



## **2** Transmission

### **23** AUTOMATIC TRANSMISSION

# Transmission

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### PRELIMINARY WORK BEFORE FAULT FINDING

Before a diagnostic routine is carried out on the automatic transmission, the vehicle must not be showing any faults when in injection mode.

**Before performing a diagnostic procedure on the Automatic transmission, you must:**

- Carry out a diagnostic procedure on the injection system.
- Deal with any possible faults.
- Clear the memories of the injection system computer.
- Road test the vehicle.
- Repeat the test with the diagnostic tool.

**If no fault appears on the injection system, continue with the Automatic transmission diagnostic.**

### GENERAL APPROACH TO FAULT FINDING

To begin a diagnostic procedure on the  
**SIEMENS TA2000 Vdiag 08 automatic transmission system, you must have the following items available:**

- The wiring diagram for the function of the vehicle concerned,
- Diagnostic tools (except XR 25).
- Multimeter.
- Bornier: **Elé. 1588 for carrying out checks.**

**1) The gear lever must be in either Park or Neutral.**

Use one of the diagnostic tools to identify the system installed in the vehicle (*read the SIEMENS TA2000 Vdiag 08 computer group*).

**Important:** If dialogue cannot be established with the computer, go straight to the Customer complaints section and consult **FAULT FINDING CHART 1: NO DIALOGUE WITH THE COMPUTER**

**2) Locate the Fault finding documents corresponding to the system identified.**

**3) Read the faults stored in the computer memory and use the Fault interpretation section of the documents.**

**Reminder:** *The interpretation of a fault should be considered when using the diagnostic tool after switching the ignition on and off.*

*There are two types of fault interpretation: present faults and stored faults.*

**If the fault is declared present:**

*perform the fault finding directly.*

**If the fault is declared stored:**

*follow the application instructions on the stored fault.*

*If the fault does not return, carry out the fault finding but do not replace the component.*

*In both cases, finish the fault finding by following the instructions in the After repair section.*

- 4) Perform the conformity check (*appearance of possible incorrect operations not yet declared by the system's self-diagnosis procedure*) and apply the relevant fault finding techniques according to results.
- 5) Confirm the repair (*removal of the sections on Customer complaints and the Fault finding charts*).
- 6) Use the sections on Customer complaints and the Fault finding charts if the problem persists.

### BORNIER SPECIFICATIONS

Bornier Elé.1588 comprises a 56-track base attached to a printed circuit on which are arranged 56 copper-plated areas numbered 1 to 56.

Using the wiring diagrams, it is easy to identify connections and other parts needing to be checked.

### IMPORTANT

- \* All checks carried out with bornier Elé.1588 must be done with the battery disconnected.
- \* The bornier is designed to be used with an ohmmeter only. Under no circumstances should 12 volts be applied to the test points.

### Note:

*The computer of the DP0 automatic transmission uses self-adapting parameters for gear change management and the lock-up function.*

*These self-adapting parameters enable the pressure and fill times for the brakes and clutches to be optimised as a function of the specific mechanical/hydraulic characteristics of each automatic transmission.*

*Therefore, the stored values need to be updated if any component that influences these parameters is replaced. The self-adapting parameters are reset using command RZ005 (self-adapting parameters).*

*After using command RZ005, it is important to carry out a test drive performing all gear changes, both up and down, several times in order to store the new values.*

**Reset the self-adapting parameters after replacing the following components:**

- Hydraulic distributor.
- Torque converter.
- Pressure modulating solenoid valve.
- The entire automatic transmission.

<b>DF002 PRESENT OR STORED</b>	<u>COMPUTER</u>
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<b>NOTES</b>	None.
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Check the **supply fuse** of the automatic transmission computer and **that its contacts are in good working order**.  
Clean or change it if necessary.

Check the **+ after ignition feed** fuse of the automatic transmission computer and **that its contacts are in good working order**.  
Clean or change it if necessary.

Check that the battery and its terminals are **clean**.  
Check the **battery voltage** —————> 11.8V < batV < 13.2V  
Recharge or replace if necessary.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check **the insulation, continuity and absence of interference resistance** on the following connections:

- Computer track 56** —————> **Fuse, engine and relay box**
- Computer track 27** —————> **Fuse, engine and relay box**
- Computer track 28** —————> **Vehicle earth**

Repair if necessary.

- **If the fault is present, replace the computer (see the Help section).**
- **If the fault is stored, clear the computer's fault memory (RZ004) and self-adapting parameters (RZ005).**

**Switch off the ignition then switch it back on to reinitialise the computer.**

<b>AFTER REPAIR</b>	<p>Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.</p>
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<b>DF003 PRESENT</b>	<u>POWER SUPPLY TO THE ANALOGUE SENSORS</u>
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<b>NOTES</b>	If faults DF005 or DF023 are present, deal with them first.
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This fault is taken into account when the **5 volt** power supply to the oil pressure and temperature sensors drops below **4.5 volts** (sensor short circuit or short circuit to earth of the 5 volt supply) or when the pressure sensor signal short circuits to 12 volts.

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Check **the connection of the connector, the cleanness and condition of the contacts** of the oil pressure sensor.  
Change the connector if necessary.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check **the insulation, continuity and absence of interference resistance** on the following connections:

<b>Computer track 24</b>	————▶	<b>Oil pressure sensor track C1</b>
<b>Computer track 25</b>	————▶	<b>Oil pressure sensor track C3</b>
<b>Computer track 55</b>	————▶	<b>Oil pressure sensor track C2</b>

Repair if necessary.

Check that the **resistance** of the oil pressure sensor is not **zero or equal to infinity** between **tracks 24 and 25 of the computer** (definite sensor fault).  
If necessary, replace the oil temperature sensor.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check **the insulation, continuity and absence of interference resistance** on the following connections:

<b>Computer track 53</b>	————▶	<b>Oil temperature sensor track B4</b>
<b>Computer track 54</b>	————▶	<b>Oil temperature sensor track B1</b>

Repair if necessary.

<b>AFTER REPAIR</b>	Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.
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**DF003**  
**(CONTINUED)**

Check the **resistance** of the oil pressure sensor between tracks **53 and 54 of the computer**.  
(See the values in the Help section).  
Change the oil pressure sensor if necessary.

**Replace the computer if the fault persists.**

**AFTER REPAIR**

Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF005 PRESENT OR STORED</b>	<u>OIL PRESSURE SENSOR CIRCUIT</u>
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<b>NOTES</b>	<p><b><u>Conditions for applying the fault finding procedure to the stored fault:</u></b> The fault is declared present after a road test.</p>
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	<p>Disconnect the <b>modular connector</b> of the automatic transmission. Check the <b>cleanness and condition</b> of the connections and the connector. Clean or change it if necessary. Reconnect the modular connector.</p>
	<p>Check <b>the connection of the connector, the cleanness and condition of the contacts</b> of the oil pressure sensor. Change the connector if necessary.</p>
	<p>Disconnect the battery. Disconnect the computer. Check <b>the cleanness and condition</b> of the connections. Connect the bornier in place of the computer and check <b>the insulation, continuity and absence of interference resistance</b> on the following connections:</p> <p style="margin-left: 40px;"> <b>Computer track 24</b> —————▶ <b>Oil pressure sensor track C1</b>  <b>Computer track 55</b> —————▶ <b>Oil pressure sensor track C2</b>  <b>Computer track 25</b> —————▶ <b>Oil pressure sensor track C3</b> </p> <p>Repair if necessary.</p>
	<p>Check that the <b>resistance</b> of the oil pressure sensor is not <b>zero or equal to infinity</b> between <b>tracks 24 and 25 of the computer</b> (definite sensor fault). If necessary replace the oil temperature sensor.</p>
	<p><b>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</b></p>

<b>AFTER REPAIR</b>	<p>Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.</p>
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<b>DF008 PRESENT OR STORED</b>	<u>MULTIFUNCTION SWITCH ON INTERMEDIATE POSITION</u> (see the earth connection of the multifunction switch)
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<b>NOTES</b>	<u>Conditions for applying the fault finding procedure to the stored fault:</u> The fault is declared present when the selector lever is shifted from position <b>P</b> to position <b>D</b> (stopping on all the lever positions).
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	Check the installation of the multifunction switch on the automatic transmission. Check the control adjustment (refer to the checking procedure in the Workshop Repair Manual).																																																
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<b>AFTER REPAIR</b>	Follow the instructions to confirm repair. Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.
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**DF008**  
**(CONTINUED)**

If all the checks are correct, reconnect the computer connector, switch on the ignition, then clear the computer's fault memory. Exit fault finding mode and switch off the ignition.  
Carry out a road test using all the selector lever positions.  
If the fault reappears, replace the multifunction switch.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF009 PRESENT OR STORED</b>	<u>MULTIFUNCTION SWITCH ON INHIBITOR POSITION</u> (see the earth connection of the multifunction switch)
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<b>NOTES</b>	<p><b>Conditions for applying the diagnostic to stored faults:</b></p> <p>The fault is declared present when the selector lever is shifted from position <b>P</b> to position <b>D</b> (stopping on all the lever positions).</p>
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<p>Check the installation of the multifunction switch on the automatic transmission. Check the control adjustment (refer to the checking procedure in the Workshop Repair Manual).</p>																																																
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<b>AFTER REPAIR</b>	<p>Follow the instructions to confirm repair. Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.</p>
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**DF009**  
**(CONTINUED)**

