

### 1. APPLICABILITY OF THE DOCUMENT

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

*Vehicle(s):* **MODUS**

for engines **K9K 750, 752, 760, 762.**

Function concerned: **K9 DELPHI (DCM 1.2) COMMON RAIL DIRECT DIESEL INJECTION**

*Name of computer:* **DCM 1.2 INJECTION**

*Program No.:* **4B**

*Vdiag No.:* 44, 48

Following the appearance of the Pump repriming function on K9K engines, a new Vdiag has been issued to cover this function.

When replacing a high pressure pump on vehicles fitted with a computer with Vdiag 44, it is essential to reprogram the injection computer to activate the Pump repriming function.

After reprogramming, Vdiag 44 is replaced by Vdiag 48.

### 2. PREREQUISITES FOR FAULT FINDING:

#### Documentation type:

**Fault finding procedures** (this manual):

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

#### Wiring Diagrams:

- Visu-Schéma (CD-ROM), paper.

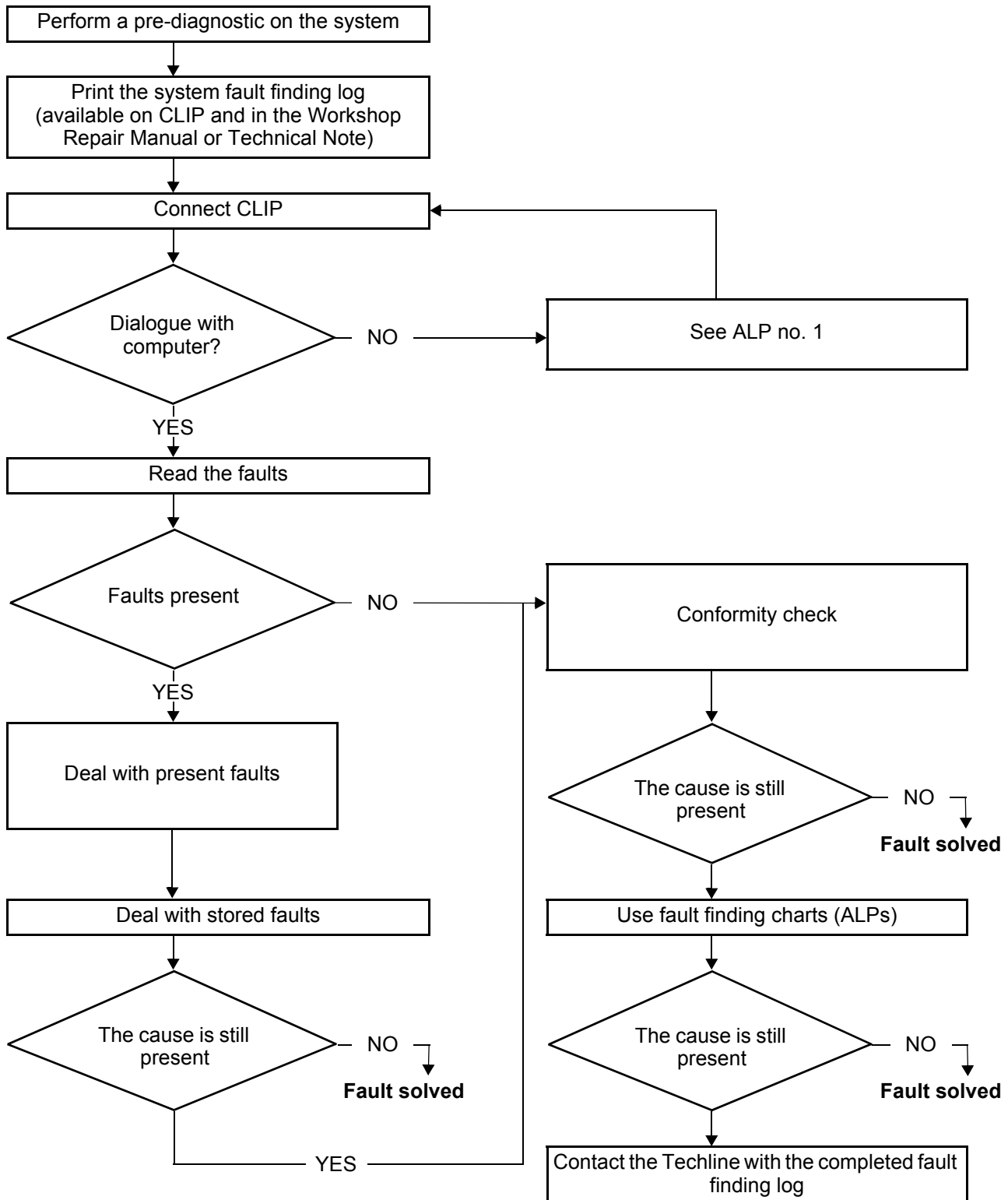
#### Type of diagnostic tools:

- CLIP

#### Special tooling required:

SPECIAL TOOLING REQUIRED	
Multimeter.	
Elé.1590	112-track computer bornier.
Elé.1681	Universal bornier.
Mot.1711	Injector flow measuring kit.

