MEGANE

2 Transmission

23A AUTOMATIC TRANSMISSION

77 11 321 322 SEPTEMBER 2005 EDITION ANGLAISE

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which his vehicles are constructed."

Transmission

Contents

ABBREVIATIONS

ABBREVIATIONS	MEANING OF ABBREVIATION
ABS	Anti-lock braking system
ALP	Fault finding chart
APC	After ignition feed
AVC	Before ignition feed
BVA	Automatic transmission
BVM	Manual gearbox
BVR	Semi-automatic
CAN	Controller Area Network
AC	Air conditioning
CD	Compact disc
PAS	Power assisted steering (hydraulic)
DAE	Electric power assisted steering
DVD	Digital versatile disc
DTC	Fault finding code
EGR	Exhaust gas recirculation
ESP	Electronic stability program
GMV	Fan unit
GNC	Compressed natural gas
LPG	Liquified petroleum gas
HLE	High elastic limit
MAG	Metal active gas (for welding steel)
MIG	Metal inert gas (for welding aluminium)
MR	Workshop repair manual
TN	Technical note
OBD	On board diagnostics
SER	Resistance spot welding
SSPP	Tyre pressure monitor
THLE	Very high elastic limit
TM	Labour time
UCH	UCH
UPC	Protection and switching unit
UCT	Roof control unit
UHLE	Ultra high elastic limit
VIN	Vehicle identification number

AUTOMATIC TRANSMISSION
Fault finding - Introduction

1. SCOPE OF THIS DOCUMENT

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

Vehicle(s): ***MEGANE II***	*Name of computer:* ***Siemens TA 2000***
Function concerned: ***AUTOMATIC TRANSMISSION***	*Program no.:* ***94***
	VDIAG no.: ***10***

2. ITEMS REQUIRED FOR FAULT FINDING

Documentation:

Fault finding procedures (this manual)**:**
– Assisted fault finding (included in the diagnostic tool), Dialogys.

Wiring Diagrams:
– Visu-Schéma (CD-ROM), paper version.

Diagnostic tools:
– CLIP

Special tooling required:

Special tooling required	
	Multimeter
Elé. 1681	Universal bornier
Elé. 1588	Bornier

3. REMINDERS

Procedure

To carry out fault finding on the vehicle's computers, switch the ignition to fault finding mode (forced + after ignition). Proceed as follows:
– Renault card in the card reader (keyless vehicle scenario 1, entry-level, not hands-free and scenario 2, top of the range, hands-free).
– Press and hold the start button (longer than **5 seconds**) with starting conditions not met.
– Then connect the diagnostic tool and carry out the required operations.

Note:
The left and right-hand discharge bulb computers are fed when the dipped headlights are switched on. It is only possible to test them after the ignition has been switched on in fault finding mode (forced + after ignition feed) and the dipped headlights are switched on.

To **cut off the + after ignition**, proceed as follows:
– Disconnect the diagnostic tool.
– Press the start button twice briefly (less than **3 seconds**).
– Check that the forced + after ignition feed has been cut off by observing the extinction of the computer warning lights on the instrument panel.

Faults

Faults are displayed as present or stored (they appeared in a certain context and have since disappeared, or they are still present but cannot be diagnosed in the current context).

The "**present**" or "**stored**" status of faults must be taken into account when using the diagnostic tool after switching on the + after ignition (without activating the system components).

Deal with **present faults** according to the procedure shown in the section on "**Interpretation of faults**".

For a **stored fault**, note the faults displayed and follow the instructions shown in the "**Notes**" section.

If the fault is **confirmed** when the notes are applied, the fault is present. In this case, deal with the fault.

If the fault is **not confirmed**, check:
- the electrical lines which correspond to the fault,
- the connectors on these lines (corrosion, bent pins, etc.),
- the resistance of the component detected as faulty,
- the condition of the wires (melted or split insulation, chafing).

Conformity check

The aim of the conformity check is to check the statuses and parameters that do not display a fault on the diagnostic tool when they are inconsistent. Therefore, this step is used to:
- Find faults which are not displayed but which may correspond to a customer complaint.
- Check that the system is operating correctly, and that there is no risk of a fault recurring after repair.

This section explains the fault finding procedures for statuses and parameters, and the conditions for checking them.

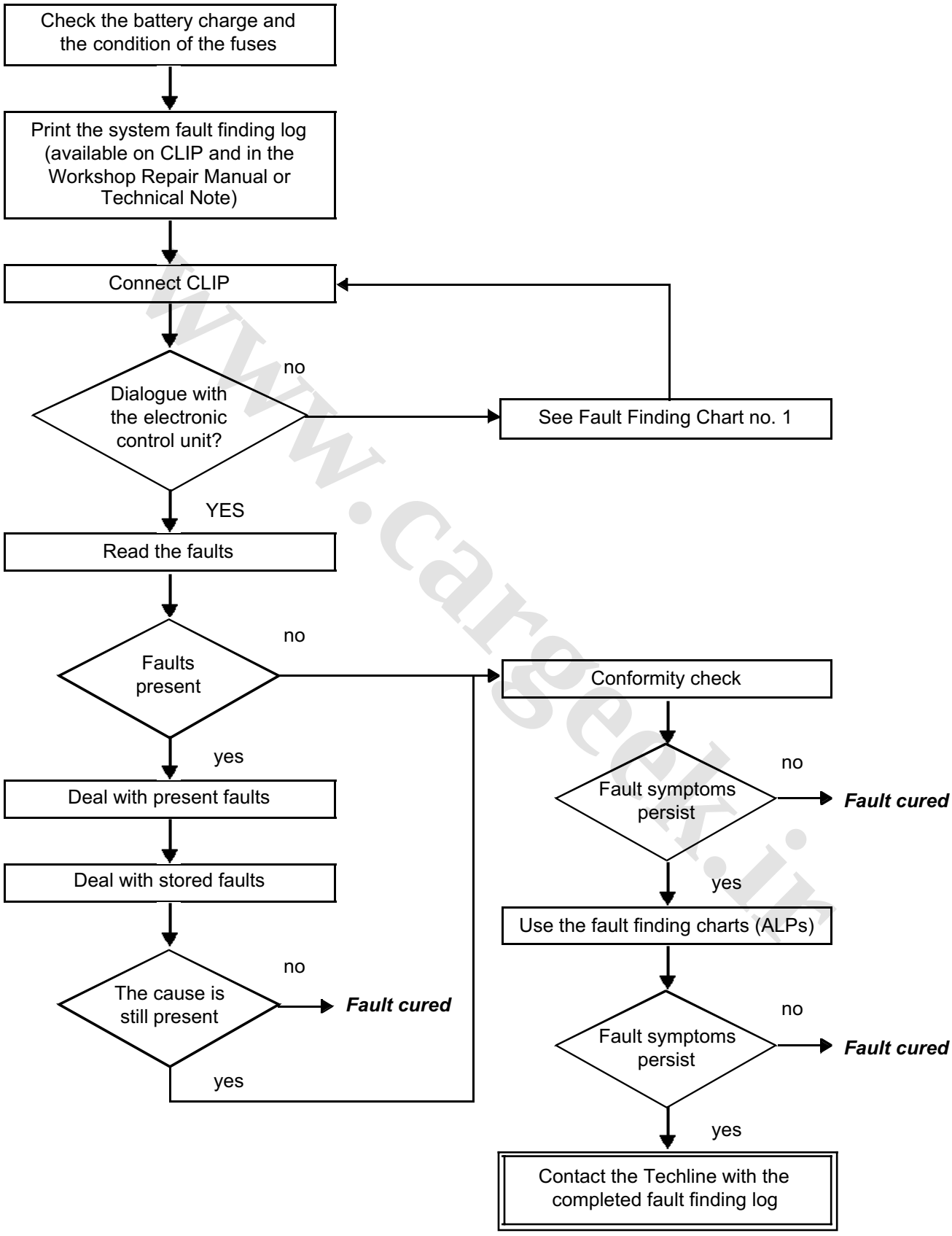
If the correct status is not displayed or a parameter is outside permitted tolerance values, you should consult the relevant fault finding page.

Customer complaints - Fault finding charts

If the diagnostic tool check is correct, but the customer complaint persists, the problem should be dealt with according to the "**customer complaint**".

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

4. FAULT FINDING PROCEDURE



5. FAULT FINDING LOG

IMPORTANT!

NOTE
All faults in a complex system require a thorough diagnostic check with the appropriate tools. The FAULT FINDING LOG, which should be completed during the procedure, enables you to keep track of the fault finding carried out. It is an essential document for consultation with the manufacturer.

IT IS THEREFORE COMPULSORY TO COMPLETE A FAULT FINDING LOG EVERY TIME FAULT FINDING IS CARRIED OUT.

You will always be asked for this sheet:

- When requesting technical assistance from the Techline.
- When requesting approval to replace parts for which approval is compulsory.
- To be attached to "monitored" parts required to be returned. The log is required for warranty reimbursement, and enables better analysis of the parts removed.

6. SAFETY INSTRUCTIONS

All work on components requires that the safety rules be obeyed to prevent damage or injury:
– Make sure that the battery is properly charged to avoid damaging the computers by using too low a voltage.
– Use the proper tools.

7. LIST OF ABBREVIATIONS

ABS:	Anti-lock braking system
ALP:	Fault Finding Chart
APC:	After ignition
BVA:	Automatic transmission
CAN:	Controller area network
CC:	Short circuit
CO:	Open circuit
D:	Drive
P/N:	Park/Neutral
R:	Reverse

FAULT FINDING LOG

System: Automatic or semiautomatic gearbox

List of monitored parts: ***Computer***

Administrative identification

Date	2 0
Log completed by	
VIN	
Engine	
Diagnostic tool	CLIP
Update version	

Customer complaint

	681	Gears not changing		622	Noise		679	No drive
	680	Slipping		675	Warning light illuminates		682	Loss of power
	683	Jolts or jerks		684	"3H"		685	Erratic gear change

Other — Your comments:

Conditions under which the customer complaint occurs

	005	While driving		004	Intermittently		008	When decelerating
	007	When accelerating		009	Sudden fault		010	Gradual deterioration

Other — Your comments:

Documentation used for fault finding

Fault finding procedure used	
Type of diagnostic manual:	Workshop Repair Manual ❑ Technical Note ❑ Assisted fault finding ❑
Fault finding manual no.:	
Wiring diagram used	
Wiring Diagram Technical Note no.:	
Other documentation	
Title and/or part number:	

RENAULT

FD 12
Fault finding log

FAULT FINDING LOG

System: Automatic or semiautomatic gearbox

● Identification of the computer and parts replaced in the system

Part 1 part number	
Part 2 part number	
Part 3 part number	
Part 4 part number	
Part 5 part number	

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

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

● Faults found with the diagnostic tool

Fault no.	Present	Stored	Fault name	Description

● Context in which fault occurs

Status or parameter no.	Parameter name	Value	Unit

● System-specific information

Description:

● Additional information

Gearbox number	
If the gearbox is automatic, which mode is it (automatic/semiautomatic)?	
Gear changes affected?	
Result of the gearbox oil level check	
Result of the oil level check with "Add-On"	
Appearance of the oil	
Oil leak?	No ❑ Seepage ❑ Drops ❑
Location of the leak	
Type of noise (metallic, rubbing, etc.)	
Does the buzzer work?	Yes ❑ No ❑
What factors led you to replace the computer?	
What other parts were replaced?	
Other faulty functions?	
Your comments:	

RENAULT

FD 12
Fault finding log

GENERAL OPERATION

The automatic transmission on this model is the DP0, which is also found on other Renault vehicles including Laguna II, Clio II and Kangoo.

The automatic transmission computer controls gear-changing using several parameters, among them engine torque and the driver's driving style.

All signals travel to the computer by wire, except for those from the injection computer, which use the multiplex network.

Line K is used for computer diagnostics.

SYSTEM OPERATION

Multifunction switch (CMF) statuses:

Note:
Multifunction switch contact S1 is not connected on this model.
Ignore **ET154 "Multifunction switches"**.

Lever position	Multifunction switch contact		
	S2	S3	S4
P	**CLOSED**	OPEN	OPEN
R	**CLOSED**	**CLOSED**	**CLOSED**
N	OPEN	**CLOSED**	OPEN
D	OPEN	OPEN	**CLOSED**
M	OPEN	OPEN	**CLOSED**
+	OPEN	OPEN	**CLOSED**
-	OPEN	OPEN	**CLOSED**

Sequential lever switch statuses:

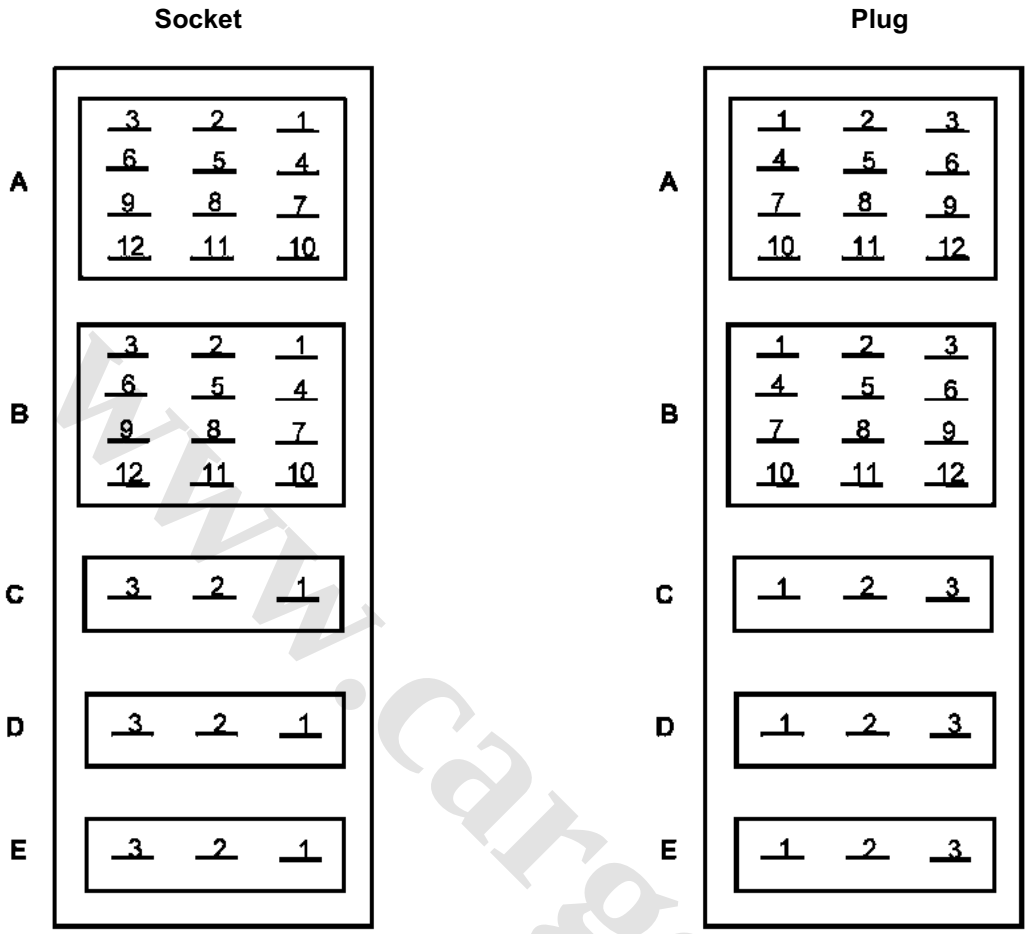
Note:
The vehicle does not have a 3rd gear hold (D3).
Ignore **ET155 "Third gear hold contact"**.

Lever position	Sequential lever upshift contact	Sequential lever downshift contact
P	OPEN	OPEN
R	OPEN	OPEN
N	OPEN	OPEN
D	OPEN	OPEN
M	**CLOSED**	**CLOSED**
+	**CLOSED**	OPEN
-	OPEN	**CLOSED**

Shift solenoids (EVS) statuses:

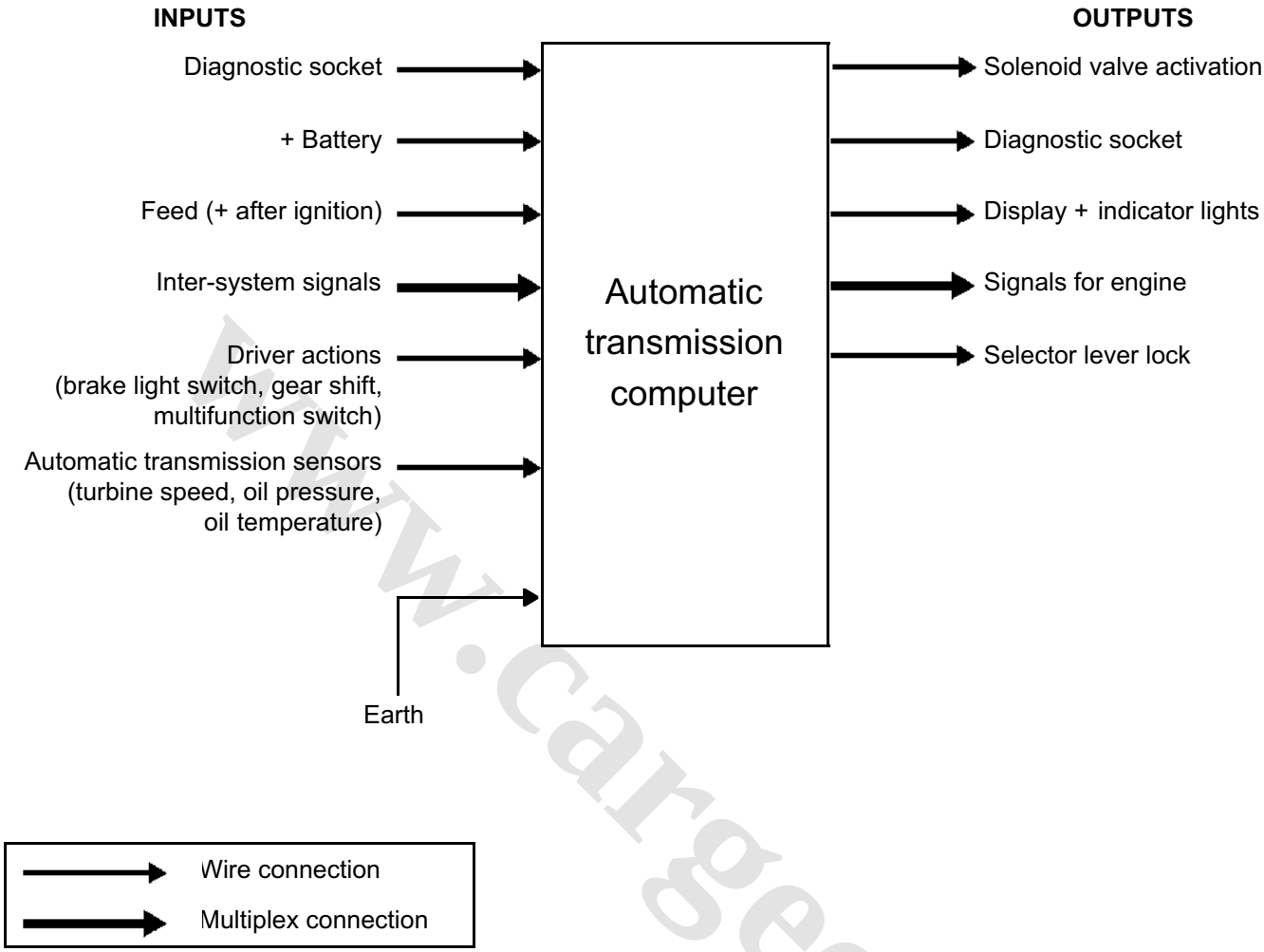
Lever position	Gear engaged	Solenoid valve statuses					
		1	2	3	4	5	6
P	**Neutral**	INACTIVE	INACTIVE	**ACTIVE**	INACTIVE	INACTIVE	INACTIVE
R	**R**	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
N	**Neutral**	INACTIVE	INACTIVE	**ACTIVE**	INACTIVE	INACTIVE	INACTIVE
P or N < -10°C	**Neutral**	INACTIVE	**ACTIVE**	INACTIVE	INACTIVE	INACTIVE	INACTIVE
D or M When stopped or driving	**1**	INACTIVE	INACTIVE	**ACTIVE**	**ACTIVE**	**ACTIVE**	INACTIVE
D or M When stopped or driving	**2**	INACTIVE	**ACTIVE**	INACTIVE	**ACTIVE**	INACTIVE	INACTIVE
D or M When driving	**3**	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
D or M When driving	**4**	**ACTIVE**	**ACTIVE**	INACTIVE	INACTIVE	INACTIVE	INACTIVE

MODULAR CONNECTOR



A Multifunction switch
B Hydraulic electronic interface
C Oil pressure sensor
D Turbine speed sensor
E Exchanger flow lock-up solenoid valve

COMPUTER INPUTS AND OUTPUTS



AUTOMATIC TRANSMISSION
Fault finding - Track assignments

Computer track	Assignment	Track of the sensor
1	Shift solenoid feed	Electric/hydraulic interface track B3
2	Exchanger flow sensor control solenoid valve feed	Exchanger flow sensor control solenoid valve track 2
3	Not used	
4	AT display signal (except Scenic II)	Automatic transmission display track 2
5	Not used	
6	Not used	
7	Shift solenoid 3 - control	Electric/hydraulic interface track B10
8	Shift solenoid 4 - control	Electric/hydraulic interface track B7
9	Shift solenoid 2 - control	Electric/hydraulic interface track B8
10	Shift solenoid 1 - control	Electric/hydraulic interface track B11
11	Selector lever lock - control	Eco/perf switch track B2
12	Exchanger flow sensor solenoid valve - control	Exchanger flow sensor control solenoid valve track 1
13	Modulating solenoid valve 3	Electric/hydraulic interface track B5
14	Modulating solenoid valve 4	Electric/hydraulic interface track B2
15	Not used	
16	Brake light switch + signal	Brake light switch track 3
17	Not used	
18	Diagnostic signal K	Track 7 diagnostic socket
19	Lock-up modulating solenoid valve	Electric/hydraulic interface track B6
20	Shift solenoid 5 - control	Electric/hydraulic interface track B9
21	Not used	
22	Not used	
23	Not used	
24	Line pressure sensor feed	Pressure sensor track C1
25	Line pressure sensor - signal	Pressure sensor track C3
26	Modulating solenoid valve feed	Electric/hydraulic interface track B12
27	After ignition feed	Protection and Switching Unit grey connector track 10
28	Earth	
29	Not used	
30	Not used	

AUTOMATIC TRANSMISSION
Fault finding - Track assignments

Computer track	Assignment	Sensor track
31	Multifunction switch signal 2	Multifunction switch track A10
32	Multifunction switch signal 3	Multifunction switch track A11
33	Multifunction switch signal 4	Multifunction switch track A12
34	Not used	
35	Not used	
36	Sequential switch control, downshift contact	Eco/perf control track B3
37	Sequential lever N +1 control	Eco/perf control track A3
38	Engine CAN H signal	Injection computer track K4
39	Engine CAN L signal	Injection computer track K3
40	Not used	
41	Not used	
42	Multifunction switch - signal	Multifunction switch track A7
43	Not used	
44	Not used	
45	Gearbox input speed sensor + signal	Turbine speed sensor track D1
46	Gearbox input speed sensor - signal	Turbine speed sensor track D2
47	Not used	
48	Not used	
49	Not used	
50	Not used	
51	Not used	
52	Not used	
53	Pressure solenoid valve 1 - signal	Electric/hydraulic interface track B4
54	Shift solenoid 6 - control	Electric/hydraulic interface track B1
55	Line pressure sensor + signal	Pressure sensor track C2
56	+ battery	Protection and Switching Unit grey connector track 1

REPLACING THE COMPUTER

IT IS ESSENTIAL TO CONTACT YOUR TECHLINE BEFORE REPLACING AN AUTOMATIC TRANSMISSION COMPUTER.

If Techline approves the computer replacement, proceed as follows:

- In the "Identification" menu, find the gearbox oil wear meter code.
- Switch off the ignition.
- Replace the computer.
- If necessary, change the computer configuration in the "Enter configuration" menu.
- Enter the VIN into the computer with diagnostic tool command **VP001 "VIN Entry"**.
- Enter the oil wear meter code from the old AT computer (found in the "Identification" menu) by running command **VP015 "Transfer oil wear meter"**.
- Enter the gearbox oil change date with command **VP016 "Enter gearbox oil change date"**.
- Switch off the ignition.
- Carry out a check using the diagnostic tool.
- Enter the After-Sales operation date with diagnostic tool command **VP008 "Enter last After-Sales operation date"**.

REPLACING AN AUTOMATIC TRANSMISSION COMPONENT

For replacing other automatic transmission components, see **Workshop Repair Manual 364 Section 2**.

PROGRAMMING

- **VP001 "VIN ENTRY":**

As it is necessary to enter the VIN each time dialogue is established with the diagnostic tool, it must be programmed into each vehicle computer whenever a computer is replaced.

Programming procedure:
– Connect the diagnostic tool
– Refer to automatic transmission fault finding
– Select parameter setting **VP001 "VIN Entry"**
– Enter the vehicle's VIN
– Clear the computer memory
– Exit diagnostic mode
– Switch off the ignition
– Wait for the end of the "power latch"
– Double-check the setting

- **VP009 "ENTER LAST AFTER-SALES OPERATION DATE":**

The date of every operation carried out on the automatic transmission in the workshop must be entered.

Select command **VP009 "Enter last After-Sales operation date"** on the fault finding tool, then enter the service date with the keyboard.

- **VP015 "TRANSFER OIL WEAR METER":**

Transfer the oil wear meter code from the old computer.

Do this by selecting command **VP015 "Transfer oil wear meter"** on the fault finding tool, then use the keyboard to enter the code found on the replaced computer.

- **VP016 "ENTER GEARBOX OIL CHANGE DATE":**

Do this by selecting command **VP016 "Enter gearbox oil change date"** on the fault finding tool, then use the keyboard to enter the date found on the replaced computer.