If all the checks are correct, reconnect the computer connector, switch on the ignition, then clear the computer's fault memory. Exit fault finding mode and switch off the ignition.  
Carry out a road test using all the selector lever positions.  
If the fault reappears, replace the multifunction switch.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF010 PRESENT OR STORED</b>	<u>INSTRUMENT PANEL CONNECTION</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network and Instrument panel sections in the Workshop Repair Manual.</li><li>- Carry out a fault finding procedure on the instrument panel system, if necessary.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF095 PRESENT OR STORED</b>	<p><b><u>LEVER LOCK ELECTROMAGNET CIRCUIT</u></b></p> <p>CO.0 : Open circuit or short circuit to earth CC.1 : Short-circuit to + 12 volts</p>
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<b>NOTES</b>	<p><b><u>Conditions for applying the fault finding procedure to the stored fault:</u></b> The fault is declared present after <b>command AC024</b> has been run (sequential command of the actuators).</p>
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<p>Check <b>the connection</b> of the connector, <b>the cleanness and condition</b> of the contacts of the lever locking electro-magnet. Replace any parts if necessary.</p>
<p>Disconnect the battery. Disconnect the computer. Check <b>the cleanness and condition</b> of the connections. Connect the bornier in place of the computer and check <b>the insulation, continuity and absence of interference resistance</b> on the following connections:</p> <p style="margin-left: 40px;"><b>Computer track 11</b>    <math>\longrightarrow</math>    <b>Lever lock solenoid valve track B2</b> <b>+ after ignition</b>        <math>\longrightarrow</math>    <b>Lever lock solenoid valve track B1</b></p> <p>Repair if necessary.</p>
<p>Disconnect the 6-track connector in the central console and measure the coil resistance of the lever lock electromagnet between <b>tracks B1 and B2</b>. Replace the solenoid valve if the resistance is not approximately <b>40 ± 4 ohms</b>.</p>
<p>Ensure that <b>+ after ignition feed is present</b> on <b>track B1</b> of the electromagnet connector.</p>
<p><b>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</b></p>

<b>AFTER REPAIR</b>	<p>Follow the instructions to confirm repair. Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.</p>
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**DF012  
PRESENT  
OR  
STORED**

### EVS SUPPLY (Sequential solenoid valves)

CO : Open circuit  
CC.1 : Short-circuit to + 12 volts

**NOTES**

#### **Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after **command AC024** has been run (sequential command of the actuators).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of no.3 sequential solenoid valve between the following tracks (see the resistance value in the Help section):  
**Computer track 1 —————> Computer track 7**  
Repair if necessary.

If all the checks are correct, switch on ignition then clear the computer's fault memory.  
Exit fault finding mode and switch off the ignition.  
If the fault reappears when the ignition is switched on, replace the internal wiring of the automatic transmission.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

**DF016  
PRESENT  
OR  
STORED**

### CONVERTER LOCK-UP SOLENOID VALVE CIRCUIT

CO.0 : Open circuit or short circuit to earth  
CC.1 : Short-circuit to + 12 volts

**NOTES**

#### **Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after **command AC024** has been run (sequential command of the actuators).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the converter lock-up solenoid valve between the following tracks (see the resistance value in the Help section):

**Computer track 19 —————> Computer track 26**

Repair if necessary.

If all the checks are correct, reconnect the computer connector, switch on the ignition, then clear the computer's fault memory.

Exit fault finding mode and switch off the ignition.

If the fault reappears under the conditions defined in "Notes", replace **the lock-up solenoid valve**.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

**DF017  
PRESENT  
OR  
STORED**

### EXCHANGER FLOW RATE SOLENOID VALVE CIRCUIT

CO.0 : Open circuit or short circuit to earth  
CC.1 : Short-circuit to + 12 volts

**NOTES**

#### **Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after **command AC024** has been run (sequential command of the actuators).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the exchanger flow solenoid valve between the following tracks (see the resistance value in the Help section):

**Computer track 2 —————▶ Computer track 12**

Repair if necessary.

If all the checks are correct, reconnect the computer connector, switch on the ignition, then clear the computer's fault memory. Exit fault finding mode and switch off the ignition.  
If the fault reappears under the conditions defined in "Notes", replace **the exchanger flow rate solenoid valve**.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

**DF018  
STORED**

### CONVERTER LOCK-UP SLIPPAGE

#### **NOTES**

If faults **DF018** and **DF005** are displayed at the same time, replace the pressure modulating solenoid valve, the converter lock-up solenoid valve and the oil.  
***Refer to the Workshop Repair Manual for all mechanical operations.***

Clear the computer memory then carry out a road test. This road test must be carried out in a manner that enables torque converter lock-up tests to be performed (driving in 3<sup>rd</sup> gear with stabilisation of speed for more than 3 consecutive minutes).

Refer to the procedure and the safety instructions for carrying out a setting point check on the torque converter. If the setting point value is not **2300 ± 150 rpm** or if there is internal noise in the converter, replace the torque converter, the converter lock-up solenoid valve and the oil.

If the oil is burnt, also replace the hydraulic distributor, all the solenoid valves and the exchanger.

If replacing the torque converter, ensure that the reaction shaft is securely attached to the hub of the oil pump (flanged shaft).

Note: A setting point which is too low may be linked to a lack of engine power.

If the setting point is OK, replace the lock-up solenoid valve and the oil.

#### **AFTER REPAIR**

Deal with any other faults.

Clear the fault memory and switch off the ignition.

Refer to the Help section for resetting the oil age counter (enter the date of the oil change).

Switch off the ignition, switch the ignition back on and carry out a road test.

Complete the operation by performing a test using the diagnostic tool.

**DF020  
STORED**

OLD OIL

**NOTES**

**None.**

The automatic transmission's computer calculates how the oil is aging by using the operating parameters of the automatic transmission (oil temperature, vehicle speed, etc...).

When fault DF020 is indicated, replace the automatic transmission oil.

After carrying out an oil change, reset the oil age counter in the computer's memory and enter the date of the oil change. These two actions are carried out using command **CF074** (Enter date of gearbox oil change). Then reset the self-adapting parameters using command mode **RZ005** (self-adapting parameters).

**AFTER REPAIR**

Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF022 PRESENT OR STORED</b>	<u>FULL LOAD/NO LOAD PROGRAMMING NOT CARRIED OUT</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
---

<b>AFTER REPAIR</b>	None.
---------------------	-------

**DF023  
PRESENT**

### GEARBOX OIL TEMPERATURE SENSOR CIRCUIT

**NOTES**

None.

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the gearbox oil temperature sensor between the following tracks (see the resistance value in the Help section):

**Computer track 53 —————▶ Computer track 54**

Repair if necessary.

If all the checks are correct, reconnect the computer connector, switch on the ignition, then clear the computer's fault memory.  
Exit fault finding mode and switch off the ignition.  
If the fault reappears when the ignition is switched on, replace the oil temperature sensor.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF024 PRESENT</b>	<u>COOLANT TEMPERATURE SENSOR CIRCUIT</u>
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<b>NOTES</b>	Check that there is no fault in injection fault finding mode.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF029 STORED</b>	<u>MULTIFUNCTION SWITCH ON UNSTABLE POSITION</u> (see the earth connection of the multifunction switch)
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<b>NOTES</b>	<p><b><u>Conditions for applying the fault finding procedure to the stored fault:</u></b> The fault is declared present following a command to move the selector lever from position <b>D</b> to position <b>P</b> (stopping on all the lever positions).</p>
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<p>Check the installation of the multifunction switch on the automatic transmission. Check the control adjustment (refer to the checking procedure in the Workshop Repair Manual).</p>																																																
<p>Disconnect the <b>modular connector</b> of the automatic transmission. Check the <b>cleanness and condition</b> of the connections and the connector. Clean or change it if necessary. Reconnect the modular connector.</p>																																																
<p>Disconnect the battery. Disconnect the computer. Check <b>the cleanness and condition</b> of the connections. Connect the bornier in place of the computer and check the following connections:</p> <p><b><u>Continuity</u></b></p> <table style="width: 100%; border: none;"> <tr> <td style="padding: 2px;">Lever in position P, track 31 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position P, track 34 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Earth</td> </tr> <tr> <td style="padding: 2px;">Lever in position R, tracks 31, 32 and 33 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position N, track 32 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position N, track 34 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Earth</td> </tr> <tr> <td style="padding: 2px;">Lever in position D, track 33 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position 2, tracks 37, 32 and 33 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position 1, tracks 37, 31 and 32 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> </table> <p><b><u>Insulation</u></b></p> <table style="width: 100%; border: none;"> <tr> <td style="padding: 2px;">Lever in position P, tracks 32, 33, 34 and 37 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position P, tracks 31, 32, 33 and 37 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Earth</td> </tr> <tr> <td style="padding: 2px;">Lever in position R, tracks 34 and 37 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position N, tracks 31, 33, 34 and 37 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position N, tracks 31, 32, 33 and 37 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Earth</td> </tr> <tr> <td style="padding: 2px;">Lever in position D, tracks 31, 32, 34 and 37 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position 2, tracks 31 and 34 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> <tr> <td style="padding: 2px;">Lever in position 1, tracks 33 and 34 of the computer</td> <td style="padding: 2px; text-align: center;">—————▶</td> <td style="padding: 2px;">Track 42 of the computer</td> </tr> </table> <p>Repair if necessary.</p>	Lever in position P, track 31 of the computer	—————▶	Track 42 of the computer	Lever in position P, track 34 of the computer	—————▶	Earth	Lever in position R, tracks 31, 32 and 33 of the computer	—————▶	Track 42 of the computer	Lever in position N, track 32 of the computer	—————▶	Track 42 of the computer	Lever in position N, track 34 of the computer	—————▶	Earth	Lever in position D, track 33 of the computer	—————▶	Track 42 of the computer	Lever in position 2, tracks 37, 32 and 33 of the computer	—————▶	Track 42 of the computer	Lever in position 1, tracks 37, 31 and 32 of the computer	—————▶	Track 42 of the computer	Lever in position P, tracks 32, 33, 34 and 37 of the computer	—————▶	Track 42 of the computer	Lever in position P, tracks 31, 32, 33 and 37 of the computer	—————▶	Earth	Lever in position R, tracks 34 and 37 of the computer	—————▶	Track 42 of the computer	Lever in position N, tracks 31, 33, 34 and 37 of the computer	—————▶	Track 42 of the computer	Lever in position N, tracks 31, 32, 33 and 37 of the computer	—————▶	Earth	Lever in position D, tracks 31, 32, 34 and 37 of the computer	—————▶	Track 42 of the computer	Lever in position 2, tracks 31 and 34 of the computer	—————▶	Track 42 of the computer	Lever in position 1, tracks 33 and 34 of the computer	—————▶	Track 42 of the computer
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<b>AFTER REPAIR</b>	<p>Follow the instructions to confirm repair. Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.</p>
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**DF029**  
**(CONTINUED)**

