

MEGANE

1 Engine and peripherals

13B

DIESEL INJECTION

DDCR INJECTION

Vdiag No.: 44, 48

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V5

Edition Anglaise

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

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

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1. APPLICABILITY OF THE DOCUMENT

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

Vehicle(s): **MEGANE II, SCENIC II**
for engines **K9K 722, 728, 729**
Function concerned: **DELPHI K9 DIESEL**
DIRECT COMMON RAIL INJECTION (DDCR)

Computer name: **DDCR INJECTION**
Program No.: **BE**
Vdiag No.: **44, 48**

Following the introduction of the Pump repriming function on K9K engines, a new Vdiag was issued to cover this function.

When replacing a high pressure pump on vehicles fitted with a computer with Vdiag 44, it is essential to reprogram the injection computer to activate the Pump repriming function.

After reprogramming, Vdiag 44 is replaced by Vdiag 48.

2. PREREQUISITES FOR FAULT FINDING:

Documentation type:

Fault finding procedures (this document):

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

Wiring Diagrams:

- Visu-Schéma (CD-ROM), paper.

Type of diagnostic tools:

- CLIP

Special tooling required:

SPECIAL TOOLING REQUIRED	
Multimeter.	
Elé. 1590	112-track computer bornier.
Elé. 1681	Universal bornier.
Mot. 1711	Injector flow measuring kit.

3. REMINDERS

Procedure

To run fault finding on the vehicle's computers, switch on the ignition in fault finding mode (forced + after ignition feed).

Proceed as follows:

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

NOTE:

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

To cut off + after ignition, proceed as follows:

- disconnect the diagnostic tool,
- 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.

Fault

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

The present or stored status of the faults should be taken into consideration when the diagnostic tool is used after the + after ignition feed has been connected (with no system components activated).

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

For a stored fault, note the faults displayed and apply the Notes paragraph.

If the fault is confirmed when the notes 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 on these lines (corrosion, bent pins, etc.),
- the resistance of the faulty component,
- the condition of the wires (melted or cut insulation, wear).

Or use diagnostics to check the circuit of the suspect component.

Conformity check

The conformity check is designed to check the statuses and parameters that do not display any faults on the diagnostic tool when inconsistent. Therefore, this stage is used to:

Run 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 repair.
- This section features the fault finding procedures for statuses and parameters, and the conditions for checking them.

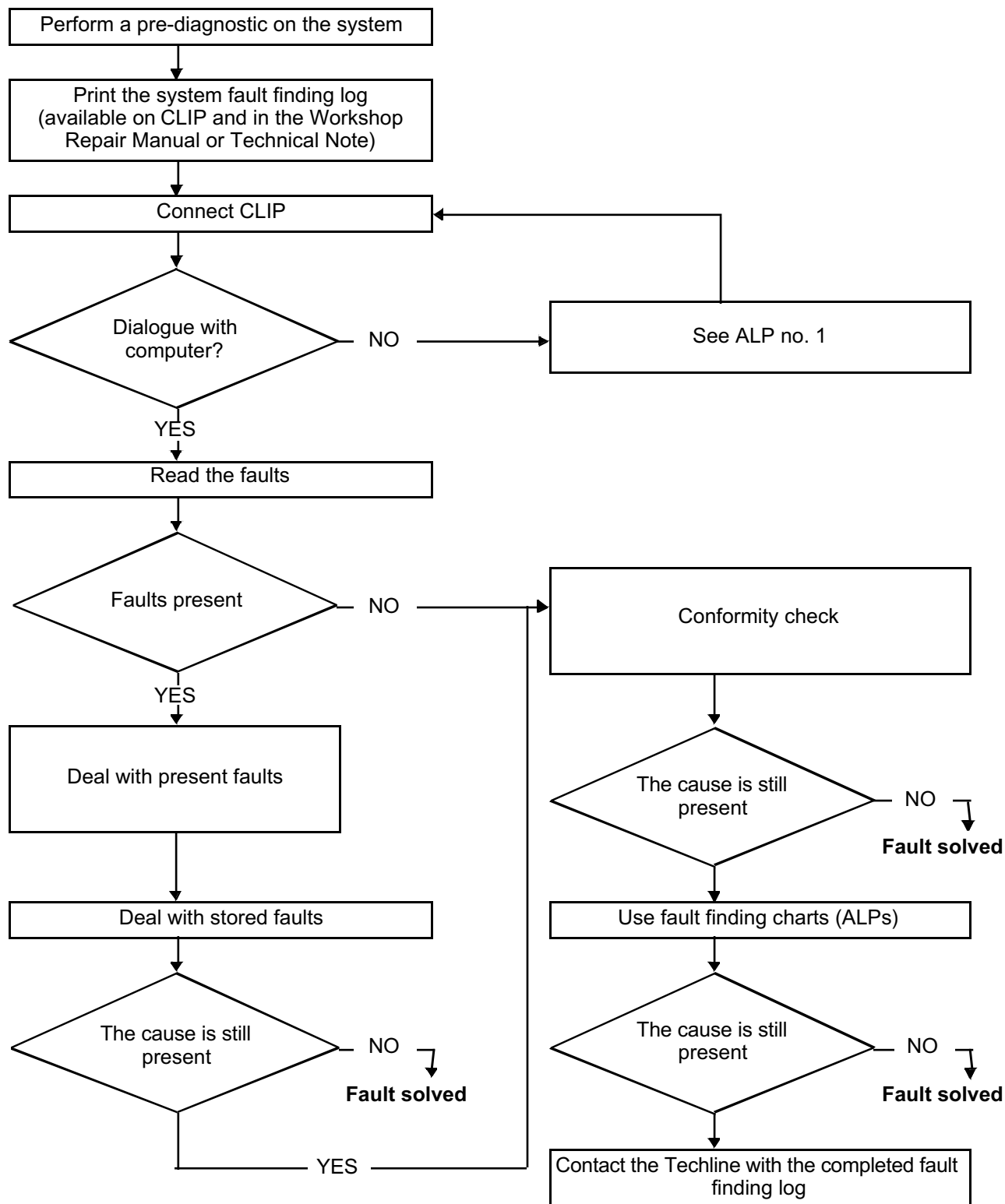
If a status is not operating normally or a parameter is outside permitted tolerance values, you should consult the corresponding fault finding page.

Customer complaints - Fault-finding chart

If the diagnostic tool check is correct, but the customer complaint is still present, it should be dealt with using Customer complaints.

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

4. FAULT FINDING PROCEDURE



4. FAULT FINDING PROCEDURE (continued)

Wiring check

Fault finding problems

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

The electrical measurements of the voltage, resistance, and insulation are generally correct, especially if the fault is not present when the measurements are being taken (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.

Physical inspection

When handling the wiring, use the diagnostic tool to detect any change in the status of the fault from stored to present.

Make sure that the connectors are firmly 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 insulation). Check that the clips and the tabs are correctly 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 with 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 COMPULSORY TO COMPLETE A FAULT FINDING LOG EVERY TIME A FAULT FINDING PROCEDURE IS PERFORMED

You will always be asked for this log:

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

6. SAFETY INSTRUCTIONS

Safety rules must be observed during any work on a component to prevent any material damage or personal injury:

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

7. CLEANLINESS INSTRUCTIONS WHICH MUST BE FOLLOWED WHEN WORKING ON THE HIGH-PRESSURE DIRECT INJECTION SYSTEM

Risks relating to contamination:

The high pressure direct injection system is highly sensitive to contamination. 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 penetrate 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, brushes, paper, clothing and cloth.
- foreign bodies such as hair,
- ambient air,
- etc.

IMPORTANT

Cleaning the engine using a high pressure washer is prohibited because of the risk of damaging connections. In addition, moisture may collect in the connectors and create electrical connection faults.

Advice to be followed before any operation

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. Parts stored in this way will be less susceptible to the risk of 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.

Blow compressed air over the cleaned parts (the tools and workbench, as well as the parts, unions, and injection system sections). 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, cleaning agent, air gun, sponge or normal cloth is strictly prohibited once the circuit has been opened. These items are likely to allow impurities to enter the system.

A new component replacing an old one must not be removed from its packaging until it is to be fitted to the vehicle.

System outline

The DDCR injection system used on the K9 engine is an electronically managed high pressure injection system. The fuel is compressed by a high pressure pump then stored in a rail that feeds the injectors. Injection occurs when a current pulse is applied to the injector holders. The injected flow is proportional to the rail pressure and to the applied pulse length, and the start of injection is phased with the start of the pulse.

The circuit comprises two subsystems, which are distinguished by the fuel pressure level.

- The low pressure system includes the tank, diesel fuel filter, transfer pump and injector holder return pipes.
- The high pressure circuit contains the high pressure pump, the rail, the injector holders and the high pressure tubes.

Finally, there are a certain number of sensors and regulating actuators for controlling and monitoring the entire system.

Functions provided

Function: Fuel supply management (timing, flow and pressure).

Quantity of fuel injected and injection timing adjustment

The injection checking parameters are the quantities to be injected and their respective timing. These are calculated by the computer using signals from the following sensors:

- Engine speed (Crankshaft + Cam for synchronisation)
- Accelerator pedal
- Turbocharging pressure and air temperature (Turbocharger pressure)
- Coolant temperature
- Air temperature
- Air load (Flow and Pressure)
- Rail pressure
- Flowmeter
- Turbocharging solenoid valve

The quantities to be injected and their respective timing are converted into:

- a reference tooth
- the time between this tooth and the start of the pulse
- the time for which the supply to the injector holder is on

An electrical current (pulse) is sent to each injector holder according to previously calculated data. The system makes one or two injections (1 pilot injection, 1 main injection). The general principle is to calculate an overall injected flow which will then be divided into a main injection flow and a pilot injection flow, to help the combustion process work properly and to reduce pollutant emissions.

An accelerometer is used to monitor some of the fuel injection deviation. This has several roles:

- Protecting the engine by detecting injection leaks (disabled on the basic vehicle).
- Checking the pilot quantity by measuring deviation and dispersion
- By changing both the duration and timing of the injection, the quantity of fuel injected and the mixture ignition timing can be adjusted.

Rail pressure check

The quality of combustion is influenced by the size of the atomised droplets in the cylinder. In the combustion chamber, smaller fuel droplets will have time to burn fully, and will not produce smoke or unburned particles. To meet the pollution requirements, the droplet size, and therefore the size of the injection holes, must be reduced.

With smaller holes, less fuel will be able to be introduced at a given pressure, which limits the power. To handle this drawback, the injected fuel flow has to be increased, which means a pressure increase (and more apertures on the injector nozzles). For the DDCR injection system, the pressure reaches **1400 bar** in the rail, and must be constantly regulated. The measuring circuit consists of an active pressure sensor on the rail connected to an analogue port on the computer.

The High Pressure pump is supplied at low pressure (**5 bar**) by a built-in transfer pump. This pump supplies the rail. The rail filling pressure is controlled by the filling valve (IMV) and the discharge pressure is controlled by the injector valves. This compensates for pressure drops. The filling actuator enables the high pressure pump to supply just the exact quantity of diesel fuel required to maintain the rail pressure. This mechanism minimises the heat generated and improves engine output.

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

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

The fuel surplus is sent back to the fuel filter or the tank, according to its flow. If there is no IMV control, the rail pressure is limited by a discharge valve fitted on the pump.

Idling speed regulation

The computer handles the calculation of idling speed. This has to take account of the instantaneous power level to be supplied, according to the following factors:

- Engine coolant temperature
- Gear engaged
- Battery charging
- Electrical consumers (Heating elements, Air conditioning, Fan assembly, Heated windscreen, etc.) active or inactive

Individual injector correction (C2I)

The DDCR system injectors must be calibrated with corrective values to adjust their flow precisely. Each injector is calibrated for different pressures on a test bench, and its specifications are shown on a label attached to the body of the injector holders. These individual correction values are then written to the computer EEPROM, which can then actuate the injectors by taking into account their manufacturing dispersion.

Measuring the angular position (Cylinder reference sensor)

The angular position is measured using a magneto-inductive sensor triggered by machined teeth on the engine flywheel. This flywheel has 60 teeth separated by six degrees, minus 2 missing teeth that form a notch. A second sensor (Hall effect), activated by a machined tooth on the high pressure pump drive pulley (synchronised with the camshaft), which rotates at half the engine speed, supplies a signal showing the progress of the injection cycle. By comparing the signals from these two sensors, the computer's APS module (Angular Position Subsystem) can supply the entire system with the synchronisation factors, namely: the angular position of the flywheel, the engine speed, the number of the active injector, and the injection cycle timing. This module also supplies the system with the engine speed signal.

Flow capacity function (VLC)

Because of the combination of several parameters such as the diesel fuel temperature, part wear, clogging of the diesel filter, etc., the system may reach its limit during its service life. If this happens, the rail pressure cannot be maintained because the pump lacks the necessary capacity. If the pump lacks the necessary capacity, this programming will therefore reduce the requested flow to a value that will enable the pressure monitoring system to control the pressure again.

The customer may have noticed a loss of vehicle performance when this program is activated (confirmed by **ET563 Flow capacity function**). **This is part of normal operation.**

Function: Air flow management.

EGR valve control

The EGR (Exhaust gas recirculation) system comprises a proportional EGR valve with a built-in valve position feedback potentiometer. The EGR valve position is controlled by the potentiometer in a closed loop and/or by changes in the estimated air flow.

Calculation of the air flow

WITHOUT FLOWMETER (K9K 722)

Certain models are not fitted with air flowmeters. In this case the amount of fresh inlet air must be evaluated, based on the values supplied by the surrounding systems. The (theoretical) air volume is calculated using a model with these calculation parameters:

- the inlet air temperature measured by a sensor located after the turbocharger and/or after the intercooler (if fitted),
- the turbocharging pressure,
- the atmospheric pressure (external air),
- the EGR valve position,
- the fuel flow,
- the engine speed.

The atmospheric pressure sensor is optional. If fitted, it sends back an atmospheric pressure signal to an analogue port on the micro-controller. If not, atmospheric pressure is recovered based on the turbocharger pressure and the engine field.

WITH FLOWMETER (K9K 728)

The flow of fresh air entering the engine is given by a hot wire ratiometric sensor. This flow sensor is used to manage the amount of exhaust gas to be recirculated to ensure optimum recirculation rates. A fresh air temperature sensor is built into the flowmeter.

Air flow measurement allows closed-loop control via the EGR valve.

Besides electrical faults with the sensor, there is a consistency test between the measured air flow and an estimated air flow without EGR.

This flow evaluates the amount of fresh inlet air, based on the values supplied by the surrounding systems:

- the inlet air temperature measured by a sensor located after the turbocharger and/or after the intercooler (if fitted),
- the turbocharging pressure,
- the engine speed.

Pre-postheating actuation

Pre-postheating actuation consists of controlling the heater plugs and preheating warning light on the instrument panel. The heater plugs are activated by relays, and the power is supplied from the battery. After the ignition is switched on. Preheating is activated for a period of time. The warning light is illuminated for an activation period that depends on the battery voltage, the atmospheric pressure, and the coolant temperature. When the temperature is below a certain threshold, a postheating function can be used to improve the combustion stability, and consequently engine operation (reducing unburnt particles and pollutant emissions).

Turbocharger control solenoid valve actuation

The turbocharger system comprises a solenoid valve that is used to actuate the vanes (or wastegate) to create an overpressure or a vacuum in the inlet circuit.

Functions included**Air conditioning management assistance**

For vehicles with air conditioning, the DDCR system can switch off the air conditioning under certain engine operating conditions:

- 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. under heavy acceleration when overtaking, anti-stalling and moving off strategies).
These conditions are only taken into account when they do not occur repeatedly, in order to prevent system instabilities (erratic deactivations),
- when certain faults appear.

Cold loop air conditioning management

The air conditioning is the cold loop type and its management shared between several computers. The injection computer is responsible for:

- managing demand for cold air according to the passenger compartment commands and the pressure value,
- determining the power absorbed by the compressor from the pressure,
- determining the fan unit commands according to vehicle speed and pressure.

The driver requests the air conditioning to be switched on by means of the ventilation selector coupled to a switch. The cold air request is authorised or denied depending on the pressure measured. If this pressure is outside the operating limits, the cold loop program is not activated.

NOTE:

Fan unit actuation requests can be made by the injection computer, but these are sent on the CAN. These requests depend on the air conditioning but also on the coolant temperature and vehicle speed.

Thermal regulation of the passenger compartment heating circuit

In a direct injection engine, fuel is injected directly into the combustion chamber. This leads to heat being lost through the upper part of the engine and consequently, the cylinder head cooling circuit is smaller in size. The effect of this is that the temperature of the coolant flowing through this circuit rises more slowly. However, this coolant is also used by the passenger compartment heating system. In very cold conditions, it is therefore difficult to achieve a comfortable passenger compartment temperature quickly.

To limit the time taken to warm up the system, air heating resistors, called RCHs, are fitted into the passenger compartment heating circuit. The UCH decides whether the RCH are required, the UPC physically actuates the RCH, and the injection computer determines whether to limit the power supplied to the RCH depending on alternator charge, and also whether to disable them according to engine speed, load and vehicle speed.

Cruise control/speed limiter management:

When activated, the cruise control function maintains the vehicle at a preselected speed, regardless of the driving conditions encountered. Using the control buttons, the driver can increase or decrease the vehicle speed. The cruise control function can be deactivated either by using the control buttons or by switching off the cruise control function selection switch, or when system events are detected such as depressing the brake or clutch pedals, or when system errors are detected such as an inconsistent vehicle speed or excessive vehicle deceleration. The cruise control function can also be temporarily suspended when the driver wants to resume control of the vehicle and exceed the selected cruising speed by depressing the accelerator pedal which then exceeds the selected fuel flow. The cruising speed is resumed when the driver releases the accelerator pedal. The cruise control function can be reactivated and the last cruising speed can be resumed after deactivating the function for whatever reason until the vehicle ignition is switched off (i.e. for as long as computer supply not cut off). The vehicle will then attempt to return to the cruising speed using a controlled vehicle acceleration rate.

When switched on (using the selection switch), the vehicle speed limiter function limits the vehicle speed to a preset value. The driver controls the vehicle in the normal way using the accelerator pedal until the limit speed is reached. If an attempt is made to exceed this speed, the system will ignore the pedal request and will control the vehicle speed as the cruise control function would do, provided that the driver continues to press the accelerator pedal. As with the cruise control function, the set speed can be altered by adjusting the control buttons, with single touches or holding down.

For safety reasons, the cruising speed can be exceeded by depressing the accelerator pedal beyond the pedal position limiting value. Vehicle speed is then controlled using the accelerator pedal until the vehicle speed is decreased to below the cruising speed, when the limiter function is activated again.

The driver has the following controls for the cruise control/speed limiter function:

- accelerator pedal,
- brake pedal,
- clutch pedal,
- function selector switch, used to select cruise control or speed limiter operating mode.

Instrument panel display

The computer displays certain information on the instrument panel relating to engine operation. This concerns 5 functions: the **MIL** (Malfunction Indicator Lamp) of the **EOBD** (European On Board Diagnostic), **pre-postheating**, the **coolant temperature**, and engine faults: **Level 1** (non-critical fault) and **Level 2** (emergency stop). These five functions are represented by 3 warning lights or messages displayed by the on-board computer.

Pre-postheating warning light

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

- permanently lit during + after ignition feed: indicates preheating of the heater plugs.

After preheating and an automatic timed **3 second** off period, the warning light will come on if a Level 1 fault occurs (leading to reduced operation and reduced safety levels. The driver should have repairs carried out 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 illuminates for **3 seconds** when the power is switched on (automatic test procedure controlled by the instrument panel)

Continuously lit: indicates engine overheating or a **Level 2** fault.

- if the fault reaches a critical level, the injection cuts off automatically after **several seconds**.
- in the event of engine overheating, it is the driver's choice to stop the car or continue driving.

ACTIVATION PROGRAMMING OF THE INSTRUMENT PANEL WARNING LIGHTS

Orange SERVICE warning light (level 1)

This warning light comes on, **accompanied by the faulty injection message**.

The driver should have the repairs carried out as soon as possible.

Red STOP warning light (level 2)

This warning light comes on, **accompanied by the faulty injection message**.

The driver should have the repairs carried out as soon as possible.

Excess pollution OBD ORANGE warning light:

This warning light is used to alert the driver of any injection faults that could lead to excessive pollution, or if the EOBD system has been deactivated. The injection computer requests illumination of the OBD warning light for a present fault only after three consecutive driving cycles.

The **3 second** visual inspection when the ignition is switched on (automatic test procedure managed by the instrument panel) is carried out by the injection computer.

Faults that activate the OBD warning light

Associated fault	Title	Specification
DF010	EGR position sensor circuit	CC.1 - CO.0
DF016	EGR control circuit	CC.1
DF026	Cylinder 1 injector control circuit	CO – CC
DF027	Cylinder 2 injector control circuit	CO – CC
DF028	Cylinder 3 injector control circuit	CO – CC
DF029	Cylinder 4 injector control circuit	CO – CC
DF038	Computer	3. DEF
DF114	EGR solenoid valve circuit	4. DEF

DIESEL INJECTION

Fault finding – System operation

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32-TRACK BLACK CONNECTOR A

Description	Tracks	Tracks	Description
Not used	A1	E1	Not used
Cruise control On/Off	A2	E2	Not used
CAN L1	A3	E3	Not used
CAN H1	A4	E4	Closed contact Stop signal
Not used	B1	F1	Not used
Not used	B2	F2	Potentiometer supply Gang 2
Not used	B3	F3	Potentiometer signal Gang 2
Diagnostic line K	B4	F4	Potentiometer earth Gang 2
Not used	C1	G1	+After ignition supply
Not used	C2	G2	Potentiometer supply Gang 1
Speed limiter on/off	C3	G3	Not used
Clutch switch information	C4	G4	Earth
+After ignition supply	D1	H1	Earth
Cruise control switch signal	D2	H2	Potentiometer signal Gang 1
Cruise control switch earth	D3	H3	Potentiometer earth Gang 1
Not used	D4	H4	Earth

NOTE:

The supply voltage on track G1 is not measurable when the computer connector is disconnected.

DIESEL INJECTION

Fault finding – System operation

13B**48-TRACK BROWN CONNECTOR B**

Description	Tracks	Tracks	Description
Flowmeter supply (728, 729)	A1	G1	Knock sensor earth (pinking)
Flowmeter signal (728, 729)	A2	G2	Fuel temperature signal
Flowmeter earth (728, 729)	A3	G3	Fuel temperature sensor earth
Cylinder 1 injector + control	A4	G4	Cylinder 4 injector + control
EGR feedback potentiometer supply	B1	H1	Not used
EGR feedback potentiometer signal	B2	H2	Coolant temperature signal
EGR feedback potentiometer earth	B3	H3	Coolant temperature sensor earth
Cylinder 1 injector - control	B4	H4	Cylinder 4 injector - control
Turbocharging pressure sensor supply	C1	J1	Not used
Turbocharging pressure sensor signal	C2	J2	Inlet air temperature signal
Turbocharging pressure sensor earth	C3	J3	Inlet air temperature earth (722)
Cylinder 2 injector + control	C4	J4	Not used
Rail pressure sensor supply	D1	K1	Accelerometer shielding (pinking)
Rail pressure sensor signal	D2	K2	External air temperature signal
Rail pressure sensor earth	D3	K3	External air temperature earth
Cylinder 2 injector - control	D4	K4	Not used
Not used	E1	L1	Not used
Phase sensor signal (cylinder)	E2	L2	Not used
Phase sensor earth (cylinder)	E3	L3	EGR valve control
Cylinder 3 injector + control	E4	L4	Not used
Knock sensor signal (pinking)	F1	M1	Not used
Engine speed (TDC) sensor + signal	F2	M2	Turbocharging solenoid valve control (728, 729)
Engine speed sensor earth (TDC)	F3	M3	Not used
Cylinder 3 injector - control	F4	M4	Fuel flow actuator control

DIESEL INJECTION

Fault finding – System operation

13B**32-TRACK GREY CONNECTOR C**

Description	Tracks	Tracks	Description
Not used	A1	E1	Not used
Water in diesel fuel detector earth	A2	E2	Not used
Not used	A3	E3	Not used
Not used	A4	E4	Not used
Not used	B1	F1	Supply relay control
Not used	B2	F2	Preheating relay control
Water in diesel fuel detector signal	B3	F3	Not used
Not used	B4	F4	Not used
Not used	C1	G1	Not used
Not used	C2	G2	After relay + battery 1 earth
Refrigerant pressure sensor signal	C3	G3	Refrigerant pressure sensor earth
Refrigerant pressure sensor supply	C4	G4	Not used
Not used	D1	H1	Potentiometer earth Gang 1
Not used	D2	H2	Not used
Heater plug diag signal	D3	H3	After relay + battery 2
Not used	D4	H4	Not used

NOTE:

The supply voltage on tracks G2 and H2 is not measurable when the computer connector is disconnected.

