



From June 2001

Technical Note 3909A

XBXX

Basic manual: Workshop Repair Manual 346

FAULT FINDING

ABS - Electronic stability program

Bosch 5.7

Vdiag no.: 08

This note cancels and replaces Technical Note 3626A

77 11 335 582

MARCH 2005

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.*

All rights are reserved by Renault s.a.s.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is prohibited without the prior written authority of RENAULT s.a.s.

Contents

Page

38C ELECTRONICALLY CONTROLLED HYDRAULIC SYSTEM

Introduction	38C-1
Fault finding log	38C-2
Interpretation of faults	38C-4
Conformity check	38C-60
Help	38C-61
Interpretation of statuses	38C-63
Customer complaints	38C-64
Fault finding chart	38C-65

This document presents the fault finding strategy applicable to all ABS/ESP BOSCH 5.7 computers with VDIAG 08.

In order to implement fault finding on this system, it is essential to have the following items available:

- The wiring diagram of the function for the vehicle concerned,
- The tools listed under the heading "Special tools required".

GENERAL APPROACH TO FAULT FINDING:

- Use of one of the diagnostic tools to identify the system fitted on the vehicle (to read the computer family, the program number, the Vdiag, etc.).
- Locating the "Fault finding" documents corresponding to the system identified.
- Taking note of information contained in the Introductory sections.
- Reading the faults stored in the computer memory and using the "Interpretation of faults" section of the documents.

Reminder: Each fault is interpreted for a particular type of storage (fault present, stored fault, fault present or stored). The checks defined for dealing with each fault are therefore only to be performed on the vehicle if the fault declared by the diagnostic tool is interpreted in the document for its type of storage. The storage type should be considered when using the diagnostic tool after the ignition has been switched off and switched back on.

If a fault is interpreted when it is recorded as "stored", the application conditions for the fault finding procedure appear in the "Notes" box. If the conditions are not met, use the fault finding procedure to check the circuit of the faulty component, since the fault is no longer present on the vehicle. Perform the same procedure when a fault is declared as stored by the diagnostic tool but is only interpreted in the documentation as a "present" fault.

- Carrying out the conformity check (appearance of possible faults not yet identified by the system's self fault finding procedure) and implement the relevant fault finding strategies according to the results.
- Confirming the repair (disappearance of the customer complaint).
- Using the fault finding strategies for the "Customer complaint" if the fault is still present.

Special tools required for operations on BOSCH 5.7 ABS ESP:

- Fault finding tools.
- Multimeter.

FAULT FINDING LOG

System: ABS and ESP (Electronic Stability program)

Pages 2/2

● Computer identification and system parts exchanged

Part 1 part no.	
Part 2 part no.	
Part 3 part no.	
Part 4 part no.	
Part 5 part no.	

To be read with the Diagnostic tool (Identification screen):

Computer part no.	
Supplier no.	
Program no.	
Software version	
Calibration no.	
VDIAG	

● Faults found with the diagnostic tool

Fault no.	Present	Stored	Fault name	Characterisation

● Conditions under which fault occurs

Status or parameter no.	Parameter name	Value	Unit

● System specific information

Description:

● Additional information

What factors led you to replace the computer?
What other parts were replaced?
Other faulty functions?
Please specify:



FD 02
Fault finding log

DF001 PRESENT	<u>COMPUTER SUPPLY VOLTAGE</u>
--------------------------	--------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Check the condition and position of the **ABS fuse** in the engine compartment connection unit.
 Check the continuity between the fuse and **tracks 6 and 2** of the computer connector (presence of **+ before ignition feed** on the tracks). Check the tightness and the condition of the battery terminals.
 Check the connections on the **42-track connector** of the ABS computer.
 Check the **ABS earths on tracks 1 and 5** (fixed above the ABS unit) and visually check that the ABS wiring is intact.

Clear the computer fault memory, exit from the fault finding procedure and switch off the ignition.
 Carry out another check using the diagnostic tool.
 If the fault is still present, contact the Techline.

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

DF006 PRESENT	<u>FRONT LEFT-HAND WHEEL SPEED SENSOR CIRCUIT</u>
--------------------------	---

NOTES	Special notes: None.
--------------	-----------------------------

Check the connection and the condition of the sensor connectors.
If the connector is correct, check the resistance of the sensor at its connector.
Replace the sensor if the resistance is not approximately **1.6 k Ω** .

If the resistance is correct, check and ensure the continuity of the following connections:

Sensor connector **one of the two tracks** \longrightarrow **Track 28** Computer connector

Sensor connector **the other track** \longrightarrow **Track 12** Computer connector

Also check the insulation between these 2 connections.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track computer connector** are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit fault finding mode and switch off the ignition.

Switch the ignition back on and replace the sensor if the fault is still present.

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

DF007 PRESENT	<u>REAR LEFT-HAND WHEEL SPEED SENSOR CIRCUIT</u>
--------------------------	--

NOTES	Special notes: None.
--------------	-----------------------------

Check the connection and the condition of the sensor connectors.
 Check the connections at the intermediate connection under the body (**R112**).
 If the connector is correct, check the resistance of the sensor at its connector.
 Replace the sensor if its resistance is not approximately **1.2 kΩ**.

If the resistance is correct, carry out a visual inspection of the sensor wiring and check that the connections on the **42-track connector** of the computer are in good condition.

Check and ensure the continuity of the following connections:

Sensor connector **one of the 2 tracks** —————> **Track 14** of the computer connector
 Sensor connector **the other track** —————> **Track 29** of the computer connector

Also check the insulation between these two connections.

If the connections are faulty, carry out the following checks:

Check that the **R112 black 10-track** intermediate connector under the body is in good condition and correctly connected. Check the continuity, insulation and absence of interference resistance between:

Computer connector **track 14** —————> **Track 2** of the intermediate connector
 Computer connector **track 29** —————> **Track 1** on the intermediate connector

Repair or replace the wiring if necessary.

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

Sensor connector **one of the two tracks** —————> **Track 1** on the intermediate connector
 Sensor connector **the other track** —————> **Track 2** on the intermediate connector

Repair or replace the wiring if necessary.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit fault finding mode and switch off the ignition.

Switch on the ignition and replace the sensor if the fault is still present.

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

DF008
STOREDFRONT LEFT-HAND WHEEL SPEED SENSOR SIGNAL**NOTES****Priorities when dealing with a number of faults:**Deal with fault **DF006 "Front left-hand wheel speed sensor circuit"** first if it is present.**Conditions for applying the fault finding procedure to stored faults:**The fault is declared present following a road test at a speed of > **24 mph (40 km/h)**.

Ensure the condition of the axles (impacts, deformations, etc.) and the conformity and good condition of the tyre fitting.

Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease or earth on the target, etc.).

Check the condition of the wheel speed sensor mounting (position and torque tightening).

Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the sensor/target air gap through one wheel revolution:

Front wheels: **0.44 mm < air gap < 2.14 mm**

Check the connection and the condition of the sensor connectors.

If the connector is correct, check the resistance of the sensor at its connector.

Replace the sensor if the resistance is not **1.6 kΩ**.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track computer connector** are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test.

If the fault is still present, replace the sensor.

AFTER REPAIR

Clear the computer fault memory.

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

DF009 STORED	<u>REAR LEFT-HAND WHEEL SPEED SENSOR SIGNAL</u>
-------------------------	---

NOTES	<p>Priorities when dealing with a number of faults: Deal with fault DF007 "Rear left-hand wheel speed sensor circuit" first if it is present.</p>
	<p>Conditions for applying the fault finding procedure to stored faults: The fault is declared present following a road test at a speed of >24 mph (40 km/h).</p>

Ensure the condition of the axles (impacts, deformations, etc.) and the conformity and good condition of the tyre fitting.
Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease or earth on the target, etc.).
Check the condition of the wheel speed sensor mounting (position and torque tightening).
Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the sensor/target air gap through one wheel revolution:
Rear wheels: **0.21 mm < air gap < 1.5 mm.**

Check the connection and the condition of the sensor connectors.
If the connector is correct, check the resistance of the sensor at its connector. Replace the sensor if its resistance is not approximately **1.2 kΩ**.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track** computer connector are in good condition.
Check the connections at the intermediate connection under the body (**R112**).

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.
Exit the fault finding procedure and carry out a road test.
If the fault is still present, replace the sensor.

AFTER REPAIR	<p>Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool.</p>
---------------------	---

DF010 PRESENT OR STORED	<u>PUMP MOTOR CIRCUIT</u>
--	---------------------------

NOTES	Conditions for applying the fault finding procedure to stored faults: The fault is declared present after: Brake pedal kept depressed + "Pump motor test" actuator command
--------------	---

If the motor pump operates continuously, change the computer and the hydraulic valve block.
 Check the ESP earth (tightness of the earth bolt above the hydraulic unit).
 Check for the presence of an **earth** on **track 1** on the **42-track** computer connector and check the condition of the connections. Repair if necessary.
 Check the condition of the fuse in the passenger compartment fuse box. Repair if necessary.
 Check the **continuity** between **track 2** of the computer connector and the **engine compartment connection unit**.
 Check the condition of the computer wiring again.
 If all the checks are in order, reconnect the computer and clear the computer fault memory.
 Exit fault finding mode and switch off the ignition.
 If the fault is still present, contact the Techline.

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

DF011 PRESENT	<u>SOLENOID VALVE SUPPLY</u>
--------------------------	------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

- Check the tightness and the condition of the battery terminals.
- Check the **fuse** in the engine compartment connection unit.
- Check the continuity between the **fuse** and **tracks 6 and 2** of the computer connector.
- Check the **ABS earths** (tightness of the earth bolt above the hydraulic unit).
- Check and ensure the continuity between the **ABS earth** and **tracks 1 and 5** of the computer connector.