Fault descriptions	
DF002	Computer
DF003	Analogue sensor feed
DF005	Oil pressure sensor circuit
DF008	Multifunction switch intermediate position
DF009	Multifunction switch prohibited position
DF010	Instrument panel connection
DF012	Solenoid valve feed
DF016	Lock-up solenoid valve circuit
DF017	Exchanger flow rate solenoid valve circuit
DF018	Lock-up slip
DF020	Old oil
DF023	Engine oil temperature sensor circuit
DF024	Coolant temperature circuit
DF029	Multifunction switch in unstable position
DF036	Pressure regulating solenoid valve circuit
DF038	Turbine speed sensor circuit
DF048	Vehicle speed signal
DF049	Pressure regulation
DF055	Injection connection ⟶ instrument panel
DF064	Display circuit
DF085	Shift solenoid "EVS1" circuit
DF086	Shift solenoid "EVS2" circuit
DF087	Shift solenoid "EVS3" circuit
DF088	Shift solenoid "EVS5" circuit
DF089	Shift solenoid "EVS4" circuit
DF093	Sequential gear lever circuit
DF095	Shift lock electromagnet circuit
DF109	Engine torque multiplex signal
DF112	Shift solenoid "EVS6" circuit
DF114	Multiplex pedal position
DF116	Engine multiplex speed signal
DF117	LH rear wheel multiplex speed signal
DF118	RH rear wheel multiplex speed signal
DF119	Brake pedal position
DF122	Passenger compartment computer connection
DF123	ABS computer connection
DF126	Turbine speed signal
DF129	Electronic stability program (ESP)
DF131	Slip
DF174	ABS fault detection
DF175	Left-hand front wheel multiplex speed signal
DF176	Right-hand front wheel multiplex speed signal
DF177	Automatic transmission overheating

DF002 PRESENT OR STORED	COMPUTER

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after the ignition has been switched on.

Check that the computer earth is connected correctly to the vehicle's left-hand front side member.
The battery voltage should be between **11.8 V** and **13.2 V**.
Check the cleanness and condition of the connections. On **track 1** of the Protection and Switching Unit's grey 12-track PPM2 connector, check the computer's permanent feed 20-A fuse F15.
Check the cleanness and condition of the connections. On **track 10** of the Protection and Switching Unit's grey 12-track PPM2 connector, check the computer's after-ignition feed 5-A fuse F5H.
Disconnect the battery. Disconnect the computer. Check the cleanness and condition of the connections. Disconnect connector PPM2 in the Protection and Switching Unit. Take the universal bornier **Elé. 1681**. Check the **insulation, continuity and absence of stray resistance** on the following connections: **Computer track 56 → PSU connector PPM2 track 1** **Computer track 27 → PSU connector PPM2 track 10** **Computer track 28 → Left-hand front side member electronic earth 2**
Reconnect the battery. With the ignition on, check for **12 V** in computer **tracks 27** and **56**. If **12 V** is not found, there is a failure in the Protection and Switching Unit. Run fault finding on the Protection and Switching Unit.
If the fault is still present, contact your Techline.

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 carrying out a check with the diagnostic tool.

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DF003 PRESENT OR STORED	FEED TO THE ANALOGUE SENSORS

NOTES	If fault **DF002 "Computer"** is present or stored, deal with it first. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after the ignition has been switched on.

Disconnect the battery.
Disconnect the "modular connector", and check the cleanness and condition of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections:
(For "modular connector" connection details, see the "System operation and Track assignments" section.)

Computer track 24 → Track C1 Modular connector plug
Computer track 25 → Track C3 Modular connector plug
Computer track 53 → Track B4 Modular connector plug
Computer track 54 → Track B1 Modular connector plug

Reconnect the "modular connector".
Check that the oil pressure sensor resistance between **tracks 24 and 25** of the computer connector is approximately **20 kΩ**.
If the resistance is not correct, either the sensor or the harness is damaged.

Check the oil-temperature sensor resistance between computer **tracks 53 and 54**.
The resistance should be between **2360** and **2660 Ω** at a temperature of approx. **20 °C**.
If the resistance is not correct, either the sensor or the harness is damaged.

If the fault is still present, contact your Techline.

If the fault does not disappear, deal with the other faults then go 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 carrying out a check with the diagnostic tool.

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DF005 PRESENT OR STORED	OIL PRESSURE SENSOR CIRCUIT

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears following a timed period of **10 seconds** with the engine running at more than **2000 rpm**.

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection details, see the "System operation and Track assignments" section.)

Computer track 24 → Track C1 Modular connector plug
Computer track 55 → Track C2 Modular connector plug
Computer track 25 → Track C3 Modular connector plug

Reconnect the "modular connector".
Check that the oil pressure sensor resistance between **tracks 24 and 25** of the computer connector is approximately **20 kΩ**.
If the value is not correct, replace the sensor.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

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AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF008 **DF009** **PRESENT** **OR** **STORED**	MULTIFUNCTION SWITCH IN INTERMEDIATE POSITION MULTIFUNCTION SWITCH IN INHIBITOR POSITION

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears when the selector lever is shifted from "**Park**" to "**Drive**" (with a stop at each lever position).

Check the **cleanness, condition and mounting** of the multifunction switch.
Check the control settings (see Workshop Repair Manual).

Disconnect the battery.
Disconnect the "modular connector" and check the **cleanness and condition** of connector "**A**" connections.
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Take the "universal bornier **Elé. 1681**". Check the **continuity** of the following connections on the modular connector's socket:

Lever in position "P"
Modular connector track A10 → Modular connector track A7

Lever in position "R"
Modular connector track A10 → Modular connector track A7
Modular connector track A11 → Modular connector track A7
Modular connector track A12 → Modular connector track A7

Lever in position "N"
Modular connector track A11 → Modular connector track A7

Lever in position "D"
Modular connector track A12 → Modular connector track A7

If the continuity is faulty, change the multifunction switch.
(continued on next page)

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 carrying out a check with the diagnostic tool.

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DF008 **DF009** **CONTINUED**	

Check the **insulation** of the following connections on the modular connector's socket:

Lever in position "P"

Modular connector track A9 → Modular connector track A7
Modular connector track A11 → Modular connector track A7
Modular connector track A12 → Modular connector track A7

Lever in position "R"

Modular connector track A9 → Modular connector track A7

Lever in position "N"

Modular connector track A9 → Modular connector track A7
Modular connector track A10 → Modular connector track A7
Modular connector track A12 → Modular connector track A7

Lever in position "D"

Modular connector track A9 → Modular connector track A7
Modular connector track A10 → Modular connector track A7
Modular connector track A11 → Modular connector track A7

If the insulation is faulty, replace the multifunction switch.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Check the **insulation, continuity and absence of stray resistance** on the following connections:

Computer track 31 → Track A10 Modular connector plug
Computer track 32 → Track A11 Modular connector plug
Computer track 33 → Track A12 Modular connector plug
Computer track 42 → Track A7 Modular connector plug

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

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DF010 PRESENT OR STORED	INSTRUMENT PANEL CONNECTION

NOTES	**None.**

Test the **multiplex network**. Refer to the "**Multiplex network**" fault finding section in the Workshop Repair Manual.
If the fault is still present, test the **instrument panel**. Refer to the "**Instrument panel**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF012 PRESENT OR STORED	SOLENOID VALVES FEED CO : Open circuit CC.1 : Short circuit to + 12 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Shift solenoid activation**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 1 → Track B3 Modular connector plug
Computer track 10 → Track B11 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 10 and 1** of the computer connector that the resistance of shift solenoid no. 1 is **40 Ω ± 2 Ω at 20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

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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 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 19 → Track B6 Modular connector plug
Computer track 26 → Track B12 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 19 and 26** of the computer connector that the resistance of the converter lock-up solenoid valve is **1 Ω ± 0.2 Ω at 20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

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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 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 12 → Track E1 Modular connector plug
Computer track 2 → Track E2 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 12 and 2** of the computer connector that the resistance of the heat exchanger flow solenoid valve is **40 Ω ± 4 Ω at 20 °C**.
If the resistance is not correct, the solenoid valve or harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DP094101.0

DF018 PRESENT OR STORED	CONVERTER LOCK-UP SLIPPAGE

NOTES	**Carry out injection system fault finding and check that it is operating correctly**
	If the following faults are present or stored, deal with them first: **DF003 - DF005 - DF016 - DF020 - DF023 - DF038 - DF049 - DF177** **Conditions for applying the fault finding procedure to stored faults:** The fault appears after driving with 3rd gear hold at a steady speed for more than **3 minutes** continuously.

To check that there are no faults with the converter lock-up solenoid valve, use the interpretation of fault **DF016 "Converter lock-up solenoid valve circuit"**.
To check that there are no faults with the turbine speed sensor, use the interpretation of fault **DF038 "Turbine speed sensor circuit"**.
Check the gearbox oil quality and level. If an oil change or top-up is necessary see the "Draining-Filling-Levels" section of the Workshop Repair Manual. Check that the transmission is not leaking oil.
Carry out the converter stall test. Follow the procedure in the "Converter stall test" section of the Workshop Repair Manual.
Carry out a "Conformity check" to detect any possible faults.
See the "Taking line pressure" section of the Workshop Repair Manual. Connect the pressure gauge for a line pressure reading. Hot engine and gearbox oil temperature between **60** and **80 °C**. Take the line pressure readings under the following conditions: – selector lever in position "**P**" or "**N**" and engine running at **2000 rpm**, the pressure should be between **2.6** and **3.2 bar**, – selector lever in position "**R**" and engine running at **2000 rpm**, the pressure should be more than **4 bar**, – selector lever in position "**D**" and engine running at **2000 rpm**, the pressure in first gear should be more than **7 bar**. If the values are not correct, there is a fault inside the gearbox.
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory and switch off the ignition. See the "System operation and Track assignments" section for how to reset the oil ageing counter to zero (Entering oil change date). Switch off the ignition, switch the ignition back on and carry out a road test. Complete the operation by carrying out a check with the diagnostic tool.

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DF020 PRESENT OR STORED	OLD OIL

NOTES	**None.**

Change the automatic transmission oil. (Refer to the relevant section in the Workshop Repair Manual.)
Reset the computer's oil ageing counter to zero and enter the oil change date. Do this by running command **VP016 "Enter gearbox oil change date"**.
Reset the self-adapting systems to zero by running command **RZ005 "Self-adapting systems"**. If necessary, take the vehicle for a drive to program the new self-adapting systems. **Driving procedure:** Go for a normal drive that involves shifting up and down into every gear several times.

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 carrying out a check with the diagnostic tool.

DF023 PRESENT OR STORED	GEARBOX OIL TEMPERATURE SENSOR CIRCUIT

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after a road test.

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 53 → Track B4 Modular connector plug
Computer track 54 → Track B1 Modular connector plug

Reconnect the "modular connector".
Check the oil temperature sensor resistance between computer connector **tracks 53 and 54**.
The resistance should be between **2360** and **2660 Ω** at a temperature of **20 °C** and between **290 and 327 Ω** at a temperature of **80 °C**.
If the resistance is not correct, the sensor or the electric/hydraulic interface harness is damaged.
Replace the sensor.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

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DF024 PRESENT OR STORED	COOLANT TEMPERATURE SENSOR CIRCUIT

NOTES	**None.**

Test the **multiplex network**. Refer to the "**Multiplex network**" fault finding section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **injection** system. See the "**Injection**" section of the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF029 PRESENT OR STORED	MULTIFUNCTION SWITCH IN UNSTABLE POSITION

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears when the selector lever is shifted from "**Park**" to "**Drive**" (with a stop at each lever position).

Check the **cleanness, condition and mounting** of the multifunction switch.
Check the control settings (see Workshop Repair Manual).

Disconnect the battery.
Disconnect the "modular connector" and check the **cleanness and condition** of connector "**A**" connections.
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Take the "universal bornier **Elé. 1681**". Check the **continuity** of the following connections on the modular connector's socket:

Lever in position "P"
Modular connector track A10 → Modular connector track A7

Lever in position "R"
Modular connector track A10 → Modular connector track A7
Modular connector track A11 → Modular connector track A7
Modular connector track A12 → Modular connector track A7

Lever in position "N"
Modular connector track A11 → Modular connector track A7

Lever in position "D"
Modular connector track A12 → Modular connector track A7

If the continuity is not good, change the multifunction switch.
(continued on next page)

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 carrying out a check with the diagnostic tool.

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DF029 **CONTINUED**	

Check the **insulation** of the following connections on the modular connector's socket:

Lever in position "P"

Modular connector track A9 → Modular connector track A7
Modular connector track A11 → Modular connector track A7
Modular connector track A12 → Modular connector track A7

Lever in position "R"

Modular connector track A9 → Modular connector track A7

Lever in position "N"

Modular connector track A9 → Modular connector track A7
Modular connector track A10 → Modular connector track A7
Modular connector track A12 → Modular connector track A7

Lever in position "D"

Modular connector track A9 → Modular connector track A7
Modular connector track A10 → Modular connector track A7
Modular connector track A11 → Modular connector track A7

If the insulation is faulty, replace the multifunction switch.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Check the **insulation, continuity and absence of stray resistance** on the following connections:

Computer track 31 → Track A10 Modular connector plug
Computer track 32 → Track A11 Modular connector plug
Computer track 33 → Track A12 Modular connector plug
Computer track 42 → Track A7 Modular connector plug

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

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DF036 PRESENT OR STORED	PRESSURE REGULATING SOLENOID VALVE CIRCUIT CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 20 → Track B9 Modular connector plug
Computer track 26 → Track B12 Modular connector plug

Check across **tracks B9 and B12** of the "modular connector" socket that the resistance of the converter lock-up solenoid valve is **1 Ω ± 0.2 Ω** at approximately **23 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with the conformity check.

AFTER REPAIR	If replacing the pressure regulating solenoid valve (EVM), the self-adapting systems must be deleted (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 carrying out a check with the diagnostic tool.

DP094101.0

DF037 PRESENT OR STORED	KICKDOWN SWITCH CIRCUIT DEF : Unidentified electrical fault

NOTES	**None.**

Test the multiplex network. Refer to the "**Multiplex network**" section in the Workshop Repair Manual.
If the fault is still present, test the **ABS and ESP** systems. Refer to the "**ABS system and Electronic Stability Program**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF038 PRESENT OR STORED	TURBINE SPEED SENSOR CIRCUIT 1.DEF : No signal 2.DEF : Signal interference

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears when the engine is running and the selector lever is in "**Park**".

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 45 → Track D1 Modular connector plug
Computer track 46 → Track D2 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 45 and 46** of the computer connector that the turbine speed sensor resistance is **300 Ω ± 40 Ω** at approximately **20 °C**.
If the resistance is not correct, either the sensor or the harness is damaged.
Replace the turbine speed sensor.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DP094101.0

DF048 PRESENT OR STORED	VEHICLE SPEED SIGNAL 1.DEF: Problem with the system generating the speed signal or signal interference 2.DEF: No signal

NOTES	Deal with faults **DF117, DF118, DF175** or **DF176** first if present or stored.

Test the multiplex network. Refer to the "**Multiplex network**" section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **ABS and ESP** system. Refer to the "**ABS system and Electronic Stability Program**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF049 PRESENT OR STORED	GEARBOX OIL PRESSURE REGULATION 1.DEF: Pressure regulation 2.DEF: Measured pressure lower than the required pressure

	Carry out an injection system check and check that it is operating correctly
NOTES	If the following faults are present or stored, deal with them first: **DF003 - DF005 - DF020 - DF023 - DF036 - DF038** **Conditions for applying the fault finding procedure to stored faults:** The fault appears after a road test.

To check that there are no faults with the oil pressure sensor, use the interpretation of fault **DF005 "Oil pressure sensor circuit"**.

To make sure there are no problems with the pressure lock-up solenoid valve, use the interpretation of fault **DF036 "Pressure regulating solenoid valve circuit"**.

Check the gearbox oil quality and level.
If a operation is required, see the "**Draining-Filling-Levels**" section of the Workshop Repair Manual.
Check that the gearbox is not leaking oil.

Carry out a conformity check to detect any possible faults.

See the "**Line pressure measurement**" section of the Workshop Repair Manual.
Connect the pressure gauge for a line pressure reading.
Hot engine with gearbox oil temperature between **60 °C** and **80 °C**.
Take the line pressure readings in the following conditions:
- with the selector lever in position "**P**" or "**N**" and the engine running at **2000 rpm**, the pressure should be between **2.6** and **3.2 bar**,
- with the selector lever in position "**R**" and the engine running at **2000 rpm**, the pressure should be more than **4 bar**,
- with the selector lever in position "**D**" and the engine running at **2000 rpm**, the pressure in first gear should be more than **7 bar**.

If the fault is still present, there is a mechanical or hydraulic failure in the gearbox.
Check the conformity of all "Statuses" and "Parameters" to find the cause of the fault.

If the fault is still present, contact the Techline.

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 carrying out a check with the diagnostic tool.

DP094101.0

DF055 PRESENT OR STORED	INJECTION SYSTEM/AUTOMATIC TRANSMISSION CONNECTION 1.DEF : No signal 2.DEF : Signal interference

NOTES	**None.**

Test the **multiplex network**. Refer to the "**Multiplex network**" fault finding section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **injection** system. See the "**Injection**" section of the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF064 PRESENT OR STORED	DISPLAY CIRCUIT CO.0 : Open circuit or short circuit to earth

NOTES	Switch on the ignition.

Check the **cleanness and condition** of the selector lever display connections.
Disconnect the battery. Disconnect the computer. Check the **cleanness and condition** of the connections. Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections: **Computer track 4 → Selector lever display track 2**
If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DF085 PRESENT OR STORED	"EVS1" SHIFT SOLENOID CIRCUITS CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V CC : Short circuit

NOTES	First deal with fault **DF012" Solenoid valves feed"** if present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 10 → Track B11 Modular connector plug
Computer track 1 → Track B3 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 10 and 1** of the computer connector that the resistance of shift solenoid no. 1 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DP094101.0

DF086 PRESENT OR STORED	"EVS2" SHIFT SOLENOID CIRCUITS CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V CC : Short circuit

NOTES	First deal with fault **DF012 "Solenoid valves feed"** if present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 9 → Track B8 Modular connector plug
Computer track 1 → Track B3 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 9 and 1** of the computer connector that the resistance of shift solenoid no. 2 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DP094101.0

DF087 PRESENT OR STORED	"EVS3" SHIFT SOLENOID CIRCUITS CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V CC : Short circuit

NOTES	First deal with fault **DF012 "Solenoid valves feed"** if present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 1 → Track B3 Modular connector plug
Computer track 7 → Track B10 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 1 and 7** of the computer connector that the resistance of shift solenoid no. 3 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DP094101.0

DF088 PRESENT OR STORED	"EVS5" SHIFT SOLENOID CIRCUITS CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V CC : Short circuit

NOTES	First deal with fault **DF012 "Solenoid valves feed"** if present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection details, see the "System operation and Track assignments" section.)

Computer track 1 → Track B3 Modular connector plug
Computer track 13 → Track B5 Modular connector plug

Reconnect the modular connector.
Check across **tracks 1 and 13** of the computer connector that the resistance of shift solenoid no. 5 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DP094101.0

DF089 PRESENT OR STORED	"EVS4" SHIFT SOLENOID CIRCUITS CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V CC : Short circuit

NOTES	First deal with fault **DF012 "Solenoid valves feed"** if present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 1 → Track B3 Modular connector plug
Computer track 8 → Track B7 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 8 and 1** of the computer connector that the resistance of shift solenoid no. 4 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DP094101.0

DF093 PRESENT OR STORED	SEQUENTIAL GEAR LEVER CIRCUITS

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears during a road test when changing up or down with the selector lever in position "**M**" (sequential control).

Check the **cleanness and condition** of the sequential switch module connections.

Disconnect the battery.
Disconnect the computer. Check the **cleanness and condition** of the connections.
Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections:

Computer track 36 → Sequential switch module track B3
Computer track 37 → Sequential switch module track A3
Battery earth → Sequential switch module track A2

If the fault is still present, replace the sequential switch module.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

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DF095 PRESENT OR STORED	SHIFT LOCK ELECTROMAGNET CIRCUITS CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Check the **cleanness and condition** of shift lock electromagnet connections.
With the ignition on, check for **+ 12 V** on **track B1** of the shift lock electromagnet connector. If there is no **+ 12 V**: – Check fuse **5F** in the Protection and Switching Unit, as well as the cleanness and condition of the connections. – Disconnect the battery. – Disconnect connector **PPH2** in the Protection and Switching Unit. – Check the **cleanness and condition** of the connections. Take the "universal bornier **Elé. 1681**". Check the **earth insulation and continuity** of the following connection: **Protection and Switching Unit connector PPH2 track 11** ⟶ **Shift lock electromagnet track B1** If there is still no **+ 12 V** on **track B1** of the shift lock electromagnet connector with the ignition switched on, check the Protection and Switching Unit.
Disconnect the battery. Disconnect the computer. Check the cleanliness and condition of the connections. Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connection: **Computer track 11** ⟶ **Shift lock electromagnet track B2**
Check the shift lock electromagnet resistance between **track 11** of the computer connector and **track 11** of Protection and Switching Unit connector **PPH2**. The resistance should be **40 Ω ± 4 Ω** at a temperature of approximately **20 °C**. If the resistance is not correct, replace the shift lock electromagnet.
If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

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DF109 PRESENT OR STORED	ENGINE TORQUE MULTIPLEX SIGNAL 1.DEF: Consistency 2.DEF: Real torque 3.DEF: Anticipated torque 4.DEF: Torque without reduction 5.DEF: Requested torque cannot be attained 6.DEF: Minimum torque not transmitted by engine management computer 7.DEF: Maximum torque not transmitted by engine management computer 8.DEF: Torque request fulfilled

NOTES	**None.**

Test the **multiplex network**. Refer to the "**Multiplex network**" fault finding section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the injection system. See the "**Injection**" section of the Workshop Repair Manual.
If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DF112 PRESENT OR STORED	EVS6 SHIFT SOLENOID CIRCUITS CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V CC : Short circuit

NOTES	First deal with fault **DF012 "Solenoid valves feed"** if present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running **command AC024** ("**Actuator sequential control**").

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Take the "universal bornier **Elé. 1681**". Check the **continuity and insulation** of the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 1 → Track B3 Modular connector plug
Computer track 14 → Track B2 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 14 and 1** of the computer connector that the resistance of shift solenoid no. 6 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with 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 carrying out a check with the diagnostic tool.

DP094101.0

DF114 PRESENT OR STORED	MULTIPLEX PEDAL POSITION

NOTES	**None.**

Test the **multiplex network**. Refer to the "**Multiplex network**" fault finding section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **injection** system. See the "**Injection**" section of the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF116 PRESENT OR STORED	MULTIPLEX ENGINE SPEED SIGNAL

NOTES	**None.**

Test the **multiplex network**. Refer to the "**Multiplex network**" fault finding section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **injection** system. See the "**Injection**" section of the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF117 PRESENT OR STORED	LEFT-HAND REAR WHEEL MULTIPLEX SIGNAL

NOTES	**None.**

Test the multiplex network. Refer to the "**Multiplex network**" section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **ABS and ESP** system. Refer to the "**ABS system and Electronic Stability Program**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF118 PRESENT OR STORED	RIGHT-HAND REAR WHEEL MULTIPLEX SIGNAL

NOTES	**None.**

Test the multiplex network. Refer to the "**Multiplex network**" section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **ABS and ESP** system. Refer to the "**ABS system and Electronic Stability Program**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF119 PRESENT OR STORED	MULTIPLEX BRAKE PEDAL POSITION

NOTES	**None.**

Test the multiplex network. Refer to the "**Multiplex network**" section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **ABS and ESP** system. Refer to the "**ABS system and Electronic Stability Program**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF122 PRESENT OR STORED	UCH CONNECTION

NOTES	**None.**

Test the **multiplex network**. Refer to the "**Multiplex network**" fault finding section in the Workshop Repair Manual.
If the fault is still present, test the **UCH**. Refer to the "**UCH**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF123 PRESENT OR STORED	ABS COMPUTER CONNECTION

NOTES	**None.**

Test the multiplex network (see **88B, Multiplex network**).
If the fault is not cured, test the **Anti-lock braking and Electronic stability program** systems (see **38C, Anti-lock braking system / Electronic stability program**).

AFTER REPAIR	Deal with any other faults. Clear the stored faults and switch off the ignition. Carry out a road test. Complete the operation by testing with the diagnostic tool.

DF126 PRESENT OR STORED	TURBINE SPEED SIGNAL

NOTES	**None.**

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the **cleanness and condition** of the connections.
Use the "universal bornier **Elé. 1681**" to check the **insulation and continuity** on the following connections:
(For "modular connector" connection positions, refer to the "System operation and track assignment" section.)

Computer track 45 → Track D1 Modular connector plug
Computer track 46 → Track D2 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 45 and 46** of the computer connector that the turbine speed sensor resistance is **300 Ω ± 40 Ω**.
If the resistance is not correct, either the sensor or the harness is damaged.

If the fault is still not cured, deal with the other faults and then proceed with the conformity check.

AFTER REPAIR	Deal with any other faults. Clear the stored faults and switch off the ignition. Carry out a road test. Complete the operation by testing with the diagnostic tool.

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DF129 PRESENT OR STORED	ELECTRONIC STABILITY PROGRAM

NOTES	**None.**

Test the multiplex network (see **88B, Multiplex network**).
If the fault is not cured, test the **Anti-lock braking and Electronic stability program** systems (see **38C, Anti-lock braking system / Electronic stability program**).

AFTER REPAIR	Deal with any other faults. Clear the stored faults and switch off the ignition. Carry out a road test. Complete the operation by testing with the diagnostic tool.

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DF131 PRESENT OR STORED	SLIP

NOTES	**Carry out injection system fault finding and check that it is operating correctly**
	Deal with all other faults first. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after a road test.

To check that there are no faults with the turbine speed sensor, use the interpretation of fault **DF038 "Turbine speed sensor circuit"**.
To check that there are no faults with the vehicle speed signal, use the interpretation of fault **DF048 "Vehicle speed signal"**.
Carry out a "Conformity check" to detect any possible faults.
If the fault is still present, a brake or clutch in the gearbox is certainly defective. Contact your Techline.

