



Fault- Finding

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BB0A - BB0C - BB0D - BB0E - CB0A - CB0C - CB0D - CB0E

77 11 197 384

DECEMBER 1997

Edition Anglaise

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

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F8Q 630 ENGINE

FAULT FINDING LUCAS DIESEL INJECTION

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CONDITIONS FOR APPLYING THE TESTS DESCRIBED IN THIS FAULT FINDING DOCUMENT

The tests described in this fault finding section should only be applied to the vehicle if the title of the fault treated corresponds exactly to the display noted on the XR25 when the ignition is switched on.

If a bargraph is interpreted when flashing, the conditions for confirming the presence of an actual fault (and the necessity of applying the fault finding) are shown in the "Notes" section or at the start of the bargraph interpretation.

If a bargraph is only interpreted if it is permanently illuminated, the application of these tests recommended in the fault finding document when the bargraph is flashing will not allow the cause of the memorised fault to be determined. In this case, only checking of the wiring and connections of the faulty component should be carried out (the fault is simply memorised as it was not present at the moment of testing).

NOTE: The ignition should be switched off before the XR25 is used.

SPECIAL TOOLING REQUIRED FOR OPERATIONS ON THE DPC DIGITAL INJECTION SYSTEM

- XR25 test kit.
- XR25 cassette N° 17 minimum.
- 25 track bornier **Elé. 1332** for testing using the computer connector.

PRESENTATION OF FICHE XR25 N° 60 SIDE 1/2

N°60 1/2		S8	code : D 3 4	read : EdIE
1	<input type="checkbox"/> ILLUMINATED <input type="checkbox"/> EXTINGUISHED	→ →	FAULT TEST TURN FICHE OVER	CODE PRESENT <input type="checkbox"/>
2	<input type="checkbox"/> * 02 COOLANT TEMP.			AIR TEMPERATURE * 22 <input type="checkbox"/>
3	<input type="checkbox"/> * 03 LOAD POTENTIOMETER	SENSOR CIRCUITS		FLYWHEEL SIGNAL <input type="checkbox"/>
4	<input type="checkbox"/> * 04 VEHICLE SPEED			ATMOSPHERIC PRESSURE * 24 <input type="checkbox"/>
5	<input type="checkbox"/> NEEDLE LIFT			ALTIMETRIC CORRECTOR * 25 <input type="checkbox"/>
6	<input type="checkbox"/> * 06 ADVANCE	SOL CIRCUITS		ACCEL. IDLE * 26 <input type="checkbox"/>
7				EGR * 27 <input type="checkbox"/>
8	<input type="checkbox"/> * 08 PREHEATER N°1	RELAY CTRL CIRCUITS		PREHEATER N°2 * 28 <input type="checkbox"/>
9				PAS ASSEMBLY * 29 <input type="checkbox"/>
10	<input type="checkbox"/> FAULT	TELL-TALE CIRCUITS		PREHEATING * 30 <input type="checkbox"/>
DIESEL INJECTION (FAULTS)			ADDITIONAL CHECKS : # . .	
Erase fault memory : G 0 **				
Request status check : G 0 1 *				
11	<input type="checkbox"/> GROUP N°1	PREHEATER PLUGS	GROUP N°2	<input type="checkbox"/>
12	<input type="checkbox"/> * 12 BATTERY		PF or PL NOT PROG.	<input type="checkbox"/>
13	<input type="checkbox"/> AIR CON. CUT-OFF			
14				
15				
16				
17				
18				
19				
20				
			End of test : G13*	
			Part No : G70*	
			Faults diagnosed : press V and 9 Return to diag. mode : D	
			17	ANG

FI21760-1

PRESENTATION OF FICHE XR25 N° 60 SIDE 2/2

N°60 2/2		read : 7d IE	
1	<input type="checkbox"/> EXTINGUISHED ILLUMINATED	→ STATUS TEST → TURN FICHE OVER	CODE PRESENT <input type="checkbox"/>
2	<input checked="" type="checkbox"/> ADVANCE	SOL CONTROLS	ACCEL. IDLE <input type="checkbox"/>
3			EGR <input type="checkbox"/>
4	<input type="checkbox"/> RESET FAULT MEMORIES		PREHEATING INHIBITED <input type="checkbox"/>
5	<input checked="" type="checkbox"/> PREHEATER N°1	RELAY Controls	PREHEATER N°2 <input type="checkbox"/>
6	<input checked="" type="checkbox"/> PAS ASSEMBLY		ALTIMETRIC CORRECTOR <input type="checkbox"/>
7			02 Coolant temp. °C
8		AIR CON.	03 Air temperature °C
9	<input type="checkbox"/> REQUEST	→	04 Battery voltage V
10	<input checked="" type="checkbox"/> FAULTS	TELL-TALES	06 Engine speed rpm
		PREHEATING	16 Atmos. pressure h.Pa
			17 Throttle load %
			18 Vehicle speed km/h
			24 RCD EGR %
			32 Advance gap CRANKSHAFT ANGLE
(NOTE : watch bargraph 20 LH)			
DIESEL INJECTION (Status)			
Erase fault memory : G 0 **			
Request fault check : G 02 *			
11	<input type="checkbox"/> LOAD LEVER POSN.	INFO OUTPUT	ENGINE SPEED <input type="checkbox"/>
12			CONTROL MODES : G . . (If engine stopped)
13			10*1* Relay preheater n°1
14			2* Relay preheater n°2
15			16* Accel. idle
16			19* Altimetric corrector
17			21*1* Fault tell-tale
			2* Preheater tell-tale
			31* PR or PL/PF programming
			32* Potentiometer adj.
			36* Power-steering
			50*x* Computer prog.
			58*x* Computer config.
 See procedure on fiche REMINDER C			
18	<input checked="" type="checkbox"/> WITH A.C	COMPUTER CONFIGURATION	WITHOUT A.C <input type="checkbox"/>
19	<input checked="" type="checkbox"/> WITH PAS		WITHOUT PAS <input type="checkbox"/>
20	<input checked="" type="checkbox"/> FAULT PRESENT		XR25 MEMORY 0
End of test : G13*			
Part No : G70*			
Faults of test : press V and 9			
Return to diag. mode : D			
17 ANG			

FI21760-2

BARGRAPH SYMBOLS

FAULTS (always on a coloured background)

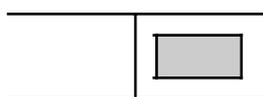


If illuminated, there is a fault with the product tested. The associated text defines the fault.

The bargraph may be :

- Permanently illuminated : fault present.
- Flashing : fault memorised
- Extinguished : no fault or not diagnosed

STATUS (always on a white background)



Bargraph always at the top right hand side.

If illuminated dialogue has been established with the computer for the product.

If it remains extinguished:

- The code does not exist.
- There is a fault with the tool, the computer or the XR25 / computer connection.

The representation of the following bargraphs indicates their initial status:

Initial status: (ignition on, engine stopped, no operator action)



or



Indefinite

- illuminated when the function or condition on the fiche is met.



Extinguished



Illuminated - extinguishes when the function or condition on the fiche is no longer met

ADDITIONAL NOTES

Certain bargraphs have a *. The *. command, when the bargraph is illuminated, allows additional information on the type of fault or status to be displayed.

Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	<p>Fiche n° 60 1/2</p>
<p>Bargraph 1 RH extinguished <u>Code present</u></p>	

NOTES	<p>Use bornier Elé. 1332 for any operations on the computer connector.</p>
--------------	--

Ensure that the XR25 is not the cause of the fault by trying to communicate with the computer on another vehicle. If the XR25 is not the cause of the fault and dialogue is not established with another computer on the same vehicle, a faulty computer may be causing interference on the K and L fault finding lines. Disconnect connections successively to determine which computer is at fault.

Check the ISO selector is on position S8, that you are using the latest XR25 cassette and the correct access code (D34).

Check the battery voltage and carry out any necessary operations to ensure the correct voltage (U battery > 10.5 volts).

Check the two 15 Amp fuses on the engine connection unit have not blown.

Check the connection and condition of the connections on the computer connector and the intermediate connections R107 dashboard / front of engine and R67 front / engine.

Check the computer is correctly fed:

- Earth on track 2 of the computer connector (check the condition and tightness of the engine earth strap and the engine earth MH near to the gearbox housing).
- + after ignition feed on track 1 of the computer connector.

Check the diagnostic socket is correctly fed:

- Earth on track 5.
- + before ignition feed on track 16.

Check and ensure the continuity and insulation of the lines in the connection diagnostic socket/ computer:

- Between track 10 of the computer connector and track 15 of the diagnostic socket.
- Between track 13 of the computer connector and track 7 of the diagnostic socket.

If fault finding is not established after these operations, replace the computer (consult the "Aid" section for this operation).

AFTER REPAIR	<p>When communication is established, deal with any fault bargraphs which may be illuminated.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	<p>Bargraph 1 LH illuminated</p> <p><u>Computer</u></p>	<p>Fiche n° 60 1/2</p>
---	---	------------------------

<p>NOTES</p>	<p>None</p>
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Replace the computer (consult the "Aid" section for this operation).

<p>AFTER REPAIR</p>	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
----------------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>2</p> 	<p>Bargraph 2 LH illuminated Fiche n° 60 1/2</p> <p><u>Coolant temperature sensor circuit</u></p> <p>XR25 aid: *02 : <i>co.1</i> : Open circuit or short circuit to 12 volts <i>cc.0</i> : Short circuit or short circuit to earth</p>
---	---

NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
--------------	---

co.1	NOTES	<p>If bargraphs 2RH and 3LH are also illuminated, look for a CO of the sensor common earth (track 3 of the computer connector)</p> <p>Also check the condition and tightness of the engine earth strap and the gearbox engine earth.</p>
-------------	--------------	--

Ensure the continuity and insulation in relation to + 12 volts of the connection between track 25 on the computer connector and track 2 on the coolant temperature sensor connector.

Ensure the continuity of the connection between track 3 on the computer connector and track 1 on the coolant temperature sensor connector.

Test the connections on the 2 connectors.

If the fault persists after these tests, replace the coolant temperature sensor then erase the computer memory.

If the "coolant temperature sensor circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

cc.0	NOTES	None
-------------	--------------	------

Ensure insulation from earth of the connection between track 25 on the computer connector and track 2 on the coolant temperature sensor connector.

Check to see if the sensor circuit (or the sensor) is in short circuit (resistance at 60°C = 1.2 Kohms).

Test the connections on the 2 connectors.

If the fault persists after these tests, replace the coolant temperature sensor then erase the computer memory.

If the "coolant temperature sensor circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

2	<p>Bargraph 2 RH illuminated Fiche n° 60 1/2</p> <p><u>Air temperature sensor circuit</u></p> <p>XR25 aid: *22 : <i>co.1</i> : Open circuit or short circuit to 12 volts <i>cc.0</i> : Short circuit or short circuit to earth</p>
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NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
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co.1	NOTES	If bargraphs 2LH and 3LH are also illuminated, look for a CO of the common sensor earth (track 3 of the computer connector)
-------------	--------------	---

<p>Ensure the continuity and insulation in relation to + 12 volts of the connection between track 24 on the computer connector and track 2 of the air temperature sensor connector.</p> <p>Ensure the continuity of the connection between track 3 on the computer connector and track 1 of the air temperature sensor connector.</p> <p>Test the connections on the 2 connectors.</p>
<p>If the fault persists after these tests, replace the air temperature sensor then erase the computer memory.</p> <p>If the "air temperature sensor circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>

cc.0	NOTES	None
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<p>Ensure insulation from earth of the connection between track 24 on the computer connector and track 2 of the air temperature sensor connector.</p> <p>Check to see if the sensor circuit (or the sensor) is in short circuit (resistance at 20°C = 3.5 Kohms).</p> <p>Test the connections on the 2 connectors.</p>
<p>If the fault persists after these tests, replace the air temperature sensor then erase the computer memory.</p> <p>If the "air temperature sensor circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> 	<p>Bargraph 3 LH illuminated Fiche n° 60 1/2</p> <p><u>Load potentiometer circuit</u></p> <p>XR25 aid: *03 : <i>co.0</i> : Open circuit or short circuit to earth <i>cc.1</i> : Short circuit to 5 volts or to 12 volts <i>dEF</i> : Sensor feed fault</p>
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NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
--------------	---

co.0	NOTES	None
-------------	--------------	------

Ensure the continuity and insulation in relation to earth of the connection between track 23 on the computer connector and track 3 on the pump connector (10 tracks).

Also ensure the insulation of this connection in relation to the connection between track 3 on the computer connector and track 5 on the pump connector (potentiometer earth).

Also ensure the continuity of the connection between track 4 on the computer connector and track 4 on the pump connector.

Look for a possible potentiometer short circuit (between tracks 4 and 5 on the 10 track connector) or a short circuit in its feed.

Test the connections on the 2 connectors.

If the fault persists after these tests, replace the load potentiometer (consult the "Aid" section for this operation).

If the "load potentiometer circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

cc.1	NOTES	If BG2LH and 2RH are also illuminated, look for a CO on the sensor earth (track 3 of the computer connector).
-------------	--------------	---

Ensure insulation from 5 volts and from 12 volts of the connection between track 23 on the computer connector and track 3 on the pump connector (10 tracks).

Also ensure the insulation of this connection in relation to the connection between track 4 on the computer connector and track 4 on the pump connector(+ 5 volts potentiometer).

Ensure the continuity of the connection between track 3 on the computer connector and track 5 on the pump connector.

Test the connections on the 2 connectors.

If the fault persists after these tests, replace the load potentiometer (consult the "Aid" section for this operation).

If the "load potentiometer circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> <hr/> <div style="background-color: black; width: 20px; height: 15px; margin: 5px auto;"></div> <hr/> <p>CONT</p>	
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<i>dEF</i>	NOTES	None
------------	--------------	------

Ensure the insulation (+12 Volts and earth) of the connection between track 4 on the computer connector and track 4 of the pump connector (10 tracks).

If the fault persists after these tests, replace the load potentiometer (consult the "Aid" section for this operation).

If the "load potentiometer circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> 	<p>Bargraph 3 RH flashing</p> <p><u>Engine speed sensor circuit</u></p>	<p>Fiche n° 60 1/2</p>
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NOTES	<p>The engine speed sensor circuit fault is present if the bargraph illuminates when the engine is running.</p> <p>Use bornier Elé. 1332 for any operations on the computer connector.</p>
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Measure the resistance of the flywheel signal sensor at its connector. Replace the sensor if the resistance is not approximately 250 ohms.

Ensure the continuity and insulation of the following lines:

- Between track 8 on the computer connector and track B on the flywheel signal sensor connector.
- Between track 3 on the computer connector and track A on the flywheel signal sensor connector.

Also check the insulation between these two connections.

Test the connections on the 2 connectors.

Carry out a visual inspection of the general condition of the wiring and its routing for possible interference.

Check the positioning and condition of the sensor.

Check the condition of the target (deformation, mounting, noise....).

Check the conformity of the target: 2 gaps at 180°.

If the fault persists after these tests, replace the flywheel signal sensor.

If the "engine speed sensor circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Bargraph 4 LH flashing Fiche n° 60 1/2</p> <p><u>Vehicle speed sensor circuit</u></p> <p>XR25 aid: *04 : <i>cc.0</i> : Short circuit to earth <i>co.1</i> : Open circuit or short circuit to 12 volts</p>
---	---

NOTES	<p>The vehicle speed sensor circuit fault is present if the bargraph illuminates during a road test. Use bornier Elé. 1332 for any operations on the computer connector.</p>
--------------	--

cc.0	NOTES	None
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<p>Ensure the insulation from earth of the connection between track 12 on the computer connector and track B1 on the vehicle speed sensor connector.</p> <p>Also ensure the insulation of this connection in relation to the connection between track 3 on the computer connector and track B2 on the vehicle speed sensor connector.</p> <p>Test the connections on the 2 connectors.</p> <p>Check the vehicle speed sensor feed:</p> <ul style="list-style-type: none"> - +after ignition feed on track A of the sensor connector - Earth on track B2 of the sensor connector. <p>If the fault persists after these tests, replace the vehicle speed sensor, then erase the computer memory.</p> <p>If the "vehicle speed sensor circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>

co.1	NOTES	None
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<p>Ensure the continuity and insulation in relation to 12 volts of the connection between track 12 on the computer connector and track B1 on the vehicle speed sensor connector.</p> <p>Also ensure the insulation of this connection in relation to the vehicle speed sensor+ after ignition feed line (track A of the sensor connector).</p> <p>Test the connections on the 2 connectors.</p> <p>Check the vehicle speed sensor feed:</p> <ul style="list-style-type: none"> - +after ignition feed on track A of the sensor connector - Earth on track B2 of the sensor connector. <p>If the fault persists after these tests, replace the vehicle speed sensor, then erase the computer memory.</p> <p>If the "vehicle speed sensor circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>
--

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Bargraph 4 RH illuminated</p> <p><u>Atmospheric pressure sensor circuit</u></p>	<p>Fiche n° 60 1/2</p>
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<p>NOTES</p>	<p>None</p>
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Replace the computer (consult the "Aid" section for this operation).

<p>AFTER REPAIR</p>	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>5</p> 	<p>Bargraph 5 LH flashing</p> <p><u>Needle lift sensor circuit</u></p>	<p>Fiche n° 60 1/2</p>
---	---	------------------------

NOTES	<p>The needle lift sensor circuit fault is present if the bargraph illuminates when the engine is running. Use bornier Elé. 1332 for any operations on the computer connector.</p>
--------------	--

Measure the resistance of the needle lift sensor at its connector.
 Replace the injector with the sensor if the resistance is not approximately 105 ohms.
 Ensure the continuity of the following connections:

- Between track 7 on the computer connector and track 1 on the needle lift sensor connector.
- Between track 3 on the computer connector and track 2 on the needle lift sensor connector.

Test the connections on the 2 connectors.

Ensure the insulation of the connection between track 7 on the computer connector and track 1 on the needle lift sensor connector .
 Also ensure the insulation between the 2 lines on the needle lift sensor.

Also check the condition of the wiring between the sensor connector and the sensor.

The "needle lift sensor circuit" fault may be connected to absence of injection at the cylinder with the sensor.
 Check the condition of the injector and its fuel supply.

If the fault persists after these tests, replace the injector with the sensor.
 If the "needle lift sensor circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test. Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

5 	<p>Bargraph 5 RH illuminated (co.0) or flashing (cc.1)</p> <p><u>Altimetric corrector control circuit</u> Fiche n° 60 1/2</p> <p>XR25 aid: *25 : co.0 : Open circuit or short circuit to earth cc.1 : Short circuit to 12 volts</p>
--	--

NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
--------------	---

co.0	NOTES	None
-------------	--------------	------

<p>Measure the resistance of the altimetric corrector relay coil (in the engine connection unit). Replace the relay if the resistance is not approximately 85 ohms.</p> <p>Ensure the continuity and the insulation from earth of the connection between track 15 of the computer connector and terminal 2 of the corrector relay mounting.</p> <p>Ensure the presence of + after ignition feed on track 1 of the corrector relay mounting.</p> <p>Test the connections on the computer connector and the relay mounting.</p> <p>If the fault persists after these tests, replace the altimetric corrector relay.</p> <p>If the "altimetric corrector circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>
--

cc.1	NOTES	<p>Even if present at the moment of testing, this fault is declared by a flashing BG 5RH side. To confirm its presence and the necessity of following the fault finding below, erase the computer memory then start command mode G19*.</p> <p>The fault is present if the bargraph flashes again.</p>
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<p>Measure the resistance of the altimetric corrector relay coil (in the engine connection unit). Replace the relay if the resistance is not approximately 85 ohms.</p> <p>Ensure the insulation from +12 volts of the connection between track 15 on the computer connector and terminal 2 on the corrector relay mounting.</p> <p>If the fault persists after these tests, replace the altimetric corrector relay.</p> <p>If the "altimetric corrector circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraph 6 LH illuminated (<i>co.0/cc.1</i>) or flashing (<i>1.dEF</i>)</p> <p><u>Advance corrector circuit</u> Fiche n° 60 1/2</p> <p>XR25 aid: *06 : <i>co.0</i> : Open circuit or short circuit to earth <i>cc.1</i> : Short circuit to 12 volts <i>1.dEF</i> : Pump hydraulic control</p>
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NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
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co.0	NOTES	None
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<p>Measure the resistance of the advance corrector at the 10 track pump connector (between tracks 2 and 7). Replace the advance corrector if the resistance is not approximately 12 ohms.</p> <p>Ensure the continuity of the connection between track 6 on the computer connector and track 7 on the pump connector.</p> <p>Ensure the presence of + after ignition feed on track 2 of the corrector connector, wiring side.</p> <p>Ensure the insulation from earth of the connection between track 6 on the computer connector and track 7 on the pump connector.</p> <p>Test the connections on the 2 connectors.</p> <p>If the fault persists after these tests, replace the advance corrector .</p> <p>If the "advance solenoid valve circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>
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cc.1	NOTES	None
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<p>Measure the resistance of the advance corrector at the 10 track pump connector (between tracks 2 and 7). Replace the advance corrector if the resistance is not approximately 12 ohms.</p> <p>Ensure the insulation from +12 volts of the connection between track 6 on the computer connector and track 7 on the pump connector.</p> <p>If the fault persists after these tests, replace the advance corrector .</p> <p>If the "advance solenoid valve circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> <hr/> <div style="background-color: black; width: 20px; height: 15px; margin: 0 auto;"></div> <hr/> <p>CONT</p>	
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1.dEF

NOTES

The fault is present if the bargraph is illuminated when the engine is running.

This fault indicates that the advance corrector is seized, the injection pump has been incorrectly set or there is a fuel supply fault.
It is taken into account when the advance noted by the needle lift sensor differs by more than 5° from the advance value requested by the computer.

NOTE : If there is a fault where the advance corrector is seized, there will be a characteristic noise when the ignition is switched on (irregular clicking of the corrector).

- Check the condition of the needle lift sensor cable and its connector.
- Check the condition of the fuel supply to the pump and the injectors (filter blocked, pipe kinked, air leak, ...).
Check the type of diesel fuel used in extreme cold weather (a "summer " type diesel fuel may cause this fault at -15 °C).
- Check the pump timing and check the tightness of the pump pulley.

If the fuel supply, the needle lift sensor and the pump timing are correct, replace the advance corrector.

AFTER REPAIR

Erase the computer memory (G0**), switch the ignition off, then carry out a road test.
Finish the operation by checking using the XR25.

Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraph 6 RH illuminated (co.0) or flashing (cc.1)</p> <p><u>Fast idle solenoid valve circuit</u></p> <p style="text-align: right;">Fiche n° 60 1/2</p> <p>XR25 aid: *26 : co.0 : Open circuit or short circuit to earth cc.1 : Short circuit to 12 volts</p>
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NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
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co.0	NOTES	None
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Measure the resistance of the fast idle solenoid valve at its connector. Replace the fast idle solenoid valve if the resistance is not approximately 45 ohms.

Ensure continuity of the connection between track 16 on the computer connector and track 1 on the fast idle solenoid valve connector.

Ensure the presence of + after ignition feed on track 2 on the fast idle solenoid valve connector, wiring side.

Ensure the insulation from earth of the connection between track 16 on the computer connector and track 1 on the fast idle solenoid valve connector.

Test the connections on the 2 connectors.

If the fault persists after these tests, replace the fast idle solenoid valve.

If the "fast idle solenoid valve circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

cc.1	NOTES	<p>Even if present at the moment of testing, this fault is still declared by a flashing BG 6RH side. To confirm its presence and the necessity of following the fault finding below, erase the computer memory then start command mode G16*.</p> <p>The fault is present if the bargraph flashes again.</p>
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Measure the resistance of the fast idle solenoid valve at its connector. Replace the fast idle solenoid valve if the resistance is not approximately 45 ohms.

Ensure insulation from +12 volts of the connection between track 16 on the computer connector and track 1 on the fast idle solenoid valve connector.

If the fault persists after these tests, replace the fast idle solenoid valve.

If the "fast idle solenoid valve circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

7 	<p>Bargraph 7 RH illuminated (co.0) or flashing (cc.1) <u>EGR solenoid valve circuit</u></p> <p style="text-align: right;">Fiche n° 60 1/2</p> <p>XR25 aid: *27 : co.0 : Open circuit or short circuit to earth cc.1 : Short circuit to 12 volts</p>
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NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
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co.0	NOTES	None
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<p>Measure the resistance of the EGR solenoid valve at its connector. Replace the EGR solenoid valve if the resistance is not approximately 45 ohms.</p> <p>Ensure continuity of the connection between track 5 on the computer connector and track 1 of the EGR solenoid valve connector.</p> <p>Ensure the presence of + after ignition feed on track 2 of the EGR solenoid valve connector, wiring side.</p> <p>Ensure the insulation from earth of the connection between track 5 on the computer connector and track 1 of the EGR solenoid valve connector.</p> <p>Test the connections on the 2 connectors.</p> <p>If the fault persists after these tests, replace the EGR solenoid valve.</p> <p>If the "EGR solenoid valve circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>
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cc.1	NOTES	<p>Even if present at the moment of testing, this fault is still declared by a flashing BG 7RH side. To confirm its presence and the necessity of following the fault finding below, start the engine.</p> <p>The fault is present if the bargraph illuminates when the engine is running.</p>
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<p>Measure the resistance of the EGR solenoid valve at its connector. Replace the EGR solenoid valve if the resistance is not approximately 45 ohms.</p> <p>Ensure insulation in relation to +12 volts of the connection between track 5 on the computer connector and track 2 of the EGR solenoid valve connector.</p> <p>If the fault persists after these tests, replace the EGR solenoid valve.</p> <p>If the "EGR solenoid valve circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>
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AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>8</p> 	<p>Bargraph 8 LH illuminated (co.0) or flashing (cc.1)</p> <p><u>Preheating relay N° 1 control circuit</u></p> <p>XR25 aid: *08 : co.0 : Open circuit or short circuit to earth cc.1 : Short circuit to 12 volts</p>	<p>Fiche n° 60 1/2</p>
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NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
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co.0	NOTES	None
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<p>Ensure the continuity and insulation in relation to earth of the connection between track 14 on the computer connector and track B1 on the relay unit connector.</p> <p>Ensure the presence of + after ignition feed on track A1 on the relay unit connector.</p> <p>Test the connections on the 2 connectors.</p>
<p>If the fault persists after these tests, replace the relay unit.</p> <p>If the "preheating relay No. 1 control circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>

cc.1	NOTES	<p>Even if present at the moment of testing, this fault is still declared by a flashing BG 8LH side. To confirm its presence and the necessity of following the fault finding below, erase the computer memory then start command mode G10*1*.</p> <p>The fault is present if the bargraph flashes again.</p>
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<p>Ensure insulation in relation to 12 volts of the connection between track 14 on the computer connector and track B1 on the relay unit connector.</p> <p>Test the connections on the 2 connectors.</p>
<p>If the fault persists after these tests, replace the relay unit.</p> <p>If the "preheating relay No. 1 control circuit" fault reappears, replace the computer (consult the "Aid" section for this operation).</p>

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>9</p> 	<p>Bargraph 9 RH illuminated (co.0) or flashing (cc.1)</p> <p><u>PAS pump assembly relay control circuit</u></p> <p>XR25 aid: *29 : co.0 : Open circuit or short circuit to earth cc.1 : Short circuit to 12 volts</p>	<p>Fiche n° 60 1/2</p>
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NOTES	<p>Use bornier Elé. 1332 for any operations on the computer connector. If the vehicle is not fitted with air conditioning, ensure the computer is configured to "without air conditioning" (for without PAS pump assembly).</p>
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co.0	NOTES	None
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<p>Measure the resistance of the PAS pump assembly relay coil (in the engine connection unit). Replace the relay if its resistance is not approximately 80 ohms.</p> <p>Ensure the continuity and insulation from earth of the connection between track 20 on the computer connector and terminal 2 on the pump assembly relay mounting.</p> <p>Ensure the presence of + after ignition feed at terminal 1 of the pump assembly relay mounting.</p> <p>Check the connections on the computer connector and the relay mounting.</p> <p>If the fault persists after these tests, replace the PAS pump assembly relay.</p> <p>If the "PAS pump assembly relay control circuit" fault reappears, replace the injection computer (consult the "Aid" section for this operation).</p>

cc.1	NOTES	<p>Even if present at the moment of testing, this fault is still declared by a flashing BG 9RH side. To confirm its presence and the necessity of following the fault finding below, erase the computer memory then start command mode G36*. The fault is present if the bargraph flashes again.</p>
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<p>Measure the resistance of the PAS pump assembly relay coil (in the engine connection unit). Replace the relay if its resistance is not approximately 80 ohms.</p> <p>Ensure the insulation from + 12 Volts of the connection between track 20 of the computer connector and terminal 2 on the pump assembly relay mounting.</p> <p>If the fault persists after these tests, replace the PAS pump assembly relay.</p> <p>If the "PAS pump assembly relay control circuit" fault reappears, replace the injection computer (consult the "Aid" section for this operation).</p>

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test. Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>10</p> 	<p>Bargraph 10 LH flashing Fiche n° 60 1/2</p> <p><u>Fault warning light circuit</u></p> <p>XR25 aid: *10: <i>cc.1</i> : Short circuit to 12 volts</p>
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NOTES	<p>Even if present at the moment of testing, this fault is still declared by a flashing BG 10LH side. To confirm its presence and the necessity of following the fault finding below, erase the computer memory then start command mode G21*1*. The fault is present if the bargraph flashes again.</p> <p>Use bornier Elé. 1332 for any operations on the computer connector.</p>
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cc.1	NOTES	None
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Ensure insulation in relation to 12 volts of the connection between track 18 of the computer connector and the instrument panel warning light (track 6 on connector MA).

Test at the warning light bulb (bulb in short circuit).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>10</p> 	<p>Bargraph 10 RH illuminated (Co.0) or flashing (cc.1)</p> <p><u>Preheating warning light circuit</u></p> <p style="text-align: right;">Fiche n° 60 1/2</p> <p>XR25 aid: *30 : <i>cc.0</i> : Open circuit or short circuit to earth <i>cc.1</i> : Short circuit to 12 volts</p>
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NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
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co.0	NOTES	None
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Check the condition of the preheating warning light bulb then the presence of +after ignition feed at the warning light.

Ensure the continuity and insulation in relation to earth of the connection between track 9 of the computer connector and the instrument panel preheating warning light (track 5 on CY connector).

Test the connections on the computer connector.

cc.1	NOTES	<p>Even if present at the moment of testing, this fault is still declared by a flashing BG 10RH side. To confirm its presence and the necessity of following the fault finding below, erase the computer memory then start command mode G21*2*.</p> <p>The fault is present if the bargraph flashes again.</p>
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Ensure insulation in relation to 12 volts of the connection between track 9 of the computer connector and the instrument panel preheating warning light (track 5 on connector CY).

Test at the preheating warning light bulb (bulb in short circuit).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>12</p> 	<p>Bargraph 12 LH illuminated Fiche n° 60 1/2</p> <p><u>Battery voltage</u></p> <p>XR25 aid: *12 : 1.dEF : Battery voltage low 2.dEF : Battery voltage too high</p>
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NOTES	<p>Carry out a complete check of the charging circuit using the Optima 5800 diagnostic station.</p>
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Carry out the operations required to ensure correct voltage feed to the computer:

8 volts < correct voltage < 16 volts.

- Check the battery charge.
- Check the charging circuit.
- Check the tightness and condition of the battery terminals.
- Check the computer earth.

Ensure the presence of + after ignition feed on track 1 of the computer connector.

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>12</p> 	<p>Bargraph 12 RH illuminated</p> <p><u>Full load or no load not programmed</u></p>	<p>Fiche n° 60 1/2</p>
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NOTES	None
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Programme the full load position of the accelerator pedal using command **G31*** (do not adjust the load lever directly).

Enter code **G31*** on the XR25 (engine speed zero).

- Press the accelerator pedal when the display flashes "PF".
The display then shows "**bon**", "**Fin**" then "**6/7.dIE**" when the procedure has been completed correctly. Bargraph 12 RH side must be extinguished.
- Switch off the ignition.

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>13</p> 	<p>Bargraph 13 LH flashing (cc.1) Fiche n° 60 1/2</p> <p><u>Air conditioning cut out information circuit</u></p> <p>XR25 aid: *13 : cc.1 : Short circuit to 12 volts</p>
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NOTES	None
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cc.1	NOTES	<p>Even if present at the moment of testing, this fault is still declared by a flashing BG 13LH side. To confirm its presence and the necessity of following the fault finding below, erase the computer memory then start the engine. The fault is present if the bargraph flashes when the engine is running.</p>
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Ensure insulation in relation to 12 volts of the connection between track 19 on the computer connector and track 18 on the air conditioning computer CY connector.

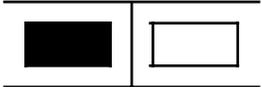
Test the connections on the 2 connectors (+ intermediate connection engine / dashboard).

If the fault persists after these tests, replace the air conditioning control module.

If the "air conditioning cut out information" fault reappears, replace the diesel injection computer (consult the "Aid" section for this operation).

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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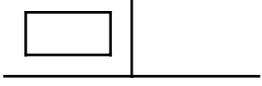
Fault finding - Interpretation of XR25 bargraphs

<p>2</p> 	<p>Bargraphs 2 RH and LH sides and bargraph 3 RH side</p> <p><u>Solenoid valve control</u></p> <p style="text-align: right;">Fiche n° 60 2/2</p>
<p>3</p> 	

NOTES	None
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These bargraphs visualise the control of the various solenoid valves:

- Advance solenoid valve (bargraph 2 LH side is always illuminated).
- Fast idle solenoid valve .
- EGR solenoid valve.

<p>4</p> 	<p>Bargraph 4 LH side</p> <p style="text-align: right;">Fiche n° 60 2/2</p> <p><u>Erase stored faults</u></p> <p>XR25 aid : BG 4LH is illuminated if command mode G0** to erase the memory has been used since the last XR25 dialogue began.</p>
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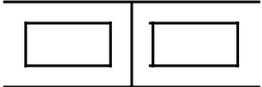
NOTES	None
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<p>4</p> 	<p>Bargraph 4 RH side</p> <p style="text-align: right;">Fiche n° 60 2/2</p> <p><u>Preheating prevented</u></p> <p>XR25 aid : BG 4RH is illuminated if command mode G59*1* to prevent control of the heater plugs has been used since the last XR25 dialogue began.</p>
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NOTES	None
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AFTER REPAIR	Ensure the bargraphs operate correctly
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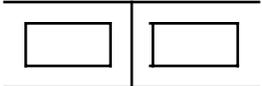
Fault finding - Interpretation of XR25 bargraphs

<p>5</p>  <p>6</p> 	<p>Bargraphs 5 and 6 RH and LH sides</p> <p><u>Relay control</u></p>	<p>Fiche n° 60 2/2</p>
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NOTES	None
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These bargraphs visualise the control of the various relays:

- Preheating relay N° 1.
- Preheating relay N° 2 (not used).
- Power assisted steering pump assembly relay (for AC + PAS).
- Altimetric corrector relay.

<p>9</p> 	<p>Bargraphs 9 RH and 9 LH side</p> <p><u>Air conditioning</u></p> <p>XR25 aid : BG 9LH illuminated if AC requested BG 9RH illuminated if AC authorised</p>	<p>Fiche n° 60 2/2</p>
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NOTES	<p>If BG 9LH is extinguished when AC is requested, ensure the continuity and insulation of the connection between track 11 of the diesel computer connector and track 20 of the AC computer CY connector.</p>
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<p>10</p> 	<p>Bargraph 10 LH side</p> <p><u>Warning light control</u></p> <p>XR25 aid : BG 10LH is illuminated if the warning light on the instrument panel is controlled. This bargraph is normally illuminated; it extinguishes when the engine is running if there is no fault.</p>	<p>Fiche n° 60 2/2</p>
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NOTES	None
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AFTER REPAIR	Ensure the bargraphs operate correctly
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Fault finding - Interpretation of XR25 bargraphs

<p>10</p> 	<p>Bargraph 10 RH side Fiche n° 60 2/2</p> <p><u>Preheating warning light control</u></p> <p>XR25 aid : BG 10RH illuminated during the preheating phase</p>
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NOTES	None
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<p>11</p> 	<p>Bargraph 11 LH side Fiche n° 60 2/2</p> <p><u>Load information output</u></p> <p>XR25 aid : This bargraph allows visualisation of the emission of the load lever position information (this information is not used for this application). It is permanently illuminated.</p>
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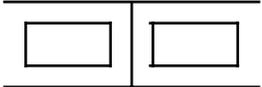
NOTES	None
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<p>11</p> 	<p>Bargraph 11 RH side Fiche n° 60 2/2</p> <p><u>Engine speed information output</u></p> <p>XR25 aid : This bargraph allows visualisation of the emission of engine speed information. It is permanently illuminated.</p>
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NOTES	None
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AFTER REPAIR	Ensure the bargraphs operate correctly
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Fault finding - Interpretation of XR25 bargraphs

<p>18</p>  <p>19</p> 	<p>Bargraphs 18 and 19 RH and LH</p> <p><u>Computer configuration for with and without air conditioning/ with and without power assisted steering pump assembly</u></p>
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NOTES	<p>Vehicles fitted with power assisted steering but without air conditioning must be configured to "without PAS".</p>
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These bargraphs show the computer configuration for the air conditioning and pump assembly power assisted steering options.

Computers sold by the Parts Department are systematically configured for vehicles with air conditioning and with the PAS pump assembly.

If the vehicle does not have air conditioning, use the command mode **G50*4*** to reverse the computer configuration (the opposite command exists for configuring to "with AC": **G50*3***).

If the vehicle is not fitted with a PAS pump assembly (vehicle without air conditioning), use command mode **G50*9*** to reverse the computer configuration (the opposite command exists for configuring to "with PAS": **G50*8***).

NOTE : Vehicles fitted with power assisted steering but without air conditioning must be configured to "without PAS".

AFTER REPAIR	<p>Erase the computer memory (G0**), switch the ignition off, then carry out a road test.</p> <p>Finish the operation by checking using the XR25.</p>
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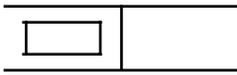
NOTES	Engine cold, ignition on
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Order of operations	Function to check	Action	Bargraph	Display and notes
1	Dialogue with XR25	D34 (selector on S8)		<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">6. dIE</div> Use fiche n° 60 fault test side
2	Interpretation of normally illuminated bargraphs		1  1 	Fault test Code present
3	Change to status test mode	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">7. dIE</div> Use fiche n° 60 status test side
4	Interpretation of normally illuminated bargraphs		1  2  4  9  10  10 	Code present Advance corrector fed Illuminated if command mode G0** has been used since dialogue was started Illuminated if AC requested Fault warning light fed Illuminated in preheating phase

NOTES	Engine cold, ignition on
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Order of operations	Function to check	Action	Bargraph	Display and notes
4 <i>(cont)</i>	Interpretation of normally illuminated bargraphs <i>(cont)</i>		11 	Injection computer may give load lever position to other computers (not used)
			11 	Injection computer may give engine speed information to other computers
5	Computer configuration with AC {	G50*3*	18 	With AC
		G50*8*	19 	With PAS with pump
	without AC {	G50*4*	18 	Without AC
		G50*9*	19 	With conventional PAS
6	Absolute pressure sensor	# 16		X = local atmospheric pressure
7	Coolant temperature sensor	# 02		X = Ambient temperature ± 5 °C
8	Air temperature sensor	# 03		X = Ambient temperature ± 5 °C
9	EGR solenoid valve	# 24		X = 0

NOTES	Engine warm at idle speed after at least one operation of the engine cooling fan assembly (air conditioning not selected).
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Order of operations	Function to check	Action	Bargraph	Display and notes
1	Change to status test	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">7. dIE</div> Use fiche n° 60 status test side
2	No faults		20 	Ensure this bargraph is not flashing, otherwise enter G02* and turn the fiche over. Repair the faulty component then erase the memory (G0**) and return to status testing (G01*)
3	Battery voltage	# 04		13 volts < X < 14.5 volts

NOTES	Engine warm at idle speed after at least one operation of the engine cooling fan assembly (air conditioning not selected).
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Order of operations	Function to check	Action	Bargraph	Display and notes
4	Interpretation of normally illuminated bargraphs	-	<p>1</p> 	Code present
		<p>2</p> 	Advance corrector fed	
		<p>2</p> 	Illuminated if fast idle solenoid valve is fed	
		<p>3</p> 	Illuminated for 40 seconds at idle speed after starting phase	
		<p>4</p> 	Illuminated if command mode G0** has been used since the last dialogue took place	
		<p>5</p> 	Illuminated for post heating	
		<p>6</p> 	Illuminated if altimetric corrector is fed	
		<p>6</p> 	Illuminated if vehicle has a PAS pump assembly (AC version only)	
		<p>9</p> 	Illuminated if AC requested	
		<p>9</p> 	Illuminated if computer authorises operation of AC compressor	

LUCAS DIESEL INJECTION

Fault finding - Checking conformity

NOTES	Engine warm at idle speed after at least one operation of the engine cooling fan assembly (air conditioning not selected).
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Order of operations	Function to check	Action	Bargraph	Display and notes
4 <i>(cont)</i>	Interpretation of normally illuminated bargraphs <i>(cont)</i>	-	11 	Injection computer may give load lever position to other computers (not used)
			11 	Injection computer may give engine speed information to other computers
5	EGR solenoid valve	After starting phase for 40 seconds # 24	3 	EGR solenoid valve fed X = 0
		After 40 seconds # 24	3 	X = 0
6	Computer configuration with AC	G50*3*	18 	With AC
		G50*8*	19 	With PAS with pump
	without AC	G50*4*	18 	Without AC
		G50*9*	19 	With conventional PAS

REPLACING THE COMPUTER

A) On these computers it is necessary to programme the load lever full load position (this value is required to replace and adjust the load lever position potentiometer).

Programming procedure:

- Enter code **G31*** on the XR25 (engine speed zero)
- Press the accelerator pedal until the display flashes "**PF**".
The display then shows "**bon**", "**Fin**" then "**6/7.dIE**" when the procedure has been carried out correctly.
Bargraph **12 RH side** must be extinguished.
- Switch off the ignition.

B) Lucas digital DPC injection computers are sold pre-configured to "with air conditioning".
If the vehicle does not have air conditioning, use command **G50*4*** on the XR25 to programme "without air conditioning".

Lucas digital DPC injection computers are sold pre-configured to "with power assisted steering" (with power assisted steering pump assembly).

