

DUSTER

3 Chassis

38C

ANTI-LOCK BRAKING SYSTEM

ABS BOSCH 8.1

Vdiag No.: 04

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V1

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 method applicable to all computers with the following specifications:

Vehicle(s): **DUSTER**

Function concerned: **ABS**

Computer name: **ABS BOSCH 8.1**

Vdiag No.: **04**

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.

Type of diagnostic tools

- **CLIP**

Special tooling required

Special tooling required:
Diagnostic tool
Multimeter

3. REMINDERS

Procedure

To run fault finding on the vehicle computers, switch on the ignition. 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,
- verify that the forced + after ignition feed has been switched off by checking that the computer warning lights on the control panel have gone out.

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).

Consider the fault status, **present** or **stored** when the **diagnostic tool** is used after the + after ignition feed (without operating 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 connections that correspond to the fault,
- the connectors for this connection,
- the resistance of the faulty component,
- the condition of the wires.

Refer to paragraphs 4.1 Checking wiring and 4.2 Checking connectors

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.

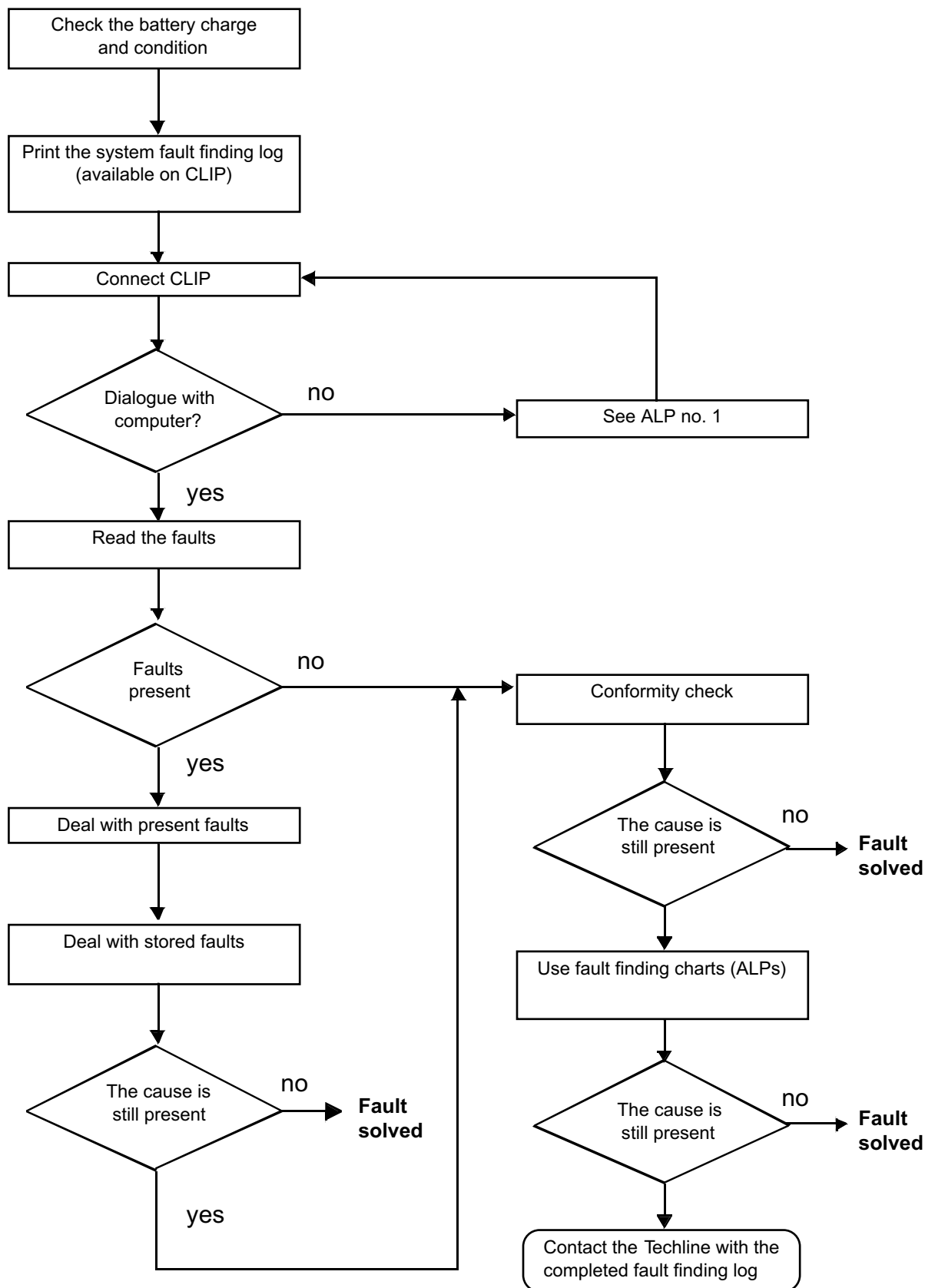
If a status is not behaving normally or a parameter is outside the permitted tolerance values, consult the corresponding fault finding page.

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 summary of the overall 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)

4.1 Wiring check

Fault finding problems

Disconnecting the connectors and/or manipulating the wiring may temporarily remove the cause of a fault.

Visual inspection

Look for damage under the bonnet and in the passenger compartment.

Carefully check the protectors, insulation, and routing of the wiring, as well as the mountings.

Physical inspection

While manipulating the wiring, use either the **diagnostic tool** to detect a change in status from "stored" to "present", or use the multimeter to view the status changes.

Make sure that the connectors are properly locked.

Apply light pressure to the connectors.

Twist the wiring harness.

Checking earth insulation

This check is carried out by measuring the voltage (multimeter in voltmeter mode) between the suspect connection and the **12 V** or **5 V**. The correct measured value is **0 V**.

Checking insulation against + 12 V or + 5 V

This check is carried out by measuring the voltage (multimeter in voltmeter mode) between the suspect connection and the earth. In the first instance, the earth may be taken on the chassis. The correct measured value should be **0 V**.

Continuity check

A continuity check is carried out by measuring the resistance (multimeter in ohmmeter mode), with the connectors disconnected at both ends. The expected result is **1 Ω \pm 1 Ω** for every connection. The line must be fully checked, and the intermediate connections are only included in the method if this saves time during the fault finding procedure. The continuity check on the multiplex lines must be carried out on both wires. The measured value should be **1 Ω \pm 1 Ω** .

Checking the supply

This check may be carried out using a test light (**21 W** or **5 W** depending on the maximum authorised load).

4.2 Checking the connectors

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.

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.) if 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 casing:

- Check that there is no mechanical damage (casing crushed, split, broken, etc.), in particular to the fragile components (lever, lock, sockets, 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 contact comes out of the connector when the wire is pulled gently.
- 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 the 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, consult **Technical Note 6015A, Repairing electrical wiring**.

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:

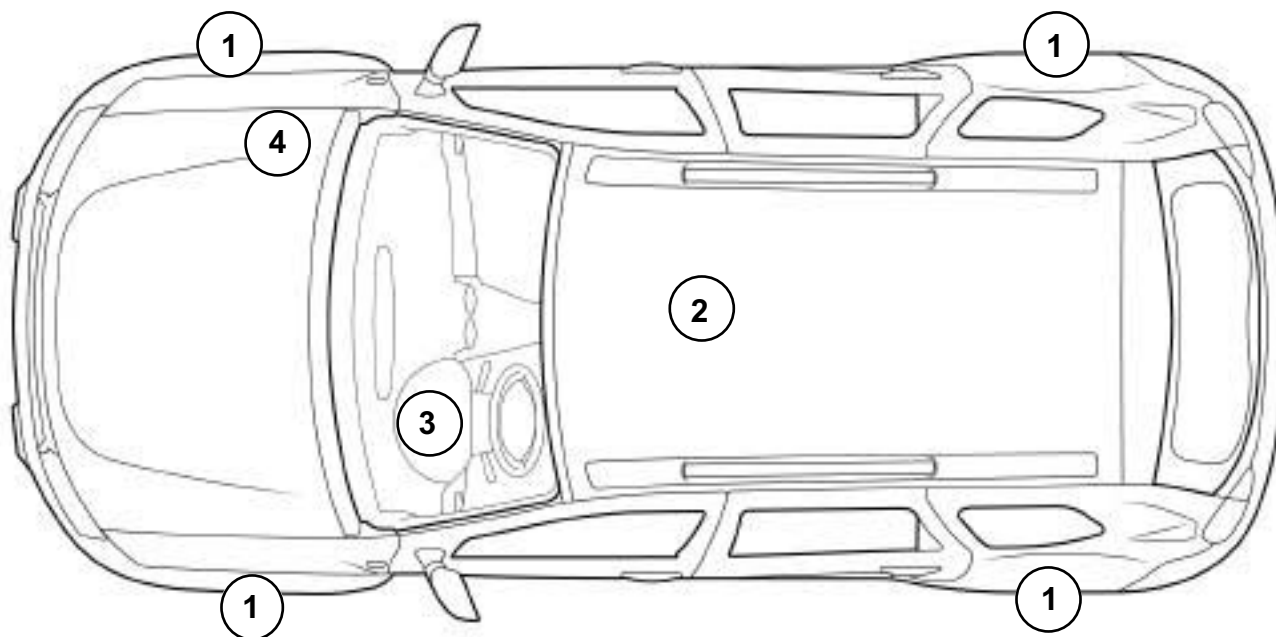
- when requesting technical assistance from Techline,
- for approval requests when replacing parts for which approval is mandatory,
- to be attached to monitored parts for which reimbursement is requested. The log is needed for warranty reimbursement, and enables better analysis of the parts removed.