COMPUTER REPLACEMENT, PROGRAMMING AND REPROGRAMMING OPERATIONS**IMPORTANT:**

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.

The procedure for resetting the function is as follows:

Vehicle ignition on.

Main switch in rest position (the computer then detects the rest position).

Switch in Cruise control position to activate the Cruise control function.

Switch in Speed limiter position to activate the Speed limiter function.

Before reprogramming or removing the computer in After-Sales operations, save the following data to the diagnostic tool:

- the **C2I** parameters (individual injector correction) and the engine parameters using the **SC003 "Save computer data"** command.

The system can be reprogrammed via the diagnostic socket using the **RENAULT CLIP** diagnostic tool. (Consult Technical Note 3585A, Computer programming and reprogramming procedure, and follow the instructions given by the diagnostic tool).

IMPORTANT

- Switch on the diagnostic tool (mains or cigarette lighter supply).
- 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**).

Any time the computer has been reprogrammed

- Use the **diagnostic tool command SC001 Enter saved data** to restore the **C2I** and the engine adaptives.
- Use command **AC028 Static test** to reinitialise the computer (fan assembly, etc.).
- When changing the pump, refer to the high pressure pump replacement procedure (**consult Technical Note 5011A, Repriming Delphi high pressure pumps on K9K engines**).
- Switch the ignition off and then on again.
- **Activate the starter without releasing the key until the engine starts (the engine start time can be up to 20 seconds).**
- Stop the engine (to initialise the computer) and wait 30 seconds.
- Switch the ignition on again and use the diagnostic tool to carry out the following steps:
- Run command **VP010 Enter VIN**.
- After injection system programming, stored faults may appear on other computers. Clear the memory of these computers.

IMPORTANT

AFTER A PROGRAMMING OPERATION, DO NOT CONNECT THE BATTERY FOR AT LEAST 30 minutes (to carry out other work on the vehicle).

Note:

If commands **SC001** and **SC003** have been lost or if they are not operating after programming the computer:

- Enter the **C2I** for each injector manually, by reading the **C2I** on each injector (see **Replacement of components, Injector replacement**).
- Use command **AC028 Static test** to reinitialise the computer (fan assembly, etc.).
- Switch the ignition off and then on again.
- Clear the engine management computer faults.

IMPORTANT

It is not possible to try an injection computer from the Parts Department because it will no longer be possible to use it on any other vehicle.

REPLACING THE INJECTORS:

Note:

C2I (individual injector correction) is a calibration carried out in the factory on **each injector** to **adjust the flow** of each injector precisely.

The correction values are written on a **label** affixed to each injector, then entered in the computer which can then actuate each injector by taking account of their **manufacturing variation**.

The system may be configured via the diagnostic socket using the **RENAULT CLIP** diagnostic tool.

The **C2I** parameters must be replaced after replacing an injector.

To do this, reprogram the **C2I** into the computer using the following commands:

Cylinder 1 injector: command **VP001 Cylinder 1 injector code (cylinder at flywheel end)**.

Cylinder 2 injector: command **VP002 Cylinder 2 injector code**.

Cylinder 3 injector: command **VP003 Cylinder 3 injector code**.

Cylinder 4 injector: command **VP004 Cylinder 4 injector code**.

It is also possible to enter the four **C2I** using command **SC002** Enter injector codes.

The technician can use the appropriate command to re-enter the new **C2I** for the replaced injector and to **erase the old C2I**.

- **Only** after simultaneously replacing at least three injectors, reset the injector programming adaptives, using command **RZ004 Pressure regulation programming adaptives**.

HIGH PRESSURE PUMP REPLACEMENT

IMPORTANT:

When reprogramming the computer, only carry out the following procedure after command AC028 Static test has been run (see Replacement of components, Computer reprogramming operation).

On a vehicle which is equipped with a computer with a Vdiag 44, always reprogram the injection computer (see Replacement of components, Computer replacement, programming, or reprogramming operations), then apply the procedure below.

This reprogramming is used to install new functions in the computer to enable the injection pump to be reprimed with diesel without damaging it.

After reprogramming, Vdiag 44 is replaced by Vdiag 48.

On a vehicle fitted with a computer with Vdiag 48, apply the procedure below before starting the engine.

PROCEDURE

Refer to Technical Note 5011A, Repriming Delphi high pressure pumps on K9K engines.

EGR VALVE REPLACEMENT:

If the **EGR valve** is replaced, program the new valve's offset position. To do this, clear the old offset using the EGR programming deletion procedure and run command **RZ002 EGR valve adaptive**.

IMPORTANT:

Perform this procedure only if the valve is new.

SETTINGS

VP001: Cylinder 1 injector code.

VP002: Cylinder 2 injector code.

VP003: Cylinder 3 injector code.

VP004: Cylinder 4 injector code.

These commands enable you to manually write the calibration code inscribed on the injector. Use these commands after replacing an injector or replacing or (re)programming the computer, when command **SC001** does not work.

VP010: Enter VIN.

This command permits manual entry of the vehicle's VIN into the computer. Use this command each time the computer is replaced or (re)programmed.

SPECIAL COMMANDS

SC001: Write saved data.

Use this command after replacing or (re)programming a computer (if the information was saved using **SC003**).

SC002: Enter injector codes.

This command enables you to manually write the calibration code inscribed on the injectors. Use this command after replacing the injectors.

SC003: Save computer data.

This command saves the computer's operating data, the C2I (individual injector correction) parameters, and the engine adaptives. Use this command before replacing or (re)programming the computer.

OTHER COMMANDS

LC005: Gearbox type. This command enables you to determine the gearbox type configured on the vehicle.

LC120: Cruise control. With or without

LC121: Speed limiter. With or without

DIESEL INJECTION

Fault finding – Fault summary table

13B

Tool fault	Associated DTC	Diagnostic tool title
DF001	0115	Coolant temperature sensor circuit
DF002	0070	Air temperature sensor circuit (728, 729)
DF003	2226	Atmospheric pressure sensor circuit
DF005	0335	Engine speed sensor circuit.
DF007	0190	Rail pressure sensor circuit
DF008	0225	Pedal potentiometer circuit track 1
DF009	2120	Pedal potentiometer circuit track 2
DF010	0409	EGR position sensor circuit
DF014	0500	Vehicle speed information circuit
DF015	0685	Main relay control circuit
DF016	0403	EGR control circuit
DF017	0382	Preheating unit control circuit
DF024	0231	Low pressure actuator control circuit
DF025	0380	Preheater unit diagnostic connection
DF026	0201	Cylinder 1 injector control circuit
DF027	0202	Cylinder 2 injector control circuit
DF028	0203	Cylinder 3 injector control circuit
DF029	0204	Cylinder 4 injector control circuit
DF037	0513	Engine immobiliser
DF038	0606	Computer
DF039	0110	Inlet air temperature sensor circuit
DF047	0560	Computer feed voltage

DIESEL INJECTION

Fault finding – Fault summary table

13B

Tool fault	Associated DTC	Diagnostic tool title
DF049	0530	Refrigerant sensor circuit
DF050	0571	Brake switch circuit
DF051	0575	Cruise control/speed limiterfunction
DF052	0200	Injector control circuit
DF053	0089	Rail pressure regulation function
DF054	0033	Turbocharging solenoid valve control circuit (728, 729)
DF056	0100	Air flow sensor circuit (728, 729)
DF057	2264	Water in diesel fuel detector circuit
DF059	0301	Misfiring on cylinder 1
DF060	0302	Misfiring on cylinder 2
DF061	0303	Misfiring on cylinder 3
DF062	0304	Misfiring on cylinder 4
DF089	0235	Inlet manifold pressure sensor circuit
DF098	0180	Fuel temperature sensor circuit
DF107	0604	Computer memory
DF112	0340	Cylinder reference sensor circuit
DF113	0608	Sensor feed voltage
DF114	0400	EGR solenoid valve circuit
DF116	C001	Multiplex network
DF121	0325	Accelerometer circuit
DF122	0609	Supply voltage pedal potentiometer gang 2
DF130	0087	Flow capacity function
DF1070	0534	Cold loop

**DF001
PRESENT****COOLANT TEMPERATURE SENSOR CIRCUIT**

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

NOTES**Special notes:**

If **DF001 is present**, the fan assembly is activated at low speed (**fan assembly 1**). If **fan assembly 1** is faulty, **fan assembly 2** is activated for vehicles fitted with air conditioning.

Check the connection and condition of the **4-track connector** of the **coolant temperature sensor**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

Measure the **resistance** of the **coolant temperature sensor** between **tracks 2 and 3**.
Replace the coolant temperature sensor if the resistance is not **2252 Ω \pm 112.16 Ω at 25°C**.

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

Sensor connector **track 2** —————> **Track H3 computer connector B**

Sensor connector **track 3** —————> **Track H2 computer connector B**

Sensor connector **track 1** —————> **Instrument panel**

Sensor connector **track 4** —————> **Instrument panel**

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF002
PRESENT****AIR TEMPERATURE SENSOR CIRCUIT**

CO.1: Open circuit or short circuit to +12 volts

CC.0: Short circuit to earth

1.DEF: inconsistency

NOTES

None.

Check the connection and condition of the **4-track connector** of the **air temperature sensor**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

Check for the **+5 V after ignition feed** between **track 3** and **track 1 earth** on the air temperature sensor connector.
Repair if necessary.

Measure the **resistance** of the **air temperature sensor** between **tracks 2 and 3**.

Replace the air temperature sensor if the resistance is not:

7419 Ω \pm 365 Ω at -5°C.

5887 Ω \pm 282 Ω at 0°C.

4707 Ω \pm 220 Ω at 5°C.

3791 Ω \pm 173 Ω at 10°C.

3075 Ω \pm 137 Ω at 15°C.

2510 Ω \pm 113 Ω at 20°C.

2063 Ω \pm 87 Ω at 25°C.

1716 Ω \pm 71 Ω at 30°C.

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

Sensor connector **track 2** —————> **Track J1** computer connector **B**

Sensor connector **track 3** —————> **Track C1** computer connector **B**

Sensor connector **track 4** —————> **Track C2** computer connector **B**

Sensor connector **track 1** —————> **Track C3** computer connector **B**

Repair if necessary.

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

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF003 PRESENT

ATMOSPHERIC PRESSURE SENSOR CIRCUIT

CO.0: Open circuit or short circuit to earth

CC.1: Short circuit to +12 volts

NOTES

None.

Contact Techline.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF005 PRESENT OR STORED	<u>ENGINE SPEED SENSOR CIRCUIT</u> 1.DEF: Inconsistency 2.DEF: No signal 3.DEF: Too many additional teeth 4.DEF: Teeth missing 5.DEF: Additional teeth 6.DEF: Too many teeth missing
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NOTES	Special notes: If 1.DEF, 2.DEF, 3.DEF, 6.DEF present: the engine stops and the level 1 warning light illuminates along with the message Faulty injection . If 4.DEF, 5.DEF , the engine performance is 75%, no warning light illuminates.
	Conditions for applying fault finding procedures to stored faults: the fault is present with the engine under the starter or idling .

Check the connection and condition of the **2-track connector** of the **engine speed sensor**. Repair if necessary.
Ensure that the sensor is correctly fitted on the engine.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

Measure the **resistance** at the **engine speed sensor terminals**.

Replace the engine speed sensor if the resistance is not:

- for 80hp versions (K9K 722): **800 Ω ± 80 Ω at 20°C**
- for 100hp versions (K9K 728/729): **680 Ω ± 68 Ω at 20°C**

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

Sensor connector **track A** —————> **Track F2** computer connector **B**

Sensor connector **track B** —————> **Track F3** computer connector **B**

Repair if necessary.

Check that the flywheel ring gear is not defective (missing teeth).

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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**DF007
STORED****RAIL PRESSURE SENSOR CIRCUIT**

CC.0: Short circuit to earth

CO.1: Open circuit or short circuit to +12 volts

1.DEF: inconsistency

2.DEF: Below minimum threshold

3.DEF: Above maximum threshold

NOTES**Priority when dealing with a number of faults:**

– Deal first with fault DF113 Sensor supply voltage.

Conditions for applying fault finding procedures to stored faults:

The fault is declared present after the engine is started.

Special notes: if DF007, the engine stops and cannot be restarted, and the level 1 warning light illuminates along with the message Faulty injection.

Check the connection and condition of the **3-track connector** of the **rail pressure sensor**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

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

Sensor connector **track 2** —————> **Track D3** computer connector **B**Sensor connector **track 1** —————> **Track D2** computer connector **B**Sensor connector **track 3** —————> **Track D1** computer connector **B**

Repair if necessary.

If the fault is still present, there is a rail pressure sensor fault, replace the rail.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF008 PRESENT	<u>PEDAL POTENTIOMETER CIRCUIT GANGED CIRCUIT 1</u> CO.0: Open circuit or short circuit to earth CC.1: Short circuit to +12 volts 1.DEF: Inconsistency between pedal gang 1 and gang 2 2.DEF: No signal 3.DEF: Jammed component
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NOTES	Priority when dealing with a number of faults: – Deal first with fault DF113 Sensor supply voltage.
	Special notes: If DF008: the engine speed is maintained above 1000 rpm, the level 1 warning light illuminates along with the message Faulty injection. If DF008 and DF009: the engine speed is fixed at 1300 rpm and the level 1 warning light illuminates along with the message Faulty injection.

1.DEF 3.DEF	NOTES	None.
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Disconnect **computer connector A** and the **pedal potentiometer connector**.
Check the insulation between **track H2** and **track F3** on computer connector A.
Repair if necessary.

Replace the pedal potentiometer if the fault is still present.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF008 CONTINUED	
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CC.0 CC.1 2.DEF	NOTES	None.
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Check the connection and condition of the **6-track connector** of the **pedal potentiometer**.
Repair if necessary.

Check the connection and condition of the black 32-track **connector A** of the computer.
Repair if necessary.

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

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

Sensor connector **track 3** —————→ **Track G2** computer connector **A**

Sensor connector **track 4** —————→ **Track H2** computer connector **A**

Sensor connector **track 5** —————→ **Track H3** computer connector **A**

Repair if necessary.

Disconnect **computer connector A** and the **pedal potentiometer connector**.
Check the insulation between **track H2** and **track F3** on computer **connector A**.

Repair if necessary.
Replace the pedal potentiometer if the fault is still present.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF009 PRESENT	<u>PEDAL POTENTIOMETER TRACK 2 CIRCUIT</u> CO.0: Open circuit or short circuit to earth. CC.1: Short circuit to +12 volts
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NOTES	Priority when dealing with a number of faults: – Deal first with fault DF122 Potentiometer gang 2 supply voltage.
	Special notes: if fault DF009: the engine speed is maintained above 1000 rpm and the level 1 warning light illuminates along with the message Faulty injection. If DF009 and DF008: the engine speed fixed at 1300 rpm and the level 1 warning light illuminates along with the message Faulty injection.

CC.0	NOTES	None.
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Check the connection and condition of the 6-track connector for the pedal potentiometer . Repair if necessary.
Check the connection and condition of the black 32-track connector A of the computer. Repair if necessary.
Measure the resistance between tracks 2 and 6 of the pedal potentiometer . Replace the pedal potentiometer if the resistance is not 2.85 kΩ ± 2.05 kΩ .
Disconnect computer connector A and the pedal potentiometer connector . Check the insulation against earth on track F3 of computer connector A . Repair if necessary.
Check the continuity of the connection between: Sensor connector track 1 —————> Track F3 computer connector A Repair if necessary.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF009 CONTINUED	
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CC.0	NOTES	None.
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Check the connection and condition of the **6-track connector** of the **pedal potentiometer**.
Repair if necessary.

Check the connection and condition of the black 32-track **connector A** of the computer.
Repair if necessary.

Measure the **resistance between tracks 2 and 6** of the **pedal potentiometer**.
Replace the pedal potentiometer if the resistance is not **2.85 kΩ ± 2.05 kΩ**.

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

Sensor connector **track 2** —————→ **Track F2** computer connector **A**

Repair if necessary.

Disconnect **computer connector A** and the **pedal potentiometer connector**.
Check the **insulation** against the **12 V feed** of tracks **F2 and F3** on computer **connector A**.

Repair if necessary.

Check **the continuity** of the following connections:

Sensor connector **track 2** —————→ **Track F2** computer connector **A**

Sensor connector **track 6** —————→ **Track F4** computer connector **A**

Repair if necessary.

Disconnect **computer connector A** and the **pedal potentiometer connector**.
Check the insulation between **track F2 and track F3** on computer connector A.

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF010
STORED****EGR POSITION SENSOR CIRCUIT**

- 1.DEF: Above maximum threshold
- 2.DEF: Below minimum threshold

NOTES**Priority when dealing with a number of faults:**

- Deal first with fault **DF113 Sensor supply voltage**.

See Technical Note **Wiring Diagrams** of the vehicle concerned.

Check the connection and condition of the **EGR valve** connector, component code **169**.
Check the connection and condition of **connector B** (brown 48-track) of the **computer**, component code **120**.
If the connector or connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Check for **+5 V** on connection **3GC** of component **169**.
Check for **earth** on connection **3JM** of component **169**.
If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Check the **insulation and continuity** of the following connections:
– **3GC** between components **169** and **120**,
– **3EL** between components **169** and **120**,
– **3JM** between components **169** and **120**.
If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Check the resistance of the **EGR valve**, component code **169**:
– with the engine stopped, the EGR valve will be closed (unless there is a fault),
– wait for the ambient temperature around the valve to stabilise (approximately **20°C**),
– measure the resistance between connections **3FB2** and **3GB**. The resistance must be between **7.54 Ω < R < 8.5 Ω** (at **20°C**),
– measure the resistance between connections **3GC** and **3JM**. The resistance must be between **2.4 KΩ < R < 5.6 KΩ** (at **20°C**),
– measure the resistance between connections **3JM** and **3EL**. The resistance must be between **800 Ω < R < 3.6 KΩ** (at **20°C**),
if the value is not correct, replace the **EGR valve**, component code **1460** (see **MR 364 (Mégane II), MR 370 (Scénic II), Mechanical, 14A, Emission control, Exhaust gas recirculation solenoid valve: Removal - Refitting**). If the EGR valve was replaced, use command **RZ002 EGR adaptives** to reinitialise the EGR valve offsets.

If the fault is still present, contact the Techline.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF014 PRESENT	<u>VEHICLE SPEED SIGNAL CIRCUIT</u>
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CC.0	NOTES	None.
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For this type of vehicle, the ABS computer or an additional unit (if the vehicle does not have ABS) transmits the vehicle speed on the CAN.
Test the multiplex network to be able to work on the CAN (fault on the CAN H and CAN L lines between the injection and the ABS). Also check that there are no faults in the ABS section or in the system that supplies the vehicle speed.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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**DF015
PRESENT****MAIN RELAY CONTROL CIRCUIT**

- 1.DEF: Permanent low level
- 2.DEF: Permanent high level

NOTES

Special notes: The main relay is built into the UPC.

Check the main relay supply fuse in the engine compartment: (**30 A** fuse) on the **UPC**.
Replace the fuse if necessary.

Check the condition and connection of the **brown 12-track PEM D** and **black 4-track PPM1 connectors** on the **UPC**.
Repair if necessary.

Check the connection and condition of the grey 32-track **connector C** of the computer.
Repair if necessary.

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

- | | | |
|---|---|---|
| Computer connector C track F1 | → | Track 2 brown 12-track connector PEM D of the UPC. |
| Computer connector C track G1 | → | Vehicle earth. |
| Computer connector C track H2 | → | Track 1 black 4-track connector PPM1 of the UPC. |
| Computer connector C track G2 | → | Track 1 black 4-track connector PPM1 of the UPC. |

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF016 STORED	<u>EGR VALVE control CIRCUIT</u> CO.0: Open circuit or short circuit to earth CC.1: Short circuit to +12 volts
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NOTES	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine idling.
	Special notes: If fault DF016 is present : the engine is unstable and may even stall. Starting difficult or even impossible when cold.
	See Technical Note Wiring Diagrams of the vehicle concerned.

Check the connection and condition of the **exhaust gas recirculation solenoid valve** connector, component code **169**.
Check the connection and condition of **connector B** (brown 48-track) of the **injection computer**, component code **120**.
If the connector or connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Check for the supply: **13 V < X < 14 V (with the engine running)**, **11.5 V < X < 12.5 V (with the ignition on and the engine stopped)** on connection **3FB2** of component **169**.

Check the **insulation and continuity** of the following connections:
– **3GB** between components **169** and **120**,
– **3FB2** between components **169** and **120**.
If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Measure the resistance of the **EGR valve**, component code **169**:
– with the engine stopped, the EGR valve will be closed (unless there is a fault),
– wait for the ambient temperature around the valve to stabilise (approximately **20°C**),
– measure the resistance between connections **3FB2** and **3GB** of component **169**. The resistance must be between
7.5 Ω < R < 8.5 Ω (at 20°C),
– measure the resistance between connections **3GC** and **3JM** of component **169**. The resistance must be between
2.4 KΩ < R < 5.6 KΩ (at 20°C),
– measure the resistance between connections **3JM** and **3EL** of component **169**. The resistance must be between
800 Ω < R < 3.6 KΩ (at 20°C),
if the value is not correct, replace the **EGR valve** (see **MR 364 (Mégane II)**, **MR 370 (Scénic II)**, **Mechanical, 14A, Emission control, Exhaust gas recirculation solenoid valve: Removal - Refitting**). If the EGR valve was replaced, use command **RZ002 EGR adaptives** to reinitialise the EGR valve offsets.

If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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**DF017
PRESENT****PREHEATING UNIT CONTROL CIRCUIT**

CO.0: Open circuit or short circuit to earth

CC.1: Short circuit to +12 volts

NOTES

Special notes: If DF017 is present, starting difficult (or impossible when cold). If CO.0: the plugs are permanently switched on with risk of damage or even engine failure.

Check the connection and condition of the preheating unit **connector**.
Repair if necessary.

Check the connection and condition of the grey 32-track **connector C** of the computer.
Repair if necessary.

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

+12 V after ignition feed —————> **Track 3** preheating unit

Computer connector **C track D3** —————> **Track 9** preheating unit

Computer connector **C track F2** —————> **Track 8** preheating unit

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF024
PRESENT****LOW PRESSURE ACTUATOR CONTROL CIRCUIT (IMV)**

CO.0: Open circuit or short circuit to earth

CC.1: Short circuit to +12 volts

NOTES**Special notes:** If fault DF024 with CO.0 or CC.1, the level 1 warning light illuminates along with the message Faulty injection.**The fuel flow actuator is fully open, there is a clicking, and the engine is stopped to prevent it from racing.**Check the connection and condition of the **flow actuator connector**.

Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.

Repair if necessary.

Measure the resistance between **tracks 1 and 2 of the flow actuator**.Replace the fuel flow actuator if the resistance is not **5.3 Ω \pm 0.5 Ω at 20°C**.Check the **insulation, continuity and the absence of interference resistance on the following connection:**Computer connector **B** track **M4**  **Track 1** fuel flow actuator

Repair if necessary.

AFTER REPAIRDeal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF025
PRESENT**PRE-POSTHEATING UNIT DIAGNOSTIC LINE
CO: Open circuit**NOTES****Special notes: This fault directs the fault finding only with an open circuit.**

Check the connection and condition of the **preheating unit connector**.
Repair if necessary.

Check the connection and condition of the **heater plug connectors**.
Repair if necessary.

Check the connection and condition of the grey 32-track **connector C** of the computer.
Repair or replace if necessary.

Measure the resistance of each **heater plug**. The resistance must be **less than 2 Ω**.
Replace defective plugs.