If all the checks are correct, reconnect the computer connector, switch on the ignition, then clear the computer's fault memory. Exit fault finding mode and switch off the ignition.  
Carry out a road test using all the selector lever positions.  
If the fault reappears, replace the multifunction switch.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF030 PRESENT OR STORED</b>	<b><u>CLIMATE CONTROL SHUT-OFF</u></b> CO.0 : Open circuit or short circuit to earth CC.1 : Short-circuit to + 12 volts
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the sections on the multiplex network and on air conditioning in the Workshop Repair Manual.</li><li>- Carry out a fault finding procedure on the air conditioning system, if necessary.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF036 PRESENT OR STORED</b>	<p><b><u>PRESSURE MODULATING SOLENOID VALVE CIRCUIT</u></b></p> <p>CO.0 : Open circuit or short circuit to earth CC.1 : Short-circuit to + 12 volts</p>
--	---

<b>NOTES</b>	<p><b><u>Conditions for applying the fault finding procedure to the stored fault:</u></b> The fault is declared present after <b>command AC024</b> has been run (sequential command of the actuators).</p>
--------------	--

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the pressure modulating solenoid valve between the following tracks (see the resistance value in the Help section):

**Computer track 26 —————▶ Computer track 20**

Repair if necessary.

If all the checks are correct, reconnect the connectors, switch on ignition and clear the fault memory.  
Exit fault finding mode and switch off the ignition.  
If the fault reappears under the conditions defined in "Notes", replace the pressure modulating solenoid valve.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

<b>AFTER REPAIR</b>	<p>If replacing the pressure modulating solenoid valve, the self-adapting parameters must be cleared (command RZ005). Follow the instructions to confirm repair. Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.</p>
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<b>DF037 PRESENT OR STORED</b>	<u>KICKDOWN SWITCH CIRCUIT</u> DEF : Unidentified electrical fault
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the sections on the multiplex network and on ABS/ESP in the Workshop Repair Manual.</li><li>- Carry out a fault finding procedure on the ABS/ESP system, if necessary.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF038 PRESENT OR STORED</b>	<p><b><u>TURBINE SPEED SENSOR CIRCUIT</u></b></p> <p>1.DEF : Signal absent 2.DEF : Interference signal</p>
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<b>NOTES</b>	<p><b><u>Conditions for applying the fault finding procedure to the stored fault:</u></b> The fault is declared present when the engine is running and the gear selector lever is in P.</p>
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Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the turbine speed sensor between the following tracks (see the resistance value in the Help section):  
**Computer track 45 —————▶ Computer track 46**  
Repair if necessary.

If all the checks are correct, reconnect the connectors, switch on ignition and clear the fault memory.  
Exit fault finding mode and switch off the ignition.  
If the fault reappears under the conditions defined in "Notes", check the installation of the turbine speed sensor (position and secure fixture).  
Check the condition of the wiring and that it is routed correctly (risk of signal interference).  
Also check that the high voltage circuits are to specification and in good condition.

If the fault persists, replace the turbine speed sensor.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

<b>AFTER REPAIR</b>	<p>Follow the instructions to confirm repair. Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.</p>
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<b>DF048 PRESENT OR STORED</b>	<p><u>VEHICLE SPEED SIGNAL</u></p> <p>1.DEF : Unidentified electrical fault                  2.DEF : Unidentified electrical fault                  3.DEF : Multiplex system                  4.DEF : Multiplex system</p>
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<b>1.DEF 2.DEF</b>	<b>NOTES</b>	<p><b><u>Conditions for applying the fault finding procedure to the stored fault:</u></b>                  The fault is declared present after a road test.</p>
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<p>Check <b>the cleanness, connection and condition of the connections</b> of the vehicle speed sensor.                  Replace any parts if necessary.</p>
<p>Disconnect the battery.                  Disconnect the computer. Check <b>the cleanness and condition</b> of the connections.                  Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the <b>resistance</b> of the vehicle speed sensor between the following tracks (see the resistance value in the Help section):  <b>Computer track 47 —————&gt; Computer track 48</b>                  Repair if necessary.</p>
<p>If all the checks are correct, reconnect the computer connector and the sensor, switch on the ignition, then clear the computer's fault memory.                  Exit fault finding mode and switch off the ignition.                  If the fault reappears under the conditions defined in "Notes", check the installation of the vehicle speed sensor (position and secure fixture).                  Check the condition of the wiring and that it is routed correctly (risk of signal interference).                  Also check that the high voltage circuits are to specification and in good condition.</p>
<p>If the fault persists, replace the vehicle speed sensor.</p>
<p><b>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</b></p>

<b>AFTER REPAIR</b>	<p>Follow the instructions to confirm repair.                  Deal with any other faults.                  Clear the fault memory and switch off the ignition.                  Carry out a road test.                  Complete the operation by performing a test using the diagnostic tool.</p>
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<b>DF048</b>  <b>(CONTINUED)</b>	
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<b>3.DEF</b> <b>4.DEF</b>	<b>NOTES</b>	Check that there is no fault in injection fault finding mode.
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- Test the multiplex network.
- Refer to the Multiplex network section in the Workshop Repair Manual.

<b>AFTER REPAIR</b>	None.
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**DF049  
STORED**

### GEARBOX OIL PRESSURE REGULATION

1.DEF :  
2.DEF :

#### **NOTES**

If fault **DF005** is displayed deal with this first.  
If faults **DF049** and **DF018** are displayed, replace the pressure modulating solenoid valve, the converter lock-up solenoid valve and the oil.

Put the selector lever into position **P/N**, with the engine stopped, in order to show up any possible fault in the **pressure modulating solenoid valve**.

With the engine stopped, check the line pressure information supplied by the pressure sensor (see the parameters).

Replace the pressure sensor if the value is greater than **0.2 bar**.

Check the oil level.

Fit a pressure gauge to the pressure check point on the automatic transmission housing (if a level check has already been carried out, ensure in the parameter function that the oil temperature is greater than **20°C** before continuing).

Note the line pressure indicated by the pressure gauge and by the diagnostic tool in the following conditions:

– **Brakes applied, lever in D position and engine speed: 1200 rpm.**

Replace the pressure sensor if the measurements from the pressure gauge and the diagnostic tool differ by more than **0.5 bar**.

Repeat the check after replacement.

#### **AFTER REPAIR**

Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

**DF049**

**(CONTINUED)**

Automatic transmission oil **between 60 and 90°**, brakes applied and lever in **D position**, place a pedal press or a stop on the accelerator pedal to get a stable recorded pressure of **approximately 8 bar** (see parameters) at an engine speed of approximately 1300 rpm.

Note the values obtained in these conditions, making sure that the engine speed remains stable between the two readings.

These measurements must be carried out as quickly as possible so that these conditions do not have to be maintained for too long.

Replace the pressure modulating solenoid valve and the oil if the difference between the two values is more than **0.2 bar**.

Repeat the check after replacement. If the fault persists, replace the hydraulic distributor and all the solenoid valves.