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,
- use the proper tools.

It is forbidden to carry out a road test with the diagnostic tool in dialogue with the ECU because the ABS and Electronic Brake Distribution functions are deactivated. Braking pressure is identical on both vehicle axles (risk of a spin under heavy braking).



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The anti-lock braking system consists of:

- four wheel speed sensors (1),
- a longitudinal acceleration sensor (ABS 4X4) (2),
- a brake pedal sensor (3),
- a pump assembly (4) consisting of:
 - a hydraulic pump,
 - a pressure modulation unit (eight solenoid valves),
 - a computer,
 - a pressure sensor.

Wheel speed sensor:

Gives the speed of each of the vehicle's wheels.

Analysis of the speeds of the right-hand and left-hand wheel allows the turning direction of the vehicle to be deduced.

Brake lights switch:

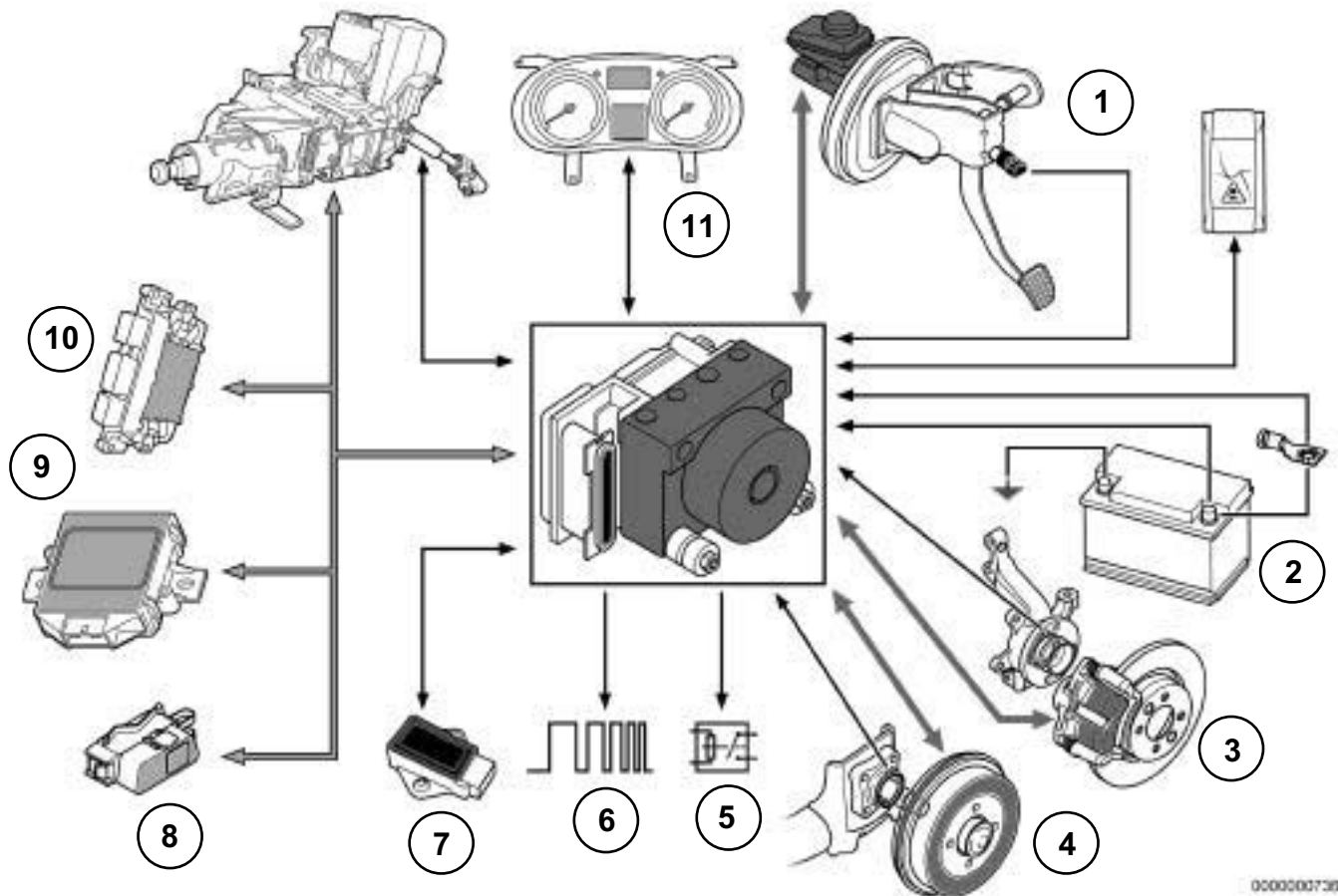
Visual indication of the brake pedal position.


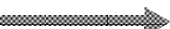

It indicates whether the driver is depressing the brake pedal.

Wire connection (vehicle speed):

The **ABS** computer supplies the vehicle speed to the other computers.

ABS EA111 (4X4) functional flowchart



1	Brake lights switch
2	Battery
3	Front wheel
4	Rear wheel
5	Engine fuse and relay box
6	Vehicle speed output
7	Wheel speed sensor
8	Diagnostic socket
9	Injection computer
10	ETC computer
11	Instrument panel
	Electric circuit
	CAN network
	Hydraulic circuit

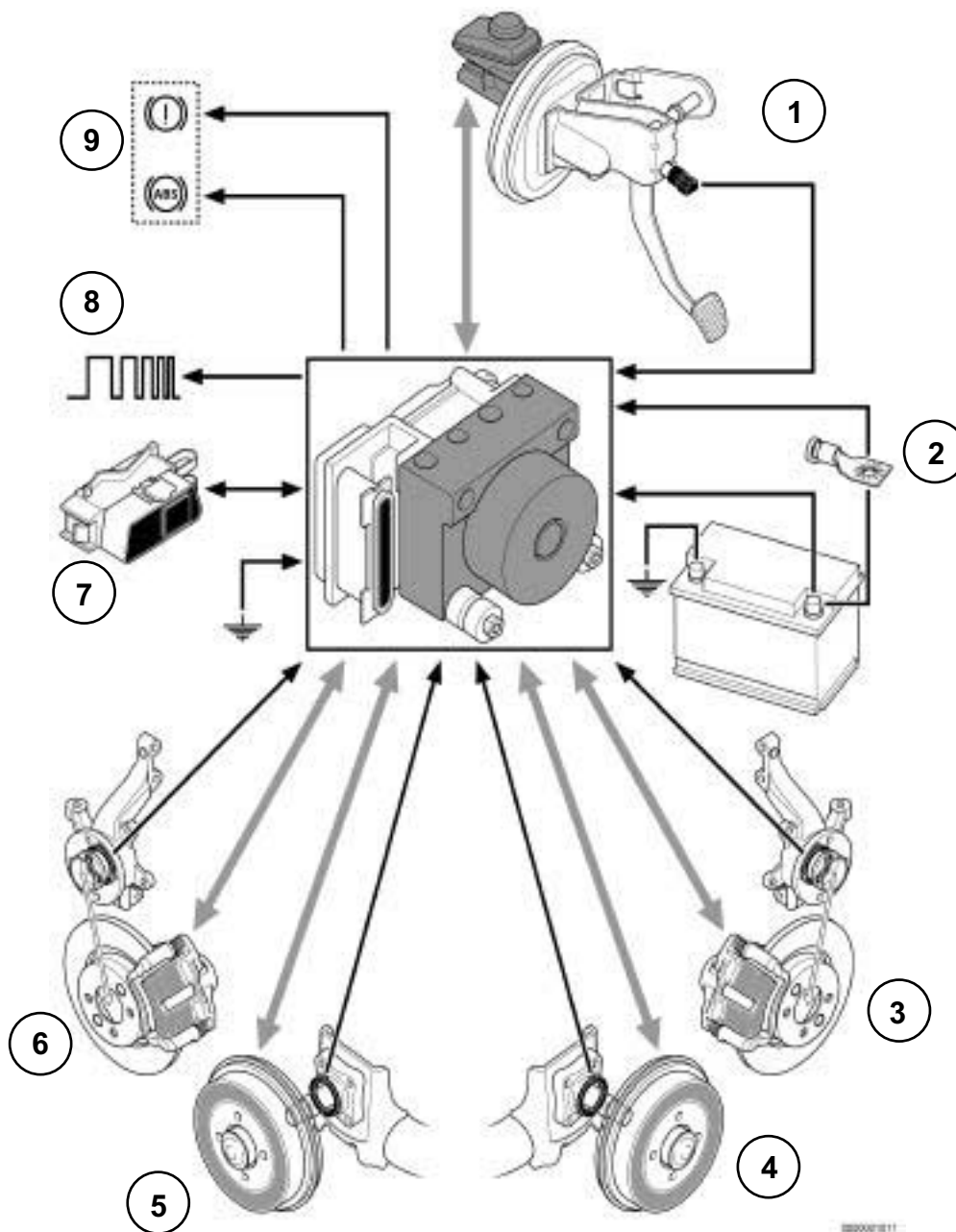
The ABS 4X4 system consists of:

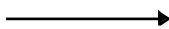

- An integrated unit containing a hydraulic unit and a **Bosch 8.1 EA111** integrated computer.
- Four active wheel speed sensors (Hall effect). At the front, the targets are magnetic with **48** pole pairs. At the rear, the targets are mechanical with **48** pole pairs.
- A longitudinal acceleration sensor.