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

Computer connector **C** track **F2** —————> **Track 8** preheating unit

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF026 PRESENT OR STORED	CYLINDER 1 INJECTOR CONTROL CIRCUIT CO: Open circuit. CC: Short circuit 1.DEF: At minimum limit
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NOTES	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine idling.
	Special notes: When this fault appears, the idle speed is stuck at 1000 rpm , there is engine noise, the engine speed is unsteady, the engine performance is reduced, and the level 1 warning light illuminates along with the message Faulty injection .

CO - CC	NOTES	None.
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Switch off the ignition and wait **15 seconds**.
Check the connection and condition of the **injector connector**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

Run command **AC005 Cylinder 1 injector**.
If a cycle of 5 actuations of injector 1 cannot be heard working, connect the cylinder 2 injector wire to the cylinder 1 injector and run command **AC006 Cylinder 2 injector**.
Does this injector actuation cycle work?

Note:
If the wires cannot be swapped, continue the procedure by replying **YES** to the previous question.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF026 CONTINUED		
YES	Injector 1 is not faulty, the fault is in the injector 1 control circuit.	
	<p>Check the continuity, insulation, and the absence of interference resistance on the following connections:</p> <p>Computer connector B track A4 —————> Track 1 injector 1</p> <p>Computer connector B track B4 —————> Track 2, injector 1</p> <p>Repair if necessary.</p> <p>If the fault is still present, contact the Techline.</p>	
NO	Injector 1 is faulty, replace the cylinder 1 injector.	
1.DEF	NOTES	None.
<p>Check the conformity of the injectors fitted to the vehicle in relation to the engine number and type (low, high or very high pressure injector).</p> <p>Check that the C2I is correctly entered on the computer.</p> <p>Check the accelerometer shielding on track K1 of the brown 48-track connector B of the computer.</p> <p>Check that the accelerometer is secured on the engine.</p> <p>After retightening the accelerometer, it is essential to clear the pressure regulation adaptives using command RZ004 Pressure regulation adaptives.</p> <p>Disconnect and reconnect the accelerometer sensor to accomplish fast programming.</p> <p>If the fault is still present, replace the cylinder 1 injector.</p>		
AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .	

DF027 PRESENT OR STORED	<u>INJECTOR CYLINDER 2 CONTROL CIRCUIT</u> CO: Open circuit. CC: Short circuit 1.DEF: At minimum limit
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NOTES	Conditions for applying fault finding procedures to stored faults: The fault is declared present with the engine idling .
	Special notes: When this fault appears, the idle speed is stuck at 1000 rpm , there is engine noise, the engine speed is unsteady, the engine performance is reduced, and the level 1 warning light illuminates along with the message Faulty injection .

CO - CC	NOTES	None.
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Switch off the ignition and wait 15 seconds . Check the connection and condition of the injector connector . Repair if necessary.
Check the connection and condition of the computer 48-track brown connector B . Repair if necessary.
Run command AC006 Cylinder 2 injector . If a cycle of 5 actuations of injector 2 cannot be heard working, connect the cylinder 3 injector wire to the cylinder 2 injector and run command AC007 Cylinder 3 injector . Does this injector actuation cycle work? Note: If the wires cannot be swapped, continue the procedure by replying YES to the previous question.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF027 CONTINUED		
YES	Injector 2 is not faulty, the fault is in the injector 2 control circuit.	
	<p>Check the continuity, insulation, and the absence of interference resistance on the following connections:</p> <p>Computer connector B track G4 —————> Track 1 injector 2</p> <p>Computer connector B track H4 —————> Track 2, injector 2</p> <p>Repair if necessary.</p> <p>If the fault is still present, contact the Techline.</p>	
NO	Injector 2 is faulty, replace the cylinder 2 injector.	
1.DEF	NOTES	None.
<p>Check the conformity of the injectors fitted to the vehicle in relation to the type of vehicle and engine number (low, high or very high pressure injector).</p> <p>Check that the C2I is correctly entered on the computer.</p> <p>Check the accelerometer shielding on track K1 of the brown 48-track connector B of the computer.</p> <p>Check that the accelerometer is secured on the engine.</p> <p>After retightening the accelerometer, it is essential to clear the pressure regulation adaptives using command RZ004 Pressure regulation adaptives.</p> <p>Disconnect and reconnect the accelerometer sensor to accomplish fast programming.</p> <p>If the fault is still present, replace the cylinder 2 injector.</p>		
AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .	

DF028 PRESENT OR STORED	CYLINDER 3 INJECTOR CONTROL CIRCUIT CO: Open circuit. CC: Short circuit 1.DEF: At minimum limit
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NOTES	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine idling .
	Special notes: When this fault appears, the idle speed is stuck at 1000 rpm , there is engine noise, the engine speed is unsteady, the engine performance is reduced, and the level 1 warning light illuminates along with the message Faulty injection .

CO - CC	NOTES	None.
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Switch off the ignition and wait **15 seconds**.

Check the connection and condition of the **injector connector**. Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**. Repair if necessary.

Run command **AC007 Cylinder 3 injector**.

If a cycle of 5 actuations of injector 3 cannot be heard working, connect the cylinder 4 injector wire to the cylinder 3 injector and run command **AC008 Cylinder 4 injector**.

Does this injector actuation cycle work?

Note:

If the wires cannot be swapped, continue the procedure by replying **YES** to the previous question.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF028 CONTINUED		
YES	Injector 3 is not faulty, the fault is in the injector 3 control circuit.	
	<p>Check the continuity, insulation, and the absence of interference resistance on the following connections:</p> <p>Computer connector B track C4 —————> Track 1 injector 3</p> <p>Computer connector B track D4 —————> Track 2, injector 3</p> <p>Repair if necessary. If the fault is still present, contact the Techline.</p>	
NO	Injector 3 is faulty, replace the cylinder 3 injector.	
1.DEF	NOTES	None.
<p>Check the conformity of the injectors fitted to the vehicle in relation to the type of vehicle and engine number (low, high or very high pressure injector).</p> <p>Check that the C2I is correctly entered on the computer. Check the accelerometer shielding on track K1 of the brown 48-track connector B of the computer. Check that the accelerometer is secured on the engine. After retightening the accelerometer, it is essential to clear the pressure regulation adaptives using command RZ004 Pressure regulation adaptives. Disconnect and reconnect the accelerometer sensor to accomplish fast programming.</p> <p>If the fault is still present, replace the cylinder 3 injector.</p>		
AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .	

DF029 PRESENT OR STORED	<u>INJECTOR CYLINDER 4 CONTROL CIRCUIT</u> CO: Open circuit CC: Short circuit 1.DEF: At minimum limit
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NOTES	Conditions for applying fault finding procedures to stored faults: The fault is declared present with the engine idling .
	Special notes: When this fault appears, the idle speed is stuck at 1000 rpm , there is engine noise, the engine speed is unsteady, the engine performance is reduced, and the level 1 warning light illuminates along with the message Faulty injection .

CO - CC	NOTES	None.
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Switch off the ignition and wait **15 seconds**.

Check the connection and condition of the **injector connector**. Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**. Repair if necessary.

Run command **AC008 Cylinder 4 injector**.

If a cycle of 5 actuations of injector 4 cannot be heard working, connect the cylinder 3 injector wire to the cylinder 4 injector and run command **AC007 Cylinder 3 injector**.

Does this injector actuation cycle work?

Note:

If the wires cannot be swapped, continue the procedure by replying **YES** to the previous question.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF029 CONTINUED		
YES	Injector 4 is not faulty, the fault is in the injector 4 control circuit.	
	<p>Check the continuity, insulation, and the absence of interference resistance on the following connections:</p> <p>Computer connector B track E4 —————> Track 1 injector 4</p> <p>Computer connector B track F4 —————> Track 2, injector 4</p> <p>Repair if necessary.</p> <p>If the fault is still present, contact the Techline.</p>	
NO	Injector 4 is faulty, replace the cylinder 4 injector.	
1.DEF	NOTES	None.
<p>Check the conformity of the injectors fitted to the vehicle in relation to the type of vehicle and engine number (low, high or very high pressure injector).</p> <p>Check that the C2I is correctly entered on the computer.</p> <p>Check the accelerometer shielding on track K1 of the brown 48-track connector B of the computer.</p> <p>Check that the accelerometer is secured on the engine.</p> <p>After retightening the accelerometer, it is essential to clear the pressure regulation adaptives using command RZ004 Pressure regulation adaptives.</p> <p>Disconnect and reconnect the accelerometer sensor to accomplish fast programming.</p> <p>If the fault is still present, replace the cylinder 4 injector.</p>		
AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .	

**DF037
PRESENT**

NOTES

None.

Carry out a fault finding procedure on the multiplex network.
Consult the fault finding procedure for the "keyless vehicle" function.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF038
PRESENT****COMPUTER**

- 1.DEF: Analogue/digital converter
- 2.DEF: Write to EEPROM memory
- 3.DEF: Read EEPROM memory
- 4.DEF: Enter injector codes
- 5.DEF: Memory self-test
- 6.DEF: Watchdog not refreshed
- 7.DEF: Interference on the injector control line
- 8.DEF: Watchdog activation

7.DEF**NOTES**

None.

Check the connection and condition of the computer 48-track brown **connector B**. Repair if necessary.

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

- Computer connector **B track A4** → **Track 1** injector 1
- Computer connector **B track B4** → **Track 2**, injector 1
- Computer connector **B track G4** → **Track 1**, injector 2
- Computer connector **B track H4** → **Track 2**, injector 2
- Computer connector **B track C4** → **Track 1**, injector 3
- Computer connector **B track D4** → **Track 2**, injector 3
- Computer connector **B track E4** → **Track 1**, injector 4
- Computer connector **B track F4** → **Track 2**, injector 4

Repair if necessary.

If the fault is still present, contact the Techline.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the **diagnostic tool**.

DF038 CONTINUED	
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4.DEF	NOTES	None.
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Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

Check that the **individual injector correction (C2I)** matches the injector. If not, write the C2I (see **Configurations and programming**).

If the **C2I** does match the injectors, contact the Techline.

1.DEF 5.DEF 6.DEF 8.DEF	NOTES	None.
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Contact Techline.

2.DEF 3.DEF	NOTES	None.
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Deal with any faults detected by the diagnostic tool.
Clear the computer fault memory.
Switch off the ignition and wait **30 seconds**.
Switch on the ignition again and run a new check using the diagnostic tool. If the fault is still present, clear the computer's fault memory for a second time.
If the fault is still present, contact the Techline.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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**DF039
PRESENT****INLET AIR TEMPERATURE SENSOR CIRCUIT**

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

NOTES

Priority when dealing with a number of faults:
– Deal first with fault DF113 Sensor supply voltage.

Check the connection and condition of the **4-track connector** of the **air temperature sensor**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

Measure the **resistance between tracks 1 and 2** on the **air temperature sensor**.
Replace the air temperature sensor if the resistance is not **2051 Ω \pm 120 Ω at 25°C**.

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

Sensor connector **track 1** —————▶ **Track C3** computer connector **B**

Sensor connector **track 2** —————▶ **Track J2** computer connector **B**

Sensor connector **track 3** —————▶ **Track C1** computer connector **B**

Sensor connector **track 4** —————▶ **Track C2** computer connector **B**

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF047
STORED****COMPUTER SUPPLY VOLTAGE**

- 1.DEF: Above maximum threshold
- 2.DEF: Below minimum threshold

NOTES**Conditions for applying fault finding procedures to stored faults:**

The fault is present with the engine running above **1000 rpm**.

Measure the **battery voltage** when the ignition is switched on.
If the **battery voltage** < **10 V**, recharge the battery.

Check the condition and connection **of the battery terminals**.
Repair if necessary.

Check the vehicle's **charging circuit**.
Repair if necessary.

Check the connection and condition of the black 32-track **connector A** of the computer.
Repair if necessary.

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

+ after ignition feed —————> **Track D1 computer connector A**

Chassis earth —————> **Tracks G4 and H4 computer connector A**

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF049
STORED****REFRIGERANT SENSOR CIRCUIT**

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

NOTES**Conditions for applying fault finding procedures to stored faults:**

The fault is present **when the engine is running and the air conditioning is on.**

Priority when dealing with several faults: - Deal first with fault **DF113 Sensor supply voltage.**

Check the connection and condition **of the refrigerant pressure sensor** connector.
Repair if necessary.

Check the connection and condition of the grey 32-track **connector C** of the computer.
Repair if necessary.

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

Sensor connector track **B** → **Track C4** computer connector **C**

Sensor connector track **C** → **Track C3** computer connector **C**

Sensor connector track **A** → **Track G3** computer connector **C**

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool.**

**DF050
PRESENT
OR
STORED****BRAKE SWITCH CIRCUIT**

- 1.DEF: No signal
- 2.DEF: Inconsistency

NOTES**Conditions for applying fault finding procedures to stored faults:**

The fault is declared present when the ignition is switched on, when decelerating or when the brake pedal is depressed.

Deal with the fault even if it is stored.

Check the connection and condition of the **switch** connector.
Repair if necessary.

Check for the **+12 V** feed on the switch supply.
Repair if necessary.

Check the connection and condition of the black 32-track **connector A** and grey 32-track **connector C** of the computer.
Repair if necessary.

Check that the **switch is working**.
Repair if necessary.

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

Brake light switch track **1 and 3** —————> **+ after ignition feed**

Brake light switch track **4** —————> **Track E4** computer connector **A**

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF051
PRESENT****CRUISE CONTROL/SPEED LIMITER FUNCTION**

- 1.DEF: inconsistency
- 2.DEF: On/off switch

NOTES

None.

Check the connection and condition of the black 32-track **connector A** of the computer.
Repair if necessary.

Check the connection and condition of the **connections** of the on - off control switch of the **cruise control - speed limiter** function.
Repair if necessary.

Check for the **12 V after ignition feed** on **track A2** of the on - off switch of the **cruise control - speed limiter** function.
Repair if necessary.

Carry out an **operating check** of the on - off switch of the **cruise control - speed limiter function** (**consult the interpretation of ET042 Cruise control - speed limiter**).
If the fault is still present, contact the Techline.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF052
PRESENT****INJECTORS CONTROL CIRCUIT**

CC.1: Short circuit to +12 volts

CC.0: Short circuit to earth

NOTES**Priority when dealing with a number of faults:**

In the event of a combination of faults **DF052** and **DF026**, **DF027**, **DF028**, and **DF029**, the fault finding procedure remains the same in order to determine the faulty injector.

Special notes:

The engine stalls when the fault appears. The **level 1 warning light** illuminates along with the message **Faulty injection**.

Switch off the ignition and check the condition and connection of the injector **connectors**.
Repair if necessary.

Switch off the ignition, disconnect the injectors (or the injector identified by **DF026**, **DF027**, **DF028**, **DF029**), and switch the ignition back on.

Using the diagnostic tool, check for changes to **DF052**.

Is DF052 present or stored?

**DF052
present**

The injectors are not defective.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

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

Injector 1 track 1 (+)	→	Track A4 computer connector B
Injector 1 track 2 (earth)	→	Track B4 computer connector B
Injector 2 track 1 (+)	→	Track G4 computer connector B
Injector 2 track 2 (earth)	→	Track H4 computer connector B
Injector 3 track 1 (+)	→	Track C4 computer connector B
Injector 3 track 2 (earth)	→	Track D4 computer connector B
Injector 4 track 1 (+)	→	Track E4 computer connector B
Injector 4 track 2 (earth)	→	Track F4 computer connector B

Repair if necessary.

If the fault is still present, contact the Techline.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF052 CONTINUED	<u>INJECTORS CONTROL CIRCUIT</u> CC.1: Short circuit to +12 volts CC.0: Short circuit to earth
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DF052 stored	Injector(s) defective. Replace the injector identified by DF026 to DF029 if present. If none of the faults identifying the defective injector circuit are present: <ul style="list-style-type: none">– Switch off the ignition.– Reconnect one of the four injectors.– Switch the ignition back on and, if the fault reappears as present, replace the reconnected injector. Carry out the same procedure for the remaining injectors.
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AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF053 STORED	<u>RAIL PRESSURE REGULATION FUNCTION</u> 1.DEF: At minimum limit 2.DEF: At maximum limit 3.DEF: Below minimum threshold 4.DEF: Above maximum threshold 5.DEF: High flow current < minimum 6.DEF: High flow current > maximum 7.DEF: Low flow current < minimum 8.DEF: Low flow current > minimum
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NOTES	Special notes: If DF053 , the engine may stop, with the level 1 and 2 warning lights illuminated along with the message Faulty injection .
	Priority when dealing with a number of faults: – DF007 Rail pressure sensor circuit , – DF098. Fuel temperature sensor circuit .
	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine running .

4.DEF 6.DEF 8.DEF	NOTES	None.
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Check the connection and condition of the fuel flow actuator connector (brown IMV connector on the pump) . Repair if necessary.
Measure the resistance between tracks 1 and 2 of the flow actuator . Replace the flow actuator if the resistance is not 5.3 Ω ± 0.5 Ω at 20°C .
Check the connection and condition of the computer 48-track brown connector B . Repair if necessary.
Check the insulation, continuity, and the absence of interference resistance on the following connection: Computer connector B track M4 → Track 1 fuel flow actuator Repair if necessary.
Check that there is fuel present in the tank and that it is correct. Run Test 13 Diesel fuel conformity check . Run Test 1 Low pressure circuit check .

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF053 CONTINUED	
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1.DEF - 2.DEF 3.DEF - 5.DEF 7.DEF	NOTES	None.
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Check that there is **fuel present** in the tank and that it is correct. Run **Test 13 Diesel fuel conformity check**.
Run **Test 1 Low pressure circuit check**.
Run **Test 6 High pressure system check**.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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**DF054
STORED****TURBOCHARGING SOLENOID VALVE CONTROL CIRCUIT**

CO.0: Open circuit or short circuit to earth

CC.1: Short circuit to +12 volts

1.DEF: At minimum limit

2.DEF: At maximum limit

NOTES**Special notes:**

If **DF054**, the performance of the vehicle is adversely affected and the **level 1 warning light** illuminates along with the message **Faulty injection**.

Check the condition of the air filter, and replace it if necessary.

Check that the inlet manifold is not blocked (clogged).

Check that the turbocharger is working properly, and carry out any necessary repairs.

Check the connection and condition of the **2-track connector** of the **turbocharging solenoid valve**.
Repair if necessary.

Check for **+12 V** on **track 2** of the solenoid valve.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

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

Solenoid valve connector **track 2** —————> **+ after ignition feed**

Solenoid valve connector **track 1** —————> **Track M2 computer connector B**

Repair if necessary.

Run **TEST 11 Air line at the turbocharger**.
Run **TEST 10 Turbocharger control solenoid valve check**.
Run **TEST 12 Turbocharger**.

If the fault persists, replace the turbocharging solenoid valve.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF056 PRESENT OR STORED	<u>AIR FLOW SENSOR CIRCUIT</u> 1.DEF: Permanent low level 2.DEF: Permanent high signal 3.DEF: Below minimum threshold 4.DEF: Above maximum threshold 5.DEF: At minimum limit 6.DEF: At maximum limit
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NOTES	Priority when dealing with a number of faults: – DF054 Turbocharging solenoid valve control circuit. – DF113 Sensor supply voltage.
	Conditions for applying fault finding procedures to stored faults: the fault reappears after the faults have been cleared followed by a road test.

Check the condition of the air filter, and replace it if necessary.
Check that the inlet manifold is not blocked (clogged).
Check that the turbocharger is working properly.
Run **TEST 11 Air line at the turbocharger.**
Run **TEST 10 Turbocharger control solenoid valve check.**
Run **TEST 12 Turbocharger.**
Carry out the necessary repairs.

Check the connection and condition of the **6-track connector** of the **air flow sensor**.
Repair if necessary.

Check for **+5 V after ignition feed** on **track 3** of the sensor connector.
Repair if necessary.

Check for **+12 V** on **track 4** of the sensor connector.
Repair if necessary.

Check for earth on connector **track 6**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF056 CONTINUED

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

- Sensor connector **track 1** —————> **Track K2** computer connector **B**
- Sensor connector **track 2** —————> **Track A3** computer connector **B**
- Sensor connector **track 3** —————> **Track A1** computer connector **B**
- Sensor connector **track 4** —————> **Track A2** computer connector **B**
- Sensor connector **track 5** —————> **+ after ignition feed**
- Sensor connector **track 6** —————> **Earth**

Repair if necessary.

Also check the insulation between these connections.

If the fault is still present, replace the air flow sensor.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF057 STORED	WATER IN DIESEL FUEL DETECTOR CIRCUIT CO.1: Open circuit or short circuit to +12 volts CC.0: Short circuit to earth 1.DEF: Above maximum threshold (water present)
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NOTES	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine running .
	The level 1 warning light illuminates along with the message Check diesel filter .

CO.1 CC.0	NOTES	None.
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Check for water in the diesel filter. Clean and replace the filter if necessary.
Check the condition and connection of the 3-track connector of the water detector . Repair if necessary.
Check the connection and condition of the grey 32-track connector C of the computer. Repair if necessary.
Check the insulation, continuity and the absence of interference resistance on the following connections: Sensor connector track 3 → Earth Sensor connector track 2 → Track B3 computer connector C Sensor connector track 1 → Track A3 computer connector B Repair if necessary.

1.DEF	NOTES	None.
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Bleed the diesel filter. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF059 STORED	<u>COMBUSTION MISFIRES ON CYLINDER 1</u>
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NOTES	Special notes: If DF059, the engine speed is maintained at 1000 rpm, the engine performance is reduced to 75%, and the level 1 warning light illuminates along with the message Faulty injection.
	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine idling .
	Priority when dealing with a number of faults: <ul style="list-style-type: none">– DF026 Cylinder 1 injector control circuit (CC or CO).– DF053 Pressure regulation.

Run TEST 13 Diesel fuel conformity check . Run TEST 3 Injector check .
Check the engine compression. Repair if necessary.
Check the valve clearance and adjust if necessary.
Check the inlet ducts and the EGR valve , and clean them if necessary.
Replace the injector .

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF060 STORED	<u>MISFIRING ON CYLINDER 2</u>
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NOTES	Special notes: If DF060, the engine speed is maintained at 1000 rpm, the engine performance is reduced to 75%, and the level 1 warning light illuminates along with the message Faulty injection.
	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine idling .
	Priority when dealing with a number of faults: <ul style="list-style-type: none">– DF027 Cylinder 2 injector control circuit (CC or CO).– DF053 Pressure regulation.

Run TEST 13 Diesel fuel conformity check . Run TEST 3 Injector check .
Check the engine compression. Repair if necessary.
Check the valve clearance and adjust if necessary.
Check the inlet ducts and the EGR valve , and clean them if necessary.
Replace the injector .

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF061 STORED	<u>MISFIRING ON CYLINDER 3</u>
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NOTES	Special notes: If DF061, the engine speed is maintained at 1000 rpm, the engine performance is reduced to 75%, and the level 1 warning light illuminates along with the message Faulty injection.
	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine idling .
	Priority when dealing with a number of faults: <ul style="list-style-type: none">– DF028 Cylinder 3 injector control circuit (CC or CO).– DF053 Pressure regulation.

Run TEST 13 Diesel fuel conformity check . Run TEST 3 Injector check .
Check the engine compression. Repair if necessary.
Check the valve clearance and adjust if necessary.
Check the inlet ducts and the EGR valve , and clean them if necessary.
Replace the injector .

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF062 STORED	<u>MISFIRING ON CYLINDER 4</u>
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NOTES	Special notes: If DF062, the engine speed is maintained at 1000 rpm, the engine performance is reduced to 75%, and the level 1 warning light illuminates along with the message Faulty injection.
	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine idling .
	Priority when dealing with a number of faults: <ul style="list-style-type: none">– DF029 Cylinder 4 injector control circuit (CC or CO).– DF053 Pressure regulation.

Run TEST 13 Diesel fuel conformity check . Run TEST 3 Injector check .
Check the engine compression. Repair if necessary.
Check the valve clearance and adjust if necessary.
Check the inlet ducts and the EGR valve , and clean them if necessary.
Replace the injector .

