

RENAULT

TECHNICAL NOTE 3294A

XXXX

FAULT FINDING SIEMENS PETROL INJECTION

COMPUTER TYPE: SIRIUS 3H
N° PROGRAMME: E3
N° VDIAG: 04

Along with this basic document, it is vital to use
Technical Note "Special Features" which corresponds to your vehicle

77 11 292 702

JANUARY 2000

EDITION ANGLAISE

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

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

All copyrights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© RENAULT 2000

Contents

Page

17

INJECTION

Introduction	17-1
Fault interpretation	17-3
Conformity check	17-46
Status interpretation	17-56
Parameter interpretation	17-70
Interpreting the controls	17-80
Help	17-87
Customer complaints	17-88
Fault finding chart	17-89

This generic diagnostic test is valid for all SIRIUS 3H computers, whose programme N° is: E3 and whose VDIAG is: 04.

The values given in this Technical Note are only indications.

It is therefore vital to use:

- The vehicle's wiring diagram.
- The note dealing with the special features of the diagnostic test relating to your vehicle.
- The note dealing with the method part relating to your vehicle.

DESCRIPTION OF THE FAULT-FINDING PHASES

FAULT CHECKING

This phase is the essential starting point for any intervention on the vehicle.

1 - Order of priority

You should start dealing with the present electrical faults, then the memorised electrical faults. Other priorities are dealt with in the "INSTRUCTIONS" section in the diagnostic test for the fault in question. In any case, it is vital to check the status of the battery before starting the diagnostic test as a low battery voltage risks disturbing the computer.

2 - Fault

a) Present:

Deal with the fault as described in the chapter "FAULT INTERPRETATION".

b) Memorised:

Note the faults displayed.

Follow the instructions in the "INSTRUCTIONS" section of the fault in question.

If the fault is confirmed in the Instructions section:

The fault is present once again. In this case, deal with the fault.

If the fault is not confirmed by the Instructions section:

Carry out basic checks. Check:

- the electrical lines which correspond to the fault,
- the connectors for these lines (for rust, bent pins...),
- the resistance of the faulty component,
- the cleanliness of the wires (insulation melted or cut, friction..).

3 - Absence of faults:

If no more faults are indicated by the diagnostic tool, you should carry out a conformity check. This may help in detecting a problem.

CHECKING CONFORMITY

The conformity test is designed to check the statuses and parameters which do not display any faults on the diagnostic tool when they are outside the permitted tolerance values. This phase allows:

- Breakdowns to be diagnosed without fault display which may correspond to a customer complaint.
- The correct operation of the injection to be checked and the risk of faults appearing shortly after the repair to be eliminated.

In this chapter there is a diagnostic test of the status and parameters in the conditions of their test.

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

TESTING USING THE CORRECT DIAGNOSTIC TOOL

If the diagnostic tool test is correct, but the customer complaint is still present, the problem should be dealt with by customer complaint.

DF002 PRESENT or MEMORISED	<u>THROTTLE POTENTIOMETER CIRCUIT</u> DEF = Unidentified electrical fault
---	---

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present after switching the ignition on without pressing the accelerator pedal for the first 10 seconds. OR The fault is declared present when there is a slight variation of the throttle position potentiometer from no load to full load. OR The fault is declared present when there is a full load for 10 seconds.
--------------	---

Check the connection and he status of the connector of the throttle position potentiometer. Change the connector if necessary.															
Check the throttle position potentiometer resistance (the resistance is zero or equal to infinity in the event of a permanent fault). Check that resistance of the potentiometer correctly follows its curve, by pressing the throttle from no load to full load. Check that the throttle carries the potentiometer. Correct or change the throttle position potentiometer if necessary.															
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <table><tr><td>Computer</td><td>75</td><td>————→</td><td>Throttle potentiometer</td></tr><tr><td>Computer</td><td>74</td><td>————→</td><td>Throttle potentiometer</td></tr><tr><td>Computer</td><td>43</td><td>————→</td><td>Throttle potentiometer</td></tr></table> Repair if necessary.				Computer	75	————→	Throttle potentiometer	Computer	74	————→	Throttle potentiometer	Computer	43	————→	Throttle potentiometer
Computer	75	————→	Throttle potentiometer												
Computer	74	————→	Throttle potentiometer												
Computer	43	————→	Throttle potentiometer												
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.															

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF003 PRESENT or MEMORISED	<u>AIR TEMPERATURE SENSOR CIRCUIT</u> DEF = Unidentified electrical fault
---	---

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following ignition of the engine running fan unit.
--------------	--

Check connection and status of the air temperature sensor connector. Change the connector if necessary.	
Check that the air temperature sensor resistance is not zero or equal to infinity (sensor permanent fault). Change the air temperature sensor if necessary.	
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div><div>Computer77</div><div>Computer49</div><div>—————></div><div>Air temperature sensor</div><div>Air temperature sensor</div></div> Repair if necessary.	
Check the sensor resistance at various temperatures . Replace the sensor if necessary.	
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF004 PRESENT or MEMORISED	<u>COOLANT TEMPERATURE SENSOR CIRCUIT</u> DEF = Unidentified electrical fault
---	---

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following ignition of the engine running fan unit.
--------------	--

Check connection and status of the coolant temperature sensor connector. Change the connector if necessary.	
Check that the coolant temperature sensor resistance is not zero or equal to infinity (sensor permanent fault). Change the coolant temperature sensor if necessary.	
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div><div>Computer73</div><div>—————></div><div>Coolant temperature sensor</div><div>Computer13</div><div>—————></div><div>Coolant temperature sensor</div></div> Repair if necessary.	
Check the sensor resistance at various temperatures . Replace the sensor if necessary.	
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
---------------------	---

DF006 PRESENT or MEMORISED	<u>PINKING SENSOR CIRCUIT</u> DEF = Unidentified electrical fault
---	---

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present during a road test when the engine is warm and with a high engine speed.
--------------	--

Check the connection and status of the pinking sensor connector. Change the connector if necessary.			
Check clamping of the pinking sensor on the engine block. Repair if necessary.			
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line:			
Computer	20	————→	Pinking sensor
Computer	79	————→	Pinking sensor
Computer	19	————→	Pinking sensor screening
Repair if necessary.			
Check the average pinking signal: PR013. If PR013 is close to zero, change the pinking sensor (if in doubt, consult the conformity check).			
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.			

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF008 PRESENT or MEMORISED	<u>FUEL PUMP CONTROL RELAY CIRCUIT</u> CO0 = Open circuit or short circuit to earth CC1 = Short circuit at +12 V DEF = Memorised fault
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a one minute timed period with the engine running.
--------------	--

Check the connection and status of the fuel pump relay connector . Change the connector if necessary.
Disconnect the relay. Check, ignition on, for +12 V on track 1 of the fuel pump relay Repair if necessary.
Check the fuel pump relay coil. Change the fuel pump relay if necessary.
Check insulation and continuity of the line: <div>Computer 68 —————> 2 Fuel pump relay</div> Repair if necessary.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF009 PRESENT or MEMORISED	<u>ACTUATOR CONTROL RELAY CIRCUIT</u> CC0 = Open circuit or short circuit to earth CC1 = Short circuit at +12 V DEF = Memorised fault
---	---

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a one minute timed period with the engine running.
--------------	--

Check the status of the battery and the vehicle earths. Repair if necessary.
Check the connection and the status of the actuator relay connector. Change the connector if necessary.
Check the actuator relay coil. Change the actuator relay if necessary.
Check the presence of 12 V on track 1 of the actuator relay. Rectify the line to the fuse.
Check insulation and continuity of the line: <div>Injection computer 39 —————> 2 Actuator relay</div> Repair if necessary.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF011 PRESENT	<u>FAULT WARNING LIGHT CIRCUIT</u> CO0 = Open circuit or short circuit to earth CC1 = Short circuit at +12 V DEF = Memorised fault
--------------------------	--

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

Check the status of the tell-tale light (if it is not lit). Change if necessary.
Check that there is an input of 12 V into the tell-tale (if it is not lit). Rectify the line to the fuse.
Connect the bornier and check the insulation and continuity of the line track 37 of the computer. Repair.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF012 PRESENT or MEMORISED	<u>INJECTION CONNECTION</u> -----► AC DEF = Unidentified electrical fault
---	---

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a timed period of 10 seconds, engine running with the heating/ventilation switched on (during the test, the battery voltage should not be lower than 11 V).
--------------	---

Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of computer line 23 . Repair if necessary.	
If the fault persists, refer to the air conditioning fault finding.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF014 PRESENT	<u>CANISTER BLEED SOLENOID VALVE CIRCUIT</u> CO = Open circuit CC0 = Short circuit to earth CC1 = Short circuit at 12 V DEF = Memorised fault
------------------	---

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

Check the connection and status of canister bleed connector . Change the connector if necessary.
With the ignition on, check for 12 V on the canister bleed valve . Repair if necessary.
Check the resistance of the canister bleed valve. Replace the valve if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line: <div>Computer 4 —————> Canister bleed valve</div> Repair if necessary.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-----------------	---

DF017 PRESENT or MEMORISED	<u>FLYWHEEL SIGNAL INFORMATION</u> 1 DEF = Engine flywheel target fault 2 DEF = Absence of tooth signal
---	--

NOTES	The pressure sensor should not be broken down to perform this diagnostic test.
	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following starter motor action for 10 seconds. OR The fault is declared present following a timed period of 2 minutes with the engine running.