Other external components are necessary to perform all the system functions:

- ETC torque distributor computer.
- Brake light switch: from the pedals system.
- The multiplex network, which allows communication with the injection computer and the ETC torque distributor computer.
- The instrument panel: to illuminate the warning lights and provide the vehicle speed signal.

ABS EA106 (4X2) functional flowchart



1	Brake lights switch
2	Battery
3	Front right-hand wheel
4	Rear right-hand wheel
5	Rear left-hand wheel
6	Front left-hand wheel
7	Diagnostic socket
8	Vehicle speed output
9	Instrument panel warning light (ABS and EBD)
	Electric circuit
	Hydraulic circuit

The ABS 4X2 system consists of:

- An integrated unit containing a hydraulic unit and a **Bosch 8.1 EA106** integrated computer.
- Four active wheel speed sensors (Hall effect). At the front, the targets are magnetic with **48** pole pairs. At the rear, the targets are mechanical with **48** pole pairs.

Other external components are necessary to perform all the system functions:

- Brake light switch: from the pedals system.
- The instrument panel: to illuminate the warning lights and provide the vehicle speed signal.

On this vehicle, the main functions of the ABS are as follows:

- electronic distribution of braking between front and rear by controlling skidding of the rear wheels,
- keeping the wheels from locking by controlling skidding of the four wheels.
- The ABS 4X4 also has the **MSR** function:
When the driver abruptly releases the accelerator pedal or the clutch pedal after changing down a gear, the engine braking tends to brake the drive wheels. In case of poor traction, the wheels can tend to slow down and slip, resulting in a loss of vehicle stability.
The **MSR** requests the engine to increase its torque to prevent the drive wheels from locking.

The **ABS** prevents the wheels from locking when braking. This function allows the vehicle to be steered under braking and ensures vehicle stability under braking.

EBD (electronic braking distribution):

The electronic braking distribution unit optimises the brakeforce distribution between the front and rear axles. This function ensures vehicle stability under braking.

Fault finding warning lights programming

Instrument panel warning light		Meaning
-	ABS	ABS function inoperative.
Brake faults	ABS and STOP	Electronic braking regulation and ABS function not working
Brake faults flashing at 2 Hz	ABS flashing at 2 Hz	ABS computer is in fault finding mode.
-	ABS flashing at 8 Hz	Tachometer index or vehicle configuration not programmed.

SETTINGS

VP001: Enter VIN.

This command permits manual entry of the vehicle's VIN into the computer.

Use this command each time the computer is replaced.

The VIN number (VF...) can be found on the manufacturer's plate on the door pillar and on the body panel under the bonnet.

Programming procedure:

- connect the **diagnostic tool**,
- refer to the **BOSCH 8.1 ABS** fault finding,
- select parameter **VP001**,
- enter the VIN,
- clear the computer memory using command **RZ001 Fault memory**,
- exit fault finding mode,
- switch off the ignition,
- wait for the end of powerlatch,
- on the identification screen, using **ID010 V.I.N. code**, check that the code entered has been correctly recognised.

VP004: Vehicle parameters.

This command is used to configure the vehicle version (4x4, 4x2).

Using **PR063 Vehicle parameters**, check that the parameters have been correctly recognised.

VP006: Enter last APV* operation date.

Whenever the ABS system is worked on in the shop, the date must be entered.

Select command VP006 on the diagnostic tool.

Enter the service date using the **diagnostic tool** keypad.

Using **ID020 Read last After-Sales operation date**, check that the date has been entered correctly.

VP007: Tachometric index.

This command is used to program the computer memory with the index required to calculate vehicle speed from the speed at which the tyres fitted on the vehicle turn.

Command VP007 is only used to stop the ABS warning light flashing after the computer has been replaced.

Using **PR030 Tachometric index**, check that the index has been entered correctly.

IMPORTANT:

The vehicle speed information is not delivered to the other computers by the ABS computer.

The vehicle speed signal is delivered by a speed sensor located on the gearbox.

APV*: After-Sales

Replacing the computer

When replacing the computer, apply the following procedure:

- Switch off the ignition,
- Disconnect the battery,
- Replace the computer,
- Reconnect the battery,
- Count the number of teeth on the ABS target using command **SC001 Check target teeth**.
- Configure the vehicle parameters using command **VP004 Vehicle parameters**:
 - Use **PR063 Vehicle parameters** to check that the ABS version has been stored correctly,
 - Enter the VIN number using command **VP001 Write VIN**,
 - Configure the tachometric index using command **VP007 Tachometric index**,
 - Perform a road test followed by a fault reading to confirm that the system is operating correctly.

Tool fault	Associated DTC	Diagnostic tool title
DF001	50CC	Computer supply
DF006	501F	Front left-hand wheel speed sensor circuit
DF007	503F	Rear left-hand wheel speed sensor circuit
DF008	501F	Front left-hand wheel speed sensor signal
DF009	503F	Rear left-hand wheel speed sensor signal
DF011	50 CB	Solenoid valve supply
DF017	5050	Computer
DF020	5154	Tachometric index programming
DF026	500F	Front right-hand wheel speed sensor circuit

Tool fault	Associated DTC	Diagnostic tool title
DF027	502F	Rear right-hand wheel speed sensor circuit
DF028	500F	Front right-hand wheel speed sensor signal
DF029	502F	Rear right-hand wheel speed sensor signal
DF055	5151	Vehicle parameter programming
DF063	5046	Wheel speed inconsistency
DF066	5076	No injection multiplex signal
DF090	5041	Front right-hand wheel target
DF091	5042	Front left-hand wheel target
DF092	5043	Rear right-hand wheel target
DF093	5044	Rear left-hand wheel target
DF120	5078	Injection multiplex signal consistency
DF152	5080	Multiplex network
DF219	5074	ABS multiplex signal consistency

Tool fault	Associated DTC	Diagnostic tool title
DF250	5072	Engine speed multiplex signal
DF251	5071	Effective average torque multiplex signals
DF252	5070	Signal: request multiplex feedback signal
DF253	5077	Calculated torque multiplex signal
DF254	5073	Resisting torque multiplex signal
DF263	5161	Longitudinal acceleration sensor signal
DF282	5161	Longitudinal acceleration sensor
DF300	50CA	Pump motor control circuit
DF331	5084	No piloted axle multiplex signal
DF332	5085	Invalid piloted axle multiplex signals
DF333	5075	Signal: accelerator pedal position multiplex

DF001 PRESENT OR STORED	<u>COMPUTER SUPPLY VOLTAGE</u> 1.DEF: Below minimum threshold 2.DEF: Above maximum threshold 3.DEF: Abnormal voltage
--	---

NOTES	Special notes: This fault is recorded if the vehicle speed is greater than 3.6 mph (6 km/h) . 1.DEF: The supply voltage is less than the minimum operating voltage (9.3 V < X < 9.9 V).
	Conditions for applying the fault finding procedure to stored faults: Apply the fault finding procedure if the fault is present or stored .
	Use the Wiring Diagrams Technical Note for DUSTER .

1.DEF 3.DEF	NOTES	None.
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Check the tightness and the condition of the battery terminals.
 Check the battery voltage and carry out the operations necessary to obtain a correct voltage (**10 V < battery voltage < 17 V**).
 Check the charge circuit.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
---------------------	--

DF001 CONTINUED 1

Check the tightening and condition of the ABS **earth** terminal. carry out repairs.

Check the **condition** and **connection** of the connectors of the ABS computer, component code **118**, of the engine fuse and relay box, component code **597**, and of the passenger compartment fuse box, component code **1016**. If the connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Check the condition of the ABS fuses, **F01 (50 A)**, **F02 (25 A)**, and **F15 (10 A)** as well as the quality of their electrical contacts. Replace the faulty components (see **MR 451 Mechanical, 81C, Fuses, Fuses: List and location of components**).

Check for **earth** on the ABS computer, component code **118** between the following connections:

- **MAH** of component **118**.

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

- **MAH** between component **118** and **earth**.

If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Check for **+12 V** on the ABS computer, component code **118** on the following connections:

- **BP88** of component **118**,
- **BP14** of component **118**,
- **AP5** of component **118**.

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

- **BP88** between components **597** and **118**,
- **BP14** between components **597** and **118**,
- **AP5** between components **1016** and **118**.

If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF001 CONTINUED 2	
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2.DEF	NOTES	None.
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Using the diagnostic tool, read the voltage seen by the computer for verification.
Check the battery charging circuit.
If the fault is still present, contact the Techline.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
---------------------	--

DF006 PRESENT OR STORED	<u>FRONT LEFT-HAND WHEEL SPEED SENSOR CIRCUIT</u>
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NOTES	Special notes: The fault is declared present during a road test at a vehicle speed > 6 mph (10 km/h). Command AC013 Wheel speed sensor supply test , must be used only once.
	Conditions for applying the fault finding procedure to stored faults: Apply the fault finding procedure if the fault is present or stored .
	Use the Wiring Diagrams Technical Note for DUSTER .

