

MEGANE

6 Air conditioning

62B

CLIMATE CONTROL

Vdiag No.: 44

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V4

Edition Anglaise

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

The procedures 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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1. SCOPE OF THIS DOCUMENT

This document presents the fault finding procedure applicable to all computers with the following specifications:

Vehicle: **Mégane**

Function concerned: **Climate control**

Computer name: **Careg**

Program No.: **0003**

Vdiag No.: **44**

2. PREREQUISITES FOR FAULT FINDING

Documentation type:

Fault finding procedures (this document):

- Assisted fault finding (integrated into the diagnostic tool), Dialogys.

Wiring Diagrams:

- Visu-Schéma (CD-ROM), paper.

Type of diagnostic tools:

- **CLIP**

Special tooling required:

SPECIAL TOOLING REQUIRED
Multimeter
Elé. 1681 Universal bornier

3. REMINDERS

Fault finding procedure:

To perform fault finding on the vehicle computers, switch on the ignition in fault finding mode (+ after ignition imposed), i.e. proceed as follows:

- Renault card in the card reader (keyless vehicle scenario 1, entry level, not hands-free and scenario 2, top of the range, hands-free),
- press and hold the Start button (longer than 5 seconds) with start-up conditions not fulfilled,
- then connect the diagnostic tool and perform the required operations.

Warning: The left-hand and right-hand xenon bulb computers are supplied when the dipped headlights are illuminated. Fault finding can only be carried out on them after the ignition has been switched on in fault finding mode (forced + after ignition feed) and the dipped headlights are on.

+ After ignition cut-off is carried out as follows:

- Disconnect the diagnostic tool,
- press the Start button twice briefly (less than 3 seconds),
- Check that the + after ignition feed has been cut off by checking that the computer warning lights on the instrument panel have gone out.

Faults:

Faults may be declared either present or stored (depending on whether they appeared in a certain context and have disappeared since, or whether they remain present but are not diagnosed within the current context).

The "present" or "stored" state of faults must be considered when using the diagnostic tool after switching on + after ignition (without activating any system components).

Deal with **present faults** according to the procedure specified in the "Interpretation of faults" section.

For **stored faults**, note the faults displayed and follow the instructions in the "Notes" section.

If the fault is **confirmed** when the notes are applied, the fault is present. In this case, deal with the fault.

If the fault is **not confirmed**, carry out some basic checks. Check:

- The electrical lines which correspond to the fault,
- The connectors on these lines (corrosion, bent pins, etc.),
- The resistance of the faulty component,
- The condition of the wiring (insulation melted or cut, chafing, etc.).

Conformity check

The aim of the conformity check is to check statuses and parameters that do not produce a fault display on the diagnostic tool when they are inconsistent. Therefore, this stage is used to:

- carry out fault finding on faults that do not have a fault display, and which may correspond to a customer complaint.
- check that the system is operating correctly and that there is no risk of a fault recurring after repairs.

This section features the fault finding procedures for statuses and parameters, and the conditions for checking them.

If a status is not behaving normally or a parameter is outside the permitted tolerance values, consult the corresponding fault finding page.

Special notes on the conformity check for the air conditioning function:

All variables (statuses and parameters) and commands required for the air conditioning function are divided into **four sub-functions**:

- the **COLD LOOP** sub-function, which groups together all the information required for producing cold air,
- the **USER SELECTION** sub-function, which groups together all the information relating to the user's requests (buttons pressed, warning lights, etc.),
- the **HEATING** sub-function, which groups together all the information required for producing warm air,
- the **PASSENGER COMPARTMENT VENTILATION** sub-function groups together all the information relating to ventilation and the mixing and distribution of air within the passenger compartment.

The conformity check for the **air conditioning function** is split into two parts:

1/ All information relating to the sensors and actuators **controlled by the control panel** of the climate control (distribution motor, mixing motor, recirculation motor, passenger compartment ventilation, etc.) is given in the conformity check of this section.

2/ All information relating to the **air conditioning function** (information provided by several computers) is given in the conformity check of section **62A Air conditioning**.

Note:

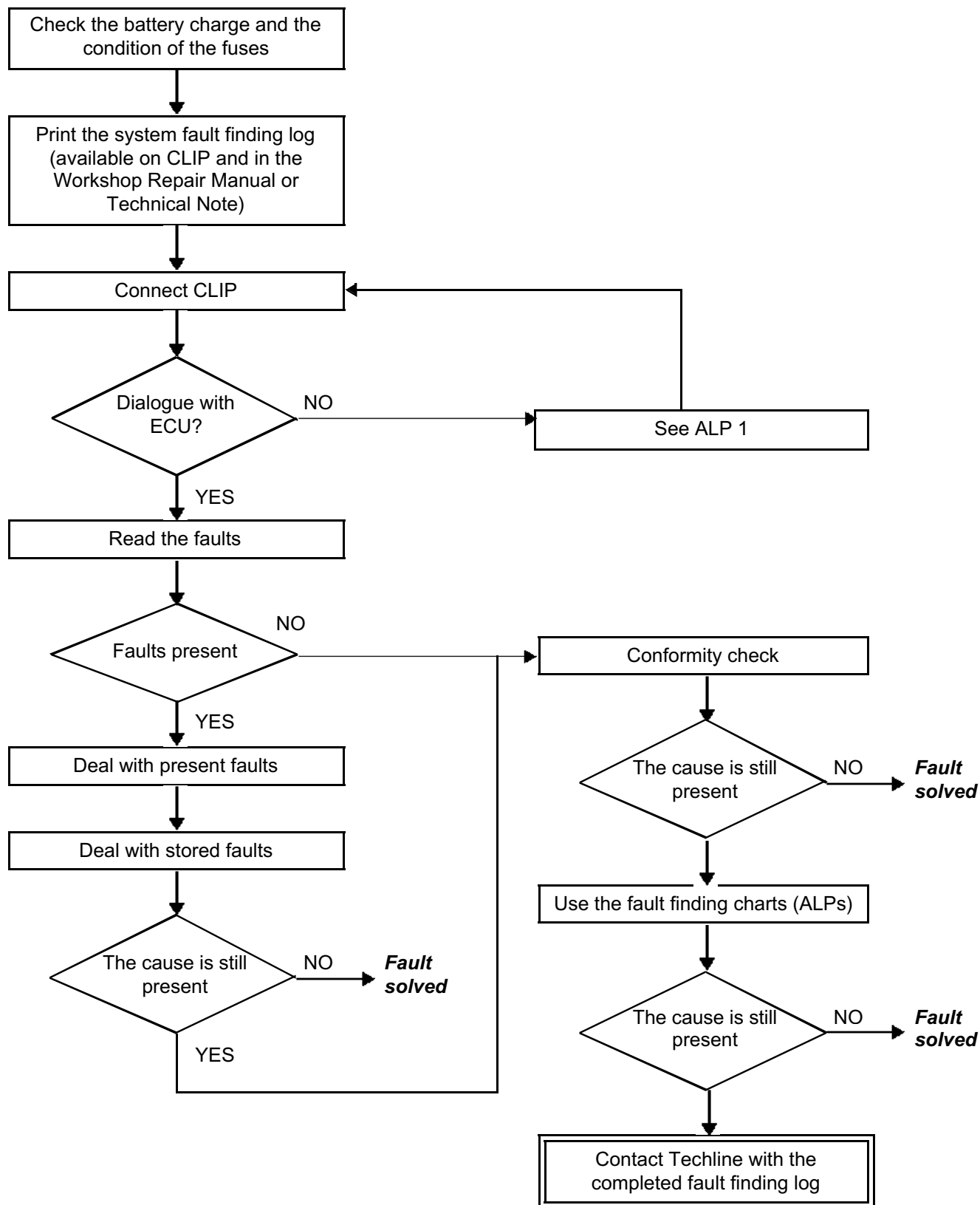
The interpretation of statuses, parameters and commands is also split into several sections. Everything which is controlled by the control panel of the climate control function is dealt with in this section. However, signals from other computers are interpreted in the fault finding sections of the computers which produce these signals.

Customer complaints - Fault finding chart

If the diagnostic tool check is correct, but the customer complaint is still present, it should be dealt with according to the customer complaint.

A summary of the overall procedure to follow is provided on the following page in the form of a flow chart.

4. FAULT FINDING PROCEDURE





5. FAULT FINDING LOG

IMPORTANT

All faults involving a complex system call for thorough diagnostics with the appropriate tools. The FAULT FINDING LOG, which should be completed during the fault finding procedure, ensures a record is kept of the procedure carried out. It is an essential document when consulting the manufacturer.

IMPORTANT!

**IT IS THEREFORE COMPULSORY TO COMPLETE A FAULT FINDING LOG
EACH TIME IT IS REQUESTED BY TECHLINE OR THE WARRANTY RETURNS
DEPARTMENT.**

You will always be asked for this report:

- when requesting technical assistance from Techline,
- when requesting approval before replacing parts for which approval is compulsory,
- to be attached to monitored parts for which reimbursement is requested. The log is needed for warranty compensation, and enables better analysis of the removed parts.

6. SAFETY INSTRUCTIONS

The safety instructions must be followed at all times when working on components, to avoid damaging the equipment and injury to the operators:

- Check the battery voltage to avoid incorrect operation of computer functions.
- Do not smoke.
- Use the appropriate tools.

GENERAL INFORMATION:

The climate control system fitted on the MEGANE is controlled by four computers. This system is called a **DISTRIBUTED FUNCTION**. Fault finding on the air conditioning is performed in two different ways using the diagnostic tool. The first procedure consists of performing **fault finding on each computer** which allows dialogue to be established with just one computer (select the climate control computer). The second procedure consists of performing **fault finding on each function** which allows dialogue to be established with all four computers of the **AIR CONDITIONING** function. These two fault finding procedures are described in the introduction of this repair manual.

DESCRIPTION OF THE OPERATION OF THE CLIMATE CONTROL COMPUTER:

The climate control computer controls the passenger compartment ventilation, the distribution motor, the mixing motor and the recirculation motor.

The climate control computer also controls two sensors, these being the interior temperature sensor and the solar radiation sensor.

The two sensors and the three motors are connected to the climate control computer by wire connections. The climate control computer controls the passenger compartment ventilation using a modulated control signal (square signal) sent to a power module (wire connection).

All other signals used by the climate control computer or transmitted by this computer to other computers are sent on the multiplex network.

Cold air production (cold loop) and warm air production (heating) are controlled by the other three computers involved in the air conditioning function (UCH, Protection and Switching Unit and injection computer).