### 4. FAULT FINDING PROCEDURE



ET703

CRUISE CONTROL/SPEED LIMITER BUTTONS

**NOTES**

**Special notes:**

Carry out these checks if the statuses do not correspond with system operation programming.

**INACTIVE**

Status **ET703** becomes **INACTIVE** when none of the cruise control/speed limiter buttons is pressed. These buttons are located on the steering wheel.

**Refer to the Airbag Technical Note for the vehicle (see 88C, Section 8) to remove the driver's airbag and carry out the checks in complete safety.**

If status **ET703** does not display **INACTIVE**,

- check the condition of the cruise control / speed limiter +/- button and the condition of its connector,
- check the condition of the cruise control / speed limiter **R/0** button and the condition of its connector.

Repair if necessary.

**INCREASE**

Status **ET703** becomes **PLUS** when the cruise control / speed limiter + button is pressed. This button is on the steering wheel, on the left-hand side.

**Refer to the airbag technical note that applies to the vehicle (see Section 8, 88C) to be able to remove the driver's airbag and carry out the checks and measurements in complete safety.**

If status **ET703** does not display **INCREASE**, check the condition of the cruise control/speed limiter +/- button and the condition of its connector. Repair if necessary.

Measure **the resistance** of the button between **tracks 1 and 2** whilst **pressing the "+" button**.

If the resistance is not approximately **300 Ω** check the continuity of the connection when the button is not pressed.

If there is continuity, replace the +/- control button.

**AFTER REPAIR**

Deal with any faults displayed by the **diagnostic tool**.

Clear the computer fault memory.

Carry out a road test followed by another check with the **diagnostic tool**.

<b>PR130</b>	<u>CRUISE CONTROL SETPOINT</u>
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<b>PARAMETER DEFINITION</b>	This parameter indicates the cruise control speed setpoint in <b>mph (km/h)</b> .
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<b>NOTES</b>	<b>Special notes:</b> Only perform these tests if the parameters do not correspond with the system operation programming.
	<b>No faults must be present.</b> Perform this fault finding procedure: <ul style="list-style-type: none"><li>– after finding an inconsistency in the parameter,</li><li>– or after a customer complaint (lack of power, smoke etc.).</li></ul>

**Conformity check with the engine stopped and the ignition on, or engine running, and engine coolant temperature > 80°C**

Indicates the cruise control cruising speed.  
Cruise control can only be activated for a speed.  
**V > 18 mph (30 km/h)**

<b>AFTER REPAIR</b>	Deal with any faults displayed by the <b>diagnostic tool</b> . Clear the computer memory. Carry out a road test followed by another check with the <b>diagnostic tool</b> .
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**DF079**  
**CONTINUED**

If the fault is still present, disconnect the battery and the injection computer.

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

Computer connector **B, track M3** —————> **Track 3** of the motorised throttle valve  
Computer connector **B, track M4** —————> **Track 5** of the motorised throttle valve  
Computer connector **B, track G4** —————> **Track 6** of the motorised throttle valve  
Computer connector **B, track G3** —————> **Track 1** of the motorised throttle valve  
Computer connector **B, track G2** —————> **Track 2** of the motorised throttle valve  
Computer connector **B, track D3** —————> **Track 4** of the motorised throttle valve

Repair if necessary.

If the fault is still present, measure the **resistance** of the throttle motor between **tracks M3** and **M4**.  
Replace the throttle if the **resistance** is not around **2.2 Ω ± 5% at 23°C**.

**If the fault persists, replace the throttle valve.**  
**Reinitialise the programming (RZ005).**

**If the fault is still present, deal with the other faults then proceed with the conformity check.**

**AFTER REPAIR**

Deal with any faults declared by the diagnostic tool.  
Clear the computer memory.  
Carry out a road test followed by another check with the diagnostic tool.