AFTER REPAIR	Follow the instructions to confirm repair. Carry out a road test. Complete the operation by carrying out a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF174 PRESENT OR STORED	ABS FAULT DETECTION

NOTES	**None.**

Test the multiplex network. Refer to the "**Multiplex network**" section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **ABS and ESP** system. Refer to the "**ABS system and Electronic Stability Program**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF175 PRESENT OR STORED	LEFT-HAND FRONT WHEEL SPEED MULTIPLEX SIGNAL

NOTES	**None.**

Test the multiplex network. Refer to the "**Multiplex network**" section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **ABS and ESP** system. Refer to the "**ABS system and Electronic Stability Program**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF176 PRESENT OR STORED	RIGHT-HAND FRONT WHEEL SPEED MULTIPLEX SIGNAL

NOTES	**None.**

Test the multiplex network. Refer to the "**Multiplex network**" section in the Workshop Repair Manual.
If the fault is still present, carry out fault finding on the **ABS and ESP** system. Refer to the "**ABS system and Electronic Stability Program**" section in the Workshop Repair Manual.

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 carrying out a check with the diagnostic tool.

DF177 PRESENT OR STORED	AUTOMATIC TRANSMISSION OVERHEATING

NOTES	**Carry out injection system fault finding and check that it is operating correctly**
	If the following faults are present or stored, deal with them first: **DF003 - DF005 - DF016 - DF017 - DF018 - DF020 - DF023 - DF024 - DF036 - DF049 - DF131** **Conditions for applying the fault finding procedure to stored faults:** The fault appears after a road test.

To check that there are no faults with the gearbox oil temperature sensor, use the interpretation of fault **DF023 "Gearbox oil temperature sensor"**.
To check that there are no faults with the exchanger flow solenoid valve, use the interpretation of fault **DF017 "Exchanger flow solenoid valve circuit"**.
Check the gearbox oil quality and level. If an oil change or top-up is necessary see the "**Draining-Filling-Levels**" section of the Workshop Repair Manual. Check that the gearbox is not leaking oil.
Check that the oil cooler is not blocked.
If the fault is still present, there is a definitely a mechanical or hydraulic fault. Deal with the other faults then proceed with the conformity check. **If the fault persists, contact your Techline.**

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 carrying out a check with the diagnostic tool.

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AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the fault finding tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values indicated in this conformity check are given as examples only. If necessary, refer to the exact operating specifications in the Workshop Repair Manual.

MAIN SCREEN

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Engine speed	**PR006:** Engine speed	**0 rpm**	**If there is a problem, refer to the fault finding procedure for this parameter.**
2	Gear selector position	**ET012:** Gear selector position	**"P" if selector in position "P"** **"N" if selector in position "N"** **"R" if selector in position "R"** **"D" if selector in position "D"** **"M" if selector in position "M"** **"M+" if selector in position "M+"** **"M-" if selector in position "M-"**	**If there is a fault, refer to the interpretation of this status.**
3	Gear	**ET013:** Gear engaged	**"N" for position "N"** **"1" for 1st unlocked** **"2" for 2nd unlocked** **R for reverse gear position**	**If there is a fault, refer to the interpretation of this status.**
4	Feed	**PR008:** Computer feed voltage	**10.5 < X < 16**	**If there is a fault, refer to the interpretation of this parameter.**
5	Vehicle speed	**PR105:** Vehicle speed	**0 mph**	**If there is a fault, refer to the interpretation of this parameter.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	
	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact function specifications in the Workshop Repair Manual.

MAIN SCREEN (continued)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
6	Brake pedal	**ET142:** Brake pedal pressed	**YES**, if the brake pedal is pressed **NO**, if the brake pedal is **not** pressed	**If there is a fault, refer to the interpretation of this status.**
7	Brake switch	**ET003:** STOP light contact (closure)	**ACTIVE**, if the brake pedal is **not** pressed **INACTIVE**, if the brake pedal is pressed	**If there is a fault, refer to the interpretation of this status.**
		ET004: STOP light contact (opening)	**INACTIVE**, if the brake pedal is **not** pressed **ACTIVE**, if the brake pedal is pressed	**If there is a fault, refer to the interpretation of this status.**
8	Selection mode	**ET097:** Manual mode	**INACTIVE**	**ACTIVE**, if lever is in position "**M**"
9	Sequential lever switch	**ET127:** Sequential lever downshift contact **ET128:** Sequential lever upshift contact	**OPEN, CLOSED**, if selector lever in position "**M-**" **OPEN, CLOSED**, if selector lever in position "**M+**"	**If there is a fault, refer to the interpretation of this status.**
		ET155: Third gear hold contact	**OPEN**	**If there is a fault, refer to the interpretation of this status.**
10	Driving mode	**ET079:** Economy mode	**YES**, if driving is economical **NO**, if driving is sporty	**WITHOUT**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact function specifications in the Workshop Repair Manual.

MAIN SCREEN (continued)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
11	Gearbox oil temperature	**PR004:** Gearbox oil temperature	**- 40 < X < 140 °C**	**If there is a fault, refer to the interpretation of this parameter.**
12	Exchanger flow control solenoid valve (EPDE)	**ET0207:** Exchanger flow control solenoid valve control	**INACTIVE**	If **ACTIVE**, refer to the interpretation of this status.
13	Old oil	**ET079:** Old oil	**YES** **NO**	No fault finding procedure for this status.

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	
	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact operating specifications in the Workshop Repair Manual.

GEAR CHANGE SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Gear selector position	**ET012:** Gear selector position	**"P" if selector in position "P"** **"N" if selector in position "N"** **"R" if selector in position "R"** **"D" if selector in position "D"** **"M" if selector in position "M"** **"M+" if selector in position "M+"** **"M-" if selector in position "M-"**	**If there is a fault, refer to the interpretation of this status.**
2	Gear	**ET013:** Gear engaged	**"N" for neutral position** **"1" for 1st unlocked** **"2" for 2nd unlocked** **"R" for reverse**	**If there is a fault, refer to the interpretation of this status.**
3	Vehicle speed	**PR105:** Vehicle speed	**0 mph**	**If there is a fault, refer to the interpretation of this parameter.**
4	Engine speed	**PR006:** Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
5	Oil pressure	**PR003:** Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter.**

NOTES	
	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact operating specifications in the Workshop Repair Manual.

GEAR CHANGE SUB-FUNCTION (continued)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
7	Solenoid valve control	**ET021:** Shift solenoid 1	**INACTIVE**	**If there is a fault, refer to the interpretation of these statuses.**
		ET022: Shift solenoid 2	**INACTIVE**	
		ET023: Shift solenoid 3	**ACTIVE**	
		ET024: Shift solenoid 4	**INACTIVE**	
		ET025: Shift solenoid 5	**INACTIVE**	
		ET026: Shift solenoid 6	**INACTIVE**	
		AC024: Actuator sequential control	Command for controlling all the solenoid valves	**If there is a fault, refer to the interpretation of this command.**
8	Multifunction switch		**Lever in position "P"**	**If there is a fault, refer to the interpretation of these statuses.**
		ET123: Multifunction switch S2	**CLOSED**	
		ET124: Multifunction switch S3	**OPEN**	
		ET125: Multifunction switch S4	**OPEN**	
9	Feeds	**ET001:** Solenoid valves feed	**PRESENT**	**If there is a fault, refer to the interpretation of these statuses.**

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact operating specifications in the Workshop Repair Manual.

GEAR CHANGE SUB-FUNCTION (continued)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
10	Selection mode	**ET097:** Manual mode	**INACTIVE** **ACTIVE**, if lever is in position "**M**"	**If there is a fault, refer to the interpretation of these statuses.**
11	Sequential lever switch	**ET127:** Sequential lever downshift contact	**OPEN** **CLOSED**, if selector lever in position "**M-**"	**If there is a fault, refer to the interpretation of these statuses.**
		ET128: Sequential lever upshift contact	**INACTIVE** **CLOSED**, if selector lever in position "**M+**"	
		ET155: Third gear hold contact	**OPEN**	

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact operating specifications in the Workshop Repair Manual.

PRESSURE REGULATION SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Gear	**ET013:** Gear engaged	**"N" for neutral position** **"1" for 1st unlocked** **"2" for 2nd unlocked** **"R" for reverse position**	**If there is a fault, refer to the interpretation of this status.**
2	Engine speed	**PR006:** Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of fault DF115.**
3	Oil pressure	**PR003:** Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter.**
		PR138: Required pressure	**21 bar**	**None.**
		PR146: Difference between specification and oil pressure	**X = PR138 - PR003**	**None.**
4	Oil temperature	**PR004:** Gearbox oil temperature	**- 40 < X < 140 °C**	**If there is a fault, refer to the interpretation of this parameter.**

NOTES	
	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact operating specifications in the Workshop Repair Manual.

SELECTOR LEVER LOCK SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Gear selector	**ET012:** Gear selector position	**"P" if selector in position "P"** **"N" if selector in position "N"** **"R" if selector in position "R"** **"D" if selector in position "D"** **"M" if selector in position "M"** **"M+" if selector in position "M+"** **"M-" if selector in position "M-"**	**If there is a fault, refer to the interpretation of this status.**
2	Brake pedal	**ET142:** Brake pedal pressed	**YES**, if brake pedal is pressed **NO**, if brake pedal is not pressed	**If there is a fault, refer to the interpretation of this status.**
		ET003: STOP light contact (opening)	**ACTIVE**, if brake pedal is not pressed **INACTIVE**, if brake pedal is pressed	**If there is a fault, refer to the interpretation of this status.**
		ET004: STOP light contact (closure)	**INACTIVE**, if brake pedal is not pressed **ACTIVE**, if brake pedal is pressed	**If there is a fault, refer to the interpretation of this status.**
3	Selector lever locking	**ET157:** Selector lever unlocking	**YES**, if brake pedal is pressed **NO**, if brake pedal is not pressed	

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	
	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact operating specifications in the Workshop Repair Manual.

SELECTOR LEVER LOCK SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
4	Multifunction switch		**In position "P"**	**If there is a fault, refer to the interpretation of these statuses.**
			OPEN	
		ET123: Multifunction switch S2		
		ET124: Multifunction switch S3	**OPEN**	
		ET125: Multifunction switch S4	**OPEN**	
5	Gear change mode	**ET097:** Manual mode	**ACTIVE**, if selector lever is in position "**M**", "**M+**" or "**M-**" **INACTIVE**, if selector lever is in position "**P**", "**R**", "**N**" or "**D**"	**If there is a fault, refer to the interpretation of this status.**
6	Sequential lever	**ET127:** Sequential lever downshift contact	**CLOSED**, if lever in position "**M-**" **OPEN**, if lever is in any position other than "**M-**"	**If there is a fault, refer to the interpretation of these statuses.**
		ET128: Sequential lever upshift contact	**CLOSED**, if lever in position "**M+**" **OPEN**, if lever is in any position other than "**M+**"	

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	
	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples only. If necessary, refer to the exact operating specifications in the Workshop Repair Manual.

LOCK-UP/UNLOCKING SUB-FUNCTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Rotation speeds	**PR006:** Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
		PR007: Turbine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
		PR128: Engine/turbine speed difference	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
2	Oil pressure	**PR003:** Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter**
		PR138: Required pressure	**21 bar**	**None.**
		PR146: Difference between specification and oil pressure	**X = PR138 - PR003**	**None.**
3	Torque converter	**ET071:** Torque converter	**INACTIVE**	**If there is a fault, refer to the interpretation of this status.**
4	Oil temperature	**PR004:** Gearbox oil temperature	**- 40 < X < 140 °C**	**If there is a fault, refer to the interpretation of this parameter.**
		ET010: Oil too hot signal	**YES/NO**	**YES**, if oil temperature is > **140 °C**
5	Driving mode	**ET079:** Economy mode	**YES**, if driving is economical **NO**, if driving is sporty	**None.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples.

SUB-FUNCTION: CREEPING AT IDLE SPEED

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Oil pressure	**PR003:** Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter.**
2	Oil temperature	**PR004:** Gearbox oil temperature	**- 40 °C < X < 140 °C**	**If there is a fault, refer to the interpretation of this parameter.**
3	Vehicle speed	**PR105:** Vehicle speed	**0 mph**	**If there is a fault, refer to the interpretation of this parameter.**
4	Engine speed	**PR006:** Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
5	Speed of rotation	**PR007:** Turbine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
6	Engine/ turbine speed difference	**PR128:** Engine/turbine speed difference	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no faults present or stored). **Test conditions: engine stopped, ignition on.**
	The values shown in this conformity check are given as examples.

SUB-FUNCTION: CREEPING AT IDLE SPEED (continued)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
7	Specified pedal position	**PR135:** Specified pedal position	**%**	**If there is a fault, refer to the interpretation of this parameter.**
8	Brake pedal	**ET003:** STOP light contact (opening)	**OPEN, brake pedal released.** **CLOSED, brake pedal pressed.**	**If there is a fault, refer to the interpretation of this status.**
9	Brake pedal	**ET004:** Stop light contact (closure)	**OPEN, brake pedal released.** **CLOSED, brake pedal pressed.**	**If there is a fault, refer to the interpretation of this status.**
10	Gear engaged	**ET013:** Gear engaged	**"R" for reverse.** **"1P" for 1st locked.** **"2P" for 2nd locked.** **"3P" for 3rd locked.** **"4P" for 4th locked.** **"1G" for 1st slipping.** **"2G" for 2nd slipping.** **"3G" for 3rd slipping.** **"4G" for 4th slipping.** **"1" for 1st unlocked.** **"2" for 2nd unlocked.** **"3" for 3rd unlocked.** **"4" for 4th unlocked.**	**If there is a fault, refer to the interpretation of this status.**

Tool status	Diagnostic tool description
ET001	Solenoid valves feed
ET003	Stop light contact (opening)
ET010	Oil too hot signal
ET012	Selector lever position
ET013	Gear engaged
ET020	Exchanger flow control solenoid valve (EPDE)
ET021	Shift solenoid 1
ET022	Shift solenoid 2
ET023	Shift solenoid 3
ET024	Shift solenoid 4
ET025	Shift solenoid 5
ET026	Shift solenoid 6
ET071	Torque converter
ET097	Manual mode
ET123	Multifunction switch S2
ET124	Multifunction switch S3
ET125	Multifunction switch S4
ET127	Sequential lever downshift contact
ET128	Sequential lever upshift contact
ET142	Brake pedal pressed
ET157	Selector lever unlocking

ET001	SOLENOID VALVES FEED

NOTES	There must be no present or stored faults.

Force power to the solenoid valves by running command **AC024 "Actuator sequential control"** described in the "Command mode procedures" section. Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the insulation, continuity and absence of stray resistance on the solenoid valve tracks. (For "modular connector" connection positions, see the "System operation and Track assignments" section.) Undervoltage: – With the solenoid valve "**ACTIVE**", the voltage should be **0 V** at the solenoid valve terminals. – With the solenoid valve "**INACTIVE**", the voltage should be **12 V** at the solenoid valve terminals.
Reconnect the modular connector and check that a solenoid valve's control current is **250 mA** when the solenoid valve is "**ACTIVE**".
If the status is not correct, use fault procedure **DF012 "Shift solenoids feed"**.
If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

ET003	STOP LIGHT CONTACT (OPENING)

NOTES	There must be no present or stored faults.

Check that the status is "**ACTIVE**" with the brake pedal released, and changes to "**INACTIVE**" when the pedal is pressed.
Check the **cleanness and condition** of the brake light switch connections.
Check the **position**, **adjustment** and **correct operation** of the brake light switch.
Disconnect the battery. Disconnect the computer. Check the cleanness and condition of the connections. Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections: **Computer track 16 ⟶ Stop light switch track 3** Repair if necessary. If the correct statuses are not displayed, replace the sensor.

AFTER REPAIR	Repeat the conformity check from the start.

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ET010	OIL TOO HOT SIGNAL

NOTES	There must be no present or stored faults.

This status indicates that the oil temperature is higher than normal operating temperature. The status is **NO** if the gearbox oil temperature is below **140 °C**. The status changes to **YES** when the gearbox oil temperature exceeds **140 °C**.
When the status is "**YES**", the oil temperature has to drop below **130 °C** for the status to change to "**NO**".
If the correct status is not displayed, use the interpretation of fault **DF177 "Automatic transmission overheating"**.
If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

ET012	GEAR SELECTOR POSITION

NOTES	There must be no present or stored faults.

LEVER POSITION "P"-"R"-"N"-"D"

Check the **cleanness, condition and mounting** of the automatic transmission multifunction switch.
Check the control settings (see Workshop Repair Manual).

Disconnect the battery.
Disconnect the "modular connector" and check the **cleanness and condition** of connector "**A**" connections. (For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Carry out the following checks on the multifunction switch:

Continuity:

Lever in position "**P**", **track A10** → **track A7**
Lever in position "**R**", **track A10, A11, A12** → **track A7**
Lever in position "**N**", **track A11** → **track A7**
Lever in position "**D**", **track A12** → **track A7**

Insulation:

Lever in position "**P**", **track A9, A11, A12** → **track A7**
Lever in position "**R**", **track A9** → **track A7**
Lever in position "**N**", **track A9, A10, A12** → **track A7**
Lever in position "**D**", **track A9, A10, A11** → **track A7**

Disconnect the multifunction switch.
Connect the "universal bornier **Elé. 1681**" in place of the computer and check the **insulation, continuity and absence of stray resistance** in the connections between:

Computer track 31 → **Multifunction switch track A10**
Computer track 32 → **Multifunction switch track A11**
Computer track 33 → **Multifunction switch track A12**
Computer track 42 → **Multifunction switch track A7**

Repair if necessary.

AFTER REPAIR	Repeat the conformity check from the start.

ET012 **(continued)**	

NOTES	There must be no present or stored faults.

LEVER POSITION "M" "M+" AND "M-" SEQUENTIAL SHIFT	Check the **cleanness and condition** of the sequential switch module connections.
	Disconnect the battery. Disconnect the computer. Check the cleanness and condition of the connections. Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections: **Computer track 36 → Sequential switch module track B3** **Computer track 37 → Sequential switch module track A3** **Battery earth → Sequential switch module track A2** Repair if necessary.
	If the fault is still present, replace the sequential switch module.

AFTER REPAIR	Repeat the conformity check from the start.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of statuses

ET013	GEAR ENGAGED

NOTES	There must be no present or stored faults.

– "**1**" for 1st unlocked – "**2**" for 2nd unlocked – "**3**" for 3rd unlocked – "**4**" for 4th unlocked – "**1G**" for 1st slipping – "**2G**" for 2nd slipping – "**3G**" for 3rd slipping – "**4G**" for 4th slipping	– "**1P**" for 1st locked – "**2P**" for 2nd locked – "**3P**" for 3rd locked – "**4P**" for 4th locked – "**R**" for reverse – "**MD**" for safe position – "**N**" for neutral position
If the fault is caused by the converter lock-up, use the interpretation of faults **DF016 "Lock-up solenoid valve circuit"**, **DF018 "Lock-up slip"** and **DF120 "Controlled slip"**.	
If the fault is caused by the gear engaged, carry out fault finding on the multifunction switch. Check that statuses **ET123**, **ET124**, **ET125** and **ET126** display correctly. Check the multifunction switch adjustment.	
If the fault is still present, contact your Techline.	

AFTER REPAIR	Repeat the conformity check from the start.

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ET020	EXCHANGER FLOW CONTROL SOLENOID VALVE

NOTES	There must be no present or stored faults.

The exchanger flow control solenoid valve is "**ACTIVE**" when the gearbox oil temperature exceeds **100 °C** and the engine speed is more than **2000 rpm**. Otherwise the solenoid valve remains inactive.
Run command **AC024 "Actuator sequential control"** and check that the activation status changes from "**INACTIVE**" to "**ACTIVE**". When the solenoid valve is "**ACTIVE**" the voltage should be **0 V**. When the solenoid valve is "**INACTIVE**" the voltage should be **12 V**.
Reconnect the computer. Activate the solenoid valves with command **AC024 "Actuator sequential control"** and check the solenoid valve current. If the current is **260 mA**, the solenoid valve is operating correctly. If the current is lower, check the connections and wiring from the computer to the exchanger flow solenoid valve.
If the command status does not change, use the interpretation of fault **DF017 "Exchanger flow solenoid valve circuit"**.
If the problem persists after the diagnostic procedure for fault **DF017 "Exchanger flow solenoid valve circuit"** has been followed, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

ET021	SHIFT SOLENOID 1

NOTES	There must be no present or stored faults.

This indicates the status of the solenoid valve: "**ACTIVE / INACTIVE**". Its status must be "**INACTIVE**" in all lever positions.
Disconnect the computer. Check the **cleanness and condition** of the connections. Check the continuity between **track 9** of the computer connector and **track B8** of the "modular connector". Check across **tracks 1 and 9** of the computer connector that the resistance of shift solenoid no. 1 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance exceeds **50 Ω**, check the harness, computer connector and "modular connector".
Reconnect the computer. Activate the solenoid valves with command **AC024 "Actuator sequential control"** and measure the current in the solenoid valves. If the current is **250 mA**, the solenoid valve is operating correctly. If the current is lower, check the connections and wiring from the computer to the solenoid valve.
If the correct status is not displayed, use the interpretation of fault **DF085 "Shift solenoid 1 circuit"**.
If the fault is still present, replace the electric/hydraulic interface.

AFTER REPAIR	Repeat the conformity check from the start. Check that all up and down shifts are correct.

ET022	SHIFT SOLENOID 2

NOTES	There must be no present or stored faults.

This indicates the status of the solenoid valve. The status should be "**INACTIVE**" when the selector lever is in position "**P**", "**R**", "**N**", or "**D**". The status should be "**ACTIVE**" when the selector lever is in position "**M**", "**M+**", or "**M-**".
Disconnect the computer. Check the **cleanness and condition** of the connections. Check the **continuity** between **track 9** of the computer connector and **track B8** of the "modular connector". Check across **tracks 1 and 9** of the computer connector that the resistance of shift solenoid no. 2 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance exceeds **50 Ω**, check the harness, computer connector and "modular connector".
Reconnect the computer. Activate the solenoid valves with command **AC024 "Actuator sequential control"** and measure the current in the solenoid valves. If the current is **250 mA**, the solenoid valve is operating correctly. If the current is lower, check the connections and wiring from the computer to the solenoid valve.
If the correct status is not displayed, use the interpretation of fault **DF086 "Shift solenoid 2 circuit"**.
If the fault is still present, replace the electric/hydraulic interface.

AFTER REPAIR	Repeat the conformity check from the start. Check that shifting up and down through each gear works properly.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of statuses

ET023	SHIFT SOLENOID 3

NOTES	There must be no present or stored faults.

This indicates the status of the solenoid valve. The status should be "**INACTIVE**" when the selector lever is in position "**R**", "**M+**", or "**M-**". The status should be "**ACTIVE**" when the selector lever is in position "**P**", "**N**", "**D**", or "**M**".
Disconnect the computer. Check the **cleanness and condition** of the connections. Check the **continuity** between **track 7** of the computer connector and **track B10** of the "modular connector". Check across **tracks 1 and 7** of the computer connector that the resistance of shift solenoid no. 3 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance exceeds **50 Ω**, check the harness, computer connector and "modular connector".
Reconnect the computer. Activate the solenoid valves with command **AC024 "Actuator sequential control"** and measure the current in the solenoid valves. If the current is **250 mA**, the solenoid valve is operating correctly. If the current is lower, check the connections and wiring from the computer to the solenoid valve.
If the correct status is not displayed, use the interpretation of fault **DF087 "Shift solenoid 3 circuit"**.
If the fault is still present, replace the electric/hydraulic interface.

AFTER REPAIR	Repeat the conformity check from the start. Check that shifting up and down through each gear works properly.

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AUTOMATIC TRANSMISSION
Fault finding - Interpretation of statuses

ET024	SHIFT SOLENOID 4

NOTES	There must be no present or stored faults.

This indicates the status of the solenoid valve. The status should be "**INACTIVE**" when the selector lever is in position "**P**", "**R**", or "**N**". The status should be "**ACTIVE**" when the selector lever is in position "**M**", "**M+**", or "**M-**".
Disconnect the computer. Check the **cleanness and condition** of the connections. Check the **continuity** between **track 8** of the computer connector and **track B7** of the "modular connector". Check across **tracks 1 and 8** of the computer connector that the resistance of shift solenoid no. 4 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance exceeds **50 Ω**, check the harness, computer connector and "modular connector".
Reconnect the computer. Activate the solenoid valves with command **AC024 "Actuator sequential control"** and measure the current in the solenoid valve. If the current is **250 mA**, the solenoid valve is operating correctly. If the current is lower, check the connections and wiring from the computer to the solenoid valve.
If the correct status is not displayed, use the interpretation of fault **DF089 "Shift solenoid 4 circuit"**.
If the fault is still present, replace the electric/hydraulic interface.

AFTER REPAIR	Repeat the conformity check from the start. Check that shifting up and down through each gear works properly.

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AUTOMATIC TRANSMISSION
Fault finding - Interpretation of statuses

ET025	SHIFT SOLENOID 5

NOTES	There must be no present or stored faults.

This indicates the status of the solenoid valve. The status should be "**INACTIVE**" when the selector lever is in position "**P**", "**R**", "**N**", "**M+**", or "**M-**". The status should be "**ACTIVE**" when the selector lever is in position "**D**", or "**M**".
Disconnect the computer. Check the **cleanness and condition** of the connections. Check the **continuity** between **track 13** of the computer connector and **track B5** of the "modular connector". Check across **tracks 14 and 1** of the computer connector that the resistance of shift solenoid no. 5 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance exceeds **50 Ω**, check the harness, computer connector and "modular connector".
Reconnect the computer. Activate the solenoid valves with command **AC024 "Actuator sequential control"** and measure the current in the solenoid valves. If the current is **250 mA**, the solenoid valve is operating correctly. If the current is lower, check the connections and wiring from the computer to the solenoid valve.
If the correct status is not displayed, use the interpretation of fault **DF088 "Shift solenoid 5 circuit"**.
If the fault is still present, replace the electric/hydraulic interface.

AFTER REPAIR	Repeat the conformity check from the start. Check that shifting up and down through each gear works properly.