If all the checks are in order, reconnect the computer and clear the computer fault memory.
Exit the fault finding procedure and carry out a road test.
If the fault is still present, contact the Techline.

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

DF013 PRESENT	<u>TARGET ON ONE OF THE WHEELS</u>
--------------------------	------------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Ensure the condition of the axles (impacts, deformations, etc.) and the conformity and good condition of the tyre fitting.
 Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease or earth on the target, etc.).
 Check the quality of wheel speed sensor mountings (position and torque tightening).
 Check the conformity of the targets: condition, **number of teeth = 26 Except CLIO RS 44.**

Check the connection and the condition of each sensor connector.
 Check the connections on the intermediate connector under the body of the rear sensors (R112).
 Carry out a visual check of the sensor wiring and check that the connections on the **42-track** computer connector are in good condition.

Check the sensor/target air gap over one revolution of each of the wheels:
 Front wheels: **0.44 mm < air gap < 2.14 mm**
 Rear wheels: **0.21 mm < air gap < 1.5 mm.**

If the results of the checks are correct, reconnect the computer and the sensors and then clear the computer fault memory.
 Exit the fault finding procedure and carry out a road test.
 If the fault recurs, it may be caused by a solenoid valve operational fault. It is therefore necessary to carry out the solenoid valve hydraulic test with the diagnostic tool commands (refer to the "help" section).
 If the **10 unlocking/locking cycles** do not occur on one of the wheels, replace the hydraulic unit.
 If the hydraulic unit is not at fault, contact the techline.

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

DF017 PRESENT	<u>COMPUTER</u>
------------------	-----------------

NOTES	Special notes: None.
--------------	-----------------------------

Check the condition and position of the **ABS fuse** in the engine compartment connection unit.
 Check the continuity between the fuse and **tracks 6 and 2** of the computer connector (presence of **+ before ignition feed on the tracks**). Check the tightness and the condition of the battery terminals.
 Check the connections on the **42-track connector** of the ABS computer.
 Check the **ABS earths on track 1 and 5** (fixed above the ABS unit) and visually check that the ABS wiring is intact.

If the checks are correct, reconnect the computer, then clear the fault memory.
 Exit the fault finding procedure and carry out a road test.
 If the fault is still present, contact the Techline.

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

DF020 PRESENT	<u>TACHOMETRIC INDEX PROGRAMMING</u>
--------------------------	--------------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

The Bosch 5.7 ABS computer with "tachometry function" supplies the vehicle speed signal to all areas where this information is needed (instrument panel, engine management, etc.).
This vehicle speed signal replaces the one supplied by the speed sensor located on the gearbox.
The ABS computer calculates the vehicle speed from the speed of the wheels and the circumference of the tyres fitted on the vehicle.

Note:

The vehicle speed is supplied by wire to the instrument panel, the radio, the navigation system, the xenon bulbs and the electric power assisted steering. The instrument panel redistributes the vehicle speed information to the other consumers via the CAN.

The tyre circumference must be programmed into the memory of a new computer. This consists of entering an index "X" using command VP007 "Tachometric index" on the diagnostic tool.

Once the index has been entered using the **VP007** command, clear the computer fault memory and then switch off the ignition. Use the **PR030** parameter to check that the index has been stored correctly.

If the fault is still present, contact the Techline.

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

DF026 PRESENT	<u>FRONT RIGHT-HAND WHEEL SPEED SENSOR CIRCUIT</u>
--------------------------	--

NOTES	Special notes: None.
--------------	-----------------------------

Check the connection and the condition of the sensor connectors.
If the connector is correct, check the resistance of the sensor at its connector.
Replace the sensor if the resistance is not **1.6 kΩ**.

If the resistance is correct, check and ensure the continuity of the following connections:

Sensor connector **one of the two tracks** \longrightarrow **Track 15** of the computer connector

Sensor connector **the other track** \longrightarrow **Track 16** of the computer connector

Also check the insulation between these 2 connections.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track computer connector** are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit fault finding mode and switch off the ignition.

Switch the ignition on and replace the sensor if the fault is still present.

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

DF027 PRESENT	<u>REAR RIGHT-HAND WHEEL SPEED SENSOR CIRCUIT</u>
--------------------------	---

NOTES	Special notes: None.
--------------	-----------------------------

Check the connection and the condition of the sensor connectors.
 Check the connections at the intermediate connection under the body (**R112**).
 If the connector is correct, check the resistance of the sensor at its connector.
 Replace the sensor if its resistance is not **1.2 kΩ**.

If the resistance is correct, carry out a visual inspection of the sensor wiring and check that the wiring on the **42 track connector** of the computer is in good condition.

Check and ensure the continuity of the following connections:

Sensor connector **one of the two tracks** —————> **Track 31** of the computer connector
 Sensor connector **the other track** —————> **Track 30** of the computer connector

Also check the insulation between these 2 connections.

If the connections are faulty, carry out the following checks:

Check that the **R112** black **10-track** intermediate connector under the body is in good condition and correctly connected.

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

Computer connector **track 30** —————> **Track 3** on the intermediate connector
 Computer connector **track 31** —————> **Track 4** on the intermediate connector

Repair or replace the wiring if necessary.

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

Sensor connector **one of the two tracks** —————> **Track 3** on the intermediate connector
 Sensor connector **the other track** —————> **Track 4** on the intermediate connector

Repair or replace the wiring if necessary.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit fault finding mode and switch off the ignition.

Switch the ignition on and replace the sensor if the fault is still present.

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

DF028
STOREDFRONT RIGHT-HAND WHEEL SPEED SENSOR SIGNAL**NOTES****Priorities when dealing with a number of faults:**

Deal with fault **DF026 "Front right-hand wheel speed sensor circuit"** first if it is present.

Conditions for applying the fault finding procedure to stored faults:

The fault is declared present following a road test at a speed of > **24 mph (40 km/h)**.

Ensure the condition of the axles (impacts, deformations, etc.) and the conformity and good condition of the tyre fitting.

Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease on the or earth on the target, etc.).

Check the condition of the wheel speed sensor mounting (position and torque tightening).

Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the sensor/target air gap through one wheel revolution:

Front wheels: **0.44 mm < air gap < 2.14 mm**

Check the connection and the condition of the sensor connectors.

If the connector is correct, check the resistance of the sensor at its connector.

Replace the sensor if the resistance is not approximately **1.6 kΩ**.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track computer connector** are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test.

If the fault is still present, replace the sensor.

AFTER REPAIR

Clear the computer fault memory.

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

DF029 STORED	<u>REAR RIGHT-HAND WHEEL SPEED SENSOR SIGNAL</u>
---------------------	--

NOTES	Priorities when dealing with a number of faults: Deal with fault DF027 "Rear right-hand wheel speed sensor circuit" first if it is present.
	Conditions for applying the fault finding procedure to stored faults: The fault is declared present following a road test at a speed of > 24 mph (40 km/h) .

Check the condition of the axles (impacts, deformations, etc.) and the conformity and condition of the tyre fitting. Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease or mud on the target, etc.).
Check the condition of the wheel speed sensor mounting (position and torque tightening).
Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the sensor/target air gap through one wheel revolution:
Rear wheels: **0.21 mm < air gap < 1.5 mm.**

Check the connection and the condition of the sensor connectors.
If the connector is correct, check the resistance of the sensor at its connector. Replace the sensor if its resistance is not **1.2 kΩ**.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track** computer connector are in good condition.
Check the connections at the intermediate connection under the body (**R112**).

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.
Exit the fault finding procedure and carry out a road test.
If the fault is still present, replace the sensor.

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

DF046 PRESENT	<u>BRAKE LIGHT AND SWITCH CIRCUIT</u>
--------------------------	--

NOTES	Special notes: None.
--------------	-----------------------------

Check the connection and condition of the brake light switch connector.
 Check that there is **+ after ignition feed** on **tracks A1 and B1** on the brake light switch connector.
 Check that the brake light switch is operating correctly:

- Brake pedal released (switch depressed): **Continuity** between **tracks and A1 B3**.
- Brake pedal pressed (switch released): **Continuity** between **tracks A3 and B1**.

Replace the switch if necessary.

If the fault is still present, check the connection and the condition of the **ABS/ESP** computer connector.

Check the continuity and insulation of the connections between:

Brake light switch connector **Track B3** —————▶ **Track 37** computer connector

Brake light switch connector **Track A3** —————▶ **Track 32** computer connector

If the connections are faulty:

Check the condition and correct connection of the black intermediate connector **R107**.

Check the continuity and insulation of the connections between:

Brake light switch connector **Track B3** —————▶ **Track H2** R107 black

Brake light switch connector **Track A3** —————▶ **Track G7** R107 black

Also check the insulation between these connections.

Check the continuity and insulation of the connections between:

R107 black **Track G7** —————▶ **Track 32** computer connector

R107 black **Track H2** —————▶ **Track 37** computer connector

Also check the insulation between these connections.

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

DF055 PRESENT	<u>VEHICLE PARAMETER PROGRAMMING</u>
------------------	--------------------------------------

NOTES	<p>Special notes: Before using the diagnostic tool to carry out the steering wheel angle calibration (VP003), it is essential to adjust the front axle.</p>
--------------	--

Use the **VP003 "PROGRAMMING"** command with the diagnostic tool to calibrate the steering wheel angle.
 Use the **VP004 "PROGRAMMING"** command with the diagnostic tool to define the appropriate variant for the vehicle type. **You must select the version that corresponds to the vehicle type.**
 Use the **VP007 "PROGRAMMING"** command using the diagnostic tool to calibrate the tachometric index.
 If the fault is still present, contact the Techline.

