

# MEGANE

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## 1 Engine and peripherals

### 13B

#### DIESEL INJECTION

##### EDC16 INJECTION

Program No.: C1

Vdiag No.: 44, 48 and 4C

Fault finding - Introduction	13B - 2
Fault finding - System operation	13B - 9
Fault finding - Allocation of computer tracks	13B - 17
Fault finding - Replacement of components	13B - 20
Fault finding - Fault summary table	13B - 23
Fault finding - Interpretation of faults	13B - 26
Fault finding - Conformity check	13B - 109
Fault finding - Status summary table	13B - 147
Fault finding - Interpretation of statuses	13B - 148
Fault finding - Parameter summary table	13B - 180
Fault finding - Interpretation of parameters	13B - 182
Fault finding - Command summary table	13B - 188
Fault finding - Interpretation of commands	13B - 189
Fault finding - Customer complaints	13B - 202
Diagnostic - Fault finding chart	13B - 203
Fault finding - Tests	13B - 217
Fault finding - Glossary	13B - 245

## 1. SCOPE OF THIS DOCUMENT

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

*Vehicle(s):* **Mégane II, Scénic II**  
*Engine type and suffix:* **F9Q 800, 808, 812**  
*Function concerned:* **Diesel injection**

*Computer name:* **Diesel injection**  
*Program no.:* **C1**  
*VDIAG No.:* **44, 48 and 4C**

## 2. PREREQUISITES FOR FAULT FINDING

### Documentation type

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

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

**Wiring diagrams:**

- Visu-Schéma (CD-ROM), paper.

### Type of diagnostic tools

- **CLIP**

### Special tooling required

Special tooling required	
	Multimeter
<b>Elé. 1590</b>	Computer connection unit
<b>Elé. 1681</b>	Universal unit

## 3. RECAP

### Procedure

To save energy, the UCH of the vehicle **interrupts the + after ignition feed after 3 minutes**

To carry out fault finding on the vehicle's computers, switch the ignition to fault finding mode (forced + after ignition).

Proceed as follows:

- with the vehicle card in the card reader,
- press and hold start button (longer than **5 seconds**) with start-up conditions not fulfilled,
- connect the diagnostic tool and perform the required operations.

Note:

The left-hand and right-hand xenon bulb computers are powered when the dipped headlights are lit. Fault finding procedures can only be carried out on them after the ignition has been switched on in fault finding mode (forced + after ignition) and the dipped headlights are lit.

To **cut off + after ignition**, proceed as follows:

- disconnect the diagnostic tool,
- vehicle card in reader,
- press the Start button twice briefly (less than **3 seconds**),
- Check that the + after ignition feed has been cut off by checking that the computer warning lights on the instrument panel have gone out.

## Faults

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

The **present** or **stored** status of faults should be taken into consideration when the diagnostic tool is 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 statuses and parameters that do not produce a fault display on the diagnostic tool when they are inconsistent. Therefore, this stage is used to:

- carry out fault finding on faults that do not have a fault display, and which may correspond to a customer complaint.
- check that the system is operating correctly and that there is no risk of a fault recurring after repairs.

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

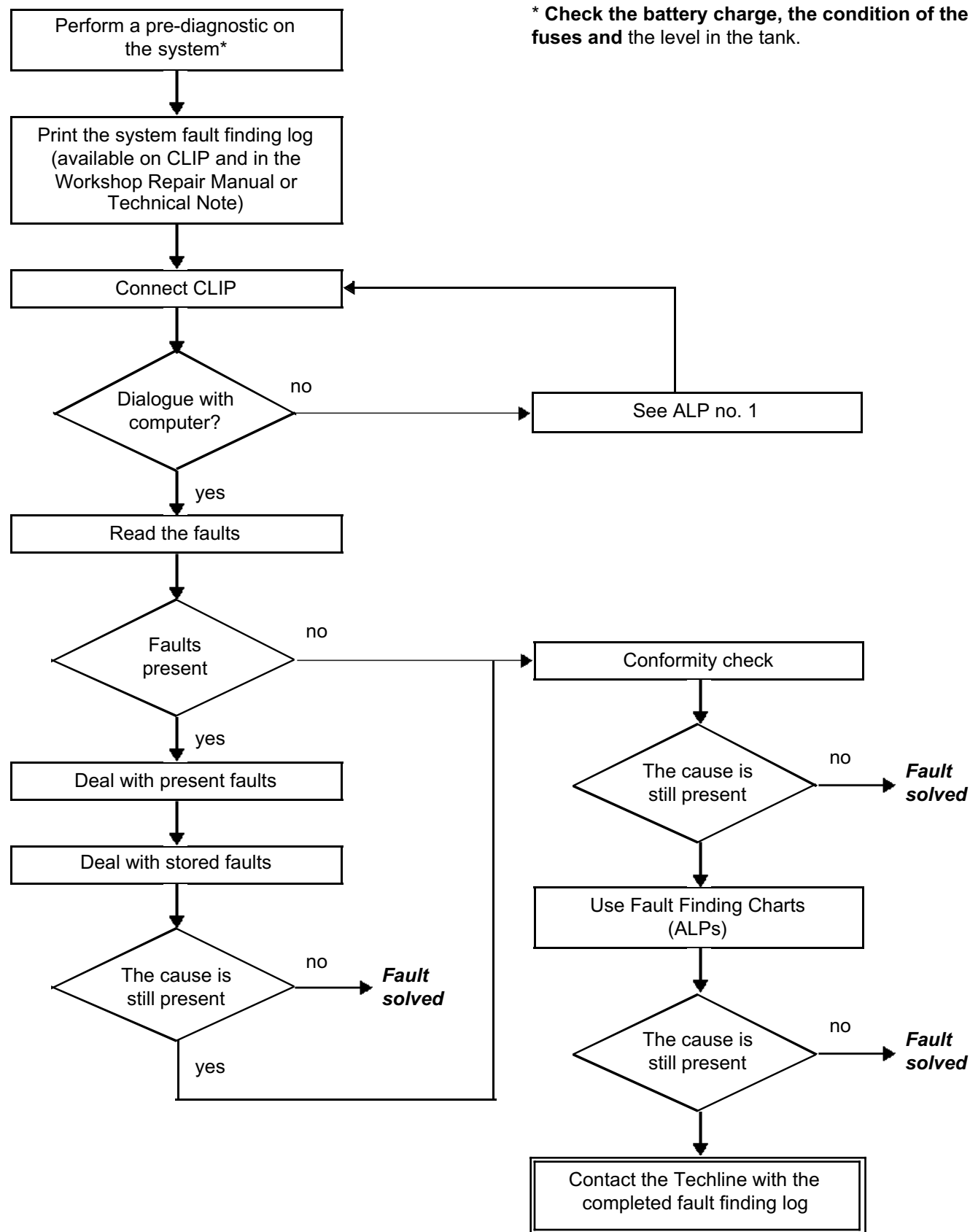
If a status is not behaving normally or a parameter is outside the permitted tolerance values, consult the corresponding fault finding page.

## Customer complaints - Fault finding chart

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



#### **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 to present.  
Make sure that the connectors are properly 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 their crimping (no crimping on the insulating section).  
Make sure that the clips and tabs are properly locked in the sockets.  
Check that no clips or tabs have been dislodged during connection.  
Check the clip contact pressure using an appropriate model of tab.

###### **Resistance check**

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

#### IMPORTANT

Any fault on a complex system requires thorough fault finding with the appropriate tools. The FAULT FINDING LOG, which should be completed during the 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 FOR EACH FAULT FINDING PROCEDURE.**

You will always be asked for this log:

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

## 6. SAFETY ADVICE

Safety rules must be observed whenever work is carried out on a component to prevent physical damage or human injury:

- check the battery voltage to avoid incorrect operation of computer functions,
- use the proper tools.

## 7. CLEANLINESS ADVICE THAT MUST BE OBSERVED WHEN WORKING ON THE HIGH PRESSURE DIRECT INJECTION SYSTEM

### Risks relating to contamination

The system is highly sensitive to contamination. The risks caused by the introduction of contamination are:

- damage or destruction to the high pressure injection system and the engine,
- a component seizing or leaking.

All After-Sales operations must be performed under very clean conditions. Performing an operation in a very clean environment means that no impurities (particles only a few microns in size) will have been able to enter the system during dismantling or into the circuits via the fuel unions.

**The cleanliness principle must be applied from the filter to the injectors.**

## **7. CLEANLINESS ADVICE THAT MUST BE OBSERVED WHEN WORKING ON THE HIGH PRESSURE DIRECT INJECTION SYSTEM**

### **Risks relating to contamination**

The direct injection system is very sensitive to pollution. The risks associated with contamination are:

- damage to or destruction of the high pressure injection system,
- components jamming,
- a component leaking.

All After-Sales operations must be performed under very clean conditions.

This means that no impurities (particles a few microns in size) should enter the system during dismantling.

The cleanliness principle must be applied from the filter to the injectors.

### **WARNING**

**BEFORE CARRYING OUT ANY WORK ON THE INJECTION SYSTEM, CHECK WITH THE DIAGNOSTIC TOOL:**

- that the rail is depressurised,
- that the fuel temperature is not too high.

### **What are the sources of contamination?**

- metal or plastic swarf,
- paint,
- fibres:   from cardboard  
              from brushes,  
              from paper,  
              from clothing,  
              from cloths.
- foreign bodies such as hair,
- ambient air,
- etc.

### **IMPORTANT**

It is not possible to clean the engine using a high pressure washer because of the risk of damaging connections. In addition, moisture may collect in the connectors and create electrical connection faults.

**Instructions to be followed before any work is carried out on the injection system:**

Protect the accessories and timing belts, the electrical accessories (starter, alternator, electric power-assisted steering pump) and the mating face to prevent diesel fuel spilling onto the clutch friction plate.

Check that you have plugs for the unions to be opened (set of plugs available from the Parts Department). The plugs are single-use only. After use, they must be discarded (once used they are soiled and cleaning is not sufficient to make them reusable). Unused plugs must be discarded.

Ensure that you have hermetically resealable plastic bags for storing removed parts. There is less risk of parts stored in this way being exposed to contamination. These are single-use bags; after use they must be discarded.

Use lint-free cleaning cloths (part no. **77 11 211 707**). Using normal cloth or paper is prohibited. They are not lint-free and could contaminate the fuel circuit. Each cloth should only be used once.

Use fresh cleaning agent for each operation (used cleaning agent is contaminated). Pour it into an uncontaminated container.

For each operation, use a clean brush in good condition (the brush must not shed its bristles).

Use a brush and cleaning agent to clean the unions to be opened.

Blast compressed air over the cleaned parts (tools, workbench, and the parts, unions and injection system area). Check that no bristles remain.

Wash your hands before and during the operation if necessary.

When wearing leather protective gloves cover them with latex gloves to prevent contamination.

**Instructions to be followed during the operation**

As soon as the circuit is open, all openings must be plugged to prevent impurities from entering the system. The plugs to be used are available from the Parts Department. They must not be reused under any circumstances.

Close the hermetically sealed bag, even if it has to be reopened shortly afterwards. Ambient air carries impurities.

All components removed from the injection system must be stored in a hermetically sealed plastic bag once they have been plugged.

Using a brush, thinner, air gun, rifle-type brush or normal rag is strictly prohibited once the circuit has been opened. These items are likely to allow impurities to enter the system.

If a component is being replaced with a new component, do not remove the packaging until it is ready to be fitted to the vehicle.



The high pressure injection system is designed to deliver a precise quantity of diesel fuel to the engine at a set moment.

It is fitted with a **112-track BOSCH EDC16C3 type** computer.

The system comprises:

- a diesel filter,
- a high pressure pump with an integrated low pressure pump (transfer pump),
- a high pressure regulator mounted on the pump,
- an injection rail,
- a diesel fuel pressure sensor integrated into the rail,
- four solenoid injectors,
- a diesel fuel temperature sensor,
- a coolant temperature sensor,
- an upstream air temperature sensor,
- a cylinder reference sensor,
- an engine speed sensor,
- a turbocharging pressure sensor,
- an accelerator pedal potentiometer,
- an EGR solenoid valve,
- an atmospheric pressure sensor integrated into the injection computer,
- an air flow sensor,
- a turbocharging pressure limitation solenoid valve,
- a damper flap solenoid valve.

The **common rail** direct high pressure injection system works sequentially (based on the petrol engine multipoint injection function).

This injection system reduces operating noise, reduces the volume of pollutant gases and particles and produces high engine torque at low engine speeds thanks to a pre-injection procedure.

The high pressure pump generates the high pressure and transmits it to the injection rail. The actuator located on the pump controls the quantity of diesel fuel supplied, according to the requirement determined by the computer. The rail supplies each injector through a steel pipe.

**a) The computer**

- Determines the value of injection pressure necessary for the engine to operate correctly and then controls the pressure regulator.
- It checks that the pressure value is correct by analysing the value transmitted by the pressure sensor located on the rail.
- It determines the injection timing required to deliver the right quantity of diesel fuel and the moment when injection should start.
- Controls each injector electrically and individually after determining these two values.

The flow injected into the engine is determined by:

- the duration of injector control,
- the rail pressure (regulated by the computer),
- the injector opening and closing speed,
- the needle stroke (determined by a constant for the type of injector),
- the nominal hydraulic flow of the injector (specific to each injector).

The computer manages:

- idling regulation,
- exhaust gas flow reinjection to the inlet,
- fuel supply check (advance, flow and rail pressure),
- the fan assembly via the Protection and Switching Unit (centralised coolant temperature management function),
- the air conditioning (cold loop function),
- the cruise control/speed limiter function,
- the pre-postheating control.
- the fault warning lights via the multiplex network.

The high pressure pump is supplied at low pressure by an integrated low-pressure pump (transfer pump).

It supplies the rail, the pressure of which is controlled by the fuel flow actuator for charging, and for discharging by the injector valves. This compensates for pressure drops.

The fuel flow actuator enables the high pressure pump to supply the exact quantity of diesel fuel required to maintain the rail pressure. This component minimises the heat generated and improves engine output.

In order to discharge the rail using the injector valves, the valves are controlled by brief electrical pulses which are:

- short enough not to open the injector (passing through the feedback circuit from the injectors),
- long enough to open the valves and discharge the rail.

### **Multiplex connection between the vehicle's various computers**

The Mégane II electronic system is a multiplex network. This enables dialogue between the various vehicle computers. As a result:

- the activation of the fault warning lights on the instrument panel is performed by the multiplex network, with the vehicle speed sensor on the gearbox deactivated,
- the vehicle speed signal is transmitted by the ABS-ESP computer via the multiplex network.

#### **IMPORTANT**

The engine must not operate with:

- Diesel fuel containing more than 10 % diester,
- Petrol, even in tiny quantities.

The system can inject diesel fuel into the engine at a pressure of up to **1350 bar**. Before each operation, check that the injection rail is depressurised and that the fuel temperature is not too high.

When working on the high pressure injection system, you must follow the cleanliness guidelines and safety advice specified in this document.

Removal of the internal parts of the pump and injectors is prohibited. Only the fuel flow actuator, the diesel fuel temperature sensor and the air vent unit can be replaced.

For safety reasons, it is strictly prohibited to undo a high pressure pipe union when the engine is running.

It is not possible to remove the pressure sensor from the fuel rail because this may cause circuit contamination faults. If the pressure sensor fails, the pressure sensor, the rail and the five high pressure pipes must be replaced.

It is strictly prohibited to remove any injection pump pulley bearing the number **070 575**. If the pump needs to be replaced, replace the pulley.

Supplying **+ 12 V** directly to any component in the system is prohibited.

Ultrasonic decoking and cleaning are prohibited.

Never start the engine unless the battery is connected correctly.

Disconnect the injection computer when carrying out any welding work on the vehicle.

## **b) Functions included**

### **Air conditioning management assistance**

In the case of vehicles with climate control, the EDC16 system has the option of deactivating the air conditioning via the UCH, under certain conditions of use:

- when requested by the driver,
- when starting the engine,
- if the engine overheats (in order to reduce the power the engine has to supply),
- when the engine speed is kept at a very high level (to protect the compressor),
- during transition phases (e.g. high acceleration demand for overtaking, anti-stalling and moving off). These conditions are only taken into account if they do not occur repeatedly, so as to prevent system instabilities (erratic deactivation),
- when certain faults appear.

### **Cold loop air conditioning management**

The air conditioning is cold loop managed, shared between several computers. The injection computer is responsible for:

- authorising cold requests according to the refrigerant pressure, the engine coolant temperature and the engine speed,
- calculating the power absorbed by the compressor (from the refrigerant pressure),
- requesting operation of the fan assembly, from the UPC, according to the vehicle speed, the refrigerant pressure and the engine coolant temperature.

### **Passenger Compartment Heating Resistor Management**

In order to reduce the time required to heat up the passenger compartment, the vehicle is fitted with **Passenger Compartment Heating resistors (RCH)**. These passenger compartment heating resistors are run and controlled by the UCH.

The injection computer authorises or prohibits the operation of the passenger compartment heating resistors according to the operating phases and engine power needs.

### **Cruise control/speed limiter management**

When activated, **the cruise control function** maintains the vehicle at a preselected speed, regardless of the driving conditions encountered.

If the driver wishes to exceed the cruising speed, they may:

- depress the accelerator pedal and exceed the cruising speed (the vehicle will return to the initial cruising speed once the driver takes their foot off the pedal),
- press the system control buttons.

The cruise control function can be deselected either by:

- the system control buttons,
- deactivating the cruise control switch,
- when system events are detected, such as the brake pedal or clutch being depressed,
- when system errors are detected such as an inconsistent vehicle speed.

The cruise function can also be temporarily disabled when the driver wants to increase speed by depressing the accelerator pedal. The cruising speed is resumed when the driver releases the accelerator pedal.

It is possible to reactivate the vehicle speed control and resume the last cruising speed after deactivation (computer supply not cut off).

**The vehicle speed limiter function** enables, when it is active (switch turned on), the vehicle speed to be limited to a preselected value. The driver controls the vehicle in the normal way using the accelerator pedal until the limit speed is reached.

If the driver wishes to exceed the cruising speed, they may:

- exceed the accelerator pedal's kickdown point,
- increase the limit speed by pressing or pressing and holding the limit speed switch.

The speed limiter function can be deselected either:

- by using the system control buttons,
- by switching off the speed limiter switch,
- when system events are detected, such as the brake pedal or clutch being depressed,
- when system errors are detected such as an inconsistent vehicle speed.

### c) Warning light management

#### Instrument panel display

The computer manages the data display on the instrument panel relating to engine operation. This involves 5 functions:

- the OBD warning light (European On Board Diagnostic),
- pre/postheating warning light,
- the coolant temperature warning light,
- the fault level 1 warning light (non-critical fault),
- the fault level 2 warning light (stop immediately).

These five functions are represented by 3 warning lights or messages sent by the trip computer.

#### Pre/postheating indicator light

This warning light is used both as an in operation indicator light and as a system fault indicator:

- continuously lit under + after ignition feed: indicates that the heater plugs are operating,
- continuously lit with **injection faulty**: indicates a level 1 fault (involves injection system operating in defect mode. The user must carry out repairs as soon as possible).

#### Temperature/emergency stop warning light

This indicator light is used both as an in-operation indicator light and as a system fault warning light. It lights up for **3 seconds** after the ignition is switched on (automatic test procedure managed by the instrument panel).

- continuously lit: indicates engine overheating (the driver remains free to stop the vehicle or not),
- continuously lit, with the **Engine stop** message: indicates a level 2 fault (In this case injection is automatically shut off after a few seconds).

#### Excess pollution OBD orange warning light

An engine symbol lights up for approximately **3 seconds** when the engine is switched on.

**For the Vdiag 44 and 48, it only lights up when the engine is running.**

**In Vdiag 4C, this warning light comes on if the system has one or more OBD faults.**

#### d) OBD management

The **OBD (On Board Diagnostic)** system enables detection of any faults relating to the vehicle emission control system (OBD EURO IV emission control standards exceeded).

**This system should be active for the entire life of the vehicle.**

##### 1. Conditions causing an OBD fault

An OBD fault will be detected after **3 operating cycles**, and the following parameters will be saved in the calculator:

- engine load,
- vehicle speed,
- air temperature,
- coolant temperature,
- turbocharging pressure,
- rail pressure,
- air flow,
- vehicle mileage.

It allows the driver to know whether their vehicle has a fault directly linked to the emission control system.

##### 2. System faults indicated by the OBD

Only a few faults are indicated by the OBD system:

- **DF012 Sensor supply voltage no. 2.**
- **DF038 Computer.**
- **DF040 Cylinder 1 injector circuit.**
- **DF041 Cylinder 2 injector circuit.**
- **DF042 Cylinder 3 injector circuit.**
- **DF043 Cylinder 4 injector circuit.**
- **DF209 EGR valve position sensor circuit.**
- **DF272 EGR valve control circuit.**
- **DF621 EGR valve jammed open.**

**Some repair operations require programming to ensure that certain engine components function correctly. Follow the programming procedures (described in the component replacement section), if replacing an exhaust gas recirculation valve or an injector.**

### 3. Conditions for clearing an OBD fault

An OBD fault is cleared in several steps.

The fault **present** in the diagnostic tool is not **stored** (following repair) until after 3 trips with the vehicle.

**The OBD warning light will only light up after these 3 driving cycles.**

**The warning light coming on does not always mean that there is a fault on the system.**

In order that the OBD fault and the display parameters are cleared from the computer, the system goes through 40 engine heating cycles.

An engine heating cycle is a driving cycle during which:

- the engine coolant temperature reaches at least 71.1 °C,
- the engine coolant temperature varies by 22.2 °C in relation to the engine starting temperature.

If one of these conditions is not fulfilled, the OBD fault will still be present or stored in the injection computer.



## Fault finding - Allocation of computer tracks

### 1 - Black connector A, 32-track

Track	Description
A1	Not used
A2	Cruise control switch earth
A3	CAN L network signal
A4	CAN H network signal
B1	Not used
B2	Not used
B3	Not used
B4	K line diagnostic socket output
C1	Not used
C2	Not used
C3	Cruise control switch supply
C4	Clutch supply signal output
D1	Protection and Switching Unit supply
D2	Cruise control programming control
D3	Cruise control programming feedback signal
D4	Not used
E1	Not used
E2	Not used
E3	Not used
E4	Brake switch supply signal output
F1	Not used
F2	Accelerator potentiometer load 2 supply
F3	Accelerator potentiometer load 2 signal
F4	Accelerator potentiometer load 2 earth

### 1 - Black connector A, 32-track (continued)

Track	Description
G1	UPC supply
G2	Accelerator potentiometer load 1 supply
G3	Not used
G4	Battery earth
H1	Battery earth
H2	Accelerator potentiometer load 1 signal
H3	Accelerator potentiometer load 1 earth
H4	Battery earth

## Fault finding - Allocation of computer tracks

### 2 - Brown connector B, 48-track

Track	Description
A1	Camshaft sensor earth
A2	Not used
A3	Not used
A4	Fuel rail pressure sensor supply
B1	TDC sensor supply signal
B2	Not used
B3	Not used
B4	Air flow sensor supply
C1	TDC sensor earth signal
C2	Not used
C3	Not used
C4	Fuel rail pressure sensor earth
D1	Camshaft sensor signal
D2	Not used
D3	Not used
D4	Turbocharging pressure sensor earth
E1	Injection locking relay coil earth control
E2	Air flow sensor earth signal
E3	Not used
E4	Not used
F1	Refrigerant pressure sensor signal
F2	Coolant temperature sensor supply signal
F3	Refrigerant pressure sensor supply
F4	EGR valve position sensor supply
G1	Air flow sensor supply signal
G2	Air temperature signal
G3	Fuel rail pressure sensor signal
G4	Turbocharging pressure sensor supply

### 2 - Brown connector B, 48-track (continued)

Track	Description
H1	Injection coolant temperature sensor earth
H2	Fuel temperature signal
H3	Not used
H4	Not used
J1	Not used
J2	Gas recirculation potentiometer signal
J3	Not used
J4	Inlet flap solenoid valve control
K1	Not used
K2	Turbocharging pressure sensor signal
K3	Not used
K4	Not used
L1	Not used
L2	Gas recirculation solenoid valve control
L3	Not used
L4	Flow sensor earth
M1	Not used
M2	UPC supply
M3	Not used
M4	Fuel pressure regulation solenoid valve control

**3 - Grey connector C, 32-track**

Track	Description
A1	Not used
A2	Water in diesel detection sensor signal
A3	Not used
A4	Preheating relay fault finding signal
B1	Not used
B2	Not used
B3	Not used
B4	Not used
C1	Not used
C2	EGR solenoid valve earth
C3	Refrigerant pressure sensor earth
C4	Not used
D1	Not used
D2	Not used
D3	Not used
D4	Not used
E1	Turbocharging pressure solenoid valve control
E2	Preheating relay control
E3	Not used
E4	Not used
F1	Fuel temperature earth
F2	Not used
F3	Not used
F4	Not used
G1	Injector 4 control
G2	Injector 2 control
G3	Injector 1 earth
G4	Injector 2 earth
H1	Injector 1 control
H2	Injector 3 control
H3	Injector 4 earth
H4	Injector 3 earth

## COMPUTER REPLACEMENT OR REPROGRAMMING OPERATIONS

The system can be programmed or reprogrammed via the diagnostic socket using the RENAULT CLIP diagnostic tool (see Technical Note **3585A**).

**While the computer is being reprogrammed the engine fan assemblies are automatically triggered).**

### Operations to be carried out before reprogramming the injection computer:

Before reprogramming the injection computer, move the main Cruise control/Speed limiter switch to the rest position. The information about the cruise control or the speed limiter displayed on the instrument panel disappears.

Otherwise, if the main switch remains in the cruise control or speed limiter position during and after reprogramming, the Cruise control/Speed limiter function will not be operational.

To reset the function, proceed as follows:

Vehicle ignition on.

- Position the main switch in rest position (the computer then detects the rest position).
- Position the switch in Cruise control position to activate the Cruise control function.
- Position the switch in Speed limiter position to activate the Speed Limiter function.

### IMPORTANT

- **Switch on the diagnostic tool (mains or cigarette lighter feed).**
- **Connect a battery charger.**
- **Switch off all electrical consumers (lights, interior lights, air conditioning, radio/CD, etc.).**
- **Wait for the engine to cool (engine coolant temperature below 60 °C and air temperature below 50 °C).**

**Before reprogramming or replacing the computer in After-Sales operations, backup the following data to the diagnostic tool:**

- The IMA codes (**individual correction of the injector**).
- The engine adaptives (engine speed, and options available on the vehicle).

*(this file corresponds to the last save carried out on the tool)*

select **YES**,

When the backup is complete, replace the computer or reprogram, then proceed to the next step,

with command **SC003 Backup computer data**.

### WARNING

**A computer without the IMA option can be replaced by a computer with this option. The codes have therefore not been backed up during command SC003.**

**In this case, status ET104 "Injector code use" becomes "YES" or "FAULTY", fault DF276 "Injector code programming" is present, and the engine operates in defect mode.**

**In this case, run command SC002 Enter injector codes, applying the procedure described in the interpretation of this command.**

## Fault finding - Replacement of components

After programming, reprogramming or replacing the computer:

- switch the ignition off and then on again,
- start and then stop the engine (to initialise the computer) and wait for 30 seconds,
- use the diagnostic tool to carry out the following procedures:
  - run command **SC001 Enter saved data**, to re-establish the injector codes and engine adaptives,
  - run command **VP010 Enter VIN**,
  - deal with any faults declared by the diagnostic tool. Clear the computer memory.
  - carry out a road test followed by another check with the diagnostic tool.

Note:

If commands **SC001** and **SC003**, have been forgotten or do not work after replacing or (re)programming the computer, enter the IMA codes for each injector manually by reading the code on each injector (see **Replacement of injectors**).

### IMPORTANT

- the injection computer retains the immobiliser code for life,
- the system has no security code,
- it is prohibited to perform tests with computers borrowed from the Parts Department or from another vehicle which must then be returned,
- these computers are hard-coded,
- if the injection computer appears to be faulty, contact the Techline and refer to the fault finding log.

### REPLACING THE INJECTORS

Note:

The **IMA coding (individual injector correction)** is a calibration made in production on **each injector** to **adjust the flow** accurately.

These correction values are etched on the Bakelite body of each injector (6 alphanumeric characters) and then entered into the computer which then controls each injector taking into account their **manufacturing variation**.

When one or more injectors are replaced, the IMA parameters of the injector output concerned must be modified.  
**The system can be configured with the diagnostic socket using the RENAULT CLIP diagnostic tool.**

To do this, display the **IMA** code(s) etched on the injector bodies, and enter the codes into the computer using command **SC002 Enter injector codes**, and follow the instructions given by the diagnostic tool.

#### IMPORTANT

When the command is complete, switch off the ignition and exit fault finding mode.

Wait **30 seconds**.

Return to fault finding mode.

Select the **Identify computer** function from the main screen.

Check that the injector codes entered into the computer correspond to those on the injector bodies.

If the codes do not match, restart the command **SC002 Enter injector codes** procedure.

Then check the system faults, and clear any stored faults.

If the computer does not have any faults, the operation is complete.

If there are faults, deal with the present faults.

### REPLACING THE EXHAUST GAS RECIRCULATION VALVE

When replacing the exhaust gas recirculation valve, enter the operational values of the new valve into the computer.

After replacing the exhaust gas recirculation valve, select **Clear** mode on the diagnostic tool.

Run command **RZ002 EGR adaptives**.

When the command is completed, switch off the ignition and exit fault finding mode.

- wait **30 seconds**, and switch on the ignition again,
- clear any faults,
- start the engine,
- let the engine idle for 1 min, accelerate to 2500 rpm for 5 s, and return to idle speed,
- repeat this procedure 5 times.

Check the faults:

If the fault does not recur, end of fault finding procedure.

If the fault recurs, restart the procedure after disconnecting and reconnecting the valve.

If the fault is still present, replace the EGR valve.

# DIESEL INJECTION

## Fault finding - Fault summary table

### WARNING LIGHT MANAGEMENT

Management of instrument panel warning lights according to the faults notified.

Tool fault	Associated DTC	Diagnostic tool title	Level 1 fault warning light (Orange heater plugs "on" indicator light)	Level 2 fault warning light (Red overheating warning light)	No fault warning light lit	OBD warning light lit
DF001	115	Coolant temperature sensor circuit	CO.1/CC.0	...	...	...
DF003	105	Atmospheric pressure sensor circuit	1.DEF / 2.DEF / 3.DEF	...	...	...
DF004	235	Turbocharging pressure sensor circuit	CO.0 / CC.1	...	1.DEF	...
DF005	335	Engine speed sensor circuit	...	...	1.DEF/2.DEF	...
DF007	190	Rail pressure sensor circuit		CO.1 / 1.DEF / 2.DEF	CC.0	...
DF008	225	Pedal potentiometer circuit gang 1	CO.0/CC.1/ 1.DEF/2.DEF	...	...	...
DF009	2120	Pedal potentiometer circuit gang 2	CO.0/CC.1/ 1.DEF	...	...	...
DF011	641	Sensor feed voltage no. 1	1.DEF/2.DEF	...	...	...
DF012	651	Sensor feed voltage no. 2	1.DEF/2.DEF	...	...	1.DEF/ 2.DEF
DF013	697	Sensor feed voltage no. 3	...	1.DEF/2.DEF	...	...
DF015	685	Main relay control circuit	...	...	1.DEF/2.DEF	...
DF017	380	Pre-postheating unit control circuit	CC.0	...	CC.1/CO/ 1.DEF	...
DF025	670	Preheating unit diagnostic line		...	X	...
DF037	C167	Engine immobiliser		...	X	...
DF038	606	Computer	5.DEF / 13.DEF	1.DEF / 2.DEF / 3.DEF / 4.DEF / 6.DEF / 7.DEF / 8.DEF / 9.DEF / 10.DEF / 11.DEF / 12.DEF	...	5.DEF
DF039	110	Inlet air temperature sensor circuit	...	...	CC.0/CO.1/ 1.DEF	...

# DIESEL INJECTION

## Fault finding - Fault summary table

13B

Tool fault	Associated DTC	Diagnostic tool title	Level 1 fault warning light (Orange heater plugs "on" indicator light)	Level 2 fault warning light (Red overheating warning light)	No fault warning light lit	OBD warning light lit
DF040	201	Cylinder 1 injector circuit	CO	CC.1 / CC / 1.DEF	...	CO
DF041	202	Cylinder 2 injector circuit	CO	CC.1 / CC / 1.DEF	...	CO
DF042	203	Cylinder 3 injector circuit	CO	CC.1 / CC / 1.DEF	...	CO
DF043	204	Cylinder 4 injector circuit	CO	CC.1 / CC / 1.DEF	...	CO
DF046	560	Battery voltage	...	...	1.DEF/2.DEF	...
DF047	615	Computer feed voltage	...	...	X	...
DF049	530	Refrigerant sensor circuit	...	...	CC.1/CO.0	...
DF050	571	Brake switch circuit	...	...	1.DEF/2.DEF	...
DF051	575	Cruise control/speed limiter function	...	...	1.DEF / 2.DEF / 3.DEF	...
DF053	89	Rail pressure regulation function	3.DEF / 8.DEF	CC.0 / CC.1 / CO / 1.DEF / 2.DEF / 5.DEF / 6.DEF / 7.DEF	4.DEF	...
DF054	33	Turbocharging solenoid valve control circuit	CO/CC.0/CC.1/ 1.DEF	...	...	...
DF055	243	Turbocharging pressure regulation circuit	1.DEF/2.DEF	...	...	...
DF056	100	Air flow sensor circuit	3.DEF/4.DEF	...	CC.0/CC.1/ 1.DEF/2.DEF	
DF057	2264	Water in diesel fuel detector circuit	...	...	X	...
DF067	638	Damper control circuit	...	CC.0	OC / CC.1 / 1.DEF	...
DF069	1620	Impact detected signal			X	
DF070	830	Clutch switch circuit	...	...	1.DEF/2.DEF	...



# DIESEL INJECTION

## Fault finding - Fault summary table

### FAULT WARNING LIGHT MANAGEMENT (continued)

Tool fault	Associated DTC	Diagnostic tool title	Level 1 fault warning light (Orange heater plugs "on" indicator light)	Level 2 fault warning light (Red overheating warning light)	No fault warning light lit	OBD warning light lit
DF091	500	Vehicle speed signal	...	...	1.DEF/ 2.DEF/ 3.DEF/ 4.DEF/5.DEF	...
DF097	340	Camshaft sensor circuit			1.DEF/2.DEF	
DF098	180	Fuel temperature sensor circuit	...	...	CC.0 / CO.1	
DF114	400	EGR solenoid valve circuit	...	...	1.DEF/2.DEF	
DF118	409	EGR solenoid valve servo-control	...	...	1.DEF/2.DEF	...
DF119	365	Camshaft sensor signal	...	...	1.DEF/2.DEF	...
DF120	385	Engine speed sensor signal		...	1.DEF/2.DEF	...
DF209	486	EGR valve position sensor circuit			1.DEF	CC.1/CO.0
DF250	C122	ESP function	...	...	1.DEF/2.DEF	...
DF272	403	EGR valve control circuit	CC.0		CC.1 / CO/ 1.DEF	CC.0
DF276	611	Injector code programming	1.DEF/2.DEF			
DF530	148A	EGR programming adaptives			X	
DF619	487	EGR valve jammed open	X	...	...	...
DF620	148B	EGR valve fouled	X	...	...	...
DF621	2413	EGR valve is jammed open (OBD fault)	...	...	...	X
DF622	2142	EGR valve jammed open	...	...	X	...
DF1070	534	Cold loop				

<b>DF001 PRESENT OR STORED</b>	<u>COOLANT TEMPERATURE SENSOR CIRCUIT</u> CC.0 : short circuit to earth CO.1 : open circuit or short circuit to + 12 V
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present with the engine running or following a road test.
	<b>Special notes:</b> If the fault is present: <ul style="list-style-type: none"> <li>– the coolant temperature: <b>PR064: Coolant temperature</b> is fixed at <b>119°C</b>,</li> <li>– the preheating phase is greater than <b>10 seconds</b>,</li> <li>– the fan assembly is permanently supplied,</li> </ul> The <b>level 1</b> warning light comes on. Use bornier <b>Elé. 1681</b> for any work on the computer connectors.

<b>CC.0</b>	<b>NOTES</b>	None.
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<p>Check the coolant temperature sensor connections. Repair if necessary.</p> <p>Measure the <b>resistance</b> of the coolant temperature sensor between <b>terminals 2 and 3</b> of its black connector. Replace the sensor if its resistance is not approximately:</p> <div style="text-align: right;"> <b>12460 ± 112 Ω at -10°C</b>  <b>2252 ± 112 Ω at 25°C</b>  <b>811.4 ± 39 Ω at 50°C</b>  <b>283 ± 8 Ω at 80°C</b>  <b>115 ± 3 Ω at 110°C</b> </div>
<p>Check the injection computer connections.</p> <p>Check for <b>continuity and the absence of interference resistance</b> of the following connections:</p> <div style="display: flex; justify-content: space-between;"> <div>Injection computer brown 48-track connector B, <b>track F2</b></div> <div>→ <b>Track 3</b> coolant temperature sensor</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Injection computer brown 48-track connector B, <b>track H1</b></div> <div>→ <b>Track 2</b> coolant temperature sensor</div> </div> <p>Repair if necessary.</p>
<p>If the fault is still present, replace the coolant temperature sensor.</p>

<b>AFTER REPAIR</b>	<p>Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.</p>
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<b>DF001</b>  <b>CONTINUED</b>	
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<b>CO.1</b>	<b>NOTES</b>	None.
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Check the coolant temperature sensor connections.  
Repair if necessary.

Measure the **resistance** of the coolant temperature sensor between **terminals 2 and 3** of its black connector.  
Replace the sensor if its resistance is not approximately:

**12460 ± 112 Ω at -10°C**  
**2252 ± 112 Ω at 25°C**  
**811.4 ± 39 Ω at 50°C**  
**283 ± 8 Ω at 80°C**  
**115 ± 3 Ω at 110°C**

Check the injection computer connections.

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

Injection computer 48-track brown connector B, **track H1** —————→ **Track 2** coolant temperature sensor  
 Injection computer 48-track brown connector B, **track F2** —————→ **Track 3** coolant temperature sensor

Repair if necessary.

If the fault is still present, replace the coolant temperature sensor.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF003 PRESENT OR STORED</b>	<b><u>ATMOSPHERIC PRESSURE SENSOR CIRCUIT</u></b> 1.DEF: Signal outside upper limit 2.DEF: signal outside lower limit 3.DEF: inconsistent signal
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after: – <b>the engine is started,</b> – <b>a road test.</b>
	<b>Special notes:</b> The atmospheric pressure sensor is integrated into the injection computer and cannot be separated.
	If the fault is present: – there is light smoke, – the atmospheric pressure value changes to default mode, <b>PR035 Atmospheric pressure = 750 mbar,</b> – the <b>level 1</b> warning light is lit. Use bornier <b>Elé. 1681</b> for any work on the computer connectors.

Disconnect the injection computer and check the condition of the contacts and connector. Repair if necessary. Display the value of parameter <b>PR041 Turbocharging pressure</b> . If this value is stuck at <b>750 mbar</b> , refer to interpretation of fault <b>DF004 Turbocharging pressure sensor circuit</b> . If the fault is still present, contact the Techline.
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<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF004 PRESENT OR STORED</b>	<b><u>TURBOCHARGING PRESSURE SENSOR CIRCUIT</u></b> CO.0 : open circuit or short circuit to earth CC.1 : short circuit to + 12 V 1.DEF: signal incoherence
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<b>NOTES</b>	<b>Order of priority in the event of more than one fault:</b> In the event of a combination of faults <b>DF004</b> and <b>DF011</b> Sensor supply voltage no.1, deal with fault <b>DF011</b> first.
	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after starting the engine, or during a road test.
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors. If the fault is present: <ul style="list-style-type: none"> <li>– the EGR function is inhibited,</li> <li>– the turbocharging pressure sensor is in defect mode, <b>PR041 = 750 mbar</b>,</li> <li>– the intake air temperature is in defect mode, <b>PR059 = 25°C</b>.</li> </ul> The <b>level 1</b> warning light comes on.