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AUTOMATIC TRANSMISSION
Fault finding - Interpretation of statuses

ET026	SHIFT SOLENOID 6

NOTES	There must be no present or stored faults.

This indicates the status of the solenoid valve: "**ACTIVE / INACTIVE**". The status should be "**INACTIVE**" when the selector lever is in any engaged gear position.
Disconnect the computer. Check the **cleanness and condition** of the connections. Check the **continuity** between **track 14** of the computer connector and **track B2** of the "modular connector". Check across **tracks 14 and 1** of the computer connector that the resistance of shift solenoid no. 6 is **40 Ω ± 2 Ω** at approximately **20 °C**.
If the resistance exceeds **50 Ω**, check the harness, computer connector and "modular connector".
Reconnect the computer. Activate the solenoid valves with command **AC024 "Actuator sequential control"** and measure the current in the solenoid valves. If the current is **250 mA**, the solenoid valve is operating correctly. If the current is lower, check the connections and wiring from the computer to the solenoid valve.
If the status displayed is still not correct, use the interpretation of fault **DF112 "Shift solenoid 6 circuit"**.
If the fault is still present, replace the electric/hydraulic interface.

AFTER REPAIR	Repeat the conformity check from the start. Check that shifting up and down through each gear works properly.

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ET071	TORQUE CONVERTER

NOTES	There must be no present or stored faults.

This indicates the status of the torque converter. The status should be "**ACTIVE**" when the vehicle is driven with a gear engaged. The status should be "**INACTIVE**" when starting, changing gears, or if the vehicle is stopped.
If the correct status is not displayed, use the interpretation of fault **DF016 "Converter lock-up solenoid valve circuit"**.
If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

ET097	MANUAL MODE

NOTES	There must be no present or stored faults.

This status indicates the selector lever position. The status should be "**ACTIVE**" when the selector lever is in position "**M**", "**M+**" or "**M-**". The status should be "**INACTIVE**" when the selector lever is in position "**P**", "**R**", "**N**", or "**D**".
If the correct status is not displayed, use the interpretation of fault **DF093 "Sequential gear lever circuit"**.
If the fault is still present, replace the sequential switch module.
If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start. Check that all up and down gear changes operate correctly in automatic and sequential mode.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of statuses

ET123 **ET124** **ET125**	MULTIFUNCTION SWITCH S2 MULTIFUNCTION SWITCH S3 MULTIFUNCTION SWITCH S4

NOTES	There must be no present or stored faults. Multifunction switch contact S1 is not connected on this model.

These indicate the status of the various multifunction switch contacts for each selector lever position.
The switch status can be "**OPEN**" or "**CLOSED**" (see table below).

	S2	S3	S4
P	**CLOSED**	**OPEN**	**OPEN**
R	**CLOSED**	**CLOSED**	**CLOSED**
N	**OPEN**	**CLOSED**	**OPEN**
D	**OPEN**	**OPEN**	**CLOSED**
M	**OPEN**	**OPEN**	**CLOSED**
M+	**OPEN**	**OPEN**	**CLOSED**
M-	**OPEN**	**OPEN**	**CLOSED**

If the correct status is not displayed, use the interpretation of fault:
– **DF008 "Multifunction switch intermediate position".**

If after these checks, statuses **ET123, ET124** or **ET125** are incorrect, replace the multifunction switch.

AFTER REPAIR	Repeat the conformity check from the start.

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ET127	SEQUENTIAL LEVER DOWNSHIFT CONTACT

NOTES	There must be no present or stored faults.

This indicates the status of the sequential lever downshift contact.
The status should be "**CLOSED**" when the selector lever is held in position "**M-**".
The status should be "**OPEN**" when the selector lever is in any position except "**M-**".

Check the sequential switch **+ 12 V** feed on **track B1** and the **earth** on **track A2** of the sequential switch.

With the selector lever in position "**M**", measure the voltage between:
Sequential switch **track B5** ⟶ **Earth**
Sequential switch **track B6** ⟶ **Earth**
If any of the measured values is **+ 12 V**, replace the sequential switch.
If the values are **0 V**, check that the selector lever positions match the instrument panel display.

If the correct status is not displayed, use the interpretation of fault **DF093 "Sequential gear lever circuit"**.

If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

ET128	SEQUENTIAL LEVER UPSHIFT CONTACT

NOTES	There must be no present or stored faults.

This indicates the status of the sequential lever upshift contact.
The status should be "**CLOSED**" when the selector lever is in position "**M+**".
The status should be "**OPEN**" when the selector lever is in any position except "**M+**".

Check the sequential switch **+ 12 V** feed on **track B1** and the **earth** on **track A2** of the sequential switch.

With the selector lever in position "**M**", measure the voltage between:
Sequential switch **track B5** ⟶ **Earth**
Sequential switch **track B6** ⟶ **Earth**
If any of the measured values is **+ 12 V**, replace the sequential switch.
If the values are **0 V**, check that the selector lever positions match the instrument panel display.

If the correct status is not displayed, use the interpretation of fault **DF093 "Sequential gear lever circuit"**.

If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

ET142	BRAKE PEDAL PRESSED

NOTES	There must be no present or stored faults.

This status indicates the position of the brake pedal The status is "**YES**" when the brake pedal is pressed. The status is "**NO**" when the brake pedal is not pressed.
If the correct status is not displayed as above, use the interpretation of fault **DF119 "Brake pedal position"**.
Disconnect the computer. Check the cleanness and condition of the connections. Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connection: **Computer track 16** ⟶ **Stop light switch track 3**
If the fault is still present, replace the brake sensor. If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

ET157	SELECTOR LEVER UNLOCKING

NOTES	There must be no present or stored faults.

This status indicates whether or not the selector lever is unlocked. Lever in position "**P**". The status is "**YES**" when the brake pedal is pressed. The status is "**NO**" when the brake pedal is not pressed. Lever in any position except "**P**". The status is "**YES**" whether or not the brake pedal is pressed.
Check that the instrument panel indicates that the lever is in position "**P**". Check that, when the brake pedal is pressed, the "Press brake pedal" message disappears from the instrument panel.
Check the selector lever operation up to the multifunction switch. Adjust the cable if necessary.
Check that statuses **ET154, ET123, ET124** and **ET125 "Multifunction switch**" are correct.
If the correct status is not displayed, use the interpretation of fault **DF095 "Selector lever locking electromagnet circuit"**.
If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

Parameter names	
PR003	Oil pressure
PR004	Gearbox oil temperature
PR007	Turbine speed
PR008	computer feed voltage
PR105	Vehicle speed
PR128	Engine/turbine speed difference

PR003	OIL PRESSURE

NOTES	There must be no present or stored faults.

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 24 → Track C1 Modular connector plug
Computer track 55 → Track C2 Modular connector plug
Computer track 25 → Track C3 Modular connector plug
Computer track 20 → Track B9 Modular connector plug
Computer track 26 → Track B12 Modular connector plug

Reconnect the "modular connector".
Check that the oil pressure sensor resistance between **tracks 24 and 25** of the computer connector is approximately **20 kΩ**.
If the value is not correct, replace the sensor.

Check across **tracks 20 and 26** of the computer connector that the resistance of the pressure regulating solenoid valve is **1 Ω ± 0.2 Ω** at approximately **23 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

Check the gearbox oil quality and level.
If an oil change or top-up is necessary see the "Draining-Filling-Levels" section of the Workshop Repair Manual.
Check that the gearbox is not leaking oil.
(continued on next page)

AFTER REPAIR	Repeat the conformity check from the start.

PR003 CONTINUED	

See the "Taking line pressure" section of the Workshop Repair Manual.
Connect the pressure gauge for a line pressure reading.
With the engine hot and the gearbox oil temperature between **60 and 80 °C**, check the difference between the line pressure sensor (**PR003**) and pressure gauge in the following conditions:
– with the engine stopped, the pressure gauge should indicate a residual pressure of about **0.2 bar**.
If the sensor reading differs by more than **0.2 bar**, replace the sensor.
– with the engine running at about **1200 rpm** the pressure gauge reading should reach **7 bar**.
If the sensor reading differs by more than **0.8 bar**, replace the sensor.

Hot engine and gearbox oil temperature between **60 and 80 °C**.
Take the line pressure readings under the following conditions:
– selector lever in position "**P**" or "**N**" and engine running at **2000 rpm**, the pressure should be between **2.6 and 3.2 bar**.
– with the selector lever in position "**R**" and engine running at **2000 rpm**, the pressure should be more than **4 bar**.
– with the selector lever in position "**D**" and engine running at **2000 rpm**, the pressure in first gear should be more than **7 bar**.
If the values are not correct, there is a problem inside the gearbox.

If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

PR004	GEARBOX OIL TEMPERATURE

NOTES	There must be no present or stored faults.

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **insulation, continuity and absence of stray resistance** on the following connections:
(For "modular connector" connection positions, see the "System operation and Track assignments" section.)

Computer track 53 → Track B4 Modular connector plug
Computer track 54 → Track B1 Modular connector plug
Computer track 12 → Track E1 Modular connector plug
Computer track 2 → Track E2 Modular connector plug

Reconnect the "modular connector".
Check the oil pressure sensor resistance between computer connector **tracks 53 and 54**.
The resistance should be between **2360 and 2660 Ω** at a temperature of **20 °C** and between **290 and 327 Ω** at a temperature of **80 °C**.
If the resistance is not correct, the sensor or the electric/hydraulic interface harness is damaged.

Reconnect the "modular connector".
Check across **tracks 12 and 2** of the computer connector that the resistance of the heat exchanger flow solenoid valve is **40 Ω ± 4 Ω** at approximately **20 °C**.
If the resistance is not correct, the solenoid valve or harness is damaged.

Check that the water-oil exchanger is not blocked.

AFTER REPAIR	Repeat the conformity check from the start.

PR007	TURBINE SPEED

NOTES	There must be no present or stored faults.

Check the turbine speed sensor mounting.
Disconnect the battery. Disconnect the "modular connector", and check the **cleanness and condition** of the connections.
Disconnect the computer. Check the cleanness and condition of the connections. Take the "universal bornier **Elé. 1681**". Check the **insulation and continuity** of the following connections: (For "modular connector" connection details, see the "System operation and Track assignments" section.) **Computer track 45 → Track D1 Modular connector plug** **Computer track 46 → Track D2 Modular connector plug**
Reconnect the "modular connector". Check that the turbine speed sensor resistance between **tracks 45 and 46** of the computer connector is approximately **300 Ω ± 40 Ω**. If the resistance is not correct, either the sensor or the harness is damaged. Replace the faulty component.
If the fault persists after the sensor has been replaced, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

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PR008	COMPUTER FEED VOLTAGE

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

Carry out a thorough check of the battery and charging circuit (see values in the Workshop Repair Manual).
Disconnect the computer. Check the condition and cleanness of the contacts.
Check that the computer earth is properly connected to the vehicle's front left side member.
Check the **20A** permanent computer feed fuse marked "**15**" in the Protection and Switching Unit. Check the cleanness and condition of the connections.
Check the **5A** after-ignition computer feed fuse marked "**5H**" in the Protection and Switching Unit. Check the cleanness and condition of the connections.
Disconnect the computer. Disconnect the computer. Check the cleanness and condition of the connections. Disconnect the connector marked "**PPM2**" in the Protection and Switching Unit. Take the "universal bornier **Elé. 1681**". Check the **insulation and continuity** of the following connections: **Computer track 56 → Connector PPM2 track 1** **Computer track 27 → Connector PPM2 track 10** **Computer track 28 → Left-hand front side member electronic earth 2**
Reconnect the battery. With the ignition on, check the presence of **+ 12 V** on **tracks 56 and 27** of the computer connector. If there is no **+ 12 V**, there is a fault in the Protection and Switching Unit. Run fault finding on the Protection and Switching Unit.

AFTER REPAIR	Repeat the conformity check from the start.

PR105	VEHICLE SPEED

NOTES	There must be no present or stored faults.

Test the multiplex network. Refer to Workshop Repair Manual **366**, "**Multiplex network**" section.
If the fault is still present, carry out fault finding on the **ABS and ESP** system. See the "**ABS/ESP**" section in the Workshop Repair Manual.

AFTER REPAIR	Repeat the conformity check from the start.

PR128	ENGINE/TURBINE SPEED DIFFERENCE

NOTES	**Carry out injection system fault finding and check that it is operating correctly.**
	There must be no present or stored faults.

Check the gearbox oil quality and level.
If an oil change or top-up is necessary see the "Draining-Filling-Levels" section of the Workshop Repair Manual.
Check that the gearbox is not leaking oil.

Disconnect the battery.
Disconnect the "modular connector", and check the **cleanness and condition** of the connections.

Disconnect the computer. Check the cleanness and condition of the connections.
Take the "universal bornier **Elé. 1681**". Check the **insulation and continuity** of the following connections:
(For "modular connector" connection details, see the "System operation and Track assignments" section.)

Computer track 45 → Track D1 Modular connector plug
Computer track 46 → Track D2 Modular connector plug
Computer track 19 → Track B6 Modular connector plug
Computer track 26 → Track B12 Modular connector plug

Reconnect the "modular connector".
Check across **tracks 45 and 46** of the computer connector that the turbine speed sensor resistance is **300 Ω ± 40 Ω** at approximately **20 °C**.
If the resistance is not correct, either the sensor or the harness is damaged.

Reconnect the "modular connector".
Check across **tracks 19 and 26** of the computer connector that the resistance of the converter lock-up solenoid valve is **1 Ω ± 0.2 Ω** at approximately **20 °C**.
If the resistance is not correct, the solenoid valve or the electric/hydraulic interface harness is damaged.

Carry out a converter stall test.
Follow the procedure in the "Converter stall test" section of the Workshop Repair Manual.

See the "Taking line pressure" section of the Workshop Repair Manual.
Connect the pressure gauge for a line pressure reading.
Hot engine and gearbox oil temperature between **60** and **80 °C**.
Take the line pressure readings under the following conditions:
– with the selector lever in position "**P**" or "**N**" and engine running at **2000 rpm**, the pressure should be between **2.6** and **3.2 bar**.
– with the selector lever in position "**R**" and engine running at **2000 rpm**, the pressure should be more than **4 bar**.
– with the selector lever in position "**D**" and engine running at **2000 rpm**, the pressure in first gear should be more than **7 bar**,
If the values are not correct, there is a fault inside the gearbox.

If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

AC024	SHIFT SOLENOID ACTIVATION

NOTES	Check the **20A** permanent computer feed fuse marked "**15**" in the Protection and Switching Unit. Check the cleanness and condition of the connections. Check the **5A** after-ignition computer feed fuse marked "**5H**" in the Protection and Switching Unit. Check the cleanness and condition of the connections. Replace them if necessary.
	Zero engine and vehicle speed, selector lever in position "**P**" or "**N**".

If the solenoid valves are not activated, check:

- the gearbox oil level,
- the cleanness and condition of the computer connector and "modular connector",

Repair if necessary.

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

Computer track 1 → Modular connector track B3 (+ 12 V)
Computer track 10 → Modular connector track B11 (EVS 1)
Computer track 9 → Modular connector track B8 (EVS 2)
Computer track 7 → Modular connector track B10 (EVS 3)
Computer track 8 → Modular connector track B7 (EVS 4)
Computer track 13 → Modular connector track B5 (EVS 5)
Computer track 14 → Modular connector track B2 (EVS 6)
Computer track 26 → Modular connector track B12 (modulating solenoid valve)
Computer track 20 → Modular connector track B6 (converter lock-up solenoid valve)
Computer track 2 → Modular connector track E2 (exchanger flow control solenoid valve)
Computer track 12 → Modular connector track E1 (exchanger flow control solenoid valve)

Repair if necessary.

If the fault is still present, contact your Techline.

AFTER REPAIR	Repeat the conformity check from the start.

CLEARING

Before using the delete commands, engine and vehicle speed must be zero and the selector lever must be in position "**P**" or "**N**".

- **RZ004 "Clear fault memory"**

  This command deletes present and stored faults in the automatic transmission computer.

- **RZ005 "Self-adapting system"**

  This command clears the self-adapting systems in the automatic transmission computer.

  Doing a road test with the vehicle after running this command is recommended before returning the vehicle to the customer. This is because, after the command, the automatic transmission may occasionally malfunction as the self-adapting systems readjust.

- **RZ006 "Converter lock-up self-adapting system"**

  This command clears the self-adapting systems associated with the converter.

  It is recommended to road test the vehicle after running this command before returning the vehicle to the customer. This is because, after the command, the automatic transmission may occasionally malfunction as the converter-related self-adapting systems reset.

- **RZ007 "OBD memory"**

  This command clears the computer's OBD memory.

AUTOMATIC TRANSMISSION
Fault finding - Customer complaints

NOTES	**Consult "Customer complaints" only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

AUTOMATIC TRANSMISSION
Fault finding - Customer complaints

NOTES	**Consult "Customer complaints" only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

REVERSING LIGHTS DO NOT WORK — **ALP 6**

Reverse gear works and the bulbs are OK

OIL PRESENT UNDER THE VEHICLE — **ALP 7**

SELECTOR LEVER DOES NOT LOCK IN "PARK" POSITION — **ALP 8**

SELECTOR LEVER STUCK IN "PARK" POSITION (IMPOSSIBLE TO UNLOCK IT BY PRESSING THE BRAKE PEDAL) — **ALP 9**

ALP 1	No dialogue with computers

NOTES	None.

Try the diagnostic tool on another vehicle.

Check:
– The connection between the diagnostic tool and the diagnostic socket (correct connection and lead in good condition).
– The computer feed.
– The engine and passenger compartment fuses.

Check that the **CLIP** probe is fed via tracks **16 (+ 12 V)**, and **4** and **5 (earth)** of the diagnostic socket, as shown by the illumination of the two red warning lights on the probe.
Check that the **CLIP** probe is fed via the computer's USB port.
Check that the **CLIP** probe is communicating with the vehicle's computers; this can be seen by the illumination of the two green diodes on the probe.

Check the following tracks on the diagnostic socket:
track 1 → **+ After ignition**
track 16 → **+ Battery**
tracks 4 and **5** → **Earth**
Repair if necessary.

No communication on line K.
Check the **continuity**, **insulation** and **absence of stray resistance** on line **K** of the diagnostic socket (**track 7**).

Disconnect the connector from the climate control computer in order to check the **insulation, continuity and absence of stray resistance** on the following connections:

Computer track 27 → **+ After ignition**
Computer track 56 → **+ Battery**
Computer track 28 → **Earth**
Computer track 18 → **Diagnostic socket**

AFTER REPAIR	Carry out a complete check with the diagnostic tool.

ALP 2	The starter motor will not operate when the selector lever is in position P or N

NOTES	**Consult the fault finding charts only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

Check the consistency between the diagnostic tool display, the selector lever positions and the gear engaged shown on the instrument panel.
Check the multifunction switch mounting. Check the lever adjustment using the method described in the Technical Note.
Switch off the ignition and disconnect the automatic transmission computer connector. Check that fuse **F3** (**25 A**) is in good condition; replace it if necessary. With the start button pressed, check the presence of **+ 12 V** on **track 3** of the PSU.
Check that the start button is operating correctly.
Check the power circuit of the starter relay and the starter motor.
Test the injection system and the UCH.

AFTER REPAIR	Carry out a complete check using the diagnostic tool.

ALP 3	Automatic transmission operating problems

NOTES	**Consult the fault finding charts only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

Use the diagnostic tool to check the correlation between the display and the selector lever positions (ignition on and engine stopped).
Check the lever adjustment, following the instructions in the Technical Note.
Check the oil level and condition (colour, odour, etc.). If the oil condition suggests an internal problem, replace the automatic transmission.
With the engine stopped, check the line pressure signal supplied by the oil pressure sensor. Replace the sensor if the pressure signal is **> 0.2 bar**.
Connect a pressure gauge to the pressure connection on the gearbox casing (check that the oil temperature is more than **20 °C** before continuing). Note the line pressure value shown on the pressure gauge and by the diagnostic tool in the following conditions: **– With the brakes on, selector lever in "D" and engine speed = 1200 rpm.** Replace the pressure sensor if the gauge and diagnostic tool readings differ. Repeat the check after replacement.
With the gearbox oil temperature between **60 °C** and **90 °C**, brakes applied and selector lever in position "**D**", place a pedal presser or pusher on the accelerator pedal to get a stable reference pressure of **approximately 8 bar** (engine speed approximately **1300 rpm**). Note the pressure gauge and diagnostic tool readings obtained under these conditions, while ensuring that the engine speed remains stable between both readings. These measurements must be carried out quite quickly so that these conditions do not have to be maintained for too long.
Replace the pressure regulating solenoid valve and the oil if the difference between the two readings is more than **0.5 bar**. Repeat the check after replacement. If the fault is still present, replace the hydraulic control valve and all the solenoid valves.
Start the engine. With the brakes applied, move the selector lever to position "**D**" and accelerate, observing the turbine speed signal. If the turbine speed signal changes, replace the gearbox.

AFTER REPAIR	Carry out a complete check using the diagnostic tool.

ALP 3 CONTINUED	

Refer to the procedure and the safety instructions for carrying out a torque converter stall test.
Theoretical engine speed at the stall speed: **2300 ± 150 rpm**.
If the stall speed value is incorrect, replace the torque converter, converter lock-up solenoid valve, and oil. If the oil is burnt, also replace the hydraulic control valve 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 (swaged shaft).
Note: a stall speed which is too low may be linked to a lack of engine power.

Carry out a road test, observing the engine speed on the instrument panel and the information displayed on the diagnostic tool.
If the engine speed does not vary with each change of gears, replace the hydraulic control valve and all the solenoid valves.

AFTER REPAIR	As a final step, clear the stored faults with command RZ004 "Clear stored faults", the computer self-adapting systems with command RZ005 "Self-adapting system" and the converter self-adapting systems with command RZ006 "Converter lock-up" self-adapting system. Refer to the "Configuration and Programming" section for how to reset the oil ageing counter to zero (enter gearbox oil change date).

ALP 4	Automatic transmission malfunction when changing gears

NOTES	**Consult the fault finding charts only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

Automatic transmission gear change malfunction may be observed without any fault being stored in the computer.

These malfunctions may be due to contact resistance faults on the selection and progressive engagement solenoid valve (EVS1 to EVS6) control lines preventing the self-test system from detecting a solenoid valve fault or preventing the solenoid valves from being controlled.

Check the clamping efficiency and condition of the clips on all the solenoid valve control line connections from the computer to the solenoid valve.

AFTER REPAIR	Carry out a road test, then do a complete check with the diagnostic tool.

ALP 5	Erratic gear changes

NOTES	**Consult the fault finding charts only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

Carry out a road test with the CLIP diagnostic tool, and check that status **ET013 "Gear engaged"** is correct.
If the customer complaint occurs when the brake pedal is released, check that status **ET142 "Brake pedal pressed"** really is **NO**. If not, adjust the brake light switch and brake pedal return spring.
Check that the instrument panel display of the gear engaged matches the selector lever position.
Check the routing of the automatic transmission harness (high voltage interference fault). Change it if necessary.
Check the adjustment of the external control. If the fault persists, replace the multifunction switch.
Carry out a fault finding procedure on the injection system.
Check the **PR006 "Engine speed"** signal during a road test at a steady speed. If the signal is wrong, replace the engine speed sensor.

AFTER REPAIR	Carry out a road test, then do a complete check with the diagnostic tool.

ALP 6	Reversing lights do not operate (Scenic II only)

NOTES	**Consult the fault finding charts only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

Check that the bulbs are in good condition. Check the condition of the bulb contacts. Repair if necessary. Check that the rear lights earth is correct. Right-hand rear light **track 4** and left-hand rear light **track 1**.
Switch off the ignition and disconnect the modular connector. Switch the ignition on again and check for **+ after ignition** on modular connector **track A2**. Check the condition of fuse **F5C** (**10A**) in the PSU and the presence of **+ after ignition** on **track 6** of connector **PPM2**.
Switch off the ignition and check the continuity between **tracks A1 and A2** of the modular connector (gearbox side) with the selector lever in position "**R**". If continuity is not provided, replace the multifunction switch. If the continuity is okay, check the continuity between **track A1** of the modular connector and **track 9** of PSU connector **PPM2**.
Switch on the ignition. With the selector lever in position "**R**", check the presence of **+ 12 V** on: **track 9 of PSU connector PPH2** **right-hand rear light track 2** **left-hand rear light track 3**

AFTER REPAIR	Carry out a complete check using the diagnostic tool.

ALP 7	Oil present under vehicle

NOTES	**Consult the fault finding charts only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

Clean the gearbox. Check the oil level and top up if necessary, following the procedure described in the Workshop Repair Manual.
Find the source of the leak, carry out the necessary repairs, or change the defective parts to stop the leak. Check the oil level.
If there is no gearbox leak, look for a leak on the engine side.

AFTER REPAIR	Carry out a road test, then do a complete check with the diagnostic tool.

ALP 8	Selector lever does not lock in "Park" position

NOTES	**Consult the fault finding charts only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

If no fault can be identified in the shift-lock electromagnet, check the operation of the stop light switch. Use the interpretation of fault **DF119 "Brake pedal position"** and status **ET003 "Brake light switch"**.
If the customer complaint is still present, look for a mechanical fault on the lever locking mechanism.

ALP 9	Selector lever stuck in "Park" position (unlocking impossible)

NOTES	**Consult the fault finding charts only after carrying out a full diagnostic check with the diagnostic tool and completing the conformity check.**

If no fault can be identified in the shift-lock electromagnet, check the operation of the stop light switch. Use the interpretation of fault **DF119 "Brake pedal position"** and status **ET003 "Brake light switch"**.
If the customer complaint is still present, look for a mechanical fault on the lever locking mechanism.

AFTER REPAIR	Carry out a complete check using the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Introduction

1. SCOPE OF THIS DOCUMENT

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

Vehicle(s): **MEGANE II and SCENIC**	*Name of computer:* **Siemens TA 2000**
Function concerned: **Automatic transmission**	*Vdiag no.:* **14**

2. PREREQUISITES FOR FAULT FINDING

Documentation type

Fault finding procedures (this manual):
– Assisted fault finding (integrated into the diagnostic tool), Dialogys.
Wiring Diagrams:
– Visu-Schéma (CD-ROM), paper version.

