DUSTER

6 Air conditioning

62C CLIMATE CONTROL

V1 **Edition Anglaise**

1. SCOPE OF THIS DOCUMENT

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

Vehicle(s): **DUSTER**
Function concerned: **Climate Control**

2. PREREQUISITES FOR FAULT FINDING

Documentation type

Fault finding procedures (this document and the Technical Notes concerning the injection system fitted to the vehicle, and the UCH):
– Assisted fault finding (integrated into the **diagnostic tool**), Dialogys.
Wiring Diagrams:
– Visu-Schéma (CD-ROM), paper.

Type of diagnostic tools
– CLIP + CAN sensor

Special tooling required

	Special tooling required
	Multimeter
Elé. 1681	Universal bornier

3. REMINDERS

Procedure

To run fault finding on the vehicle computers, proceed as follows:
– turn the ignition key to APC,
– connect the **diagnostic tool** and perform the required operations,

To cut off the + after ignition feed, proceed as follows:
– disconnect the **diagnostic tool**,
– turn the ignition key to OFF,
– switch off the ignition.

Faults

Faults are declared 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** status of the fault should be considered when the diagnostic tool is switched on after the + after ignition feed is switched on (without any action on the system components).

For a **present fault**, apply the procedure described in the **Interpretation of faults** section.
For a **stored fault**, note the faults displayed and apply the **Notes** section.
If the fault is **confirmed** when the instructions are applied, the fault is present. Deal with the fault.

If the fault is **not confirmed**, 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 wires (melted or split insulation, wear).

Conformity check

The aim of the conformity check is to check data that does not produce a fault on the **diagnostic tool** when the data is 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 gives 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:

The **air conditioning system** conformity check is divided into four parts. The parts relate to the four sub-functions of the air conditioning system: heating, cold loop, user selection and passenger compartment ventilation. The statuses and parameters related to these sub-functions are listed with their respective computers.

Special notes: The air conditioning control panel does not control electrical components (other than the passenger compartment fan assembly) and it cannot support fault finding.

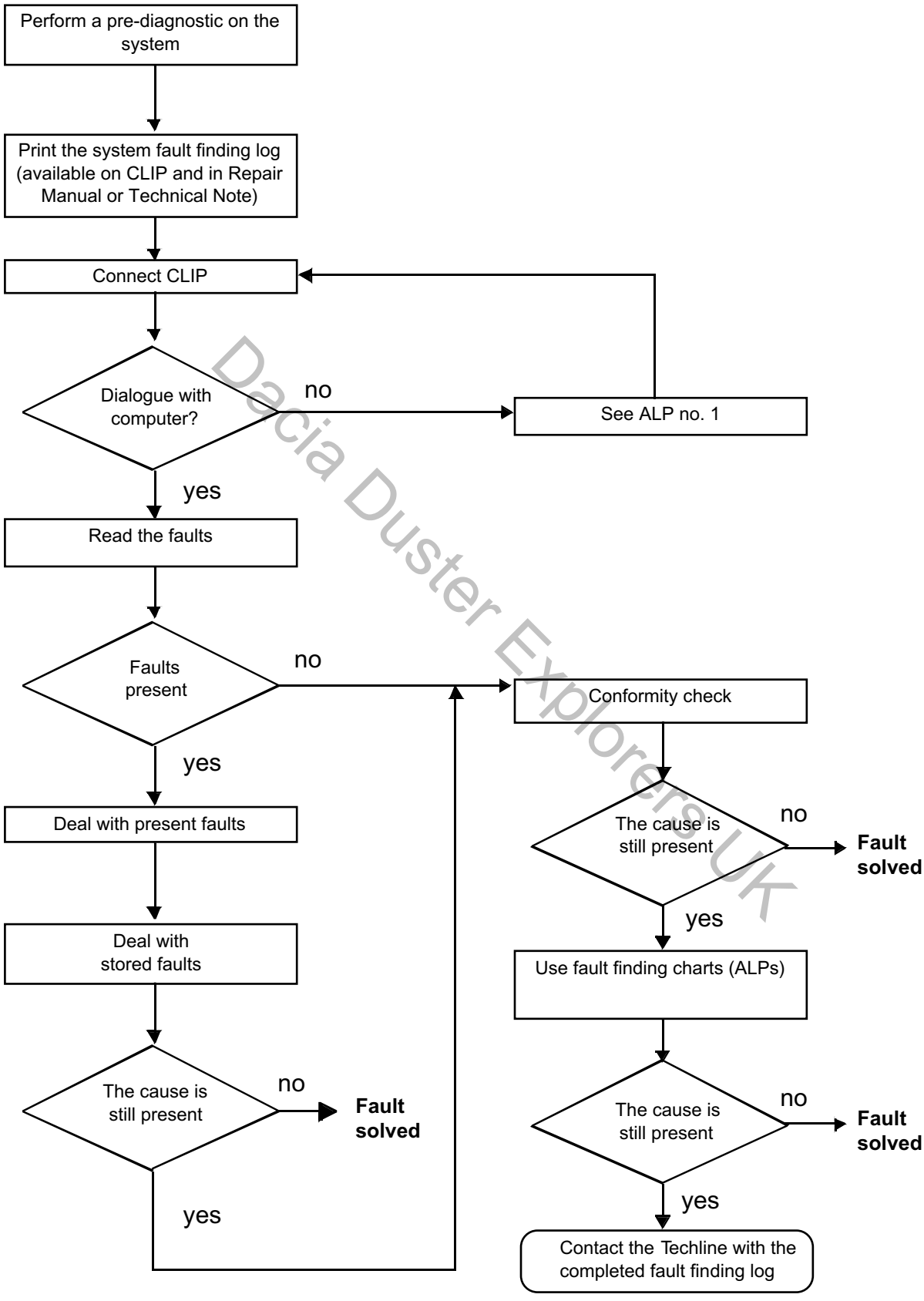
Note:
The interpretation of statuses, parameters and commands is also split into several sections. Everything controlled by the air conditioning control panel is explained in the two **Air conditioning** sections (**62B and 62C**). On the other hand, signals from other computers are explained in the fault finding sections for these computers (see **conformity check**).

Customer complaints - Fault finding chart

If the test with the **diagnostic tool** is OK but the customer complaint is still present, the fault should be processed by **customer complaints**.

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

4. FAULT FINDING PROCEDURE



4. FAULT FINDING PROCEDURE (continued)

Wiring check

Note:
Carry out each requested check visually. Do not remove a connector if it is not required.

Note:
Repeated connections and disconnections alter the functionality of the connectors and increase the risk of poor electrical contact. Limit the number of connections/disconnections as much as possible.

Note:
The check is carried out on the 2 parts of the connection. There may be two types of connection:
– Connector / Connector
– Connector / Device

Fault finding problems
Disconnecting the connectors and/or manipulating the wiring may temporarily remove the cause of a fault. Electrical measurements of voltage, resistance and insulation are generally correct, especially if the fault is not present when the analysis is made (stored fault).

Visual inspection of the connection:
- Check that the connector is connected correctly and that the male and female parts of the connection are correctly coupled.

Visual inspection of the area around the connection:
- Check the condition of the mounting (pin, strap, adhesive tape, etc.), that the connectors are attached to the vehicle.
- Check that there is no damage to the wiring trim (sheath, foam, adhesive tape, etc.) near the wiring.
- Check that there is no damage to the electrical wires at the connector outputs, in particular on the insulating material (wear, cuts, burns, etc.).

Disconnect the connector to continue the checks.

Visual inspection of the plastic casings:
- Check that there is no mechanical damage (casing crushed, cracked, broken, etc.), in particular to the fragile components (lever, lock, openings, etc.).
- Check that there is no heat damage (casing melted, darker, deformed, etc.).
- Check that there are no stains (grease, mud, liquid, etc.).

Visual inspection of the metal contacts:
(The female contact is called CLIP. The male contact is called TAB).
- Check that there are no bent contacts (the contact is not inserted correctly and can come out of the back of the connector). The spring contact of the connector when pulling the wire slightly.
- Check that there is no damage (folded tabs, clips open too wide, blackened or melted contact, etc.).
- Check that there is no oxidation on the metal contacts.

Visual inspection of the sealing:
(Only for watertight connectors)

- Check for the seal on the connection (between the 2 parts of the connection).
- Check the seal at the back of the connectors:
  - For *unit* joints (1 for each wire), check that the unit joints are present on each electrical wire and that they are correctly positioned in the opening (level with the housing). Check that plugs are present on openings which are not used.
  - For a *grommet* seal (one seal which covers the entire internal surface of the connector), check that the seal is present.
  - For *gel* seals, check for gel in all of the sockets without removing the excess or any protruding sections (it does not matter if there is gel on the contacts).
  - For *hotmelt* sealing (heat-shrink sheath with glue), check that the sheath has contracted correctly on the rear of the connectors and electrical wires, and that the hardened glue comes out of the side of the wire.
- Check that there is no damage to any of the seals (cuts, burns, significant deformation, etc.).

If a fault is detected, repair or replace the wiring (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**)

5. FAULT FINDING LOG

IMPORTANT!

IMPORTANT
Any fault on a complex system requires thorough fault finding 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.

IT IS THEREFORE ESSENTIAL THAT THE FAULT FINDING LOG IS FILLED OUT EVERY TIME IT IS REQUESTED BY TECHLINE OR THE WARRANTY RETURNS DEPARTMENT.

You will always be asked for this log:

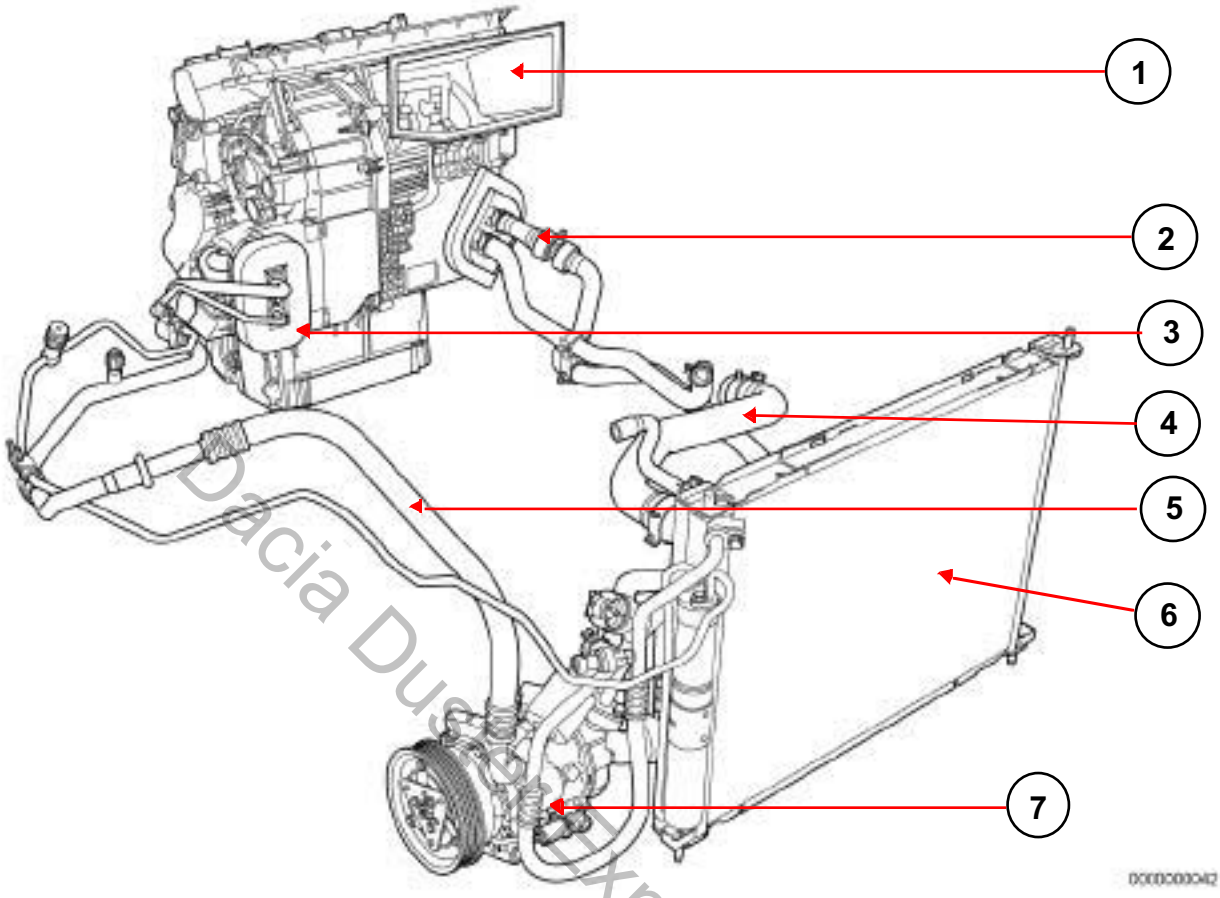
- when requesting technical assistance from Techline,
- for approval requests when replacing parts for which approval is mandatory,
- to be attached to monitored parts for which reimbursement is requested. The log is needed for warranty reimbursement, and enables better analysis of the parts removed.

6. SAFETY INSTRUCTIONS

Safety rules must be observed during any work on a component to prevent any material damage or personal injury:

– check the battery voltage to avoid incorrect operation of computer functions,
– do not smoke,
– use the proper tools.

System (cold loop, hot loop and components)



1) **Air conditioning unit**
2) **Heater matrix**
3) **Expansion valve and evaporator**
4) **Coolant circuit**
5) **Cold loop**
6) **Condenser and radiator**
7) **Compressor**

- **COLD LOOP COMPONENTS:**

– **Compressor**: This is located at the bottom on the left-hand side, next to the radiator in the engine compartment.

– **Condenser:** This is located between the radiator and the cooling fan assembly.

– **Dehydrator reservoir**: This is located on the left-hand side of the condenser outlet.

– **Heating and air conditioning assembly**: This is located underneath the dashboard.

– **Thermostatic expansion valve**: This is located to the left of the heating and air conditioning assembly on the bulkhead.

– **Evaporator**: This is located to the right of the **thermostatic expansion valve** in the heating and air conditioning assembly.

– **High pressure pipe**: This pipe connects the compressor, condenser, dehydrator reservoir and expansion valve inlet in series (it is located in the engine compartment on the left-hand side).

– **Low pressure pipe**: This pipe connects the expansion valve, buffering capacity, evaporator and compressor inlet in series (it is located in the engine compartment on the left-hand side).

• **HEATING COMPONENTS**

– **Heater matrix:** This is located at the bottom of the heating and air conditioning assembly.

– **Heating resistors**: These are located at the bottom of the heater matrix on the driver's side (depending on the equipment).

• **ACTUATORS:**

– **Air distribution flap:** This is located in the heating and air conditioning assembly.

– **Mixing flap:** This is located in the heating and air conditioning assembly.

– **Recirculation flap**: This is located behind the dashboard.