Summary table of malfunction modes:

		Types	Special	Effects on the engine	Customer complaints
Electrical faults on resistor or wiring	Thermostat faults	– Open short circuit – Short circuit to + 12 V	0%	Coolant temperature $\approx 110^{\circ}\text{C}$ , <b>limited performance, low temperature</b> reference value.	Overheating warning light comes on at each first opening, high temperature on instrument panel, fan assembly 1 activated.
		– Short circuit	100%	Coolant temperature $\approx 90^{\circ}\text{C}$ , <b>limited performance, low temperature</b> reference value.	Normal operation for customer but performance limited by <b>10 to 20%</b> .
	Sensor faults	– All	Low temperature mode	Forced <b>low temperature</b> mode, with no limited performance.	No visible effect, impact on fuel consumption with <b>permanent low temperature operation</b> .
	Thermostat faults detected		Nominal	No change of mode when requested.	Overheating warning light lighting on first opening, display of an additional square if the mode is changed.
Non-electrical faults	Thermostat faults detected	– Thermostat stuck in <b>closed</b> position	All modes	No cooling, engine overheating, engine damage.	Instrument panel display, overheating warning, torque reduction.
		– Thermostat stuck in <b>open</b> position	All modes	Slow increase in temperature.	Overconsumption of petrol when cold, unsuitable passenger compartment temperature, possible performance reduction when cold.

<b>DF051 CONTINUED 2</b>	
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<b>2.DEF</b>	<b>NOTES</b>	None.
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<p>If the fault is present, check the conformity of the switches.          In the event of inconsistency, ensure the conformity or replace the switches (see <b>MR 417 (Kangoo II)</b>, <b>MR 392 (Clio III)</b> or <b>MR 385 (Modus)</b>, <b>Mechanical, 83D, Cruise Control, Cruise control – Speed limiter: List and location of components</b>).</p>
<p>If <b>ET703</b> indicates <b>SUSPEND</b> when the <b>SUSPEND</b> button is released, the <b>SUSPEND</b> button is jammed. Adjust the conformity if necessary.          Check the <b>continuity, insulation and absence of interference resistance</b> on the following connections:</p> <ul style="list-style-type: none"> <li>• <b>86M</b> between components <b>331</b> and <b>1519</b>,</li> <li>• <b>86G</b> between components <b>331</b> and <b>1519</b>.</li> </ul> <p>If the connection or connections are faulty and there is a repair procedure (see <b>Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair</b>), repair the wiring, otherwise replace it.</p>
<p>If <b>ET703</b> indicates <b>DECREASE</b> when the "-" button is released, the "-" button is jammed. Adjust the conformity if necessary.</p>
<p>If <b>ET703</b> indicates <b>INCREASE</b> when the "+" button is released, the "+" button is jammed. Adjust the conformity if necessary.</p>
<p>If <b>ET703</b> indicates <b>RESUME</b> when the <b>RESUME</b> button is released, the <b>RESUME</b> button is jammed. Adjust the conformity if necessary.</p>
<p>Check that the buttons operate correctly and check that there is no risk of them jamming.</p>
<p>If the fault is still present, replace the switches (see <b>MR 417 (Kangoo II)</b>, <b>MR 392 (Clio III)</b> or <b>MR 385 (Modus)</b>, <b>Mechanical, 83D, Cruise control, Cruise control – Speed limiter: List and location of components</b>) or the switches and the steering wheel if necessary.</p>

<b>AFTER REPAIR</b>	<p>Press the four switches successively and, each time, check that the steering wheel switches are regularly recognised by the injection computer and that <b>DF051</b> is not present or stored.</p>
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<b>ET127</b>	<u>LOWER SEQUENTIAL LEVER SWITCH</u>
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<b>NOTES</b>	There must be no present or stored faults.
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<p>This indicates the status of the lower sequential lever switch. This status displays <b>ACTIVE</b> with the gear lever in position <b>M-</b>. This status displays <b>INACTIVE</b> with the gear lever in a position other than <b>M-</b>.</p>
<p>Check the sequential lever supply on the following connections: Check for <b>+12 V</b> on connection <b>AP10</b> of component <b>129</b>. Check for a vehicle earth on connection <b>5FI</b> of component <b>129</b>.</p> <p>If the connection or connections are faulty or there is a repair procedure (see <b>Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair</b>), repair the wiring, otherwise replace it.</p>
<p>With the gear lever in position <b>M</b>, measure the voltage between the following connections:</p> <p>Check the voltage between the vehicle earth and connection code <b>5FJ</b> of component <b>129</b>, Check the voltage between the vehicle earth and connection code <b>5FM</b> of component <b>129</b>. If any of the measured values is <b>+ 12 V</b>, replace the sequential lever. If the values are <b>0 V</b>, check that the gear lever positions match the instrument panel display. If the connection or connections are faulty or there is a repair procedure (see <b>Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair</b>), repair the wiring, otherwise replace it.</p>
<p>If the correct status is not displayed, use the interpretation of fault <b>DF093 Manual sequential controls circuits</b>.</p>