<b>CO.0</b>	<b>NOTES</b>	None.
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Check the turbocharger pressure sensor connections. Check the injection computer connections. Repair if necessary.
Check <b>the continuity and insulation</b> from earth of the following connections: <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> Injection computer brown 48-track connector B, <b>track K2</b> </div> <div style="width: 50%; text-align: right;"> <b>Track 3</b> turbocharger pressure sensor connector </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> Injection computer brown 48-track connector B, <b>track G4</b> </div> <div style="width: 50%; text-align: right;"> <b>Track 1</b> turbocharger pressure sensor connector </div> </div> Repair if necessary.
If the fault is still present, replace the turbocharging pressure sensor.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF004</b>  <b>CONTINUED</b>	
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<b>CC.1</b>	<b>NOTES</b>	None.
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Check the turbocharger pressure sensor connections.  
Check the injection computer connections.  
Repair if necessary.

Check **the continuity and insulation against + 12 V** of the following connections:

Injection computer brown 48-track connector B, **track D4** → **Track 2** turbocharger pressure sensor connector

Injection computer brown 48-track connector B, **track K2** → **Track 3** turbocharger pressure sensor connector

Repair if necessary.

If the fault is still present, replace the turbocharging pressure sensor.

<b>1.DEF</b>	<b>NOTES</b>	None.
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**If it occurs with fault DF003**, perform fault finding procedure on parameter **PR041 Turbocharging pressure**.  
If the turbocharger pressure sensor is correct, contact the Techline.

Check the turbocharger pressure sensor connections.  
Check the injection computer connections.  
Repair if necessary.

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

Injection computer brown 48-track connector B, **track G4** → **Track 1** turbocharger pressure sensor connector

Injection computer brown 48-track connector B, **track D4** → **Track 2** turbocharger pressure sensor connector

Injection computer brown 48-track connector B, **track K2** → **Track 3** turbocharger pressure sensor connector

Repair if necessary.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF005 PRESENT OR STORED</b>	<b><u>ENGINE SPEED SENSOR CIRCUIT</u></b> 1.DEF: no signal 2.DEF: signal incoherence
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present: <ul style="list-style-type: none"><li>– when an attempt is made to start the engine,</li><li>– when the engine is running.</li></ul>
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for any work on the computer connectors. The engine speed sensor is consistent with the camshaft sensor. If the fault is present, the <b>level 2</b> warning light comes on.

Check the engine speed sensor connections. Repair if necessary. Check that the sensor is correctly mounted and that the flywheel target is not damaged. Check that the gap between the engine speed sensor and the engine flywheel is <b>0.5 to 1.8 mm</b> . Check the <b>resistance</b> of the engine speed sensor between <b>terminals A and B</b> of the black connector. The <b>winding resistance</b> is between <b>510 and 850 Ohm</b> at an engine temperature of <b>20°C</b> . If the value displayed is incorrect, replace the engine speed sensor.
Check the injection computer connections. Repair if necessary.
Check the <b>continuity and the absence of interference resistance</b> of the following connections: Injection computer 48-track brown connector B, <b>track B1</b> —————> <b>Track A</b> engine speed sensor Injection computer 48-track brown connector B, <b>track C1</b> —————> <b>Track B</b> engine speed sensor Repair if necessary.
If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF007 PRESENT OR STORED</b>	<u><b>RAIL PRESSURE SENSOR CIRCUIT</b></u> CC.0 : short circuit to earth CO.1 : open circuit or short circuit to + 12 V 1.DEF: offset at minimum threshold 2.DEF: offset at maximum threshold
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<b>NOTES</b>	<b>Priorities when dealing with a number of faults:</b> Deal with fault <b>DF013 Sensor supply voltage no. 3</b> first, if it is present or stored.
	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after repeated engine starts or with the engine running.
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for any work on the computer connectors. If the fault is present, the engine stops immediately. The <b>level 2</b> fault warning light will be lit.

<b>CC.0</b>	<b>NOTES</b>	None.
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Check the rail pressure sensor connectors. Check the injection computer connections. Repair if necessary.
Check <b>the continuity and insulation against earth</b> of the following connections: Injection computer brown 48-track connector B, <b>track G3</b> —————> <b>Track 2</b> rail pressure sensor Injection computer brown 48-track connector B, <b>track A4</b> —————> <b>Track 3</b> rail pressure sensor Repair if necessary.
If the fault is still present, replace the rail pressure sensor and tighten it to <b>35 ± 5 N.m</b> . <b>Observe the safety instructions in the Introduction.</b>

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF007</b>  <b>CONTINUED</b>	
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<b>CO.1</b>	<b>NOTES</b>	None.
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Check the rail pressure sensor connectors.  
Check the injection computer connections.  
Repair if necessary.

Check the **continuity and insulation against + 12 V** of the following connections:

Injection computer brown 48-track connector B, **track G3** —————> **Track 2** rail pressure sensor

Injection computer brown 48-track connector B, **track C4** —————> **Track 1** rail pressure sensor

Repair if necessary.

if the fault is still present, replace the rail pressure sensor and tighten it to **35 ± 5 N.m.**

**Observe the safety advice in the Introduction.**

<b>1.DEF</b> <b>2.DEF</b>	<b>NOTES</b>	None.
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Check the rail pressure sensor connectors.  
Check the injection computer connections.  
Repair if necessary.

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

Injection computer brown 48-track connector B, **track G3** —————> **Track 2** rail pressure sensor

Injection computer brown 48-track connector B, **track A4** —————> **Track 3** rail pressure sensor

Injection computer brown 48-track connector B, **track C4** —————> **Track 1** rail pressure sensor

Repair if necessary.

With the ignition on and the engine stopped for more than one minute:

Display parameter **PR038 Rail pressure** in the **Fuel circuit, Engine management function** tab.

– If the value is below **50 bar**, the sensor is in order.

In this case, contact the Techline.

– If the pressure is above **50 bar**, replace the rail pressure sensor and tighten it to **35 ± 5 N.m.**

**Observe the safety advice in the Introduction.**

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF008 PRESENT OR STORED</b>	<b><u>PEDAL POTENTIOMETER CIRCUIT GANG 1</u></b> CO.0 : open circuit or short circuit to earth CC.1 : short circuit to + 12 V 1.DEF: signal incoherence 2.DEF: accelerator pedal sensor locked
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<b>NOTES</b>	<b>Priorities when dealing with a number of faults:</b> Deal with fault <b>DF011 Sensor feed voltage no. 1</b> first if it is present or stored.
	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after a series of full-load/no-load actions on the accelerator pedal.
	<b>Special notes:</b> Turbocharging and cruise control are not authorised. The <b>level 1</b> warning light comes on. The engine speed is stuck at <b>1400 rpm</b> if there is fault on gangs 1 and 2 of the pedal potentiometer. Use bornier <b>Elé. 1681</b> for any work on the computer connectors.

### WARNING

This fault may appear if the wiring harness has been damaged.  
Follow the procedure described in **Wiring check** in the Introduction.  
This check enables the condition and the conformity of the engine wiring harness to be checked.

<b>CO.0</b>	<b>NOTES</b>	<b>Priorities when dealing with a number of faults:</b> If fault <b>DF009 Pedal potentiometer circuit gang 2</b> is present at the same time, check that the pedal sensor connector is connected correctly.
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Check the pedal potentiometer connections.  
Check the injection computer connections.  
Repair if necessary.

Check **the continuity and insulation against earth** of the following connections:

Injection computer, black 32-track connector A, <b>track H2</b>	→	Track 4 pedal potentiometer connector
Injection computer, black 32-track connector A, <b>track G2</b>	→	Track 3 pedal potentiometer connector

Repair if necessary.

Measure the **resistance** on the pedal potentiometer on **track 1** between **tracks 5 and 3**.  
Replace the pedal potentiometer if the resistance is not approximately **1.7 kΩ ± 0.9**.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF008</b>  <b>CONTINUED 1</b>	
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<b>CC.1</b>	<b>NOTES</b>	None.
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Check the pedal potentiometer connections.  
Check the injection computer connections.  
Repair if necessary.

Check the **continuity and insulation against + 12 volts** of the following connections:

Injection computer, black 32-track connector A, <b>track H2</b>	→	Track 4 pedal potentiometer connector
Injection computer, black 32-track connector A, <b>track H3</b>	→	Track 5 pedal potentiometer connector

Repair if necessary.

Measure the **resistance** on the pedal potentiometer on **track 1** between **tracks 5 and 3**.  
Replace the pedal potentiometer if the resistance is not approximately **1.7 kΩ ± 0.9**.

<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the pedal potentiometer connections.  
Check the injection computer connections.  
Repair if necessary.

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

Injection computer, black 32-track connector A, <b>track H2</b>	→	Track 4 pedal potentiometer connector
Injection computer, black 32-track connector A, <b>track G2</b>	→	Track 3 pedal potentiometer connector
Injection computer, black 32-track connector A, <b>track H3</b>	→	Track 5 pedal potentiometer connector
Injection computer, black 32-track connector A, <b>track F3</b>	→	Track 1 pedal potentiometer connector
Injection computer, black 32-track connector A, <b>track F2</b>	→	Track 2 pedal potentiometer connector
Injection computer, black 32-track connector A, <b>track F4</b>	→	Track 6 pedal potentiometer connector

Repair if necessary.

If the fault is still present, replace the pedal potentiometer.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF008</b> <b>CONTINUED 2</b>	
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<b>2.DEF</b>	<b>NOTES</b>	<b>Only in Vdiag 4C.</b>
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Check the mechanical condition of the accelerator pedal:

- locked in full load position,
- with the pedal blocked by an external component.

Check the brake light switch.

Repair if necessary.

Vary the position of the pedal and refer to the conformity check in order to check the operating values of the accelerator pedal potentiometer.

If the values displayed are inconsistent, replace the accelerator pedal potentiometer.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test, then check with the <b>diagnostic tool</b> .
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<b>DF009 PRESENT OR STORED</b>	<b><u>PEDAL POTENTIOMETER CIRCUIT GANG 2</u></b> CO.0 : open circuit or short circuit to earth CC.1 : short circuit to + 12 V 1.DEF: signal incoherence
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<b>NOTES</b>	<b>Priorities when dealing with a number of faults:</b> Deal with fault <b>DF011 Sensor feed voltage no. 1</b> first if it is present or stored.
	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after a series of full-load/no-load actions on the accelerator pedal.
	<b>Special notes:</b> Turbocharging and cruise control are not authorised, The <b>level 1</b> warning light comes on. The engine speed is stuck at <b>1400 rpm</b> if there is fault on gangs 1 and 2 of the pedal potentiometer. Use bornier <b>Elé. 1681</b> for any work on the computer connectors.

### WARNING

This fault may appear if the wiring harness has been damaged.  
Follow the procedure described in the Wiring Check in the Introduction.  
This test enables the condition and the conformity of the engine wiring harness to be checked.

<b>CO.0</b>	<b>NOTES</b>	<b>Priorities when dealing with a number of faults:</b> if fault <b>DF008 Pedal potentiometer circuit gang 1</b> is present at the same time, check that the pedal is connected correctly.
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Check the pedal potentiometer connections.  
Check the injection computer connections.  
Repair if necessary.

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

Injection computer, black 32-track connector A, <b>track F3</b>	→	Track 1 pedal potentiometer connector
Injection computer, black 32-track connector A <b>track F2</b>	→	Track 2 pedal potentiometer connector

Repair if necessary.

Measure the pedal sensor **resistance** on **track 2** across **tracks 2 and 6**.  
Replace the pedal potentiometer sensor if the resistance is not approximately **2.85 kΩ ± 2.05**.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF009</b>  <b>CONTINUED</b>	
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<b>CC.1</b>	<b>NOTES</b>	<b>Priorities when dealing with a number of faults:</b> Deal with fault <b>DF012 Sensor feed voltage no. 2</b> first if it is present or stored.
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Check the pedal potentiometer connections.  
Check the injection computer connections.  
Repair if necessary.

Check the **continuity and insulation from + 12 V** of the following connections:

Injection computer, black 32-track connector A, **track F3** —————> **Track 1** pedal potentiometer connector

Injection computer, black 32-track connector A, **track F4** —————> **Track 6** pedal potentiometer connector

Repair if necessary.

Measure the **resistance** of the pedal potentiometer on **gang 2** between **tracks 2** and **6**.

Replace the pedal potentiometer sensor if the resistance measured is not approximately: **2.85 kΩ ± 2.05**.

<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the pedal potentiometer connections.  
Check the injection computer connections.  
Repair if necessary.

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

Injection computer black 32-track connector A, **track F3** —————> **Track 1** pedal potentiometer connector

Injection computer black 32-track connector A, **track F2** —————> **Track 2** pedal potentiometer connector

Injection computer black 32-track connector A, **track F4** —————> **Track 6** pedal potentiometer connector

Injection computer black 32-track connector A, **track H2** —————> **Track 4** pedal potentiometer connector

Injection computer black 32-track connector A, **track G2** —————> **Track 3** pedal potentiometer connector

Injection computer black 32-track connector A, **track H3** —————> **Track 5** pedal potentiometer connector

Repair if necessary.

If the fault is still present, replace the pedal potentiometer.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF011 PRESENT OR STORED</b>	<b><u>SENSOR SUPPLY VOLTAGE NO. 1</u></b> 1.DEF: sensor reference voltage too weak 2.DEF: sensor reference voltage too high
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present following a road test or after attempting to start the engine several times.
	<b>Special notes:</b> If the fault is present: <ul style="list-style-type: none"><li>– cruise control is deactivated,</li><li>– the engine speed is limited,</li><li>– the <b>level 1</b> warning light is lit.</li></ul> Use bornier <b>Ele. 1681</b> for all operations on the injection computer connectors.

**WARNING**

This fault may appear if the wiring harness has been damaged.  
Follow the procedure described in the Wiring Check in the Introduction.  
This check enables the condition and the conformity of the engine wiring harness to be checked.

The sensors connected to **supply no. 1** are:

- **Turbocharging pressure sensor,**
- **Accelerator pedal potentiometer sensor, gang 1.**

To locate a faulty sensor and/or connection, disconnect one of these sensors then check whether the fault becomes stored.

If the fault is still present, start the operation again with the other sensor.

(wait a few seconds between each disconnection to allow the computer to perform the measurement).

If the fault is stored after a disconnection, replace the faulty sensor or repair its connection.

Clear the faults created by the multiple disconnections.

If the fault is still present when both these sensors have been disconnected:

1. Check the **insulation from earth** of the following connections:

Injection computer brown 48-track connector B, <b>track K2</b>	————→	<b>Track 3</b> of the turbocharger pressure sensor
Injection computer brown 48-track connector B, <b>track G4</b>	————→	<b>Track 1</b> of the turbocharger pressure sensor
Injection computer black 32-track connector A, <b>track G2</b>	————→	<b>Track 3</b> of the accelerator pedal potentiometer gang 1
Injection computer black 32-track connector A, <b>track H2</b>	————→	<b>Track 4</b> of the accelerator pedal potentiometer gang 1

Repair if necessary.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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**DF011**  
**CONTINUED**

2. Check the **insulation from + 12 V** of the following connections:

- |  |       |  |
|--|-------|--|
| Injection computer brown 48-track connector B, <b>track K2</b> | ————→ | <b>Track 3</b> of the turbocharger pressure sensor           |
| Injection computer brown 48-track connector B, <b>track D4</b> | ————→ | <b>Track 2</b> of the turbocharger pressure sensor           |
| Injection computer black 32-track connector A, <b>track H3</b> | ————→ | <b>Track 5</b> of the accelerator pedal potentiometer gang 1 |
| Injection computer black 32-track connector B, <b>track H2</b> | ————→ | <b>Track 4</b> of the accelerator pedal potentiometer gang 1 |

Repair if necessary.

3. Check the **insulation** between the following connections **after disconnecting the sensors**:

- tracks **3** and **5** of the **pedal gang 1 sensor** connector.
- tracks **1** and **2** of the **turbocharging pressure sensor** connector.

If these checks do not produce the correct results, replace the faulty sensor(s).

If the fault is still present, contact the Techline.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.



<b>DF012 PRESENT OR STORED</b>	<b>SENSOR SUPPLY VOLTAGE No. 2</b> 1.DEF: sensor reference voltage too weak 2.DEF: sensor reference voltage too high
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present following a road test or after attempting to start the engine several times.
	<b>Special notes:</b> If the fault is present: <ul style="list-style-type: none"><li>– the EGR functions and passenger compartment heating resistance functions are inhibited,</li><li>– the engine speed is limited,</li><li>– the <b>level 1</b> warning light is lit.</li><li>– The OBD warning light will come on after three consecutive cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds).</li></ul> Use bornier <b>Ele. 1681</b> for all operations on the injection computer connectors.

**WARNING**

This fault may appear if the wiring harness has been damaged. Follow the procedure described in the **Wiring Check** in the Introduction. This check enables the condition and the conformity of the engine wiring harness to be checked.

The sensors connected to **supply no.2** are:

- **EGR valve position sensor,**
- **track 2 of the accelerator pedal potentiometer sensor,**
- **refrigerant pressure sensor.**

To locate a faulty sensor and/or connection, disconnect one of these sensors then check whether the fault becomes stored.

If the fault is still present, repeat the operation with the other sensors.

(wait a few seconds between each disconnection to allow the computer to perform the measurement).

If the fault is stored after a disconnection, replace the faulty sensor or repair its connection.

Clear the faults created by the multiple disconnections.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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**DF012**  
**CONTINUED**

If the fault is still present when the three sensors have been disconnected:

1. Check the **insulation from earth** of the following connections:

- |   |       |  |
|---|-------|--|
| Injection computer brown 48-track connector B, <b>track F4</b>  | ————→ | <b>Track 2</b> of the EGR valve connector                    |
| Injection computer brown 48-track connector B, <b>track J2</b>  | ————→ | <b>Track 6</b> of the EGR valve connector                    |
| Injection computer black 32-track connector A, <b>track F2</b>  | ————→ | <b>Track 2</b> of the accelerator pedal potentiometer gang 2 |
| Injection computer black 32-track connector A <b>track F3</b>   | ————→ | <b>Track 1</b> of the accelerator pedal potentiometer gang 2 |
| Injection computer, brown 48-track connector B, <b>track F3</b> | ————→ | <b>Track B</b> of the refrigerant pressure sensor            |
| Injection computer, brown connector B <b>track F1</b>           | ————→ | <b>Track C</b> of the refrigerant pressure sensor            |

Repair if necessary.

2. Check the **insulation from + 12 V** of the following connections:

- |   |       |  |
|---|-------|--|
| Injection computer brown connector B <b>track F4</b>  | ————→ | <b>Track 2</b> of the EGR valve connector                    |
| Injection computer brown connector B, <b>track J2</b> | ————→ | <b>Track 6</b> of the EGR valve connector                    |
| Injection computer grey connector C <b>track C2</b>   | ————→ | <b>Track 4</b> of the EGR valve connector                    |
| Injection computer black connector A <b>track F2</b>  | ————→ | <b>Track 2</b> of the accelerator pedal potentiometer gang 2 |
| Injection computer black connector A <b>track F3</b>  | ————→ | <b>Track 1</b> of the accelerator pedal potentiometer gang 2 |
| Injection computer black connector A <b>track F4</b>  | ————→ | <b>Track 6</b> of the accelerator pedal potentiometer gang 2 |
| Injection computer brown connector B <b>track F3</b>  | ————→ | <b>Track B</b> of the refrigerant pressure sensor            |
| Injection computer, brown connector B <b>track F1</b> | ————→ | <b>Track C</b> of the refrigerant pressure sensor            |
| Injection computer grey connector C <b>track C3</b>   | ————→ | <b>Track A</b> of the refrigerant pressure sensor            |

Repair if necessary.

3. Check the **insulation** between the following connections **after disconnecting the sensors**:

- tracks **2** and **6** of **pedal sensor gang 2** connector.
- tracks **2** and **4** of the **EGR valve position sensor** connector.
- tracks **A** and **B** of the **refrigerant pressure sensor**.

If these checks do not produce the correct results, replace the faulty sensor(s).

If the fault is still present, contact the Techline.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

<b>DF013 PRESENT OR STORED</b>	<b>SENSOR SUPPLY VOLTAGE No. 3</b> 1.DEF: sensor reference voltage too weak 2.DEF: sensor reference voltage too high
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present following a road test or after attempting to start the engine several times.
	<b>Special notes:</b> If the fault is present: <ul style="list-style-type: none"><li>– the EGR function is inhibited,</li><li>– the engine speed is limited,</li><li>– the <b>level 2</b> warning light is lit.</li></ul> Use bornier <b>Ele. 1681</b> for all operations on the injection computer connectors.

**WARNING**

This fault may appear if the wiring harness has been damaged.

Follow the procedure described in the Wiring Check in the Introduction.

This check enables the condition and the conformity of the engine wiring harness to be checked.

The sensors connected to **supply no. 3** are:

– **Rail Pressure Sensor**

– **Air flow sensor..**

To locate a faulty sensor and/or connection, disconnect one of these sensors then check whether the fault becomes stored.

If the fault is still present, start the operation again with the other sensor.

(wait a few seconds between each disconnection to allow the computer to perform the measurement).

If the fault is stored after a disconnection, replace the faulty sensor or repair its connection.

Clear the faults created by the multiple disconnections.

If the fault is still present when both these sensors have been disconnected:

1. Check the **insulation from earth** of the following connections:

Injection computer brown 48-track connector B, <b>track G3</b>	—————>	<b>Track 2</b> of the rail pressure sensor
Injection computer brown 48-track connector B, <b>track A4</b>	—————>	<b>Track 3</b> of the rail pressure sensor
Injection computer brown 48-track connector B, <b>track G1</b>	—————>	<b>Track 5</b> of the air flowmeter
Injection computer brown 48-track connector B, <b>track B4</b>	—————>	<b>Track 3</b> of the air flowmeter
Injection computer brown 48-track connector B, <b>track E2</b>	—————>	<b>Track 2</b> of the air flowmeter

Repair if necessary.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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**DF013**  
**CONTINUED**

2. Check the **insulation from + 12 V** of the following connections:

Injection computer brown 48-track connector B, <b>track G3</b>	————▶	<b>Track 2</b> of the rail pressure sensor
Injection computer brown 48-track connector B, <b>track A4</b>	————▶	<b>Track 3</b> of the rail pressure sensor
Injection computer brown 48-track connector B, <b>track C4</b>	————▶	<b>Track 1</b> rail pressure sensor
Injection computer brown 48-track connector B, <b>track G1</b>	————▶	<b>Track 5</b> of the air flowmeter
Injection computer brown 48-track connector B, <b>track B4</b>	————▶	<b>Track 3</b> of the air flowmeter
Injection computer brown 48-track connector B, <b>track E2</b>	————▶	<b>Track 2</b> of the air flowmeter
Injection computer brown 48-track connector B, <b>track L4</b>	————▶	<b>Track 6</b> of the air flowmeter

Repair if necessary.

3. Check the **insulation** between the following connections **after disconnecting the sensors**:

- tracks **1** and **3** of the **rail pressure sensor**,
- tracks **2** and **3** of the **air flow sensor connector**.

If these checks do not produce the correct results, replace the faulty sensor(s).

If the fault is still present, contact the Techline.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

<b>DF015 PRESENT OR STORED</b>	<u>MAIN RELAY control CIRCUIT</u> 1.DEF: relay cut out too soon 2.DEF: relay cut out too late
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> Only deal with this fault if it is stored.
	<b>Special notes:</b> The main relay is integrated into the UPC. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

Check the Protection and Switching Unit connections.  
Check the injection computer connections.  
Repair if necessary.  
Check the condition of the battery terminals making sure they are correctly tightened.  
Repair if necessary.

Check for **continuity and the absence of interference resistance** on the following connection:  
Injection computer connector B,  
brown 48-track **track E1** —————> **Track D2** UPC brown connector D.  
Repair if necessary.

If the fault is still present and remains present, refer to the Protection and Switching Unit Technical Note.

**WARNING**

**If the UPC no longer detects the injection computer frames then GMV 1 will be started until the battery has been completely discharged.**

**In the event that engine cooling fan 1 is not working, GMV 2 will be supplied.**



**IMPORTANT!**

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF017 PRESENT OR STORED</b>	<b><u>PRE-POSTHEATING UNIT CONTROL CIRCUIT</u></b> CC.1 : short circuit to + 12 V CC.0 : open circuit or short circuit to earth CO : open circuit 1.DEF: internal electrical fault
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after actuator command <b>AC001 Preheating unit</b> , or after an attempted engine start.
	<b>Special notes:</b> If the fault is present, it is difficult or even impossible to start the vehicle when cold. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<b>CC.1</b>	<b>NOTES</b>	None.
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Check the pre-postheating unit connections and the heating plug supply cables. Check the injection computer connections. Repair if necessary.
Check the condition of the <b>F2 (70A)</b> supply fuse on the power supply fuse board.  Check <b>the continuity and insulation against + 12 V</b> of the following connections: Injection computer grey 32-track connector C, <b>track E2</b> —————> <b>Track 8</b> preheating unit Injection computer grey 32-track connector C, <b>track A4</b> —————> <b>Track 3</b> preheating unit Repair if necessary.
If the fault is still present, replace the pre-postheating unit.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF017</b>  <b>CONTINUED</b>	
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<b>CC.0</b> <b>CO</b>	<b>NOTES</b>	<b>Special notes:</b> If the pre-postheating unit has a short circuit to earth there is a risk that the heater plugs will be operated continuously. The heater plugs and the engine may be damaged.
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Check the pre-postheating unit connections and the heating plug supply cables.  
Check the injection computer connections.  
Repair if necessary.

Check the condition of the **F2 (70A)** supply fuse on the power supply fuse board.  
Check **the continuity and insulation against earth** of the following connection:  
     Injection computer grey 32-track connector C, **track A4** —————> **Track 3** preheating unit  
     Injection computer grey 32-track connector C, **track E2** —————> **Track 8** preheating unit  
 Repair if necessary.

If the fault is still present, replace the pre-postheating unit.

<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the pre-postheating unit connections and the heating plug supply cables.  
Check the injection computer connections.  
Repair if necessary.

Check the condition of the **F2 (70A)** supply fuse on the power supply fuse board.  
Check for **continuity and the absence of interference resistance** on the following connection:  
     Injection computer grey 32-track connector C, **track E2** —————> **Track 8** preheating unit  
 Repair if necessary.

If the fault is still present, **check that the computer output is working correctly**.  
with the pre-postheating unit connected:  
 – connect the negative terminal of the voltmeter to **track 8** of the preheating unit,  
 – connect the positive terminal of the voltmeter to the **+ 12 V** battery,  
 – run command **AC001 Pre-postheating unit**.  
 If the voltmeter does not indicate the battery voltage while the command is running (ten one-second ON/OFF cycles), contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF025 PRESENT OR STORED</b>	<u>PRE-POSTHEATING UNIT DIAGNOSTIC LINE</u>
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after several attempts to start the engine, or following actuator command <b>AC001 Preheating unit</b> .
	<b>Special notes:</b> It is difficult or even impossible to start the engine when cold. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

Check the pre-postheating unit connections. Check the connections on <b>all the heater plugs</b> . Repair if necessary.
Check <b>the resistance</b> of the heater plugs: Replace any plug whose resistance is not <b>below 2 Ω at + 20°C</b> .
Check <b>the continuity and absence of interference resistance</b> of the following connections: <ul style="list-style-type: none"><li>– Preheating unit <b>track 1</b> —————&gt; Heater plug of <b>cylinder 3</b></li><li>– Preheating unit <b>track 2</b> —————&gt; Heater plug of <b>cylinder 4</b></li><li>– Preheating unit <b>track 6</b> —————&gt; Heater plug of <b>cylinder 1</b></li><li>– Preheating unit <b>track 7</b> —————&gt; Heater plug of <b>cylinder 2</b></li></ul>
Check for the <b>presence of + 12 V battery</b> on <b>track 3</b> of the preheating relay (via maxi fuse). Check the engine earthing.
If the fault is still present, Check the injection computer connections. Check for <b>continuity and the absence of interference resistance</b> on the following connection: Injection computer, grey 32-track connector C, <b>track A4</b> —————> <b>Track 9</b> preheating unit connector If the fault is still present, replace the pre-postheating unit.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF037 PRESENT OR STORED</b>	<u>ENGINE IMMOBILISER</u>
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after a road test or an attempt to start the engine.
	<b>Special notes:</b> It is impossible to start the vehicle. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

Check the UCH connections.  
Check the injection computer connections.  
Repair if necessary.

Test the multiplex network and carry out a complete fault finding procedure on the UCH.  
Refer to the UCH Technical Note if a fault is declared present.  
If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF038 PRESENT OR STORED</b>	<b>COMPUTER</b> CO : open circuit 1.DEF : permanent high signal 2.DEF : permanent low signal 3.DEF : configuration absent or incorrect 4.DEF : analogue/digital converter fault 5.DEF : EEPROM fault 6.DEF : activation in Watchdog 7.DEF : signal outside upper limit 8.DEF : signal outside lower limit 9.DEF : disrupted communication 10.DEF : injector control condenser fault 11.DEF : injector control 12.DEF : Initialisation fault 13.DEF : deceleration fault when decelerating
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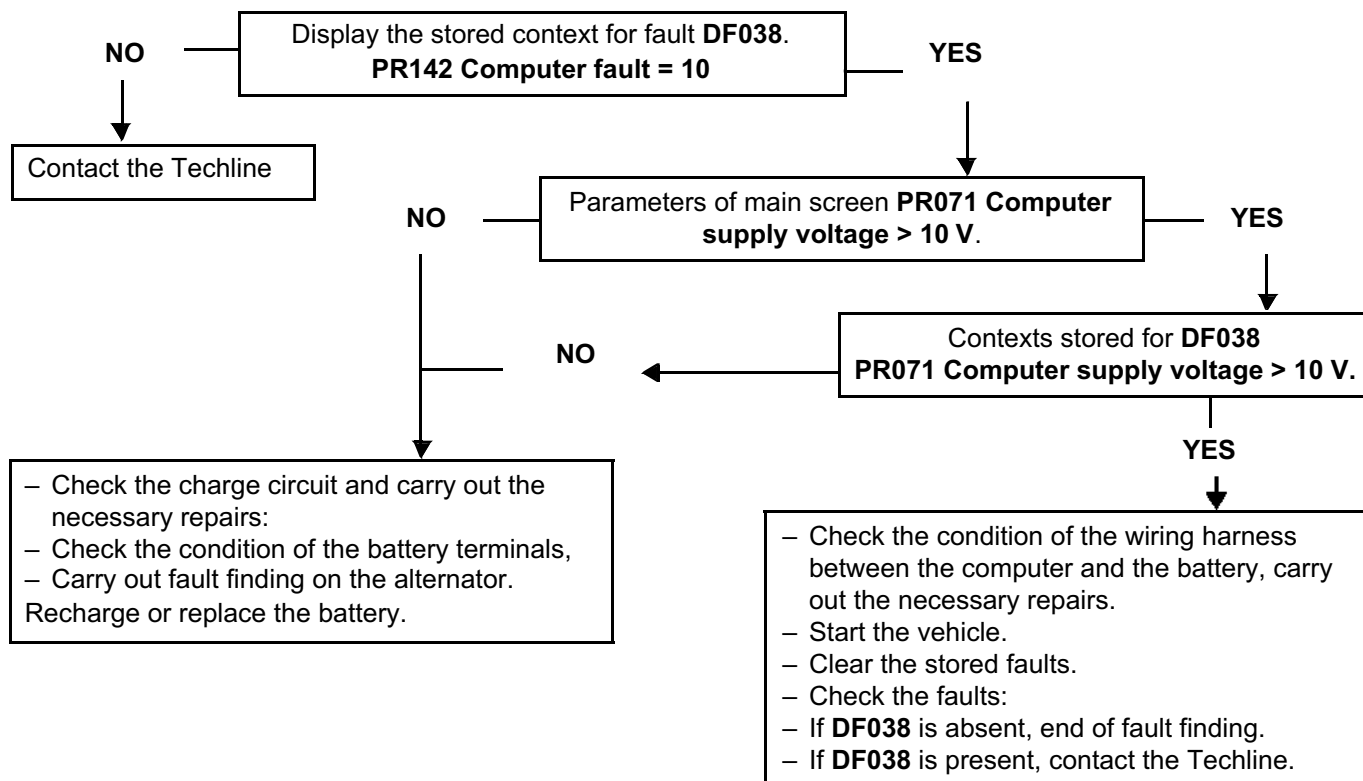
<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after several starting attempts, or with the engine running.
	<b>Special notes:</b> The <b>level 1</b> warning light is lit for a fault that does not require you to stop the vehicle. The <b>level 2</b> warning light is lit for a fault which requires the engine to be switched off. If 5.DEF is still present, the OBD warning light will come on after three consecutive driving cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds). Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<b>CO 1.DEF to 9.DEF 11.DEF to 13.DEF</b>	Check the injection computer connections and the <b>continuity</b> of all the supplies. Repair if necessary. Clear the faults. Switch off the ignition, <b>wait 30 seconds</b> and switch the ignition on again. If the fault is still present, contact the Techline and fill out the <b>fault finding log</b> included in this Technical Note.
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<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF038</b>  <b>CONTINUED</b>	
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<b>10.DEF</b>	<b>NOTES</b>	If there are a number of faults, deal with the other system faults first.
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<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF039 PRESENT OR STORED</b>	<b><u>INLET AIR TEMPERATURE SENSOR CIRCUIT</u></b> CO.1 : open circuit or short circuit to + 12 V CC.0 : short circuit to earth 1.DEF: below minimum threshold
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after an attempted start, or with the engine running following a road test.
	<b>Special notes:</b> If the fault is present: – The air temperature value enters defect mode, i.e. <b>PR059 Intake air temperature = 20°C</b> . – The EGR function is inhibited. Use bournier <b>Ele. 1681</b> for all operations on the injection computer connectors.

<b>CO.1</b>	<b>NOTES</b>	None.
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Check the air flowmeter connections. Check the injection computer connections. Repair if necessary.
Check <b>the continuity</b> of the following connection: Air flowmeter black 6-track connector <b>track 4</b> —————> <b>Track 2</b> UPC black connector Repair if necessary.
Check <b>the continuity and insulation against + 12 V</b> of the following connections: Injection computer brown 48-track connector B, <b>track G2</b> —————> <b>Track 1</b> air flowmeter connector Injection computer brown 48-track connector B, <b>track E2</b> —————> <b>Track 2</b> air flowmeter connector Repair if necessary.
Measure the air temperature sensor resistance between <b>tracks 1</b> and <b>2</b> of the air flow sensor. Replace the air flowmeter if the resistance is not: <div style="text-align: right;"> <b>3714 Ω ± 161 at + 10°C</b>  <b>2488 Ω ± 90 at 20°C</b>  <b>1671 Ω ± 59 at 30°C</b> </div>

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF039</b>  <b>CONTINUED 1</b>	
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<b>CC.0</b>	<b>NOTES</b>	None.
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Check the air flowmeter connections.  
Check the injection computer connections.  
Repair if necessary.

Check **the continuity and insulation** against earth of the following connections:

Injection computer brown 48-track connector B, **track G2** —————> **Track 1** air flowmeter

Air flowmeter black 6-track connector **track 4** —————> **Track 2** UPC black connector

Injection computer brown 48-track connector B, **track B4** —————> **Track 3** air flowmeter

Repair if necessary.

Measure the resistance of the air temperature sensor integrated into the flowmeter across **tracks 1 and 2**.  
Replace the air flowmeter if the resistance is not:

**3714  $\Omega$   $\pm$  161 at + 10°C**

**2488  $\Omega$   $\pm$  90 at 20°C**

**1671  $\Omega$   $\pm$  59 at 30°C**

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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DF039  CONTINUED 2	
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1.DEF	NOTES	None.
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Check the air flowmeter connections.  
Check the injection computer connections.  
Repair if necessary.

Check **the continuity and absence of interference resistance** of the following connections:  
Injection computer brown 48-track connector B, **track E2** → **Track 2** air flowmeter  
Injection computer brown 48-track connector B, **track G2** → **Track 1** air flowmeter

Repair if necessary.

Measure the resistance of the air temperature sensor integrated into the flow sensor between **tracks 1 and 2**.  
Replace the air flowmeter if the resistance is not:  
**3714 Ω ± 161 at + 10°C**  
**2488 Ω ± 90 at 20°C**  
**1671 Ω ± 59 at 30°C**

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF040 PRESENT OR STORED</b>	<b><u>CYLINDER 1 INJECTOR CIRCUIT</u></b> CC.1 : short circuit to + 12 V CO : open circuit CC : short circuit 1.DEF: Injector control
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the engine has been started.
	<b>Special notes:</b> If CC.1, CC, or 1.DEF is present, the <b>level 2</b> warning light is lit. If CO is present the <b>level 1</b> warning light is lit. If CO is still present, the <b>OBD</b> warning light will come on after three consecutive driving cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds.). If the fault is present, the injection on cylinder 1 is disabled. Use bornier Ele. 1681 for all operations on the injection computer connectors.

### WARNING

This fault may appear if the wiring harness has been damaged.

Follow the procedure described in the **Wiring Check in the Introduction**.

This test enables the condition and the conformity of the engine wiring harness to be checked.

<b>CC.1 CO CC 1.DEF</b>	<b>NOTES</b>	<b>None.</b>
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Check the connections on injector no 1.  
Check the injection computer connections.  
Repair if necessary.

### Disconnect injector no. 1.

Measure the **resistance** of injector no. 1 between **tracks 1** and **2**.

Replace the injector if there is a **short circuit** ( $R = 0 \Omega$ ) or an **open circuit** (infinite resistance measurement).

Otherwise, **reconnect injector no. 1**.

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

Injection computer grey 32-track connector C, **track G3** —————▶ **Track 2** injector no. 1

Injection computer grey 32-track connector C, **track H1** —————▶ **Track 1** injector no. 1

If the fault is still present: run **test 1 INJECTOR TEST**.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF041 PRESENT OR STORED</b>	<u>CYLINDER 2 INJECTOR CIRCUIT</u> CC.1 : short circuit to + 12 V CO : open circuit CC : short circuit 1.DEF: Injector control
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the engine has been started.
	<b>Special notes:</b> If CC.1, CC, or 1.DEF is present, the <b>level 2</b> warning light is lit. If CO is present the <b>level 1</b> warning light is lit. If CO is still present, the <b>OBD</b> warning light will come on after three consecutive driving cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds.). If the fault is present, the injection on cylinder 1 is disabled. Use bornier Ele. 1681 for all operations on the injection computer connectors.

### WARNING

This fault may appear if the wiring harness has been damaged.

Follow the procedure described in the **Wiring Check in the Introduction**.

This test enables the condition and the conformity of the engine wiring harness to be checked.

<b>CC.1 CO CC 1.DEF</b>	<b>NOTES</b>	<b>None.</b>
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Check the connections on injector no. 2.  
Check the injection computer connections.  
Repair if necessary.

### Disconnect injector no. 2.

Measure the **resistance** of injector no. 2 across **tracks 1 and 2**.

Replace the injector if there is a **short circuit ( $R = 0 \Omega$ )** or an **open circuit (infinite resistance measurement)**.

Otherwise, **reconnect injector no. 2**.

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

Injection computer grey 32-track connector C, **track G4** —————> **Track 2** injector no. 2

Injection computer grey 32-track connector C, **track G2** —————> **Track 1** injector no. 2

If the fault is still present: run **test 1 INJECTOR TEST**.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF042 PRESENT OR STORED</b>	<u>CYLINDER 3 INJECTOR CIRCUIT</u> CC.1 : short circuit to + 12 V CO : open circuit CC : short circuit 1.DEF: Injector control
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the engine has been started.
	<b>Special notes:</b> If CC.1, CC, or 1.DEF is present, the <b>level 2</b> warning light is lit. If CO is present the <b>level 1</b> warning light is lit. If CO is still present, the <b>OBD</b> warning light will come on after three consecutive driving cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds.). If the fault is present, the injection on cylinder 1 is disabled. Use bornier Ele. 1681 for all operations on the injection computer connectors.

### WARNING

This fault may appear if the wiring harness has been damaged.

Follow the procedure described in the **Wiring Check in the Introduction**.

This test enables the condition and the conformity of the engine wiring harness to be checked.

<b>CC.1 CO CC 1.DEF</b>	<b>NOTES</b>	<b>None.</b>
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Check the connections on injector no. 3.  
Check the injection computer connections.  
Repair if necessary.

### Disconnect injector no. 3.

Measure the **resistance** of injector no. 3 between **tracks 1** and **2**.

Replace the injector if there is a **short circuit** ( $R = 0 \Omega$ ) or an **open circuit** (infinite resistance measurement).

Otherwise, **reconnect injector no. 3**.