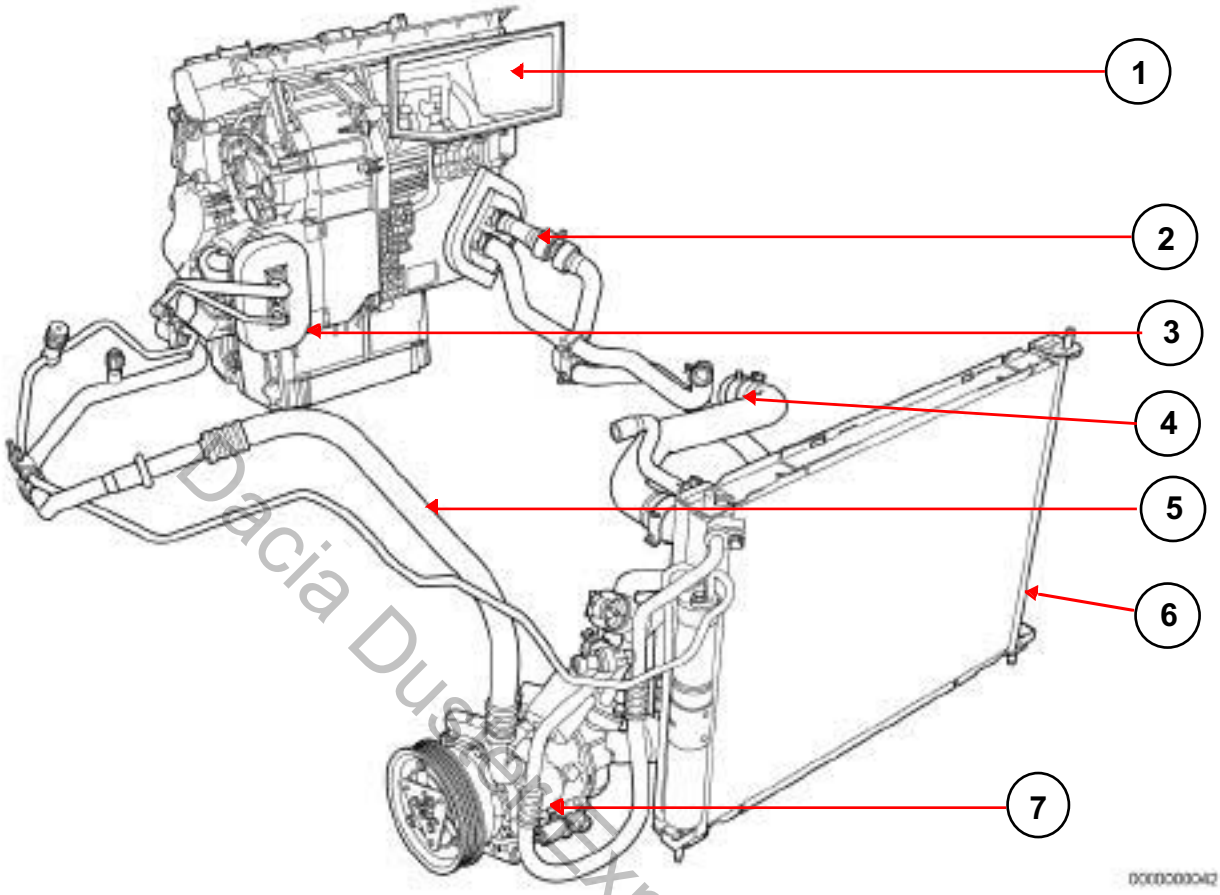
• **OTHERS**

– **Passenger compartment fan assembly:** This is located in the heating and air conditioning assembly.

– **Cooling fan assembly:** This is located in the front panel of the vehicle, in front of the condenser.

– **Air pipes**: These are located underneath the dashboard.

- **COLD LOOP COMPONENTS**



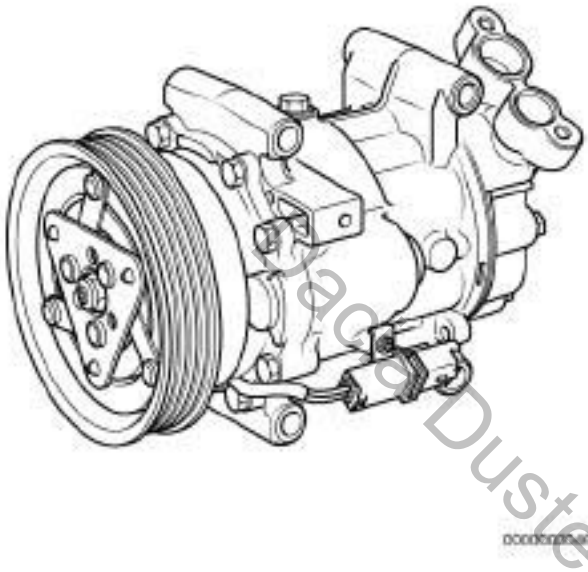
System assembly

1) **Air conditioning unit**
2) **Heater matrix**
3) **Expansion valve and evaporator**
4) **Coolant circuit**
5) **Cold loop**
6) **Condenser and radiator**
7) **Compressor**

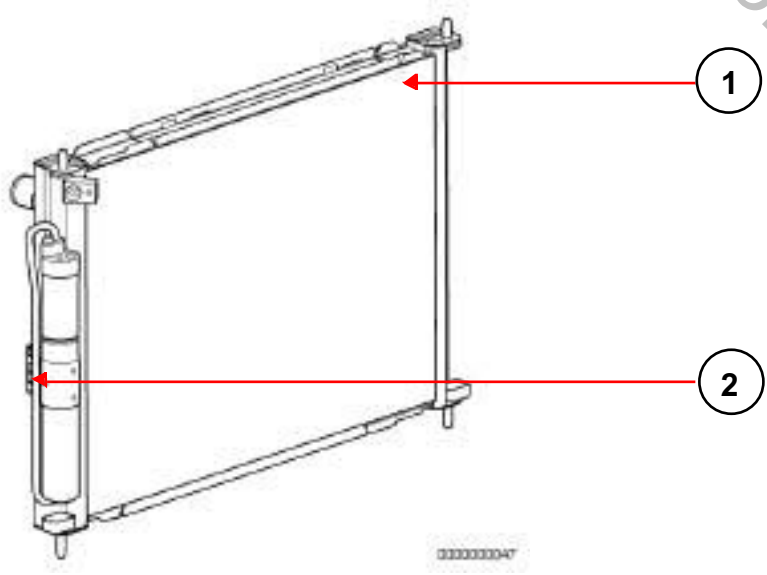
Figure 1: System assembly

– Compressor:

The compressor is not activated when the exterior temperature is less than **3˚C**, it is used to compress the refrigerant into gas. The pressure can reach up to **28 bar**.



– Condenser:
The condenser is composed of flat horizontal aluminium tubes. The pipes are divided by the vanes in order to increase the air heat exchange and therefore cool the refrigerant fluid to produce condensation.



1) **Condenser**
2) **Dehydrator reservoir**

– Dehydrator reservoir: (see figure above)

The dehydrator reservoir is used to:
- Check the condition of the refrigerant.
- Absorb the variations in volume (expansion bottle principle).
- Filter impurities.
- Absorb moisture (water in the circuit).

– Heating and air conditioning assembly: (see figure above)

This unit acts as an air mixing box. It is equipped with a system of flaps which allow the air to be directed in accordance with the requirements of the occupants whilst simultaneously allowing the temperature of the air entering the passenger compartment to be modified by mixing hot and cold air.

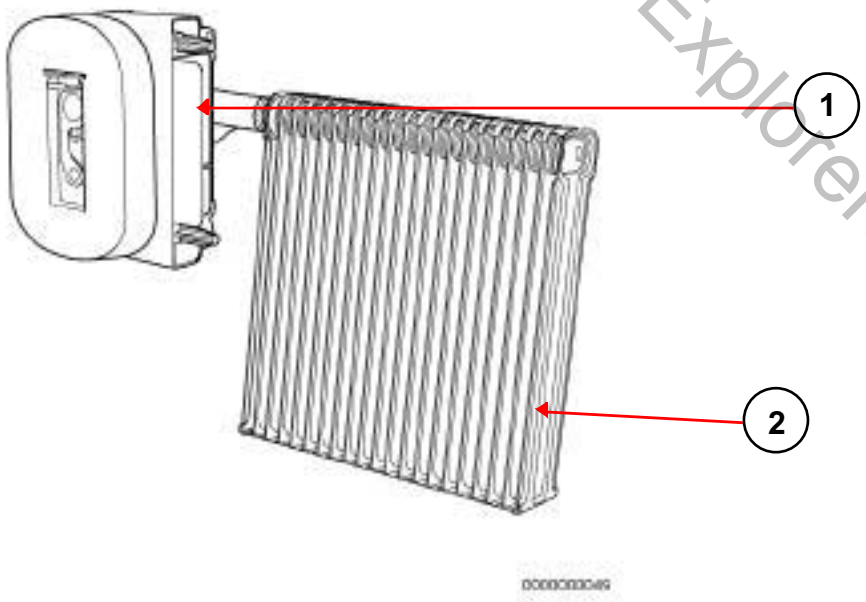
– Thermostatic expansion valve: (see figure below)

This thermostatic-type expansion valve is used to check refrigerant expansion. It is located at the evaporator inlet.

– Evaporator: (see figure below)

- The evaporator is a heat exchanger which enables the air entering the passenger compartment to be cooled.

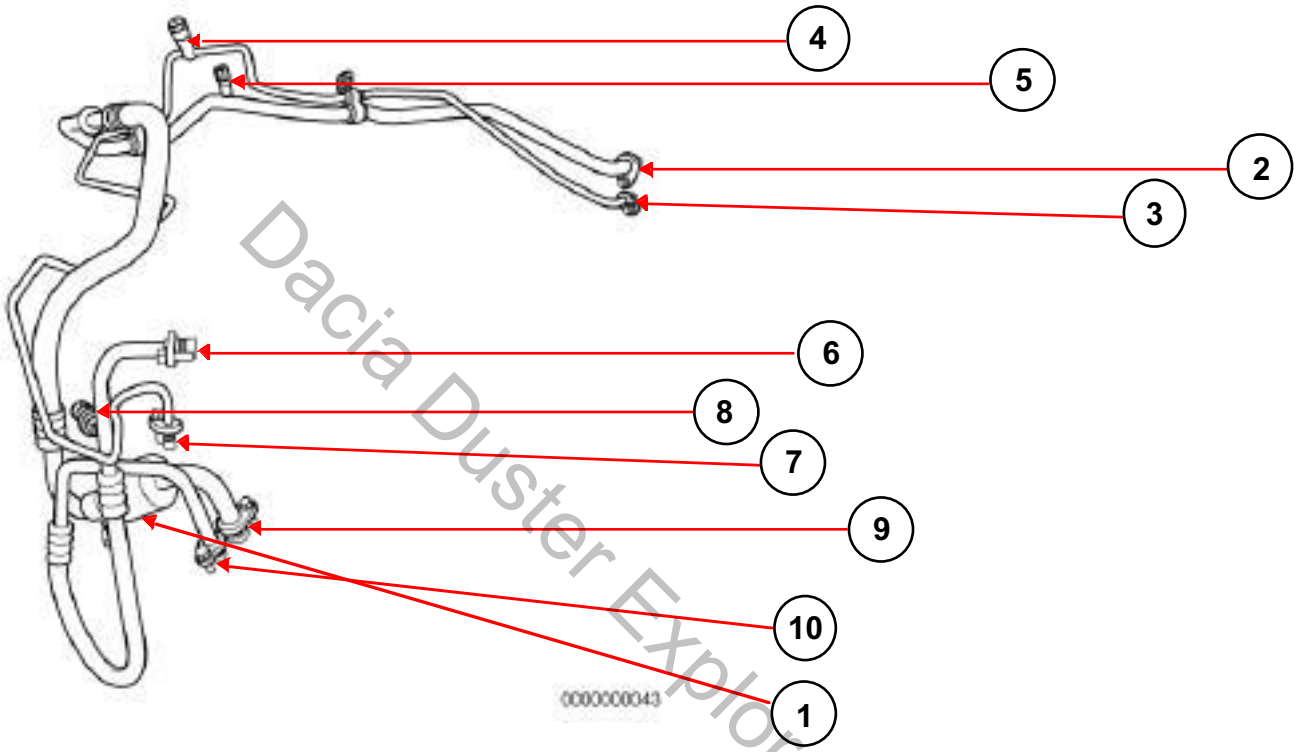
Note: Condensation of the air may occur thereby causing normal drops of water to form underneath the vehicle body.



1) Expansion valve
2) Evaporator

– High and low pressure pipes:

- The **High Pressure** and **Low Pressure** pipes are composed of rigid aluminium pipes and flexible pipes which enable engine-related movements to be absorbed.
- Two filler valves (on the **High Pressure** pipe and on the **Low Pressure** pipe) can be accessed in order to fill (or drain) the refrigerant loop.
- The connections must be checked in the event of a refrigerant fluid leak.



1) **Buffering capacity**
2) **Expansion valve outlet**
3) **Expansion valve inlet**
4) **High pressure filler valve**
5) **Low pressure filler valve**
6) **Condenser inlet**
7) **Condenser outlet**
8) **Pressure sensor**
9) **Compressor inlet**
10) **Compressor outlet**

Figure 6: Cold loop pipes

- **HEATING COMPONENTS**

– Heater matrix:

The external air entering the heating and air conditioning system (**HVAC**) is heated by the **heater matrix**.

– Passenger compartment heating resistors (depending on the equipment level):
The passenger compartment heating resistors (RCH) are electrical heating devices in the air conditioning unit. This system is an additional heating system which operates when the engine is cold (when starting).

- **ACTUATORS**

– Air distribution flap:

This flap enables the air flowing into the passenger compartment to be directed.

– Air mixing flap:

This flap mixes the air in order to meet the temperature requirements of the occupants.

– Recirculation flap:

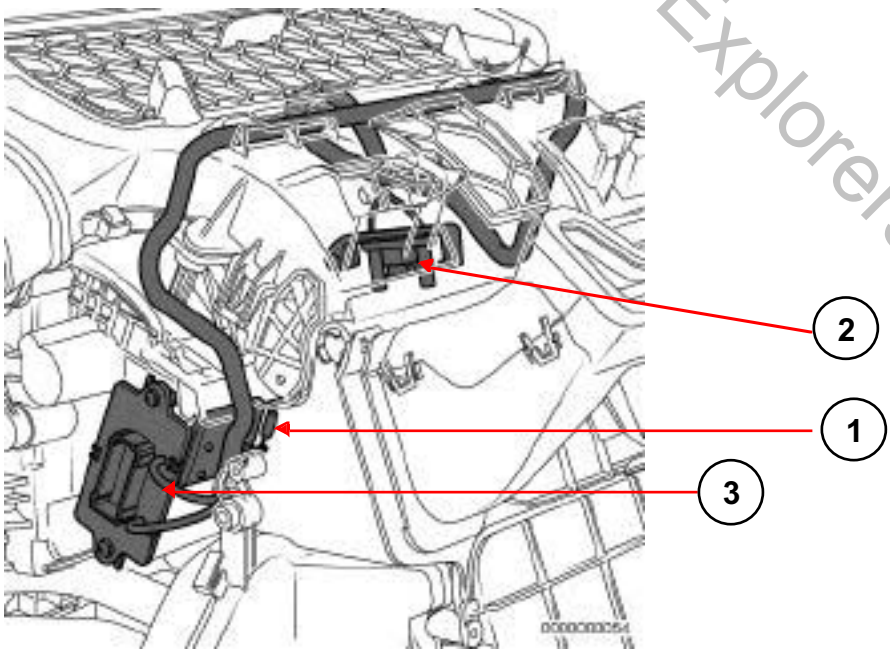
This flap prevents the entry of exterior air. In this case, the passenger compartment is isolated from the exterior and air is blown in the passenger compartment in a closed circuit.