After using command VP003, turn to full lock on each side and with the wheels straight ahead, check that PR033 is located between: $-10^{\circ} < PR033 < +10^{\circ}$ (the value of full-locking to the left must be equal to the full-locking to the right).
If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds. Switch the ignition back on and perform the VP003 command procedure again.

AFTER REPAIR	<p>Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool.</p>
---------------------	--

DF056 PRESENT OR STORED	<u>BRAKE PEDAL CONTACT CONSISTENCY</u>
--	--

NOTES	Conditions for applying the fault finding procedure to stored faults: The fault is declared present when the brake pedal is depressed.
--------------	--

Depress the brake pedal observing the **ET017 "Brake pedal"** status.
Check that the "pedal released" and "pedal pressed" positions are detected.

yes	Check the 2 brake light bulbs and the earth of the rear light units (no earthing of track 41 across the bulbs when the pedal is not depressed).
------------	--

no	Apply the fault finding procedure described in the interpretation of the ET017 "Brake pedal" status.
-----------	---

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

DF058 PRESENT OR STORED	<u>BRAKE PEDAL/PRESSURE STATUS CONSISTENCY</u>
--	--

NOTES	<p>Conditions for applying the fault finding procedure to stored faults: The fault is declared present after the engine has been started and the brake pedal depressed.</p>
--------------	--

Check the connection and condition of the pressure sensor connector on the hydraulic valve block.
Check the continuity and insulation of the connections between:

- Pressure sensor connector **track 1** —————▶ **Track 25** of the computer
- Pressure sensor connector **track 2** —————▶ **Track 26** of the computer
- Pressure sensor connector **track 3** —————▶ **Track 42** of the computer

Repair if necessary.

Check the connection and condition of the brake switch connector on the pedal assembly.

With the brake pedal released, check the continuity between tracks **A1 and B3**.

With the brake pedal depressed, check the continuity between tracks **A3 and B1**.

Replace the brake light switch if necessary.

Check the continuity and insulation of the connections between:

- Switch connector **track A3** —————▶ **Track 32** of the computer
- Switch connector **track B3** —————▶ **Track 37** of the computer

If the connections are faulty:

Check the condition and correct connection of the black intermediate connector **R107**.

Check the continuity and insulation of the connections between:

- Brake light switch connector **Track B3** —————▶ **Track H2** R107 black
- Brake light switch connector **Track A3** —————▶ **Track G7** R107 black

Also check the insulation between these connections.

Check the continuity and insulation of the connections between:

- R107 black **Track G7** —————▶ **Track 32** computer connector
- R107 black **Track H2** —————▶ **Track 37** computer connector

Also check the insulation between these connections.

With the diagnostic tool, check that **PR035** is approximately **10 bar**.

If the fault is still present, replace the hydraulic unit.

AFTER REPAIR	<p>Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool.</p>
---------------------	---

DF059 PRESENT	<u>FRONT RIGHT WHEEL SPEED SENSOR</u>
--------------------------	---------------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Ensure the condition of the axles (impacts, deformations, etc.) and the conformity and good condition of the tyre fitting.

Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease on the or earth on the target, etc.).

Check the condition of the wheel speed sensor mounting (position and torque tightening).

Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the connection and the condition of the sensor connectors.

If the connector is correct, check the resistance of the sensor at its connector.

Replace the sensor if the resistance is not **1.6 kΩ**.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track** computer connector are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test.

If the fault is still present, replace the sensor.

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

DF060 PRESENT	<u>FRONT LEFT WHEEL SPEED SENSOR</u>
--------------------------	--------------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Ensure the condition of the axles (impacts, deformations, etc.) and the conformity and good condition of the tyre fitting.

Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease on the or earth on the target, etc.).

Check the condition of the wheel speed sensor mounting (position and torque tightening).

Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the connection and the condition of the sensor connectors.

If the connector is correct, check the resistance of the sensor at its connector.

Replace the sensor if the resistance is not **1.6 kΩ**.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track** computer connector are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test.

If the fault is still present, replace the sensor.

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

DF061 PRESENT	<u>REAR RIGHT WHEEL SPEED SENSOR</u>
--------------------------	--------------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Ensure the condition of the axles (impacts, deformations, etc.) and the conformity and good condition of the tyre fitting.

Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease on the or earth on the target, etc.).

Check the condition of the wheel speed sensor mounting (position and torque tightening).

Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the connection and the condition of the sensor connectors.

If the connector is correct, check the resistance of the sensor at its connector.

Replace the sensor if its resistance is not approximately **1.2 kΩ**.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track** computer connector are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test. If the fault is still present, replace the sensor.

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

DF062 PRESENT	<u>REAR LEFT WHEEL SPEED SENSOR</u>
--------------------------	-------------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Ensure the condition of the axles (impacts, deformations, etc.) and the conformity and good condition of the tyre fitting.

Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease or earth on the target, etc.).

Check the condition of the wheel speed sensor mounting (position and torque tightening).

Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the connection and the condition of the sensor connectors.

If the connector is correct, check the resistance of the sensor at its connector.

Replace the sensor if its resistance is not **1.2 kΩ**.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track** computer connector are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test.

If the fault is still present, replace the sensor.

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

DF063 PRESENT OR STORED	<u>WHEEL SPEED CONSISTENCY</u>
--	--------------------------------

NOTES	Priorities when dealing with a number of faults: Deal with other faults first.
	Conditions for applying the fault finding procedure to stored faults: The fault is declared present following a road test at a speed of > 24 mph (40 km/h) .

Check the condition of the axles (impacts, deformations, etc.) and the conformity and condition of the tyre fitting. Ensure that the braking system is in good condition (condition of the linings, tightness, grip, bleeding, bearing play, grease on the or earth on the target, etc.).
Check the condition of the wheel speed sensor mounting (position and torque tightening).
Check the conformity of the target (condition, number of teeth = **26 except CLIO RS = 44**).

Check the sensor/target air gap over one revolution of each of the wheels:
Front wheels: **0.44 mm < air gap < 2.14 mm**
Rear wheels: **0.21 mm < air gap < 1.5 mm.**

Check the connection and the condition of the sensor connectors.
If the connector is correct, check the resistance of the sensor at its connector.
Replace the sensor if its resistance is not approximately **1.6 kΩ** for the front and **1.2 kΩ** for the rear.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track** computer connector and the intermediate connector under the body (**R112**) are in good condition.

If all the checks are in order, reconnect the computer and the wheel speed sensor, then clear the computer fault memory.
Exit the fault finding procedure and carry out a road test.
If the fault is still present, replace the sensor(s).

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

DF064 PRESENT	<u>MULTIPLEX SIGNAL CONTROL MODULE</u>
--------------------------	--

NOTES	Special notes: If there is a problem with the multiplex network, run the multiplex network fault finding procedure.
--------------	--

Check the condition and correct connection of the ABS/ESP and injection computer connector.

Check the continuity and insulation of the connections between:

ABS computer **Track 24** —————▶ **CAN H track** injection computer

ABS computer **Track 40** —————▶ **CAN L track** injection computer

Repair if necessary.

Check the status and correct connection of the UCH connector.

Check the continuity and insulation of the connections between:

ABS computer **Track 24** —————▶ **CAN H track** of the UCH connector

ABS computer **Track 40** —————▶ **CAN L track** of the UCH connector

Repair if necessary.

Check the diagnostic socket connections.

Check the continuity and insulation of the connections between:

ABS computer **Track 24** —————▶ **Track 6** of the diagnostic socket

ABS computer **Track 40** —————▶ **Track 14** of the diagnostic socket

Repair if necessary.

Check the condition and connection of the steering wheel angle sensor connector.

Check the continuity and insulation of the connections between:

Diagnostic socket **Track 6** —————▶ **Track 3** of the steering wheel angle sensor connector

Diagnostic socket **Track 14** —————▶ **Track 2** of the steering wheel angle sensor connector

Repair if necessary.

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

DF065 PRESENT	<u>ABS REGULATION</u>
--------------------------	-----------------------

NOTES	Special notes: None.
--------------	-----------------------------

Check the ESP earth (tightness of the earth bolt on top of the hydraulic unit).
Check the condition and position of the fuses.
Check the connection and condition of the **42-track** computer connector.
Switch the ignition on and perform a fault finding test, clear the fault memory and exit finding mode.
If the fault is still present contact Techline.

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

DF066 PRESENT	<u>NO INJECTION MULTIPLEX SIGNAL</u>
--------------------------	--------------------------------------

NOTES	<p>Special notes: Although the fault is stored in the computer, it is not caused by ABS/ESP components. This fault indicates that the ESP function is inoperative due to an injection frame transmission fault. Perform fault finding on the injection.</p> <p>Note: The injection does not always store transient faults as quickly as the ABS/ESP. If no fault is stored in the injection computer, start the engine; if there is no fault present, contact the Techline. Once the fault in the injection system has been remedied, clear the ABS/ESP computer fault memory.</p>
	<p>Special notes: If there is a problem with the multiplex network, run the multiplex network fault finding procedure.</p>
	<p>Priorities when dealing with a number of faults: Deal first with faults DF152, DF153, DF154.</p>

Check the condition and correct connection of the ABS/ESP and injection computer connector.