Check the connection and status of the target sensor connector. Change the connector if necessary.
Check the resistance of the target sensor . Replace the sensor if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div><div>Computer</div><div>54</div><div>—————></div><div>Target sensor</div></div> <div><div>Computer</div><div>24</div><div>—————></div><div>Target sensor</div></div> Repair if necessary.
If 1DEF, check the status of the flywheel.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

<div>DF018 PRESENT or MEMORISED</div>	<div><u>UPSTREAM OXYGEN SENSOR HEATER CIRCUIT</u></div> <div>CO = Open circuit CC0 = Short circuit to earth CC1 = Short circuit at 12 V 1 DEF = Unidentified electrical fault 2 DEF = Sensor heating power not conform</div>
---	--

<div>NOTES</div>	<div>Conditions for the application of the diagnostic on the fault stored.</div> <div>The fault is declared present following a timed period of 10 seconds with the engine running.</div>
------------------	---

<div>Check the connection and status of the oxygen sensor connector. Change the connector if necessary.</div>
<div>Check the oxygen sensor heating resistance. Change the oxygen sensor if necessary.</div>
<div>Check that there are 12 V on the oxygen sensor. Rectify the electrical line to the actuator relay.</div>
<div>Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div>Computer 63 —————> Oxygen sensor</div> Repair if necessary.</div>
<div>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</div>

<div>AFTER REPAIR</div>	<div>Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.</div>
-----------------------------	--

DF019 PRESENT or MEMORISED	<u>SUPPLY</u> 1.DEF = Fault +12 V after ignition 2.DEF = Fault +12 V after actuator relay 3.DEF = Supply voltage fault in the injector steering computer													
NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present after: – switching the ignition off and dialogue loss AND – switching the ignition on and starting a dialogue.													
1.DEF	NOTES	The injection computer makes a comparison between the injection computer most after ignition and the most after ignition of the injector steering computer.												
Ensure that the injection computer connector and the injector steering computer are in good condition.														
Check the insulation, continuity and interference resistance on the line: <table><tr><td>Positive fuse after ignition</td><td>————→</td><td>29</td><td>Injection computer</td></tr><tr><td>Positive fuse after ignition</td><td>————→</td><td>33</td><td>Injector steering computer</td></tr><tr><td>Injection computer 87</td><td>————→</td><td>5</td><td>Injector steering computer</td></tr></table> Repair if necessary.			Positive fuse after ignition	————→	29	Injection computer	Positive fuse after ignition	————→	33	Injector steering computer	Injection computer 87	————→	5	Injector steering computer
Positive fuse after ignition	————→	29	Injection computer											
Positive fuse after ignition	————→	33	Injector steering computer											
Injection computer 87	————→	5	Injector steering computer											
Ensure that the earth is clean: Track 3 of the injection computer Track 28 of the injection computer Track 33 of the injection computer Track 22 of the injector steering computer Track 23 of the injector steering computer Track 51 of the injector steering computer														
AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.													

CONT 1	
--------	--

2.DEF	<div>NOTES</div> <div>The injection computer makes the comparison between its positive after ignition and its positive after actuator relay</div>
	<div>Check the status of the battery and the vehicle earths. Repair if necessary.</div> <div>Check the connection and the status of the actuator relay connector Change the connector if necessary.</div> <div>Disconnect the clip on track 5 of the relay-holder. Ignition on, check for 12 V on track 5 of the actuator relay</div>
<div>There is not 12 V on track 5</div>	<div>Disconnect the relay and check for 12 V on track 3 of the relay-holder. Repair if necessary.</div> <div>Change the relay.</div>
<div>There is 12 V on track 5</div>	<div>Check insulation and continuity of the line: Injection computer 66 —————> 5 Actuator relay Repair if necessary.</div>
	<div>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</div>

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
--------------	---

CONT 2	
--------	--

3.DEF	<div>NOTES</div> <div>The injection computer makes a comparison between the positive after ignition of the injection computer and the positive after ignition of the injector steering computer.</div>
-------	--

Check **insulation and continuity** of the line:

Actuator relay

Actuator relay

Actuator relay

Positive after ignition

Battery positive

5

5

5

—————>

—————>

—————>

—————>

—————>

25

26

27

33

34

Injector steering computer

Injector steering computer

Injector steering computer

Injector steering computer

Injector steering computer

If necessary, rectify the defective lines.

Ensure that the earth is clean:

Track 22 of the injector steering computer

Track 23 of the injector steering computer

Track 51 of the injector steering computer

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
--------------	---

**DF021
PRESENT**

IMMOBILISER

Electrical problem on the coded line.

NOTES

None

Check the **connection and status of the connectors** of the coded line on track 58 of the injection computer.
Change the defective connector if necessary.

Connect the bornier in the place of the computer and check **the insulation and continuity** of the coded line on track 58 of the injection computer.
Repair if necessary.

If the fault persists, refer to the immobiliser fault finding.

**AFTER
REPAIR**

Erase fault memory.
Deal with any other possible faults.

DF022 PRESENT	<u>COMPUTER</u> 1.DEF = Computer fault 2.DEF = Back-up memory zone fault 3.DEF = Immobiliser memory zone fault
------------------	---

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

1.DEF	Computer defective or not conform. Replace the injection computer.
-------	---

2.DEF 3.DEF	Do not change the injection computer immediately. Carry out the following procedure: – Switch on and enter into dialogue with the computer. – Erase the computer memory. – Switch off and wait for loss of dialogue with the computer. – Switch on and enter into dialogue with the computer. If the computer fault is still present, carry out this procedure again. If the computer fault is still present after the fifth deletion attempt, change the injection computer.
----------------	---

AFTER REPAIR	Erase fault memory.
-----------------	---------------------

DF032 PRESENT or MEMORISED	<u>COOLANT TEMPERATURE OVERHEAT TELL-TALE CIRCUIT</u> CO0 = Open circuit or short circuit CC1 = Short circuit at 12 V DEF = Memorised fault
---	---

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a timed period of 10 second with engine running at a speed greater than 3800 rpm .
--------------	---

Check the connection and status if the overheat tell-tale line connector . Change the connector if necessary.
Check the status of the tell-tale light (if it is not lit). Change it if necessary.
Check that there is an input of 12 V into the tell-tale . Rectify the line to the fuse.
Connect the bornier and check the insulation and continuity of the line track 9 of the computer. Repair.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF034 PRESENT	<u>EGR SOLENOID VALVE CIRCUIT</u> CO = Open circuit CC0 = Short circuit to earth CC1 = Short circuit at 12 V DEF = Electrical memorised fault 1DEF= Data incoherence 2DEF= Data incoherence
------------------	---

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

CO CC0 CC1	NOTES	A fault is present in the EGR solenoid valve control
------------------	-------	--

Check the connection and status of the EGR solenoid valve connector . Change the connector if necessary.
With the ignition on, check for 12 V after actuator relay on the EGR solenoid valve. Repair if necessary.
Check the resistance of the EGR solenoid valve . Change the solenoid valve if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line: Injection computer 62 —————> EGR solenoid valve Repair if necessary.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-----------------	---

CONT	
------	--

1 DEF 2 DEF	<div>NOTES</div> <div><p>The EGR valve position sensor should not be broken down, DF088 with 2 DEF, to carry out this diagnostic test. The computer checks the coherence between the EGR solenoid valve control and the value shown on the EGR valve position sensor.</p><p>Check the connection and status of the EGR solenoid valve connector. Change the connector if necessary.</p><p>With the ignition on, check for 12 V after actuator relay on the EGR solenoid valve. Repair if necessary.</p><p>Check the resistance of the EGR solenoid valve . Change the solenoid valve if necessary.</p><p>Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line:</p><div><div><div>Injection computer</div><div>62</div><div>—————></div><div>EGR solenoid valve</div></div><div><div>Injection computer</div><div>18</div><div>—————></div><div>EGR valve position sensor</div></div><div><div>Injection computer</div><div>82</div><div>—————></div><div>EGR valve position sensor</div></div><div><div>Injection computer</div><div>83</div><div>—————></div><div>EGR valve position sensor</div></div></div><p>Repair if necessary.</p><p>If all the tests are successful, change the EGR solenoid valve with its position sensor.</p></div>
----------------	---

AFTER REPAIR	<p>Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.</p>
--------------	--

DF038 PRESENT or MEMORISED	<u>DOWNSTREAM OXYGEN SENSOR HEATER CIRCUIT</u> CO = Open circuit CC0 = Short circuit to earth CC1 = Short circuit at 12 V 1DEF = Unidentified electrical fault 2DEF = Sensor heating power not conform
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present after: – engine running fan unit start-up AND – one minute timed period with low acceleration
--------------	--

Check the connection and status of the oxygen sensor connector . Change the connector if necessary.
Check the oxygen sensor heating resistance . Change the oxygen sensor if necessary.
Check for 12 V (after actuator relay) oxygen sensor . Rectify the electrical line to the actuator relay.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line: <div>Computer 65 —————> Oxygen sensor</div> Repair if necessary.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF045 PRESENT or MEMORISED	COLLECTOR PRESSURE SENSOR CIRCUIT 1DEF= Collector pressure not coherent 2DEF= Atmospheric pressure not coherent	
NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present after: – switching the ignition off and dialogue loss AND – switching the ignition on and starting a dialogue. AND – 10 second timed period with minimum speed of 608 rpm .	
1 DEF	Check the coherence of PR017 throttle position parameter in no load position and full throttle. Lightly press the accelerator pedal (from no load to full throttle) and check that position throttle increases regularly.	
	Information on throttle position is not conform	Deal with the diagnostic test for parameter PR017.
	Information on throttle position is conform	Deal with the diagnostic test for fault: DF045 for 2DEF.
2 DEF	NOTES	Check the status of the pressure sensor connector . Change the connector if necessary.
	Check the status of the pressure sensor connector . Change the connector if necessary.	
	Check that the pressure sensor is connected pneumatically .	
	Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div>Computer 16 —————> Pressure sensor Computer 15 —————> Pressure sensor Computer 78 —————> Pressure sensor</div> Repair if necessary.	
	Using a vacuum pump, check the coherence of the collector pressure: PR001. Replace the sensor if necessary.	
	If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	
AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.	