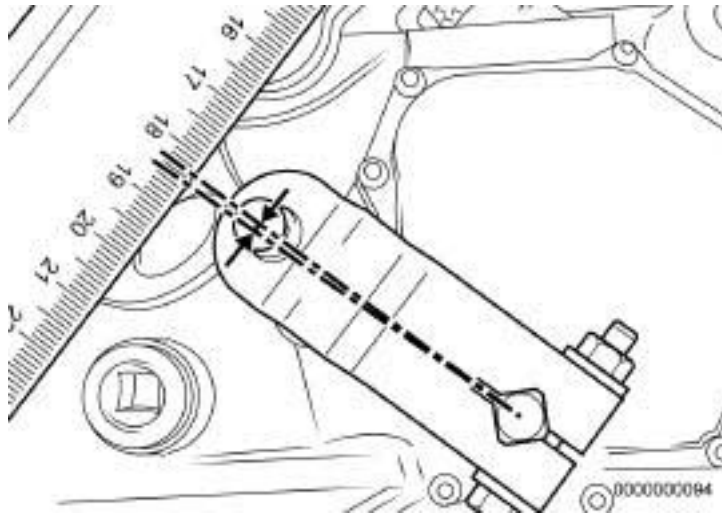
<b>AFTER REPAIR</b>	Repeat the conformity check from the start.
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### TEST 1 CONTINUED

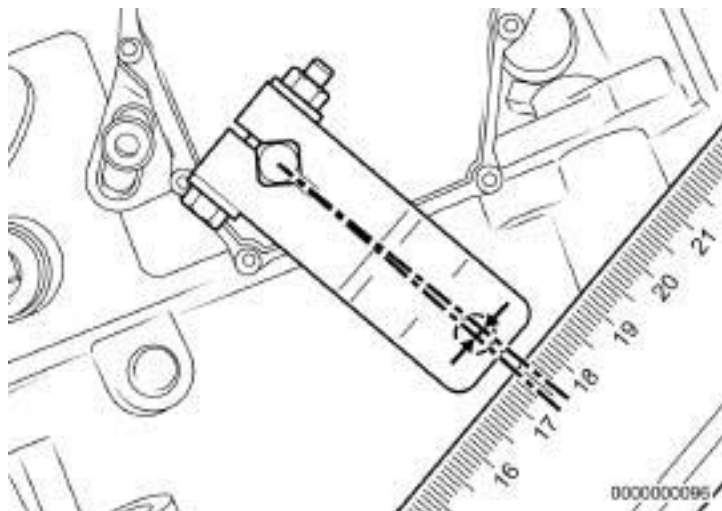
#### Normal lever:

Check the clearance in the Park position. Clearance must be approximately **1.5 mm** (measured at the ball joint).



#### Inverted lever:

Check the clearance in the Park position. Clearance must be **approximately 1.5 mm** (measured at the ball joint).



## CLEARING

**RZ001:** Fault memory.

This command is used for clearing the computer's stored faults.

**RZ003:** Programming of **ESP** sensors.

This command reinitialises programming of the **ESP** sensors. Use this command each time work on the **electric power assisted steering** necessitated programming of the steering wheel angle or following any operation on the axles. Also use this command after dismantling or replacement of the combined sensor.

## ACTUATION

**AC003:** Front left-hand wheel solenoid valves.

**AC004:** Front right-hand wheel solenoid valves.

**AC005:** Rear left-hand wheel solenoid valves.

**AC006:** Rear right-hand wheel solenoid valves.

These commands permit a check on the hydraulics of each wheel.

Raise the vehicle in order to be able to rotate the wheels, and check that they rotate freely. Keep the brake pedal depressed to prevent the wheel being tested from being turned by hand (do not brake so firmly that full braking power is reached).

Select and confirm the command of the wheel being examined (e.g. Front left-hand wheel solenoid valves, etc.)

Turn the wheel concerned by hand; you should see it go through 5 locking/unlocking cycles.