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF089 PRESENT	<u>INLET MANIFOLD PRESSURE SENSOR CIRCUIT</u> 1.DEF: Permanent low level 2.DEF: Permanent high level 3.DEF: Below minimum threshold 4.DEF: Above maximum threshold 5.DEF: Inconsistency 6.DEF: At maximum limit 7.DEF: At minimum limit
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NOTES	Priority when dealing with a number of faults: – DF113 Sensor supply voltage.
	Special notes: The level 1 warning light illuminates along with the message Faulty injection.

K9K 722 ENGINE

1.DEF-2.DEF 3.DEF-4.DEF	NOTES	None.
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Check the connection and condition of the **4-track connector** of the **inlet pressure sensor**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

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

Sensor connector **track 1** —————→ **track C3** computer connector **B**

Sensor connector **track 2** —————→ **track J2** computer connector **B**

Sensor connector **track 3** —————→ **track C1** computer connector **B**

Sensor connector **track 4** —————→ **track C2** computer connector **B**

Repair if necessary.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF089
CONTINUED 15.DEF-6.DEF
7.DEF

NOTES

None.

Visually check the turbocharging circuit **sealing**.
Run **TEST 11 Air line at the turbocharger**.
Repair if necessary.

Remove the air supply ducts and **check** that they are not blocked.
Repair if necessary.

Check for consistency between the **atmospheric pressure** and the **manifold pressure (PR035 = PR032)**.
With the engine stopped, the pressure should be approximately the same between the 2 sensors.
Replace the manifold pressure sensor if necessary.

Check the **turbocharger**,
Run **TEST 10 Turbocharger control solenoid valve check**.
Run **TEST 12 Turbocharger**.
Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF089
CONTINUED 2

K9K 728 ENGINE

1.DEF-2.DEF
3.DEF-4.DEF

NOTES

None.

Check the connection and condition of the **4-track connector** of the **inlet pressure sensor**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

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

Sensor connector **track 1** → **track C3** computer connector **B**

Sensor connector **track 2** → **track J2** computer connector **B**

Sensor connector **track 3** → **track C1** computer connector **B**

Sensor connector **track 4** → **track C2** computer connector **B**

Repair if necessary.

5.DEF
6.DEF - 7.DEF

NOTES

None.

Visually check the turbocharging circuit **sealing**,
Run **TEST 11 Air line at the turbocharger**.
Repair if necessary.

Remove the air supply ducts and **check** that they are not blocked.
Repair if necessary.

Check for consistency between the **atmospheric pressure** and the **manifold pressure (PR035 = PR032)**.
With the engine stopped, the pressure should be approximately the same between the 2 sensors.
Replace the manifold pressure sensor if necessary.

In case of **6.DEF** and **7.DEF**, check the **turbocharger**.
Run **TEST 10 Turbocharger control solenoid valve check**.
Run **TEST 12 Turbocharger**.
Repair if necessary

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF098
PRESENT****FUEL TEMPERATURE SENSOR CIRCUIT**CO.1: Open circuit or short circuit to +12 volts
CC.0: Short circuit to earth**NOTES**

None.

Check the connection and condition of the **2-track connector** of the **fuel temperature sensor**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

Measure the **resistance** at the **fuel temperature sensor** terminals.
Replace the fuel temperature sensor if the resistance is not approximately 2.2 kΩ **at 25°C**.

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

Sensor connector **track 1** —————→ **track G2** computer connector **B**

Sensor connector **track 2** —————→ **track G3** computer connector **B**

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF107 STORED	<u>COMPUTER MEMORY</u>
NOTES	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine running .
	Special note: If fault DF107 , the engine stops and cannot be restarted and the level 1 warning light illuminates along with the message Faulty injection .
Enter the individual injector corrections (C2I) using the diagnostic tool (command SC002) .	
If the fault is still present, contact the Techline.	

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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**DF112
STORED****CYLINDER REFERENCE SENSOR CIRCUIT**

- 1.DEF: No signal
- 2.DEF: Inconsistency

NOTES

Conditions for applying fault finding procedures to stored faults:
The fault is **declared present** with the engine under the **starter or when idling**.

Check the connection and condition of the **3-track connector** of the **cylinder reference sensor**.
Repair if necessary.

Check the connection and condition of the computer 48-track brown **connector B**.
Repair if necessary.

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

Sensor connector **track 2** —————> **Track E2** computer connector **B**

Sensor connector **track 1** —————> **Track E3** computer **connector B**

If necessary replace the sensor.

Check the timing setting using the appropriate **Workshop Repair Manual**.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

**DF113
PRESENT****SENSOR SUPPLY VOLTAGE**

- 1.DEF: At minimum limit
- 2.DEF: At maximum limit

NOTES**Special notes:**

If **DF113**, the engine stops immediately and cannot be restarted. **The level 1 warning light illuminates along with the message Faulty injection.**

Check the condition and connection of the **connectors of all sensors** with a **5 V** feed.

- Refrigerant pressure sensor
- Pressure sensor and inlet manifold temperature sensor
- Rail pressure sensor
- Pedal sensor gang 1
- EGR valve position sensor
- Flow sensor.

Repair if necessary.

Check the condition and connection of computer **connectors A, B, and C**.

Repair if necessary.

To locate any internal fault in one of the sensors with a **5 V** supply (short circuit), disconnect each of the sensors on the list above in turn, checking after each disconnection whether the fault changes status from **present** to **stored**.

If the faulty sensor is located, check its connections and that it is in order. If necessary replace the sensor.

Connect the bornier in place of the computer and check the **insulation, continuity and the absence of interference resistance on the following connections:**

- Computer connector C **track C4** → **Track B** refrigerant pressure sensor
- Computer connector B **track C1** → **Track 3** inlet pressure - temperature sensor
- Computer connector B **track D1** → **Track 3** rail pressure sensor
- Computer connector A **track G2** → **Track 3** pedal sensor gang 1
- Computer connector B **track B1** → **Track 2** EGR valve position sensor
- Computer connector B **track A1** → **Track 3** of the flowmeter

Repair if necessary.

If the fault is still present, apply the fault finding procedure for each sensor with a **5 V** supply.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the **diagnostic tool**.

DF114 STORED	<u>EGR SOLENOID VALVE CIRCUIT</u> 1.DEF: At minimum limit 2.DEF: At maximum limit 3.DEF: Inconsistency 4.DEF: Valve jammed 5.DEF: Valve clogged
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NOTES	Priority when dealing with a number of faults: – DF113 Sensor supply voltage.
	Special notes: If fault DF114 is present : the engine is unstable and may even stall. Starting difficult or even impossible when cold, smoke emissions and loss of performance possible. On status 4.DEF, the level 1 warning light illuminates with the message Faulty injection displayed on the instrument panel.
	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine running.
	See Technical Note Wiring Diagrams of the vehicle concerned.

Check the connection and condition of the **EGR valve** connector, component code **169**.
Check the connection and condition of **connector B** (brown 48-track) of the **injection computer**, component code **120**.
If the connector or connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connector, otherwise replace the wiring.

Check for **+12 V** on connection **3FB2** of component **169**.
If the connection is faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

Check the **insulation and continuity** of the following connections:
– **3GB** between components **169** and **120**,
– **3FB2** between components **169** and **1337**.
If the connection or connections are faulty and there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace it.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF114
CONTINUED

Check the **resistance** of the **EGR valve**, component code **169**:

- with the engine stopped, the EGR valve will be closed (unless there is a fault),
- wait for the ambient temperature around the valve to stabilise (approximately **20°C**),
- measure the resistance between connections **3FB2** and **3GB**. The resistance must be between **7.5 Ω < R < 8.5 Ω** (at **20°C**),
- measure the resistance between connections **3GC** and **3JM**. The resistance must be between **2.4 kΩ < R < 5.6 kΩ** (at **20°C**),
- measure the resistance between connections **3JM** and **3EL**. The resistance must be between **800 Ω < R < 3.6 kΩ** (at **20°C**).

If the value is not correct, replace the **EGR valve**, component code **169** (see **MR 364 (Mégane II)**, **MR 370 (Scénic II)**, **Mechanical**, **14A**, **Emission control**, **Exhaust gas recirculation solenoid valve: Removal - Refitting**). If the EGR valve was replaced, use command **RZ002 EGR adaptives** to reinitialise the EGR valve offsets.

Also, if a **3.DEF**, **4.DEF**, or **5.DEF** fault is present:

Remove the **EGR valve**. Check that there are no foreign bodies (scale, etc.) that could jam the **valve**.

Remove the foreign matter and **clean the EGR valve** (see **MR Technical Note 3916, Cleaning the EGR solenoid valve**).

Use command **RZ002 EGR adaptives** to reinitialise the EGR valve offsets.

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

If the fault is still present, contact the Techline.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the **diagnostic tool**.

**DF116
PRESENT****MULTIPLEX NETWORK**

1.DEF: Carry out the fault finding procedure for the multiplex network

NOTES

None.

Carry out the fault finding procedure for the multiplex network.

AFTER REPAIRDeal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF121 STORED	<u>ACCELEROMETER CIRCUIT</u>
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NOTES	Priorities when dealing with a number of faults : DF001 Coolant temperature sensor circuit, DF002 Air temperature sensor circuit, DF098 Fuel temperature sensor circuit, DF003 Atmospheric pressure sensor circuit. A fault on these sensors could lead to incorrect fault finding on the accelerometer.
	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine idling.

Check the conformity of the injectors fitted to the vehicle in relation to the type of vehicle and engine number (low, high or very high pressure injector).
Check the condition and connection of the accelerometer connector . Repair if necessary.
Check the connection and condition of the brown 48-track connector B of the computer and check the sensor shielding on track K1 . Repair if necessary.
Check the insulation, continuity and the absence of interference resistance on the following connections: <div style="text-align: center;">Sensor connector track 1 —————→ Track F1 computer connector B Sensor connector track 2 —————→ Track G1 computer connector B</div> Repair if necessary.
Check that the C2I is correctly entered on the computer. Check that the accelerometer is secured on the engine. Disconnect and reconnect the accelerometer sensor to accomplish fast programming. Carry out a road test followed by another check with the diagnostic tool. If the fault is still present, replace the accelerometer.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF122 PRESENT	<u>PEDAL POTENTIOMETER GANG 2 SUPPLY VOLTAGE</u> CO.1: Open circuit or short circuit to +12 volts CC.0: Short circuit to earth
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NOTES	Special notes: If DF122 , the idling speed is stuck at 1000 rpm , the engine performance is reduced to 75% , and the level 1 warning light illuminates along with the message Faulty injection .
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CC.0	NOTES	None.
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Check the connection and condition of the **6-track connector** of the **pedal potentiometer**.
Repair if necessary.

Check the connection and condition of the black 32-track **connector A** of the computer.
Repair if necessary.

Measure the **resistance** between **tracks 2 and 6** of the **pedal potentiometer**.
Replace the pedal potentiometer if the resistance is not **2.85 k Ω \pm 2.05 Ω** .

Disconnect computer **connector A** and the **pedal potentiometer connector**.
Check the **insulation against earth** of the connection on track **F2** on computer **connector A**.
Repair if necessary.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DF122 CONTINUED	
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C0.1	NOTES	None.
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Check the connection and condition of the **pedal potentiometer connector**.
Repair if necessary.

Check the connection and condition of the black 32-track **connector A** of the computer.
Repair if necessary.

Measure the **resistance** between **tracks 2 and 6** of the **pedal potentiometer**.
Replace the pedal potentiometer if the resistance is not **2.85 kΩ ± 2.05 Ω**.

Disconnect computer connector A and the pedal potentiometer connector.
– **Check the insulation on connector A between tracks F2 and F4.**
– **Check the insulation against +12 V of the connection on track F2 on computer connector A.**

Repair if necessary.

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

Sensor connector **track 1** —————> **Track F1** computer connector **B**

Sensor connector **track 2** —————> **Track G1** computer connector **B**

Repair if necessary.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

DF130 STORED	<u>FLOW CAPACITY FUNCTION</u>
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NOTES	Special notes: If DF130 , the engine may stop with the level 1 and 2 warning lights illuminated along with the message Faulty injection.
	Conditions for applying fault finding procedures to stored faults: The fault is present with the engine running.

Check the connection and condition of the of the fuel flow actuator connector (IMV) , and repair it if necessary.
Measure the resistance between tracks 1 and 2 of the flow actuator. Replace the flow actuator if the resistance is not 5.3 Ω ± 0.5 Ω at 20°C.
Check the connection and condition of the computer 48-track brown connector B. Repair if necessary.
Check the insulation, continuity and the absence of interference resistance on the following connection: Computer connector B track M4 ————→ track 1 fuel flow actuator Repair if necessary.
Check that there is fuel present in the tank and that it is correct. Run Test 13 Diesel fuel conformity check. Run Test 1 Low pressure circuit check. Run Test 6 High pressure system check. Repair if necessary.

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool.
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DF1070 PRESENT OR STORED	<u>COLD LOOP</u> 1.DEF: Jammed component
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NOTES	Conditions for applying fault finding procedures to stored faults: The fault is declared present with the engine running and with a climate control request.
	Priorities when dealing with a number of faults: – 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. There is no longer any air conditioning.

Check fuse **F22 (10 A)** of the **UPC**, component code **1337**.

Check the connector of the air conditioning compressor, component code **171**.
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 wiring of the air conditioning compressor.
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 jamming, replace the air conditioning compressor (see **MR 364 (Mégane II), MR 370 (Scénic II), Mechanical, 62A, Air conditioning, Compressor: Removal - Refitting**).

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

AFTER REPAIR	Deal with any faults declared by the diagnostic tool. Clear the computer fault memory. Carry out a road test followed by another check with the diagnostic tool .
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DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

MAIN STATUSES AND PARAMETERS OF THE COMPUTER:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Battery voltage	PR074: Battery voltage	12 V < PR074 < 13.5 V	If there is a fault, apply the fault finding procedure for the "Charge circuit".
Engine speed	PR055: Engine speed	Indicates the engine's speed of rotation in rpm.	In the event of a fault, apply the fault finding procedure for DF005 "Engine speed sensor circuit".
Accelerator pedal position	PR030: Accelerator pedal position. 0%	Indicates the position of the accelerator pedal as a %. PR030 = 0 %	In the event of a fault, apply the fault finding procedure for Pedal sensor circuit gang 1 and gang 2 (DF008 and DF009) and DF113 Sensor supply voltage.
Coolant temperature	PR064: Coolant temperature. Warm: 90 °C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.
External air temperature	PR061: External air temperature	Gives the external air temperature in °C. This parameter is controlled by the UCH and transmitted to the injection via the multiplex network. Default value: 20°C.	In the event of a fault, apply the fault finding procedure for this fault described in the UCH document.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

MAIN COMPUTER STATUSES AND PARAMETERS: (continued 1)

Function	Parameter or Status Check or action	Display and notes	Fault finding
Inlet air temperature (invalid for K9K 728)	PR059: Inlet air temperature. Cold = PR061 Warm: 30 °C	Indicates the inlet air temperature in °C. This information is provided by the air temperature/pressure sensor. Default value: 30 °C	In the event of a fault, refer to the interpretation of parameter PR059 Inlet air temperature.
Fuel temperature	PR063: Fuel temperature. Cold = PR064 Warm: 50 °C	Gives the fuel temperature in °C. This value is supplied by "the fuel temperature sensor". Default value: 30 °C	In the event of a fault, apply the fault finding procedure for fault DF098 "Fuel temperature sensor circuit".
Air circuit pressure.	PR035: Atmospheric pressure.	Indicates the atmospheric pressure in mbar. The sensor is built into the computer.	If not consistent, check that PR035 = PR032 = local atmospheric pressure, with the engine stopped and the ignition on.
	PR032: Inlet pressure.	Indicates the pressure in the inlet circuit in mbar.	
Rail pressure	PR038: Rail pressure. cold and hot: -90 bar < PR038 < 90 bar	Indicates the pressure, in bar, of the diesel fuel in the injector rail. This pressure is supplied by the sensor on the rail. Default value: 2000 bar	In the event of a fault apply the fault finding procedure for fault DF007 "Rail pressure sensor circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

MAIN COMPUTER STATUSES AND PARAMETERS: (continued 2)

Function	Parameter or Status Check or action	Display and notes	Fault finding
Engine	ET038: Engine. UNDER + AFTER IGNITION FEED	Indicates the current status of the engine. - UNDER + AFTER IGNITION FEED - UNDER STARTER - RUNNING - SUPPLY MAINTAINED: Supply maintained during the power latch phase. - STALLED: When the engine has stalled. - PROTECTED: When a level 2 fault has appeared or when the engine speed is locked at a certain value.	NONE
Engine immobiliser	ET003: Engine immobiliser. INACTIVE	Indicates the status of the immobiliser system. - INACTIVE: The injection computer has recognised the immobiliser code transmitted by the UCH. - ACTIVE: The injection computer does not recognise the immobiliser code transmitted by the UCH.	If ACTIVE, apply the associated Help given in the tool.
Code programmed	ET006: Code programmed YES	Indicates whether the immobiliser code has been programmed into the computer. - YES: Code is programmed. - NO: Code was not programmed into the injection computer.	If NO, contact the Techline.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

MAIN COMPUTER STATUSES AND PARAMETERS: (continued 3)

Function	Parameter or Status Check or action	Display and notes	Fault finding
Vehicle speed	PR089: Vehicle speed	Indicates the vehicle speed in mph. This parameter is transmitted by the ABS computer or by the vehicle speed ECU. This signal is transmitted to the injection system on the multiplex network.	Test the multiplex network. Refer to fault finding for the ABS or the vehicle speed ECU.
New pump chamber filling	ET637: New pump chamber filling	COMPLETED	If NOT DONE, see Replacement of components.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

STARTING SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
+ After ignition computer feed	ET001: + After ignition computer feed. PRESENT	Indicates + after ignition feed to the computer. - Present - Absent	In the event of a fault, apply the fault finding procedure for DF047 "Computer feed voltage" or DF015 "Main relay control circuit".
Starting	ET076: Starting. AUTHORISED	Indicates whether or not starting has been authorised by the injection. AUTHORISED: The injection authorises starting. PROHIBITED: The injection does not authorise starting.	If PROHIBITED , carry out a complete fault finding procedure on the preheating system.
Engine	ET038: Engine. UNDER + AFTER IGNITION FEED	Indicates the current status of the engine. - UNDER + AFTER IGNITION FEED - UNDER STARTER - RUNNING - SUPPLY MAINTAINED: Supply maintained during the power latch phase. - STALLED: When the engine has stalled. - PROTECTED: When a fault has appeared or when the engine speed is locked at a certain value.	NONE
Battery voltage	PR074: Battery voltage.	12 V < PR074 < 13.5 V	If there is a fault, apply the fault finding procedure for the "Charge circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

PROTECTION SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Engine immobiliser	ET003: Engine immobiliser. INACTIVE	Indicates the status of the immobiliser system. - INACTIVE: The injection computer has recognised the immobiliser code transmitted by the UCH. - ACTIVE: The injection computer does not recognise the immobiliser code transmitted by the UCH.	If ACTIVE , apply the associated Help given in the tool.
Code programmed	ET006: Code programmed. YES	States whether the immobiliser code has been programmed by the computer or not. - YES: Code is programmed - NO: Code was not programmed into the injection computer.	If NO , contact the Techline.
Battery voltage	PR074: Battery voltage	12 V < PR074 < 13.5 V	If there is a fault, apply the fault finding procedure for the "Charge circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

COLD LOOP SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Air conditioning present	ET079: Air conditioning present. YES	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 inconsistent with the vehicle equipment, perform a multiplex network test and apply the associated procedure.
Compressor activation request	ET088: Compressor activation request. INACTIVE	The injection requests the Protection and Switching Unit (via the multiplex network) to start the compressor. - ACTIVE: The multiplex network must not be faulty on the Automatic transmission, Protection and Switching Unit, or UCH systems. The UCH should request the injection to be engaged. The coolant pressure sensor must not be defective. Satisfactory engine operating conditions (Coolant temperature, engine load, etc.). - INACTIVE: One of the above conditions is not fulfilled.	NONE

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

COLD LOOP SUB-FUNCTION (continued 1):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Air conditioning authorised	ET004: Air conditioning authorised. NO	Non operational information, designed solely for fault finding purposes. - YES: Satisfactory engine operating conditions (coolant temperature, engine load etc.). The vehicle is not in a specific movement phase (hill start, start from stop etc.). - NO: One of the above conditions is not fulfilled.	NONE
Refrigerant pressure.	PR037: Refrigerant pressure.	Gives the value in BAR for the refrigerant fluid in the system. 2 bar < PR037 < 27 bar Default value: 0 bar	If there is a fault apply the fault finding procedure for DF049 "Refrigerant sensor circuit". If the fault is still present, replace the refrigerant sensor.
Engine speed	PR055: Engine speed.	Indicates the engine's speed of rotation in rpm.	In the event of a fault, apply the fault finding procedure for DF005 "Engine speed sensor circuit".
Fast idle speed request	ET023: Fast idle speed request. ABSENT	The UCH requests fast idle speed from the injection. - ABSENT: The UCH did not make a request. - PRESENT: The UCH made a request.	If ET023 is inconsistent, carry out a multiplex network test using the diagnostic tool. If the test is correct, consult the fault finding procedure for the UCH.
Coolant temperature	PR064: Coolant temperature. Warm: 90°C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

COLD LOOP SUB-FUNCTION (continued 2):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Vehicle speed	PR089: Vehicle speed.	Indicates the vehicle speed in mph. This parameter is transmitted by the ABS computer or by the vehicle speed ECU. This signal is transmitted to the injection system on the multiplex network.	Test the multiplex network. Refer to fault finding for the ABS or the vehicle speed ECU.
Power consumed by the air conditioning compressor	PR125: Power consumed by the air conditioning compressor. 0 W	Indicates the power consumed by the compressor.	NONE
Speed request for fan assembly*	ET022: Low speed fan assembly request. INACTIVE.	The injection requests the UPC to start the fans. - INACTIVE: Because engine speed = 0 rpm. - ACTIVE: Engine speed = idle speed, correct refrigerant pressure and vehicle speed = 0 mph (km/h), or high coolant temperature.	NONE
Speed request for fan assembly*	ET021: High speed fan assembly request. INACTIVE.	The injection requests the UPC to start the fans. - INACTIVE: Because engine speed = 0 rpm. - ACTIVE: Engine speed = idle speed. Refrigerant pressure > 15 bar, vehicle speed = 0 mph, or high coolant temperature.	NONE

* When the air conditioning is requested with the engine idling and the vehicle speed = 0 mph (0 km/h), ET022 will always be ACTIVE and ET021 INACTIVE (unless refrigerant pressure > 15 bar, vehicle speed = 0 mph, and high coolant temperature). The fan assemblies are disabled under certain coolant temperature conditions when driving.