Type of diagnostic tools

– CLIP

Special tooling required

Special tooling required	
	Multimeter
Elé. 1681	Universal bornier

3. RECAP

Procedure

To run fault finding on the vehicle computers, switch on the ignition.

Proceed as follows:
– Connect the diagnostic tool and perform the required operations.

IMPORTANT
Computer supply for the fault finding procedure:
To run fault finding on the vehicle computers, proceed as follows:
– Renault card on the card holder (keyless vehicle scenario 1 (basic, not hands-free) and scenario 2 (top of the range, hands-free)).
– Long press (more than 5 seconds) on Start button without start-up conditions.
– Then connect the diagnostic tool and perform the required operations.

Faults

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

The **present** or **stored** status of faults should be taken into consideration when the diagnostic tool is switched on after the + after ignition feed (without any system components being active).

For a **present fault**, apply the procedure described in the **Interpretation of faults** section.

For a **stored fault**, note the faults displayed and apply the instructions in the **Notes** section.

If the fault is **confirmed** when the instructions in the Notes section are applied, the fault is present. Deal with the fault.

If the fault is **not confirmed**, check:
- the electrical lines which correspond to the fault,
- the connectors for these lines (for oxidation, bent pins, etc.),
- the resistance of the component detected as faulty,
- the condition of the wires (melted or split insulation, wear).

Conformity check

The aim of the conformity check is to check data that does not produce a fault on the diagnostic tool because the data is inconsistent. Therefore, this phase is used to:
- carry out fault finding on faults that do not have a fault display, and which may correspond to a customer complaint,
- check that the system is operating correctly and that there is no risk of a fault recurring after repairs.

This section gives the fault finding procedures for statuses and parameters and the conditions for checking them.

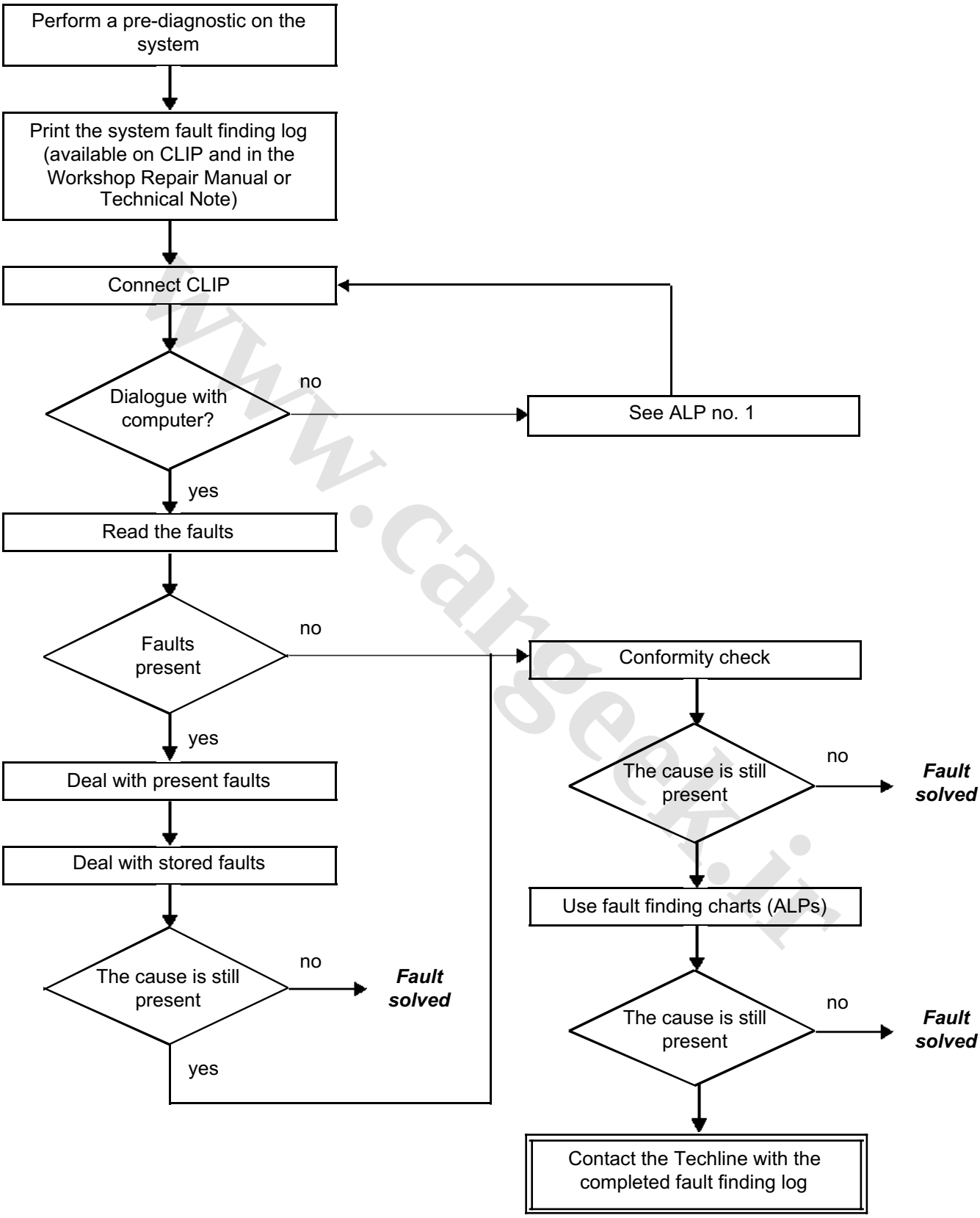
If a status is not behaving normally or a parameter is outside the permitted tolerance values, consult the corresponding fault finding page.

Customer complaints - Fault finding chart

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

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

4. FAULT FINDING PROCEDURE



4. FAULT FINDING PROCEDURE (continued)

Wiring check

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

Visual inspection
Look for damage under the bonnet and in the passenger compartment.
Carefully check the fuses, insulators and wiring harness routing.
Look for signs of oxidation.

Tactile inspection
While manipulating the wiring harness, use the diagnostic tool to note any change in fault status from "stored" or "present".
Make sure that the connectors are correctly locked.
Apply light pressure to the connectors.
Twist the wiring harness.
If there is a change in status, try to locate the source of the fault.

Inspection of each component
Disconnect the connectors and check the appearance of the clips and tabs, as well as the crimping (no crimping on the insulating section).
Make sure that the clips and tabs are correctly locked in the sockets.
Make sure that no clips or tabs have been dislodged during connection.
Check the clip contact pressure using an appropriate model of tab.

Check the continuity/insulation
Check the continuity of entire lines, then section by section.
Look for a short circuit to earth, to **+ 12 V** or to another wire.

If a fault is detected, repair or replace the wiring harness.

5. FAULT FINDING LOG

IMPORTANT!

NOTE
Any fault on a complex system requires thorough fault finding with the appropriate tools. The FAULT FINDING LOG, which should be completed during the procedure, enables you to keep track of the procedure which is carried out. It is an essential document when consulting the manufacturer.

IT IS THEREFORE MANDATORY TO FILL OUT A FAULT FINDING LOG EACH TIME FAULT FINDING IS CARRIED OUT.

You will always be asked for this log:
- when requesting technical assistance from the Techline,
- for approval requests when replacing parts for which approval is obligatory,
- to be enclosed when returning monitored parts on request. The log is needed for warranty reimbursement, and enables better analysis of the parts removed.

6. SAFETY ADVICE

Safety rules must be observed during any work on a component to prevent any damage or injury:
- make sure that the battery is properly charged to avoid damaging the computers with a low load,
- use the appropriate tools,
- immobilise the vehicle for all tests in the workshop on the automatic transmission with the engine running.

FAULT FINDING LOG

System: Automatic or sequential gearbox

List of monitored parts: ***Computer***

● Administrative identification

Date	2 0
Log completed by	
VIN	
Engine	
Diagnostic tool	CLIP
Update version	

● Customer complaint

	681	Gears not changing		622	Noise		679	No drive
	680	Slipping		675	Indicator light comes on		682	Loss of power
	683	Jolts or jerks		684	"3H"		685	Erratic gear change

Other — Your comments:

● Conditions under which the customer complaint occurs

	005	While driving		004	Intermittently		008	When decelerating
	007	When accelerating		009	Sudden fault		010	Gradual deterioration

Other — Your comments:

● Documentation used in fault finding

Fault finding procedure used	
Type of diagnostic manual:	Workshop Repair Manual ❑ Technical Note ❑ Assisted fault finding ❑
Fault finding manual no.:	
Wiring diagram used	
Wiring Diagram Technical Note no.:	
Other documentation	
Title and/or part number:	

RENAULT

FD 12
Fault finding log

FAULT FINDING LOG

System: Automatic or sequential gearbox

● Computer identification and system parts replaced

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

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

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

● Faults found with the diagnostic tool

Fault no.	Present	Stored	Fault name	Specification

● Conditions under which fault occurs

Status or parameter no.	Parameter name	Value	Unit

● System-specific information

Description:

● Additional information

Gearbox serial number	
If the gearbox is automatic, which mode is it (automatic/sequential)?	
Gear changes affected?	
Result of the gearbox oil level check	
Result of the oil check using "Add-On"	
Appearance of the oil	
Oil leak?	No ❑ Seepage ❑ Droplets ❑
Location of the leak	
Type of noise (metallic, friction, etc.)	
Does the buzzer work?	Yes ❑ No ❑
What factors led you to replace the computer?	
What other parts were replaced?	
Other defective functions?	
Your comments:	

RENAULT

FD 12
Fault finding log

GENERAL OPERATION

The automatic transmission on this model is a DP0, which is also found on other Renault vehicles including the Clio II, Kangoo or Megane.

The automatic transmission computer controls gear-shifting based on several parameters, among them engine torque and the type of driving being done.

All signals travel to the computer by wire, except for those from the injection computer, which use the multiplex network.

Fault finding on the computer is carried out via the multiplex network (CAN).

SYSTEM OPERATION

Multifunction switch (CMF) statuses:

Note:
On this vehicle, contact S1 of the multifunction switch depends on **status ET128 "Upper switch on sequential lever"**.

Lever position	Multifunction switch contact			
	P/N	S2	S3	S4
P	**CLOSED**	OPEN	**CLOSED**	**CLOSED**
R	**CLOSED**	OPEN	OPEN	OPEN
N	**CLOSED**	**CLOSED**	OPEN	**CLOSED**
D	**CLOSED**	**CLOSED**	**CLOSED**	OPEN
M	**CLOSED**	**CLOSED**	**CLOSED**	OPEN
+	**CLOSED**	**CLOSED**	**CLOSED**	OPEN
-	**CLOSED**	**CLOSED**	**CLOSED**	OPEN

Sequential lever switch statuses:

Note:
The vehicle does not have a fixed 3rd (D3).

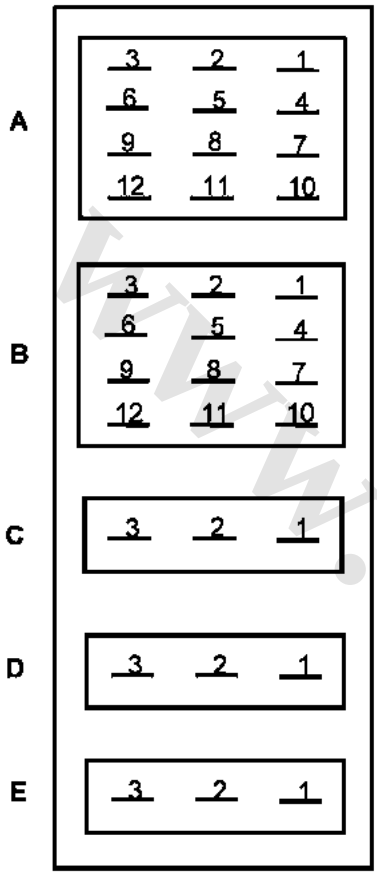
Lever position	Upper sequential lever contact	Lower sequential lever contact
P	ACTIVE	ACTIVE
R	ACTIVE	ACTIVE
N	ACTIVE	ACTIVE
D	ACTIVE	ACTIVE
M	**INACTIVE**	**INACTIVE**
+	**INACTIVE**	ACTIVE
-	ACTIVE	**INACTIVE**

Sequence solenoid valve (EVS) statuses:

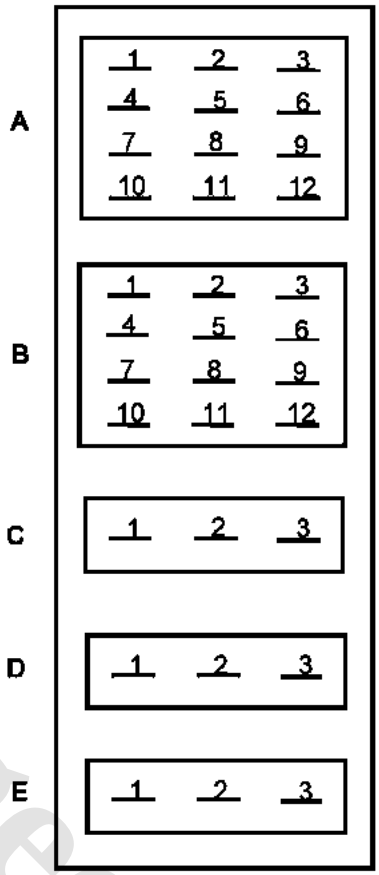
Lever position	Gear engaged	Solenoid valve statuses					
		1	2	3	4	5	6
P	**Neutral**	INACTIVE	INACTIVE	**ACTIVE**	INACTIVE	INACTIVE	INACTIVE
R	**R**	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
N	**Neutral**	INACTIVE	INACTIVE	**ACTIVE**	INACTIVE	INACTIVE	INACTIVE
P or N < - 10 °C	**Neutral**	INACTIVE	**ACTIVE**	INACTIVE	INACTIVE	INACTIVE	INACTIVE
D or M stationary or driving	**1**	INACTIVE	INACTIVE	**ACTIVE**	**ACTIVE**	INACTIVE	INACTIVE
D or M stationary or driving	**2**	INACTIVE	**ACTIVE**	INACTIVE	**ACTIVE**	INACTIVE	INACTIVE
D or M While driving	**3**	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
D or M While driving	**4**	**ACTIVE**	**ACTIVE**	INACTIVE	INACTIVE	INACTIVE	INACTIVE

MODULAR CONNECTOR

Female pins
(connector towards the switch, the interface,
the sensors, the exchanger flow lock-up solenoid valve)

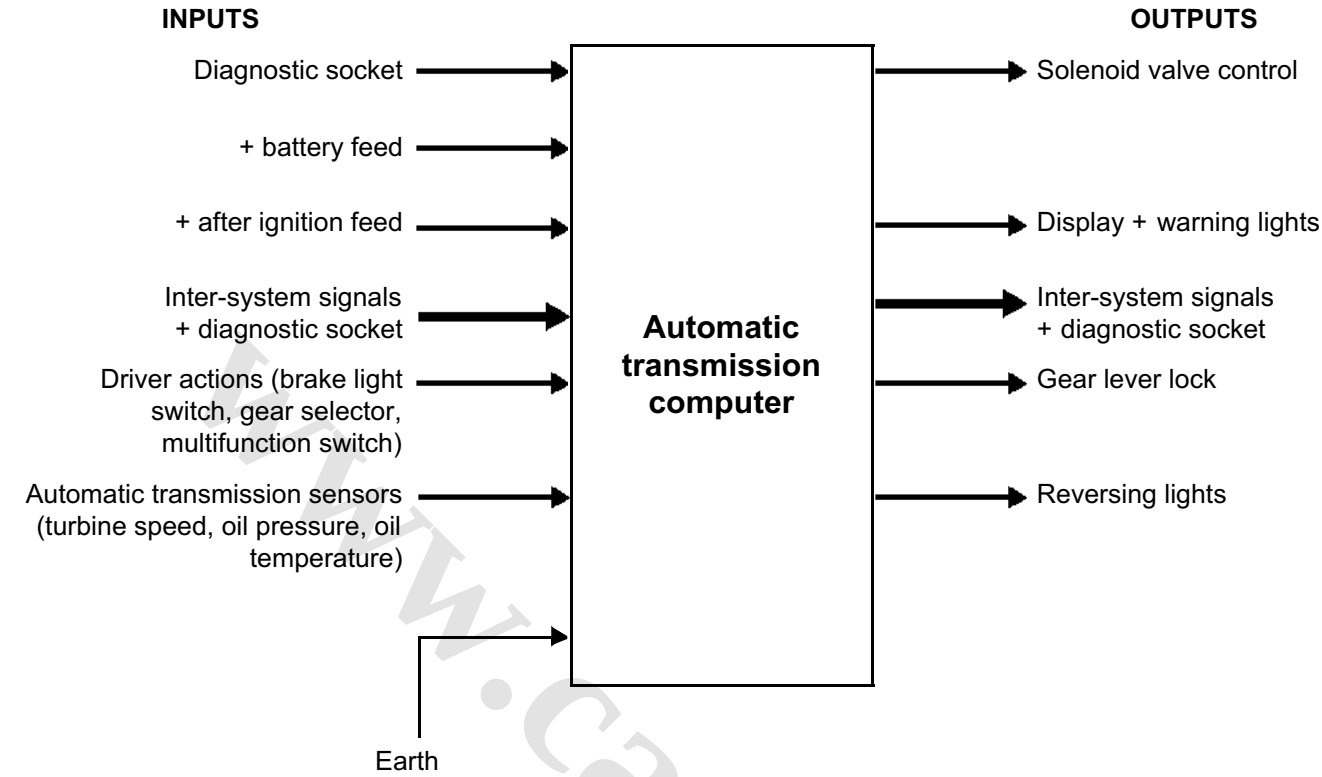


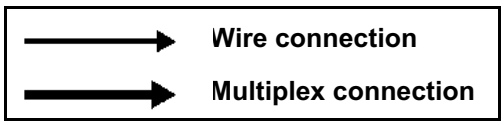
Male pins
(connector from the computer)



A Multifunction switch
B Hydraulic electronic interface
C Oil pressure sensor
D Turbine speed sensor
E Exchanger flow lock-up solenoid valve

COMPUTER INPUTS AND OUTPUTS





AUTOMATIC TRANSMISSION

Fault finding - Allocation of computer tracks

Computer track	Description	Track of the sensor
1	Shift solenoid valve power supply	track B3 electric/hydraulic interface
2	Exchanger flow lock-up solenoid valve supply	track 2 exchanger flow lock-up solenoid valve
3	Not used	
4	Gear lever display signal	track 2 gear lever display
5	Not used	
6	Not used	
7	Shift solenoid valve 3 control	track B10 electric/hydraulic interface
8	Shift solenoid valve 4 control	track B7 electric/hydraulic interface
9	Shift solenoid valve 2 control	track B8 electric/hydraulic interface
10	Shift solenoid valve 1 control	track B11 electric/hydraulic interface
11	Gear lever lock control	shift pattern control track B2
12	Exchanger flow lock-up solenoid valve control	track 1 exchanger flow lock-up solenoid valve
13	Shift solenoid valve 5 control	track B5 electric/hydraulic interface
14	Shift solenoid valve 6 control	track B2 electric/hydraulic interface
15	Not used	
16	Brake switch "Open" signal	brake light switch track 3
17	Not used	
18	Diagnostic socket	
19	Lock-up modulating solenoid valve control	track B6 electric/hydraulic interface
20	Oil pressure regulating solenoid valve	track B9 electric/hydraulic interface
21	Not used	
22	Not used	
23	Not used	
24	Pressure sensor feed	pressure sensor track C1
25	Pressure sensor earth	pressure sensor track C3
26	Modulating solenoid valve power supply	track B12 electric/hydraulic interface
27	+ After ignition feed	track 12 of the white 16-track connector in the Protection and Switching Unit
28	Computer earth	
29	Not used	
30	Not used	

Computer track	Description	Track of the sensor
31	Multifunction switch signal 2	multifunction switch track A10
32	Multifunction switch signal 3	multifunction switch track A11
33	Multifunction switch signal 4	multifunction switch track A12
34	Not used	
35	Not used	
36	Lower one touch switch contact control	track B3 shift pattern control
37	Upper one touch switch contact control	track A3 shift pattern control
38	CAN H2 signal	track A4 injection computer (K9K, F9Q) track K4 injection computer (F4R, K4M)
39	CAN L2 signal	track A3 injection computer (K9K, F9Q) track K3 injection computer (F4R, K4M)
40	Not used	
41	Not used	
42	Multifunction switch earth	multifunction switch track A7
43	Not used	
44	Not used	
45	Turbine speed signal	turbine speed sensor track D1
46	Turbine speed earth	turbine speed sensor track D2
47	Not used	
48	Not used	
49	Not used	
50	Not used	
51	Not used	
52	Not used	
53	Temperature sensor earth	electric/hydraulic interface track B4
54	Temperature sensor signal	electric/hydraulic interface track B1
55	Line pressure signal	pressure sensor track C2
56	+ Battery supply	Protection and Switching Unit white 16-track connector track 8

REPLACING THE COMPUTER

IT IS ESSENTIAL TO CONTACT YOUR TECHLINE BEFORE REPLACING AN AUTOMATIC TRANSMISSION COMPUTER.

If Techline approves the computer replacement, proceed as follows:

- Note the gearbox oil condition meter code in the Identification menu: **ID018 "Oil condition meter"** and the date of the last gearbox oil service **ID017 "Gearbox oil service date"**.
- Switch off the ignition.
- Replace the computer.
- If necessary, change the computer configuration in the "Write configuration" menu.
- Enter the VIN into the computer with diagnostic tool command **VP001 "Write VIN"**.
- Enter the oil condition meter code from the old automatic transmission computer (found in the Identification menu) using command **VP015 "Transfer oil condition meter"**.
- Enter the gearbox oil change date with command **VP016 "Write gearbox oil service date"**.
- Enter the After-Sales service date with diagnostic tool command **VP009 "Write last After-Sales service date"**.
- Carry out a check with the diagnostic tool, on the identification screen.
- Switch off the ignition.

REPLACING AN AUTOMATIC TRANSMISSION COMPONENT

For replacing other automatic transmission components, see **MR 364, Mechanics, 23A, Automatic transmission**.

PROGRAMMING

- **VP001 "VIN entry":**

  As it is necessary to enter the VIN each time dialogue is established with the diagnostic tool, it must be programmed into each vehicle computer whenever a computer is replaced.

  Programming procedure:
  – Connect the diagnostic tool.
  – Consult the fault finding procedure for the automatic transmission.
  – Select configuration **VP001 "VIN entry"**.
  – Enter the VIN.
  – Exit fault finding mode.
  – Switch off the ignition.
  – Wait for the end of Power-latch: over 10 seconds.

- **VP009 "Enter last After-Sales operation date":**

  Every time work is carried out on the automatic transmission in the workshop, enter the date of the operation.
  Select command **VP009 "Write last After-Sales operation date"** on the diagnostic tool, then use the tool's keypad to enter the date of the operation.

- **VP015 "Transfer oil condition meter":**

  Transfer the oil condition meter code from the old computer.
  Selecting command **VP015 "Transfer oil condition meter"** at the diagnostic tool, then use the keyboard to enter the code found on the replaced computer.

- **VP016 "Write gearbox oil change date":**

  Select command **VP016 "Write gearbox oil change date"** at the diagnostic tool, then use the keyboard to enter the date found on the replaced computer.

* The immobiliser warning light will flash for a few seconds after the ignition is switched off.

Tool fault	Associated DTC	Diagnostic tool title
DF003	**0641**	Analogue sensor power supply
DF005	**0840**	Oil pressure sensor circuit
DF009	**0705**	Multifunction switch prohibited position
DF012	**0657**	Solenoid valve supply
DF016	**0795**	Lock-up solenoid valve circuit
DF017	**2753**	Exchanger flow rate solenoid valve circuit
DF023	**0710**	Gearbox oil temperature sensor circuit
DF029	**0709**	Multifunction switch in unstable position
DF036	**0775**	Pressure regulating solenoid valve circuit
***DF064**	**0814**	Display circuit
DF084	**C001**	Multiplex network
DF085	**0753**	"EVS1" Shift solenoid valve circuit
DF086	**0758**	"EVS2" Shift solenoid valve circuit
DF087	**0763**	"EVS3" Shift solenoid valve circuit
DF088	**0773**	"EVS5" Shift solenoid valve circuit
DF089	**0768**	"EVS4" Shift solenoid valve circuit
DF093	**0819**	Manual one touch button switch circuit
DF095	**1928**	Shift lock electromagnet circuit
DF109	**D123**	Engine torque multiplex signal
DF112	**2709**	"EVS6" Shift solenoid valve circuit
DF113	**0740**	Converter lock-up servo control
DF131	**0730**	Slipping
DF145	**D12F**	P/N contact pedal position multiplex signal

* All Megane vehicles except Scenic

AUTOMATIC TRANSMISSION

Fault finding - Fault summary table

Tool fault	Associated DTC	Diagnostic tool title
DF147	D122	Invalid anticipated torque multiplex signal
DF177	0218	Automatic transmission overheating
DF183	C140	No UCH multiplex signal
DF185	C121	ABS/ESP absent multiplex signal
DF186	C100	No injection multiplex signal
DF226	0841	Automatic transmission internal pressure
DF227	D403	UCH brake pedal multiplex signal
DF228	D22B	Invalid ABS lateral acceleration multiplex signal
DF229	D208	Invalid ABS brake multiplex signal
DF230	0720	Invalid vehicle speed multiplex signal
DF231	D200	Vehicle speed absent multiplex signal
DF232	0603	Computer
DF233	0604	Computer
DF234	0605	Computer
DF235	D121	Pedal position multiplex signal
DF236	D11F	Invalid engine speed multiplex signal
DF237	D100	Invalid coolant temperature signal
DF238	D12B	Raw engine torque multiplex signal
DF239	D120	Invalid real engine torque multiplex signal
DF240	D220	Invalid front right-hand wheel speed multiplex signal
DF241	D221	Invalid front left-hand wheel speed multiplex signal
DF242	D225	Invalid rear right-hand wheel speed multiplex signal
DF243	D226	Invalid rear left-hand wheel speed multiplex signal
DF244	0715	Turbine speed sensor signal
DF263	D12D	Instant max. torque multiplex signal

DF003 PRESENT OR STORED	ANALOGUE SENSOR FEEDS 1.DEF: Voltage outside permitted range of values

NOTES	**Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors. Customer complaint: deterioration in gear change shift patterns

Deal first with faults: **DF005 "Oil pressure sensor circuit"** and **DF023 "Gearbox oil temperature sensor circuit"**.
Disconnect the battery.
Check **the condition and cleanliness** of the modular connector connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** of the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 24** → **Track C1** male modular connector
Computer **track 25** → **Track C3** male modular connector
Computer **track 53** → **Track B4** male modular connector
Computer **track 54** → **Track B1** male modular connector

check the supply of the analogue sensors = 5 V
Repair if necessary.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF005 PRESENT OR STORED	OIL PRESSURE SENSOR CIRCUIT CO.0 : Open circuit or short circuit to earth

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after a timed period of **10 seconds** with the engine running at **2000 rpm**.
	Special notes: Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** of the following connection:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 24** → **Track C1** male modular connector

With the ignition on, check for + 12 V on track C1 of the oil pressure sensor connector.