Check the continuity and insulation of the connections between:

ABS computer **Track 24** —————▶ **CAN H track** injection computer

ABS computer **Track 40** —————▶ **CAN L track** injection computer

Repair if necessary.

If the fault persists, perform a fault finding procedure on the engine injection and repair accordingly.

AFTER REPAIR	<p>Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool.</p>
---------------------	---

DF067 PRESENT	<u>FAULTY MULTIPLEX INJECTION SIGNAL</u>
--------------------------	--

NOTES	Special notes: If there is a problem with the multiplex network, run the multiplex network fault finding procedure.
--------------	--

Perform a complete check on the vehicle injection system with the diagnostic tool.
If the fault is still present, apply the complete process for **DF066**.

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

**DF071
PRESENT
OR
STORED**

PRESSURE SENSOR

NOTES

Conditions for applying the fault finding procedure to stored faults: Apply the fault finding procedure described below if the fault is declared present or stored.

Check the brake fluid level.

Check that the brake pedal travel is not too long. If it is too long, perform a bleed without using the diagnostic tool so that the solenoid valves of the hydraulic assembly are not activated.

Check brake light switch.

Ensure that the sensor and computer connectors are correctly connected and in good condition.

Check the continuity and insulation of the connections between:

Pressure sensor connector **track 1** —————▶ **Track 25** of the computer

Pressure sensor connector **track 2** —————▶ **Track 26** of the computer

Pressure sensor connector **track 3** —————▶ **Track 42** of the computer

Repair if necessary.

If the fault is still present, change the pressure sensor.

Clear the fault memory and carry out a road test with ABS regulation and braking.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

DF072 PRESENT	<u>STEERING WHEEL ANGLE SENSOR COMMUNICATION</u>
--------------------------	--

NOTES	Special notes: None.
--------------	-----------------------------

Check the connection and condition of the steering wheel angle sensor connector.
Without disconnecting the steering wheel angle sensor, check for **+12 V after ignition** between **tracks 1 and 5** of the sensor connector.

If the voltage is correct, carry out the following checks:
Check the condition and correct connection of the diagnostic socket.
Check the continuity and insulation of the connections between:

Sensor connector **Track 3** —————▶ **Track 6** Diagnostic socket
Sensor connector **Track 2** —————▶ **Track 14** Diagnostic socket

Repair if necessary.

If the voltage is incorrect:
Check the connection and condition of the **42-track** computer connector.
Check the continuity and insulation of the connections between:

ABS computer **Track 21** —————▶ **Track 1** steering wheel angle sensor connector
ABS computer **Track 39** —————▶ **Track 5** steering wheel angle sensor connector

If the connection is faulty:
Check the condition and correct connection of the black intermediate connector **R107**.
Check the continuity and insulation of the connections between:

R107 black **Track B6** —————▶ **Track 21** ABS computer
R107 black **Track A6** —————▶ **Track 39** ABS computer

Also check the insulation between these connections. Repair if necessary.
Check the continuity and insulation of the connections between:

R107 black **Track B6** —————▶ **Track 1** steering wheel angle sensor connector
R107 black **Track A6** —————▶ **Track 5** steering wheel angle sensor connector

Also check the insulation between these connections. Repair if necessary.

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

DF073 PRESENT	<u>STEERING WHEEL ANGLE SENSOR CALIBRATION</u>
--------------------------	--

NOTES	Special notes: If calibration has been carried out after replacing the steering wheel angle sensor, clear the memories and road test the vehicle.
--------------	--

It is essential to adjust the front axle before using the diagnostic tool to carry out the steering wheel angle calibration.

Use the diagnostic tool to program the steering wheel angle sensor with command **VP003**.

After using command VP003, turn to full lock on each side and with the wheels straight ahead, check that PR033 is located between: $-10^{\circ} < PR033 < +10^{\circ}$ (the value of full-locking to the left must be equal to the full-locking to the right).

If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds. Switch the ignition back on and perform the VP003 command procedure again.

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

DF074 PRESENT	<u>STEERING WHEEL ANGLE CONSISTENCY</u>
--------------------------	---

NOTES	Special notes: Before using the diagnostic tool to carry out the steering wheel angle calibration, it is essential to adjust the front axle.
--------------	--

Ensure that the steering wheel angle sensor is in good condition and correctly mounted on the steering column behind the steering wheel.

Use the diagnostic tool to program the steering wheel angle sensor with command **VP003**.

If the fault is still present, check that **+ after ignition feed** is present on the steering wheel angle sensor (connector connected) between **tracks 1 and 5** on the sensor connector.

If the voltage is incorrect, ensure continuity on the connections between:

Sensor connector **track 1** —————▶ **Track 21** Computer connector

Sensor connector **track 5** —————▶ **Track 39** Computer connector

If the connection is faulty:

Check the condition and correct connection of the black intermediate connector **R107**.

Check the continuity and insulation of the connections between:

R107 black **Track B6** —————▶ **Track 21** ABS computer

R107 black **Track A6** —————▶ **Track 39** ABS computer

Also check the insulation between these connections. Repair if necessary.

Check the continuity and insulation of the connections between:

R107 black **Track B6** —————▶ **Track 1** steering wheel angle sensor connector

R107 black **Track A6** —————▶ **Track 5** steering wheel angle sensor connector

Also check the insulation between these connections. Repair if necessary.

After using command VP003, turn to full lock on each side and with the wheels straight ahead, check that PR033 is located between: $-10^\circ < PR033 < +10^\circ$ (the value of full-locking to the left must be equal to the full-locking to the right).

If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds.

Switch the ignition back on and perform the VP003 command procedure again.

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

**DF076
PRESENT
OR
STORED**

STEERING WHEEL ANGLE SENSOR CIRCUIT

NOTES

Special notes: Before using the diagnostic tool to carry out the steering wheel angle calibration it is **essential to adjust the front axle**.

Conditions for applying the fault finding procedure to stored faults: The fault is declared present after turning the steering wheel from lock to lock.

Priorities when dealing with a number of faults: Deal with fault **DF152, DF153, DF154** first if present.

Ensure that the steering wheel angle sensor is correctly installed and positioned on the steering column. Use the diagnostic tool to perform the calibration of the sensor with command **VP003**.

Set the wheels straight ahead and go to the parameter menu in the diagnostic tool to check that **PR033** varies between **0° and -500°** when the wheel is locked to the right, and **0° and +500°** when the wheel is locked to the left.

Check the connection and condition of the sensor and the computer.
With the connector connected, check the voltage between **tracks 1 and 5** of the steering wheel angle sensor.

Is the voltage measured correct?

YES

Check the condition and correct connection of the diagnostic socket.
Check the continuity and insulation of the connections between:
Sensor connector **Track 3** —————▶ **Track 6** Diagnostic socket
Sensor connector **Track 2** —————▶ **Track 14** Diagnostic socket
Repair if necessary.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

DF076
CONTINUED

NO

Check the continuity of the connections between:

Sensor connector **Track 1** —————▶ **Track 21** Computer connectorSensor connector **Track 5** —————▶ **Track 39** Computer connector

If the connection is faulty:

Check the condition and correct connection of the black intermediate connector **R107**.

Check the continuity and insulation of the connections between:

R107 black **Track B6** —————▶ **Track 21** ABS computerR107 black **Track A6** —————▶ **Track 39** ABS computer

Also check the insulation between these connections. Repair if necessary.

Check the continuity and insulation of the connections between:

R107 black **Track B6** —————▶ **Track 1** steering wheel angle sensor
connectorR707 black **Track A6** —————▶ **Track 5** steering wheel angle sensor
connector

Also check the insulation between these connections. Repair if necessary.

If the voltage is still incorrect, replace the computer.

AFTER REPAIR

Clear the computer fault memory.

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

DF077 PRESENT	<u>YAW SPEED SENSOR CONFORMITY</u>
--------------------------	------------------------------------

NOTES	Special notes: Place the vehicle on a flat working surface.
--------------	--

Check the condition and correct connection of the ABS/ESP computer connector and the combined sensor connector.
Check for the presence of **+12 after ignition feed** between **tracks 6 and 3** of the combined sensor connector.

Is the value measured correct?

YES

Reconnect the combined sensor connector, switch on the ignition and **measure the voltage** delivered by the sensor between **tracks 6 and 4** on the sensor connector.
If the voltage is not approximately **2.5 V ± 0.4**, replace the combined sensor.

NO

Check the continuity and insulation of the connections between:
 Sensor connector **Track 6** —————> **Track 21** Computer connector
 Sensor connector **Track 3** —————> **Track 39** Computer connector
 If the connection is faulty:
 Check the condition and correct connection of the black intermediate connector **R107**.
 Check the continuity and insulation of the connections between:
R107 black **Track A6** —————> **Track 39** Computer connector
R107 black **Track B6** —————> **Track 21** Computer connector
 Also check the insulation between these connections.
 Check the continuity and insulation of the connections between:
R107 black **Track A6** —————> **Track 3** Sensor connector
R107 black **Track B6** —————> **Track 6** Sensor connector
 Also check the insulation between these connections.

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

DF078 PRESENT	<u>YAW SPEED SENSOR CONSISTENCY</u>
--------------------------	-------------------------------------

NOTES	Special notes: Before using the diagnostic tool to carry out the steering wheel angle calibration it is essential to adjust the front axle.
--------------	---

Check to see if calibration **VP003** of the steering wheel angle has been carried out.
 Ensure that the combined sensor is correctly tightened and positioned on the vehicle floor.
 Check that **PR034** varies when the vehicle is rocked from side to side.
 Check that the voltage under **+ after ignition** between terminals **6 and 3** of the combined sensor connector is approximately **12 V**. Repair if necessary.
 With the connector connected, check that the voltage under **+ after ignition** between terminals **6 and 4** of the combined sensor connector is approximately **2.5 V ± 0.4**.
 Clear the faults and carry out a road test at **18 mph (30 km/h)** on a winding road.
 Replace the combined sensor if the fault recurs.