If the vehicle does not have a power assisted steering pump assembly (vehicle without air conditioning), use command **G50*9*** on the XR25 to programme "without power assisted steering".

Vehicles fitted with power assisted steering but without air conditioning must be configured to "without power assisted steering".

REPLACING THE LOAD LEVER POSITION POTENTIOMETER

The load lever position potentiometer may only be replaced in After Sales if the full load position has been programmed into the computer before the fault with the potentiometer.

Procedure for replacing and adjusting the load lever position potentiometer:

- Fit the new potentiometer into position without locking the mounting bolts.
- Connect the potentiometer and set up the XR25 (**S8** code **D34**).
- Start command **G32*** on the XR25, keep the accelerator pedal fully depressed (do not touch the load lever directly) and turn the potentiometer until the display on the XR25 shows a value other than **H.L** (outside limits). Adjust the setting by turning the potentiometer to obtain 0.000 on the display (adjustment correct if value < 0.040).
- Tighten the mounting bolts with the potentiometer in this position then press * to complete the adjustment procedure.

NOTES

Only consult these customer complaints after a complete check using the XR25.

No dialogue from the computer to the XR25.

Chart 1

Idle speed too high (approximately 900 ± 50 rpm when air conditioning compressor is not operating)

Chart 2

No fast idle when air conditioning compressor is operating

Chart 3

Starting fault (engine will not start or is difficult to start).

Chart 4

Warning light illuminates with no fault shown by the XR25.

Chart 5

Vehicle produces black smoke at altitude

Chart 6

No engine speed information at instrument panel

Chart 7

Air conditioning compressor does not engage

Chart 8

Chart 1	NO DIALOGUE FROM THE COMPUTER TO THE XR25.
----------------	---

NOTES	Use bornier Elé. 1332 for any operations on the computer connector.
--------------	---

Ensure that the XR25 is not the cause of the fault by trying to communicate with the computer on another vehicle. If the XR25 is not the cause of the fault and dialogue is not established with another computer on the same vehicle, a faulty computer may be causing interference on the K and L fault finding lines. Disconnect connections successively to determine which computer is at fault.

Check the ISO selector is on position S8, that you are using the latest XR25 cassette and the correct access code (D34).

Check the battery voltage and carry out any necessary operations to ensure the correct voltage (U battery > 10.5 volts).

Check the two 15 Amp fuses on the engine connection unit have not blown.

Check the connection and condition of the connections on the computer connector and the intermediate connections R107 dashboard / front of engine and R67 front / engine.

Check the computer is correctly fed:

- Earth on track 2 of the computer connector (check the condition and tightness of the engine earth strap and the engine earth MH near to the gearbox housing).
- + after ignition feed on track 1 of the computer connector.

Check the diagnostic socket is correctly fed:

- Earth on track 5.
- + before ignition feed on track 16.

Check and ensure the continuity and insulation of the lines in the connection diagnostic socket/ computer:

- Between track 10 of the computer connector and track 15 of the diagnostic socket.
- Between track 13 of the computer connector and track 7 of the diagnostic socket.

If fault finding is not established after these operations, replace the computer (consult the "Aid" section for this operation).

AFTER REPAIR	Carry out a road test then check using the XR25. Deal with any illuminated fault bargraphs.
---------------------	--

Chart 2	IDLE SPEED TOO HIGH WHEN AIR CONDITIONING NOT OPERATING (approximately 950 rpm)
----------------	--

NOTES	Only consult this customer complaint after a complete check using the XR25.
--------------	---

This fault may be connected to fast idle operation.
Check the sealing of the pneumatic circuit for the fast idle control (LDA and solenoid valve).
Look for a short circuit to + **12 volts** of the connection between track **11** on the injection computer and track **20** on the CY connector for the air conditioning computer ("AC Inj. / fast idle" information).

AFTER REPAIR	Carry out a road test then check using the XR25.
---------------------	--

Chart 3	NO FAST IDLE WHEN AIR CONDITIONING COMPRESSOR IS OPERATING
----------------	---

NOTES	Only consult this customer complaint after a complete check using the XR25.
--------------	---

Look for an open circuit or a short circuit to earth on the connection between track **11** on the injection computer and track **20** on the CY connector for the air conditioning computer ("AC Inj. / fast idle" information).

This fault causes the absence of illumination of bargraph **9 LH side** "air conditioning requested".

AFTER REPAIR	Carry out a road test then check using the XR25.
---------------------	--

Chart 4	Starting fault without illumination of the warning light (engine will not start or is difficult to start)
----------------	--

NOTES	Only consult this customer complaint after a complete check using the XR25.
--------------	---

If no fault is shown by the XR25, ensure that the fault is not caused by a faulty immobiliser system.
Check the operation of the preheating system: Start command mode G10*1* and check for a voltage at the plugs. If the plugs are not fed, check the connection of the 3 track connector on the relay unit and the condition of the 70 Amp fuse on the engine connection unit.
If the fault persists, check the fuel supply circuits (for the pump and the injectors). If necessary, carry out a complete check of the engine (starter drive speed, pump timing, condition of injectors, rocker arm clearances, compression,).

AFTER REPAIR	Carry out a road test then check using the XR25.
---------------------	--

Chart 5	WARNING LIGHT ILLUMINATES WITH NO FAULT SHOWN BY THE XR25.
----------------	---

NOTES	Only consult this customer complaint after a complete check using the XR25.
--------------	---

If no fault is shown by the XR25, look for a short circuit to earth of the heater plug feed wiring or a plug short circuit fault.

AFTER REPAIR	Carry out a road test then check using the XR25.
---------------------	--

Chart 6	VEHICLE PRODUCES BLACK SMOKE AT ALTITUDE
----------------	---

NOTES	Only consult this customer complaint after a complete check using the XR25.
--------------	---

<p>Measure the resistance of the altimetric corrector at the 10 track pump connector (between tracks 1 and 6). Replace the altimetric corrector if the resistance is not approximately 15 ohms.</p> <p>Ensure the continuity of the connection between track 1 on the pump connector, wiring side, and track 5 on the altimetric connector control relay mounting in the engine connection unit.</p> <p>Ensure the presence of earth on track 6 of the pump connector, wiring side.</p>
--

AFTER REPAIR	Carry out a road test then check using the XR25.
---------------------	--

Chart 7	NO ENGINE SPEED INFORMATION ON INSTRUMENT PANEL
----------------	--

NOTES	Only consult this customer complaint after a complete check using the XR25.
--------------	---

Ensure the continuity and insulation of the connection between track **21** on the diesel injection computer connector and track **7** on the black instrument panel connector (engine speed information).

AFTER REPAIR	Carry out a road test then check using the XR25.
---------------------	--

Chart 8	AIR CONDITIONING COMPRESSOR DOES NOT OPERATE
----------------	---

NOTES	Only consult this customer complaint after a complete check using the XR25.
--------------	---

Ensure the continuity and insulation of the connection between track **19** of the diesel injection computer connector and track **18** of the air conditioning CY computer connector (AC prevention connection).

AFTER REPAIR	Carry out a road test then check using the XR25.
---------------------	--

E7J 780 / K7M 744 ENGINES

FAULT FINDING MULTIPOINT INJECTION

CONTENTS

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Introduction	01
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Interpretation of XR25 bargraphs	09
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Status and parameter interpretation	36
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SETTING UP DIALOGUE BETWEEN THE XR25 AND THE COMPUTER

- Connect the test kit to the diagnostic socket.
- Put the selector on **S8**
- Switch on the ignition.
- Enter **D13**

9.NJ

COMPUTER IDENTIFICATION

The computer is not identified by reading a fault code but by reading the Part Number directly from the computer. After having set up a dialogue with the computer:

ENTER **G70***

7700

XXX

XXX

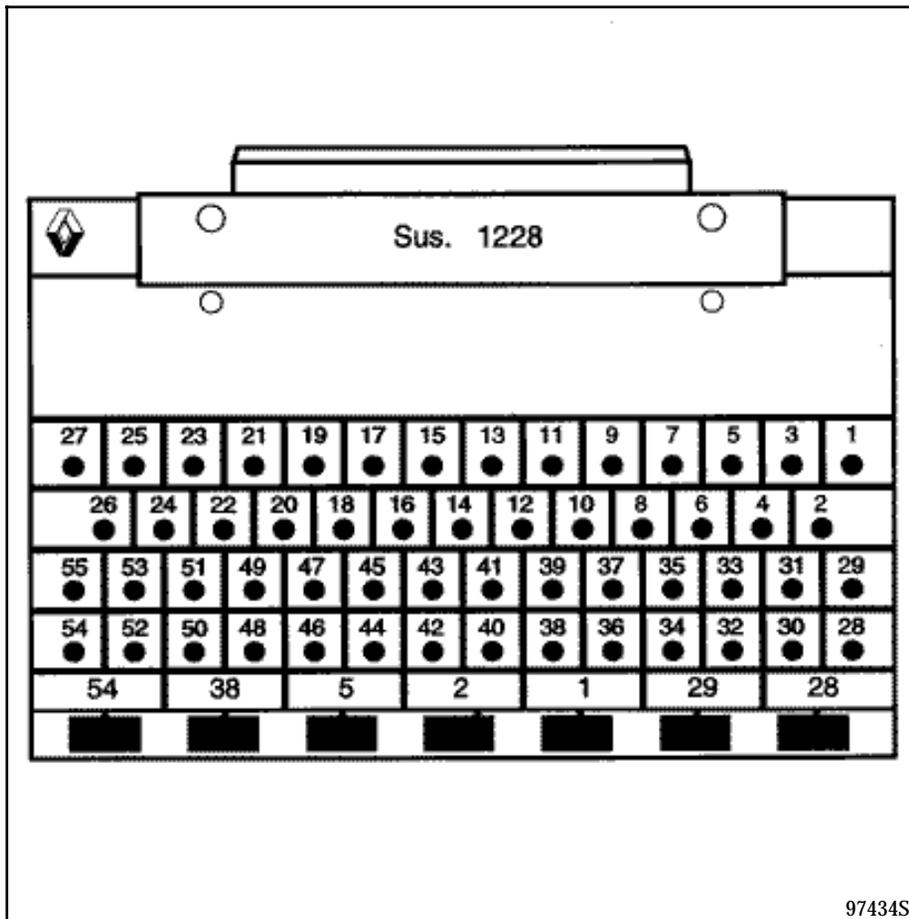
The Part Number will then appear on the central display in three sequences.

Each sequence is displayed for approximately two seconds. The display is repeated twice.

ERASING THE MEMORY (ignition on)

After an operation on the injection system the computer's memory can be erased by using the code **G0****.

If the information obtained by the XR25 requires electrical continuities to be checked, connect bornier **Sus. 1228**.



Bornier **Sus. 1228** is a 55 track base with a printed circuit on which are 55 copper coated surfaces, numbered from 1 to 55.

Using the wiring diagrams, the tracks connecting the components to be tested can be easily identified.

IMPORTANT :

- All tests using bornier **Sus. 1228** must be carried out with the battery disconnected.
- The bornier is only designed to operate with an ohmmeter. Under no circumstances should 12 Volts be applied to the test points.

DESCRIPTION OF THE FAULT-FINDING PHASES

The process described below is to be carried out in all cases of faults.

XR25 FAULT-CHECKING

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

There are several constraints to the treatment of the bargraphs :

- A priority in the order of treatment when several bargraphs are illuminated.
- The interpretation of a bargraph depending on whether it is constantly illuminated or flashing .

Faults must be checked using the XR25 as described below:

- Switch off the ignition.
- Switch on the ignition and deal with any faults.
- Run the engine (or run at starter speed for 10 seconds) and deal with any faults.
- Carry out a road test and deal with any faults.

1 - Order of priority

A series of illuminated bargraphs corresponding to the sensors with the same 12 V or having the same earth, indicates a fault in this source. These priorities are dealt with in the "NOTES" section of the fault-finding of the bargraph concerned.

2 - Input / output fault bargraphs**a) Illuminated :**

The fault is present : treat the fault following the method described in the "INTERPRETATION OF XR25 BARGRAPHS" section.

b) Flashing :

Note the bargraphs displayed on the XR25.

Erase the memory of the computer and attempt to re-illuminate the bargraph: ignition on, idle speed (or at starter speed) or by means of a road test (the "NOTES" section in the fault finding for the bargraph concerned may help to determine the conditions under which the bargraph will illuminate).

If the bargraph has re-illuminated (fixed or flashing) :

The fault is present once again. In this case, treat the fault bargraph.

If the bargraph has not re-illuminated, check :

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

NOTE : If the customer complaint does not correspond to the fault bargraph which is flashing (example : Air temperature sensor fault bargraph flashing, but no customer complaint) ignore this memorised fault and erase it.

3 - No bargraphs illuminated

If no bargraphs are illuminated on the XR25, carry out a status and parameter check. This may help in detecting a problem.

XR25 CHECKING STATUSES AND PARAMETERS

The status and parameter check is aimed at checking the statuses and parameters which do not illuminate any fault bargraphs if they are outside of permitted tolerance values. This phase allows :

- Faults to be found without the illumination of fault bargraphs which may correspond to a customer complaint (example : absence of no load information causing an unstable idle speed).
- The correct operation of the injection to be checked and the risk of faults appearing shortly after the repair to be eliminated.

This section contains fault-finding for statuses and parameters, under their test conditions (example : fault finding for # 01 ignition on and fault finding for # 01 engine running).

If a status does not operate normally or a parameter is outside of permitted tolerance values, consult the fault-finding page indicated in the "Fault-finding" column.

XR25 CHECK CORRECT

If the XR25 check is correct, but the customer complaint persists, the problem must be dealt with through customer complaints.

Treatment of customer complaints

This section has fault charts, which suggest a series of possible causes of the problem.

These lines of enquiry must only be used in the following cases :

- No fault bargraph appears on the XR25.
- No faults are detected during the checking of statuses and parameters.
- The vehicle is not operating correctly

POST-REPAIR CHECK

This operation is a simple check of the repair (by a command, or by an XR25 command mode ...).

This makes it possible to check that the system upon which the intervention has been carried out is correct electrically.

It is an introduction to the road test.

ROAD TEST

A road test is essential in order to guarantee the correct operation of the vehicle and to test the quality of the repair. Its role is to make sure that no faults occur (or will occur) when driving.

In order to be significant, the road test is subject to special driving conditions.

Driving conditions for programming the adaptive variables:

During the road test, the engine speed must be stabilised for a few moments between:

260 < # 01 < 390 mbars	}	E7J 780 engine
then 390 < # 01 < 510 mbars		
then 510 < # 01 < 620 mbars		
then 620 < # 01 < 740 mbars		
then 740 < # 01 < 870 mbars		

250 < # 01 < 390 mbars	}	K7M 744 engine
then 390 < # 01 < 500 mbars		
then 500 < # 01 < 620 mbars		
then 620 < # 01 < 730 mbars		
then 730 < # 01 < 930 mbars		

Do not exceed an engine speed of 4800 rpm for the E7J 780 engine and 4000 rpm for the K7M 744 engine. The engine must be warm (coolant temperature > 75 °C).

For this test, start from a fairly low engine speed, in 3rd or 4th gear, and apply progressive acceleration to stabilise at the pressure required for 10 seconds in each zone.

The test must then be continued by driving normally, in a varied manner for 3 to 6 miles (5 to 10 km).

PRESENTATION OF XR25 FICHE N° 27 SIDE 1/2

N°27 1/2		S8	code : D 1 3	read : 9nJ
1	<input type="checkbox"/> ILLUMINATED → <input type="checkbox"/> EXTINGUISHED →	FAULT TEST TURN CARD	CODE PRESENT <input type="checkbox"/>	
2	<input type="checkbox"/>	COMPUTER	ENG. IMMOB * 22	<input type="checkbox"/>
3	<input type="checkbox"/>	AIR TEMPERATURE	O2 SENSOR * 23	<input type="checkbox"/>
4	<input type="checkbox"/>	COOLANT TEMP.	VEHICLE SPEED	<input type="checkbox"/>
5	<input type="checkbox"/>	PRESSURE	FLYWHEEL SIGNAL * 25	<input type="checkbox"/>
6	<input type="checkbox"/> * 06	PINKING	THROTTLE POSITION	<input type="checkbox"/>
7	<input type="checkbox"/>	CAMSHAFT	FUEL TANK PRESSURE	<input type="checkbox"/>
8	<input type="checkbox"/> * 08	FUEL PUMP	BLOCKING * 28	<input type="checkbox"/>
9	<input type="checkbox"/> * 09	ANTI-PERCOLATION	AIR PUMP * 29	<input type="checkbox"/>
10	<input type="checkbox"/> * 10	O2 SENSOR OVERHEAT	BI MODE * 30	<input type="checkbox"/>

<h3 style="margin: 0;">INJECTION (FAULTS)</h3> <p style="margin: 0; font-size: small;">Erase fault memory : G 0 ** Status check request : G01 *</p>	<p style="margin: 0; font-size: small;">ADDITIONAL CHECKS : # . . .</p> <table style="width: 100%; font-size: x-small;"> <tr><td>01</td><td>PRESSURE</td><td>mb</td></tr> <tr><td>02</td><td>Coolant temp.</td><td>°C</td></tr> <tr><td>03</td><td>Air temp.</td><td>°C</td></tr> <tr><td>04</td><td>Computer feed</td><td>V</td></tr> <tr><td>05</td><td>O2 sensor</td><td>V</td></tr> <tr><td>06</td><td>Engine speed</td><td>rpm</td></tr> <tr><td>12</td><td>Idling RCO</td><td>%</td></tr> <tr><td>13</td><td>Pinking signal</td><td></td></tr> <tr><td>14</td><td>Engine speed gap</td><td>rpm</td></tr> <tr><td>15</td><td>Pinking correct.</td><td></td></tr> <tr><td>16</td><td>Atmos. pressure</td><td>mb</td></tr> <tr><td>17</td><td>Throttle pot.</td><td></td></tr> <tr><td>18</td><td>Vehicle speed</td><td>km/h</td></tr> <tr><td>21</td><td>Auto. correct. of RCO de speed</td><td>%</td></tr> <tr><td>23</td><td>Canister purge RCO</td><td>%</td></tr> <tr><td>24</td><td>RCO EGR</td><td>%</td></tr> <tr><td>30</td><td>Auto. correct. of rich. under high loads</td><td></td></tr> <tr><td>31</td><td>Auto. correct. of rich. under low loads</td><td></td></tr> <tr><td>35</td><td>Richness corr.</td><td></td></tr> <tr><td>44</td><td>P. absorbed by AC compressor</td><td>W</td></tr> </table>	01	PRESSURE	mb	02	Coolant temp.	°C	03	Air temp.	°C	04	Computer feed	V	05	O2 sensor	V	06	Engine speed	rpm	12	Idling RCO	%	13	Pinking signal		14	Engine speed gap	rpm	15	Pinking correct.		16	Atmos. pressure	mb	17	Throttle pot.		18	Vehicle speed	km/h	21	Auto. correct. of RCO de speed	%	23	Canister purge RCO	%	24	RCO EGR	%	30	Auto. correct. of rich. under high loads		31	Auto. correct. of rich. under low loads		35	Richness corr.		44	P. absorbed by AC compressor	W
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">11</td> <td><input type="checkbox"/> * 11</td> <td>INJECTOR CIRCUIT</td> <td>CONNECTION A.T. → INJ</td> <td><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">12</td> <td><input type="checkbox"/> * 12</td> <td>WARN. LAMP CIRC. DEF.</td> <td>FUEL PUMP + INFO</td> <td><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">13</td> <td><input type="checkbox"/></td> <td>SAVE DATA IN MEMORY</td> <td>ADAC * 33</td> <td><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">14</td> <td><input type="checkbox"/> * 14</td> <td>IDLE SPEED REG CIRC.</td> <td>BLEED CANISTER CIRC. * 34</td> <td><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">15</td> <td><input type="checkbox"/> * 15</td> <td>CONNECTION INJ. → AC</td> <td>EGR CIRCUIT * 35</td> <td><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">16</td> <td><input type="checkbox"/> * 16</td> <td>IGNITION COILS</td> <td>COLD START INJECTORS * 36</td> <td><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">17</td> <td><input type="checkbox"/> * 17</td> <td>MIL WARN. LIGHT</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">18</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">19</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">20</td> <td><input type="checkbox"/> * 20</td> <td>COMPUTER CONFIGURATION</td> <td>XR25 MEMORY <input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	11	<input type="checkbox"/> * 11	INJECTOR CIRCUIT	CONNECTION A.T. → INJ	<input type="checkbox"/>	12	<input type="checkbox"/> * 12	WARN. LAMP CIRC. DEF.	FUEL PUMP + INFO	<input type="checkbox"/>	13	<input type="checkbox"/>	SAVE DATA IN MEMORY	ADAC * 33	<input type="checkbox"/>	14	<input type="checkbox"/> * 14	IDLE SPEED REG CIRC.	BLEED CANISTER CIRC. * 34	<input type="checkbox"/>	15	<input type="checkbox"/> * 15	CONNECTION INJ. → AC	EGR CIRCUIT * 35	<input type="checkbox"/>	16	<input type="checkbox"/> * 16	IGNITION COILS	COLD START INJECTORS * 36	<input type="checkbox"/>	17	<input type="checkbox"/> * 17	MIL WARN. LIGHT			18					19					20	<input type="checkbox"/> * 20	COMPUTER CONFIGURATION	XR25 MEMORY <input type="checkbox"/>	<input type="checkbox"/>	<p style="text-align: center; margin: 0;">End of test: G 13 *</p> <p style="text-align: center; margin: 0;">Part No : G 70 *</p> <p style="text-align: center; margin: 0;">Diagnosed faults : Press V and 9 Return to diagnostic mode : D</p>										
11	<input type="checkbox"/> * 11	INJECTOR CIRCUIT	CONNECTION A.T. → INJ	<input type="checkbox"/>																																																									
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17 ANG

FI21727-1

PRESENTATION OF XR25 FICHE N° 27 SIDE 2/2

N°27 2/2		read : 10rJ
1	<input type="checkbox"/> EXTINGUISHED → STATUS TEST <input type="checkbox"/> ILLUMINATED → TURN CARD	CODE PRESENT <input checked="" type="checkbox"/>
2	<input type="checkbox"/> PG ← THROTTLE POSITIONS → <input type="checkbox"/> PL	CONTROL MODES : G.. (IF ENGINE STOPPED) 10* Fuel pump relay 11* Blocking relay 12* AC compressor 14* Idle speed reg. valve 16* Bleed canister valve 17* Anti percolation relay 21*1* Warn. light def. 22* Air pump relay 23* EGR valve 24* Bi-mode inlet valve 31* Injector control 50*x* Computer set-up 57*x* Idle speed adj. 58*x* Computer configuration 59*x* INJ Lock/Unlock 60* Zeroing validation
3	<input type="checkbox"/> FLYWHEEL SIGNAL ACTIVE ENG. IMMOB. <input type="checkbox"/>	
4	<input checked="" type="checkbox"/> PARK/NEUTRAL POSITION + APC COMPUTER <input type="checkbox"/>	
5	<input type="checkbox"/> TORQUE ADJUSTMENT RELAY CONTROL LOCKING <input type="checkbox"/>	
6	<input type="checkbox"/> RICHNESS REGULATION IDLING REGULATION <input type="checkbox"/>	
7	<input type="checkbox"/> FUEL PUMP CONTROL BLEED CANISTER AUTHOR. <input type="checkbox"/>	
8	<input checked="" type="checkbox"/> ANTI-PERCOL. CTRL ELEC. W/SCREEN REQUESTED <input type="checkbox"/>	
9	<input checked="" type="checkbox"/> SELECTION ACCEL. IDLE SPEED <input type="checkbox"/> <input type="checkbox"/> AIR COND.	
10	<input type="checkbox"/> REQUEST → COMPRESSION AUTHOR. OR PROHIBITED <input type="checkbox"/>	
(WARNING : monitor bar graph 20 left)		
<h3>INJECTION (STATUS)</h3> Erase fault memory : G 0 ** Request fault test : G 02 *		ADDITIONAL CHECKS : # . . 01 Pressure mb 02 Coolant temp °C 03 Air temp. °C 04 Computer feed V 05 O2 Sensor V 06 Engine speed rpm 12 Idling RCD % 13 Pinking signal 14 Eng. speed gap rpm 15 Pinking correct d° 16 Atmos. pressure mb 17 Throttle pot. 18 Vehicle speed km/h 21 Auto. corr. RCD idle speed % 23 RCD bleed canister % 24 RCD EGR % 30 Auto. correct. ditch under/high back 31 Auto. corr. of richness 35 Mixture regulation 44 P. absorbed by W AC compressor
11	<input type="checkbox"/> CAMSHAFT SIGNAL BLEED CANISTER + ACTIVE SOL VALVES <input type="checkbox"/>	
12	<input type="checkbox"/> EGR SV CONTROL MEMORISED FAULTS <input type="checkbox"/>	
13	<input checked="" type="checkbox"/> AIR PUMP CONTROL POWER STEERING PRESSOSTAT <input type="checkbox"/>	
14	<input checked="" type="checkbox"/> BI-MODE INLET CTRL COLD START INJECTORS <input type="checkbox"/>	
15	<input checked="" type="checkbox"/> SPEED SENSOR well connected	
16		
17		
18		
19	<input checked="" type="checkbox"/> Veh. with AT COMPUTER CONFIGURATION Veh. with man. g/box <input type="checkbox"/>	
20	<input checked="" type="checkbox"/> FAULT PRESENT XR25 MEMORY <input type="checkbox"/>	Diagnosed faults : Press V and 9 Return to diagnostic mode : D
		17 ANG

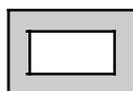
FI21727-2

REPRESENTATION OF THE BARGRAPHS

-  Illuminates when a dialogue has been established with the product computer. If it remains extinguished:
- the code does not exist,
 - there is a fault in the tool, the computer or the line

REPRESENTATION OF THE FAULTS (always on a coloured background)

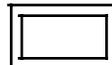
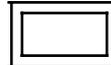
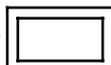
-  If illuminated, indicates a fault on the tested product, the associated text defines the fault.
If flashing, there is a fault memorised for the product tested, the associated text defines the fault.

-  If extinguished, indicates that the fault has not been found on the tested product.

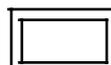
REPRESENTATION OF THE STATUSES (always on a white background)

Engine off, ignition on, no operator action

The status bargraphs on the fiche are represented as the status which they should have when the engine is off, the ignition is on and there is no operator action

- If on the fiche the bargraph is represented as  the test kit should give as information 
 - If on the fiche the bargraph is represented as  the test kit should give as information 
 - If on the fiche the bargraph is represented as  the test kit should give as information
- either  or 

Engine running

-  Extinguishes when the function or condition given on the fiche is no longer performed.
-  Illuminates when the function or condition given on the fiche is performed

Fiche n° 27 is a generic fiche used for several engines.

The different engines do not use all the bargraphs. To find out the bargraphs dealt with by the injection computer, after having set up a dialogue with the computer, press the V and 9 buttons simultaneously.

The bargraphs dealt with will:

- illuminate permanently for non memorisable fault bargraphs or status bargraphs,
- flash for memorisable fault bargraphs.

To return to fault finding mode, press button D.

Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	<p>Bargraph 1 RH side extinguished Fiche n° 27 side 1/2</p> <p><u>XR25 CIRCUIT</u></p> <p>XR25 aid: No connection, CO, CC-, CC+</p>
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NOTES	This bargraph must be illuminated for fault finding
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Test the XR25 on another vehicle.

Check:

- the injection, engine and passenger compartment fuses,
- the connection between the XR25 and the diagnostic socket,
- the position of the ISO selector (**S8**),
- the conformity of the cassette.

Repair if necessary.

Check the presence of + 12 V on track **16** and earth on track **5** of the diagnostic socket.

Repair if necessary.

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

Computer	2	→	Earth
Computer	3	→	Earth
Computer	11	→	7 Diagnostic socket
Computer	38	→	15 Diagnostic socket
Computer	24	→	Fuse F6 15 A
Computer	32	→	Fuse F3 5 A
Computer	28	→	3 Coil 1-4
Computer	29	→	3 Coil 2-3

Repair.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p style="text-align: center;">2</p> 	<p>Bargraph 2 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>COMPUTER CIRCUIT</u></p> <p>XR25 aid: Computer faulty</p>
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<p style="text-align: center;">NOTES</p>	<p>None</p>
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The computer is incorrect or faulty.
Replace the computer.

<p style="text-align: center;">AFTER REPAIR</p>	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>2</p> 	<p>Bargraph 2 RH side illuminated Fiche n° 27 side 1/2</p> <p><u>IMMOBILISER CIRCUIT</u></p> <p>XR25 aid: *22 = 1 dEF CO, CC- or CC+ line 37 on the computer *22 = 2 dEF Refer to the immobiliser fault finding</p>
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NOTES	Ignore this bargraph if the vehicle is not fitted with an immobiliser.
--------------	--

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the wiring on track **37 of the computer**.
Repair if necessary.

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

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> 	<p>Bargraph 3 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>AIR TEMPERATURE SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+line 20 or 46 on the computer</p>
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NOTES	<p>If BG 6RH is also illuminated, check line 46 of the computer.</p>
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Connect the bornier in place of the computer and check the insulation and continuity of the line:

Computer	20	→	2	Air temperature sensor
Computer	46	→	1	Air temperature sensor

Repair if necessary.

Check the resistance of the sensor. Replace it if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> 	<p>Bargraph 3 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>OXYGEN SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+line 17 on the computer</p>
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NOTES	<p>If BG 3RH is flashing, increase the engine speed to 2500 rpm for 5 minutes If BG3RH becomes permanently illuminated, deal with the fault.</p>
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Check the connection and the condition of the connector on the oxygen sensor.

Check, **ignition on during the timed phase**, for :

- **earth on track B of the oxygen sensor,**
- **+ 12 V after the fuel pump relay on track A of the oxygen sensor.**

Repair if necessary.

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

Computer 17 —————> **C Oxygen sensor**

Repair if necessary.

The fault persists. Replace the oxygen sensor.

The fault persists! Replace the injection computer.

IMPORTANT: **The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.**

AFTER REPAIR	<p>Run the engine for 5 minutes, then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Bargraph 4 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>COOLANT TEMPERATURE SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+line 44 or 15 on the computer</p>
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NOTES	<p>If BG 6LH or BG 5LH or 4 RH is also illuminated, check line 44 of the computer.</p>
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Connect the bornier in place of the computer and check the insulation and continuity of the line:

Computer 44 —————→ **B1 Coolant temperature sensor**

Computer 15 —————→ **B2 Coolant temperature sensor**

Repair if necessary.

Check the resistance of the sensor. Replace it if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Bargraph 4 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>VEHICLE SPEED CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 12 on the computer</p>
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NOTES	<p>If BG 4LH or BG 5LH or BG 6LH is also illuminated, check line 44 on the computer. Carry out a road test and check #18 if BG 4 RH is flashing. Deal with this fault if BG 4 RH illuminates permanently during the road test or #18 = 0.</p>
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<p>Check on the vehicle speed sensor for:</p> <ul style="list-style-type: none"> - earth on track B2, - + 12 after ignition feed on track A. <p>Repair if necessary.</p>
<p>Check the sensor is correctly positioned.</p>
<p>Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:</p> <p style="text-align: center;">Computer 12 —————> B1 Vehicle speed sensor</p> <p>Repair if necessary.</p>
<p>The fault persists! Replace the sensor.</p>
<p>The fault persists! Replace the injection computer.</p> <p>IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>5</p> 	<p>Bargraph 5 LH side illuminated <u>PRESSURE SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 45, 44 or 16 on the computer</p>	<p>Fiche n° 27 side 1/2</p>
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NOTES	<p>If BG 6RH is also illuminated, check line 45 on the computer.</p> <p>If BG 6LH or BG 4LH or BG 4 RH is also illuminated, check line 44 on the computer.</p>
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<p>Check that the pressure sensor is connected correctly both electrically and pneumatically. Check the conformity of the pressure sensor pipe (it must not be holed or blocked...).</p>															
<p>Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:</p> <table style="margin-left: 20px;"> <tr> <td>Computer</td> <td>45</td> <td>————→</td> <td>C</td> <td>Pressure sensor</td> </tr> <tr> <td>Computer</td> <td>44</td> <td>————→</td> <td>A</td> <td>Pressure sensor</td> </tr> <tr> <td>Computer</td> <td>16</td> <td>————→</td> <td>B</td> <td>Pressure sensor</td> </tr> </table> <p>Repair if necessary.</p>	Computer	45	————→	C	Pressure sensor	Computer	44	————→	A	Pressure sensor	Computer	16	————→	B	Pressure sensor
Computer	45	————→	C	Pressure sensor											
Computer	44	————→	A	Pressure sensor											
Computer	16	————→	B	Pressure sensor											
<p>The fault persists! Replace the sensor.</p>															
<p>The fault persists! Replace the injection computer.</p> <p>IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>															

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

5	<p>Bargraph 5 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>FLYWHEEL SIGNAL CIRCUIT</u></p> <p>XR25 aid: *25 = CO.0 => CO or CC- line 33 or 34 *25 = CC.0 => CC- line 33 or 34 on the computer *25 = In => sensor incorrectly connected</p>
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NOTES	<p>If BG 5RH is flashing, erase the computer memory using G0**. Try to start the vehicle. If BG 5RH becomes permanently illuminated or flashes, deal with this fault.</p>
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<p>*25 = CO.0 *25 = CC.0</p>	<p>Check the condition of the flywheel, especially if it has been removed.</p> <p>Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:</p> <p style="text-align: center;"> Computer 33 —————> B Target sensor Computer 34 —————> A Target sensor </p> <p>Repair if necessary.</p> <p>The fault persists! Replace the sensor.</p> <p>The fault persists! Replace the injection computer. IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>
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<p>*25 = In</p>	<p>Check the target sensor has been correctly connected (the sensor connector must not be inverted). Repair if necessary.</p> <p>The fault persists! Replace the sensor.</p>
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AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraph 6 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>PINKING SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 8 or 44 on the computer</p>
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NOTES	<p>If BG 6LH is flashing, erase the computer memory using G0**. Run the engine at 3000 rpm for 3 min. If BG 6LH becomes permanently illuminated or flashes, deal with this fault. If BG 4LH or BG 4 RH or BG 5LH is also illuminated, check line 44 on the computer.</p>
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Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

- Computer 8** —————▶ **2 Pinking sensor**
- Computer 44** —————▶ **1 Pinking sensor**
- Computer 31** —————▶ **Pinking sensor screening**

Repair if necessary.

The fault persists! Replace the pinking sensor in question.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraph 6 RH side illuminated Fiche n° 27 side 1/2</p> <p><u>THROTTLE POTENTIOMETER CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 19, 45 or 46 on the computer</p>
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NOTES	<p>If BG 5LH is also illuminated, check line 45 on the computer. If BG 3LH is also illuminated, check line 46 on the computer.</p>
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Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

Computer	19	→	2	Throttle potentiometer
Computer	45	→	1	Throttle potentiometer
Computer	46	→	3	Throttle potentiometer

Repair if necessary.

Check the resistance of the throttle potentiometer.
The fault persists! Replace the throttle potentiometer.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>8</p> 	<p>Bargraph 8 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>FUEL PUMP CIRCUIT</u></p> <p>XR25 aid: *08 = ignore this information CO, CC- or CC+ line 48 on the computer CO line 52 on the computer</p>
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NOTES	<p>If BG 8LH is flashing, erase the computer memory using G0**. Try to start the engine. If BG 8LH is now permanently illuminated or flashing, deal with this fault. If BG 13RH is illuminated, deal with BG 8 LH first.</p>
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Enter the fuel pump relay command mode : G10*.
Does the fuel pump relay click?

The fuel pump relay does not click	<p>Check the presence of 12 volts on track L1 on the fuel pump relay mounting. If necessary, repair the line to the fuse.</p>
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Check the insulation, continuity and that there is no interference resistance on the line:

Computer 48 —————> **2 Fuel pump relay**

Repair if necessary.

If the fuel pump relay still does not click, replace the fuel pump relay.

The fault persists! Replace the injection computer.
IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

The fuel pump relay clicks	<p>Check the presence of 12 volts on track 3 on the fuel pump relay mounting. If necessary, repair the line to the 30 A fuse.</p>
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Check the insulation and continuity of the line:

Computer 52 —————> **5 Fuel pump relay**

Repair if necessary.
NOTE : If there is a short circuit on this line, check all the users of this feed.

If the fault persists, replace the fuel pump relay.

The fault persists! Replace the injection computer.
IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>11</p> 	<p>Bargraph 11 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>INJECTOR CIRCUIT</u></p> <p>XR25 aid: *11 = XX.CO => CO or CC- line 30 or 4 on the computer *11 = XX.CC => CC+ line 30 or 4 on the computer</p>
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NOTES	<p>XX = 14 => Cylinder 1 or 4 line 30 on the computer XX = 23 => Cylinder 2 or 3 line 4 on the computer If BG 11LH is flashing, erase the computer memory using G0**. Try to start the engine. If BG 11LH is now permanently illuminated or flashing, deal with this fault.</p>
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<p>When the ignition is switched on and during the timed phase, check for 12 V on track 1 of the faulty injector. If necessary, repair the line from track 1 injector to track 5 fuel pump relay.</p>										
<p>Connect the bornier in place of the computer and check the insulation and continuity of the line :</p> <table style="margin-left: 40px;"> <tr> <td style="padding-right: 20px;">Computer</td> <td style="padding-right: 10px;">30</td> <td style="text-align: center;">→</td> <td style="padding-right: 20px;">2</td> <td style="padding-right: 20px;">Injectors 1 and 4</td> </tr> <tr> <td>Computer</td> <td>4</td> <td style="text-align: center;">→</td> <td>2</td> <td>Injectors 2 and 3</td> </tr> </table> <p>Repair if necessary.</p>	Computer	30	→	2	Injectors 1 and 4	Computer	4	→	2	Injectors 2 and 3
Computer	30	→	2	Injectors 1 and 4						
Computer	4	→	2	Injectors 2 and 3						
<p>The fault persists! Replace the faulty injector. NOTE : Check the insulation and continuity of the lines for the other injectors and also check the resistance of these injectors.</p>										
<p>The fault persists! Replace the injection computer. IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>										

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>11</p> 	<p>Bargraph 11 RH side illuminated or flashing</p> <p><u>AT</u> → <u>INJECTION CIRCUIT</u></p> <p>XR25 aid: None</p>	<p>Fiche n° 27 side 1/2</p>
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NOTES	None
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This vehicle currently has no AT.

Check that the vehicle is **correctly configured for a manual gearbox** (status bargraph 19 RH side illuminated).

If this is not correct, use command mode **G50*1*** to **configure the vehicle with a manual gearbox**.

Erase the computer memory using **G0**** and ignore this bargraph.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>13</p> 	<p>Bargraph 13 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>MEMORY CIRCUIT</u></p> <p>XR25 aid: Loss of computer feed</p>
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NOTES	None
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This bargraph only illuminates when the computer feed has been cut (disconnection of the battery, the computer, ...).

Check the computer feed hygiene:

Computer 24 —————> **Fuse** 15 A F6

Computer 32 —————> **Fuse** 5 A F3

Repair if necessary.

Turn the engine.

Switch the ignition off.

Switch the ignition on.

Enter dialogue with the computer.

Erase the computer memory using G0**.

NOTE : memorised faults are erased. It would therefore be useful to carry out a road test to check there are no faults on the injection system.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

13 	Bargraph 13 RH side illuminated or flashing Fiche n° 27 side 1/2 <u>ADAC CIRCUIT</u> XR25 aid: *33 = CC.0 CO, CC- line 50 on the computer *33 = CC.1 CC+ line 50 on the computer
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NOTES	If another bargraph is illuminated, refer to the fault finding for that bargraph. If your vehicle does not have ADAC, ignore this bargraph.
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Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on track **50** on the computer.

Repair.

AFTER REPAIR	Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.
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Fault finding - Interpretation of XR25 bargraphs

<p>14</p> 	<p>Bargraph 14 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>IDLE SPEED REGULATION CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 40 or 35 or 9 or 36 on the computer</p>
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NOTES	<p>If BG 14LH is flashing, erase the computer memory using G0**. Try to start the engine (if the engine will not start, keep trying with the starter motor). If BG 14LH becomes permanently illuminated or flashes, deal with this fault.</p> <p>Following G59*1* and trying to start the engine, BG 14 LH may illuminate. In this case, ignore it and erase it.</p>
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Check the insulation, continuity and that there is no interference resistance on the line:

Computer	40	→	B	idle speed regulation stepping motor
Computer	35	→	A	idle speed regulation stepping motor
Computer	9	→	D	idle speed regulation stepping motor
Computer	36	→	C	idle speed regulation stepping motor

Repair if necessary.

NOTE : This operation can be carried out without having to remove the throttle body.

Check the resistance of the idle speed regulation stepping motor.

Check the idle speed regulation valve if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>14</p> 	<p>Bargraph 14 RH side illuminated Fiche n° 27 side 1/2</p> <p><u>CANISTER BLEED CIRCUIT</u></p> <p>XR25 aid: *34 = CO.0 CO, CC- line 42 on the computer *34 = CC.1 CC+ line 42 on the computer</p>
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NOTES	<p>If BG 14RH is flashing, erase the computer memory using G0**. Start the engine. If BG 14RH becomes permanently illuminated when the engine is running, deal with this fault.</p>
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<p>Check the resistance of the canister bleed valve. Replace the valve if necessary.</p>
<p>Check, ignition on and during the timed phase, for 12 V on track A of the canister bleed. Repair if necessary.</p>
<p>Connect the bornier in place of the computer and check the insulation and continuity of the line:</p> <p style="text-align: center;">Computer 42 —————> B Canister bleed valve</p> <p>Repair if necessary.</p>
<p>The fault persists! Replace the injection computer. IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>15</p> 	<p>Bargraph 15 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>COMPUTER</u> —————> <u>AC CONNECTION CIRCUIT</u></p> <p>XR25 aid: *15 = 1dEF : injection / AC connection fault (track 51) *15 = 2dEF : AC connection fault (track 5)</p>
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<p>NOTES</p>	<p>Check that the vehicle has air conditioning and if it is not fitted with air conditioning, deal with the other bargraphs first. Engine running, select the air conditioning function.</p>
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<p>Connect the bornier in place of the computer and check the insulation and continuity of the line for track 5 and track 51 on the computer. Repair if necessary.</p>
<p>If the fault persists, refer to the air conditioning fault finding.</p>

<p>AFTER REPAIR</p>	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>15</p> <hr/> 	<p>Bargraph 15 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>EGR CIRCUIT</u></p> <p>XR25 aid: None</p>
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<p>NOTES</p>	<p>None</p>
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Ignore the illumination of this bargraph as the vehicle is not fitted with EGR.