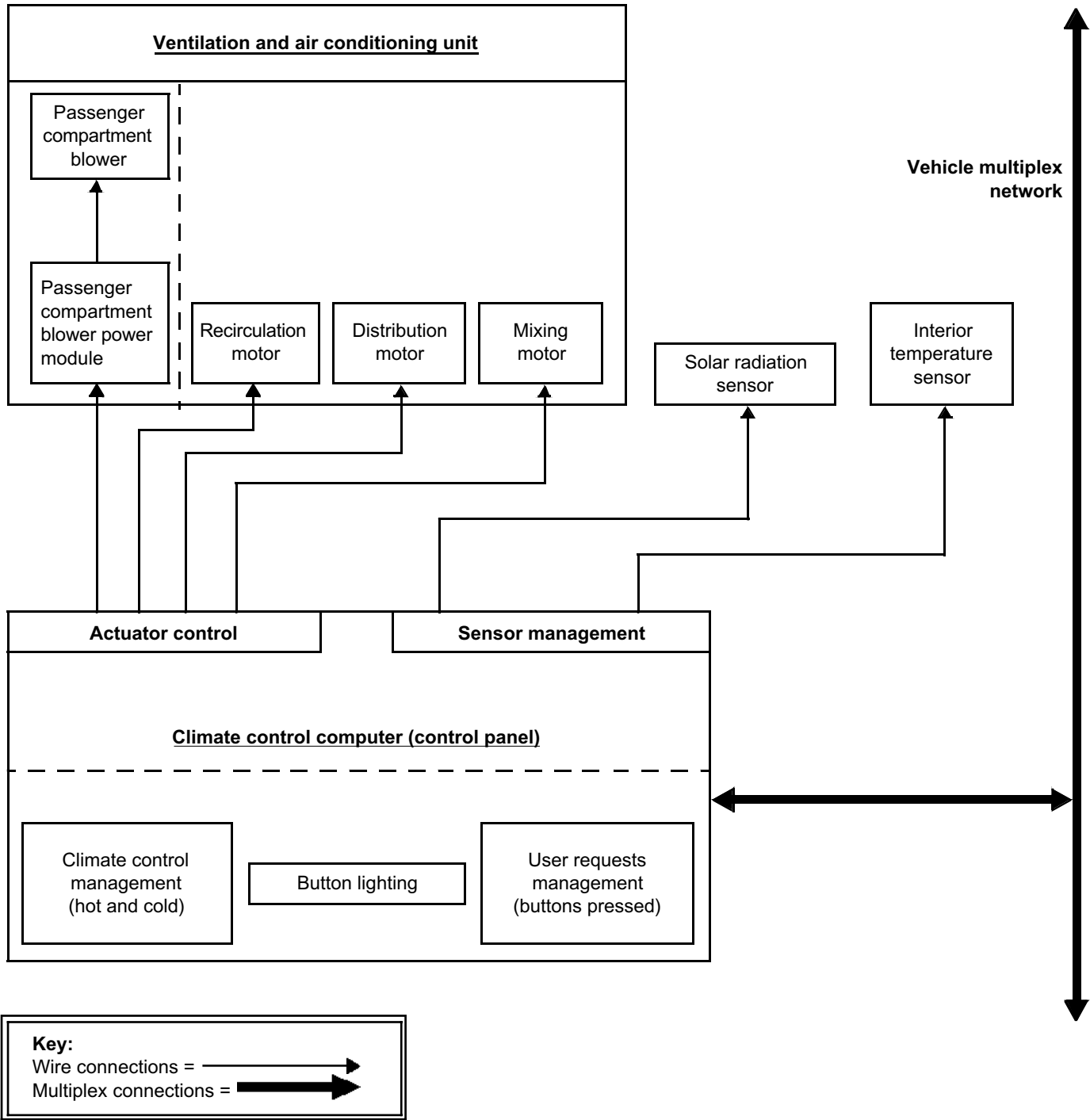
The main signals used by the climate control computer are:

- + 12 V side lights feed,
- 0 V rheostat controlled,
- exterior temperature,
- engine coolant temperature,
- engine operating status,
- engine speed,
- electrical power consumed,
- request to set the blown air temperature.

SPECIAL NOTES FOR OPERATION:

- When the engine is switched off, the passenger compartment blower unit operates approximately 30% slower than the requested speed (control panel setting).
- If any of the actuators are faulty, the air conditioning can no longer control them, but the setting requests are still displayed on the control panel: warning lights come on, display of symbols on the control panel (distribution motor position, passenger compartment blower speed, AC symbol, etc.).
- **If the exterior temperature sensor is faulty, the climate control computer is switched on 5 seconds after the ignition is switched on** (this allows a fault to be identified as fault finding cannot be performed on the exterior temperature sensor by the UCH).

SUMMARY OF COMPONENTS CONTROLLED OR MANAGED BY THE CLIMATE CONTROL COMPUTER:



Allocation of climate control computer tracks.

Computer tracks	Functions	Sensor - actuator tracks
Connector A		
1	CAN L	
2	Not used	
3	Not used	
4	solar radiation sensor signal	track 2 of the solar radiation sensor
5	interior temperature sensor signal	track 4 of the interior temperature sensor
6	computer earth	
7	CAN H	
8	Not used	
9	+ 12 V side lights feed	left-hand side light fuse in the Protection and Switching Unit (7.5 A)
10	+ 12 V accessories feed	passenger compartment fuse (15 A)
11	+ 12 V before ignition feed	passenger compartment fuse (20 A)
12	0 V sensors (solar radiation, interior temperature)	track 1 of the solar radiation sensor and track 5 of the interior temperature sensor
Connector B		
1	recirculation motor control	track 5 of the recirculation motor
2	Not used	
3	Not used	
4	Not used	
5	Not used	
6	Not used	
7	passenger compartment blower module control	track 6 of the passenger compartment blower module 6-track connector
8	12 V supply of the mixing and distribution motors	track 2 of the mixing and distribution motors
9	Not used	
10	recirculation motor control	track 6 of the recirculation motor
11	distribution motor control	track 1 of the distribution motor (coil B2)
12	distribution motor control	track 6 of the distribution motor (coil A2)
13	distribution motor control	track 3 of the distribution motor (coil B1)
14	distribution motor control	track 4 of the distribution motor (coil A1)
15	mixing motor control	track 1 of the mixing motor for B and C84 and track 3 of the mixing motor for J84 (winding B2)
16	mixing motor control	track 6 of the mixing motor (coil A2)
17	mixing motor control	track 3 of the mixing motor for B and C84 and track 1 of the mixing motor for J84 (winding B1)
18	mixing motor control	track 4 of the mixing motor (winding A1)

CLIMATE CONTROL COMPUTER CONFIGURATION:

The climate control computer has 2 configuration functions. These configurations need to be set after replacing the computer.

These two configurations are important as they ensure air conditioning is optimised within the vehicle (better control compared to automatic air conditioning). If they are not correctly entered, cold air and warm air production will be severely affected (e.g. heating resistors will not be switched on to heat the passenger compartment air).

These configurations can be accessed in repair mode by the diagnostic tool and can only be entered using the fault finding by computer menu as opposed to the fault finding by function menu.

These configurations can also be read using the diagnostic tool in **repair mode** to ensure they have been correctly set. These configurations can be read in both **fault finding by computer** mode and **fault finding by function** mode.

- The first configuration is **CF044** Vehicle type; this configuration allows you to enter the body type on which the air conditioning computer is fitted (J84 / R84 for Mégane Scénic and 4-wheel drive Scénic, and OTHER X84 for all other Méganes). The configuration is called **LC013** Vehicle type.
- The second configuration is **CF117** Type of heating resistors; this configuration is used to enter the type of passenger compartment air heating resistors fitted on the vehicle. There are three options: **WITHOUT** for vehicles without **1000 W** and **1800 W** resistors.

Heating resistors are mainly fitted on vehicles with Diesel engines.

They are located in the ventilation - air distribution unit (LH side), next to the heater matrix. The label affixed to the resistor unit (with the part number) specifies whether the resistors are **1000** or **1800 W** (Note: 1800 W resistors are mainly fitted to Mégane Scenic). The configuration reading is: **LC043** Heating resistor.

Note:

In fault finding by function mode, the diagnostic tool can also display the configuration readings of the other computers involved in the air conditioning function. All of the air conditioning function configurations (injection computer, UCH computer and Protection and Switching Unit computer) are listed in section **62A Air conditioning**.

MIXING AND DISTRIBUTION MOTOR PROGRAMMING PROCEDURE (self-setting):

There is no **specific** programming operation for the mixing motor and the distribution motor.

However, the minimum and maximum limits of these motors have to be programmed. This operation is automatic and is performed in the following cases:

- after replacing the mixing or distribution motor,
- after disconnecting the battery or after disconnecting the climate control computer supply fuse,
- if a fault, declared as present when the ignition was switched off, disappears the next time the ignition is switched on.

WARNING

To ensure this programming operation is performed correctly, the passenger compartment fan must be switched off (speed set to 0).

CLIMATE CONTROL

Fault finding - Summary of faults

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SUMMARY OF SENSORS AND ACTUATORS ON WHICH FAULT FINDING CAN BE PERFORMED BY THE CLIMATE CONTROL COMPUTER (with corresponding design office codes).

FAULT NAME	DTC CODES
DF001 Computer	91 05
DF007 Interior temperature sensor circuit	91 01
DF010 Mixing motor circuit	91 07
DF012 Distribution motor circuit	91 08
DF021 Recirculation motor circuit	91 06
DF026 Solar radiation sensor circuit	91 02

DF001 PRESENT OR STORED	<u>COMPUTER</u> 1.DEF: Internal electronic fault
----------------------------------	-----------------------------------------------------

NOTES	Conditions for applying the fault finding procedure to stored faults: Apply this fault finding procedure if the fault appears as present or stored again after: – clearing the fault and switching the ignition off then back on.
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If the fault is stored: clear the fault, switch off the ignition and disconnect the climate control computer supply fuse.

- Refit the fuse and switch the ignition back on.
- Start the engine and switch on the air conditioning.

If the fault reappears as stored: contact your **Techline**.

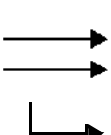
If the fault does not reappear: leave the climate control switched on and select various ventilation and air distribution settings to check that the system is working correctly.

If the fault is present: contact your **Techline**.

AFTER REPAIR	If the computer was replaced (at the request of the Techline): reconfigure the computer (see Section Configurations and Programming). Deal with any other faults.
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DF007 PRESENT OR STORED	<u>INTERIOR TEMPERATURE SENSOR CIRCUIT</u> CC.0 : Short circuit to earth CO.1 : Short circuit or open circuit to + 12 V
--------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------

NOTES	Conditions for applying the fault finding procedure to stored faults: Apply this fault finding procedure if the fault appears as present or stored again after: – switching on the ignition and switching on the climate control.
	Special notes: The interior temperature sensor (combined with a micro-turbine, depending on the vehicle equipment) is located in the headlining in a unit under the rear view mirror.

Check the connection and condition of the internal temperature sensor connector. Replace the connector if necessary.
With the ignition on ("forced" + after ignition: see Introduction), check that the temperature sensor micro-turbine is working correctly . If not, check for the presence of +12 V on track 1 of the temperature sensor connector and an earth on track 3 . If the micro-turbine supply is correct and the micro-turbine is not working, replace the component: sensors + micro-turbine (the micro-turbine is not available separately).
Disconnect connector A (12-track) from the climate control computer in order to check the insulation, continuity and absence of interference resistance on the connections: <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 10px;"> Computer connector A track 5 Computer connector A track 12 </div> <div style="margin-right: 10px;">  </div> <div> Track 4 of the interior temperature sensor Track 5 of the interior temperature sensor Track 1 of the solar radiation sensor </div> </div> Repair if necessary.
Check the resistance value of the sensor between: track 4 and track 5 of the interior temperature sensor connector. Replace the sensor if the resistance is not: 10 kΩ ± 500 Ω at 25°C (for more details, refer to the electrical specifications of the sensor according to temperature in the Help section).
If the fault is still present, replace the interior temperature sensor.