After using command VP003, put the full lock on each side and with the wheels straight, check that PR033 is located between: $-10^\circ < PR033 < +10^\circ$ (the value of full-locking to the left must be equal to that of full-locking to the right).
If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds. Switch the ignition back on and perform the VP003 command procedure again.

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

**DF079
PRESENT**

YAW SPEED SENSOR SIGNAL.

NOTES

Priorities when dealing with a number of faults:
Deal with fault **DF080 "Yaw speed sensor circuit"** first if it is present.

Ensure that the combined sensor is in good condition, correctly positioned and tightened to its mounting to **8Nm**. Then check that the mounting is fixed to the floor (under the centre console between the gear lever and the handbrake lever).

Check the connection and condition of the combined sensor connector.

Check the connection and condition of the sensor and the computer wiring.

Check the continuity and insulation of the following connections:

Sensor connector **track 1** —————▶ **Track 10** of the computer connector
 Sensor connector **track 2** —————▶ **Track 9** of the computer connector
 Sensor connector **track 3** —————▶ **Track 39** of the computer connector
 Sensor connector **track 4** —————▶ **Track 41** of the computer connector
 Sensor connector **track 5** —————▶ **Track 8** of the computer connector
 Sensor connector **track 6** —————▶ **Track 21** of the computer connector

Also check the insulation between these connections.

If the connections are faulty:

Disconnect connector **R107** and check the condition and correct connection of the black connector connections.

Check the continuity and insulation of the following connections:

Sensor connector **track 1** —————▶ **Track A9** black connector R107
 Sensor connector **track 2** —————▶ **Track A8** black connector R107
 Sensor connector **track 3** —————▶ **Track A6** black connector R107
 Sensor connector **track 4** —————▶ **Track A10** black connector R107
 Sensor connector **track 5** —————▶ **Track A12** black connector R107
 Sensor connector **track 6** —————▶ **Track B6** black connector R107

Also check the insulation between these connections.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

**DF079
CONTINUED**

Check and ensure the continuity and insulation of the connections between:

Black connector R107 track A9	————→	Track 10 of the computer connector
Black connector R107 track A8	————→	Track 9 of the computer connector
Black connector R107 track A6	————→	Track 39 of the computer connector
Black connector R107 track A10	————→	Track 41 of the computer connector
Black connector R107 track A12	————→	Track 8 of the computer connector
Black connector R107 track B6	————→	Track 21 of the computer connector

Also check the insulation between these connections.

If the results of the checks are correct, reconnect the computer and the combined sensor then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test.

If the fault is still present, replace the sensor.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

DF080 PRESENT	<u>YAW SPEED SENSOR CIRCUIT</u>
--------------------------	---------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Check the connection and condition of the sensor and the computer wiring.

Check the continuity and insulation of the following connections:

Sensor connector track 1	—————▶	Track 10 of the computer connector
Sensor connector track 2	—————▶	Track 9 of the computer connector
Sensor connector track 3	—————▶	Track 39 of the computer connector
Sensor connector track 4	—————▶	Track 41 of the computer connector
Sensor connector track 5	—————▶	Track 8 of the computer connector
Sensor connector track 6	—————▶	Track 21 of the computer connector

Also check the insulation between these connections.

If the connections are faulty:

Disconnect black connector **R107** and check the condition and correct connection of the connections.

Check the continuity and insulation of the connections between:

Sensor connector track 1	—————▶	track A9 of the black connector R107
Sensor connector track 2	—————▶	track A8 of the black connector R107
Sensor connector track 3	—————▶	track A6 of the black connector R107
Sensor connector track 4	—————▶	track A10 of the black connector R107
Sensor connector track 5	—————▶	track A12 of the black connector R107
Sensor connector track 6	—————▶	track B6 of the black connector R107

Also check the insulation between these connections.

Check the continuity and insulation of the connections between:

Black connector R107 track A9	—————▶	Track 10 of the computer connector
Black connector R107 track A8	—————▶	Track 9 of the computer connector
Black connector R107 track A6	—————▶	Track 39 of the computer connector
Black connector R107 track A10	—————▶	Track 41 of the computer connector
Black connector R107 track A12	—————▶	Track 8 of the computer connector
Black connector R107 track B6	—————▶	Track 21 of the computer connector

Also check the insulation between these connections.

If the results of the checks are correct, reconnect the computer and the combined sensor then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test.

If the fault is still present, replace the sensor.

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

DF081 PRESENT	<u>YAW SPEED SENSOR</u>
--------------------------	-------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Replace the combined sensor.

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

DF082 PRESENT	<u>TRANSVERSAL ACCELERATION CONSISTENCY</u>
--------------------------	---

NOTES	Special notes: Before using the diagnostic tool to carry out the steering wheel angle calibration, it is essential to adjust the front axle.
--------------	--

Check to see if calibration **VP003** of the steering wheel angle has been carried out.
 Ensure that the combined sensor is correctly tightened and positioned on the vehicle floor.
 Check that **PR034** varies when the vehicle is rocked from side to side.
 Check that the voltage under **+ after ignition** between terminals **6 and 3** of the combined sensor connector is approximately **12 V**. Repair if necessary.
 With the connector connected, check that the voltage under **+ after ignition** between terminals **6 and 5** of the combined sensor connector is approximately **2.5 V ± 0.4**.
 Clear the faults and carry out a road test at **18 mph (30 km/h)** on a winding road.
 If the fault is still present, replace the combined sensor.

After using command VP003, put the full lock on each side and with the wheels straight, check that PR033 is located between: $-10^\circ < PR033 < +10^\circ$ (the value of full-locking to the left must be equal to the full-locking to the right).
If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds. Switch the ignition back on and perform the VP003 command procedure again.

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

DF083
PRESENTTRANSVERSE ACCELERATION SENSOR SIGNAL**NOTES****Priorities when dealing with a number of faults:**Deal with fault **DF084 Transverse acceleration sensor circuit** first if it is present.

Ensure that the combined sensor is in good condition, correctly positioned and tightened to its mounting. Then check that the mounting is correctly fixed to the floor (under the centre console between the gear lever and the handbrake lever).

Check the connection and condition of the combined sensor connector.

Check the connection and condition of the sensor and the computer wiring.

Check and ensure continuity and insulation of the following connections:

- Sensor connector **track 1** —————▶ **Track 10** of the computer connector
- Sensor connector **track 2** —————▶ **Track 9** of the computer connector
- Sensor connector **track 3** —————▶ **Track 39** of the computer connector
- Sensor connector **track 4** —————▶ **Track 41** of the computer connector
- Sensor connector **track 5** —————▶ **Track 8** of the computer connector
- Sensor connector **track 6** —————▶ **Track 21** of the computer connector

Also check the insulation between these connections.

If the connections are faulty:

Disconnect black connector **R107** and check the condition and correct connection of the connections.

Check the insulation and continuity of the connections between:

- Sensor connector **track 1** —————▶ **Track A9** of the black connector R107
- Sensor connector **track 2** —————▶ **Track A8** of the black connector R107
- Sensor connector **track 3** —————▶ **Track A6** of the black connector R107
- Sensor connector **track 4** —————▶ **Track A10** of the black connector R107
- Sensor connector **track 5** —————▶ **Track A12** of the black connector R107
- Sensor connector **track 6** —————▶ **Track B6** of the black connector R107

Also check the insulation between these connections.

AFTER REPAIR

Clear the computer fault memory.

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

DF083
CONTINUED

Disconnect black connector **R107** and check the condition and correct connection of the connections.
Check the insulation and continuity of the connections between:

Black connector R107 track A9	—————▶	Track 10 of the computer connector
Black connector R107 track A8	—————▶	Track 9 of the computer connector
Black connector R107 track A6	—————▶	Track 39 of the computer connector
Black connector R107 track A10	—————▶	Track 41 of the computer connector
Black connector R107 track A12	—————▶	Track 8 of the computer connector
Black connector R107 track B6	—————▶	Track 21 of the computer connector

Also check the insulation between these connections.

If the results of the checks are correct, reconnect the computer and the combined sensor then clear the computer fault memory.

Exit the fault finding procedure and carry out a road test.

If the fault is still present, replace the sensor.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

DF084 PRESENT	<u>TRANSVERSE ACCELERATION SENSOR CIRCUIT</u>
--------------------------	---

NOTES	Special notes: None.
--------------	-----------------------------

Check the connection and the condition of the computer connectors.

Check the continuity and insulation of the connections between:

Sensor connector track 1	—————▶	Track 10 of the computer connector
Sensor connector track 2	—————▶	Track 9 of the computer connector
Sensor connector track 3	—————▶	Track 39 of the computer connector
Sensor connector track 4	—————▶	Track 41 of the computer connector
Sensor connector track 5	—————▶	Track 8 of the computer connector
Sensor connector track 6	—————▶	Track 21 of the computer connector

Also check the insulation between these connections.

If the connections are faulty:

Disconnect black connector **R107** and check the condition and correct connection of the connections.