<p>AFTER REPAIR</p>	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>16</p> 	<p>Bargraph 16 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>COMPUTER</u> —————> <u>MPA CONNECTION CIRCUIT</u></p> <p>XR25 aid: *16 = XX.CO => CO line 28 or 29 on the computer *16 = XX.CC => CC+ or CC- line 28 or 29 on the computer</p>
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NOTES	<p>XX = 14 => Cylinder 1 or 4 line 28 on the computer XX = 23 => Cylinder 2 or 3 line 29 on the computer NOTE : If there is an open circuit, it is possible for *16 = XX.CC instead of *16 = XX.CO.</p>
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<p>Check the + after ignition feed to the coil concerned on track 2. Repair if necessary.</p>										
<p>Check the resistance of the faulty coil. Replace the coil if necessary.</p>										
<p>Check the hygiene of the anti-interference condenser on track 1 of the coil.</p>										
<p>Connect the bornier in place of the computer and check the insulation and continuity of the line :</p> <table style="margin-left: 40px; border: none;"> <tr> <td style="padding-right: 10px;">Computer</td> <td style="padding-right: 10px;">29</td> <td style="padding-right: 10px;">—————></td> <td style="padding-right: 10px;">3</td> <td style="padding-right: 10px;">Coil 2-3</td> </tr> <tr> <td>Computer</td> <td>28</td> <td>—————></td> <td>3</td> <td>Coil 1-4</td> </tr> </table> <p>Repair if necessary.</p>	Computer	29	—————>	3	Coil 2-3	Computer	28	—————>	3	Coil 1-4
Computer	29	—————>	3	Coil 2-3						
Computer	28	—————>	3	Coil 1-4						
<p>The fault persists! Replace the injection computer. IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>										

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
---------------------	---

Fault finding - Status and parameter checks

NOTES	Engine stopped, ignition on.
--------------	------------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Dialogue with XR25	D13 (selector on S8)	<p style="text-align: center;">1</p>  <p style="text-align: center;">1</p> 	<p>Fault test</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">9.NJ</div> <p>Use fiche 27</p> <p>Code present</p>	Deal with fault bargraph
2	Change to status test	G01*	<p style="text-align: center;">1</p> 	<div style="border: 1px solid black; padding: 2px; display: inline-block;">10.NJ</div> <p>Status test</p>	None
3	Battery voltage	# 04		11.8 < X < 13.2 V	DIAG 1
4	Computer configuration		<p style="text-align: center;">19</p>  <p style="text-align: center;">19</p> 	<p>Computer configured to manual gearbox</p> <p>Computer configured to automatic transmission</p>	See Fiche "Reminder C" to configure vehicle
5	Immobiliser	Ignition on	<p style="text-align: center;">3</p> 	This status bargraph must be extinguished when the ignition is on to indicate that the immobiliser is not active.	DIAG 12

Fault finding - Status and parameter checks

NOTES	Engine stopped, ignition on.
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Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
6	Throttle position potentiometer	No load # 17	2 	16 < X < 50 (E7J 780) 19 < X < 51 (K7M 744)	DIAG 2
		Accelerator pedal slightly depressed	2 		
		Full load # 17	2 	185 < X < 243 (E7J 780) 190 < X < 243 (K7M 744)	
7	Pressure sensor	# 01		X = Atmospheric pressure	DIAG 9
8	Coolant temperature sensor	# 02		X = Engine temperature ± 5 °C	DIAG 3
9	Air temperature sensor	# 03		X = Temperature under bonnet ± 5 °C	DIAG 4
10	Fan assembly	G17*		Fan must operate	DIAG 17
11	Fault warning light	Switch ignition on		Fault warning light must illuminate then extinguish	DIAG 19
12	AC	AC selected G12*		AC compressor should be heard	DIAG 16

Fault finding - Status and parameter checks

NOTES	Carry out the actions below if the engine does not start. Otherwise, refer to the following pages.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Flywheel signal sensor	Starter	3 	Illuminated if TDC information is detected	DIAG 5
2	Fuel pump	G10*		Fuel pump should be heard to operate	DIAG 6
3	Ignition	Connect Optima Station		Starting test. Complete guide on Optima Station	Use Optima 5800 Station
4	Fuel pressure	Connect pressure gauge to fuel inlet and activate starter motor		Pressure gauge must show 2.5 bars	Fuel pressure, see Workshop Repair Manual or section
5	Injector command	Starter		Fuel must come out of the injector	DIAG 11
6	Engine compression	Connect Optima Station		Complete guide on Optima Station	Use Optima 5800 Station
7	Flywheel	Connect Optima Station		Oscilloscope. Complete guide on Optima Station	Use Optima 5800 Station

Fault finding - Status and parameter checks

NOTES	Carry out the actions below (engine warm, at idle speed, no consumers) if the engine starts. Otherwise refer to the previous pages.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Charging circuit	# 04		$13 < X < 14.5 \text{ V}$	DIAG 1
2	Throttle potentiometer	No load	2 	Illuminated (does not flash!)	DIAG 2
3	Idle speed regulation	# 06 # 12 # 21	6 	$700 < X < 800 \text{ rpm}$ $2 \% < X < 15 \% \text{ (E7J 780)}$ $6 \% < X < 15 \% \text{ (K7M 744)}$ $- 2.4 \% < X < 6.2 \%$	DIAG 7
4	Anti-pinking circuit	# 13 (at 3500 rpm, no load)		X variable and not zero	DIAG 8
5	Pressure circuit	# 01 # 16		$300 \leq X \leq 400 \text{ mb}$ (E7J 780) $250 \leq X \leq 350 \text{ mb}$ (K7M 744) X = atmospheric pressure	DIAG 9
6	Richness regulation	# 35 # 05	6 	$0 < X < 255$ X varies around 128 $0.050 \leq X \leq 0.900 \text{ V}$	DIAG 10 See also DIAG 15

Fault finding - Status and parameter checks

NOTES	Carry out the actions below (engine warm, at idle speed, no consumers) if the engine starts. Otherwise refer to the previous pages.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
7	Fuel pressure	Connect a pressure gauge to the gallery and activate the starter motor		Pressure gauge must show 2.5 bars	Fuel pressure, see Workshop Repair Manual or section
8	AC	AC selected # 06 # 44	10  10 	Illuminated when AC requests compressor operation Illuminated when injection authorises operation of compressor $800 < X < 900$ rpm $X > 0$	DIAG 16
9	Power assisted steering pressostat	Turn wheels to full lock	13 	Illuminated when wheels turned to full lock	DIAG 18

Fault finding - Status and parameter checks

NOTES	Check during road test.
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Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Vehicle speed information	# 18		X = speed read on speedometer in km/h	DIAG 13
2	Adaptive richness	Program- ming # 30 # 31		$64 \leq X \leq 192$ (E7J 780) $60 \leq X \leq 195$ (K7M 744) $64 \leq X \leq 192$ (E7J 780) $60 \leq X \leq 195$ (K7M 744)	DIAG 14
3	Emission of pollutants	2500 rpm after driving At idle speed, wait for stabilisation		$CO < 0.3 \%$ $CO_2 > 13.5 \%$ $O_2 < 0.8 \%$ $HC < 100 \text{ ppm}$ $0.97 < \lambda < 1.03$ $CO < 0.5 \%$ $HC < 100 \text{ ppm}$ $0.97 < \lambda < 1.03$	DIAG 15 see also DIAG 10

Fault finding - Status and parameter interpretation

DIAG 1	Fiche n° 27
BATTERY VOLTAGE	
XR25 aid: Battery voltage, ignition on, Minimum < # 04 < Maximum Battery voltage, idle speed, Minimum < # 04 < Maximum	

NOTES	No fault bargraphs should be illuminated. No consumers
--------------	---

Ignition on

If # 04 < Minimum, the battery is discharged: Check the charging circuit to determine the cause of this fault.
If # 04 > Maximum, the battery may be overcharged: Check the charging voltage is correct with and without consumers.

At idle speed

If # 04 < Minimum, the charging voltage is too low: Check the charging circuit to determine the cause of this fault.
If # 04 > Maximum, the charging voltage is too high: The alternator regulator is faulty. Repair this fault and check the electrolyte level in the battery.

NOTE:

The battery and the charging circuit may be checked using the OPTIMA 5800 station (measurement does not require the battery to be disconnected, which retains the memories of the computers).

AFTER REPAIR	Start the status and parameter check again from the beginning.
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Fault finding - Status and parameter interpretation

DIAG 2	<p>THROTTLE POTENTIOMETER Fiche n° 27</p> <p>XR25 aid: # 17 outside tolerances # 17 does not vary when throttle moves Status BG 2LH or 2RH, incorrect illumination</p>
---------------	---

NOTES	No fault bargraphs should be illuminated. Ignition on or engine running.
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Status bargraph 2RH incorrect illumination	NOTES	None
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Check the insulation, continuity and the absence of interference resistance on the line:			
Computer	19 →	2	Throttle potentiometer
Computer	45 →	1	Throttle potentiometer
Computer	46 →	3	Throttle potentiometer
Repair if necessary.			
If the fault is still present, replace the throttle potentiometer.			

# 17 is fixed	NOTES	None
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Check the resistance of the throttle potentiometer when the throttle butterfly is moved.		
If the resistance varies, check the electrical lines of the sensor.		
If the resistance does not vary, check that the sensor is connected mechanically to the throttle. If necessary, replace the sensor.		

# 17 outside tolerances	NOTES	None
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Check the upper and lower stops of the throttle butterfly. Check the accelerator control (points of resistance and friction). Repair.		
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AFTER REPAIR	Start the status and parameter check again from the beginning.	
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Fault finding - Status and parameter interpretation

DIAG 3	Fiche n° 27
COOLANT TEMPERATURE	
XR25 aid: # 02 = Engine temperature ± 5 °C	

NOTES	No fault bargraphs should be illuminated.
--------------	---

If the value read is incoherent, check the sensor is correctly following the standard table of values for "resistance as a function of temperature".

Replace the sensor if the values are incorrect (**NOTE** : If a sensor is incorrect, this is often due to an electric shock).

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer	15	—————▶	B2	Coolant temperature sensor
Computer	44	—————▶	B1	Coolant temperature sensor

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
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Fault finding - Status and parameter interpretation

DIAG 4	Fiche n° 27
AIR TEMPERATURE	
XR25 aid: # 03 = Temperature under the bonnet ± 5 °C	

NOTES	No fault bargraphs should be illuminated.
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If the value read is incoherent, check the sensor is correctly following the standard table of values for "resistance as a function of temperature".

Replace the sensor if the values are incorrect (**NOTE** : If a sensor is incorrect, this is often due to an electric shock).

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer	20	—————▶	2	Air temperature sensor
Computer	46	—————▶	1	Air temperature sensor

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 5	<p style="text-align: right;">Fiche n° 27</p> <p>TDC DETECTION</p> <p>XR25 aid: Status BG 3 LH incorrect illumination</p>
---------------	---

NOTES	<p>No fault bargraphs should be illuminated. When the starter motor is activated.</p>
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Check the sensor is correctly mounted.

Check the condition of the target (if it has been removed).

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer	33	—————▶	B	Flywheel signal sensor
Computer	34	—————▶	A	Flywheel signal sensor

Repair. If necessary, replace the sensor.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
---------------------	---

Fault finding - Status and parameter interpretation

DIAG 6	Fiche n° 27
	<p>FUEL PUMP</p> <p>XR25 aid: The command mode should cause the fuel pump to operate</p>

NOTES	No fault bargraphs should be illuminated.
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Check the impact sensor is correctly clipped in.

Check the fuel pump fuse.

Check the insulation and continuity of the wiring:

Fuel pump fuse —————> **3 Fuel pump relay**

Repair if necessary.

Check the insulation and continuity of the wiring:

Fuel pump relay 5 —————> **Impact sensor**
Impact sensor —————> **C1 Fuel pump**

Repair if necessary.

Check the hygiene and presence of earth on track **C2 of the fuel pump**.

If + 12 V is not reaching the fuel pump, replace the fuel pump relay.

If + 12 V is reaching the fuel pump, replace the fuel pump.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 7	<p>IDLE SPEED REGULATION Fiche n° 27</p> <p>XR25 aid: Engine speed , Minimum < # 06 < Maximum</p>
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NOTES	No fault bargraphs should be illuminated.
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Check the insulation, continuity and that there is no interference resistance on the line:

Computer	9	→	D	Idle speed regulation motor
Computer	35	→	A	Idle speed regulation motor
Computer	40	→	B	Idle speed regulation motor
Computer	36	→	C	Idle speed regulation motor

Repair if necessary and continue fault finding using the value for # 06.

06 < **Minimum**

NOTES

The idle speed is too low

Idle speed regulation is not maintaining the idle speed.

- Clean the air supply circuit (throttle body, idle regulation valve), since it is probably contaminated.
- Check the engine oil level (too high ---> splashing).
- Check and ensure correct fuel pressure.
- Using the OPTIMA 5800 station, check the engine compression.
- Check the valve clearances and the timing.

If all these points are correct, replace the idle regulation motor.

06 > **Maximum**

NOTES

The idle speed is too high

An air leak may be affecting the idle speed regulation programming.

- Check the connections on the manifold.
- Check the hygiene of the pipes on the manifold.
- Check the pneumatically controlled solenoid valves.
- Check the manifold gaskets.
- Check the throttle body gaskets.
- Check the sealing of the brake servo.
- Check the restrictions are present in the oil vapour rebreathing circuit.
- Check the fuel pressure.

If all these points are correct, replace the idle speed regulation motor.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 8	Fiche n° 27
ANTI-PINKING CIRCUIT	
XR25 aid: # 13 is not zero and variable for fast idle or under load	

NOTES	No fault bargraphs should be illuminated.
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The pinking sensor should give a signal which is variable and not zero, to prove that it is recording the mechanical vibrations of the engine.

If the signal is zero:

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

Computer	8	—→	2	Pinking sensor
Computer	44	—→	1	Pinking sensor
Computer	2	—→		Pinking sensor screening

If necessary, replace the sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 9	Fiche n° 27
PRESSURE CIRCUIT	
XR25 aid: Ignition on # 01 not coherent At idle speed # 01 < Minimum or # 01 > Maximum # 16 not coherent	
NOTES	No fault bargraphs should be illuminated.

01 not coherent
ignition on
01 < Minimum at idle
speed
16 not coherent

Check the insulation, continuity and that there is no interference resistance on the line:

Computer	45	—————→	C	Pressure sensor
Computer	44	—————→	A	Pressure sensor
Computer	16	—————→	B	Pressure sensor

Repair if necessary.

If all these points are correct, replace the sensor.

A vacuum pump with a pressure gauge may be used to check coherence with # 01 and to show a faulty sensor.

01 > Maximum at idle
speed

The manifold pressure is often a sign of incorrect engine operation. Check

- the sealing of the pipe between the manifold and the sensor,
- the valve clearances,
- the canister bleed valve which should be closed at idle speed,
- cylinder compression using the OPTIMA 5800 station.

If all these points are correct, replace the sensor.

A vacuum pump with a pressure gauge may be used to check coherence with # 01 and to show a faulty sensor.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 10	Fiche n° 27
	RICHNESS REGULATION
	XR25 aid: Richness regulation faulty

NOTES	No fault bargraphs should be illuminated. Ignition correct (a check may be made using the OPTIMA 5800 station). No other status bargraph should show a fault.
--------------	---

Check the connection and condition of the oxygen sensor connector.

Ignition on, during the timed phase, check for:

- earth on track **B of the oxygen sensor**.
- **+ 12 V after the fuel pump relay on track A of the oxygen sensor**.

Repair if necessary.

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

Computer 17 —————> **C Oxygen sensor**

Repair if necessary.

Check the resistance of the injectors and that there is no interference resistance on the lines:

Computer 4 —————> **2 Injectors 2 and 3**

Computer 30 —————> **2 Injectors 1 and 4**

Repair if necessary.

Check the sealing of the canister bleed valve (a leak can disrupt the richness considerably).

Check the sealing of the exhaust pipe upstream from the oxygen sensor.

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 idle speed is unstable, check the valve clearances.

Check the injectors (flow and shape of the jet).

If necessary, replace the oxygen sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 11	Fiche n° 27
INJECTOR	
XR25 aid: CO or CC - line 30 of the computer for injectors 1 and 4 CO or CC - line 4 of the computer for injectors 2 and 3	

NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the resistance of the faulty injector. Replace it if necessary.

Check the insulation and continuity of the line:

injectors 1 and 4	Computer 30	—→	2 injectors
injectors 2 and 3	Computer 4	—→	2 injectors

Repair if necessary.

During command mode operation, check for + 12 Volts on track 1 of the faulty injector.

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 12	IMMOBILISER XR25 aid: Status BG 3RH illuminated, ignition on	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the insulation and continuity of the wiring for track **37** on the injection computer.

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

AFTER REPAIR	Start the status and parameter check again from the beginning.
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Fault finding - Status and parameter interpretation

DIAG 13	Fiche n° 27
	VEHICLE SPEED XR25 aid: # 18 = Speed read on speedometer in km/h

NOTES	No fault bargraphs should be illuminated. Check on a road test.
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If the value read is incoherent:

- Check that the sensor is correctly mounted and supplied:
 - **+12 V on A1**
 - **Earth on B2**
- Check the insulation, continuity and that there is no interference resistance on the line:
Computer 12 —————> B1 vehicle speed sensor

NOTE : Check the different functions that use this information.

Repair.

The fault persists! Replace the speed sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 14	<p style="text-align: right;">Fiche n° 27</p> <p>ADAPTIVE RICHNESS</p> <p>XR25 aid: Minimum < # 30 < Maximum Minimum < # 31 < Maximum</p>
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NOTES	<p>No fault bargraphs should be illuminated. Carry out the programming operations.</p>
--------------	--

Ensure the canister bleed valve is sealed.

Erase the computer memory.

Engine warm , running at idle speed, check the values for # 30 and # 31.

- **If # 30 or # 31 is at a MAXIMUM, there is not enough fuel .**
- **If # 30 or # 31 is at a MINIMUM, there is too much fuel.**

Ensure the hygiene, cleanliness and correct operation of :

- filter.
- fuel pump.
- fuel circuit.
- fuel tank.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
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Fault finding - Status and parameter interpretation

DIAG 15	Fiche n° 27
EMISSION OF POLLUTANTS	
XR25 aid: None	

NOTES	No fault bargraphs should be illuminated.
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$0.97 \leq \lambda \leq 1.03$ at 2500 rpm.	NOTES	The oxygen sensor loops correctly at 2500 rpm.
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If CO > 0.3 % at 2500 rpm.
The catalytic converter is faulty. NOTE : it is vital to determine the cause of the catalytic converter damage to avoid a new converter also being damaged.

If $\lambda < 0.97$ or $\lambda > 1.03$ at idle speed
Check the sensor earth and heating. Check there is no air leak at the manifold.

$0.97 \leq \lambda \leq 1.03$ at 2500 rpm.	NOTES	The oxygen sensor does not loop correctly at 2500 rpm.
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There is a fault with the injection or the sensor.
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AFTER REPAIR	Start the status and parameter check again from the beginning.
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Fault finding - Status and parameter interpretation

DIAG 15 CONT	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
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$\lambda > 1.03$ at 2500 rpm.	NOTES	None
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The oxygen sensor loops correctly at 2500 rpm.
<ul style="list-style-type: none"> Check there is no leak at the exhaust. Check that an injector has not seized. Check the fuel pressure is not too low.

The oxygen sensor does not loop correctly at 2500 rpm.
<ul style="list-style-type: none"> Check there is not an injection fault. Check there is not an ignition fault. Check the sensor is not faulty. Check the fuel pressure.

$\lambda < 0.97$ at 2500 rpm	NOTES	The oxygen sensor does not loop correctly at 2500 rpm. CO > 0.3 % at 2500 rpm.
<ul style="list-style-type: none"> Check the pressure sensor. Check the sensor. Check that an injector is not faulty. 		

AFTER REPAIR	Start the status and parameter check again from the beginning.
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Fault finding - Status and parameter interpretation

DIAG 16	<p style="text-align: right;">Fiche n° 27</p> <p>AIR CONDITIONING</p> <p>XR25 aid: Status BG 10LH or 10 RH, incorrect illumination</p>
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NOTES	<p>No fault bargraphs should be illuminated.</p>
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Check the insulation and continuity of the lines for track 5 and track 51 on the injection computer.
Repair if necessary.
Refer to the fault finding for the air conditioning.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
---------------------	---

Fault finding - Status and parameter interpretation

DIAG 17	Fiche n° 27
ANTIPERCOLATION RELAY	
XR25 aid: The fan assembly must operate when command mode G17* is used.	
NOTES	No fault bargraphs should be illuminated.

The antipercolation relay does not click when its command mode is used

Ignition on, check for **12 V on track 1 of the fan assembly relay.**

There is not 12 V on track 1

Check the line for track 1 of the relay to the fuse.

There is 12 V on track 1

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

Bornier 14 → 2 Relay

Repair.

The fault persists, replace the relay.

The fault persists!
Replace the injection computer.

The antipercolation relay does click when its command mode is used

Fan assembly relay in place, check, during operation of the command mode, for **12 V on track 5 of the fan assembly relay.**

There is not 12 V on track 5

Check the insulation and continuity of line 3 on the relay to the fuse.
Repair if necessary.

The fault persists, replace the fan assembly relay.

There is 12 V on track 5

Check the insulation and continuity of the line:

Relay 5 → 2 Fan assembly
Fan assembly 1 → Earth

Repair.

If the fan assembly still does not operate, replace the fan assembly.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 18	<p style="text-align: right;">Fiche n° 27</p> <p>POWER ASSISTED STEERING PRESSOSTAT</p> <p>XR25 aid: None</p>
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NOTES	<p>No fault bargraphs should be illuminated.</p>
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Check the correct operation of the power assisted steering (oil level, ...).
Check the insulation and continuity of the line for track 13 on the injection computer.
Check the power assisted steering pressostat is correctly connected.
Repair if necessary.

If all these points are correct, replace the power assisted steering pressostat.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
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Fault finding - Status and parameter interpretation

DIAG 19	FAULT WARNING LIGHT CIRCUIT XR25 aid: None	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
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Check the condition of the warning light and its feed.
Repair if necessary.

Connect the bornier in place of the computer and check the insulation and continuity of the line for **track 43** on the computer.
Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Customer complaints

NOTES

Only refer to this customer complaint after a complete check using the XR25.

STARTING FAULTS

Chart 1

IDLE SPEED FAULTS

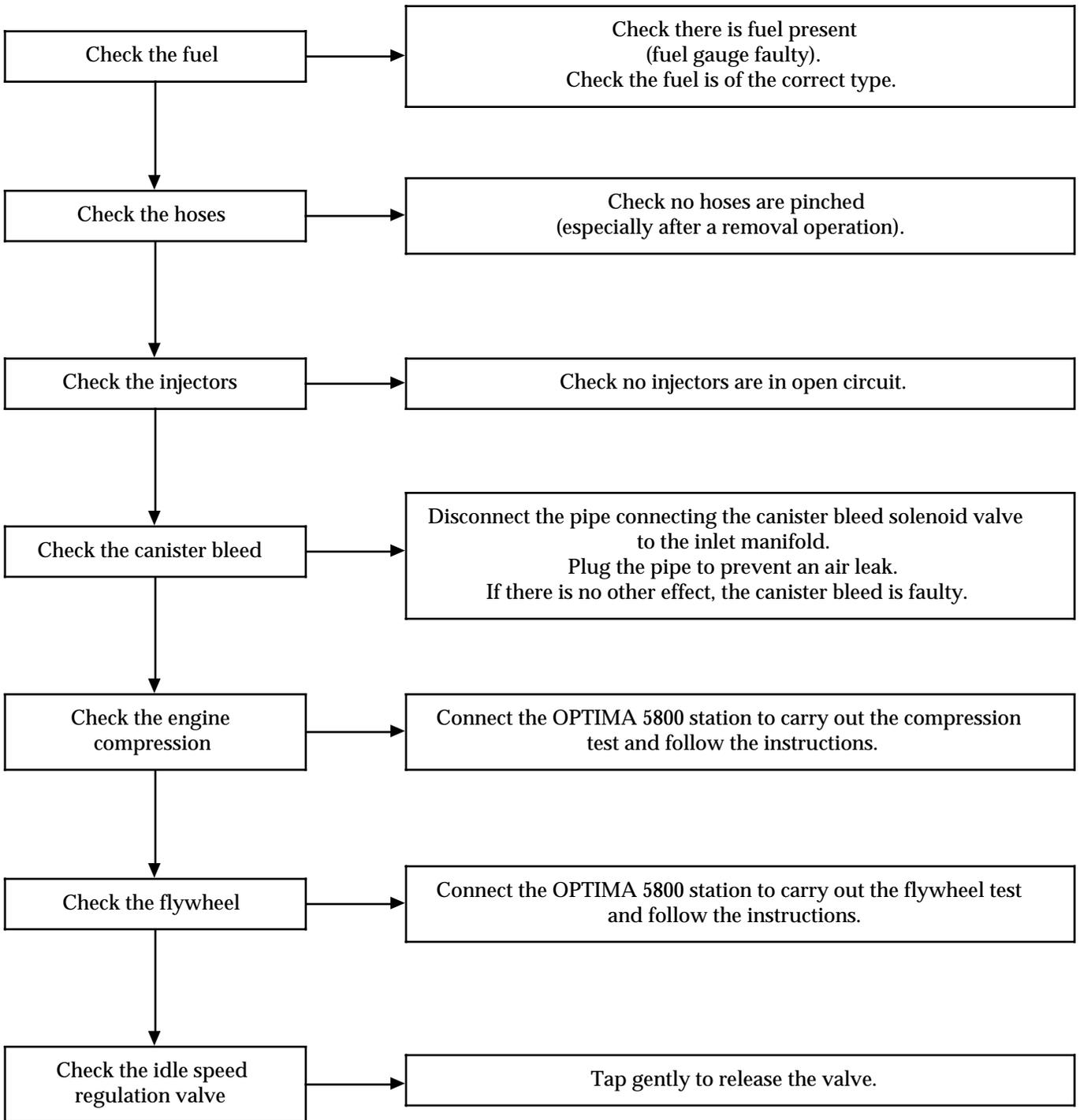
Chart 2

BEHAVIOUR WHILE DRIVING

Chart 3

Chart 1	STARTING FAULTS
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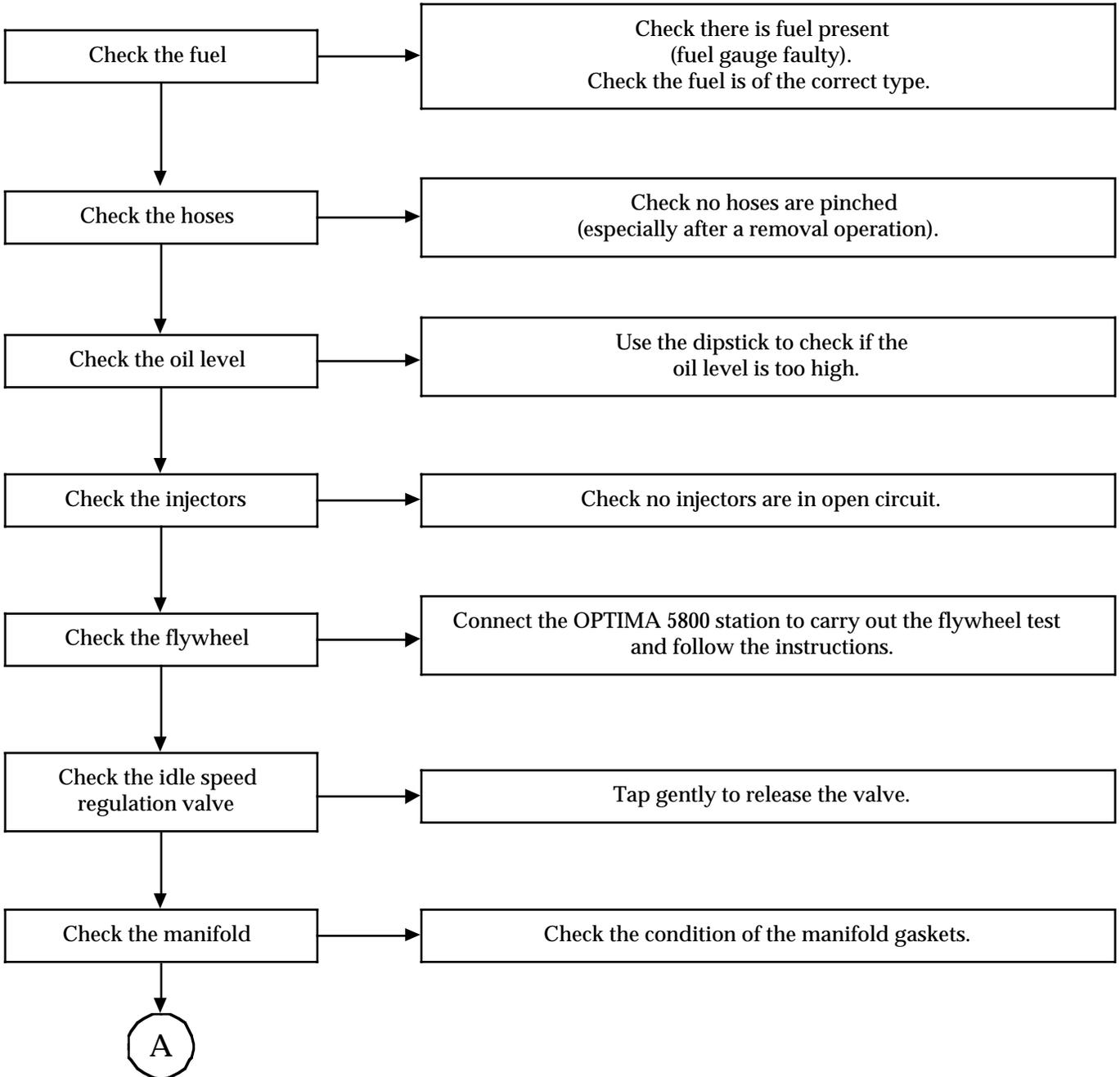
NOTES	Only refer to this customer complaint after a complete check using the XR25.
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AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
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Chart 2	IDLE SPEED FAULTS
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NOTES	Only refer to this customer complaint after a complete check using the XR25.
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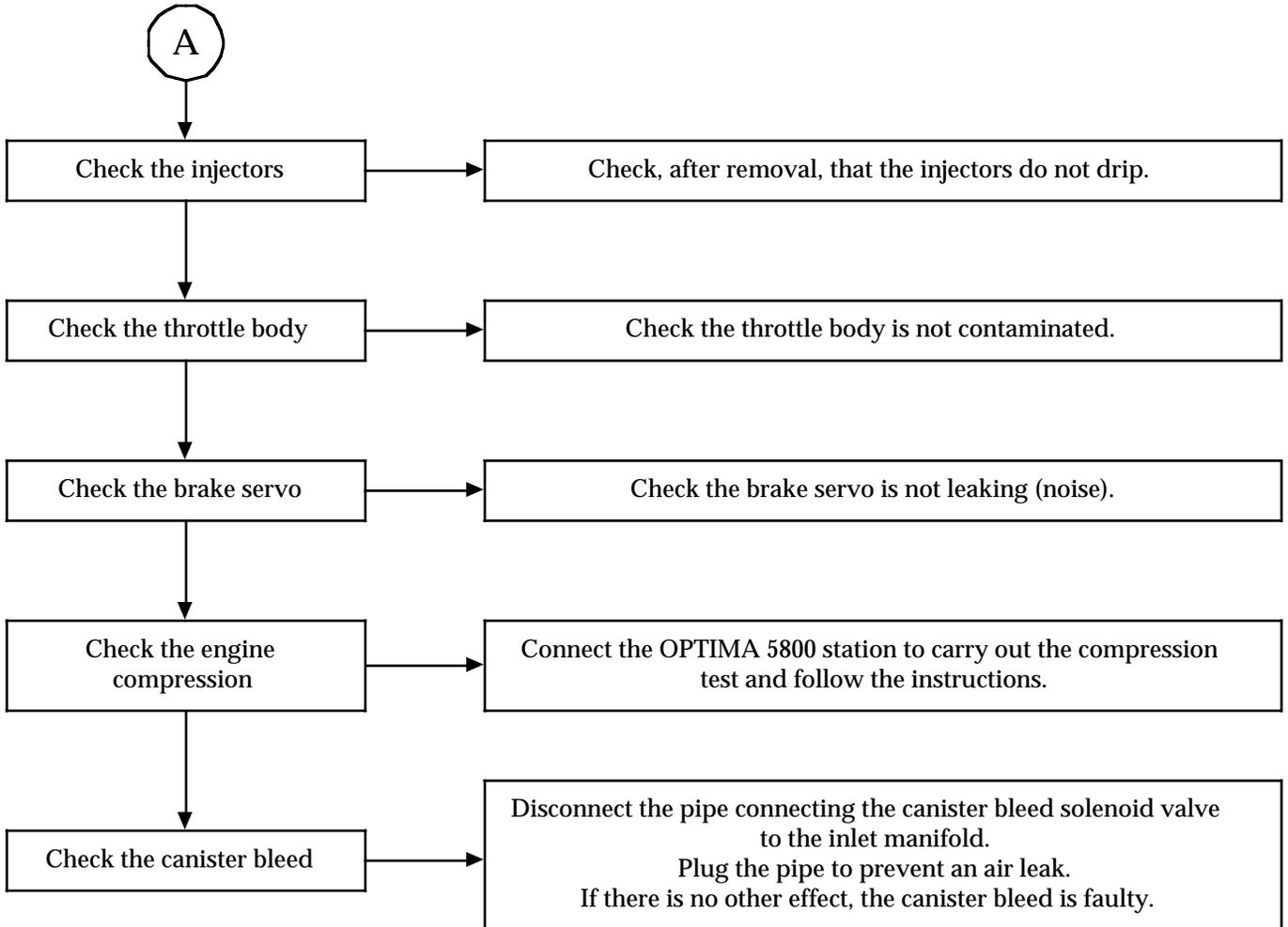


AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
---------------------	---

Chart 2
CONT

NOTES

Only refer to this customer complaint after a complete check using the XR25.

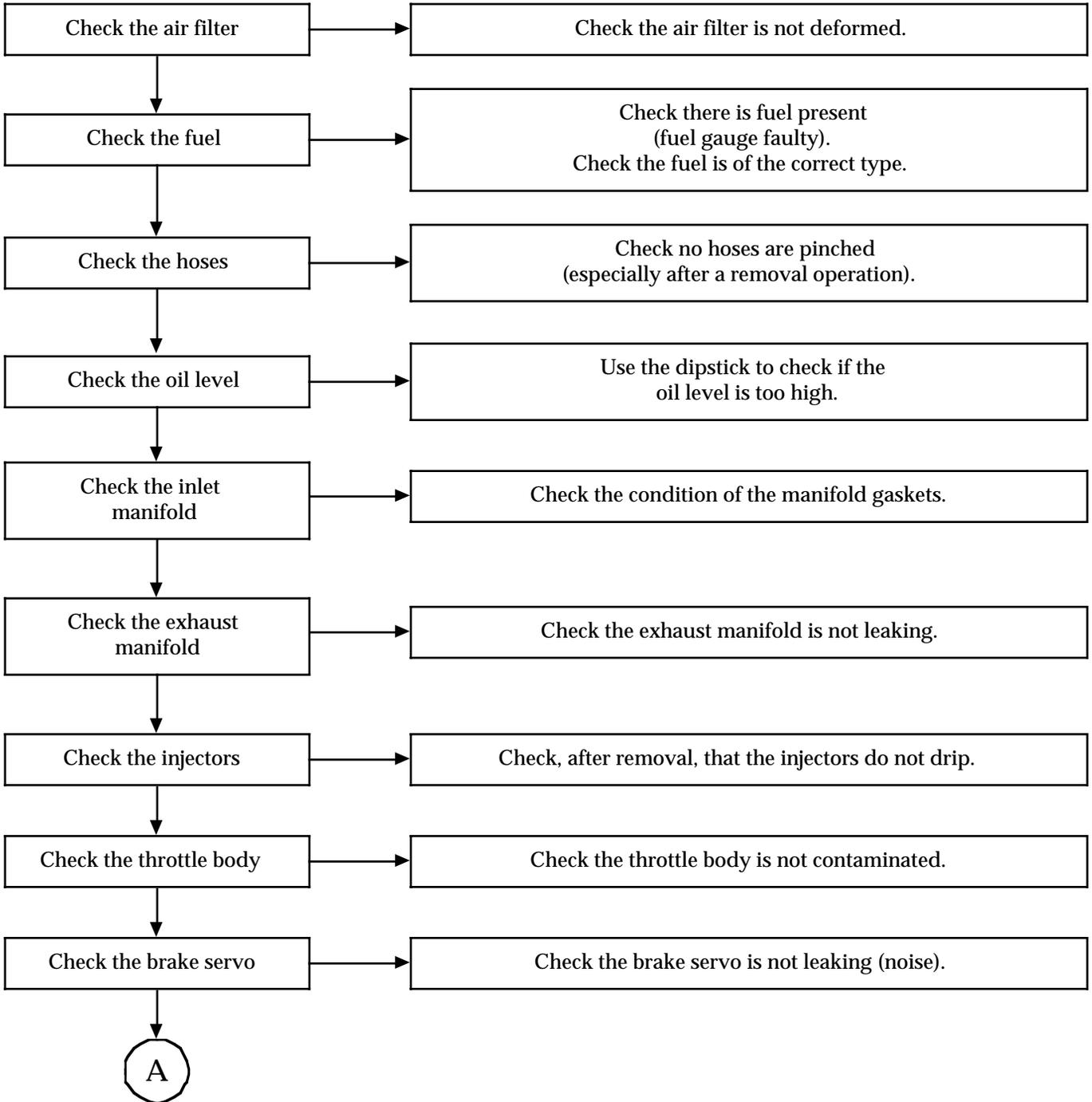


AFTER REPAIR

Erase the computer memory using G0** and carry out a road test.

Chart 3	BEHAVIOUR WHILE DRIVING
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NOTES	Only refer to this customer complaint after a complete check using the XR25.
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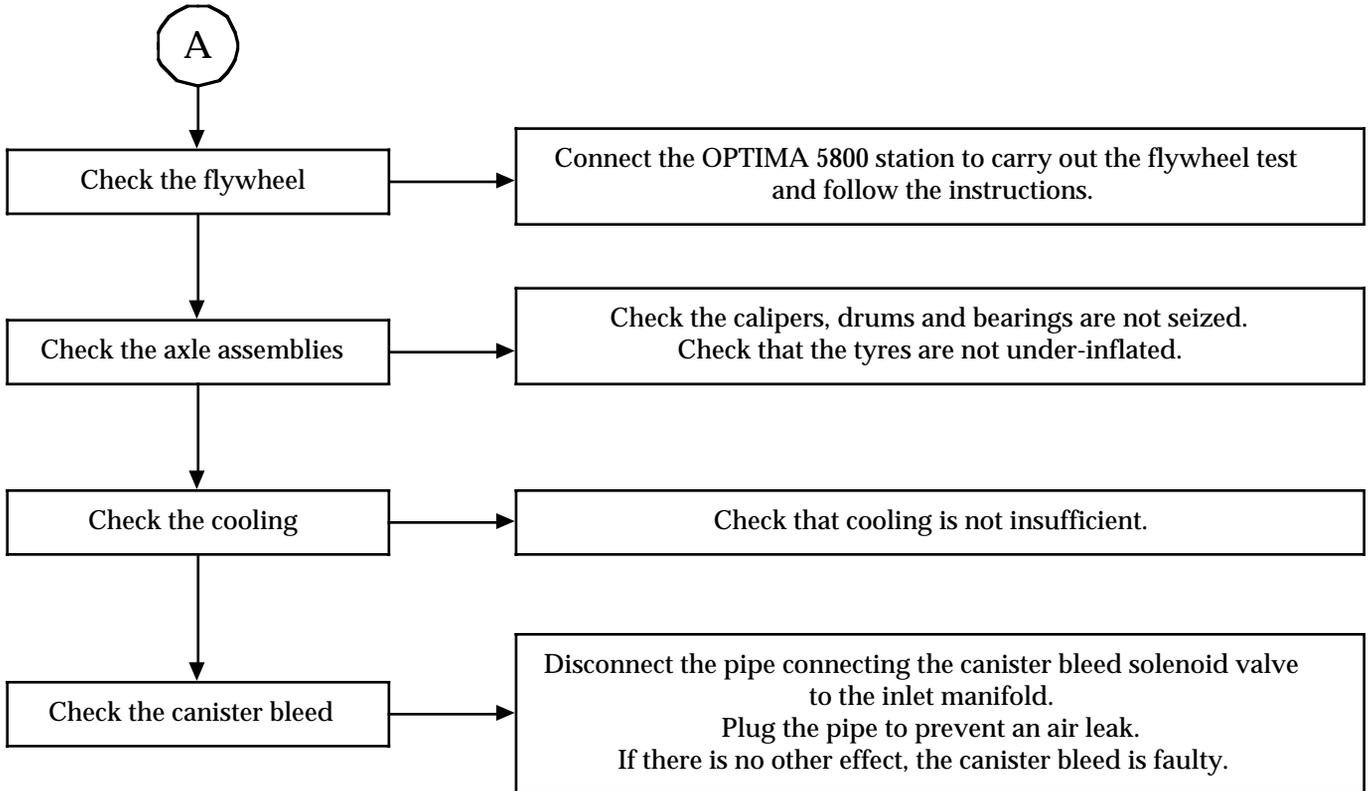


AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
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Chart 3
CONT

NOTES

Only refer to this customer complaint after a complete check using the XR25.



AFTER REPAIR

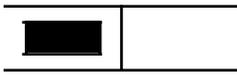
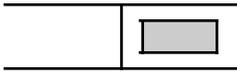
Erase the computer memory using G0** and carry out a road test.