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

Injection computer grey 32-track connector C, **track H4** —————> **Track 2** injector no. 3

Injection computer grey 32-track connector C, **track H2** —————> **Track 1** injector no. 3

If the fault is still present: run **test 1 INJECTOR TEST**.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF043 PRESENT OR STORED</b>	<u><b>CYLINDER 4 INJECTOR CIRCUIT</b></u> CC.1 : short circuit to + 12 V CO : open circuit CC : short circuit 1.DEF: Injector control
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the engine has been started.
	<b>Special notes:</b> If CC.1, CC, or 1.DEF is present, the <b>level 2</b> warning light is lit. If CO is present the <b>level 1</b> warning light is lit. If CO is still present, the <b>OBD</b> warning light will come on after three consecutive driving cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds.). If the fault is present, the injection on cylinder 1 is disabled. Use bornier Elé. 1681 for all operations on the injection computer connectors.

### WARNING

This fault may appear if the wiring harness has been damaged.

Follow the procedure described in the **Wiring Check in the Introduction**.

This test enables the condition and the conformity of the engine wiring harness to be checked.

<b>CC.1 CO CC 1.DEF</b>	<b>NOTES</b>	<b>None.</b>
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Check the connections on injector no 4.  
Check the injection computer connections.  
Repair if necessary.

### Disconnect injector no. 4.

Measure the **resistance** of injector no. 4 between **tracks 1** and **2**.

Replace the injector if there is a **short circuit** ( $R = 0 \Omega$ ) or an **open circuit** (infinite resistance measurement).

Otherwise, **reconnect injector no. 4**.

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

Injection computer grey 32-track connector C, **track H3** —————> **Track 2** injector no. 4

Injection computer grey 32-track connector C, **track G1** —————> **Track 1** injector no. 4

If the fault is still present: run **test 1 INJECTOR TEST**.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF046 PRESENT OR STORED</b>	<b>BATTERY VOLTAGE</b> 1.DEF: excess voltage 2.DEF: undervoltage
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present following a road test or after attempting to start the engine.
	<b>Special notes:</b> Computer operating voltage: <b>9 V &lt; operating voltage &lt; 16 V</b> . If the battery voltage is too low this may cause the <b>level 1</b> fault warning light to come on. It is then not possible to start the engine. Use bornier <b>Ele. 1681</b> for all operations on the injection computer connectors.

<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the charge circuits: Carry out the necessary repairs.	– battery status, – alternator status (complete fault finding procedure).
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<b>2.DEF</b>	<b>NOTES</b>	(Use the <b>Wiring Diagrams</b> Technical Note for the vehicle).
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**With the ignition off**, measure the voltage across the battery terminals.

If the voltage is less than **11.5 V**, test the battery.

If the battery is faulty, replace the battery then test the charge circuit.

**With the ignition on and the with the starter motor turning**, measure the voltage between the battery terminals

If the voltage drops below **9.6 V**, check the tightness and condition of the battery terminals.

Repair if necessary.

If the terminals are in good condition, test the battery.

If they are faulty, replace the battery.

If the starter is cranking the engine correctly, but the fault is still present,

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

<b>+ 12 V timed by UPC</b>	————→	<b>Track M2</b> connector <b>B</b> of the engine management computer
<b>+ 12 V timed by UPC</b>	————→	<b>Track G1</b> connector <b>A</b> of the engine management computer
<b>Battery earth</b>	————→	<b>Tracks G4, H4, H1</b> of connector <b>A</b> of the injection computer

Repair if necessary.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF047 PRESENT OR STORED</b>	<u>COMPUTER SUPPLY VOLTAGE</u>
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after several starting attempts, or with the engine running.
	<b>Special notes:</b> Computer operating voltage: <b>9 V &lt; operating voltage &lt; 16 V</b> . If the battery voltage is too low this may cause the <b>level 1</b> fault warning light to come on. It is then not possible to start the engine. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<p>Check for <b>continuity and the absence of interference resistance</b> on the following connection: Injection computer <b>connector A</b>, black 32-track <b>track D1</b> —————▶ <b>Track 1 black</b> connector of the UPC Repair if necessary.</p> <p>Check the condition of the <b>FD5</b> fuse on the UPC (poor contact, or oxidation on the relay mounting clips). Repair if necessary.</p> <p><b>If the fault does not recur</b>, start the engine and <b>wait 1 min</b>. Carry out a road test and check the system faults. If there are no faults, fault finding is complete.</p> <p><b>If the fault is still present</b>, contact the Techline.</p>
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<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF049 PRESENT OR STORED</b>	<u>REFRIGERANT SENSOR CIRCUIT</u> CC.1 : short circuit to + 12 V CO.0 : open circuit or short circuit to earth
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<b>NOTES</b>	<b>Priorities when dealing with a number of faults:</b> Deal with fault <b>DF012 Sensor feed voltage no. 2</b> first if it is present or stored.
	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present following a road test, or if the air conditioning is switched on. <b>Special notes:</b> If the fault is present, air conditioning is not authorised. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<b>CC.1</b>	<b>NOTES</b>	None.
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Check the refrigerant pressure sensor connectors.  
 Check the injection computer connections.  
 Repair if necessary.

Connect an air conditioning filling station (equipped with a high pressure gauge) to the vehicle.  
 Display parameter **PR037 Refrigerant pressure** and compare the value displayed by the filling station.

**If the values match**, carry out a fault finding procedure as described in the fault finding note for that vehicle.

**If the values do not match**, check the continuity and insulation against + 12 V of the following connections:

Injection computer, brown 48-track connector <b>B</b> , track <b>F1</b>	→	Track <b>C</b> refrigerant sensor connector
Injection computer, brown 48-track connector <b>B</b> , track <b>F3</b>	→	Track <b>B</b> refrigerant sensor connector
Injection computer grey 32-track connector <b>C</b> , track <b>C3</b>	→	Track <b>A</b> refrigerant sensor connector

Repair if necessary.

If the fault is still present, replace the refrigerant pressure sensor.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF049</b>  <b>CONTINUED</b>	
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<b>CO.0</b>	<b>NOTES</b>	None.
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Check the refrigerant pressure sensor connectors.  
Check the injection computer connections.  
Repair if necessary.

Connect an air conditioning filling station (equipped with a high pressure gauge) to the vehicle.  
Display parameter **PR037 Refrigerant pressure** and compare the value displayed by the filling station.

**If the values match**, carry out a fault finding procedure as described in the fault finding note for that vehicle.

**If the values do not match**, check **the continuity and insulation against earth** of the following connections:

Injection computer, brown 48-track connector <b>B</b> , track <b>F1</b>	————→	<b>Track C</b> refrigerant sensor connector
Injection computer, brown 48-track connector <b>B</b> , track <b>F3</b>	————→	<b>Track B</b> refrigerant sensor connector
Injection computer grey 48-track connector <b>C</b> , track <b>C3</b>	————→	<b>Track A</b> refrigerant sensor connector

Repair if necessary.

If the fault is still present, replace the refrigerant pressure sensor.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF050 PRESENT OR STORED</b>	<b><u>BRAKE SWITCH CIRCUIT</u></b> 1.DEF: signal incoherence 2.DEF: no signal
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the brake pedal is depressed, or during a road test.
	<b>Special notes:</b> If the fault is present, cruise control is deactivated. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

### WARNING

This fault may appear if the wiring harness has been damaged.  
 Follow the procedure described in the **Wiring Check in the Introduction**.  
 This check enables the condition and the conformity of the engine wiring harness to be checked.

<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the brake pedal switch connections.  
 Check the condition and adjustment of the brake pedal switch.  
 Repair if necessary.

Check the **continuity and the absence of interference resistance** on the following connection:  
 Injection computer black 32-track connector **A, track E4** —————> **Track 3** of the brake switch  
 Repair if necessary.

Check the conformity of the switch by consulting the interpretation of statuses **ET704 Brake switch no. 1 signal** and **ET705 Brake switch no. 2 signal**.

If the fault is still present, carry out fault finding on the ABS computer.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF050</b>  <b>CONTINUED</b>	
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<b>2.DEF</b>	<b>NOTES</b>	None.
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Check the brake pedal switch connections.  
Check the condition and adjustment of the brake pedal switch.  
Repair if necessary.

Check **the conformity of the** brake switch:

**Brake pedal released:** continuity between **tracks 3** and **4**  
infinite resistance across **tracks 1** and **2**  
**Brake pedal depressed:** infinite resistance between **tracks 3** and **4**  
continuity between **tracks 1** and **2**.

Replace the switch if necessary.

Check the condition of the **1H 15A** fuse on the passenger compartment fuse and relay board.  
Replace the fuse if necessary.

Check the following switch **supplies**:

+ **12 V** after ignition —————> **Track 2** of the brake pedal switch connector  
+ **12 V** battery —————> **Track 4** of the brake pedal switch connector (via the UCH)

Replace the switch if necessary.

Check **the continuity and insulation** of the following connection:

Injection computer black 32-track connector **A**, **track E4** —————> **Track 3** brake pedal switch connector

Repair if necessary.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF051 PRESENT OR STORED</b>	<b><u>CRUISE CONTROL/SPEED LIMITER FUNCTION</u></b> 1.DEF: signal incoherence 2.DEF: inconsistent vehicle speed 3.DEF: controls at the steering wheel
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the engine is started or following a road test.
	<b>Special notes:</b> The cruise control/speed limiter function is inhibited. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

**WARNING**

**This fault may appear if the wiring harness has been damaged.  
Follow the procedure described in the Wiring Check in the Introduction.  
This check enables the condition and the conformity of the engine wiring harness to be checked.**

If fault **DF051** is present, refer to the **Cruise control/Speed limiter** section of the conformity check and refer to interpretation of statuses **ET042 Cruise control/Speed limiter**, **ET415 Cruise control/Speed limiter deactivation** and **ET703 Cruise control/Speed limiter buttons**.

Check that by pressing the buttons the statuses change and that, with the ignition switched on, all the values are correct.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF053 PRESENT OR STORED</b>	<p><b><u>RAIL PRESSURE REGULATION FUNCTION</u></b></p> <p>CC.1 : Short circuit to + 12 V          CC.0 : Short circuit to earth          CO : Open circuit</p> <p>1.DEF: Internal electrical fault          2.DEF: Measured pressure too low          3.DEF: Measured pressure too high          4.DEF: Insufficient pressure          5.DEF: Pressure &lt; minimum          6.DEF: Pressure &gt; maximum          7.DEF: Extensive pump command          8.DEF: significant pump control at idle speed</p>
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<b>NOTES</b>	<p><b>Conditions for applying the fault finding procedure to a stored fault:</b>          The fault is declared present following a road test or after attempting to start the engine.</p> <p><b>Special notes:</b>          If the fault is present:          – It is not possible to start the engine.          – the level 2 warning light is lit.          Use bormier <b>Ele. 1681</b> for all operations on the injection computer connectors.</p>
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<b>CC.1</b>	<b>NOTES</b>	None.
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<p>Check the rail pressure regulator connectors.          Check the injection computer connections.          Check the low pressure circuit.          Check the conformity of the fuel used, apply <b>test 5 Diesel fuel conformity check</b>.          Check the injector return flow, run <b>test 1 Injector test</b>.          Check the operation of the overpressure valve if fitted to the vehicle, run test <b>6 Incorrect operation of the overpressure valve</b>.          Repair if necessary.</p>
<p>Measure the <b>resistance</b> of the rail pressure regulator between <b>tracks 1 and 2</b>.          If the resistance is not <b>3 Ω ± 1 at 20° C</b>, replace the injection pump.          Check <b>the continuity and insulation from + 12 V</b> on the following connection:              Injection computer brown 48-track connector <b>B, track M4</b> —————&gt; <b>Track 2</b> of the fuel flow actuator</p>
<p>If the fault is still present, replace the injection pump.</p>

<b>AFTER REPAIR</b>	<p>Deal with any faults.          Carry out a road test followed by another check with the <b>diagnostic tool</b>.</p>
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<b>DF053</b>  <b>CONTINUED 1</b>	
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<b>CC.0</b> <b>CO</b>	<b>NOTES</b>	None.
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Check the fuel flow regulator connections.  
Check the injection computer connections.  
Check the low pressure circuit.  
Check the conformity of the fuel used, apply **test 5 Diesel fuel conformity check**.  
Check the injector return flow, run **test 1 Injector test**.  
Check the operation of the overpressure valve if fitted to the vehicle, run test **6 Incorrect operation of the overpressure valve**.  
Repair if necessary.

Measure the **resistance** of the flow regulator between **tracks 1 and 2**.  
If the resistance is not **3  $\Omega$   $\pm$  1 at 20°C**, replace the injection pump.  
Check the **continuity and insulation** from earth of the following connection:  
Injection computer brown 48-track connector **B, track M4**  $\longrightarrow$  **Track 2** of the fuel flow regulator  
With the ignition on, check for **+ 12 V** after relay feed on **track 1** of the fuel flow regulator.

If the fault is still present, replace the injection pump.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by another check with the <b>diagnostic tool</b> .
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<b>DF053</b>  <b>CONTINUED 2</b>	
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<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the rail pressure regulator connectors.  
Check the injection computer connections.  
Check the low pressure circuit.  
Check the conformity of the fuel used, apply **test 5 Diesel fuel conformity check**.  
Check the injector return flow, run **test 1 Injector test**.  
Check the operation of the overpressure valve if fitted to the vehicle, run test **6 Incorrect operation of the overpressure valve**.  
Repair if necessary.

Measure the **resistance** of the flow regulator between **tracks 1 and 2**.  
If the resistance is not  **$3\ \Omega \pm 1$  at 20°C**, replace the injection pump.  
Check **the continuity and absence of interference resistance** of the following connections:  
Injection computer brown 48-track connector **B, track M4** —————→ **Track 2** of the fuel flow regulator  
UPC, connector **PPM1, track 1** —————→ **Track 1** of the rail pressure regulator  
Repair if necessary.

\*Opening cyclic ratio

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by another check with the <b>diagnostic tool</b> .
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<b>DF053</b>  <b>CONTINUED 3</b>	
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<b>2.DEF to 8.DEF</b>	<b>NOTES</b>	<b>None.</b>
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Check the operation of the overpressure valve if fitted to the vehicle, run test **6 Incorrect operation of the overpressure valve**.

**In the event of rail overpressure:**

Check that the injectors are operating correctly (see **Component test, Test 1, Injector Test**).

Check that the rail pressure sensor is operating correctly using command **AC011 Rail pressure regulator**.

Display parameter **PR038 Rail pressure**, and refer to the conformity check to check the operating values.

If these checks do not indicate any abnormality and if the fault is still present, replace the injection pump.

**in the event of rail underpressure:**

Check that the rail pressure sensor is operating correctly using command **AC011 Rail pressure regulator**.

Display parameter **PR038 Rail pressure**, and refer to the conformity check to check the operating values.

Check the low pressure diesel circuit priming.

Check the conformity of the diesel filter connections.

Check the condition of the filter (clogging and water saturation).

Check that there are no air bubbles between the filter and the high pressure pump.

Check the low and high pressure diesel fuel circuit sealing (visual inspections, odour, etc.): pump housing, pressure relief valve, pipes, rail and injector unions, injector wells, etc.

Check that the injectors are operating correctly (see **Component test, Test 1, Injector Test**).

Carry out the necessary operations.

If the fault is still present, replace the injection pump.

If the fault is still present, replace the injection pump.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by another check with the diagnostic tool.
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<b>DF054 PRESENT OR STORED</b>	<b><u>TURBOCHARGING SOLENOID VALVE CONTROL CIRCUIT</u></b> CC.1 : short circuit to + 12 V CC.0 : short circuit to earth CO : open circuit 1.DEF: internal electrical fault
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after: <ul style="list-style-type: none"> <li>– the engine is started,</li> <li>– a road test,</li> <li>– actuator command <b>AC004 Turbocharging solenoid valve</b>.</li> </ul>
	<b>Special notes:</b> If the fault is present: <ul style="list-style-type: none"> <li>– turbocharging is no longer authorised,</li> <li>– the EGR function is inhibited,</li> <li>– the level 1 warning light is illuminated.</li> </ul> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<b>CC.1</b>	<b>NOTES</b>	None.
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Check the turbocharging solenoid valve connections. Check the injection computer connections. Repair if necessary.
Measure the resistance of the turbocharging solenoid valve between its <b>tracks 1 and 2</b> : If the resistance displayed is not <b>15.4 <math>\Omega</math> <math>\pm</math> 0.7 at 20°C</b> , replace the turbocharging solenoid valve.
Check <b>the continuity and insulation from + 12 V</b> of the following connection: Injection computer grey 32-track connector <b>C, track E1</b> $\longrightarrow$ <b>Track 1</b> turbocharging solenoid valve Repair if necessary.
If the fault is still present, replace the turbocharging solenoid valve.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF054</b>  <b>CONTINUED 1</b>	
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<b>CC.0</b> <b>CO</b>	<b>NOTES</b>	None.
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Check the turbocharging solenoid valve connections.  
Check the injection computer connections.  
Repair if necessary.

Measure the resistance of the turbocharging solenoid valve between its **tracks 1 and 2**:  
If the resistance displayed is not **15.4  $\Omega$   $\pm$  0.7 at 20°C**, replace the turbocharging solenoid valve.

Check **the continuity and insulation** from earth of the following connections:

Injection computer grey 32-track connector **C, track E1**  $\longrightarrow$  **Track 1** turbocharging solenoid valve  
UPC connector PPM1 **track 1**  $\longrightarrow$  **Track 2** turbocharging solenoid valve

Repair if necessary.

If the fault is still present, replace the turbocharging solenoid valve.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF054</b>  <b>CONTINUED 2</b>	
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<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the turbocharging solenoid valve connections.  
Check the injection computer connections.  
Repair if necessary.

Measure the resistance of the turbocharging solenoid valve between its **tracks 1 and 2**:  
If the resistance displayed is not **15.4  $\Omega$   $\pm$  0.7 at 20°C**, replace the turbocharging solenoid valve.

Check **the continuity and absence of interference resistance** of the following connections:  
Injection computer grey 32-track connector **C, track E1**  $\longrightarrow$  **Track 1** turbocharging solenoid valve  
UPC connector PPM1 **track 1**  $\longrightarrow$  **Track 2** Turbocharging solenoid valve

**\*Opening cyclic ratio.**

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF055 PRESENT OR STORED</b>	<b><u>TURBOCHARGING PRESSURE REGULATION CIRCUIT</u></b> 1.DEF: Pressure too low 2.DEF: Pressure too high
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after: – the engine is started, – a road test.
	<b>Special notes:</b> If the fault is present: - engine torque is limited, - turbocharging regulation is inhibited, - the EGR function is inhibited, - the injection <b>level 1</b> warning light is on. Use bornier <b>Elé. 1681</b> for any operations on the injection computer connectors.
	Use Wiring Diagram Technical Note, <b>Mégane II ph2, Scénic II ph2</b> .

<b>1.DEF 2.DEF</b>	<b>NOTES</b>	None.
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Check the condition of the turbocharging pressure sensor connector (see **Wiring Diagram Technical Note, Mégane II ph2, Scénic II ph2, component code 1071**).

Check the condition of the engine management computer connector (see **Wiring Diagram Technical Note, Mégane II ph2, Scénic II ph2, component code 120**).

If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Run **test 2 Air line at the turbocharger**.  
Run **test 3 Turbocharger control solenoid valve check**.  
Run **test 4 Turbocharger**.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the <b>diagnostic tool</b> .
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<b>DF056 PRESENT OR STORED</b>	<b>AIR FLOWMETER CIRCUIT</b> CC.1 : short circuit to + 12 V CO.0 : open circuit or short circuit to earth 1.DEF: offset at maximum threshold 2.DEF : offset at minimum threshold 3.DEF: parameter at max limit 4.DEF: parameter at minimum limit
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the engine is started or following a road test.
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<b>CC.1</b>	<b>NOTES</b>	None.
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Check the air flowmeter connections. Check the injection computer connections. Repair if necessary.
Check <b>the continuity and insulation against + 12 V</b> of the following connections: Injection computer brown 48-track connector <b>B, track E2</b> —————> <b>Track 2</b> air flow sensor Injection computer brown 48-track connector <b>B, track L4</b> —————> <b>Track 6</b> air flow sensor Injection computer brown 48-track connector <b>B, track G1</b> —————> <b>Track 5</b> air flow sensor Injection computer brown 48-track connector <b>B, track B4</b> —————> <b>Track 3</b> air flow sensor Injection computer brown 48-track connector <b>B, track G2</b> —————> <b>Track 1</b> air flow sensor
If the fault is still present, replace the air flowmeter.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF056</b>  <b>CONTINUED 1</b>	
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<b>CO.0</b>	<b>NOTES</b>	None.
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Check that there is a + 5 V supply on track 3 of the air flowmeter.  
Repair if necessary.  
Check the air flowmeter connections.  
Check the injection computer connections.  
Repair if necessary.

Check the **continuity and insulation against earth between:**

Injection computer brown 48-track connector <b>B</b> , <b>track E2</b>	————→ <b>Track 2</b> air flow sensor
Injection computer brown 48-track connector <b>B</b> , <b>track B4</b>	————→ <b>Track 3</b> air flow sensor
Injection computer brown 48-track connector <b>B</b> , <b>track G1</b>	————→ <b>Track 5</b> air flow sensor
Injection computer brown 48-track connector <b>B</b> , <b>track G2</b>	————→ <b>Track 1</b> air flow sensor connector
Injection computer brown 48-track connector <b>B</b> , <b>track L4</b>	————→ <b>Track 6</b> air flow sensor connector
<b>PPM1</b> black connector of the UPC <b>track 2</b>	————→ <b>Track 4</b> air flow sensor connector

Repair if necessary.

If the fault is still present and remains present, replace the air flowmeter.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF056</b>  <b>CONTINUED 2</b>	
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<b>1.DEF</b> <b>2.DEF</b>	<b>NOTES</b>	None.
<b>3.DEF</b> <b>4.DEF</b>	<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the ignition has been switched off for <b>15 seconds</b> .

Check the air flowmeter connections.  
Check the injection computer connections.  
Repair if necessary.

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

Injection computer, brown 48-track connector <b>B</b> , track <b>B4</b>	—————→	Track <b>3</b> air flow sensor
Injection computer brown 48-track connector <b>B</b> , track <b>G1</b>	—————→	Track <b>5</b> air flow sensor
Injection computer, brown 48-track connector <b>B</b> , track <b>L4</b>	—————→	Track <b>6</b> air flow sensor
Injection computer, brown 48-track connector <b>B</b> , track <b>E2</b>	—————→	Track <b>2</b> air flow sensor
Injection computer, brown 48-track connector <b>B</b> , track <b>G2</b>	—————→	Track <b>1</b> air flow connector
<b>PPM1</b> black connector of the UPC track <b>2</b>	—————→	Track <b>4</b> air flow sensor connector

Repair if necessary.

**Check the entire air inlet circuit:**

- air filter unit inlet not blocked and filter not clogged,
- **no** foreign bodies on the air flow sensor grille (**visual inspection only**).

Otherwise, replace the air flow sensor.

- oil vapour recirculation circuit connected correctly,
- **no leaks** or **blockages** in the **low** and **high pressure** air circuits: pipes, presence and tightness of the mounting clips, mounting of the turbocharger pressure sensor, intercooler, etc.
- check that the damper valve is open (valve control **is against the body** of the air vent unit).

With the flowmeter **connected**, the vehicle **ignition on** and **engine stopped**:

- check the voltage between **tracks 2** and **5** of the flowmeter:

If the value is not **0.6 V ± 0.1**, replace the air flow sensor.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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**DF056**

**CONTINUED 3**

● **Check the EGR valve is not jammed open:**

- remove the EGR valve:
- with the valve removed and connected, run command **AC002 EGR valve**.

Check: the movement of the valve,  
that it closes when the command is completed.

If these checks show that the valve is jammed or irrevocably seized, replace the EGR valve.

If no faults are revealed, but the fault is still present, replace the air flowmeter.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

<b>DF057 PRESENT OR STORED</b>	<u><b>WATER IN DIESEL FUEL DETECTOR CIRCUIT</b></u>
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after the engine is started or following a road test.
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**A) Make sure the water in diesel fuel detection sensor is properly connected.**

- If not, clear the fault,
- carry out a road test (speed > 12 mph (20 km/h) at an engine speed of > 1200 rpm) for more than **30 seconds**.
- If the fault does not recur, end the fault finding procedure.
- If the fault does recur, go to **step B**.

**B) If the sensor is properly connected:**

- drain the diesel filter unit (see **MR 364, 13A, Fuel supply**),
- clear the fault,
- carry out a road test (speed > 12 mph (20 km/h) at an engine speed of > 1200 rpm) for more than **30 seconds**.

If the fault does not recur, **end the fault finding procedure**.

**C) If the fault recurs:**

- Check **the continuity and the absence of unwanted resistance** on the connection between:  
Injection computer, grey 32-track connector C, **track A2** —————> **Track 3** of the water detection sensor
- **Check the power supply** to the water detection sensor:  
**UPC PPM1 black connector track 2** —————> **Track 1** the water detection sensor  
**Earth** —————> **Track 2** water detection sensor
- Carry out the necessary repairs.

**If none of these checks reveal any faults:**

- Replace the water detection sensor (see **MR 364, 13A, Fuel supply**).
- Clear the fault.
- Carry out a road test (speed > 12 mph (20 km/h) and engine speed > 1200 rpm) for more than **30 seconds**, to confirm the repair.

**Note:**

*if the level of water in the fuel filter unit is lower than the sensor electrodes, certain driving conditions (on a bend, leaning) may cause the injection warning light to light up erratically.*

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF067 PRESENT OR STORED</b>	<u><b>DAMPER CONTROL CIRCUIT</b></u> CC.1 : short circuit to + 12 V CC.0 : short circuit to earth CO : open circuit 1.DEF: internal electrical fault
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<b>NOTES</b>	<p><b>Conditions for applying the fault finding procedure to stored faults:</b>            The fault is declared present after:</p> <ul style="list-style-type: none"> <li>– the engine is started,</li> <li>– a road test,</li> <li>– an actuator command <b>C014 Damper valve</b>.</li> </ul> <hr/> <p><b>Special notes:</b>            If the fault is present:</p> <ul style="list-style-type: none"> <li>– it is difficult or even impossible to start the vehicle.</li> <li>– the level 2 warning light is lit.</li> </ul> <p>Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.</p>
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<b>CC.1</b>	<b>NOTES</b>	None.
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<p>Check the connections of the damper valve solenoid valve.            Check the injection computer connections.            Repair if necessary.</p>
<p>Measure the resistance between <b>tracks 1 and 2</b> of the damper flap solenoid valve:            The resistance should be between <b>43 and 49 Ω at 25°C</b>.            Replace the solenoid valve if the resistance is outside the tolerance values.</p>
<p>Check <b>the continuity and insulation from + 12 V</b> of the following connection:            Injection computer, brown 48-track connector <b>B, track J4</b> —————▶ <b>Track 1</b> damper valve solenoid valve            Repair if necessary.</p>
<p>If the fault is still present, replace the damper valve solenoid valve.</p>

<b>AFTER REPAIR</b>	<p>Deal with any faults.            Carry out a road test followed by a check with the diagnostic tool.</p>
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<b>DF067</b>  <b>CONTINUED 1</b>	
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<b>CO.0</b> <b>CO</b>	<b>NOTES</b>	None.
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Check the connections of the damper valve solenoid valve.  
Repair if necessary.

Measure the resistance between **tracks 1** and **2** of the damper flap solenoid valve:

- The resistance should be between **43 and 49 Ω at 25°C**,
- Replace the solenoid valve if the resistance is outside the tolerance values.

Check **the continuity and insulation** from earth of the following connections:

Injection computer, brown 48-track connector <b>B</b> , <b>track J4</b>	→	Track 1 damper valve solenoid valve
UPC PPM1 black connector <b>track 2</b>	→	Track 2 damper valve solenoid valve

Repair if necessary.  
If the fault is still present, replace the damper valve solenoid valve.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF067</b>  <b>CONTINUED 2</b>	
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<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the connections of the damper valve solenoid valve.  
Check the injection computer connections.  
Repair if necessary.

Measure the resistance between **tracks 1 and 2** of the damper flap solenoid valve:  
– The resistance should be between **43 and 49  $\Omega$  at 25°C**,  
– Replace the solenoid valve if the resistance is outside the tolerance values.

Check the **continuity, insulation, and the absence of interference resistance** of the following connection:  
Injection computer, brown 48-track connector **B, track J4** —————▶ **Track 1** damper valve solenoid valve  
Repair if necessary.  
If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF069 PRESENT</b>	<u>IMPACT DETECTED SIGNAL</u>
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<b>NOTES</b>	<b>Fault finding procedure application conditions:</b> Only apply the procedure if the fault is present and if the vehicle does not start.
	<b>Special notes:</b> The fault appears when the injection computer receives a frontal impact signal from the Airbag computer via the multiplex network. As soon as the injection computer receives this signal, engine operation is inhibited and the level 2 warning light is lit. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

**If the vehicle has been involved in an accident:**

Carry out any necessary repairs:

- clear the fault,
- switch off the ignition and wait **30 seconds**,
- wait for the engine immobiliser indicator light to flash,
- switch on the ignition,
  - If the fault does not recur, *end the fault finding procedure.*
  - If the fault recurs, carry out fault finding on the **AIRBAG** computer.

**If the vehicle has not been involved in an accident**, carry out fault finding on the Airbag computer.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF070 PRESENT OR STORED</b>	<b><u>CLUTCH SWITCH CIRCUIT</u></b> 1.DEF: no signal 2.DEF: inconsistent signal
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after the clutch pedal is depressed, or during a road test.
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

**WARNING**

**This fault may appear if the wiring harness has been damaged.  
Follow the procedure described in the Wiring Check in the Introduction.  
This check enables the condition and the conformity of the engine wiring harness to be checked.**

Check the conformity and adjustment of the clutch switch (position, connection).

- display status **ET405 Clutch pedal switch**,
  - when the clutch pedal is engaged, status **ET405** should be **INACTIVE**,
  - when the clutch pedal is disengaged, status **ET405** should be **ACTIVE**,
- If these checks are not OK, replace the clutch switch.

If these checks are correct:

Check the connections of the clutch pedal switch.

Check the injection computer connections.

Repair if necessary.

Check for **continuity and the absence of interference resistance** on the following connection:

Injection computer black 32-track connector **A, track C4** —————> **Track 1** Clutch pedal switch

Repair if necessary.

Check for earth on **track 2** of the clutch pedal switch.

Repair if necessary.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF091 PRESENT OR STORED</b>	<u><b>VEHICLE SPEED SIGNAL</b></u> 1.DEF: inconsistent signal 2.DEF: no signal 3.DEF: configuration absent or incorrect 4.DEF: signal outside upper limit 5.DEF: CAN connection fault
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present during a road test.
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

Check the ABS computer connections.  
Check the injection computer connections.  
Repair if necessary.

Carry out a fault finding procedure on the multiplex network and ABS.  
See **88B Multiplexing** and **38C ABS** to deal with any faults.  
If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF097 PRESENT OR STORED</b>	<u><b>CAMSHAFT SENSOR CIRCUIT</b></u> 1.DEF: no signal 2.DEF: inconsistent signal
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present after the engine is started or following a road test.
	<b>Special notes:</b> If the fault declared present before an attempt is made to start the engine it will not be possible to start the engine. Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<b>1.DEF 2.DEF</b>	<b>NOTES</b>  <b>Priority when dealing with a number of faults:</b> In the event of more than one fault: – <b>DF056 Air flow sensor circuit,</b> – <b>DF057 Water in diesel fuel detector circuit,</b> – <b>DF067 Damper control circuit,</b> Check the conformity of the <b>+ 12 V</b> after relay supply line, from <b>track 2</b> of the <b>UPC PPM1 connector</b> . (Use the <b>Wiring Diagrams</b> Technical Note for the vehicle).
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Check the camshaft sensor connectors,  
Check the injection computer connections.  
Check that the camshaft sensor is correctly positioned and mounted.  
Also check the general condition (damaged housing, heating up, etc.).  
Carry out the necessary repairs.

Check **the continuity and absence of interference resistance** of the following connections:  
Injection computer brown 48-track connector **B, track D1** —————> **Track 2** Camshaft sensor  
Injection computer brown 48-track connector **B, track A1** —————> **Track 1** Camshaft sensor  
Repair if necessary.  
Check the camshaft sensor resistance between tracks 2 and 3.  
If the resistance is not **10250  $\Omega$   $\pm$  500 at 20°C**, replace the sensor.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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**DF097**  
**CONTINUED**

**With the ignition on and the camshaft sensor connected:**

Use a voltmeter to measure the voltage between **tracks 1** and **3** of the camshaft sensor:

The voltage displayed should be equal to the battery voltage **0.08 V**)

if the voltage is outside permitted tolerance values, take the measurement again with the **camshaft sensor disconnected**.

If the voltage is still outside the permitted tolerance values with the sensor disconnected, check the **continuity and absence of interference resistance** on the following connection:

Camshaft sensor, **track 3** —————▶ **Track 2, PPM1** UPC black connector

If the voltage displayed is correct with the sensor disconnected, replace the camshaft sensor.

If the fault is still present, contact the Techline.

**AFTER REPAIR**

Deal with any faults.

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

<b>DF098 PRESENT OR STORED</b>	<b><u>FUEL TEMPERATURE SENSOR CIRCUIT</u></b> CC.0 : short circuit to earth CO.1 : open circuit or short circuit to + 12 V
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present following a road test or after attempting to cold start the engine.
	<b>Special notes:</b> – Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors. – The default value given by the diagnostic tool is <b>100°C</b> .

<b>CC.0</b>	<b>NOTES</b>	None.
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Check the fuel temperature sensor connections. Check the injection computer connections. Repair if necessary.
Measure the <b>resistance</b> of the fuel temperature sensor across <b>tracks 1 and 2</b> . Replace the fuel temperature sensor if the resistance is not: <b>2050 Ω ± 100 at 25°C</b> <div style="text-align: right; margin-right: 100px;"> <b>810 Ω ± 47 at 50°C</b>  <b>309 Ω ± 17 at 80°C</b> </div> Check <b>the continuity and insulation</b> from earth of the following connections: <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 45%;">           Injection computer brown 48-track connector <b>B</b>, <b>track H2</b>            Injection computer grey 32-track connector <b>C</b>, <b>track F1</b> </div> <div style="width: 10%; text-align: center;">   </div> <div style="width: 40%;"> <b>Track 1</b> fuel temperature sensor  <b>Track 2</b> fuel temperature sensor         </div> </div>
If the fault is still present, replace the fuel temperature sensor.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF098</b>  <b>CONTINUED</b>	
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<b>CO.1</b>	<b>NOTES</b>	None.
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Check the fuel temperature sensor connections.  
Check the injection computer connections.  
Repair if necessary.

Measure the **resistance** of the fuel temperature sensor across **tracks 1** and **2**.  
Replace the fuel temperature sensor if the resistance is not: **2050  $\Omega$   $\pm$  100 at 25°C**  
**810  $\Omega$   $\pm$  47 at 50°C**  
**309  $\Omega$   $\pm$  17 at 80°C**

Check **the continuity and insulation against + 12 V** of the following connections:

Injection computer brown 48-track connector **B**, **track H2**  $\longrightarrow$  **Track 1** fuel temperature sensor  
Injection computer grey 32-track connector **C**, **track F1**  $\longrightarrow$  **Track 2** fuel temperature sensor

If the fault is still present, replace the fuel temperature sensor.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF114 PRESENT OR STORED</b>	<b><u>EGR SOLENOID VALVE CIRCUIT</u></b> 1.DEF: Insufficient EGR valve flow 2.DEF: Excessive EGR valve flow
<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after: <ul style="list-style-type: none"><li>– the engine is started,</li><li>– a road test,</li><li>– an actuator command <b>AC002 EGR solenoid valve</b>.</li></ul>
	<b>Special notes:</b> If the fault is present: <ul style="list-style-type: none"><li>– the EGR function is inhibited,</li><li>– the vehicle performance is reduced,</li><li>– the level 1 warning light is lit.</li></ul> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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**DF114**  
**CONTINUED**

Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Measure the **resistance** of the EGR solenoid valve between **tracks 1 and 5**.  
If the resistance measured is not **8  $\Omega \pm 0.5$  at 20°C**, replace the exhaust gas recirculation valve.

Check **the continuity and absence of interference resistance** of the following connections:  
UPC **PPM1 connector, track 1** —————> **Track 1** EGR solenoid valve  
Injection computer, brown 48-track connector **B, track L2** —————> **Track 5** EGR solenoid valve

Check that there are no leaks on the EGR circuit (pipes pierced or damaged) and that the clamps are properly tightened.

**Check the operation of the EGR valve:**

- exit fault finding mode in CLIP,
- switch off the vehicle ignition,
- disconnect the EGR valve connector,
- remove the EGR valve,
- disconnect the connector and EGR valve,
- switch on the ignition and return to fault finding mode on the CLIP tool,
- run command **AC002 EGR solenoid valve with valve removed**.

Check:

- the position of the valve,
- that there is no play between the valve and the control rod, and the general condition (clogging, hard point, etc.),
- the valve closure when the command is completed.

If, during the command:

- no valve movement is evident,
- the valve does not open or close completely,

Check that there are no particles blocking the movement of the piston.

If a particle was blocking the movement of the valve, run command **AC002 EGR solenoid valve, again and check the valve is operating correctly**.

If the valve is operating normally, run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.

If the valve is jammed or irrevocably seized, replace the EGR valve.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

<b>DF118 PRESENT OR STORED</b>	<u><b>EGR SOLENOID VALVE SERVO-CONTROL</b></u> 1.DEF: Insufficient EGR valve flow 2.DEF: Excessive EGR valve flow
<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after: <ul style="list-style-type: none"><li>– the engine is started,</li><li>– a road test,</li><li>– an actuator command <b>AC002 EGR solenoid valve</b>.</li></ul>
	<b>Special notes:</b> If the fault is present: <ul style="list-style-type: none"><li>– the EGR function is inhibited,</li><li>– the vehicle performance is reduced,</li><li>– the level 1 warning light is lit.</li></ul> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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**DF118**

**CONTINUED**

Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Measure the **resistance** of the EGR solenoid valve between **tracks 1** and **5**.  
If the resistance measured is not **8  $\Omega \pm 0.5 \Omega$  at 20°C**, replace the EGR valve.

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

UPC **PPM1** connector, **track 1** —————> **Track 1** EGR valve connector

Injection computer brown 48-track connector **B**, **track L2** —————> **Track 5** EGR valve connector

Check that there are no leaks on the EGR circuit (pipes pierced or damaged) and that the clamps are properly tightened.

**Check the operation of the EGR valve:**

- exit fault finding mode in CLIP,
- switch off the vehicle ignition,
- disconnect the EGR valve connector,
- remove the EGR valve,
- disconnect the connector and EGR valve,
- switch on the ignition and return to fault finding mode on the CLIP tool,
- run command **AC002 EGR solenoid valve with valve removed**.
- Check:
  - the position of the valve,
  - that there is no play between the valve and the control rod, and the general condition (clogging, hard point, etc.),
  - the valve closure when the command is completed.

If, during the command:

- no valve movement is evident,
- the valve does not open or close completely.

Check that there are no particles blocking the movement of the piston.

If a particle was blocking the movement of the valve, run command **AC002 EGR solenoid valve, again and check the valve is operating correctly**.

If the valve is operating normally, run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.

If the valve is stuck or seized beyond repair, replace the exhaust gas recirculation valve.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

<b>DF119 STORED</b>	<b><u>CAMSHAFT SENSOR SIGNAL</u></b> 1.DEF: intermittent absence of signal 2.DEF: intermittent inconsistency of signal
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared stored following a road test or after attempting to start the engine several times.
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

Check the camshaft sensor connections.  
Check the injection computer connections.  
Check that the camshaft sensor is correctly positioned and mounted.  
Also check the general condition, (damaged housing, heating up, etc.)  
Carry out the necessary repairs.  
Check the camshaft sensor resistance between tracks 2 and 3.  
If the resistance is not **10250  $\Omega \pm 500$  at 20°C**, replace the sensor.

Check **the continuity and absence of interference resistance** of the following connections:  
Injection computer brown 48-track connector **B, track D1**  $\longrightarrow$  **Track 2** Camshaft sensor.  
Injection computer brown 48-track connector **B, track A1**  $\longrightarrow$  **Track 1** Camshaft sensor.