Check and ensure the continuity and insulation of the connections between:

Sensor connector track 1	—————▶	Track A9 of the black connector R107
Sensor connector track 2	—————▶	Track A8 of the black connector R107
Sensor connector track 3	—————▶	Track A6 of the black connector R107
Sensor connector track 4	—————▶	Track A10 of the black connector R107
Sensor connector track 5	—————▶	Track A12 of the black connector R107
Sensor connector track 6	—————▶	Track B6 of the black connector R107

Also check the insulation between these connections.

Check the continuity and insulation of the connections between:

Black connector R107 track A9	—————▶	Track 10 of the computer connector
Black connector R107 track A8	—————▶	Track 9 of the computer connector
Black connector R107 track A6	—————▶	Track 39 of the computer connector
Black connector R107 track A10	—————▶	Track 41 of the computer connector
Black connector R107 track A12	—————▶	Track 8 of the computer connector
Black connector R107 track B6	—————▶	Track 21 of the computer connector

Also check the insulation between these connections.

If the results of the checks are correct, reconnect the computer and the combined sensor then clear the computer fault memory. Exit fault finding mode and switch off the ignition.

Switch the ignition on and replace the sensor if the fault is still present.

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

DF085 PRESENT	<u>TRANSVERSE ACCELERATION SENSOR</u>
--------------------------	---------------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Replace the combined sensor.

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

DF086 PRESENT	<u>COMPUTER CONFIGURATION</u>
------------------	-------------------------------

NOTES	<p>Special notes: Before using the diagnostic tool to carry out the steering wheel angle calibration, it is essential to adjust the front axle.</p>
--------------	---

Configure the tachometric index **PR030**, the vehicle parameters **VP004** and program the steering wheel angle **VP003**.

If the computer configuration fails, replace the computer (consult the help section for this operation).

After using command VP003, turn to full lock on each side and with the wheels straight ahead, check that PR033 is located between: $-10^{\circ} < PR033 < +10^{\circ}$ (the value of full-locking to the left must be equal to the full-locking to the right).

If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds. Switch the ignition back on and perform the VP003 command procedure again.

AFTER REPAIR	<p>Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool.</p>
---------------------	---

DF087
PRESENTPROGRAMMING THE STEERING WHEEL ANGLE SENSOR**NOTES**

Special notes: Before using the diagnostic tool to carry out the steering wheel angle calibration, **it is essential to adjust the front axle.**

Use the diagnostic tool to program the steering wheel angle sensor with command **VP003**.

After using command VP003, turn to full lock on each side and with the wheels straight ahead, check that PR033 is located between: $-10^{\circ} < PR033 < +10^{\circ}$ the value of full-locking to the left must be equal to the full-locking to the right).

If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds. Switch the ignition back on and perform the VP003 command procedure again.

If the fault is still present, replace the steering wheel angle sensor and calibrate again (refer to "help" for this operation).

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

DF088 PRESENT	<u>PRESSURE SENSOR CIRCUIT</u>
--------------------------	--------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Check the condition and correct connection of the brake pressure sensor.
Check the connection and the condition of the computer connectors.

Check and ensure the continuity of the following connections:

Sensor connector **track 1** —————▶ **Track 25** of the computer connector

Sensor connector **track 2** —————▶ **Track 26** of the computer connector

Sensor connector **track 3** —————▶ **Track 42** of the computer connector

Also check the insulation between these connections.

Carry out a visual inspection of the sensor wiring and check that the wiring on the **42-track computer connector** is in good condition.

If the results of the checks are correct, reconnect the computer and the brake pressure sensor and clear the computer fault memory.

Exit fault finding mode and switch off the ignition.

Switch on the ignition and replace the sensor if the fault is still present.

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

DF089 PRESENT	<u>PRESSURE CONSISTENCY</u>
--------------------------	-----------------------------

NOTES	Special notes: If the brake pedal travel is too long, perform a conventional bleeding of the braking system.
--------------	---

Check the condition and correct connection of the brake pressure sensor.
Check the connection and the condition of the computer connectors.

Check and ensure the continuity of the following connections:

Sensor connector **track 1** —————▶ **Track 25** of the computer connector

Sensor connector **track 2** —————▶ **Track 26** of the computer connector

Sensor connector **track 3** —————▶ **Track 42** of the computer connector

Also check the insulation between these connections.

Carry out a visual check of the sensor wiring and check that the connections on the **42-track computer connector** are in good condition.

If the results of the checks are correct, reconnect the computer and the brake pressure sensor and clear the computer fault memory.

Exit fault finding mode and switch off the ignition.

Switch on the ignition and replace the sensor if the fault is still present.

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

DF097
PRESENTNO AUTOMATIC TRANSMISSION MULTIPLEX SIGNAL**NOTES****Special notes:** If there is a problem with the multiplex network, run the multiplex network fault finding procedure.

Carry out the fault finding procedure for the multiplex network.
If the fault is still present, carry out a full check of the automatic transmission fitted to the vehicle using the diagnostic tool.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

DF098 PRESENT	<u>NO UCH MULTIPLEX SIGNAL</u>
--------------------------	--------------------------------

NOTES	Special notes: If there is a problem with the multiplex network, run the multiplex network fault finding procedure.
--------------	--

Carry out the fault finding procedure for the multiplex network.
If the fault is still present, carry out a full check of the UCH using the diagnostic tool.

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

**DF108
PRESENT
OR
STORED**

STEERING WHEEL ANGLE SENSOR

NOTES

Special notes: Before using the diagnostic tool to carry out the steering wheel angle calibration, **it is essential to adjust the front axle.**

Conditions for applying the fault finding procedure to stored faults: The fault is declared present after full-locking from stop to stop.

Priorities when dealing with a number of faults: Deal with fault **DF152, DF153, DF154** first if present.

Ensure that the steering wheel angle sensor is correctly installed and positioned on the steering column. Use the diagnostic tool to perform the calibration of the sensor with command **VP003**.

Set the wheels straight ahead and go to the parameter menu in the diagnostic tool to check that **PR033** varies between **0° and -500°** when the wheel is locked to the right, and **0° and +500°** when the wheel is locked to the left.

Check the connection and condition of the sensor and the computer.
Check the connector voltage connected between **tracks 1 and 5** of the steering wheel angle sensor.

Is the voltage measured correct?

YES

Check the condition and correct connection of the diagnostic socket.
Check the continuity and insulation of the connections between:
Sensor connector **Track 3** —————▶ **Track 6** Diagnostic socket
Sensor connector **Track 2** —————▶ **Track 14** Diagnostic socket

Repair if necessary.

Clear the computer fault memory and switch off the ignition.

Switch on the ignition again, turn the steering wheel from lock to lock; if the fault reappears replace the steering wheel angle sensor and recalibrate (refer to the help section for this procedure).

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

DF108
CONTINUED

NO

Check the continuity of the connections between:

Sensor connector **Track 1** —————▶ **Track 21** Computer connectorSensor connector **Track 5** —————▶ **Track 39** Computer connector

If the connection is faulty:

Check the condition and correct connection of the black intermediate connector **R107**.

Check the continuity and insulation of the connections between:

R107 black **Track B6** —————▶ **Track 21** ABS computerR107 black **Track A6** —————▶ **Track 39** ABS computer

Also check the insulation between these connections. Repair if necessary.

Check the continuity and insulation of the connections between:

R107 black **Track B6** —————▶ **Track 1** steering wheel angle sensor
connectorR107 black **Track A6** —————▶ **Track 5** steering wheel angle sensor
connector

Also check the insulation between these connections. Repair if necessary.

If the voltage is still incorrect, replace the computer.

AFTER REPAIR

Clear the computer fault memory.

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

DF125 PRESENT	<u>COMBINED SENSOR SUPPLY</u>
--------------------------	-------------------------------

NOTES	Special notes: None.
--------------	-----------------------------

Check the condition and correct connection of the **ABS/ESP** computer connector and the combined sensor connector.
Check for the presence of **+12 after ignition feed** between **tracks 6 and 3** of the combined sensor connector.

Is the value measured correct?

YES

Reconnect the combined sensor connector, switch on the ignition and **measure the voltage** delivered by the sensor between **tracks 6 and 4** on the sensor connector.
If the voltage is not approximately **2.5 V ± 0.4**, replace the combined sensor.

NO

Check the continuity and insulation of the connections between:
 Sensor connector **Track 6** —————> **Track 21** Computer connector
 Sensor connector **Track 3** —————> **Track 39** Computer connector
 If the connection is faulty:
 Check the condition and correct connection of the black intermediate connector **R107**.
 Check the continuity and insulation of the connections between:
R107 black **Track A6** —————> **Track 39** Computer connector
R107 black **Track B6** —————> **Track 21** Computer connector
 Also check the insulation between these connections.
 Check the continuity and insulation of the connections between:
R107 black **Track A6** —————> **Track 3** Sensor connector
R107 black **Track B6** —————> **Track 6** Sensor connector
 Also check the insulation between these connections.
 If the voltage is still incorrect, replace the computer.

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

<p>DF128 to DF151 PRESENT OR STORED</p>	<p><u>SOLENOID VALVE CIRCUIT</u></p>
---	--------------------------------------

<p>NOTES</p>	<p>Special notes: None.</p>
	<p>Conditions for applying the fault finding procedure to stored faults: Clear the computer memory, switch the ignition off and on again and carry out the check again using the diagnostic tool.</p>

Ensure that the earth on the hydraulic valve block is in good condition.
Check the condition and position of the **60A** fuses in the engine fuse box.
Clear the computer fault memory, switch the ignition off then on again and carry out another check with the diagnostic tool.
Replace the computer if the fault persists.