On completion of the work, clear the computer's fault memory and the self-adapting parameters by using the command.

Refer to the Help section for resetting the oil age counter (enter the date of the oil change).

Switch off the ignition, switch the ignition back on then carry out a road test.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

### **AFTER REPAIR**

Deal with any other faults.

Clear the fault memory and switch off the ignition.

Carry out a road test.

Complete the operation by performing a test using the diagnostic tool.

**DF054  
PRESENT  
OR  
STORED**

**MULTIFUNCTION SWITCH P/N CONTACT INFORMATION**  
(see the earth connection of the multifunction switch)

**NOTES**

**Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present when the selector lever is shifted from position **P** to position **D** (stopping on all the lever positions).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check **the insulation, continuity and absence of interference resistance** on the following connections:

**Computer track 28** —————▶ **Multifunction switch**

**Computer track 28** —————▶ **Vehicle earth** (see wiring diagram)

Repair if necessary.

If all the checks are correct, switch on ignition then clear the computer's fault memory. Exit fault finding mode and switch off the ignition.

Move the selector lever contact to position **P** or **N**.

If the fault reappears, replace the multifunction switch.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF055 PRESENT OR STORED</b>	<u>INJECTION SYSTEM/AUTOMATIC TRANSMISSION CONNECTION</u> 1. DEF: Signal absent 2. DEF: Interference signal
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF064 PRESENT OR STORED</b>	<u>DISPLAY CIRCUIT</u> CO.0 : Open circuit or short circuit to earth CC.1 : Short-circuit to + 12 volts
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<b>NOTES</b>	None.
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- Test the multiplex network.
- Refer to the sections on the multiplex network and on the instrument panel in the Workshop Repair Manual.
- Carry out a fault finding procedure on the instrument panel system, if necessary.

<b>AFTER REPAIR</b>	None.
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<b>DF084 PRESENT OR STORED</b>	<u>MULTIPLEX NETWORK</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
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<b>AFTER REPAIR</b>	None.
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**DF085  
PRESENT  
OR  
STORED**

### EVS1 SEQUENTIAL SOLENOID VALVE CIRCUITS

CO.0 : Open circuit or short circuit to earth  
CC.1 : Short-circuit to + 12 volts  
CC : Short circuit

### **NOTES**

#### **Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after **command AC024** has been run (sequential command of the actuators).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the EVS1 between the following tracks (see the resistance value in the Help section):

**Computer track 10 —————▶ Computer track 1**

Repair if necessary.

If all of the checks are correct, reconnect the computer connector.  
Switch on the ignition then clear the computer's fault memory, exit from diagnostics mode and switch off the ignition.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

### **AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF086 PRESENT OR STORED</b>	<p><b><u>EVS2 SEQUENTIAL SOLENOID VALVE CIRCUITS</u></b></p> <p>CO.0 : Open circuit or short circuit to earth          CC.1 : Short-circuit to + 12 volts          CC : Short circuit</p>
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<b>NOTES</b>	<p><b><u>Conditions for applying the fault finding procedure to the stored fault:</u></b></p> <p>The fault is declared present after <b>command AC024</b> has been run (sequential command of the actuators).</p>
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	<p>Disconnect the <b>modular connector</b> of the automatic transmission.          Check the <b>cleanness and condition</b> of the connections and the connector.          Clean or change it if necessary.          Reconnect the modular connector.</p>
	<p>Disconnect the battery.          Disconnect the computer. Check <b>the cleanness and condition</b> of the connections.          Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the <b>resistance</b> of the EVS2 between the following tracks (see the resistance value in the Help section):</p> <p style="text-align: center;"><b>Computer track 9 —————▶ Computer track 1</b></p> <p>Repair if necessary.</p>
	<p>If all of the checks are correct, reconnect the computer connector.          Switch on the ignition then clear the computer's fault memory, exit from diagnostics mode and switch off the ignition.</p>
	<p><b>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</b></p>

<b>AFTER REPAIR</b>	<p>Follow the instructions to confirm repair.          Deal with any other faults.          Clear the fault memory and switch off the ignition.          Carry out a road test.          Complete the operation by performing a test using the diagnostic tool.</p>
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**DF087  
PRESENT  
OR  
STORED**

### EVS3 SEQUENTIAL SOLENOID VALVE CIRCUITS

CO.0 : Open circuit or short circuit to earth  
CC.1 : Short-circuit to + 12 volts  
CC : Short circuit

**NOTES**

#### **Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after **command AC024** has been run (sequential command of the actuators).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the EVS3 between the following tracks (see the resistance value in the Help section):  
**Computer track 7 —————> Computer track 1**  
Repair if necessary.

If all of the checks are correct, reconnect the computer connector.  
Switch on the ignition then clear the computer's fault memory, exit from diagnostics mode and switch off the ignition.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

**DF088  
PRESENT  
OR  
STORED**

### EVS5 SEQUENTIAL SOLENOID VALVE CIRCUITS

CO.0 : Open circuit or short circuit to earth  
CC.1 : Short-circuit to + 12 volts  
CC : Short circuit

**NOTES**

#### **Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after **command AC024** has been run (sequential command of the actuators).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the EVS5 between the following tracks (see the resistance value in the Help section):

**Computer track 13 —————▶ Computer track 1**

Repair if necessary.

If all of the checks are correct, reconnect the computer connector.  
Switch on the ignition then clear the computer's fault memory, exit from diagnostics mode and switch off the ignition.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

**DF089  
PRESENT  
OR  
STORED**

### EVS4 SEQUENTIAL SOLENOID VALVE CIRCUITS

CO.0 : Open circuit or short circuit to earth  
CC.1 : Short-circuit to + 12 volts  
CC : Short circuit

**NOTES**

#### **Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after **command AC024** has been run (sequential command of the actuators).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the EVS4 between the following tracks (see the resistance value in the Help section):

**Computer track 8** —————> **Computer track 1**

Repair if necessary.

If all of the checks are correct, reconnect the computer connector.  
Switch on the ignition then clear the computer's fault memory, exit from diagnostics mode and switch off the ignition.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF109 PRESENT OR STORED</b>	<b><u>ENGINE TORQUE MULTIPLEX INFORMATION</u></b> 1.DEF : Consistency 2.DEF : Real torque 3.DEF : Anticipated torque 4.DEF : Torque excluding reduction
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<b>NOTES</b>	<b>Check that there is no fault in injection fault finding mode.</b>
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
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<b>AFTER REPAIR</b>	None.
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**DF112  
PRESENT  
OR  
STORED**

### EVS6 SEQUENTIAL SOLENOID VALVE CIRCUITS

CO.0 : Open circuit or short circuit to earth  
CC.1 : Short-circuit to + 12 volts  
CC : Short circuit

**NOTES**

#### **Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after **command AC024** has been run (sequential command of the actuators).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the EVS6 between the following tracks (see the resistance value in the Help section):

**Computer track 14 —————▶ Computer track 1**

Repair if necessary.

If all of the checks are correct, reconnect the computer connector.  
Switch on the ignition then clear the computer's fault memory, exit from diagnostics mode and switch off the ignition.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>DF114 PRESENT OR STORED</b>	<u>MULTIPLEX PEDAL POSITION</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
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<b>AFTER REPAIR</b>	None.
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**DF116  
PRESENT  
OR  
STORED**

MULTIPLEX ENGINE SPEED INFORMATION

**NOTES**

Check that there is no fault in injection fault finding mode.

- Test the multiplex network.
- Refer to the Multiplex network section in the Workshop Repair Manual.

**AFTER REPAIR**

None.

<b>DF117 PRESENT OR STORED</b>	<u>MULTIPLEX LEFT REAR WHEEL INFORMATION</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the sections on the multiplex network and on ABS/ESP in the Workshop Repair Manual.</li><li>- Carry out a fault finding procedure on the ABS/ESP system, if necessary.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF118 PRESENT OR STORED</b>	<u>MULTIPLEX RIGHT REAR WHEEL INFORMATION</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the sections on the multiplex network and on ABS/ESP in the Workshop Repair Manual.</li><li>- Carry out a fault finding procedure on the ABS/ESP system, if necessary.</li></ul>
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<b>AFTER REPAIR</b>	None.
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**DF119  
PRESENT  
OR  
STORED**

### BRAKE PEDAL POSITION

**NOTES**

Press down on the brake pedal and then release.

Check **the cleanness, connection and condition of the connectors** of the brake switches.  
Change the connector if necessary.

Check the **adjustment** of the brake switches and that they are **working correctly**.  
Change the switch if necessary.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check **the insulation, continuity and absence of interference resistance** on the following connections:

**Computer track 16** —————▶ **Braking computer**

**Computer track 43** —————▶ **Braking computer**

(See the connector track numbers in the appropriate wiring diagram)

Repair if necessary.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

None.