For further details, refer to section 12

Injector resistance	=	14.5 Ω	
Idle regulation stepping motor resistance	:	A - D = 52 Ω B - C = 52 Ω	
Canister bleed valve resistance	=	35 Ω	
Ignition coil resistance	:	Primary = 1-3 ; 2-3 = 1 Ω 1-2 = 0.5 Ω	
		Secondary = 10 kΩ	
Oxygen sensor heating resistance	=	3 to 15 Ω	
Throttle potentiometer resistance	:	no load 1-2 = 5440 Ω 1-3 = 4500 Ω 2-3 = 2160 Ω	full load 1-2 = 2200 Ω 1-3 = 4460 Ω 2-3 = 5340 Ω
Flywheel signal resistance	=	220 Ω	
Fuel pressure	=	3 bars ignition on/ 2.5 bars at idle speed	
Value for: CO	=	0.3 % maximum	
HC	=	100 ppm maximum	
CO ₂	=	14.5 % minimum	
Lambda	=	0.97 < λ < 1.03	

Sensor resistance					
Temperature in °C	0	20	40	80	90
Air temperature sensor Resistance in ohms	7470 to 11970	3060 to 4045	1315 to 1600	-	-
Coolant temperature sensor Resistance in ohms	6700 to 8000	2600 to 3000	1100 to 1300	270 to 300	200 to 215

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Dialogue with XR25	D13 (selector on S8)		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">9.NJ</div> Use fiche n° 27 fault test side
2	Interpretation of normally illuminated bargraphs		<div style="text-align: center;">1</div>  <div style="text-align: center;">1</div> 	Fault test Code present
3	Immobiliser		<div style="text-align: center;">2</div> 	If the vehicle does not have an immobiliser, this bargraph may be illuminated.
4	Change to status test	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side

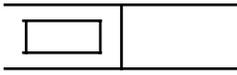
NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
5	Interpretation of normally illuminated bargraphs		1 	Code present
			2 	No load recognition
			3 	Illuminated if immobiliser active
			4 	+ after ignition information received
			9 	Always illuminated if AC option is present
			12 	Illuminates after erasing the memory to indicate that the operation has been carried out correctly
			19 	Computer configured for: manual gearbox (G50*2*)
			19 	automatic transmission (G50*1*)

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
6	Throttle position potentiometer	No load # 17	2 	$16 < X < 50$ (E7J 780) $19 < X < 51$ (K7M 744)
		Accelerator pedal slightly depressed	2 	
		Full load # 17	2 	
7	Absolute pressure sensor	# 01		X = Local atmospheric pressure
8	Coolant temperature sensor	# 02		X = Ambient temperature $\pm 5\text{ }^\circ\text{C}$
9	Air temperature sensor	# 03		X = Ambient temperature $\pm 5\text{ }^\circ\text{C}$
10	Idle speed regulation stepping motor	# 12		The value read is variable depending on the coolant temperature : $7\% \leq X \leq 100\%$
11	Engine speed	# 06		X = 0 rpm
12	Canister bleed	# 23		X = 0.7 %

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once (air conditioning not selected).
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Change to status test mode	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side
2	No fault present		20 	Ensure this bargraph is not flashing, otherwise enter G02* and turn over the fiche. IMPORTANT: This bargraph may flash if the vehicle has no immobiliser. Ignore this bargraph if fault bargraph 2 RH side is illuminated and *22 = 2 DEF. Repair the faulty component the erase the memory (G0**) and return to the status test (G01*)
3	Battery voltage	# 04 if in # 04 then # 06		13 volts < X < 14.5 volts X < 12.7 volts E7J 780 engine Engine speed < X < 930 rpm nominal K7M 744 engine Engine speed < X < 912 rpm nominal
4	Interpretation of normally illuminated bargraphs	-	1  2 	Code present No load recognition

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once (air conditioning not selected).
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
4 <i>(cont)</i>	Interpretation of normally illuminated bargraphs <i>(cont)</i>	-	3 	Engine speed information received
			4 	+ after ignition information received
			6 	Idle speed regulation active
			6 	Richness regulation active
			7 	Fuel pump active
			8 	Illuminated if fan assembly is controlled (K7M 744 only)
			9 	Always illuminated if AC option is present
			12 	Illuminates after erasing the memory to indicate that the operation has been carried out correctly

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once (air conditioning not selected).
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
4 <i>(cont)</i>	Interpretation of normally illuminated bargraphs <i>(cont)</i>	-	<p>19</p>  <p>19</p> 	<p>Computer configured for:</p> <p style="padding-left: 20px;">manual gearbox (G50*2*)</p> <p style="padding-left: 20px;">automatic transmission (G50*1*)</p>
5	Idle speed	<p>Without air conditioning operating</p> <p style="text-align: center;"># 06</p> <p style="text-align: center;"># 12</p> <p style="text-align: center;"># 44</p> <p style="text-align: center;">Air conditioning selected</p> <p style="text-align: center;"># 44</p> <p style="text-align: center;"># 06</p> <p>PAS pressostat</p>	<p>6</p>  <p>9</p>  <p>10</p>  <p>13</p>  <p># 06</p>	<p style="text-align: center;">$X = 750 \pm 50 \text{ rpm}$</p> <p style="text-align: center;">$2 \% < X < 15 \% \text{ (E7J 780)}$ $6 \% < X < 15 \% \text{ (K7M 744)}$</p> <p style="text-align: center;">$X \approx 250 \text{ W}$</p> <p style="text-align: center;">Illuminated depending on status of air conditioning</p> <p style="text-align: center;">$250 \leq X \leq 4000 \text{ W}$ if AC requests fast idle speed</p> <p style="text-align: center;">$X = 880 \pm 50 \text{ rpm (E7J 780)}$ $X = 850 \pm 50 \text{ rpm (K7M 744)}$</p> <p style="text-align: center;">$X = 800 \pm 50 \text{ rpm (E7J 780)}$ $X = 850 \pm 50 \text{ rpm (K7M 744)}$</p>

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
6	Anti-pinking noise measurement	# 13 (3500 rpm, no load)		X variable or not zero
7	Manifold pressure	# 01 no consumers		X is variable and approximately 350 ± 50 mb (E7J 780) or 300 ± 50 mb (K7M 744) (this pressure varies with altitude)
8	Richness regulation	Stable engine speed of 2500 rpm then idle speed # 05 # 35	<div style="text-align: center;">6</div>  <div style="text-align: center;">6</div> 	<p>X varies in the range from 50 to 900 mV approximately</p> <p>X is close to 128 and varies slightly with a maximum of 255 and minimum of 0</p>
9	Adaptive idle speed correction	# 21		- 2.4 % < X < 6.2 % (average value after erasing the memory: 0)
10	Canister bleed	# 23	<div style="text-align: center;">7</div> 	Canister bleed is prevented. The solenoid valve remains closed. X = 0.7 %
11	PAS pressostat	# 06	<div style="text-align: center;">13</div> 	<p>X = 800 rpm (E7J 780)</p> <p>X = 850 rpm (K7M 744)</p>

NOTES	Checks to be carried out during a road test.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Change to status test	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side
2	No fault present		20 	Ensure this bargraph is not flashing, otherwise enter G02* and turn over the fiche. IMPORTANT: This bargraph may flash if the vehicle has no immobiliser. Ignore this bargraph if fault bargraph 2 RH side is illuminated and *22 = 2 DEF. Repair the faulty component the erase the memory (G0**) and return to the status test (G01*)
3	Canister bleed	# 23	11 	Canister bleed is authorised X = variable and > 0.7
4	Vehicle speed information	# 18		X = vehicle speed read on speedometer
5	Pinking sensor	Vehicle under load and engine speed 2000 rpm # 13 # 15		X = variable and not zero $0 \leq X \leq 7$ (if there is a sensor fault, the advance is retarded systematically by 3°, which is not visible using # 15)

NOTES	Checks to be carried out during a road test.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
6	Adaptive richness	After programming phase # 30 # 31		$64 \leq X \leq 192$ (E7J 780) $60 \leq X \leq 195$ (K7M 744) (average value after erasing the memory: 128) $64 \leq X \leq 192$ (E7J 780) $60 \leq X \leq 195$ (K7M 744) (average value after erasing the memory: 128)

D7F 720 ENGINE - 35 tracks

MULTIPOINT INJECTION FAULT FINDING

CONTENTS

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SETTING UP DIALOGUE BETWEEN THE XR25 AND THE COMPUTER

- Connect the test kit to the diagnostic socket.
- Put the selector on **S8**
- Switch on the ignition.
- Enter **D13**

9.NJ

COMPUTER IDENTIFICATION

The computer is not identified by reading a fault code but by reading the Part Number directly from the computer. After having set up a dialogue with the computer:

ENTER **G70***

7700

XXX

XXX

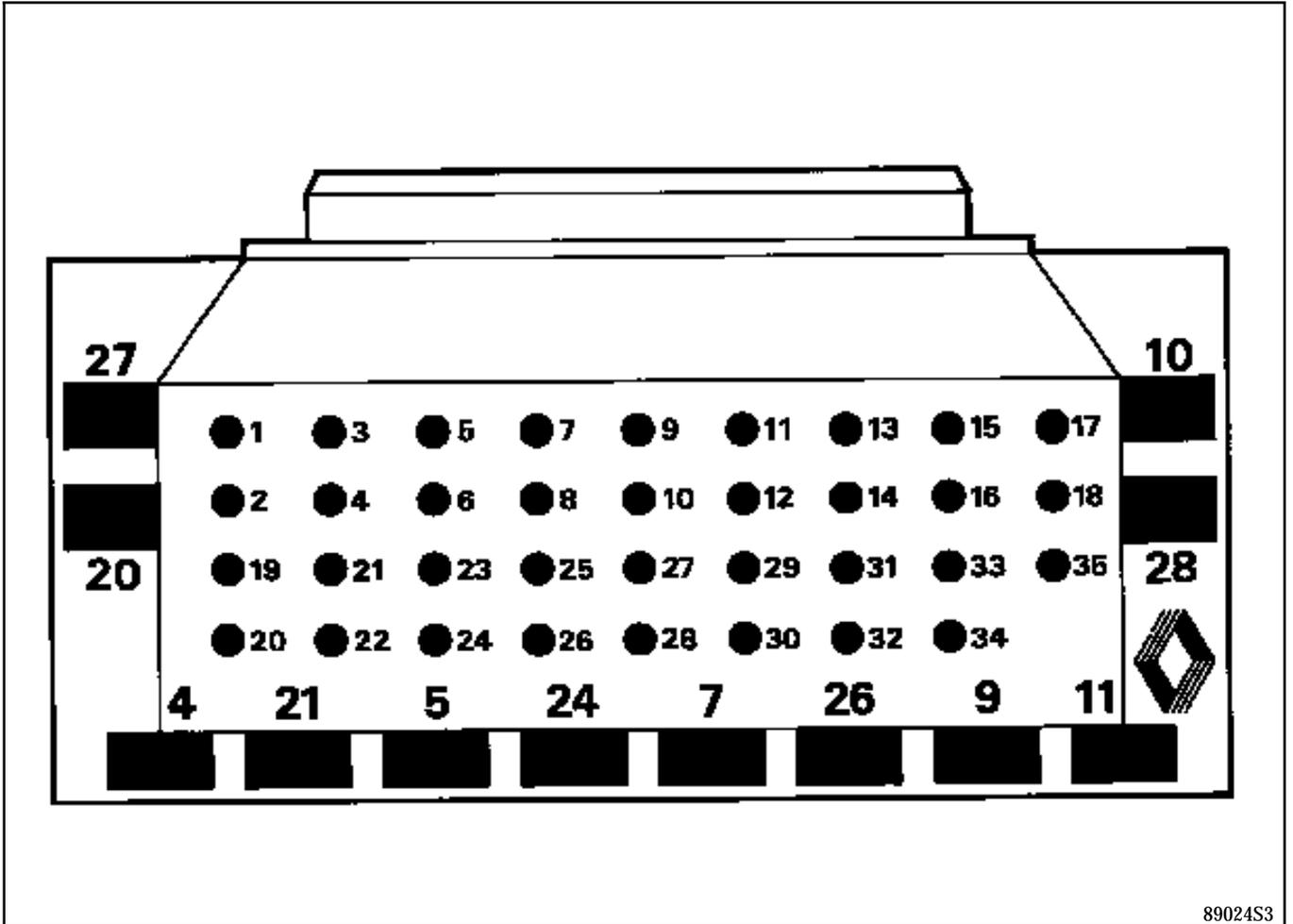
The Part Number will then appear on the central display in three sequences.

Each sequence is displayed for approximately two seconds. The display is repeated twice .

ERASING THE MEMORY (ignition on)

After an operation on the injection system the computer's memory can be erased by using the code **G0**** .

If the information obtained by the XR25 requires electrical continuities to be checked, connect bornier **MS 1048**.



89024S3

Bornier **MS 1048** is a 35 track base with a printed circuit on which are 35 copper coated surfaces, numbered from 1 to 35.

Using the wiring diagrams, the tracks connecting the components to be tested can be easily identified.

IMPORTANT :

- All tests using bornier **MS 1048** must be carried out with the battery disconnected.
- The bornier is only designed to operate with an ohmmeter. Under no circumstances should 12 Volts be applied to the test points.

DESCRIPTION OF THE FAULT-FINDING PHASES

The process described below is to be carried out in all cases of faults.

XR25 FAULT-CHECKING

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

There are several constraints to the treatment of the bargraphs :

- A priority in the order of treatment when several bargraphs are illuminated.
- The interpretation of a bargraph depending on whether it is constantly illuminated or flashing .

Faults must be checked using the XR25 as described below:

- Switch off the ignition.
- Switch on the ignition and deal with any faults.
- Run the engine (or run at starter speed for 10 seconds) and deal with any faults.
- Carry out a road test and deal with any faults.

1 - Order of priority

A series of illuminated bargraphs corresponding to the sensors with the same 12 V or having the same earth, indicates a fault in this source. These priorities are dealt with in the "NOTES" section of the fault-finding of the bargraph concerned.

2 - Input / output fault bargraphs

a) Illuminated :

The fault is present : treat the fault following the method described in the "INTERPRETATION OF XR25 BARGRAPHS" section.

b) Flashing :

Note the bargraphs displayed on the XR25.

Erase the memory of the computer and attempt to re-illuminate the bargraph: ignition on, idle speed (or at starter speed) or by means of a road test (the "NOTES" section in the fault finding for the bargraph concerned may help to determine the conditions under which the bargraph will illuminate).

If the bargraph has re-illuminated (fixed or flashing) :

The fault is present once again. In this case, treat the fault bargraph.

If the bargraph has not re-illuminated, check :

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

NOTE : If the customer complaint does not correspond to the fault bargraph which is flashing (example : Air temperature sensor fault bargraph flashing, but no customer complaint) ignore this memorised fault and erase it.

3 - No bargraphs illuminated

If no bargraphs are illuminated on the XR25, carry out a status and parameter check. This may help in detecting a problem.

XR25 CHECKING STATUSES AND PARAMETERS

The status and parameter check is aimed at checking the statuses and parameters which do not illuminate any fault bargraphs if they are outside of permitted tolerance values. This phase allows :

- Faults to be found without the illumination of fault bargraphs which may correspond to a customer complaint (example : absence of no load information causing an unstable idle speed).
- The correct operation of the injection to be checked and the risk of faults appearing shortly after the repair to be eliminated.

This section contains fault-finding for statuses and parameters, under their test conditions (example : fault finding for # 01 ignition on and fault finding for # 01 engine running).

If a status does not operate normally or a parameter is outside of permitted tolerance values, consult the fault-finding page indicated in the "Fault-finding" column.

XR25 CHECK CORRECT

If the XR25 check is correct, but the customer complaint persists, the problem must be dealt with through customer complaints.

Treatment of customer complaints

This section has fault charts, which suggest a series of possible causes of the problem.

These lines of enquiry must only be used in the following cases :

- No fault bargraph appears on the XR25.
- No faults are detected during the checking of statuses and parameters.
- The vehicle is not operating correctly

POST-REPAIR CHECK

This operation is a simple check of the repair (by a command, or by an XR25 command mode ...).

This makes it possible to check that the system upon which the intervention has been carried out is correct electrically.

It is an introduction to the road test.

ROAD TEST

A road test is essential in order to guarantee the correct operation of the vehicle and to test the quality of the repair. Its role is to make sure that no faults occur (or will occur) when driving.

In order to be significant, the road test is subject to special driving conditions.

Driving conditions for programming the adaptive variables:

During the road test, the engine speed must be stabilised for a few moments between:

260 < # 01 < 385 mbars
then 385 < # 01 < 510 mbars
then 510 < # 01 < 635 mbars
then 635 < # 01 < 760 mbars
then 760 < # 01 < 970 mbars

Do not exceed an engine speed of 4400 rpm
The engine must be warm (coolant temperature > 75 °C).

For this test, start from a fairly low engine speed, in 3rd or 4th gear, and apply progressive acceleration to stabilise at the pressure required for 10 seconds in each zone.

The test must then be continued by driving normally, in a varied manner for 3 to 6 miles (5 to 10 km).

PRESENTATION OF XR25 FICHE N° 27 SIDE 1/2

N°27 1/2		S8	code : D 1 3	read : 9nJ
1	<input type="checkbox"/> ILLUMINATED → <input type="checkbox"/> EXTINGUISHED →	FAULT TEST TURN CARD	CODE PRESENT <input type="checkbox"/>	
2	<input type="checkbox"/>	COMPUTER	ENG. IMMOB * 22	<input type="checkbox"/>
3	<input type="checkbox"/>	AIR TEMPERATURE	O2 SENSOR * 23	<input type="checkbox"/>
4	<input type="checkbox"/>	COOLANT TEMP.	VEHICLE SPEED	<input type="checkbox"/>
5	<input type="checkbox"/>	PRESSURE	FLYWHEEL SIGNAL * 25	<input type="checkbox"/>
6	<input type="checkbox"/> * 06	PINKING	THROTTLE POSITION	<input type="checkbox"/>
7	<input type="checkbox"/>	CAMSHAFT	FUEL TANK PRESSURE	<input type="checkbox"/>
8	<input type="checkbox"/> * 08	FUEL PUMP	BLOCKING * 28	<input type="checkbox"/>
9	<input type="checkbox"/> * 09	ANTI-PERCOLATION	AIR PUMP * 29	<input type="checkbox"/>
10	<input type="checkbox"/> * 10	O2 SENSOR OVERHEAT	BI MODE * 30	<input type="checkbox"/>

<h3 style="margin: 0;">INJECTION (FAULTS)</h3> <p style="margin: 0; font-size: small;">Erase fault memory : G 0 ** Status check request : G01 *</p>	<p>ADDITIONAL CHECKS : # . .</p> <table style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr><td>01</td><td>PRESSURE</td><td>mb</td></tr> <tr><td>02</td><td>Coolant temp.</td><td>°C</td></tr> <tr><td>03</td><td>Air temp.</td><td>°C</td></tr> <tr><td>04</td><td>Computer feed</td><td>V</td></tr> <tr><td>05</td><td>O2 sensor</td><td>V</td></tr> <tr><td>06</td><td>Engine speed</td><td>rpm</td></tr> <tr><td>12</td><td>Idling RCO</td><td>%</td></tr> <tr><td>13</td><td>Pinking signal</td><td></td></tr> <tr><td>14</td><td>Engine speed gap</td><td>rpm</td></tr> <tr><td>15</td><td>Pinking correct.</td><td></td></tr> <tr><td>16</td><td>Atmos. pressure</td><td>mb</td></tr> <tr><td>17</td><td>Throttle pot.</td><td></td></tr> <tr><td>18</td><td>Vehicle speed</td><td>km/h</td></tr> <tr><td>21</td><td>Auto. correct. of RCO de speed</td><td>%</td></tr> <tr><td>23</td><td>Canister purge RCO</td><td>%</td></tr> <tr><td>24</td><td>RCO EGR</td><td>%</td></tr> <tr><td>30</td><td>Auto. correct. of rich. under high loads</td><td></td></tr> <tr><td>31</td><td>Auto. correct. of rich. under low loads</td><td></td></tr> <tr><td>35</td><td>Richness corr.</td><td></td></tr> <tr><td>44</td><td>P. absorbed by AC compressor</td><td>W</td></tr> </table>	01	PRESSURE	mb	02	Coolant temp.	°C	03	Air temp.	°C	04	Computer feed	V	05	O2 sensor	V	06	Engine speed	rpm	12	Idling RCO	%	13	Pinking signal		14	Engine speed gap	rpm	15	Pinking correct.		16	Atmos. pressure	mb	17	Throttle pot.		18	Vehicle speed	km/h	21	Auto. correct. of RCO de speed	%	23	Canister purge RCO	%	24	RCO EGR	%	30	Auto. correct. of rich. under high loads		31	Auto. correct. of rich. under low loads		35	Richness corr.		44	P. absorbed by AC compressor	W
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11	<input type="checkbox"/> * 11	INJECTOR CIRCUIT	CONNECTION A.T. → INJ	<input type="checkbox"/>																																																									
12	<input type="checkbox"/> * 12	WARN. LAMP CIRC. DEF.	FUEL PUMP + INFO	<input type="checkbox"/>																																																									
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17 ANG

FI21727-1

PRESENTATION OF FICHE XR25 N° 27 SIDE 2/2

N°27 2/2		read : 10rJ
1	<input type="checkbox"/> EXTINGUISHED → STATUS TEST <input type="checkbox"/> ILLUMINATED → TURN CARD	CODE PRESENT <input checked="" type="checkbox"/>
2	<input type="checkbox"/> PG ← THROTTLE POSITIONS → PL <input type="checkbox"/>	CONTROL MODES : G.. (IF ENGINE STOPPED) 10* Fuel pump relay 11* Blocking relay 12* AC compressor 14* Idle speed reg. valve 16* Bleed canister valve 17* Anti percolation relay 21*1* Warn. light def. 22* Air pump relay 23* EGR valve 24* Bi-mode inlet valve 31* Injector control 50*x* Computer set-up 57*x* Idle speed adj. 58*x* Computer configuration 59*x* INJ Lock/Unlock 60* Zeroing validation
3	<input type="checkbox"/> FLYWHEEL SIGNAL ACTIVE ENG. IMMOB. <input type="checkbox"/>	
4	<input checked="" type="checkbox"/> PARK/NEUTRAL POSITION + APC COMPUTER <input type="checkbox"/>	
5	<input type="checkbox"/> TORQUE ADJUSTMENT RELAY CONTROL LOCKING <input type="checkbox"/>	
6	<input type="checkbox"/> RICHNESS REGULATION IDLING REGULATION <input type="checkbox"/>	
7	<input type="checkbox"/> FUEL PUMP CONTROL BLEED CANISTER AUTHOR. <input type="checkbox"/>	
8	<input checked="" type="checkbox"/> ANTI-PERCOL. CTRL ELEC. W/SCREEN REQUESTED <input type="checkbox"/>	
9	<input checked="" type="checkbox"/> SELECTION ACCEL. IDLE SPEED <input type="checkbox"/> <input type="checkbox"/> AIR COND.	
10	<input type="checkbox"/> REQUEST COMPRESSION AUTHOR. OR PROHIBITED <input type="checkbox"/>	
(WARNING : monitor bar graph 20 left)		
<h3>INJECTION (STATUS)</h3> Erase fault memory : G 0 ** Request fault test : G 02 *		ADDITIONAL CHECKS : # . . 01 Pressure mb 02 Coolant temp. °C 03 Air temp. °C 04 Computer feed V 05 O2 Sensor V 06 Engine speed rpm 12 Idling RCD % 13 Pinking signal 14 Eng. speed gap rpm 15 Pinking correct. d° 16 Atmos. pressure mb 17 Throttle pot. 18 Vehicle speed km/h 21 Auto. corr. RCD idle speed % 23 RCD bleed canister % 24 RCD EGR % 30 Auto. correct. ditch under/high back 31 Auto. corr. of richness 35 Mixture regulation 44 P. absorbed by AC compressor W
11	<input type="checkbox"/> CAMSHAFT SIGNAL BLEED CANISTER + ACTIVE SOL VALVES <input type="checkbox"/>	
12	<input type="checkbox"/> EGR SV CONTROL MEMORISED FAULTS <input type="checkbox"/>	
13	<input checked="" type="checkbox"/> AIR PUMP CONTROL POWER STEERING PRESSOSTAT <input type="checkbox"/>	
14	<input checked="" type="checkbox"/> BI-MODE INLET CTRL COLD START INJECTORS <input type="checkbox"/>	
15	<input checked="" type="checkbox"/> SPEED SENSOR well connected	
16		
17		
18		
19	<input checked="" type="checkbox"/> Veh. with AT COMPUTER CONFIGURATION Veh. with man. g/box <input type="checkbox"/>	
20	<input checked="" type="checkbox"/> FAULT PRESENT XR25 MEMORY <input type="checkbox"/>	Diagnosed faults : Press V and 9 Return to diagnostic mode : D
		17 ANG

FI21727-2

REPRESENTATION OF THE BARGRAPHS

-  Illuminates when a dialogue has been established with the product computer. If it remains extinguished:
- the code does not exist,
 - there is a fault in the tool, the computer or the line

REPRESENTATION OF THE FAULTS (always on a coloured background)

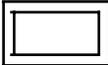
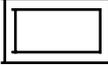
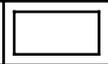
-  If illuminated, indicates a fault on the tested product, the associated text defines the fault.
If flashing, there is a fault memorised for the product tested, the associated text defines the fault.

-  If extinguished, indicates that the fault has not been found on the tested product.

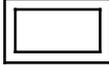
REPRESENTATION OF THE STATUSES (always on a white background)

Engine off, ignition on, no operator action

The status bargraphs on the fiche are represented as the status which they should have when the engine is off, the ignition is on and there is no operator action

- If on the fiche the bargraph is represented as  the test kit should give as information 
 - If on the fiche the bargraph is represented as  the test kit should give as information 
 - If on the fiche the bargraph is represented as  the test kit should give as information
- either  or 

Engine running

-  Extinguishes when the function or condition given on the fiche is no longer performed.
-  Illuminates when the function or condition given on the fiche is performed

Fiche n° 27 is a generic fiche used for several engines.

The different engines do not use all the bargraphs. To find out the bargraphs dealt with by the injection computer, after having set up a dialogue with the computer, press the V and 9 buttons simultaneously.

The bargraphs dealt with will:

- illuminate permanently for non memorisable fault bargraphs or status bargraphs,
- flash for memorisable fault bargraphs.

To return to fault finding mode, press button D.

Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	<p>Bargraph 1 RH extinguished</p> <p style="text-align: right;">Fiche n° 27 side 1/2</p> <p><u>XR25 CIRCUIT</u></p> <p>XR25 aid: No connection, CO, CC-, CC+</p>
---	--

NOTES	<p>This bargraph must be illuminated for fault finding</p>
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Test the XR25 on another vehicle.

Check:

- the connection between the XR25 and the diagnostic socket (condition of the XR25 cable)
- the position of the ISO selector (**S8**),
- the conformity of the cassette.
- the injection, engine and passenger compartment fuses,

Repair if necessary.

Check the presence of + 12 V on track 16 and earth on track 5 of the diagnostic socket.

Repair if necessary.

Check, ignition on, for 12 V on track:

- 1 on the main relay,
- 3 on the main relay,
- 1 on the fuel pump relay.

Repair if necessary.

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

Computer	4	→	Earth
Computer	16	→	Earth
Computer	34	→	Earth
Computer	9	→	7 Diagnostic socket
Computer	10	→	15 Diagnostic socket
Computer	18	→	5 Main relay
Computer	26	→	2 Main relay
Computer	20	→	2 Fuel pump relay

Repair if necessary.

Ignition on, check for 12 V on track 5 of the main relay:

- **If there is 12 V on track 5 of the main relay:** replace the fuel pump relay.
- **If there is not 12 V on track 5 of the main relay:** replace the main relay.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p style="text-align: center;">2</p> 	<p>Bargraph 2 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>COMPUTER CIRCUIT</u></p> <p>XR25 aid: Computer faulty</p>
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<p style="text-align: center;">NOTES</p>	<p>None</p>
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The computer is incorrect or faulty.
Replace the computer.

<p style="text-align: center;">AFTER REPAIR</p>	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>2</p> 	<p>Bargraph 2 RH side illuminated Fiche n° 27 side 1/2</p> <p><u>IMMOBILISER CIRCUIT</u></p> <p>XR25 aid: *22 = 1 dEF CO, CC- or CC+ line 30 on the computer *22 = 2 dEF Refer to the immobiliser fault finding</p>
---	---

NOTES	Ignore this bargraph if the vehicle is not fitted with an immobiliser.
--------------	--

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the wiring on track **30** of the computer.
Repair if necessary.

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

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> 	<p>Bargraph 3 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>AIR TEMPERATURE SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+line 2 or 15 on the computer</p>
---	--

NOTES	<p>For certain faults BG 6RH may be flashing If BG 4LH or BG 5LH or BG 6LH or BG 6RH are also illuminated, check line 15 on the computer.</p>
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Connect the bornier in place of the computer and check the insulation and continuity of the line:

Computer	2	→	2	Air temperature sensor
Computer	15	→	1	Air temperature sensor

Repair if necessary.

Check the resistance of the sensor. Replace it if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> 	<p>Bargraph 3 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>OXYGEN SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+line 22 on the computer CO line 4 on the computer</p>
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NOTES	<p>If BG 3RH is flashing, increase the engine speed to 2500 rpm for 5 minutes If BG 3RH becomes permanently illuminated, deal with the fault.</p>
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Check the connection and the condition of the connector on the oxygen sensor.

Check, **ignition on during the timed phase**, for :

- **earth on track B of the oxygen sensor,**
- **+ 12 V after the fuel pump relay on track A of the oxygen sensor.**

Repair if necessary.

Check for the presence of earth on track 4 on the injection computer.

Repair if necessary.

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

Computer 22 ———→ C Oxygen sensor

Repair if necessary.

The fault persists. Replace the oxygen sensor.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Bargraph 4 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>COOLANT TEMPERATURE SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+line 15 or 6 on the computer</p>
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NOTES	<p>If BG 3LH or BG 5LH or BG 6LH or BG 6RH is also illuminated, check line 15 on the computer. For certain faults, BG 4LH is only permanently illuminated when the engine is running.</p>
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Connect the bornier in place of the computer and check the insulation and continuity of the line:

Computer 15 —————→ **B1 Coolant temperature sensor**

Computer 6 —————→ **B2 Coolant temperature sensor**

Repair if necessary.

Check the resistance of the sensor. Replace it if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Bargraph 4 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>VEHICLE SPEED CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 8 on the computer</p>
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NOTES	<p>Carry out a road test checking #18 if BG 4 RH is flashing. Deal with this fault if BG 4 RH illuminates permanently during the road test or #18 = 0</p>
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Check the sensor is correctly positioned.

Check on the vehicle speed sensor for:

- earth on track B2,
- + 12 after ignition feed on track A.

Repair if necessary.

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

Computer 8 —————> B1 Vehicle speed sensor

Repair if necessary.

The fault persists! Replace the sensor.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>5</p> 	<p>Bargraph 5 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>PRESSURE SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 5, 15 or 23 on the computer</p>
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NOTES	<p>If BG 6RH is also illuminated, check line 5 on the computer. If BG 4LH or BG 3LH or BG 6LH or BG 6RH is also illuminated, check line 15 on the computer.</p>
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Check that the pressure sensor is connected correctly both **electrically and pneumatically**.
Check the conformity of the pressure sensor pipe (it must not be holed or blocked...).

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

Computer	5	—————▶	C	Pressure sensor
Computer	15	—————▶	A	Pressure sensor
Computer	23	—————▶	B	Pressure sensor

Repair if necessary.

The fault persists! Replace the sensor.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

5	<p>Bargraph 5 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>FLYWHEEL SIGNAL CIRCUIT</u></p> <p>XR25 aid: *25 = CO.0 => CO or CC- line 13 or 31 on the computer *25 = CC.0 => CC- line 13 or 31 on the computer *25 = In => sensor incorrectly connected</p>
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NOTES	<p>BG 5RH is often seen to flash if *25 = dEF as its illumination is very quick. In certain cases BG 5RH may illuminate then extinguish. In this case enter *25 and try to illuminate BG 5RH under starter speed.</p>
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<p>*25 = CO.0 *25 = CC.0</p>	<p>Check the resistance of the target sensor. Replace the sensor if necessary.</p>
	<p>Check the condition of the flywheel, especially if it has been removed.</p>
	<p>Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:</p> <p style="margin-left: 40px;"> Computer 13 —————> B Target sensor Computer 31 —————> A Target sensor </p> <p>Repair if necessary.</p>
	<p>The fault persists! Replace the injection computer.</p> <p>IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>

<p>*25 = In</p>	<p>Check the target sensor has been correctly connected (the sensor connector must not be inverted). Repair if necessary.</p>
	<p>The fault persists! Replace the sensor.</p>

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraph 6 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>PINKING SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 1 or 15 on the computer</p>
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NOTES	<p>For certain faults BG 6LH will only illuminate permanently at 3000 rpm. for 1 minute. If BG 4LH or BG 5LH or BG 3LH or BG 6RH is also illuminated, check line 15 on the computer.</p>
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Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

- Computer 1** —————> **2 Pinking sensor**
- Computer 15** —————> **1 Pinking sensor**
- Computer 16** —————> **Pinking sensor screening**

Repair if necessary.

The fault persists! Replace the pinking sensor.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraph 6 RH side illuminated Fiche n° 27 side 1/2</p> <p><u>THROTTLE POTENTIOMETER CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 3, 5 or 15 on the computer</p>
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NOTES	<p>If BG 6RH is flashing and BG 3LH is fixed, deal with BG 3LH. If BG 5LH is also illuminated, check line 5 on the computer. If BG 4LH or BG 5LH or BG 6LH or BG 3LH is also illuminated, check line 15 on the computer .</p>
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Check the resistance of the throttle potentiometer.
Replace the throttle potentiometer if necessary.

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

Computer	3	→	C	Throttle potentiometer
Computer	5	→	B	Throttle potentiometer
Computer	15	→	A	Throttle potentiometer

Repair if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>8</p> 	<p>Bargraph 8 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>FUEL PUMP CIRCUIT</u></p> <p>XR25 aid: Just detection of CC+ on line 20 of the computer</p>
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NOTES	<p>CO or CC- on line 20 of the computer prevents dialogue with the computer. In certain cases of faults, BG 11 LH or BG 14 RH may also be illuminated.</p>
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Check the insulation from 12 V of line :

Computer 20 —————→ **2 Fuel pump relay**

Repair if necessary.

The fault persists! Replace the fuel pump relay.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>11</p> 	<p>Bargraph 11 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>INJECTOR CIRCUIT</u></p> <p>XR25 aid: *11 = XX.CO => CO or CC- line 32 or 33 of the computer *11 = XX.CC => CC+ line 32 or 33 of the computer</p>
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NOTES	<p>XX = 14 => Cylinder 1 or 4 line 33 of the computer XX = 23 => Cylinder 2 or 3 line 32 of the computer If BG 8LH or BG 14 RH is also illuminated, refer to BG 8LH</p>
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<p>Check the resistance of the valve for the two faulty injectors. Replace the injector/s if necessary.</p>										
<p>When the ignition is switched on and during the timed phase, check for 12 V on track 1 of the faulty injector. If necessary, repair the line from track 1 injector to track 5 fuel pump relay.</p>										
<p>Connect the bornier in place of the computer and check the insulation and continuity of the line :</p> <table style="margin-left: 40px;"> <tr> <td style="padding-right: 10px;">Computer</td> <td style="padding-right: 10px;">33</td> <td style="padding-right: 10px;">—→</td> <td style="padding-right: 10px;">2</td> <td style="padding-right: 10px;">Injectors 1 and 4</td> </tr> <tr> <td>Computer</td> <td>32</td> <td>—→</td> <td>2</td> <td>Injectors 2 and 3</td> </tr> </table> <p>Repair if necessary.</p>	Computer	33	—→	2	Injectors 1 and 4	Computer	32	—→	2	Injectors 2 and 3
Computer	33	—→	2	Injectors 1 and 4						
Computer	32	—→	2	Injectors 2 and 3						
<p>The fault persists! Replace the injection computer. IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>										

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

11 	Bargraph 11 RH side illuminated or flashing <u>AT</u> → <u>INJECTION CIRCUIT</u> XR25 aid: None	Fiche n° 27 side 1/2
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NOTES	None.
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Ignore the illumination of this bargraph with this computer.

AFTER REPAIR	Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.
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Fault finding - Interpretation of XR25 bargraphs

<p>12</p> 	<p>Bargraph 12 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>FAULT WARNING LIGHT CIRCUIT</u></p> <p>XR25 aid : *12 = CC.1 : CC+ line 19 on the computer *12 = CO.0 : CO or CC- line 19 on the computer</p>
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NOTES	None
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Check the condition of the warning light and its feed.
Repair if necessary.

Connect the bornier in place of the computer and check the insulation and continuity of **line 19 of the computer**.
Repair.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>13</p> 	<p>Bargraph 13 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>MEMORY CIRCUIT</u></p> <p>XR25 aid: Loss of computer feed</p>
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NOTES	None
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This bargraph only illuminates when the computer feed has been cut (disconnection of the battery, the computer, ...).

Check the computer feed hygiene:

Computer	18	→		5	Main relay
Main relay	3	→		Fuse	

Computer	26	→		2	Main relay
Main relay	1	→		Fuse	

Computer	20	→		2	Fuel pump relay
Fuel pump relay	1	→		Fuse	

Repair if necessary.

Turn the engine.

Switch the ignition off and wait for the loss of dialogue between the XR25 and the computer.

Switch the ignition on.

Enter dialogue with the computer.

Erase the computer memory using G0**.

NOTE : memorised faults are erased. It would therefore be useful to carry out a road test to check there are no faults on the injection system.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>14</p> 	<p>Bargraph 14 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>IDLE SPEED REGULATION CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 11 or 12 or 28 or 29 on the computer</p>
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NOTES	<p>If BG 14 LH is flashing, erase the computer memory using G0**.</p> <p>Turn the engine.</p> <p>If BG 14 LH is now permanently illuminated or flashing, deal with this fault.</p>
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Check the resistance of the idle speed regulation stepping motor.
Check the idle speed regulation valve if necessary.

Check the insulation, continuity and that there is no interference resistance on the line:

Computer	11	→	D	idle speed regulation stepping motor
Computer	12	→	A	idle speed regulation stepping motor
Computer	28	→	B	idle speed regulation stepping motor
Computer	29	→	C	idle speed regulation stepping motor

Repair if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>14</p> 	<p>Bargraph 14 RH side illuminated Fiche n° 27 side 1/2</p> <p><u>CANISTER BLEED CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 24 on the computer</p>
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NOTES	<p>If BG 8 LH or BG 11 LH is also illuminated, refer to BG 8 LH.</p>
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Check the resistance of the canister bleed valve.
Replace the valve if necessary.

Check, ignition on , for **12 V** on track **A of the canister bleed**.
Repair if necessary.

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

Computer 24 —————> B Canister bleed valve

Repair if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: **The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.**

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>15</p> 	<p>Bargraph 15 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>COMPUTER</u> → <u>AC CONNECTION CIRCUIT</u></p> <p>XR25 aid: None</p>
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<p>NOTES</p>	<p>None</p>
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Ignore the illumination of this bargraph with this computer.