**With the ignition on and the camshaft sensor connected:**  
Use a voltmeter to measure the voltage between **tracks 1** and **3** of the camshaft sensor:  
(This voltage should be equal to the battery voltage  $\pm 0.08$  V)  
– If the voltage is outside permitted tolerance values, take the measurement again with the **camshaft sensor disconnected**,  
– If the voltage is still outside the permitted tolerance values with the sensor disconnected, check the **continuity and absence of interference resistance** on the following connection:  
Camshaft sensor, **track 3**  $\longrightarrow$  **Track 2, PPM1** UPC connector  
– If the voltage displayed is correct with the sensor disconnected, replace the camshaft sensor.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF120 PRESENT OR STORED</b>	<b><u>ENGINE SPEED SENSOR SIGNAL</u></b> 1.DEF: intermittent absence of signal 2.DEF: intermittent inconsistency of signal
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present: <ul style="list-style-type: none"><li>– when an attempt is made to start the engine,</li><li>– when the engine is running.</li></ul>
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for any work on the computer connectors. The engine speed sensor is consistent with the camshaft sensor. If the fault is present, the <b>level 2</b> warning light comes on.

Check the engine speed sensor connections.  
Repair if necessary.

Check that the sensor is correctly mounted and that the flywheel target is not damaged.

Check that the gap between the engine speed sensor and the engine flywheel is **0.5 to 1.8 mm**.

Measure the **resistance** of the engine speed sensor between **terminals A and B** of the black connector.  
If the **winding resistance** is not between **510 and 850 Ohm** at an engine temperature of **20°C**, replace the engine speed sensor.

Check the injection computer connections.  
Repair if necessary.

Check the **continuity and the absence of interference resistance** of the following connections:  
Injection computer, brown 48-track connector **B, track B1** —————▶ **Track A** engine speed sensor  
Injection computer, brown 48-track connector **B, track C1** —————▶ **Track B** engine speed sensor  
Repair if necessary.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF209 PRESENT OR STORED</b>	<u>EGR VALVE POSITION SENSOR CIRCUIT</u> CO.0 : open circuit or short circuit to earth CC.1 : short circuit to + 12 V 1.DEF: micro-breaks
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<b>NOTES</b>	<b>Priorities when dealing with a number of faults:</b> Deal with fault <b>DF012 Sensor feed no. 2 voltage</b> first, if it is present or stored.
	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present following a road test or an actuator control <b>AC002 EGR Solenoid Valve</b> .
	<b>Special notes:</b> If the fault is present: – there is smoke from the exhaust, – the EGR function is deactivated. If CO.0 and/or CC.1 is still present, the OBD warning light will come on after three consecutive driving cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds). Use bornier <b>Elé. 1681</b> for any work on the computer connectors.

<b>CO.0</b>	<b>NOTES</b>	None.
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Check the EGR valve connections. Check the injection computer connections. Repair if necessary.
Check <b>the continuity and insulation</b> from earth of the following connections: Injection computer, brown 48 track connector B <b>track J2</b> —————> <b>Track 6</b> EGR valve Injection computer brown 48-track connector B, <b>track F4</b> —————> <b>Track 2</b> EGR valve Repair if necessary.
Measure the <b>resistances</b> of the EGR valve between: – <b>tracks 2 and 4</b> . If the resistance of the EGR valve is not between <b>2.4 kΩ and 5.6 kΩ</b> , replace the EGR valve. – <b>tracks 2 and 6</b> . If the resistance of the EGR valve is not between <b>1.9 kΩ and 6.4 kΩ</b> , replace the EGR valve. – <b>tracks 4 and 6</b> . If the resistance of the EGR valve is not between <b>0.8 kΩ and 3.8 kΩ</b> , replace the EGR valve.  If the fault is still present, replace the EGR valve.


<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF209</b>  <b>CONTINUED 1</b>	
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<b>CC.1</b>	<b>NOTES</b>	None.
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Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Check **the continuity and insulation against + 12 V** of the following connections:

Injection computer, brown 48 track connector B **track J2**  **Track 6** EGR valve

Injection computer grey 32-track connector C, **track C2**  **Track 4** EGR valve

Repair if necessary.

Measure the **resistances** of the EGR valve between:

- **tracks 2 and 4**. If the resistance of the EGR valve is not between **2.4 kΩ and 5.6 kΩ**, replace the EGR valve.
- **tracks 2 and 6**. If the resistance of the EGR valve is not between **1.9 kΩ and 6.4 kΩ**, replace the EGR valve.
- **tracks 4 and 6**. If the resistance of the EGR valve is not between **0.8 kΩ and 3.8 kΩ**, replace the EGR valve.

If the fault is still present, replace the EGR valve.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF209</b>  <b>CONTINUED 2</b>	
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<b>1.DEF</b>	<b>NOTES</b>	Only in Vdiag 4C.
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Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.  
Run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.  
(See the **Replacement of components** section).

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

Injection computer, brown 48 track connector B **track J2** —————> **Track 6** EGR valve

Injection computer brown 48-track connector B, **track F4** —————> **Track 2** EGR valve

Injection computer grey 32-track connector C, **track C2** —————> **Track 4** EGR valve

Repair if necessary.

If after all the checks the fault is still present, replace the EGR valve.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF250 PRESENT OR STORED</b>	<u><b>ELECTRONIC STABILITY PROGRAM FUNCTION</b></u> 1.DEF: CAN connection fault 2.DEF: inconsistent signal
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present during a road test.
	<b>Special notes:</b> Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

Check the ABS computer connections.  
Check the injection computer connections.  
Repair if necessary.

Carry out a fault finding procedure on the multiplex network and ABS.  
(See 88C, Multiplexing and 38C ABS) to deal with any faults.  
If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF272 PRESENT OR STORED</b>	<b><u>EGR VALVE CONTROL CIRCUIT</u></b> CC.1 : short circuit to + 12 V CC.0 : short circuit to earth CO : open circuit 1.DEF: internal electrical fault
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present following a road test or an actuator control <b>AC002 EGR Solenoid Valve</b> .
	<b>Special notes:</b> The EGR and turbocharging functions are inhibited. The <b>level 1</b> warning light comes on. If CC.0 is still present, the OBD warning light will come on after three consecutive driving cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds). Use bornier <b>Elé. 1681</b> for all operations on the injection computer connectors.

### WARNING

If dealing with this fault requires the EGR valve to be replaced, run command **RZ002 EGR Adaptives** described in Interpretation of commands in this section.

<b>CC.1</b>	<b>NOTES</b>	None.
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Check the EGR valve connections.

Check the injection computer connections.

Repair if necessary.

Measure the **resistance** of the EGR solenoid valve between **tracks 1** and **5**.

If the resistance is not approximately **8  $\Omega$   $\pm$ 0.5 at 20°C**, replace the EGR valve.

Check the **continuity and insulation against + 12 V** of the following connection:

Injection computer brown 48-track connector B, **track L2** → **Track 5** of the EGR valve

Repair if necessary.

If the fault is still present, replace the EGR valve

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF272</b>  <b>CONTINUED 1</b>	
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<b>CC.0</b> <b>CO</b>	<b>NOTES</b>	<b>Special notes:</b> If fault <b>DF209 EGR valve position sensor circuit CO.0</b> is present at the same time, check that the EGR valve connector is properly connected.
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Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Measure the **resistance** of the EGR solenoid valve between **tracks 1** and **5**.

If the resistance measured is not **8  $\Omega \pm 0.5$  at 20°C**, replace the EGR valve.

Check **the continuity and insulation against earth** of the following connections:

Injection computer brown 48-track connector B, **track L2**  $\longrightarrow$  **Track 5** of the EGR valve  
UPC black **PPM1 connector track 1**  $\longrightarrow$  **Track 1** of the EGR valve

Check for **+ 12 V** after relay (UPC) on **track 1** of the EGR valve.  
If there is not **+ 12 V on track 1**, refer to the UPC fault finding note.  
If the fault is still present, replace the EGR valve

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF272</b>  <b>CONTINUED 2</b>	
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<b>1.DEF</b>	<b>NOTES</b>	None.
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Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Check the **resistance** of the EGR solenoid valve between **tracks 1 and 5**.  
If the resistance is not approximately **8  $\Omega \pm 0.5$  at 20°C**, replace the EGR valve.

Check for **continuity, insulation and the absence of interference resistance** on the following connections:  
Injection computer brown 48-track connector B, **track L2**  $\longrightarrow$  **Track 5** of the EGR valve  
UPC PPM1 black connector **track 1**  $\longrightarrow$  **Track 1** of the EGR valve

Check for **+ 12 V** after relay (UPC) on **track 1** of the EGR valve.  
Repair if necessary.

If the fault persists, **check that the computer output stage is working correctly**:

- Run actuator command **AC002 EGR solenoid valve**.
- If there is no perceptible movement of the valve, ensure that the computer output is functioning:
  - Leave the EGR valve connected.
  - Connect a "wire clip" to the violet wire between the valve and the injection computer (connection between **track 6 of the valve** and **track J2 of the injection computer connector B**).
  - Connect the positive terminal of the voltmeter to the wire clip.
  - Connect the negative terminal of the voltmeter to the battery earth.
  - Run command **AC002 EGR solenoid valve**.
  - The voltage should vary over **10 cycles** between **1.05 V and 3.5 V**.
  - If the voltage varies between these values, replace the EGR valve.
  - If the voltage does not vary or varies between incorrect values, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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<b>DF276 PRESENT OR STORED</b>	<b><u>INJECTOR CODE PROGRAMMING</u></b> 1.DEF: Internal electronic fault during programming 2.DEF: no code stored
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to stored faults:</b> The fault is declared present after: <ul style="list-style-type: none"><li>– replacing injector(s),</li><li>– replacing the injection computer.</li></ul>
	<b>Special notes:</b> If the fault is present: <ul style="list-style-type: none"><li>– the engine speed is limited,</li><li>– the level 1 warning light is lit.</li></ul>

<b>1.DEF</b>	<b>NOTES</b>	None.
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Program the injector codes using command **SC002 Enter injector codes**.  
Carry out the procedure described in the **Interpretation of commands** section.  
If the fault is still **present**, after the ignition is switched off and dialogue is established, contact the Techline.

<b>2.DEF</b>	<b>NOTES</b>	<b>This fault appears on any blank computer (new or recently reprogrammed).</b>
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**WARNING**

**A computer without the IMA option can be replaced by a computer with this option. The codes are not saved during command SC003 Save computer data.**

**In this case, status ET104 Injector code use changes to YES or FAULTY, fault DF276 will be present, and the engine will operate in defect mode.**

- Program the injector codes using:  
command **SC002 Enter injector codes**, (follow the procedure described in the **Interpretation of commands** section).
- After the codes have been entered:
- switch off the ignition,
- wait until power latch closes down and then switch the ignition back on,
- establish dialogue and clear the fault memory,
- end of operation.

If the fault is still present, contact the Techline.

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by a check with the diagnostic tool.
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**DF530  
PRESENT  
OR  
STORED**

**EGR ADAPTIVES**

**WARNING**

This fault only appears in Vdiag 48.

**NOTES**

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

The fault is declared present after:

- a road test,
- an actuator command **AC002 EGR solenoid valve**.

**Special notes:**

The EGR and turbocharging functions are inhibited.

The **level 1** warning light comes on.

Use bornier **Elé. 1681** for all operations on the injection computer connectors.

Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Clear any stored faults.

Run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.

Switch off the ignition and wait for the engine immobiliser warning light to start flashing.

Switch the ignition on again and check the system faults.

If the fault is still present, replace the exhaust gas recirculation valve.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

**DF619  
PRESENT  
OR  
STORED**

**EGR VALVE JAMMED OPEN**

**WARNING**

This fault only appears in Vdiag 48 and 4c.

**NOTES**

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

The fault is declared present after:

- a road test,
- an actuator command **AC002 EGR solenoid valve**.

**Special notes:**

The EGR and turbocharging functions are inhibited.

The **level 1** warning light comes on.

Use bornier **Elé. 1681** for all operations on the injection computer connectors.

Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Clear any stored faults.

Run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.

Switch off the ignition and wait for the engine immobiliser warning light to start flashing.

Switch the ignition on again and check the system faults.

If the fault is still present:

- remove the EGR valve and reconnect it after removing it,
- check that the movement of the valve is not being blocked by a particle,
- check that the valve is not jammed or stuck in one position,
- run command **AC002 EGR solenoid valve**,
- check the movement of the solenoid valve,
- check that the solenoid valve is completely closed,
- if there is no movement, or if the valve is seized and cannot be repaired, replace the EGR solenoid valve.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.



**DF620  
PRESENT  
OR  
STORED**

**EGR VALVE FOULED**

**WARNING**

This fault only appears in Vdiag 48.

**NOTES**

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

The fault is declared present after:

- a road test,
- an actuator command **AC002 EGR solenoid valve**.

**Special notes:**

The EGR and turbocharging functions are inhibited.

The **level 1** warning light comes on.

Use bornier **Elé. 1681** for all operations on the injection computer connectors.

Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Clear any stored faults.

Run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.

Switch off the ignition and wait for the engine immobiliser warning light to start flashing.

Switch the ignition on again and check the system faults.

If the fault is still present:

- remove the EGR valve, and then reconnect it,
- check that the movement of the valve is not being blocked by a particle,
- check that the valve is not jammed or stuck in one position,
- run command **AC002 EGR solenoid valve**,
- check the movement of the solenoid valve,
- check that the solenoid valve is completely closed,
- if there is no movement, or if the valve is seized and cannot be repaired, replace the EGR solenoid valve.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

**DF621  
PRESENT  
OR  
STORED**

EGR VALVE LOCKED OPEN (OBD fault)

**WARNING**

This fault only appears in Vdiag 48 and 4C.

**NOTES**

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

The fault is declared present after:

- a road test,
- an actuator command **AC002 EGR solenoid valve**.

**Special notes:**

The EGR and turbocharging functions are inhibited.

The **level 1** warning light comes on.

The **OBD** warning light will come on after three consecutive driving cycles (starting + 5 seconds + switch off the ignition and wait 40 seconds).

Use bornier **Elé. 1681** for all operations on the injection computer connectors.

Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Clear any stored faults.

Run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.

Switch off the ignition and wait for the engine immobiliser warning light to start flashing.

Switch the ignition on again and check the system faults.

If the fault is still present:

- remove the EGR valve and reconnect it after removing it,
- check that the movement of the valve is not being blocked by a particle,
- check that the valve is not jammed or stuck in one position,
- run command **AC002 EGR solenoid valve**,
- check the movement of the solenoid valve,
- check that the solenoid valve is completely closed,
- if there is no movement, or if the valve is seized and cannot be repaired, replace the EGR solenoid valve.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

**DF622  
PRESENT  
OR  
STORED**

EGR VALVE JAMMED OPEN

**WARNING**

This fault only appears in Vdiag 4C.

**NOTES**

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

The fault is declared present after:

- a road test,
- an actuator command **AC002 EGR solenoid valve**.

**Special notes:**

The EGR and turbocharging functions are inhibited.

The **level 1** warning light comes on.

Use bornier **Elé. 1681** for all operations on the injection computer connectors.

Check the EGR valve connections.  
Check the injection computer connections.  
Repair if necessary.

Clear any stored faults.

Run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.

Switch off the ignition and wait for the engine immobiliser warning light to start flashing.

Switch the ignition on again and check the system faults.

If the fault is still present:

- remove the EGR valve and reconnect it after removing it,
- check that the movement of the valve is not being blocked by a particle,
- check that the valve is not jammed or stuck in one position,
- run command **AC002 EGR solenoid valve**,
- check the movement of the solenoid valve,
- check that the solenoid valve is completely closed,
- if there is no movement, or if the valve is seized and cannot be repaired, replace the EGR solenoid valve.

**AFTER REPAIR**

Deal with any faults.  
Carry out a road test followed by a check with the diagnostic tool.

<b>DF1070 PRESENT OR STORED</b>	<u>COLD LOOP</u>
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<b>NOTES</b>	<b>Conditions for applying the fault finding procedure to a stored fault:</b> The fault is declared present with the engine running and a heating and air conditioning request
	<b>Priorities when dealing with a number of faults:</b> <b>Firstly, deal with the following faults:</b> – DF049 Refrigerant sensor circuit if it is present or stored.

When the fault is present or stored, the heating and air conditioning system is inhibited.  
Check fuse **F22 (10A)** of the **UPC** and the condition of the air conditioning compressor connector.  
If the connector is faulty and there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Check the air conditioning compressor wiring.  
If the wiring is faulty and there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace the wiring.

Manually check if the compressor is jammed (turn the clutch plate manually to check that there is no point of resistance). In the event of sticking, replace the air conditioning compressor (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, Heating and air conditioning system, 62A, Air conditioning, Compressor: Removal - Refitting**).

Top up with freon, check for any leaks and repair if necessary (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, Heating and air conditioning system, 62A, Air conditioning, Refrigerant circuit: check, Refrigerant circuit: Draining - Filling**).

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test, then check with the <b>diagnostic tool</b> .
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# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### MAIN COMPUTER STATUSES AND PARAMETERS

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Vehicle impact	ET077: Impact detected	YES or NO	In the event of a fault, refer to the interpretation of fault <b>DF069 Impact detected signal.</b>
2	Power supply	ET001: + After ignition computer feed	PRESENT, ignition on	In the event of a fault carry out fault finding on the charge circuit.
		PR071: Computer feed voltage	$9\text{ V} < X < 16\text{ V}$	
		PR358: Sensor reference voltage	$3.47\text{ V} < X < 3.75\text{ V}$ (Average of the three sensor feed voltages)	In the event of a fault, consult the interpretation of faults <b>DF011 Sensor feed voltage no. 1</b> , <b>DF012 Sensor feed voltage no. 2</b> and <b>DF013 Sensor feed voltage no. 3.</b>
		PR076: Refrigerant sensor voltage	$0\text{ V} < X < 5\text{ V}$	In the event of a fault, refer to the fault finding procedure for fault <b>DF049 Refrigerant sensor circuit.</b>
3	Engine running	PR055: Engine speed	Gives the engine's speed in <b>rpm.</b> <b>With the ignition on 0 rpm</b>	In the event of a fault, consult the interpretation of fault <b>DF005 Engine speed sensor circuit.</b>
4	Injection configuration	ET104: Injector code use	YES or NO or DEFECTIVE	This status indicates that the IMA function is activated. In the event of a fault, refer to the fault finding procedure for fault <b>DF276 Injector code programming.</b>

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### MAIN COMPUTER STATUSES AND PARAMETERS (continued)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
5	Pressure	PR035: Atmospheric pressure	Indicates the atmospheric pressure in mbar. The sensor is built into the computer. <b>Default value: 750 mbar</b>	<b>In the event of a fault, consult the interpretation of fault DF003 Atmospheric pressure sensor circuit.</b>
		PR038: Rail pressure	<b>0 &lt; X &lt; 2 bar</b>	<b>In the event of a fault, consult the interpretation of fault DF007 Rail pressure sensor circuit.</b>
6	Temperature	PR059: Inlet air temperature	Indicates the inlet air temperature <b>Ignition on</b> <b>PR061 = PR059</b> <b>Default value: 20°C</b>	<b>In the event of a fault, refer to the interpretation of parameter PR059.</b>
		PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119°C.</b>	<b>In the event of a fault, refer to the interpretation of DF001 Coolant temperature sensor circuit.</b>
7	Preheating	ET007: Pre-postheating control	<b>INACTIVE</b> or <b>ACTIVE</b>	<b>In the event of a fault, refer to the interpretation of status ET007.</b>
8	Torque	PR015: Engine torque	<b>X = 0 Nm</b>	None.
9	Charging circuit	PR016: Alternator flow	<b>X = 0 mA</b>	<b>In the event of a fault, check the charge circuit.</b>

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### MAIN COMPUTER STATUSES AND PARAMETERS (continued)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
10	Speed signal	PR089: Vehicle speed	Gives the vehicle speed in <b>km/h</b> . This parameter is transmitted by the ABS computer. This signal is transmitted to the injection system by the multiplex network.	<b>In the event of a fault</b> test the multiplex network. (see 38C ABS to deal with any faults.)
11	Reverse gear signal	ET035: Reverse gear signal	<b>ABSENT</b> or <b>PRESENT</b>	None.

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### AIR CIRCULATION (TURBOCHARGING/INLET)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Engine speed	PR055: Engine speed	Indicates the engine's speed of rotation in rpm. With the ignition on PR55 = 0 rpm.	<b>In the event of a fault,</b> refer to the interpretation of fault DF005 Engine speed sensor circuit.
2	Temperature	PR061: Exterior air temperature	Gives the exterior air temperature in °C. This parameter is managed by the UCH and transmitted to the injection on the multiplex network. <b>Default value: 20°C</b>	<b>In the event of a fault,</b> (see 87B carry out fault finding on the UCH).
		PR059: Inlet air temperature	<b>Ignition on</b> <b>Default value: 20°C</b> <b>PR061 = PR059</b>	<b>In the event of a fault,</b> refer to the interpretation of fault DF039 Inlet air temperature sensor circuit.
3	Turbocharging	PR041: Turbocharging pressure	<b>PR041 = PR035 = Atmospheric pressure</b>	<b>In the event of a fault,</b> consult the interpretation of fault DF004 Turbocharging pressure sensor circuit.
		PR009: Turbocharging pressure setpoint	<b>790 &lt; X &lt; 1010 mbar</b>	None.
		PR047: Turbocharging pressure OCR	<b>X = 5%</b>	The opening cyclic ratio should be identical to the correction of the solenoid valve position.
		PR011: Turbocharging solenoid valve position sensor	<b>X = 5%</b>	



# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### AIR CIRCULATION (TURBOCHARGING/INLET) (CONT'D)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
4	Air circulation	PR035: Atmospheric pressure	Indicates the atmospheric pressure in mbar. The sensor is built into the computer. <b>Default value: 750 mbar</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF003 Atmospheric pressure sensor circuit.</b>
		PR132: Air flow	<b>X = 0 kg/h</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF056 Air flow sensor circuit.</b>
		PR050: Damper flap OCR	<b>X = 5%</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF067 Damper control circuit.</b>
5	Sensor feed	PR081: Inlet temperature sensor voltage	<b>1.90 &lt; X &lt; 2.10 V</b> <b>Default value: 5 V</b>	<b>In the event of a fault,</b> refer to the interpretation of fault <b>DF039 "Inlet air temperature circuit"</b>
		PR079: Atmospheric pressure sensor voltage	<b>3.80 &lt; X &lt; 4 V</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF003 Atmospheric pressure sensor circuit.</b>
		PR073: Air flowmeter feed voltage	<b>Ignition on</b> <b>U = 0.6 V</b> <b>Safe value: 0 V</b>	<b>In the event of a fault,</b> refer to the interpretation of fault <b>DF013 Sensor supply voltage no. 3.</b>

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### FUEL CIRCUIT

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Engine speed	PR055: Engine speed	Indicates the engine's speed of rotation in rpm. <b>Ignition on</b> PR055 = 0 rpm	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF005 Engine speed sensor circuit.</b>
2	Temperature	PR063: Fuel temperature	Shows the fuel temperature <b>Default value: 100°C</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF098 Fuel temperature sensor circuit.</b>
3	Pressure	PR008: Rail reference pressure	Indicates the theoretical pressure value for optimum engine operation <b>X = 250 bar</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF053 Rail pressure regulation function.</b>
		PR048: Rail pressure regulation valve OCR	<b>X = 15%</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF007 Rail pressure sensor circuit.</b>
		PR038: Rail pressure	<b>X = 0 bar</b> <b>Default value: 250 bar.</b>	
		PR213: Rail pressure loop difference	<b>X = PR008 - PR038</b>	
				The fuel pressure variation is the difference between the rail pressure and the rail pressure setpoint. <b>In the event of a fault,</b> consult the interpretation of fault <b>DF007 Rail pressure sensor circuit.</b>

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### FUEL CIRCUIT (continued)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
4	Flow	PR017: Fuel flow	Ignition on PR017 = 0 mg/st	NONE
5	Rail current	PR006: Rail pressure regulator current	X = 395 mA Default value: 1600 mA or 4 mA	In the event of a fault, consult the interpretation of fault <b>DF007 Rail pressure sensor circuit.</b>
		PR007: Rail pressure regulator current setpoint	X = 400 mA Default value: 1600 mA	
6	Sensor voltage	PR082: Fuel temperature sensor voltage	1.8 V < X < 3 V Default value: 5 V	In the event of a fault, consult the interpretation of fault <b>DF098 Fuel temperature sensor circuit.</b>
		PR080: Rail pressure sensor voltage	X = 0.5 V Default value: 5 V	In the event of a fault, refer to the interpretation of fault <b>DF013 Sensor supply voltage no. 3.</b>
7	Fuel flow	PR364: Cylinder no. 1 fuel flow correction ----- PR405: Cylinder no. 2 fuel flow correction ----- PR406: Cylinder no. 3 fuel flow correction ----- PR365: Cylinder no. 4 fuel flow correction	0.0 mg/st	In the event of a fault, refer to test 1 <b>INJECTOR TEST.</b>

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### ANTIPOLLUTION/OBD

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Engine speed	PR055: Engine speed	Gives the engine's speed in <b>rpm</b> .	In the event of a fault, consult the interpretation of fault <b>DF005 Engine speed sensor circuit</b> .
2	Exhaust gas recirculation	PR046: EGR solenoid valve OCR PR005: EGR valve opening setpoint PR051: EGR valve position feedback PR022: EGR valve position feedback loop difference PR128: First EGR valve offset PR129: Last EGR valve offset	$X = 5\%$ $5 < X < 95\%$ Gives a theoretical EGR valve opening value for optimum engine operation. <b>With ignition switched on <math>X = 0\%</math></b> <b>With ignition switched on <math>X = 0\%</math></b> $PR022 = PR051 - PR005$ $15\% < X < 30\%$ (Average value) $15 < X < 40\%$ (Average value)	In the event of a fault, refer to the interpretation of faults <b>DF118 EGR solenoid valve servo</b> and <b>DF114 EGR solenoid valve circuit</b> .
3	Air regulation	PR171: Air flow setpoint for EGR PR131: EGR air flow variation ET078: Air regulation	<b>Ignition on</b> $PR004 = PR131 = 0 \text{ mg/st}$ <b>ACTIVE or INACTIVE</b>	None
4	Sensor feed	PR077: EGR valve position sensor voltage	$1.06 < X < 1.08 \text{ V}$ <b>Safe value: 0 V</b>	In the event of a fault, consult the interpretation of fault <b>DF114 EGR solenoid valve circuit</b> .

### NOTES

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

### COLD LOOP

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Air conditioning detection	ET079: Air conditioning present	States whether the vehicle is fitted with air conditioning or not. – YES: Air conditioning is detected by the injection computer. – NO: Air conditioning is not detected by the injection computer.	If this is not consistent with the vehicle equipment, carry out a test on the multiplex network and apply the relevant procedure.
2	Engine running	PR055: Engine speed	Indicates the engine's rotation speed in rpm.	In the event of a fault, consult the interpretation of fault <b>DF005 Engine speed sensor circuit.</b>
3	Driver control	ET088: Compressor actuation request	Ignition on <b>INACTIVE</b>	If the air conditioning is authorised, or if the compressor is being controlled, refer to the Air conditioning fault finding note for the vehicle.
		ET004: Air conditioning authorisation	<b>NO</b>	
4	Air conditioning speed	PR053: Speed requested by air conditioning	Ignition on <b>PR053 = 0 rpm</b>	None
5	Pressure	PR037: Refrigerant pressure	Ignition on <b>PR037 = 0 bar</b>	In the event of a fault, please consult the interpretation of fault <b>DF049 Refrigerant sensor circuit.</b>
6	Output	PR125: Power consumed by the air conditioning compressor	Ignition on <b>PR125 = 0 W</b>	None

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### COLD LOOP (continued)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
7	Engine cooling	ET022: Low speed fan assembly request	With the ignition switched on < 80° <b>INACTIVE</b>	If the fan assemblies are supplied with the ignition on, the injection system may be in defect mode.
		ET021: High speed fan assembly request		
		ET014: Fan assembly 1 check	With the ignition switched on < 80° <b>STOPPED</b>	Carry out a system fault test and refer to the interpretation of any faults.
		ET015: Fan assembly 2 check		
8	Coolant temperature	PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119°C</b>	In the event of a fault, refer to the interpretation of <b>DF001 Coolant temperature sensor circuit.</b>
9	Vehicle speed	PR089: Vehicle speed	Gives the vehicle speed in mph. This parameter is transmitted by the ABS computer. This signal is transmitted to the injection system on the multiplex network. Ignition on PR089 = 0 mph (0 km/h).	In the event of a fault, test the multiplex network. Refer to the ABS fault finding note for the interpretation of possible faults (see 38C, ABS).

### NOTES

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

### DRIVER PARAMETERS

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Engine running	PR055: Engine speed	Indicates the engine's rotation speed in <b>rpm</b>  <b>Ignition on</b>  <b>PR055 = 0 rpm</b>	<b>In the event of a fault, consult the interpretation of fault DF005 Engine speed sensor circuit.</b>
2	Accelerator pedal position	PR030: Pedal load*	Indicates the accelerator pedal position  <b>If no pressure is being applied to the pedal PR030 = 0%</b>	<b>In the event of a fault, refer to the interpretation of fault DF008 Pedal potentiometer circuit gang 1 or DF009 Pedal potentiometer circuit gang 2.</b>
3	Sensor feed	PR147: Pedal potentiometer gang 1 voltage ----- PR148: Pedal potentiometer gang 2 voltage	<b>Accelerator pedal released</b> <b>0.70 &lt; PR147 &lt; 0.80 V</b> ----- <b>Accelerator pedal released</b> <b>0.35 &lt; PR148 &lt; 0.40 V</b>	<b>In the event of a fault, refer to the interpretation of fault DF011 Sensor feed voltage no. 1 or DF012 Sensor feed voltage no. 2.</b>

**(\*) PEDAL VOLTAGES - COLD, IGNITION OFF (Average values given for information purposes).**

Pedal load	0%	25%	50%	100%	120%
Gang 1 voltage	0.76 V	1.52 V	2.09 V	3.23 V	3.68 V
Voltage gang 2	0.37 V	0.74 V	1.02 V	1.56 V	1.79 V

### NOTES

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

### HEATING

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Coolant temperature	PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119°C.</b>	<b>In the event of a fault, refer to the interpretation of DF001 Coolant temperature sensor circuit.</b>
2	Resistance Heating Passenger compartment	ET111: Set number of RCH	Indicates the number of passenger compartment resistors supplied. The passenger compartment resistor function programming is performed through the UCH.  Certain operating parameters determine the operation of one or more passenger compartment resistors.  The injection computer only receives a signal relating to the number of passenger compartment resistors to control.  <b>Ignition on</b> <b>ET111 = NO</b>	<b>In the event of a fault, (see 87B, UCH).</b>
		ET112: RCH cut-off	Status <b>ET112</b> is indicated if the passenger compartment resistors are being controlled. The computer receives the signal to cut-off the resistors through the UCH.  <b>Ignition on</b> <b>ET112 = YES</b>	



# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### CRUISE CONTROL/SPEED LIMITER

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Cruise control/speed limiter	PR089: Vehicle speed	Gives the vehicle speed in <b>mph</b> . This parameter is transmitted by the ABS computer. This signal is transmitted to the injection on the multiplex network.  <b>Ignition on</b> <b>PR089 = 0 mph (km/h)</b>	<b>In the event of a fault</b> , test the multiplex network.  (See <b>38C, ABS</b> ) for the interpretation of possible faults.
		PR130: Cruise control setpoint	Indicates the cruise control speed limit  <b>Ignition on</b> <b>X = 0 mph (km/h)</b>	<b>In the event of a fault</b> , consult the interpretation of statuses <b>ET703 Cruise control/Speed limiter buttons</b> and <b>ET415 Cruise control/Speed limiter deactivation</b> .
		ET703: Cruise control/speed limiter buttons	<b>INCREASE:</b> Increase button pressed	In the event of a fault, consult the interpretation of statuses <b>ET703 Cruise control/Speed limiter buttons</b> and <b>ET415 Cruise control/Speed limiter deactivation</b> .
			<b>DECREASE:</b> Decrease button pressed  <b>SUSPEND:</b> Suspend button pressed  <b>RESUME:</b> Resume button pressed  <b>INACTIVE:</b> no buttons pressed	

### NOTES

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

### CRUISE-CONTROL/SPEED LIMITER (continued)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
2	Cruise control/ speed limiter (continued)	<p><b>ET415:</b> Deactivation of cruise control/ speed limiter</p> <p>Note: the cruise control can only be activated at a speed of <b>&gt; 18 mph (30 km/h)</b>.</p>	<p><b>NONE</b></p> <p><b>STATUS 1:</b> Traction control request</p> <p><b>STATUS 2:</b> Brake pedal depressed</p> <p><b>STATUS 3:</b> Clutch pedal depressed</p> <p><b>STATUS 4:</b> Suspend button pressed</p> <p><b>STATUS 5:</b> Cruise control or speed limiter monitoring</p> <p><b>STATUS 6:</b> Gear lever in neutral (manual gearbox) or neutral position (automatic transmission)</p> <p><b>STATUS 7:</b> Inconsistency between the request and the vehicle speed</p> <p><b>STATUS 9:</b> Vehicle speed monitoring</p> <p><b>STATUS 10:</b> Monitoring by injection computer</p>	<p>The cruise control and speed limiter functions can be deactivated by various events.</p> <p><b>In the event of a fault, consult the interpretation of statuses <b>ET042 Cruise control/speed limiter</b> and <b>ET415 Cruise control/speed limiter deactivation</b>.</b></p>

<b>NOTES</b>	Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: <b>engine stopped, ignition on.</b>
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**CRUISE-CONTROL/SPEED LIMITER (continued)**

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
3	Brake switch	<div>ET704: Brake switch no. 1 signal</div> <div>-----</div> <div>ET705: Brake switch no. 2 signal</div>	<p><b>Indicates the position of the brake pedal</b></p> <p><b>With the ignition on, pedal released:</b></p> <p><b>ET704 = ET705 = INACTIVE</b></p>	<p><b>In the event of a fault, consult the interpretation of statuses ET704 and ET705.</b></p>
4	Clutch Switch	ET405: Clutch pedal switch	<p><b>Indicates the position of the clutch pedal</b></p> <p><b>With the ignition on, pedal released:</b></p> <p><b>ET405 = INACTIVE</b></p>	<p><b>In the event of a fault, consult the interpretation of status ET405.</b></p>

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### ENGINE COOLING

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Coolant temperature	PR064: Coolant temperature	Shows the engine coolant temperature in °C  Default value: 119°C.	In the event of a fault, refer to the interpretation of DF001 Coolant temperature sensor circuit.
2	Fan assemblies	ET022: Low speed fan assembly request ----- ET021: High speed fan assembly request ----- ET014: Fan assembly 1 check ----- ET015: Fan assembly 2 check	With the ignition switched on, engine < 80°  <b>INACTIVE</b>  ----- With the ignition switched on, engine < 80°  <b>STOPPED</b>	If the fan assemblies are supplied with the ignition on, the injection may be in defect mode.  Carry out a system fault test and consult the interpretation of faults.
3	Sensor feed	PR084: Coolant temperature sensor voltage	X = 3 V ± 0.5 Default value: 5 V	In the event of a fault, refer to the interpretation of DF001 Coolant temperature sensor circuit.

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### IGNITION/PREHEATING

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Power supply	ET001: + After ignition computer feed	Ignition on <b>PRESENT</b>	If the event of a fault, carry out fault finding on the <b>charge circuit</b> .
2	Engine speed	PR055: Engine speed	Indicates the engine's rotation speed in <b>rpm</b> .	In the event of a fault, consult the interpretation of fault <b>DF005 Engine speed sensor circuit</b> .
3	Temperature	PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119°C.</b>	In the event of a fault, refer to the interpretation of <b>DF001 Coolant temperature sensor circuit</b> .
		PR059: Inlet air temperature	Indicates the inlet air temperature <b>Default value: 20°C.</b>	In the event of a fault, refer to the interpretation of fault <b>DF039 Inlet air temperature sensor circuit</b> .
4	Preheating	ET007: Preheating unit control	Status <b>ET007</b> is <b>ACTIVE</b> a few seconds after the ignition is switched on, and for postheating	In the event of a fault, ( <b>ET007</b> locked in <b>ACTIVE</b> status), consult the interpretation of fault <b>DF017 Preheating unit control circuit</b> .

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### STARTING

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Power supply	<b>ET001:</b> + After ignition computer feed	<b>Ignition on PRESENT</b>	<b>If the event of a fault</b> , carry out fault finding on the <b>charge circuit</b> .
		<b>PR071:</b> Computer feed voltage	<b>9 V &lt; X &lt; 16 V</b>	If the event of a fault, carry out fault finding on the charge circuit
		<b>PR358:</b> Sensor reference voltage	<b>3.47 V &lt; X &lt; 3.75 V</b> (Average of the three sensor supply voltages)	In the event of a fault, consult the interpretation of faults DF011 Sensor feed voltage no. 1, DF012 Sensor feed voltage no. 2, and DF013 Sensor feed voltage no. 3.
2	Starting	<b>ET076:</b> Starting	<b>AUTHORISED:</b> The injection system authorises starting or <b>PROHIBITED:</b> The injection system does not authorise starting.	If status <b>ET076</b> is <b>PROHIBITED</b> , carry out fault finding on the entire multiplex network.
3	Engine operation	<b>ET038:</b> Engine	<b>Ignition on STOPPED or STALLED</b>	<b>None</b>
4	Synchronisation	<b>ET238:</b> Synchronisation	<b>COMPLETED</b>	In the event of a fault, consult the interpretation of status <b>ET238</b> .

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

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

### PROTECTION

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Engine immobiliser	ET341: Immobiliser code programmed	YES or NO	If status <b>ET341</b> is locked on <b>NO</b> , (See 87B, UCH).
		ET003: Engine immobiliser	ACTIVE or INACTIVE	If status <b>ET003</b> is stuck at <b>ACTIVE</b> , (See 87B, UCH fault finding).
2	Vehicle impact	ET077: Impact detected	YES or NO	<b>In the event of a fault</b> , refer to the interpretation of fault <b>DF069 Impact detected signal</b> .
3	Starting	ET076: Starting	<b>AUTHORISED:</b> The injection system authorises starting or <b>PROHIBITED:</b> The injection system does not authorise starting.	If status <b>ET076</b> is stuck at <b>PROHIBITED</b> , (See 87B, UCH fault finding).

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### MAIN COMPUTER STATUSES AND PARAMETERS

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Vehicle impact	ET077: Impact detected	YES or NO	In the event of a fault, refer to the interpretation of fault <b>DF069 Impact detected signal.</b>
2	Power supply	ET001: + After ignition computer feed	PRESENT, ignition on	If there is a fault carry out a fault finding test on the <b>charge circuit.</b>
		PR071: Computer feed voltage	$9\text{ V} < X < 16\text{ V}$	
		PR368: Sensor reference voltage	$3.47\text{ V} < X < 3.75\text{ V}$ (Average of the three sensor feed voltages)	In the event of a fault, consult the interpretation of faults <b>DF011 Sensor feed voltage no. 1</b> , <b>DF012 Sensor feed voltage no. 2</b> and <b>DF013 Sensor feed voltage no. 3.</b>
		PR076: Refrigerant sensor voltage	$0\text{ V} < X < 5\text{ V}$	In the event of a fault, consult the interpretation of fault <b>DF049 Refrigerant sensor circuit.</b>
3	Engine running	PR055: Engine speed	Indicates the engine's rotation speed in <b>rpm.</b> <b>PR055 = 800 rpm</b>	In the event of a fault, consult the interpretation of fault <b>DF005 Engine speed sensor circuit.</b>
4	Injection configuration	ET104: Injector code use	YES or NO or DEFECTIVE	This status indicates that the IMA function is activated. In the event of a fault, consult the interpretation of <b>DF276 Injector code programming.</b>



# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### MAIN COMPUTER STATUSES AND PARAMETERS (continued)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
5	Pressure	PR035: Atmospheric pressure	Indicates the atmospheric pressure in mbar. The sensor is built into the computer. <b>Default value: 750 mbar.</b>	<b>In the event of a fault, consult the interpretation of fault DF003 Atmospheric pressure sensor circuit.</b>
		PR038: Rail pressure	<b>250 &lt; P &lt; 300 bar</b> <b>Pmax = 1350 bar</b>	<b>In the event of a fault, consult the interpretation of fault DF007 Rail pressure sensor circuit.</b>
6	Temperature	PR059: Inlet air temperature	Indicates the inlet air temperature <b>Default value: 20°C</b>	<b>In the event of a fault, refer to the interpretation of parameter PR059.</b>
		PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119°C.</b>	<b>In the event of a fault, refer to the interpretation of DF001 Coolant temperature sensor circuit.</b>
7	Preheating	ET007: Pre-postheating control	<b>INACTIVE</b> <b>warm engine</b>	<b>In the event of a fault, refer to the interpretation of status ET007.</b>
8	Torque	PR015: Engine torque	<b>When starting:</b> <b>25 &lt; X &lt; 40 N.m</b> <b>At idle speed:</b> <b>2 &lt; X &lt; 4 N.m</b>	None.
9	Charging circuit	PR016: Alternator flow	<b>Warm engine</b> <b>10 &lt; X &lt; 20 mA</b> <b>With consumers:</b> <b>25 &lt; X &lt; 36 mA</b>	<b>In the event of a fault, check the charge circuit.</b>

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### MAIN COMPUTER STATUSES AND PARAMETERS (continued)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
10	Speed signal	PR089: Vehicle speed	Gives the vehicle speed in <b>km/h</b> . This parameter is transmitted by the ABS computer. This signal is transmitted to the injection system by the multiplex network.	<b>In the event of a fault</b> test the multiplex network. (See 38C ABS to deal with any faults.)
11	Reverse gear signal	ET035: Reverse gear signal	<b>ABSENT</b> or <b>PRESENT</b>	None.