AFTER REPAIR	If the computer was replaced (at the request of the Techline): reconfigure the computer (see Section Configurations and Programming). Deal with any other faults.
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DF010 PRESENT OR STORED	<u>MIXING MOTOR CIRCUIT</u> CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V
--------------------------------------------	-----------------------------------------------------------------------------------------------------------------------

NOTES	Conditions for applying the fault finding procedure to stored faults: The fault is declared present after: – switching the climate control panel on and pressing the temperature control (minimum or maximum temperature request).
	Special notes: – After repairing the fault (when the fault switches from present to stored), wait for 1 minute before the climate control computer is able to control the distribution motor. To avoid having to wait, switch the ignition off and then back on again. – There is no specific programming operation for the mixer motor, however, after it has been replaced, the motor needs to program its limits (minimum and maximum).

Check **the connection and condition of the** mixing motor connector.
 Replace the connector if necessary.

Disconnect connector B (**18-track**) from the climate control computer in order to check the **insulation, continuity and the absence of interference resistance** on the following connections:

For all Megane vehicles:

Computer connector B track 18	————→	Track 4 of the mixing motor
Computer connector B track 8	————→	Track 2 of the mixing motor
	————→	Track 2 of the distribution motor
Computer connector B track 16	————→	Track 6 of the mixing motor

For Mégane vehicles other than Scénic:

Computer connector B track 17	————→	Track 3 of the mixing motor
Computer connector B track 15	————→	Track 1 of the mixing motor

For Mégane Scénics:

Computer connector B track 17	————→	Track 1 of the mixing motor
Computer connector B track 15	————→	Track 3 of the mixing motor

Repair if necessary.



AFTER REPAIR	Clear the fault memory. Follow the instructions to confirm repair. If the motor has been replaced, refer to the Configuration and Programming section. Deal with any other faults.
---------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

DF010
CONTINUED

With the climate control computer connected and the ignition on ("forced" + after ignition: see **Introduction**) check for a **12 V supply** on track 2 of the mixing motor connector. If the supply is not present and if no faulty connections are detected during the continuity checks, **contact your Techline**.

With the connector disconnected, check the resistance value of the mixer motor by measuring between:
track 2 and **track 1** of the mixing motor connector,
track 2 and **track 3** of the mixing motor connector,
track 2 and **track 4** of the mixer motor connector,
track 2 and **track 6** of the mixing motor connector.
For the four checks, a value of **100 Ω \pm 5 Ω at 20°C** should be obtained. Replace the mixer motor if this is not the case.

If the fault is still present with the mixing motor removed and connected, carry out a motor command using the temperature buttons on the control panel: switch the temperature setting to maximum hot position 27° (value 100%) then switch the temperature setting to maximum cold position 15° (value 0%). The motor should switch from one direction to the other.
If the connections checked previously are correct but the motor does not switch during the commands: replace the mixing motor.

If the commands have been performed correctly, check that the mixing motor flap is not **jammed** by trying to move the mechanism.
Repair if necessary.

If the fault is still present, **replace** the mixing motor.

AFTER REPAIR

Clear the fault memory.
Follow the instructions to confirm repair.
If the motor has been replaced, refer to the **Configuration and Programming** section.
Deal with any other faults.

DF012 PRESENT OR STORED	<u>DISTRIBUTION MOTOR CIRCUIT</u> CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V
--------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------

NOTES	Conditions for applying the fault finding procedure to stored faults: The fault is declared present after: <ul style="list-style-type: none">– switching the climate control panel on and pressing the distribution control (selection set to de-icing, ventilation, footwells, etc.).
	Special notes: <ul style="list-style-type: none">– After repairing the fault (when the fault switches from present to stored), wait for 1 minute before the climate control computer is able to control the distribution motor. To avoid having to wait, switch the ignition off and then back on again.– There is no specific programming operation for the distribution motor, however, after it has been replaced, the motor needs to program its limits (minimum and maximum).

Check **the connection and condition** of the distribution motor connector.
Replace the connector if necessary.

Disconnect connector B (**18-track**) from the climate control computer in order to check the **insulation, continuity and the absence of interference resistance** on the following connections:

Computer connector B track 11	→	track 1 of the distribution motor
Computer connector B track 12	→	track 6 of the distribution motor
Computer connector B track 13	→	track 3 of the distribution motor
Computer connector B track 14	→	track 4 of the distribution motor
Computer connector B track 8	→	track 2 of the distribution motor
	→	track 2 of the mixing motor

Repair if necessary.

With the climate control computer connector connected and the ignition on (climate control panel on), ensure there is a **12 V supply** on **track 2** of the distribution motor connector. If the supply is not present and if no faulty connections are detected during the continuity checks, **contact your Techline**.



AFTER REPAIR	Clear the fault memory. Follow the instructions to confirm repair. If the motor has been replaced, refer to the Configuration and Programming section. Deal with any other faults.
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DF012
CONTINUED



With the connector disconnected, check the resistance value of the distribution motor by measuring between:
track 2 and **track 1** of the distribution motor connector,
track 2 and **track 3** of the distribution motor connector,
track 2 and **track 4** of the distribution motor connector,
track 2 and **track 6** of the distribution motor connector.
For the four checks, a value of **100 Ω ± 5 Ω** at **20°C** should be obtained. Replace the distribution motor if this is not the case.

If the fault is still present with the distribution motor dismantled and connected, carry out a motor command using the distribution buttons on the control panel: switch the distribution to demisting position (value 100%) then switch the distribution setting to air vent position (value 0%). The motor should switch from one direction to the other.
If the connections checked previously are correct but the motor does not switch during the commands: replace the distribution motor.

If the commands have been performed correctly, check that the distribution motor flap is not **jammed** by trying to move the mechanism.
Repair if necessary.



If the fault is still present, **replace** the distribution motor.

AFTER REPAIR

Clear the fault memory.
Follow the instructions to confirm repair.
If the motor has been replaced, refer to the **Configuration and Programming** section.
Deal with any other faults.

DF021 PRESENT OR STORED	<u>RECIRCULATION MOTOR CIRCUIT</u> CO : Open circuit CC.0 : Short circuit to earth CC.1 : Short circuit to + 12 V
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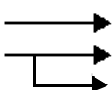
NOTES	Conditions for applying the fault finding procedure to stored faults: The fault is declared present after: – air conditioning panel lit and recirculation control pressed (select "recirculation" to close the flap or "external air" to open the flap).
	Special notes: Climate control does not have automatic recirculation. However, in extreme temperatures (above 35 °C) and when the air conditioning is switched on, the recirculation flap sets itself to the recirculation position in order to warm up the passenger compartment more quickly.

Check the connection and condition of the recirculation motor. Replace the connector if necessary.
Disconnect connector B (18-track) from the climate control computer in order to check the insulation, continuity and the absence of interference resistance on the following connections: Computer connector B track 10  Track 6 of the recirculation motor Computer connector B track 1  Track 5 of the recirculation motor
Check the resistance value of the recirculation motor by measuring between: track 5 and track 6 of the recirculation motor connector. Replace the motor if the resistance is not: 35 Ω ± 5 Ω at 20°C .
If the fault is still present, remove the scuttle panel grille beneath the windscreen to look at the recirculation flap. Run a recirculation command by pressing the air conditioning control panel button: the flap should close. The flap should close during the command. During the command, check that the recirculation motor flap does close without any resistance and without jamming . Repair if necessary.
If the fault is still present, replace the recirculation motor.

AFTER REPAIR	Clear the fault memory. Follow the instructions to confirm repair. Deal with any other faults.
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DF026 PRESENT OR STORED	<u>SOLAR RADIATION SENSOR CIRCUIT</u> CC.0 : Short circuit to earth CO.1 : Short circuit or open circuit to + 12 V
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NOTES	Conditions for applying the fault finding procedure to stored faults: Apply this fault finding procedure if the fault appears as present or stored again after: – clearing the fault and switching the ignition off then back on.
	Special notes: The solar sensor (a little black button) is located on top of the dashboard, on the windscreen side.

Check that the solar sensor is not "shaded" by any objects (nothing should be placed on top of the sensor).
Check the connection and condition of the solar radiation sensor connector. Replace the connector if necessary.
Disconnect connector A (12-track) from the climate control computer in order to check the insulation, continuity and absence of interference resistance on the connections: <div><div>Computer connector A track 4 Computer connector A track 12</div><div><div>Track 2 of the solar radiation sensor Track 1 of the solar radiation sensor Track 5 of the interior temperature sensor</div></div></div>
Repair if necessary.
With the ignition on, the insolation sensor electrically connected and the climate control panel on, ensure that the insolation sensor supplies a voltage (signal) to the climate control computer. To ascertain the voltage that the sensor should be supplying as a function of solar radiation intensity, refer to the procedure for interpreting this parameter in the Interpretation of parameters section.
If the fault is still present, replace the solar radiation sensor.

AFTER REPAIR	Clear the fault memory. Deal with any other faults.
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ET007	<u>COMPUTER + AFTER IGNITION FEED</u>
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NOTES	None.
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This status shows the **+ 12 V after ignition** feed supplied by the Protection and Switching Unit.
 When the ignition is off, the status displays: **ABSENT**.
 When the ignition is on, the status displays: **PRESENT**.

If the fault is still present, carry out **fault finding on the Protection and Switching Unit**: Check that status **ET003** After ignition relay control is working correctly and check that fault **DF001** After ignition relay control circuit is not present.
 Carry out any repairs necessary (see corresponding fault finding procedures).

If the fault is still present: disconnect connector A (**12-track**) from the climate control computer to check the **insulation, continuity and the absence of interference resistance** of the following connections:

- Computer connector A **track 10** —————> **+ accessories feed** (7.5 A fuse in the Protection and Switching Unit)
- Computer connector A **track 11** —————> **+ before ignition feed** (20 A UCH fuse)
- Computer connector A **track 6** —————> **Earth** (left-hand dashboard cross member)

Repair if necessary.

If the connections are correct and the climate control computer is correctly supplied but the fault is still present: carry out **fault finding on the electric charge circuit**.

AFTER REPAIR	Repeat the conformity check from the start.
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ET062	<u>RECIRCULATION FLAP POSITION</u>
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NOTES	<p>Special notes:</p> <p>Climate control does not have automatic recirculation. However, in extreme temperatures (above 35°C) and when the air conditioning is switched on, the recirculation flap sets itself to the recirculation position in order to speed up temperature adjustment in the passenger compartment.</p>
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<p>This status specifies the position of the recirculation flap.</p> <p>If the flap is in the external air position, the status displays: OPEN.</p> <p>If the flap is in the recirculation position, the status displays: CLOSED.</p>
<p>If the status does not operate as shown, apply the fault finding procedure for fault DF021 Recirculation motor circuit.</p>

AFTER REPAIR	Repeat the conformity check from the start.
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ET085	<u>HEATED REAR SCREEN: AUTO MODE</u>
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NOTES	None.
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This status specifies whether the heated rear screen is operated in automatic mode or not. This mode corresponds to the **SEE CLEAR** function. This function switches on the heated rear screen, the heated door mirrors, the air conditioning and the windscreen ventilation at high speed.

The heated rear screen will operate for as long as the **SEE CLEAR** function is requested (permanently controlled).

This automatic mode is obtained by pressing the de-icing button at the top of the climate control panel.

If the **SEE CLEAR** function is requested, the status should display: **ACTIVE**.

If the **SEE CLEAR** function is not requested, the status should display: **INACTIVE**.

If the status does not operate as shown, refer to **ALP 10** in Section **62A Air conditioning**.