These three flaps are **controlled by a cable**.

- **OTHERS**

– Passenger compartment blower unit:

The passenger compartment fan assembly is controlled by the Resistive Blower Dimmer Module (**MVPR**).



Resistive Blower Dimmer Module (MVPR)

1) Thermal fuse
2) Fan assembly connector
3) Connector to Control panel

The passenger compartment fan assembly is used to vary the rate at which air is blown into the passenger compartment, depending on the requirements of the customer.

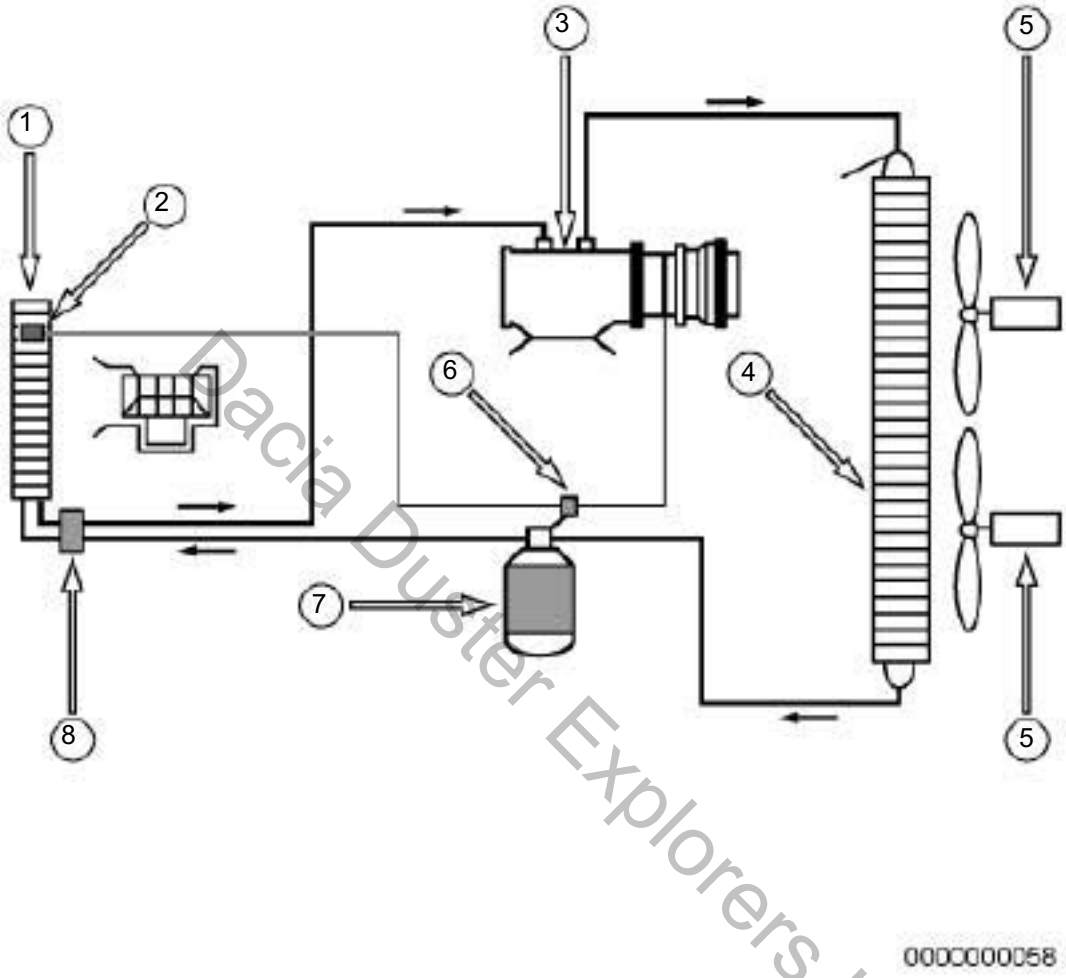
– Cooling fan assembly:

The cooling fan assembly motor is normally used in order to promote heat exchange in the condenser and therefore improve the performance of the air conditioning system. Activation of the air conditioning fan unit depends, among other things, on the vehicle speed and high pressure in the loop.

– Air pipes:

The air flows into an open air inlet scoop towards the exterior. Therefore there must be enough air flow for it to be channelled into the passenger compartment. This flow can be created by the vehicle speed (in non-recirculation mode) or by activating the blower. The air flowing into the passenger compartment is protected by a grille and a rain shield in order to prevent foreign bodies and water from entering. The air is then distributed inside the passenger compartment.

Summary diagram of all the components of the air conditioning system

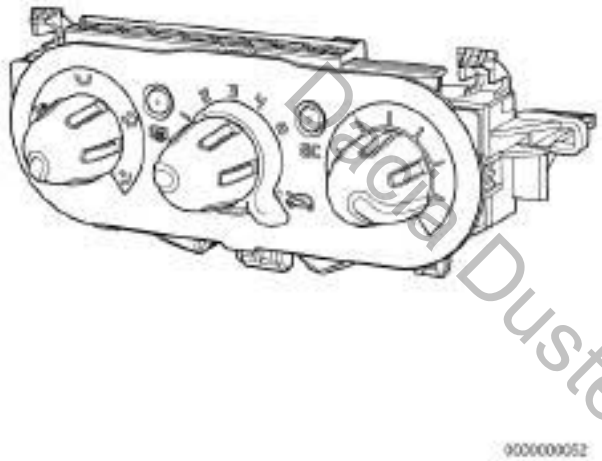


1) **Evaporator**
2) **Temperature sensor**
3) **Compressor**
4) **Condenser**
5) **Fan assembly**
6) **Pressure switch**
7) **Dehydrator reservoir**
8) **Expansion valve**

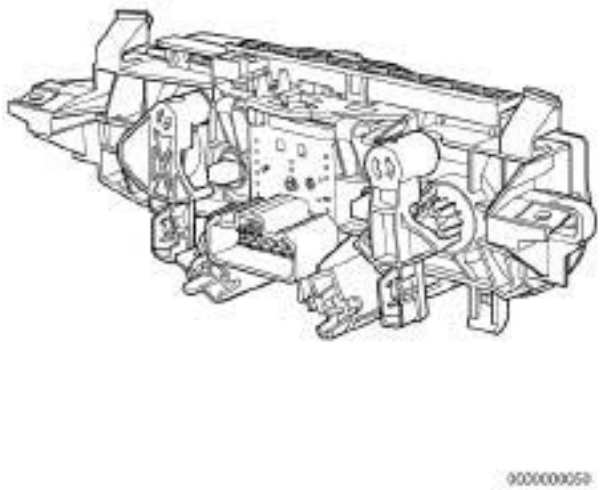
Layout of the air conditioning function:

The functions provided by the system are the thermal comfort of the occupants (warming and cooling), visibility through the windscreen, as well as the isolation of the passenger compartment in case of exterior air pollution. The heating and air conditioning system dries and purifies the air in the passenger compartment. Only manual heating and air conditioning is available for **DUSTER**.

The injection computer controls the passenger compartment heating resistors (depending on the equipment). It authorises or denies compressor activation depending on the vehicle operation and refrigerant pressure.



Manual air conditioning system control panel: front panel



Manual air conditioning system control panel: rear panel

Buttons with operation indicator lamps:
- Air conditioning button.

Manual controls:
- Mixing: rotary control on the right-hand side, with cable connection to the flap.
- Distribution: rotary control on the left-hand side, with cable connection to the flap.
- Recirculation: rotary lever in the centre, with cable connection to the flap.
- Air flow V0, V1 to V4 by rotary control in the centre.

Description of the sub-functions:

Heating sub-function: this sub-function includes everything relating to the **production of warm air** in the vehicle and management of the heated rear screen.

The UCH computer controls the rear screen de-icing.
The injection computer manages the actuation of the passenger compartment heating resistors

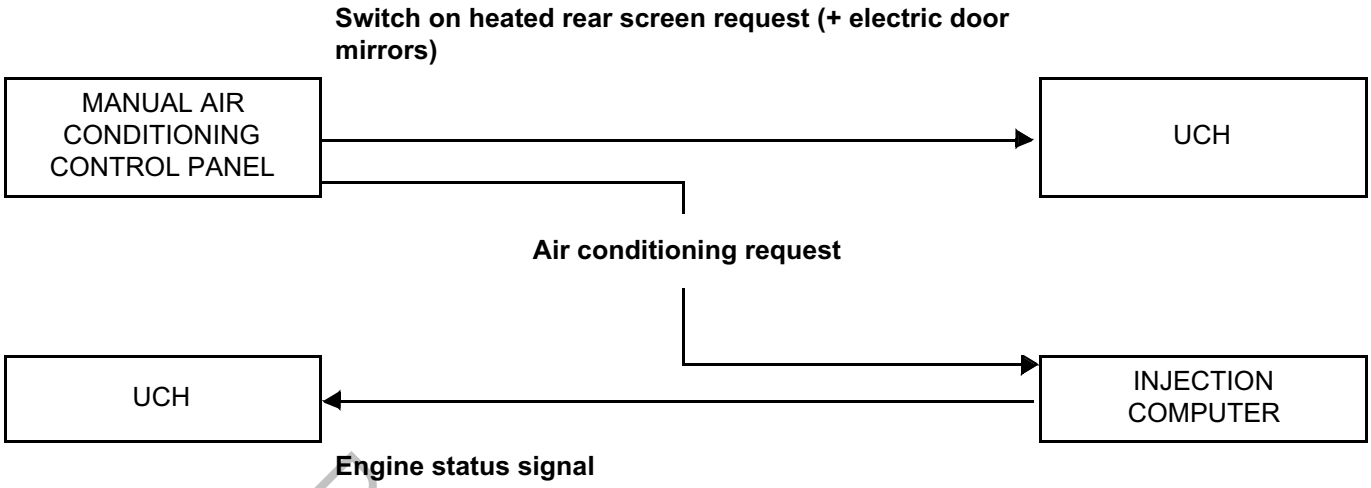
Cold loop sub-function: this sub-function includes everything involved in the vehicle's **production of cold air**.

The computers concerned include:
The injection computer, which authorises compressor activation and controls the compressor and motor-driven fan assemblies.

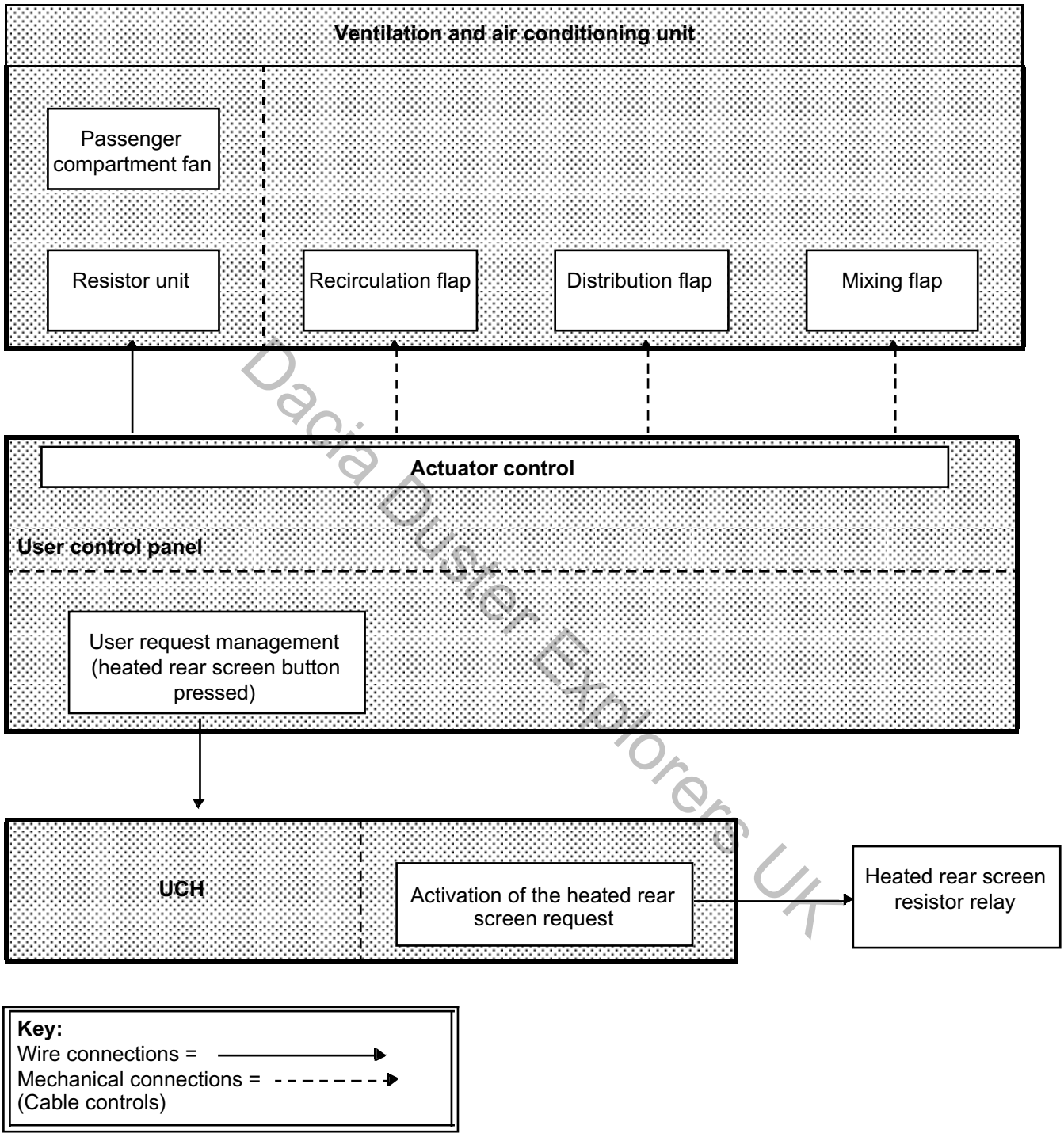
The UCH, which authorises or denies the request for compressor activation from the air conditioning control panel to the injection computer in accordance with the condition of the passenger compartment blower and the exterior temperature (depending on the equipment).

User selection sub-function: This sub-function includes everything used to transmit the user's requests (pressing buttons). The computer involved is the UCH computer.