Check the connection and condition of the connections of the front left-hand wheel speed sensor, component code **153**.
 If the connector is faulty and if there is a repair procedure (see **Technical Note 6015A (Renault)** or **Technical Note 9804A (Dacia)**, **Electrical wiring repair**, **Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.
 Disconnect the sensor, use command **AC013** and check that voltage pulses of approximately **12 V** are detected by a multimeter at the terminals of the sensor connector on the computer side.
Are the pulses present?

AFTER REPAIR	Once the repair is finished, carry out a conformity check of the target to verify that all is correct.
---------------------	--

DF006
CONTINUED 1

YES

Swap the 2 sensors on the same axle and check if the fault follows the sensor.
If it follows the sensor, replace the sensor (see **MR 451, Mechanical, 38C, Anti-lock braking systems, Front wheel speed sensor: Removal - Refitting**).
If it does not follow the sensor:
Check the connection and condition of the connections of the ABS computer, component code **118**.
If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring. Check the **continuity** and **insulation**, and the **absence of interference resistance** on the following connections:
– **4E** between components **153** and **118**,
– **4C** between components **153** and **118**.
If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.
If the fault is still present, contact the Techline.

AFTER REPAIR

Once the repair is finished, carry out a conformity check of the target to verify that all is correct.

DF006
CONTINUED 2

NO

Check the connection and condition of the connections of the ABS computer, component code **118**.

If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

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

- **4E** between components **153** and **118**,
- **4C** between components **153** and **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Once the repair is finished, carry out a conformity check of the target to verify that all is correct.

DF007 PRESENT OR STORED	<u>REAR LEFT-HAND WHEEL SPEED SENSOR CIRCUIT</u>
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NOTES	Special notes: The fault is declared present during a road test at a vehicle speed > 6 mph (10 km/h). Command AC013 Wheel speed sensor supply test , must be used only once.
	Conditions for applying the fault finding procedure to stored faults: Apply the fault finding procedure if the fault is present or stored .
	Use the Wiring Diagrams Technical Note for DUSTER .

Check the connection and condition of the connections of the rear left-hand wheel speed sensor, component code **151**.
 If the connector is faulty and if there is a repair procedure (see **Technical Note 6015A (Renault)** or **Technical Note 9804A (Dacia)**, **Electrical wiring repair**, **Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.
 Disconnect the sensor, use command **AC013** and check that voltage pulses of approximately **12 V** are detected by a multimeter at the terminals of the sensor connector on the computer side.
Are the pulses present?

AFTER REPAIR	Once the repair is finished, carry out a conformity check of the target to verify that all is correct.
---------------------	--

DF007
CONTINUED 1

YES

Swap the 2 sensors on the same axle and check if the fault follows the sensor.
If it follows the sensor, replace the sensor (see **MR 451, Mechanical, 38C, Anti-lock braking systems, Rear wheel speed sensor: Removal - Refitting**).

If it does not follow the sensor:

Check the connection and condition of the connections of the ABS computer, component code **118**.

If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

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

- **4G** between components **151** and **118**,
- **4H** between components **151** and **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Once the repair is finished, carry out a conformity check of the target to verify that all is correct.

DF007
CONTINUED 2

NO

Check the connection and condition of the connections of the ABS computer, component code **118**.

If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

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

- **4G** between components **151** and **118**,
- **4H** between components **151** and **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Once the repair is finished, carry out a conformity check of the target to verify that all is correct.

<p>DF008 PRESENT OR STORED</p>	<p><u>FRONT LEFT-HAND WHEEL SPEED SENSOR SIGNAL</u></p>
<p>NOTES</p>	<p>None.</p>
<p>Run a conformity check of the magnetic target. If the target is not correct, ensure the conformity of it.</p>	
<p>Check that the 4 tyres conform to the type defined for this vehicle. Ensure the conformity of the incorrect tyres, then check the value of PR030 Tachometric index.</p>	
<p>Check the sensor mounting. If it is not correct, ensure the conformity of it.</p>	
<p>Visually inspect the condition of the connections and cable of the sensor (signs of oxidation, cable damage, etc.). If there is corrosion, replace the sensor and the wiring.</p>	
<p>Swap the 2 sensors on the same axle. Perform a road test of more than 30 seconds above 12 mph (20 km/h). Check if the fault follows the sensor. If the fault follows the sensor, replace the sensor (see MR 451, Mechanical, 38C, Anti-lock braking system, Front wheel speed sensor: Removal - Refitting).</p>	
<p>Visually inspect the condition of the computer connections (particularly the pins for the sensor) and the computer wiring (signs of oxidation, damage, etc.). Replace the faulty components.</p>	
<p>If the fault is still present, contact the Techline.</p>	

<p>AFTER REPAIR</p>	<p>Once the repair is finished, carry out a conformity check of the target to verify that all is correct.</p>
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DF009 PRESENT OR STORED	<u>REAR LEFT-HAND WHEEL SPEED SENSOR SIGNAL</u>
NOTES	None.
Run a conformity check of the magnetic target. If the target is not correct, ensure the conformity of it.	
Check that the 4 tyres conform to the type defined for this vehicle. Ensure the conformity of the incorrect tyres, then check the value of PR030 Tachometric index .	
Check the sensor mounting. If it is not correct, ensure the conformity of it.	
Visually inspect the condition of the connections and cable of the sensor (signs of oxidation, cable damage, etc.). If there is corrosion, replace the sensor and the wiring.	
Swap the 2 sensors on the same axle. Perform a road test for more than 30 seconds above 12 mph (20 km/h) . Check if the fault follows the sensor. If the fault follows the sensor, replace the sensor (see MR 451, Mechanical, 38C, Anti-lock braking system, Rear wheel speed sensor: Removal - Refitting).	
Visually inspect the condition of the computer connections (particularly the pins for the sensor) and the computer wiring (signs of oxidation, damage, etc.). Replace the faulty components.	
If the fault is still present, contact the Techline.	

AFTER REPAIR	Once the repair is finished, carry out a conformity check of the target to verify that all is correct.
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DF011 PRESENT OR STORED	<u>SOLENOID VALVE SUPPLY</u> DEF: Abnormal voltage
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NOTES	Use the Wiring Diagrams Technical Note for DUSTER .
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Check the tightness and the condition of the battery terminals.
Check the condition and connection of the connectors of the ABS computer, component code 118 and of the engine fuse and relay box, component code 597 . If the connectors are faulty and if there is a repair procedure (see Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair), repair the connector, otherwise replace the wiring.
Check the presence and condition of the supply fuses of the ABS computer, component code 118 : <ul style="list-style-type: none"> • F02 (25 A) on component 597. Replace the fuses if the checks are not correct.
Check for +12 V on the ABS computer, component code 118 on the following connection: <ul style="list-style-type: none"> • BP14 of component 118. Check the continuity, insulation and the absence of interference resistance of the following connection: BP14 between components 118 and 597 . If the connection or connections are faulty and there is a repair procedure (see Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair), repair the wiring, otherwise replace it.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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DF011 CONTINUED

Check the quality of the system earth (tightening, oxidation, etc.).

Check for **earth** on the ABS computer, component code **118** between the following connections:

- **MAH** of component **118**.

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

- **MAH** between component **118** and **earth**.

If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Control the solenoid valves from the diagnostic tool using the following commands: **AC003 Front left-hand wheel solenoid valves, AC004 Front right-hand wheel solenoid valves, AC005 Rear right-hand wheel solenoid valves, AC006 Rear left-hand wheel solenoid valves** (verification of hydraulic track assignments). If the test fails and/or if the computer exits fault finding mode, the solenoid valves are faulty or jammed, or the computer is faulty. Replace the computer (see **MR 451, Mechanical, 38C, Anti-lock braking system, Hydraulic brake unit: Removal - Refitting**).

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF017 PRESENT OR STORED	<u>COMPUTER</u> DEF: Supply fault or internal electronic fault
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NOTES	Special notes: The fault is present when the ignition is switched on.
	Conditions for applying the fault finding procedure to stored faults: Apply the fault finding procedure if the fault is present or stored .
	Use the Wiring Diagrams Technical Note for DUSTER .

Check the condition and position of ABS power fuses **F01 (50 A)** and **F02 (25 A)** in the engine compartment connection unit, component code **597** (see **MR 451, Mechanical, 81C, Fuses, Fuses: List and location of components**).

Check **the continuity** between fuses **F01** and **F02** and connections **BP14** and **BP88** of the computer connector, component code **118** (presence of **+ before ignition feed** on the connections).

Check that the battery terminals are in good condition and properly tightened, component code **107**.

Check the connections on the connector of the ABS computer, component code **118**.

If the connector is faulty and if there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Check **the earths** on connections **MAH** of component **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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DF017 CONTINUED

Clear the computer memory using command **RZ001 Fault memory**, exit fault finding and switch off the ignition. Carry out a new check using the **diagnostic tool**.

If the fault is still present, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**. Carry out a road test followed by another check with the **diagnostic tool**.

**DF020
PRESENT**

TACHOMETRIC INDEX PROGRAMMING

NOTES

None.

The **ABS BOSCH 8.1** computer with "tachometric function" must have an index value in order to calculate the vehicle speed from the speed at which the tyres turn.
Use command **VP007 Tachometric index** and check that it has been taken into account using parameter **PR030 Tachometric index**.