When the UPC stops receiving multiplex transmissions from the injection, the fan assemblies are constantly activated.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

HEATING SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Coolant temperature	PR064: Coolant temperature. Warm: 90 °C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.
Set number of RCH	ET111: Set number of RCH. YES - NO	The RCHs* are actuated by the UCH. They are high current consumers. Consequently, their use is conditional on the available power all the time (alternator power). The injection checks the balance of available mechanical power according to the engine operating conditions (torque, power, etc.) to authorise, limit, or stop their use. (This information is sent via the CAN network to the UCH). Note: When the RCHs* are actuated, the injection system must respond to a fast idle speed request from the UCH.	NONE
RCH cut-off	ET112: RCH cut-off YES - NO		

*RCH = Passenger Compartment Heating Resistor

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

FUEL CIRCUIT SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Fuel temperature	PR063: Fuel temperature. Cold = PR064 Warm: 50°C	Gives the fuel temperature in °C. Default value: 30°C	In the event of a fault, apply the fault finding procedure for fault DF098 "Fuel temperature sensor circuit".
Fuel flow	PR017: Fuel flow. 0.0 mg/st	Shows the fuel injected in mg/st for each injector. PR017 = 0 mg/st	NONE
Rail pressure	PR038: Rail pressure. Cold and warm: -90 bar < PR038 < 90 bar	Indicates the pressure, in bar, of the diesel fuel in the injector rail. This pressure is supplied by the sensor on the rail. Default value: 2000 bar	In the event of a fault apply the fault finding procedure for fault DF007 "Rail pressure sensor circuit".
Rail pressure set point	PR008: Rail pressure setpoint. 375 bar (Engine starting pressure setpoint). Cold: 500 bar. Warm: 300 bar	Gives a theoretical pressure value for optimum engine operation. 300 bar < PR008 < 500 bar	NONE

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

FUEL CIRCUIT SUB-FUNCTION (continued 1):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Rail pressure sensor voltage	PR080: Rail pressure sensor voltage. Cold: 0.5 V Warm: 4.5 V	Shows the voltage supplied by the computer to the rail pressure sensor. 0.5 V < PR080 < 4.5 V Default value: 4.5 V	NONE
Engine speed	PR055: Engine speed	Indicates the engine's speed of rotation in rpm.	In the event of a fault, apply the fault finding procedure for DF005 "Engine speed sensor circuit".
New pump chamber filling	ET637: New pump chamber filling	COMPLETED	If NOT DONE, see Replacement of components.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

PRE-HEATING/IGNITION SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Coolant temperature	PR064: Coolant temperature. Warm: 90 °C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.
External air temperature	PR061: External air temperature	Gives the external air temperature in °C. This parameter is controlled by the UCH and transmitted to the injection via the multiplex network. Default value: 20°C	In the event of a fault, apply the fault finding procedure for this fault described in the UCH document.
Inlet air temperature (invalid for K9K 728)	PR059: Inlet air temperature. Cold = PR061 Warm: 30 °C	Indicates the inlet air temperature in °C. This signal is provided by the air temperature/pressure sensor. Default value: 30°C.	In the event of a fault, refer to the interpretation of parameter PR059 Inlet air temperature.
Battery voltage	PR074: Battery voltage	12 V < PR074 < 13.5 V	If there is a fault, apply the fault finding procedure for the "Charge circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

AIR CIRC. SUB-FUNCTION (TURBO/INLET):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Inlet air temperature (invalid for K9K 728)	PR059: Inlet air temperature. Cold = PR061 Warm: 30°C	Indicates the inlet air temperature in °C. This signal is provided by the air temperature/pressure sensor. Default value: 30°C.	In the event of a fault, refer to the interpretation of parameter PR059 Inlet air temperature.
Air circuit pressure	PR035: Atmospheric pressure.	Indicates the atmospheric pressure in mbar. The sensor is built into the computer.	If not consistent, check that PR035 = PR032 = local atmospheric pressure, with the engine stopped and the ignition on.
	PR032: Inlet pressure.	Indicates the pressure in the inlet circuit in mbar.	
Air flow	PR132: Air flow.	Air flow estimated by the injection computer.	NONE
Inlet temperature sensor voltage	PR081: Inlet temperature sensor voltage.	Indicates the voltage, in volts, delivered by the computer to supply the inlet temperature sensor.	NONE
Engine speed	PR055: Engine speed.	Indicates the engine's speed of rotation in rpm.	In the event of a fault, apply the fault finding procedure for DF005 "Engine speed sensor circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

ENGINE COOLING SUB FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Coolant temperature	PR064: Coolant temperature. Warm: 90 °C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

DRIVER PARAMETERS SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Accelerator pedal position	PR030: Accelerator pedal position. 0%.	Shows the pedal position between NO LOAD and FULL LOAD as a percentage. $0\% < PR030 < 100\%$	In the event of a fault, apply the fault finding procedures for Pedal sensor circuit gang 1 and gang 2 (DF008 and DF009) and DF113 Sensor supply voltage.
Pedal potentiometer gang voltages.	PR086: Pedal potentiometer gang 1 voltage. 16%	Shows the percentage of feed voltage on gangs 1 and 2 of the pedal potentiometer. $10\% < PR086 < 20\%$ $5\% < PR088 < 15\%$	In the event of a fault, apply the fault finding procedures for Pedal sensor circuit gang 1 and gang 2 (DF008 and DF009) and DF113 Sensor supply voltage.
	PR088: Pedal potentiometer gang 2 voltage. 7%		

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

EMISSION CONTROL/OBD SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
EGR valve control	ET008: EGR valve control. INACTIVE	Indicates the EGR valve control status. - INACTIVE : The valve is not controlled by the computer. - ACTIVE : The valve is controlled by the computer.	NONE
Atmospheric pressure	PR035: Atmospheric pressure.	Indicates the atmospheric pressure in mbar. The sensor is built into the computer.	If not consistent, check that PR035 = PR032 = local atmospheric pressure, with the engine stopped and the ignition on.
Air flow	PR132: Air flow.	Air flow estimated by the injection computer.	NONE
Fuel flow	PR017: Fuel flow. 0.0 mg/st	Gives the fuel flow at the high pressure pump outlet in mg/st.	NONE
EGR valve opening setpoint	PR005: EGR valve opening setpoint. Warm or cold = -50	Gives a theoretical EGR valve opening value for optimum engine operation. PR005 = PR051	NONE
EGR valve position feedback	PR051: EGR valve position feedback. Warm or cold = -50	Shows the true EGR valve position. PR051 = PR005	NONE

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

EMISSION CONTROL / OBD SUBFUNCTION (cont.):

Function	Parameter or Status Check or action	Display and notes	Fault finding
EGR valve position sensor voltage.	PR077: EGR valve position sensor voltage. 1.09 V	Indicates the EGR valve voltage according to its position. - INACTIVE: The valve is not controlled by the computer. - ACTIVE: The valve is controlled by the computer. 0.5 V < PR077 < 4.8 V	NONE
Accelerator pedal position	PR030: Accelerator pedal position. 0%	Shows the pedal position between NO LOAD and FULL LOAD as a percentage. PR030 = 0 %	In the event of a fault, apply the fault finding procedures for Pedal sensor circuit gang 1 and gang 2 (DF008 and DF009) and DF113 Sensor supply voltage.
Coolant temperature	PR064: Coolant temperature. Warm: 90°C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

CRUISE CONTROL / SPEED LIMITER SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Cruise control/speed limiter	ET042: Cruise control/speed limiter	NOT DETECTED: Vehicle not equipped with the cruise control - speed limiter function buttons, OR after reprogramming the injection computer, the switch is in the rest position. INACTIVE: when no buttons are pressed SPEED LIMITER: Main switch in speed limiter position. CRUISE CONTROL: Main switch in cruise control position.	Consult the interpretation of status ET042 Cruise control - speed limiter .
	ET703: Cruise control/speed limiter buttons	INACTIVE: No cruise control - speed limiter buttons are pressed. These buttons are located on the steering wheel. PLUS: When the cruise control - speed limiter + button is pressed. This button is on the steering wheel, on the left-hand side. - MINUS: When the cruise control - speed limiter - button is pressed. This button is on the steering wheel, on the left-hand side. - SUSPEND: When the cruise control - speed limiter 0 button is pressed. This button is located on the steering wheel, to the right. - RESUME: When the cruise control - speed limiter R button is pressed. This button is located on the steering wheel, to the right.	Consult the interpretation of status ET703 Cruise control - speed limiter button .

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

CRUISE CONTROL - SPEED LIMITER SUB-FUNCTION (continued 1):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Brake contact	ET704: Brake switch No. 1	- INACTIVE - ACTIVE (brake pedal depressed)	Consult the interpretation of status ET704 Brake switch No. 1
	ET705: Brake switch No. 2	- ACTIVE (brake pedal released) - INACTIVE	Consult the interpretation of status ET705 Brake switch No. 2
Clutch pedal switch	ET405: Clutch pedal switch	- ACTIVE - INACTIVE	Consult the interpretation of status ET405 Clutch switch
Cruise control setpoint	PR130: Cruise control setpoint	Indicates the reference value requested by the driver (in mph (km/h))	NONE
Vehicle speed	PR089: Vehicle speed	0 mph (km/h) Gives the vehicle speed in mph (km/h) . This parameter is transmitted by the ABS computer or vehicle speed ECU*. This signal is transmitted to the injection on the multiplex network.	Test the multiplex network. See fault finding for the ABS system or the vehicle speed ECU*.

NOTES

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

CRUISE CONTROL - SPEED LIMITER SUB-FUNCTION (continued 2):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Cruise control/ speed limiter deactivation	ET415: Cruise control - speed limiter deactivation	NONE: This status is present on the diagnostic tool when: The computer has been reinitialised, The computer has been reprogrammed. - STATUS 1: Traction control request - STATUS 2: Brake pedal depressed. - STATUS 3: Clutch pedal depressed. - STATUS 4: Suspend button pressed - STATUS 5: Cruise control or speed limiter monitoring. - STATUS 6: Gear lever in neutral (manual gearbox) or in the neutral position (automatic transmission). - STATUS 7: Inconsistency between the request and the vehicle speed. - STATUS 8: Automatic transmission in defect mode. - STATUS 9: Vehicle speed monitoring. - STATUS 10: Monitoring by the injection computer.	In the event of a fault, consult the interpretation of status ET415 Cruise control - speed limiter deactivation.

*ECU: Electronic control unit

DIESEL INJECTION

Fault finding – Conformity check

13B

NOTES

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

MAIN STATUSES AND PARAMETERS OF THE COMPUTER:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Battery voltage	PR074: Battery voltage.	13 V < PR074 < 14 V	If there is a fault, apply the fault finding procedure for the "Charge circuit".
Engine speed	PR055: Engine speed. Cold: 900 rpm. Warm: 805 rpm.	Indicates the engine's speed of rotation in rpm.	In the event of a fault, apply the fault finding procedure for DF005 "Engine speed sensor circuit".
Accelerator pedal position	PR030: Accelerator pedal position. 0%	Indicates the position of the accelerator pedal as a %. PR030 = 0 %	In the event of a fault, apply the fault finding procedures for Pedal sensor circuit gang 1 and gang 2 (DF008 and DF009) and DF113 Sensor supply voltage.
Coolant temperature	PR064: Coolant temperature. Warm: 90°C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.
External air temperature	PR061: External air temperature.	Gives the external air temperature in °C. This parameter is controlled by the UCH and transmitted to the injection via the multiplex network. Default value: 20°C	In the event of a fault, apply the fault finding procedure for this fault described in the UCH document.
Inlet air temperature	PR059: Inlet air temperature. Cold = PR061 Warm: 30°C	Indicates the inlet air temperature in °C. This signal is provided by the air temperature/ pressure sensor. Default value: 20°C.	In the event of a fault, refer to the interpretation of parameter PR059 Inlet air temperature.

DIESEL INJECTION

Fault finding – Conformity check

13B

NOTES

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

MAIN COMPUTER STATUSES AND PARAMETERS (continued 1):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Fuel temperature	PR063: Fuel temperature. Cold = PR064 Warm: 50°C	Gives the fuel temperature in °C. This value is supplied by "the fuel temperature sensor". Default value: 30°C.	In the event of a fault, apply the fault finding procedure for fault DF098 "Fuel temperature sensor circuit".
Air circuit pressure.	PR035: Atmospheric pressure.	Indicates the atmospheric pressure in mbar. The sensor is built into the computer. 600 mbar < Cold < 1050 mbar 600 mbar < Warm < 1050 mbar.	If not consistent, check that PR035 = PR032 = local atmospheric pressure, with the engine stopped and the ignition on.
	PR032: Inlet pressure.	Indicates the pressure in the inlet circuit in mbar. PR032 = Local atmospheric pressure.	
Rail pressure	PR038: Rail pressure. Cold: 260 bar. Warm: 230 bar.	Indicates the pressure, in bar, of the diesel fuel in the injector rail. This pressure is supplied by the sensor on the rail. Default value: 2000 bar	In the event of a fault apply the fault finding procedure for fault DF007 "Rail pressure sensor circuit".
Engine	ET038: Engine running	Indicates the current status of the engine. - UNDER + AFTER IGNITION FEED - UNDER STARTER - RUNNING - SUPPLY MAINTAINED: Supply maintained during the power latch phase. - STALLED: When the engine has stalled. - PROTECTED: When a level 2 fault has appeared or when the engine speed is locked at a certain value.	NONE

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

MAIN COMPUTER STATUSES AND PARAMETERS (continued 2):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Engine immobiliser	ET003: Engine immobiliser. INACTIVE	Indicates the status of the immobiliser system. - INACTIVE: The injection computer has recognised the immobiliser code transmitted by the UCH. - ACTIVE: The injection computer has not recognised the immobiliser code transmitted by the UCH.	If ACTIVE , apply the associated Help given in the tool.
Code programmed	ET006: Code programmed YES	Indicates whether the immobiliser code has been programmed into the computer. - YES: Code is programmed. - NO: Code was not programmed into the injection computer.	If NO , contact the Techline.
Vehicle speed	PR089: Vehicle speed	Indicates the vehicle speed in mph. This parameter is transmitted by the ABS computer or by the vehicle speed ECU. This signal is transmitted to the injection system on the multiplex network.	Test the multiplex network. Refer to fault finding for the ABS or the vehicle speed ECU.
New pump chamber filling	ET637: New pump chamber filling	COMPLETED	If NOT DONE , see Replacement of components.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

STARTING SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
+ After ignition computer feed	ET001: + After ignition computer feed. PRESENT	Indicates + after ignition feed to the computer. - Present - Absent	In the event of a fault, carry out the fault finding procedure for DF047 "Computer supply voltage" or DF015 "Main relay circuit".
Starting	ET076: Starting. AUTHORISED	Indicates whether or not starting has been authorised by the injection. AUTHORISED: The injection authorises starting. PROHIBITED: The injection does not authorise starting.	If PROHIBITED , carry out a complete fault finding procedure on the preheating system.
Engine	ET038: Engine. RUNNING	Indicates the current status of the engine. - UNDER + AFTER IGNITION FEED - UNDER STARTER - RUNNING - SUPPLY MAINTAINED: Supply maintained during the power latch phase. - STALLED: When the engine has stalled. - PROTECTED: When a fault has appeared or when the engine speed is locked at a certain value.	NONE
Battery voltage	PR074: Battery voltage.	13 V < PR074 < 14 V	If there is a fault, apply the fault finding procedure for the "Charge circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

PROTECTION SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Engine immobiliser	ET003: Engine immobiliser. INACTIVE	Indicates the status of the immobiliser system. - INACTIVE: The injection computer has recognised the immobiliser code transmitted by the UCH. - ACTIVE: The injection computer has not recognised the immobiliser code transmitted by the UCH.	If ACTIVE, apply the associated Help given in the tool.
Code programmed	ET006: Code programmed YES	Indicates whether the immobiliser code has been programmed into the computer. - YES: Code is programmed. - NO: Code was not programmed into the injection computer.	If NO, contact the Techline.
Battery voltage	PR074: Battery voltage.	13 V < PR074 < 14 V	If there is a fault, apply the fault finding procedure for the "Charge circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

COLD LOOP SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Air conditioning present	ET079: Air conditioning present. YES	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 inconsistent with the vehicle equipment, perform a multiplex network test and apply the associated procedure.
Compressor activation request	ET088: Compressor activation request. INACTIVE	The injection requests the Protection and Switching Unit (via the multiplex network) to start the compressor. - ACTIVE: The multiplex network must not be faulty on the Automatic transmission, Protection and Switching Unit, or UCH systems. The UCH should request the injection to be engaged. The coolant pressure sensor must not be defective. Satisfactory engine operating conditions (coolant temperature, engine load etc.). - INACTIVE: One of the above conditions has not been met or no request has been made by the driver, so ET004 = NO .	NONE
Air conditioning authorised	ET004: Air conditioning authorised. NO	Non operational information, designed solely for fault finding purposes. - YES: Satisfactory engine operating conditions (coolant temperature, engine load, etc.). The vehicle is not in a specific movement phase (hill start, start from stop etc.). - NO: One of the above conditions has not been met or no request has been made by the driver, so ET088 = INACTIVE .	NONE

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

COLD LOOP SUB-FUNCTION (continued 1):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Refrigerant pressure	PR037: Refrigerant pressure.	Gives the value in BAR for the refrigerant fluid in the system. 2 bar < PR037 < 27 bar Default value: 0 bar	If there is a fault apply the fault finding procedure for DF049 "Refrigerant sensor circuit". If the fault is still present, replace the refrigerant sensor.
Engine speed	PR055: Engine speed. Cold: 900 RPM Warm: 805 rpm.	Shows the engine's speed of rotation in RPM	In the event of a fault, apply the fault finding procedure for DF005 "Engine speed sensor circuit".
Fast idle speed request	ET023: Fast idle speed request. ABSENT	The UCH requests fast idle speed from the injection. - ABSENT: The UCH did not make a request. - PRESENT: The UCH made a request.	If ET023 is inconsistent, test the multiplex network using the diagnostic tool. If the test is correct, consult the fault finding procedure for the UCH.
Coolant temperature	PR064: Coolant temperature. Warm: 90 °C	Indicates the coolant temperature in °C. Default value: 80 °C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.
Vehicle speed	PR089: Vehicle speed.	Indicates the vehicle speed in mph. This parameter is transmitted by the ABS computer or by the vehicle speed ECU. This signal is transmitted to the injection system on the multiplex network.	Test the multiplex network. Refer to fault finding for the ABS or the vehicle speed ECU.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

COLD LOOP SUB-FUNCTION (continued 2):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Power consumed by the air conditioning compressor	PR125: Power consumed by the air conditioning compressor. 0 WATT	Indicates the power consumed by the compressor.	NONE
Fan assembly speed request*	ET022: Low speed fan assembly request. INACTIVE.	The injection requests the UPC to start the fans. - INACTIVE: The request was not made by the injection because ET088 = INACTIVE and ET004 = NO. - ACTIVE: The request was made by the injection. ET088 = ACTIVE and ET004 = YES. (Correct refrigerant pressure and vehicle speed = 0 mph (0 km/h) or high coolant temperature).	NONE
	ET021: High speed fan assembly request. INACTIVE.	The injection requests the UPC to start the fans. - INACTIVE: The request was not made by the injection because ET088 = INACTIVE and ET004 = NO. - ACTIVE: The request was made by the injection. ET088 = ACTIVE and ET004 = YES. (Refrigerant pressure > 15 bar and vehicle speed = 0 mph or high engine coolant temperature).	

*When the air conditioning is requested with the engine idling and the vehicle speed = 0 mph (0 km/h), ET022 will always be ACTIVE and ET021 INACTIVE (unless refrigerant pressure > 15 bar, vehicle speed = 0 mph (0 km/h) and high coolant temperature). The fan assemblies are disabled under certain coolant temperature conditions when driving.

When the UPC stops receiving multiplex transmissions from the injection, the fan assemblies are constantly activated.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

HEATING SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Coolant temperature	PR064: Coolant temperature. Warm: 90 °C	Indicates the coolant temperature in °C. Default value: 80°C	
RCH* number set	ET111: RCH* number set. YES - NO	The RCHs* are actuated by the UCH. They are high current consumers. Consequently, their use is conditional on the available power all the time (alternator power). The injection checks the balance of available mechanical power according to the engine operating conditions (torque, power, etc.) to authorise, limit, or stop their use. (This information is sent via the CAN to the UCH). Note: When the RCHs* are actuated, the injection system must respond to a fast idle speed request from the UCH.	NONE
RCH cut-off	ET112: RCH* cut-off YES - NO		

*RCH = Passenger Compartment Heating Resistor

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

FUEL CIRCUIT SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Fuel temperature	PR063: Fuel temperature. Cold = PR064 Warm: 50°C	Gives the fuel temperature in °C. Default value: 30°C.	In the event of a fault, apply the fault finding procedure for fault DF098 "Fuel temperature sensor circuit".
Fuel flow	PR017: Fuel flow. 10 < Cold < 2 mg/st 4 < Warm < 6 mg/st	Shows the fuel injected in mg/st for each injector.	NONE
Rail pressure	PR038: Rail pressure. Cold: 260 bar. Warm: 230 bar	Indicates the pressure, in bar, of the diesel fuel in the injector rail. This pressure is supplied by the sensor on the rail. Default value: 2000 bar	In the event of a fault apply the fault finding procedure for fault DF007 "Rail pressure sensor circuit".
Rail pressure set point	PR008: Rail pressure setpoint. 375 bar (Engine starting pressure setpoint). Cold: 260 bar. Warm: 230 bar	Gives the theoretical pressure value for optimum engine operation.	NONE
Rail pressure sensor voltage	PR080: Rail pressure sensor voltage.	Shows the voltage supplied by the computer to the rail pressure sensor. 0.5 V (0 bar) < PR080 < 4.5 V (1600 bar)	NONE

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

FUEL CIRCUIT SUB-FUNCTION (continued):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Engine speed	PR055: Engine speed. Cold: 900 rpm. Warm: 805 rpm.	Indicates the engine's speed of rotation in rpm.	In the event of a fault, apply the fault finding procedure for DF005 "Engine speed sensor circuit".
New pump chamber filling	ET637: New pump chamber filling	COMPLETED	If NOT DONE, see Replacement of components.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

PRE-HEATING/IGNITION SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Coolant temperature	PR064: Coolant temperature. Warm: 90°C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.
External air temperature	PR061: External air temperature.	Gives the external air temperature in °C. This parameter is controlled by the UCH and transmitted to the injection via the multiplex network. Default value: 20°C	In the event of a fault, apply the fault finding procedure for this fault described in the UCH document.
Inlet air temperature (invalid for K9K 728)	PR059: Inlet air temperature. Cold = PR061 Warm: 30°C	Indicates the inlet air temperature in °C. This signal is provided by the air temperature/pressure sensor. Default value: 30°C .	In the event of a fault, refer to the interpretation of parameter PR059 Inlet air temperature.
Battery voltage	PR074: Battery voltage.	12 V < PR074 < 14 V	If there is a fault, apply the fault finding procedure for the "Charge circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B

NOTES

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

AIR CIRC. SUB-FUNCTION (TURBO/INLET):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Inlet air temperature (invalid for K9K 728)	PR059: Inlet air temperature. Cold = PR061 Warm: 30°C	Indicates the inlet air temperature in °C. This signal is provided by the air temperature/pressure sensor. Default value: 30°C.	In the event of a fault, refer to the interpretation of parameter PR059 Inlet air temperature.
Air circuit pressure.	PR035: Atmospheric pressure.	Indicates the atmospheric pressure in mbar. The sensor is built into the computer.	If not consistent, check that PR035 = PR032 = local atmospheric pressure, with the engine stopped and the ignition on.
	PR032: Inlet pressure.	Indicates the pressure in the inlet circuit in mbar.	
Air flow.	PR132: Air flow. 350 < Cold < 400 mg/st 300 < Cold < 350 mg/st	Air flow estimated by the injection computer.	NONE
Inlet temperature sensor voltage	PR081: Inlet temperature sensor voltage.	Indicates the voltage, in volts, delivered by the computer to supply the inlet temperature sensor.	NONE
Engine speed	PR055: Engine speed. Cold: 900 rpm. Warm: 805 rpm	Indicates the engine's speed of rotation in rpm.	In the event of a fault, apply the fault finding procedure for DF005 "Engine speed sensor circuit".