DF050 PRESENT	<u>INJECTOR STEERING COMPUTER</u>
------------------	-----------------------------------

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

<p>Check the injector steering computer supply voltage:</p> <p>Track 25: 12 V actuator relay Track 26: 12 V actuator relay Track 27: 12 V actuator relay Track 33: Positive after ignition Track 34: Battery positive</p> <p>If necessary, rectify the defective lines.</p>
<p>Ensure that the earth is clean:</p> <p>Track 22 of the injector steering computer Track 23 of the injector steering computer Track 51 of the injector steering computer</p>
<p>The injector steering computer is defective: Change the injector steering computer</p>

AFTER REPAIR	Erase fault memory.
-----------------	---------------------

DF051 PRESENT	<u>"CAN" CONNECTION</u>
------------------	-------------------------

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

Connect the bornier in place of the computer and check **the insulation and continuity** of the line:

Injection computer

27

—————>

Injector steering computer

Injection computer

57

—————>

Injector steering computer

Repair if necessary.

Check the injector steering computer supply voltage:

Track 22: Earth

Track 23: Earth

Track 51: Earth

Track 33: Positive after ignition

Track 25: Positive after actuator relay

Track 26: Positive after actuator relay

Track 27: Positive after actuator relay

Track 34: Battery positive

Repair if necessary.

Ensure injection computer supply voltage:

Track 3: Earth

Track 28: Earth

Track 33: Earth

Track 29: Positive after ignition

Track 66: Actuator relay

Track 30: Battery positive

Repair if necessary.

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

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-----------------	---

DF052 PRESENT or MEMORISED	<u>CYLINDER 1 INJECTOR CIRCUIT</u> CO = Open circuit CC1 = Short circuit at 12 V DEF = Memorised fault
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a timed period of 10 seconds with the engine running.
--------------	---

Check the injector 1 resistance . Change the injector if necessary.	
Check the insulation, continuity and interference resistance on the line:	
Injector steering computer	35 —————> Injector 1
Injector steering computer	36 —————> Injector 1
Repair if necessary.	
Check the injector steering computer supply voltage :	
Track 22: Earth	
Track 23: Earth	
Track 51: Earth	
Track 25: Positive after actuator relay	
Track 26: Positive after actuator relay	
Track 27: Positive after actuator relay	
Track 34: Battery positive	
Track 33: Positive after ignition	
Repair if necessary.	
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF053 PRESENT or MEMORISED	<u>CYLINDER 2 INJECTOR CIRCUIT</u> CO = Open circuit CC1 = Short circuit at 12 V DEF = Memorised fault
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a timed period of 10 seconds with the engine running.
--------------	---

Check the injector 2 resistance . Change the injector if necessary.	
Check the insulation, continuity and interference resistance on the line:	
Injector steering computer	43 —————→ Injector 2
Injector steering computer	42 —————→ Injector 2
Repair if necessary.	
Check the injector steering computer supply voltage :	
Track 22: Earth	
Track 23: Earth	
Track 51: Earth	
Track 25: Positive after actuator relay	
Track 26: Positive after actuator relay	
Track 27: Positive after actuator relay	
Track 34: Battery positive	
Track 33: Positive after ignition	
Repair if necessary.	
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF054 PRESENT or MEMORISED	<u>CYLINDER 3 INJECTOR CIRCUIT</u> CO = Open circuit CC1 = Short circuit at 12 V DEF = Memorised fault
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a timed period of 10 seconds with the engine running.
--------------	---

Check the injector 3 resistance . Change the injector if necessary.	
Check the insulation, continuity and interference resistance on the line:	
Injector steering computer	40 —————→ Injector 3
Injector steering computer	41 —————→ Injector 3
Repair if necessary.	
Check the injector steering computer supply voltage :	
Track 22: Earth	
Track 23: Earth	
Track 51: Earth	
Track 25: Positive after actuator relay	
Track 26: Positive after actuator relay	
Track 27: Positive after actuator relay	
Track 34: Battery positive	
Track 33: Positive after ignition	
Repair if necessary.	
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

<div>DF055 PRESENT or MEMORISED</div>	<div>CYLINDER 4 INJECTOR CIRCUIT</div> <div>CO = Open circuit CC1 = Short circuit at 12 V DEF = Memorised fault</div>
---	---

<div>NOTES</div>	<div>Conditions for the application of the diagnostic on the fault stored.</div> <div>The fault is declared present following a timed period of 10 seconds with the engine running.</div>
------------------	---

<div>Check the injector 4 resistance. Change the injector if necessary.</div>
<div>Check the insulation, continuity and interference resistance on the line:</div> <div><div><div>Injector steering computer</div><div>38</div><div>—————></div><div>Injector 4</div></div><div><div>Injector steering computer</div><div>37</div><div>—————></div><div>Injector 4</div></div></div> <div>Repair if necessary.</div>
<div>Check the injector steering computer supply voltage:</div> <div><div>Track 22: Earth</div><div>Track 23: Earth</div><div>Track 51: Earth</div><div>Track 25: Positive after actuator relay</div><div>Track 26: Positive after actuator relay</div><div>Track 27: Positive after actuator relay</div><div>Track 34: Battery positive</div><div>Track 33: Positive after ignition</div></div> <div>Repair if necessary.</div>
<div>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</div>

<div>AFTER REPAIR</div>	<div>Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.</div>
-----------------------------	--

DF057 PRESENT or MEMORISED	<u>UPSTREAM OXYGEN SENSOR CIRCUIT</u> DEF = Unidentified electrical fault
---	---

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a 5 minute timed period in ratio regulation (engine running).
--------------	---

Check the connection and status of the oxygen sensor connector . Change the connector if necessary.
Check that there is no air leak .
If the vehicle is used frequently in towns, carry out a decarbonisation operation .
With the ignition on, check for +12 V (after actuator relay) on the oxygen sensor . Repair if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div><div>Computer45</div><div>—————→</div><div>Oxygen sensor</div><div>Computer80</div><div>—————→</div><div>Oxygen sensor</div></div> Repair if necessary.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF058 PRESENT or MEMORISED	<u>UPSTREAM OXYGEN SENSOR CIRCUIT</u> DEF = Unidentified electrical fault
---	---

NOTES	<p>Conditions for the application of the diagnostic on the fault stored.</p> <p>The fault is declared present if:</p> <ul style="list-style-type: none">– gentle road test after fan operation AND– ET027 ratio double loop active. OR <p>The fault is declared present if:</p> <ul style="list-style-type: none">– gentle road test after fan operation AND– ET027 ratio double loop active. AND– immediately followed by a road test on a hill with no load (deceleration phase).
--------------	---

Check the connection and status of the oxygen sensor connector . Change the connector if necessary.
Check that there is no air leak .
If the vehicle is used frequently in towns, carry out a decarbonisation operation .
With the ignition on, check for +12 V (after actuator relay) on the oxygen sensor . Repair if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div><div><div>Computer</div><div>Computer</div></div><div><div>44</div><div>76</div></div><div><div>—————></div><div>—————></div></div><div><div>Oxygen sensor</div><div>Oxygen sensor</div></div></div> Repair if necessary.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF060 PRESENT	<u>IDLE SPEED REGULATION CIRCUIT</u> DEF = Idle speed regulation fault
------------------	---

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

Check the connection and status of the idle speed regulation stepper motor connector . Change the connector if necessary.			
Check the resistance of the idle speed regulation stepper motor . Change the idle speed regulation stepper motor if necessary.			
Check the insulation, continuity and interference resistance on the line:			
Computer	12	—————>	Idle speed regulation stepper motor
Computer	41	—————>	Idle speed regulation stepper motor
Computer	42	—————>	Idle speed regulation stepper motor
Computer	72	—————>	Idle speed regulation stepper motor
Repair if necessary.			
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.			