IMPORTANT:

The vehicle speed information is not delivered to the other computers by the ABS computer.

The vehicle speed signal is delivered by a speed sensor located on the gearbox, which informs the computers (instrument panel, engine management, etc.).

If the fault is still present, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF026 PRESENT OR STORED	<u>FRONT RIGHT-HAND WHEEL SPEED SENSOR CIRCUIT</u>
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NOTES	Special notes: The fault is declared present during a road test at a vehicle speed > 6 mph (10 km/h). Command AC013 Wheel speed sensor supply test , must be used only once.
	Conditions for applying the fault finding procedure to stored faults: Apply the fault finding procedure if the fault is present or stored .
	Use the Wiring Diagrams Technical Note for DUSTER .

Check the connection and the condition of the connections of the front right-hand wheel speed sensor, component code **152**. If the connector is faulty and if there is a repair procedure (see **Technical Note 6015A (Renault)** or **Technical Note 9804A (Dacia)**, **Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Disconnect the sensor, use command **AC013** and check that voltage pulses of approximately **12 V** are detected by a multimeter at the terminals of the sensor connector on the computer side.

Are the pulses present?

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
---------------------	--

DF026
CONTINUED 1

YES

Swap the 2 sensors on the same axle and check if the fault follows the sensor.
If it follows the sensor, replace the sensor (see **MR 451, Mechanical, 38C, Anti-lock braking systems, Front wheel speed sensor: Removal - Refitting**).

If it does not follow the sensor:

Check the connection and condition of the connections of the computer, component code **118**.

If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

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

- **4M** between components **152** and **118**,
- **4N** between components **152** et **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF026
CONTINUED 2

NO

Check the connection and condition of the connections of the computer, component code **118**.

If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

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

- **4M** between components **152** and **118**,
- **4N** between components **152** et **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF027 PRESENT OR STORED	<u>REAR RIGHT-HAND WHEEL SPEED SENSOR CIRCUIT</u>
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NOTES	Special notes: The fault is declared present during a road test at a vehicle speed > 6 mph (10 km/h). Command AC013 Wheel speed sensor supply test , must be used only once.
	Conditions for applying the fault finding procedure to stored faults: Apply the fault finding procedure if the fault is present or stored .
	Use the Wiring Diagrams Technical Note for DUSTER .

Check the connection and the condition of the connections of the rear right-hand wheel speed sensor, component code **150**.

If the connector is faulty and if there is a repair procedure (see **Technical Note 6015A (Renault)** or **Technical Note 9804A (Dacia)**, **Electrical wiring repair**, **Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Disconnect the sensor, use command **AC013** and check that voltage pulses of approximately **12 V** are detected by a multimeter at the terminals of the sensor connector on the computer side.

Are the pulses present?

AFTER REPAIR	Once the repair is finished, carry out a conformity check of the target to verify that all is correct.
---------------------	--

DF027
CONTINUED 1

YES

Swap the 2 sensors on the same axle and check if the fault follows the sensor.
If it follows the sensor, replace the sensor (see **MR 451, Mechanical, 38C, Anti-lock braking systems, Rear wheel speed sensor: Removal - Refitting**).

If it does not follow the sensor:

Check the connection and condition of the connections of the computer, component code **118**.

If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

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

- **4S** between components **150** and **118**,
- **4T** between components **150** and **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Once the repair is finished, carry out a conformity check of the target to verify that all is correct.

DF027
CONTINUED 2

NO

Check the connection and condition of the connections of the computer, component code **118**.

If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

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

- **4S** between components **150** and **118**,
- **4T** between components **150** and **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Once the repair is finished, carry out a conformity check of the target to verify that all is correct.

DF028 PRESENT OR STORED	<u>FRONT RIGHT-HAND WHEEL SPEED SENSOR SIGNAL</u>
NOTES	None.
Run a conformity check of the magnetic target. If the target is not correct, ensure the conformity of it.	
Check that the 4 tyres conform to the type defined for this vehicle. Ensure the conformity of the incorrect tyres, then check the value of PR030 Tachometric index .	
Check the sensor mounting. If it is not correct, ensure the conformity of it.	
Visually inspect the condition of the connections and cable of the sensor (signs of oxidation, cable damage, etc.). If there is corrosion, replace the sensor and the wiring.	
Swap the 2 sensors on the same axle. Perform a road test for more than 30 seconds above 12 mph (20 km/h) . Check if the fault follows the sensor. If the fault follows the sensor, replace the sensor (see MR 451, Mechanical, 38C, Anti-lock braking system, Front wheel speed sensor: Removal - Refitting).	
Visually inspect the condition of the computer connections (particularly the pins for the sensor) and the computer wiring (signs of oxidation, damage, etc.). Replace the faulty components.	
If the fault is still present, contact the Techline.	

AFTER REPAIR	Once the repair is finished, carry out a conformity check of the target to verify that all is correct.
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<p>DF029 PRESENT OR STORED</p>	<p><u>REAR RIGHT-HAND WHEEL SPEED SENSOR SIGNAL</u></p>
<p>NOTES</p>	<p>None.</p>
<p>Run a conformity check of the magnetic target. If the target is not correct, ensure the conformity of it.</p>	
<p>Check that the 4 tyres conform to the type defined for this vehicle. Ensure the conformity of the incorrect tyres, then check the value of PR030 Tachometric index.</p>	
<p>Check the sensor mounting. If it is not correct, ensure the conformity of it.</p>	
<p>Visually inspect the condition of the connections and cable of the sensor (signs of oxidation, cable damage, etc.). If there is corrosion, replace the sensor and the wiring.</p>	
<p>Swap the 2 sensors on the same axle. Perform a road test for more than 30 seconds above 12 mph (20 km/h). Check if the fault follows the sensor. If the fault follows the sensor, replace the sensor (see MR 451, Mechanical, 38C, Anti-lock braking system, Rear wheel speed sensor: Removal - Refitting).</p>	
<p>Visually inspect the condition of the computer connections (particularly the pins for the sensor) and the computer wiring (signs of oxidation, damage, etc.). Replace the faulty components.</p>	
<p>If the fault is still present, contact the Techline.</p>	

<p>AFTER REPAIR</p>	<p>Once the repair is finished, carry out a conformity check of the target to verify that all is correct.</p>
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**DF055
PRESENT
OR
STORED**

VEHICLE PARAMETER PROGRAMMING

DEF: Configuration absent or incorrect

NOTES

None.

Program the correct vehicle version with the diagnostic tool using command **VP004 Vehicle parameters**.
Exit fault finding mode, switch the ignition off and on.
Check that the programming is correctly entered in the computer using **PR063 Vehicle parameters**.
If the fault is still present, replace the hydraulic unit (see **MR 451 Mechanical, 38C, Anti-lock braking system, Hydraulic brake unit: Removal - Refitting**).

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF063 PRESENT OR STORED	<u>WHEEL SPEED CONSISTENCY</u> DEF: Inconsistency
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NOTES	Priorities when dealing with a number of faults: Deal with faults DF006 Front left-hand wheel speed sensor circuit , DF007 Rear left-hand wheel speed sensor circuit , DF026 Front right-hand wheel speed sensor circuit and DF027 Rear right-hand wheel speed sensor circuit first even if they are stored.
	Conditions for applying the fault finding procedure to stored faults: The fault is declared present during a road test.

Check the condition of the braking system (condition of linings, sealing, grating, bleed, etc.).
 Check the condition of the axles and the conformity and good condition of the tyre mountings.
 Check how well the wheel speed sensors are fitted (correct clipping).
 Repair if necessary.

Check the target conformity (condition, number of teeth = **48**) for every wheel.
 If the counts are not correct, apply the target fault finding procedure for the wheel(s) concerned (**DF090 Front right-hand wheel target**, **DF091 Front left-hand wheel target**, **DF092 Rear right-hand wheel target**, **DF093 Rear left-hand wheel target**).

If the fault is still present, contact the Techline.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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DF066 PRESENT OR STORED	<u>INJECTION MULTIPLEX SIGNAL ABSENT</u>
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NOTES	Special notes: The injection computer does not always store these transient failures as quickly as the ABS computer. If no fault is stored in the injection computer, start the engine; if there is no fault present, contact the Techline.
	Conditions for applying the fault finding procedure to stored faults: The fault is declared present when the engine is started.
	Priorities when dealing with a number of faults: First deal with fault DF152 Multiplex network .

Use fault finding to control the engine torque in order to check that the exchanges between injection and ABS are correct.
Run a multiplex network test (see 88B, Multiplex).
If the fault is still present, contact the Techline.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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DF090 DF091 DF092 DF093 PRESENT OR STORED	<u>FRONT RIGHT-HAND WHEEL TARGET</u> <u>FRONT LEFT-HAND WHEEL TARGET</u> <u>REAR RIGHT-HAND WHEEL TARGET</u> <u>REAR LEFT-HAND WHEEL TARGET.</u>
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NOTES	Conditions for applying the fault finding procedure to stored faults: The fault is declared present during a road test.
	Priorities when dealing with a number of faults: Deal with faults DF006 Front left-hand wheel speed sensor circuit , DF007 Rear left-hand wheel speed sensor circuit , DF026 Front right-hand wheel speed sensor circuit , and DF027 Rear right-hand wheel speed sensor circuit first.