<b>DF121 PRESENT OR STORED</b>	<u>MULTIFUNCTION SWITCH PARK POSITION INFORMATION</u> (see the earth connection of the multifunction switch)
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<b>NOTES</b>	<p><b><u>Conditions for applying the fault finding procedure to the stored fault:</u></b> The fault is declared present following a command to move the selector lever from position <b>D</b> to position <b>P</b> (stopping on all the lever positions).</p>
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Check the installation of the multifunction switch on the automatic transmission.  
Check the control adjustment (refer to the checking procedure in the Workshop Repair Manual).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check the **cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check the following connections:

**Continuity**

- |   |    |                          |
|---|----|--------------------------|
| Lever in position P, track 31 of the computer             | —→ | Track 42 of the computer |
| Lever in position P, track 34 of the computer             | —→ | Earth                    |
| Lever in position R, tracks 31, 32 and 33 of the computer | —→ | Track 42 of the computer |
| Lever in position N, track 32 of the computer             | —→ | Track 42 of the computer |
| Lever in position N, track 34 of the computer             | —→ | Earth                    |
| Lever in position D, track 33 of the computer             | —→ | Track 42 of the computer |
| Lever in position 2, tracks 37, 32 and 33 of the computer | —→ | Track 42 of the computer |
| Lever in position 1, tracks 37, 31 and 32 of the computer | —→ | Track 42 of the computer |

**Insulation**

- |   |    |                          |
|---|----|--------------------------|
| Lever in position P, tracks 32, 33, 34 and 37 of the computer | —→ | Track 42 of the computer |
| Lever in position P, tracks 31, 32, 33 and 37 of the computer | —→ | Earth                    |
| Lever in position R, tracks 34 and 37 of the computer         | —→ | Track 42 of the computer |
| Lever in position N, tracks 31, 33, 34 and 37 of the computer | —→ | Track 42 of the computer |
| Lever in position N, tracks 31, 32, 33 and 37 of the computer | —→ | Earth                    |
| Lever in position D, tracks 31, 32, 34 and 37 of the computer | —→ | Track 42 of the computer |
| Lever in position 2, tracks 31 and 34 of the computer         | —→ | Track 42 of the computer |
| Lever in position 1, tracks 33 and 34 of the computer         | —→ | Track 42 of the computer |

Repair if necessary.

<b>AFTER REPAIR</b>	<p>Follow the instructions to confirm repair. Deal with any other faults. Clear the fault memory and switch off the ignition. Carry out a road test. Complete the operation by performing a test using the diagnostic tool.</p>
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**DF121**  
**(CONTINUED)**

If all the checks are correct, switch on ignition then clear the computer's fault memory. Exit fault finding mode and switch off the ignition.

Move the selector lever contact to position **P** or **N**.

If the fault reappears, replace the multifunction switch.

**If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.**

**AFTER REPAIR**

Follow the instructions to confirm repair.

Deal with any other faults.

Clear the fault memory and switch off the ignition.

Carry out a road test.

Complete the operation by performing a test using the diagnostic tool.

<b>DF122 PRESENT OR STORED</b>	<u>PASSENGER COMPARTMENT COMPUTER CONNECTION</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF123 PRESENT OR STORED</b>	<u>ABS COMPUTER CONNECTION</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF126 PRESENT OR STORED</b>	<u>TURBINE SPEED INFORMATION</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the Multiplex network section in the Workshop Repair Manual.</li></ul>
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<b>AFTER REPAIR</b>	None.
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<b>DF129 PRESENT OR STORED</b>	<u>ELECTRONIC STABILITY PROGRAM</u>
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<b>NOTES</b>	None.
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<ul style="list-style-type: none"><li>- Test the multiplex network.</li><li>- Refer to the sections on the multiplex network and on ABS/ESP in the Workshop Repair Manual.</li><li>- Carry out a fault finding procedure on the ABS/ESP system, if necessary.</li></ul>
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<b>AFTER REPAIR</b>	None.
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**DF131  
PRESENT  
OR  
STORED**

SLIPPAGE

**NOTES**

*If faults DF038 or DF048 are present, deal with them first.*

**Conditions for applying the fault finding procedure to the stored fault:**

The fault is declared present after a road test.

- Excessive slipping indicates a mechanical fault in the automatic transmission.
- Refer to the Workshop Repair Manual.

**AFTER REPAIR**

Follow the instructions to confirm repair.  
Deal with any other faults.  
Clear the fault memory and switch off the ignition.  
Carry out a road test.  
Complete the operation by performing a test using the diagnostic tool.

<b>NOTES</b>	<b>Ignition on, engine stopped.</b>
	The values shown in the conformity check are only examples. If necessary, refer to the exact function specifications in the Workshop Repair Manual.

Order	Function	Parameter or status Check or action	Display and notes	Fault finding
<b>Electrical supply function</b>				
1	Battery voltage	<b>PR008:</b> Computer supply voltage	$11.8 < X < 13.2 \text{ V}$	<b>In the event of a problem: consult fault finding procedure PR008.</b>
<b>Brake pedal function</b>				
2	Brake pedal	<p><b><i>Brake pedal released</i></b></p> <p><b>ET003:</b> Brake light contact opening</p> <p><b>ET142:</b> Brake pedal pressed</p> <p><b><i>Brake pedal applied</i></b></p> <p><b>ET003:</b> Brake light contact opening</p> <p><b>ET142:</b> Brake pedal pressed</p>	<p><b>STATUS CONFIRMED</b></p> <p><b>STATUS NOT CONFIRMED</b></p> <p><b>STATUS NOT CONFIRMED</b></p> <p><b>STATUS CONFIRMED</b></p>	<b>In the event of a problem consult fault finding procedures ET003 and ET142.</b>
<b>Gear selector function</b>				
3	Gear selector	<p><b><i>Selector in position P</i></b></p> <p><b>ET012:</b> Gear selector position</p> <p><b><i>Selector in position R</i></b></p> <p><b>ET012:</b> Gear selector position</p> <p><b><i>Selector in position N</i></b></p> <p><b>ET012:</b> Gear selector position</p> <p><b><i>Selector in position D</i></b></p> <p><b>ET012:</b> Gear selector position</p>	<p>Position P confirmed by diagnostic tool</p> <p>Position R confirmed by diagnostic tool</p> <p>Position N confirmed by diagnostic tool</p> <p>Position D confirmed by diagnostic tool</p>	<b>In the event of a problem, consult:</b> – the status charts in the Help section, – diagnostic ET012.

<b>NOTES</b>	<b>Ignition on, engine stopped.</b>
	The values shown in the conformity check are only examples. If necessary, refer to the exact function specifications in the Workshop Repair Manual.

Order	Function	Parameter or status Check or action	Display and notes	Fault finding
3 (Continued)	Gear selector	<p><b>Selector in position 2</b></p> <p><b>ET012:</b> Gear selector position</p> <p><b>Selector in position 1</b></p> <p><b>ET012:</b> Gear selector position</p> <p><b>Selector in position D and forced 3<sup>rd</sup> button pressed (D3)</b></p> <p><b>ET012:</b> Gear selector position</p> <p><b>Snow mode switch pressed</b></p> <p><b>ET081:</b> Snow mode</p>	<p>Position 2 confirmed by the diagnostic tool</p> <p>Position 1 confirmed by the diagnostic tool</p> <p>Forced 3<sup>rd</sup> position confirmed by the diagnostic tool</p> <p>Snow mode position confirmed by the diagnostic tool</p>	<p><b>In the event of a problem, consult:</b></p> <ul style="list-style-type: none"> <li>- the status charts in the Help section,</li> <li>- diagnostic ET012.</li> </ul> <p><b>In the event of a problem, consult diagnostic ET012</b></p> <p><b>In the event of a problem, consult diagnostic ET081.</b></p>
<b>Sensor function</b>				
4	Oil pressure sensor	<p><b>PR003:</b> Oil pressure</p>	Pressure < 0.2 bar	<b>In the event of a problem, consult diagnostic PR003.</b>

<b>NOTES</b>	<b>Engine warm at idle speed, no electrical consumers.</b>
	The values shown in the conformity check are only examples. If necessary, refer to the exact function specifications in the Workshop Repair Manual.

Order	Function	Parameter or status Check or action	Display and notes	Fault finding
<b>Electrical supply functions</b>				
1	Battery voltage	<b>PR008:</b> Computer supply voltage	$13 < X < 14.5 \text{ V}$	<b>In the event of a problem, consult diagnostic PR008.</b>
<b>Sensor functions</b>				
2	Oil temperature sensor	<b>PR004:</b> oil temperature.	$X = \text{Engine temperature} \pm 5 \text{ }^\circ\text{C}$	<b>In the event of a problem, consult diagnostic PR004.</b>
3	Oil pressure sensor	<b>Speed 1200rpm and pressure ~ 7 bar.</b> <b>PR146:</b> Difference between setpoint and oil pressure	Difference < 0.8 bar	<b>In the event of a problem, consult diagnostic PR146.</b>
4	Engine and turbine speeds	<b>PR128:</b> Engine/turbine speed difference	Engine speed = Turbine speed	<b>In the event of a problem, consult diagnostic PR128.</b>

<b>NOTES</b>	<b>Road test.</b>
	The values shown in the conformity check are only examples. If necessary, refer to the exact function specifications in the Workshop Repair Manual.