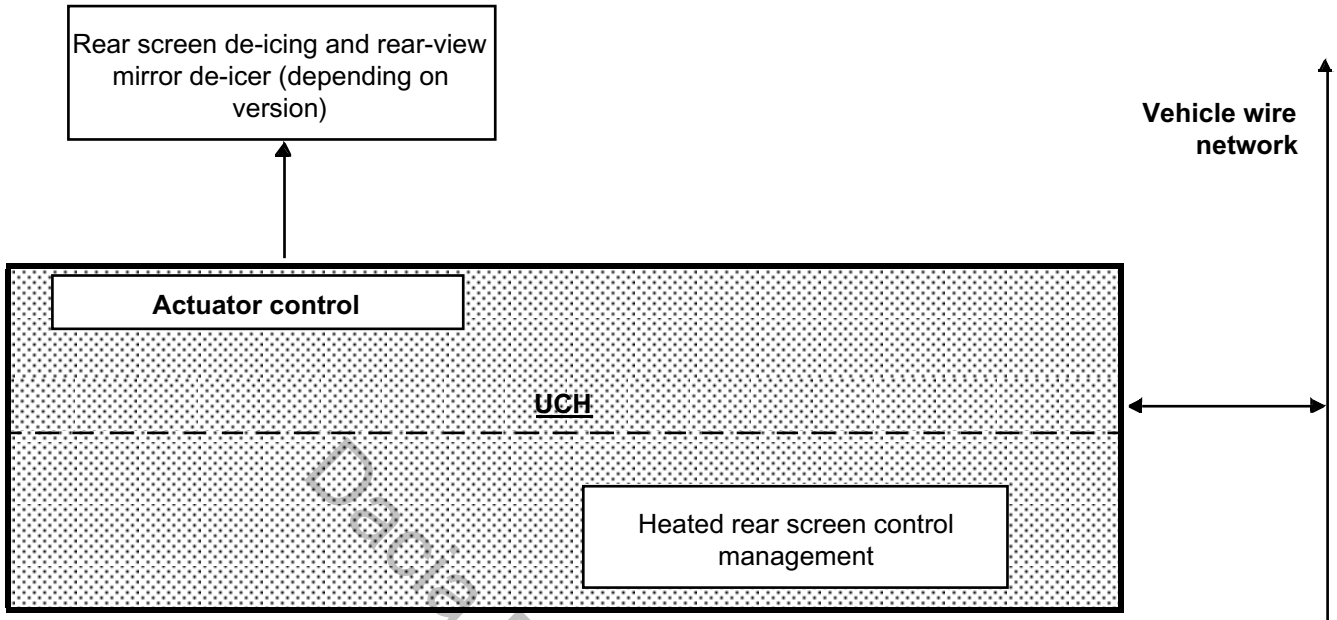
Exchanges between the two air conditioning computers (manual air conditioning)



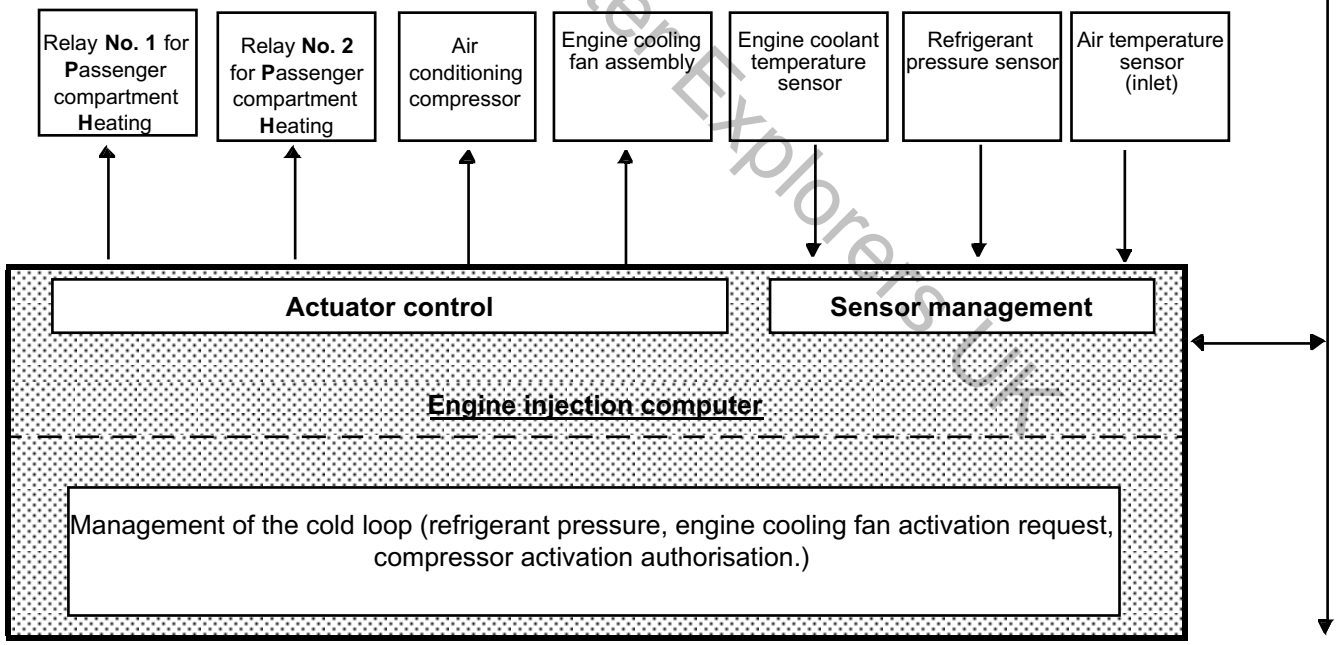
Summary of components controlled or managed by the MANUAL AIR CONDITIONING control panel:



Summary diagram of components controlled or managed by the UCH:

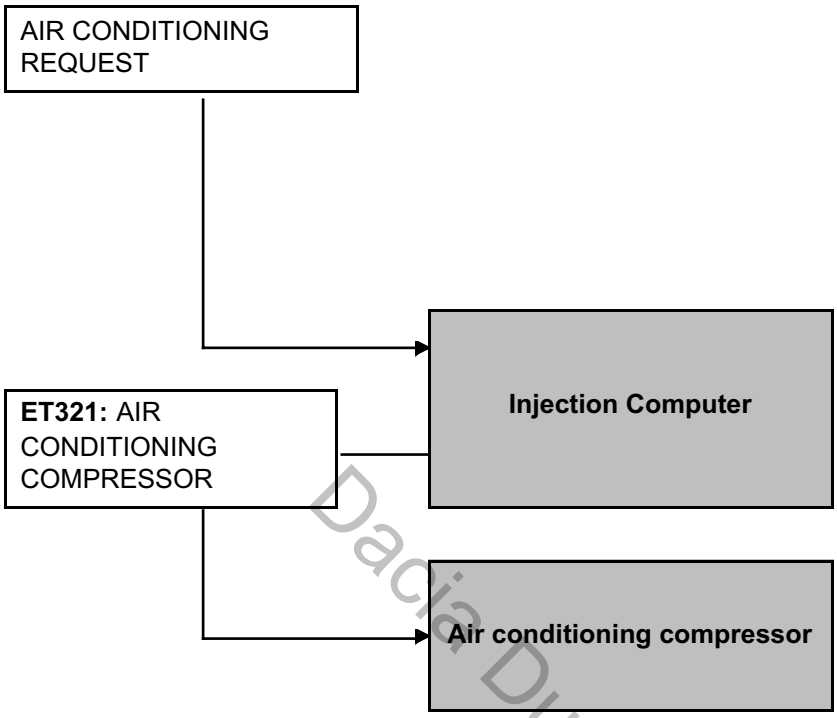


Summary diagram of components controlled or managed by the injection computer:



Key:
Wire connections = ⟶

Compressor control flowchart:



Special notes:
This flowchart shows the tracks of the compressor engagement request.

If the compressor does not engage (one of the requests is not transmitted): carry out a conformity check.

Key:

: Wire connections

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions:** Engine stopped, ignition on, **AIR CONDITIONING SWITCHED OFF** (Passenger compartment blower unit switched off and air conditioning compressor not activated). **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 approximately equal (interior, exterior and engine coolant).

SUB-FUNCTION: COLD LOOP

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
UCH	**ET091:** Engine running	**NO**	In the event of a fault, refer to the **interpretation of this status**.
Injection	**ET321:** Air conditioning compressor	**INACTIVE**	If the status displays **ACTIVE**, refer to the **interpretation of this status**.
	PR037: Refrigerant pressure	**1 bar < X < 15 bar**	If there is a fault, refer to the **interpretation of this parameter.**
	PR055 or **PR145:** Engine speed (depending on version)	**0 rpm**	If there is a fault, refer to the **interpretation of this parameter.**
	PR064: Coolant temperature	**X = coolant temperature of the engine**	If there is a fault, refer to the **interpretation of this parameter.**
	PR089 or **PT155:** Vehicle speed (depending on version)	**0 mph**	If there is a fault, refer to the **interpretation of this parameter.**

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions:** Engine stopped, ignition on, **AIR CONDITIONING SWITCHED OFF** (Passenger compartment blower unit switched off and air conditioning compressor not activated). **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 approximately equal (interior, exterior and engine coolant).

SUB-FUNCTION: COLD LOOP (CONTINUED)

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
Injection	**PR125:** Power absorbed by the AC* compressor	**0 W (ambient tº = 23ºC)**	If there is a fault, refer to the **interpretation of this parameter.**
	ET298: Low-speed fan assembly	**INACTIVE**	In the event of a fault, refer to **the interpretation of this status**.
	ET299: High-speed fan assembly	**INACTIVE**	In the event of a fault, refer to **the interpretation of this status**.
	ET018: Air conditioning request	**INACTIVE / NO**	In the event of a fault, refer to **the interpretation of this status**.

*AC: Air conditioning

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions:** Engine stopped, ignition on, **AIR CONDITIONING SWITCHED OFF** (Passenger compartment blower unit switched off and air conditioning compressor not activated).

SUB-FUNCTION: HEATING

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
UCH	**PR001:** Battery voltage	**10.5 V < X < 14.4 V**	If there is a fault, refer to the **interpretation of this parameter** If the fault is still present, carry out a check of the charging circuit.
	ET004: +12 V after ignition	**PRESENT**	If there is a fault, see **the interpretation of this parameter**
Injection	**PR064:** Coolant temperature	**X = engine coolant temperature**	If there is a fault, see **the interpretation of this parameter**
	ET111: RCH number set	**NO** **Note: Depending on the requirements of the injection system (power requirement, torque reduction, etc.), the injection computer sets the controlled passenger compartment heating resistor stage number (no more, no less)**	In the event of a fault, refer to **the interpretation of this status**.
	ET112: Passenger compartment heating resistor cut-off	**YES**	In the event of a fault, refer to **the interpretation of this status**.

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions:** Engine stopped, ignition on, **AIR CONDITIONING SWITCHED OFF** (Passenger compartment blower unit switched off and air conditioning compressor not activated).

SUB-FUNCTION: USER SELECTION

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
UCH	**ET547:** Rear de-icing button	**PRESSED / RELEASED**	In the event of a fault, refer to **the interpretation of this status**.

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions: Engine at idle speed, AIR CONDITIONING OPERATING** (air conditioning compressor engaged).

SUB-FUNCTION: COLD LOOP

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
UCH	**ET091: Engine running**	**YES**	In the event of a fault, refer to **the interpretation of this status**.
Injection	**ET321: Air conditioning compressor**	**ACTIVE**	If the status displays **INACTIVE**, refer to the **interpretation of this status**.
	PR037: Refrigerant pressure	**1 bar < X < 27 bar**	If there is a fault, see **the interpretation of this parameter**
	PR055 or PR145: Engine speed (depending on version)	**750 rpm < X < 850 rpm**	If there is a fault, see **the interpretation of this parameter**
	PR064: Coolant temperature	**X = engine coolant temperature**	If there is a fault, see **the interpretation of this parameter**
	PR089 or PR155: Vehicle speed (depending on version)	**0 mph**	If there is a fault, see **the interpretation of this parameter**
	PR125: Power absorbed by the AC* compressor	**300 W < X < 5000 W (ambient temperature 23 ºC)**	If there is a fault, see **the interpretation of this parameter**

*AC: Air conditioning

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions: Engine at idle speed, AIR CONDITIONING OPERATING** (air conditioning compressor engaged).

SUB-FUNCTION: COLD LOOP (CONTINUED)

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
Injection	**ET298: Low-speed fan assembly**	**ACTIVE if the refrigerant pressure is less than 19 bar, INACTIVE otherwise.**	In the event of a fault, refer to **the interpretation of this status**.
	ET299: High-speed fan assembly	**ACTIVE if the refrigerant pressure is more than 19 bar, INACTIVE otherwise.**	In the event of a fault, refer to **the interpretation of this status**.
	ET018: Air conditioning request	**ACTIVE / YES**	In the event of a fault, refer to **the interpretation of this status**.

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions: Engine at idle speed, AIR CONDITIONING OPERATING** (air conditioning compressor engaged).

SUB-FUNCTION: HEATING

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
UCH	**PR001:** Battery voltage	**12.5 V < X < 14.4 V**	If there is a fault, refer to the **interpretation of this parameter** If the fault is still present, carry out a check of the charging circuit.
	ET004: +12 V after ignition	**PRESENT**	In the event of a fault, refer to **the interpretation of this status**.
Injection	**PR064:** Coolant temperature	**X = engine coolant temperature**	If there is a fault, see **the interpretation of this parameter**
	ET111: RCH number set	**YES or NO** **Note: Depending on the requirements of the injection system (power requirement, torque reduction, etc.), the injection computer sets the controlled passenger compartment heating resistor stage number (no more, no less)**	In the event of a fault, refer to **the interpretation of this status**.

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions: Engine at idle speed, AIR CONDITIONING OPERATING** (air conditioning compressor engaged).

SUB-FUNCTION: HEATING (CONTINUED)

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
Injection	**ET112:** Passenger compartment heating resistor cut-off	**YES or NO** **Note: Depending on the requirements of the injection system (power requirement, torque reduction, etc.), the injection computer sets the controlled passenger compartment heating resistor stage number (no more, no less)**	In the event of a fault, refer to **the interpretation of this status**.

NOTES	Only carry out this conformity check after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). **Application conditions: Engine at idle speed, AIR CONDITIONING OPERATING** (air conditioning compressor engaged).

SUB-FUNCTION: USER SELECTION

Computer	Parameter or Status Checked or Action	Display and notes	Fault finding
UCH	**ET547:** Rear de-icing button	**PRESSED / RELEASED**	In the event of a fault, refer to the **interpretation of this status**.

SUMMARY TABLE OF THE VARIOUS AIR CONDITIONING COMPUTER COMMANDS

NAME OF SUB-FUNCTION	COMPUTER NAME	TITLE OF COMMAND	FAULT FINDING
COLD LOOP	Injection	**AC180: Air conditioning compressor relay control or AC070 Air conditioning compressor or AC003 Air conditioning compressor (depending on version)**	In the event of a fault, consult **the interpretation of this command**.
		AC039 High speed fan assembly relay or AC625 High speed fan assembly (depending on version)	In the event of a fault, consult **the interpretation of this command**.
		AC038 Low speed fan assembly relay or AC626 Low speed fan assembly (depending on version)	In the event of a fault, consult **the interpretation of this command**.
HEATING	Injection	**AC250 Heating resistor relay 1**	In the event of a fault, consult **the interpretation of this command**.
		AC251 Heating resistor relay 2	In the event of a fault, consult **the interpretation of this command**.

Fault finding procedures for the commands listed in this summary are explained in the Workshop Repair Manuals relating to the computer which generates the signal (see **Introduction**).

NOTES	**Special notes:** This section corresponds to the list of possible customer complaints.