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### AIR CIRCULATION (TURBOCHARGING/INLET)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Engine speed	PR055: Engine speed	Indicates the engine's speed of rotation in rpm. At idle speed PR055 = 800 rpm.	In the event of a fault, consult the interpretation of fault DF005 Engine speed sensor circuit.
2	Temperature	PR061: Exterior air temperature	Gives the exterior air temperature in °C. This parameter is controlled by the UCH and transmitted to the injection on the multiplex network. <b>Default value: 20°C</b>	<b>In the event of a fault,</b> (see 87B, UCH).
		PR059: Inlet air temperature	Indicates the inlet air temperature <b>Default value: 20°C</b>	<b>In the event of a fault,</b> refer to the interpretation of fault <b>DF039 Inlet air temperature sensor circuit.</b>
3	Turbocharging	PR041: Turbocharging pressure	<b>Idling</b> <b>PR042 = PR035 = Atmospheric pressure</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF004 Turbocharging pressure sensor circuit.</b>
		PR009: Turbocharging pressure setpoint	<b>790 &lt; X &lt; 1010 mbar</b>	None.
		PR047: Turbocharging pressure OCR	<b>Warm engine</b> <b>PR047 = 85%</b>	The Opening Cyclic Ratio should be identical to the correction of the solenoid valve position.
		PR011: Turbocharging solenoid valve position sensor	<b>Warm engine</b> <b>PR011 = 85%</b>	

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### AIR CIRCULATION (TURBOCHARGING/INLET) (CONT'D)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
4	Air circulation	PR035: Atmospheric pressure	Indicates the atmospheric pressure in mbar. The sensor is built into the computer. <b>Default value: 750 mbar</b>	<b>In the event of a fault, consult the interpretation of fault DF003 Atmospheric pressure sensor circuit.</b>
		PR132: Air flow	<b>Idling</b> <b>PR132 = 30 kg/h</b>	<b>In the event of a fault, consult the interpretation of fault DF056 Air flow sensor circuit.</b>
		PR050: Damper flap OCR	<b>X = 5%</b>	<b>In the event of a fault, consult the interpretation of fault DF067 Damper control circuit.</b>
5	Sensor feed	PR081: Inlet temperature sensor voltage	<b>1.9 &lt; PR081 &lt; 2.4 V</b> <b>Default value: 5 V</b>	<b>In the event of a fault, refer to the interpretation of fault DF039 Inlet air temperature sensor circuit.</b>
		PR079: Atmospheric pressure sensor voltage	<b>3.80 &lt; X &lt; 4 V</b>	<b>In the event of a fault, consult the interpretation of fault DF003 Atmospheric pressure sensor circuit.</b>
		PR073: Air flowmeter feed voltage	<b>Engine idling</b> <b>1.5 &lt; PR073 &lt; 2.2 V</b> <b>Safe value: 0 V</b>	<b>In the event of a fault, refer to the interpretation of fault DF013 Sensor supply voltage no. 3.</b>

### NOTES

Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: **engine at idle speed, coolant temperature at > 80°**.

### FUEL CIRCUIT

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Engine speed	PR055: Engine speed	Indicates the engine's rotation speed in rpm. <b>Idling</b> PR055 = 800 rpm	<b>In the event of a fault, consult the interpretation of fault DF005 Engine speed sensor circuit.</b>
2	Temperature	PR063: Fuel temperature	Shows the fuel temperature <b>Default value: 100°C</b>	<b>In the event of a fault, consult the interpretation of fault DF098 Fuel temperature sensor circuit.</b>
3	Pressure	PR008: Rail reference pressure	Indicates the theoretical pressure value for optimum engine operation <b>250 &lt; PR008 &lt; 300 bar</b>	<b>In the event of a fault, consult the interpretation of fault DF053 Rail pressure regulation function.</b>
		PR048: Rail pressure regulation valve OCR	<b>PR048 = 40%</b>	<b>In the event of a fault, consult the interpretation of fault DF007 Rail pressure sensor circuit.</b>
		PR038: Rail pressure	<b>250 &lt; PR038 &lt; 300 bar</b> <b>Default value: 250 bar.</b>	
		PR213: Rail pressure loop difference	<b>X = PR008 - PR038</b>	The fuel pressure variation is the difference between the rail pressure and the rail pressure setpoint. <b>In the event of a fault, consult the interpretation of fault DF007 Rail pressure sensor circuit.</b>

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### FUEL CIRCUIT (continued)

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
4	Flow	PR017: Fuel flow	$6 < X < 7 \text{ mg/st}$	NONE
5	Rail current	PR006: Rail pressure regulator current	$1320 < X < 1350 \text{ mA}$ Default value: 1600 mA or 4 mA	In the event of a fault, consult the interpretation of fault <b>DF007 Rail pressure sensor circuit.</b>
		PR007: Rail pressure regulator current setpoint	$1320 < X < 1350 \text{ mA}$ Default value: 1600 mA or 4 mA	
6	Sensor voltage	PR082: Fuel temperature sensor voltage	$1.5 < X < 2.5 \text{ V}$ Default value: 5 V	In the event of a fault, consult the interpretation of fault <b>DF098 Fuel temperature sensor circuit.</b>
		PR080: Rail pressure sensor voltage	$1.1 < X < 1.2 \text{ V}$ Default value: 5 V	In the event of a fault, refer to the interpretation of fault <b>DF013 Sensor supply voltage no. 3.</b>
7	Fuel flow correction	PR364: Cylinder no. 1 fuel flow correction ----- PR405: Cylinder no. 2 fuel flow correction ----- PR406: Cylinder no. 3 fuel flow correction ----- PR365: Cylinder no. 4 fuel flow correction	$\pm 1 \text{ mg/st}$	If one of the fuel flow correction parameters is outside the permitted tolerance values, consult the interpretation of TEST 1 Injector Test.

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

Only carry out this conformity check after carrying out a complete check using the diagnostic tool. The values shown in this conformity check are given as examples. Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### ANTIPOLLUTION/OBD

Order	Function	Parameter or Status Check or Action	Display and Notes	Fault finding
1	Engine speed	PR055: Engine speed	Indicates the engine's rotation speed in rpm. <b>Idling</b> <b>X = 800 rpm rpm</b>	<b>In the event of a fault, consult the interpretation of fault DF005 Engine speed sensor circuit.</b>
2	Exhaust gas recirculation	PR046: EGR solenoid valve OCR ----- PR005: EGR valve opening setpoint ----- PR051: EGR valve position feedback ----- PR022: EGR valve position feedback loop difference ----- PR128: First EGR valve offset ----- PR129: Last EGR valve offset	<b>Idling</b> <b>43.5 &lt; X &lt; 44%</b> ----- Gives a theoretical EGR valve opening value for optimum engine operation. <b>Idling</b> <b>5 &lt; X &lt; 95%</b> ----- <b>5 &lt; X &lt; 95%</b> ----- <b>PR022 = PR051 - PR005</b> ----- <b>15% &lt; X &lt; 30%</b> (Average value) ----- <b>15% &lt; X &lt; 40%</b> (Average value)	<b>In the event of a fault, consult the interpretation of faults DF117 EGR position offset and DF114 EGR solenoid valve circuit.</b>
3	Air regulation	PR171: Air flow setpoint for EGR ----- PR131: EGR air flow variation ----- ET078: Air regulation	<b>275 &lt; X &lt; 280 mg/st</b> ----- <b>ACTIVEor INACTIVE</b>	<b>None</b>
4	Sensor feed	PR077: EGR valve position sensor voltage	<b>1.06 &lt; X &lt; 1.08 V</b> <b>Safe value: 0 V</b>	<b>In the event of a fault, consult the interpretation of fault DF114 EGR solenoid valve circuit.</b>

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as examples.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### COLD LOOP

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Air conditioning detection	ET079: Air conditioning present	Indicates whether the vehicle is fitted with air conditioning or not. – YES: Air conditioning is detected by the injection computer. – NO: Air conditioning is not detected by the injection computer.	If this is not consistent with the vehicle equipment, carry out a test on the multiplex network and apply the relevant procedure.
2	Engine running	PR055: Engine speed	Indicates the engine's speed in rpm <b>At idling speed</b> PR055 = 800 rpm	In the event of a fault, consult the interpretation of fault <b>DF005 Engine speed sensor circuit.</b>
3	Driver control	ET088: Compressor actuation request ----- ET004: Air conditioning authorisation	ACTIVE OR INACTIVE ----- YES or NO	If air conditioning is not authorised, or if the compressor is never activated, (See 62A, Air conditioning).
4	Air conditioning speed	PR053: Speed requested by air conditioning	At idling speed PR053 = 900 rpm	None
5	Pressure	PR037: Refrigerant pressure	1 < X < 32 bar	In the event of a fault, consult the interpretation of fault <b>DF049 Refrigerant sensor.</b>
6	Output	PR125: Power absorbed by the air conditioning compressor	At idling speed PR125 = 300 W	None



### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as examples.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### COLD LOOP (continued)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
7	Engine cooling	<p>ET022: Low speed fan assembly request</p> <p>ET021: High speed fan assembly request</p> <p>ET014: Fan assembly 1 check</p> <p>ET015: Fan assembly 2 check</p>	<p><b>INACTIVE</b> if air conditioning not switched on</p> <p><b>RUNNING</b> if air conditioning is active</p> <p><b>RUNNING</b> if operating temperature is reached</p>	<p>If the motor-driven fan assemblies are being supplied continuously without the air conditioning being active, the injection system may be in defect mode.</p> <p>Carry out a system fault test and consult the interpretation of any faults.</p>
8	Coolant temperature	PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119 °C</b>	<b>In the event of a fault,</b> consult the interpretation for <b>DF001 "Coolant temperature sensor circuit"</b> .
9	Vehicle speed	PR089: Vehicle speed	Gives the vehicle speed in mph. This parameter is transmitted by the ABS computer. This signal is transmitted to the injection on the multiplex network. With ignition on PR089 = 0 mph (km/h)	In the event of a fault, test the multiplex network. Refer to the ABS fault finding notes for the interpretation of possible faults.

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as examples.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### DRIVER PARAMETERS

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Engine running	PR055: Engine speed	Indicates the engine's speed in rpm <b>At idling speed</b> PR055 = 800 rpm	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF005 Engine speed sensor circuit.</b>
2	Accelerator pedal position	PR030: Accelerator pedal position *	Indicates the accelerator pedal position <b>If no pressure is being applied to the pedal PR030 = 0 %</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF008 Pedal potentiometer circuit gang 1</b> or <b>DF009 Pedal potentiometer circuit gang 2.</b>
3	Sensor feed	PR147: Pedal potentiometer gang 1 voltage ----- PR148: Pedal potentiometer gang 2 voltage	<b>Accelerator pedal released</b> <b>0.70 &lt; PR147 &lt; 0.80 V</b> ----- <b>Accelerator pedal released</b> <b>0.35 &lt; PR148 &lt; 0.40 V</b>	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF011 Sensor feed voltage no. 1</b> or <b>DF012 Sensor feed voltage no. 2.</b>

**(\*) PEDAL VOLTAGES - COLD, IGNITION OFF**  
(Average values given as examples).

Pedal load	0 %	25 %	50 %	100 %	120 %
Gang 1 voltage	0.76 V	1.52 V	2.09 V	3.23 V	3.68 V
Gang 2 voltage	0.37 V	0.74 V	1.02 V	1.56 V	1.79 V

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as a guide.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### HEATING

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Coolant temperature	PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119 °C</b>	<b>In the event of a fault</b> , consult the interpretation of <b>DF001 Coolant temperature sensor circuit</b> .
2	Resistance Heating Passenger compartment	ET111: RCH number set	Indicates the number of passenger compartment resistors supplied. The passenger compartment resistor function programming is performed through the UCH.  Certain operating parameters determine the operation of one or more passenger compartment resistors.  The injection computer only receives a signal relating to the number of passenger compartment resistors to control.  <b>Warm engine</b> <b>ET111 = NO</b>	<b>In the event of a fault</b> , refer to the UCH fault finding note.
		ET112: RCH cut-off	Status <b>ET112</b> is indicated if the passenger compartment resistors are being controlled. The computer receives the signal to cut-off the resistors through the UCH.  <b>Warm engine</b> <b>ET112 = YES</b>	

# DIESEL INJECTION

## Fault finding - Conformity check

# 13B

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as a guide.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### CRUISE CONTROL/SPEED LIMITER

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Cruise control/speed limiter	PR089: Vehicle speed	Indicates the vehicle speed in <b>mph (km/h)</b> . This parameter is transmitted by the ABS computer. This signal is transmitted to the injection on the multiplex network.  <b>At idling speed</b> <b>PR089 = 0 mph</b>	<b>In the event of a fault, test the multiplex network.</b>  <b>(See 38C, ABS) for the interpretation of possible faults.</b>
		PR130: Cruise control setpoint	Indicates the cruise control limit speed  <b>At idling speed</b> <b>X = 0 mph (km/h)</b>	<b>In the event of a fault, consult the interpretation of statuses ET703 Cruise control/Speed limiter buttons and ET415 Cruise control/Speed limiter deactivation.</b>

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as a guide.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### CRUISE-CONTROL/SPEED LIMITER (continued)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
2	Cruise control/speed limiter (continued)	<b>ET415:</b> Deactivation of cruise control/speed limiter  Note: the cruise control can only be activated at a speed of <b>&gt; 18 mph (30 km/h)</b> .	<b>NONE</b> <hr/> <b>STATUS 1:</b> Traction control request <hr/> <b>STATUS 2:</b> Brake pedal depressed <hr/> <b>STATUS 3:</b> Clutch pedal depressed <hr/> <b>STATUS 4:</b> Suspend button pressed <hr/> <b>STATUS 5:</b> Cruise control or speed limiter monitoring <hr/> <b>STATUS 6:</b> Gear lever in neutral (manual gearbox) or neutral position (automatic transmission). <hr/> <b>STATUS 7:</b> Inconsistency between request and vehicle speed <hr/> <b>STATUS 9:</b> Vehicle speed monitoring <hr/> <b>STATUS 10:</b> Monitoring by injection computer	The cruise control and speed limiter functions can be deactivated by various events.  <b>In the event of a fault,</b> consult the interpretation of statuses <b>ET703 Cruise control/Speed limiter buttons</b> and <b>ET415 Cruise control/Speed limiter deactivation</b> .
		<b>ET703:</b> Cruise control/speed limiter buttons	<b>INACTIVE:</b> no button pressed <hr/> <b>INCREASE:</b> increase button pressed <hr/> <b>DECREASE:</b> decrease button pressed <hr/> <b>SUSPEND:</b> Suspend button pressed <hr/> <b>RESUME:</b> Resume button pressed	<b>In the event of a fault,</b> consult the interpretation of statuses <b>ET703 Cruise control/Speed limiter buttons</b> and <b>ET415 Cruise control/Speed limiter deactivation</b> .

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as a guide.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### CRUISE-CONTROL/SPEED LIMITER (continued)

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
3	Brake switch	ET704: Brake switch no. 1 signal	Indicates the position of the brake pedal	In the event of a fault, consult the interpretation of statuses <b>ET704</b> and <b>ET705</b> .
		----- ET705: Brake switch no. 2 signal	With the ignition on, pedal released: <b>ET704 = ET705 = INACTIVE</b>	
4	Clutch Switch	ET405: Clutch pedal switch	Indicates the position of the clutch pedal  With the ignition on, pedal released: <b>ET405 = INACTIVE</b>	In the event of a fault, consult the interpretation of <b>status ET405</b> .

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as a guide.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### ENGINE COOLING

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Coolant temperature	PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119 °C</b>	<b>In the event of a fault, consult the interpretation of DF001 Coolant temperature sensor circuit.</b>
2	Fan assemblies	ET022: Low speed fan assembly request	<b>INACTIVE</b> if air conditioning not switched on	<b>If the fan assemblies are supplied with the ignition on, the injection may be in defect mode.</b>  Carry out a system fault test and consult the interpretation of any faults.
		ET021: High speed fan assembly request		
		ET014: Fan assembly 1 check	<b>RUNNING</b> if air conditioning is active	
		ET015: Fan assembly 2 check	<b>RUNNING</b> if operating temperature is reached	
3	Sensor feed	PR084: Coolant temperature sensor voltage	<b>idle speed, engine warm</b>  <b>PR084 = 0.54 V</b>  <b>Safe value: 5 V</b>	<b>In the event of a fault, consult the interpretation of DF001 Coolant temperature sensor circuit.</b>

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as a guide.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### IGNITION/PREHEATING

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Power supply	ET001: + After ignition computer feed	<b>PRESENT</b>	<b>If the event of a fault, carry out fault finding on the charging circuit</b>
2	Engine speed	PR055: Engine speed	Indicates the engine's speed in <b>rpm</b>  <b>At idling speed</b> <b>PR055 = 800 rpm</b>	<b>In the event of a fault, consult the interpretation of fault DF005 Engine speed sensor circuit.</b>
3	Temperature	PR064: Coolant temperature	Shows the engine coolant temperature in °C <b>Default value: 119 °C</b>	<b>In the event of a fault, consult the interpretation of DF001 Coolant temperature sensor circuit.</b>
		PR059: Inlet air temperature	Indicates the inlet air temperature <b>Default value: 20 °C</b>	<b>In the event of a fault, consult the interpretation of fault DF039 Inlet air temperature sensor circuit.</b>
4	Preheating	ET007: Preheating unit control	<b>idle speed, engine warm</b> <b>ET007 = INACTIVE</b>	<b>In the event of a fault, (ET007 locked in ACTIVE), consult the interpretation of fault DF017 Preheating unit control circuit.</b>



### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as a guide.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### STARTING

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Power supply	ET001: + After ignition computer feed	PRESENT	If the event of a fault, carry out fault finding on the <b>charging circuit</b>
		PR071: Computer feed voltage	9 V < X < 16 V	In the event of a fault, carry out fault finding on the charging circuit.
		PR358: Sensor reference voltage	3.47 < X < 3.75 V (Average of the three sensor feed voltages)	In the event of a fault, consult the interpretation of faults DF011 Sensor feed voltage no. 1, DF012 Sensor feed voltage no. 2, and DF013 Sensor feed voltage no. 3.
2	Starting	ET076: Starting	<b>AUTHORISED:</b> The injection gives authorisation to start or <b>PROHIBITED:</b> The injection does not give authorisation to start.	If status <b>ET076</b> is <b>PROHIBITED</b> , carry out fault finding on the entire multiplex network.
3	Engine operation	ET038: Engine	At idling speed Running	None
4	Synchronisation	ET238: Synchronisation	PERFORMED	In the event of a fault, consult the interpretation of status <b>ET238</b>

### NOTES

Only check conformity after a complete check using the diagnostic tool. The values shown in this conformity check are given as a guide.  
Test conditions: **engine at idle speed, coolant temperature at > 80°.**

### PROTECTION

Order	Function	Parameter or Status checked or Action	Display and Notes	Fault finding
1	Engine immobiliser	ET341: Code programmed	YES or NO	If status <b>ET341</b> is stuck at <b>NO</b> , (See 87B, UCH).
		ET003: Engine immobiliser	ACTIVE or INACTIVE	If status <b>ET003</b> is stuck at <b>ACTIVE</b> , (See 87B, UCH).
2	Vehicle impact	ET077: Impact detected	YES or NO	<b>In the event of a fault,</b> consult the interpretation of fault <b>DF069 Impact signal detected</b> .
3	Starting	ET076: Starting	<b>AUTHORISED:</b> The injection system authorises starting or <b>PROHIBITED:</b> The injection system does not authorise starting.	If status <b>ET076</b> is <b>PROHIBITED</b> , (See 87B, UCH).

Tool Status	Diagnostic tool title
<b>ET001</b>	+ After ignition computer feed
<b>ET003</b>	Engine immobiliser
<b>ET004</b>	Air conditioning authorisation
<b>ET007</b>	Preheating unit control
<b>ET014</b>	Check cooling fan 1
<b>ET015</b>	Check cooling fan 2
<b>ET021</b>	High speed fan assembly request
<b>ET022</b>	Low speed fan assembly request
<b>ET035</b>	Reverse gear signal
<b>ET038</b>	Engine
<b>ET042</b>	Cruise control/speed limiter
<b>ET076</b>	Starting
<b>ET077</b>	Impact detected
<b>ET078</b>	Air regulation
<b>ET079</b>	Air conditioning present
<b>ET088</b>	Compressor actuation request
<b>ET104</b>	Injector code use
<b>ET111</b>	RCH* number set
<b>ET112</b>	RCH* cut-off
<b>ET233</b>	Clutch pedal
<b>ET238</b>	Synchronisation
<b>ET341</b>	Immobiliser code programmed
<b>ET405</b>	Clutch pedal switch
<b>ET413</b>	Cruise control/speed limiter function
<b>ET415</b>	Deactivation of cruise control/speed limiter
<b>ET703</b>	Cruise control/speed limiter buttons
<b>ET704</b>	Brake switch no. 1
<b>ET705</b>	Brake switch no. 2

\*RCH: Passenger compartment heating resistor

<b>ET001</b>	<u>COMPUTER + AFTER IGNITION FEED</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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**ABSENT ignition on**

Check the condition and conformity of the **F5D (5A)** supply fuse for the UPC.

Repair if necessary.

Check for **earth** on the following connections:

Injection computer black 32-track connector A **track G4** —————▶ **Battery earth**

Injection computer black 32-track connector A **track H4** —————▶ **Battery earth**

Injection computer black 32-track connector A **track H1** —————▶ **Battery earth**

Repair if necessary.

Check for **+ 12 V** on track **D1** of connector A of the injection computer.

If there is no voltage, check the **continuity and insulation against earth** of the following connection:

Injection computer black 32-track connector A, **track D1** —————▶ **Track 1** of the UPC  
black connector

Repair if necessary.

**PRESENT ignition on**

Check that there is not **+ 12 V** with the ignition switched on track **D1** of connector A of the injection computer.

Repair if necessary.

<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET003</b>	<u>ENGINE IMMOBILISER</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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<b>ACTIVE</b>
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Refer to the UCH fault finding note (See 87B, UCH).

<b>INACTIVE</b>
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Refer to the UCH fault finding note (See 87B, UCH).

<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET004</b>	<u>AC AUTHORISED</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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<b>YES</b>	The air conditioning authorisation only changes to <b>YES</b> if: <ul style="list-style-type: none"><li>– the air conditioning request has been made by the driver (air conditioning switch in <b>AC</b> or <b>AUTO</b> position with minimum ventilation),</li><li>– the engine is not under full load,</li><li>– the air conditioning system is not defective.</li></ul>
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<b>NO</b>	<p>The status <b>ET004</b> remains at <b>NO</b> under the following conditions:</p> <ul style="list-style-type: none"><li>– Vehicle stopped with the ignition on,</li><li>– faults present in the air conditioning circuit,</li><li>– no air conditioning request made by the driver,</li><li>– engine under full load.</li></ul> <p>If status <b>ET004</b> remains at <b>NO</b> then the air conditioning should be authorised, check:</p> <ul style="list-style-type: none"><li>– that the air conditioning compressor is activated correctly,</li><li>– the air conditioning system feed fuses,</li><li>– for gas in the air conditioning circuit,</li><li>– the gas pressure value is consistent at idle speed.</li></ul> <p>If the fault is still present, check the air conditioning computer for faults (See <b>62A, Air conditioning</b>).</p>
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET007</b>	<u>PREHEATING UNIT CONTROL</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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<b>YES</b>	<p>When the vehicle is started from cold, the injection computer controls the pre/postheating unit so that the vehicle can be started.</p> <p>Status <b>ET007</b> changes to <b>YES</b> a few seconds after the ignition is switched on and during pre/postheating.</p> <p>If the vehicle does not start and status <b>ET007</b> changes to <b>YES</b>, check:</p> <ul style="list-style-type: none"><li>– the <b>F2 (70A)</b> supply fuse on the preheating unit,</li><li>– the resistance of the heater plugs.</li></ul> <p>Replace any plug with resistance of less than <b>2 Ω</b>.</p> <p>If the vehicle starts and the status <b>ET007</b> remains <b>YES</b> during the engine functional stage, consult the interpretation of faults:</p> <p><b>DF017 Preheating relay control circuit.</b></p> <p><b>DF025 Preheating unit diagnostic connection.</b></p>
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<b>NO</b>	<p>After the engine is started and preheating, the injection computer should stop the pre/postheating unit operating.</p> <p>Status <b>ET007</b> Should change to <b>NO</b>.</p> <p>In the event that the vehicle does not start and status <b>ET007</b> remains at <b>NO</b>, check the <b>continuity and the absence of interference resistance</b> of the following connections:</p> <p>Injection computer <b>track A4, 32-track grey connector C</b> —————→ <b>Track 9</b> preheating unit</p> <p>Injection computer <b>track E2, 32-track grey connector C</b> —————→ <b>Track 8</b> preheating unit</p> <p>Repair if necessary.</p> <p>If the fault is still present, consult the interpretation of faults:</p> <p><b>DF017 Preheating relay control circuit.</b></p> <p><b>DF025 Preheating unit diagnostic connection.</b></p>
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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**ET014**

FAN ASSEMBLY 1 CHECK

**NOTES**

Only perform the tests if the statuses do not correspond with the system programming functions.

**Note: Status ET022 Low-speed engine fan request and status ET014 Engine fan assembly check 1 change their status at the same time.**

**RUNNING**

The low-speed fan assembly is supplied in three scenarios:

- the engine coolant temperature is above **89 °C**;
- the air conditioning is operational,
- the injection computer has system faults that could lead to the engine overheating.

When the low-speed engine fan is supplied:

- status **ET014** changes to **RUNNING**
- status **ET022 low-speed engine fan request** changes to **ACTIVE**.

In the event that the low-speed engine fan does not work, refer to the UPC fault finding note.

**STOPPED**

The low-speed engine fan assembly stops when:

- the engine coolant temperature is below **89 °C**;
- no air conditioning request made by the driver.



**IMPORTANT**

**WARNING**

If the UPC does not detect the injection computer frames, the low-speed engine fan assembly is supplied until the battery is completely discharged.

In the event that the low-speed engine fan assembly is faulty, the high-speed engine fan assembly will then be activated.

**AFTER REPAIR**

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



<b>ET015</b>	<u>FAN ASSEMBLY 2 CHECK</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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**Note:** Status ET015 Engine fan assembly 2 and status ET021 High-speed engine fan request change their status at the same time.

**RUNNING**

The engine fan assembly can be supplied when:

- the engine coolant temperature is above **99 °C**.
- the injection computer has system faults that could lead to the engine overheating.

When the high speed fan is supplied:

- status **ET015** changes to **RUNNING**
- status **ET021 low-speed engine fan request** changes to **ACTIVE**.

In the event that the high-speed engine fan does not work, refer to the UPC fault finding note.

**STOPPED**

The high-speed engine fan assembly stops when:

- the engine coolant temperature is below **99 °C**;



**IMPORTANT**

**WARNING**

If the UPC does not detect the injection computer frames, the low speed engine fan is supplied until the battery is completely discharged.

In the event that the low-speed engine fan assembly is faulty, the high-speed engine fan assembly will then be activated.

**AFTER REPAIR**

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

<b>ET021</b>	<u>HIGH-SPEED FAN REQUEST</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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**Note: Status ET021 High-speed engine fan assembly request and status ET015 High-speed engine fan 2 test change their status at the same time.**

**ACTIVE**

The injection computer requests the activation of the high speed GMV when:

- the engine coolant temperature is above **99 °C**.
- the injection computer has system faults that could lead to the engine overheating.

When the high speed fan is supplied:

- status **ET021 High-speed engine fan request** changes to **ACTIVE**.
- status **ET015** changes to **RUNNING**

In the event that the high-speed engine fan does not work, refer to the UPC fault finding note.

**STOPPED**

The high-speed engine fan assembly stops when:

- the engine coolant temperature is below **99 °C**;
- no fault which could engine overheating is present in the injection system.



**IMPORTANT**

**WARNING**

If the UPC does not detect the injection computer frames, the low speed engine fan is supplied until the battery is completely discharged.

In the event that the low-speed engine fan assembly is faulty, the high-speed engine fan assembly will then be activated.

<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET022</b>	<u>LOW-SPEED FAN REQUEST</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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**Note:** Status ET022 Low-speed engine fan request and status ET014 Engine fan assembly check 1 change their status at the same time.

**ACTIVE**

The injection computer requests the activation of the low speed GMV when:

- the engine coolant temperature is above **89 °C**;
- the injection computer has system faults that could lead to the engine overheating,
- the air conditioning is switched on by the driver.

When the high speed fan is supplied:

- status **ET022 High-speed engine fan request** changes to **ACTIVE**,
- status **ET014** changes to **RUNNING**.

In the event that the low-speed engine fan does not work, refer to the UPC fault finding note.

**STOPPED**

The low-speed engine fan assembly stops when:

- the engine coolant temperature is below **89 °C**;
- no fault which could cause engine overheating is present in the injection system.
- the air conditioning is not switched on by the driver.



**IMPORTANT**

**WARNING**

If the UPC does not detect the injection computer frames, the low speed engine fan is supplied until the battery is completely discharged.

In the event that the low-speed engine fan assembly is faulty, the high-speed engine fan assembly will then be activated.

<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET038</b>	<u>Engine</u>
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<b>STOPPED</b>	Status <b>ET038</b> is STOPPED if the engine ignition is on but there has been no starter operation.
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<b>STALLED</b>	Status <b>ET038</b> is STALLED when the engine has stalled. The vehicle will still be on + after ignition feed.
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<b>RUNNING</b>	Status <b>ET038</b> is RUNNING if the engine has started.
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<b>STARTING</b>	Status <b>ET038</b> is Starter when the engine is in its starting phase.
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET042</b>	<u>CRUISE CONTROL/SPEED LIMITER</u>
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<b>STATUS DEFINITION</b>	<p><b>"NOT DETECTED"</b>: This status indicates that the cruise control or speed limiter function is not present on the vehicle.</p> <p><b>"INACTIVE"</b>: This status indicates that the cruise control/speed limiter main On/Off switch is in the rest (or neutral) position.</p> <p><b>"LIMITER"</b>: This status indicates that the driver has used the main switch to select the speed limiter.</p> <p><b>"CRUISE CONTROL"</b>: This status indicates that the driver has used the main switch to select the cruise control.</p>
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<b>NOTES</b>	<p><b>Special notes:</b></p> <p>Only perform these tests if the statuses do not correspond with the system programming functions.</p>
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<b>NOT DETECTED</b>	<p>If the vehicle does not have buttons for the cruise control or speed limiter functions, status <b>ET042</b> is permanently <b>"NOT DETECTED"</b>. This confirms that the cruise control/speed limiter function is not present on the vehicle.</p> <p>If the vehicle is fitted with cruise control or speed limiter function buttons, the main switch is in rest (or neutral) position and the injection computer has just been programmed or reprogrammed, then status <b>ET042</b> is <b>"NOT DETECTED"</b>.</p> <p>To activate the cruise control or speed limiter function, press the main switch in the cruise control position and then in the speed limiter position.</p> <p>Return to rest position</p> <p>The tool displays status <b>ET042: INACTIVE</b>.</p> <p>If not, several steps must be checked:</p> <ol style="list-style-type: none"><li>1 Return to the multiplex network test page with the Clip application. Repeat the multiplex network test. Re-establish dialogue with the injection computer. Check status <b>ET042</b>. If <b>ET042</b> is <b>INACTIVE</b>, the injection computer has detected the various positions of the main switch. The cruise control/speed limiter is activated.</li><li>2 If <b>ET042</b> is <b>"NOT DETECTED"</b>, check that the owner of the vehicle has not requested, sometime in the past, for the cruise control/speed limiter function to be inhibited. Contact the Techline.</li></ol>
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<b>AFTER REPAIR</b>	<p>Deal with any faults.</p> <p>Carry out a road test followed by another check with the <b>diagnostic tool</b>.</p>
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**ET042**  
**(Continued 1)**

**INACTIVE**

When the main switch is in rest position (or neutral), status **ET042** is "**INACTIVE**".  
If "**CRUISE CONTROL**" or "**SPEED LIMITER**" appears despite the main button being in the rest position (or neutral), carry out the following operations:  
Check the connections of the cruise control/speed limiter main switch.

Check for **+ 12 V** APC on the main switch connector.

- Connection code **AP43 of component 1081 (Mégane II)**
- Connection code **AP43 of component 1546 (Scénic II)**

Disconnect the main switch and with it in the rest position, check the insulation between:

- Connection codes **AP43 and 3FX of component 1081 (Mégane II)**
- Connection codes **AP43 and 3PD of component 1081 (Mégane II)**
- **Connection codes AP43 and 3FX of component 1546 (Scénic II)**
- **Connection codes AP43 and 3PD of component 1546 (Scénic II)**

Check the continuity between **connections AP43 and 3PD of component 1081 (Mégane II) and component 1546 (Scénic II)** in speed limiter position.

Check the continuity between **connections AP43 and 3FX of component 1081 (Mégane II) and component 1546 (Scénic II)** in cruise control position.

If these checks are not in order, replace the switch.

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

- Connection code **3FX**,
- connection code **3PD**.

**Between components 1081 and 120 (Mégane II)**

**Between components 1546 and 120 (Scénic II)**

Also check the engine management computer connectors.

If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

**AFTER REPAIR**

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

**ET042**  
**(Continued 2)**

**SPEED  
LIMITER**

When the driver presses the main switch in the speed limiter position, status **ET042** becomes "**SPEED LIMITER**".

If "**CRUISE CONTROL**" or "**INACTIVE**" appears although the switch was pressed in the speed limiter position, carry out the following operations:

Check the connections of the cruise control/speed limiter main switch.

Check for **+12 V** after ignition feed on the main switch connector.

- Connection code **AP43 of component 1081 (Mégane II)**.
- Connection code **AP43 of component 1546 (Scénic II)**.

Disconnect the main switch and with it in the rest position, check the insulation between:

- Connection codes **AP43 and 3FX of component 1081 (Mégane II)**.
- Connection codes **AP43 and 3PD of component 1081 (Mégane II)**.
- Connection codes **AP43 and 3FX of component 1546 (Scénic II)**.
- Connection codes **AP43 and 3PD of component 1546 (Scénic II)**.
- Check the continuity between **connections AP43 and 3PD of component 1081 (Mégane II) and component 1546 (Scénic II)** in speed limiter position.
- Check the continuity between **connections AP43 and 3FX of component 1081 (Mégane II) and component 1546 (Scénic II)** in cruise control position.

If these checks show incorrect values, replace the main switch.

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

- Connection code **3FX**,
  - Connection code **3PD**,
- between components 1081 and 120 (Mégane II).**  
**between components 1546 and 120 (Scénic II).**

Also check the engine management computer connectors.

If there is a repair method (See **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace the wiring.

**AFTER REPAIR**

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

**ET042**  
**(Continued 3)**

**CRUISE  
CONTROL**

When the driver presses the main switch in the cruise control position, status **ET042** becomes "**CRUISE CONTROL**".

If "**SPEED LIMITER**" or "**INACTIVE**" appears although the driver pressed the switch in the cruise control position, carry out the following operations:

Check the connections of the cruise control/speed limiter main switch.

Check for **+ 12 V** APC on the main switch connector.

- Connection code **AP43 of component 1081 (Mégane II)**.
- Connection code **AP43 of component 1546 (Scénic II)**.

Disconnect the switch and when it is in the rest position, check the insulation between:

- Connection codes **AP43 and 3FX of component 1081 (Mégane II)**.
- Connection codes **AP43 and 3PD of component 1081 (Mégane II)**.
- Connection codes **AP43 and 3FX of component 1546 (Scénic II)**.
- Connection codes **AP43 and 3PD of component 1546 (Scénic II)**.

Check the continuity between connections **AP43 and 3PD of component 1081 (Mégane II) or component 1546 (Scénic II)** in the speed limiter position.

Check the continuity between connections **AP43 and 3FX of component 1081 (Mégane II) or component 1546 (Scénic II)** in the cruise control position.

If these checks show incorrect values, replace the main switch.

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

- Connection code **3FX**,
- connection code **3PD**.

Between **components 1081 and 120 (Mégane II)**.

Between components **1546 and 120 (Scénic II)**.

Also check the engine management computer connectors.

If there is a repair method (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

**AFTER REPAIR**

Deal with any other faults. Clear the fault memory.

Switch off the ignition and carry out a road test followed by a test with the **diagnostic tool**.



<b>ET076</b>	<u>STARTING</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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<b>AUTHORISED</b>	Starting the vehicle is authorised when the UCH authorises starting. Status <b>ET076</b> changes to <b>AUTHORISED</b> if the vehicle cards are recognised and the engine immobiliser is inactive.
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<b>PROHIBITED</b>	If the card is not recognised by the UCH, starting the vehicle is prohibited. Status <b>ET076</b> is <b>PROHIBITED</b> and the vehicle cannot be started. Run fault finding on the UCH (see 87B, UCH).
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET077</b>	<u>IMPACT DETECTED</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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<b>YES</b>	<p>If the vehicle has been involved in an accident, the injection computer receives the impact signal via the multiplex network and may switch off the ignition. Status <b>ET077</b> is at <b>YES</b>.</p> <p>Switch off the ignition for ten seconds, then switch it back on to enable the engine to start. Carry out a multiplex network test and deal with any faults.</p>
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<b>NO</b>	In normal operating conditions, status <b>ET077</b> is <b>NO</b> when the computer has received no impact signal.
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET088</b>	<u>REQUEST TO START COMPRESSOR</u>
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<b>ACTIVE</b>	<p>The air conditioning request has been made by the driver when pressing one of the air conditioning controls (Auto, or AC).</p> <p>Status <b>ET088</b> becomes <b>ACTIVE</b> and the computer authorises or does not authorise air conditioning depending on the operating conditions.</p> <p>If status <b>ET088</b> does not become <b>ACTIVE</b> after pressing the control button (See 62A, Air conditioning).</p>
<b>INACTIVE</b>	<p>When the driver deactivates the air conditioning, status <b>ET088</b> must become <b>INACTIVE</b>.</p> <p>If this does not happen, (See 62A, Air conditioning).</p>

<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET104</b>	<u>INJECTOR CODE USE</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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<b>YES</b>	<p>Status <b>ET104</b> is <b>YES</b> if the IMA option (<b>individual injector correction</b>) is <b>activated in the injection computer</b>.</p> <p><b>All the injectors have IMA codes</b> etched on the bakelite body, but <b>not all computers use them</b>.</p> <p>In the case of a computer configured with the IMA option, the injector codes must be entered into the injection computer in the following scenarios:</p> <ul style="list-style-type: none"><li>– when one or more injectors is replaced,</li><li>– when the injection computer is replaced,</li><li>– when the injection computer is reprogrammed.</li></ul> <p><b>If the injector codes are not programmed after these operations, fault DF276 Injector code programming will be present, and the engine will operate in defect mode.</b></p> <p><b>Run command SC002 Enter injector codes applying the procedure described in the interpretation of this command.</b></p>
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<b>NO</b>	<p>Status <b>ET104</b> is <b>NO</b> if the computer is not configured to interpret the IMA codes (<b>individual injector correction</b>).</p> <p><b>WARNING</b></p> <p><b>A computer without the IMA option can be replaced by a computer with this option. In this scenario status ET104 changes to YES after replacing the computer. Fault DF276 Injector code programming will be present and the engine will operate in defect mode.</b></p> <p><b>In this case, run command SC002 Enter injector codes, applying the procedure described in the interpretation of this command.</b></p>
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET104</b> <b>CONTINUED</b>	
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<b>FAULTY</b>	<p>Status <b>ET104</b> is <b>FAULTY</b> if the computer does not have IMA codes in the memory. Fault <b>DF276 Injector code programming</b> is present and the engine operates in defect mode. Run command <b>SC002 Enter injector codes</b> applying the procedure described in the interpretation of this command.</p> <p>If at the end of the procedure status <b>ET104</b> remains <b>FAULTY</b>, contact Techline.</p>
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET238</b>	<u>SYNCHRONISATION</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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**WARNING**

Synchronisation is carried out during the engine starting phase. This is established between the camshaft position sensor and the TDC sensor.