<p>AFTER REPAIR</p>	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>16</p> 	<p>Bargraph 16 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>COMPUTER</u> —————▶ <u>MPA CONNECTION CIRCUIT</u></p> <p>XR25 aid: *16 = XX.CO => CO or CC- line 17 or 35 of the computer *16 = XX.CC => CC+ line 17 or 35 of the computer</p>
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NOTES	<p>XX = 14 => Cylinder 1 or 4 line 35 of the computer XX = 23 => Cylinder 2 or 3 line 17 of the computer If BG 16 LH is flashing, erase the computer memory using G0**. Turn the engine. If BG 16 LH illuminates permanently or flashes, deal with this fault.</p>
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<p>Check the hygiene of the anti-interference condenser on track 4 of the coil.</p>										
<p>Check the resistance of the coil. Replace the coil if necessary.</p>										
<p>Check the + after ignition feed to the coil concerned on track 3. Repair if necessary.</p>										
<p>Connect the bornier in place of the computer and check the insulation and continuity of the line :</p> <table style="margin-left: 40px;"> <tr> <td>Computer</td> <td>17</td> <td>————▶</td> <td>2</td> <td>Coil</td> </tr> <tr> <td>Computer</td> <td>35</td> <td>————▶</td> <td>1</td> <td>Coil</td> </tr> </table> <p>Repair if necessary.</p>	Computer	17	————▶	2	Coil	Computer	35	————▶	1	Coil
Computer	17	————▶	2	Coil						
Computer	35	————▶	1	Coil						
<p>The fault persists! Replace the injection computer. IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>										

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
---------------------	---

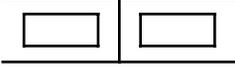
Fault finding - Status and parameter checks

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Dialogue with XR25	D13 (selector on S8)	<p style="text-align: center;">1</p>  <p style="text-align: center;">1</p> 	<p style="text-align: center;">Fault test</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">9.NJ</div> <p style="text-align: center;">Use fiche 27 Code present</p>	Deal with fault bargraph
2	Change to status test	G01*	<p style="text-align: center;">1</p> 	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">10.NJ</div> <p style="text-align: center;">Status test</p>	None
3	Battery voltage	#04		11.8 < X < 13.2 V	DIAG 1
4	Computer configuration		<p style="text-align: center;">19</p>  <p style="text-align: center;">19</p> 	<p style="text-align: center;">Computer configured to manual gearbox</p> <p style="text-align: center;">Computer configured to automatic transmission</p>	See Fiche "Reminder C" to configure vehicle
5	Immobiliser (if option)	Ignition on	<p style="text-align: center;">3</p> 	This status bargraph must be extinguished when the ignition is on to indicate that the immobiliser is not active.	DIAG 12

Fault finding - Status and parameter checks

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
6	Throttle position potentiometer	No load # 17	2 	10 < X < 50	DIAG 2
		Accelerator pedal slightly depressed	2 		
		Full load # 17	2 	185 < X < 245	
7	Pressure sensor	# 01		X = Atmospheric pressure	DIAG 9
8	Coolant temperature sensor	# 02		X = Engine temperature ± 5 °C	DIAG 3
9	Air temperature sensor	# 03		X = Temperature under bonnet ± 5 °C	DIAG 4
10	Fan assembly	G17*		Fan must operate	DIAG 16
11	Fault warning light	G21*1*		Fault warning light must illuminate then extinguish	DIAG 18
12	Canister bleed	G16*		Canister bleed valve must be heard to operate	DIAG 19

Fault finding - Status and parameter checks

NOTES	Carry out the actions below if the engine does not start . Otherwise, refer to the following pages.
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Flywheel signal sensor	Starter	3 	Illuminated if TDC information is detected	DIAG 5
2	Fuel pump	G10*		Fuel pump should be heard to operate	DIAG 6
3	Ignition	Connect Optima Station		Starting test. Complete guide on Optima Station	Use Optima 5800 Station
4	Fuel pressure	Connect pressure gauge to fuel inlet and activate starter motor		Pressure gauge must show 2.5 bars	Fuel pressure, see Workshop Repair Manual or section
5	Injector command	Starter		Fuel must come out of the injector	DIAG 11
6	Engine compression	Connect Optima Station		Complete guide on Optima Station	Use Optima 5800 Station
7	Flywheel	Connect Optima Station		Oscilloscope. Complete guide on Optima Station	Use Optima 5800 Station

Fault finding - Status and parameter checks

NOTES	Carry out the actions below (engine warm, at idle speed, no consumers) if the engine starts. Otherwise refer to the previous pages.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Charging circuit	# 04		$13 < X < 14.5 \text{ V}$	DIAG 1
2	Throttle potentiometer	No load	2 	Illuminated (does not flash!)	DIAG 2
3	Idle speed regulation	# 06 # 12 # 21	6 	$690 < X < 790 \text{ rpm}$ $4 \% < X < 14 \%$ $- 4.3 \% < X < 3.9 \%$	DIAG 7
4	Anti-pinking circuit	# 13 (at 3500 rpm, no load)		X variable and not zero	DIAG 8
5	Pressure circuit	# 01 # 16		$270 \leq X \leq 500 \text{ mb}$ X = atmospheric pressure	DIAG 9
6	Richness regulation	# 35 # 05	6 	$0 < X < 255$ X varies around 128 $0.050 \leq X \leq 0.900 \text{ V}$	DIAG 10 See also DIAG 15

Fault finding - Status and parameter checks

NOTES	Carry out the actions below (engine warm, at idle speed, no consumers) if the engine starts. Otherwise refer to the previous pages.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
7	Fuel pressure	Connect a pressure gauge to the fuel inlet and activate the starter motor		Pressure gauge must show 2.5 bars	Fuel pressure, see Workshop Repair Manual or section
8	Power assisted steering pressostat	Turn wheels to full lock	<div style="border: 1px solid black; padding: 5px; margin: 0 auto; width: 80px;"> <div style="text-align: center; margin-bottom: 5px;">13</div> <div style="border: 1px solid black; width: 100%; height: 20px; background-color: black;"></div> </div>	Illuminated when wheels turned to full lock	DIAG 17

Fault finding - Status and parameter checks

NOTES	Check during road test.
--------------	-------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Vehicle speed information	# 18		X = speed read on speedometer in km/h	DIAG 13
2	Adaptive richness	Program- ming # 30 # 31		106 ≤ X ≤ 150 106 ≤ X ≤ 150	DIAG 14
3	Emission of pollutants	2500 rpm after driving At idle speed, wait for stabilisation		CO < 0.3 % CO ₂ > 13.5 % O ₂ < 0.8 % HC < 100 ppm 0.97 < λ < 1.03 CO < 0.5 % HC < 100 ppm 0.97 < λ < 1.03	DIAG 15 see also DIAG 10

Fault finding - Status and parameter interpretation

DIAG 1	Fiche n° 27
BATTERY VOLTAGE	
XR25 aid: Battery voltage, ignition on, Minimum < # 04 < Maximum Battery voltage, idle speed, Minimum < # 04 < Maximum	

NOTES	No fault bargraphs should be illuminated. No consumers
--------------	---

Ignition on

If # 04 < Minimum, the battery is discharged: Check the charging circuit to determine the cause of this fault.
If # 04 > Maximum, the battery may be overcharged: Check the charging voltage is correct with and without consumers.

At idle speed

If # 04 < Minimum, the charging voltage is too low: Check the charging circuit to determine the cause of this fault.
If # 04 > Maximum, the charging voltage is too high: The alternator regulator is faulty. Repair this fault and check the electrolyte level in the battery.

NOTE:

The battery and the charging circuit may be checked using the OPTIMA 5800 station (measurement does not require the battery to be disconnected, which retains the memories of the computers).

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 2	<p>THROTTLE POTENTIOMETER Fiche n° 27</p> <p>XR25 aid: # 17 outside tolerances # 17 does not vary when throttle moves Status BG 2LH or 2RH, incorrect illumination</p>
---------------	---

NOTES	No fault bargraphs should be illuminated. Ignition on or engine running.
--------------	---

**Status bargraph 2RH
incorrect illumination**

NOTES

None

Check the resistance of the throttle potentiometer.
Replace the throttle potentiometer if necessary.

Check the insulation, continuity and absence of interference resistance of the line:

Computer	3	→	C	Throttle potentiometer
Computer	5	→	B	Throttle potentiometer
Computer	15	→	A	Throttle potentiometer

Repair if necessary.

17 is fixed

NOTES

None

Check the resistance of the throttle potentiometer when the throttle butterfly is moved.

If the resistance varies, check the electrical lines of the sensor.

If the resistance does not vary, check that the sensor is connected mechanically to the throttle.
If necessary, replace the sensor.

17 outside tolerances

NOTES

None

Check the upper and lower stops of the throttle butterfly.
Check the accelerator control (points of resistance and friction).
Repair.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 3	Fiche n° 27
	COOLANT TEMPERATURE XR25 aid: # 02 = Engine temperature ± 5 °C

NOTES	No fault bargraphs should be illuminated.
--------------	---

If the value read is incoherent, check the sensor is correctly following the standard table of values for "resistance as a function of temperature".

Replace the sensor if the values are incorrect (**NOTE** : If a sensor is incorrect, this is often due to an electric shock).

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer 6 \longrightarrow **B2 Coolant temperature sensor**

Computer 15 \longrightarrow **B1 Coolant temperature sensor**

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 4	Fiche n° 27
AIR TEMPERATURE XR25 aid: # 03 = Temperature under the bonnet ± 5 °C	

NOTES	No fault bargraphs should be illuminated.
--------------	---

If the value read is incoherent, check the sensor is correctly following the standard table of values for "resistance as a function of temperature".

Replace the sensor if the values are incorrect (**NOTE** : If a sensor is incorrect, this is often due to an electric shock).

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer	2	—→	2	Air temperature sensor
Computer	15	—→	1	Air temperature sensor

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 5	<p style="text-align: right;">Fiche n° 27</p> <p>TDC DETECTION</p> <p>XR25 aid: Status BG 3LH, incorrect illumination</p>
---------------	---

NOTES	<p>No fault bargraphs should be illuminated. When the starter motor is activated.</p>
--------------	---

Check the resistance of the TDC sensor.
Replace the sensor if necessary.

Check the sensor is correctly mounted.
Repair if necessary.

Check the condition of the target (if it has been removed).
Repair if necessary.

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer	13	→	B	Flywheel signal sensor
Computer	31	→	A	Flywheel signal sensor

Repair.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
---------------------	---

Fault finding - Status and parameter interpretation

DIAG 6	Fiche n° 27
	<p>FUEL PUMP</p> <p>XR25 aid: The command mode should cause the fuel pump to operate</p>

NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the fuel pump fuse.

Check the insulation and continuity of the wiring:

Fuel pump fuse \longrightarrow 3 Fuel pump relay

Repair if necessary.

Check the insulation and continuity of the wiring:

Fuel pump relay 5 \longrightarrow Impact sensor
 Impact sensor \longrightarrow C1 Fuel pump

Repair if necessary.

Check the hygiene and presence of earth on track **C2 of the fuel pump**.

If + 12 V is not reaching the fuel pump, replace the fuel pump relay.

If + 12 V is reaching the fuel pump, replace the fuel pump.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 7	<p>IDLE SPEED REGULATION</p> <p>XR25 aid: Engine speed , Minimum < # 06 < Maximum</p>	Fiche n° 27
---------------	---	-------------

NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the resistance of the idle speed regulation stepping motor.
Replace the idle speed regulation valve if necessary.

Check the insulation and continuity of the line:

Computer	11	→	D	Idle speed regulation motor
Computer	12	→	A	Idle speed regulation motor
Computer	28	→	B	Idle speed regulation motor
Computer	29	→	C	Idle speed regulation motor

Repair if necessary and continue fault finding using the value for # 06.

06 < Minimum

NOTES

The idle speed is too low

Idle speed regulation is not maintaining the idle speed.

- Clean the air supply circuit (throttle body, idle regulation valve), since it is probably contaminated.
- Check the engine oil level (too high ---> splashing).
- Check and ensure correct fuel pressure.
- Using the OPTIMA 5800 station, check the engine compression.
- Check the valve clearances and the timing.

If all these points are correct, replace the idle regulation motor.

06 > Maximum

NOTES

The idle speed is too high

An air leak may be affecting the idle speed regulation programming.

- Check the connections on the manifold.
- Check the hygiene of the pipes on the manifold.
- Check the pneumatically controlled solenoid valves.
- Check the manifold gaskets.
- Check the throttle body gaskets.
- Check the sealing of the brake servo.
- Check the restrictions are present in the oil vapour rebreathing circuit.
- Check the fuel pressure.

If all these points are correct, replace the idle speed regulation motor.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 8	Fiche n° 27
ANTI-PINKING CIRCUIT	
XR25 aid: # 13 is not zero and variable for fast idle or under load	

NOTES	No fault bargraphs should be illuminated.
--------------	---

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

If the signal is zero:

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

Computer	1	—→	2	Pinking sensor
Computer	15	—→	1	Pinking sensor
Computer	16	—→		Pinking sensor screening

If necessary, replace the sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 9	Fiche n° 27
PRESSURE CIRCUIT	
XR25 aid: Ignition on # 01 not coherent At idle speed # 01 < Minimum or # 01 > Maximum # 16 not coherent	
NOTES	No fault bargraphs should be illuminated.

01 not coherent
ignition on
01 < Minimum at idle
speed
16 not coherent

Check the insulation, continuity and that there is no interference resistance on the line:

Computer	5	→	C	Pressure sensor
Computer	15	→	A	Pressure sensor
Computer	23	→	B	Pressure sensor

Repair if necessary.

If all these points are correct, replace the sensor.

A vacuum pump with a pressure gauge may be used to check coherence with # 01 and to show a faulty sensor.

01 > Maximum at idle
speed

The manifold pressure is often a sign of incorrect engine operation. Check

- the sealing of the pipe between the manifold and the sensor,
- the valve clearances,
- the canister bleed valve which should be closed at idle speed,
- cylinder compression using the OPTIMA 5800 station.

If all these points are correct, replace the sensor.

A vacuum pump with a pressure gauge may be used to check coherence with # 01 and to show a faulty sensor.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 10	RICHNESS REGULATION XR25 aid: Richness regulation faulty	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated. Ignition correct (a check may be made using the OPTIMA 5800 station). No other status bargraph should show a fault.
--------------	---

Using a vacuum pump fitted with a pressure gauge, check the coherence of # 01.
If incoherence is present, refer to "DIAG 9 # 01 incoherent, ignition on".

Check the sealing of the canister bleed valve (a leak can disrupt the richness considerably).
Check the sealing of the exhaust pipe upstream from the oxygen sensor.
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 idle speed is unstable, check the valve clearances.
Check the injectors (flow and shape of the jet).
If necessary, replace the oxygen sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 11	Fiche n° 27
INJECTOR	
XR25 aid: CO or CC - line 33 of the computer for injectors 1 and 4 CO or CC - line 32 of the computer for injectors 2 and 3	

NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the resistance of the faulty injector.
Replace it if necessary.

During command mode operation, check for + 12 Volts on track 1 of the faulty injector.
Repair.

Check the insulation and continuity of the line:

injectors 1 and 4	Computer 33	—————▶	2 injectors
injectors 2 and 3	Computer 32	—————▶	2 injectors

Repair if necessary.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 12	IMMOBILISER XR25 aid: Status BG 3RH, incorrect illumination	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the insulation and continuity of the wiring for track **30** on the injection computer.

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

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 13	Fiche n° 27
	VEHICLE SPEED XR25 aid: # 18 = Speed read on speedometer in km/h

NOTES	No fault bargraphs should be illuminated. Check on a road test.
--------------	--

If the value read is incoherent:

- Check that the sensor is correctly mounted and supplied:
 - **+12 V on A1**
 - **Earth on B2**
- Check the insulation, continuity and that there is no interference resistance on the line:
Computer 8 —————> B1 vehicle speed sensor

NOTE : check the various functions using this information.

Repair.

The fault persists! Replace the speed sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 14	Fiche n° 27 side 2/2
	ADAPTIVE RICHNESS
	XR25 aid: Minimum < # 30 < Maximum Minimum < # 31 < Maximum

NOTES	No fault bargraphs should be illuminated. Carry out the programming operations.
--------------	--

Ensure the canister bleed valve is sealed.

Erase the computer memory.

Engine warm , running at idle speed, check the values for # 30 and # 31.

- **If # 30 or # 31 is at a MAXIMUM, there is not enough fuel .**
- **If # 30 or # 31 is at a MINIMUM, there is too much fuel.**

Ensure the hygiene, cleanliness and correct operation of :

- filter
- fuel pump
- fuel circuit
- fuel tank.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 15	Fiche n° 27
EMISSION OF POLLUTANTS	
XR25 aid: None	

NOTES	No fault bargraphs should be illuminated.
--------------	---

$0.97 \leq \lambda \leq 1.03$ at 2500 rpm	NOTES	The oxygen sensor loops correctly at 2500 rpm.
---	--------------	--

If CO > 0.3 % at 2500 rpm
<p>The catalytic converter is faulty. NOTE : it is vital to determine the cause of the catalytic converter damage to avoid a new converter also being damaged.</p>

If $\lambda < 0.97$ or $\lambda > 1.03$ at idle speed
<p>Check the sensor earth and heating. Check there is no air leak at the manifold.</p>

$0.97 \leq \lambda \leq 1.03$ at 2500 rpm	NOTES	The oxygen sensor does not loop correctly at 2500 rpm.
---	--------------	--

There is a fault with the injection or the sensor.
--

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 15 CONT	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
--------------	---

$\lambda > 1.03$ at 2500 rpm	NOTES	None
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The oxygen sensor loops correctly at 2500 rpm.
<ul style="list-style-type: none"> Check there is no leak at the exhaust. Check that an injector has not seized. Check the fuel pressure is not too low.

The oxygen sensor does not loop correctly at 2500 rpm.
<ul style="list-style-type: none"> Check there is not an injection fault. Check there is not an ignition fault. Check the sensor is not faulty. Check the fuel pressure.

$\lambda < 0.97$ at 2500 rpm.	NOTES	The oxygen sensor does not loop correctly at 2500 rpm., CO > 0.3 % at 2500 rpm.
<ul style="list-style-type: none"> Check the pressure sensor. Check the sensor. Check that an injector is not faulty. 		

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 16	Fiche n° 27
ANTIPERCOLATION RELAY	
XR25 aid: The fan assembly must operate when command mode G17* is used.	
NOTES	No fault bargraphs should be illuminated.

The antipercolation relay does not click when its command mode is used

Ignition on, check for **12 V on track 1 of the fan assembly relay.**

There is not 12 V on track 1

Check the line for track 1 of the relay to the fuse.

There is 12 V on track 1

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

Bornier 27 —————> 2 Relay

Repair.

The fault persists, replace the relay.

The fault persists!
Replace the injection computer.

The antipercolation relay does click when its command mode is used

Fan assembly relay in place, check, during operation of the command mode, for **12 V on track 5 of the fan assembly relay.**

There is not 12 V on track 5

Check the insulation and continuity of line 3 on the relay to the fuse.
Repair if necessary.

The fault persists, replace the fan assembly relay.

There is 12 V on track 5

Check the insulation and continuity of the line:

Relay 5 —————> 1 Fan assembly
Fan assembly 2 —————> Earth

Repair.

If the fan assembly still does not operate, replace the fan assembly.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 17	<p style="text-align: right;">Fiche n° 27</p> <p>POWER ASSISTED STEERING PRESSOSTAT</p> <p>XR25 aid: None</p>
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NOTES	<p>No fault bargraphs should be illuminated.</p>
--------------	--

Check the correct operation of the power assisted steering (oil level, ...).
Check the power assisted steering pressostat is correctly connected.
Check the insulation and continuity of the line for track 7 on the injection computer.
Repair if necessary.

If all these points are correct, replace the power assisted steering pressostat.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
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Fault finding - Status and parameter interpretation

DIAG 18	FAULT WARNING LIGHT CIRCUIT XR25 aid: None	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the condition of the warning light and its feed.
Repair if necessary.

Connect the bornier in place of the computer and check the insulation and continuity of the line **track 19 on the computer**.

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 19	<p style="text-align: right;">Fiche n° 27</p> <p>CANISTER BLEED</p> <p>XR25 aid: G16* = Canister bleed command</p>
----------------	--

NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the resistance of the canister bleed valve.
Replace the valve if necessary.

Ignition on, check during the timed phase for the presence of 12 V on track A of the canister bleed valve.
Repair if necessary.

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

Computer 24 —————> B Canister bleed valve

Repair if necessary.

Replace the canister bleed solenoid valve.

NOTE : when replacing the valve, shake it over a sheet of white paper, and also shake the adjacent pipes.
If pieces of carbon fall out, the canister must also be replaced.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

NOTES	Only refer to this customer complaint after a complete check using the XR25.
--------------	--

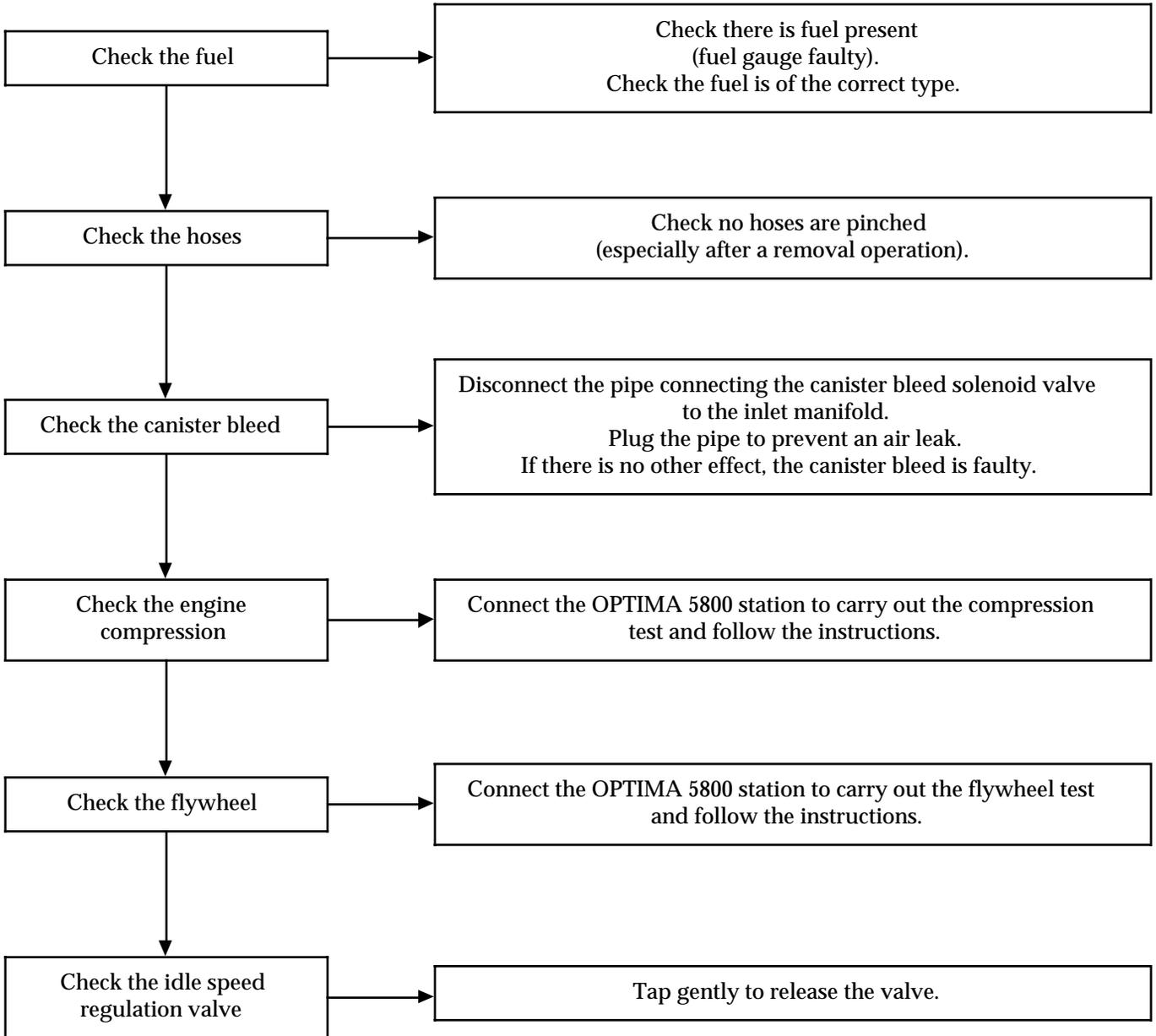
STARTING FAULTS ————— **Chart 1**

IDLE SPEED FAULTS ————— **Chart 2**

BEHAVIOUR WHILE DRIVING ————— **Chart 3**

Chart 1	STARTING FAULTS
----------------	------------------------

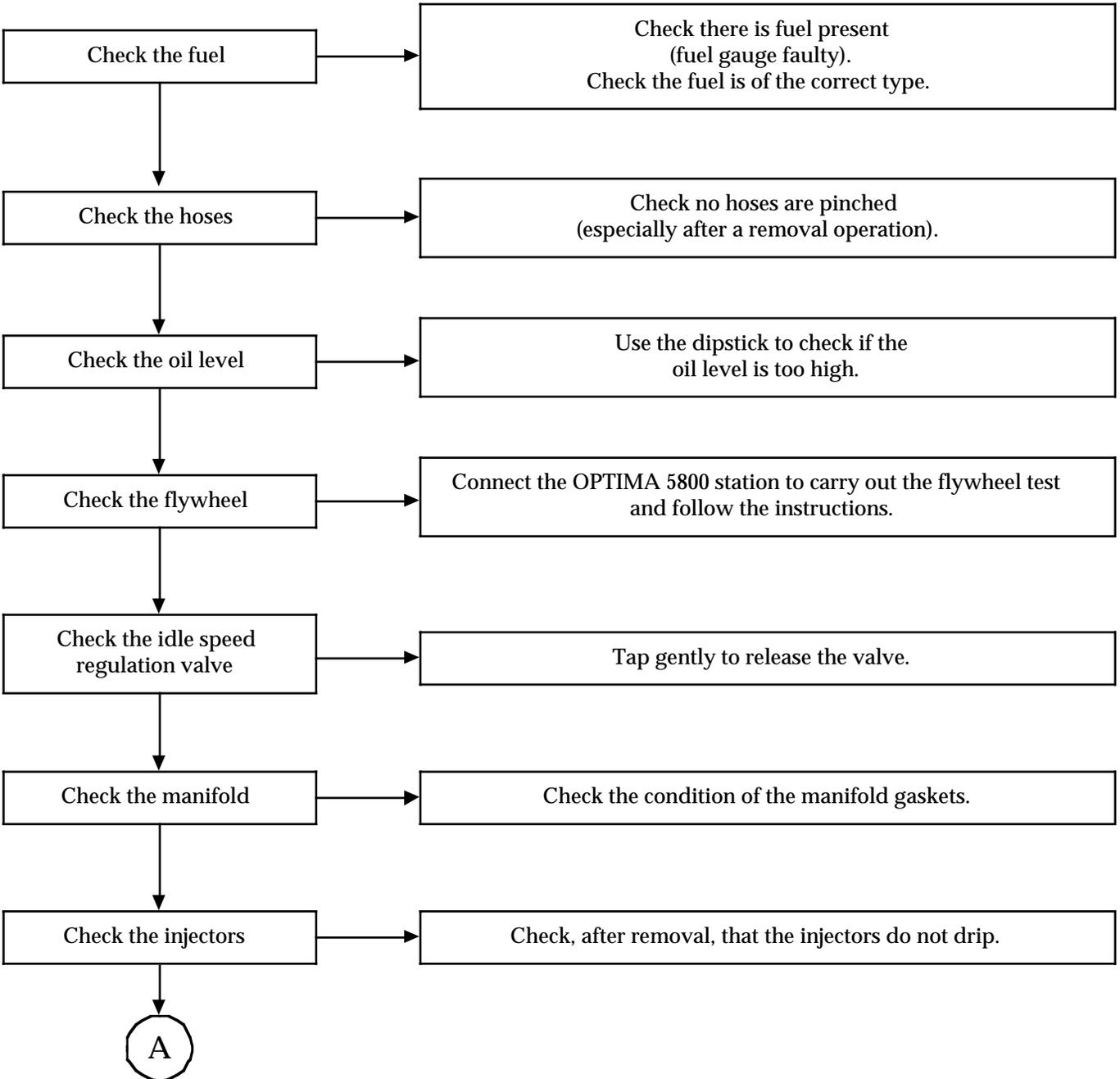
NOTES	Only refer to this customer complaint after a complete check using the XR25.
--------------	--



AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
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Chart 2	IDLE SPEED FAULTS
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NOTES	Only refer to this customer complaint after a complete check using the XR25.
--------------	--

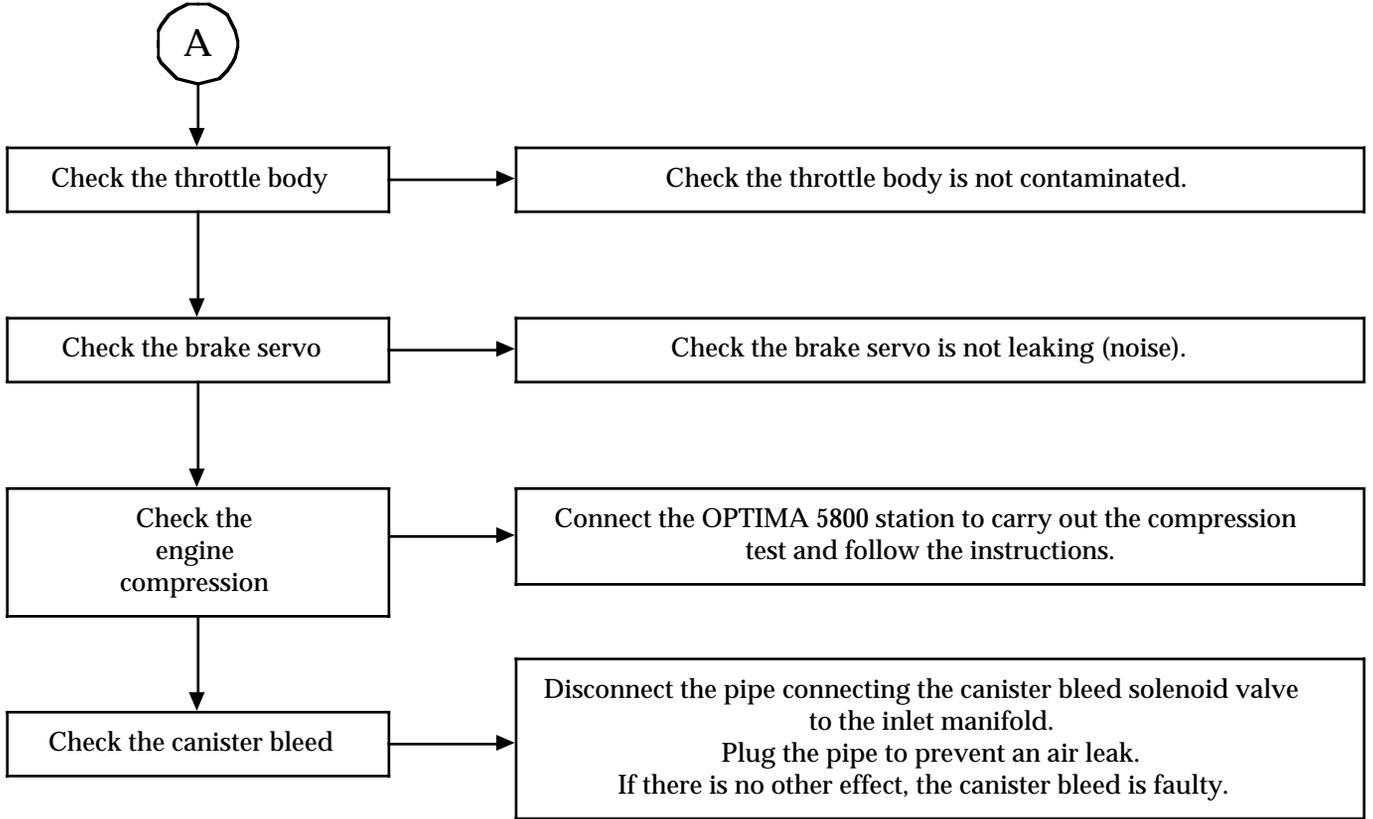


AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
---------------------	---

Chart 2
CONT

NOTES

Only refer to this customer complaint after a complete check using the XR25.

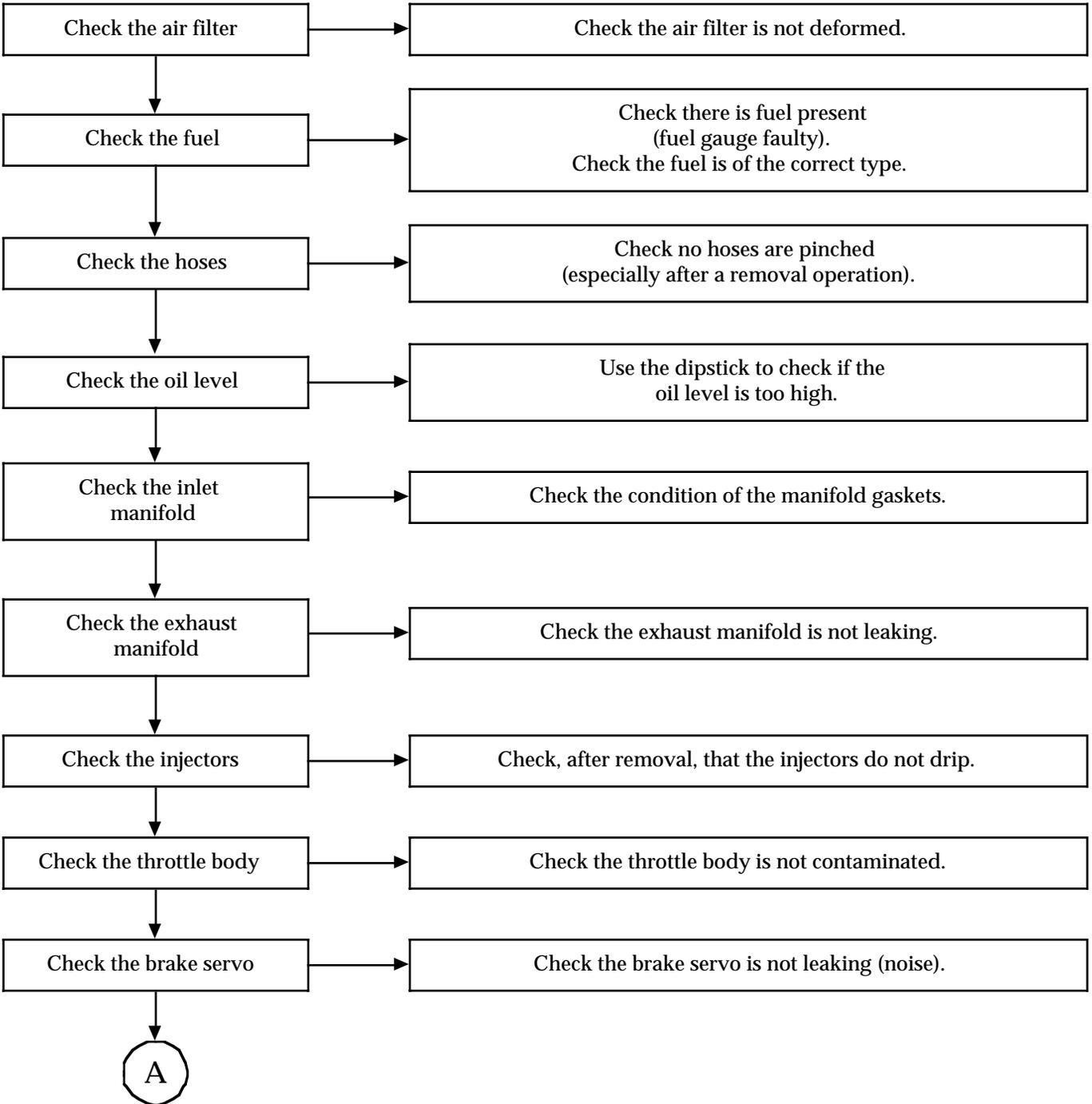


AFTER REPAIR

Erase the computer memory using G0** and carry out a road test.

Chart 3	BEHAVIOUR WHILE DRIVING
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NOTES	Only refer to this customer complaint after a complete check using the XR25.
--------------	--

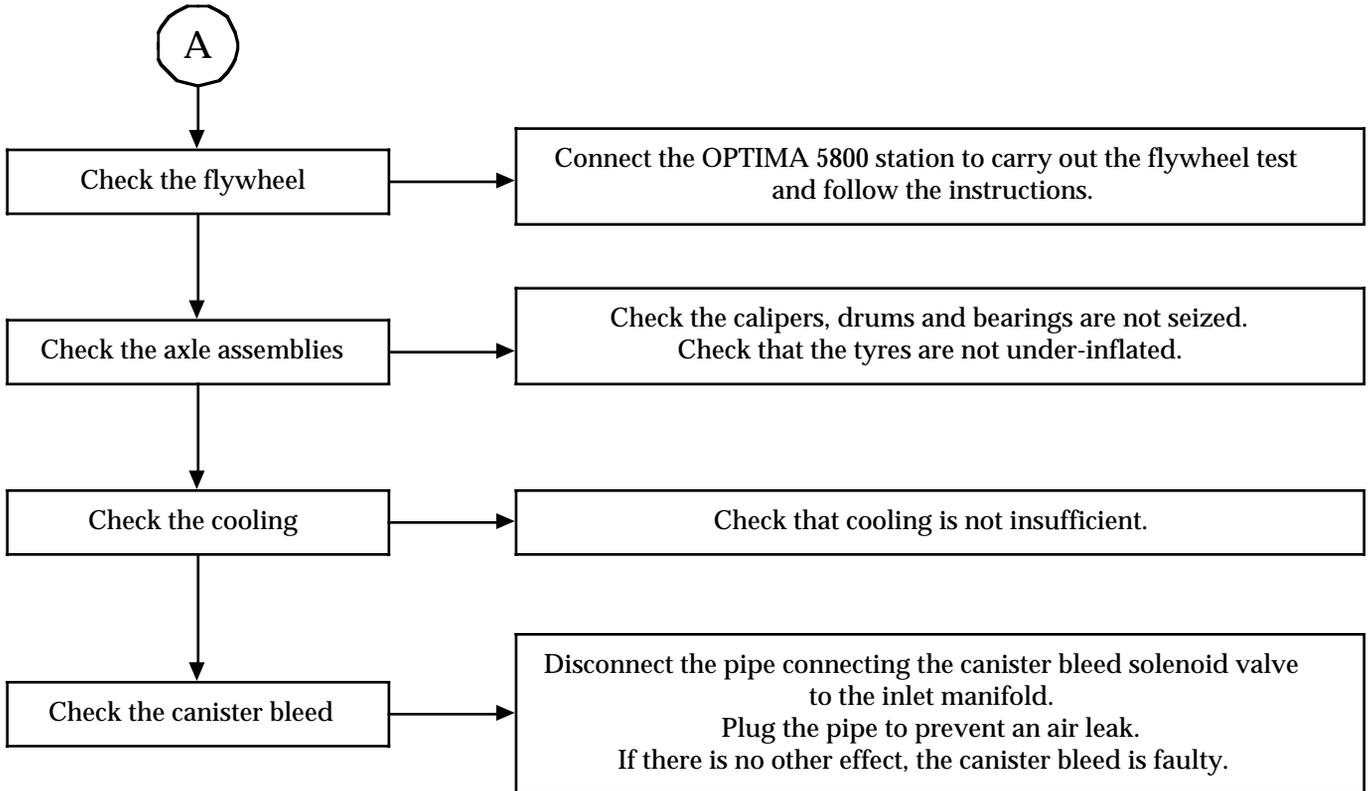


AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
---------------------	---

Chart 3
CONT

NOTES

Only refer to this customer complaint after a complete check using the XR25.



AFTER REPAIR

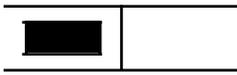
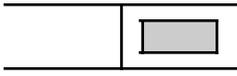
Erase the computer memory using G0** and carry out a road test.

For further details, refer to section 12

- Injector resistance = 14.5 Ω
- Idle regulation stepping motor resistance : A - D= 100 Ω
B - C = 100 Ω
- Canister bleed valve resistance = 35 Ω
- Ignition coil resistance : Primary = 1-4 ; 1-3 ; 2-3 ; 2-4 = 1.5 Ω
3-4 = 0.6 Ω
Secondary = 8 kΩ
- Oxygen sensor heating resistance = 3 to 15 Ω
- Throttle potentiometer resistance : no load A-B = 1300 Ω full load A-B= 1300 Ω
A-C = 1360 Ω A-C= 2350 Ω
B-C = 2300 Ω B-C = 1260 Ω
- Flywheel signal resistance = 220 Ω
- Fuel pressure = 3 bars ignition on/ 2.5 bars at idle speed
- Value for: CO = 0.3 % maximum
- HC = 100 ppm maximum
- CO₂ = 14.5 % minimum
- Lambda = 0.97 < λ < 1.03

Sensor resistance					
Temperature in °C	0	20	40	80	90
Air temperature sensor Resistance in ohms	5000 to 7000	1700 to 3300	500 to 1550	-	-
Coolant temperature sensor Resistance in ohms	6700 to 8000	2600 to 3000	1100 to 1300	270 to 300	200 to 215

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Dialogue with XR25	D13 (selector on S8)		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">9.NJ</div> Use fiche n° 27 fault test side
2	Interpretation of normally illuminated bargraphs		1  1 	Fault test Code present
3	Immobiliser		2 	If the vehicle does not have an immobiliser, this bargraph should be illuminated.
4	Change to status test	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
5	Interpretation of normally illuminated bargraphs		1	Code present
			2	No load recognition
			3	Illuminated if immobiliser active
			4	+ after ignition information received
			5	Locking relay control effective
			12	Illuminates after erasing the memory to indicate that the operation has been carried out correctly
			12	Computer configured for: manual gearbox (G50*2*)
			19	automatic transmission (G50*1*)

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
6	Throttle position potentiometer	No load # 17	2 	$10 < X < 50$
		Accelerator pedal slightly depressed	2 	
		Full load # 17	2 	$185 < X < 245$
7	Absolute pressure sensor	# 01		X = Local atmospheric pressure
8	Coolant temperature sensor	# 02		X = Ambient temperature $\pm 5\text{ }^\circ\text{C}$
9	Air temperature sensor	# 03		X = Ambient temperature $\pm 5\text{ }^\circ\text{C}$
10	Idle speed regulation stepping motor	# 12		The value read is variable depending on the coolant temperature : $11\% \leq X \leq 100\%$
11	Engine speed	# 06		X = 0 rpm
12	Canister bleed	# 23		X = 0.7 %

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Change to status test mode	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side
2	No fault present		20 	Ensure this bargraph is not flashing, otherwise enter G02* and turn over the fiche. IMPORTANT: This bargraph may flash if the vehicle has no immobiliser. Ignore this bargraph if fault bargraph 2 RH side is illuminated and *22 = 2 dEF. Repair the faulty component the erase the memory (G0**) and return to the status test (G01*)
3	Battery voltage	# 04 if in # 04 then # 06		13 volts < X < 14.5 volts X < 12.7 volts Engine speed < X < 880 rpm nominal

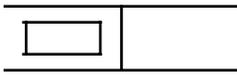
NOTES	Engine warm, at idle speed, after fan assembly has operated at least once
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes		
4	Interpretation of normally illuminated bargraphs	-	<p>1</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 50%; height: 20px;"></td> <td style="width: 50%; text-align: center;">■</td> </tr> </table>		■	Code present
	■					
			<p>2</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 50%; height: 20px;"></td> <td style="width: 50%; text-align: center;">■</td> </tr> </table>		■	No load recognition
	■					
			<p>3</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">■</td> <td style="width: 50%; height: 20px;"></td> </tr> </table>	■		Engine speed information received
■						
			<p>4</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 50%; height: 20px;"></td> <td style="width: 50%; text-align: center;">■</td> </tr> </table>		■	+ after ignition information received
	■					
			<p>5</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 50%; height: 20px;"></td> <td style="width: 50%; text-align: center;">■</td> </tr> </table>		■	Locking relay control effective
	■					
			<p>6</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 50%; height: 20px;"></td> <td style="width: 50%; text-align: center;">■</td> </tr> </table>		■	Idle speed regulation active
	■					
			<p>6</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">■</td> <td style="width: 50%; height: 20px;"></td> </tr> </table>	■		Richness regulation active
■						

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes
4 <i>(cont)</i>	Interpretation of normally illuminated bargraphs <i>(cont)</i>	-	<p>7</p> 	Fuel pump active
			<p>12</p> 	Illuminates after erasing the memory to indicate that the operation has been carried out correctly
			<p>19</p> 	Computer configured for: manual gearbox (G50*2*)
			<p>19</p> 	automatic transmission (G50*1*)
5	Idle speed	# 06 # 12	<p>6</p> 	X = 740 ± 50 rpm 4 % < X < 14 %
6	Anti-pinking noise measurement	# 13 (3500 rpm, no load)		X variable and not zero

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes
7	Manifold pressure	# 01 no consumers		X is variable and is approximately $270 \leq X \leq 430$ mb (this pressure varies with altitude)
8	Richness regulation	Stable engine speed of 2500 rpm then idle speed # 05 # 35	<p>6</p>  <p>6</p> 	X varies in the range from 50 to 900 mV approximately X is close to 128 and varies slightly with a maximum of 255 and minimum of 0
9	Adaptive idle speed correction	# 21		- 4.3 % < X < 3.9 % (average value after erasing the memory: 0)
10	Canister bleed	# 23	<p>11</p> 	Canister bleed is prevented. The solenoid valve remains closed. X = 0.7 %
11	PAS pressostat	# 06	<p>13</p> 	X = 800 rpm
12	Fan assembly	# 02		The fan should operate when the temperature exceeds 99 °C.