AFTER REPAIR	Delete the idle speed regulation programming in the event of a change of idle speed regulation stepper motor. Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-----------------	--

<div> DF061 PRESENT or MEMORISED </div>	<div> <div>IGNITION COIL 1-4 CIRCUIT</div> <div> CO0 = Open circuit CC1 = Short circuit at 12 V DEF = Memorised fault </div> </div>
--	---

<div>NOTES</div>	<div>The fuel pump relay fault should not be present: DF008</div>
	<div> <div>Conditions for the application of the diagnostic on the fault stored.</div> <div>The fault is declared present following a timed period of 10 seconds with the engine running or at starter speed.</div> </div>

<div> Check the resistance of the coil. Replace the coil if necessary. </div>
<div> Connect the bornier in place of the computer and check the insulation and continuity of the line: <div> <div>Computer</div> <div>32</div> <div>—————▶</div> <div>Coil</div> </div> Repair if necessary. </div>
<div> Check, ignition on, for 12 V on track 3 of the fuel pump relay. Repair if necessary. </div>
<div> Check insulation, continuity and interference resistance on line on track C of the coil. Repair if necessary. </div>
<div> With the engine running, check for 12 V on track 5 of the fuel pump relay. Change the relay if necessary. </div>
<div> If the problem has still not been solved, deal with the other faults and then proceed to the conformity check. </div>

<div>AFTER REPAIR</div>	<div> Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults. </div>
-------------------------	--

<div>DF062</div> <div>PRESENT</div> <div>or</div> <div>MEMORISED</div>	<div>IGNITION COIL 2-3 CIRCUIT</div> <div>CO0 = Open circuit</div> <div>CC1 = Short circuit at 12 V</div> <div>DEF = Memorised fault</div>
--	--

<div>NOTES</div>	<div>The fuel pump relay fault should not be present: DF008</div>
	<div>Conditions for the application of the diagnostic on the fault stored.</div> <div>The fault is declared present following a timed period of 10 seconds with the engine running or at starter speed.</div>

<div>Check the resistance of the coil.</div> <div>Replace the coil if necessary.</div>
<div>Connect the bornier in place of the computer and check the insulation and continuity of the line:</div> <div> <div>Computer</div> <div>1</div> <div>→</div> <div>Coil</div> </div> <div>Repair if necessary.</div>
<div>Check, ignition on, for 12 V on track 3 of the fuel pump relay.</div> <div>Repair if necessary.</div>
<div>Check insulation, continuity and interference resistance on line on track C of the coil.</div> <div>Repair if necessary.</div>
<div>With the engine running, check for 12 V on track 5 of the fuel pump relay. Change the relay if necessary.</div>
<div>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</div>

<div>AFTER REPAIR</div>	<div>Erase fault memory.</div> <div>Follow the instructions to confirm repair.</div> <div>Deal with any other possible faults.</div>
-------------------------	--

DF064 PRESENT or MEMORISED	<u>VEHICLE SPEED INFORMATION</u> DEF = Unidentified electrical fault
-------------------------------------	---

NOTES	It is vital that the ABS is not defective when carrying out this test.
	Conditions for the application of the diagnostic on the fault stored. The fault is declared present during: gentle road test OR The fault is declared present during: road test on a gradient at a constant speed. OR The fault is declared present during: road test when driving on a slope in no load position.

Check the connection and status of the vehicle speed line connector. Change the connector if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line 53 of the computer . Repair if necessary.
If the fault persists, refer to the ABS fault finding .

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-----------------	---

DF084 PRESENT or MEMORISED	<u>CYLINDER 1 INJECTOR COMMAND</u> CO = Open circuit CC0 = Short circuit to earth CC1 = Short-circuit at 12 V 1DEF= Memorised electrical fault 2DEF= Interference on injector command line
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a timed period of 10 seconds with the engine running.
	NOTE: The injection computer only detects a fault when the engine is running. The injector control computer detects a fault with the ignition on. It is therefore possible to see a change in designation when changing from engine running to ignition on.

Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line:	
Injection computer	59 —————> 3 Injector steering computer
Repair if necessary.	
Check the injector steering computer supply voltage:	
Track 22: Earth	Track 25: Positive after actuator relay
Track 23: Earth	Track 26: Positive after actuator relay
Track 51: Earth	Track 27: Positive after actuator relay
Track 33: Positive after ignition	Track 34: Battery positive
Repair if necessary.	
Check the injection computer supply:	
Track 3: Earth	Track 30: Battery positive
Track 28: Earth	Track 66: Actuator actuator relay
Track 33: Earth	Track 29: Positive after ignition
Repair if necessary.	
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

<div>DF085</div> <div>PRESENT</div> <div>or</div> <div>MEMORISED</div>	<div>CYLINDER 2 INJECTOR COMMAND</div> <div>CO = Open circuit</div> <div>CC0 = Short circuit to earth</div> <div>CC1 = Short-circuit at 12 V</div> <div>1DEF= Memorised electrical fault</div> <div>2DEF= Interference on injector command line</div>
--	---

<div>NOTES</div>	<div>Conditions for the application of the diagnostic on the fault stored.</div> <div>The fault is declared present following a timed period of 10 seconds with the engine running.</div>
	<div>NOTE:</div> <div>The injection computer only detects a fault when the engine is running.</div> <div>The injector control computer detects a fault with the ignition on.</div> <div>It is therefore possible to see a change in designation when changing from engine running to ignition on.</div>

<div>Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line:</div> <div> <div>Injection computer</div> <div>90</div> <div>→</div> <div>30</div> <div>Injector steering computer</div> </div> <div>Repair if necessary.</div>	
<div>Check the injector steering computer supply voltage:</div> <div> <div>Track 22: Earth</div> <div>Track 23: Earth</div> <div>Track 51: Earth</div> <div>Track 33: Positive after ignition</div> <div>Track 25: Positive after actuator relay</div> <div>Track 26: Positive after actuator relay</div> <div>Track 27: Positive after actuator relay</div> <div>Track 34: Battery positive</div> </div> <div>Repair if necessary.</div>	
<div>Check the injection computer supply:</div> <div> <div>Track 3: Earth</div> <div>Track 28: Earth</div> <div>Track 33: Earth</div> <div>Track 30: Battery positive</div> <div>Track 66: Actuator actuator relay</div> <div>Track 29: Positive after ignition</div> </div> <div>Repair if necessary.</div>	
<div>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</div>	

<div>AFTER REPAIR</div>	<div>Erase fault memory.</div> <div>Follow the instructions to confirm repair.</div> <div>Deal with any other possible faults.</div>
-------------------------	--

DF086 PRESENT or MEMORISED	<u>CYLINDER 3 INJECTOR COMMAND</u> CO = Open circuit CC0 = Short circuit to earth CC1 = Short-circuit at 12 V 1DEF= Memorised electrical fault 2DEF= Interference on injector command line
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a timed period of 10 seconds with the engine running.
	NOTE: The injection computer only detects a fault when the engine is running. The injector control computer detects a fault with the ignition on. It is therefore possible to see a change in designation when changing from engine running to ignition on.

Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line:	
Injection computer	60 —————> 2 Injector steering computer
Repair if necessary.	
Check the injector steering computer supply voltage:	
Track 22: Earth	Track 25: Positive after actuator relay
Track 23: Earth	Track 26: Positive after actuator relay
Track 51: Earth	Track 27: Positive after actuator relay
Track 33: Positive after ignition	Track 34: Battery positive
Repair if necessary.	
Check the injection computer supply:	
Track 3: Earth	Track 30: Battery positive
Track 28: Earth	Track 66: Actuator actuator relay
Track 33: Earth	Track 29: Positive after ignition
Repair if necessary.	
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF087 PRESENT or MEMORISED	<u>CYLINDER 4 INJECTOR COMMAND</u> CO = Open circuit CC0 = Short circuit to earth CC1 = Short-circuit at 12 V 1DEF= Memorised electrical fault 2DEF= Interference on injector command line
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a timed period of 10 seconds with the engine running.
	NOTE: The injection computer only detects a fault when the engine is running. The injector control computer detects a fault with the ignition on. It is therefore possible to see a change in designation when changing from engine running to ignition on.

Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line:	
Injection computer	89 —————> 20 Injector steering computer
Repair if necessary.	
Check the injector steering computer supply voltage:	
Track 22: Earth	Track 25: Positive after actuator relay
Track 23: Earth	Track 26: Positive after actuator relay
Track 51: Earth	Track 27: Positive after actuator relay
Track 33: Positive after ignition	Track 34: Battery positive
Repair if necessary.	
Check the injection computer supply:	
Track 3: Earth	Track 30: Battery positive
Track 28: Earth	Track 66: Actuator actuator relay
Track 33: Earth	Track 29: Positive after ignition
Repair if necessary.	
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.	

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF088 PRESENT	<u>EGR VALVE POSITION SENSOR CIRCUIT</u> 1DEF= EGR valve mechanically locked 2DEF= Unidentified electrical fault
------------------	--

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

Check the connection and status of the EGR valve position sensor connector . Change the connector if necessary.			
Check the EGR valve position sensor resistance . Replace the sensor if necessary.			
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line:			
Injection computer	18	————→	EGR valve position sensor
Injection computer	82	————→	EGR valve position sensor
Injection computer	83	————→	EGR valve position sensor
Repair if necessary.			
If DEF1, the EGR solenoid valve is mechanically locked. Replace the solenoid valve.			
Deal with the other faults then proceed to conformity check.			

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-----------------	---

DF089 PRESENT or MEMORISED	<u>FUEL PRESSURE REGULATION</u> CO = Open circuit CC0 = Short circuit to earth CC1 = Short circuit at 12 V DEF = Memorised electrical fault 1DEF= Fault in fuel pressure regulation 2DEF= Fault in fuel circuit
---	--

NOTES	<p>For SAFETY and CLEANLINESS reasons, it is VITAL TO FOLLOW THE INSTRUCTIONS PROVIDED IN THE "METHOD" SECTION of this vehicle.</p> <p>Depending on the designation of the fault, the instructions which allow the presence of a fault to be confirmed are different.</p> <p>This fault has two faults, one is electrical and one if functional.</p>
--------------	---

CO CC0 CC1	NOTES	<p>Fault detection conditions by the computer: Switch on the ignition.</p> <p>Condition for carrying out the diagnostic test: The fault is present.</p>
Check the connection and status of the fuel pressure regulation valve connector . Change the connector if necessary.		
Ignition on, check for 12 V on the fuel pressure regulation valve . Repair if necessary.		
Check the resistance of the fuel pressure regulation valve . Replace the valve if necessary.		
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line:		
<div>Injection computer 6 —————> Fuel pressure regulation valve</div> <p>Repair if necessary.</p>		
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.		