AFTER REPAIR	Repeat the conformity check from the start.
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ET086	<u>HEATED REAR SCREEN: MANUAL MODE</u>
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NOTES	None.
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This status specifies whether the heated rear screen is operated in manual mode or not. This mode corresponds to a timed operating period for the heated rear screen, controlled by the UCH. This timed period depends on the exterior temperature (approximately 15 minutes). Operation in manual mode is obtained by pressing the de-icing button at the bottom of the climate control panel. This function is used to switch on the heated rear screen and the heated door mirrors. If operation of the heated rear screen is requested in manual mode, the status should display: **ACTIVE**. If operation of the heated rear screen is not requested, the status should display: **INACTIVE**.

If the status does not operate as shown, refer to **ALP 10** in Section **62A Air conditioning**.

AFTER REPAIR	Repeat the conformity check from the start.
--------------	---------------------------------------------

ET141	<u>PASSENGER COMPARTMENT BLOWER</u>
-------	-------------------------------------

NOTES	Special note: This status is used by the UCH to authorise triggering of the passenger compartment heating resistors (RCH): operating safety.
-------	--------------------------------------------------------------------------------------------------------------------------------------------------------

<p>This status shows the operation of the passenger compartment blower.</p> <p>When the passenger compartment blower is operating (from speed 1 to speed 8), the status displays: RUNNING.</p> <p>When the passenger compartment blower is not operating (speed 0), the status displays: STOPPED.</p>
<p>If the status does not operate as displayed, check that the passenger compartment blower is operating correctly. If the passenger compartment blower does not work, apply the fault finding procedure for ALP 5 No passenger compartment ventilation.</p>
<p>If the passenger compartment blower works correctly but the status displays the message STOPPED, check that the passenger compartment blower symbol (spiral) on the control panel works correctly (increase in spiral bargraphs according to the eight speeds).</p> <p>If the passenger compartment symbol (spiral) does not work: Contact your Techline.</p>
<p>If the fault is still present, carry out fault finding on the multiplex network.</p>

AFTER REPAIR	Repeat the conformity check from the start.
--------------	---------------------------------------------

ET143	<u>AIR CONDITIONING REQUEST 1</u>
-------	-----------------------------------

NOTES	Note: For more information, refer to the compressor switch-on request diagram in Section 62A Air conditioning .
--------------	---------------------------------------------------------------------------------------------------------------------------

This status specifies whether the request to switch on air conditioning has been sent by the climate control computer to the UCH or not.

When air conditioning switch-on is requested, the status should display **ACTIVE**.

When air conditioning switch-on is not requested, the status should display **INACTIVE**.

If the status does not operate as shown, contact your **Techline**.

AFTER REPAIR	Repeat the conformity check from the start.
---------------------	---------------------------------------------

PR001	<u>INTERIOR TEMPERATURE</u>
-------	-----------------------------

NOTES	None.
-------	-------

The climate control computer receives the interior temperature signal through a wire connection.

To ensure this parameter is correct (without using a thermometer), read the temperature information when the vehicle is cold (in the morning). The interior temperature, the exterior temperature and the engine coolant temperature should be practically the same.

Another way of checking whether this sensor is correct is to check the resistance value of the sensor as a function of temperature: refer to the electrical specifications of the sensor in the **Help** section.

If the temperature displayed by this parameter seems to be incorrect, apply the fault finding procedure for fault **DF007** Interior temperature sensor circuit.

AFTER REPAIR	Repeat the conformity check from the start.
--------------	---------------------------------------------

PR006	<u>SOLAR RADIATION</u>
-------	------------------------

NOTES	None.
-------	-------

The solar radiation sensor is used to improve the comfort level of the air conditioning according to the windscreen solar radiation.

This sensor measures the solar radiation level and transmits the information to the climate control computer in the form of a measurement in W/m^2 . This measurement ranges from **0** to **400 W**. The sensor is faulty if it gives a value of **400 W** while the vehicle is in the shade (in the workshop) as this value equals maximum solar radiation.

If the value displayed by this parameter seems to be incorrect: check the signal transmitted by the sensor as a function of solar radiation, by measuring between track 2 of the sensor and earth (solar radiation sensor connected electrically, ignition on and climate control panel on).

0 W	————→	4.91 V
50 W	————→	4.28 V
100 W	————→	3.70 V
200 W	————→	2.55 V
300 W	————→	1.40 V
400 W	————→	0.30 V

If the fault is still present, apply the fault finding procedure for fault: **DF026** Solar radiation sensor circuit.

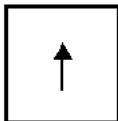
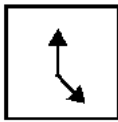
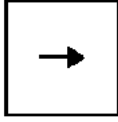
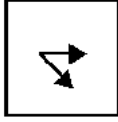
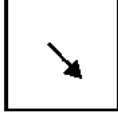
AFTER REPAIR	Repeat the conformity check from the start.
--------------	---------------------------------------------

PR011	<u>DISTRIBUTION FLAP POSITION</u>
--------------	-----------------------------------

NOTES	The values listed below are only given as a guide (they depend on which way the flap is being moved).
--------------	-------------------------------------------------------------------------------------------------------

The following table gives the percentages by which the air distribution motor is controlled as well as the opening status of the lower flaps (footwell flap and under seat duct flap). To view the lower flaps, remove the right-hand and left-hand lower air ducts.

Values should be checked with the engine switched off and the air conditioning in manual mode (tolerance $\pm 5\%$).

Air distribution request	PR011 Distribution flap position	Air flow distribution information			Lower flap opening status
		Demisting flow	Vent flow	Footwell flow	
Demisting 	100%	High	Low	None	Completely CLOSED
Demisting + Footwells 	60%	High	Low	High	Completely OPEN
Air vents 	0%	Low	High	None	Completely CLOSED
Vents + Footwells 	15%	Low	High	High	Approximately 20% OPEN
Footwell Ventilation 	50%	Average	Average	High	Completely OPEN

AFTER REPAIR	Repeat the conformity check from the start.
---------------------	---------------------------------------------

PR012	<u>MIXING FLAP POSITION</u>
-------	-----------------------------

NOTES	None.
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The mixing flap moves as a function of the temperature requested or automatically if the air conditioning is in automatic mode.

The mixing motor does not have a position feedback potentiometer. This parameter is therefore an indication of the flap position as a function of how the motor is being controlled by the climate control computer.

As specified in the conformity check, in the maximum cold position (**15°C**), the parameter indicates 0% and in the maximum hot position (**27°C**), the parameter indicates 100%.

If the value displayed by this parameter seems to be incorrect or if the parameter is correct but the blown air temperature does not vary in accordance with user requests: apply the fault finding procedure for fault **DF010** Mixing motor circuit or refer to **ALP 6** No warm air or **ALP 8** No cold air depending on the customer complaint (these fault finding charts are given in Section **62A Air conditioning**).

AFTER REPAIR	Repeat the conformity check from the start.
--------------	---------------------------------------------

PR019	<u>PASSENGER COMPARTMENT BLOWER PWM SETTING</u>
--------------	-------------------------------------------------

NOTES	The values listed below are only given as a guide.
--------------	----------------------------------------------------

Values checked with engine switched off and engine running with heating and ventilation in manual mode (tolerance $\pm 5\%$).

Passenger compartment blower speed setting.	SPD 0	SPD 1	SPD 2	SPD 3	SPD 4	SPD 5	SPD 6	SPD 7	SPD 8
PR019 passenger compartment blower PWM setting.	0%	18%	23%	30%	39%	51%	66%	82%	100%

If the values given above are correct but the passenger compartment blower does not work, refer to fault finding **ALP 5** No passenger compartment ventilation.

AFTER REPAIR	Repeat the conformity check from the start.
---------------------	---------------------------------------------

PR092	<u>BATTERY VOLTAGE</u>
-------	------------------------

NOTES	None.
-------	-------

This parameter specifies the supply voltage of the climate control computer.

This parameter should indicate a voltage of: **10.5 < X < 14.4 V**.

If the voltage is not within the specified range, disconnect connector A (**12-track**) of the climate control computer to check **the insulation, continuity and the absence of interference resistance** of the following connections:

- | | | |
|--------------------------------------|--------|-----------------------------------------------------------------------------|
| Computer connector A track 10 | —————> | + accessories feed (7.5 A fuse in the Protection and Switching Unit) |
| Computer connector A track 11 | —————> | + before ignition feed (20 A UCH fuse) |
| Computer connector A track 6 | —————> | Earth (left-hand dashboard cross member) |

Repair if necessary.

If the connections are correct but the fault is still present, run **fault finding on the charge circuit**.

AFTER REPAIR	Repeat the conformity check from the start.
--------------	---------------------------------------------

PR121	<u>BLOWN AIR TEMPERATURE SETTING</u>
-------	--------------------------------------

NOTES	None.
-------	-------

This parameter is used to control the temperature inside the passenger compartment. This setting is calculated by the climate control computer according to interior temperature, exterior temperature and coolant temperature.

This setting is used to control the mixing motor and the request to operate the passenger compartment air heating resistors (to reach the temperature requested by the user as quickly as possible in order to optimise passenger compartment comfort quickly).

The following conditions must be satisfied to allow the UCH to control the passenger compartment air heating resistors:

- Engine running,
- Air conditioning blower running (minimum speed 1),
- User temperature setting above 20°C (or automatic mode requested),
- Blown air temperature setting **above 65°C**,
- Interior temperature **below 10°C**,
- Exterior temperature **below 5°C**,
- Engine coolant temperature **below 65°C**,
- Injection authorisation (**ET019** Number of RCH authorised by the injection system < at 1),
- Alternator authorisation (**ET018** Number of RCH authorised by alternator < at 1).

Note:

- Statuses **ET017**, **ET018** and **ET019** are brought up by the UCH (see conformity check for the air conditioning function: Section **62A**).
- The values given below are **average values**. The UCH calculates the number of passenger compartment heating resistors to trigger (**ET017** Number of RCH required).

AFTER REPAIR	Repeat the conformity check from the start.
--------------	---------------------------------------------

NOTES

Only carry out this conformity check after a **full check** with the diagnostic tool (fault reading and configuration checks).

Application conditions: engine off, ignition on (forced 12 V After ignition).

Air conditioning off (air conditioning compressor not triggered).

Special note:

The various conformity checks for the air conditioning function are explained in the **Introduction** section.

Note:

- Read the parameters when the vehicle is cold (in the morning) to check the conformity of the temperature parameters (without thermometer). The two temperatures should be practically the same (as should the coolant temperature given by the injection system).
- The invalid values given in this check correspond to the value sent by the diagnostic tool (substitute value) when the sensor in question is faulty. A sensor fault can be detected when these invalid values are displayed (this is important for sensors on which fault finding cannot be performed, e.g. exterior temperature sensor).

PASSENGER COMPARTMENT VENTILATION SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Temperatures	PR001: Interior temperature	X = interior temperature $\pm 5^{\circ}\text{C}$ (invalid value: 87.5°C)	In the event of a fault, consult the fault finding procedure for this parameter .
		PR002: Exterior temperature	X = exterior temperature $\pm 5^{\circ}\text{C}$ (invalid value: 215°C) Note: This status is brought up by the climate control computer but generated by the UCH.	In the event of a fault, refer to the interpretation of this parameter (see Section 87B).
2	Solar radiation	PR006: Solar radiation	from 0 W (no solar radiation) to 400 W (maximum solar radiation) (invalid value: 765 W)	In the event of a fault, see the interpretation of this parameter .