AIR DISTRIBUTION PROBLEM	
AIR DISTRIBUTION PROBLEM	**ALP 2**
AIR FLOW FAULT	**ALP 3**
INEFFICIENT WINDSCREEN DEMISTING	**ALP 4**
NO PASSENGER COMPARTMENT VENTILATION	**ALP 5**
HEATING FAULT	
NO HEATING OR LOSS OF HEATING (section 61A)	**ALP 6**
TOO MUCH HEATING (section 61A)	**ALP 7**
AIR CONDITIONING FAULT	
NO COLD AIR	**ALP 8**
TOO MUCH COLD AIR	**ALP 9**
INEFFICIENT REAR SCREEN DE-ICING/DEMISTING	**ALP 10**

PASSENGER COMPARTMENT ODOURS

- UNPLEASANT ODOURS IN PASSENGER COMPARTMENT → ALP 11

WATER IN PASSENGER COMPARTMENT

- WATER IS PRESENT IN PASSENGER COMPARTMENT → ALP 12

CONTROL PANEL FAULT

- NO CONTROL PANEL LIGHTING → ALP 13

COMPRESSOR NOISES

- COMPRESSOR NOISES → ALP 14

ALP 2	Air distribution fault

NOTES	Make sure that **the air circuit** (**cabin filter**, scuttle panel grille, air ducts etc.) is not blocked.

Check that **the air circuit** (**cabin filter**, scuttle panel grille, air vents and extractors etc.) is not blocked.
Ensure that the passenger compartment fan blades are in good condition.
Repair, clean or change the cabin filter if necessary.

Ensure that the blower unit is properly **sealed**.
Repair if necessary.

Set the passenger compartment blower to maximum speed with maximum hot or maximum cold and move the air distribution control.
Check that the air outlet is the one selected.

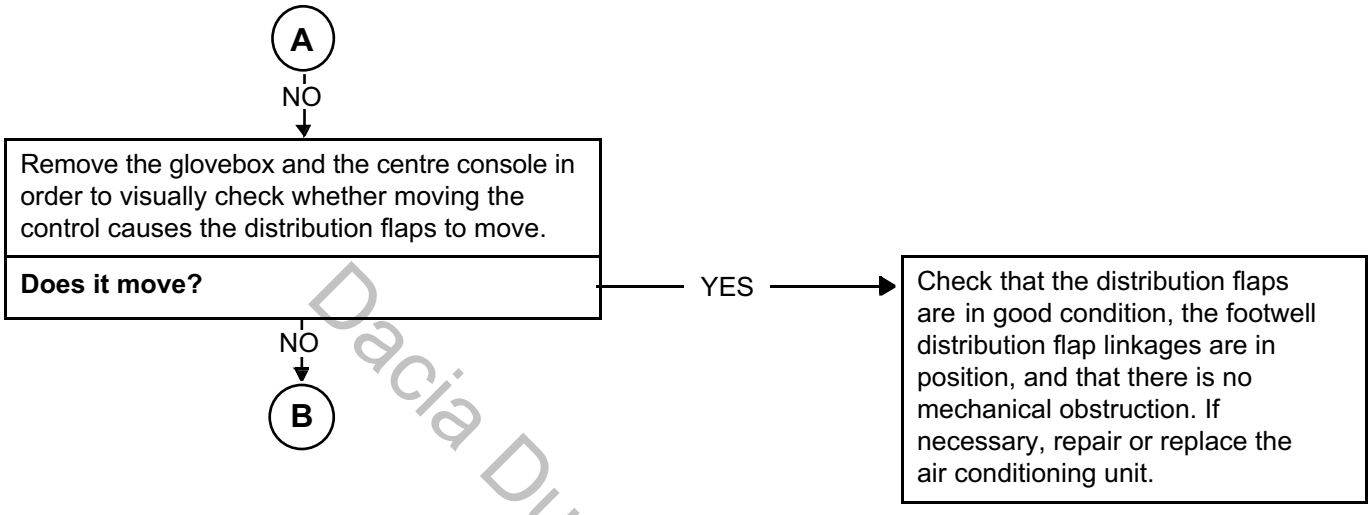
Is the air distribution correct?

YES → The air distribution is operating correctly.
Explain to the customer how the system operates.

NO → A

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 2 CONTINUED 1	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 2 CONTINUED 2	

B

Check that the cable routing is clean and that the cables are in good condition.
Repair if necessary.

Make sure that the controls are in good condition and that they move the cables correctly.
Repair if necessary.

End of fault finding.

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 3	Air flow fault

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

Does the passenger compartment fan **operate**? Check all of the speeds: Does the flow vary in accordance with the position of the speed switch?

NO → Repair, see **ALP 5**.

YES ↓

Make sure that **the air circuit** (**cabin filter**, scuttle panel grille, air ducts etc.) is not blocked.
Ensure that the passenger compartment fan blades are in good condition.
Clean or replace the cabin filter.

↓

With the cabim 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 blocked. If there is ice on the evaporator, carry out a **conformity check** on the temperature sensors (exterior and coolant). Replace any faulty components.

NO ↓

(A)

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 3 CONTINUED	

A

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.
Repair if necessary.

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

YES → Ensure that all the air vents are open.
If the fault persists, refer to **ALP 2**.

NO

See **ALP 5**.

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 4	Inefficient windscreen demisting

NOTES	**Special notes:** Check that the inside of the windows are not greasy, as this reduces the demisting efficiency.

Is the passenger compartment fan **working**? — NO → Repair, see **ALP 5**.

YES ↓

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 ↓

Make sure that the compressor is working correctly by switching on the air conditioning.

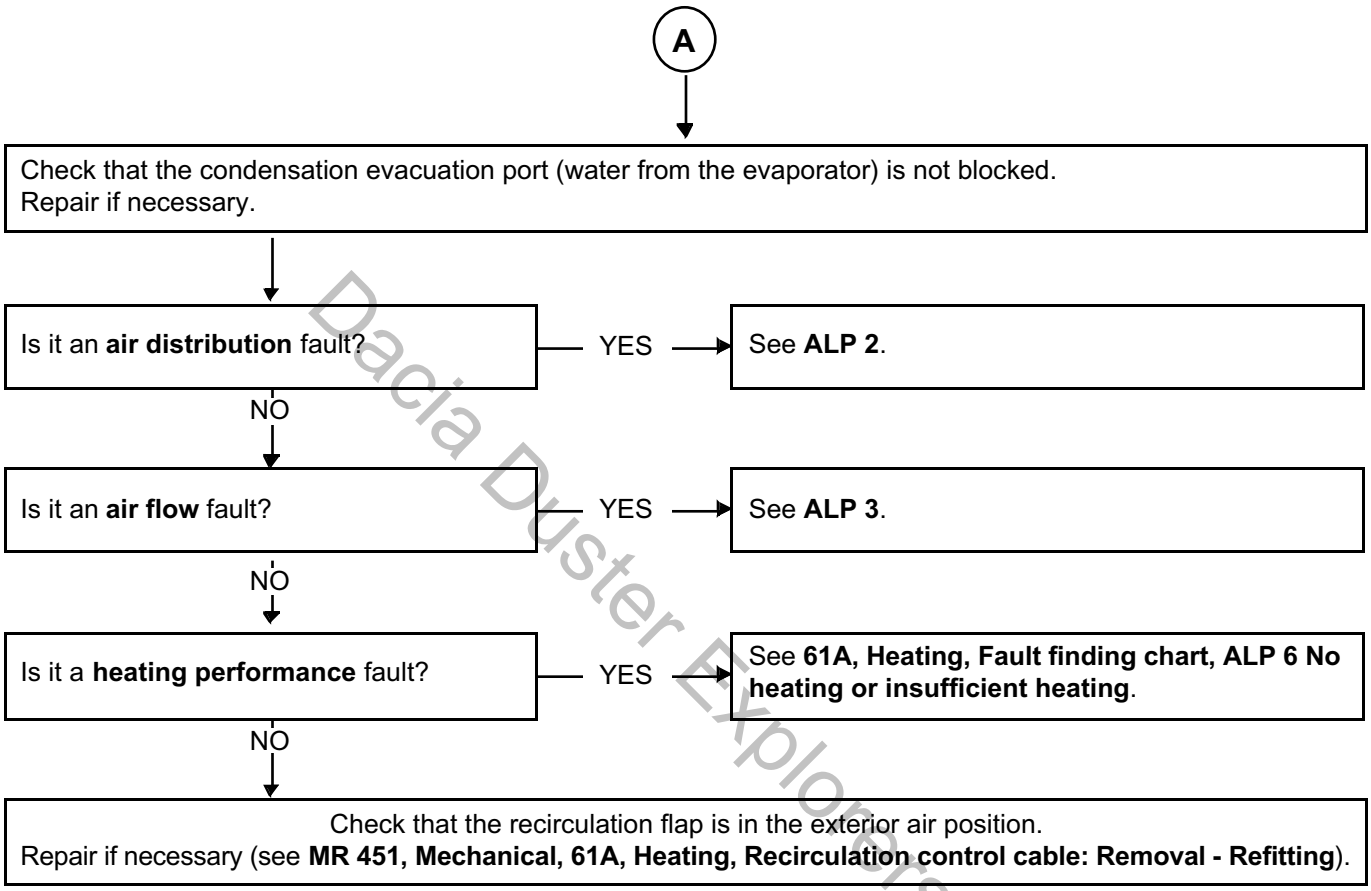
Does the compressor work? — NO → See **ALP 8 No cold air**.

YES ↓

(A)

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 4 CONTINUED	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 5	No passenger compartment ventilation

NOTES	Check that fuses **F39** and **F36** are in good condition.

Check that the **air circuit (cabin filter, scuttle panel grille, air ducts, etc.)** is not blocked.

Is the air circuit in good condition?

NO

If necessary, repair, clean or replace the cabin filter (see **MR 451 Mechanical, 61A, Heating, Cabin filter: Removal - Refitting**).

YES

Check the condition of the passenger compartment blower blades

Are the passenger compartment blower blades in good condition?

YES

Check that the air recirculation flap does not remain closed when in the recirculation position. Repair if necessary.

Ensure that all the air vents are open. Repair if necessary.

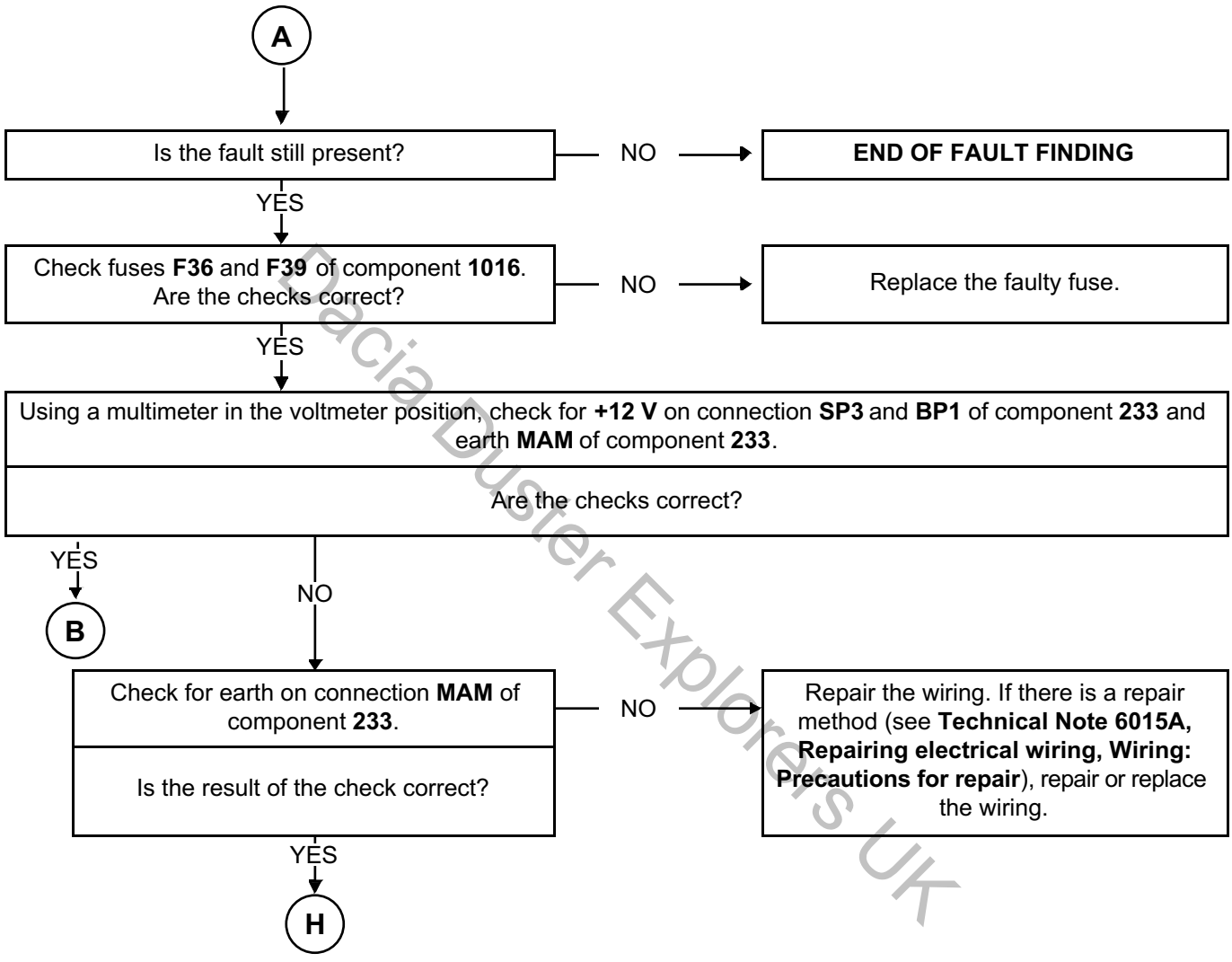
A

NO

If necessary, repair, clean or replace the passenger compartment blower blades (see **MR 451 Mechanical, 61A, Heating, Fan assembly: Removal - Refitting**).

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 5 CONTINUED 1	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 5 CONTINUED 2

B

Check for **+12 V** on connection **S1** of component **319**. Is the result of the check correct?

NO → Carry out a continuity test on connection **S1** between components **233** and **319**. Is the result of the check correct?

NO → Repair the wiring. If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair or replace the wiring.

YES → Replace the cold air blowing device relay (component code **233**).

YES

Make sure that the control panel speed selection button works properly.
Position the speed selection button on speed 1 and carry out a continuity test between connection **S1** and connection **38AH** of component **319**.
Position the speed selection button on speed 2 and carry out a continuity test between connection **S1** and connection **38AJ** of component **319**.
Position the speed selection button on speed 3 and carry out a continuity test between connection **S1** and connection **38AK** of component **319**.
Position the speed selection button on speed 4 and carry out a continuity test between connection **S1** and connection **38AL** of component **319**.
Position the speed selection button on speed 4 and carry out a continuity test between connection **S1** and connection **38DB** of component **319**.

Are the checks correct?

YES → C

NO → Replace the air conditioning control panel.

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 5 CONTINUED 3	

C

Carry out a continuity test on connection **38AH** between components **319** and **164**.

Is the continuity correct?

YES

Carry out a continuity test on connection **38AJ** between components **319** and **164**.