Run a conformity check of the magnetic target. Clean the target. Ensure the conformity if necessary.
Check the wheel speed sensor mounting. Ensure the conformity of the mounting. Check the condition of the magnetic target. Carry out repairs.
Run a conformity check of the magnetic target. If the target is not correct: <ul style="list-style-type: none"> – Swap the wheels (only if the fault is on the rear axle). – Check the target conformity on the 2 wheels. – If the check is not correct on the wheel receiving the suspect target, replace the defective wheel mounting. – In the other cases, contact the Techline
If the fault is still present, contact the Techline.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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**DF120
PRESENT
OR
STORED**

INJECTION MULTIPLEX SIGNALS CONSISTENCY.

NOTES

Special notes:

The injection computer emitted too short a signal.

Use fault finding to control the engine torque in order to check that the exchanges between injection and ABS are correct.

Run a multiplex network test (see **88B, Multiplex**).

If the fault is still present, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF152
PRESENT
OR
STORED**

MULTIPLEX NETWORK

DEF: Carry out the multiplex network fault finding procedure.

NOTES

Special notes:

There is a fault on the multiplex network.

Run a multiplex network test (see **88B, Multiplex**).

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF219 DF250 DF251 DF252 DF253 DF254 PRESENT OR STORED	<u>ABS MULTIPLEX SIGNAL CONSISTENCY</u> <u>ENGINE SPEED MULTIPLEX SIGNAL</u> <u>EFFECTIVE AVERAGE TORQUE MULTIPLEX SIGNALS</u> <u>TORQUE REQUEST MULTIPLEX FEEDBACK SIGNAL</u> <u>CALCULATED TORQUE MULTIPLEX SIGNAL</u> <u>RESISTING TORQUE MULTIPLEX SIGNAL</u>
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NOTES	Special notes: Although it is stored in the computer, the ABS system is not faulty. The ABS is deactivated due to unusable information from the injection system. Perform fault finding on the injection system using the diagnostic tool.
	Conditions for applying the fault finding procedure to stored faults: The fault is declared present when the engine is started.
	Priorities when dealing with a number of faults: First deal with fault DF152 Multiplex network .

Use fault finding to control the engine torque in order to check that the exchanges between injection and ABS are correct.

Run a multiplex network test (see **88B, Multiplex**).

If the fault is still present, contact the Techline.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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DF263 PRESENT OR STORED	<u>LONGITUDINAL ACCELERATION SENSOR SIGNAL</u> 1.DEF: Inconsistency
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NOTES	Special notes: The longitudinal acceleration signal remains constant, which is not consistent with the longitudinal acceleration recalculated from the wheel speeds.
	Use the Wiring Diagrams Technical Note for DUSTER .

Check the position and mounting of the longitudinal accelerometer, component code 1380 .
Check the condition and connection of the connectors of the longitudinal accelerometer, component code 1380 and of the ABS computer, component code 118 . If the connectors are faulty and if there is a repair procedure (see Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair), repair the connector, otherwise replace the wiring.
Check for +12 V on the longitudinal accelerometer, component code 1380 on the following connection: • 44AD of component 1380 . Check the continuity, insulation and the absence of interference resistance of the following connection: • 44AD between components 1380 and 118 . If the connection or connections are faulty and there is a repair procedure (see Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair), repair the wiring, otherwise replace it.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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DF263 CONTINUED

Check for **earth** on the longitudinal accelerometer, component code **1380** between the following connection:

- **44AE** of component **1380**.

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

- **44AE** between component **1380** and **118**.

If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

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

- **44AF** between components **1380** and **118**.

If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the fault is still present, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF282 PRESENT OR STORED	<u>LONGITUDINAL ACCELERATION SENSOR</u> 1.DEF: Supply fault or internal electrical fault
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NOTES	None
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If the fault is stored, clear the fault. If it reappears, replace the sensor.
If the fault is still present, replace the sensor.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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**DF300
PRESENT
OR
STORED**

PUMP MOTOR CONTROL CIRCUIT

DEF: Abnormal voltage

NOTES

Use the **Wiring Diagrams Technical Note for DUSTER**.

Check the tightness and the condition of the battery terminals.

Check the presence and condition of the supply fuses of the ABS computer, component code **118**:

- **F01 (50 A)** on component **597**.

Replace the fuses if the checks are not correct.

Check the **condition** and **connection** of the connectors of the ABS computer, component code **118** and of the engine fuse and relay box, component code **597**.

If the connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF300 CONTINUED

Check for **+12 V** on the ABS computer, component code **118** on the following connection:

- **BP88** of component **118**.

Check the **continuity, insulation** and the **absence of interference resistance** of the following connection: **BP88** between components **118** and **597**.

If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Check the quality of the system earth (tightening, oxidation, etc.).

Check for **earth** on the ABS computer, component code **118** between the following connections:

- **MAH** of component **118**.

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

- **MAH** between component **118** and **earth**.

If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Control the solenoid valves from the diagnostic tool using the following commands: **AC003 Front left-hand wheel solenoid valves, AC004 Front right-hand wheel solenoid valves, AC005 Rear right-hand wheel solenoid valves, AC006 Rear left-hand wheel solenoid valves** (verification of hydraulic track assignments). If the test fails and/or if the computer exits fault finding mode, the solenoid valves are faulty or jammed, or the computer is faulty. Replace the computer (see **MR 451, Mechanical, 38C, Anti-lock braking system, Hydraulic brake unit: Removal - Refitting**).

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

DF331 DF332 PRESENT OR STORED	<u>NO PILOTED AXLE MULTIPLEX SIGNAL</u> <u>INVALID PILOTED AXLE MULTIPLEX SIGNALS</u>
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NOTES	Conditions for applying the fault finding procedure to stored faults: The fault is declared present when the engine is started.
	Priorities when dealing with a number of faults: First deal with fault DF152 Multiplex network .

Use fault finding to control the engine torque in order to check that the exchanges between injection and ABS are correct.

Run a multiplex network test (see **88B, Multiplex**).

If the fault is still present, contact the Techline.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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DF333 PRESENT OR STORED	<u>ACCELERATOR PEDAL POSITION MULTIPLEX SIGNAL</u>
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NOTES	Special notes: Although it is stored in the computer, the ABS system is not faulty. The ABS is deactivated due to unusable information from the injection system. Perform fault finding on the injection system using the diagnostic tool.
	Conditions for applying the fault finding procedure to stored faults: The fault is declared present when the engine is started.
	Priorities when dealing with a number of faults: First deal with fault DF152 Multiplex network .

Use fault finding to control the engine torque in order to check that the exchanges between injection and ABS are correct.

Run a multiplex network test (see **88B, Multiplex**).

If the fault is still present, contact the Techline.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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NOTESOnly carry out a conformity check after a **complete check** with the **diagnostic tool**.**SUB-FUNCTION: MAIN SCREEN**

Function	Parameter or Status Check or Action	Display and notes	Fault finding
Vehicle speed	PR038: Vehicle speed	Ensure that the vehicle speed is consistent	In the event of a fault, apply the interpretation of fault DF063 Wheel speed consistency
Brake pedal not depressed detection	ET017: Brake pedal	Released status, brake pedal not depressed Depressed status, brake pedal depressed	If the event of a fault, apply the interpretation of status ET017
Wheel speed	PR002: Front left-hand wheel speed	Ensure that the wheel speed is consistent	In the event of a fault, refer to the interpretation of fault DF006 Front left-hand wheel speed sensor circuit
	PR001: Front right-hand wheel speed	Ensure that the wheel speed is consistent	In the event of a fault, refer to the interpretation of fault DF026 Front right-hand wheel speed sensor circuit
	PR004: Rear left-hand wheel speed	Ensure that the wheel speed is consistent	In the event of a fault, refer to the interpretation of fault DF007 Rear left-hand wheel speed sensor circuit
	PR003: Rear right-hand wheel speed	Ensure that the wheel speed is consistent	In the event of a fault, refer to the interpretation of fault DF027 Rear right-hand wheel speed sensor circuit

NOTES

Only carry out a conformity check after a **complete check** with the **diagnostic tool**.

SUB-FUNCTION: MAIN SCREEN (CONTINUED)

Function	Parameter or Status Check or Action	Display and notes	Fault finding
Computer supply	PR005: Computer feed voltage	Ensure that the battery voltage is correct (check the charge circuit if necessary)	In the event of a fault, apply the interpretation of fault DF001 Computer supply .
Tachometric index	PR030: Tachometric index	Make sure that the tachometric index matches the tyres fitted to the vehicle.	In the event of a fault, apply the interpretation of command VP007 Tachometric index .
Vehicle parameters	PR063: Vehicle parameters	Check that the parameters are consistent with the vehicle on which fault finding is being run.	In the event of a fault, apply the interpretation of command VP004 Vehicle parameters .

NOTES

Only carry out this conformity check after a complete check using the **diagnostic tool**.
The values shown in this conformity check are given as a guide.
Test conditions: **Engine stopped, ignition on.**

SUB-FUNCTION: BRAKE REGULATION

Function	Parameter or Status Check or Action	Display and notes	Fault finding
Brake pedal not depressed detection	ET017: Brake pedal	Released status confirmed, brake pedal not depressed Depressed status, brake pedal depressed	If the event of a fault, apply the interpretation of status ET017 .
Wheel speed	PR001: Front right- hand wheel speed	Ensure that the wheel speed is consistent	In the event of a fault, refer to the interpretation of fault DF026 Front right-hand wheel speed sensor circuit.
	PR002: Front left-hand wheel speed	Ensure that the wheel speed is consistent	In the event of a fault, refer to the interpretation of fault DF006 Front left-hand wheel speed sensor circuit.
	PR003: Rear right- hand wheel speed	Ensure that the wheel speed is consistent	In the event of a fault, refer to the interpretation of fault DF027 Rear right-hand wheel speed sensor circuit.
	PR004: Rear left-hand wheel speed	Ensure that the wheel speed is consistent	In the event of a fault, refer to the interpretation of fault DF007 Rear left-hand wheel speed sensor circuit.