NOTES	Checks to be carried out during a road test.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Change to status test	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side
2	No fault present		20 	Ensure this bargraph is not flashing, otherwise enter G02* and turn over the fiche. IMPORTANT: This bargraph may flash if the vehicle has no immobiliser. Ignore this bargraph if fault bargraph 2 RH side is illuminated and *22 = 2 dEF. Repair the faulty component the erase the memory (G0**) and return to the status test (G01*)
3	Canister bleed	# 23	11 	Canister bleed is authorised X = variable and > 0.7
4	Vehicle speed information	# 18		X = vehicle speed read on speedometer
5	Pinking sensor	Vehicle under load and engine speed 2000 rpm # 13 # 15		X = variable and not zero $0 \leq X \leq 6$ (if there is a sensor fault, the advance is retarded systematically by 4° , which is not visible using # 15)

NOTES	Checks to be carried out during a road test.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
6	Adaptive richness	After programming phase # 30 # 31		$106 \leq X \leq 150$ (average value after erasing the memory: 128) $106 \leq X \leq 150$ (average value after erasing the memory: 128)

D7F 720 ENGINE - 55 tracks

MULTIPOINT INJECTION FAULT FINDING

CONTENTS

	Page
Introduction	147
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Status and parameter checks	175
Status and parameter interpretation	181
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SETTING UP DIALOGUE BETWEEN THE XR25 AND THE COMPUTER

- Connect the test kit to the diagnostic socket.
- Put the selector on **S8**
- Switch on the ignition.
- Enter **D13**

9.NJ

COMPUTER IDENTIFICATION

The computer is not identified by reading a fault code but by reading the Part Number directly from the computer. After having set up a dialogue with the computer:

ENTER **G70***

7700

XXX

XXX

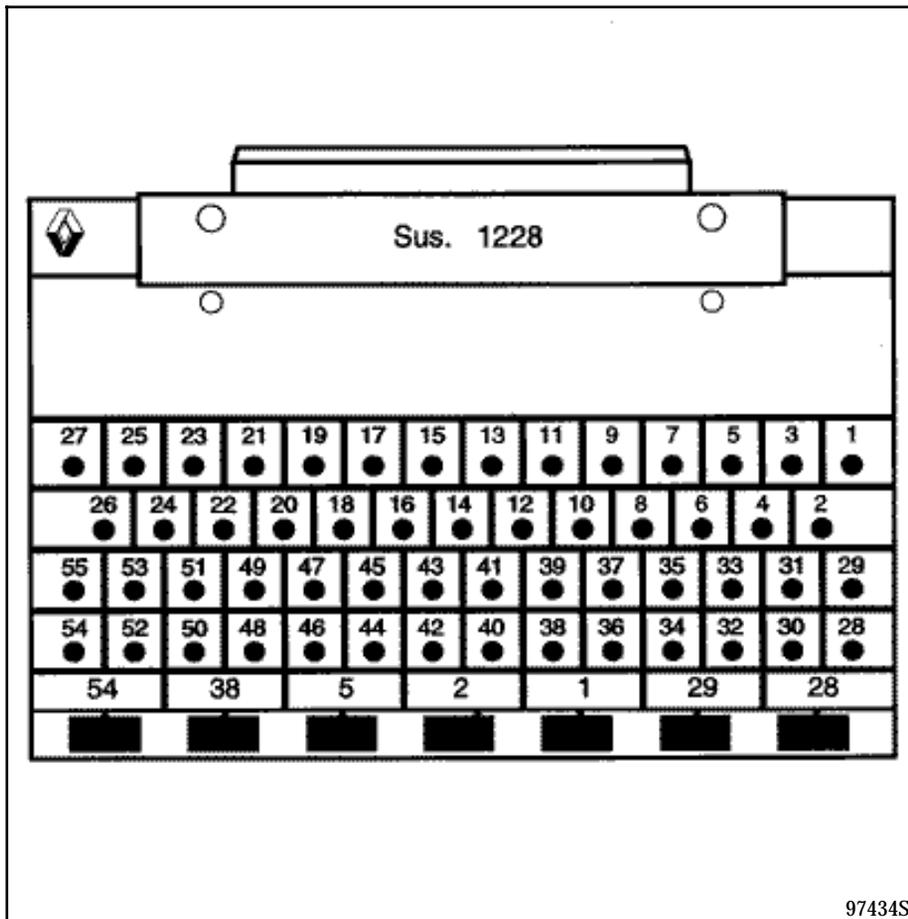
The Part Number will then appear on the central display in three sequences.

Each sequence is displayed for approximately two seconds. The display is repeated twice .

ERASING THE MEMORY (ignition on)

After an operation on the injection system the computer's memory can be erased by using the code **G0**** .

If the information obtained by the XR25 requires electrical continuities to be checked, connect bornier **Sus 1228**.



Bornier **Sus 1228** is a 55 track base with a printed circuit on which are 55 copper coated surfaces, numbered from 1 to 55.

Using the wiring diagrams, the tracks connecting the components to be tested can be easily identified.

IMPORTANT :

- All tests using bornier **Sus 1228** must be carried out with the battery disconnected.
- The bornier is only designed to operate with an ohmmeter. Under no circumstances should 12 Volts be applied to the test points.

DESCRIPTION OF THE FAULT-FINDING PHASES

The process described below is to be carried out in all cases of faults.

XR25 FAULT-CHECKING

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

There are several constraints to the treatment of the bargraphs :

- A priority in the order of treatment when several bargraphs are illuminated.
- The interpretation of a bargraph depending on whether it is constantly illuminated or flashing .

Faults must be checked using the XR25 as described below:

- Switch off the ignition.
- Switch on the ignition and deal with any faults.
- Run the engine (or run at starter speed for 10 seconds) and deal with any faults.
- Carry out a road test and deal with any faults.

1 - Order of priority

A series of illuminated bargraphs corresponding to the sensors with the same 12 V or having the same earth, indicates a fault in this source. These priorities are dealt with in the "NOTES" section of the fault-finding of the bargraph concerned.

2 - Input / output fault bargraphs

a) Illuminated :

The fault is present : treat the fault following the method described in the "INTERPRETATION OF XR25 BARGRAPHS" section.

b) Flashing :

Note the bargraphs displayed on the XR25.

Erase the memory of the computer and attempt to re-illuminate the bargraph: ignition on, idle speed (or at starter speed) or by means of a road test (the "NOTES" section in the fault finding for the bargraph concerned may help to determine the conditions under which the bargraph will illuminate).

If the bargraph has re-illuminated (fixed or flashing) :

The fault is present once again. In this case, treat the fault bargraph.

If the bargraph has not re-illuminated, check :

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

NOTE : If the customer complaint does not correspond to the fault bargraph which is flashing (example : Air temperature sensor fault bargraph flashing, but no customer complaint) ignore this memorised fault and erase it.

3 - No bargraphs illuminated

If no bargraphs are illuminated on the XR25, carry out a status and parameter check. This may help in detecting a problem.

XR25 CHECKING STATUSES AND PARAMETERS

The status and parameter check is aimed at checking the statuses and parameters which do not illuminate any fault bargraphs if they are outside of permitted tolerance values. This phase allows :

- Faults to be found without the illumination of fault bargraphs which may correspond to a customer complaint (example : absence of no load information causing an unstable idle speed).
- The correct operation of the injection to be checked and the risk of faults appearing shortly after the repair to be eliminated.

This section contains fault-finding for statuses and parameters, under their test conditions (example : fault finding for # 01 ignition on and fault finding for # 01 engine running).

If a status does not operate normally or a parameter is outside of permitted tolerance values, consult the fault-finding page indicated in the "Fault-finding" column.

XR25 CHECK CORRECT

If the XR25 check is correct, but the customer complaint persists, the problem must be dealt with through customer complaints.

Treatment of customer complaints

This section has fault charts, which suggest a series of possible causes of the problem.

These lines of enquiry must only be used in the following cases :

- No fault bargraph appears on the XR25.
- No faults are detected during the checking of statuses and parameters.
- The vehicle is not operating correctly

POST-REPAIR CHECK

This operation is a simple check of the repair (by a command, or by an XR25 command mode ...).

This makes it possible to check that the system upon which the intervention has been carried out is correct electrically.

It is an introduction to the road test.

ROAD TEST

A road test is essential in order to guarantee the correct operation of the vehicle and to test the quality of the repair. Its role is to make sure that no faults occur (or will occur) when driving.

In order to be significant, the road test is subject to special driving conditions.

Driving conditions for programming the adaptive variables:

During the road test, the engine speed must be stabilised for a few moments between:

260 < # 01 < 385 mbars
then 385 < # 01 < 510 mbars
then 510 < # 01 < 635 mbars
then is 635 < # 01 < 760 mbars
then 760 < # 01 < 970 mbars

Do not exceed an engine speed of 4400 rpm

The engine must be warm (coolant temperature > 75 °C).

For this test, start from a fairly low engine speed, in 3rd or 4th gear, and apply progressive acceleration to stabilise at the pressure required for 10 seconds in each zone.

The test must then be continued by driving normally, in a varied manner for 3 to 6 miles (5 to 10 km).

PRESENTATION OF XR25 FICHE N° 27 SIDE 1/2

N°27 1/2		S8	code : D 1 3	read : 9nJ
1	<input type="checkbox"/> ILLUMINATED → <input type="checkbox"/> EXTINGUISHED →	FAULT TEST TURN CARD	CODE PRESENT	<input type="checkbox"/>
2	<input type="checkbox"/>	COMPUTER	ENG. IMMOB * 22	<input type="checkbox"/>
3	<input type="checkbox"/>	AIR TEMPERATURE	O2 SENSOR * 23	<input type="checkbox"/>
4	<input type="checkbox"/>	COOLANT TEMP.	VEHICLE SPEED	<input type="checkbox"/>
5	<input type="checkbox"/>	PRESSURE	FLYWHEEL SIGNAL * 25	<input type="checkbox"/>
6	<input type="checkbox"/> * 06	PINKING	THROTTLE POSITION	<input type="checkbox"/>
7	<input type="checkbox"/>	CAMSHAFT	FUEL TANK PRESSURE	<input type="checkbox"/>
8	<input type="checkbox"/> * 08	FUEL PUMP	BLOCKING * 28	<input type="checkbox"/>
9	<input type="checkbox"/> * 09	ANTI-PERCOLATION	AIR PUMP * 29	<input type="checkbox"/>
10	<input type="checkbox"/> * 10	O2 SENSOR OVERHEAT	BI MODE * 30	<input type="checkbox"/>

<h3>INJECTION (FAULTS)</h3> <p>Erase fault memory : G 0 ** Status check request : G01 *</p>	<p>ADDITIONAL CHECKS : # . .</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>01</td><td>PRESSURE</td><td>mb</td></tr> <tr><td>02</td><td>Coolant temp.</td><td>°C</td></tr> <tr><td>03</td><td>Air temp.</td><td>°C</td></tr> <tr><td>04</td><td>Computer feed</td><td>V</td></tr> <tr><td>05</td><td>O2 sensor</td><td>V</td></tr> <tr><td>06</td><td>Engine speed</td><td>rpm</td></tr> <tr><td>12</td><td>Idling RCO</td><td>%</td></tr> <tr><td>13</td><td>Pinking signal</td><td></td></tr> <tr><td>14</td><td>Engine speed gap</td><td>rpm</td></tr> <tr><td>15</td><td>Pinking correct.</td><td></td></tr> <tr><td>16</td><td>Atmos. pressure</td><td>mb</td></tr> <tr><td>17</td><td>Throttle pot.</td><td></td></tr> <tr><td>18</td><td>Vehicle speed</td><td>km/h</td></tr> <tr><td>21</td><td>Auto. correct. of RCO de speed</td><td>%</td></tr> <tr><td>23</td><td>Canister purge RCO</td><td>%</td></tr> <tr><td>24</td><td>RCO EGR</td><td>%</td></tr> <tr><td>30</td><td>Auto. correct. of rich. under high loads</td><td></td></tr> <tr><td>31</td><td>Auto. correct. of rich. under low loads</td><td></td></tr> <tr><td>35</td><td>Richness corr.</td><td></td></tr> <tr><td>44</td><td>P. absorbed by AC compressor</td><td>W</td></tr> </table>	01	PRESSURE	mb	02	Coolant temp.	°C	03	Air temp.	°C	04	Computer feed	V	05	O2 sensor	V	06	Engine speed	rpm	12	Idling RCO	%	13	Pinking signal		14	Engine speed gap	rpm	15	Pinking correct.		16	Atmos. pressure	mb	17	Throttle pot.		18	Vehicle speed	km/h	21	Auto. correct. of RCO de speed	%	23	Canister purge RCO	%	24	RCO EGR	%	30	Auto. correct. of rich. under high loads		31	Auto. correct. of rich. under low loads		35	Richness corr.		44	P. absorbed by AC compressor	W
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11	<input type="checkbox"/> * 11	INJECTOR CIRCUIT	CONNECTION A.T. → INJ	<input type="checkbox"/>																																																									
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17 ANG

FI21727-1

INJECTION

Fault finding - XR25 fiche

PRESENTATION OF FICHE XR25 N° 27 SIDE 2/2

N°27 2/2		read : 10rJ
1	<input type="checkbox"/> EXTINGUISHED → STATUS TEST <input type="checkbox"/> ILLUMINATED → TURN CARD	CODE PRESENT <input checked="" type="checkbox"/>
2	<input type="checkbox"/> PG ← THROTTLE POSITIONS → PL <input checked="" type="checkbox"/>	CONTROL MODES : G.. (IF ENGINE STOPPED) 10* Fuel pump relay 11* Blocking relay 12* AC compressor 14* Idle speed reg. valve 16* Bleed canister valve 17* Anti percolation relay 21*1* Warn. light def. 22* Air pump relay 23* EGR valve 24* Bi-mode inlet valve 31* Injector control 50*x* Computer set-up 57*x* Idle speed adj. 58*x* Computer configuration 59*x* INJ Lock/Unlock 60* Zeroing validation
3	<input type="checkbox"/> FLYWHEEL SIGNAL ACTIVE ENG. IMMOB. <input checked="" type="checkbox"/>	
4	<input checked="" type="checkbox"/> PARK/NEUTRAL POSITION + APC COMPUTER <input checked="" type="checkbox"/>	
5	<input type="checkbox"/> TORQUE ADJUSTMENT RELAY CONTROL LOCKING <input checked="" type="checkbox"/>	
6	<input type="checkbox"/> RICHNESS REGULATION IDLING REGULATION <input type="checkbox"/>	
7	<input type="checkbox"/> FUEL PUMP CONTROL BLEED CANISTER AUTHOR. <input type="checkbox"/>	
8	<input checked="" type="checkbox"/> ANTI-PERCOL. CTRL ELEC. W/SCREEN REQUESTED <input checked="" type="checkbox"/>	
9	<input checked="" type="checkbox"/> SELECTION ACCEL. IDLE SPEED <input type="checkbox"/> AIR COND.	
10	<input type="checkbox"/> REQUEST COMPRESSION AUTHOR. OR PROHIBITED <input checked="" type="checkbox"/>	
(WARNING : monitor bar graph 20 left)		
<h3 style="margin: 0;">INJECTION (STATUS)</h3> <p style="margin: 0;">Erase fault memory : G 0 ** Request fault test : G 02 *</p>		
11	<input type="checkbox"/> CAMSHAFT SIGNAL BLEED CANISTER + ACTIVE SOL VALVES <input type="checkbox"/>	ADDITIONAL CHECKS : # . . 01 Pressure mb 02 Coolant temp °C 03 Air temp. °C 04 Computer feed V 05 O2 Sensor V 06 Engine speed rpm 12 Idling RCD % 13 Pinking signal 14 Eng. speed gap rpm 15 Pinking correct. d° 16 Atmos. pressure mb 17 Throttle pot. 18 Vehicle speed km/h 21 Auto. corr. RCD idle speed % 23 RCD bleed canister % 24 RCD EGR % 30 Auto. correct. ditch under/high back 31 Auto. corr. of richness 35 Mixture regulation 44 P. absorbed by W AC compressor
12	<input type="checkbox"/> EGR SV CONTROL MEMORISED FAULTS <input type="checkbox"/>	
13	<input checked="" type="checkbox"/> AIR PUMP CONTROL POWER STEERING PRESSOSTAT <input checked="" type="checkbox"/>	
14	<input checked="" type="checkbox"/> BI-MODE INLET CTRL COLD START INJECTORS <input type="checkbox"/>	
15	<input checked="" type="checkbox"/> SPEED SENSOR well connected	
16		
17		
18		
19	<input checked="" type="checkbox"/> Veh. with AT COMPUTER CONFIGURATION Veh. with man. g/box <input checked="" type="checkbox"/>	
20	<input checked="" type="checkbox"/> FAULT PRESENT XR25 MEMORY <input type="checkbox"/>	
End of test : G 13 * Part No : G 70 * Diagnosed faults : Press V and 9 Return to diagnostic mode : D		
17 ANG		

FI21727-2

REPRESENTATION OF THE BARGRAPHS

-  Illuminates when a dialogue has been established with the product computer. If it remains extinguished:
- the code does not exist,
 - there is a fault in the tool, the computer or the line

REPRESENTATION OF THE FAULTS (always on a coloured background)

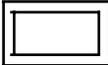
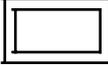
-  If illuminated, indicates a fault on the tested product, the associated text defines the fault.
If flashing, there is a fault memorised for the product tested, the associated text defines the fault.

-  If extinguished, indicates that the fault has not been found on the tested product.

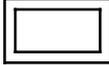
REPRESENTATION OF THE STATUSES (always on a white background)

Engine off, ignition on, no operator action

The status bargraphs on the fiche are represented as the status which they should have when the engine is off, the ignition is on and there is no operator action

- If on the fiche the bargraph is represented as  the test kit should give as information 
 - If on the fiche the bargraph is represented as  the test kit should give as information 
 - If on the fiche the bargraph is represented as  the test kit should give as information
- either  or 

Engine running

-  Extinguishes when the function or condition given on the fiche is no longer performed.
-  Illuminates when the function or condition given on the fiche is performed

Fiche n° 27 is a generic fiche used for several engines.

The different engines do not use all the bargraphs. To find out the bargraphs dealt with by the injection computer, after having set up a dialogue with the computer, press the V and 9 buttons simultaneously.

The bargraphs dealt with will:

- illuminate permanently for non memorisable fault bargraphs or status bargraphs,
- flash for memorisable fault bargraphs.

To return to fault finding mode, press button D.

Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	<p>Bargraph 1 RH extinguished</p> <p style="text-align: right;">Fiche n° 27 side 1/2</p> <p><u>XR25 CIRCUIT</u></p> <p>XR25 aid: No connection, CO, CC-, CC+</p>
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NOTES	<p>This bargraph must be illuminated for fault finding</p>
--------------	--

Test the XR25 on another vehicle.

Check:

- the connection between the XR25 and the diagnostic socket (condition of the XR25 cable),
- the position of the ISO selector (S8),
- the conformity of the cassette,
- the injection, engine and passenger compartment fuses.

Repair if necessary.

Check the presence of + 12 V on track 16 and earth on track 5 of the diagnostic socket.

Repair if necessary.

Check, ignition on, for 12 V on track:

- 1 on the main relay,
- 3 on the main relay,
- 1 on the fuel pump relay.

Repair if necessary.

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

Computer	18	→	Earth
Computer	2	→	Earth
Computer	3	→	Earth
Computer	11	→	7 Diagnostic socket
Computer	38	→	15 Diagnostic socket
Computer	1	→	5 Main relay
Computer	40	→	2 Main relay
Computer	48	→	2 Fuel pump relay

Repair if necessary.

Ignition on, check for 12 V on track 5 of the main relay:

- If there is 12 V on track 5 of the main relay: replace the fuel pump relay.
- If there is not 12 V on track 5 of the main relay: replace the main relay.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p style="text-align: center;">2</p> 	<p>Bargraph 2 LH side illuminated. Fiche n° 27 side 1/2</p> <p><u>COMPUTER CIRCUIT</u></p> <p>XR25 aid: computer faulty</p>
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<p style="text-align: center;">NOTES</p>	<p>None</p>
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The computer is incorrect or faulty.
Replace the computer.

<p style="text-align: center;">AFTER REPAIR</p>	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>2</p> 	<p>Bargraph 2 RH side illuminated Fiche n° 27 side 1/2</p> <p><u>IMMOBILISER CIRCUIT</u></p> <p>XR25 aid: *22 = 1 dEF CO, CC- or CC+ line 37 of the computer *22 = 2 dEF Refer to the immobiliser fault finding section</p>
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NOTES	Ignore this bargraph if the vehicle is not fitted with an immobiliser.
--------------	--

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the wiring on track 37 of the computer.
Repair if necessary.

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

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> 	<p>Bargraph 3 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>AIR TEMPERATURE SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+line 20 or 46 of the computer</p>
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NOTES	<p>If BG 6RH is also illuminated, check line 46 of the computer.</p>
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Connect the bornier in place of the computer and check the insulation and continuity of the line.

Computer	20	→	2	Air temperature sensor
Computer	46	→	1	Air temperature sensor

Repair if necessary.

Check the resistance of the sensor. Replace if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>3</p> 	<p>Bargraph 3 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>OXYGEN SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+line 17 of the computer CO line 18 of the computer</p>
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NOTES	<p>If BG 3RH is flashing, increase the engine speed to 2500rpm for 5 minutes. If BG 3RH becomes permanently illuminated, deal with the fault.</p>
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Check the connection and the condition of the connector on the oxygen sensor.

Check, ignition on during the timed phase, for :

- earth on track B of the oxygen sensor,
- + 12 V after the fuel pump relay on track A of the oxygen sensor.

Repair if necessary.

Check for the presence of earth on track 18 of the injection computer.
Repair if necessary.

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

Computer 17 \longrightarrow C Oxygen sensor

Repair if necessary.

The fault persists. Replace the oxygen sensor.

The fault persists! Replace the injection computer.
IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Bargraph 4 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>COOLANT TEMPERATURE SENSOR CIRCUIT</u></p> <p>XR25 aid : CO, CC- or CC+line 44 or 15 of the computer</p>
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NOTES	<p>If BG 6LH or BG 5LH is also illuminated , check line 44 of the computer. For certain faults, BG 4LH is only permanently illuminated when the engine is running.</p>
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<p>Connect the bornier in place of the computer and check the insulation and continuity of the line:</p> <p>Computer 44 → B 1 Coolant temperature sensor</p> <p>Computer 15 → B 2 Coolant temperature sensor</p> <p>Repair if necessary.</p>	
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<p>Check the resistance of the sensor. Replace it if necessary.</p>

<p>The fault persists! Replace the injection computer.</p> <p>IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Bargraph 4 RH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>VEHICLE SPEED CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 12 of the computer</p>
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NOTES	<p>Carry out a road test checking #18 if BG 4 RH is flashing. Deal with this fault if BG 4 RH illuminates permanently during the road test or #18 = 0</p>
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Check the sensor is correctly positioned.

Check on the vehicle speed sensor for:
 - **earth on track B2,**
 -+ **12 after ignition feed on track A.**
 Repair if necessary.

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

Computer 12 —————> B1 Vehicle speed sensor

Repair if necessary.

The fault persists! Replace the sensor.

The fault persists! Replace the injection computer.

IMPORTANT: **The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.**

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>5</p> 	<p>Bargraph 5LH side illuminated Fiche n° 27 side 1/2</p> <p><u>PRESSURE SENSOR CIRCUIT</u></p> <p>XR25 aid : CO, CC- or CC+ line 45, 44 or 16 of the computer</p>
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NOTES	<p>If BG 6RH is also illuminated, check line 45 of the computer.</p> <p>If BG 6LH or BG 4LH is also illuminated, check line 44 of the computer.</p>
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Check that the pressure sensor is **connected correctly both electrically and pneumatically**.
Check the conformity of the pressure sensor pipe (it must not be pierced or blocked...).

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

Computer	45	—————▶	C	Pressure sensor
Computer	44	—————▶	A	Pressure sensor
Computer	16	—————▶	B	Pressure sensor

Repair if necessary.

The fault persists! Replace the sensor.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

5	<p>Bargraph 5 RH side illuminated or flashing Fiche n° 2 side 1/2</p> <p><u>FLYWHEEL SIGNAL CIRCUIT</u></p> <p>XR25 aid: *25 = CO.0 => CO or CC- line 33 or 34 of the computer *25 = CC.0 => CC- line 33 or 34 of the computer *25 = In => sensor incorrectly connected</p>
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NOTES	<p>BG 5RH is often seen to flash if *25 = dEF as its illumination is very quick. In certain cases BG 5RH may illuminate then extinguish. In this case enter *25 and try to illuminate BG 5RH under starter speed.</p>
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<p>*25 = CO.0 *25 = CC.0</p>	<p>Check the resistance of the target sensor. Replace the sensor if necessary.</p>
	<p>Check the condition of the flywheel, especially if it has been removed.</p>
	<p>Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:</p> <p style="margin-left: 40px;"> Computer 33 —————> B Target sensor Computer 34 —————> A Target sensor </p> <p>Repair if necessary.</p>
	<p>The fault persists! Replace the injection computer. IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>

<p>*25 = In</p>	<p>Check the target sensor has been correctly connected (the sensor connector must not be inverted). Repair if necessary.</p>
	<p>The fault persists! Replace the sensor.</p>

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraph 6 LH side illuminated or flashing Fiche n° 2 side 1/2</p> <p><u>PINKING SENSOR CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 54 or 44 of the computer</p>
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NOTES	<p>For certain faults BG 6LH will only illuminate permanently at 3000 rpm. for 1 minute. If BG 4LH or BG 5LH is also illuminated, check line 44 of the computer.</p>
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Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

- Computer 54** —————> **2 Pinking sensor**
- Computer 44** —————> **1 Pinking sensor**
- Computer 31** —————> **Pinking sensor screening**

Repair if necessary.

The fault persists! Replace the pinking sensor.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraph 6 RH side illuminated Fiche n° 27 side 1/2</p> <p><u>THROTTLE POTENTIOMETER CIRCUIT</u> XR25 aid: CO, CC- or CC+ line 19, 45 or 46 of the computer</p>
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NOTES	<p>If BG 5LH is also illuminated, check line 45 of the computer. If BG 3LH is also illuminated, check line 46 of the computer.</p>
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Check the resistance of the throttle potentiometer.
 Replace the throttle potentiometer if necessary.

Connect the bornier in place of the computer and check the insulation, continuity and that there is no interference resistance on the line:

Computer	19	→	C	Throttle potentiometer
Computer	45	→	B	Throttle potentiometer
Computer	46	→	A	Throttle potentiometer

Repair if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>8</p> 	<p>Bargraph 8 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>FUEL PUMP CIRCUIT</u></p> <p>XR25 aid: Only detection of CC+ on line 48 of the computer</p>
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NOTES	<p>CO or CC- on line 48 of the computer prevents dialogue with the computer. In certain cases of faults, BG 11 LH or BG 14 RH may also be illuminated.</p>
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Check the insulation from 12 V of line :

Computer 48 —————> **2 Fuel pump relay**

Repair if necessary.

The fault persists! Replace the fuel pump relay.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>11</p> 	<p>Bargraph 11 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>INJECTOR CIRCUIT</u></p> <p>XR25 aid: *11 = XX.CO => CO or CC- line 30 or 4 of the computer *11 = XX.CC => CC+ line 30 or 4 of the computer</p>
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NOTES	<p>XX = 14 => Cylinder 1 or 4 line 30 of the computer XX = 23 => Cylinder 2 or 3 line 4 of the computer If BG 8LH or BG 14 RH is also illuminated, refer to BG 8LH</p>
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Check the resistance of the two faulty injectors.
 Replace the injector/s if necessary.

When the ignition is switched on and during the timed phase, check for 12 V on track 1 of the faulty injector.
 If necessary, repair the line from **track 1 injector to track 5 fuel pump relay.**

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

Computer	30	—→	2	Injectors 1 and 4
Computer	4	—→	2	Injectors 2 and 3

Repair if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: **The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.**

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

11 	Bargraph 11 RH side illuminated or flashing Fiche n° 27 side 1/2 <u>AUTOMATIC TRANSMISSION</u> → <u>INJECTION CIRCUIT</u> XR25 aid: None
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NOTES	None
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Ignore this bargraph, as this vehicle is not fitted with automatic transmission.

AFTER REPAIR	Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.
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Fault finding - Interpretation of XR25 bargraphs

<p>12</p> 	<p>Bargraph 12 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>FAULT WARNING LIGHT CIRCUIT</u></p> <p>XR25 aid: *12 = CO.0 CO or CC- line 43 on the computer *12 = CC.1 CC+ line 43 on the computer</p>
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NOTES	None
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Check the condition of the warning light and its feed.
Repair if necessary.

Connect the bornier in place of the computer and check the insulation and continuity of the **line 43 on the computer**.
Repair.

AFTER REPAIR	<p>Erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>13</p> 	<p>Bargraph 13 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>MEMORY CIRCUIT</u></p> <p>XR25 aid: Loss of computer feed.</p>
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NOTES	None
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This bargraph only illuminates when the computer feed has been cut (disconnection of the battery, the computer, ...).

Check the computer feed hygiene:

Computer	1	→		5	Main relay
Main relay	3	→		Fuse	

Computer	40	→		2	Main relay
Main relay	1	→		Fuse	

Computer	48	→		2	Fuel pump relay
Fuel pump relay	1	→		Fuse	

Repair if necessary.

Run the engine.

Switch the ignition off and wait for the loss of dialogue between the XR25 and the computer.

Switch the ignition on.

Enter dialogue with the computer.

Erase the computer memory using G0**.

NOTE : Memorised faults are erased. It would therefore be useful to carry out a road test to check there are no faults on the injection system.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>14</p> 	<p>Bargraph 14LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>IDLE SPEED REGULATION CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 8 or 35 or 9 or 36 of the computer</p>
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NOTES	<p>If BG 14 LH is flashing, erase the computer memory using G0**.</p> <p>Turn the engine.</p> <p>If BG 14 LH is now permanently illuminated or flashing, deal with this fault.</p>
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Check the resistance of the idle speed regulation stepping motor.
Check the idle speed regulation valve if necessary.

Check the insulation, continuity and that there is no interference resistance on the line:

Computer	8	→	D	idle speed regulation stepping motor
Computer	35	→	A	idle speed regulation stepping motor
Computer	9	→	B	idle speed regulation stepping motor
Computer	36	→	C	idle speed regulation stepping motor

Repair if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>14</p> 	<p>Bargraph 14RH side illuminated Fiche n° 27 side 1/2</p> <p><u>CANISTER BLEED CIRCUIT</u></p> <p>XR25 aid: CO, CC- or CC+ line 42 of the computer</p>
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NOTES	<p>If BG 8 LH or BG 11 LH is also illuminated, refer to BG 8 LH.</p>
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Check the resistance of the canister bleed valve.
Replace the valve if necessary.

Check, ignition on , for 12 V on track A of the canister bleed valve.
Repair if necessary.

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

Computer 42 —————> B Canister bleed valve

Repair if necessary.

The fault persists! Replace the injection computer.

IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>15</p> 	<p>Bargraph 15 LH side illuminated Fiche n° 27 side 1/2</p> <p><u>COMPUTER</u> —————> <u>AC CONNECTION CIRCUIT</u></p> <p>XR25 aid: CC + 12 V line 51 of the computer</p>
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NOTES	<p>Check that the vehicle has air conditioning, if not, ignore this bargraph.</p>
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Connect the bornier in place of the computer and check the insulation and continuity of line 51 of the computer.

Repair if necessary.

If the fault persists, consult the air conditioning fault finding section.

AFTER REPAIR	<p>Erase the computer memory using G0**.</p> <p>Use the XR25 to check for faults (see Introduction).</p> <p>Remember to carry out a status and parameter check.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>16</p> 	<p>Bargraph 16 LH side illuminated or flashing Fiche n° 27 side 1/2</p> <p><u>COMPUTER</u> —————> <u>MPA CONNECTION CIRCUIT</u></p> <p>XR25 aid: *16 = XX.CO => CO or CC- line 28 or 29 of the computer *16 = XX.CC => CC+ line 28 or 29 of the computer</p>
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NOTES	<p>XX = 14 => Cylinder 1 or 4 line 28 of the computer XX = 23 => Cylinder 2 or 3 line 29 of the computer If BG 16 LH is flashing, erase the computer memory using G0**. Turn the engine. If BG 16 LH illuminates permanently or flashes, deal with this fault.</p>
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<p>Check the hygiene of the anti-interference condenser on track 4 of the coil.</p>										
<p>Check the resistance of the coil. Replace the coil if necessary.</p>										
<p>Check the + after ignition feed to the coil concerned on track 3. Repair if necessary.</p>										
<p>Connect the bornier in place of the computer and check the insulation and continuity of the line :</p> <table style="margin-left: 40px;"> <tr> <td>Computer</td> <td>29</td> <td>—————></td> <td>2</td> <td>Coil</td> </tr> <tr> <td>Computer</td> <td>28</td> <td>—————></td> <td>1</td> <td>Coil</td> </tr> </table> <p>Repair if necessary.</p>	Computer	29	—————>	2	Coil	Computer	28	—————>	1	Coil
Computer	29	—————>	2	Coil						
Computer	28	—————>	1	Coil						
<p>The fault persists! Replace the injection computer. IMPORTANT: The computer has probably been damaged by an electric shock. The cause of the damage must be found before fitting a new computer.</p>										

AFTER REPAIR	<p>Turn the engine then erase the computer memory using G0**. Use the XR25 to check for faults (see Introduction). Remember to carry out a status and parameter check.</p>
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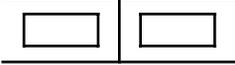
Fault finding - Status and parameter checks

NOTES	Engine stopped, ignition on.
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Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Dialogue with XR25	D13 (selector on S8)	<p style="text-align: center;">1</p>  <p style="text-align: center;">1</p> 	<p style="text-align: center;">Fault test</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">9.NJ</div> <p style="text-align: center;">Use fiche 27</p> <p style="text-align: center;">Code present</p>	Deal with fault bargraph
2	Change to status test	G01*	<p style="text-align: center;">1</p> 	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">10.NJ</div> <p style="text-align: center;">Status test</p>	None
3	Battery voltage	# 04		11.8 < X < 13.2 V	DIAG 1
4	Computer configuration		<p style="text-align: center;">19</p>  <p style="text-align: center;">19</p> 	<p>Computer configured to manual gearbox</p> <p>Computer configured to automatic transmission</p>	See Fiche 'Reminder C' to configure the vehicle
5	Immobiliser (if option)	Ignition on	<p style="text-align: center;">3</p> 	This status bargraph must be extinguished when the ignition is on to indicate that the immobiliser is not active.	DIAG 12

Fault finding - Status and parameter checks

NOTES	Engine stopped, ignition on.
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Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
6	Throttle position potentiometer	No load # 17	2 	10 < X < 50	DIAG 2
		Accelerator pedal slightly depressed	2 		
		Full load # 17	2 	185 < X < 245	
7	Pressure sensor	# 01		X = Atmospheric pressure	DIAG 9
8	Coolant temperature sensor	# 02		X = Engine temperature ± 5 °C	DIAG 3
9	Air temperature sensor	# 03		X = Temperature under bonnet ± 5 °C	DIAG 4
10	Fan assembly	G17*		The fan must operate	DIAG 17
11	Fault warning light	G21*1*		The fault warning light must illuminate then extinguish	DIAG 19
12	Canister bleed	G16*		The canister bleed valve must be heard to operate	DIAG 20

Fault finding - Status and parameter checks

NOTES	Carry out the actions below if the engine does not start. Otherwise, refer to the following pages.
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Flywheel signal sensor	Starter	3 	Illuminated if TDC information detected	DIAG 5
2	Fuel pump	G10*		Fuel pump should be heard to operate	DIAG 6
3	Ignition	Connect Optima Station		Starting test, complete guide on Optima Station	Use Optima 5800 Station
4	Fuel pressure	Connect pressure gauge to fuel inlet and activate starter motor		The pressure gauge must show 2.5 bars	Fuel pressure, see Workshop Repair Manual or section
5	Injection command	Starter		Fuel must come out of the injector	DIAG 11
6	Engine compression	Connect Optima Station		Complete guide on Optima Station	Use Optima 5800 Station
7	Flywheel	Connect Optima Station		Oscilloscope. Complete guide on Optima Station	Use Optima 5800 Station

Fault finding - Status and parameter checks

NOTES	Carry out the actions below (engine warm, at idle speed, no consumers) if the engine starts. Otherwise refer to the previous pages.
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Charging circuit	# 04		$13 < X < 14.5 \text{ V}$	DIAG 1
2	Throttle potentiometer	No load	2 	Illuminated (does not flash!)	DIAG 2
3	Idle speed regulation	# 06 # 12 # 21	6 	$690 < X < 790 \text{ rpm}$ $4 \% < X < 14 \%$ $- 4.3 \% < X < 3.9 \%$	DIAG 7
4	Anti-pinking circuit	# 13 (at 3500 rpm, no load)		X variable and not zero	DIAG 8
5	Pressure circuit	# 01 # 16		$270 \leq X \leq 430 \text{ V}$ X = atmospheric pressure	DIAG 9
6	Richness regulation	# 35 # 05	6 	$0 < X < 255$ X varies around 128 $0.050 \leq X \leq 0.900 \text{ V}$	DIAG 10 See also DIAG 15
7	Fuel pressure	Connect a pressure gauge to the fuel gallery and activate the starter motor		Pressure gauge must show 2.5 bars	Fuel pressure, see Workshop Repair Manual or section

Fault finding - Status and parameter checks

NOTES	Carry out the actions below (engine warm, at idle speed, no consumers) if the engine starts. Otherwise refer to the previous pages.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
8	Air conditioning	AC selected	9 	Extinguished if fast idle is not active Illuminated if the air conditioning requests compressor operation Illuminated if the injection authorises compressor operation $690 \leq X \leq 790 \text{ rpm}$ $250 \leq X \leq 4000 \text{ W}$	DIAG 16
		# 06 # 44	10  10 		
		# 06 # 44	9  10 	$800 \leq X \leq 900 \text{ rpm}$ $250 \leq X \leq 4000 \text{ W}$	
9	Power assisted steering prestostat	Turn wheels to full lock	13 	Illuminated when wheels turned to full lock	DIAG 18

Fault finding - Status and parameter checks

NOTES	Check during road test.
--------------	-------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes	Fault finding
1	Vehicle speed information	# 18		X = speed read on the speedometer in km/h	DIAG 13
2	Adaptive richness	After programming # 30 # 31		106 ≤ X ≤ 150 106 ≤ X ≤ 150	DIAG 14
3	Emission of pollutants	2500rpm after driving At idle speed, wait for stabilisation		CO < 0.3 % CO2 > 13.5 % O2 < 0.8 % HC < 100 ppm 0.97 < λ < 1.03 CO < 0.5 % HC < 100 ppm 0.97 < λ < 1.03	DIAG 15 see also DIAG 10

Fault finding - Status and parameter interpretation

DIAG 1	Fiche n° 27
BATTERY VOLTAGE XR25 aid: Battery voltage ignition on, Minimum < # 04 < Maximum Battery voltage idle speed, Minimum < # 04 < Maximum	

NOTES	No fault bargraphs should be illuminated. No consumers
--------------	---

Ignition on

If # 04 < Minimum, the battery is discharged: Check the charging circuit to determine the cause of this fault.
If # 04 > Maximum, the battery may be overcharged: Check the charging voltage is correct with and without consumers.

At idle speed

If # 04 < Minimum, the charging voltage is too low: Check the charging circuit to determine the cause of this fault.
If # 04 > Maximum, the charging voltage is too high: The alternator regulator is faulty. Repair this fault and check the electrolyte level in the battery.

NOTE:

The battery and the charging circuit may be checked using the OPTIMA 5800 station (measurement does not require the battery to be disconnected, which retains the memories of the computers).

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 2	<p>THROTTLE POTENTIOMETER</p> <p>XR25 aid:# 17 outside tolerances # 17 does not vary when throttle moves Status BG 2LH or 2RH, incorrect illumination</p>	Fiche n° 27
---------------	--	-------------

NOTES	No fault bargraphs should be illuminated. Ignition on or engine running.
--------------	---

Status bargraph 2RH incorrect illumination	NOTES	None
---	--------------	------

<p>Check the resistance of the throttle potentiometer. Replace the throttle potentiometer if necessary.</p>												
<p>Check the insulation and the continuity of the line:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Computer 19</td> <td style="width: 15%; text-align: center;">—————▶</td> <td style="width: 15%;">C</td> <td>Throttle potentiometer</td> </tr> <tr> <td>Computer 45</td> <td style="text-align: center;">—————▶</td> <td>B</td> <td>Throttle potentiometer</td> </tr> <tr> <td>Computer 46</td> <td style="text-align: center;">—————▶</td> <td>A</td> <td>Throttle potentiometer</td> </tr> </table> <p>Repair if necessary.</p>	Computer 19	—————▶	C	Throttle potentiometer	Computer 45	—————▶	B	Throttle potentiometer	Computer 46	—————▶	A	Throttle potentiometer
Computer 19	—————▶	C	Throttle potentiometer									
Computer 45	—————▶	B	Throttle potentiometer									
Computer 46	—————▶	A	Throttle potentiometer									

# 17 is fixed	NOTES	None
----------------------	--------------	------

<p>Check the resistance of the throttle potentiometer when the throttle is activated.</p>
<p>If the resistance varies, check the electrical lines of the sensor.</p>
<p>If the resistance does not vary, check that the sensor is connected mechanically to the throttle. If necessary, replace the sensor.</p>

# 17 outside tolerances	NOTES	None
--------------------------------	--------------	------

<p>Check the upper and lower stops of the throttle. Check the accelerator control (points of resistance and friction). Repair.</p>
--

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 3	Fiche n° 27
COOLANT TEMPERATURE	
XR25 aid:# 02 = Engine temperature ± 5 °C	

NOTES	No fault bargraphs should be illuminated.
--------------	---

If the value read is inconsistent, check the sensor correctly follows the standard table of values for "resistance as a function of temperature".

Replace the sensor if the values are incorrect (**NOTE** : If a sensor is incorrect, this is often due to an electric shock).