Once this synchronisation has been carried out, it enables the computer to identify cylinder no.1 and to ascertain the precise position of the cylinder's top dead centre.

<b>INACTIVE</b>	<p>When the engine is stopped but the ignition switched on, cylinder no. 1 is no longer indicated.</p> <p>Status <b>ET238</b> is <b>INACTIVE</b>, no synchronisation between the crankshaft and the camshaft is performed.</p>
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<b>DONE</b>	<p>Synchronisation is carried out during the engine starting phase.</p> <p>Cylinder No. 1 is indicated and synchronisation will be performed once the engine is started.</p> <p>Status <b>ET238</b> is <b>COMPLETED</b>.</p> <p>If after several attempts to start the engine status <b>ET238</b> remains <b>INACTIVE</b>, consult the interpretation of the following faults:</p> <ul style="list-style-type: none"><li>– <b>DF005 Engine speed sensor circuit</b></li><li>– <b>DF097 Camshaft sensor circuit</b></li></ul> <p>If the engine still does not start, (see <b>Customer complaints, ALP2 Starting faults</b>).</p>
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET341</b>	<u>IMMOBILISER CODE PROGRAMMED</u>
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<b>NOTES</b>	Only perform the tests if the statuses do not correspond with the system programming functions.
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<b>YES</b>	Status <b>ET341</b> becomes <b>YES</b> if dialogue is possible between the UCH and the injection computer and the card code is recognised.  Engine starting authorisation is only given if the code is recognised by the UCH computer, and status <b>ET003 Engine immobiliser</b> is <b>INACTIVE</b> .
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<b>NO</b>	The code remains <b>NO</b> if dialogue between the UCH and the injection computer is not possible.  Status <b>ET003 Engine immobiliser</b> remains <b>ACTIVE</b> .  The malfunction may result from poor card programming; in this case (see 87B, UCH and follow the card programming procedure).  If the fault is still present, perform a multiplex network test, and make sure there is dialogue between the UCH, UPC and the injection computer.  If dialogue is not established, contact the Techline.
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<b>AFTER REPAIR</b>	Carry out a road test followed by a complete test with the diagnostic tool.
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<b>ET405</b>	<u>CLUTCH PEDAL SWITCH</u>
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<b>STATUS DEFINITION</b>	<p><b>ACTIVE:</b> this status indicates that the clutch pedal is depressed.</p> <p><b>INACTIVE:</b> this status indicates that the clutch pedal is released.</p>
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<b>NOTES</b>	<p><b>Special note:</b> Only perform the tests if the statuses do not correspond with the system programming functions.</p>
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**Conformity check with engine stopped and ignition on, or engine running, and engine coolant temperature > 80 °C**

<b>ACTIVE</b>	<p><b>Clutch pedal depressed.</b> Non-conformity of the brake signals and or the clutch switch signals can cause the engine to race during gear changes. In the event of a fault, check the electrical conformity of the sensor.</p>
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<b>INACTIVE</b>	<p><b>Clutch pedal released.</b> Non-conformity of the brake signals and or the clutch switch signals can cause the engine to race during gear changes. In the event of a fault, check the electrical conformity of the sensor.</p>
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### Sensor electrical conformity

<b>ACTIVE</b>	<p><b>Check the condition and fitting of the clutch pedal switch.</b> Remove the clutch pedal switch, then check the insulation between tracks 1 and 2, with the switch in the rest position. Repeat this operation with the switch pressed and check the <b>continuity</b> between <b>tracks 1 and 2</b>. If these two tests are not correct, replace the switch.</p>
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<b>AFTER REPAIR</b>	<p>Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a test with the <b>diagnostic tool</b>.</p>
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**ET405  
CONTINUED 1**

**INACTIVE**

Check the condition and fitting of the clutch pedal switch.

Remove the clutch pedal switch, then check the **insulation** between **tracks 1** and **2**, with the switch in the rest position.

Repeat this operation with the switch engaged and check the **continuity** between **tracks 1** and **2**.

If these two checks are not in order, replace the switch.

Then check the **continuity and make sure there is no interference resistance** on the following connection:

Injection computer black, 32-track  
connector A, **track C4**



**Track 1** Clutch connector

Check for **earth** on **track 2** of the clutch switch connector.

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

**AFTER REPAIR**

Deal with any other faults. Clear the fault memory.

Switch off the ignition and carry out a road test followed by a test with the **diagnostic tool**.

<b>ET415</b>	<u>CRUISE CONTROL/SPEED LIMITER DEACTIVATION</u>
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<b>NOTES</b>	<b>Special notes:</b> Only perform the tests if the statuses do not correspond with the system programming functions.
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**Note:**

Cruise control can be activated when the vehicle speed exceeds **20 mph (30 km/h)**.

Status **ET415** shows various factors that cause deactivation of the cruise control/speed limiter function, due to a driver request or the external environment (e.g. STATUS 1).

**IMPORTANT**

Clear the fault memory by running command **RZ001 "Fault memory"**, to reset this status to **"WITHOUT"**.

<b>NONE</b>	This status is present on the diagnostic tool when: The computer has been reinitialised. The computer has been reprogrammed.
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<b>STATUS 1</b>	<b>Traction control request</b>
	If the vehicle is fitted with a traction control system, the cruise control function is deactivated every time the ABS computer calls for traction control.  Status <b>ET415</b> becomes <b>STATUS 1</b> when driving, with cruise control active ( <b>ET042: Cruise control/Speed limiter: CRUISE CONTROL</b> ) and upon a traction control request.  This deactivates cruise control.  <b>Reinitialise status ET415 on the injection computer by running command RZ001 "Fault memory"</b> . If status <b>ET415</b> becomes <b>STATUS 1</b> with no traction control request (see <b>38C, Anti-lock Braking System</b> ).

<b>AFTER REPAIR</b>	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a test with the <b>diagnostic tool</b> .
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<b>ET415</b> <b>1(CONTINUED)</b>	
<b>STATUS 2</b>	<p><b>Brake pedal depressed</b></p> <p>The cruise control function is deactivated when the brake pedal is depressed.</p> <p>Status <b>ET415</b> becomes <b>STATUS 2</b> when driving with cruise control active (<b>ET042 Cruise control/Speed limiter: CRUISE CONTROL</b>) and the brake pedal is depressed. This deactivates cruise control.</p> <p><b>Reinitialise status ET415 on the injection computer by running command RZ001 "Fault memory".</b></p> <p>If status <b>ET415</b> becomes <b>STATUS 2</b> without pressing the brake pedal, consult the interpretation of statuses <b>ET704</b> and <b>ET705 Brake contact No. 1 and No. 2</b>.</p>
<b>STATUS 3</b>	<p><b>Clutch pedal depressed</b></p> <p><b>Manual gearbox ONLY</b></p> <p>The cruise control function is deactivated when the gearbox is not coupled to the engine (clutch pedal depressed).</p> <p>Status <b>ET415</b> becomes "<b>STATUS 3</b>" when driving with cruise control active (<b>ET042 "Cruise control/speed limiter": CRUISE CONTROL</b>) and the clutch pedal depressed. This deactivates cruise control.</p> <p><b>Reinitialise status ET415 on the injection computer by running command RZ001 "Fault memory".</b></p> <p>If status <b>ET415</b> becomes <b>STATUS 3</b> without the clutch pedal being depressed, consult the interpretation of status <b>ET405 Clutch pedal switch</b>.</p> <p>If the vehicle is fitted with automatic transmission: Test the multiplex network: check the configuration of the multiplex network in relation to the vehicle's technical specification, especially the configuration of the automatic transmission computer (see <b>88B, Multiplexing</b>)</p>
<b>AFTER REPAIR</b>	<p>Deal with any other faults. Clear the fault memory.</p> <p>Switch off the ignition and carry out a road test followed by a test with the <b>diagnostic tool</b>.</p>

<p><b>ET415</b> <b>(CONTINUED 2)</b></p>	
<p><b>STATUS 4</b></p>	<p><b>Cancel button pressed</b></p> <p>The cruise control/speed limiter function is deactivated whenever the suspend button is pressed. Status <b>ET415</b> becomes <b>STATUS 4</b> when driving with:</p> <ul style="list-style-type: none"> <li>- Either the cruise control active.</li> <li>- Or the speed limiter active,</li> <li>- and the driver presses the <b>0</b> button.</li> </ul> <p>This action deactivates the Cruise control/Speed limiter.</p> <p><b>Reinitialise status ET415 on the injection computer by running command RZ001 "Fault memory".</b></p> <p>If status <b>ET415</b> becomes "<b>STATUS 4</b>" without pressing the "<b>0</b>" button, consult the interpretation of status <b>ET703 "Cruise control/speed limiter" buttons</b> and run fault finding on the "<b>R/0</b>" control button located on the steering wheel, to the right.</p>
<p><b>STATUS 5</b></p>	<p><b>Cruise control or speed limiter monitoring</b></p> <p>This status appears when the vehicle brakes or decelerates sharply without the injection computer receiving a signal that the brake pedal switch has been pressed.</p> <p>If status <b>ET415</b> is <b>STATUS 5</b>, consult the interpretation of:</p> <ul style="list-style-type: none"> <li>- status <b>ET042 Cruise control/Speed limiter</b>,</li> <li>- status <b>ET703 Cruise control/speed limiter buttons</b>,</li> <li>- status <b>ET704 Brake contact no. 1</b>,</li> <li>- and status <b>ET705 Brake contact No 2</b>,</li> </ul> <p>to test the cruise control/speed limiter system components and find the defective component.</p> <p>Also check the operation of the accelerator pedal, and check with the diagnostic tool the presence of a fault connected with this component. Deal with them if necessary.</p> <p><b>Reinitialise status ET415 on the injection computer by running command RZ001 "Fault memory".</b></p> <p>If status <b>ET415</b> changes to <b>STATUS 5</b>, deal with present faults or those stored in the injection computer.</p> <p>If the fault is still present, contact Techline.</p>
<p><b>AFTER REPAIR</b></p>	<p>Deal with any other faults. Clear the fault memory.</p> <p>Switch off the ignition and carry out a road test followed by a test with the <b>diagnostic tool</b>.</p>

<b>ET415 (CONTINUED 3)</b>	
<b>STATUS 6</b>	<p><b>Gear lever in neutral (manual gearbox) or the neutral position (automatic gearbox)</b></p> <p>Status <b>ET415</b> becomes "<b>STATUS 6</b>" when driving with cruise control active (<b>ET042 "Cruise control/speed limiter": CRUISE CONTROL</b>) and:</p> <ul style="list-style-type: none"><li>- If the driver puts the gear lever in neutral position on a manual gearbox without declutching or,</li><li>- if the gear lever is in neutral on an automatic gearbox.</li></ul> <p>This deactivates cruise control.</p> <p><b>Reinitialise status ET415 on the injection computer by running command RZ001 "Fault memory".</b></p> <p>If status <b>ET415</b> becomes <b>STATUS 6</b> without shifting the gear lever into neutral on a manual gearbox without declutching, or into neutral on an automatic transmission, run fault finding on the ABS computer and check the configuration of the tyre size stored in the computer. If the configuration is correct, contact the Techline.</p>
<b>STATUS 7</b>	<p><b>Inconsistency between the request and the vehicle speed</b></p> <p>Status <b>ET415</b> becomes <b>STATUS 7</b> if the computer detects too great a difference between the speed requested by the driver and the vehicle speed.</p> <p><b>STATUS 7</b> could occur when driving, with cruise control active (<b>ET042 Cruise control/speed limiter: CRUISE CONTROL</b>) and when there is a significant difference.</p> <p>This inconsistency deactivates cruise control.</p> <p><b>Reinitialise status ET415 on the injection computer by running command RZ001 "Fault memory".</b></p> <p>If status <b>ET415</b> changes to <b>STATUS 7</b> where there is no significant difference in the levels, contact the Techline.</p>
<b>AFTER REPAIR</b>	<p>Deal with any other faults. Clear the fault memory.</p> <p>Switch off the ignition and carry out a road test followed by a test with the <b>diagnostic tool</b>.</p>

<b>ET415 (CONTINUED 4)</b>	
<b>STATUS 8</b>	<p><b>Automatic transmission in defect mode.</b></p> <p>Status <b>ET415</b> becomes "<b>STATUS 8</b>", when driving with cruise control active (<b>ET042: "Cruise control/speed limiter": CRUISE CONTROL</b>) and if the automatic transmission is in defect mode.</p> <p>This signal is conveyed on the multiplex line and deactivates the cruise control. Carry out a multiplex network test, then run fault finding on the automatic transmission computer.</p> <p>Deal with any present or stored faults (see <b>23A, Automatic transmission, Interpretation of faults</b>).</p> <p>Clear the automatic transmission computer fault memory by running command <b>RZ001: Fault memory</b> or <b>RZ007: Fault memory</b>.</p> <p><b>Reinitialise status ET415 of the injection computer by running command RZ001 "Fault memory" or RZ007 "Fault memory".</b></p> <p>If <b>STATUS 8</b> is still present, contact the Techline.</p>
<b>STATUS 9</b>	<p><b>Vehicle speed monitoring</b></p> <p>Status <b>ET415</b> changes to <b>STATUS 9</b> if the vehicle speed received by the computer is invalid or absent.</p> <p>This signal is conveyed on the multiplex line and deactivates the cruise control. Carry out a multiplex network test, then run fault finding on the <b>ABS</b> computer. Deal with any present or stored faults (see <b>38C, Anti-lock braking system, Interpretation of faults</b>).</p> <p><b>Reinitialise status ET415 of the injection computer by running command RZ001 "Fault memory" or RZ007 "Fault memory".</b></p> <p>If <b>STATUS 9</b> is still present, contact the Techline.</p>
<b>AFTER REPAIR</b>	<p>Deal with any other faults. Clear the fault memory.</p> <p>Switch off the ignition and carry out a road test followed by a test with the <b>diagnostic tool</b>.</p>

<b>ET415</b> <b>(CONTINUED 4)</b>	
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<b>STATUS 10</b>	<b>Monitoring by the injection computer.</b>
	Status <b>ET415</b> becomes " <b>STATUS 10</b> " when driving with cruise control active ( <b>ET042 "Cruise control/speed limiter": CRUISE CONTROL</b> ) and if the injection computer detects a fault anywhere in the engine management system, or an engine speed that is too high or too low.
	<p>This signal is conveyed on the multiplex line and deactivates the cruise control. Carry out a multiplex network test, then run fault finding on the injection computer. Deal with any present or stored faults (see <b>13B Diesel injection, interpretation of faults</b> or <b>17B Petrol injection, Interpretation of faults</b>).</p> <p>Reinitialise status <b>ET415</b> of the injection computer by running command <b>RZ001 "Fault memory"</b> or <b>RZ007 "Fault memory"</b>. If <b>status 10</b> continues, contact the Techline.</p>

<b>AFTER REPAIR</b>	Deal with any other faults. Clear the fault memory. Switch off the ignition and carry out a road test followed by a test with the <b>diagnostic tool</b> .
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## Fault finding - Interpretation of statuses

ET703	<u>CRUISE CONTROL/SPEED LIMITER BUTTONS</u>
NOTES	Special notes: Only perform these tests if the status does not correspond with the system's operation programming.
INACTIVE	Status <b>ET703</b> becomes " <b>INACTIVE</b> " when no cruise control/speed limiter buttons have been pressed. These buttons are located on the steering wheel. To carry out these checks and measurements in complete safety, observe the recommendations for removing the driver's front airbag ( <b>see MR 364 (Mégane II) or 372 (Scénic II), Mechanical, 88C, Airbag and seat belt pretensioners, Driver's front airbag, Removal - Refitting</b> ). If status <b>ET703</b> does not display " <b>INACTIVE</b> ", <ul style="list-style-type: none"><li>– check the condition of the cruise control/speed limiter "+/-" button and the condition of its connector.</li><li>– check the condition of the cruise control/speed limiter "R/O" button and the condition of its connector.</li></ul> Repair if necessary.
INCREASE	Status <b>ET703</b> becomes " <b>INCREASE</b> " when the cruise control/speed limiter "+" button is pressed. This button is on the steering wheel, on the left-hand side.  If status <b>ET703</b> does not display " <b>INCREASE</b> ", check the condition of the "+/-" cruise control/speed limiter button and the condition of its connector. Repair if necessary.  To carry out these checks and measurements in complete safety, observe the recommendations for removing the driver's front airbag ( <b>see MR 364 (Mégane II) or 372 (Scénic II), Mechanical, 88C, Airbag and seat belt pretensioners, Driver's front airbag, Removal - Refitting</b> ). Measure the <b>resistance of the following connections while pressing the + button (on the button tracks)</b> : <ul style="list-style-type: none"><li>– Connection code <b>86G</b>, of component <b>331</b>.</li><li>– Connection code <b>86M</b> of component <b>331</b>.</li></ul> If the resistance is not approximately <b>300 Ω</b> , check the continuity of the connection when the button is not pressed. If there is continuity, replace the +/- control button.  If there is a repair method (see <b>Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair</b> ), repair the wiring, otherwise replace it.
AFTER REPAIR	Deal with any faults. Carry out a road test followed by another check with the <b>diagnostic tool</b> .



<p><b>ET703</b> <b>(CONTINUED 1)</b></p>	
<p><b>DECREASE</b></p>	<p>Status <b>ET703</b> becomes "<b>DECREASE</b>" when the cruise control/speed limiter "-" button is pressed. This button is on the steering wheel, on the left-hand side. If status <b>ET703</b> does not become "<b>DECREASE</b>", check the condition of the cruise control/speed limiter "+/-" button, and the condition of its connector. Repair if necessary.</p> <p>To carry out these checks and measurements in complete safety, observe the recommendations for removing the driver's front airbag (see <b>MR 364 (Mégane II)</b> or <b>370 (Scénic II), Mechanical, 88C, Airbag and seat belt pretensioners, Driver's front airbag, Removal - Refitting</b>).</p> <p>Measure the <b>resistance of the following connection whilst pressing the "-" button (on the button tracks)</b>:</p> <ul style="list-style-type: none"> <li>– Connection code <b>86G</b>, of component <b>331</b>.</li> <li>– Connection code <b>86M</b> of component <b>331</b>.</li> </ul> <p>If the resistance is not approximately <b>100 Ω</b>, check the continuity of the connection when the button is in rest position. If there is continuity, replace the +/- control button.</p> <p>If there is a repair method (see <b>Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair</b>), repair the wiring, otherwise replace it.</p>
<p><b>SUSPEND</b></p>	<p>Status <b>ET703</b> becomes "<b>SUSPEND</b>" when the cruise control/speed limiter "0" button is pressed. This button is located on the steering wheel, to the right. If status <b>ET703</b> does not become "<b>SUSPEND</b>", check the condition of the cruise control/speed limiter "R/0" button, and the condition of its connector.</p> <p>To carry out these checks and measurements in complete safety, observe the recommendations for removing the driver's front airbag (see <b>MR 364 (Mégane II)</b> or <b>370 (Scénic II), Mechanical, 88C, Airbag and seat belt pretensioners, Driver's front airbag, Removal - Refitting</b>).</p> <p>Measure the <b>resistance of the following connection whilst pressing the "0" button (on the button tracks):0</b></p> <ul style="list-style-type: none"> <li>– Connection code <b>86G</b>, of component <b>331</b>.</li> <li>– Connection code <b>86M</b> of component <b>331</b>.</li> </ul> <p>If the resistance is not approximately <b>0 Ω</b>, replace the "R/0" control button.</p> <p>If there is continuity, replace the R/0 control button.</p> <p>If there is a repair method (see <b>Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair</b>), repair the wiring, otherwise replace it.</p>
<p><b>AFTER REPAIR</b></p>	<p>Deal with any faults. Carry out a road test followed by another check with the <b>diagnostic tool</b>.</p>

<b>ET703</b> <b>(CONTINUED 2)</b>	
<b>RESUME</b>	<p>Status <b>ET703</b> becomes “<b>RESUME</b>” when the cruise control/speed limiter “<b>R</b>” button is pressed. This button is located on the steering wheel, to the right.</p> <p>If status <b>ET703</b> does not become “<b>RESUME</b>”, check the condition of the cruise control/speed limiter “<b>R/0</b>” button, and the condition of its connector. Repair if necessary.</p> <p>To carry out these checks and measurements in complete safety, observe the recommendations for removing the driver's front airbag (<b>see MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 88C, Airbag and seat belt pretensioners, Driver's front airbag, Removal - Refitting</b>).</p> <p>Measure <b>the resistance of the following connection whilst pressing the R button (on the button tracks)</b>:</p> <ul style="list-style-type: none"><li>– Connection code <b>86G</b>, of component <b>331</b>.</li><li>– Connection code <b>86M</b> of component <b>331</b>.</li></ul> <p>If the resistance is not approximately <b>900 Ω</b>, check the continuity of the connection when the button is in rest position.</p> <p>If there is continuity, replace the <b>R/0</b> control button.</p> <p>If there is a repair method (see <b>Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair</b>), repair the wiring, otherwise replace it.</p>
<b>AFTER REPAIR</b>	<p>Deal with any faults.</p> <p>Carry out a road test followed by another check with the <b>diagnostic tool</b>.</p>

ET704 ET705	<u>BRAKE CONTACT No. 1</u> <u>BRAKE CONTACT No. 2</u>
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<b>NOTES</b>	<b>Special note:</b> Statuses <b>ET704</b> and <b>ET705</b> should change status at the same time. In the event of inconsistency, consult the interpretation of fault <b>DF050 Brake switch circuit</b> .
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ACTIVE OR INACTIVE	<p>If the brake lights are working: check the continuity and make sure there is no interference resistance on the following connection: Connection code <b>5A between components 160 and 120/645/119</b>. If there is a repair method (see <b>Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair</b>), repair the wiring, otherwise replace it.</p> <p>If the brake lights are not operational, check:</p> <ul style="list-style-type: none"><li>– the condition and fitting of the brake switch,</li><li>– the condition and conformity of the brake light fuse,</li><li>– the conformity of the values in the following table:</li></ul> <p>disconnect the switch and carry out the following checks:</p> <p>for <b>Mégane II and Scénic II with ESP</b></p>		
		Continuity between connections	Insulation between connections
	Switch engaged (Brake pedal released)	5A and BPT	65G and SP17
	Switch released (Brake pedal depressed)	65G and SP17	5A and BPT
	for <b>Mégane II and Scénic II without ESP</b>		
		Continuity between connections	Insulation between connections
	Switch engaged (Brake pedal released)	5A and BPT	65A and SP17
	Switch released (Brake pedal depressed)	65A and SP17	5A and BPT
	Replace the switch if the values obtained are not correct		

<b>AFTER REPAIR</b>	Deal with any faults. Carry out a road test followed by another check with the <b>diagnostic tool</b> .
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## Fault finding - Parameter summary table

Tool parameter	Diagnostic tool title
<b>PR005</b>	EGR valve opening setpoint
<b>PR006</b>	Rail pressure regulator current
<b>PR007</b>	Rail pressure regulator current setpoint
<b>PR008</b>	Rail pressure setpoint
<b>PR009</b>	Turbocharging pressure setpoint
<b>PR011</b>	Turbocharging solenoid valve position correction
<b>PR015</b>	Engine torque
<b>PR016</b>	Alternator flow
<b>PR017</b>	Fuel flow
<b>PR022</b>	EGR valve position feedback loop difference
<b>PR030</b>	Accelerator pedal position
<b>PR035</b>	Atmospheric pressure
<b>PR037</b>	Refrigerant pressure
<b>PR038</b>	Rail pressure
<b>PR041</b>	Turbocharging pressure
<b>PR046</b>	EGR solenoid valve OCR
<b>PR047</b>	Turbocharging pressure OCR
<b>PR048</b>	Rail pressure regulation valve OCR
<b>PR050</b>	Damper flap OCR
<b>PR051</b>	EGR valve position feedback
<b>PR053</b>	Speed requested by air conditioning
<b>PR055</b>	Engine speed
<b>PR059</b>	Inlet air temperature

## Fault finding - Parameter summary table

Tool parameter	Diagnostic tool title
<b>PR061</b>	Exterior air temperature
<b>PR063</b>	Fuel temperature
<b>PR064</b>	Coolant temperature
<b>PR071</b>	Computer feed voltage
<b>PR073</b>	Air flowmeter feed voltage
<b>PR076</b>	Refrigerant sensor voltage
<b>PR077</b>	EGR valve position sensor voltage
<b>PR079</b>	Atmospheric pressure sensor voltage
<b>PR080</b>	Rail pressure sensor voltage
<b>PR081</b>	Inlet temperature sensor voltage
<b>PR082</b>	Fuel pressure sensor voltage
<b>PR084</b>	Coolant temperature sensor voltage
<b>PR089</b>	Vehicle speed
<b>PR125</b>	Power absorbed by the air conditioning compressor *
<b>PR128</b>	First EGR valve offset
<b>PR129</b>	Last EGR valve offset
<b>PR130</b>	Cruise control setpoint
<b>PR131</b>	EGR air flow variation
<b>PR132</b>	Air flow
<b>PR146</b>	Inlet air flow
<b>PR147</b>	Pedal potentiometer voltage gang 1
<b>PR148</b>	Pedal potentiometer voltage gang 2
<b>PR157</b>	Fuel flow setpoint
<b>PR171</b>	Air flow setpoint for EGR
<b>PR190</b>	Engine idle speed setpoint.
<b>PR213</b>	Rail pressure loop difference
<b>PR358</b>	Sensor reference voltage
<b>PR364</b>	Cylinder no. 1 fuel flow correction
<b>PR365</b>	Cylinder no. 4 fuel flow correction
<b>PR405</b>	Cylinder no. 2 fuel flow correction
<b>PR406</b>	Cylinder no. 3 fuel flow correction

\* AC: Air conditioning

## Fault finding - Interpretation of parameters

PR035	<u>ATMOSPHERIC PRESSURE</u>
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NOTES	<p><b>There must be no present or stored faults.</b></p> <p>Perform this fault finding procedure after detecting an inconsistency in the <b>Parameters</b> menu of the computer or following a customer complaint (lack of power, smoke, etc.).</p>
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The atmospheric pressure sensor is incorporated in the computer, so no electrical check can be made.  
The sensor default value is **750 mbar**.  
If this value or any other inconsistent value appears, then reset the computer.  
If the computer is to be reprogrammed (see **Replacement of components**).  
If the fault persists and remains present, contact the Techline.

AFTER REPAIR	Repeat the conformity check from the start.
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<b>PR037</b>	<u>REFRIGERANT PRESSURE</u>
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<b>NOTES</b>	<p><b>There must be no present or stored faults.</b></p> <p>Perform this fault finding procedure after an inconsistency is displayed in the <b>Parameters menu</b> or <b>after a customer complaint (no air conditioning, etc.)</b>.</p>
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### Step 1

- Start the engine, switch on the air conditioning and increase the engine speed to **1,500 rpm**:
- Display **PR037 Refrigerant pressure** in the **Cold loop** function on the diagnostic tool:

If the pressure is greater than ~ **27 bar**, go to **step 2**.

If the pressure does not rise, or remains below normal:

- Ensure that the air conditioning compressor and the relay are operating correctly.
- Check the conformity of the refrigerant pressure sensor by **comparing\*** the value displayed by the tool (**PR192**) with the reading given by the charging station high pressure gauge.

**If the pressure difference =  $\pm 1.5$  bar, (or 1500 mbar):**

Check the continuity and the absence of interference resistance on the connections between:

Injection computer, **grey 24-track connector C, track C3**       $\longrightarrow$       **Track A** of the refrigerant pressure sensor

Injection computer, **brown 48-track connector B, track F1**       $\longrightarrow$       **Track C** of the refrigerant pressure sensor

Injection computer, **brown 48-track connector B, track F3**       $\longrightarrow$       **Track B** of the refrigerant pressure sensor

If these connections are not faulty, replace the **refrigerant pressure sensor**.

**If there is no difference**, the refrigerant pressure sensor is correct: go to **step 2**.

### Step 2

- Perform fault finding on the **air conditioning**.

\*Note:

The diagnostic tool displays the absolute pressure, the charging station high pressure gauge displays the relative pressure.

The normal difference between the two is equal to atmospheric pressure, i.e. ~ **1,000 mbar**.

<b>AFTER REPAIR</b>	Repeat the conformity check from the start.
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## Fault finding - Interpretation of parameters

<b>PR038</b>	<u>RAIL PRESSURE</u>
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<b>NOTES</b>	<p><b>Perform this fault finding procedure:</b></p> <ul style="list-style-type: none"><li>– after the interpretation of fault <b>DF053 Rail pressure regulation function</b>,</li><li>– after an inconsistency for <b>PR038</b> noted in the Parameters menu,</li><li>– after the interpretation of the fault finding procedure for <b>AC011 Rail pressure regulator</b>,</li><li>– following a customer complaint (starting faults, poor performance, stalling, etc.).</li></ul>
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Check the continuity and the absence of interference resistance on the following connections:

Injection computer, <b>brown 48-track connector B, track G3</b>	—————▶	<b>Track 2</b> of the rail pressure sensor connector
Injection computer <b>brown 48-track connector B, track A4</b>	—————▶	<b>Track 3</b> of the rail pressure sensor connector
Injection computer, <b>brown 48-track connector B, track C4</b>	—————▶	<b>Track 1</b> of the rail pressure sensor connector

If all these connections are correct, check for fuel pressure sensor power supply:

<b>+ 5 V</b>	—————▶	<b>Track 3</b> of the rail pressure sensor connector
<b>Earth</b>	—————▶	<b>Track 1</b> of the rail pressure sensor connector

Repair if necessary.

Check the sealing of the low and high-pressure diesel circuits (visual inspections, odour) pump housing, overpressure valve, pipes, rail and injector unions, injector wells, etc.

If all of the previous checks are correct, switch the ignition on, wait for more than **1 minute** and display **PR038 Rail pressure**.

If the value is **less than 50 bar**, the rail pressure sensor is correct. If it is greater than this value, replace the rail pressure sensor and tighten it to **35 ± 5 Nm**.

<b>AFTER REPAIR</b>	Repeat the conformity check from the start.
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<b>PR059</b>	<u>INLET AIR TEMPERATURE</u>
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<b>NOTES</b>	<b>There must be no present or stored faults.</b> Perform this fault finding procedure after noting an inconsistency in the Parameters menu.
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Check the air flow sensor. Check the injection computer connections.	
Repair if necessary. Check <b>for + 12 V</b> on <b>track 4</b> of the air flow sensor connector. Display <b>PR059 Inlet air temperature</b> and check that the value displayed is not recovery value <b>20 °C</b> . If this is the case, check the coolant temperature sensor:	
Injection computer brown 48-track connector B, <b>track G2</b>	—————▶ <b>Track 1</b> of the air flow sensor connector
Injection computer brown 48-track connector B, <b>track E2</b>	—————▶ <b>Track 2</b> of the air flow sensor connector
Repair if necessary.	
Measure the resistance between tracks 1 and 2 of the air temperature and pressure sensor. Replace the air temperature and pressure sensor if the resistance is not: <b>3,714 Ω ± 161 Ω at 10 °C</b> <b>2,448 Ω ± 96 Ω at 20 °C</b> <b>1,671 Ω ± 59 Ω at 30 °C</b>	

<b>AFTER REPAIR</b>	Repeat the conformity check from the start.
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<b>PR063</b>	<u>FUEL TEMPERATURE</u>
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<b>NOTES</b>	There must be no present or stored faults.
	<b>NOTE</b> In the event of a relatively low outside temperature, the difference between the fuel temperature and the engine temperature after cold starting may be greater than 30 °C.

<p>Check in the Fuel circuit tab in <b>PR063 Fuel temperature</b> that the value displayed is not the recovery value <b>100 °C</b>.  If it is, check the fuel temperature sensor:  Check that the fuel temperature sensor is in good condition:  Repair if necessary.  Check the continuity and the absence of interference resistance on the following lines:</p> <p>Brown 48-track connector B, <b>track H2</b>      —————&gt; <b>Track 1</b> fuel temperature sensor</p> <p>Grey 32-track connector C, <b>track F1</b>      —————&gt; <b>Track 2</b> fuel temperature sensor</p> <p>If the temperature read is inconsistent, check that the sensor follows the resistance as a function of temperature calibration curve (NTC) correctly.  Replace the fuel pressure and temperature sensor if the resistance is not:</p> <p style="text-align: center;"> <b>2,051 ± 123 Ω at 25 °C</b>  <b>810 ± 47 Ω at 50 °C</b>  <b>309 ± 17 Ω at 80 °C</b> </p> <p>Replace the fuel temperature sensor if it is incorrect (an incorrect sensor is often the result of an electric shock).</p>
---

<b>AFTER REPAIR</b>	Repeat the conformity check from the start.
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<b>PR064</b>	<u>COOLANT TEMPERATURE</u>
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<b>NOTES</b>	<b>No fault should be present or stored:</b> Perform this fault finding procedure after noting an inconsistency in the Parameters menu.
--------------	--

Display the **PR064 Coolant temperature** and check that the value displayed is not recovery value - **30 °C**.

If this is the case, check the coolant temperature sensor:

Check the condition of the coolant temperature sensor connections.

Repair if necessary.

Check for the absence of interference resistance on the following lines:

Brown 48-track connector B, **track F2** —————> **Track 3** coolant temperature sensor

Brown 48-track connector B, **track H1** —————> **Track 2** coolant temperature sensor

If the temperature read is inconsistent, check that the sensor follows the resistance as a function of temperature calibration curve (NTC) correctly.

Replace the air temperature and pressure sensor if the resistance is not:

**2,252 Ω ± 112 Ω at 25 °C**

**811 Ω ± 39 Ω at 50 °C**

**283 Ω ± 8 Ω at 80 °C**

Replace the coolant temperature sensor if the values read do not correspond to the ones above.

<b>AFTER REPAIR</b>	Repeat the conformity check from the start.
---------------------	---

Tool command	Diagnostic tool title
<b>SC001</b>	Write saved data
<b>SC002</b>	Enter injector codes
<b>SC003</b>	Save computer data
<b>RZ001</b>	Fault memory
<b>RZ002</b>	EGR programming adaptives
<b>RZ005</b>	Programming
<b>AC001</b>	Preheating unit
<b>AC002</b>	EGR solenoid valve
<b>AC004</b>	Turbocharging solenoid valve
<b>AC011</b>	Rail pressure regulator
<b>AC014</b>	Damper flap
<b>VP010</b>	Enter VIN

## Fault finding - Interpretation of commands

SC001	<u>WRITE SAVED DATA</u>
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NOTES	All data must be backed up with command <b>SC003 Backup computer data</b> for this command to be run. Writing is carried out after the computer has been reprogrammed or replaced.
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Confirming this command writes the data backed up using command **SC003 Backup computer data**.

The data is as follows:

- Vehicle-specific idle speed.
- Options available on the vehicle and managed by the computer (Example: Air conditioning).
- Injector calibration codes (if the vehicle is fitted with IMA).
- Programming of exhaust gas recirculation valve data.

They will configure the computer and will enable it to avoid:

- engine malfunction after reprogramming or replacing the computer,
- faulty interpretation of information provided by the CLIP tool.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

<b>SC002</b>	<u>ENTER INJECTOR CODES</u>
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<b>NOTES</b>	<p>This command is carried out after the replacement of the injectors, and only if the vehicle is configured with IMA (<b>ET104 Injector code use YES</b>).</p> <p>If this command is not run, the fault <b>DF276 Injector code programming</b> will be present.</p>
--------------	--

**IMPORTANT**

Letters **Q** and **J**, and figures **0** and **9** are not **used in IMA codification**.

If these characters are used the entry will be **invalid**.

Cylinder **no. 1** is the cylinder located **at the engine flywheel end**.

Procedure to be followed:

- Read the 6-character alphanumeric codes etched on the upper section of the injector bodies.
- Select the cylinder number for the cylinder concerned in the Desired column, then confirm.
- Enter the injector code displayed for the cylinder.
- Enter the new codes for each cylinder, then confirm.
- When the command is completed, the modified codes appear in the Current column.
- Check that the codes correspond to those read earlier.
- If the codes entered appear in neither the Current column nor the Desired column, check the codes read and make sure the data has been entered correctly.
- Exit fault finding mode.
- Switch off the ignition and **wait 30 seconds**.
- Switch the ignition back on and check for faults.
- The **DF276 Injector code programming** should be stored.

If the fault is still present, the command has not been run correctly.

Start the procedure again and follow the instructions.

Switch off the ignition.

If all these checks still do not enable the command to be confirmed, contact the Techline.

<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
---------------------	--

<b>SC003</b>	<u>SAVE COMPUTER DATA</u>
--------------	---------------------------

<b>NOTES</b>	The data is saved before computer reprogramming or the computer is replaced.
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Selecting this command saves the following vehicle-specific data:

- Vehicle idle speed.
- Injector calibration codes (if the vehicle is fitted with IMA).
- Programming of exhaust gas recirculation valve data.
- Options available on the vehicle and managed by the computer (Example: Air conditioning).

This information will be saved in the CLIP tool.

● **Before replacing or reprogramming the computer:**

- Select **SC003 SAVE COMPUTER DATA**.
- if the following message appears: **backup file exists, do you want to overwrite it?:**

*(this file corresponds to the last save carried out on the tool)*

Select **YES**.

When the save has been performed, replace the computer or carry out the programming then proceed to the next step.

Once the backup is complete, run the command **SC001 Write backed up data** to reconfigure the computer.

<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
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## Fault finding - Interpretation of commands

<b>RZ002</b>	<u>EGR ADAPTIVES</u>
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<b>NOTES</b>	<p>This command is only performed after the exhaust gas recirculation valve has been replaced.</p> <p>Deal with all faults which do not involve the exhaust gas recirculation valve before programming the valve.</p>
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After replacing the exhaust gas recirculation valve, clear the valve offsets from the memory.

Procedure to be followed after replacing the exhaust gas recirculation valve:

- Switch on the ignition.
- Run command **RZ002**.
- Once the command has terminated, check that the following parameters and statuses correctly indicate the statuses below:
  - **PR128 EGR valve first offset** = 0 %
  - **PR129 EGR valve last offset** = 0 %
  - **PR088 EGR valve position feedback** = 0 %
- When the command has finished, switch off the ignition and exit fault finding mode.
- Wait **30 seconds**, and switch on the ignition again.
- Switch off the ignition again and wait 30 seconds.
- Refer to the following parameters again:
  - PR128 EGR valve first offset: 15 % < X < 30 %
  - PR129 EGR valve last offset: 15 % < X < 40 %
- If the parameters are not correct, refer to the interpretation of DF272 EGR valve control circuit
- Otherwise
- Start the engine.
- Let the engine idle for **1 min**, accelerate to **2,500 rpm** for **5 seconds** and return to idle speed.
- Repeat this procedure 5 times.

Check the faults.

If the fault does not recur, end the fault finding procedure.

If the fault recurs, restart the procedure after disconnecting and reconnecting the valve.

If the fault is still present, replace the EGR valve.

<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
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<b>RZ005</b>	<u>PROGRAMMING</u>
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<b>NOTES</b>	This command is only executed after replacing the computer.
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Command **RZ005** reconfigures the computer.

If the computer does not have any configuration data, run command **RZ005** to enter the vehicle options:

- air conditioning,
- passenger compartment heating resistors,
- cruise control.

These options are detected by the computer even if command **RZ005** is not used.

The computer is configured as soon as the one of the vehicle's optional system components is operated.