Is the continuity correct?

YES

Carry out a continuity test on connection **38AK** between components **319** and **164**.

Is the continuity correct?

YES

D

NO

Fault on connection **38AH** between components **319** and **164**. Repair the wiring.
If there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

NO

Fault on connection **38AJ** between components **319** and **164.** Repair the wiring. If there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

NO

E

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 5 CONTINUED 4

D

Carry out a continuity test on connection **38AK** between components **319** and **164**.

Is the continuity correct?

YES

Carry out a continuity test on connection **38DB** between components **319** and **164.**

Is the continuity correct?

YES

F

NO

G

E

Fault on connection **38AK** between components **319** and **164**. Repair the wiring. If there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

NO

Fault on connection **38AL** between components **319** and **164**. Repair the wiring. If there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 5 CONTINUED 5	

F

YES

Check for earth on connection **MAN** of component **164** (fan assembly).
Is the result of the check correct?

NO → Repair the wiring. If there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

YES

Replace fan assembly 1 (see **MR 451 Mechanical, 61A, Heating, Passenger compartment fan assembly control unit: Removal - Refitting**).

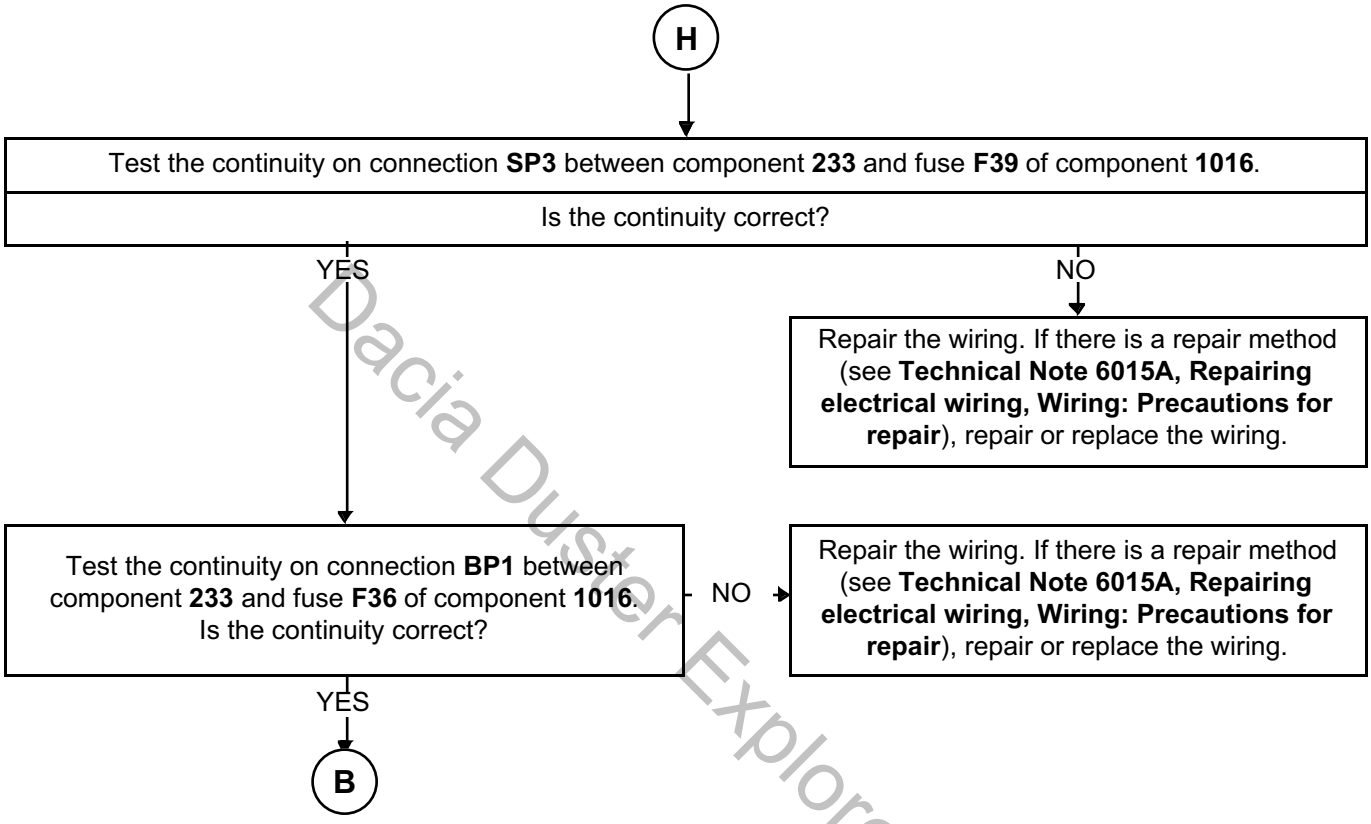
G

NO

Fault on connection **38DB** between components **319** and **164**. Repair the wiring. If there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 5 CONTINUED 6	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8	No cold air

NOTES	Consult this customer complaint after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). Check that the engine speed is greater than **750 rpm** and that the exterior temperature is above **3°C**. Check that the fuses are in good condition. Use a multimeter and a **21 W** test light. Use the **Technical Note Wiring Diagram for DUSTER**.

Engine running, air conditioning in maximum cold position, maximum ventilation speed. After **10 minutes**, are the high pressure outlet pipes of the compressor hot, whereas the low pressure outlet pipes of the evaporator are cold and covered in frost?

YES → (2)

NO ↓

Check the cleanliness of the condenser. Touch the pipes: are they warmer at the inlet than the outlet?

NO → Replace the condenser (see **MR 451 Mechanical, 62A, Air conditioning, Condenser: Removal - Refitting**).

YES ↓

Is the dehydrator reservoir pipe hot at the inlet and outlet?

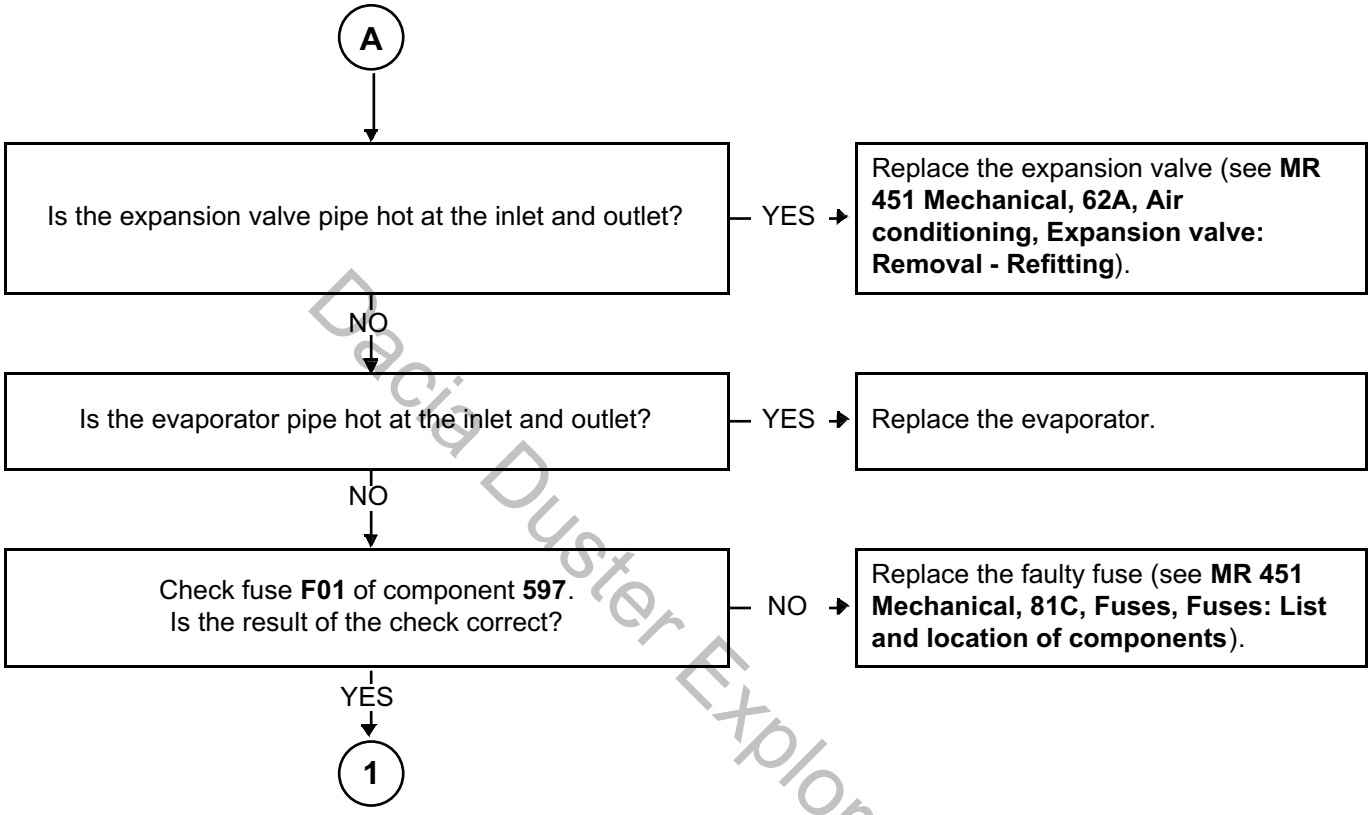
NO → Replace the dehydration canister.

YES ↓

(A)

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 1	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 2	

(1)

Using the **diagnostic tool** statuses and parameters screen (**Injection cold loop sub-function**), check that the temperature signals are consistent (no sensor drift resulting in incorrect measurement).

– Using parameter **PR064 Coolant temperature**.

Are the temperature signals consistent?

NO →

Carry out **a conformity check**:

– For the coolant temperature sensor, **see 13B, Diesel injection, Fault summary table or 17B Petrol injection, Fault summary table**.

Replace any faulty components.

YES

Start the engine and switch on the air conditioning by pressing the AC button (with a request for maximum cold temperature and the passenger compartment blower running).

On the **Cold loop** sub-function screen, display the following status: **ET018 Air-conditioning request** should be **ACTIVE**.

Note: the status indicates whether the signal for the AC* button pressed on the control panel is read by the injection computer correctly.

Is status **ET018 ACTIVE**?

NO →

Continuity fault on connection **38Z**.
Use an ohmmeter to test the continuity on connection **38Z** between components **319** and **120**. If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair or replace the wiring.

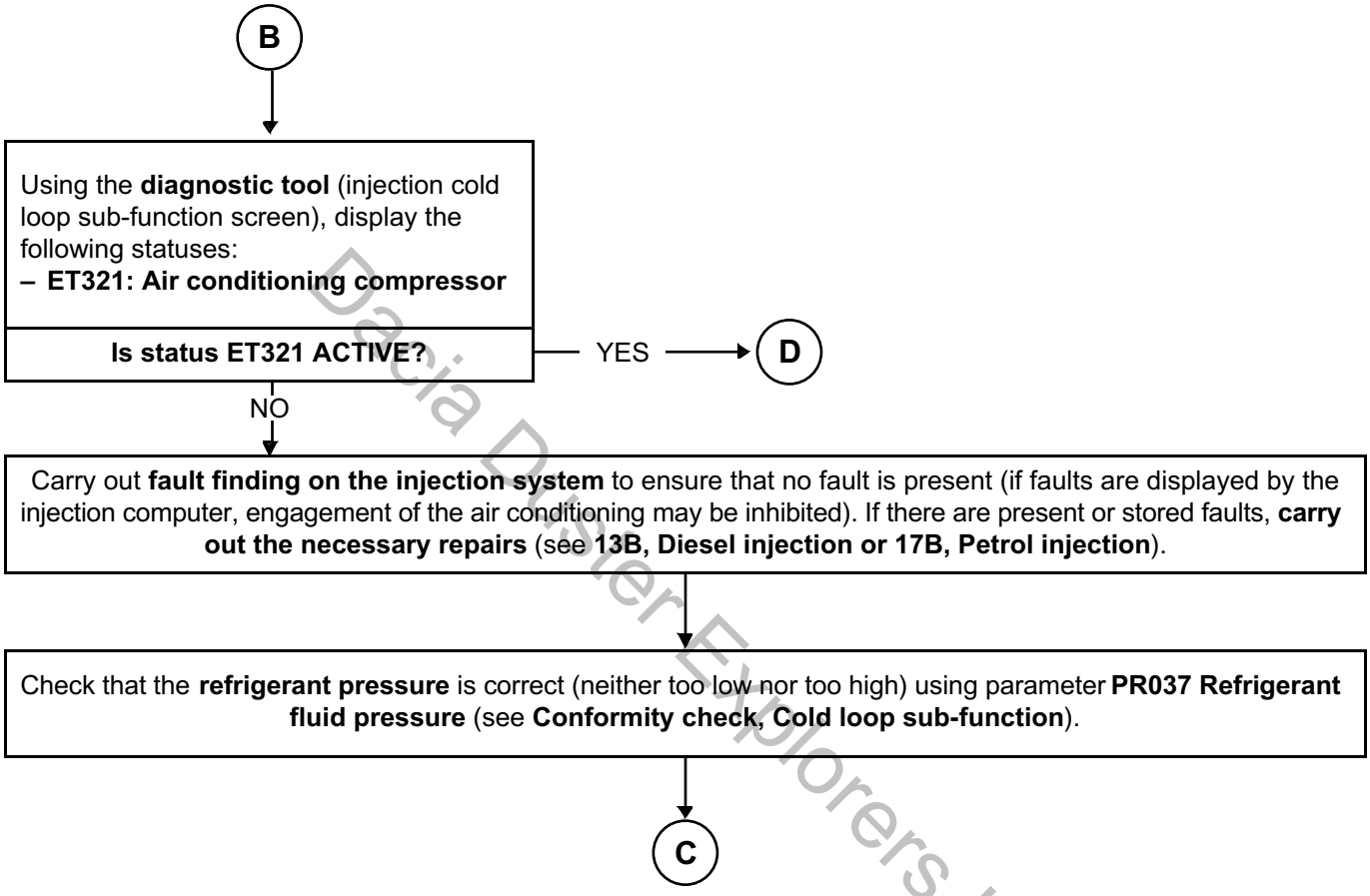
YES

(B)