Order	Function	Parameter or status Check or action	Display and notes	Fault finding
<b>Sensor functions</b>				
1	Automatic transmission vehicle speed sensor	<b>PR105:</b> Vehicle speed	X = Vehicle speed	<b>In the event of a problem, consult diagnostic PR105.</b>

**ET003**

BRAKE STOP CONTACT OPENING

**NOTES**

There must be no faults present or stored.

Check **the cleanness, connection and condition of the connector** of the brake switch.  
Change the connector if necessary.

Check **the** brake switch adjustment and check that the switch **is working correctly**.  
Change the switch if necessary.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check **the insulation, continuity and absence of interference resistance** on the following connection:  
**Computer track 16** —————▶ **Brake switch track 3**  
Repair if necessary.

**AFTER REPAIR**

Restart the conformity check from the beginning.

<b>ET012</b>	<u>GEAR SELECTOR POSITION</u>
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<b>NOTES</b>	There must be no faults present or stored.
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	<p>Check the installation of the multifunction switch on the automatic transmission. Check the control adjustment (refer to the checking procedure in the Workshop Repair Manual).</p>																																																
	<p>Disconnect the <b>modular connector</b> of the automatic transmission. Check the <b>cleanness and condition</b> of the connections and the connector. Clean or change it if necessary. Reconnect the modular connector.</p>																																																
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<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
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**ET012**  
**(CONTINUED)**

Gear lever in position **D**

**Forced 3<sup>rd</sup> switch deactivated**

**Computer track 36** —————▶ **Insulated against earth**

**Forced 3<sup>rd</sup> switch activated**

**Computer track 36** —————▶ **Earth**

Rectify the electrical line or change the switch.

If all the checks are correct, reconnect the computer connector, switch on the ignition, then clear the computer's fault memory. Exit fault finding mode and switch off the ignition.

Carry out a road test using all the selector lever positions.

If the fault reappears, replace the multifunction switch.

**ET081**

### SNOW MODE

#### **NOTES**

There must be no faults present or stored.

Disconnect the switch connector.  
Check the cleanness and condition of the connections.  
Check for the presence of **earth on track B2** of the connector.  
Repair if necessary.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check the following connections:

#### **"Normal" switch position**

**Computer track 40** —————▶ **Insulated against earth**

#### **"Snow mode" position switch**

**Computer track 40** —————▶ **Earth**

Rectify the electrical line or change the switch.

If it still does not function, change the switch.

#### **AFTER REPAIR**

Restart the conformity check from the beginning.

**ET142**

BRAKE PEDAL PRESSED

**NOTES**

There must be no faults present or stored.

Check **the cleanness, connection and condition of the connector** of the brake switch.  
Change the connector if necessary.

Check the **adjustment** of the brake switch and that the switch **is working correctly**.  
Change the switch if necessary.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check **the insulation, continuity and absence of interference resistance** on the following connections:

**Computer track 43 —————▶ Brake switch**

(See the connector track number in the appropriate wiring diagram)

Repair if necessary.

**AFTER REPAIR**

Restart the conformity check from the beginning.

**PR003**

### OIL PRESSURE

#### **NOTES**

There must be no faults present or stored.

Check **the cleanness, connection and condition of the connector** of the oil pressure sensor.  
Change the connector if necessary.

Check that the **resistance of the** oil pressure sensor is not **zero or equal to infinity** (definite sensor fault).  
If necessary replace the oil temperature sensor.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer and check **the insulation, continuity and absence of interference resistance** on the following connections:

**Computer track 24** —————▶ **Oil pressure sensor track C1**  
**Computer track 55** —————▶ **Oil pressure sensor track C2**  
**Computer track 25** —————▶ **Oil pressure sensor track C3**

Repair if necessary.

#### **AFTER REPAIR**

Restart the conformity check from the beginning.

**PR004**

### AUTOMATIC TRANSMISSION OIL TEMPERATURE

#### **NOTES**

There must be no faults present or stored.

If the reading is inconsistent, ensure that the sensor is obeying the "resistance versus temperature" calibration curve.  
Replace the sensor if the values are incorrect (**NOTE:** If a sensor is incorrect, this is often due to an electric shock).

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the gearbox oil temperature sensor between the following tracks (see the resistance value in the help section):  
**Computer track 53 —————▶ Computer track 54**  
Repair if necessary.

If all the checks are correct, reconnect the computer connector, switch on the ignition, then clear the computer's fault memory.  
Exit fault finding mode and switch off the ignition.  
If the fault reappears when the ignition is switched on, replace the oil temperature sensor.

#### **AFTER REPAIR**

Restart the conformity check from the beginning.

**PR008**

COMPUTER SUPPLY VOLTAGE

**NOTES**

There must be no faults present or stored.  
All electrical consumers switched off.

**IGNITION ON**

**If voltage < Min. the battery is discharged:**

Check the charging circuit to determine the cause of this fault.

**If voltage > Max. the battery may be over-charged:**

Check that the charging voltage is correct with and without electrical consumers.

**ENGINE AT IDLE SPEED**

**If voltage < Min. the charging voltage is too low:**

Check the charging circuit to determine the cause of this fault.

**If voltage > Max. the charging voltage is too high:**

The alternator regulator is faulty.

**AFTER REPAIR**

Restart the conformity check from the beginning.

**PR105**

### VEHICLE SPEED

#### **NOTES**

There must be no faults present or stored.

- **Test the multiplex network.**
- **Refer to the Multiplex network section in the Workshop Repair Manual.**

Check **the cleanness, connection and condition of the connections** of the vehicle speed sensor.  
Replace any parts if necessary.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the vehicle speed sensor between the following tracks (see the resistance value in the help section):  
**Computer track 47 —————▶ Computer track 48**  
Repair if necessary.

If all the checks are correct, reconnect the computer connector and the sensor, switch on the ignition, then clear the computer's fault memory.  
Exit fault finding mode and switch off the ignition.  
If the fault reappears under the conditions defined in "Notes", check the installation of the vehicle speed sensor (position and secure fixture).  
Check the condition of the wiring and that it is routed correctly (risk of signal interference).  
Also check that the high voltage circuits are to specification and in good condition.

If the fault persists, replace the vehicle speed sensor.

#### **AFTER REPAIR**

Restart the conformity check from the beginning.

**PR128**

### ENGINE/TURBINE SPEED DIFFERENCE

#### **NOTES**

There must be no faults present or stored.

Disconnect the **modular connector** of the automatic transmission.  
Check the **cleanness and condition** of the connections and the connector.  
Clean or change it if necessary.  
Reconnect the modular connector.

Disconnect the battery.  
Disconnect the computer. Check **the cleanness and condition** of the connections.  
Connect the bornier in place of the computer, check the insulation, continuity of the circuit and the **resistance** of the turbine speed sensor between the following tracks (see the resistance value in the help section):  
**Computer track 45 —————▶ Computer track 46**  
Repair if necessary.

If all the checks are correct, reconnect the connectors, switch on the ignition and clear the fault memory.  
Exit fault finding mode and switch off the ignition.  
If the fault reappears under the conditions defined in "Notes", check the installation of the turbine speed sensor (position and secure fixture).  
Check the condition of the wiring and that it is routed correctly (risk of signal interference).  
Also check that the high voltage circuits are to specification and in good condition.

If the fault persists, replace the turbine speed sensor.

#### **AFTER REPAIR**

Restart the conformity check from the beginning.

<b>PR146</b>	<u>DIFFERENCE BETWEEN SETPOINT AND OIL PRESSURE</u>
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<b>NOTES</b>	There must be no faults present or stored.
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	<p>Disconnect the <b>modular connector</b> of the automatic transmission. Check the <b>cleanness and condition</b> of the connections and the connector. Clean or change it if necessary. Reconnect the modular connector.</p>
	<p>Check <b>the connection of the connector, the cleanness and condition of the contacts</b> of the oil pressure sensor. Change the connector if necessary.</p>
	<p>Disconnect the battery. Disconnect the computer. Check <b>the cleanness and condition</b> of the connections. Connect the bornier in place of the computer and check <b>the insulation, continuity and absence of interference resistance</b> on the following connections:</p> <p style="margin-left: 40px;"> <b>Computer track 24</b> —————▶ <b>Oil pressure sensor track C1</b>  <b>Computer track 55</b> —————▶ <b>Oil pressure sensor track C2</b>  <b>Computer track 25</b> —————▶ <b>Oil pressure sensor track C3</b> </p> <p>Repair if necessary.</p>
	<p>Check that the <b>resistance</b> of the oil pressure sensor is not <b>zero or equal to infinity</b> between <b>tracks 24 and 25 of the computer</b> (definite sensor fault). If necessary replace the oil temperature sensor.</p>

<b>AFTER REPAIR</b>	None.
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### SPECIAL NOTES

#### **– REPLACING THE COMPUTER**

When replacing the automatic transmission computer, the AT oil age value in the computer being replaced must be loaded into the memory of the new computer.

Use the following procedure:

- Using parameter PR133 (Oil age counter), read the oil age value from the memory of the computer being replaced and note the value.
- Replace the computer. Enter the oil age value into the memory of the new computer using the command CF320 (Oil age counter report).