Computer **track 55** → **Track C2** male modular connector

Computer **track 25** → **Track C3** male modular connector

The voltage on **track C1** of the modular connector should be **+ 5 V**. If it is not, check the computer feed.
Reconnect the "modular connector".
Measure the **resistance** of the oil pressure sensor between **tracks 25 and 55** of the computer connector (female pins).
Replace the sensor if the resistance is not approximately **20 kΩ**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF009 PRESENT OR STORED	MULTIFUNCTION SWITCH IN INHIBITOR POSITION

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault is reported present when the selector lever is shifted from "**P**" to "**D**" (with a stop at each lever position). **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Check **the cleanliness, condition and attachment** of the multifunction switch.
Check the adjustment of the control (see **MR 364 Mechanics, 23A, Automatic transmission**).
Repair if necessary.

Check **the cleanliness and condition** of the connector A connections (see **System operation and Allocation of computer tracks** on the "modular connector").

Check the continuity of the following connections on the female "modular connector":

Lever in position "P"

Modular connector track A10 → Track A7 modular connector

Lever in position "R"

Modular connector track A10 → Track A7 modular connector

Modular connector track A11 → Track A7 modular connector

Modular connector track A12 → Track A7 modular connector

Lever in position "N"

Modular connector track A11 → Track A7 modular connector

Lever in position "D"

Modular connector track A12 → Track A7 modular connector

If the continuity is faulty, change the multifunction switch.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF009 **CONTINUED**	

Check **the insulation** of the following connections on the "modular connector's" female plug:

Lever in position "P"

Modular connector track A9 → **Track A7 modular connector**

Modular connector track A11 → **Track A7 modular connector**

Modular connector track A12 → **Track A7 modular connector**

Lever in position "R"

Modular connector track A9 → **Track A7 modular connector**

Lever in position "N"

Modular connector track A9 → **Track A7 modular connector**

Modular connector track A10 → **Track A7 modular connector**

Modular connector track A12 → **Track A7 modular connector**

Lever in position "D"

Modular connector track A9 → **Track A7 modular connector**

Modular connector track A10 → **Track A7 modular connector**

Modular connector track A11 → **Track A7 modular connector**

If the insulation is faulty, replace the multifunction switch.

Check **the cleanliness and condition** of the connections.
Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** of the following connections:

Computer **track 31** → **Track A10** male modular connector

Computer **track 32** → **Track A11** male modular connector

Computer **track 33** → **Track A12** male modular connector

Computer **track 42** → **Track A7** male modular connector

With the ignition on, check for + 12 V on track A2 of the multifunction switch.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF012 PRESENT OR STORED	SOLENOID VALVE SUPPLY CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**.
	Special notes: Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** of the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 1**	→	**Track B3** male modular connector
Computer **track 10**	→	**Track B11** male modular connector
Computer **track 7**	→	**Track B10** male modular connector
Computer **track 9**	→	**Track B8** male modular connector
Computer **track 8**	→	**Track B7** male modular connector
Computer **track** 13	→	**Track B5** male modular connector
Computer **track** 14	→	**Track B2** male modular connector
Computer **track** 26	→	**Track B12** male modular connector
Computer **track** 20	→	**Track B9** male modular connector
Computer **track** 19	→	**Track B6** male modular connector
Computer **track** 53	→	**Track B4** male modular connector
Computer **track** 54	→	**Track B1** male modular connector

With the ignition on, check for + 12 V on tracks B12 and B3 of the connector on the electric/hydraulic interface.
Check the earth to track B4 of the connector on the electric/hydraulic interface.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF012 **CONTINUED**	

Reconnect the "modular connector". Measure the **resistance** of shift solenoid valve no. 1 between **tracks 10 and 1** of the computer connector: Replace the solenoid valve or the electric/hydraulic interface wiring if the **resistance** is not **40 Ω ± 2 at 20 °C**.
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF016 PRESENT OR STORED	LOCK-UP SOLENOID VALVE CIRCUIT CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**.
	Special notes: Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 19** → **Track B6** male modular connector

Computer **track 26** → **Track B12** male modular connector

Reconnect the "modular connector".
Measure **the resistance** of the converter lock-up solenoid valve between **tracks 19 and 26** of the connector, computer female pins:
Replace the solenoid valve or the electric/hydraulic interface wiring if the resistance is not **1 Ω ± 0.12 at 23 °C**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with 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 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**.
	Special notes: Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 12** → **Track E1** male modular connector

Computer **track 2** → **Track E2** male modular connector

Reconnect the "modular connector".
Measure **the resistance** of the exchanger flow lock-up solenoid valve between **tracks 12 and 2** of the computer female pin connector:
Replace the exchanger flow solenoid valve or the wiring if the resistance is not **40 Ω ± 4 at 23 °C**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF023 PRESENT OR STORED	GEARBOX OIL TEMPERATURE SENSOR CIRCUIT CO.0 : Open circuit or short circuit to earth

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault is declared present after a road test. **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 53** → **Track B4** male modular connector

Computer **track 54** → **Track B1** male modular connector

Reconnect the "modular connector".
Measure **the resistance** of the oil temperature sensor between **tracks 53 and 54** of the computer female pin connector:
Replace the sensor or the wiring if the resistance is not between:

2360 Ω and 2660 Ω at 20 °C
290 Ω and 327 Ω at 80 °C

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF029 PRESENT OR STORED	MULTIFUNCTION SWITCH IN UNSTABLE POSITION

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears when the selector lever is moved from position "P" to position "D" with a stop at each lever position. **Special notes** Use bornier **Elé. 1681** for any work on the computer connectors.

Check **the cleanliness, condition and attachment** of the multifunction switch.
Check the adjustment of the control (see **MR 364 Megane Bodywork, 23A Automatic transmission**).
Repair if necessary.

Disconnect the battery.
Disconnect the "modular connector" and check **the cleanliness and condition** of the connector "A" connections.
(see **System operation and Track assignments** on the "modular connector")
Check **the continuity** of the following connections on the "modular connector's" female plug:

Lever in position "P"

Modular connector track A10 → Track A7 modular connector

Lever in position "R"

Modular connector track A10 → Track A7 modular connector
Modular connector track A11 → Track A7 modular connector
Modular connector track A12 → Track A7 modular connector

Lever in position "N"

Modular connector track A11 → Track A7 modular connector

Lever in position "D"

Modular connector track A12 → Track A7 modular connector

If the continuity is faulty, change the multifunction switch.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF029 **CONTINUED**	

Check **the insulation** of the following connections on the "modular connector's" female plug:

Lever in position "P"

Modular connector track A9 → **Track A7 modular connector**

Modular connector track A11 → **Track A7 modular connector**

Modular connector track A12 → **Track A7 modular connector**

Lever in position "R"

Modular connector track A9 → **Track A7 modular connector**

Lever in position "N"

Modular connector track A9 → **Track A7 modular connector**

Modular connector track A10 → **Track A7 modular connector**

Modular connector track A12 → **Track A7 modular connector**

Lever in position "D"

Modular connector track A9 → **Track A7 modular connector**

Modular connector track A10 → **Track A7 modular connector**

If the insulation is faulty, replace the multifunction switch.

Disconnect the computer. Check **the cleanliness and condition** of the connections.
Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:

Computer **track 31** → **Track A10** male modular connector

Computer **track 32** → **Track A11** male modular connector

Computer **track 33** → **Track A12** male modular connector

Computer **track 42** → **Track A7** male modular connector

If the values are not correct, move the wiring about while taking the measurements again.
If the values are still incorrect, replace the modular connector.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF036 PRESENT OR STORED	PRESSURE REGULATING SOLENOID VALVE CIRCUIT CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**.
	Special notes: Use bornier **Elé. 1681** for any work on the computer connectors.

CO.0	***NOTES***	None

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:
(see **System operation and track assignments** on the "modular connector")

Computer **track 20** → **Track B9** male modular connector

Computer **track 26** → **Track B12** male modular connector

Repair if necessary.

Measure the **resistance** of the converter lock-up solenoid valve between **tracks B9 and B12** of the female "modular connector":
Replace the solenoid valve or the electric/hydraulic interface wiring if the resistance is not **1 Ω ± 0.2 at 23 °C**.

CC.1	***NOTES***	None

Check the temperature sensor supply between **track 54 of the computer and track B1** of the electric/hydraulic interface.
Check the lock-up solenoid valve supply between **track 26 of the computer and track B12** of the electric/hydraulic interface.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF064 PRESENT OR STORED	DISPLAY CIRCUIT CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	None

Disconnect the battery. Check **the cleanliness and condition** of the gear lever display connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections. Use the "Universal bornier **Elé. 1681**" to check **the insulation, continuity and absence of interference resistance** on the following connection: **Computer track 4** ⟶ **Track 2 Gear lever display** Repair if necessary.
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF084 PRESENT OR STORED	MULTIPLEX NETWORK 1.DEF: Carry out the multiplex network fault finding procedure

NOTES	None

Run a multiplex network test (see **88B, Multiplexing**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF085 PRESENT OR STORED	"EVS1" SHIFT SOLENOID VALVE CIRCUIT CC.0 : Short circuit to earth CO : Open circuit CC.1 : Short circuit to + 12 V

NOTES	Deal with fault **DF012 "Solenoid valves feed"** first if it is present or stored.
	Conditions for applying the fault finding procedure to stored faults: The fault appears after running command **AC024 "Actuator sequential control"**.
	Special notes: Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 10** → **Track B11** male modular connector

Computer **track 1** → **Track B3** male modular connector

Repair if necessary.

Reconnect the "modular connector".
Measure the **resistance** of the shift solenoid valve no. 1 between **tracks 10 and 1** of the computer connector: (which corresponds to track B3 and B11 of the connector, female pins).
Replace the solenoid valve or the electric/hydraulic interface wiring if the resistance is not **40 Ω ± 2 at 23 °C**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF086 PRESENT OR STORED	"EVS2" SHIFT SOLENOID VALVE CIRCUIT CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	Deal with fault **DF012 "Solenoid valves feed"** first if it is present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**. **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance** on the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 9** → **Track B8** male modular connector

Computer **track 1** → **Track B3** male modular connector

Repair if necessary.

Reconnect the "modular connector".
Measure the **resistance** of the shift solenoid no. 2 valve between **tracks 9 and 1** of the computer connector: (which corresponds to track B3 and B8 of the connector, female pins).
Replace the solenoid valve or the electric/hydraulic interface wiring if the resistance is not **40 Ω ± 2 at 23 °C**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF087 PRESENT OR STORED	"EVS3" SHIFT SOLENOID VALVE CIRCUIT CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	Deal with fault **DF012 "Solenoid valves feed"** first if it is present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**. **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance** on the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 1** → **Track B3** male modular connector

Computer **track 7** → **Track B10** male modular connector

Repair if necessary.

Reconnect the "modular connector".
Measure the **resistance** of the shift solenoid valve no. 3 between **tracks 1 and 7** of the computer connector: (which corresponds to track B3 and B10 of the connector, female pins).
Replace the solenoid valve or the electric/hydraulic interface wiring if the resistance is not **40** Ω ± **2 at 23** °**C**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF088 PRESENT OR STORED	"EVS5" SHIFT SOLENOID VALVE CIRCUIT CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	Deal with fault **DF012 "Solenoid valves feed"** first if it is present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**. **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance** on the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 1** → **Track B3** male modular connector

Computer **track 13** → **Track B5** male modular connector

Repair if necessary.

Reconnect the "modular connector".
Measure the **resistance** of the shift solenoid valve no. 5 between **tracks 1 and 13** of the computer connector:
(which corresponds to track B3 and B5 of the connector, female pins).
Replace the solenoid valve or the electric/hydraulic interface wiring if the resistance is not **40** Ω ± **2 at 23** °**C**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF089 PRESENT OR STORED	"EVS4" SHIFT SOLENOID VALVE CIRCUIT CC.0 : Short circuit to earth CO : Open circuit CC.1 : Short circuit to + 12 V

NOTES	Deal with fault **DF012 "Solenoid valves feed"** first if it is present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**. **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance** on the following connections:
(see **System operation and Allocation of computer tracks** on the "modular connector")

Computer **track 1** → **track B3** male modular connector

Computer **track 8** → **track B7** male modular connector.

Repair if necessary.

Reconnect the "modular connector".
Measure the **resistance** of the shift solenoid valve no. 4 between **tracks 8 and 1** of the computer connector: (which corresponds to track B3 and B7 of the connector, female pins).
Replace the solenoid valve or the electric/hydraulic interface wiring if the resistance is not **40 Ω ± 2 at 23 °C**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF093 PRESENT OR STORED	ONE-TOUCH MANUAL CONTROL CIRCUIT 1.DEF: Signal inconsistency CC.0 : Short circuit to earth

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears during a road test when selecting position "M" with the lever (one-touch control). **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

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

Computer **track 36** → **Track B3** one-touch switch module
Computer **track 37** → **Track A3** one-touch switch module
Computer **track 11** → **Track B2** one-touch switch module
Battery earth → **Track A2** one-touch switch module

Repair if necessary.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF095 PRESENT OR STORED	SELECTOR LEVER LOCK ELECTROMAGNET CIRCUIT CO : Open circuit CC.1 : Short circuit to + 12 V

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears when the selector lever is in position "**P**". **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Check **the cleanliness and condition** of the gear lever lock electromagnet connections.

With the ignition on, check for **+ 12 V** in **track B1** of the gear lever lock electromagnet connector.
– Disconnect the battery.
– Check fuse **5F** in the Protection and Switching Unit, as well as the cleanliness and condition of the connections.
– Disconnect connector **PPH2** in the Protection and Switching Unit.
– Check **the cleanliness and condition** of the connections.
Use the "Universal bornier **Elé. 1681**". To check **the insulation to earth and the continuity** of the following connection:

Protection and Switching Unit connector PPH2 track 11 → **Lever lock electromagnet track B1**

With the ignition on, if there is still no **+ 12 V** on **track B1** of the lever lock electromagnet connector, carry out Protection and Switching Unit fault finding.

Disconnect the battery.
Disconnect the computer. Check the cleanliness and condition of the connections.
Take "Universal bornier **Elé. 1681**". Check **the insulation and continuity** of the following connection:

Computer track 11 → **Lever lock solenoid valve track B2**

Repair if necessary.

Check gear lever lock electromagnet resistance between **track 11** of the computer connector and **track 11** of the Protection and Switching Unit connector **PPH2** .
The resistance should be **40** Ω ± **4** Ω at a temperature of approximately **23** °**C**.
Otherwise replace the gear lever lock electromagnet.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF109 PRESENT OR STORED	ENGINE TORQUE MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on the injection system (see **17B, Petrol injection** or **13B, Diesel injection**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF112 PRESENT OR STORED	"EVS6" SHIFT SOLENOID VALVE CIRCUIT CO.0 : Open circuit or short circuit to earth CC.1 : Short circuit to + 12 V

NOTES	Deal with fault **DF012 "Solenoid valves feed"** first if it is present or stored. **Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**. **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector", and check **the cleanliness and condition** of the connections.
Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:
(see **System operation and Allocation of computer tracks**, "modular connector" connections)

Computer **track 1** → **Track B3** male modular connector

Computer **track 14** → **Track B2** male modular connector

Repair if necessary.

Reconnect the "modular connector".
Measure the **resistance** of the shift solenoid valve no. 6 between **tracks 14 and 1** of the computer connector:
(which corresponds to track B2 and B3 of the connector, female pins).
Replace the solenoid valve or the electric/hydraulic interface wiring if the resistance is not **40 Ω ± 2 at 23 °C**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF113 PRESENT OR STORED	CONVERTER LOCK-UP SERVO CONTROL

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears after running command **AC024 "Actuator sequential control"**.
	If the following faults are present or stored, deal with them first: – **DF003 "Analogue sensor feeds".** – **DF005 "Oil pressure sensor circuit".** – **DF016 "Lock-up solenoid valve circuit".** – **DF177 "Automatic transmission overheating".** – **DF226 "Automatic transmission internal pressure".** – **DF244 "Turbine speed sensor signal".**

Check the quality and oil level of the gearbox (see **MR 364 Mechanics 23A, Automatic transmission, Fill-up oil level**).
Make sure that the gearbox is not leaking oil.

Check the converter setting point (see **MR 364 Mechanics, 23A, Automatic transmission, Converter setting point check**).

With the engine running, check the behaviour of **PR006 "Engine speed"** and **PR007 "Turbine speed"**.
If the fault is still present, check conformity.

Set up the pressure gauge for a line pressure reading.
Hot engine and gearbox oil temperature between **60** and **80 °C**.
Take the line pressure readings under the following conditions:
NOTE
The vehicle must be stationary: handbrake on and brake pedal depressed.
– gear lever at "**P**" or "**N**" and engine running at **2000 rpm**: the pressure should be between **2.6** and **3.2 bar**,
– gear lever at "**R**" and engine running at **2000 rpm**: the pressure should be above **4 bar**,
– gear lever at "**D**" and engine running at **2000 rpm**: the pressure in first gear should be above **7 bar**.

If the values are not correct, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF131 PRESENT OR STORED	SLIPPAGE 1.DEF: Permanent low level

NOTES	Deal with all other faults first. **Conditions for applying the fault finding procedure to stored faults:** Safe mode is triggered after a fault, not by the driver.

In particular, check the absence of faults on:
– the turbine speed sensor, **DF244 "Turbine speed sensor signal"**,
– the vehicle speed signal, **DF230 "Invalid vehicle speed multiplex signal"**.
Check that the value of PR003 oil pressure is equal to 31 bar (forced setpoint).
Possible faulty components:
Slave cylinder (brakes, clutch) or computer.
Then check cleanliness and condition of the gearbox oil.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF145 PRESENT OR STORED	INVALID PEDAL POSITION MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	**Conditions for applying the fault finding procedure to stored faults:** If the fault appears following a road test during which the quality of the gear changes deteriorates.

Disconnect the battery.
Disconnect the gearbox computer. Check **the cleanliness and condition** of the connections.
Disconnect the engine management computer. Check **the cleanliness and condition** of the connections.
If the fault is still present, run fault finding on the **injection** system (see **17B, Petrol injection** or **13B, Diesel injection**).
Repair if necessary.

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

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF147 PRESENT OR STORED	INVALID ANTICIPATED TORQUE MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF177 PRESENT OR STORED	AUTOMATIC TRANSMISSION OVERHEATING

NOTES	If the following faults are present or stored, deal with them first: – **DF003 "Analogue sensor feeds".** – **DF005 "Oil pressure sensor circuit".** – **DF016 "Lock-up solenoid valve circuit".** – **DF017 "Exchanger flow solenoid valve circuit".** – **DF023 "Gearbox oil temperature sensor circuit".** – **DF036 "Pressure regulating solenoid valve circuit".** – **DF131 "Slipping".** – **DF226 "Automatic transmission internal pressure".** – **DF237 "Invalid coolant temperature signal".** **Conditions for applying the fault finding procedure to stored faults:** The fault is declared present after a road test.

Check gearbox oil quality and level.
If a procedure is required (see **MR 366 Megane 2, 23A, Automatic transmission, Filling and top-up**).
Make sure that the water-oil exchanger is not blocked.
Check the oil temperature sensor resistance of track 53 to track 54, the resistance should be: 2660 Ω < R < 2360 Ω at 20 °C and 327 Ω < R < 290 Ω at 80 °C

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF183 PRESENT OR STORED	UCH MULTIPLEX SIGNAL ABSENT 1.DEF: Carry out the multiplex network fault finding procedure

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on the **UCH** system (see **87B, Passenger compartment connection unit**).

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF185 PRESENT OR STORED	ABS/ESP MULTIPLEX SIGNAL ABSENT 1.DEF: Carry out the multiplex network fault finding procedure

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault has not been resolved, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF186 PRESENT OR STORED	NO INJECTION MULTIPLEX SIGNAL 1.DEF: Carry out the multiplex network fault finding procedure

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on the **injection** system (see **17B, Petrol injection** or **13B, Diesel injection**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF226 PRESENT OR STORED	AUTOMATIC TRANSMISSION INTERNAL PRESSURE

NOTES	If the following faults are present or stored, deal with them first: – **DF003 "Sensor feeds".** – **DF005 "Oil pressure sensor circuit".** – **DF023 "Gearbox oil temperature sensor circuit".** – **DF036 "Pressure regulating solenoid valve circuit".** – **DF244 "Turbine speed sensor signal".** **Conditions for applying the fault finding procedure to stored faults:** The fault is declared present after a road test.

See the section "**Measuring the line pressure**" in the Repair Manual.
Set up the pressure gauge for a line pressure reading.
Hot engine and gearbox oil temperature between **60** and **80** °**C**.
Take the line pressure readings under the following conditions:
NOTE
The vehicle must be stationary: handbrake on and brake pedal depressed.
– with the selector lever at "**P**" or "**N**" and engine speed at **2000 rpm** the pressure must be between **2.6** and **3.2 bar**.
– with the selector lever at "**R**" and engine speed at **2000 rpm** the pressure must be greater than **4 bar**.
– with the selector lever at "**D**" and engine speed at **2000 rpm** the pressure in first gear must be greater than **7 bar**.
If the fault has not been resolved, check the conformity of all the statuses and parameters to find the source of the fault.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF227 PRESENT OR STORED	INVALID UCH BRAKE PEDAL MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the problem is not resolved, carry out fault finding on the **UCH** system (see **87B, Passenger compartment connection unit**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF228 PRESENT OR STORED	INVALID ABS LATERAL ACCELERATION MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	– invalid ABS lateral acceleration multiplex signal: Signal sent as multiplex frames by the ABS computer to the automatic transmission computer to tell it whether the vehicle is tending to drift out (understeer).

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF229 PRESENT OR STORED	INVALID ABS BRAKE MULTIPLEX SIGNALS 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF230 PRESENT OR STORED	INVALID INVALID VEHICLE SPEED MULTIPLEX SIGNAL 1.DEF: Signal incoherence

NOTES	If the following faults are present or stored, deal with them first: – **DF240 "Invalid front right-hand wheel speed multiplex signal".** – **DF241 "Invalid front left-hand wheel speed multiplex signal".** – **DF242 "Invalid rear right-hand wheel speed multiplex signal".** – **DF243 "Invalid rear left-hand wheel speed multiplex signal".**

Run a **multiplex network** test (see **MR 366 Megane 8, 88B, Multiplexing**).
If the fault has not been resolved, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF231 PRESENT OR STORED	ABSENT VEHICLE SPEED MULTIPLEX SIGNAL 1.DEF: Carry out the multiplex network fault finding procedure

NOTES	If the following faults are present or stored, deal with them first: – **DF240 "Invalid front right-hand wheel speed multiplex signal".** – **DF241 "Invalid front left-hand wheel speed multiplex signal".** – **DF242 "Invalid rear right-hand wheel speed multiplex signal".** – **DF243 "Invalid rear left-hand wheel speed multiplex signal".**

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault has not been resolved, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF232 PRESENT OR STORED	COMPUTER 1.DEF: Internal electronic fault

NOTES	**Special note:** The fault relates to an internal computer fault.

If the fault is **stored**, clear the fault from the computer memory.
Switch off the ignition, wait until the end of power latch* then switch the ignition back on and re-establish dialogue:
Check the computer supply and earth:
– + 12 V on track 27 of the computer,
– the earth track 28 of the computer.

If the fault is still present, contact the Techline.

* The immobiliser warning light will flash for a few seconds after the ignition is switched off.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF233 PRESENT OR STORED	COMPUTER

NOTES	**Special note:** The fault relates to an internal computer fault.

If the fault is **stored**, clear the fault from the computer memory.
Switch off the ignition, wait until the end of power latch* then switch the ignition back on and re-establish dialogue:
Check the computer supply and earth:
– + 12 V on track 27 of the computer,
– the earth track 28 of the computer.

If the fault is still present, contact the Techline.

* The immobiliser warning light will flash for a few seconds after the ignition is switched off.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF234 PRESENT OR STORED	COMPUTER

NOTES	**Special note:** The fault relates to an internal computer fault.

If the fault is **stored**, clear the fault from the computer memory.
Switch off the ignition, wait until the end of power latch* then switch the ignition back on and re-establish dialogue:
Check the computer supply and earth:
– + 12 V on track 27 of the computer,
– the earth track 28 of the computer.

If the fault is still present, contact the Techline.

* The immobiliser warning light will flash for a few seconds after the ignition is switched off.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF235 PRESENT OR STORED	INVALID PEDAL POSITION MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	**Conditions for applying the fault finding procedure to stored faults:** If the fault appears following a road test during which the kickdown function is inactive.

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on **injection** system (see **17B, Petrol injection** or **13B, Diesel injection**).
If the fault is still present, contact the Techline.