<p>AFTER REPAIR</p>	<p>Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool.</p>
----------------------------	---

DF152 DF153 DF154 PRESENT	<u>MULTIPLEX NETWORK</u>
--	--------------------------

NOTES	Special notes: If there is a problem with the multiplex network, run the multiplex network fault finding procedure.
--------------	--

Carry out the fault finding procedure for the multiplex network.

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

DF158 to DF161 PRESENT OR STORED	<u>LONG-TERM WHEEL SENSOR SIGNAL FAULT</u>
---	--

NOTES	Special notes: None.
	Conditions for applying the fault finding procedure to stored faults: Clear the computer fault memory, switch the ignition off and on again and carry out the check again with the diagnostic tool.

If the fault is still present, replace the faulty sensor.

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

NOTES

Only check conformity after a complete check using the diagnostic tool.

Order	Function	Parameter or Status checked or Action	Display and notes	Fault finding
1	Diagnostic tool dialogue		ABS/ESP BOSCH 5.7	Fault Finding Chart 1
2	Computer configuration	PR030: TACHOMETRIC INDEX	Check that the index entered corresponds to the tyres fitted to the vehicle (refer to the Help section)	None
3	Detection that brake pedal is not depressed	ET017: BRAKE PEDAL	State 2 " Released " confirmed, brake pedal not depressed	ET017
4	Detection that brake pedal is depressed	ET017: BRAKE PEDAL	State 1 " Depressed " confirmed, brake pedal fully depressed	ET017
5	Steering wheel angle programming check	PR033: STEERING WHEEL ANGLE	Values between: -10° < PR033 < +10°.	DF073
6	Vehicle parameter reading	LC003 or VP019 VEHICLE PARAMETERS	Ensure that the variants correspond to the vehicle type.	HELP

Use of command modes:

Controlling the wheel solenoid valves in order to check the hydraulic system:

Raise the vehicle in order to be able to rotate the wheels, and check that they rotate freely.

Keep the brake pedal depressed to prevent the wheel being tested from being turned by hand (do not brake so firmly that full brake power is reached).

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

—————▶ There should be 10 unlocking/locking cycles on the wheel concerned.

Controlling the pump motor:

Select the "**Pump motor test**" command.

—————▶ The motor should run for 5 seconds

Bleeding the hydraulic circuits:

Apply the procedure described in the "bleeding the circuits" section of the "Repair Procedure" Technical Note.

REPLACING A STEERING WHEEL ANGLE SENSOR AND USING COMMAND VP003:

It is essential to adjust the front axle before using the diagnostic tool to carry out the steering wheel angle calibration.

When replacing a steering wheel angle sensor, the sensor should be calibrated by means of programming command **VP003**. However, there is a special procedure (described below) which must be respected for command **VP003**.

After using command VP003, turn to full lock on each side and with the wheels straight ahead, check that PR033 is located between: $-10^\circ < PR033 < +10^\circ$ (the value of full-locking to the left must be equal to the full-locking to the right).

If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds. Switch the ignition back on and perform the VP003 command procedure again.

KEY TO ABBREVIATIONS:

ESP: Electronic stability program.

CLUSTER (Combined sensor): 1 single sensor combining the Yaw sensor and Lateral acceleration sensor functions.

REPLACING THE COMPUTER:

After replacing a computer, configure as follows:

– **Programming the "tachometric index":**

The Bosch 5.7 ABS computer with the "tachometry function" supplies the vehicle speed signal to all areas where this information is needed (instrument panel, engine management, etc.). This vehicle speed signal replaces the one supplied by the speed sensor located on the gearbox. The ABS computer calculates the vehicle speed from the speed of the wheels and the circumference of the tyres fitted on the vehicle.

Note:

The vehicle speed is supplied by wire to the instrument panel, the radio, the navigation system, the xenon bulbs and the electric power assisted steering. The instrument panel redistributes the vehicle speed information to the other consumers via the CAN.

The tyre circumference must be programmed into the memory of a new computer. This consists of entering an index "X" using the diagnostic tool and the command VP007 "Tachometric index".

Once the index has been entered using the **VP007** command, clear the computer fault memory and then switch off the ignition. Use the **PR030** parameter to check that the index has been stored correctly.

– **Vehicle parameters (engine torque index configuration + brake type):**

Select command VP004 on the diagnostic tool. (You must ensure that the variants selected correspond correctly to the vehicle type).

– **Programming the steering wheel angle:**

It is essential to adjust the front axle before using the diagnostic tool to carry out the steering wheel angle calibration.

Select command VP003 on the diagnostic tool.

After using command VP003, turn to full lock on each side and with the wheels straight ahead, check that PR033 is located between: $-10^\circ < PR033 < +10^\circ$ (the value of full-locking to the left must be equal to the full-locking to the right).

If the value read is incorrect, exit fault finding mode and switch off the ignition for a few seconds. Switch the ignition back on and perform the VP003 command procedure again.

ET017

BRAKE PEDAL**NOTES**

Special notes: Only carry out the checks if the "Depressed" and "Released" statuses are not consistent with the pedal position.

"Released" STATUS 2 Brake pedal depressed.

If the brake lights are working:

- Ensure the continuity of the connection between **track B3** of the brake light switch connector and **track 37** of the computer connector.

If the brake lights are not working:

- Check the condition, fitting and setting of the brake light switch and the brake light fuse and the conformity of the bulbs.
- Check the condition and fitting of the brake light switch and brake lights fuse.
- Remove the brake light switch and check that it is operating correctly:

	Continuity between tracks	Insulation between tracks
Switch pressed (Brake pedal released)	A1 and B3	A3 and B1
Switch released (Brake pedal depressed)	A3 and B1	A1 and B3

- Replace the switch if necessary.
- Check/ensure the presence of **+ after ignition feed** on **tracks A1 and B1** on the brake light switch connector.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

ET017
CONTINUED**"Depressed" STATUS 1 brake pedal released.**

- Check the condition, fitting and setting of the brake light switch, the brake light fuse and the conformity of the bulbs.
- Remove the brake light switch and check that it is operating correctly:

	Continuity between tracks	Insulation between tracks
Switch pressed (Brake pedal released)	A1 and B3	A3 and B1
Switch released (Brake pedal depressed)	A3 and B1	A1 and B3

- Replace the switch if necessary.
- Check and ensure insulation from **12 V** of the connection between **track B3** of the brake light switch connector and **track 37** of the computer connector.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

NOTES	Only refer to these customer complaints after performing a complete check with the diagnostic tool.
--------------	---

FAULTS DETECTED ON BRAKING WITH ABS/BRAKING REGULATION

	LOCKING OF ONE OR MORE WHEELS	Fault Finding Chart 2
	PULLING	Fault Finding Chart 3
	DRIFT	Fault Finding Chart 4
	UNEXPECTED ABS OPERATION AT LOW SPEEDS AND SLIGHT PEDAL PRESSURE	Fault Finding Chart 5
	UNEXPECTED ABS OPERATION ON A POOR ROAD SURFACE	Fault Finding Chart 6
	UNEXPECTED ABS OPERATION WITH USE OF ACCESSORIES (CAR PHONE, CB, etc.).	Fault Finding Chart 7
	EXTENSION OF BRAKE PEDAL TRAVEL FOLLOWING A REGULATION PHASE (WITH AN IRREGULAR PEDAL WHEN ENTERING REGULATION).	Fault Finding Chart 8
	SPONGY PEDAL	Fault Finding Chart 9
	BRAKE PEDAL VIBRATION	Fault Finding Chart 10
	NOISES FROM THE PUMP, PIPES OR HYDRAULIC UNIT	Fault Finding Chart 11

OTHER CASES

	NO COMMUNICATION WITH THE ABS COMPUTER	Fault Finding Chart 1
--	--	-----------------------

Fault Finding Chart 1	No dialogue with the ABS computer
------------------------------	--

NOTES	None
--------------	------

Ensure that the diagnostic tool is not causing the fault by trying to establish dialogue with a computer on another vehicle. 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 fault finding line **k**. Proceed by successive disconnections to locate this computer. Check the battery voltage and carry out the operations necessary to obtain the correct voltage (**9.5 V < battery voltage < 17.5 V**).

Check the presence and the condition of the ABS fuses on the passenger compartment fuse board and in the engine fuse box. Check that the computer connector is properly connected and check the condition of its connections.

Check the ABS earths (good condition, not corroded, tightness of the earth bolt above the ABS assembly).

Check that the supply to the computer is correct:

- **Earth on tracks 1 and 5** of the 42-track connector.
- **+ Before ignition feed on tracks 6 and 2** of the 42-track connector.
- **+ After ignition feed on track 23** of the 42-track connector.

Check that the power supply to the diagnostic socket is correct:

- **+ before ignition feed on track 16**
- **Earth on track 5.**

Check and ensure the continuity and insulation of the connection between:

Computer connector **track 11** —————▶ **track 7** diagnostic socket.

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

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

Fault Finding
Chart 2

Locking of one or more wheels

NOTES

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

Reminder: On a vehicle fitted with ABS, wheel locking or tyre squealing interpreted by the customer as locking, may be linked to normal operation of the system and should not necessarily be considered a fault:

- Locking is allowed below **4 mph (6 km/h)** (the system will not provide regulation).
- Braking with ABS intervention on very poor roads (significant squealing).
-

However, if there is actually wheel locking, lift the vehicle in order to be able to rotate the wheels and check:

- Possible inversion of the speed sensor connection.

Using parameters **PR001**, **PR002**, **PR003** and **PR004**, rotate the wheels slowly and check 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 10 locking/unlocking cycles on the wheel concerned (see "Help" section). If the 10 cycles are not completed on the wheel being tested (wheel still locked), check whether they are completed on another wheel (if a reverse connection is confirmed: repair).