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

ENGINE COOLING SUB FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Coolant temperature	PR064: Coolant temperature. Warm: 90°C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

DRIVER PARAMETERS SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Accelerator pedal position	PR030: Accelerator pedal position. 0%.	Shows the pedal position between NO LOAD and FULL LOAD as a percentage. 0% < PR030 < 100%	In the event of a fault, apply the fault finding procedures for Pedal sensor circuit gang 1 and gang 2 (DF008 and DF009) and DF113 Sensor supply voltage.
Pedal potentiometer gang voltages	PR086: Pedal potentiometer gang 1 voltage. 16%	Shows the percentage of feed voltage on gangs 1 and 2 of the pedal potentiometer.	In the event of a fault, apply the fault finding procedures for Pedal sensor circuit gang 1 and gang 2 (DF008 and DF009) and DF113 Sensor supply voltage.
	PR088: Pedal potentiometer gang 2 voltage. 7%	10% < PR086 < 20% 5% < PR088 < 15%	

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

EMISSION CONTROL/OBD SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
EGR valve control	ET008: EGR valve control. INACTIVE	Indicates the EGR valve control status. - INACTIVE : The valve is not controlled by the computer. - ACTIVE : The valve is controlled by the computer.	NONE
Atmospheric pressure	PR035: Atmospheric pressure.	Indicates the atmospheric pressure in mbar. The sensor is built into the computer.	If not consistent, check that PR035 = PR032 = local atmospheric pressure, with the engine stopped and the ignition on.
Air flow	PR132: Air flow. 350 < Cold < 400 mg/st 300 < Cold < 350 mg/st	Air flow estimated by the injection computer.	NONE
Fuel flow	PR017: Fuel flow. 10 < Cold < 12 mg/st 4 < Warm < 6 mg/st.	Gives the fuel flow at the high pressure pump outlet in mg/st.	NONE
EGR valve opening setpoint	PR005: EGR valve opening setpoint. Warm: 20%	Gives a theoretical EGR valve opening value for optimum engine operation. PR005 = PR051	NONE
EGR valve position feedback	PR051: EGR valve position feedback. Warm approximately 20 %	Shows the true EGR valve position. Default value: 30%	NONE

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

SUB-FUNCTION: ANTIPOLLUTION/OBD (cont.):

Function	Parameter or Status Check or action	Display and notes	Fault finding
EGR valve position sensor voltage	PR077: EGR valve position sensor voltage.	Indicates the EGR valve voltage according to its position. - INACTIVE: The valve is not controlled by the computer. - ACTIVE: The valve is controlled by the computer. 0.5 V < PR077 < 4.8 V	NONE
Accelerator pedal position	PR030: Accelerator pedal position. 0%.	Shows the pedal position between NO LOAD and FULL LOAD as a percentage. 0 < PR030 < 100%	In the event of a fault, apply the fault finding procedures for Pedal sensor circuit gang 1 and gang 2 (DF008 and DF009) and DF113 Sensor supply voltage.
Coolant temperature	PR064: Coolant temperature. Warm: 90 °C	Indicates the coolant temperature in °C. Default value: 80°C	In the event of a fault, consult the interpretation of parameter PR064 Coolant temperature.

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

CRUISE CONTROL / SPEED LIMITER SUB-FUNCTION:

Function	Parameter or Status Check or action	Display and notes	Fault finding
Cruise control/ speed limiter	ET042: Cruise control/ speed limiter	NOT DETECTED: Vehicle not equipped with the cruise control - speed limiter function buttons, OR after reprogramming the injection computer, the switch is in the rest position. INACTIVE: when no buttons are pressed SPEED LIMITER: Main switch in speed limiter position. CRUISE CONTROL: Main switch in cruise control position.	Consult the interpretation of status ET042 Cruise control - speed limiter .
	ET703: Cruise control/speed limiter buttons	INACTIVE: No cruise control - speed limiter buttons are pressed. These buttons are located on the steering wheel. PLUS: When the cruise control - speed limiter + button is pressed. This button is on the steering wheel, on the left-hand side. - MINUS: When the cruise control - speed limiter - button is pressed. This button is on the steering wheel, on the left-hand side. - SUSPEND: When the cruise control - speed limiter 0 button is pressed. This button is located on the steering wheel, to the right. - RESUME: When the cruise control - speed limiter R button is pressed. This button is located on the steering wheel, to the right.	Consult the interpretation of status ET703 Cruise control - speed limiter button .

DIESEL INJECTION

Fault finding – Conformity check

13B**NOTES**

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

CRUISE CONTROL - SPEED LIMITER SUB-FUNCTION (continued 1):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Brake contact	ET704: Brake switch No. 1	- INACTIVE - ACTIVE (brake pedal depressed)	Consult the interpretation of status ET704 Brake switch No. 1 .
	ET705: Brake switch No. 2	- ACTIVE (brake pedal released) - INACTIVE	Consult the interpretation of status ET705 Brake switch No. 2 .
Clutch pedal switch	ET405: Clutch pedal switch	- ACTIVE - INACTIVE	In the event of a fault, consult the interpretation of status ET405 Clutch switch .
Cruise control setpoint	PR130: Cruise control setpoint	Indicates the reference value requested by the driver (in mph (km/h))	NONE
Vehicle speed	PR089: Vehicle speed	0 mph (km/h) Gives the vehicle speed in mph (km/h) . This parameter is transmitted by the ABS computer or vehicle speed ECU*. This signal is transmitted to the injection on the multiplex network.	Test the multiplex network. See fault finding for the ABS system or the vehicle speed ECU*.

NOTES

Only check conformity after a **full check** with the **diagnostic tool**.
The values shown in this conformity check are given as examples.
Application conditions: Engine **off**, ignition **on**.

CRUISE CONTROL - SPEED LIMITER SUB-FUNCTION (continued 2):

Function	Parameter or Status Check or action	Display and notes	Fault finding
Cruise control - speed limiter deactivation	ET415: Cruise control/speed limiter deactivation	NONE: This status is present on the diagnostic tool when: The computer has been reinitialised, The computer has been reprogrammed. - STATUS 1: Traction control request - STATUS 2: Brake pedal depressed. - STATUS 3: Clutch pedal depressed. - STATUS 4: Suspend button pressed - STATUS 5: Cruise control or speed limiter monitoring. - STATUS 6: Gear lever in neutral (manual gearbox) or neutral position (automatic transmission). - STATUS 7: Inconsistency between the request and the vehicle speed. - STATUS 8: Automatic transmission in defect mode. - STATUS 9: Vehicle speed monitoring. - STATUS 10: Monitoring by the injection computer.	In the event of a fault, consult the interpretation of status ET415 "Cruise control/speed limiter deactivation".

*ECU: Electronic control unit

Fault finding – Status summary table

TOOL STATE	DIAGNOSTIC TOOL DESCRIPTION
ET001	+ After ignition computer feed
ET003	Engine immobiliser
ET004	Air conditioning authorised.
ET006	Code programmed
ET008	EGR solenoid valve control
ET021	High speed fan assembly request
ET022	Low speed fan assembly request
ET023	Fast idle speed request
ET038	Engine
ET042	Cruise control/speed limiter
ET076	Starting
ET079	Air conditioning present
ET088	Compressor actuation request
ET405	Clutch pedal switch
ET415	Deactivation of cruise control/speed limiter
ET563	Flow capacity function.
ET111	RCH* number set
ET112	RCH* cut-off
ET703	Cruise control/speed limiter button
ET704	Brakecontact No 1
ET705	Brakecontact No 2

* RCH = passenger compartment heating resistor:

ET042

CRUISE CONTROL/SPEED LIMITER

NOTES

None.

NOT DETECTED

If the vehicle is not fitted with cruise control - speed limiter function buttons, status **ET042** is permanently **NOT DETECTED**. This confirms that the cruise control/speed limiter function is not present on the vehicle.

If the vehicle is fitted with cruise control or speed limiter function buttons and the main switch is in the rest (or neutral) position and after the injection computer has been programmed or reprogrammed, then status **ET042** is **NOT DETECTED**.

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.

Return to rest position

The tool displays status **ET042: INACTIVE**.

If not, several steps must be checked:

1. Return to the page on testing the multiplex network with the CLIP program. Repeat the multiplex network test. Re-establish dialogue with the injection computer. Check **ET042**. If ET042 is **INACTIVE**, the injection computer has detected the various positions of the main switch. The cruise control/speed limiter is active.
2. If **ET042** is still **NOT DETECTED**, check that the owner of the vehicle has not had the cruise control - speed limiter function deactivated in the past. Contact Techline.

AFTER REPAIR

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

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 switch being in the rest (or neutral) 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 1546**.

Disconnect the main switch and with it in the rest position, check the insulation between:

- Connection code **AP43 and 3FX of component 1546**.
- Connection code **AP43 and 3PD of component 1546**.

Check the continuity between **connections AP43 and 3PD of component 1546** in the speed limiter position.

- Check the continuity between **connections AP43 and 3FX of component 1546** in the cruise control position.

If these checks are not in order, replace the switch.

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

- Connection code **3FX**,
 - Connection code **3PD**,
- between components 1546 and 120.**

Also check the engine management computer connectors.

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

AFTER REPAIR

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 1546**.

Disconnect the main switch and with it in the rest position, check the insulation between:

- Connection codes **AP43 and 3FX of component 1546**.
- Connection codes **AP43 and 3PD of component 1546**.

Check the continuity between **connections AP43 and 3PD of component 1546** in the speed limiter position.

Check the continuity between **connections AP43 and 3FX of component 1546** in the cruise control position.

If these checks show incorrect values, replace the main switch.

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

- Connection code **3FX**,
 - Connection code **3PD**,
- between components 1546 and 120.**

Also check the engine management computer connectors.

If there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace the wiring.

AFTER REPAIR

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

ET042
CONTINUED 3CRUISE
CONTROL

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 1546**.

Disconnect the main switch, and when it is in the rest position, check the insulation between:

- Connection codes **AP43 and 3FX of component 1546**.
- Connection codes **AP43 and 3PD of component 1546**.

– Check the continuity between **connections AP43 and 3PD of component 1546** in the speed limiter position.

– Check the continuity between **connections AP43 and 3FX of component 1546** in the cruise control position.

If these checks show incorrect values, replace the main switch.

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

- Connection code **3FX**,
- Connection code **3PD**,

Between components **1546 and 120**.

Also check the engine management computer connectors.

If there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace the wiring.

AFTER REPAIR

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

ET405

CLUTCH PEDAL SWITCH

NOTES

Special note:

Only apply the checks if the **INACTIVE** and **ACTIVE** statuses are not consistent with the pedal position.

STATUS INACTIVE with clutch pedal depressed.

- Check the condition and fitting of the **clutch switch**.
- Check and ensure the **continuity** on the connection between **track 1** of the **clutch switch connector** and **track C4** of the **black 32-track** connector **A** of the **injection computer**.

Check and ensure that **earth** is on **track 2** of the clutch switch **connector**.

Repair if necessary.

- Remove the **clutch switch** and test its operation:

	Continuity between tracks	insulation between tracks
Switch engaged (Clutch pedal released)	1 and 2	-
Switch released (Clutch pedal depressed)	-	1 and 2

- Replace the switch if necessary.

AFTER REPAIR

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

**ET405
CONTINUED****STATUS ACTIVE** with clutch pedal released.

- Check the condition and fitting of the **clutch switch**.
- Remove the **clutch switch** and test its operation:

	Continuity between tracks	insulation between tracks
Switch engaged (Clutch pedal released)	1 and 2	-
Switch released (Clutch pedal depressed)	-	1 and 2

- Replace the switch if necessary.
- Check and ensure the insulation against **earth** of the connection between track 1 of the **clutch switch** connector and **track C4** of the black 32-track connector **A** of the injection computer.

AFTER REPAIRCarry out a road test followed by another check with the **diagnostic tool**.

ET415

CRUISE CONTROL/SPEED LIMITER DEACTIVATION

NOTES

None.

Note:

Cruise control can be activated when the vehicle speed exceeds **18 mph (30 km/h)**.Status **ET415** shows various reasons for 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 **NONE**.

NONE

This status is present on the diagnostic tool if:
the computer has been reinitialised,
the computer has been reprogrammed.

STATUS 1

Traction control request

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 **ET415** becomes **STATUS 1** when driving with the cruise control active (**ET042 Cruise control/Speed limiter: CRUISE CONTROL**) and traction control is requested.

This deactivates cruise control.

Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.

If status **ET415** becomes **STATUS 1** without traction control requested (see **38C, ABS**).

AFTER REPAIRCarry out a road test followed by another check with the **diagnostic tool**.

ET415 CONTINUED 1	
STATUS 2	<p>Brake pedal depressed</p> <p>The cruise control function is deactivated when the brake pedal is depressed.</p> <p>Status ET415 becomes STATUS 2 when driving with cruise control active (ET042 Cruise control - speed limiter: CRUISE CONTROL) and the brake pedal is depressed.</p> <p>This deactivates cruise control.</p> <p>Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.</p> <p>If status ET415 becomes STATUS 2 without pressing the brake pedal, consult the interpretation of statuses ET704 and ET705 Brake contact No. 1 and No. 2.</p>
STATUS 3	<p>Clutch pedal depressed</p> <p>Manual gearbox ONLY</p> <p>The cruise control function is deactivated when the gearbox is not coupled to the engine (clutch pedal depressed).</p> <p>Status ET415 becomes STATUS 3 when driving with the cruise control active (ET042 Cruise control - speed limiter: CRUISE CONTROL) and the clutch pedal is depressed.</p> <p>This deactivates cruise control.</p> <p>Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.</p> <p>If status ET415 becomes STATUS 3 without the clutch pedal being depressed, consult the interpretation of status ET405 Clutch pedal.</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 88B, MULTIPLEXING).</p>
AFTER REPAIR	Carry out a road test followed by another check with the diagnostic tool .

ET415 CONTINUED 2	
STATUS 4	<p>Cancel button pressed</p> <p>The cruise control/speed limiter function is deactivated each time the suspend button is pressed. Status ET415 becomes STATUS 4, when driving when:</p> <ul style="list-style-type: none">– Either the cruise control is active, or– the speed limiter is active,– and the driver presses the 0 button. <p>This action deactivates the Cruise control/Speed limiter.</p> <p>Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.</p> <p>If status ET415 becomes STATUS 4 without pressing the 0 button, consult the interpretation of status ET703 Cruise control - speed limiter buttons and run fault finding on the R/0 control button located on the right-hand side of the steering wheel.</p>
AFTER REPAIR	Carry out a road test followed by another check with the diagnostic tool .

ET415 CONTINUED 3	
STATUS 5	<p data-bbox="456 465 984 495">Cruise control or speed limiter monitoring</p> <p data-bbox="456 544 1365 636">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 data-bbox="456 669 1107 698">If status ET415 is STATUS 5, consult the interpretation:</p> <ul data-bbox="456 705 1150 831" style="list-style-type: none">– of status ET042 Cruise control/Speed limiter,– of status ET703 Cruise control - speed limiter buttons,– of status ET704 Brake switch no. 1,– and status ET705 Brake switch no. 2, <p data-bbox="456 835 1389 889">to test the cruise control/speed limiter system components and locate the faulty component.</p> <p data-bbox="456 896 1415 987">Also, check the operation of the accelerator pedal, and use the diagnostic tool to check the presence of a fault connected with this component. Deal with them if necessary.</p> <p data-bbox="456 1023 1373 1081">Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.</p> <p data-bbox="456 1120 1428 1176">If status ET415 becomes STATUS 5, deal with the present faults or those stored in the injection computer.</p> <p data-bbox="456 1182 997 1211">If the fault is still present, contact the Techline.</p>
AFTER REPAIR	Carry out a road test followed by another check with the diagnostic tool .

ET415 CONTINUED 4	
STATUS 6	<p>Gear lever in neutral (manual gearbox) or the neutral position (automatic gearbox)</p> <p>Status ET415 becomes STATUS 6 when driving with cruise control active (ET042 Cruise control - speed limiter: CRUISE CONTROL) and:</p> <ul style="list-style-type: none">– if the driver puts the gear lever in neutral position on a manual gearbox without declutching or,– if the gear lever is put in neutral on an automatic transmission. <p>This deactivates cruise control.</p> <p>Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.</p> <p>If status ET415 becomes STATUS 6 without shifting the gear lever into neutral on a manual gearbox without declutching, or into the neutral position 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>
STATUS 7	<p>Inconsistency between the request and the vehicle speed</p> <p>Status ET415 becomes STATUS 7 if the computer detects too great a difference between the speed requested by the driver and the vehicle speed.</p> <p>This could occur when driving with cruise control active (ET042 Cruise control/ speed limiter: CRUISE CONTROL) and when there is a significant difference in speed.</p> <p>This inconsistency deactivates cruise control.</p> <p>Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.</p> <p>If status ET415 becomes STATUS 7 on relatively flat terrain, contact the Techline.</p>
AFTER REPAIR	Carry out a road test followed by another check with the diagnostic tool .

ET415 CONTINUED 5	
STATUS 8	<p>Automatic transmission in defect mode.</p> <p>NOT AVAILABLE ON THIS SOFTWARE</p>
STATUS 9	<p>Vehicle speed monitoring</p> <p>Status ET415 becomes STATUS 9 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 ABS computer. Deal with the present or stored faults (see 38C, ABS).</p> <p>Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.</p> <p>If the specification STATUS 9 is still present, contact Techline.</p>
STATUS 10	<p>Monitoring by injection computer</p> <p>Status ET415 becomes STATUS 10 when driving with cruise control active (ET042 Cruise control - speed limiter: CRUISE CONTROL) 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> <p>This signal is conveyed on the multiplex line and deactivates the cruise control. Carry out a multiplex network test, then Perform fault finding on the injection computer.</p> <p>Deal with any present or stored faults (see 13B, Diesel injection).</p> <p>Reinitialise status ET415 on the injection computer by running command RZ001 Fault memory.</p> <p>If STATUS 10 is still present, contact the Techline.</p>
AFTER REPAIR	Carry out a road test followed by another check with the diagnostic tool .

ET703

CRUISE CONTROL/SPEED LIMITER BUTTONS

NOTES**Special notes:**

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

INACTIVE

Status **ET703** becomes **INACTIVE** when none of the cruise control - speed limiter buttons are pressed. These buttons are located on the steering wheel.

**To remove the driver's airbag to perform the checks in complete safety.
(see 88C, Airbag and pretensioners)**

If status **ET703** does not display **INACTIVE**,

- check the condition of the cruise control/speed limiter **+/-** button and the condition of its connector.
- check the condition of the cruise control/speed limiter **R/0** button and the condition of its connector.

Repair if necessary.

AFTER REPAIR

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

ET703 CONTINUED 1	
INCREASE	<p>Status ET703 becomes PLUS when the cruise control / speed limiter + button is pressed. This button is on the steering wheel, on the left-hand side.</p> <p>To remove the driver's airbag to perform the checks in complete safety. (see 88C, Airbag and pretensioners)</p> <p>If status ET703 does not display INCREASE, check the condition of the cruise control - speed limiter +/- button and the condition of its connector. Repair if necessary.</p> <p>Measure the resistance on the following connections while pressing the + button (on the button tracks):</p> <ul style="list-style-type: none">• Connection code 86G of component 331.• Connection code 86M of component 331. <p>If the resistance is not approximately 300 Ω check the continuity of the connection when the button is not pressed. If there is continuity, replace the +/- control button. (see MR 364 (Mégane II), MR 370 (Scénic II), Mechanical, 83D, Cruise control, Steering wheel switch: Removal - Refitting).</p>
DECREASE	<p>Status ET703 becomes DECREASE when the - button of the cruise control/speed limiter is pressed. This button is on the steering wheel, on the left-hand side.</p> <p>To remove the driver's airbag to perform the checks in complete safety. (see 88C, Airbag and pretensioners)</p> <p>If status ET703 does not change to MINUS, check the condition of the cruise control / speed limiter +/- button, and the condition of its connector. Repair if necessary.</p> <p>If there is a repair method (see Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair), repair the wiring, otherwise replace it.</p> <p>Measure the resistance of the following connections while pressing the "-" button (on the button tracks):</p> <ul style="list-style-type: none">• Connection code 86G of component 331.• Connection code 86M of component 331. <p>If the resistance is not approximately 100 Ω check the continuity of the connection when the button is not pressed. If there is continuity, replace the +/- control button. (see MR 364 (Mégane II), MR 370 (Scénic II), Mechanical, 83D, Cruise control, Steering wheel switch: Removal - Refitting).</p>
AFTER REPAIR	Carry out a road test followed by another check with the diagnostic tool .

ET703
CONTINUED 2

SUSPEND

Status **ET703** becomes **SUSPEND** when the cruise control / speed limiter **0** button is pressed. This button is located on the steering wheel, to the right.

**To remove the driver's airbag to perform the checks in complete safety.
(see 88C, Airbag and pretensioners)**

If status **ET703** does not become **SUSPEND**, check the condition of the cruise control - speed limiter **R/0** button and the condition of its connector.

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

Measure **the resistance of the following connection whilst pressing the 0 button (on the button tracks)**:

- Connection code **86G** of component **331**.
- Connection code **86M** of component **331**.

If the resistance is not approximately **0 Ω**, replace the **R/0** control button.

If there is continuity, replace the **R/0** control button (see **MR 364 (Mégane II)**, **MR 370 (Scénic II)**, **Mechanical, 83D, Cruise control, Steering wheel switch: Removal - Refitting**).

AFTER REPAIR

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

ET703
CONTINUED 3

RESUME

Status **ET703** becomes **RESUME** when the **R** button of the cruise control/speed limiter is pressed. This button is located on the steering wheel, to the right.

**To remove the driver's airbag to perform the checks in complete safety.
(see 88C, Airbag and pretensioners)**

If status **ET703** does not change to **RESUME**, check the condition of the cruise control / speed limiter **R/0** button, and the condition of its connector. Repair if necessary.

If there is a repair procedure (see **Technical Note 6015A, Electrical wiring repair, Wiring: Precautions for repair**), repair the wiring, otherwise replace the wiring. Measure **the resistance on the following connection while pressing the R button (on the button tracks)**:

- Connection code **86G** of component **331**.
- Connection code **86M** of component **331**.

If the resistance is not approximately **900 Ω**, check the continuity of the connection when the button is not pressed. If there is continuity, replace the **R/0** control button (see **MR 364 (Mégane II)**, **MR 370 (Scénic II)**, **Mechanical, 83D, Cruise control, Steering wheel switch: Removal - Refitting**).

AFTER REPAIR

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

ET704 ET705	BRAKE SWITCH NO. 1 BRAKE SWITCH NO. 2
----------------	--

NOTES	None.
-------	-------

Note:

Statuses **ET704** and **ET705** should change status at the same time. In the event of inconsistency, refer to the interpretation of fault **DF050 Brake switch circuit**.

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

ET704 ET705 CONTINUED	
-----------------------------	--

ACTIVE
OR
INACTIVE

If the brake lights are working:
check the continuity and the absence of interference resistance on the following connection:

- connection code **5A between components 160 and 120, 645, 119.**

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

If the brake lights are not operational, check:

- the condition and fitting of the brake switch,
- the condition and conformity of the brake light fuse,
- the conformity of the values in the following table:

disconnect the switch and carry out the following checks:

for MEGANE II and SCENIC II with ESP

	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 MEGANE II and SCENIC II without ESP

	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

Replace the switch if the values obtained are not correct.

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

Fault finding – Parameter summary table

Tool parameter	DIAGNOSTIC TOOL DESCRIPTION
PR005	EGR valve opening setpoint
PR008	Rail pressure set point
PR009	Turbocharging pressure setpoint
PR010	Idle speed regulation setpoint
PR017	Fuel flow
PR073	Air flowmeter supply voltage
PR028	Pedal position (gang 1)
PR029	Pedal position (gang 2)
PR030	Accelerator pedal position
PR032	Inlet pressure
PR035	Atmospheric pressure
PR037	Refrigerant pressure
PR038	Rail pressure
PR051	EGR valve position feedback
PR055	Engine speed
PR059	Inlet air temperature (invalid in K9K 728)
PR061	External air temperature
PR063	Fuel temperature
PR064	Coolant temperature
PR074	Battery voltage
PR077	EGR valve position sensor voltage
PR080	Rail pressure sensor voltage
PR081	Inlet temperature sensor voltage
PR088	Pedal potentiometer gang 2 voltage
PR089	Vehicle speed
PR125	Power absorbed by air conditioning compressor
PR127	Heat.* resistor maximum authorised power
PR130	Cruise control setpoint
PR132	Air flow

* Heat.: Heating

PR059

INLET AIR TEMPERATURE

NOTES

Special notes:

This parameter is invalid and set at **-50°C** for **K9K 728** engines.

Check the condition of the air temperature - pressure sensor connections.

If necessary replace the sensor.

Measure the **resistance** between **tracks 1 and 2** of the air temperature - pressure sensor.

Theoretical values:**8950 to 9901 Ω at -10°C****7054 to 7784 Ω at -5°C****5605 to 6169 Ω at 0°C****3618 to 3964 Ω at 10°C****2400 to 2620 Ω at 20°C****1645 to 1787 Ω at 30°C**

Replace the air temperature - pressure sensor if it is not in order.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

PR064

COOLANT TEMPERATURE

NOTES

None.

Check the condition of the coolant temperature sensor connections.

If necessary replace the sensor.

Measure the **resistance** between tracks **2** and **3** of the **coolant temperature sensor**.

Theoretical values:

12.46 k Ω \pm 1128 Ω at -10°C.

2252 Ω \pm 112.6 Ω at 25°C.

811.4 Ω \pm 38.4 Ω at 50°C.