NOTES

Only carry out this conformity check after a complete check using the **diagnostic tool**.
The values shown in this conformity check are given as a guide.
Test conditions: **Engine stopped, ignition on.**

SUB-FUNCTION: BRAKE REGULATION (CONTINUED 1)

Function	Parameter or Status Check or Action	Display and notes	Fault finding
Computer supply	PR005: Computer feed voltage	Ensure that the battery voltage is correct (check the charge circuit if necessary)	In the event of a fault , apply the interpretation of fault DF001 Computer supply .
Vehicle speed	PR038: Vehicle speed	Ensure that the vehicle speed is consistent	In the event of a fault , apply the interpretation of fault DF063 Wheel speed consistency .
Wheel solenoid valves	AC003: Front left-hand wheel solenoid valves	This command is used to test the front left-hand wheel solenoid valve	In the event of a fault , apply the interpretation of command AC003 .
	AC004: Front right-hand wheel solenoid valves	This command is used to test the front right-hand wheel solenoid valve	In the event of a fault , apply the interpretation of command AC004 .
	AC005: Rear left-hand wheel solenoid valves	This command is used to test the rear left-hand wheel solenoid valve	In the event of a fault , apply the interpretation of command AC005 .
	AC006: Rear right-hand wheel solenoid valves	This command is used to test the rear right-hand wheel solenoid valve	In the event of a fault , apply the interpretation of command AC006 .

NOTES

Only carry out this conformity check after a complete check using the **diagnostic tool**.
The values shown in this conformity check are given as a guide.
Test conditions: **Engine stopped, ignition on.**

SUB-FUNCTION: BRAKE REGULATION (CONTINUED 2)

Function	Parameter or Status Check or Action	Display and notes	Fault finding
Speed sensor supply	AC013: Wheel speed sensor supply test	This command is used to check that voltage pulses of approximately 12 V are detected on the faulty sensor	In the event of a fault , apply the interpretation of command AC013 .
Acceleration	PR007: Longitudinal acceleration	Check that the longitudinal acceleration is consistent.	In the event of a fault , apply the interpretation of DF282 Longitudinal acceleration sensor .

Tool status	Diagnostic tool title
ET017	Brake pedal

ET017	<u>BRAKE PEDAL</u>
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NOTES	Special notes: Carry out the checks only if the depressed and released statuses are not consistent with the pedal position.
	Use the Wiring Diagrams Technical Note for DUSTER .

Released STATUS Brake pedal depressed.

If the brake lights are working:

- Check the **condition** and **connection** of the connectors of the brake light switch, component code **160** and of the ABS computer, component code **118**.

If the connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

- Check and ensure **the continuity** of connection **65A** between the connector of the brake light switch, component code **160** and the connector of the ABS computer, component code **118**.

If the connection is faulty and if there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If the brake lights are not working:

- Check the condition and fitting of the brake light switch and fuse **F3 (10A)** of the brake lights.
- Remove and test the operation of the brake light switch:

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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ET017 CONTINUED 1

	Continuity between the following connections:	Insulation between the following connections:
Switch depressed (Brake pedal released)	5A and AP1	65A and AP1
Switch released (Brake pedal depressed)	65A and AP1	5A and AP1

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault)** or **Technical Note 9804A (Dacia)**, **Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

- Replace the switch if necessary.
- Check and ensure the presence of **+ after ignition feed** on connection **AP1** on the brake light switch connector, component code **160**.

If the connection is faulty and if there is a repair procedure (see **Technical Note 6015A (Renault)** or **Technical Note 9804A (Dacia)**, **Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ET017 CONTINUED 2

Depressed STATUS: Brake pedal released.

Check the **condition** and **connection** of the connectors of the brake light switch, component code **160** and of the ABS computer, component code **118**.

If the connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

- Check the condition and fitting of the brake light switch and fuse **F3 (10A)** of the brake lights.
- Remove and test the operation of the brake light switch:

	Continuity between the following connections:	Insulation between the following connections:
Switch depressed (Brake pedal released)	5A and AP1	65A and AP1
Switch released (Brake pedal depressed)	65A and AP1	5A and AP1

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Check and ensure **the insulation to +12 V** of connection **65A** between the connector of the brake light switch, component code **160** and the connector of the ABS computer, component code **118**.

If the fault is still present, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

Tool Parameter	Diagnostic tool title	Comments
PR001	Front right-hand wheel speed	These parameters indicate the speed in mph (km/h) of each wheel on the vehicle.
PR002	Front left-hand wheel speed	
PR003	Rear right-hand wheel speed	
PR004	Rear left-hand wheel speed	
PR005	Computer feed voltage	This parameter indicates the computer supply voltage in volts .
PR030	Tachometric index	This parameter specifies the tachometric index entered in the computer for the tyres fitted to the vehicle.
PR038	Vehicle speed	This parameter indicates the vehicle speed in mph (km/h) .
PR063	Vehicle parameters	This parameter shows whether the configuration (VP004 Vehicle parameters) matches the vehicle undergoing fault finding
PR007	Longitudinal acceleration	This parameter indicates the vehicle's longitudinal acceleration. It should be 0 when the vehicle is stationary.

Tool command	Diagnostic tool title	Comments
RZ001	Fault memory	This command is used to clear the faults stored in the computer.
AC003	Front left-hand wheel solenoid valves	See interpretation of command AC003 .
AC004	Front right-hand wheel solenoid valves	See interpretation of command AC004 .
AC005	Rear left-hand wheel solenoid valves	See interpretation of command AC005 .
AC006	Rear right-hand wheel solenoid valves	See interpretation of command AC006 .
AC013	Wheel speed sensor supply test	See interpretation of command AC013 .
AC016	Pump motor test	See interpretation of command AC016 .

Tool command	Diagnostic tool title	Comments
SC001	Check target teeth	This command tests the condition of the teeth on each wheel. Select the command SC001 and follow the instructions. The test result must equal 48 .
SC006	Bleed the hydraulic unit and brake circuits.	This command must be used only in the event of abnormal lengthening of brake pedal travel during a road test with ABS regulation (the vehicle must have already been bled using the conventional procedure). Select command SC006 and follow the instructions given by the diagnostic tool .

AC003 AC004 AC005 AC006	<u>FRONT LEFT-HAND WHEEL SOLENOID VALVES</u> <u>FRONT RIGHT-HAND WHEEL SOLENOID VALVES</u> <u>REAR LEFT-HAND WHEEL SOLENOID VALVES</u> <u>REAR RIGHT-HAND WHEEL SOLENOID VALVES</u>
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NOTES	Conditions of use of the command: Ignition on, engine stopped and vehicle speed zero.
	Before using the commands, check that the battery is fully charged.

These commands test the solenoid valves on each wheel.

Controlling the wheel solenoid valves to check the hydraulic system.

Lift the vehicle in order to be able to check that the wheels turn 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 the locking/unlocking cycles.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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AC013	<u>WHEEL SPEED SENSOR SUPPLY TEST</u>
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NOTES	Conditions of use of the command: Ignition on, engine stopped and vehicle speed zero.
	Before using the command, check that the battery is fully charged. You must use command AC013 once only.

This command is used to check that voltage pulses of approximately **12 V** are detected on the faulty sensor by a **multimeter** on the connector terminals on the computer side, component codes **150**, **151**, **152**, and **153**. Select command **AC013**.

Note:
To restart an **AC013 command**, restart then stop the vehicle engine and ensure that the battery is properly charged.

AFTER REPAIR	Clear the computer memory using command RZ001 Fault memory . Carry out a road test followed by another check with the diagnostic tool .
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AC016

PUMP MOTOR TEST

NOTES

Conditions of use of the command:

Ignition on, engine stopped and vehicle speed zero.

Before using the command, check that the battery is fully charged.

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

Select the command **AC016**.

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

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

SC001

CHECK THE TARGET TEETH

NOTES

Conditions of use of the command:

Ignition on, engine stopped and vehicle speed zero.

Before using the command, check that the battery is fully charged.

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

Select the command **SC001**.

The test result must equal **48**.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

SC006

BLEEDING THE HYDRAULIC UNIT AND BRAKE CIRCUITS

NOTES

Conditions of use of the command:

Ignition on, engine stopped and vehicle speed zero.

Before using the command, check that the battery is fully charged.

This command must be used only in the event of abnormal lengthening of brake pedal travel during a road test with ABS regulation (the vehicle must have already been bled using the conventional procedure).
Select command **SC006** and follow the instructions given by **the diagnostic tool**.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

NOTES

Only consult these customer complaints after a **complete check** with the **diagnostic tool**.