**AC013:** Wheel speed sensor supply test.

This command allows you to check that voltage **pulses** of approximately **12 V are detected** by a multimeter at the sensor connector terminals on the computer side.

**You must use command AC013 once only.**

**AC016:** Pump motor test.

This command is used to test the pump motor control circuit.

Select command **AC016 Pump Motor Test**.

The motor must run for **5 seconds**.

**AC187:** Brake light activation relay.

This command is for testing brake light activation by the **ESP** when controlling understeering with sharp deceleration.

## XENON BULBS AND CORNERING LIGHTS

AC001

ADJUSTMENT MOTORS

This command is for testing the control circuit of the adjustment motors.

Select the actuators tab of the diagnostic tool.

Select the command **AC001**.

The adjustment motors should move while the command is being run.

Switch the lights on if necessary to verify the beam height variation.

If either of the two motors, or both motors do not move, check **continuity and absence of interference resistance** on the following connections:

Left-hand adjustment motor:

- |   |   |   |
|---|---|---|
| Xenon bulb computer, 10-track black connector, <b>track 3</b> | → | <b>Track 1</b> left-hand adjustment motor |
| Xenon bulb computer, 10-track black connector, <b>track 1</b> | → | <b>Track 2</b> left-hand adjustment motor |
| Xenon bulb computer, 10-track black connector, <b>track 4</b> | → | <b>Track 3</b> left-hand adjustment motor |
| Xenon bulb computer, 10-track black connector, <b>track 2</b> | → | <b>Track 4</b> left-hand adjustment motor |

If the continuities are OK, replace the left-hand adjustment motor.

Right-hand adjustment motor:

- |   |   |  |
|---|---|--|
| Xenon bulb computer, 10-track black connector, <b>track 7</b> | → | <b>Track 1</b> right-hand adjustment motor |
| Xenon bulb computer, 10-track black connector, <b>track 9</b> | → | <b>Track 2</b> right-hand adjustment motor |
| Xenon bulb computer, 10-track black connector, <b>track 6</b> | → | <b>Track 3</b> right-hand adjustment motor |
| Xenon bulb computer, 10-track black connector, <b>track 8</b> | → | <b>Track 4</b> right-hand adjustment motor |

If the continuities are OK, replace the right-hand adjustment motor.

**AFTER REPAIR**

Carry out a check using the diagnostic tool.  
Deal with any faults.

### Faults

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

The **present** or **stored** status of faults should be taken into consideration when the diagnostic tool is used after the + after ignition feed (without acting 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 in the Notes section are applied, the fault is present. Deal with the fault

If the fault is **not confirmed**, check:

- the electrical lines corresponding with the faulty part,
- the connectors for these lines (for oxidation, bent pins, etc.),
- the resistance of the component detected as faulty,
- the condition of the wires (melted or split insulation, wear).

### Check conformity

The aim of the conformity check is to check data that does not produce a fault on the diagnostic tool because the data is inconsistent. Therefore, this phase allows us to:

- carry out fault finding on faults that do not have a fault display, and which may correspond to a customer complaint.
- a 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 testing them.

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

### 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 treated by **customer complaints**.

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

Fault finding - Interpretation of statuses

Wipers - Wiping control

<b>ET027</b>	<u>WINDSCREEN WIPER PARK POSITION</u>
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<b>NOTES</b>	<b>There must be no present or stored faults.</b>
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<p>Check the condition and connection of the 5-track windscreen wiper motor connector (tabs broken, bent, oxidised). Repair if necessary.</p>	
<p>Check that the <b>earth</b> on <b>track 1</b> of the windscreen wiper motor connector is in perfect condition. Repair if necessary.</p>	
<p>Check for <b>+ 12 V</b> feed on <b>track 5</b> of the windscreen wiper motor connector. Replace the fuse and repair if necessary.</p>	
<p>Check the condition and connection of the 12-track Protection and Switching Unit BA connector (tabs broken, bent, oxidised). Repair if necessary.</p>	
<p>Check <b>the insulation, continuity and the absence of interference resistance</b> on the connections between the UCH 40-track connector and the windscreen wiper motor connector:</p> <p style="text-align: center;">             Protection and Switching Unit <b>track 2</b> connector <b>BA</b>      <math>\longrightarrow</math>      <b>track 2</b> of the windscreen wiper motor connector         </p> <p>Repair if necessary.</p>	
<p>Check the fitting and activate the supply to the windscreen wiper motor. Repair if necessary or replace the motor if it is faulty.</p>	
<p>If the fault is still present, contact the Techline.</p>	