#### **– CHANGING THE AUTOMATIC TRANSMISSION OIL**

The oil age counter must be reset when the automatic transmission oil is changed. It is reset by entering the date of the oil change using command CF074 (Enter date of gearbox oil change).

#### **– REPLACING COMPONENTS**

The SIEMENS TA2000 computer uses self-adapting parameters for gear change management and the lock-up function.

These self-adapting parameters enable the pressure and fill times for the brakes and clutches to be optimised as a function of the specific mechanical/hydraulic characteristics of each automatic transmission.

Therefore, replacing any component that influences these parameters requires the stored values to be updated. The self-adapting parameters are reset using command RZ005.

After using command RZ005, it is important to carry out a test drive performing all gear changes, both up and down, several times in order to store the new values.

#### **Reset the self-adapting parameters after replacing the following components:**

- Hydraulic distributor.
- Torque converter.
- Pressure modulating solenoid valve.
- The entire automatic transmission.

**ELECTRICAL RESISTANCE OF COMPONENTS**

*Resistance values of components at 20°C:*

Lever locking electromagnet (EVSL)	<b>45 ohms ± 10%</b>
Exchanger flow rate solenoid valve (EPDE)	<b>40 ohms ± 10%</b>
Converter lock-up solenoid valve (EVLU)	<b>1.5 ohms ± 10%</b>
Modulating solenoid valve	<b>1.5 ohms ± 10%</b>
Sequential solenoid valve no. 1 (EVS1)	<b>40 ohms ± 10%</b>
Sequential solenoid valve no. 2 (EVS2)	<b>40 ohms ± 10%</b>

Sequential solenoid valve no. 3 (EVS3) **40 ohms ± 10%**

Sequential solenoid valve no. 4 (EVS4) **40 ohms ± 10%**

Sequential solenoid valve no. 6 (EVS6) **40 ohms ± 10%**

Sequential solenoid valve no. 5 (EVS5) **40 ohms ± 10%**

Turbine speed sensor **300 ohms ± 10%**

Vehicle speed sensor **1200 ohms ± 10%**

Oil pressure sensor **20 Kohms ± 10%**

<i>Oil temperature sensor</i>			
<i>Temperature in °C</i>	<b>20</b>	<b>40</b>	<b>80</b>
<i>Resistance in ohms ± 10%</i>	<b>2500</b>	<b>1300</b>	<b>300</b>

### DIAGNOSTIC TOOL STATUS CHART

Statuses for the multifunction and gear lever switches:

– Switch on the ignition

LEVER POSITION	MULTIFUNCTION SWITCH CONTACT			
	S2	S3	S4	P
P	<i>INACTIVE</i>	<b>ACTIVE</b>	<b>ACTIVE</b>	<i>INACTIVE</i>
R	<i>INACTIVE</i>	<i>INACTIVE</i>	<i>INACTIVE</i>	<b>ACTIVE</b>
N	<b>ACTIVE</b>	<i>INACTIVE</i>	<b>ACTIVE</b>	<i>INACTIVE</i>
D	<b>ACTIVE</b>	<b>ACTIVE</b>	<i>INACTIVE</i>	<b>ACTIVE</b>
2	<b>ACTIVE</b>	<i>INACTIVE</i>	<i>INACTIVE</i>	<b>ACTIVE</b>
1	<i>INACTIVE</i>	<i>INACTIVE</i>	<b>ACTIVE</b>	<b>ACTIVE</b>
D + forced 3 <sup>rd</sup>	<b>ACTIVE</b>	<b>ACTIVE</b>	<i>INACTIVE</i>	<b>ACTIVE</b>

**Statuses for sequential solenoid valves:**

– Switch on the ignition

LEVER POSITION	GEAR ENGAGED	STATUSES FOR EVS					
		1	2	3	4	5	6
P	Neutral	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE
R	R	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
N	Neutral	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE
P or N < -10°C	Neutral	INACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
D at stop or when driving	1	INACTIVE	INACTIVE	ACTIVE	ACTIVE	ACTIVE	INACTIVE
D at stop or when driving	2	INACTIVE	ACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE
D when driving	3	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
D when driving	4	ACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
2	2	INACTIVE	INACTIVE	ACTIVE	ACTIVE	ACTIVE	INACTIVE
1	1	INACTIVE	INACTIVE	ACTIVE	ACTIVE	ACTIVE	INACTIVE
D + Snow mode	2	INACTIVE	ACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE

### NOTES

Consult Customer complaints only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

**NO DIALOGUE WITH THE COMPUTER**

→ **CHART 1**

**ENGINE STARTING PROBLEMS**

→ **CHART 2**

→ The starter does not engage when the selector lever is in the P OR N positions.

**AUTOMATIC TRANSMISSION OPERATING PROBLEMS**

→ **CHART 3**

- No forward and/or reverse movement
- Late engagement with engine racing followed by a jolt when starting
- The vehicle moves sluggishly when starting
- Jolts, slippage or engine racing when changing gear
- No gear changing possible, vehicle stuck in one gear
- One or more of the gears is missing

**AUTOMATIC TRANSMISSION MALFUNCTIONING ON GEAR CHANGING**

→ **CHART 4**

**UNTIMELY GEAR CHANGES**

→ **CHART 5**

### NOTES

Consult Customer complaints only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

REVERSING LIGHTS DO NOT WORK

CHART 6

Reverse gear works and the bulbs are OK

OIL PRESENT UNDER THE VEHICLE

CHART 7

SELECTOR LEVER DOES NOT LOCK WHEN IN PARK POSITION

CHART 8

SELECTOR LEVER STUCK IN PARK POSITION (NOT POSSIBLE TO UNLOCK IT BY DEPRESSING THE PEDAL)

CHART 9

### CHART 1

### NO DIALOGUE WITH THE COMPUTER

#### NOTES

None.

Try to establish dialogue with a computer on another vehicle to make sure that the diagnostic tool is not faulty. If the diagnostic tool is not the cause of 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 lines **K** and **L**. Disconnect the computers one at a time to locate the fault. Check the battery voltage and carry out the operations necessary to obtain the correct voltage (**8.7 volts < battery voltage < 16 volts**).

Check whether the **7.5A fuse for the automatic transmission on the fuse board has blown**. If the **7.5 A fuse** is replaced but blows again as soon as the ignition is switched back on, give priority to finding a short circuit to earth of the **+ after ignition feed supply** of the computer or the modulating or converter lock-up solenoid valves (tracks in question: **26** and **27** of the computer). Check the connection and condition of the connectors at the computer connector. Check that the computer is correctly supplied:

- **Earth on track 28.**
- **+after ignition feed on track 27.**

Check that the diagnostic socket is correctly supplied:

- **Earth on tracks 4 and 5** of the diagnostic socket.
- **+ battery on track 16** of the diagnostic socket
- **+ after ignition feed on track 1** of the diagnostic socket.

Check and ensure the continuity and insulation of the lines connecting the diagnostic socket and the computer:

- Between **track 17** of the computer connector and **track 15** of the diagnostic socket.
- Between **track 18** of the computer connector and **track 7** of the diagnostic socket.

If dialogue is still not established after these various checks, replace the computer and clear the fault memory after completion of the work (see the Help section).

#### AFTER REPAIR

When dialogue is established, deal with any faults present or stored.

CHART 2

ENGINE STARTING PROBLEMS

**NOTES**

Consult the fault finding charts only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

Check that the diagnostic tool display is consistent with the selector lever positions.

**Is it consistent?**

no

Check the mountings of the multifunction switch.  
Check the control adjustment using the method described in the Technical Note.

yes

Switch off the ignition, disconnect the automatic transmission connector.  
When the starter is activated, check that there is **12 volts on track A5** of the **12-track green module** on the vehicle wiring side.

**Is there 12 volts on track A5?**

no

Check the starter relay.  
Check the continuity of the connection between **track A5** of the automatic transmission connector and the ignition switch relay.  
Ensure that the ignition switch is working properly.

yes

Check the power circuit of the starter relay and the starter.

**AFTER REPAIR**

Perform a road test followed by a test using the diagnostic tool.