PASSENGER COMPARTMENT VENTILATION SUB-FUNCTION (CONTINUED)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
3	Passenger compartment blower	PR019: Passenger compartment blower PWM setting	Speed 0 = 0% Speed 8 = 100% Note: The PWM signal is a modulated control voltage used to control the air conditioning blower power module for the passenger compartment.	If the event of a fault or for more information (to find the percentages for speeds 1-7), consult the fault finding procedure for this parameter . Note: If the parameter varies correctly but the passenger compartment blower does not work, refer to ALP 5.
		ET141: Passenger compartment blower	RUNNING or STOPPED depending on user request	In the event of a fault, consult the fault finding procedure for this status .
4	Air flaps	PR012: Mixing flap position	0% = Max. cold position (15°C) 100% = Max. hot position (27°C)	In the event of a fault, consult the fault finding procedure for this parameter .
		ET062: Recirculation flap position	OPEN if the flap is in the external air position CLOSED if the flap is in the recirculation position	In the event of a fault, refer to the interpretation of this status .
		PR011: Distribution flap position	from 0% to 100% . Note: 0% = Air vents only position 100% = De-icing position	In the event of a fault or for more information (various flap opening values according to the user selection), consult the fault finding procedure for this parameter .

NOTES

Only carry out this conformity check after a **full check** with the diagnostic tool (fault reading and configuration checks).

Application conditions: engine off, ignition on (forced 12 V After ignition feed).

Air conditioning off (air conditioning compressor not triggered).

Special note:

The various conformity checks for the air conditioning function are explained in the **Introduction** section.

COLD LOOP SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Request to engage the compressor	ET143: Air conditioning request 1	ACTIVE for air conditioning request (AC button pressed or AUTO button pressed with maximum cold request). INACTIVE otherwise.	In the event of a fault, consult the fault finding procedure for this status . Note: This status represents the request from the climate control computer to the UCH to start the compressor (refer to the system operation outline).
2	Temperature	PR001: Interior temperature	X = interior temperature $\pm 5^{\circ}\text{C}$ (invalid value: 87.5°C)	In the event of a fault, consult the fault finding procedure for this parameter .
3	Passenger compartment blower	ET141: Passenger compartment blower	RUNNING or STOPPED depending on user request	In the event of a fault, consult the fault finding procedure for this status .
4	Air flap	PR012: Mixing flap position	0% = Maximum cold position (15°C) 100% = Maximum hot position (27°C)	In the event of a fault, consult the fault finding procedure for this parameter .
5	Solar radiation	PR006: Solar radiation	from 0 W (no solar radiation) to 400 W (maximum solar radiation) (invalid value: 765 W)	In the event of a fault, consult the fault finding procedure for this parameter .

NOTES

Only carry out this conformity check after a **full check** with the diagnostic tool (fault reading and configuration checks).

Application conditions: engine off, ignition on (forced 12 V After ignition feed).

Air conditioning off (air conditioning compressor not triggered).

Special note:

The various conformity checks for the air conditioning function are explained in the **Introduction** section.

USER SELECTION SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Heated rear screen	ET086: Heated rear screen: manual mode	ACTIVE: De-icing button at the bottom of the control panel pressed. INACTIVE: otherwise.	In the event of a fault, consult the fault finding procedure for this status .
		ET085: Heated rear screen: automatic mode	ACTIVE: De-icing button at the top of the control panel pressed (See clear function). INACTIVE: otherwise.	In the event of a fault, consult the fault finding procedure for this status .
2	Request to start the compressor	ET143: Air conditioning request 1	ACTIVE for air conditioning request (AC button pressed or AUTO button pressed with maximum cold request). INACTIVE otherwise.	In the event of a fault, consult the fault finding procedure for this status . Note: This status represents the request from the climate control computer to the UCH to start the compressor (refer to the system operation flowchart).

NOTES

Only carry out this conformity check after a **full check** with the diagnostic tool (fault reading and configuration checks).

Application conditions: engine off, ignition on (forced 12 V After ignition feed).

Air conditioning off (air conditioning compressor not triggered).

Special note:

The various conformity checks for the air conditioning function are explained in the **Introduction** section.

HEATING SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Mixing motor	PR012: Mixing flap position	0% = Maximum cold position (15°C) 100% = Maximum hot position (27°C)	In the event of a fault, consult the fault finding procedure for this parameter .
2	Heated rear screen	ET086: Heated rear screen: manual mode	ACTIVE: De-icing button at the bottom of the control panel pressed. INACTIVE otherwise.	In the event of a fault, refer to the interpretation of this status .
		ET085: Heated rear screen: automatic mode	ACTIVE De-icing button at the top of the control panel pressed (See clear function). INACTIVE otherwise.	In the event of a fault, consult the fault finding procedure for this status .
3	Passenger compartment blower	PR001: Interior temperature	X = interior temperature $\pm 5^{\circ}\text{C}$ (invalid value 87.5°C).	In the event of a fault, consult the fault finding procedure for this parameter .
		PR121: Blown air temperature setting	$0 < X < 80^{\circ}\text{C}$	In the event of a fault, consult the fault finding procedure for this parameter .
4	Temperature	ET141: Passenger compartment blower	RUNNING or STOPPED depending on user request	In the event of a fault, consult the fault finding procedure for this status .

CLIMATE CONTROL

Fault finding - Conformity check

62B

Vdiag No.: 44

NOTES

Only carry out this conformity check after a **full check** with the diagnostic tool (fault reading and configuration checks).

Application conditions: engine off, ignition on (forced 12 V After ignition feed).

Air conditioning off (air conditioning compressor not triggered).

Special note:

The various conformity checks for the air conditioning function are explained in the **Introduction** section.

Note:

This page lists the statuses and parameters provided by the climate control computer but which are not associated to the four sub-functions given in the conformity check (**PASSENGER COMPARTMENT VENTILATION**, **COLD LOOP**, **USER SELECTION** and **HEATING** sub-functions).

MAIN SCREEN

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Electrical supplies	PR092: Battery voltage	10.5 < X < 14.4 V	In the event of a fault, see the interpretation of this parameter .
		ET007: + after ignition computer feed	ABSENT: Ignition off. PRESENT: Ignition on.	In the event of a fault, refer to the interpretation of this status .
		ET002: + 12 V side lights feed	ABSENT: Sidelights off. PRESENT: Sidelights on.	In the event of a fault, consult the interpretation of this status (see 87B, Passenger compartment connection unit).
		PR122: Night-time lighting level	6% = minimum lighting level. 99% = maximum lighting level. (side lights off: 102%)	In the event of a fault, consult the interpretation of fault DF037 Instrument panel lighting dimmer (see 83A, Instrument panel).

NOTES

Special notes:

A **general summary** of all air conditioning fault finding charts can be found in Section **62A**. The customer complaints listed below only relate to the actuators controlled by the air conditioning control panel. For cold air and warm air production faults, refer to Section **62A**.

DIALOGUE FAULT

NO DIALOGUE WITH THE COMPUTER

ALP 1

AIR DISTRIBUTION PROBLEM

AIR DISTRIBUTION PROBLEM

ALP 2

AIR FLOW FAULT

ALP 3

INEFFICIENT WINDSCREEN DEMISTING

ALP 4

NO PASSENGER COMPARTMENT VENTILATION

ALP 5

**PASSENGER COMPARTMENT
ODOURS**

UNPLEASANT ODOURS IN PASSENGER COMPARTMENT

ALP 11

WATER IN PASSENGER COMPARTMENT

WATER IS PRESENT IN PASSENGER COMPARTMENT

ALP 12

NOTES

Special notes:
A **general summary** of all air conditioning fault finding charts can be found in Section **62A**. The customer complaints listed below only relate to the actuators controlled by the air conditioning control panel. For cold air and warm air production faults, refer to Section **62A**.

CONTROL PANEL FAULT

NO CONTROL PANEL LIGHTING ALP 13

COMPRESSOR NOISES

AIR CONDITIONING NOISES DURING OPERATION ALP 14

PASSENGER COMPARTMENT VENTILATION NOISES ALP 15

CLIMATE CONTROL

Fault finding - Fault Finding Chart

Vdiag No.: 44

62B

ALP 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 sensor (wiring in good condition),
- the connection between the vehicle's diagnostic sensor and the diagnostic socket (cable in good condition),
- the injection, engine and passenger compartment fuses.

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

Repair if necessary.

Disconnect the connector from the climate control computer in order to check the **insulation, continuity and the absence of interference resistance** of the following connections:

Climate control computer 12-track connector:

- Track 11** —————> **+ before ignition** (see the vehicle wiring diagram)
- Track 10** —————> **+ accessories feed** (see the vehicle wiring diagram)
- Track 6** —————> **Earth**
- Track 7** —————> **Track 6** of the diagnostic socket (CAN H)
- Track 1** —————> **Track 14** of the diagnostic socket (CAN L)

Repair if necessary (see the vehicle wiring diagram).

AFTER REPAIR

Perform a complete check using the diagnostic tool.

ALP 2

Air distribution fault

NOTES

Only refer to this customer complaint after a **complete check with the diagnostic tool** (no faults should be present or stored, especially fault **DF012** Distribution motor circuit).

Special notes:

Adjusting the air distribution or ventilation controls switches off automatic climate control mode.

Note:

The air distribution motor is located on the RH side of the distribution - ventilation unit, above the footwell air duct.

Check that **the air circuit** (**cabin filter**, scuttle panel grille, air ducts and ventilation grilles, etc.) is not blocked. Repair, clean or change the cabin filter if necessary.
Also check that there is no air flow fault: see **ALP 3** Air flow fault.

Ensure that the blower unit is properly **sealed**. Also check that the air distribution ducts (right-hand and left-hand, upper and lower) are correctly connected to the housing as well as the refrigeration pipe in the glove box (if the customer complains about a feeling of cold air on the passenger's side).
Repair if necessary.



Switch the passenger compartment fan to maximum speed, the temperature control to maximum hot or maximum cold, and move the air distribution control.
Check that the air outlet is the one selected.
Note:
For information about the air flows according to user selection, see the air distribution table shown in the interpretation of parameter **PR011** Distribution flap position.

Has the customer complaint been confirmed?

NO

The air distribution is operating correctly.
If necessary, explain how the system works to the customer again.

YES

Remove the distribution motor and check the condition of the flap control (star-shaped mechanism).

Is the flap control damaged?