282.6 Ω \pm 7.83 Ω at 80°C.

Replace the coolant temperature sensor if it is not correct.

AFTER REPAIR

Deal with any faults declared by the diagnostic tool. Clear the computer fault memory.
Carry out a road test followed by another check with the **diagnostic tool**.

CLEARING

RZ001: fault memory.

This command is used to clear stored faults from the computer's memory.

RZ002: EGR adaptives.

Run this command only when replacing the EGR valve.

RZ004: Pressure regulation parameters.

Run this command when replacing all 4 injectors at once. It enables you to reset the injector adaptive programs.

RZ005: Programming.

This command lets you reinitialise the entire computer configuration according to the vehicle.

COMMANDS

LPG - FUEL CIRCUIT tab

AC010: High-pressure pump.

This command lets you listen for the operation of the high pressure pump.

AC005 to AC008: Injectors of cylinders 1 to 4.

These commands let you listen for the injector on the selected cylinder.

AC028: Static test.

This command activates fault finding for the EGR and high pressure pump circuits.

AC029: High-pressure circuit seal check.

This command lets you check the high pressure circuit sealing after a procedure has been carried out.

AC212: New pump chamber filling.

Use this command only after replacing the high pressure pump (see High pressure pump replacement in Replacement of components). This command is used to activate the pump repriming sequence.

IGNITION - PREHEATING tab

AC001: Preheating unit.

This command actuates the preheating unit to test the heater plug supply.

EMISSION CONTROL - OBD tab

AC002: EGR solenoid valve.

This command lets you listen to the mechanical operation of the EGR valve.

AC028: Static test.

This command activates fault finding for the EGR and high pressure pump circuits.

TURBO - INLET AIR CIRCUIT tab

AC004: Turbocharging solenoid valve.

This command lets you listen for the operation of the turbocharging solenoid valve.

NOTES	Only consult these tests when dealing with a fault finding chart (ALP) or when interpreting faults.
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Low pressure circuit check	→	TEST 1
Electrical circuit check	→	TEST 2
Injector check	→	TEST 3
Inlet circuit check	→	TEST 5
High pressure system check	→	TEST 6
High pressure circuit sealing check	→	TEST 7
Injector return flow	→	TEST 8
Diesel filter check	→	TEST 9
Turbocharger solenoid valve check	→	TEST 10
Air line at the turbocharger	→	TEST 11
Turbocharger	→	TEST 12
Diesel fuel conformity check	→	TEST 13

TEST 1

Low pressure circuit check

Check the conformity of the low pressure circuit connections.

Are the low pressure circuit connections correct?

NO

Carry out the necessary repairs.

YES

Check the condition of the priming bulb, and that it is working properly.

Look for leaks at the unions.

Are there leaks from the hoses and unions?

YES

Carry out the necessary repairs.

NO

Check that there are no air bubbles in the diesel fuel.

Are air bubbles present in the low pressure circuit?

YES

Bleed the low-pressure circuit.
Place a container under the filter.
Disconnect the return hose from the filter and plug the filter.
Pump using the priming bulb until there is no air left.
Reconnect the return hose immediately.

NO

Low pressure circuit correct.

TEST 2

Electrical circuit check

Check the battery charge and that the alternator is operating correctly (see **87G, Engine compartment connection unit** for Mégane II or Scénic II).

Is the charging circuit in good order?

NO →

Carry out the necessary repairs

YES
↓

Check the fuses.

Are the fuses correct?

NO →

Carry out the necessary repairs

YES
↓

Check that the injection locking relay is operating correctly.

Is the injection locking relay working properly?

NO →

Carry out the necessary repairs

YES
↓

Check the engine earths.

Are the engine earths correct?

NO →

Carry out the necessary repairs

YES
↓

The electrical circuit is in good order.

TEST 3

Injector check

Is diesel fuel present around the injectors?

YES →

Locate the source of the leak and carry out the necessary repairs.

NO
↓

Control the injectors with the commands
AC005 Cylinder 1 injector,
AC006: Cylinder 2 injector,
AC007: Cylinder 3 injector,
AC008: Cylinder 4 injector.

Can you hear the valve moving when you are 1 metre away from the vehicle?

NO →

Check **the insulation** and **the continuity** of the electrical circuit.
Run **test 9 Diesel filter check**.
If **test 9** is correct, replace the faulty injectors (**MR 364 (Mégane II) or MR 370 (Scénic II), Mechanical, 13B, Diesel injection, Diesel injector: Removal - Refitting**).

YES
↓End of **TEST 3**.

TEST 5

Inlet circuit check

Check for air leaking in or out.

Is air leaking in or out?

YES →

Carry out the necessary repairs.

NO
↓

Check the condition of the air filter.

Is the air filter in order?

NO →

Replace the air filter (see **MR 364 (Mégane II)** or **MR 370 (Scénic II), Mechanical, 12A, Fuel mixture, Air filter, Removal - Refitting**).YES
↓

Check that the inlet manifold is not obstructed (clogged).

Is the inlet manifold blocked?

YES →

Clean the inlet manifold.

NO
↓

Air system in good order.

TEST 6

High pressure system check

NOTES

Special note:

Certain faults make it impossible to carry out this test - deal with these first.

IMPORTANT: It is pointless and dangerous to engage the starter motor for more than 5 seconds.**Preliminary checks:**

- Check for the presence of fuel
- Check that there is no air in the low pressure circuit. Run **TEST 1 Low pressure circuit check**.
- Ensure that the correct fuel is being used. Run **TEST 13 Diesel fuel conformity check**.

The capacity of the high pressure supply pump can be checked by carrying out the following procedure:

- **With the ignition off, disconnect** the low pressure actuator from the pump (**brown IMV connector**) and connect a **test IMV** or the adapter of **MOT. 1711**.
- Electrically disconnect the four injectors.
- Switch on the ignition, connect the diagnostic tool and re-establish dialogue with the injection system.
- Go to the **Main computer statuses and parameters** screen.
- Run the test cold, **PR064 Coolant temperature < 30°C** or equal to the ambient temperature.
- Engage **the starter for 5 seconds**.
- Read the rail pressure maximum value (**PR038**) during the test on the diagnostic tool.

Is the rail pressure greater than 1050 bar?

NO

**A**

YES

**B**

IMV = fuel flow actuator

TEST 6
CONTINUED

A

NO

- Switch off the ignition, reconnect the electrical connections to the four injectors and the low-pressure actuator.
- Switch on the ignition again, and clear the injection faults using the **diagnostic tool**.
- Check that there is no fuel leak in the high pressure circuit. Run **TEST 7 High pressure circuit sealing check**.
- Check the conformity of the diesel filter. Run **TEST 9 Diesel filter check**.
- Carry out fault finding on the injectors by checking the return flow volume of the four injectors, run **TEST 8 Injector return flow**.
- Is **TEST 8** correct?

NO

Replace the faulty injectors (see **MR 364 (Mégane II) or MR 370 (Scénic II), Mechanical, 13B, Diesel injection, Diesel injector: Removal - Refitting**).

YES

Replace the high pressure pump (see **MR 364 (Mégane II) or MR 370 (Scénic II), Mechanical, 13B, Diesel injection, High pressure pump: Removal - Refitting**).

B

YES

The pump can supply the operating pressure. Switch off the ignition, reconnect the electrical connections to the four injectors and the low pressure actuator. Switch on the ignition again, and clear the injection faults using the **diagnostic tool**. Check that there is no fuel leak in the high pressure circuit. Run **TEST 7 High pressure circuit sealing check**. Carry out fault finding on the injectors by checking the return flow volume of the four injectors, run **TEST 8 Injector return flow**. If **TEST 8** is correct, the high pressure fuel circuit is correct.

TEST 7	High pressure circuit sealing check
NOTES	Special note: Certain faults make it impossible to carry out this test - deal with these first.

Command **AC029 High-pressure circuit sealing check** is used to locate a leak in the high pressure circuit if a union is incorrectly fitted or bolted. This command cannot determine if a union is not torque tightened.

This command can be used only if the engine temperature is **greater than 60°C**.

Watch out for any objects (tool or others) on the sides of the engine housing during the 4 accelerations (possible vibrations).

Run command **AC029**. The engine will automatically perform a cycle of **four accelerations** to increase the pressure in the rail. Check for leaks on the high pressure circuit.

TEST 8

Injector return flow

NOTES

Special note:

Certain faults make it impossible to carry out this test - deal with these first.

Does the engine start?

NO →

A

YES
↓

Command AC029 also checks the return volume of each injector to detect an internal injector leak.

Be careful with any objects (tool or other) on the engine housing during the four cycles of the operation (possible vibrations).

Tooling required

– Mot. 1711 Injector flow measuring kit.

Or: Use four pipes with internal diameter 4 mm and approximately 50 cm in length, and four graduated measuring cylinders.

Procedure

- Ensure that the engine coolant temperature is **above 60°C**,
- **switch off the ignition**,
- disconnect the return pipes from the four injectors,
- cap the pump venturi tube to prevent the low-pressure circuit from depriming,
- connect the four transparent tubes in place of the return pipes,
- put the other ends of the four pipes into four graduated measuring cylinders.
- After finishing these preparations, start the engine and let it idle for **2 minutes**.

Note: This idle time must be respected for the test results to be interpreted correctly.

- **Run** command **AC029 High pressure circuit sealing check**. The engine will automatically carry out a cycle of four accelerations to increase the rail pressure and measure the internal injector leaks under these conditions.
- **Once the cycle is complete, run command AC029 again** to obtain a correct reading of the return volume of each injector.
- **Switch off the engine at the end of the cycle.**

TEST 8 CONTINUED 1

At the end of both cycles, the return volume of each injector should be **35-ml maximum**.

If the return volume of one of the injectors is greater than **35 ml**, replace the faulty injector (see **MR 364 (Mégane II)**, **MR 370 (Scénic II)**, **Mechanical, 13B, Diesel injection, Diesel injector: Removal - Refitting**).

Disconnect the 4 transparent pipes and reconnect the injector return circuit.

Carry out the following test to confirm the repair:

- **With the ignition off, disconnect** the low pressure actuator from the pump (**brown IMV connector**) and connect the test adapter (**test IMV, Mot. 1711**),
- electrically disconnect the 4 injectors,
- switch on the ignition, connect the diagnostic tool and re-establish dialogue with the injection system,
- go to the **Main computer statuses and parameters** screen,
- engage **the starter for 5 seconds**,
- read the rail pressure maximum value (**PR038**) on the diagnostic tool during the test.

If the rail pressure (PR038) is less than 1050 bar, run test 6 High pressure system check.

- **Switch off the ignition, and reconnect the four injectors electrically,**
- disconnect the test filling actuator (test IMV) and reconnect the low pressure actuator connector (IMV) to the pump.

Switch the ignition back on, and clear the injection faults using the diagnostic tool.

If the rail pressure (PR038 Rail pressure) is greater than 1050 bar, the repair is correct.

End of **TEST 8**.

TEST 8
CONTINUED 2

If the engine does not start, only the static leak can be measured, that is the leak with the injector closed, not being actuated and under high pressure.

Make sure that the ignition circuit is working correctly (minimum engine speed **200 rpm**).

Tooling required

– **Mot. 1711 Injector flow measuring kit.**

Or: Use four tubes of internal diameter **4 mm** and approximately **50 cm long** and a **test adapter (TEST IMV)**.

Procedure

- **Switch off the ignition,**
- disconnect the return pipes from the four injectors,
- cap the pump venturi tube to prevent the low-pressure circuit from depriming,
- connect the four transparent pipes in place of the return pipes (**Mot. 1711**),
- disconnect the low pressure actuator from the pump (**brown IMV connector**) and connect a **test IMV** or the adapter of **Mot. 1711**,
- **disconnect the four injectors electrically,**
- switch on the ignition and engage **the starter for 5 seconds**,
- measure the amount of diesel fuel in each pipe.

Replace the injectors that have a leak return greater than 10 cm.

Switch off the ignition, and reconnect the four injectors electrically.

Disconnect the test IMV and reconnect the low-pressure actuator connector to the pump. Disconnect the four transparent tubes and reconnect the injectors return circuit. Switch on the ignition again, and clear the injection faults using the diagnostic tool.

TEST 8 CONTINUED 3

Carry out the following test to confirm the repair:

- **With the ignition off, disconnect** the low pressure actuator from the pump (**brown IMV connector**) and connect the test adapter (**test IMV, Mot. 1711**),
- disconnect the four injectors electrically,
- switch on the ignition, connect the diagnostic tool and re-establish dialogue with the injection system,
- go to the **Main computer statuses and parameters** screen,
- engage **the starter for 5 seconds**,
- read the rail pressure maximum value (**PR038**) during the test on the diagnostic tool.

If the rail pressure (PR038) is less than 1050 bar, run test 6 High pressure system check.

- **Switch off the ignition, and reconnect the four injectors electrically**,
- disconnect the test IMV and reconnect the low-pressure actuator connector to the pump,
- switch on the ignition again, and clear the injection faults using the diagnostic tool.

If the rail pressure (PR038 Rail pressure) is greater than 1050 bar, the repair is correct.

End of **TEST 8**.

TEST 9

Diesel filter check

Check the conformity of the diesel filter.

Is the diesel filter in order?

NO →

Replace the filter with an original part
(see MR 364 (Mégane II) or MR 370 (Scénic II),
Mechanical, 13A, Fuel supply, Fuel filter:
Removal - Refitting).

YES
↓

- Switch off the ignition and analyse the diesel fuel in the diesel filter.
- Disconnect the diesel supply and return hoses from the filter.
- Block the filter inlets and outlets straight away with appropriate plugs.
- Remove the filter from its holder and shake it firmly while holding the caps in place. Tap the edge of the filter with a screwdriver handle to detach any contamination. Empty the contents of the filter into a glass container by lifting a protective plug, then loosening and completely removing the bleed screw.

Is there a deposit of black particles at the bottom of the container?

YES
↓

Pass a magnet beneath the container to collect
all the metal particles. Take the magnet away
from the container.

Do the particles collected using the magnet
cover a surface area greater than 1 cm²?

YES →

YES
↓

Replace the entire injection system.

NO
↓

Diesel filter in good order.

Diesel filter in good order.

TEST 10

Turbocharger control solenoid valve test

Check the vacuum at the pressure regulator inlet

Run the engine at idle speed.

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 of the end piece of the pressure regulator.

Connect a vacuum pressure gauge **to the end of the disconnected pipe** and put it in the **vacuum measurement** position.

Perform a quick acceleration by depressing the accelerator pedal completely and then releasing it immediately.

The total duration of pressing and holding in the full load position must not exceed **1 s**.

During this acceleration, the engine speed must reach a value between **3000 and 4000 rpm**.

Repeat the operation 3 times.

Read the maximum vacuum posted by the pressure gauge during the increase and decrease in the speed and after the return to idle speed.

Tolerance intervals for the vacuum are:

-1 bar < CORRECT vacuum value < -0.6 bar

- 0.6 bar < INCORRECT vacuum value < 0 bar

Is the vacuum at the turbocharging pressure regulator inlet displayed on the vacuum gauge within the tolerance interval?

NO



YES

The solenoid valve is in order.

TEST 10
CONTINUED 1

A

NO

Reconnect the vacuum pipe on the turbocharging pressure regulator.

Checking the vacuum at the solenoid valve outlet

Leave the engine running at idle speed.

Disconnect the vacuum pipe from the end piece of the solenoid valve outlet.
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.

Perform a quick acceleration by depressing the accelerator pedal completely and then releasing it immediately.
The total duration of pressing and holding in the full load position must not exceed **1 s**.
During this acceleration, the engine speed must reach a value between **3000 and 4000 rpm**.

Repeat the operation 3 times.

Read the maximum vacuum posted by the pressure gauge during the increase and decrease in the speed and after the return to idle speed.

Tolerance intervals for the vacuum are:

-1 bar < CORRECT vacuum value < -0.6 bar**- 0.6 bar < INCORRECT vacuum value < 0 bar****Is the vacuum displayed by the pressure gauge at the solenoid valve outlet within the tolerance interval?**

NO

Reconnect the vacuum pipe on
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 10
CONTINUED 2**

B

Visual inspection of the electrical connector of the solenoid valve

Switch off the engine.

Note:

The requested checks are only visual.

1. Check that the connector is correctly connected and locked.
2. Check the absence of damage to the electric wires where they leave the installation.
Disconnect the connector to continue the checks.
3. Check the absence of thermal damage to the unit and mechanical damage to the lock.
4. Check the absence of deformations of the contacts (clips and tabs).
5. Check the sealing of the connector.

Do the visual inspections show any damage?

NO

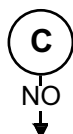
C

YES

Refer to **Technical Note 6015A, Electrical wiring repair.**

NO →

A

TEST 10
CONTINUED 3**Checking the vacuum at the solenoid valve inlet**

Run the engine at idle speed.

Disconnect the vacuum pipe from the end piece of the solenoid valve inlet.
This pipe connects the vacuum pump to the turbocharger solenoid valve.

Connect a vacuum gauge **to the end of the disconnected pipe** and set it to **vacuum measurement**.

Read the vacuum posted by the pressure gauge.

Tolerance intervals for the vacuum are:

-1 bar < CORRECT vacuum value < -0.85 bar

- 0.85 bar < INCORRECT vacuum value < 0 bar

Is the vacuum displayed by the pressure gauge at the solenoid valve inlet within the tolerance interval?

NO
↓

Carry out the following operations.

- Reconnect the vacuum pipe to the turbocharger solenoid valve.
- Check the conformity of the vacuum pipe connections.
- Visually check the condition of the vacuum pipes leaving the vacuum pump to the different supplied components.

Refer to the repair manual (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).

YES
↓

Replace the solenoid valve (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).

TEST 11

Air line at the turbocharger

Check that the air filter is present.
Check the replacement interval of the air filter on the maintenance booklet.
Compare the part nos. of the fitted air filter on the vehicle and of the air filter recommended by the manufacturer.
Check the direction of fitting of the air filter.

Is the air filter correctly fitted on the vehicle?

YES

NO

Check the condition of the air filter

Visually inspect the condition of the filtering section of the air filter.

Is the air filter or its seal damaged?

Is the air filter fouled (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:

Depending on the vehicle type, the best visual access will be either from above or from below.

Visually inspect the condition of the following components:

- fresh air inlet scoop on the front panel of the vehicle,
- air inlet pipe to the air filter,
- air pipe of the filter until the compressor inlet,
- mountings of the air flowmeter.

Is one of these components incorrect (pipes dislodged, torn, bent, pierced or kinked)?

YES →

Replace the defective parts (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).

NO



TEST 11
CONTINUED**High pressure circuit check**

Note:

Depending on the vehicle type, the best visual access will be either from above or from below.

Visually inspect the condition of the following components:

- the compressor outlet pipe to the turbocharging air cooler (some engines do not have a turbocharging air cooler),
- outlet pipe of the turbocharging air cooler to the inlet manifold,
- inlet manifold,
- pressure and temperature sensors.

Is one of these components incorrect (pipes dislodged, torn, bent, pierced or kinked)?

YES →

Replace the defective parts
(see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).

**Exhaust circuit check**

Visually inspect the condition of the following engine sections:

- from the exhaust manifold circuit to the turbocharger turbine,
- from the turbine outlet pipe to the end of the exhaust pipe,
- from the inlet manifold to the EGR valve,
- pressure and temperature sensors connected.

Do certain of these components have blackish or whitish traces?

YES →

Replace the defective parts
(see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).



Run **TEST 10 Turbocharger control solenoid valve check**.

TEST 12

Turbocharger

IMPORTANT

Perform these checks without removing the turbocharger and with the vehicle ignition switched off.

Checking the turbocharger shaft**WARNING**

- Observe the following safety precautions:
- wear high temperature protective gloves when the engine is hot,
- do not wear oversize or baggy clothing or hanging jewellery,
- watch for possible triggering of the motor-driven cooling fan unit and the operation of the accessories belt or belts.

Note:

The turbocharger shaft is the shaft that connects the compressor wheel and the turbine wheel. Depending on the vehicle type, the best visual access will be either from above or from below.

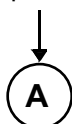
Disconnect the air pipe located between the turbocharger and the air filter.

Wearing gloves, check the operation of the turbocharger shaft by turning the vanes manually without forcing.

Does the shaft have a kickdown point in rotation?

Does the compressor wheel touch the casing of the turbocharger?

If for these 2 questions
the response 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 12
CONTINUED 1

A

If for these 2 questions
the response is **NO****Check the condition of the turbocharger vanes.**

Note:

This check is facilitated by using a mirror and a lamp.

Depending on the vehicle type, the best visual access will be either from above or from below.

Visually check that the compressor vanes are in good condition.

Are the vanes damaged or twisted?

NO

YES

Which type of turbocharger is it?

Variable geometry
turbochargerFixed geometry
turbocharger

B

C

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 12
CONTINUED 2

B

Checking the turbocharging pressure regulator to determine if it is a variable geometry turbocharger

Note:

The pressure regulator rod of a variable geometry turbocharger is orthogonal to the turbocharger shaft.

Variable geometry turbochargers are controlled by a solenoid valve.

Depending on the vehicle type, the best visual access will be either from above or from below.

Note:

If necessary and depending on 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 on the turbocharging pressure regulator of approximately **650 mbar**.

1. Check that the fitting is completely leaktight.
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 in 10 seconds**.
4. Release the pressure and check that the control rod comes back to its initial position without jerking.

Repeat the complete sequence 3 times.

Is the pressure regulator leaktight and is the rod movement correct?

YES

The turbocharger is correct.
End of procedure.

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**).

TEST 12
CONTINUED 3

C

Checking the turbocharging pressure regulator to determine if it is a fixed geometry turbocharger**Note:**

The pressure regulator rod of a fixed geometry turbocharger is aligned with the turbocharger shaft.

Fixed geometry turbochargers are controlled by a solenoid valve.

Depending on the vehicle type, the best visual access will be either from above or from below.

Note:

If necessary and depending on 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 on the turbocharging pressure regulator of approximately **650 mbar**.

1. Check that the fitting is completely leaktight.
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 in 10 seconds**.
4. Release the pressure and check that the control rod comes back to its initial position without jerking.

Repeat the complete sequence 3 times.

Is the pressure regulator leaktight and is the rod movement correct?

YES

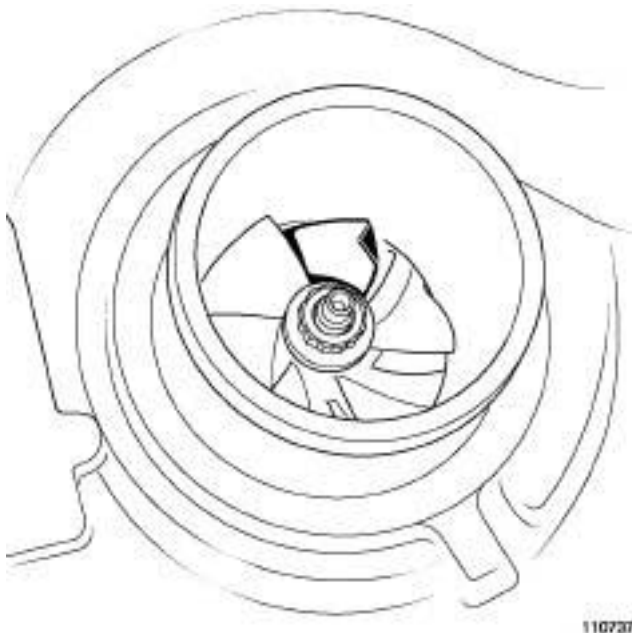
The turbocharger is correct.
End of procedure.