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

CONT 1	
--------	--

1 DEF	<div>NOTES</div> <div>Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a 2 minute timed period engine running at idle speed.</div>
	<div>Check the connection and status of the fuel pressure sensor connector. Change the connector if necessary.</div> <div>Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div><div>Injection computer</div><div>Injection computer</div><div>Injection computer</div><div>48</div><div>74</div><div>75</div><div>—————></div><div>—————></div><div>—————></div><div>Fuel pressure sensor</div><div>Fuel pressure sensor</div><div>Fuel pressure sensor</div></div><div>Repair if necessary.</div><div>If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.</div></div>

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
--------------	---

CONT 2	
--------	--

2 DEF	<div>NOTES</div> <div>Conditions for the application of the diagnostic on the fault stored. The fault is declared present after: – a 2 minute timed period with engine running at idle speed OR The fault is declared present after: – a 2 minute timed period with engine running at different speeds</div>
-------	---

For SAFETY and CLEANLINESS reasons, it is VITAL TO FOLLOW THE INSTRUCTIONS PROVIDED IN THE "METHOD" SECTION of this vehicle.
Check that the fuel circuit does not have any leaks. Repair if necessary.
Check the status of the fuel filter. If it has any impurities, change the filter and check the cleanliness of the tank.
Check the electrical (resistance measure) and mechanical operation of the fuel pump (measure of flow and pressure). Change the fuel pump if necessary.
Check that the fuel pressure sensor is operating correctly: refer to vehicle conformity checks to obtain the value for fuel pressure with ignition on (PR074). Replace the sensor if necessary.
With the engine running at idle speed, check the value of the fuel pressure (refer to vehicle conformity checking).

PR074 > maximum	The high pressure regulator is defective.
PR074 < minimum	Activate the regulator control to check that the regulator is not seized. Change the pressure regulator. If the problem is still not resolved, the high pressure pump is therefore defective.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
--------------	---

DF090 PRESENT or MEMORISED	<u>CAMSHAFT SENSOR</u> DEF = Unidentified electrical fault
---	--

NOTES	Conditions for the application of the diagnostic on the fault stored. The fault is declared present following a 10 second timed period with engine running at idling speed or under starter motor action.
--------------	---

Check the connection and status of the camshaft sensor connector. Change the connector if necessary.
Check the camshaft sensor resistance. Change the camshaft sensor if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div>Computer 46 —————> Camshaft sensor</div> Repair if necessary.
With the ignition on, check for 12 V on the camshaft sensor. Repair if necessary.
Check for earth on the camshaft sensor. Repair if necessary.
If the problem has still not been solved, deal with the other faults and then proceed to the conformity check.

AFTER REPAIR	Erase fault memory. Follow the instructions to confirm repair. Deal with any other possible faults.
-------------------------	---

DF117 PRESENT	<u>IMMOBILISER CODE NOT LEARNT</u>
------------------	------------------------------------

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

This fault indicates that the injection computer has not learnt the immobiliser code.

If necessary, you should refer to the immobiliser method.

AFTER REPAIR	None
-----------------	------

NOTES	<p>The values shown in this conformity test are only given as an indication. It is therefore vital to consult the Technical Note which deals with your vehicle.</p> <p>Conditions for performance: Engine stopped, ignition on.</p>
-------	--

Order	Function	Abbreviations	Viewing and Notes	Fault finding
Status Window				
1	Battery voltage	ET001: + After ignition PR004: Computer supply voltage	Status CONFIRMED 11.8 < X < 13.2 V	In the event of a problem, consult the diagnostic PR004
2	Immobiliser	ET002: Immobiliser	Status NOT CONFIRMED	In the event of a problem, consult the diagnostic ET002
3	Computer configuration	ET068: Electrical windscreen connection ET008: Heating/ventilation connection ET067: Power-assisted steering pressure switch connection ET069: Vehicle speed sensor connection	Status CONFIRMED If option Status CONFIRMED Status CONFIRMED Status CONFIRMED	In the event of a problem, consult the diagnostic ET068 consult the diagnostic ET008 consult the diagnostic ET067 consult the diagnostic ET069
4	Supply relay	ET020: Fuel pump control relay ET025: Actuator control relay	Status CONFIRMED a few seconds to switching the ignition on Status CONFIRMED	None
5	Instrument panel tell-tales	ET007: Overheat tell-tale ET006: Fault warning light	Status NOT CONFIRMED Status NOT CONFIRMED	In the event of a problem, consult the fault diagnostic

NOTES	<p>The values shown in this conformity test are only given as an indication. It is therefore vital to consult the Technical Note which deals with your vehicle.</p> <p>Conditions for performance: Engine stopped, ignition on.</p>
-------	--

Order	Function	Abbreviations	Viewing and Notes	Fault finding
6	Throttle position potentiometer	<p>Accelerator pedal released ET003: Throttle position: no load</p> <p>PR017: Throttle position</p> <p>PR008: No load position programming value</p> <p>ET005: Throttle position: full load</p> <p>Accelerator pedal lightly depressed ET003: Throttle position: no load</p> <p>ET005: Throttle position: full load</p> <p>Accelerator pedal depressed ET003: Throttle position: no load</p> <p>ET005: Throttle position: full load</p> <p>PR017: Throttle position</p>	<p>Status CONFIRMED</p> <p>0 < X < 20</p> <p>0 < X < 20</p> <p>Status NOT CONFIRMED</p> <p>Status NOT CONFIRMED</p> <p>Status NOT CONFIRMED</p> <p>Status NOT CONFIRMED</p> <p>Status CONFIRMED</p> <p>68 < X < 100</p>	<p>In the event of a problem, consult the diagnostic PR017</p>
Parameter Window				
7	Coolant temperature sensor	PR002: Coolant temperature	X = Engine temperature ± 5 °C	In the event of a problem, consult the diagnostic PR002
8	Air temperature sensor	PR003: Air temperature	X = Temperature under bonnet ± 5 °C	In the event of a problem, consult the diagnostic PR003

INJECTION

Fault finding - Conformity check

17

NOTES

The values shown in this conformity test are only given as an indication.
It is therefore vital to consult the Technical Note which deals with your vehicle.
Conditions for performance: Engine stopped, ignition on.

Order	Function	Abbreviations	Viewing and Notes	Fault finding
9	Pressure sensor	PR001: Manifold pressure PR016: Atmospheric pressure	X = Atmospheric pressure X = Atmospheric pressure	In the event of a problem, consult the diagnostic PR001
10	Ramp pressure	PR074: Fuel pressure PR102: Fuel regulation solenoid valve RCO signal ET087: Fuel low pressure injection inhibition	X < 5 bars X > 70 % Status NOT CONFIRMED	In the event of a problem, check that there are no faults
11	EGR	PR020: EGR potentiometer	X ≈ 23 %	In the event of a problem, consult the diagnostic PR020
Command Window				
12	Fuel pump	AC010: Fuel pump relay	Fuel pump should be heard to operate	In the event of a problem, consult the diagnostic AC010
13	Idle regulation valve	AC014: Idle regulation valve	Place your hand on it to ensure it is operating	In the event of a problem, consult the diagnostic AC014
14	Canister bleed solenoid valve	AC016: Canister bleed	The canister bleed solenoid valve should operate	In the event of a problem, consult the diagnostic AC016

NOTES	<p>The values shown in this conformity test are only given as an indication. It is therefore vital to consult the Technical Note which deals with your vehicle.</p> <p>Conditions for performance: Engine stopped, ignition on.</p>
-------	--

Order	Function	Abbreviations	Viewing and Notes	Fault finding
15	EGR valve	AC023: EGR solenoid valve	The valve should operate	In the event of a problem, consult the diagnostic AC023
16	Fan assembly	AC271: Low speed fan relay AC272: High speed fan relay	The fan should be heard when running at low speed The fan should be heard when running at low speed at high speed	In the event of a problem, consult the diagnostic AC271 In the event of a problem, consult the diagnostic AC272
17	Tell-tale	AC212: Coolant temperature warning tell-tale	The tell-tale should illuminate	In the event of a problem, consult the diagnostic AC212

NOTES	<p>The values shown in this conformity test are only given as an indication. It is therefore vital to consult the Technical Note which deals with your vehicle.</p> <p>Conditions for performance: Engine warm at idle speed, without electrical consumer.</p>
-------	---

Order	Function	Abbreviations	Viewing and Notes	Fault finding
Status Window				
1	Battery voltage	ET001: + After ignition PR004: Computer supply voltage If PR004: Computer supply voltage then PR006: Engine speed	Status CONFIRMED $13 < X < 14.5 \text{ V}$ $X < 12.8 \text{ V}$ $750 < X < 910 \text{ rpm}$	<p>In the event of a problem, consult the diagnostic PR004</p>
2	Fuel pump control	ET020: Fuel pump control relay	Status CONFIRMED	None
3	Flywheel signal/camshaft	ET060: Flywheel signal with engine running ET084: Camshaft information	Status CONFIRMED Status CONFIRMED Flashing	<p>In the event of a problem, consult the diagnostic ET060</p> <p>In the event of a problem, consult the diagnostic ET084</p>
4	Oxygen sensors heater	ET030: Upstream oxygen sensor heater ET031: Downstream oxygen sensor heater	Status CONFIRMED Status CONFIRMED (refer to operating conditions)	None

INJECTION

Fault finding - Conformity check

17

NOTES

The values shown in this conformity test are only given as an indication.
It is therefore vital to consult the Technical Note which deals with your vehicle.
Conditions for performance : Engine warm at idle speed, without electrical consumer.