YES

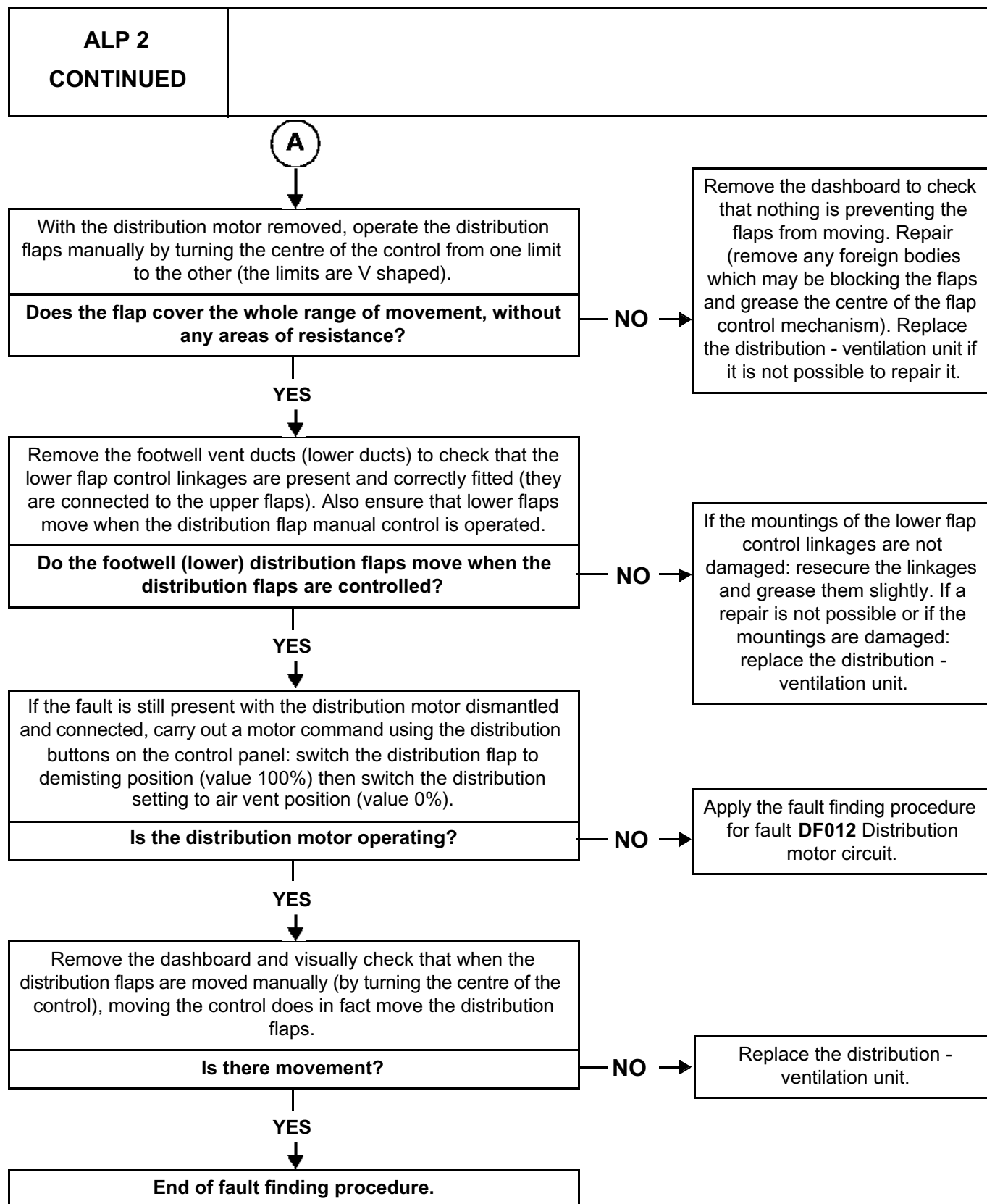
Replace the distribution - ventilation unit.

NO



AFTER REPAIR

Perform a complete check using the diagnostic tool.



AFTER REPAIR	Perform a complete check using the diagnostic tool.
---------------------	-----------------------------------------------------

ALP 3

Air flow fault

NOTES

Only consult this customer complaint after a **complete check using the diagnostic tool**.
Check that the customer knows how to work the air conditioning system properly.

Is the passenger compartment fan **working**?

NO →

Repair, see **ALP 5**

YES
↓

Check that **the air circuit** (**cabin filter**, scuttle panel grille, air ducts and ventilation grilles, etc.) is not blocked. Ensure that the blower blades are in good condition. Repair, clean or change the cabin filter if necessary.

With the cabin filter removed, put your hand into the housing to ensure that the evaporator is not obstructed and that there is no ice.

Is the evaporator obstructed?

YES →

Remove the evaporator and clean if it is obstructed. If there is ice on the evaporator, carry out a **conformity check** of the temperature sensors (internal, external and engine coolant temperatures). Depending on vehicle equipment, check that the interior air temperature sensor micro-turbine is working correctly (if it is faulty it may cause the measurement to be incorrect). Replace any faulty components.

NO
↓

Ensure that the blower unit is properly **sealed**. Also check that the air distribution ducts (right-hand and left-hand, upper and lower) are correctly connected to the housing as well as the refrigeration pipe in the glove box (if the customer complains about a feeling of cold air on the passenger's side). Repair if necessary.

Check that the air recirculation flap does not remain closed when in the recirculation position. On the diagnostic tool, status **ET062** "Recirculation flap position" should display OPEN (the flap can be seen by removing the windscreen frame). Repair if necessary (apply the fault finding procedure for fault **DF021** Recirculation motor circuit).

Does the fault disappear when the **air distribution** is changed?

YES →

Ensure that all the air vents are open. If the fault is still present, see **ALP 2**.

NO
↓

A

AFTER REPAIR

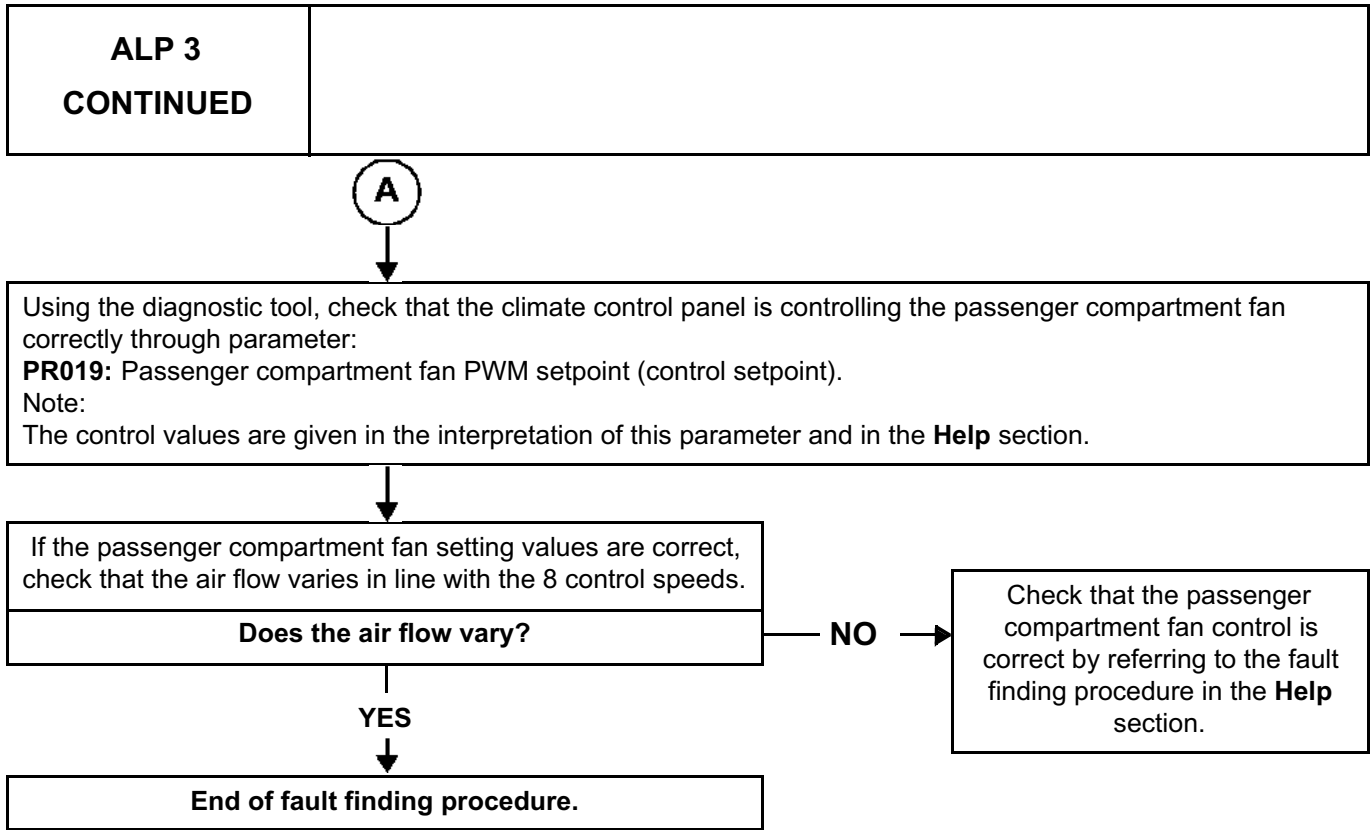
Perform a complete check using the diagnostic tool.

CLIMATE CONTROL

Fault finding - Fault Finding Chart

62B

Vdiag No.: 44



AFTER REPAIR

Perform a complete check using the diagnostic tool.

ACREG X84 1.1

CLIMATE CONTROL

Fault finding - Fault Finding Chart

Vdiag No.: 44

62B

ALP 4

Inefficient windscreen demisting

NOTES

Only consult this customer complaint after a **complete check using the diagnostic tool**.

Special notes:

Check that the inside of the windows are not greasy, as this lowers the efficiency of the demister.

Check that the air extraction vents are not blocked.
Repair if necessary.

Is the fault still present?

NO

End of fault finding procedure.

YES

Ensure that there are no **water leaks** into the passenger compartment which would significantly increase the humidity and reduce the effectiveness of the demisting.
Repair if necessary (see **ALP 12**).

Is the fault still present?

NO

End of fault finding procedure.

YES

Check that the compressor is **operating correctly** by running command: **AC008** Compressor command (Protection and Switching Unit command mode) or by operating the air conditioning (press AC button).
Repair if necessary (see **ALP 8** No cold air, in section **62A**).

Check that the condensation **drain ring** (water from the evaporator) is not obstructed (underneath the body).
Repair if necessary.

Is it an air distribution fault?