Kickdown: instant power request by suddenly pressing the accelerator pedal down hard.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF236 PRESENT OR STORED	INVALID ENGINE SPEED MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on **injection** system (see **17B, Petrol injection** or **13B, Diesel injection**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF237 PRESENT OR STORED	INVALID COOLANT TEMPERATURE SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	None

Run a **multiplex network** test (see **MR 366 Megane 8, 88B, Multiplexing**).
If the fault is still present, carry out fault finding on **injection** system (see **17B, Petrol injection** or **13B, Diesel injection**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF238 PRESENT OR STORED	INVALID RAW ENGINE TORQUE MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on the injection system (see **17B, Petrol injection** or **13B, Diesel injection**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF239 PRESENT OR STORED	INVALID REAL ENGINE TORQUE MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	None

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault is still present, carry out fault finding on the injection system (see **17B, Petrol injection** or **13B, Diesel injection**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF240 PRESENT OR STORED	INVALID FRONT RIGHT-HAND WHEEL SPEED MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	Front right-hand front wheel speed signal for the automatic transmission computer.

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault has not been resolved, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF241 PRESENT OR STORED	INVALID FRONT LEFT-HAND WHEEL SPEED MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	Front left-hand wheel speed signal for the automatic transmission computer.

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault has not been resolved, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of faults

DF242 PRESENT OR STORED	INVALID REAR RIGHT-HAND WHEEL SPEED MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	Rear right-hand wheel speed signal for the automatic transmission computer.

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault has not been resolved, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF243 PRESENT OR STORED	INVALID REAR LEFT-HAND WHEEL SPEED MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	Rear left-hand wheel speed signal for the automatic transmission computer.

Run a **multiplex network** test (see **88B, Multiplexing**).
If the fault has not been resolved, carry out fault finding on the system (see **38C, ABS system**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF244 PRESENT OR STORED	TURBINE SPEED SENSOR SIGNAL 1.DEF: Communication disrupted 2.DEF: No signal

NOTES	**Conditions for applying the fault finding procedure to stored faults:** The fault appears when the engine is running and the selector lever is at "P". **Special notes:** Use bornier **Elé. 1681** for any work on the computer connectors.

Disconnect the battery.
Disconnect the "modular connector" and check **the cleanliness and condition** of the connections. Disconnect the computer. Check **the cleanliness and condition** of the connections.
Repair if necessary.

Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:
(see **System operation and Allocation of computer tracks** on the modular connector)

Computer track 45 → **Male modular connector track D1**

Computer track 46 → **Male modular connector track D2**

Repair if necessary.

Reconnect the "modular connector".
Measure the **resistance** of the turbine speed sensor between **tracks 45 and 46** of the computer connector:
Replace the sensor or the wiring if the resistance is not: **300 Ω ± 40 Ω**.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

DF263 PRESENT OR STORED	INSTANT MAXIMUM TORQUE MULTIPLEX SIGNAL 1.DEF : Multiplex frames absent or values invalid (fault with the computer generating the signal or CAN connection fault)

NOTES	Instant maximum torque signal for the automatic transmission computer.

Carry out a test on the **multiplex network** (see **88B, Multiplexing**).
If the fault is still present, run fault finding on the injection system (see **17B, Petrol injection** or **13B, Diesel injection**).
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a check with the diagnostic tool.

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

MAIN SCREEN

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Engine speed	**PR006:** Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
2	Turbine speed	**PR007:** Turbine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
3	Power supply	**PR008:** Computer supply voltage	**10 V < X < 13 V**	**If there is a fault, refer to the interpretation of this parameter.**
4	Gearbox oil temperature	**PR004:** Gearbox oil temperature	**- 40 °C < X < 140 °C**	**If there is a fault, refer to the interpretation of this parameter.**
5	Coolant temperature	**PR001:** Coolant temperature	**- 40 °C < X < 120 °C**	**If there is a fault, refer to the interpretation of this parameter.**
6	Oil pressure	**PR003:** Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

MAIN SCREEN (CONTINUED)

Order	Function	Parameter or Status checked or Action		Display and Notes	Fault finding
7	Gear lever position	**ET012:**	Gear lever position	**"P" if selector is in position "P". "N" if selector is in position "N". "R" if selector is in position "R". "D" if selector is in position "D". "M" if selector is in position "M". "M+" if selector is in position "M+". "M-" if selector is in position "M-".**	**In the event of a fault, refer to the interpretation of this status.**
8	Manual mode	**ET097:**	Manual mode	**INACTIVE ACTIVE**, if lever is in position "**M**"	**In the event of a fault, refer to the interpretation of this status.**
9	Old oil	**ET083:**	Old oil	**YES NO**	**No fault finding procedure for this status.**
10	Raw pedal position	**PR136:**	Raw pedal position	**%**	**If there is a fault, refer to the interpretation of this parameter.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: CHANGING GEAR

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Gear lever position	**ET012:** Gear lever position	**"P" if selector is in position "P".** **"N" if selector is in position "N".** **"R" if selector is in position "R".** **"D" if selector is in position "D".** **"M" if selector is in position "M".** **"M+" if selector is in position "M+".** **"M-" if selector is in position "M-".**	**In the event of a fault, refer to the interpretation of this status.**
2	Sequential lever switch	**ET128:** Upper sequential lever contact	**INACTIVE** **ACTIVE**, if selector lever at "**M+**"	**In the event of a fault, refer to the interpretation of this status.**
		ET127: Lower sequential lever contact	**INACTIVE** **ACTIVE**, if selector lever at "**M**"	**In the event of a fault, refer to the interpretation of this status.**
3	Selection mode	**ET097:** Manual mode	**INACTIVE** **ACTIVE**, if lever is in position "**M**"	**In the event of a fault, refer to the interpretation of this status.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: CHANGING GEAR (CONTINUED)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
4	Gear engaged	**ET013:** Gear engaged	**"R" for reverse. "1P" for 1st locked. "2P" for 2nd locked. "3P" for 3rd locked. "4P" for 4th locked. "1G" for 1st slipping. "2G" for 2nd slipping. "3G" for 3rd slipping. "4G" for 4th slipping. "1" for 1st unlocked. "2" for 2nd unlocked. "3" for 3rd unlocked. "4" for 4th unlocked.**	**In the event of a fault, refer to the interpretation of this status.**
5	Oil pressure	**PR003:** Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter.**
6	Engine speed	**PR006:** Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
7	Specified pedal position	**PR135:** Specified pedal position	**%**	**If there is a fault, refer to the interpretation of this parameter.**
8	Raw pedal position	**PR136:** Raw pedal position	**%**	**If there is a fault, refer to the interpretation of this parameter.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: CHANGING GEAR (CONTINUED)

Order	Function	Parameter or Status checked or Action		Display and Notes	Fault finding
9	Accelerator pedal position for downshifting	PR124:	Accelerator pedal position for downshifting	%	If there is a fault, refer to the interpretation of this parameter.
10	Solenoid valve control	ET021:	Shift solenoid valve 1 control	ACTIVE INACTIVE	In the event of a fault, refer to the interpretation of this status.
		ET022:	Shift solenoid valve 2 control	ACTIVE INACTIVE	In the event of a fault, refer to the interpretation of this status.
		ET023:	Shift solenoid valve 3 control	ACTIVE INACTIVE	In the event of a fault, refer to the interpretation of this status.
		ET024:	Shift solenoid valve 4 control	ACTIVE INACTIVE	In the event of a fault, refer to the interpretation of this status.
		ET025:	Shift solenoid valve 5 control	ACTIVE INACTIVE	In the event of a fault, refer to the interpretation of this status.
		ET026:	Shift solenoid valve 6 control	ACTIVE INACTIVE	In the event of a fault, refer to the interpretation of this status.

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: CHANGING GEAR (CONTINUED)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
11	Multifunction switch	**ET123:** Multifunction switch S2	Lever in position "**P**" **OPEN**	**In the event of a fault, refer to the interpretation of this status.**
		ET124: Multifunction switch S3		**In the event of a fault, refer to the interpretation of this status.**
		ET125: Multifunction switch S4		**In the event of a fault, refer to the interpretation of this status.**
		ET126: P/N multifunction switch		**In the event of a fault, refer to the interpretation of this status.**
12	Actuator sequential control	**AC024:** Actuator sequential control	Means of controlling all the solenoid valves	**In the event of a fault, refer to the interpretation of this command.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: PRESSURE CONTROL

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Gear engaged	**ET013:** Gear engaged	**"R" for reverse. "1P" for 1st locked. "2P" for 2nd locked. "3P" for 3rd locked. "4P" for 4th locked. "1G" for 1st slipping. "2G" for 2nd slipping. "3G" for 3rd slipping. "4G" for 4th slipping. "1" for 1st unlocked. "2" for 2nd unlocked. "3" for 3rd unlocked. "4" for 4th unlocked.**	**In the event of a fault, refer to the interpretation of this status.**
2	Engine speed	**PR006:** Engine speed	**0 rpm**	**In the event of a fault, refer to the interpretation of fault DF236 "Invalid engine speed multiplex signal".**
3	Oil pressure	**PR003:** Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter.**
4	Gearbox oil pressure sensor voltage	**PR118:** Gearbox oil pressure sensor voltage	**X = 5 V**	**If there is a fault, refer to the interpretation of this parameter.**
5	Reference pressure	**PR138:** Reference pressure	**21 bar**	**None.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: PRESSURE CONTROL (CONTINUED)

Order	Function	Parameter or Status checked or Action		Display and Notes	Fault finding
6	Difference between reference pressure and oil pressure	**PR146:**	Difference between specification and oil pressure	**X = PR138 - PR003**	**None.**
7	Gearbox oil pressure	**PR004:**	Gearbox oil temperature	**- 40 °C < X < 140 °C**	**If there is a fault, refer to the interpretation of this parameter.**
8	Actuator sequential control	**AC024:**	Actuator sequential control	Means of controlling all the solenoid valves	**In the event of a fault, refer to the interpretation of this command.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: SELECTION LEVER LOCK

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Gear lever position	**ET012:** Gear lever position	**"P" if selector is in position "P". "N" if selector is in position "N". "R" if selector is in position "R". "D" if selector is in position "D". "M" if selector is in position "M". "M+" if selector is in position "M+". "M-" if selector is in position "M-".**	**In the event of a fault, refer to the interpretation of this status.**
2	Brake pedal	**ET003:** Brake light contact (opening)	**OPEN, if brake pedal is not depressed. CLOSED, if brake pedal is depressed.**	**In the event of a fault, refer to the interpretation of this status.**
3	Brake pedal	**ET004:** Stop light contact (closure)	**OPEN, if brake pedal is depressed, CLOSED, if brake pedal is not depressed.**	**In the event of a fault, refer to the interpretation of this status.**
4	Actuator sequential control	**AC024:** Actuator sequential control	Means of controlling all the solenoid valves	**In the event of a fault, refer to the interpretation of this command.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: LOCK-UP/UNLOCKING

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Engine speed	**PR006:** Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
2	Calculated engine torque	**PR123:** Calculated engine torque	**0 Nm**	**If there is a fault, refer to the interpretation of this parameter.**
3	Speed of rotation	**PR007:** Turbine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
4	Engine/turbine speed difference	**PR128:** Engine/turbine speed difference	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
5	Current turbine speed	**PR126:** Current turbine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
6	Reference pressure	**PR138:** Reference pressure	**21 bar**	**If there is a fault, refer to the interpretation of this parameter.**
7	Oil pressure	**PR003:** Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: LOCK-UP/UNLOCKING (CONTINUED)

Order	Function	Parameter or Status checked or Action		Display and Notes	Fault finding
8	Gearbox oil pressure sensor voltage	**PR118:**	Gearbox oil pressure sensor voltage	**X = 5 V**	**If there is a fault, refer to the interpretation of this parameter.**
9	Oil temperature	**PR004:**	Gearbox oil temperature	**- 40 °C < X < 140 °C**	**If there is a fault, refer to the interpretation of this parameter.**
10	Difference between pressure setting and oil pressure	**PR146:**	Difference between specification and oil pressure	**X = PR138 - PR003**	**None.**
11	Oil too hot signal	**ET010:**	Oil too hot signal	**YES**, if oil temperature: **X > 140 °C**	**In the event of a fault, refer to the interpretation of this status.**
12	Actuator sequential control	**AC024:**	Actuator sequential control	Means of controlling all the solenoid valves	**In the event of a fault, refer to the interpretation of this command.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: STATIONARYDECLUTCHING

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Engine speed	**PR006:** Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
2	Gear lever position	**ET012:** Gear lever position	**"P" if selector is in position "P".** **"N" if selector is in position "N".** **"R" if selector is in position "R".** **"D" if selector is in position "D".** **"M" if selector is in position "M".** **"M+" if selector is in position "M+".** **"M-" if selector is in position "M-".**	**In the event of a fault, refer to the interpretation of this status.**
3	Gear engaged	**ET013:** Gear engaged	**"R" for reverse.** **"1P" for 1st locked.** **"2P" for 2nd locked.** **"3P" for 3rd locked.** **"4P" for 4th locked.** **"1G" for 1st slipping.** **"2G" for 2nd slipping.** **"3G" for 3rd slipping.** **"4G" for 4th slipping.** **"1" for 1st unlocked.** **"2" for 2nd unlocked.** **"3" for 3rd unlocked.** **"4" for 4th unlocked.**	**In the event of a fault, refer to the interpretation of this status.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: STATIONARY DECLUTCHING (CONTINUED)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
4	Brake pedal	**ET003:** Brake light contact (opening)	**OPEN, brake pedal released.** **CLOSED, brake pedal depressed.**	**In the event of a fault, refer to the interpretation of this status.**
5	Brake pedal	**ET004:** Stop light contact (closure)	**CLOSED, brake pedal released.** **OPEN, brake pedal depressed.**	**In the event of a fault, refer to the interpretation of this status.**
6	Actuator sequential control	**AC024:** Actuator sequential control	Means of controlling all the solenoid valves	**In the event of a fault, refer to the interpretation of this command.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: CREEPING AT IDLE SPEED

Order	Function	Parameter or Status checked or Action		Display and Notes	Fault finding
1	Oil pressure	**PR003:**	Oil pressure	**X < 0.2 bar**	**If there is a fault, refer to the interpretation of this parameter.**
2	Oil temperature	**PR004:**	Gearbox oil temperature	**- 40 °C < X < 140 °C**	**If there is a fault, refer to the interpretation of this parameter.**
3	Vehicle speed	**PR105:**	Vehicle speed	**0 mph**	**If there is a fault, refer to the interpretation of this parameter.**
4	Engine speed	**PR006:**	Engine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
5	Speed of rotation	**PR007:**	Turbine speed	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**
6	Engine/turbine speed difference	**PR128:**	Engine/turbine speed difference	**0 rpm**	**If there is a fault, refer to the interpretation of this parameter.**

AUTOMATIC TRANSMISSION
Fault finding - Conformity check

NOTES	Only carry out this conformity check after a **complete check** with the diagnostic tool (no present or stored faults). **Test conditions: engine off, ignition on.**
	The values indicated in this conformity check are given as examples.

SUB-FUNCTION: CREEPING AT IDLE SPEED (CONTINUED)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
7	Standard pedal position	**PR135:** Standard pedal position	**%**	**If there is a fault, refer to the interpretation of this parameter.**
8	Brake pedal	**ET003:** Brake light contact (opening)	**OPEN, brake pedal released.** **CLOSED, brake pedal depressed.**	**In the event of a fault, refer to the interpretation of this status.**
9	Brake pedal	**ET004:** Stop light contact (closure)	**CLOSED, brake pedal released.** **OPEN, brake pedal depressed.**	**In the event of a fault, refer to the interpretation of this status.**
10	Gear engaged	**ET013:** Gear engaged	**"R" for reverse.** **"1P" for 1st locked.** **"2P" for 2nd locked.** **"3P" for 3rd locked.** **"4P" for 4th locked.** **"1G" for 1st slipping.** **"2G" for 2nd slipping.** **"3G" for 3rd slipping.** **"4G" for 4th slipping.** **"1" for 1st unlocked.** **"2" for 2nd unlocked.** **"3" for 3rd unlocked.** **"4" for 4th unlocked.**	**In the event of a fault, refer to the interpretation of this status.**

Tool status	Diagnostic tool title
ET001	Solenoid valve supply
ET003	Brake light contact (opening)
ET004	Stop light contact (closure)
ET010	Oil too hot signal
ET011	Engine speed signal
ET012	Gear lever position
ET013	Gear engaged
ET020	Exchanger flow control solenoid valve control
ET021	Shift solenoid valve 1 control
ET022	Shift solenoid valve 2 control
ET023	Shift solenoid valve 3 control
ET024	Shift solenoid valve 4 control
ET025	Shift solenoid valve 5 control
ET026	Shift solenoid valve 6 control
ET072	Gear change settings
ET081	Snow mode
ET083	Old oil
ET097	Manual mode
ET108	Torque reduction
ET123	S2 multifunction switch
ET124	S3 multifunction switch
ET125	S4 multifunction switch
ET126	P/N multifunction switch
ET127	Lower sequential lever contact
ET128	Upper sequential lever contact
ET157	Gear lever unlocking
ET158	Multifunction switch

AFTER REPAIR	Repeat the conformity check from the start.

ET001	SOLENOID VALVE SUPPLY

NOTES	There must be no present or stored faults.

Force the solenoid valves feed by running command **AC024 "Actuator sequential control"**; see **"Interpretation of commands"**.

Disconnect the electric/hydraulic interface connector and check:
The solenoid valves feed status is "**ABSENT**" at a voltage of **0 V**:

Earth → **Track 1**
Earth → **Track 12**
Earth → **Track 20**

The solenoid valves feed status is "**PRESENT**" at a voltage of **+ 12 V**.
If the status is not correct, apply the interpretation of fault **DF012 "Solenoid valves feed"**.
Repair if necessary.

AFTER REPAIR	Repeat the conformity check from the start.

ET003	BRAKE LIGHT CONTACT (OPENING)

NOTES	There must be no present or stored faults.

The status displays "**OPEN**" with the pedal released and changes to "**CLOSED**" with the brake pedal depressed.
Check the cleanliness and the condition of the brake light switch connections.
Check the position, setting and correct operation of the brake light switch. (Watch out for the floor carpet which can jam the switch.)
Disconnect the battery. Disconnect the computer. Check **the cleanliness and condition** of the connections. Use the "Universal bornier **Elé. 1681**" to check the insulation, continuity and absence of interference resistance on the following connection: Computer **track 16** ⟶ **track 3** brake light switch
If the correct status is not displayed, replace the switch.

AFTER REPAIR	Repeat the conformity check from the start.

ET004	STOP LIGHT CONTACT (CLOSURE)

NOTES	There must be no present or stored faults.

The status displays "**CLOSED**" with the pedal released and changes to "**OPEN**" with the brake pedal depressed.
Check **the cleanliness and the condition** of the brake light switch connections.
Check the **position**, **setting** and **proper functioning** of the brake light switch. (Watch out for the floor carpet which can jam the switch.)
Disconnect the battery. Disconnect the computer. Check the cleanliness and condition of the connections. Use the "Universal bornier **Elé. 1681**" to check **the insulation, continuity and the absence of interference resistance** on the following connection: Computer **track 16** ⟶ **Track 3** brake light switch Repair if necessary. If the correct status is not displayed, replace the switch.

AFTER REPAIR	Repeat the conformity check from the start.

ET010	OIL TOO HOT SIGNAL

NOTES	There must be no present or stored faults.

This status means the oil temperature is higher than normal running temperature.
The status displays "**NO**" if the gearbox oil temperature is below **140 °C**.
The status displays "**YES**" when the gearbox oil temperature rises above **140 °C**.

If the correct status is not displayed, use the interpretation of fault **DF177 "Automatic transmission overheating"**.

AFTER REPAIR	Repeat the conformity check from the start.

ET012	GEAR LEVER POSITION

NOTES	There must be no present or stored faults.

LEVER POSITION "P" - "R" - "N" - "D"	Check **the cleanliness, condition and attachment** of the automatic transmission multifunction switch. Check the lever adjustment (see **23A, Automatic transmission**).
	Disconnect the battery. Disconnect the "modular connector" and check **the cleanliness and condition** of the connector "A" connections. See **System operation and Allocation of computer tracks**, "modular connector" connections.
	Carry out the following checks on the multifunction switch: **Continuity:** Lever in position **"P", track A10** → **Track A7** Lever in position **"R", tracks A10, A11, A12** → **Track A7** Lever in position **"N", track A11** → **Track A7** Lever in position **"D", track A12** → **Track A7** **Insulation:** Lever in position **"P", tracks A9, A11, A12** → **Track A7** Lever in position **"R", track A9** → **Track A7** Lever in position **"N", tracks A9, A10, A12** → **Track A7** Lever in position **"D", tracks A9, A10, A11** → **Track A7**

AFTER REPAIR	Repeat the conformity check from the start.

ET012 **CONTINUED**	

LEVER POSITION "P" - "R" - "N" - "D" CONTINUED	**Disconnect the multifunction switch.** Use the "Universal bornier **Elé. 1681**" to check **the insulation, continuity and absence of interference resistance** on the following connections: Computer **track 31** → **Track A10** multifunction switch Computer **track 32** → **Track A11** multifunction switch Computer **track 33** → **Track A12** multifunction switch Computer **track 42** → **Track A7** multifunction switch Repair if necessary.

LEVER POSITION "M" "M+" AND "M-" incremental shift	Check the **cleanliness and the condition** of the one-touch switch module connections. Disconnect the battery. Disconnect the computer. Check the cleanliness and condition of the connections. Use the "Universal bornier **Elé. 1681**". Check **the insulation, continuity and the absence of interference resistance** on the following connections: Computer **track 36** → **Track B3** one-touch switch module Computer **track 37** → **Track A3** one-touch switch module **Battery earth** → **Track A2** one-touch switch module Repair if necessary.

AFTER REPAIR	Repeat the conformity check from the start.

ET013	GEAR ENGAGED

NOTES	There must be no present or stored faults.

"1" for 1st unlocked "2" for 2nd unlocked "3" for 3rd unlocked "4" for 4th unlocked "1G" for 1st slipping "2G" for 2nd slipping "3G" for 3rd slipping "4G" for 4th slipping	"1P" for 1st locked "2P" for 2nd locked. "3P" for 3rd locked "4P" for 4th locked "R" for reverse "D" for the default position "N" for neutral position
If the fault found is caused by the converter lock-up, use the interpretation of fault **DF016 "Lock-up solenoid valve circuit"**.	
If the fault comes from the engaged gear, carry out fault finding on the multifunction switch. Check that statuses **ET123, ET124** and **ET125** operate correctly. – **ET123** "Multifunction switch S2". – **ET124** "Multifunction switch S3". – **ET125** "Multifunction switch S4". Check multifunction switch settings.	

AFTER REPAIR	Repeat the conformity check from the start.

ET020	EXCHANGER FLOW CONTROL SOLENOID VALVE CONTROL*

NOTES	There must be no present or stored faults.

The exchanger flow control solenoid valve command status displays "**ACTIVE**" in the following conditions: – gearbox oil temperature is over **100 °C**, – engine rotation speed is greater than **2000 rpm**. With other conditions, the solenoid valve status displays "**INACTIVE**".
Disconnect the computer. Check **the cleanliness and condition** of the connections. Check the **continuity** between **track 2** of the computer connector and **track E2** of the "modular connector". Check the **continuity** between **track 12** of the computer connector and **track E1** of the "modular connector". Check between **tracks 2 and 12** of the computer connector that the **resistance** of shift solenoid valve no. 2 is **40 Ω ± 2** at approximately **23 °C**. Repair if necessary.
If the **resistance** is greater than **50 Ω**, check the harness, computer connector and "modular connector".
If the status of the command fails to change, use the interpretation of fault **DF017 "Exchanger flow solenoid valve circuit"**.

* EV: Solenoid valve.

AFTER REPAIR	Repeat the conformity check from the start.

ET021	SHIFT SOLENOID VALVE 1 CONTROL

NOTES	There must be no present or stored faults.

This status displays "**ACTIVE**" when the gear engaged is "**3**" or "**4**" and "**INACTIVE**" when other gears are engaged.
Disconnect the computer. Check **the cleanliness and condition** of the connections. Check the **continuity** between **track 10** of the computer connector and **track B8** of the "modular connector". Check between **tracks 1 and 10** of the computer connector that the **resistance** of shift solenoid valve no. 2 is **40** Ω ± **2** at approximately **23** °**C**. Repair if necessary.
If the **resistance** is greater than **50** Ω, check the harness, computer connector and "modular connector".
If the correct status is not displayed, use the interpretation of fault **DF085 "EVS1 Shift solenoid valve circuit"**.

AFTER REPAIR	Repeat the conformity check from the start.

ET022	SHIFT SOLENOID VALVE 2 CONTROL

NOTES	There must be no present or stored faults.

This status displays "**ACTIVE**" when the gear engaged is "**N**" or "**2**" or "**3**" or "**4**" and "**INACTIVE**" when other gears are engaged.
Disconnect the computer. Check **the cleanliness and condition** of the connections. Check the **continuity** between **track 9** of the computer connector and **track B8** of the "modular connector". Check between **tracks 1 and 9** of the computer connector that the **resistance** of shift solenoid valve no. 2 is **40** Ω ± **2** at approximately **23 °C**.
If the **resistance** is greater than **50** Ω, check the harness, computer connector and "modular connector".
If the status does not function as specified, use the interpretation of fault **DF086 "EVS2 Shift solenoid valve 2 circuit"**.

AFTER REPAIR	Repeat the conformity check from the start.

ET023	SHIFT SOLENOID VALVE 3 CONTROL

NOTES	There must be no present or stored faults.

This status displays "**ACTIVE**" when the gear engaged is "**P**" or "**N**" or "**1**" and "**INACTIVE**" when other gears are engaged.
Disconnect the computer. Check **the cleanliness and condition** of the connections. Check the **continuity** between **track 7** of the computer connector and **track B10** of the "modular connector". Check between **tracks 1 and 7** of the computer connector that the **resistance** of shift solenoid valve no. 3 is **40 Ω ± 2** at approximately **23 °C**. Repair if necessary.
If the **resistance** is greater than **50 Ω**, check the harness, computer connector and "modular connector".
If the status does not function as specified, use the interpretation of fault **DF087 "EVS3 Sequence solenoid valve 3 circuit"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

ET024	SHIFT SOLENOID VALVE 4 CONTROL

NOTES	There must be no present or stored faults.