Order	Function	Abbreviations	Viewing and Notes	Fault finding
5	Fuel pressure regulation	ET089 : Fuel pressure regulation PR074 : Fuel pressure PR102 : Fuel regulation solenoid valve RCO signal PR104 : Fuel pressure regulation error	Status CONFIRMED $45 < X < 100$ bars $20 < X < 30\%$ $X \sim 0$ bar	In the event of a problem, check that there are no faults
6	Idle speed regulation	ET039 : Idle speed regulation PR002 : Coolant temperature PR006 : Engine speed if PR055 : After Sales idle speed instruction PR040 : Idle speed divergence PR055 : Idle speed instruction PR022 : RCO signal idling PR021 : Idling RCO signal adaptive PR038 : Fast idle speed	Status CONFIRMED $X > 70$ °C $725 < X < 775$ rpm $X = 0$ rpm $-25 < X < +25$ rpm $725 < X < 775$ rpm $9 \% < X < 15\%$ $-6 \% < X < 6\%$ Status NOT CONFIRMED	In the event of a problem, consult the diagnostic ET039
7	Ratio regulation	ET037 : Ratio regulation PR009 : Upstream sensor voltage PR035 : Ratio correction value	Status CONFIRMED $20 < X < 800$ mV $0 < X < 255$	In the event of a problem, consult the diagnostic ET037

INJECTION

Fault finding - Conformity check

17

NOTES

The values shown in this conformity test are only given as an indication.
It is therefore vital to consult the Technical Note which deals with your vehicle.
Conditions for performance: Engine warm at idle speed, without electrical consumer.

Order	Function	Abbreviations	Viewing and Notes	Fault finding
8	Canister	ET032: Canister bleed PR023: Canister bleed solenoid valve RCO signal	Status NOT CONFIRMED $X < 0.7$	None
9	EGR	ET021: EGR solenoid control ET086: EGR adaptive PR020: EGR potentiometer PR049: EGR opening instructions PR026: EGR programming increase	Status CONFIRMED (depending on the operating conditions) Status CONFIRMED $X \approx 22 \%$ $X \approx 22 \%$ $X \approx 52$	In the event of a problem, consult the diagnostic method for programming EGR } PR020 PR026
Parameter Window				
10	Anti-pinking circuit	PR013: Average pinking signal PR015: Anti-pinking correction	$75 < X < 180$ $X \leq 5$	In the event of a problem, consult the diagnostic PR013
11	Pressure circuit	PR001: Manifold pressure PR016: Atmospheric pressure	$270 < X < 350 \text{ mb}$ $X = \text{Atmospheric pressure}$	In the event of a problem, consult the diagnostic PR001

NOTES	<p>The values shown in this conformity test are only given as an indication. It is therefore vital to consult the Technical Note which deals with your vehicle.</p> <p>Conditions for performance: Engine warm at idle speed, without electrical consumer.</p>
-------	---

Order	Function	Abbreviations	Viewing and Notes	Fault finding
Status Window				
12	Heating/ventilation (air conditioning selected)	ET009: Heating/ventilation request	Status CONFIRMED If the air conditioning requires compressor operation	In the event of a problem, consult the diagnostic ET009
		ET024: Air conditioning compressor	Status CONFIRMED If the injection allows the compressor operation	ET024
		PR006: Engine speed PR044: Power used by the AC compressor	850 < X < 950 rpm 250 < X < 5000 W	
		ET035: Low speed fan	Status CONFIRMED The fan should run at low speed	In the event of a problem, consult the diagnostic ET035
13	Power assisted steering pressure switch	Turn wheels to full lock		
		ET034: Power assisted steering pressostat	Status CONFIRMED	In the event of a problem, consult the diagnostic ET067
		ET067: Power-assisted steering pressure switch connection	Status CONFIRMED	
14	Fan assembly	PR002: Coolant temperature	The fan should operate when the engine water temperature exceeds 99 °C	In the event of a problem, consult the diagnostic ET035
		ET035: Low speed fan	Status CONFIRMED	
		PR002: Coolant temperature	The fan should operate when the engine water temperature exceeds 102 °C	
		ET036: High speed fan	Status CONFIRMED	ET036

NOTES	<p>The values shown in this conformity test are only given as an indication. It is therefore vital to consult the Technical Note which deals with your vehicle.</p> <p>Conditions for performance: Road test.</p>
-------	--

Order	Function	Abbreviations	Viewing and Notes	Fault finding
Status Window				
1	Canister bleed	ET032: Canister bleed PR023: Canister bleed RCO	Status CONFIRMED The canister bleed is authorised X > 1.5 % and variable	None
Parameter Window				
2	Vehicle speed	PR018: Vehicle speed	X = speed read on speedometer in km/h	In the event of a problem, consult the diagnostic PR018
3	Pinking sensor	Vehicle under load PR013: Average pinking signal PR015: Anti-pinking correction	$75 < X < 180$ $X \leq 5$	In the event of a problem, consult the diagnostic in PR013
4	Downstream oxygen sensor	PR010: Downstream oxygen sensor voltage/ tension in full load operation decelerating after full load	Do not take into account the voltage at idle speed. Consult the section in question. Rich sensor detector X increases with a short response time Poor sensor detection X falls with a short response time	In the event of a problem, consult the diagnostic in PR010

Order	Function	Abbreviations	Viewing and Notes	Fault finding
5	Adaptive richness	<p>Programming</p> <p>PR035: Richness correction value</p> <p>PR030: Adaptive operation</p> <p>ET031: Idling ration adaptive</p>	<p>0 < X < 255</p> <p>96 < X < 192</p> <p>32 < X < 224</p>	<p>In the event of a problem, check that there are no faults</p>
6	Pollutant emissions	<p>2500 rpm after driving</p> <p>At idle speed, wait for stabilisation</p>	<p>CO < 0.3 % CO2 > 13.5 % O2 < 0.8 % HC < 100 ppm 0,97 < 1 < 1,03</p> <p>CO < 0.5 % HC < 100 ppm 0,97 < 1 < 1,03</p>	<p>In the event of a problem, consult the Technical Note on Antipollution</p>

ET002	<u>IMMOBILISER</u>
NOTES	No faults should be present or memorised/stored

Check if the immobiliser is faulty. If the immobiliser is faulty, repair the fault before carrying out this test.
Check the insulation and continuity of the electrical wiring track 58 on the injection computer.
If the fault persists, refer to the immobiliser fault finding.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET008	<u>HEATING/VENTILATION CONNECTION</u>
-------	---------------------------------------

NOTES	No faults should be present or memorised/stored
-------	---

Check the insulation and continuity of the line for track 23 on the injection computer. Repair if necessary.
If the fault persists, refer to the air conditioning fault finding.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET009	<u>HEATING/VENTILATION REQUEST</u>
-------	------------------------------------

NOTES	No faults should be present or memorised/stored
-------	---

The injection computer does not register the air conditioning request.
Check the insulation and continuity of the line for track 23 on the injection computer. Repair if necessary.
If the fault persists, refer to the air conditioning fault finding.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET024	<u>AIR CONDITIONING COMPRESSOR</u>
-------	------------------------------------

NOTES	No faults should be present or memorised/stored
-------	---

The compressor clutch does not cut in.
Check the insulation and continuity of the line for track 10 on the injection computer. Repair if necessary.
If the fault persists, refer to the air conditioning fault finding.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET035	<u>LOW SPEED FAN</u>
-------	----------------------

NOTES	No faults should be present or memorised/stored
-------	---

<p>Check insulation and continuity of the line 8. Repair if necessary.</p>
<p>The fault persists. Check using the wiring diagram:</p> <ul style="list-style-type: none">– fan relay and fan supply,– fan earth cleanliness,– the status of the fan relay,– the fan resistance status,– the fan status. <p>Repair if necessary.</p>

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET036	<u>HIGH SPEED FAN</u>
-------	-----------------------

NOTES	No faults should be present or memorised/stored
-------	---

<p>Check insulation and continuity of the line 38. Repair if necessary.</p>
<p>The fault persists. Check using the wiring diagram:</p> <ul style="list-style-type: none">– fan relay and fan supply,– fan earth cleanliness,– the status of the fan relay,– the fan status. <p>Repair if necessary.</p>

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET037	<u>RICHNESS REGULATION</u>
-------	----------------------------

NOTES	No faults should be present or memorised/stored
-------	---

Check the connection and status of the downstream oxygen sensor connector . Repair if necessary.								
Check that there are 12V on the upstream oxygen sensor. Check insulation and continuity of the line: <table><tr><td>Computer</td><td>45</td><td>—————→</td><td>Oxygen sensor</td></tr><tr><td>Computer</td><td>80</td><td>—————→</td><td>Oxygen sensor</td></tr></table> Repair if necessary.	Computer	45	—————→	Oxygen sensor	Computer	80	—————→	Oxygen sensor
Computer	45	—————→	Oxygen sensor					
Computer	80	—————→	Oxygen sensor					
Check ignition. Check the sealing of the canister bleed valve (a leak can disrupt the richness considerably). Check the exhaust system seal. Check the sealing of the inlet manifold. If the vehicle has only been driven in town, the sensor is contaminated (try driving under load). Check the fuel pressure. If the idling is unstable, check the valve clearances and distribution. If necessary, replace the oxygen sensor.								