<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
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## Fault finding - Interpretation of commands

<b>AC001</b>	<u>PREHEATING UNIT</u>
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<b>NOTES</b>	<p>This command is only carried out if fault <b>DF025 Preheating unit fault finding connection</b> or <b>DF081 Preheating relay circuit</b> is present or stored and if no other fault is present.</p> <p>Refer to the <b>Wiring diagrams</b> Technical Note for the vehicle to locate the fuses and relays concerned.</p>
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Connect the diagnostic tool and turn on the ignition.

With the preheating unit connected:

- connect the negative terminal of the voltmeter to **track 8** of the preheating unit,
- connect the positive terminal of the voltmeter to the **+ 12 V** battery,
- run command **AC001 Preheating unit**.

if the voltmeter does not indicate the battery voltage while the command is running (ten one-second ON/OFF cycles), contact the Techline:

1. Check the condition of the **F01 (70A)** fuse which supplies the preheating unit. Replace it if necessary.
2. Check **the continuity and the absence of interference resistance** on the following connections:

Injection computer connector C, **track E2** —————> **Track 8** of the preheating unit connector

Injection computer connector C, **track A4** —————> **Track 9** of the pre-postheating unit connector

Repair if necessary.

3. Check the connections on the preheating unit, heater plugs and injection computer.  
Repair if necessary.

- 4 Measure the resistance of the heater plugs. If the resistance is greater than **2 Ω** replace the faulty plug(s).

5. Check **the continuity and the absence of interference resistance** between:

- preheating unit **track 1** —————> Heater plug for **cylinder 3**
- preheating unit **track 2** —————> Heater plug for **cylinder 4**
- preheating unit **track 6** —————> Heater plug for **cylinder 1**
- preheating unit **track 7** —————> Heater plug for **cylinder 2**

6. Then check for **+ 12 V** on **track 3** of the preheating relay connector.

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

<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
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<b>AC002</b>	<u>EGR SOLENOID VALVE</u>
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<b>NOTES</b>	This command enables the exhaust gas recirculation valve function to be checked.
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Measure the **resistance** of the exhaust gas recirculation valve between **tracks 1 and 5**.

– If the resistance is not: **8  $\Omega$   $\pm$  0.5 at 20 °C**, replace the EGR valve.

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

Injection computer brown 48-track connector B **track L2**  **track 5** of the EGR solenoid valve connector  
**+ 12 V (UPC)**  **track 1** of the EGR solenoid valve connector

### Step 1: Mechanical check of EGR valve:

Remove the exhaust gas recirculation valve.

Run command **AC002 EGR solenoid valve**.

If, during the command:

- no valve movement is evident,
- the valve does not open or close completely,

Check that there are no particles blocking the movement of the piston.

If a particle was blocking the movement of the valve, run command **AC002 EGR solenoid valve again and check the valve is operating correctly**.

If the valve is operating normally, run command **RZ002 EGR Adaptives** to reinitialise the valve operating values.

If the valve is jammed or irrevocably seized, replace the EGR valve.

<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
---------------------	--

**AC002**  
**CONTINUED**

### Step 2: Check the computer output

#### using a voltmeter:

- Leave the EGR valve connected.
- Connect a "wire clip" to the violet wire between the valve and the injection computer (connection between **track 6 of the valve** and **track J2 of the injection computer connector B**).
- Connect the positive terminal of voltmeter to the wire clip.
- Connect the negative terminal of the voltmeter to the battery earth.
- Run command **AC002 EGR solenoid valve**.
- The voltage should vary over **10 cycles** between **1.05 V and 3.5 V**.
- If the voltage varies between these values, replace the EGR valve.
- If the voltage does not vary or varies between incorrect values, contact the Techline.

**AFTER REPAIR**

Restart the conformity check from the beginning.

<b>AC004</b>	<u>TURBOCHARGING SOLENOID VALVE</u>
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<b>NOTES</b>	This command is run if a fault is detected in the turbocharging circuit.
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**This command checks that the turbocharger and the control circuit are working properly.**

### Introduction

#### 1 - Check the sealing of the high-pressure air circuit:

Pipe not joined or pierced, pressure sensor disconnected or poorly fitted (seal present), intercooler pierced.  
To test the intercooler: stabilise the engine speed between **3,500** and **4,000 rpm** with the vehicle stopped and check that there are no leaks.

Check the resistance of the turbocharging limitation solenoid valve between **tracks 1 and 2**:  
Replace the solenoid valve if the resistance is not: **15.4  $\Omega$   $\pm$  0.7 at 20 °C**.

Check the injection computer connections.  
Check for **continuity and the absence of interference resistance** on the following connection:  
Injection computer grey 32-track connector C, **track E1**  $\longrightarrow$  **Track 1** turbocharging solenoid valve  
Repair if necessary.  
Check for the presence of **+ 12 V** after relay on **track 2** of the turbocharging solenoid valve.

#### 2 - Turbocharger control circuit check

- With the engine stopped, make sure that the control rod is in the rest position.
- Start the engine and make sure that the control rod operates to the high stop.  
(when the engine is switched off, the control rod should return to the idle position)
- If the control rod does not move correctly, carry out the following checks:
- 1) Vacuum pressure command check:**
  - Disconnect the solenoid valve inlet **hose** and connect it to a pressure gauge.
  - Start the engine and run it at a stable idle speed.
  - If the vacuum pressure does not reach **800 mbar  $\pm$  100**: check the vacuum pressure circuit from the vacuum pump.
  - Stop the engine, reconnect the inlet hoses and go to step no. 2.
- 2) Solenoid valve control check:**
  - Disconnect the solenoid valve outlet **hose**.
  - Start the engine and run it at a stable idle speed.
  - Place your hand on the solenoid valve and block the outlet **union** with your thumb.
  - If you notice no solenoid valve vibration, check the operation of the computer output (**step 5**).
- 3) Solenoid valve operation check:**
  - Connect the pressure gauge to the solenoid valve outlet **union**.
  - Start the engine and run it at a stable idle speed.

If the vacuum pressure does not reach **800 mbar  $\pm$  100**, replace the solenoid valve.

<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
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## Fault finding - Interpretation of commands

**AC004**  
**CONTINUED**

### Turbocharger control circuit check (continued)

#### 4) Turbocharging operation check:

- a) Connect vacuum pump to the **hoses** connected to the turbocharger control diaphragm,
    - Apply a vacuum pressure of **800 mbar**:
      - If there is a leak, replace the turbocharger (diaphragm included).
  - b) Check the movement of the control rod (See **MR 364, 12B, Mechanical, Turbocharging**).
    - If the control rod is sticking, replace the turbocharger.
  - c) Engine cold and switched off:
    - Remove the turbocharger inlet duct and check that the compressor turns freely on the axis.
  - d) If the fault is still present:
    - Check that the exhaust manifold is not leaking.
    - Check that the exhaust is not blocked.
- Carry out the necessary repairs.

#### 5) Computer output check (solenoid valve connected):

This operation **can only be carried out** if the checks indicated in **step no. 2** are **not conclusive**.

##### Using a voltmeter:

- Connect the voltmeter earth to **track 2** of the solenoid valve and the positive cable to **track 1**.
- Clear any solenoid valve fault then run command **AC004**:
  - ➡ The voltmeter should display **ten cycles** of two successive voltages ~ = battery voltage X OCR\* current.  
either: ~ **2.5 V** (OCR for **20 %**) then ~ **8.7 V** (OCR for **70 %**).

##### Or using an oscilloscope (range 5 V/division and with time base 1 ms/division):

- Connect the earth of the oscilloscope to the battery earth and the positive test pin to **track 2** of the solenoid valve.
- Clear any solenoid valve faults, then run command **AC004**:
  - ➡ the oscilloscope should display a square wave signal of 12.5 V in amplitude at a frequency of 140 Hz (with an OCR alternating from ~ 20 to ~ 70 %).
  - If the measurement is correct, replace the solenoid valve.
  - If the measurement does not show any control or continuous voltage, contact the Techline.

\* Opening Cyclic Ratio.

**AFTER REPAIR**

Restart the conformity check from the beginning.

## Fault finding - Interpretation of commands

<b>AC011</b>	<u>RAIL PRESSURE REGULATOR</u>
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<b>NOTES</b>	This command enables the operation of the injector high-pressure regulator circuit to be checked.
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### Step 1

Measure the pressure regulator resistance between **tracks 1** and **2**.

– Replace the regulator if the resistance is not approximately: **3  $\Omega \pm 0.5$  at 20 °C**.

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

Injection computer brown 48-track connector **B**, track **M4**  **track 2** of the rail pressure regulator connector.

+ 12 V after relay  **track 1** of the rail pressure regulator connector.

If, when running command **AC011**, you can hear a slight whistling noise and the rattling from the regulator, go to **Step 2**. Otherwise, ensure that the computer output is functioning correctly:

#### ● Using a voltmeter:

With the solenoid valve connected, connect the voltmeter earth lead to **track 2** of the fuel pressure solenoid valve and the positive cable to **track 1**. Clear any fuel pressure solenoid valve faults, then run command **AC011**:

➡ The voltmeter should display two successive voltages: ~ 2.5 V for an OCR at 20 % then ~ 8.75 V at an OCR at 70 % (ten cycles)

#### ● Or using an oscilloscope (range 5 V/division and with time base 1 ms/division):

With the solenoid valve connected, connect the earth of the oscilloscope to the battery earth and the positive test pin to **track 2** of the fuel pressure solenoid valve. Clear any fuel pressure solenoid valve faults then run command **AC011**:

➡ The oscilloscope should display a square-wave signal of 12.5 volts amplitude at a frequency of 185 Hz (with an OCR going successively from 20 to 70 %).

– If the measurement is correct, replace the regulator.

– If the measurement is not correct, contact the Techline.

**Step 2, next page**

\* Opening **Cyclic Ratio**

<b>AFTER REPAIR</b>	Restart the conformity check from the beginning.
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### AC011 CONTINUED

#### Step 2

##### In the event of rail overpressure:

Check the operation of the injectors (see **Components test, Test 1 Injector test**).

Check the operation of the rail pressure sensor: interpretation of fault **DF007 Rail pressure sensor circuit**.

If these checks do not reveal any faults, and if the fault is still present, replace the rail pressure sensor.

##### In the event of rail underpressure:

Check the operation of the rail pressure sensor: interpretation of fault **DF007 Rail pressure sensor circuit**.

Check the low pressure diesel circuit priming.

Check the conformity of the diesel filter connections.

Check the condition of the filter (clogging and water saturation).

Check there are no air bubbles between the filter and the high pressure pump.

Check the high-pressure diesel circuit sealing, pump, pipes, unions (visual inspections + odours, etc.):  
pump housing, pressure release valve, pipes, rail and injectors unions, injector wells, etc.

Check the conformity of the seal fitting on the pressure regulator.

Check the operation of the injectors: see **Component test, Test 1 Injector test**.

Carry out the necessary repairs.

### AFTER REPAIR

Carry out a road test followed by a diagnostic tool check.  
Repeat the conformity check from the start.



## Fault finding - Interpretation of commands

<b>AC014</b>	<u>DAMPER FLAP</u>
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<b>NOTES</b>	This command enables the damper flap function to be checked.
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- Measure the resistance of the inlet flap valve solenoid valve between **tracks 1** and **2**.  
Replace the solenoid valve if the resistance is not **46 Ω ± 3 at +25 °C**.
- Check **the continuity and the absence of interference resistance** on the following connections:  
Injection computer brown 48-track connector B **track J4** —————→ **Track 1** of damper flap solenoid valve connector  
**+ 12 V (UPC)** —————→ **Track 2** damper flap solenoid valve connector

### A) Engine running at idle speed:

- Make sure that there is a vacuum pressure of: ~ **900 mb** in the solenoid valve inlet hose.  
Make the necessary repairs (vacuum pressure circuit conformity and seal).

### B) With the vehicle ignition on, engine stopped:

- Check that the **inlet flap is open**.  
If not, clean or replace the air vent unit.
- Disconnect the solenoid valve inlet and outlet hoses.
- Connect a vacuum pump to the inlet union and apply a vacuum pressure of ~ **900 mbar**.  
If there is a leak, replace the solenoid valve.
- Run command **AC014**.
- If the solenoid valve opens (vacuum pump pressure gauge returns to atmospheric pressure), **go to step C**.
- Otherwise, with the solenoid valve connected, check operation of the computer output with a voltmeter:  
Voltmeter earth cable —————→ **track 1** of the solenoid valve  
Voltmeter positive lead —————→ **track 2** of the solenoid valve  
Clear any solenoid valve faults,  
Run command **AC014**.  
The voltmeter should display ten **ON-OFF** cycles (**8.75 V then 2.5 V**).  
If the measurement is correct, replace the solenoid valve.  
If the measurement shows is not controlled, contact the Techline.

### C) Vehicle with ignition off:

- Connect a vacuum pump to the flap control diaphragm and apply a vacuum pressure of ~ **900 mbar**:
- If the diaphragm **does not maintain the vacuum pressure**, replace the air vent unit (the diaphragm cannot be disconnected).
- If the diaphragm **maintains the vacuum pressure** and **the valve does not operate**, clean or replace the air vent unit.
- If the diaphragm **maintains the vacuum pressure** and **the flap operates** then operate it several times to ensure that there is no blockage.  
Check for clogging of the air vent unit and the valve, and clean if necessary.

<b>AFTER REPAIR</b>	Repeat the conformity check from the start.
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**NOTES**

Before dealing with this customer complaint, check that there are no faults, and the conformity (or otherwise) of the **parameters** and **statuses** using the diagnostic tool. If the customer complaint is not eliminated, then proceed according to the corresponding fault finding chart.

NO COMMUNICATION WITH THE COMPUTER

→ ALP 1

STARTING FAULT OR STARTING IMPOSSIBLE

→ ALP 2

INJECTION NOISE

→ ALP 3

POOR PERFORMANCE

→ ALP 4

IRREGULAR ENGINE OPERATION

→ ALP 5

ROUGH IDLE

→ ALP 6

OIL LEAKS FROM THE TURBOCHARGER

→ ALP 7

TURBOCHARGER NOISE

→ ALP 8

SMOKE FROM THE EXHAUST

→ ALP 9

**ALP 1**

**No dialogue with the computer**

**NOTES**

**Before dealing with this customer complaint, check that there are no faults, and the conformity (or otherwise) of the parameters and statuses using the diagnostic tool.**

**If the customer complaint is not eliminated, perform the following checks.**

**Check the conformity of the vehicle type, and the domain selected on the tool.**

Check that the tool is not faulty by trying to establish dialogue with a computer on another vehicle.

Disconnect the injection computer, and check the condition of the contacts:

no oxidation, no damage to pins, etc.

Check the condition and conformity of UPC fuse **F5D 5A**.

Replace it if necessary.

Check the continuity and the absence of interference resistance of the following connections:

Injection computer 48-track brown connector B **track M2** —————> **Track 1** UPC black PPM1 connector

Injection computer black 32-track connector A **track G1** —————> **Track 4** UPC grey PPH1 connector

Injection computer black 32-track connector A **track G4** —————> Vehicle **earth**

Injection computer black 32-track connector A **track H4** —————> Vehicle **earth**

Injection computer black 32-track connector A **track H1** —————> Vehicle **earth**

Repair if necessary.

Check the supply to the diagnostic socket:

+ before ignition feed on **track 16**,

+ after ignition feed on **track 1**,

Earth on **track 4** and **5**.

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.

**ALP 1  
CONTINUED**

**Try to start communication with another computer on the same vehicle.**

**1) If dialogue is established with **another computer on the same vehicle**:**  
Contact Techline.

**2) If dialogue is not established with **any other computer on the same vehicle**:**  
It may be that a faulty computer is causing interference on the multiplex network.  
To locate it, carry out a process of elimination, disconnecting in turn all the computers linked to these lines (according to wiring diagram and equipment): Airbag, ABS, UCH, instrument panel.  
Try to establish dialogue after disconnecting each line:

**If after disconnection:**

- dialogue is successful: carry out the computer fault finding procedure and reconnect all the disconnected components,
- it is not possible to establish dialogue: contact the Techline.

**AFTER REPAIR**

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

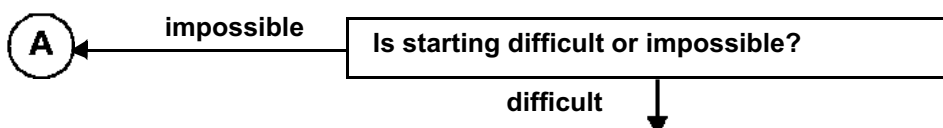
**ALP 2**

**Starting faults  
(or starting impossible)**

**NOTES**

Before dealing with this customer complaint, check that there are no faults, and the conformity (or otherwise) of the parameters and statuses using the diagnostic tool.

If the customer complaint is not eliminated, perform the following checks.



Check the engine earths.

Make sure that the engine speed reaches **250 rpm** when the starter motor is operated, displayed in the parameter screen.

Ensure that the correct fuel is being used. Run **test 5 Diesel fuel conformity check**.

Check the conformity of the fuel filter connections.

Ensure that the fuel filter is not saturated with water.

Check there are no air bubbles between the filter and the high pressure pump.

Check the operation of the preheating unit and heater plugs with command **AC001 Preheating unit**.

Check the condition of the air filter (clogging).

Check the seal of the high-pressure diesel circuit, pump, pipes, unions (visual checks + odours).

Check the position of the EGR valve: jamming or mechanical seizure.

Check the consistency of the signal from the engine coolant temperature sensor.

Check that the pressure regulator is working correctly (see the interpretation of command **AC011 Rail pressure regulator**).

Check the operation of the injectors (too much return leakage, clogging, seizing) referring to **Component test, Test 1 Injector Test**.

Check the compression balance, according to current consumption during the starting phase (**Compression test** menu on the Clip tool).

In the event of imbalance, use a compression gauge to refine the reading (see the procedure in the Workshop Repair Manual). After the operation, clear the faults caused by disconnecting the regulator and the heater plugs.

**AFTER REPAIR**

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

**ALP 2  
CONTINUED**

**A**

**ET003 not correct or  
immobiliser warning  
light permanently  
illuminated**

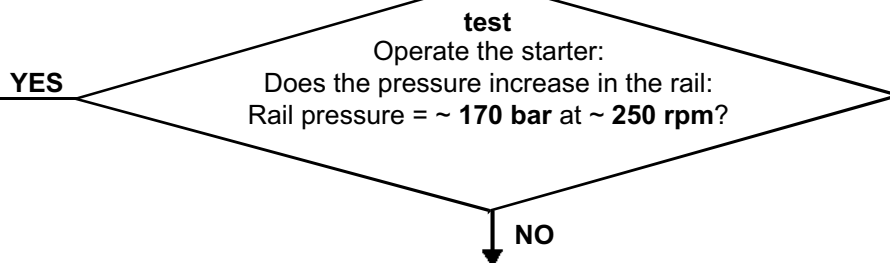
From the STATUS menu on your fault finding tool, check the conformity of the immobiliser system: **ET003 Engine immobiliser** should be **INACTIVE**.

**ET003 correct (Immobiliser code  
warning light switched off)**

Refer to the engine  
immobiliser fault finding  
procedure in the UCH fault  
finding.

Check the battery charge and the condition and tightness of the terminals. Ensure that engine speed reaches **250 rpm** when the starter motor is operated. This is displayed on the parameter screen.  
Check the engine earths.  
Check the conformity of the inertia switch (according to equipment).  
Check the presence and conformity of fuel in the tank. Run **test 5 Diesel fuel conformity check**.  
Check for the **12 V** after relay feed on **tracks G1** and **M2** of **connector B** on the engine management computer (via injection relay).  
Check the engine fuses (and their mountings, wires and terminals).

Check the timing setting, and the position of the high pressure pump sprocket.  
Check the cylinder compressions.  
Check the cylinder balance using the Clip function, **Compression test** physical measurement icon.



Run a fault finding check on the regulator and high pressure pump by applying the interpretation of command **AC011 Rail pressure regulator**.

**AFTER REPAIR**

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

**ALP 3**

**Injection noise**

**NOTES**

**Before dealing with this customer complaint, check that there are no faults, and the conformity (or otherwise) of the parameters and statuses using the diagnostic tool.**

**If the customer complaint is not eliminated, perform the following checks.**

**If the injection noise occurs after starting from cold:**

- Check the low pressure diesel circuit priming.
- Check the fuel heater supply.
- Check the operation of the preheating system.
- Check that fuel and engine temperatures are consistent.

If the complaint is still present, check the rail pressure (**Parameter** menu) and apply the interpretation of command **AC011 Rail pressure regulator**.



**If the injection noise occurs at idle speed:**

- Check the condition of the injector connector and pressure regulator terminals.
  - Check the conformity of the air flow signal (consult parameter **PR018 Estimated air flow**).
  - Check the condition of the EGR valve (clogging, blocked, seized).
- If the complaint is still present, perform the injector fault finding procedure with **Test 1 Injector test**.

**Does the injection noise occur at all engine speeds?**

- Carry out fault finding on the injectors with **Test 1 Injector Test**.
  - Check the condition of the injector connector and pressure regulator terminals.
  - Ensure that the correct fuel is being used.
  - Check the conformity of the air flow signal (consult the interpretation of parameter **PR132 Air flow**).
- If the customer complaint is still present, check the rail pressure (**parameter** menu) and apply the interpretation of command **AC011 Rail pressure regulator**.



**If the injection noise occurs at transitional speed:**

- If the engine races during gear changes, check the conformity of the clutch switch.
  - When changing gear during a road test, display parameter **PR017 Fuel flow**. if it varies without greatly affecting the rail pressure, perform the fault finding procedure for **AC011 Rail pressure regulator**.
- If the fault is still present, carry out a fault finding check on the injectors (see **TEST 1**).

**AFTER REPAIR**

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

**ALP 4**

**Poor performance**

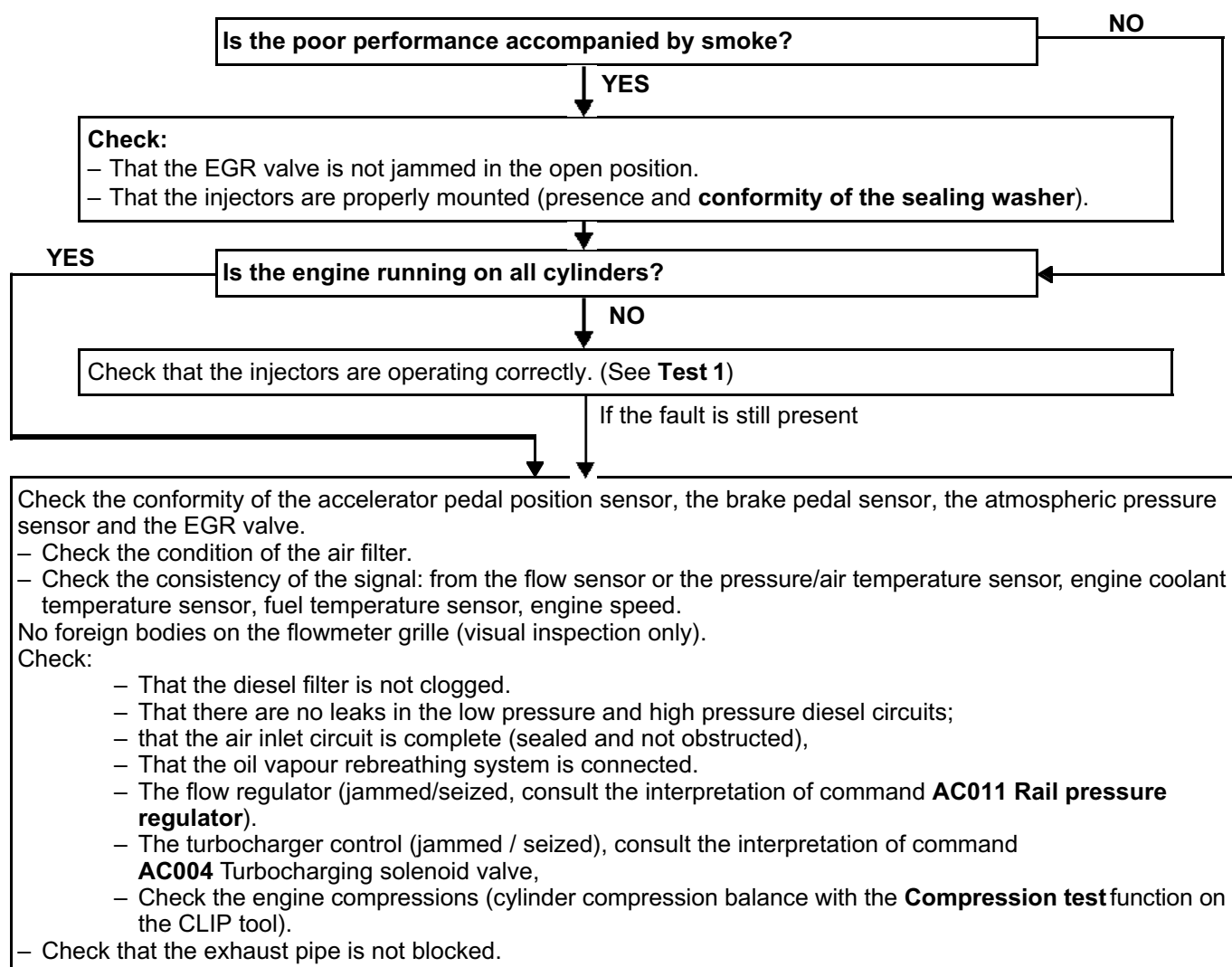
**NOTES**

Before dealing with this customer complaint, check that there are no faults, and the conformity (or otherwise) of the parameters and statuses using the diagnostic tool.

If the customer complaint is not eliminated, perform the following checks.

**IMPORTANT**

In the event of the engine overheating above **110°C**, the computer deliberately limits the fuel flow, and supplies the fan assembly until the battery is completely discharged.



**AFTER REPAIR**

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



**ALP 5**

**Irregular engine operation**

**NOTES**

**Before dealing with this customer complaint, check that there are no faults, and the conformity (or otherwise) of the parameters and statuses using the diagnostic tool.**

**If the customer complaint is not eliminated, perform the following checks.**

If the engine bucks or races during gear changes, check the conformity of the clutch switch.

If the fault is still present:

- Ensure that the correct fuel is being used. Run **test 5 Diesel fuel conformity check**.
- Check the low pressure diesel circuit priming.
- Check the conformity of the low-pressure circuit connections.
- Check the conformity of the diesel filter and that it is not saturated with water (replace the filter if necessary).
- Check that there are no air bubbles between the filter and the high pressure pump.
- Check the conformity of the rail pressure (warm engine):

**± 25 bar** around the rail pressure value at idle speed, (the minimum to maximum variations in the rail pressure at idle speed should not exceed **50 bar**).

**approximately 1350 bar** under load with foot hard down on the accelerator.

In the event of a fault, apply the interpretation of command **AC011 Rail pressure regulator**.

Check the conformity of the air flow, apply the interpretation of parameter **PR132 Air flow**.

If the fault is still present:

- Check the injector operation using **Test 1 Injector test**.
  - Check cylinder balancing using the CLIP function, **Compression test** physical measurement icon.
- Check engine compression where necessary.

**AFTER REPAIR**

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

**ALP 6**

**Rough idle**

**NOTES**

**Before dealing with this customer complaint, check that there are no faults, and the conformity (or otherwise) of the parameters and statuses using the diagnostic tool.**

**If the customer complaint is not eliminated, perform the following checks.**

Check the seal and condition of the inlet circuit.



Check the low pressure circuit.



Check the engine parameters:

- Check the update of the engine management computer calibration (last calibration).
- Check the conformity of the **IMA\*** codes (using the **Identification** screen on the **Clip diagnostic tool**).
- Check the charging circuit (see **Technical Note 6014A Checking the charging circuit**)
- To check the conformity of the engine speed signal, check:
  - The wiring.
  - The flywheel position and the condition of the flywheel teeth.
  - The position and tightness of the engine speed sensor.
- Check the fuel flow correction at each individual injector, run **test 1 Injector test**.



Check the connections and wiring of the injectors.  
Check the connections and wiring of the engine management computer to the injectors.  
Repair if necessary.



Check the high pressure circuit (external leaks).



Check the engine timing (and the position of the high pressure pump sprocket).



Check the lower engine:

- Check the compressions using the **Compression Test** on the CLIP Technic **diagnostic tool** or the special tool.
  - Check the engine mounts only if there is noise or excessive vibrations at idle speed.
- If the checks are correct, contact the Techline.

**AFTER REPAIR**

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

**ALP 7**

**Oil leaks from the turbocharger**

**NOTES**

Before dealing with this customer complaint, check that there are no faults, and the conformity (or otherwise) of the parameters and statuses using the diagnostic tool.

If the customer complaint is not eliminated, perform the following checks.

**Check the area around the turbocharger**

Note:

An oil leak does not correspond always to a turbocharger fault, the oil leak can arise from the area around the turbocharger.

Depending on the vehicle type, the best visual access will be either from above or from below.

- 1- Do not start the engine.  
Check the area around the turbocharger and identify the origin of the leaks.  
Clean the oil traces on the turbocharger.
- 2- Start the engine and let it warm up for several minutes.

**IMPORTANT**

If the air filter was removed previously, refit it before starting the engine (risks foreign matter entering the air inlet circuit).

Accelerate with no load several times, progressively increasing the duration before releasing the accelerator pedal.

Visually inspect the exterior condition of the fuel supply pipes and the turbocharger oil return and the area around it.

Identify the origin of the leaks.

**Is an oil leak present at the air compressor inlet or outlet?**

YES



NO



**AFTER REPAIR**

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

**ALP 7  
CONTINUED 1**



**Check the air compressor inlet or outlet**

Check for a loose interface (inlet or outlet) that is the cause of the air leak.

Note:

It is normal to find oil traces inside the pipes at the turbocharger inlet or outlet, because the air entering the compressor is laden with oil from the engine rebreathing circuit.

**Is the suspected interface properly tightened?**

NO →

Tighten the interface or the concerned pipe.  
**End of procedure.**

YES

Replace the pipe concerned (see **MR 364 (Mégane II)** or **370 (Scénic II)**, **Mechanical, 12B, Turbocharging**).

**AFTER REPAIR**

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

<b>ALP 7 CONTINUED 2</b>	
------------------------------	--

**B**



**Is an oil leak present only at the casing of the compressor section?**

**YES**



The turbocharger is not faulty. The oil leak is from another engine component and the oil is flowing onto the turbocharger.

**NO**



**C**

<b>AFTER REPAIR</b>	Carry out a road test followed by a complete check with the diagnostic tool.
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**ALP 7  
CONTINUED 3**

**C**

**Is an oil leak present at the turbocharger oil supply inlet or outlet?**

**YES**

**Check the turbocharger oil supply inlet and outlet.**

Check for a loose interface (inlet or outlet) that is the cause of the oil leak.

**Is the suspected interface properly tightened?**

**NO**

Retighten or the pipe concerned.  
**End of procedure.**

**YES**

Replace only the seal **or** the pipe of the section concerned (see **MR 364 (Mégane II)** or **370 (Scénic II)**, **Mechanical, 12B, Turbocharging**).

**NO**

**Is an oil leak present at the interfaces of the turbine casing and the exhaust pipes?**

**YES**

**NO**

**End of procedure.**

The turbocharger is not faulty. Another engine fault is probably present.  
Mark the component that is the source of the leak and refer to the repair manual (see **MR 364 (Mégane II)** or **370 (Scénic II)**, **10A Engine and peripherals**).

**AFTER REPAIR**

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

**ALP 8**

**Turbocharger noise**

**Note:**

Pay close attention to faulty components that might result in unjustified replacement of the turbocharger.  
For example, whistling does not necessarily indicate damage to the turbocharger (this could be coming from the exhaust, the timing, the gearbox, etc.).

**Move on to the Noise fault finding Technical Note ALP Turbocharger Noises Technical Note 5164A.**

**AFTER REPAIR**

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

**ALP 9**

**Exhaust fumes**

Run **test 2 Air line at the turbocharger**.  
Run **test 3 Turbocharger control solenoid valve check**

Is the vehicle equipped with a particle filter?

**NO**

**YES**

Start the engine and warm it up at idle speed for **10 minutes**.

**IMPORTANT**

If the air filter was removed previously, refit it before starting the engine (risks foreign matter entering the air inlet circuit).

Perform several rapid and brief accelerations under no load.

Note:

The presence of smoke is often normal.

The quantity, density, colour and persistence of the smoke are the important factors.

Is the exhaust outlet producing abnormal smoke?

Perform the fault finding of the "particle filter" function, refer to the **TESTS or corresponding ALP**.

**NO** →

The turbocharger is not faulty. Another engine fault is probably present. **Consult the TEST or the corresponding ALP**.

**YES**

Consult **test 4 Turbocharger**.

**AFTER REPAIR**

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



INJECTOR TEST

TEST 1

AIR LINE AT THE TURBOCHARGER

TEST 2

TURBOCHARGER CONTROL SOLENOID VALVE CHECK

TEST 3

TURBOCHARGER

TEST 4

DIESEL FUEL CONFORMITY CHECK

TEST 5

INCORRECT OPERATION OF THE OVERPRESSURE VALVE

TEST 6

<b>TEST 1</b>	<b>Injector test</b>
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### Part A: Fuel regulation balance check for each injector (individual correction):

- In the **CLIP diagnostic tool**, choose the **Fuel circuit** subfunction.
- With the engine idling and the fuel temperature **> 50°C**, display the flow correction values for each injector (individual correction), i.e.:
  - **PR364 Cylinder no. 1 fuel flow correction.**
  - **PR405 Cylinder no. 2 fuel flow correction.**
  - **PR406 Cylinder no. 3 fuel flow correction.**
  - **PR365 Cylinder no. 4 fuel flow correction.**

The normal flow correction **range** per injector is between **- 5 mg/stroke and + 5 mg/stroke without reaching these values.**

- If this has not already been carried out, check the injector connections and wiring.
- Check the connections and wiring of the engine management computer to the injectors.
- Repair if necessary.
- Check the **IMA** injector codes, by comparing the **IMA** engraved codes on the injectors (the **IMA** codes are read from left to right) and the **IMA** codes read with the **Clip diagnostic tool**.
- If the **IMA** codes are correct, continue the fault finding procedure,
- If not, modify the incorrect **IMA** codes using command **SC002 Enter injector codes** (see **Interpretation of commands**).

To confirm the repair, consult **part B** of this test.

### CASE No. 1: If at least one of these values is equal to or greater than + 5 mg/st

- Check the valve clearance.
- Check the condition of the engine and the compressions (using the **Clip diagnostic tool** or a compression gauge).
- If the compression test reveals a cylinder fault, carry out the necessary repairs.
- If the compression is correct, check the fitting conformity of the injector (see **MR 364 (Mégane II) or 370 (Scénic II), 13B, Diesel injection, Diesel injector: Removal - Refitting**)

**In particular, check that each injector has one compression washer.**

Check the fuel regulation again for each injector (individual correction).

If not, replace the injector and check for the sealing washer. Modify the **IMA** code using command **SC002 Enter injector codes** (see **Interpretation of commands**).

- Run **Part B** of this test to confirm the fault finding procedure.

### CASE no. 2: If at least one of these values is less than or equal to - 5 mg/stroke

- Check the valve clearance.
- Check the level and condition of the engine oil.
- Remove the injector with the largest correction.
- If there is diesel fuel contamination, check the condition of the cylinder concerned (cylinder, piston, valves). Use an endoscope if possible.
- Only replace the removed injector, and modify the **IMA** code using command **SC002 Enter injector codes** (see **Interpretation of commands**).
- Run **Part B** of this test to confirm the fault finding procedure.

**TEST 1**  
**CONTINUED 1**

**CASE No. 3: If at least one of these values does not stabilise (20 seconds after starting).**

- Check the low pressure circuit.
- Ensure that the correct fuel is being used.
- Run **Part B** of this test to confirm the fault finding procedure.

**CASE No. 4: If the fuel flow correction values are all correct (between - 5 mg/st and + 5 mg/st)**

Run **Part C** of this test (Fuel return flow measurement).

**IMPORTANT**

For the removal - refitting of the injectors, observe the cleanliness and safety instructions (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 13B, Diesel injection, Diesel injector: Removal - refitting**).

**Part B: Confirmation of flow correction fault finding for each injector (individual correction):**

Clear the faults and perform a test with the **engine idling** for at least **5 minutes**, fuel temperature **> 50°C**.

Check that no fault appears on the **CLIP diagnostic tool** and that the corrective values do not reach **± 5 mg/stroke** to confirm the repair.

If the customer complaint is still present and the fuel flow correction values are between **-5 mg/st and +5 mg/st**, run **Part A: Fuel regulation balance check for each injector (individual)** of this test (**Case no. 4**).

If one or more cylinders has an injector flow correction value in excess of **± 5 mg/stroke**, run **Part A Fuel regulation balance check for each injector (individual)**, as one or more additional injectors may be defective.

**TEST 1**  
**CONTINUED 2**

**Part C: Measuring fuel return flow**

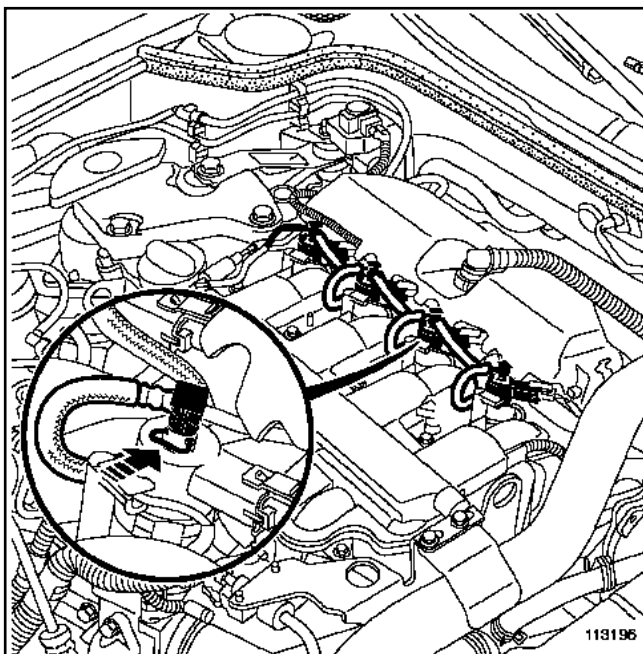
**1 - Fitting the tool:**

**Only carry out this part if PR063 Fuel temperature is greater than 50°C (see step 2 of Part C of this test).**

Remove the engine undertray

Disconnect the entire fuel return pipe in accordance with the following procedure (do not remove the clips):

- press the clip,
- pull vertically on the end piece of the fuel return pipe (see the arrow in the diagram below).


















**IMPORTANT**

The end piece is fragile. Be careful not to break it by pulling it too hard.

Replace all removed clips.

TEST 1 CONTINUED 3	
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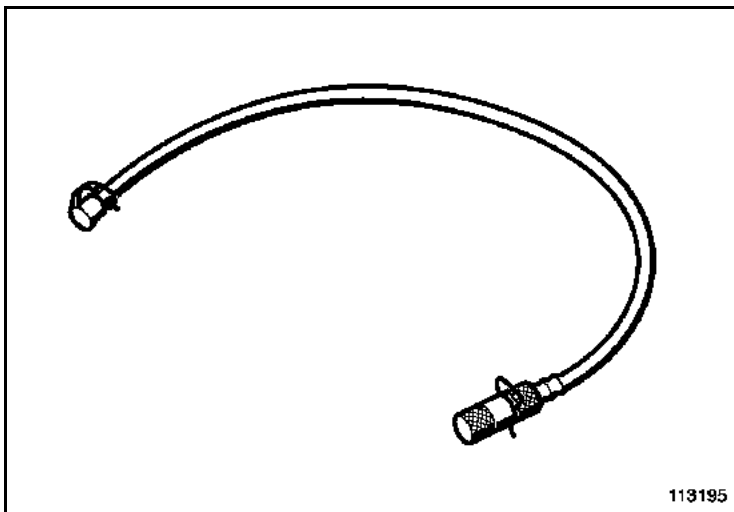
  
**RENAULT**

	<b>A</b>  X 5	<b>B</b>  X 4	<b>C</b>  X 6	<b>D</b>  X 7	<b>E</b>  X 8	<b>F</b>  X 1	<b>G</b>  X 7	<b>H</b>  X 1	<b>I</b>  X 1
	<b>J</b>  X 1	<b>K</b>  X 1	<b>L</b>  X 1	<b>M</b>  X 1					

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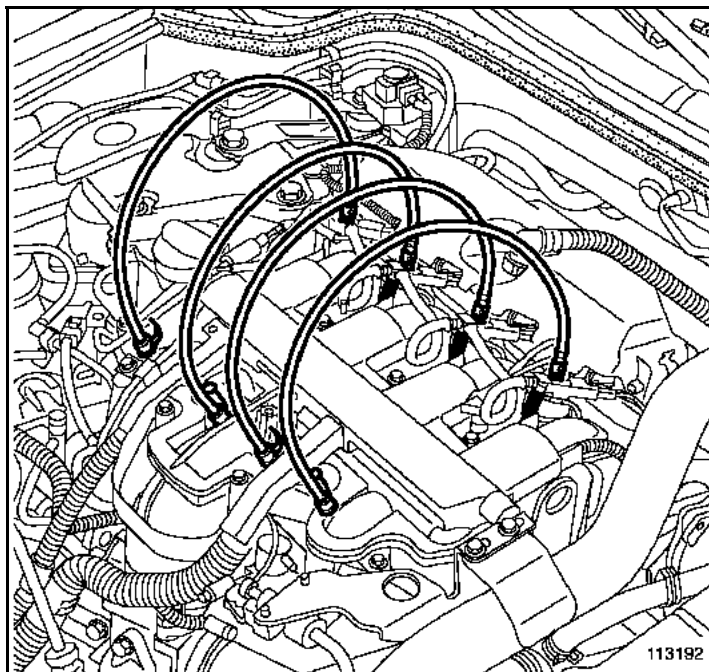
Fit the blanking plugs (B), from the kit (part number 77 01 208 229), on the end pieces of the fuel return pipe.  
If **Mot. 1760** is not fitted on the injectors immediately, place blanking plugs (A) on the injector fuel return openings.