FAULTS DETECTED WHEN BRAKING WITH ABS CONTROL

Locking of one or more wheels	→	ALP 2
Pull	→	ALP 3
Drift	→	ALP 4
Unexpected ABS operation at low speed and with slight pedal pressure	→	ALP 5
Unexpected ABS system intervention on a poor road surface	→	ALP 6
Unexpected ABS operation when using special equipment (car phone, CB, etc.)	→	ALP 7
Extension of brake pedal travel following a regulation phase (with an irregular pedal when entering regulation).	→	ALP 8
Spongy pedal	→	ALP 9
Brake pedal vibration	→	ALP 10
Noise from the pump, pipes or hydraulic unit	→	ALP 11

OTHER CASES

No dialogue with the ABS computer

ALP 1

Intermittent illumination of brake, ABS, SERVICE and STOP warning lights and a message on the instrument panel with no fault codes in the computer

ALP 12

ALP 1

No dialogue with the ABS computer

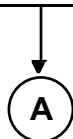
NOTES

Use the **Wiring Diagrams Technical Note** for DUSTER.

Try to establish dialogue with a computer on another vehicle to check that **the diagnostic tool** is not faulty. If the tool is not causing the fault and dialogue cannot be established with any other computer on the same vehicle, it may be that a faulty computer is disrupting diagnostic line **K**.

Use a process of successive disconnections to locate this computer.

Check the battery voltage and perform the operations necessary to obtain the correct voltage (**9.8 V < battery voltage < 16.7 V**).



AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 1 CONTINUED 1

A

Check the presence and condition of the ABS fuses on the passenger compartment fuse box, component code **1016, F15 (10 A)** and in the engine fuse box, component code **597, F01 (50 A)** and **F02 (25 A)**, (see **MR 451 Mechanical, 81C, Fuses, Fuses: List and location of components**).

Check the connection of the ABS computer connector, component code **118** and the condition of its connections. If the connector is faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Check **the earths** on connections **MAH** of component **118** (good condition, not corroded, tightness of the earth screw on top of the ABS assembly).

Check that the supply to the computer is correct:

- **Earth** on connections **MAH** of component **118**,
- **+ before ignition feed** on connections **BP14** and **BP88** of component **118**,
- **+ after ignition feed** on connection **AP5** of component **118**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Check the connection of the diagnostic socket connector, component code **225** and the condition of its connections.

Check the continuity of connection HK between the computer and the diagnostic socket.

If the connection is faulty and if there is a repair procedure (see **Technical Note 6015A (Renault) or Technical Note 9804A (Dacia), Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

B

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 1 CONTINUED 2

B

Check that the diagnostic socket, component code **225** is correctly supplied:

- **+ before ignition feed** on connection **BP56** of component **225**.
- **+ after ignition feed** on connection **AP10** of component **225**.
- **Earth** on connections **MAM** and **NC** of component **225**.

If the connection(s) are faulty and there is a repair procedure (see **Technical Note 6015A (Renault)** or **Technical Note 9804A (Dacia)**, **Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

If dialogue has still not been established after these checks, contact the techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 2

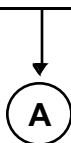
Locking of one or more wheels

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

Reminder:

Locking of the wheels on a vehicle fitted with ABS or squealing of tyres, interpreted by the customer as locking, could be related to a normal reaction of the system and should not automatically be assumed to be a fault (braking with ABS regulation on a very bad road causes considerable squealing).



AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 2 CONTINUED



However, if the wheel(s) is/are actually locking, lift the vehicle so that you can turn the wheels and check for:

- Possible inversion when connecting the speed sensors.

Use parameters **PR001 Front right-hand wheel speed**, **PR002 Front left-hand wheel speed**, **PR003 Rear right-hand wheel speed** and **PR004 Rear left-hand wheel speed** by turning the relevant wheels and checking the consistency of the results obtained.

If the value measured is zero, rotate the other wheels to confirm an electrical inversion of the sensors and repair the wiring harness.

- Possible inversion of pipes on the hydraulic unit.

Use commands **AC003 Front left-hand wheel solenoid valves**, **AC004 Front right-hand wheel solenoid valves**, **AC005 Rear left-hand wheel solenoid valves** and **AC006 Rear right-hand wheel solenoid valves** while depressing the brake pedal and check for the occurrence of locking/unlocking cycles on the wheel concerned (see **Command summary table**). If the cycles do not occur on the wheel tested (wheel remains locked), check whether they occur on another wheel to confirm reversed pipes.

If the cycles do not occur on one wheel and the pipes have not been inverted, contact the Techline.

Check that the wheel speed sensor mounting is in good condition (clipping).

Visually inspect the condition of the target (clogging, metallic contamination, etc.) and clean with compressed air if necessary.

Check the condition of the braking system (condition of linings, sealing, grating, bleed, etc.).

Check the condition of the axles and the conformity and good condition of the tyre mountings.

If the fault is still present after these checks, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 3

Pull

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

Disconnect one wheel speed sensor.

Start the engine and ensure that only the ABS fault warning light comes on. Do not drive the vehicle if the brake fault warning light is also illuminated because the "braking compensator" function is no longer guaranteed.

Carry out a road test with the ABS thus out of order.

Is the fault still present under these conditions?

NO

YES

Raise the vehicle so that you can rotate the wheels and check:

- whether the speed sensors have been incorrectly connected,
- whether the pipes on the hydraulic unit have been inverted.

For these two tests, consult and apply the procedures defined in **ALP2 Locking of one or several wheels**. Check the condition and conformity of the ABS targets. If the fault is still present, contact the Techline.

If the brake pedal travel is relatively long, bleed the brake circuit.

If the travel is normal, check the tyre pressures, the front axle, or for any leaks in the circuit.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**. Carry out a road test followed by another check with the **diagnostic tool**.

ALP 4

Drift

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

Disconnect one wheel speed sensor.

Start the engine and ensure that only the ABS fault warning light comes on. Do not drive the vehicle if the brake fault warning light is also illuminated because the "braking compensator" function is no longer guaranteed.

Carry out a road test with the ABS thus out of order.

Is the fault still present under these conditions?

NO
↓

Normal behaviour linked to the system operation during the regulation phase, mainly on surfaces with uneven grip or which are poorly laid.

YES
↓

Road holding fault not related to the ABS.
Check the condition of the brake linings and that they are to specification and check the tyre pressures, the front axle, etc.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 5

Unexpected ABS operation at low speed and with slight pedal pressure

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**. Warning: **ABS** control is sensitive to poor traction (icy roads, wet cobblestones, etc.).

It is possible to feel brake pedal vibrations which are associated with the reaction of the system in particular circumstances, such as:

- crossing rumble strips,
- tight cornering with lifting of the inside rear wheel.

These vibrations may be linked to simple brake limiter activation, when the pressure on the rear axle is limited. If the fault is different, check the speed sensor connectors (micro-breaks).

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 6

Unexpected ABS system intervention on a poor road surface

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

On poor road surfaces it is normal to feel bucking and vibration of the pedal as well as more significant tyre squealing than on good surfaces.
This gives the impression of a variation in efficiency, but this should be considered normal.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 7

**Unexpected ABS operation when using special equipment
(car phone, CB, etc.)**

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

Check that the equipment which is causing the fault is approved.
Check that this equipment has been correctly installed without modification to the original wiring, particularly that of the ABS (unauthorised earth and **+ after ignition feed** connections on the ABS).

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 8

**Extension of brake pedal travel following a regulation phase
(with an irregular pedal when entering regulation).**

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

Air transit from the hydraulic unit regulation channels to the brake circuits.
Bleed the circuits following the recommended procedure in **MR451, Mechanical, 30A, General information, Braking circuit: Bleeding (use of diagnostic tool command modes)**.
After the operation, carry out a road test with ABS regulation.



If the fault persists, carry out the above operation again once or twice.
If the customer complaint is particularly pronounced, and the bleeds have not rectified it, contact the Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 9

Spongy pedal

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

Air in the brake circuits.

Bleed the circuits in the conventional way starting with the rear right-hand brake, followed by rear left-hand, front left-hand, and finally the front right-hand. Repeat the operation if necessary.

Check the play of the front and rear bearings.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 10

Brake pedal vibration

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

Normal reaction of the brake pedal during an ABS regulation phase or pressure limitation on the rear axle (brake limiter function).

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 11

Noise from the pump, pipes or hydraulic unit

NOTES

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

- Vibration of the unit: check the presence and the condition of the unit support insulating rubber mountings.
- Vibration of pipes: check that all the pipes are securely clipped in their retaining clips and that there is no contact between pipes or between pipes and bodywork.

To identify the origin of the noise, use the solenoid valve control commands **AC003 Front left-hand wheel solenoid valves**, **AC004 Front right-hand wheel solenoid valves**, **AC005 Rear left-hand wheel solenoid valves** and **AC006 Rear right-hand wheel solenoid valves** while depressing the brake pedal.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.

ALP 12

Intermittent illumination of brake, ABS, Service and Stop warning lights and a message on the instrument panel with no fault codes in the computer

NOTES

Special notes:

Only address this customer complaint after a **complete check** with the **diagnostic tool**.

Problem with external supply to the computer:

The computer is intermittently without supply because of bad contacts in the electrical supply circuit.

Refer to the interpretation of fault **DF001 Computer supply**.

If the fault is still present, contact Techline.

AFTER REPAIR

Clear the computer memory using command **RZ001 Fault memory**.
Carry out a road test followed by another check with the **diagnostic tool**.