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET039	<u>IDLE SPEED REGULATION</u>
-------	------------------------------

NOTES	No faults should be present or memorised Pay particular attention to the instruction value of After Sales idle speed: PR055.
-------	---

Check the resistance of the idle speed regulation stepper motor . Change the idle regulation valve if necessary.	
Check insulation and continuity of the line:	
Computer 12	—————> Idle speed regulation stepper motor
Computer 41	—————> Idle speed regulation stepper motor
Computer 42	—————> Idle speed regulation stepper motor
Computer 72	—————> Idle speed regulation stepper motor
Correct if necessary and continue the diagnostic following the idle speed divergence value.	

Speed divergence idle < stop min.	NOTES	The idle speed is too low
---	-------	---------------------------

<ul style="list-style-type: none">– Check the operation of the ratio regulation.– Clean the air supply circuit (throttle body, idle speed regulation stepper motor), since it is probably contaminated.– Check the engine oil level (too high --> splashing).– Check ignition.– Check the injectors.– Check the engine compression.– Check the valve clearances and the timing. If all these points are correct, replace the idle regulation motor.	
--	--

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

CONT	
------	--

Speed divergence idle < stop min.	NOTES	The idle speed is too high
---	-------	----------------------------

<ul style="list-style-type: none">– Check the engine oil level.– Check that the pressure sensor is operating correctly.– Check the cleanliness of the pipes on the manifold.– Check the pneumatically controlled solenoid valves.– Check the brake servo sealing.– Check the restrictions are present in the oil vapour rebreathing circuit.– Check the manifold gaskets.– Check the throttle body gaskets.– Check the valve clearances and the timing. <p>If all these points are correct, replace the idle regulation motor.</p>
--

AFTER REPAIR	Restart the conformity check from the beginning.
-----------------	--

ET060	<u>FLYWHEEL SIGNAL</u>
-------	------------------------

NOTES	No faults should be present or memorised/stored
-------	---

Check the connection and status of the target sensor connector . Change the connector if necessary.
Check the resistance of the target sensor . Replace the sensor if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance of the line: <div><div>Computer54</div><div>—————></div><div>Target sensor</div><div>Computer24</div><div>—————></div><div>Target sensor</div></div> Repair if necessary.
Check the status of the flywheel.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET067	<u>POWER-ASSISTED STEERING PRESSURE SWITCH CONNECTION</u>
-------	---

NOTES	No faults should be present or memorised/stored
-------	---

Check the **correct operation of the power assisted steering** (oil level, ...).

Check that the **power-assisted steering pressure switch is correctly connected**.

Check **insulation and continuity** of the line:

Injection computer

Power assisted steering pressure switch

85

—————>

—————>

Power assisted steering pressure switch

Earth

Repair if necessary.

If these points are correct, replace the power assisted steering pressure switch.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET068	<u>ELECTRICAL WINDSCREEN CONNECTION</u>
-------	---

NOTES	No faults should be present or memorised/stored
-------	---

Turn the engine on. Select the electrical windscreen. If the ET068 status is not active, check the insulation continuity and interference resistance on line 88 of the injection computer.
If the fault persists, refer to the air conditioning fault finding.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET069	<u>VEHICLE SPEED SENSOR CONNECTION</u>
-------	--

NOTES	No faults should be present or memorised/stored
-------	---

You have certainly just changed the injection computer or the vehicle has never been driven at a speed above 40 km/h.
It is vital that this status is active before handing the vehicle over to the customer.
To activate this status, carry out a road test (you must drive at speed of greater than 40 km/h).
If this status is not illuminated, consult the vehicle speed parameter diagnostic PR018.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

ET084	<u>CAMSHAFT INFORMATION</u>
-------	-----------------------------

NOTES	No faults should be present or memorised/stored
-------	---

Check the connection and status of the camshaft sensor connector . Change the connector if necessary.
Check the camshaft sensor resistance. Change the camshaft sensor if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line: <div>Computer 46 —————> Camshaft sensor</div> Repair if necessary.
With the ignition on, check for 12 V on the cam,shaft sensor . Repair if necessary.
Check for earth on the camshaft sensor . Repair if necessary.
Change the camshaft sensor.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR001	<u>MANIFOLD PRESSURE</u>
-------	--------------------------

NOTES	No faults should be present or memorised
-------	--

<div>Manifold pressure not coherent with ignition on PR001</div> <div>Manifold pressure < Min. at idling speed PR001</div> <div>Atmospheric pressure not coherent PR016</div>	<div>Check the insulation, continuity and interference resistance on the line:</div> <div><div>Computer15→Pressure sensor</div><div>Computer16→Pressure sensor</div><div>Computer78→Pressure sensor</div></div> <div>Repair if necessary.</div> <div>If all these points are correct, replace the sensor.</div>
--	--

<div>Manifold pressure > Max. at idle speed PR001</div>	<div>Check:</div> <div><div>– the pipe sealing between the manifold and the sensor.</div><div>– the canister bleed valve which should be closed at idle speed.</div><div>– cylinder compression.</div><div>– the valve clearances,</div></div> <div>If all these points are correct, replace the sensor.</div>
--	--

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR002	<u>COOLANT TEMPERATURE</u>
-------	----------------------------

NOTES	No faults should be present or memorised
-------	--

If the value taken is incoherent, check the sensor is correctly following the calibration curve "resistance according to temperature".
Change the sensor if it drifts (**Note:** a sensor which drifts is often the result of an electric shock).

Check **the insulation, continuity and interference resistance** of the electrical line:

Computer	13	→	Pressure sensor
Computer	73	→	Pressure sensor

Repair.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR003	<u>AIR TEMPERATURE</u>
-------	------------------------

NOTES	No faults should be present or memorised
-------	--

If the value taken is incoherent, check the sensor is correctly following the calibration curve "resistance according to temperature".
Change the sensor if it drifts (**Note:** a sensor which drifts is often the result of an electric shock).

Check **the insulation, continuity and interference resistance** of the electrical line:

Computer	49	→	Air temperature sensor
Computer	77	→	Air temperature sensor

Repair.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR004	<u>COMPUTER SUPPLY VOLTAGE</u>
-------	--------------------------------

NOTES	No faults should be present or memorised No consumers
-------	--

Ignition on

If voltage < Min, the battery is discharged: Check the charging circuit to determine the cause of this fault.
If voltage >Max, the battery may be too charged: Check that the charging voltage is correct with and without consumers.

At idle speed

If voltage < Minimum, the charging voltage is too low: Check the charging circuit to determine the cause of this fault.
If voltage > Maximum, the charging voltage is too high: The alternator regulator is faulty. Repair this fault and check the electrolyte level in the battery.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR010	<u>DOWNSTREAM OXYGEN SENSOR VOLTAGE</u>
-------	---

NOTES	No faults should be present or memorised
-------	--

Check the connection and status of the downstream oxygen sensor connector . Repair if necessary.	
Check for 12 V on the downstream oxygen sensor. Check insulation and continuity of the line:	
Computer 44	→ Oxygen sensor
Computer 76	→ Oxygen sensor
Repair if necessary.	
Check the exhaust system seal.	

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR013	<u>PINKING SIGNAL</u>
-------	-----------------------

NOTES	No faults should be present or memorised
-------	--

The pinking sensor should give a signal which is not zero, to prove that it is recording the mechanical vibrations of the engine.

If the signal is zero:

- Check that the **sensor is correctly screwed in.**
- Check **the insulation and continuity of the electrical wiring:**

Computer	20	→	Pinking sensor
Computer	79	→	Pinking sensor
Computer	19	→	Pinking sensor screening

If necessary, replace the sensor.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR017	<u>THROTTLE POSITION</u>
-------	--------------------------

NOTES	No faults should be present or memorised
-------	--

<div>Programming at stop PR008 or PL ET003 not detected or PG ET005 not detected</div>	Check that the potentiometer mechanical stop has not been altered. Check the accelerator control (friction, ...).													
	Check the resistance of the throttle potentiometer . Replace the throttle potentiometer if necessary.													
	Check the insulation, continuity and interference resistance on the line: <table><tr><td>Computer</td><td>43</td><td>————→</td><td>Throttle potentiometer</td></tr><tr><td>Computer</td><td>74</td><td>————→</td><td>Throttle potentiometer</td></tr><tr><td>Computer</td><td>75</td><td>————→</td><td>Throttle potentiometer</td></tr></table> Repair if necessary.			Computer	43	————→	Throttle potentiometer	Computer	74	————→	Throttle potentiometer	Computer	75	————→
Computer	43	————→	Throttle potentiometer											
Computer	74	————→	Throttle potentiometer											
Computer	75	————→	Throttle potentiometer											

The throttle position is fixed/parked PR017	Check that the sensor is mechanically linked to the throttle. If necessary, replace the sensor.
--	--

AFTER REPAIR	Restart the conformity check from the beginning.
-----------------	--

PR018	<u>VEHICLE SPEED</u>
-------	----------------------

NOTES	No faults should be present or memorised
-------	--

Check the insulation, continuity and interference resistance on the line: <div>Computer 53 —————> ABS</div> NOTE: Check the various functions using this information. Repair. If the fault persists, refer to the ABS fault finding.	
---	--

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR020	<u>EGR POTENTIOMETER</u>
-------	--------------------------

NOTES	No faults should be present or memorised
-------	--

Check the resistance of the EGR potentiometer . Change the potentiometer if necessary.	
Check the insulation, continuity and interference resistance on the line:	
Computer	18 —————> EGR potentiometer
Computer	82 —————> EGR potentiometer
Computer	83 —————> EGR potentiometer
Repair if necessary.	