If the 10 cycles are not completed on a wheel and the pipes have not been reversed, replace the hydraulic unit.

Check that the wheel speed sensor mountings are correct and in good condition.

Check the conformity of the targets: condition, **number of teeth = 26 except CLIO RS = 44** the condition and mounting (crimping, etc.) of targets on the hubs..

If the fault is still present after these checks, replace the hydraulic unit.

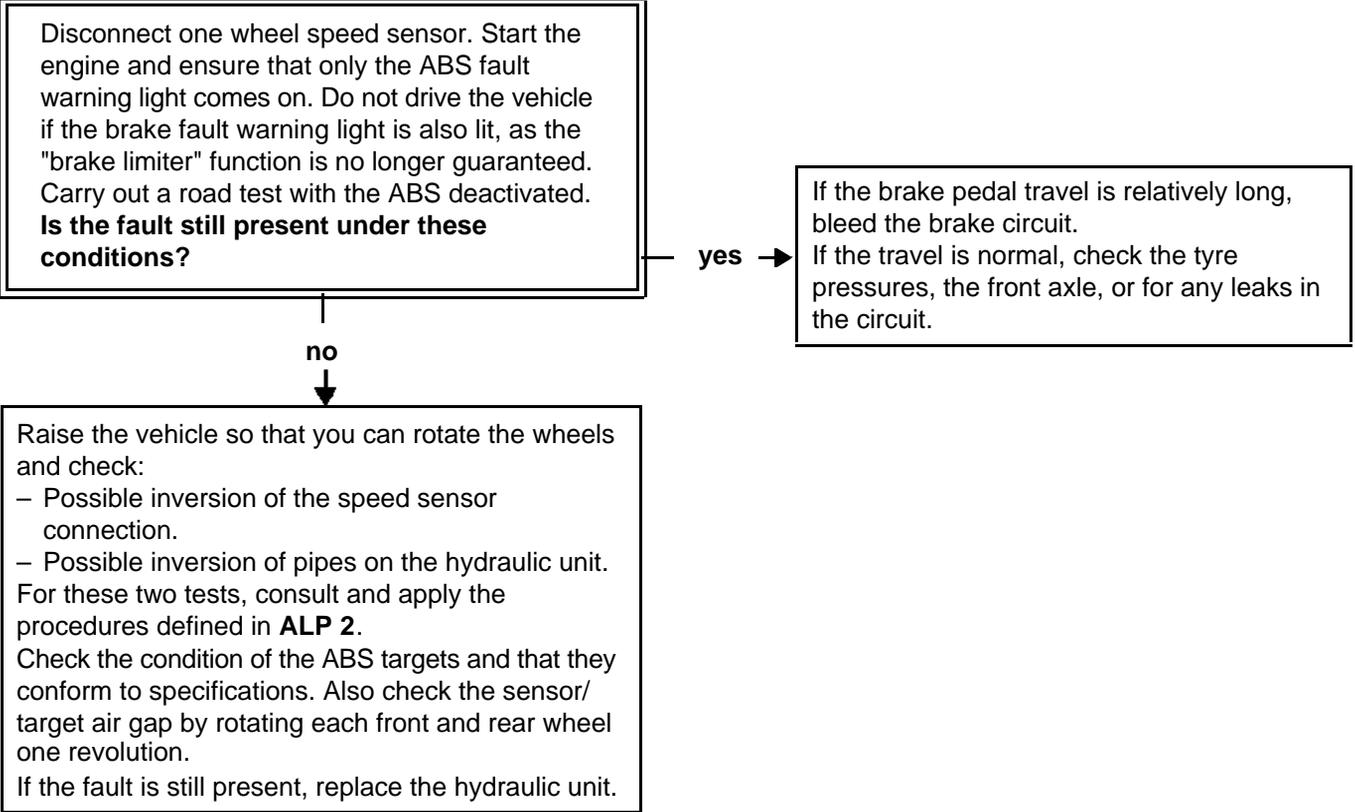
AFTER REPAIR

Clear the computer fault memory.

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

Fault Finding Chart 3	Pull
------------------------------	-------------

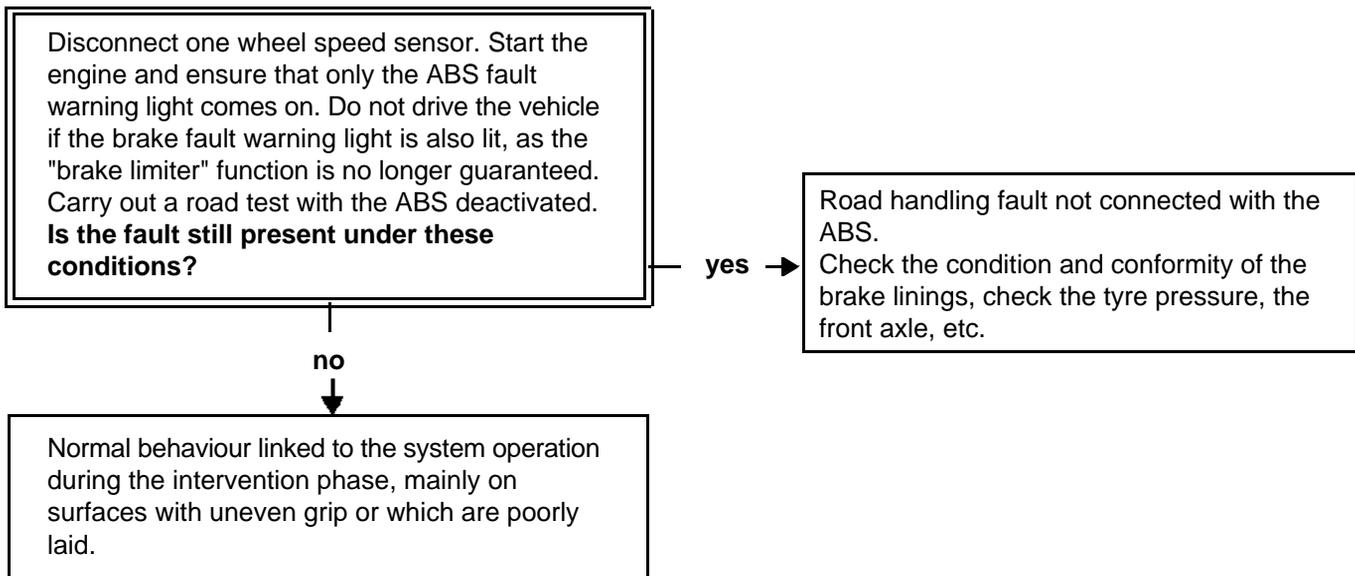
NOTES	Only consult this customer complaint after a complete check with the diagnostic tool.
--------------	---



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

Fault Finding Chart 4	Wandering
----------------------------------	------------------

NOTES	Only consult this customer complaint after a complete check with the diagnostic tool
--------------	--



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

**Fault Finding
Chart 5****Unexpected ABS operation at low speed and with light pedal
pressure****NOTES**

Only consult this customer complaint after a complete check with the diagnostic tool.
Warning: ABS regulation may be sensitive when there is poor grip on surfaces such as icy roads, cobbled streets, etc.

It is possible to feel brake pedal vibrations, which are due to the reaction of the system in particular circumstances:

– Crossing speed bumps.

– 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 problem is different, check the speed sensor connectors (micro-breaks) as well as the air gaps.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

Fault Finding Chart 6	Unexpected ABS system intervention on a poor road surface
------------------------------	--

NOTES	Only consult this customer complaint after a complete check with the diagnostic tool.
--------------	---

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

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

**Fault Finding
Chart 7****Unexpected ABS intervention when using special equipment
(car phone, CB, etc.)****NOTES**

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

Check that the equipment which is causing the fault when used is approved.
Check that this equipment has been correctly installed with no alteration to the original wiring, in particular that of the ABS (unauthorised connections from the ABS to earth and **+ After ignition feed/Before ignition feed**).

AFTER REPAIRClear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

**Fault Finding
Chart 8****Lengthening of the brake pedal travel due to regulation phase**
(with pedal irregularity at the start of regulation)**NOTES**

Only consult 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 in accordance with the procedure recommended in the Workshop Repair Manual (use the command modes on the fault finding tool).
Following the operation, carry out a road test with ABS regulation.

If the fault is still present, carry out the above operation again once or twice.
If the customer complaint is particularly serious, and bleeding the circuit does not improve matters, replace the hydraulic unit.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

**Fault Finding
Chart 9****Spongy pedal****NOTES**

Only consult 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, front left and finally front right. Repeat the operation if necessary.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.

Fault Finding Chart 10	Brake pedal vibration
-------------------------------	------------------------------

NOTES	Only consult this customer complaint after a complete check with the diagnostic tool.
--------------	---

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

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

**Fault Finding
Chart 11****Noise from the pump, pipes or hydraulic unit****NOTES**

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

- Vibration of the assembly: check the presence and the condition of the assembly bracket insulating rubber mounting fittings.
 - Vibration of pipes: check that all pipes are correctly clipped into their mounting clips and that there is no contact between pipes or between pipes and bodywork.
- To determine where the noise is coming from, use the "Front left-hand wheel solenoid valves", "Front right-hand wheel solenoid valves", "Rear left-hand wheel solenoid valves" and "Rear right-hand wheel solenoid valves" control commands while depressing the brake pedal.

AFTER REPAIR

Clear the computer fault memory.
Carry out a road test followed by another check with the diagnostic tool.