* AC: air conditioning

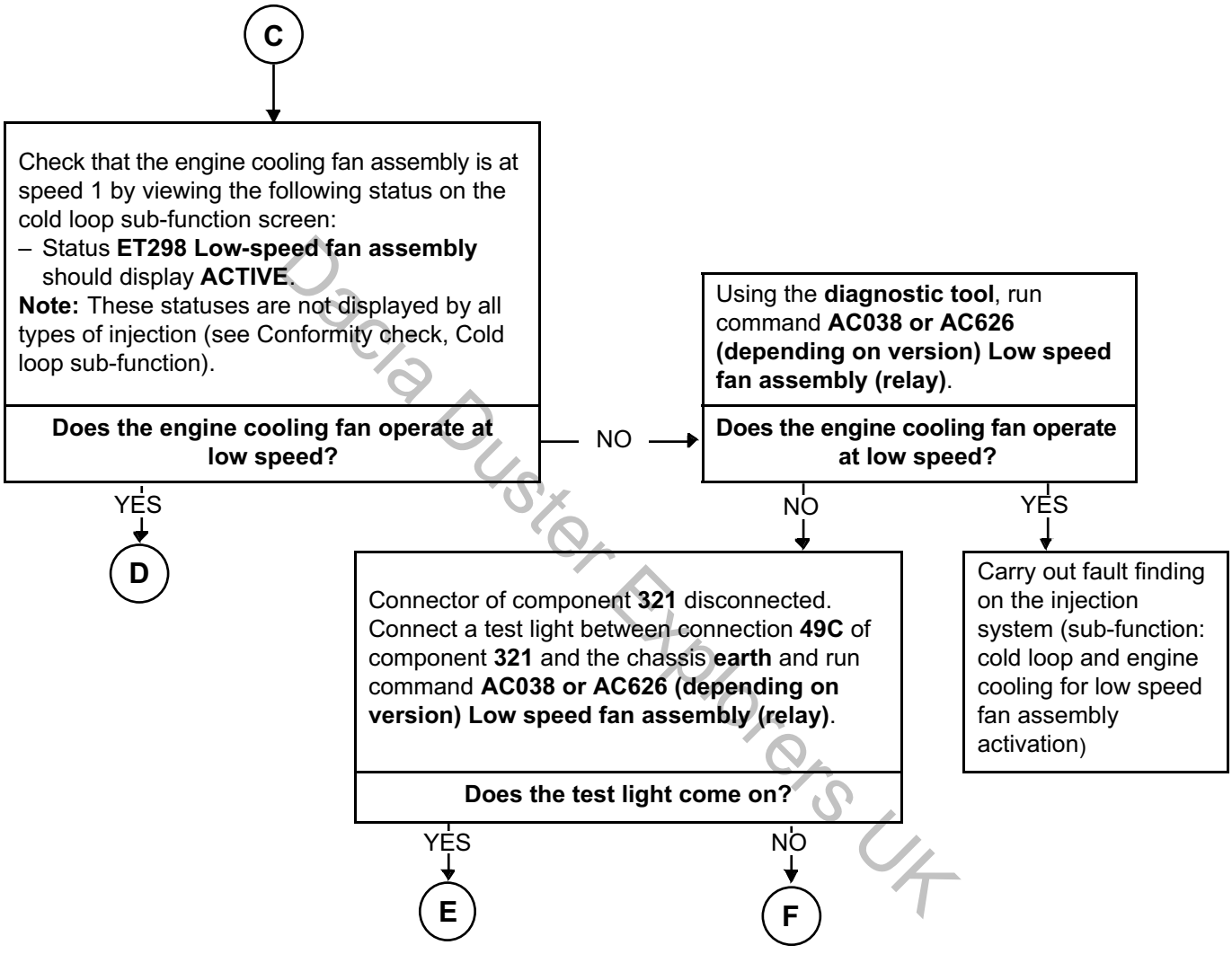
AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 3	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 4	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 5	

E

Measure the resistance of component **321** between connections **49C** and **49B** of component **321.** If the measured resistance is infinite, replace the fan assembly resistor (component **321**).

F

Check the continuity of connection **49C** between components **321** and **784**.

Is the continuity correct?

NO

Continuity fault on connection **49C**. If there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

YES

Check that the low speed fan assembly relay (component **784**) operates correctly. Replace it if faulty. (see **MR 451 Mechanical, 81C, Fuses, Fuses: List and location of components**)

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 6	

D

Check the air conditioning compressor **belt tension** (see **Technical Note 3786A, Engine and cylinder block assembly, 10A, Belt tension setting tool Hz measurement: tension values**).

Is the tension correct?

NO → **Replace** the belt. (see **MR 451, Mechanical, 11A, Top and front of engine, Accessories belt: Removal - Refitting**).

YES

With the engine stopped, use the diagnostic tool to run command (depending on version) **AC180 Air conditioning compressor relay control, AC003** or **AC070 Air conditioning compressor** (injection command mode menu).

Does the compressor clutch stick?

NO → Connect a test light between **connections 38R** and **compressor earth** (component **171**) and run command (depending on version) **AC180 Air conditioning compressor relay control, AC003 or AC070 Air conditioning compressor**.

Does the test bulb illuminate?

YES → Check the condition of the diode (component **597**). Replace the diode if it is faulty.

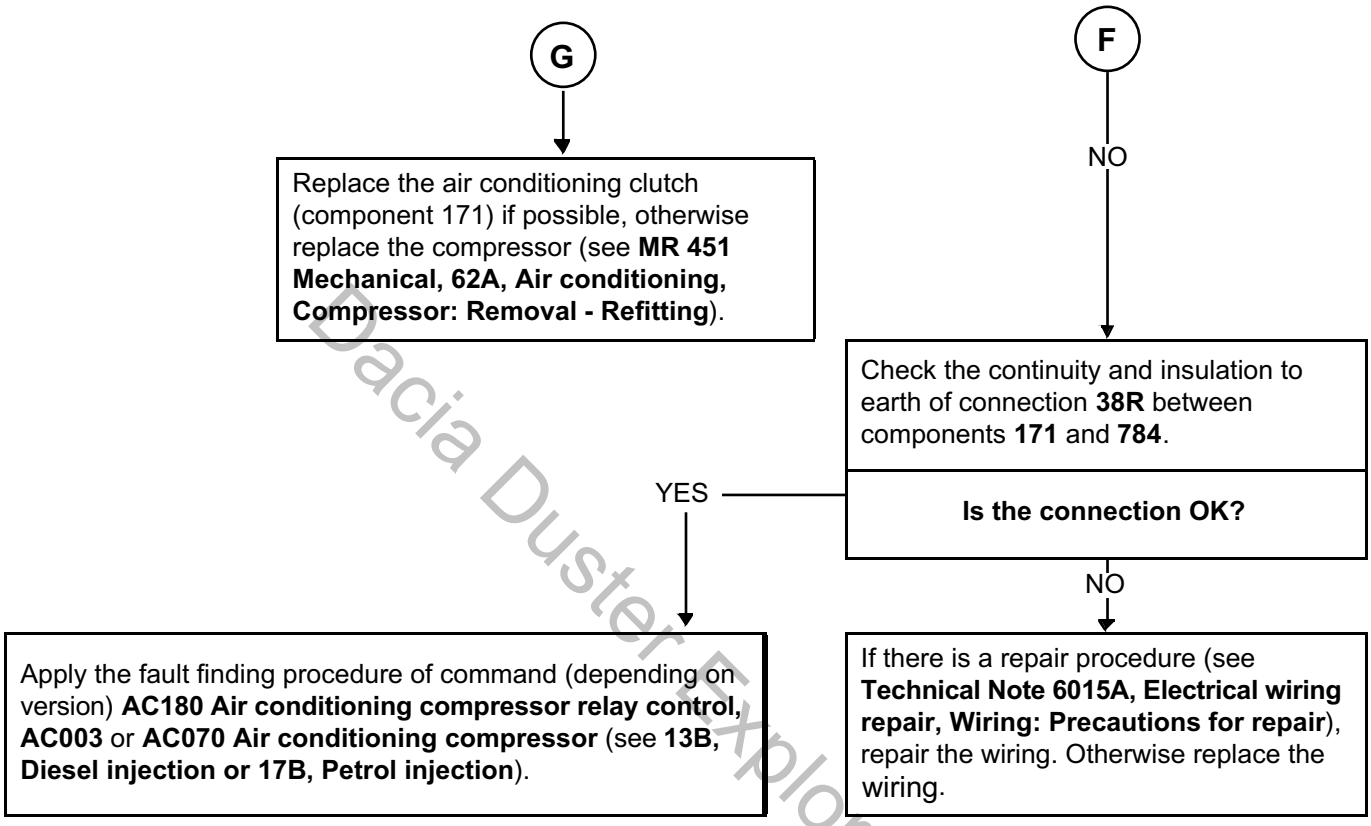
G

NO → F

YES → E

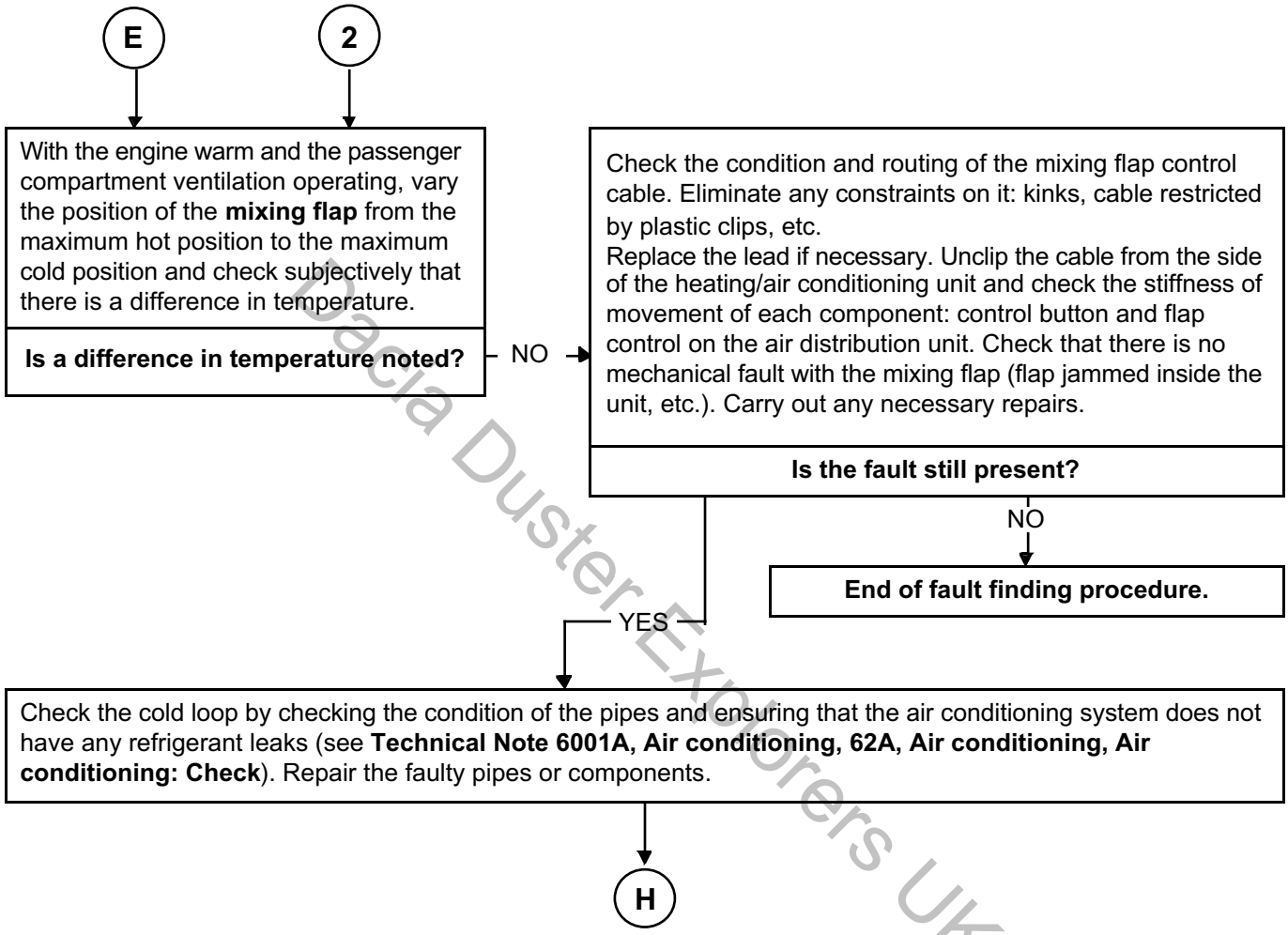
AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 7	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 8	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 8 CONTINUED 9	

H

Top up the refrigerant (see **MR 451 Mechanical, 62A, Air conditioning, Refrigerant circuit: Draining - Filling**).

Is the fault still present?

NO → **End of fault finding procedure.**

YES → **Replace the air conditioning compressor.**

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 9	Too much cold air

NOTES	Consult this customer complaint after a **complete check** with the **diagnostic tool** (fault reading and configuration checks). Check that the fuses are in good condition. Use a multimeter and a **21 W** test light. Use the **Technical Note Wiring Diagram for DUSTER**.

With the engine at idle speed and the air conditioning off (**AC** button not pressed), check that the air conditioning compressor clutch is not engaged.

Is the air conditioning compressor clutch engaged?

NO → **A**

YES

With the engine stopped, check the correct operation of the compressor clutch electric control by using the diagnostic tool to run command (depending on version) **AC180 Air conditioning compressor relay control**, **AC003** or **AC070 Air conditioning compressor**.
– During the command, connection **38R** of component **171** must be supplied with **+ 12 V**.
– After the command, connection **38R** of component **171** must no longer be supplied with **+ 12 V**.

Is the connection still supplied with + 12V after the command?

YES

Check the continuity and insulation from **+ 12 V** of connection **38R** between components **171** and **784**.

Is the connection OK?

NO → **B**

YES → **C**

NO

Check that the air conditioning compressor clutch is not jammed (mechanical fault).

Is the clutch still engaged?

YES → **D**

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 9 CONTINUED 1

B
NO

If there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

C
YES

With the vehicle ignition off, check that the compressor clutch relay is not "jammed", by checking the continuity between connection **38R** and connection **BP7** of component **784**.

Is the continuity present?

YES → **Replace the air conditioning compressor clutch relay**

NO

Apply the fault finding procedure of command (depending on version) **AC180 Air conditioning compressor relay control, AC003** or **AC070 Air conditioning compressor** (see **13B, Diesel injection or 17B, Petrol injection**).

Is the fault still present?

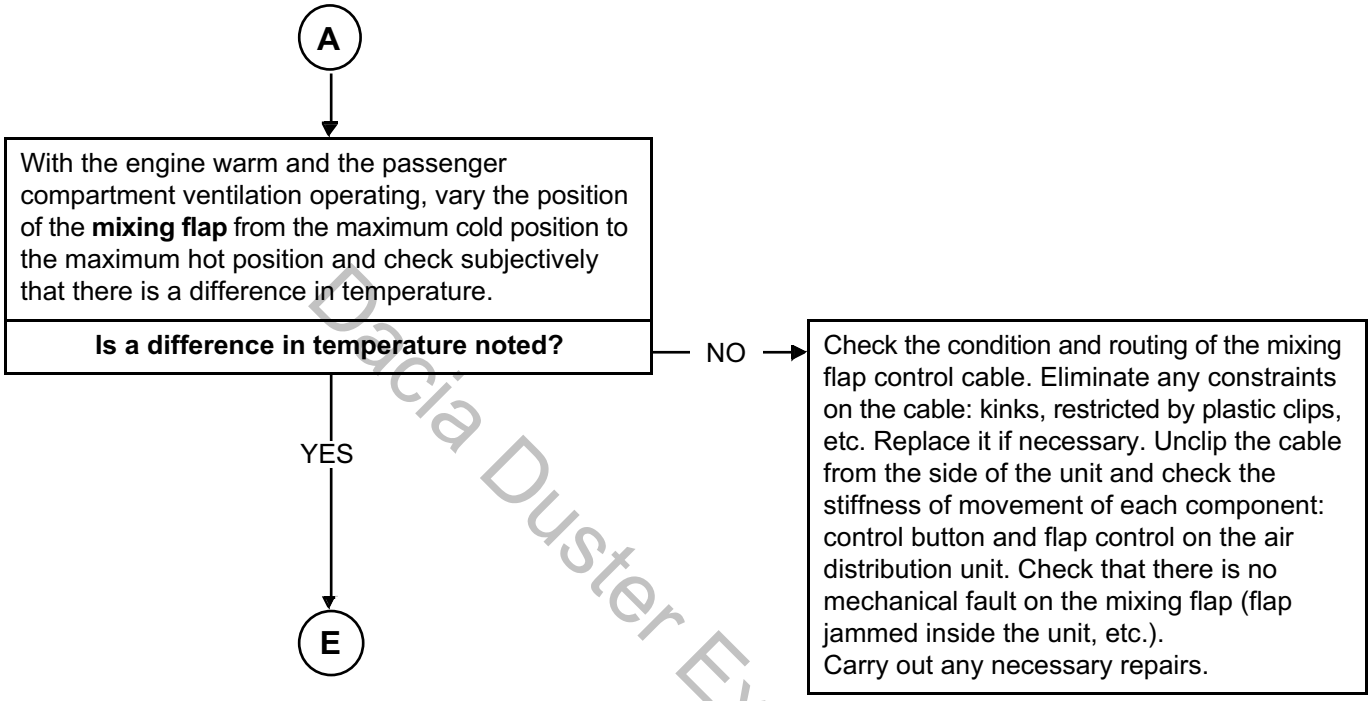
A

D
YES

Replace the air conditioning compressor (see **MR 451, Mechanical, 62A, Air conditioning, Compressor: Removal - Refitting**).