YES

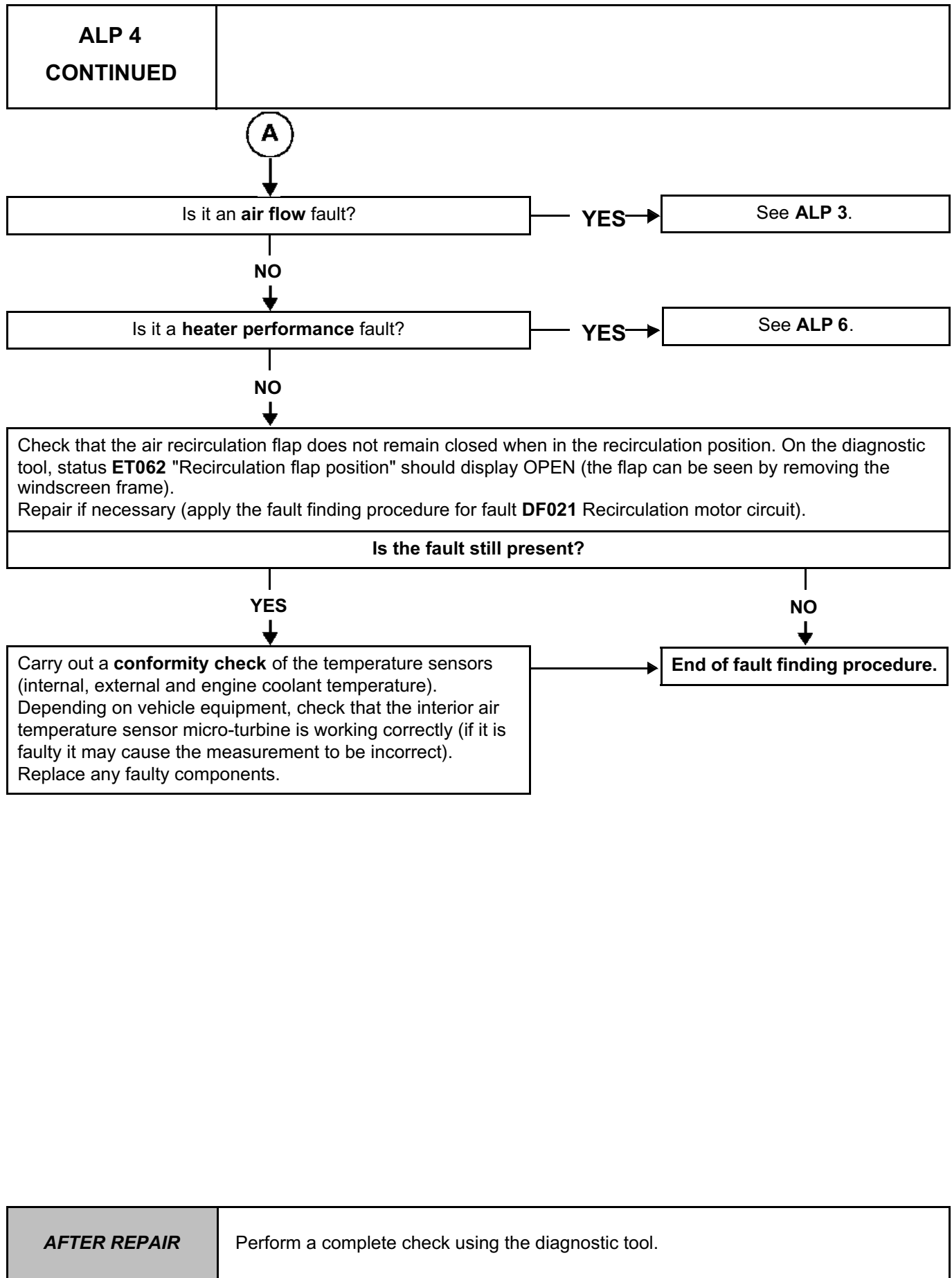
See **ALP 2**.

NO

A

AFTER REPAIR

Perform a complete check using the diagnostic tool.



ALP 5

No passenger compartment ventilation

NOTES

Only consult this customer complaint after a **complete check using the diagnostic tool**.

Special notes:

The 2 x 5-track intermediate connector is located on the LH side of the distribution / ventilation unit (behind a plastic cover) and the passenger compartment fan control module is located slightly higher up, below the heater matrix pipes.

Check that the **fuses** are in good condition.

Using the diagnostic tool, check that the passenger compartment fan control setting given by the computer varies from 0 to 100% by checking parameter **PR019** Passenger compartment fan PWM setting (refer to the interpretation of this status).

Does the value vary?

NO

Contact your
TECHLINE.

YES

Check that the **control voltage (PWM - pulse width modulation)** of the passenger compartment fan power module (modulated control voltage) varies between 5 and 12 V (from 0 to 100%) by measuring between **track 6** of the module's 6-track connector and earth (connector connected).

Note:

The check procedure is given in the **Help** section.

Does the voltage vary correctly?

YES

NO

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

Climate control computer 18-track
connector
track 7

Power module 6-track connector

track 6

Repair if necessary.

With the ignition on, check for the presence of **+12 V accessories feed** on track **B1** and an **earth** on track **B5** of the black 2 x 5 track intermediate connector (screwed to the base of the console).

Repair if necessary.

A

AFTER REPAIR

Perform a complete check using the diagnostic tool.

ALP 5
CONTINUED

A

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

Power module 2-track connector

track 1

track 2

Black 2 x 5-track intermediate connector

track B1

track B5

Power module 6-track connector

track 3

track 4

Passenger compartment fan 2-track connector

track 1

track 2

Repair if necessary.

Check that the blade of the passenger compartment fan is not **broken or detached** from its shaft.
Replace the passenger compartment fan if necessary.

Disconnect the black 2-track connector for the passenger compartment fan and **check the resistance of the motor** between **tracks 1 and 2**. Replace the passenger compartment fan if the resistance is zero or equal to infinity.

Is the fault still present?

NO

End of fault finding procedure.

YES

Replace the power module.

AFTER REPAIR

Perform a complete check using the diagnostic tool.

CLIMATE CONTROL

Fault finding - Fault Finding Chart

62B

Vdiag No.: 44

ALP 11

Unpleasant odours in the passenger compartment

NOTES

Only consult this customer complaint after a **complete check using the diagnostic tool**.

Check that the cabin filter is not blocked or damaged.
Replace it if necessary.

Is the fault still present?

NO → End of fault finding procedure.

YES

Check that the condensation **drain ring** (water from the evaporator) is not obstructed (under the body).
Repair if necessary.

Is the fault still present?

NO → End of fault finding procedure.

YES

Check the **sealing of the heating unit** in relation to the engine compartment:

- Foam seal on the heater matrix coolant pipes fitted and in good condition.
- Rubber seal on the radiator tank fitted and in good condition (seal under the bonnet separating the engine compartment from the windscreen aperture).
- Drain valve on the radiator tank fitted and in good condition.

Repair if necessary.

Is the fault still present?

NO → End of fault finding procedure.

YES

Remove the cabin filter to apply air conditioning system cleaner using an extension pipe on the evaporator.
Spray the entire contents of the aerosol.
Leave the product to work for **15 minutes**.

AFTER REPAIR

Perform a complete check using the diagnostic tool.

CLIMATE CONTROL

Fault finding - Fault Finding Chart

Vdiag No.: 44

62B

ALP 12

Water is present in the passenger compartment

NOTES

Only consult this customer complaint after a **complete check using the diagnostic tool**.

Pressurise the cooling circuit.

Is there any coolant leaking into the vehicle?

YES

Repair.

NO

Check that the evaporator **drain ring** is not blocked (under the body).
Repair if necessary.

Is the fault still present?

NO

End of fault finding procedure.

YES

Check that the **scuttle panel** (under the windscreen frame) is not filled with water.
If it is, check that the drain valve is fitted to the scuttle panel and is in good condition.
Replace the valve if necessary.

Has the customer just washed the vehicle?

NO

End of fault finding procedure.

YES

Explain to the customer that when washing the car using a hose pipe, the water jet must not be left for too long on the air inlet in the scuttle panel (on the bonnet).

AFTER REPAIR

Perform a complete check using the diagnostic tool.

ALP 13

No control panel lighting

NOTES

Only refer to this customer complaint after a full check of the multiplex network and the air conditioning with the fault finding tool.

Special notes:

With the ignition on, the control panel screen is permanently on but the panel buttons only light up when the sidelights are switched on.

Note:

If the external temperature sensor is faulty, the climate control computer is switched on 5 seconds after the ignition is switched on (this allows a fault to be identified as fault finding cannot be performed on the external temperature sensor by the UCH).

Is the fault common to other components (instrument panel, multifunction display, electric window buttons, etc.)?

NO

YES

Switch on the ignition and switch on the side lights to check there is a 12 V supply on **track 6** of the brown 12-track connector (PPH2) of the Protection and Switching Unit.

Is there a 12 V supply?

NO

Perform fault finding on the protection and switching unit.

YES

Check the **connection and the condition** of the connectors at the air conditioning control panel output.
Repair if necessary.

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

Air conditioning computer 12-track connector

Protection and Switching Unit brown 12-track (PPH2) connector

track 9

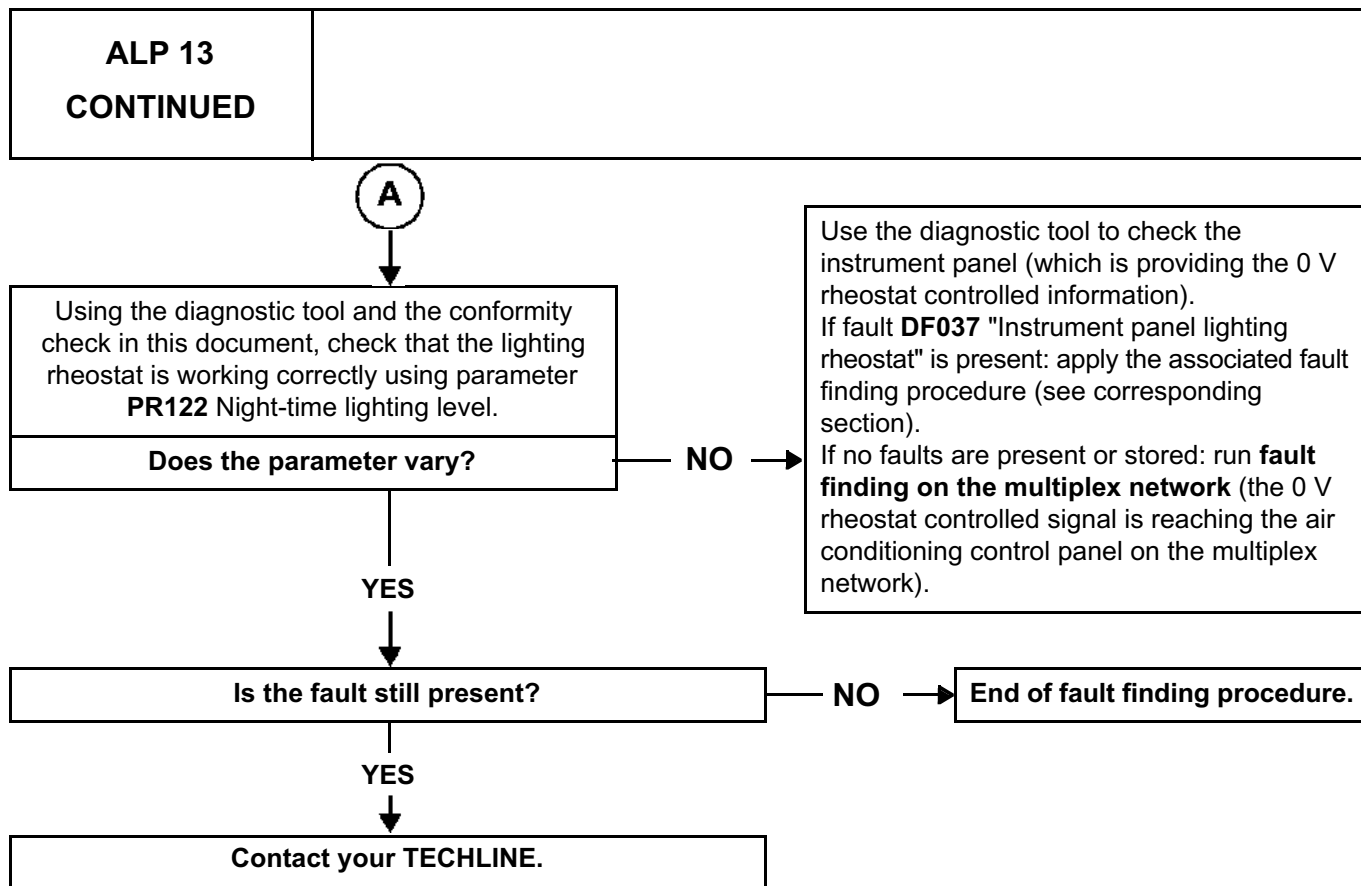
track 6

Repair if necessary.