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

PR026	<u>EGR PROGRAMMING INCREASE</u>
-------	---------------------------------

NOTES	No faults should be present or memorised
-------	--

Check the connection and status of the EGR solenoid valve connector EGR . Change the connector if necessary.	
With the ignition on, check for 12 V after actuator relay on the EGR solenoid valve. Repair if necessary.	
Check the resistance of the EGR solenoid valve . Change the solenoid valve if necessary.	
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line: <div>Injection computer 62 —————> EGR solenoid valve</div> Repair if necessary.	
Change the solenoid valve if necessary.	

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

AC010	<u>FUEL PUMP</u>
NOTES	No faults should be present or memorised

Check that the impact sensor is switched on . Switch on the impact sensor if necessary.
Check the continuity between tracks 1 and 3 of the impact sensor . If there is no continuity, change the impact sensor.
With the starter motor on, check for 12 V on track 3 of the impact sensor connector . If there are not 12 V, correct the track 3 line of the impact sensor to track 5 of the fuel pump relay.
Check the hygiene and presence of earth on track C2 of the fuel pump .
Check the insulation and continuity of wiring: <div>Impact sensor 1 —————> C1 Fuel pump</div> Repair if necessary.
If the incident persists, change the fuel pump.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

AC014	<u>IDLE SPEED REGULATION VALVE</u>
-------	------------------------------------

NOTES	No faults should be present or memorised
-------	--

Check the connection and status of the idle speed regulation stepper connector. Change the connector if necessary.			
Check the resistance of the idle speed regulation stepper motor . Change the idle speed regulation stepper motor if necessary.			
Check the insulation, continuity and interference resistance on the line:			
Computer	12	————→	Idle speed regulation stepper motor
Computer	41	————→	Idle speed regulation stepper motor
Computer	42	————→	Idle speed regulation stepper motor
Computer	72	————→	Idle speed regulation stepper motor
Repair if necessary.			
Change the idle speed regulation stepper motor.			

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

AC016	<u>CANISTER BLEED</u>
-------	-----------------------

NOTES	No faults should be present or memorised
-------	--

Check the connection and status of canister bleed connector . Change the connector if necessary.
With the ignition on, check for 12 V on the canister bleed valve . Repair if necessary.
Check the resistance of the canister bleed valve . Replace the valve if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line: <div>Computer 4 —————> Canister bleed valve</div> Repair if necessary.
Change the canister bleed valve.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

AC023	<u>EGR SOLENOID VALVE</u>
-------	---------------------------

NOTES	No faults should be present or memorised
-------	--

Check the connection and status of the EGR solenoid valve connector . Change the connector if necessary.
With the ignition on, check for 12 V after actuator relay on the EGR solenoid valve. Repair if necessary.
Check the resistance of the EGR solenoid valve . Change the solenoid valve if necessary.
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line: <div>Injection computer 62 —————> EGR solenoid valve</div> Repair if necessary.
Change the EGR solenoid valve.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

AC212	<u>COOLANT TEMPERATURE WARNING TELL-TALE</u>
-------	--

NOTES	No faults should be present or memorised
-------	--

Check the connection and status of the overheat tell-tale line connector . Change the connector if necessary.
Check the status of the tell-tale light (if it is not lit). Change it if necessary.
Check that there is an input of 12 V into the tell-tale . Rectify the line to the fuse.
Connect the bornier and check the insulation and continuity of the line track 9 of the computer. Repair.

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

AC271	<u>LOW SPEED FAN</u>
-------	----------------------

NOTES	No faults should be present or memorised
-------	--

<p>Check the insulation and continuity of line 8. Repair if necessary.</p> <p>The fault persists. Check using the wiring diagram:</p> <ul style="list-style-type: none">– fan relay and fan supply.– fan earth cleanliness.– the status of the fan relay.– the fan resistance status.– the fan status. <p>Repair if necessary.</p>

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

AC272	<u>HIGH SPEED FAN</u>
-------	-----------------------

NOTES	No faults should be present or memorised
-------	--

<p>Check the insulation and continuity of line 38. Repair if necessary.</p> <p>The fault persists. Check using the wiring diagram:</p> <ul style="list-style-type: none">– fan relay and fan supply.– fan earth cleanliness.– the status of the fan relay.– the fan status. <p>Repair if necessary.</p>

AFTER REPAIR	Restart the conformity check from the beginning.
--------------	--

Refer to section 12 of the Technical Note
which deals with your vehicle to obtain the
exact values.

- Injector resistance = 1.78 Ω
- Idle regulation stepper motor resistance = 53 Ω
- Canister bleed valve resistance = 26 Ω
- Ignition coil resistance : Primary = 0.5 Ω
- Secondary = 11 kΩ
- Oxygen sensor heater resistance : Upstream = 9 Ω
- Downstream = 3.4 Ω
- Throttle potentiometer resistance : Track = 1300 Ω
- Cursor = 1050 Ω
- Flywheel signal resistance = 220 Ω
- EGR solenoid valve : Track = 5 kΩ
- Valve = 6 kΩ
- Fuel pressure sensor = 3.8 Ω
- Fuel pressure regulator = 2084 Ω
- Manifold pressure sensor = 50 kΩ
- Value for: CO = 0.5 % max
- HC = 100 ppm maximum
- CO2 = 14.5 % min
- Lambda = $0.97 < \lambda < 1.03$

Sensor resistance					
Temperature in °C	-10	25	50	80	110
Air temperature sensor Resistance in ohms	10450 to 8585	2120 to 1880	860 to 760	-	-
Coolant temperature sensor Resistance in ohms	-	2360 to 2140	850 to 770	290 to 275	117 to 112

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

NO COMMUNICATION WITH THE COMPUTER

CHART 1

FAULTS

CHART 2

IDLE SPEED FAULTS

CHART 3

PROBLEMS WHEN DRIVING

CHART 4

Chart 1	NO COMMUNICATION WITH THE COMPUTER
NOTES	None

Try the diagnostic tool on another vehicle.			
Check: – the connection between the diagnostic tool and the diagnostic test (good wiring status), – the injection, engine and passenger compartment fuses. Repair if necessary.			
Check for + 12 V on track 16 and for earth on track 5 of the diagnostic connector. Repair if necessary.			
Connect the bornier in place of the computer and check the insulation, continuity and interference resistance on the line:			
Injection computer	28	—————>	Earth
Injection computer	33	—————>	Earth
Injection computer	3	—————>	Earth
Injection computer	56	—————>	7 Diagnostic connector
Injection computer	26	—————>	15 Diagnostic connector
Injection computer	29	—————>	Fuse
Injection computer	30	—————>	Fuse
Repair.			

AFTER REPAIR	Test using the diagnostic tool.
--------------	---------------------------------

Chart 2	STARTING FAULTS
---------	-----------------

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

Check there is fuel present (fuel gauge faulty). Check the fuel is of the correct type. Check no hoses are pinched (especially after a removal operation). Check the status of the tank.	
Check the fuel pump supply. Check that the impact sensor is operating correctly.	
Check the idle speed regulation valve Tap gently to release the valve.	
Disconnect the pipe which links the canister bleed solenoid valve to the inlet manifold. Plug the pipe to prevent an air leak. If there is no other effect, the canister bleed is faulty.	
Check the status of the plugs and coils. Check that these elements are well adapted to the vehicle.	
Check that the exhaust system is not blocked and that the catalytic converter is not plugged.	
Check the engine compression	
Check the status of the flywheel.	

AFTER REPAIR	Test using the diagnostic tool.
--------------	---------------------------------

Chart 3	IDLE SPEED FAULTS
---------	-------------------

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

Check there is fuel present (fuel gauge faulty). Check the fuel is of the correct type. Check no hoses are pinched (especially after a removal operation). Check the status of the tank.	
Check the idle speed regulation valve Tap gently to release the valve.	
Disconnect the pipe which links the canister bleed solenoid valve to the inlet manifold. Plug the pipe to prevent an air leak. If there is no other effect, the canister bleed is faulty.	
Check the status of the plugs and coils. Check that these elements are well adapted to the vehicle.	
Check that the exhaust system is not blocked and that the catalytic converter is not plugged.	
Use the dipstick to check if the oil level is too high.	
Check the status of the inlet manifold gaskets.	
Check the throttle body is not contaminated.	
Check the brake servo is not leaking (noise).	
Check the engine compression	
Check the status of the flywheel.	

AFTER REPAIR	Test using the diagnostic tool.
--------------	---------------------------------

Chart 4	PROBLEMS WHEN DRIVING
---------	-----------------------

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

Check there is fuel present (fuel gauge faulty). Check the fuel is of the correct type. Check no hoses are pinched (especially after a removal operation). Check the status of the tank.	
Disconnect the pipe which links the canister bleed solenoid valve to the inlet manifold. Plug the pipe to prevent an air leak. If there is no other effect, the canister bleed is faulty.	
Check the status of the plugs and coils. Check that these elements are well adapted to the vehicle.	
Check the exhaust manifold is not leaking.	
Check that the exhaust system is not blocked and that the catalytic converter is not plugged.	
Check the air filter is not deformed.	
Check the status of the inlet manifold gaskets.	
Check the brake servo is not leaking (noise).	
Check the throttle body is not contaminated.	
Use the dipstick to check if the oil level is too high.	
Check the engine compression	
Check the status of the flywheel.	
Check that cooling is not insufficient.	
Check that the calipers, drums and bearings are not seized. Check that the tyres are not under-inflated.	

AFTER REPAIR	Test using the diagnostic tool.
--------------	---------------------------------