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 9 CONTINUED 2	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 9 CONTINUED 3	

E

Using the **diagnostic tool** statuses and parameters screen (Injection cold loop sub-function), check that the temperature signals are consistent (no sensor drift resulting in incorrect measurement).

– Using parameter **PR064 Coolant temperature.**

Are the temperature signals consistent?

NO →

Carry out **a conformity check**:

– For the coolant temperature sensor, see **13B, Diesel injection, Fault summary table or 17B Petrol injection, Fault summary table**.

Replace any faulty components.

YES ↓

Check the refrigerant level (see **Technical Note 6001A, Air conditioning, 62A, Air conditioning, Air conditioning: Check**).

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 10	Inefficient rear screen de-icing and demisting

NOTES	Carry out this conformity check after a **complete check** using the **diagnostic tool** (fault reading, especially UCH and injection faults and configuration checks). Check that the fuses are in good condition. Use a multimeter and a **21 W** test light. Use the **Technical Note Wiring Diagram for DUSTER**.
	Special notes: Check that the inside of the glass is not **greasy** as this lowers the de-icing efficiency.
	Note: The de-icing control is only authorised when the engine is running to save power. The heated rear screen is controlled by pressing the heated rear screen button (with time delay and door mirror de-icer if fitted).

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 10 CONTINUED 1	

Ensure that there are no water leaks in the passenger compartment which would significantly increase the moisture and reduce the effectiveness of the demisting function (see **ALP 12** if the fault is noted).

Is the fault still present?

NO → **End of fault finding procedure.**

YES

Check fuses **F01** and **F32** of component **1016**.
Are the checks correct?

NO → Replace the faulty fuse.

YES

Check that the UCH receives the signal about the status and operation of the engine. On the **Cold loop sub-function screen**, status **ET091 Engine running** should display **YES**.

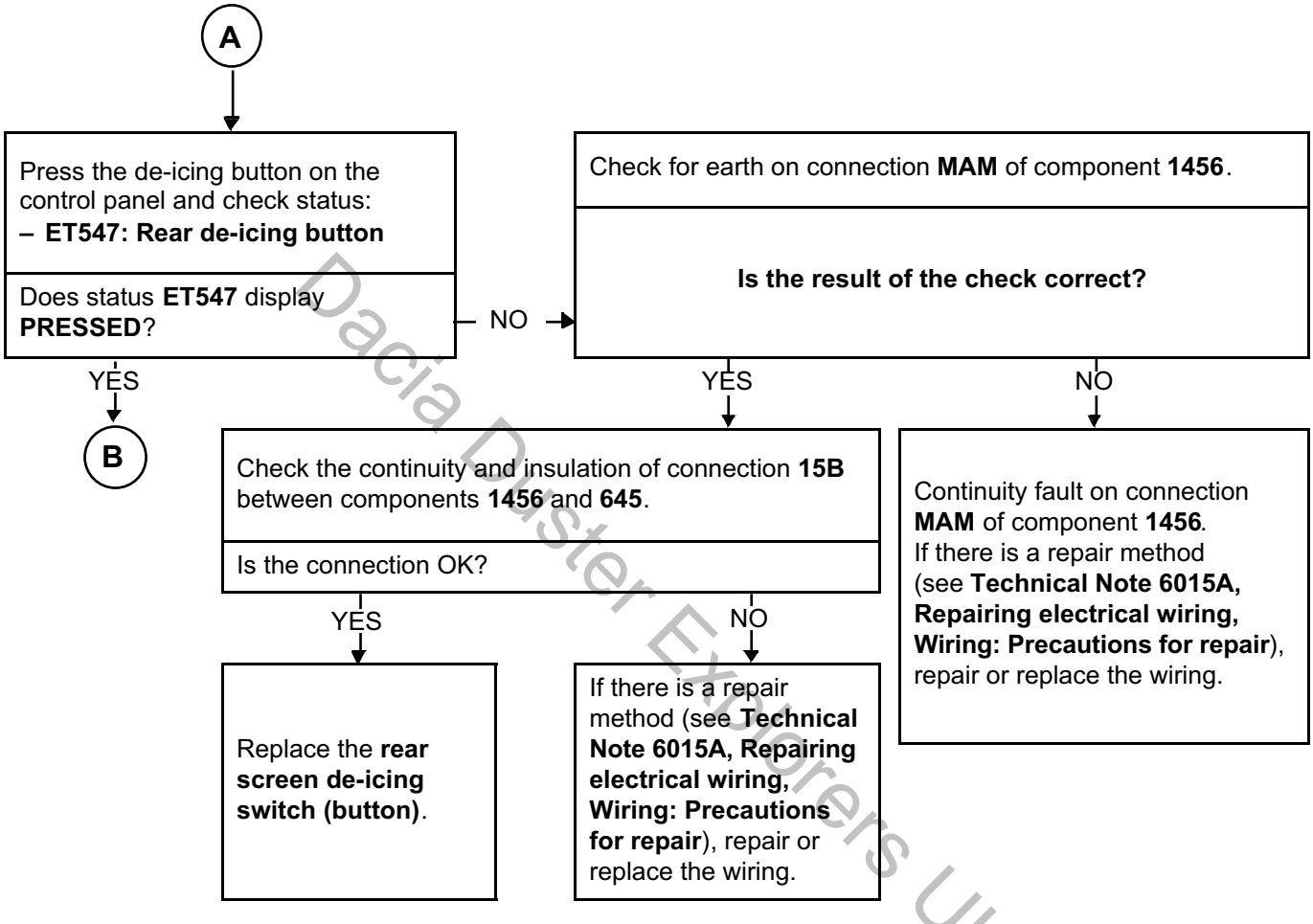
Is status ET091 YES?

NO → Carry out fault finding on the UCH (interpretation of status **ET091**) and on the wire network.

YES → A

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 10 CONTINUED 2	



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 10 CONTINUED 3	

B

Press the de-icing button on the control panel and check for earth on connection **15M** of component **235**.

Is the result of the check correct? — NO → Continuity fault on connection **15M**. Use an ohmmeter to perform a continuity test on connection **15M** between components **235** and **645**. If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair or replace the wiring.

YES

Connect a test light between connection **AP7** of component **235** and a **chassis earth**.

Does the test bulb illuminate? — NO → Continuity fault on connection **AP7**. Use an ohmmeter to test the continuity on connection **AP7** between component **235** and fuse **F01** of component **1016**. If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair or replace the wiring.

YES

Connect a test light between connection **BP15** of component **235** and a **chassis earth**.

Does the test bulb illuminate? — NO → Continuity fault on connection **BP15**. Use an ohmmeter to test the continuity on connection **BP15** between component **235** and fuse **F32** of component **1016**. If there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace the wiring.

YES

C

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 10 CONTINUED 4

C

Connect a test light between connection **15LP** of component **200** and a **chassis earth**.

Does the test bulb illuminate?

NO → Check the continuity of connection **15LP** between components **235** and **200**.

Is the connection OK?

YES → Replace the **heated rear screen relay** (component code **235**).

NO → If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair or replace the wiring.

YES

Check for earth on connection **MG** of component **200**.

Is the result of the check correct?

NO → If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair or replace the wiring.

YES

Replace the **rear screen**.

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 11	Unpleasant odours in the passenger compartment

NOTES	None.

Check that the cabin filter is not blocked or damaged.

Is the fault still present?

NO → **End of fault finding procedure.**

YES ↓

Check that the condensate drain pipe (water from the evaporator) is not blocked.

Is the fault still present?

NO → **End of fault finding procedure.**

YES ↓

(A)

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 11 CONTINUED	

(A)

YES

Check that the heating unit is completely sealed and there are no leaks into 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	Carry out a full check with the **diagnostic tool**.

ALP 12	Water is present in the passenger compartment

NOTES	None.

Pressurise the cooling circuit.

Is there any coolant leaking into the vehicle? — YES → **Repair.**

NO ↓

Check that the condensation evacuation pipe (water from the evaporator) is not blocked.
Repair if necessary.

Is the fault still present? — NO → **End of fault finding procedure.**

YES ↓

Make sure that the **scuttle panel** (under the windscreen aperture) 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	Carry out a full check with the **diagnostic tool**.

ALP 13	No lighting on the control panel in night mode

NOTES	Check fuse **F19** or **F18** (depending on model: **F19** for **left-hand drive** and **F18** for **right-hand drive**) of component **1016**.

Check fuse **F19** (**left-hand drive**) or **F18** (**right-hand drive**) of component **1016**. Is the test correct?

NO → Replace the faulty fuse.

YES

Using a test light, check for **+12 V** between connection **LPD** or **LPG** (depending on model) and connection **NC** of component **319**.

Does the test bulb illuminate?

YES

Check the condition of the air conditioning control panel bulbs.

B

A

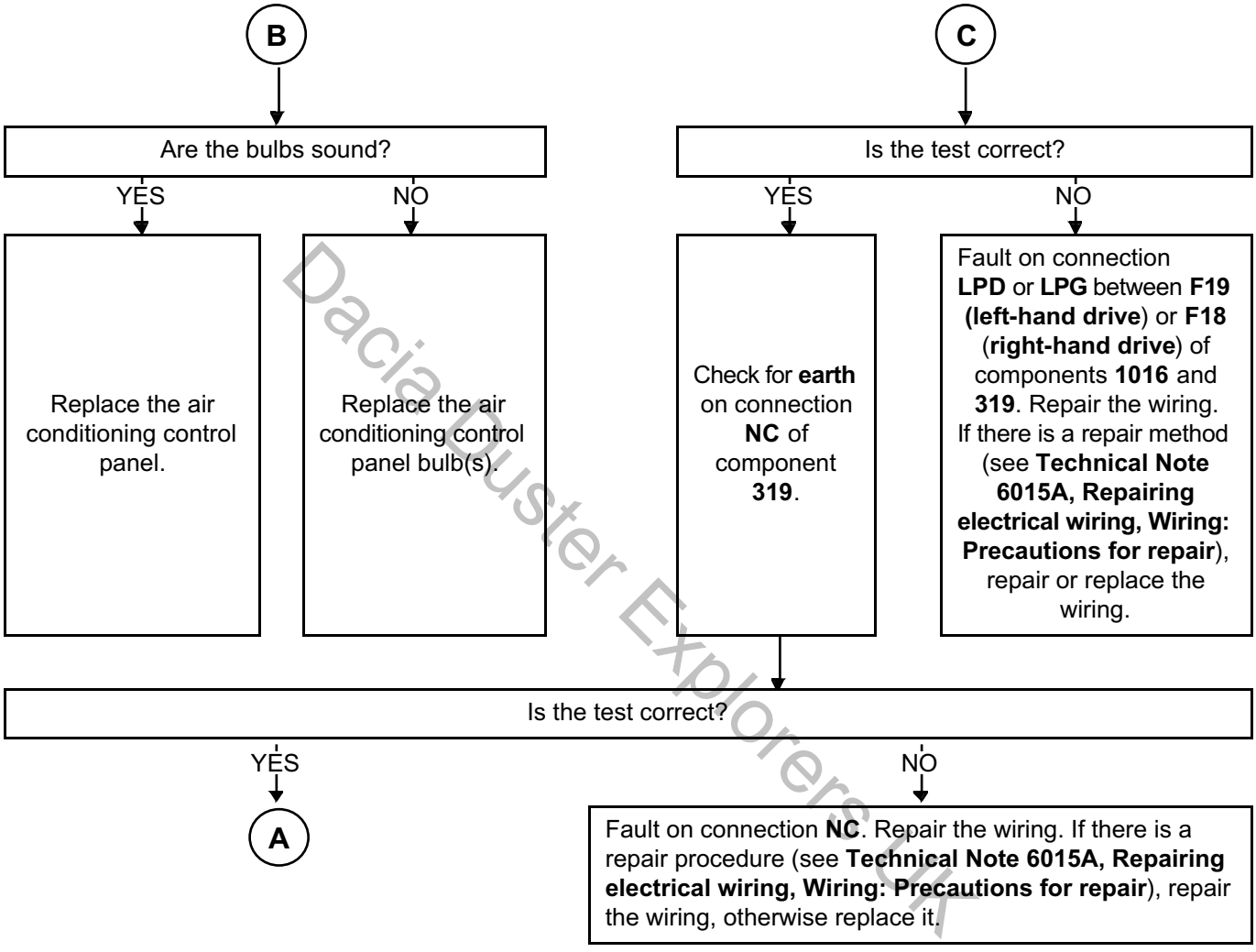
NO

Perform a continuity test on connection **LPD** (or **LPG**) between component **319** and **F19** (**left-hand drive**) or **F18** (**right-hand drive**) of component **1016**.

C

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 13 CONTINUED



AFTER REPAIR	Carry out a full check with the **diagnostic tool**.

ALP 14	Compressor noise

NOTES	Only address this customer complaint after a **complete check** with the **diagnostic tool**.
	Note: Before starting any work, check that the noise is indeed coming from the compressor.

Check that the **compressor belt is in good condition** and **check its tension** (for engines without automatic tensioning) (see **MR 451, Mechanical, 11A**, **Top and front of engine, Accessories belt: Removal - Refitting**).

↓

Check that the compressor is **correctly attached** (see **MR 451, Mechanical, 62A, Air conditioning, Compressor: Removal - Refitting**).

Check the refrigerant fluid and look for any leaks. Significant loss of fluid causes the compressor to make noises. (see **Technical Note 6001A, Air conditioning, 62A, Air conditioning, Air conditioning: Check**).

↓

If the fault is still present, **replace** the air conditioning compressor (see **MR 451, Mechanical, 62A, Air conditioning, Compressor: Removal - Refitting**).

AFTER REPAIR	Carry out a full check with the **diagnostic tool**.