A

AFTER REPAIR

Perform a complete check using the diagnostic tool.

**AFTER REPAIR**

Perform a complete check using the diagnostic tool.

CLIMATE CONTROL

Fault finding - Fault Finding Chart

62B

Vdiag No.: 44

ALP 14	Air conditioning noises during operation
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NOTES	Only deal with this customer complaint after a full check with the diagnostic tool (fault reading and configuration checks).
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<p>Check that the computers involved in the air conditioning function (Injection, Protection and Switching Unit, UCH and Air conditioning control panel) are correctly configured. Reconfigure if necessary (see 62A, Air conditioning, Configurations and Configuration reading).</p>
<p>Check that:</p> <ul style="list-style-type: none"> – the compressor fitted to the vehicle corresponds correctly to the engine (see MR 364 Mechanical, 62A, Air conditioning, Air conditioning: Parts and consumables for the repair). <p>Replace the compressor if necessary (see MR 364, Mechanical, 62A, Air conditioning, Compressor: Removal - Refitting).</p> <ul style="list-style-type: none"> – the compressor is correctly fixed (see MR 364 Mechanical, 62A, Air conditioning, Compressor: Removal - Refitting).
<p>Check the condition of the compressor belt and check its tension. Replace the belt if necessary (see MR 364 Mechanical, 11A, Top and front of engine, Accessories belt: Removal - Refitting).</p>
<p>Check that the intermediate pipes, condenser and dehydrator reservoir are correctly fitted.</p> <ul style="list-style-type: none"> – Check the mountings and brackets of the components. – Check the contact between and proximity of the components. <p>(See MR 364 Mechanical, 62A, Air conditioning, Air conditioning: List and location of components).</p>
<p>Check the correct operation of the cooling fan assembly or passenger compartment fan assembly and condenser:</p> <ul style="list-style-type: none"> – check the electrical supply of the fan using parameters ET007 High speed fan assembly control, AC009 Low speed fan assembly and AC010 High speed fan assembly (see 62A, Air conditioning, Conformity check, Cold loop sub-function).
<p>Check the quantity of refrigerant (see MR 364 Mechanical, 62A, Air conditioning, Air conditioning: Parts and consumables for the repair).</p> <p>If the quantity of refrigerant is:</p> <ul style="list-style-type: none"> – Greater than the manufacturer's information, recharge according to the manufacturer's values (see MR 364 Mechanical, 62A, Air conditioning: Draining - Filling). – Less than the manufacturer's information, check for leaks (see MR 364 Mechanical, 62A, Air conditioning, Refrigerant circuit: Check).
<p>If the fault is still present, replace the compressor (see MR 364, Mechanical, 62A, Air conditioning, Compressor: Removal - Refitting).</p>

AFTER REPAIR	Carry out a complete check using the diagnostic tool.
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CLIMATE CONTROL

Fault finding - Fault Finding Chart

Vdiag No.: 44

62B

ALP 15

Passenger compartment ventilation noises

NOTES

Only deal with this customer complaint after a **full check with the diagnostic tool** (fault reading and configuration checks).

The aim of the following operations is to check and, if necessary, eliminate any foreign bodies (leaves, insects, other, etc.) in:

- the passenger compartment air inlet,
- the cabin filter housing,
- the housing and on the fan assembly.

Check the passenger compartment air inlet:

Remove:

- the scuttle panel grille (see **MR 365 Bodywork, 56A, Exterior equipment, Scuttle panel grille: Removal - Refitting**),
- the scoop under the scuttle panel grille.

Check that there are no foreign bodies (leaves, insects, other, etc.) and, if necessary, clean the passenger compartment air inlet and the cabin filter housing.

Refit:

- the scoop under the scuttle panel grille,
- the scuttle panel grille (see **MR 365 Bodywork, 56A, Exterior equipment, Scuttle panel grille: Removal - Refitting**).

Check the cabin filter housing:

Remove the cabin filter (see **MR 364 Mechanical, 61A, Heating system, Cabin filter: Removal – Refitting**).

Check that there are no foreign bodies (leaves, insects, other, etc.) and, if necessary, clean the cabin filter housing.
Refit the cabin filter (see **MR 364 Mechanical, 61A, Heating system, Cabin filter: Removal – Refitting**).

Check the housing and the fan assembly:

Remove the fan assembly (see **MR 364 Mechanical, 61A, Heating system, Fan assembly: Removal - Refitting**).

Check that there are no foreign bodies (leaves, insects, other, etc.) and, if necessary, clean the fan assembly housing.

Check that there are no foreign bodies (leaves, insects, other, etc.) and, if necessary, clean the fan assembly.
Refit the fan assembly (see **MR 364 Mechanical, 61A, Heating system, Fan assembly: Removal - Refitting**).

AFTER REPAIR

Carry out a complete check using the diagnostic tool.

MEASURING THE CONTROL VOLTAGE OF THE PASSENGER COMPARTMENT BLOWER POWER MODULE

There are two ways to measure the control voltage of the passenger compartment blower power module:

1/ MEASURING USING A MULTIMETER (in the voltmeter position, direct voltage measurement):

With the power module connector connected, measure across **track 6** of the module and the earth.

At **speed 0** the voltage measured is equal to the **battery voltage** (± 1 V) and at **speed 8** the voltage is **5 V** (± 0.5 V).

The voltage varies between 0 and 14 V for the seven intermediate speeds.

Examples of measurements taken with the voltmeter with the engine at idle speed (values given as a guide):

Passenger compartment blower speed	0	1	2	3	4	5	6	7	8
Voltage measurement	13.77 V	12.26 V	11.79 V	11.22 V	10.43 V	9.44 V	8.08 V	6.66 V	4.96 V
PR019 Passenger compartment blower PWM setting*	0%	18%	23%	30%	39%	51%	66%	82%	100%

2/ MEASURING USING AN OSCILLOSCOPE (Optima 5800, CLIP technique):

The blower power module is controlled by pulse width modulated control voltage (PWM).

This control voltage is always 12 V; it is the control signal (square signal) that varies:

the amplitude and frequency do not vary but instead the **high status (12 V)** varies in relation to the **low status (5 V)**.

To take the measurement, connect the earth lead of the oscilloscope to the battery earth and the measuring lead of the oscilloscope to **track 6** (6-track connector) of the power module (module connector connected).

Adjust the time base on the oscilloscope to **500 μ s** per division with a calibration of **5 V** per division.

The signals obtained should be: a **straight line at 14 V** (± 1 V) for **speed 0**, and a **straight line at 5 V** (± 0.5 V) for **speed 8**.

Examples of measurements taken using the oscilloscope with the engine at idle speed (given as a guide):

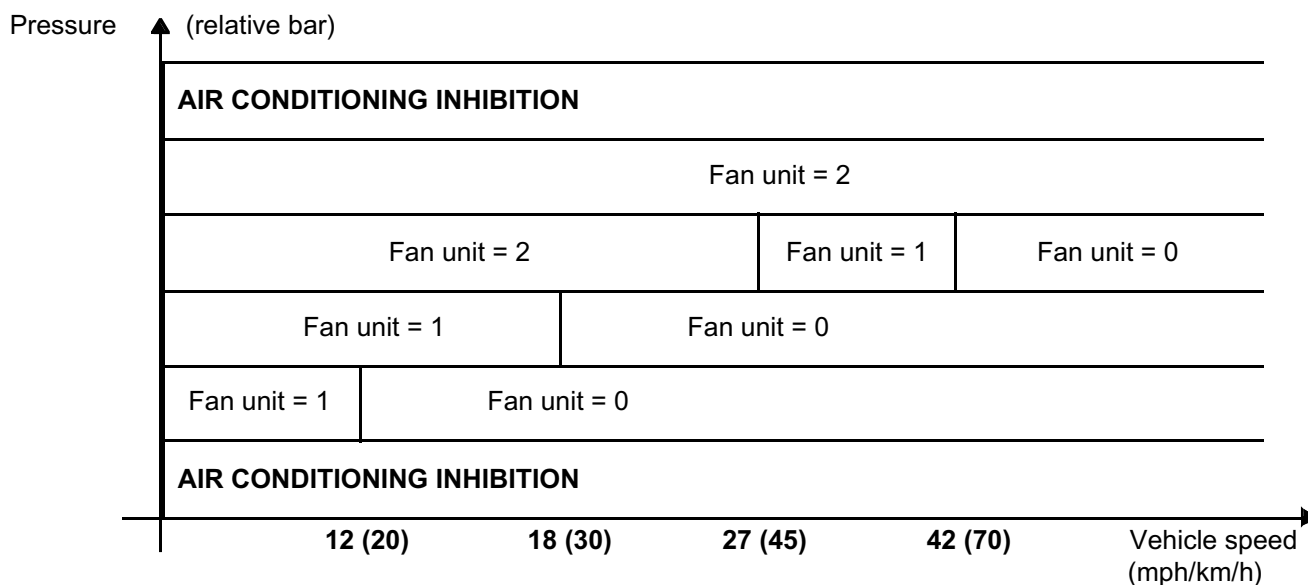
Passenger compartment blower speed	0	1	2	3	4	5	6	7	8
Duration of high status	.....	450 μ s	400 μ s	350 μ s	300 μ s	250 μ s	200 μ s	150 μ s	.....
Duration of low status	.....	50 μ s	100 μ s	150 μ s	200 μ s	250 μ s	300 μ s	350 μ s	.....
PR019 Passenger compartment blower PWM setting*	0%	18%	23%	30%	39%	51%	66%	82%	100%

* **Passenger compartment blower PWM:** passenger compartment blower pulse width modulation control voltage.

Electrical specifications of the interior temperature sensor depending on temperature (tolerance: $\pm 5\%$).**Interior temperature sensor**

Temperature	Sensor resistance
- 30°C	175200 Ω
- 25°C	129300 Ω
- 20°C	96360 Ω
- 15°C	72500 Ω
- 10°C	55050 Ω
- 5°C	42160 Ω
0°C	32560 Ω
5°C	25340 Ω
10°C	19870 Ω
15°C	15700 Ω
16°C	14991 Ω
17°C	14318 Ω
18°C	13679 Ω
19°C	13074 Ω
20 °C	12490 Ω
21°C	11942 Ω
22°C	11422 Ω
23°C	10928 Ω
24°C	10458 Ω

Temperature	Sensor resistance
25°C	10000 Ω
26°C	9574 Ω
27°C	9168 Ω
28°C	8783 Ω
29°C	8416 Ω
30°C	8059 Ω
35°C	6535 Ω
40°C	5330 Ω
45°C	4372 Ω
50°C	3606 Ω
55°C	2989 Ω
60°C	2490 Ω

Operation of the engine cooling fan assembly depending on the refrigerant fluid pressure and vehicle speed.

Fan unit = 1	Low speed engine cooling fan
Fan unit = 2	High speed engine cooling fan
Fan unit = 0	Engine cooling fan stopped

The engine cooling fan unit is not used for vehicle speeds over 42 mph (70 km/h), except in rare cases where the refrigerant fluid pressure is above 23 bar in spite of the speed (e.g.: driving behind a lorry).

When stationary, the engine cooling fan is used systematically at low speed if the refrigerant fluid relative pressure is below 19 bar, at high speed in the opposite case.

While driving, the engine cooling fan may either not operate, or operate at low or high speed depending on the refrigerant fluid pressure at the condenser outlet and the vehicle speed.