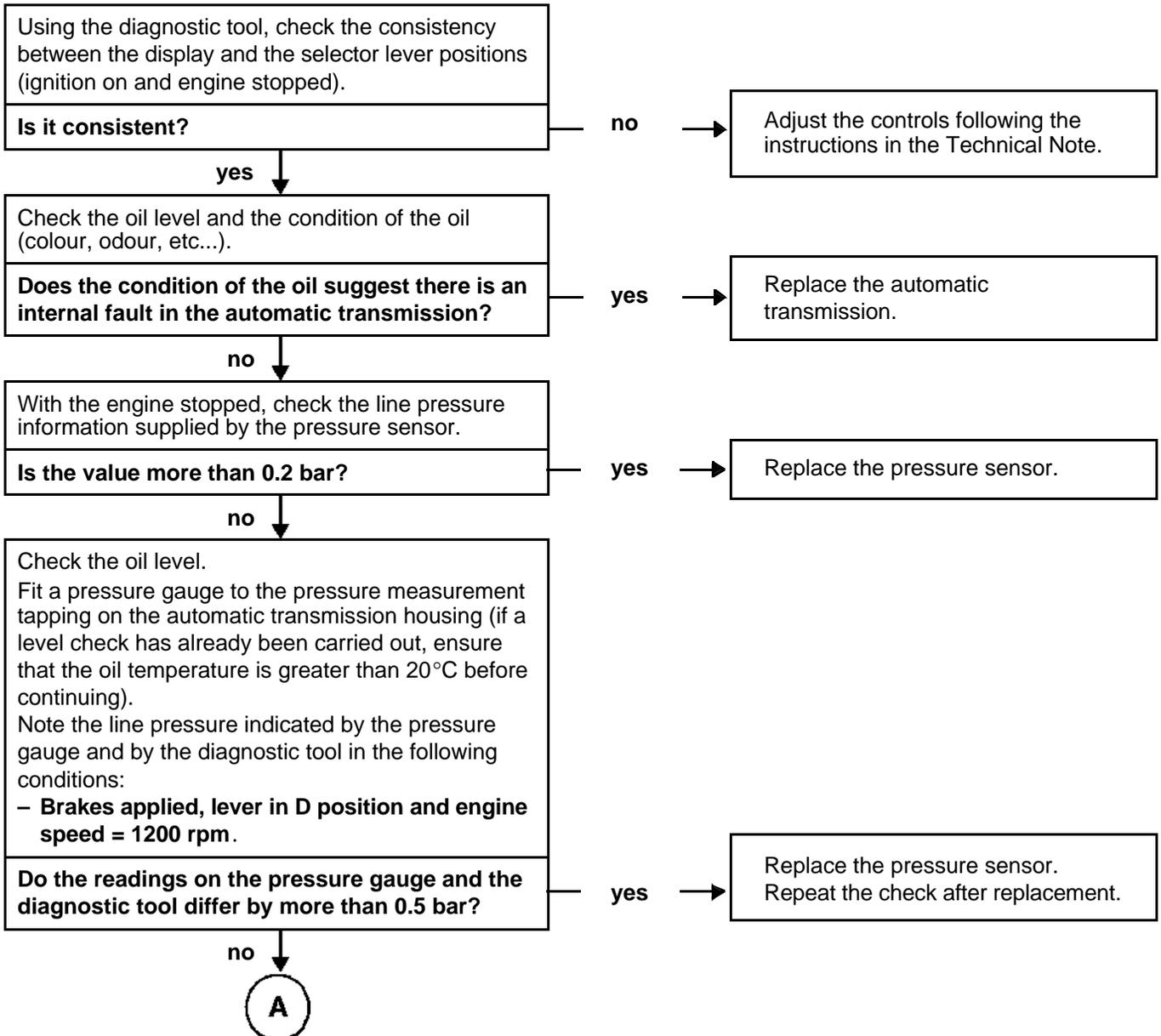
### CHART 3

### AUTOMATIC TRANSMISSION OPERATING PROBLEMS

#### NOTES

Consult the fault finding charts only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

If the engine races while cold when shifting between 1<sup>st</sup> and 2<sup>nd</sup> gears (transmission oil temperature less than 15°), replace the pressure modulating solenoid valve



#### AFTER REPAIR

On completion of the work, clear the computer's fault memory and the self-adapting parameters by using the command. Refer to the Help section for information on resetting the oil age counter (enter the date if changing the automatic transmission oil).

<p><b>CHART 3</b> <b>(CONTINUED 1)</b></p>	
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Automatic transmission oil between **60°** and **90°**, brakes applied and lever in D position, place a pedal press or a stop on the accelerator pedal to get a stable recorded pressure of **approximately 8 bar** (engine speed approximately 1300 rpm). Note the values obtained in these conditions, making sure that the engine speed remains stable between the two readings. These measurements must be carried out as quickly as possible so that these conditions do not have to be maintained for too long.

**Is the difference between the two values more than 0.3 bar?**

yes →

Replace the pressure modulating solenoid valve and the oil. Repeat the check after replacement. If the fault persists, replace the hydraulic distributor and all the solenoid valves.

no ↓

Start the engine. With the brakes applied, move the selector lever into position **D** and accelerate, observing the turbine speed information.

**Does the turbine speed information change?**

yes →

Replace the automatic transmission.

no ↓

Refer to the procedure and the safety instructions for carrying out a setting point check on the torque converter. Theoretical value of engine speed at the setting point:

**2300 ± 150 rpm.**

**Is the value of the setting point wrong or is there an internal noise in the converter?**

yes →

Replace the torque converter, the lock-up solenoid valve and the oil. If the oil is burnt, also replace the hydraulic distributor and all the solenoid valves. When replacing the torque converter, ensure that the reaction shaft is securely attached to the hub of the oil pump (flanged shaft).

**Note:** A setting point which is too low may be linked to a lack of engine power.

no ↓



<p><b>AFTER REPAIR</b></p>	<p>On completion of the work, clear the computer's fault memory and the self-adapting parameters by using the command. Refer to the Help section for information on resetting the oil age counter (enter the date if changing the automatic transmission oil).</p>
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**CHART 3**  
**(CONTINUED 2)**

**B**

Carry out a road test, observing the engine speed on the instrument panel and the displays on the diagnostic tool (refer to the Help section).

**Does the engine speed change each time there is a gear change?**

no

Replace the hydraulic distributor and all the solenoid valves.

yes

The checks carried out have not provided any evidence of a fault and the automatic transmission appears to be working correctly. If the vehicle does show the customer complaint selected, continue with the entire diagnostic procedure.

**AFTER REPAIR**

On completion of the work, clear the computer's fault memory and the self-adapting parameters by using the command. Refer to the Help section for information on resetting the oil age counter (enter the date if changing the automatic transmission oil).

**CHART 4**

**AUTOMATIC TRANSMISSION MALFUNCTIONING  
ON GEAR CHANGING**

**NOTES**

Consult the fault finding charts only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

The automatic transmission may show malfunctions during gear changing without any fault being stored in the computer. These malfunctions may be due to contact resistance problems on the control lines of the sequence and progressivity solenoid valves (EVS1 to EVS6) preventing the self-diagnostic system from detecting a fault in the solenoid valve or preventing the solenoid valves from being controlled.  
Check the clamping action and condition of the clips on all the connections to the solenoid valve control lines (from the computer to the solenoid valve).

**AFTER REPAIR**

Perform a road test followed by a test using the diagnostic tool.

**CHART 5**

**UNTIMELY GEAR CHANGES**

**NOTES**

Consult the fault finding charts only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

Does the display for the selector lever position change when the fault appears (position D disappears)?

no

Check how the automatic transmission wiring is routed (high voltage interference).  
Modify if necessary.

yes

Check the adjustment of the external control.  
If the fault persists, replace the multifunction switch.

**AFTER REPAIR**

Perform a road test followed by a test using the diagnostic tool.

### CHART 6

### REVERSING LIGHTS DO NOT WORK

#### NOTES

Consult the fault finding charts only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

Switch off the ignition, disconnect the automatic transmission connector.  
Switch the ignition back on and check that there is **+ after ignition feed** on **track A2** of the **12-track green module** on the vehicle wiring side.

Is there **+ after ignition feed** on **track A2**?

no

Check the continuity of the connection between **track A2** of the **12-track green module** and the passenger compartment interconnecting unit.

yes

Switch off the ignition and check the continuity between **tracks A1 and A2** of the **12-track green module** on the gearbox side, with the lever in position **R**.  
If continuity is not provided, replace the multifunction switch.  
If continuity is good, ensure there is continuity between **track A1** of the module on the vehicle wiring side and the reversing lights. Also check the rear lights earth.

#### AFTER REPAIR

Perform a road test followed by a test using the diagnostic tool.

**CHART 7**

**OIL PRESENT UNDER THE VEHICLE**

**NOTES**

Consult the fault finding charts only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

Wash the automatic transmission, check the oil level using the method described in the Technical Note, mop up the leak and locate its origin.

Deal with the source of the leak and replace the faulty components.

Check the oil level.

**AFTER REPAIR**

Perform a road test followed by a test using the diagnostic tool.

**CHART 8****SELECTOR LEVER DOES NOT LOCK WHEN IN PARK POSITION****NOTES**

Consult the fault finding charts only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

Carry out fault finding procedure **DF095** even if there is no fault identified in the shift-lock electromagnet. Check the brake pedal switch circuits. Refer to the diagnostic of statuses **ET003** and **ET142**.

If the customer complaint persists, look for a mechanical problem on the lever locking mechanism.

**AFTER REPAIR**

Perform a road test followed by a test using the diagnostic tool.

**CHART 9**

**SELECTOR LEVER STUCK IN PARK POSITION**

**NOTES**

Consult the fault finding charts only after carrying out a diagnostic using the diagnostic tool and after completing the conformity check.

Carry out fault finding procedure **DF095** even if there is no fault identified in the shift-lock electromagnet. Check the brake pedal switch circuits. Refer to the diagnostic of statuses **ET003** and **ET142**.

If the customer complaint persists, look for a mechanical problem on the lever locking mechanism.

**AFTER REPAIR**

Perform a road test followed by a test using the diagnostic tool.