NO

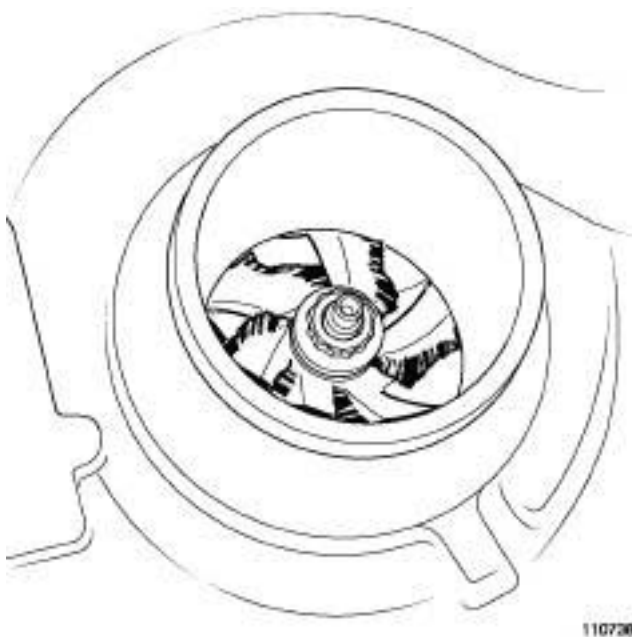
Replace the turbocharger (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging, Turbocharger: Removal - Refitting and Technical Note 3938A, Broken turbocharger: Replacement instructions**).

**TEST 12
CONTINUED 4**

Deformed, twisted blade ("soft" foreign body)



Broken blades ("hard" foreign body)



End of TEST 12

TEST 13

Diesel fuel conformity check

WARNING

- During this operation, it is essential to:
- refrain from smoking or bringing incandescent objects close to the work area,
- guard against petrol splashes caused by the 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)** and its cover (**part no. 77 11 171 416**) using an electronic scale similar to those used in body paint workshops (for 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.

Take a **1 l** fuel sample from the **diesel fuel 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 let it settle for approximately **2 minutes**.

Is the fuel cloudy or does it separate into two parts?

—YES—>

If so, 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



TEST 13
CONTINUED 1

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 minimum 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**).

TEST 13
CONTINUED 2

Note:

If the weight measured hits the upper and lower limits, 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.

DIESEL INJECTION

Fault finding – Customer complaints

13B**NOTES****Special note:**Only consult this customer complaint after a complete check with the **diagnostic tool**.

No dialogue with the computer

ALP1

Starting fault:

The engine will not start

ALP2

The engine starts with difficulty, or starts then stalls

ALP3

Starting difficult with warm engine

ALP4

Rough idle (pumping)

ALP5

Idling speed too high or too low

ALP6

Behaviour while driving:

Erratic acceleration/deceleration and engine racing

ALP7

Acceleration gap

ALP8

Engine cut-out (stalling)

ALP9

Engine bucking

ALP10

Loss of power

ALP11

Too much power

ALP12

Excessive consumption

ALP13

Overspeed when releasing accelerator or changing gear

ALP14

Engine dies on pulling away

ALP15

Noise, odours or smoke:

Engine rattling, noisy engine, turbocharger noise

ALP16

Blue, white or black smoke

ALP17

Oil leaks from the turbocharger

ALP18

ALP1

No dialogue with the computer

NOTES

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

To check that the **diagnostic tool** is not causing the fault, try to establish dialogue with a computer on another vehicle. If the **diagnostic tool** is not the cause and communication cannot be established with any other computer on the same vehicle, it is possible that another computer is disrupting the multiplex network. Check the battery voltage and make the necessary adjustments to obtain a correct voltage (**9.5 V < Battery voltage < 17.5 V**).

Carry out fault finding on the multiplex network using **the diagnostic tool** (see **88B, Multiplexing**).

Check the presence and the condition of the injection fuses on the UPC and on the engine fuse box.
Check the connection of the computer connectors and the condition of its connections.
Check the injection computer earths (quality, oxidation, earth bolts secure on the battery terminal).
Check that the supply to the computer is correct:

- **AP15** between components **1337** and **120**,
- **NH** between earth and component **120**,
- **3FB1** between components **1337** and **120**,
- **3FB2** between components **1337** and **120**.

Ensure that the supply to the diagnostic socket is correct:

- **BP32** between components **225** and **260**,
- **AP43** between components **225** and **1337**,
- **MN** between earth and component **225**.

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

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP2

The engine will not start

NOTES

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

Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the levels of engine oil and coolant.

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

Is the catalytic converter clogged or damaged?

YES →

Replace the catalytic converter (see MR 364 (Mégane II) or MR 370 (Scénic II), Mechanical, 19B, Exhaust, Catalytic converter: Removal - Refitting).

NO

Check the electrical circuit: run **TEST 2 Electrical circuit check**.Check the electrical conformity of the **heater plugs** (the resistance **value** of the heater plug must be **less than 2 Ω**).

Is the timing set correctly?

NO →

Carry out the necessary repairs.

YES

Visually check the condition of the engine wiring harness.

A

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP2
CONTINUED 1

A

Does the starter motor operate correctly
(minimum engine speed = **200 rpm**)?

NO →

Carry out the necessary repairs

YES
↓

Is the compression in order?

NO →

Carry out the necessary repairs

YES
↓

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Is **PR038 Rail pressure** less than 50 bar under
+ after ignition feed?

YES →

Apply the fault finding procedure for
DF007 Rail pressure sensor circuit.NO
↓Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.Check the injectors: run **TEST 3 Injector check**.Visually check that there are no leaks on the high pressure circuit: run **TEST 7 High pressure circuit sealing check**.

A

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

**ALP2
CONTINUED 2**

A

Check the high pressure system: run **TEST 6 High pressure system check**.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP3

The engine starts with difficulty, or starts then stalls

NOTES

Only consult this customer complaint after a complete check with the **diagnostic tool**.Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the levels of engine oil and coolant.

Check the air inlet circuit: run **test 5 Air inlet circuit check**.

Is the catalytic converter clogged or damaged?

YES

Replace the catalytic converter (see **MR 364 (Mégane II)** or **MR 370 (Scénic II)**, **Mechanical, 19B, Exhaust, Catalytic converter: Removal - Refitting**).

NO

Check the electrical conformity of the **heater plugs** (the resistance **value** of the heater plug must be **less than 2 Ω**).

Is the timing set correctly?

NO

Carry out the necessary repairs.

YES

Is the compression in order?

NO

Carry out the necessary repairs.

YES



AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP3
CONTINUED

A

YES

Visually check the condition of the engine wiring harness.

Check the electrical circuit: run **TEST 2 Electrical circuit check**.

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

Visually check that there are no leaks on the high pressure circuit: run **TEST 7 High pressure circuit sealing check**.

Check the high pressure system: run **TEST 6 High pressure system check**.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP4

Starting difficult with warm engine

NOTES

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

Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

Is the compression in order?

NO

Carry out the necessary repairs.

YES

Is the timing set correctly?

NO

Carry out the necessary repairs.

YES

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Visually check the condition of the engine wiring harness.

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

A

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP4
CONTINUED

A

Control the injectors using the commands:

- AC005 Cylinder 1 injector,
- AC006 Cylinder 2 injector,
- AC007 Cylinder 3 injector,
- AC008 Cylinder 4 injector.

Can you hear the valve moving when you are 1 metre from the vehicle?

NO

Run Test 9 Diesel filter check.

If **test 9** is correct, **replace only the faulty injectors** (see **MR 364 (Mégane II)** or **MR 370 (Scénic II)**, **Mechanical**, **13B**, **Diesel injection**, **Diesel injector: Removal - Refitting**).

YES

Check the high pressure system: run **TEST 6 High pressure system check**.

Check that the computer connectors are properly locked.

Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).

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

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP5

Rough idle (pumping)

NOTES

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

Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Visually check the condition of the engine wiring harness.

Visually check that there are no leaks on the high pressure circuit: run **TEST 7 High pressure circuit sealing check**.

Is the compression in order?

NO

Carry out the necessary repairs.

YES

Check the electrical conformity of the **heater plugs** (the resistance **value** of the heater plug must be **less than 2 Ω**).

Check the high pressure system: run **TEST 6 High pressure system check**.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP6

Idling speed too high or too low

NOTES

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

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Check the electrical circuit: run **TEST 2 Electrical circuit check**.

Is the clutch clearance set correctly?

NO

Carry out the necessary repairs

YES

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP7

Unexpected acceleration/deceleration and engine racing

NOTES

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

Check that the engine has not sucked up its oil (engine racing).

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Visually check the condition of the engine wiring harness.

Check the injectors: run **TEST 3 Injector check**.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP8

Acceleration gap

NOTES

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

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

Is the compression in order?

NO

Carry out the necessary repairs.

YES

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Check that the turbocharger is working properly.
Run TEST 11 Air line at the turbocharger.
Run TEST 10 Turbocharger solenoid valve check.
Run TEST 12 Turbocharger.
Is the turbocharger in order?

NO

Carry out the necessary repairs.

YES

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

Check the injectors: run **TEST 3 Injector check**.

A

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

**ALP8
CONTINUED**

A

Visually check that there are no leaks on the high pressure circuit: run **TEST 7 High pressure circuit sealing check**.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP9

Engine cut-out (stalling)

NOTES

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

Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the levels of engine oil and coolant.

Check that the engine has not sucked up its oil (engine racing).

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

Is the catalytic converter clogged or damaged?

YES →

Replace the catalytic converter (see **MR 364 (Mégane II)** or **MR 370 (Scénic II)**, **Mechanical, 19B, Exhaust, Catalytic converter: Removal - Refitting**).

NO ↓

Visually check the condition of the engine wiring harness.

Check the electrical circuit: run **TEST 2 Electrical circuit check**.

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

A

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

**ALP9
CONTINUED**

A

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Visually check that there are no leaks on the high pressure circuit: run **TEST 7 High pressure circuit sealing check**.

Check the injectors: run **TEST 3 Injector check**.

Check the high pressure system: run **TEST 6 High pressure system check**.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP10

Engine bucking

NOTES

Only consult this customer complaint after a full check with the **diagnostic tool**.
See **Feature, Function: Fuel supply management (timing, flow rate and pressure), Flow capacity function (VLC) section**.

Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen.
If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Is the engine wiring harness cut or pinched?

YES

Carry out the necessary repairs.

NO

Is the compression in order?

NO

Carry out the necessary repairs.

NO

Is the valve clearance set correctly?

NO

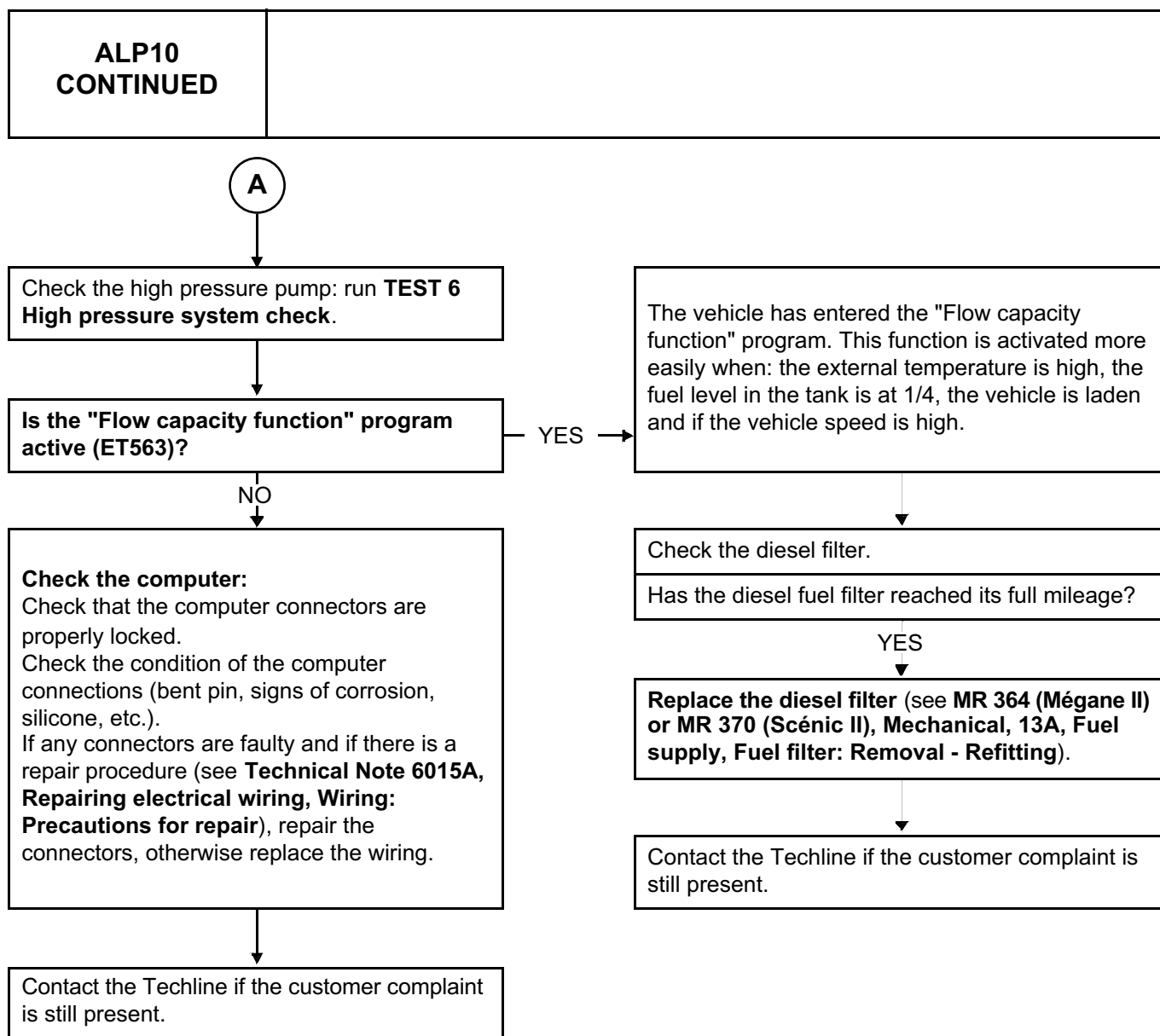
Carry out the necessary repairs.

YES

A

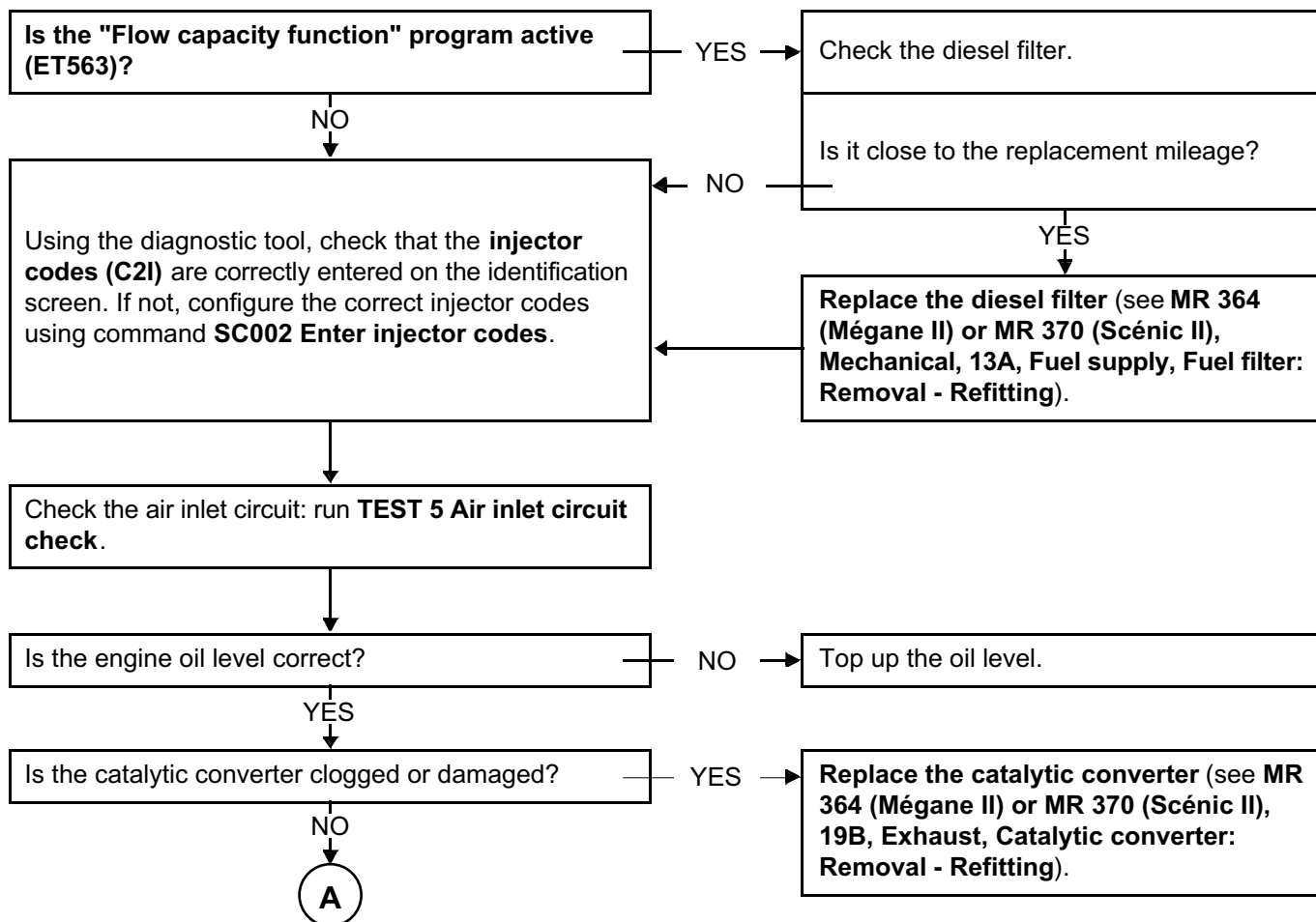
AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

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

ALP11**Loss of power****NOTES****Special note:**

Only consult this customer complaint after a full check with the **diagnostic tool**.
See the explanation for **flow capacity function** in the system operation section.
In this case, the lack of power is due to insufficient vacuum for the OCR * setpoint given.



*OCR: opening cyclic ratio

AFTER REPAIRCarry out a road test, then check with the **diagnostic tool**.

**ALP11
CONTINUED****A**

NO

Check that the turbocharger is working properly.
Run TEST 11 Air line at the turbocharger.
Run TEST 10 Turbocharger solenoid valve check.
Run TEST 12 Turbocharger.

Are the components in good condition?

NO

Carry out the necessary repairs.

YES

Check the low pressure circuit: run **TEST 1 Low pressure circuit check.**

Check the injectors: run **TEST 3 Injector check.**

Check the high pressure system: run **TEST 6 High pressure system check.**

Is the compression in order?

NO

Carry out the necessary repairs.

YES

Is the valve clearance set correctly?

NO

Carry out the necessary repairs.

YES

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool.**

ALP12

Too much power

NOTES

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

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

Check that the engine has not sucked up its oil (engine racing).

Check the injectors: run **TEST 3 Injector check**.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP13

Excessive consumption

NOTES

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

Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the levels of engine oil and coolant.

Is the fuel temperature sensor leaking?

YES →

Replace the fuel temperature sensor (see MR 364 (Mégane II) or MR 370 (Scénic II), Mechanical, 13B, Diesel injection, Rail pressure sensor: Removal - Refitting).

NO
↓

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

Check the injectors: run **TEST 3 Injector check**.

Visually check that there are no leaks on the high pressure circuit: run **TEST 7 High pressure circuit sealing check**.

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

A

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP 13
CONTINUED

A

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Is the compression in order?

NO

Carry out the necessary repairs.

YES

Is the catalytic converter clogged or damaged?

YES

Replace the catalytic converter (see **MR 364 (Mégane II)** or **MR 370 (Scénic II)**, **Mechanical, 19B, Exhaust, Catalytic converter: Removal - Refitting**).

NO

Check that the turbocharger is working properly.
Run TEST 11 Air line at the turbocharger.
Run TEST 10 Turbocharger solenoid valve check.
Run TEST 12 Turbocharger.

YES

Is the turbocharger in order?

NO

Carry out the necessary repairs.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP14

Engine races when accelerator is released or when changing gear

NOTES

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

Check that there are no obstacles that might impede the accelerator pedal travel (carpet, point of resistance, etc.).

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Visually check the condition of the engine wiring harness.

Is the clutch clearance set correctly?

NO

Carry out the necessary repairs.

YES

Check that the engine has not sucked up its oil (engine racing).

Is the compression in order?

NO

Carry out the necessary repairs.

YES

Check that the turbocharger is working properly.
Run TEST 11 Air line at the turbocharger.
Run TEST 10 Turbocharger solenoid valve check.
Run TEST 12 Turbocharger.
Is the turbocharger in order?

NO

Carry out the necessary repairs.

YES



AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

**ALP14
CONTINUED**

A

YES

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP15**Engine dies on pulling away****NOTES**

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

Is the clutch clearance set correctly?

— NO →

Carry out the necessary repairs.

YES
↓

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

Is the catalytic converter clogged or damaged?

— YES →

Replace the catalytic converter (see **MR 364 (Mégane II)** or **MR 370 (Scénic II)**, **Mechanical, 19B, Exhaust, Catalytic converter: Removal - Refitting**).

NO
↓

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

Visually check the condition of the engine wiring harness.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP16

Engine rattling, noisy engine, turbocharger noise

NOTES

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

If the noise arises from the turbocharger, apply **Technical Note 5164A, Noise fault finding**.

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.).

Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the levels of engine oil and coolant.

Is the compression in order?

NO

Carry out the necessary repairs.

YES

Check the electrical conformity of the **heater plugs** (the resistance **value** of the heater plug must be **less than 2 Ω**).

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen. If not, configure the correct injector codes using command **SC002 Enter injector codes**.

A

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

**ALP16
CONTINUED**

A

Check the air inlet circuit: run **TEST 5 Air inlet circuit check**.

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.

Check the injectors: run **TEST 3 Injector check**.

Check the high pressure system: run **TEST 6 High pressure system check**.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP17

Blue, white or black smoke

NOTESOnly consult this customer complaint after a full check with the **diagnostic tool**.Check that the fuel tank is correctly filled and that the fuel is correct: run **TEST 13 Diesel fuel conformity check**.

Check the levels of engine oil and coolant.

Check that the engine has not sucked up its oil (engine racing).

Is the compression in order?

NO

Carry out the necessary repairs.

YES

Check the electrical conformity of the **heater plugs** (the resistance **value** of the heater plug must be **less than 2 Ω**).

Is the catalytic converter clogged or damaged?

YES

Replace the catalytic converter (see MR 364 (Mégane II) or MR 370 (Scénic II), Mechanical, 19B, Exhaust, Catalytic converter: Removal - Refitting).

NO

Run **TEST 5 Inlet circuit check**.
Run **TEST 11 Air line at the turbocharger**.
Run **TEST 10 Turbocharger solenoid valve check**.

A

AFTER REPAIRCarry out a road test, then check with the **diagnostic tool**.

ALP17
CONTINUED

A

Run **TEST 12 Turbocharger**.
Is the turbocharger in order?

NO

Carry out the necessary repairs.

YES

Visually check the condition of the engine wiring harness.

Using the diagnostic tool, check that the **injector codes (C2I)** are correctly entered on the identification screen.
If not, configure the correct injector codes using command **SC002 Enter injector codes**.

Check the low pressure circuit: run **TEST 1 Low pressure circuit check**.Check the injectors: run **TEST 3 Injector check**.

Check that the computer connectors are properly locked.
Check the condition of the computer connections (bent pin, signs of corrosion, silicone, etc.).
If any connectors are faulty and if there is a repair procedure (see **Technical Note 6015A, Repairing electrical wiring, Wiring: Precautions for repair**), repair the connectors, otherwise replace the wiring.

Contact the Techline if the customer complaint is still present.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP18

Oil leaks from the turbocharger

NOTES

Before analysing 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 fault of the turbocharger, 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 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

A

NO

B

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

**ALP18
CONTINUED 1**

A

YES

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 was 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 385 Mechanical, 12B, Turbocharging**).

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

ALP18
CONTINUED 2

B

NO

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.
End of procedure.

NO

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?

YES

Replace only the seal **or** the pipe of the section concerned (see **MR 364 (Mégane II) or 370 (Scénic II), Mechanical, 12B, Turbocharging**).

C

NO

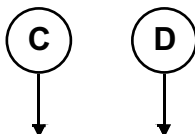
Tighten the pipe concerned.
End of procedure.

D

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.

**ALP18
CONTINUED 3**



Is an oil leak present at the interfaces of the turbine casing and the exhaust pipes?

YES
↓

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**).

NO
↓

End of procedure.

AFTER REPAIR

Carry out a road test, then check with the **diagnostic tool**.