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer 15 \longrightarrow **B2 Coolant temperature sensor**

Computer 44 \longrightarrow **B1 Coolant temperature sensor**

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 4	Fiche n° 27
AIR TEMPERATURE	
XR25 aid:# 03 = Temperature under the bonnet ± 5 °C	

NOTES	No fault bargraphs should be illuminated.
--------------	---

If the value read is incoherent, check the sensor correctly follows the standard table of values for "resistance as a function of temperature".

Replace the sensor if the values are incorrect (**NOTE** : If a sensor is incorrect, this is often due to an electric shock).

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer 20 \longrightarrow **2** **Air temperature sensor**

Computer 46 \longrightarrow **1** **Air temperature sensor**

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 5	<p style="text-align: right;">Fiche n° 27</p> <p>TDC DETECTION</p> <p>XR25 aid:Status BG 3LH, incorrect illumination</p>
---------------	--

NOTES	<p>No fault bargraphs should be illuminated. When the starter motor is activated.</p>
--------------	---

Check the resistance of the TDC sensor.
Replace the sensor if necessary.

Check the sensor is correctly mounted.
Repair if necessary.

Check the condition of the target (if it has been removed).
Repair if necessary.

Check the insulation, continuity and that there is no interference resistance on the electrical line :

Computer	33	————→	B	Flywheel signal sensor
Computer	34	————→	A	Flywheel signal sensor

Repair.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
---------------------	---

Fault finding - Status and parameter interpretation

DIAG 6	Fiche n° 27
FUEL PUMP	
XR25 aid: The command mode should cause the fuel pump to operate.	

NOTES	No fault bargraphs should be illuminated.
--------------	---

<p>Check the fuel pump fuse. Check the insulation and continuity of the wiring:</p> <p style="text-align: center;">Fuel pump fuse \longrightarrow 3 Fuel pump relay</p> <p>Repair if necessary.</p>
--

<p>Check the insulation and continuity of the wiring:</p> <p style="text-align: center;">Fuel pump relay 5 \longrightarrow Impact sensor Impact sensor \longrightarrow C1 Fuel pump</p> <p>Repair if necessary.</p>

<p>Check the hygiene and presence of earth on track C2 of the fuel pump.</p> <p>If + 12 V is not reaching the fuel pump, replace the fuel pump relay. If + 12 V is reaching the fuel pump, replace the fuel pump.</p>

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 7	<p>IDLE SPEED REGULATION Fiche n° 27</p> <p>XR25 aid: Engine speed , Minimum < # 06 < Maximum</p>
---------------	---

NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the resistance of the idle speed regulation stepping motor.
Replace the idle speed regulation valve if necessary.

Check the insulation and continuity of the line:

Computer	8	————→	D Idle speed regulation motor
Computer	35	————→	A Idle speed regulation motor
Computer	9	————→	B Idle speed regulation motor
Computer	36	————→	C Idle speed regulation motor

Repair if necessary and continue fault finding using the value for # 06.

06 < Minimum

NOTES

The idle speed is too low

Idle speed regulation is not maintaining the idle speed.

- Clean the air supply circuit (throttle body, idle speed regulation valve), since it is probably contaminated.
- Check the engine oil level (too high ---> splashing).
- Check and ensure correct fuel pressure.
- Using the OPTIMA 5800 station, check the engine compression.
- Check the valve clearances and the timing.

If all these points are correct, replace the idle regulation motor.

06 > Maximum

NOTES

The idle speed is too high

An air leak may be affecting the idle speed regulation programming.

- Check the connections on the manifold.
- Check the hygiene of the pipes on the manifold.
- Check the pneumatically controlled solenoid valves.
- Check the manifold gaskets.
- Check the throttle body seals.
- Check the sealing of the brake servo.
- Check the restrictions are present in the oil vapour rebreathing circuit.
- Check the fuel pressure.

If all these points are correct, replace the idle speed regulation motor.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 8	Fiche n° 27
ANTI-PINKING CIRCUIT XR25 aid:# 13 is not zero and variable for fast idle or under load	

NOTES	No fault bargraphs should be illuminated.
--------------	---

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

If the signal is zero:

- Check the sensor is correctly screwed in.
 - Check the insulation and continuity of the wiring:
- | | | |
|--------------------|--------|---------------------------------|
| Computer 54 | —————→ | 2 Pinking sensor |
| Computer 44 | —————→ | 1 Pinking sensor |
| Computer 31 | —————→ | Pinking sensor screening |

If necessary, replace the sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 9	Fiche n° 27
PRESSURE CIRCUIT	
XR25 aid: Ignition on # 01 not coherent At idle speed # 01 < Minimum or # 01 > Maximum # 16 not coherent	

NOTES	No fault bargraphs should be illuminated.
--------------	---

01 not coherent
ignition on
01 < Minimum at idle
speed
16 not coherent

Check the insulation, the continuity and that there is no interference on the line:

Computer 45	—————→	C Pressure sensor
Computer 44	—————→	A Pressure sensor
Computer 16	—————→	B Pressure sensor

Repair if necessary.

If all these points are correct, replace the sensor.
A vacuum pump with a pressure gauge may be used to check coherence with # 01 and to show a faulty sensor.

01 > Maximum at idle
speed

The manifold pressure is often a sign of incorrect engine operation. Check

- the sealing of the pipe between the manifold and the sensor,
- the valve clearances,
- the canister bleed valve which should be closed at idle speed,
- cylinder compression using the OPTIMA 5800 station.

If all these points are correct, replace the sensor.
A vacuum pump with a pressure gauge may be used to check coherence with # 01 and to show a faulty sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 10	RICHNESS REGULATION XR25 aid: Richness regulation faulty	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated. Ignition correct (a check may be made using the OPTIMA 5800 station). No other status bargraph should show a fault.
--------------	---

Using a vacuum pump fitted with a pressure gauge, check the coherence of # 01.
If incoherence is present, refer to "DIAG 9 # 01 incoherent, ignition on".

Check the sealing of the canister bleed valve (a leak can disrupt the richness considerably).
Check the sealing of the exhaust pipe upstream from the oxygen sensor.
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 idle speed is unstable, check the valve clearances.
Check the injectors (flow and shape of the jet).
If necessary, replace the oxygen sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 11	Fiche n° 27
	<p>INJECTOR</p> <p>XR25 aid : CO or CC - line 30 of the computer for injectors 1 and 4 CO or CC - line 4 of the computers for injectors 2 and 3</p>

NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the resistance of the faulty injector.
Replace it if necessary.

During command mode operation, check for + 12 Volts on track 1 of the faulty injector.
Repair.

Check the insulation and continuity of the line:

injectors 1 and 4	Computer 30	—————▶	2 injectors
injectors 2 and 3	Computer 4	—————▶	2 injectors

Repair if necessary.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 12	IMMOBILISER XR25 aid : Status BG 3RH, illuminated when ignition switched on	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the insulation and continuity of the wiring for track 37 on the injection computer.

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

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 13	Fiche n° 27
	VEHICLE SPEED XR25 aid: # 18 = Speed read on speedometer in km/h

NOTES	No fault bargraphs should be illuminated. Check with a road test.
--------------	--

If the value read is incoherent:

- Check that the sensor is correctly mounted and fed:
 - **+12 V on A1**
 - **Earth on B2**
- Check the insulation, continuity and that there is no interference resistance on the line:

Computer 12 \longrightarrow B1 vehicle speed sensor

NOTE : check the various functions using this information.

Repair.

The fault persists! Replace the speed sensor.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 14	Fiche n° 27
<p>ADAPTIVE RICHNESS</p> <p>XR25 aid: Minimum < # 30 < Maximum Minimum < # 31 < Maximum</p>	

NOTES	<p>No fault bargraphs should be illuminated. Carry out the programming operations.</p>
--------------	--

<p>Ensure the canister bleed valve is sealed.</p>
<p>Erase the computer memory. Engine warm , running at idle speed, check the values for # 30 and # 31.</p> <ul style="list-style-type: none"> - If # 30 or # 31 is at a MAXIMUM, there is not enough fuel. - If # 30 or # 31 is at a MINIMUM, there is too much fuel.
<p>Ensure the hygiene, cleanliness and correct operation of :</p> <ul style="list-style-type: none"> - filter - fuel pump - fuel circuit - fuel tank.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
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Fault finding - Status and parameter interpretation

DIAG 15	Fiche n° 27
EMISSION OF POLLUTANTS	
XR25 aid: None	

NOTES	No fault bargraphs should be illuminated.
--------------	---

$0.97 \leq \lambda \leq 1.03$ at 2500 rpm	NOTES	The oxygen sensor loops correctly at 2500 rpm.
---	--------------	--

If CO > 0.3 % at 2500 rpm
The catalytic converter is faulty. NOTE : it is vital to determine the cause of the catalytic converter damage to avoid a new converter also being damaged.

If $\lambda < 0.97$ or $\lambda > 1.03$ at idle speed
Check the sensor earth and heating. Check there is no air leak at the manifold.

$0.97 \leq \lambda \leq 1.03$ at 2500 rpm	NOTES	The oxygen sensor does not loop correctly at 2500 rpm.
---	--------------	--

It is an injection or sensor fault.

AFTER REPAIR	Start the status and parameter check again from the beginning.
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Fault finding - Status and parameter interpretation

DIAG 15 CONT	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
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$\lambda > 1.03$ at 2500 rpm	NOTES	None
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The oxygen sensor loops correctly at 2500 rpm.
Check there is no leak at the exhaust. Check that an injector has not seized. Check the fuel pressure is not too low.

The oxygen sensor does not loop correctly at 2500 rpm.
Check there is not an injection fault. Check there is not an ignition fault. Check the sensor is not faulty. Check the fuel pressure.

$\lambda < 0.97$ at 2500 rpm.	NOTES	The oxygen sensor does not loop correctly at 2500 rpm, CO > 0.3 % at 2500 rpm.
Check the pressure sensor. Check the sensor. Check that an injector is not faulty.		

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 16	<p style="text-align: right;">Fiche n° 27</p> <p>AIR CONDITIONING</p> <p>XR25 aid:Status BG 10LH or 10RH incorrect illumination</p>
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NOTES	<p>No fault bargraphs should be illuminated.</p>
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Check the insulation and continuity of lines **track 5 and track 51** of the injection computer.
Repair if necessary.
Consult the air conditioning fault finding.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
---------------------	---

Fault finding - Status and parameter interpretation

DIAG 17	Fiche n° 27
ANTIPERCOLATION RELAY	
XR25 aid: The fan assembly must operate when command mode G17* is used.	

NOTES	No fault bargraphs should be illuminated.
--------------	---

The antipercolation relay does not click when its command mode is used

Ignition on, check for 12 V on track 1 of the fan assembly relay.

There is not 12 V on track 1

Check the line for track 1 of the relay to the fuse.

There is 12 V on track 1

Connect the bornier in place of the computer and check the insulation and continuity of the line:
Bornier 10 **2 Relay**
 Repair.

The fault persists, replace the relay.

The fault persists!
 Replace the injection computer.

The antipercolation relay does click when its command mode is used

Fan assembly relay in place, check, during operation of the command mode, for 12 V on track 5 of the fan assembly relay.

There is not 12 V on track 5

Check the insulation and continuity of line 3 on the relay to the fuse.
 Repair if necessary.

The fault persists, replace the fan assembly relay.

There is 12 V on track 5

Check the insulation and continuity of the line:
Relay 5 **1 Fan assembly**
Fan assembly 2 **Earth**
 Repair.

If the fan assembly still does not operate, replace the fan assembly.

AFTER REPAIR

Start the status and parameter check again from the beginning.

Fault finding - Status and parameter interpretation

DIAG 18	<p style="text-align: right;">Fiche n° 27</p> <p>POWER ASSISTED STEERING PRESSOSTAT</p> <p>XR25 aid :None.</p>
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NOTES	<p>No fault bargraphs should be illuminated.</p>
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Check the correct operation of the power assisted steering (oil level, ...).
Check the power assisted steering pressostat is correctly connected.
Check the insulation and continuity of the line for track 13 on the injection computer.
Repair if necessary.

If all these points are correct, replace the power assisted steering pressostat.

AFTER REPAIR	<p>Start the status and parameter check again from the beginning.</p>
---------------------	---

Fault finding - Status and parameter interpretation

DIAG 19	FAULT WARNING LIGHT CIRCUIT XR25 aid:None	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the condition of the warning light and its feed.
Repair if necessary.

Connect the bornier in place of the computer and check the insulation and continuity of the line **track 43 on the computer**.

Repair.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Status and parameter interpretation

DIAG 20	CANISTER BLEED XR25 aid: G16* = Canister bleed command	Fiche n° 27
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NOTES	No fault bargraphs should be illuminated.
--------------	---

Check the resistance of the canister bleed valve.
Replace the valve if necessary.

Ignition on, check during the timed phase for the presence of 12 V on track A of the canister bleed valve.
Repair if necessary.

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

Computer 42 —————> B Canister bleed valve

Repair if necessary.

Replace the canister bleed solenoid valve.

NOTE : when replacing the valve, shake it over a sheet of white paper, and also shake the adjacent pipes.
If pieces of carbon fall out, the canister must also be replaced.

AFTER REPAIR	Start the status and parameter check again from the beginning.
---------------------	--

Fault finding - Customer complaints

NOTES

Only refer to this customer complaint after a complete check using the XR25.

STARTING FAULTS

Chart 1

IDLE SPEED FAULTS

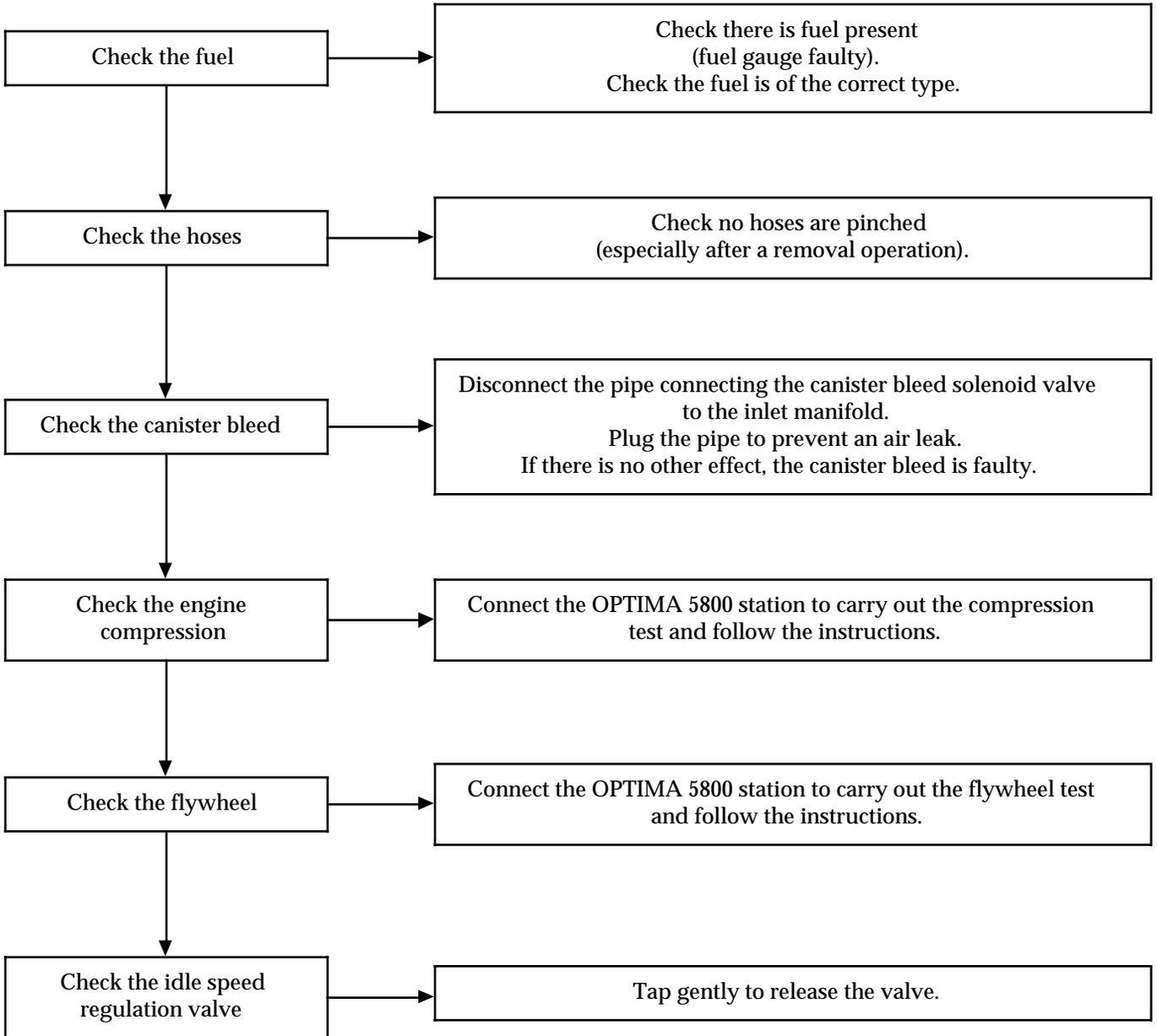
Chart 2

BEHAVIOUR WHILE DRIVING

Chart 3

Chart 1	STARTING FAULTS
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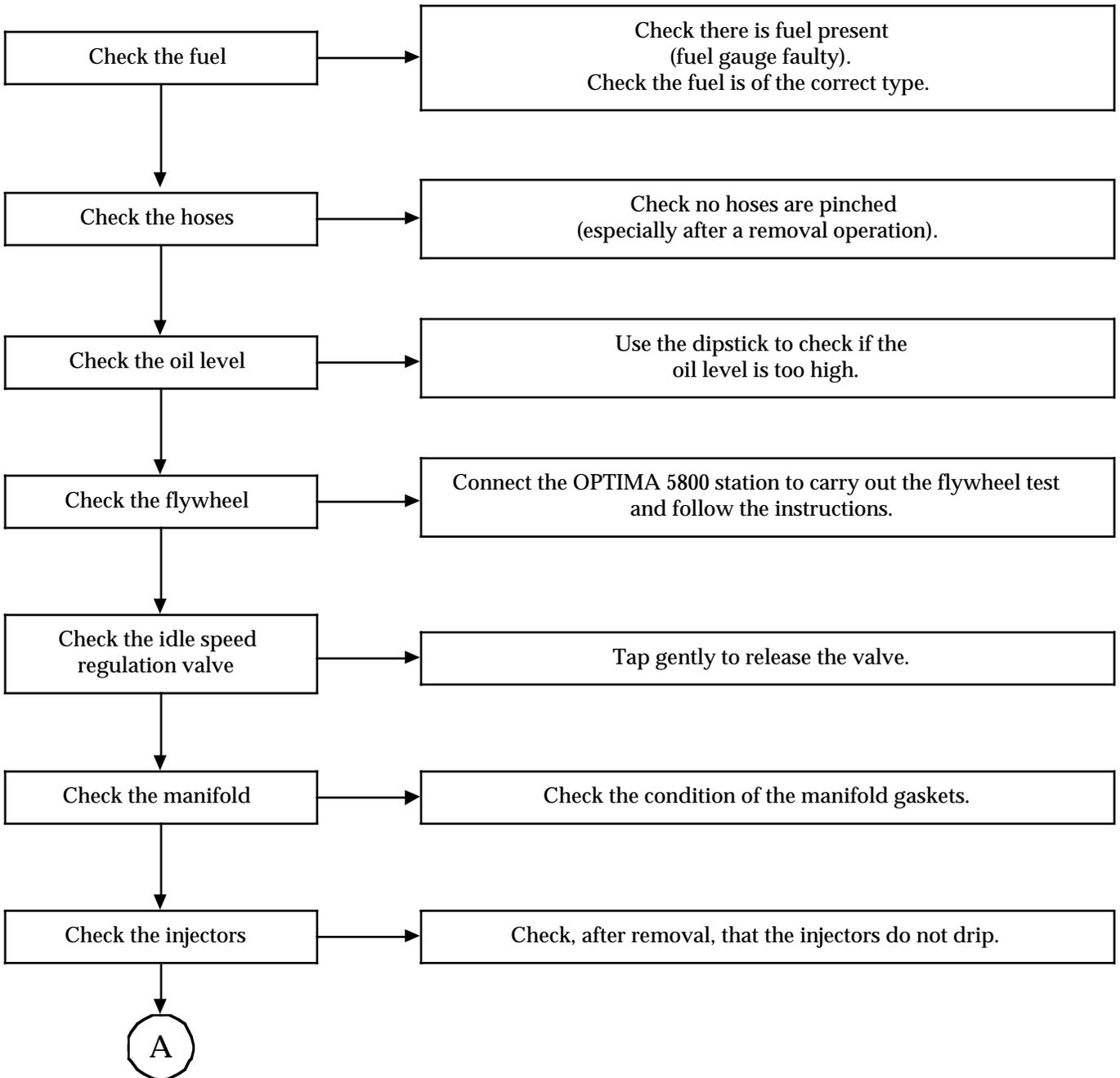
NOTES	Only refer to this customer complaint after a complete check using the XR25.
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AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
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Chart 2	IDLE SPEED FAULTS
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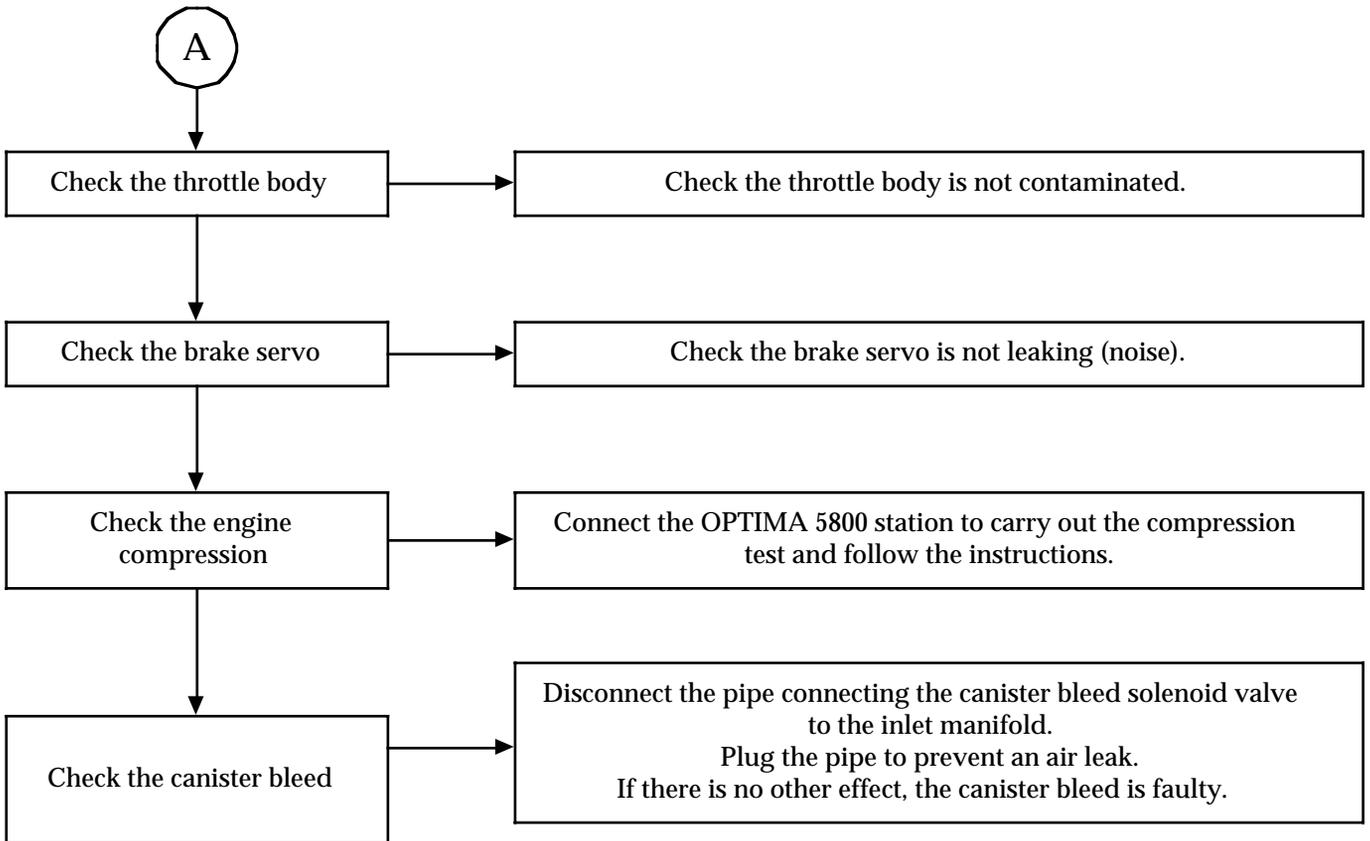
NOTES	Only refer to this customer complaint after a complete check using the XR25.
--------------	--



AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
---------------------	---

Chart 2 CONT	
------------------------	--

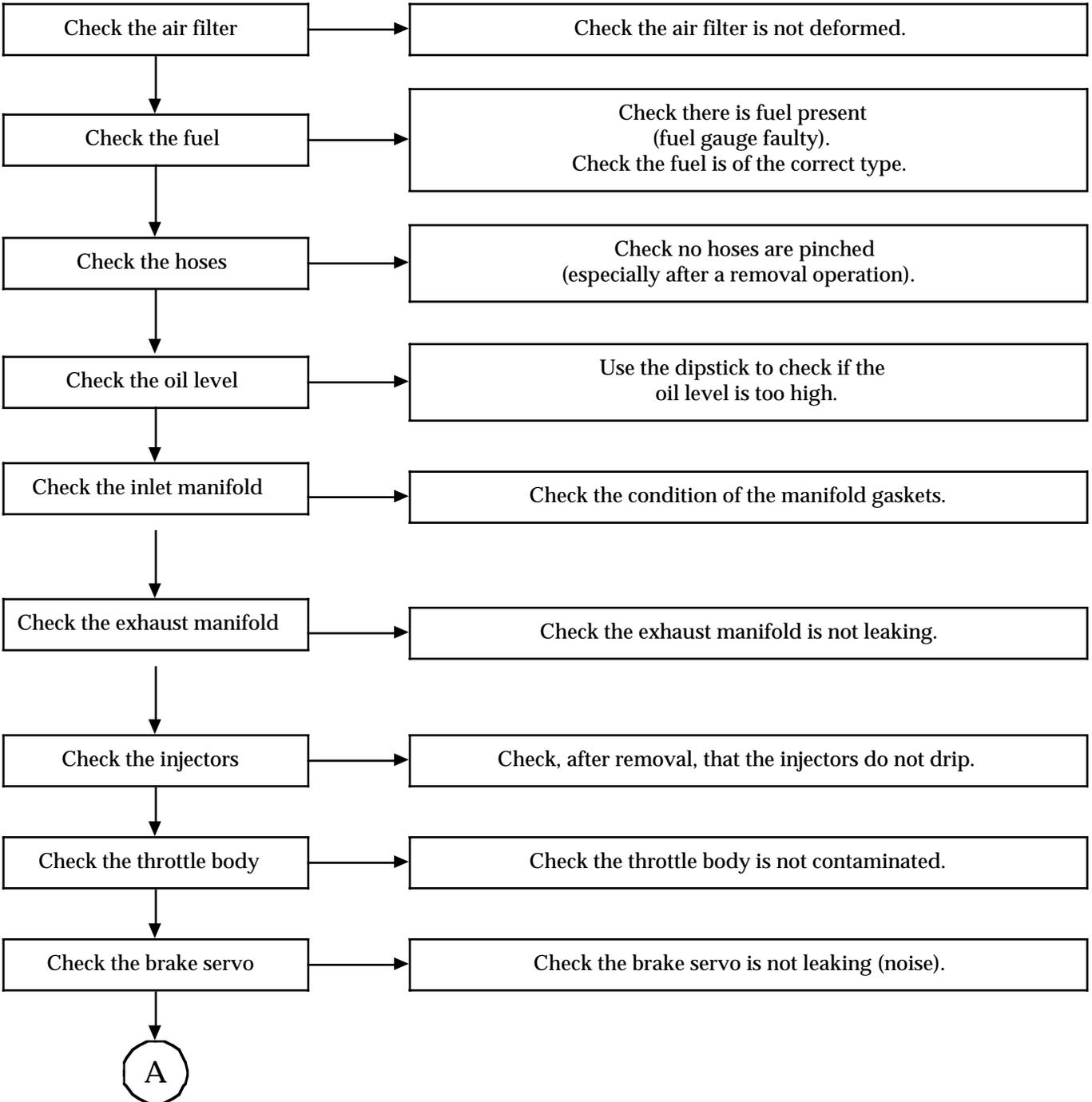
NOTES	Only refer to this customer complaint after a complete check using the XR25.
--------------	--



AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
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Chart 3	BEHAVIOUR WHILE DRIVING
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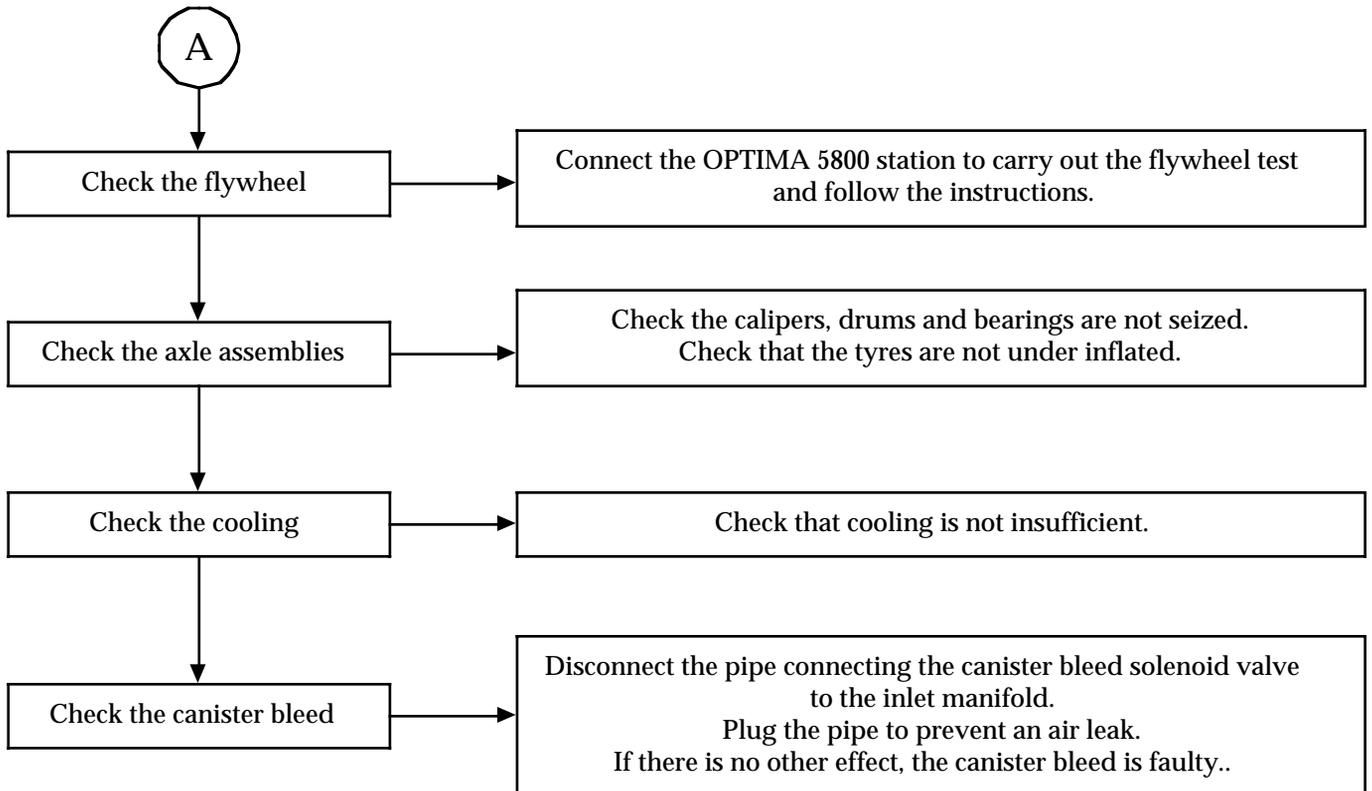
NOTES	Only refer to this customer complaint after a complete check using the XR25.
--------------	--



AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
---------------------	---

Chart 3 CONT	
------------------------	--

NOTES	Only refer to this customer complaint after a complete check using the XR25.
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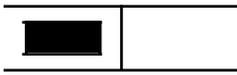
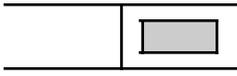
AFTER REPAIR	Erase the computer memory using G0** and carry out a road test.
---------------------	---

For further details, refer to section 12

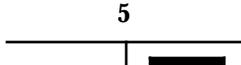
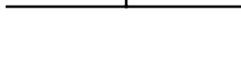
Injector resistance	=	14.5 Ω	
Idle regulation stepping motor resistance	:	A - D = 100 Ω B - C = 100 Ω	
Canister bleed valve resistance	=	35 Ω	
Ignition coil resistance	:	Primary = 1-4 ; 1-3 ; 2-3 ; 2-4 = 1.5 Ω 3-4 = 0.6 Ω	
		Secondary = 8 kΩ	
Oxygen sensor heating resistance	=	3 to 15 Ω	
Throttle potentiometer resistance	:	no load A-B= 1300 Ω A-C= 1360 Ω B-C= 2300 Ω	full load A-B= 1300 Ω A-C= 2350 Ω B-C = 1260 Ω
Flywheel signal resistance	=	220 Ω	
Fuel pressure	=	3 bars ignition on/ 2.5 bars at idle speed	
Value for: CO	=	0.3 % maximum	
HC	=	100 ppm maximum	
CO2	=	14.5 % minimum	
Oxygen	=	0.97 < λ < 1.03	

Sensor resistance					
Temperature in °C	0	20	40	80	90
Air temperature sensor Resistance in ohms	5000 to 7000	1700 to 3300	500 to 1550	-	-
Coolant temperature sensor Resistance in ohms	6700 to 8000	2600 to 3000	1100 to 1300	270 to 300	200 to 215

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Dialogue with XR25	D13 (selector on S8)		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">9.NJ</div> Use fiche n° 27 fault test side
2	Interpretation of normally illuminated bargraphs		1  1 	Fault test Code present
3	Immobiliser		2 	If the vehicle does not have an immobiliser, this bargraph should be illuminated.
4	Change to status test	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side

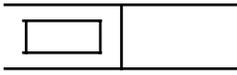
NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
5	Interpretation of normally illuminated bargraphs		1  <hr/> 2  <hr/> 3  <hr/> 4  <hr/> 5  <hr/> 9  <hr/> 12  <hr/> 19  <hr/> 19 	<p style="text-align: center;">Code present</p> <p style="text-align: center;">No load recognition</p> <p style="text-align: center;">Illuminated if immobiliser active</p> <p style="text-align: center;">+ after ignition information received</p> <p style="text-align: center;">Locking relay control effective</p> <p style="text-align: center;">Always illuminated if air conditioning option available</p> <p style="text-align: center;">Illuminates after erasing the memory to indicate that the operation has been carried out correctly</p> <p style="text-align: center;">Computer configured for: Manual gearbox (G50*2*)</p> <p style="text-align: center;">Automatic transmission(G50*1*)</p>

NOTES	Engine cold, ignition on.
--------------	---------------------------

Order of operations	Function to be checked	Action	Bargraph	Display and notes
6	Throttle position potentiometer	No load # 17	2 	$10 < X < 50$
		Accelerator pedal slightly depressed	2 	
		Full load # 17	2 	$185 < X < 245$
7	Absolute pressure sensor	# 01		$X = \text{Local atmospheric pressure}$
8	Coolant temperature sensor	# 02		$X = \text{Ambient temperature} \pm 5 \text{ } ^\circ\text{C}$
9	Air temperature sensor	# 03		$X = \text{Ambient temperature} \pm 5 \text{ } ^\circ\text{C}$
10	Idle speed regulation stepping motor	# 12		The value read is variable depending on the coolant temperature : : $11 \% \leq X \leq 100 \%$
11	Engine speed	# 06		$X = 0 \text{ rpm}$
12	Canister bleed	# 23		$X = 0.7 \%$

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once (air conditioning not selected)
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Change to status test	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side
2	No fault present		20 	Ensure this bargraph is not flashing, otherwise enter G02* and turn over the fiche. IMPORTANT: This bargraph may flash if the vehicle has no immobiliser. Ignore this bargraph if fault bargraph 2 RH side is illuminated and *22 = 2 dEF. Repair the faulty component the erase the memory (G0**) and return to the status test (G01*)
3	Battery voltage	# 04 if in # 04 then # 06		13 volts < X < 14.5 volts X < 12.7 volts Engine speed < X < 880 rpm nominal

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once (air conditioning not selected)
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Order of operations	Function to be checked	Action	Bargraph	Display and notes		
4	Interpretation of normally illuminated bargraphs	-	<p>1</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td style="width: 50%; height: 20px;"></td><td style="width: 50%; height: 20px; background-color: black;"></td></tr> </table>			Code present
			<p>2</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td style="width: 50%; height: 20px;"></td><td style="width: 50%; height: 20px; background-color: black;"></td></tr> </table>			No load recognition
			<p>3</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td style="width: 50%; height: 20px; background-color: black;"></td><td style="width: 50%; height: 20px;"></td></tr> </table>			Engine speed information received
			<p>4</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td style="width: 50%; height: 20px;"></td><td style="width: 50%; height: 20px; background-color: black;"></td></tr> </table>			+ after ignition information received
			<p>5</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td style="width: 50%; height: 20px;"></td><td style="width: 50%; height: 20px; background-color: black;"></td></tr> </table>			Locking relay control effective
			<p>6</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td style="width: 50%; height: 20px;"></td><td style="width: 50%; height: 20px; background-color: black;"></td></tr> </table>			Idle speed regulation active
			<p>6</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td style="width: 50%; height: 20px; background-color: black;"></td><td style="width: 50%; height: 20px;"></td></tr> </table>			Richness regulation active

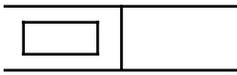
NOTES	Engine warm, at idle speed, after fan assembly has operated at least once (air conditioning not selected)
--------------	---

Order of operations	Function to be checked	Action	Bargraph	Display and notes
4 <i>(cont)</i>	Interpretation of normally illuminated bargraphs <i>(cont)</i>	-	<p>7</p> 	Fuel pump active
			<p>9</p> 	Always illuminated if air conditioning option available
			<p>12</p> 	Illuminates after erasing the memory to indicate that the operation has been carried out correctly
			<p>19</p> 	Computer configured for: Manual gearbox (G50*2*)
			<p>19</p> 	Automatic transmission(G50*1*)

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once (air conditioning not selected)
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Order of operations	Function to be checked	Action	Bargraph	Display and notes
5	Engine idle speed	<p>Without air conditioning</p> <p># 06</p> <p># 12</p> <p># 44</p> <p>With air conditioning and without fast idle request</p> <p># 06</p> <p># 44</p> <p>With air conditioning and fast idle request</p> <p># 06</p> <p># 44</p>	<p style="text-align: center;">6</p> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">9</p> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">9</p> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">10</p> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">9</p> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">10</p> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100%; height: 20px; margin-bottom: 5px;"></div>	<p style="text-align: center;">$X = 740 \pm 50 \text{ rpm}$</p> <p style="text-align: center;">$4 \% < X < 14 \%$</p> <p style="text-align: center;">$X \approx 250 \text{ W}$</p> <p style="text-align: center;">$X = 740 \pm 50 \text{ rpm}$</p> <p style="text-align: center;">$250 \leq X \leq 4000 \text{ W}$</p> <p style="text-align: center;">$X = 850 \pm 50 \text{ rpm}$</p> <p style="text-align: center;">$250 \leq X \leq 4000 \text{ W}$</p>
6	Anti-pinking noise measurement	<p># 13 (3500 rpm, no load)</p>		X variable and not zero

NOTES	Engine warm, at idle speed, after fan assembly has operated at least once (air conditioning not selected)
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Order of operations	Function to be checked	Action	Bargraph	Display and notes
7	Manifold pressure	# 01 no consumers		X is variable and is approximately $270 \leq X \leq 430$ mb (this pressure varies with altitude)
8	Richness regulation	Stable engine speed of 2500 rpm then idle speed # 05 # 35	<div style="text-align: center;">6</div>  <div style="text-align: center;">6</div> 	X varies in the range from 50 to 900 mV approximately X is close to 128 and varies slightly with a maximum of 255 and minimum of 0
9	Adaptive idle speed correction	# 21		- 4.3 % < X < 3.9 % (average value after erasing the memory : 0)
10	Canister bleed	# 23	<div style="text-align: center;">11</div> 	Canister bleed is prevented. The solenoid valve remains closed. X = 0.7 %
11	PAS pressostat	# 06	<div style="text-align: center;">13</div> 	X = 800 rpm
12	Fan assembly	# 02		The fan must operate when the temperature exceeds 99 °C

NOTES	Checks to be carried out during a road test.
--------------	--

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Change to status test	G01*		<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">10.NJ</div> Use fiche n° 27 status test side
2	No fault present		20 	Ensure this bargraph is not flashing, otherwise enter G02* and turn over the fiche. IMPORTANT: This bargraph may flash if the vehicle has no immobiliser. Ignore this bargraph if fault bargraph 2 RH side is illuminated and *22 = 2 DEF. Repair the faulty component the erase the memory (G0**) and return to the status test (G01*)
3	Canister bleed	# 23	11 	Canister bleed is authorised X = variable and > 0.7
4	Vehicle speed information	# 18		X = vehicle speed read on speedometer
5	Pinking sensor	Vehicle under load and engine speed 2000 rpm # 13 # 15		X = variable and not zero $0 \leq X \leq 6$ (if there is a sensor fault, the advance is retarded systematically by 4°, which is not visible using # 15)

NOTES	Checks to be carried out during a road test.
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Order of operations	Function to be checked	Action	Bargraph	Display and notes
6	Adaptive richness	After programming phase # 30 # 31		$106 \leq X \leq 150$ (average value after erasing the memory : 128) $106 \leq X \leq 150$ (average value after erasing the memory : 128)

ABS BOSCH 5.3

FAULT FINDING

CONTENTS

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CONDITIONS FOR APPLICATION FOR THE TESTS DEFINED IN THIS FAULT FINDING

The tests described in this fault finding are only to be applied when the wording of the fault corresponds exactly to the display on the XR25 kit.