<b>AFTER REPAIR</b>	Repeat the conformity check from the start.
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# ELECTRIC WINDOWS - SUNROOF

## Fault finding - Fault Finding Chart

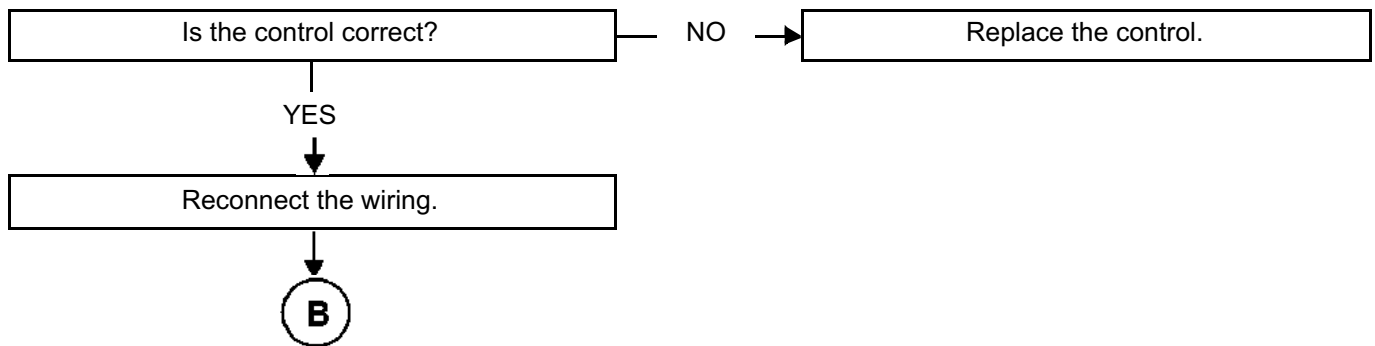
**87D**

ALP 1 CONTINUED 1	
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Disconnect the computer connector which receives signals from the sunroof opening control (connections **52J**, **52H**, **52G**, **52AG** and **52D** of component **1579**). Using the table opposite, check the conformity and operation of the control. Use the multimeter in the ohmmeter position.

Control position	Ohmmeter connected between connections:		
	<b>52D</b> and <b>52G</b>	<b>52D</b> and <b>52H</b>	<b>52D</b> and <b>52J</b>
Tilt position	infinite	100 Ω Max	100 Ω Max
Closed	infinite	infinite	100 Ω Max
Sliding position 1	100 Ω Max	infinite	100 Ω Max
Sliding position 2	100 Ω Max	infinite	infinite
Sliding position 3	100 Ω Max	100 Ω Max	infinite
Pressed	100 Ω Max	100 Ω Max	100 Ω Max



# AIR BAG AND PRETENSIONERS

## Fault finding - Summary table of faults

Tool fault	Associated DTC	Fault finding tool title
DF001	9080	Computer
DF002	9042	Computer supply voltage
DF010	9040	Fault warning light circuit
DF028	9041	Passenger air bag status light circuit
DF034	907E	Computer locked
DF039	9035	Driver's side sensor circuit
DF040	9036	Passenger's side sensor circuit
DF051	9035	Driver's side sensor configuration
DF052	9036	Passenger side sensor configuration
DF053	9031	Driver's seat position sensor
DF060	9050	Multiplex network
DF061	9002	Passenger seat belt pretensioner circuit
DF065	9031	Driver's front seat position sensor circuit
DF068	900C	Passenger's front side air bag circuit
DF069	900A	Passenger's side curtain air bag circuit
DF070	9009	Driver's side curtain air bag circuit.
DF071	9008	Driver's front air bag circuit 2
DF072	9007	Driver's front air bag circuit 1
DF074	9006	Passenger's front air bag circuit 2
DF075	9005	Passenger's front air bag circuit 1
DF077	900B	Driver's front side air bag circuit
DF080	9001	Driver's seat belt pretensioner circuit
DF091	9034	Air bag locking switch circuit
DF193	907C	Change of status of passenger air bag locking
DF194	907F	Computer to be replaced following impact
DF214	9034	Air bag locking switch configuration
DF232	9051	Driver's seat belt buckle sensor circuit
DF233	9052	Passenger's seat belt buckle sensor circuit
DF234	9053	Passenger presence detection sensor circuit
DF239	9017	Rear seat belt inertia reel circuit
DF243	9028	Front inertia reel circuit