This status displays "**ACTIVE**" when the gear engaged is "**1**" or "**2**" and "**INACTIVE**" when other gears are engaged.
Disconnect the computer. Check **the cleanliness and condition** of the connections. Check the **continuity** between **track 8** of the computer connector and **track B7** of the "modular connector". Check between **tracks 1 and 8** of the computer connector that the **resistance** of shift solenoid valve no. 4 is **40 Ω ± 2** at approximately **23 °C**. Repair if necessary.
If the **resistance** is greater than **50 Ω**, check the harness, computer connector and "modular connector".
If the status does not function as specified, use the interpretation of fault **DF089 "EVS4 Sequence solenoid valve 4 circuit"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

ET025	SHIFT SOLENOID VALVE 5 CONTROL

NOTES	There must be no present or stored faults.

This status displays "**ACTIVE**" when the gear engaged is "**1**" and "**INACTIVE**" when other gears are engaged.
Disconnect the computer. Check **the cleanliness and condition** of the connections. Check the **continuity** between **track 13** of the computer connector and **track B5** of the "modular connector". Check between **tracks 1 and 13** of the computer connector that the **resistance** of shift solenoid valve no. 5 is **40 Ω ± 2** at approximately **23 °C**. Repair if necessary.
If the resistance exceeds **50 Ω**, check the harness, computer connector and "modular connector".
If the status is still not correct, use the interpretation of fault **DF088 "EVS5 Shift solenoid valve circuit"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

ET026	SHIFT SOLENOID VALVE 6 CONTROL

NOTES	There must be no present or stored faults.

This status displays "**INACTIVE**" with any gear engaged.
Disconnect the computer. Check **the cleanliness and condition** of the connections. Check the **continuity** between **track 14** of the computer connector and **track B2** of the "modular connector". Check between **tracks 14 and 1** of the computer connector that the resistance of shift solenoid valve no. 6 is **40 Ω ± 2** at approximately **23 °C**.
If the resistance exceeds **50 Ω**, check the harness, computer connector and "modular connector".
If the status is still not correct, use the interpretation of fault **DF112 "EVS6 Shift solenoid valve circuit"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

ET097	MANUAL MODE

NOTES	There must be no present or stored faults.

This status indicates the gear lever position. This status displays "**ACTIVE**" when the gear lever is in position "**M**", "**M+**" or "**M-**". This status displays "**INACTIVE**" when the gear lever is in positions "**P**", "**R**", "**N**" or "**D**".
If the correct status is not displayed, use the interpretation of fault **DF093 "One-touch switch circuits"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of statuses

ET123 **ET124** **ET125**	MULTIFUNCTION SWITCH S2 MULTIFUNCTION SWITCH S3 MULTIFUNCTION SWITCH S4

NOTES	There must be no present or stored faults. Multifunction switch contact S1 is not connected on this vehicle.

These statuses show the position of the multifunction switch for each gear lever position.
The switch status can be "**OPEN**" or "**CLOSED**" (see chart below).

	S2	S3	S4
P	**CLOSED**	**OPEN**	**OPEN**
R	**CLOSED**	**CLOSED**	**CLOSED**
N	**OPEN**	**CLOSED**	**OPEN**
D	**OPEN**	**OPEN**	**CLOSED**
M	**OPEN**	**OPEN**	**CLOSED**
M+	**OPEN**	**OPEN**	**CLOSED**
M-	**OPEN**	**OPEN**	**CLOSED**

If a status fails to function as specified, use the interpretation of fault **DF008 "Multifunction switch intermediate position"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

ET127	LOWER SEQUENTIAL LEVER CONTACT

NOTES	There must be no present or stored faults.

This indicates the status of the lower sequential lever switch.
This status displays "**ACTIVE**" with the gear lever in position "**M-**".
This status displays "**INACTIVE**" with the gear lever in a position other than "**M-**".

Check the one-touch switch's power supply for **+ 12 V** on **track B1** and **earth** in **track A2** of the one-touch switch.

With the gear lever in position "**M**", measure the voltage between:

One-touch switch **track A3** ⟶ **Earth**

One-touch switch **track B3** ⟶ **Earth**

If any of the measured values is **+ 12 V**, replace the one-touch switch.
If the values are **0 V**, check that the gear lever positions match the instrument panel display.
Repair if necessary.

If the correct status is not displayed, use the interpretation of fault **DF093 "One-touch switch circuits"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

ET128	UPPER SEQUENTIAL LEVER CONTACT

NOTES	There must be no present or stored faults.

This indicates the status of the lower sequential lever contact.
This status displays "**ACTIVE**" with the gear lever in position "**M+**".
This status displays "**INACTIVE**" with the gear lever in a position other than "**M+**".

Check the one-touch switch's power supply for **+ 12 V** on **track B1** and **earth** in **track A2** of the one-touch switch.

With the gear lever in position "**M**", measure the voltage between:

One-touch switch **track A3** ⟶ **Earth**

One-touch switch **track B3** ⟶ **Earth**

If any of the measured values is **+ 12 V**, replace the one-touch switch.
If the values are **0 V**, check that the gear lever positions match the instrument panel display.
Repair if necessary.

If the correct status is not displayed, use the interpretation of fault **DF093 "One-touch switch circuits"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

ET157	GEAR LEVER UNLOCKING

NOTES	There must be no present or stored faults.

This status displays "**ACTIVE**" when the gear lever is locked and "**INACTIVE**" when the gear lever is unlocked
Check the status with: – Gear lever in position "**P**". – Instrument panel displaying "**P**" for the gear lever position. Press the brake pedal; the message on the instrument panel: "**Depress the brake pedal**" disappears. The status displays "**INACTIVE**" with the brake pedal depressed and gear lever unlocking permitted. The status displays "**ACTIVE**" with the brake pedal released and the gear lever locked in position "**P**".
This status can only be checked with the gear lever in position "**P**".
If the correct status is not displayed, use the interpretation of fault **DF095 "Selector lever locking electromagnet circuit"**.

AFTER REPAIR	Repeat the conformity check from the start. Make sure that shifting up and down through each gear works properly.

Tool parameter	Diagnostic tool title
PR001	Coolant temperature
PR003	Oil pressure
PR004	Gearbox oil temperature
PR006	Engine speed
PR007	Turbine speed
PR008	Computer supply voltage
PR019	Engine torque
PR105	Vehicle speed
PR118	Gearbox oil pressure sensor voltage
PR119	Modulating solenoid valve control time
PR123	Calculated engine torque
PR124	Accelerator pedal position for downshifting
PR126	Current turbine speed
PR128	Engine/turbine speed difference
PR135	Standard pedal position
PR136	Raw pedal position
PR137	Lock-up solenoid valve control time
PR138	Reference pressure
PR146	Difference between specification and oil pressure

PR001	COOLANT TEMPERATURE

NOTES	**Special notes:** Only apply the checks if the parameter is inconsistent.

Test the multiplex network (see **88B, Multiplexing**).
If parameter **PR001 "Coolant temperature"** is absent, refer to the interpretation of the parameter (see **MR 366 Megane, 17B, Petrol injection** or **13B, Diesel injection**).

AFTER REPAIR	Repeat the conformity check from the start.

PR003	OIL PRESSURE

NOTES	There must be no present or stored faults.

Immobilise the vehicle: handbrake on and brake pedal depressed.
Check the oil pressure values on the diagnostic tool:
– engine not running: pressure reading **less than 0.2 bar**,
– engine at idle speed (**~ 820 rpm**) and selector lever at "**D**" or "**R**": pressure reading **~ 2.6 bar**.
– engine speed **~ 1400 rpm** and selector lever at "**D**" or "**R**": pressure reading **~ 8.7 bar**.

AFTER REPAIR	Repeat the conformity check from the start.

PR004	GEARBOX OIL TEMPERATURE

NOTES	There must be no present or stored faults.

Gearbox oil temperature values vary according to how the vehicle is used.
Check the oil temperature values on the diagnostic tool: Minimum temperature: **- 40 °C**. Maximum temperature: **+ 140 °C**. These values relate to normal operation of the vehicle.

AFTER REPAIR	Repeat the conformity check from the start.

PR006	ENGINE SPEED

NOTES	There must be no present or stored faults.

Run a multiplex network test (see **88B, Multiplexing**).
After these checks, if parameter **PR006 "Engine speed"** is absent, refer to the interpretation of the parameter (see **17B, Petrol injection** or **13B, Diesel injection**).

AFTER REPAIR	Repeat the conformity check from the start.

PR007	TURBINE SPEED

NOTES	There must be no present or stored faults.

Turbine speed varies according to oil temperature and pressure.
Turbine speed depends on engine speed.

Check the turbine speed on the diagnostic tool:
Selector lever in position "**N**".

Oil temperature **43 °C**: engine speed **~ 762 rpm** → turbine speed **~ 681 rpm**.

Oil temperature **45 °C**: engine speed **~ 743 rpm** → turbine speed **~ 654 rpm**.

AFTER REPAIR	Repeat the conformity check from the start.

PR008	COMPUTER SUPPLY VOLTAGE

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

Carry out a complete battery and charging circuit check (see **TN 6014A, "Charging circuit fault finding"**).
Disconnect the computer. Check **the condition and cleanliness** of the connector.
Check **the insulation, continuity and absence of interference resistance**: **earth** on computer **track 28** and the front left-hand side member of the vehicle.
Check the computer's **30A** fuse. Check the computer's **5A** after ignition feed fuse.
With the ignition on, measure the computer feed voltage **Track 56: + 12 V** **Track 27: + 12 V** Then check the earths: **Track 28 and track 46** Check the Protection and Switching Unit if necessary.

AFTER REPAIR	Repeat the conformity check from the start.

PR019	ENGINE TORQUE

NOTES	There must be no present or stored faults.

Run a multiplex network test (see **88B, Multiplexing**).
If parameter **PR019 "Engine torque"** is absent, refer to the interpretation of the parameter (see **MR 366 Megane, 17B, Petrol injection** or **13B, Diesel injection**).

AFTER REPAIR	Repeat the conformity check from the start.

PR105	VEHICLE SPEED

NOTES	There must be no present or stored faults.

Run a multiplex network test (see **MR 366 Megane 8, 88B, Multiplexing**).
If parameter **PR105 "Vehicle speed"** is absent, carry out fault finding on the system (see **38C, ABS system)**.

AFTER REPAIR	Repeat the conformity check from the start.

PR118	GEARBOX OIL PRESSURE SENSOR VOLTAGE

NOTES	**There must be no present or stored faults.**

ELECTRICAL CONFORMITY OF THE SENSOR:

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

Computer **track 24** → **Track C1** male modular connector

Computer **track 55** → **Track C2** male modular connector

Computer **track 25** → **Track C3** male modular connector

If all these connections are correct, check for a gearbox oil pressure sensor power supply:

+ 5 V → **Track C1** male modular connector

Earth → **Track C3** male modular connector

Repair if necessary.

AFTER REPAIR	Repeat the conformity check from the start.

PR123	CALCULATED ENGINE TORQUE

NOTES	There must be no present or stored faults.

Run a multiplex network test (see **88B, Multiplexing**).
If parameter **PR123 "Calculated engine torque"** is absent, refer to the interpretation of the parameter (see **17B, Petrol injection** or **13B, Diesel injection**).

AFTER REPAIR	Repeat the conformity check from the start.

PR124	ACCELERATOR PEDAL POSITION FOR DOWNSHIFTING

NOTES	There must be no present or stored faults.

Run a multiplex network test (see **88B, Multiplexing**).
If parameter **PR124 "Accelerator pedal position for downshifting"** is absent, refer to the interpretation of the parameter (see **17B, Petrol injection** or **13B, Diesel injection**).

AFTER REPAIR	Repeat the conformity check from the start.

PR126	CURRENT TURBINE SPEED

NOTES	There must be no present or stored faults.

Check the cleanliness and condition of the turbine speed sensor and its connections.
Check **the insulation, continuity and the absence of interference resistance to earth, to + 12 V** and the following connections:

Computer **track 45** → **Track D1** of the turbine speed sensor (**+ 12 V**)

Computer **track 46** → **Track D2** of the turbine speed sensor (**earth**)

Repair if necessary.

Check the turbine speed on the diagnostic tool:
Gear lever position at **"N" or "P"**
Oil temperature **43 °C**: engine speed **~ 681 rpm**
Oil temperature **45 °C**: engine speed **~ 654 rpm**

AFTER REPAIR	Repeat the conformity check from the start.

PR128	ENGINE/TURBINE SPEED DIFFERENCE

NOTES	There must be no present or stored faults.

Check the **cleanliness and condition** of the engine speed sensor and its connections.
Run a multiplex network test (see **88B, Multiplexing**).

After these checks, if parameter **PR006 "Engine speed"** is absent, refer to the interpretation of the parameter (see **17B, Petrol injection** or **13B, Diesel injection**).

Check the **cleanliness and condition** of the turbine speed sensor and its connections.

This parameter is the difference between parameter **PR006 "Engine speed"** and parameter **PR007 "Turbine speed"**.
Check the engine/turbine speed difference with the diagnostic tool:
Engine idling:

Engine speed: **~ 743 rpm** and turbine speed: **~ 654 rpm** → difference = **~ 89 rpm**.

Repair if necessary.

AFTER REPAIR	Repeat the conformity check from the start.

PR135	STANDARD PEDAL POSITION

NOTES	There must be no present or stored faults.

Run a multiplex network test (see **88B, Multiplexing**).
If parameter **PR135 "Standard pedal position"** is absent, refer to the interpretation of the parameter (see **17B, Petrol injection** or **13B, Diesel injection**).

AFTER REPAIR	Repeat the conformity check from the start.

PR136	RAW PEDAL POSITION

NOTES	There must be no present or stored faults.

Run a multiplex network test (see **88B, Multiplexing**).
If parameter **PR136 "Raw pedal position"** is absent, refer to the interpretation of the parameter (see **17B, Petrol injection** or **13B, Diesel injection**).

AFTER REPAIR	Repeat the conformity check from the start.

PR138	PRESSURE SETTING

NOTES	There must be no present or stored faults.

The pressure setting is determined by the automatic transmission computer.
Check the reference pressure on the diagnostic tool: – engine not running: pressure reading **21 bar**, – engine at idle speed (**~ 700 rpm**) and selector lever at "**D**" or "**R**": pressure reading **~ 2.7 bar**, – engine speed **~ 1400 rpm** and selector lever at "**D**" or "**R**": pressure reading **~ 8.9 bar**.

AFTER REPAIR	Repeat the conformity check from the start.

PR146	DIFFERENCE BETWEEN SETPOINT AND OIL PRESSURE

NOTES	There must be no present or stored faults.

The pressure setting values are stored in the gearbox computer memory and depend on how the vehicle is used. The oil pressure is regulated according to the pressure setting. The oil pressure values must always be close to the pressure settings.

This parameter is the difference between parameter **PR138 "Pressure setting"** and parameter **PR003 "Oil pressure"**.

– engine not running: reference pressure reading **21 bar**.
oil pressure reading = **0 bar**.
– engine at idle speed (**~ 700 rpm**) and selector lever at "**D**" or "**R**": reference pressure reading **~ 2.7 bar**.
oil pressure reading = **~ 2.6 bar**.
– engine speed **~ 1400 rpm** and selector lever at "**D**" or "**R**": reference pressure reading **~ 8.9 bar**.
oil pressure reading = **~ 8.7 bar**.

AFTER REPAIR	Repeat the conformity check from the start.

COMMANDS AND CLEARING:

Before using these clearing commands, engine and vehicle speeds must be zero and the selector lever must be in position "**P**" or "**N**".

AC024 "Actuator sequential control"

This command activates the shift solenoid valves EVS1 to EVS6 simultaneously to check that they operate correctly.

RZ004 "Fault memory"

This command clears present and stored faults from the automatic transmission computer.

RZ005 "Self-adapting programs"

This command deletes the self-adapting programs in the automatic transmission computer.
After running this command, carry out a road test with the vehicle before returning it to the customer. This is because the automatic transmission may malfunction during the time taken for the self-adapting programs to re-install.

AFTER REPAIR	Repeat the conformity check from the start.

AC024	ACTUATOR SEQUENTIAL CONTROL

NOTES	Check fuse **30 A** for the permanent power supply of the computer in the Protection and Switching Unit. Check fuse **5 A** for the after ignition power supply of the computer in the Protection and Switching Unit. Replace the fuses if necessary. Check the cleanliness and condition of the connections.
	Engine speed zero and selector lever in position "**P**" or "**N**".

This command enables all the automatic transmission solenoid valve actuators to be operated.

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

Computer **Track 12** → **Track E1** modular connector.

Computer **Track 26** → **Track B12** modular connector.

Computer **Track 1** → **Track B3** modular connector.

To activate solenoid valve **EVS1**: Computer **Track 10** → **Track B11** modular connector

To activate solenoid valve **EVS2**: Computer **Track 9** → **Track B8** modular connector

To activate solenoid valve **EVS3**: Computer **Track 7** → **Track B10** modular connector

To activate solenoid valve **EVS4**: Computer **Track 8** → **Track B7** modular connector

To activate solenoid valve **EVS5**: Computer **Track 13** → **Track B5** modular connector

To activate solenoid valve **EVS6**: Computer **Track 14** → **Track B2** modular connector

Test the solenoid valves then check the presence of faults on the computer.

AFTER REPAIR	Repeat the conformity check from the start.

AUTOMATIC TRANSMISSION
Fault finding - Interpretation of commands

NOTES	Only refer to "Customer complaints" after carrying out a complete fault finding procedure with the diagnostic tool and the conformity check.

ALP1	No dialogue with the computer

NOTES	None

Try the diagnostic tool on another vehicle.

Check:
– the connection between the diagnostic tool and socket (connection and cable in good condition),
– the power supply to the computer,
– the engine and passenger compartment fuses.

Check that the **CLIP** sensor is fed via **tracks 16 (+ 12 V), 4 and 5 (earth)** of the diagnostic socket, as indicated by the illumination of two red warning lights on the sensor.
Make sure that the **CLIP** sensor is connected to the computer's USB port.
Make sure that the **CLIP** sensor is communicating properly with the vehicle's computers; this can be seen by the two green diodes on the sensor lighting up.

Use the diagnostic socket to check the following tracks:

track 1 → **+ After ignition**

track 16 → **+ Battery feed**

tracks 4 → **Earth**

Repair if necessary.

Disconnect the automatic transmission computer connector to check **the insulation, continuity and the absence of interference resistance** of the following connections:

Computer **track 27** → **+ After ignition feed**

Computer **track 56** → **+ Battery feed**

Computer **track 28** → **Earth**

Computer **track 38** → **track 6 diagnostic socket (CAN H)**

Computer **track 39** → **track 14 diagnostic socket (CAN L)**

Repair if necessary.

If the fault is still present, contact the Techline.

AFTER REPAIR	Carry out a road test followed by a complete check with the diagnostic tool.

ALP2	Engine starting faults

NOTES	**Only refer to "Customer complaints" after carrying out a complete fault finding procedure with the diagnostic tool and the conformity check.**

Make sure that the diagnostic tool report, gear lever positions and instrument panel all indicate the same gear engaged. Adjust the gear lever cable if it is faulty.
The engine will only start when the selector lever is at "**P**" or "**N**".
Check the battery charge and the condition of the terminals (oxidation). Check the multifunction switch mounting and that it is working. Check the gear lever control cable, adjust it if necessary (see **23A, Automatic transmission**).
Switch off the ignition and disconnect the automatic transmission computer connector. Make sure that the fuses are in good condition and replace them if necessary.
Ensure that the ignition switch is working properly.
Check the power circuit of the starter relay and the starter.
Carry out fault finding on the injection system.
If the engine still doesn't start, contact the Techline.

AFTER REPAIR	Carry out a road test followed by a complete check with the diagnostic tool.

ALP3	Automatic transmission operating fault

NOTES	**Only refer to "Customer complaints" after carrying out a complete fault finding procedure with the diagnostic tool and the conformity check.**

Using the diagnostic tool, check the consistency between the display and the selector lever positions (ignition on and engine stopped).
Check the level, smell and colour of the oil and for the presence of particles in the oil.
Check the mountings of the multifunction switch. Check the multifunction switch control wire (see **23A, Automatic transmission, Multifunction switch**). Carry out fault finding with the diagnostic tool: Check the following points: – With the engine stopped, check the oil pressure value: **0 bar**. – With the engine running, oil temperature higher than **20 °C**, vehicle stationary and selector lever at "**D**", the oil pressure increases with the engine/turbine speed. – Example: engine speed **~ 750 rpm** ⟶ pressure: **~ 3 bar**. engine speed **~ 1400 rpm** ⟶ pressure: **~ 9 bar**. If the pressure remains static, replace the oil pressure sensor. Check the line pressure using a pressure gauge (see **23A, Automatic transmission, Line pressure reading**). If the oil pressure value is incorrect, there may be one or more causes: – Clogged strainer or faulty pump. – An internal leak (slave cylinders, brakes, clutch), carry out a road test to check there is no slipping. – A hydraulic control valve fault may cause jerking or malfunctions when driving.

AFTER REPAIR	Carry out a road test followed by a complete check with the diagnostic tool.

ALP3 CONTINUED	

Refer to the procedure and the safety instructions for carrying out a setting point check on the torque converter. Selector lever in position "**D**". Theoretical engine speed at setting point: **2300 ± 150 rpm**. Oil pressure at engine speed **~ 1400 rpm** ⟶ **9 bar**. If the setting point value is incorrect, there may be one or more causes: – the torque converter, – the converter lock-up solenoid valve, – internal oil leak. Note: A setting point which is too low may be due to a lack of engine power.
Carry out a road test, observing the engine speed on the instrument panel and the displays on the diagnostic tool.
If the fault is still present, contact the Techline.

AFTER REPAIR	Carry out a road test followed by a complete check with the diagnostic tool.

ALP4	Automatic transmission malfunction when changing gears

NOTES	**Only refer to "Customer complaints" after carrying out a complete fault finding procedure with the diagnostic tool and the conformity check.**

Automatic transmission faults may be noted during gear changing without any fault being stored in the computer.
These malfunctions may be linked to:

– Connection faults (**insulation**: generates a fault, **resistance**) in the shift solenoid valve control wiring (**EVS1 to EVS6**).
  Check the tightness and condition of the clips on all the solenoid valve control wiring connections from the computer to each solenoid valve.
  Use command **AC024 "Actuator sequential control"** to find any faults.
– Hydraulic distributor faults (hydraulic slide valve seizing, strainer/distributor seal) preventing the shift solenoid valves from working.
  Check the oil's condition (colour, burnt or not) its level and pressure: increasing with engine/turbine speed.
– Loss of pressure when changing gear (clutch brakes/receivers leak)

Read the values of the following parameters (selector lever in position "**D**" or "**R**": vehicle stationary and handbrake on) on the CLIP tool:

– PR003 "Oil pressure",
– PR006 "Engine speed",
– PR007 "Turbine speed",
– PR138 "Pressure setting",
– PR008 "Computer feed voltage".

These parameters are associated with automatic transmission operation.
If one of the values is incorrect, note the fault it causes.
Replace the faulty part if necessary and carry out a check.

If the fault is still present, contact the Techline.

AFTER REPAIR	Carry out a road test followed by a complete check with the diagnostic tool.

ALP5	Erratic gear changes

NOTES	**Only refer to "Customer complaints" after carrying out a complete fault finding procedure with the diagnostic tool and the conformity check.**

Run a multiplex network test (see **MR 366 Megane 8, 88B, Multiplexing**). Check the presence of the following parameters: – **PR135 "Standard pedal position",** – **PR136 "Raw pedal position".**
Carry out a road test using the diagnostic tool, making sure that status **ET013 "Gear engaged"** functions normally.
If the customer complaint occurs with the brake pedal released, check that status **ET004 "Brake light switch (Closed)"** is "**NO**". If not, adjust the brake light switch and the brake pedal.
Make sure that the instrument panel display of the gear engaged matches the gear lever position.
Check the automatic transmission wiring harness (shift solenoid valve activation). Replace it if necessary.
Check that the gear lever cable is working properly and adjust it if necessary. Check that the multifunction switch is working correctly.
If the fault is still present, contact the Techline.

AFTER REPAIR	Carry out a road test followed by a complete check with the diagnostic tool.

ALP6	Reversing lights inoperative

NOTES	**Only refer to "Customer complaints" after carrying out a complete fault finding procedure with the diagnostic tool and the conformity check.**

Check: – the condition of the fuses in the UPC. – the condition of the bulbs. – the condition of the bulb contacts. Repair if necessary. – the rear lights earth. Rear right-hand light **track 3** and rear left-hand light **track 4**.
Switch off the ignition and disconnect the modular connector. Switch the ignition on again and check the presence of **+ 12 V after ignition feed** on **track A2** of the modular connector.
Switch off the ignition and check the continuity between **tracks A1 and A2** of the modular connector **(gearbox side)** with the selector lever in position "**R**". Check that the gear lever cable is correctly adjusted and check the instrument panel display. If the continuity is poor, replace the multifunction switch. If the continuity is good, check the continuity between **track A1** of the modular connector and **track 2** of the Protection and Switching Unit brown **12-track** connector.
Switch on the ignition. With the selector lever in position "**R**", check the presence of **+ 12 V after ignition feed** on: **track 2 of the Protection and Switching Unit brown 12-track connector,** **track 2 of the rear right-hand light,** **track 5 of the rear left-hand light.**

AFTER REPAIR	Carry out a road test followed by a complete check with the diagnostic tool.

ALP7	Oil present under the vehicle

NOTES	**Only refer to "Customer complaints" after carrying out a complete fault finding procedure with the diagnostic tool and the conformity check.**

Check the colour of the oil under the vehicle to determine the source of the leak (automatic transmission fluid is red). Clean the engine and gearbox.
Check the oil levels in the engine and gearbox. Top up if necessary (see **23A, Automatic transmission, Fill-up**).
If there is no gearbox leak, look for a leak on the engine side. If the leak is from the gearbox: – Locate the source of the leak and carry out the necessary repairs. – Replace any faulty parts. – Check the oil level.

AFTER REPAIR	Carry out a road test followed by a complete check with the diagnostic tool.