**TEST 1  
CONTINUED 4**



On the pipes of **Mot.1760** (see illustration **113195**), remove the clips and the plugs from the end pieces (on the right in the diagram) and leave the plugs (on the left in the diagram) in place.

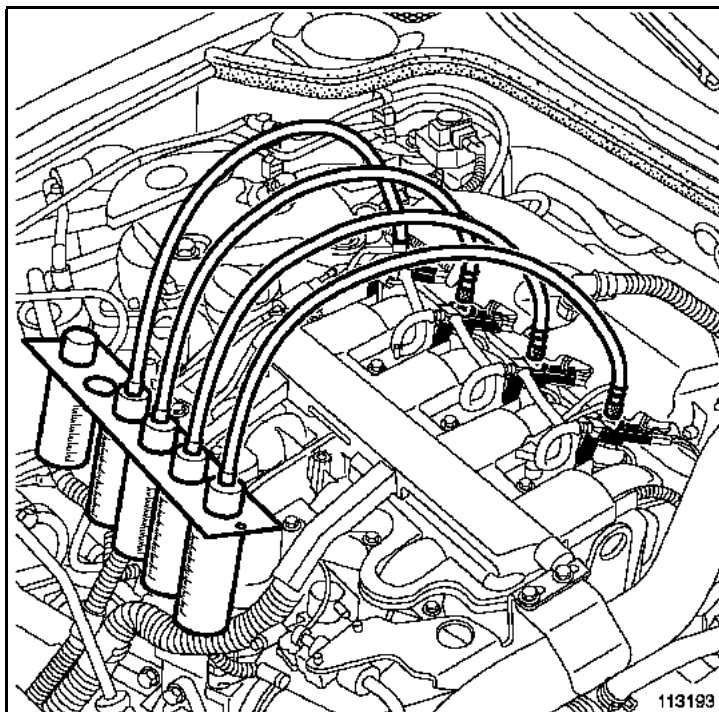
**TEST 1**  
**CONTINUED 5**



Connect the pipes of tool **Mot. 1760** to the injectors (without removing the clips on the injectors):

- press on the injector clip,
- insert the end piece into the injector fuel return opening.
- remember to fit the end piece plugs to the injector fuel return openings with the clips provided,
- remove the plugs left on tool **mot. 1760**

### TEST 1 CONTINUED 6

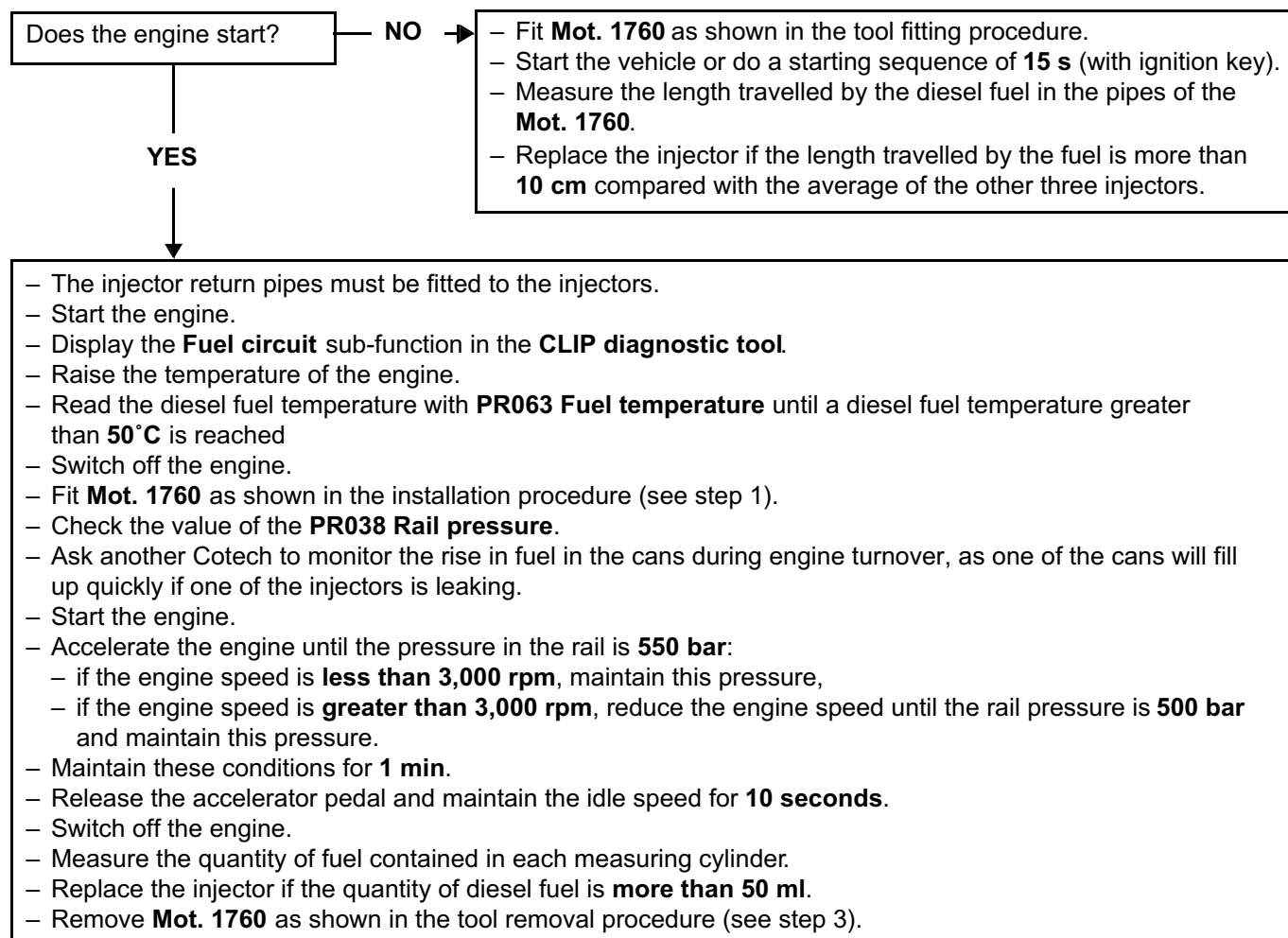


Insert the ends of the pipes into the measuring cylinders of tool **mot. 1760**. The measuring cylinders are taken from tool **mot. 1711**.



**TEST 1  
CONTINUED 7**

**2 - Injector return flow balance check:**



**TEST 1  
CONTINUED 8**

**3 - Removing the tool:**

**IMPORTANT**

Use a cleaning cloth (**part number 77 11 211 707**) to absorb fuel run-off.

Disconnect the pipe from an injector:

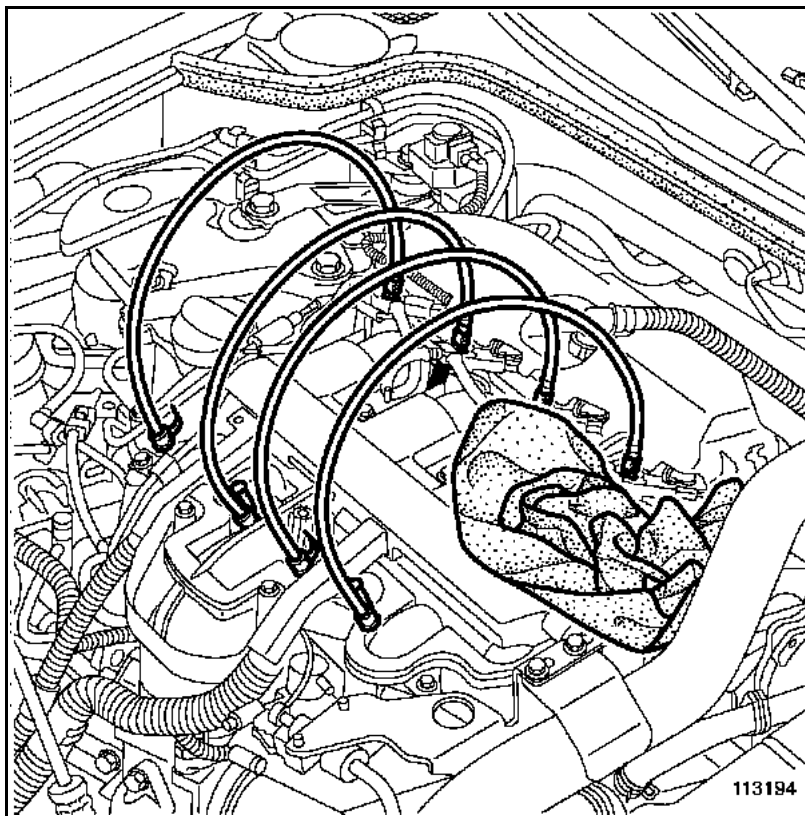
- press on the injector clip,
- pull vertically on the end piece of the pipe of tool **mot. 1760** while putting a cloth on the end piece to avoid drips. Lift the end piece vertically so that the fuel contained in the pipes flows into the measuring cylinders of tool **mot. 1760**.

Remove the other 3 pipes using the same procedure.

Remove the plug welds from the fuel return pipe end pieces.

Connect the complete fuel return pipe to the injectors.

Wipe up any fuel run-off with a cleaning cloth (**part number 77 11 211 707**).



**End of test 1.**

**TEST 2**

**Turbocharger air chain**

Check for an air filter.  
Check the replacement frequency for the air filter in the Maintenance Booklet.  
Compare the part numbers of the air filter fitted to the vehicle and that of the air filter recommended by the manufacturer.  
Check the air filter direction of fitting.  
**Is the air filter fitted to the vehicle correct?**

**YES**

**NO**

**Check the condition of the air filter.**  
Visually inspect the condition of the filter section of the air filter.  
**Is the air filter or its seal damaged?**  
**Is the air filter clogged (does it contain a lot of impurities)?**

**YES →**

Replace the air filter (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12A, Fuel mixture, Air filter, Removal - Refitting**).

**NO**

**Low pressure circuit check**  
Note:  
According to the vehicle type, maximum visual access will either be from above or from below.  
Visually inspect the condition of the following components:  
– fresh air inlet scoop on the front end panel of the vehicle,  
– air filter air inlet pipe,  
– filter air pipe up to the compressor inlet,  
– air flowmeter mountings.  
**Is one of these components incorrect (disconnected, cut, bent, pierced or kinked pipes)?**

**YES →**

Replace the defective parts (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).

**NO**



**TEST 2  
CONTINUED**



**High pressure circuit check**

Note:

According to the vehicle type, maximum visual access will either be from above or from below. Visually inspect the condition of the following components:

- outlet pipe of the compressor to the turbocharging air cooler,
- turbocharging air cooler outlet pipe at inlet manifold,
- inlet manifold,
- temperature and pressure sensors.

**Is one of these components incorrect (disconnected, cut, bent, pierced or kinked pipes)?**

YES

Replace the defective parts (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).

NO

**Exhaust system check**

Visually inspect the condition of the following engine parts:

- the exhaust manifold circuit to the turbocharger turbine,
- the turbine outlet pipe to the end of the exhaust pipe,
- from the inlet manifold to the EGR valve,
- check that the temperature and pressure sensors are connected.

**Do some of these components have black or white marks on them?**

YES

NO

Run **test 3: Turbocharger control solenoid valve check**.

**TEST 3**

**Turbocharger control solenoid valve test**

Start the engine and let it run at idle speed for **1 min.**  
Check the battery voltage.  
If the value of **PR071 Computer supply voltage** is **greater than 13 V**, continue the test.  
If not, check the charging circuit, then carry out a road test to confirm that the fault has disappeared.

**Checking the vacuum at the pressure regulator inlet**

Let the engine idle.  
Check the engine temperature using the CLIP parameter **PR064 Coolant temperature**.  
Let the engine warm up until the temperature reaches **80°C**.  
Disconnect the vacuum pipe from the pressure regulator end piece.  
Connect a vacuum pressure gauge **to the end of the disconnected pipe** and put it in the **vacuum measurement** position.  
Accelerate rapidly by fully depressing the accelerator pedal and releasing it immediately.  
The total duration of pressing and holding in the full load position must not exceed **1 second**.  
During this acceleration, the engine speed must reach a value between **3000 and 4000 rpm**.  
Repeat the operation 3 times.  
Read the maximum vacuum displayed by the pressure gauge during the increase in speed, the decrease in speed and after returning to idle speed.  
Tolerance intervals to be respected for the vacuum value:  
**-1 bar < CORRECT vacuum value < - 0.6 bar**  
**-0.6 bar < INCORRECT vacuum value < 0 bar**  
**Does the vacuum at the turbocharger pressure regulator inlet, displayed by the pressure gauge, respect the tolerance interval?**

**NO**



**YES**

The solenoid valve is correct.  
If the customer complaint relates to **Smoke from the exhaust**, apply **ALP9 Smoke from the exhaust**, otherwise, run **test 4 Turbocharger**.

**TEST 3  
CONTINUED 1**

**A**

Reconnect the vacuum pipe to the turbocharging pressure regulator.

**Check the vacuum at the solenoid valve outlet**

Let the engine idle.

Disconnect the vacuum pipe from the solenoid valve outlet end piece.

This pipe connects the solenoid valve to the turbocharging pressure regulator.

Connect a vacuum pressure gauge **to the solenoid valve outlet** and put it in the **vacuum measurement** position.

Accelerate rapidly by fully depressing the accelerator pedal and releasing it immediately.

The total duration of pressing and holding in the full load position must not exceed **1 second**.

During this acceleration, the engine speed must reach a value between **3000 and 4000 rpm**.

Repeat the operation 3 times.

Read the maximum vacuum displayed by the pressure gauge during the increase in speed, the decrease in speed and after returning to idle speed.

Tolerance intervals to be respected for the vacuum value:

- **1 bar** < **CORRECT** vacuum value < - **0.6 bar**

- **0.6 bar** < **INCORRECT** vacuum value < **0 bar**

**Does the vacuum displayed at the solenoid valve outlet, by the pressure gauge respect the tolerance interval?**

**NO**

Reconnect the vacuum pipe to the turbocharging pressure regulator.

**B**

**YES**

Replace the vacuum pipe between the solenoid valve and the turbocharging pressure regulator (see **MR 364 (Mégane II)** or **370 (Scénic II), Mechanical, 12B, Turbocharging**).

**TEST 3  
CONTINUED 2**

**B**

**Visual inspection of the solenoid valve electrical connector**

Switch off the engine.

Note:

The requested checks are entirely visual.

- 1- Check that the connector is correctly connected and locked.
  - 2- Check that the electric wires are not damaged where they leave the insulation.
- Disconnect the connector to continue the checks.
- 3- Check that there is no heat damage to the unit and mechanical damage to the lock.
  - 4- Check that the contacts (clips and tabs) are not deformed.
  - 5- Check the sealing of the connector.

**Do the visual inspections highlight any damage?**

**NO**

**YES**

If there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.  
**After repair, restart the test from the beginning.**

**Check the vacuum at the solenoid valve inlet**

Let the engine idle.

Disconnect the vacuum pipe from the solenoid valve inlet end piece.

This pipe connects the vacuum pump to the turbocharger solenoid valve.

Connect a vacuum pressure gauge **to the end of the disconnected pipe** and put it in the **vacuum measurement** position.

Read the vacuum displayed by the pressure gauge.

Tolerance intervals to be respected for the vacuum value:

**-1 bar < CORRECT vacuum value < -0.85 bar**

**-0.85 bar < INCORRECT vacuum value < 0 bar**

**Does the vacuum displayed at the solenoid valve inlet by the pressure gauge respect the tolerance interval?**

**NO**

**YES**

**C**

Replace the solenoid valve (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).

**TEST 3**  
**CONTINUED 3**



Perform the following operations:

- reconnect the vacuum pipe to the turbocharger solenoid valve,
  - check the conformity of the connection of the vacuum pipe(s),
  - visually inspect the condition of the vacuum pipes from the vacuum pump to the various components supplied.
- Refer to the repair manual (see **MR 364 (Mégane II)** or **370 (Scénic II)**, **Mechanical**, **12B Turbocharging**).



**TEST 4**

**Turbocharger**

**IMPORTANT**

Perform these checks without removing the turbocharger and with the vehicle ignition switched off.

**Check the turbocharger shaft**

**WARNING**

Respect the following safety precautions:

- wear heat resistant gloves when the engine is hot,
- do not wear loose or baggy clothing and do not wear loose hanging jewellery,
- be aware that the cooling fan assembly may be triggered and pay attention to the operation of the accessories belt or belts.

**Note:**

The turbocharger shaft is the shaft connecting the compressor wheel and the turbine wheel.  
According to the vehicle type, maximum visual access will either be from above or from below.

Disconnect the air pipe located between the turbocharger and the air filter.

Wearing gloves, check the operation of the turbocharger shaft by turning the vanes manually without forcing.

**Is there a point of resistance when the shaft is rotated?**

**Does the compressor wheel touch the turbocharger housing?**

If the response  
for these  
**2 questions** is  
**NO**



If **YES** for **one of these 2 questions**

Replace the turbocharger (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging, Turbocharger: Removal - Refitting and Technical Note 3938A, Broken turbocharger: Replacement instructions**).

**TEST 4  
CONTINUED 1**

**A**

**Check the condition of the turbocharger vanes**

Note:

Use a mirror and light to facilitate this check.

According to the vehicle type, maximum visual access will either be from above or from below.

Visually check that the compressor vanes are in good condition.

**Are the vanes damaged or twisted?**

YES

NO

Replace the turbocharger (see **MR 364 (Mégane II)** or **370 (Scénic II)**, **Mechanical, 12B, Turbocharging, Turbocharger: Removal - Refitting** and **Technical Note 3938A, Broken turbocharger: Replacement instructions**).

**What is the type of turbocharger?**

Variable geometry  
turbocharger

**B**

Turbocharger with  
fixed geometry

**C**

**TEST 4**  
**CONTINUED 2**

**B**

**Checking the turbocharging pressure regulator for a turbocharger with variable geometry**

Note:

The rod of the pressure regulator on a turbocharger with variable geometry is perpendicular to the turbocharger shaft.

Turbochargers with variable geometry are controlled by a solenoid valve.

According to the vehicle type, maximum visual access will either be from above or from below.

Note:

If necessary, according to the vehicle type and the accessibility of the pressure regulator, connect the vacuum pump to the end of the pressure regulator pipe at the solenoid valve outlet.

Using a **manual vacuum pump**, apply a vacuum to the turbocharging pressure regulator of approximately **650 mbar**.

- 1- Check that the fitting is completely sealed.
- 2- Check that the control rod **is resting against its stop**.
- 3- Lock the **vacuum** device and check that the pressure variation is not greater than **100 mbar over 10 seconds**.
- 4- Release the pressure and check that the control rod returns to its initial position without jerking.

Repeat the complete sequence 3 times.

**Is the pressure regulator sealing and rod movement correct?**

**YES**

**NO**

The turbocharger is correct.  
**End of procedure.**

Replace the turbocharger (see **MR 364 (Mégane II)** or **370 (Scénic II)**, **Mechanical, 12B, Turbocharging, Turbocharger: Removal - Refitting** and **Technical Note 3938A, Broken turbocharger: Replacement instructions**).

**TEST 4  
CONTINUED 3**

C

**Checking the turbocharging pressure regulator for a turbocharger with fixed geometry**

Note:

The pressure regulator rod for a turbocharger with fixed geometry is line with the turbocharger shaft.

Turbochargers with fixed, regulated geometry are controlled by a solenoid valve.

According to the vehicle type, maximum visual access will either be from above or from below.

Note:

If necessary, according to the vehicle type and the accessibility of the pressure regulator, connect the vacuum pump to the end of the pressure regulator pipe at the solenoid valve outlet.

Using a **manual vacuum pump**, apply a vacuum to the turbocharging pressure regulator of approximately **650 mbar**.

- 1- Check that the fitting is completely sealed.
- 2- Check that the control rod **moved several millimetres**.
- 3- Lock the **vacuum** device and check that the pressure variation is not greater than **100 mbar over 10 seconds**.
- 4- Release the pressure and check that the control rod returns to its initial position without jerking.

Repeat the complete sequence 3 times.

**Is the pressure regulator sealing and rod movement correct?**

**YES**

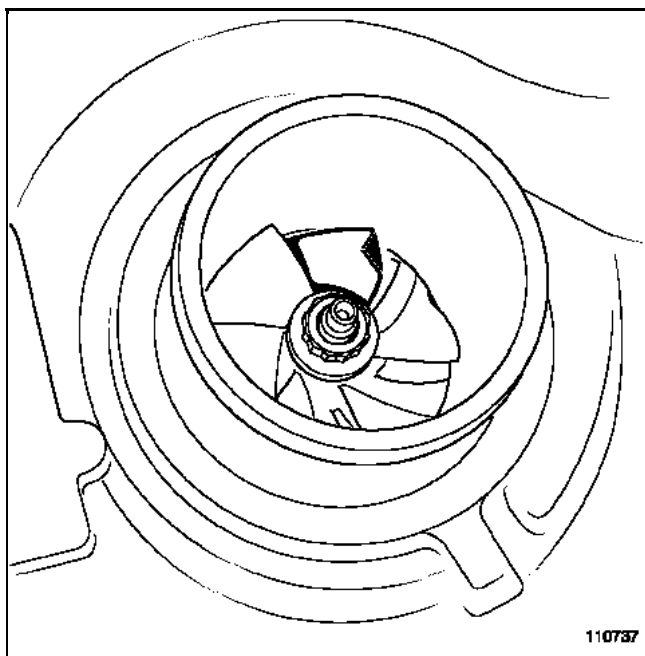
**NO**

The turbocharger is correct.  
**End of procedure.**

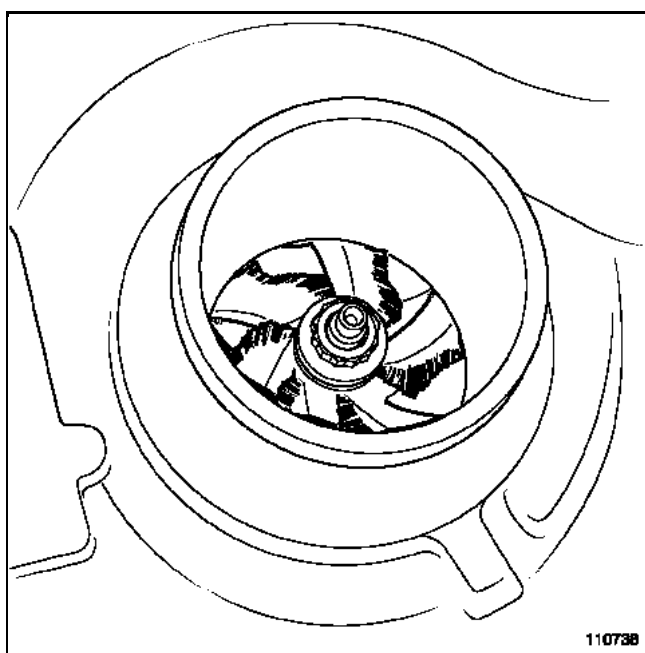
Replace the turbocharger (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging, Turbocharger: Removal - Refitting and Technical Note 3938A, Broken turbocharger: Replacement instructions**).

**TEST 4**  
**CONTINUED 4**

**Deformed, twisted blade ("soft" foreign body)**



**Broken blades ("hard" foreign body)**



**TEST5**

**Diesel fuel conformity check**

**WARNING**

During this operation, it is essential to:

- refrain from smoking or bringing incandescent objects close to the work area,
- protect yourself against fuel splashes due to residual pressure in the pipes,
- wear safety goggles with side guards,
- wear leaktight gloves (Nitrile type).

**IMPORTANT**

- To avoid any corrosion or damage, protect the areas on which fuel is likely to run.
- To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

**Preparations:**

Weigh an empty 1300 ml plastic cup (part no. 77 11 171 413) with its cover (part no. 77 11 171 416) using electronic scales such as those used in body paint workshops (example: PANDA part no. 77 11 224 995).

Record the weight of the empty plastic cup.

This type of plastic cup is used to prepare paint.

Remove **1 L of fuel at the diesel filter outlet** (see **MR 364 (Mégane) or 370 (Scénic), Mechanical, 19C, Tank, Fuel tank: Draining**), using a pneumatic transfer pump (part no. 634-200) and place it in the 1300 ml plastic cup. **Cover the plastic cup with its cover and allow it to settle for approximately 2 minutes.**

Is the fuel cloudy or does it separate into two parts?

—YES—>

The diesel fuel contains water and is not compliant.  
Drain the fuel circuit, including the tank (see **MR 364 (Mégane) or 370 (Scénic), Mechanical, 19C, Tank, Fuel Tank: Draining**).

NO  
↓



**TEST5  
CONTINUED**

**A**

Weigh the diesel fuel and note the fuel weight after subtracting the weight of the empty plastic cup and its cover.  
Does the fuel weight fall between the minimum and maximum weights given in the table below?

Calculated weight (g.)		Fuel temperature (°C)
Min. weight	Max. weight	
821	846	13
821	846	14
820	845	15
819	844	16
819	844	17
818	843	18
817	842	19
816	841	20
816	841	21
815	840	22
814	839	23
814	839	24
813	838	25

Check the fuel temperature by immersing a thermometer in the plastic cup.

**YES**



End of test.

**NO**



The fuel is not correct.

If the fuel weight is less than the minimum value then there is petrol in the diesel fuel.

If the fuel weight is greater than the maximum value then there is oil in the diesel fuel.

Drain the fuel circuit, including the tank (see **MR 364 (Mégane) or 370 (Scénic), Mechanical, 19C, Tank, Fuel Tank: Draining**).

**Note:**

If the weight measured reaches the limit values, the measurement can be performed with a **2230 ml (part no. 77 11 171 414)** plastic cup with a cover (**part no. 77 11 171 417**):

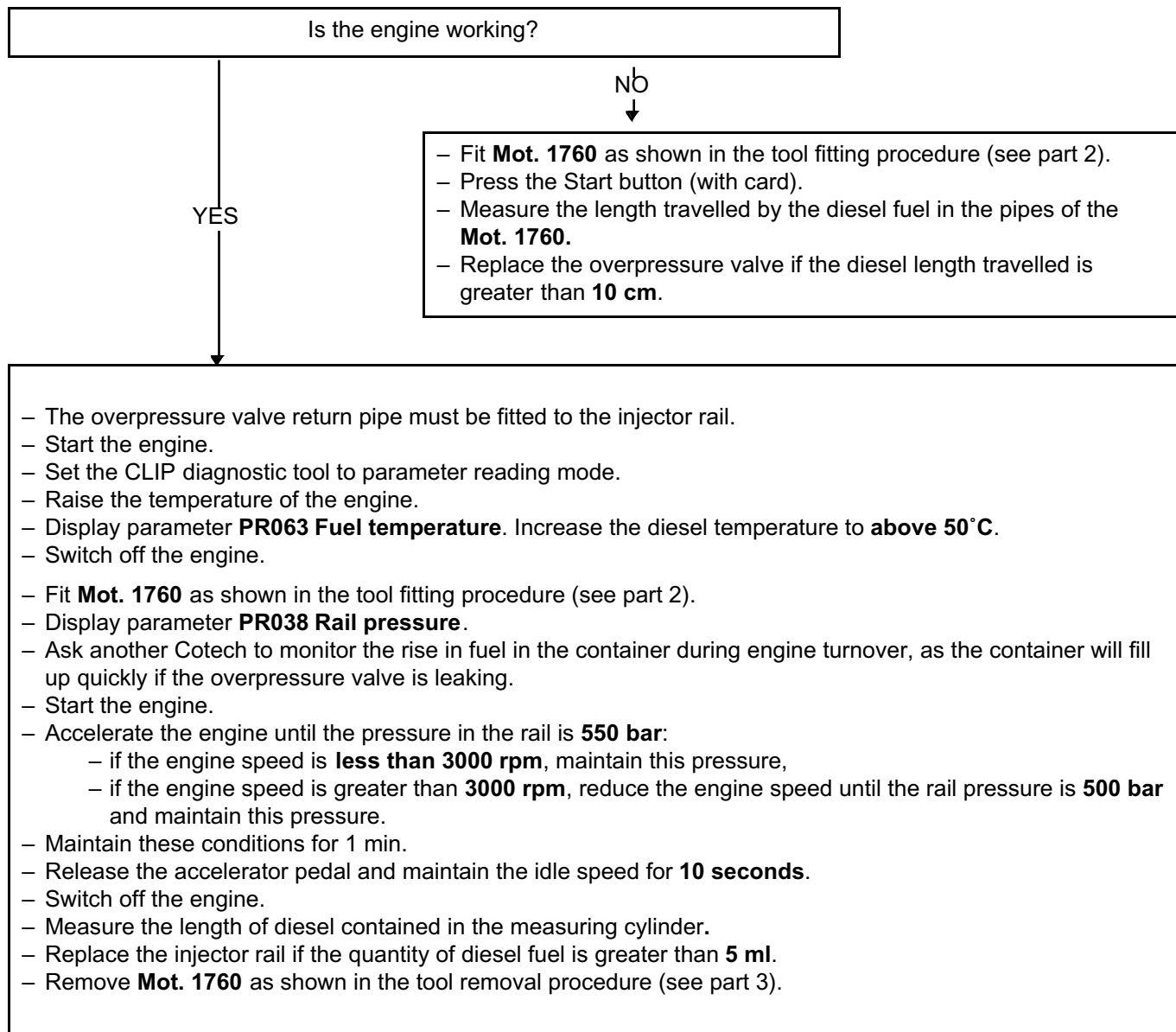
- Carry out a quick test drive in order to mix the fuel, then remove **2 l** of fuel.
- Perform the test again and check the results by multiplying the limit values by 2.

**Contact the Techline if you have doubts or problems with the customer.**

**TEST6**

**Incorrect operation of the overpressure valve**

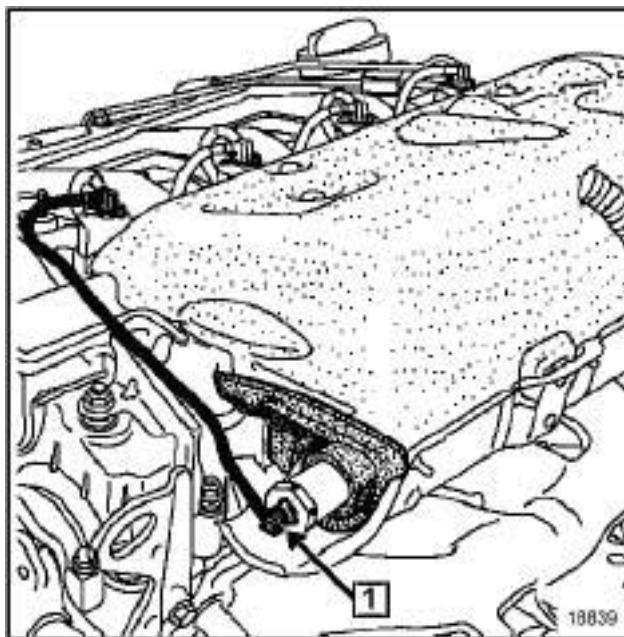
**Part 1. Overpressure valve return flow test:**





**TEST6**  
**(CONTINUED 1)**

**Part 2: Fitting the tool:**



Remove the engine undertray.

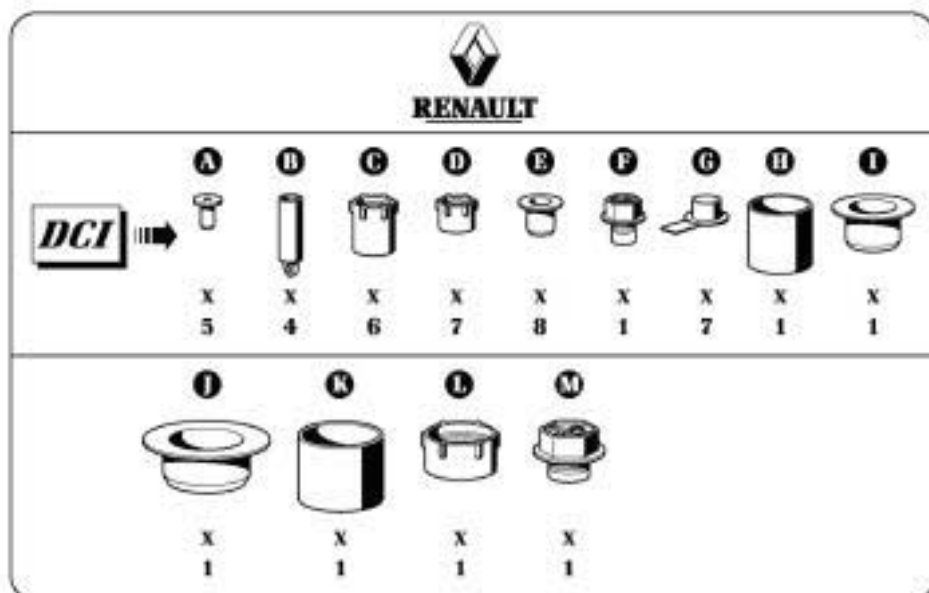
Disconnect the overpressure valve return pipe according to the following procedure (**do not remove the clips**):

- press the clip,
- pull vertically on the end piece (1) of the fuel return pipe.

**TEST6**  
**(CONTINUED 2)**

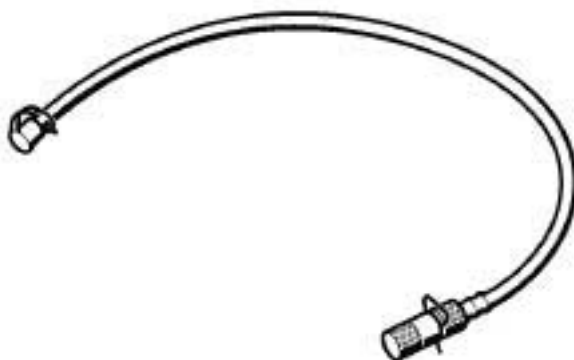
**IMPORTANT**

The end piece is fragile. Be careful not to break it by pulling it too hard. Replace



Fit the blanking plugs (**B**), from the kit (part number **77 01 208 209**), on the end pieces of the fuel return pipe.  
If **Mot.1760** is not fitted immediately on the overpressure valve, place a blanking plug (**A**) on the overpressure valve fuel return opening.

**TEST6**  
**(CONTINUED 3)**



113196

Shown above is the pipe (**Mot. 1760**) with the end piece (2) on the right and the plug (4) on the left.

Remove the clip and the plug from the end piece (2) of the pipe of tool **Mot.1760**, leave the plug (4) in place.

Connect the pipe of **Mot. 1760** to the rail overpressure valve (without removing the clip on the overpressure valve):

- press on the clip (1) of the overpressure valve,
- insert the end piece (2) in the overpressure valve fuel return opening.
- do not forget to fit the end piece plug (2) to the overpressure valve fuel return opening using the clip supplied.

Remove the plug (4).

Insert the end of the pipe in the measuring cylinder of the tool **Mot. 1760**, the measuring cylinder is retrieved from the tool **Mot.1711**.

Measure the return flow (see the procedure in **part 1** of this test).

**TEST6**  
**(CONTINUED 4)**

**Part 3: Removing the tool:**

**IMPORTANT**

Use a cleaning cloth (part number **77 11 211 707**) to absorb fuel run-off.

Disconnect the pipe of **Mot.1760** on the overpressure valve:

- press on the clip (1) of the overpressure valve,
- pull horizontally on the end piece (2) of the pipe of **Mot. 1760** while putting a cloth on the end piece (2) to avoid the drips.

Lift the end piece (2) vertically so that the diesel fuel contained in the pipe flows into the measuring cylinder of **Mot. 1760**.

Remove the plug from the fuel return pipe end piece (2).

Connect the complete fuel return pipe to the overpressure valve.

Wipe up any diesel fuel run-off using a cleaning cloth (part number **77 11 211 707**).

<b>Injection computer</b>	112-track (BOSCH) Connectors: black A 32-track, brown B 48-track, grey C 32-track
<b>Atmospheric pressure sensor</b>	Integrated into the computer (BOSCH)
<b>Injector</b>	0.33 $\Omega$ at + 20°C / 2 $\Omega$ max (BOSCH) 1350 bar
<b>Flow regulator (high pressure pump)</b>	R = 3 $\Omega$ at + 20°C (BOSCH, CP3.2+ pump type)
<b>Rail pressure sensor</b>	Rail pressure limiter: opening at around 1600 bar (BOSCH, bolted to the rail)
<b>Engine speed sensor</b>	R = 680 $\pm$ 170 $\Omega$ at + 20°C (MGI)
<b>Camshaft sensor</b>	Hall effect sensor (ELECTRICFIL) R = 10250 $\pm$ 500 $\Omega$ at + 20°C (measurement between tracks 2 and 3 of the sensor)
<b>Turbocharger control solenoid valve</b>	15.4 $\pm$ 0.7 $\Omega$ at + 20°C (PIERBURG)
<b>Electric EGR valve</b>	Track 1: + 12 V solenoid Track 2: + 5 V potentiometer Track 3: Not used Track 4: potentiometer earth Track 5: solenoid earth Track 6: potentiometer signal  SOLENOID: R between tracks 1 and 5 = 8 $\pm$ 0.5 $\Omega$ at + 20°C POTENTIOMETER: R between tracks 2 and 4: 4 $\pm$ 2 k $\Omega$ at + 20°C (Pierburg)
<b>EGR by-pass solenoid valve</b>	R = 46 $\pm$ 3 $\Omega$ at + 25°C (EATON/BITRON)
<b>Electric damper valve</b>	DIRECT CURRENT MOTOR (VDO)
<b>Air flowmeter</b>	Track 1: air temperature signal Track 2: flow sensor earth Track 3: + 5 V flowmeter Track 4: + 12 V battery Track 5: air flow signal Track 6: battery earth (SIEMENS)
<b>Air temperature sensor</b>	R = 3714 $\Omega \pm$ 161 at + 10°C/2448 $\Omega \pm$ 96 at + 20°C/1671 $\Omega \pm$ 59 at + 30°C
<b>Coolant temperature sensor</b>	R = 2252 $\Omega \pm$ 112 at 25°C/811 $\Omega \pm$ 39 at 50°C/283 $\Omega \pm$ 8 at 80°C
<b>Fuel temperature sensor</b>	R = 2051 $\Omega \pm$ 123 at 25°C/810 $\Omega \pm$ 47 $\pm$ at 50°C/309 $\Omega \pm$ 17 at 80°C
<b>Accelerator pedal sensor</b>	R gang 1 = 1700 $\pm$ 900 $\Omega$ R gang 2 = 2850 $\pm$ 2050 $\Omega$
<b>Heater plug</b>	R = 0.6 $\Omega$ at + 20°C/2 $\Omega$ max Maximum current drawn: 28 A at 0 seconds/12 A at 10 seconds/9 A after 30 seconds
<b>Diesel fuel temperature sensor</b>	According to application (ZERTAN)

(R = Resistance, EGR = Exhaust gas recirculation)