If a fault is dealt with because there is a flashing bargraph, the conditions for confirming the existence of an actual fault (and the need to apply the fault finding) can be found in the "Notes" or at the beginning of the bargraph interpretation.

If a bargraph is only interpreted when it is permanently illuminated, the application of the recommended tests in the fault finding when the bargraph is flashing will not allow you to determine the origin of the memorisation of this fault. In this case, only a test of the wiring and the connections of the component in question must be carried out (the fault is simply memorised as it was not present at the time of testing).

NOTE : The ignition must have been switched off before the XR25 kit is used.

INDISPENSABLE TOOLING REQUIRED FOR OPERATIONS ON THE ABS SYSTEM

- XR25 kit.
- XR25 cassette n° 17 minimum.

Reminders : When there is intermittent fault memorisation, the ABS warning light will illuminate the next time the vehicle is used until the car reaches 7.5mph (12 km/h). When the fault is memorised, a counter relating to the fault is set at 40 . This value is reduced by one each time the ignition is turned on if the fault is not present when the vehicle exceeds 7.5mph (12 km/h). When the reading on the counter is equal to 1, it remains at 1 and the fault is not erased.

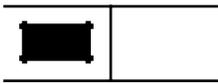
PRESENTATION OF XR25 FICHE N° 53

N°53		S8 code : D 1 1 read : n.53	
1	<input type="checkbox"/>	FEED / COMPUTER	CODE PRESENT <input type="checkbox"/>
2	<input type="checkbox"/> FR LH	INLET SOL. VALVE CIRCUIT	FR RH <input type="checkbox"/>
3	<input type="checkbox"/> RR LH		RR RH <input type="checkbox"/>
4	<input type="checkbox"/> FR LH	EXHAUST SOL. VALVE CIRCUIT	FR RH <input type="checkbox"/>
5	<input type="checkbox"/> RR LH		RR RH <input type="checkbox"/>
6	<input type="checkbox"/> FR LH	WHEEL SPEED SENSOR CIRCUIT	FR RH <input type="checkbox"/>
7	<input type="checkbox"/> RR LH		RR RH <input type="checkbox"/>
8	<input type="checkbox"/> FR LH	WHEEL SPEED SIGNAL SENSORS	FR RH <input type="checkbox"/>
9	<input type="checkbox"/> RR LH		RR RH <input type="checkbox"/>
10		PUMP MOTOR CIRCUITS	*30 <input type="checkbox"/>
BOSCH ABS		ADDITIONAL CHECKS : # . . (see note) 01 FR RH wheel speed Km/h 02 FR LH wheel speed Km/h 03 RR RH wheel speed Km/h 04 RR LH wheel speed Km/h 06 feed volts 12 computer identification 2 5 5. 5 if X66 2 2 0. 5 if X65 / 76 2 14. 5 if X54 PH2 90 Card number (53)	
Erase fault memory : G 0 ** End of test : G13 *			
11	<input type="checkbox"/>	SOL. VALVE FEED	
12	<input type="checkbox"/>	STOP CIRCUIT (CO)	TARGET FOR ONE WHEEL <input type="checkbox"/>
13	<input type="checkbox"/>	BRAKE PEDAL DEPRESSED ← → RELEASED <input type="checkbox"/>	
14			
15			
16			
17			
18			
19			
20			
CONTROL MODES : G . . * (if veh. speed is zero and for SV tests, depress brake pedal) 03 Test FR LH sol. valves 04 Test FR RH sol. valves 05 Test RR LH sol. valves 06 Test RR RH sol. valves 20 Engine and sol. valve static test			
NOTE : for safety, the computer can exit diag. when driving along			17 ANG

FI21753

SYMBOLISATION OF THE BARGRAPHS

- Of faults (always on coloured background) :

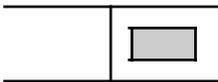


If illuminated, signals a fault on the product tested. The associated text describes the fault.

This bargraph may be:

- Illuminated : fault present.
- flashing : fault memorised.
- Extinguished : fault absent or not found.

- Of status (always on white background) :



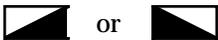
Bargraph is always on the upper right hand side

If illuminated, this signals the establishment of dialogue with the product computer
If it remains extinguished :

- The code does not exist.
- There is a fault in the XR25, the computer or the XR25/computer connection.

The representation of the following bargraphs indicates their initial status:

Initial status : (ignition on, engine stopped, without operator action).



or

Indefinite

illuminated when the function or condition specified on the fiche is met



Extinguished



Illuminated

extinguished when the function or condition specified on the fiche is no longer met.

- Supplementary information:

Certain bargraphs have a *. Command*.., when the bargraph is illuminated, allows supplementary information on the type of fault or status arising to be displayed.

Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	Fiche n° 53
<p>Bargraph 1, right hand side extinguished</p> <p><u>Code present</u></p>	

NOTES	None
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Check that the XR25 kit is not the cause of the fault by trying to communicate with the computer of another vehicle. If the XR25 kit is not at fault and it will not communicate with any other computer in the same vehicle, it is possible that a faulty computer is corrupting fault finding lines K and L . Locate this computer by disconnecting the lines one by one.

Check that the ISO interface is correctly in position **S8** and that you are using the most recent XR25 cassette and the correct access code.

Check the battery voltage and carry out the necessary operations to obtain the correct voltage(9.5 Volts< U battery<17.5 Volts)

Check the presence and condition of the ABS fuse on the passenger compartment fuse board (**10A**).
 Check the connection of the computer connector and the condition of its connection.
 Check the connection and condition of the connections at the intermediate connection **R107** dashboard / front of engine and **R255** front of engine / ABS.
 Check the ABS earth wires (tighten the two earth screws above the ABS assembly).
 Check that the computer is correctly fed :

- **earth on track 19** of the **31 track connector**,
- **+ after ignition feed on track 15** of the **31track connector**.

Check that the diagnostic socket is correctly fed :

- **+ before ignition feed on track 16**,
- **earth on track 5**.

Check the continuity and insulation of the lines in the diagnostic socket / ABS computer connection:

- between track **12** of the computer connector and track **15** of the diagnostic socket,
- between track **11** of the computer connector and track **7** of the diagnostic socket.

If dialogue is still not established after these tests, replace the ABS computer.,

AFTER REPAIR	When communication is established, deal with any fault bargraphs which may be illuminated.
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Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	Fiche n° 53
<p>Bargraph 1 left hand side illuminated</p> <p><u>Power supply/computer</u></p>	

<p>NOTES</p>	<p>None.</p>
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Check the condition and position of the **60A** ABS fuse in the engine connection unit.

Ensure continuity between this fuse and tracks 17 and 18 of the computer connector (presence of positive before ignition feed on both tracks). Check the tightness and condition of the battery terminals.

Check the connections on the 31 track connector of the ABS computer.

Check the ABS earths (above the hydraulic assembly) and visually check all the ABS wiring.

Erase the computer memory, exit the fault finding (**G13***) and switch off the ignition.

Carry out a new XR25 test. If the "power supply / computer" fault persists, replace the ABS computer.

<p>AFTER REPAIR</p>	<p>After replacing the computer, carry out another XR25 test.</p>
----------------------------	---

Fault finding - Interpretation of XR25 bargraphs

Fiche n° 53

2 - 3 - 4 - 5



Bargraphs 2, 3, 4 or 5 right or left hand side flashing
Solenoid valve circuit

NOTES

Even if present at time of testing, these faults will always be declared by a flashing bargraph.

To confirm their presence and therefore the need to apply the fault finding described below start command G20*. The fault is present if the bargraph appears illuminated at the end of the command.

If bargraph 11 left hand side is also illuminated, deal with bargraph 11 left hand side as a priority.

Check the ABS earths (tightening of the two screws above the hydraulic assembly).

Check the condition and position of the **60A** ABS fuse in the engine connection unit.

Check the connection and condition of the connections on the 31 track connector of the computer.

Erase the computer memory, exit the fault finding mode(G13*) switch off the ignition.
 Switch on the ignition and carry out a new test with the XR25 kit, using command G20*.
 If the fault "solenoid valve circuit"reappears, replace the ABS computer.

AFTER REPAIR

Erase computer memory(GO**).
 Carry out a road test followed by a check with the XR25 kit.

Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	Fiche n° 53
<p>Bargraph 6 left hand side illuminated</p> <p><u>Front left wheel sensor circuit</u></p>	

NOTES	None.
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Check the connection and condition of the sensor connections.
 If the connector is correct, check the resistance of the sensor at its connector..
 Replace the sensor if its resistance is not approximately **1.6 Kohms (1.6 Kohms ± 320 ohms)**.

If the resistance is correct, check and ensure the continuity of the connection between the sensor connector and the computer connector:

- between one track of the sensor connector and track 7 of the computer connector,
- between the other track of the sensor connector and track 6 of the computer connector.

Also check the insulation between these connections.

Carry out a visual inspection of the sensor wiring and check the quality of the connection on the 31 track computer connector.

If all the checks are correct, reconnect the computer and the wheel speed sensor then erase the computer memory.

Exit fault finding mode(G13*) and switch off the ignition.

Switch the ignition on and replace the sensor if the fault reappears.

If the fault reappears after replacing the sensor, replace the computer.

AFTER REPAIR	<p>Erase computer memory(GO**).</p> <p>Carry out a road test followed by a check with the XR25 kit.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	Fiche n° 53
<p>Bargraph 6 Right hand side illuminated</p> <p><u>Front right wheel sensor circuit</u></p>	

NOTES	None.
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Check the connection and condition of the sensor connections.

If the connector is correct, check the resistance of the sensor at its connector.

Replace the sensor if its resistance is not approximately **1.6 Kohms (1.6 Kohms ± 320 ohms)**.

If the resistance is correct, check and ensure the continuity of the connections between the sensor connector and the computer connector :

- between one track of the sensor connector and **track 3** of the computer connector,
- between the other track of the sensor connector and **track 5** of the computer connector.

Also check the insulation between these connections.

Carry out a visual inspection of the sensor wiring and check the quality of the connections on the 31 track computer connector.

If all the checks are correct, reconnect the computer and the wheel speed sensor, then erase the computer memory.

Exit the fault finding mode(**G13***) and switch off the ignition.

Switch the ignition on and replace the sensor if the fault reappears .

If the fault reappears after replacing the sensor, replace the computer.

AFTER REPAIR	<p>Erase computer memory(GO**).</p> <p>Carry out a road test followed by a check with the XR25 kit.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>7</p> 	<p style="text-align: right;">Fiche n° 53</p> <p>Bargraph 7 left hand side illuminated <u>Rear left wheel sensor circuit</u></p>
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NOTES	None.
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Check the connection and condition of the sensor connections.

Check the connections at the intermediate connection under the body (**R101**).

If the connector and connection are correct, check the resistance of the sensor at its connector. Replace the sensor if the resistance is not approximately **1.6 Kohms (1.6 Kohms ± 320 ohms)**.

If the resistance is correct, check and ensure the continuity of the connections between the sensor connector and the computer connector :

- between one track of the sensor connector and **track 8** of the computer connector (via **track B** of the connector under the body **R101**),
- between the other track of the sensor connector and **track 9** of the computer connector (via **track A** of the connector under the body **R101**).

Also check the insulation between these connections.

Carry out a visual inspection of the sensor wiring and check the quality of the connections on the 31 track computer connector.

If all checks are correct, reconnect the computer and wheel speed sensor, then erase the computer memory.

Exit fault finding mode(G13*) and switch off the ignition.

Switch on the ignition and replace the sensor if the fault reappears.

If the fault reappears after replacing the sensor, replace the computer.

AFTER REPAIR	<p>Erase computer memory(GO**). Carry out a road test followed by a check with the XR25 kit.</p>
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Fault finding - Interpretation of XR25 bargraphs

7 	Fiche n° 53
Bargraph 7 Right hand side illuminated <u>Rear right wheel sensor circuit</u>	

NOTES	None.
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Check the connection and condition of the sensor connections.

Check the connections at the intermediate connector under the body (**R101**).

If the connector and connection are correct , check the resistance of the sensor at its connector.
Replace the sensor if its resistance is not approximately **1.6 Kohms (1.6 Kohms ± 320 ohms)**.

If the resistance is correct, check and ensure the continuity of the connections between the sensor connector and the computer connector :

- between one track of the sensor connector and **track 1** of the computer connector (via **track D** of the connector under the body **R101**),
- between the other track of the sensor connector and **track 2** of the computer connector (via **track C** of the connector under the body **R101**).

Also check the insulation between these connections.

Carry out a visual inspection of sensor wiring and check the quality of the connections on the 31 track computer connector.

If all checks are correct, reconnect the computer and the wheel speed sensor, then erase the computer memory.

Exit fault finding mode(**G13***) and switch off the ignition.

Switch on the ignition and replace the sensor if the fault reappears.

If the fault reappears after replacing the sensor, replace the computer.

AFTER REPAIR	Erase computer memory(GO**). Carry out a road test followed by a check with the XR25 kit.
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Fault finding - Interpretation of XR25 bargraphs

<p>8</p> 	Fiche n° 53
<p>Bargraph 8 right or left hand side flashing</p> <p><u>Front right or front left wheel sensor signal</u></p>	

NOTES	<p>Even if they are present at time of testing, these faults will always be declared by BG 8 flashing on the left or right hand side.</p> <p>To confirm their presence and therefore the need to apply the fault finding below, carry out a road test. The fault is present if the bargraph illuminates during the test.</p> <p>If bargraphs 6 and 8 left hand side are both illuminated, deal with bargraph 6 first.</p> <p>If bargraphs 6 and 8 right hand side are both illuminated, deal with bargraph 6 first.</p>
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Check the quality of the wheel speed sensor mounting (its position and that it is tightened to recommended torque). Check the sensor / target air gap over one wheel revolution : **0.1 mm < air gap < 1.9 mm**. Check conformity of the target (condition, **number of teeth=26**)

Check the connection and condition of the sensor connections.
If the connector is correct, check the resistance of the sensor at its connector.
Replace the sensor if its resistance is not approximately **1.6 Kohms (1.6 Kohms ± 320 ohms)**.

Carry out a visual inspection of the sensor wiring and check the quality of the connections on the 31 track computer connector.

If all checks are correct, reconnect the computer and the wheel speed sensor, then erase the computer memory.
Leave fault finding mode(**G13***) and carry out a road test. Replace the sensor if the fault reappears.

If the fault reappears after replacing the sensor, it may be caused by an operating fault on a solenoid valve and it is therefore necessary to carry out the hydraulic check of the solenoid valves with the XR25 kit with command **G03*** or **G04*** (consult the section "Aid"). If the ten unlocking/locking cycles do not occur on one of the wheels, replace the hydraulic assembly.

If the hydraulic assembly is not at fault, replace the computer.

AFTER REPAIR	<p>Erase computer memory(GO**).</p> <p>Carry out a road test followed by a check with the XR25 kit.</p>
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

9



Fiche n° 53

Bargraph 9 right or left hand side flashing
Rear left or rear right wheel sensor signal

NOTES

Even if present at time of test, these faults will always be declared by BG9 flashing on the left or right hand side.
 To confirm their presence and therefore the need to apply the fault finding below, carry out a road test. The fault is present if the bargraph illuminates during the test.
 If bargraphs 7 and 9 left hand side are both illuminated, deal with bargraph 7 first.
 If bargraphs 7 and 9 right hand side are both illuminated, deal with bargraph 7 first.

Check the quality of the wheel speed sensor mounting (position and torque tightening).
 Check the connection and condition of the sensor connections.
 Check the connections at the intermediate connector under the body **R101**.
 If the connector is correct, check the resistance of the sensor at its connector.
 Replace the sensor if its resistance is not approximately **1.6 Kohms (1.6 Kohms ± 320 ohms)**.

Carry out a visual inspection of the sensor wiring and check the quality of the connections on the 31 track computer connector.

If all checks are correct, reconnect the computer and the wheel speed sensor, then erase the computer memory. Leave fault finding mode(**G13***) and carry out a road test.
 If the fault reappears, check the conformity of the target:condition, **number of teeth = 26**.

If all checks are correct, erase the computer memory, leave fault finding mode and carry out a road test.
 Replace the sensor if the fault reappears.

If the fault reappears after replacing sensor, it could be caused by a solenoid valve operating fault. It is therefore necessary to carry out a hydraulic test of the solenoid valves with the XR25 kit with command **G05*** or **G06*** (consult section "Aid"). If the ten unlocking/locking cycles do not occur on one of the wheels, replace the hydraulic assembly.

If the hydraulic assembly is not at fault, replace the computer.

AFTER REPAIR

Erase computer memory(**GO****).
 Carry out a road test followed by a check with the XR25 kit.

Fault finding - Interpretation of XR25 bargraphs

<p>10</p> 	<p>Bargraph 10 right hand side illuminated or flashing</p> <p><u>Pump motor circuit</u></p> <p>XR25 aids: * 30 1.dEF : Permanent signal or CO earth. 2.dEF : Motor not turning over.</p>	Fiche n° 53
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NOTES	<p>If bargraph 10 RH is flashing, confirm the presence of the fault and therefore the need to apply fault finding below, using command G20* on the XR25 kit.</p> <p>The fault is present if the bargraph re-illuminates at the end of the command.</p>
--------------	--

1.dEF	NOTES	Replace the computer if the pump motor is operating permanently.
--------------	--------------	--

Check the ABS earths (tightening of the two earth bolts above the hydraulic assembly).

Check/ ensure continuity between the ABS earth and **track 16** of the computer connector.

Check locking of the two-track connector of the pump motor.

If all checks are correct, reconnect the computer and erase the memory with command **G0****.

Leave fault finding mode(**G13***) and carry out a road test.

Replace the computer if the fault reappears.

2.dEF	NOTES	None.
--------------	--------------	-------

Replace the hydraulic assembly (mechanical locking of the pump, ...).

AFTER REPAIR	<p>Erase computer memory(GO**).</p> <p>Carry out a road test followed by a check with the XR25 kit.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>11</p> 	Fiche n° 53
<p>Bargraph 11 left hand side illuminated</p> <p><u>Solenoid valve power supply fault</u></p>	

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

Carry out operations necessary for obtaining correct voltage between **tracks 19 and 17/18** of the 31-track ABS computer connector (**9.5 volts < correct voltage < 17.5 volts**) :

- Check tightness and condition of battery terminals.
- Check the **60A** fuse in the engine connection unit (white base).
- Ensure continuity between the **60A** fuse and **tracks 17 and 18** of the computer connector.
- Check the ABS earths (tightening of the two earth bolts above the hydraulic assembly).
- Check/ ensure continuity between the ABS earth and **track 19** of the computer connector.

If all the checks are correct, reconnect the computer then erase its memory with command **G0****.

Leave fault finding mode(**G13***) and carry out a road test. Replace the computer if the fault reappears.

AFTER REPAIR	<p>Erase computer memory(G0**).</p> <p>Carry out a road test followed by a check with the XR25 kit.</p>
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Fault finding - Interpretation of XR25 bargraphs

<p>12</p> 	Fiche n° 53
<p>Bargraph 12 left hand side illuminated or flashing</p> <p><u>Brake light circuit</u></p>	

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

Press the brake pedal while observing **right and left bargraph 13**.

Are the positions "pedal released" and "pedal depressed" registered?

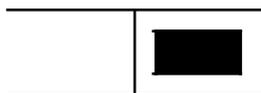
YES	Check the two brake light bulbs and the earth of the rear light units (no earthing of track 14 across the bulbs when pedal is not depressed).
------------	--

NO	Apply the fault finding described in the interpretation of bargraph 13 right and left hand side for " Bargraph 13 left hand side extinguished, brake pedal depressed ".
-----------	---

AFTER REPAIR	Erase computer memory(GO**). Carry out a road test followed by a check with the XR25 kit.
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

12

**Bargraph 12 right hand side flashing**Target of one of the wheels

Fiche n° 53

NOTES

Even if present at moment of testing, this fault will always be declared by BG 12 RH side flashing.

To confirm its presence and therefore the need to apply the fault finding below, carry out a road test. The fault is present if the bargraph illuminates during the test.

Check the quality of wheel speed sensor mountings (position and that they are tightened to the recommended torque).

Check the conformity of the targets :condition, **number of teeth= 26**.

AFTER REPAIR

Erase computer memory(GO**).
Carry out a road test followed by a check with the XR25 kit.

NOTES

Only carry out this conformity check after a complete XR25 check.

Order of operations	Function to be checked	Action	Bargraph	Display and Comments
1	Dialogue with XR25	D11 (selector on S8)		
2	Computer conformity	#12		
3	Operation of ABS warning light- computer initialisation check	Ignition on		Two second illumination of warning light when ignition is switched on (consult fault finding if it remains illuminated or if it does not illuminate)
4	Acknowledgement that brake pedal is not pressed		13 	
5	Acknowledgement that brake pedal is pressed	Press brake pedal	13 	

Solenoid valve control for hydraulic inspection: G03* to G06*

Lift vehicle so that the wheels can be turned and check that they turn freely.
Keep the brake pedal pressed down so that the wheel being tested cannot be turned by hand (do not press the brake too hard to ensure you are at the releasing limit).

Enter G0X*  Ten cycles of unlocking/locking must be noted for the wheel concerned.

Pump motor control : G08*

Enter G08* and apply brake  Pump operation must be noted for 2 seconds.

Pump motor and solenoid valve control : G20*

Enter G20* and apply brake  Brief motor and solenoid valve operation must be noted.

Bleeding of hydraulic circuits : G15*3* front left / G15*4* front right / G15*5* rear left / G15*6* rear right

Apply the procedure described in the section "Bleeding the circuits" in the Workshop Repair Manual.

Fault finding - Customer Complaints

NOTES

Only consult this section after a complete check with the XR25 kit.

WARNING LIGHT FAULTS

- ABS warning light does not illuminate for 3 seconds after ignition switched on. **Chart 1**
- Permanent illumination of ABS warning light , ignition on. **Chart 2**
- ABS and / or brake warning light illuminates again after engine starts. **Chart 3**
- Temporary illumination of ABS and /or brake warning light when driving. **Chart 3**
- Brake warning light does not illuminate 1 second after switching on ignition **Chart 4**
- Brake warning light permanently illuminated, ignition on. **Chart 5**
- ABS and brake warning lights permanently illuminated, ignition on. **Chart 6**

FAULTS NOTED WHEN BRAKING WITH ABS REGULATION

- Locking of one or more wheels. **Chart 7**
- Pulling. **Chart 8**
- Wandering. **Chart 9**
- Unexpected ABS operation at low speed and little force applied to brake. **Chart 10**
- Unexpected ABS operation on poor road surface. **Chart 11**
- Unexpected ABS operation when using special equipment (mobile phone,CB...). **Chart 12**
- Extension of brake pedal travel following a regulation phase (with an irregular pedal when regulation begins). **Chart 13**
- Spongy pedal. **Chart 14**
- Brake pedal vibration. **Chart 15**
- Noise from pump, pipes or hydraulic assembly . **Chart 16**

Fault finding - Customer Complaints

NOTES

Only consult this section after a complete check with the XR25 kit.

OTHER CASES

— ABS and brake warning lights do not illuminate, computer disconnected.

Chart 17

— No communication with ABS computer.

Chart 18

Fault finding - Fault charts

Chart 1

ABS WARNING LIGHT DOES NOT ILLUMINATE FOR 3 SECONDS WHEN IGNITION SWITCHED ON**NOTES**

Only consult this section after a complete check with the XR25 kit.

Check the 10A instrument panel fuse on the passenger compartment fuse board (if the problem affects all instrument panel operations).

Switch off the ignition.
Disconnect the computer, then switch on the ignition again.
Does the ABS warning light illuminate?

yes

Carry out an inspection of the connections on the 31 track connector.
Replace the computer if the fault persists.

no

Check condition of ABS warning light bulb and its power supply.
Ensure continuity of connection between **track 20** of the computer connector and the ABS warning light.
If fault persists, check the instrument panel operation.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 2

**ABS WARNING LIGHT PERMANENTLY ILLUMINATED
WHEN IGNITION SWITCHED ON** (no fault declared by XR25)**NOTES**

Only consult this section after a complete check with the XR25 kit.

Disconnect the computer and check the shunt positioning in the 31 track connector (between **track 19** and **tracks 20 and 21**). Ensure on the computer side that a shunt opening pin is present between **tracks 19 and tracks 20 and 21** of the computer connector.

Reconnect the computer.
Check that there is continuity between **track 10** of the **R255** front of engine / ABS connector on the ABS side, and earth.
Is continuity ensured ?

yes

Look for a fault in the shunt or a short circuit to earth of the connection between **track 20** of the computer connector and **R255 on track 10**.

no

Look for a short circuit to earth of the connection between **track 10** of connection **R255** and the ABS warning light.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 3	REILLUMINATION OF ABS AND / OR BRAKE WARNING LIGHT AFTER STARTING THE ENGINE TEMPORARY ILLUMINATION OF ABS AND / OR BRAKE WARNING LIGHT WHEN DRIVING
NOTES	Only consult this section after a complete check with the XR25 kit.

Check the voltage of the computer power supply : **9.5 volts < correct voltage < 17.5 volts.**

If necessary, carry out the following operations :

- Check the battery charge (check the charging circuit if necessary).
- Check the tightness and condition of the battery terminals.
- Check the ABS earths (tightness of two earth bolts above the ABS assembly).

Disconnect the computer and check the condition and the positioning of the shunt in the 31 track connector (between **track 19** and **tracks 20 and 21**).

Check on the computer side, the condition of the shunt opening pin.

AFTER REPAIR	Carry out a road test, then a check with the XR25 kit.
---------------------	--

Fault finding - Fault charts

Chart 4

**BRAKE WARNING LIGHT DOES NOT ILLUMINATE 1
SECOND AFTER SWITCHING ON IGNITION****NOTES**

Only consult this section after a complete check with the XR25 kit.

Switch off the ignition.
Disconnect the computer then switch on the
ignition again.
Does the brake warning light illuminate?

yes

Check the connections on the computer
connector.
Replace the computer if the fault persists.

no

Check the condition of the brake warning
light bulb and its power supply.
Ensure continuity of the connection
between **track 21** on the computer
connector and the warning light.
If the fault persists, check the operation of
the instrument panel.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 5

**BRAKE WARNING LIGHT PERMANENTLY ILLUMINATED,
IGNITION ON****NOTES**

Only consult this section after a complete check with the XR25 kit.

This warning light is multi-purpose.

- Check the position of the handbrake and the circuit for its switch.
- Check the brake fluid level in the reservoir.
- Check the brake pad wear.

Ensure the insulation in relation to earth of the connection between **track 21** on the computer connector and the brake warning light.**AFTER REPAIR**

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 6

**ABS AND BRAKE WARNING LIGHTS PERMANENTLY
ILLUMINATED, IGNITION ON.****NOTES**

Only consult this section after a complete check with the XR25 kit.

Check the **10A ABS fuse** on the passenger compartment fuse board.

Check the ABS earths (tightness of two earth bolts above the ABS assembly).

Check the computer and the intermediate connections **R107** dashboard / front of engine and **R255** front of engine / ABS are correctly connected (also check the condition of the connections).

Check that the computer is correctly fed:

- Ensure the presence of + **after ignition feed on track 15** of the computer connector.
- Ensure the continuity to earth of tracks **16 and 19** on the computer connector.

If the fault persists, refer to Chart 2 and Chart 5.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 7

LOCKING OF ONE OR MORE WHEELS

NOTES

Only consult this section after a complete check with the XR25 kit.

REMINDER: Wheel locking on a vehicle equipped with ABS, or tyre squeal, considered by the customer as locking, can be linked to a normal reaction of the system and should not be systematically considered as a fault :

- locking is allowed below **3.75 mph (6 km/h)** (the system will not provide regulation).
- Braking with ABS regulation under very bad road conditions (high degree of tyre squeal).
- -----

On the other hand, if there really is wheel locking on one or more wheels, lift the vehicle so the wheels can be turned, and check :

- a possible incorrect connection in the speed sensor connection.
 - Use operations **#01, #02, #03 and #04** while turning the appropriate wheel and ensure the consistency of the results obtained .
 - If the value measured is zero, turn the other wheels to confirm a bad electrical connection of the sensors and repair the wiring.
- A possible incorrect connection of the hydraulic assembly pipes.
 - Use operations **G03*, G04*, G05* and G06*** while applying the brake and check for the ten cycles of unlocking/locking on the wheel concerned (consult section "Aid").
 - If the ten cycles do not occur on the wheel tested, (wheel remains locked), see if they occur on another wheel (if a bad connection is confirmed: repair).
 - If the ten cycles do not occur on a wheel and the pipes are correctly connected, replace the hydraulic assembly.
 - Check the condition of the ABS targets and that they conform.
 - Also check the sensor/target air gap by rotating each of the front wheels (the rear wheels cannot be checked) :

Front 0.1 mm < air gap over one rotation < 1.9 mm.

If the fault persists after these checks, replace the hydraulic assembly.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 8

PULLING

NOTES

Only consult this section after a complete check with the XR25 kit.

Disconnect a wheel speed sensor.
Start the engine and make sure only the ABS warning light illuminates. If the brake warning light illuminates too, do not drive the vehicle as the brake limiter function is no longer ensured.

Carry out a road test with the ABS non-operational.

Does the fault persist under these conditions?

yes

If the pedal travel is relatively long, bleed the brake circuit.
If it is normal, check the tyre pressure, the front axle assembly or possibly for leaks in the circuit.

no

Lift the vehicle so the wheels can be turned and check for :

- a possible incorrect connection in the speed sensors,
- a possible incorrect connection of the hydraulic assembly piping.

For these two checks, consult and apply the methods defined in Fault Chart 7. Check the condition of the ABS targets and that they conform. Also check the sensor/ target air gap by rotating each front wheel.

If the fault persists, replace the hydraulic assembly.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 9

WANDERING

NOTES

Only consult this section after a complete check with the XR25 kit.

Disconnect a wheel speed sensor.
Start the engine and make sure only the ABS warning light illuminates. If the brake warning light illuminates too, do not drive the vehicle as the brake limiter function is no longer ensured.

Carry out a road test with the ABS non-operational.

Does the fault persist under these conditions?

yes

Handling fault not linked to ABS system.
Check the condition and conformity of brake linings, check tyre pressures, front axle assembly, ...

no

Normal behaviour linked to system operation in the regulation phase essentially because of asymmetrical grip or poor road surface.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 10

**UNEXPECTED ABS OPERATION AT LOW SPEEDS AND
WHEN LITTLE PRESSURE APPLIED TO BRAKE PEDAL****NOTES**

Only consult this section after a complete check with the XR25 kit.

It is possible to feel brake pedal vibrations which are linked to reactions of the system in particular situations :

- Crossing speed bumps.
- Rear inside wheel lifts on tight bends.

This feeling may be connected to the simple action of the brake limiter when pressure is limited at the rear axle assembly.

If the problem is different, check the speed sensors connectors (micro-breaks) as well as the air gaps.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 11

**UNEXPECTED ABS OPERATION
UNDER POOR ROAD CONDITIONS****NOTES**

Only consult this section after a complete check with the XR25 kit.

Under poor road conditions, it is normal to feel jerky operation and vibration of the pedal and a higher degree of tyre squeal than on a good road surface.
This results in a feeling that there is variation in efficiency, but this is normal.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 12

**UNEXPECTED ABS OPERATION WHEN USING SPECIAL
EQUIPMENT (MOBILE PHONE,CB...)****NOTES**

Only consult this section after a complete check with the XR25 kit.

Check that equipment causing the problem during use is approved.
Check that this equipment has been correctly installed without modification to the original wiring, in particular, that of the ABS (connections to **earth** and + **after ignition/ before ignition** of the ABS are not permitted).

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 13

**BRAKE PEDAL TRAVEL EXTENDED FOLLOWING A
REGULATION PHASE
(WITH IRREGULAR PEDAL AT START OF REGULATION)****NOTES**

Only consult this section after a complete check with the XR25 kit.

Passage of air from the hydraulic assembly regulation channels to brake circuits.
Bleed the circuits according to the procedure recommended in the Workshop Repair Manual (use of XR25 command modes.).
After the operation, carry out a road test with ABS regulation.

If the fault persists, carry out the preceding operation once or twice more.
If customer complaint is particularly serious and bleeding brings about no improvement, replace the hydraulic assembly.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 14

SPONGY PEDAL

NOTES

Only consult this section after a complete check with the XR25 kit.

Presence of air in the brake circuits.

Bleed the circuits in the conventional way starting with the **rear right**, then **rear left**, **front left** then **front right**.

Repeat the operation if necessary.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 15

BRAKE PEDAL VIBRATION

NOTES

Only consult this section after a complete check with the XR25 kit.

Normal reaction of the brake pedal during an ABS regulation phase or pressure limitation at the rear axle assembly ("brake limiter" function).

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 16

NOISE FROM THE PUMP, PIPES OR HYDRAULIC ASSEMBLY

NOTES

Only consult this section after a complete check with the XR25 kit.

- Assembly vibration: check the presence and condition of the rubber assembly mounting pads.
 - Vibration of pipes : check that all pipes are well clipped into their fixing clips and that there is no contact between pipes or between pipes and bodywork.
- To determine the origin of the noise, it is possible to use functions **G03***, **G04***, **G05*** and **G06*** on the XR25 kit (consult section "Aid").

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 17

**ABS AND BRAKE WARNING LIGHTS DO NOT ILLUMINATE,
COMPUTER DISCONNECTED****NOTES**

Only consult this section after a complete check with the XR25 kit.

Disconnect the ABS computer .
Check if the shunt is present between **track 19** and **tracks 20 and 21** of the computer connector.

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

Fault finding - Fault charts

Chart 18

LACK OF COMMUNICATION WITH
ABS COMPUTER

NOTES

Only consult this section after a complete check with the XR25 kit.

Check that the XR25 kit is not the cause of the fault by trying to communicate with the computer of another vehicle. If the XR25 kit is not at fault and it will not communicate with any other computer in the same vehicle, it is possible that a faulty computer is corrupting fault finding lines K and L. Locate this computer by disconnecting the lines one by one.

Check that the ISO interface is correctly in position **S8** and that you are using the most recent XR25 cassette and the correct access code.

Check the battery voltage and carry out the necessary operations to obtain the correct voltage (9.5 Volts < U battery < 17.5 Volts)

Check the presence and condition of the ABS fuse on the passenger compartment fuse board (**10A**).
Check the connection of the computer connector and the condition of its connection.
Check the connection and condition of the connections at the intermediate connection **R107** dashboard / front of engine and **R255** front of engine / ABS.
Check the ABS earth wires (tighten the two earth screws above the ABS assembly).
Check that the computer is correctly fed :

- **earth on track 19** of the **31 track connector**,
- **+ after ignition feed on track 15** of the **31 track connector**.

Check that the diagnostic socket is correctly fed :

- **+ before ignition feed on track 16**,
- **earth on track 5**.

Check the continuity and insulation of the lines in the diagnostic socket / ABS computer connection:

- between track **12** of the computer connector and track **15** of the diagnostic socket,
- between track **11** of the computer connector and track **7** of the diagnostic socket.

If dialogue is still not established after these tests, replace the ABS computer.,

AFTER REPAIR

Carry out a road test, then a check with the XR25 kit.

AIR CONDITIONING

FAULT FINDING

CONTENTS

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- Connect the XR25 to the diagnostic socket.
- ISO selector in position **S8**
- Using fiche 61, enter code **D17**

n.61

PRECAUTION :

Conditions apply to the illumination of the warning lights on the control panel:

- The AC warning light illuminates when there is a request for air conditioning operation and when the fan is set to the first speed.
- The air recycling warning light illuminates under no particular conditions. It is memorised when the ignition is switched off.
- The heated rear screen warning light illuminates when engine speed > 600 rpm and there is a time limit of 15 minutes for operation of the heated screen. The function is not memorised when the ignition is switched off.

PRESENTATION OF XR25 FICHE N° 61

N°61		S8 code : D 1 7		read : n5 l		
1	<input type="checkbox"/> COMPUTER			CODE PRESENT <input type="checkbox"/>		
2	<input type="checkbox"/> * 02 REFRIGERANT FLUID SENSOR	SENSOR CIRCUITS		EVAPORATOR * 23 <input type="checkbox"/>		
3						
4	<input type="checkbox"/> * 04 COMPRESSOR CONTROL			RECYCLING MOTOR * 24 <input type="checkbox"/>		
5	<input type="checkbox"/> * 05 REAR SCREEN DEMISTER CTRL					
6	<input type="checkbox"/> * 06 FAN MOTOR CTRL (2) (CC. 1)			COMMANDE G.M.V (1) (CC. 1) * 28 <input type="checkbox"/>		
7	<input type="checkbox"/> +12 ACC			+ 12 BULB <input type="checkbox"/>		
8	<input type="checkbox"/> AIR CON. AIR			COMPRESSOR ACTIVE <input type="checkbox"/>		
9	<input type="checkbox"/> RECYCLING	CONTROL/ACTION		RECYCLING ACTIVE <input type="checkbox"/>		
10	<input type="checkbox"/> REAR SCREEN DEMISTER (if configured)			REAR SCREEN DEMISTER ACTIVE <input type="checkbox"/>		
AIR CON.			ADDITIONAL CHECKS : #..			
Erase fault memory : G 0 ** End of test : G13 *			03 Evaporator temp. °C 08 Fan speed % 14 Supply Volts 15 Engine speed rpm 16 Refrigerant fluid pressure bar			
11	<input type="checkbox"/> LOW SPEED ← cooling fan assy → HIGH SPEED <input type="checkbox"/>				CONTROL MODES : G...* 20 Rear screen demister 21 Compressor clutch 22 Fan speed 1 23 Fan speed 2 24 Recycling motor 25 AC cycled outlet 26 Tell-tale outlets 72 Write A/S date 73 Read A/S date	
12	<input type="checkbox"/> NO ENGINE SPEED INFO (DEPENDING ON VERSION)					
13	<input type="checkbox"/> INJECTION ← AIR CON. PROHIBITED BY : → A.T <input type="checkbox"/>					
14	<input type="checkbox"/> under pressure ← Gas pressure status → over pressure <input type="checkbox"/>					
15	may be illuminated if too cold : (14LH) or too hot (14 RH)					
CONFIGURATION (fixed display)						
16	<input type="checkbox"/> Rear screen demister	entry all or nothing		<input type="checkbox"/>		
17		with recycling motor timer		<input type="checkbox"/>		
18	<input type="checkbox"/> fluid pressure sensor	evaporator temp. sensor		<input type="checkbox"/>		
19	<input type="checkbox"/> siemens	SENSOR TYPE		<input type="checkbox"/> hokuriku		
20	<input type="checkbox"/> behr			<input type="checkbox"/> eeprom		
			Help : V9 Return to diag. mode : D Part No : G70a			
17 ANG						

FI21761

BARGRAPH SYMBOLS

FAULTS (always on a coloured background)

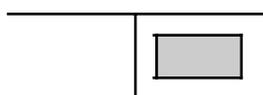


If illuminated, this indicates a fault on the product tested. The associated text defines the fault.

The bargraph may be :

- Permanently illuminated : fault present.
- Flashing : fault memorised.
- Extinguished : no fault or fault not found.

STATUS (always on a white background)



Bargraph always at the top right hand side.

If illuminated dialogue has been established with the computer for the product.

If it remains extinguished:

- The code does not exist.
- There is a fault with the tool, the computer or the XR25 / computer connection.

The representation of the following bargraphs indicates their initial status:

Initial status: (ignition on, engine stopped, no operator action)



or



Indefinite

illuminated when the function or condition on the fiche is met.



Extinguished



Illuminated

extinguishes when the function or condition specified on the fiche is no longer being met.

ADDITIONAL NOTES

Certain bargraphs have a *. The *.. command, when the bargraph is illuminated, allows additional information on the type of fault or status to be displayed.

Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	<p>Left hand bargraph 1 illuminated</p> <p><u>COMPUTER FAULT</u></p> <p>Fiche n° 61</p>
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<p>NOTES</p>	<p>None</p>
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Change the air conditioning control unit

<p>AFTER REPAIR</p>	<p>Enter G0** on the XR25.</p> <p>Check that the system operates correctly.</p>
----------------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>1</p> 	<p>Right hand bargraph 1 extinguished</p> <p><u>XR25 / CONTROL UNIT COMMUNICATION</u></p>	Fiche n° 61
---	--	-------------

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

Before establishing communication between the XR25 and the control unit, check that the ignition is switched on.

Ensure that the XR25 is not the cause of the fault by trying to communicate with a computer on another vehicle.

Check that the ISO interface is in position **S8** and that you are using the latest version of the XR25 cassette and the correct access code (**D 17**).

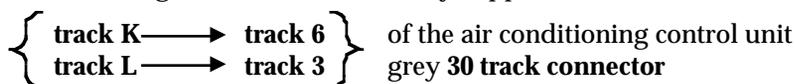
Check the battery voltage (**U > 10.5 volts**). Recharge the battery if necessary.

Check that the control unit connectors are engaged correctly.

Check that the air conditioning control unit is correctly supplied:

- **earth on track 4** of the red 15 track connector
- **+ after ignition on track 6** of the red 15 track connector

Check that the diagnostic socket is correctly supplied:



If there is still no dialogue between the XR25 and the control unit, change the air conditioning control unit.

AFTER REPAIR	You may begin the fault finding procedure.
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

4 	Left hand bargraph 4 illuminated <u>COMPRESSOR CONTROL</u> XR25 aid : C.O. open circuit C.C.1 short circuit to 12 volts	Fiche n° 61
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NOTES	Before any removal, enter G0** on the XR25 and reinitialise the system.
--------------	--

Check the continuity and that there is no short circuit on the wiring between **track 1** of the clutch and **tracks 2 and 17 of the grey 30 track connector** of the air conditioning control unit.

Repair the wiring if necessary.

Supply the compressor directly with 12 Volts and check that it operates.

Replace the compressor if necessary.

If the fault persists, replace the air conditioning control unit.

AFTER REPAIR	Check the system operates correctly by entering G21* on the XR25 (direct compressor control). Enter G0** on the XR25.
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

<p>4</p> 	<p>Right hand bargraph 4 illuminated</p> <p><u>AIR RECYCLING MOTOR</u></p>	Fiche n° 61
---	--	-------------

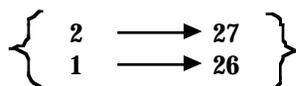
NOTES	None
--------------	------

Check that the evaporator sensor connector is correctly clipped into the resistance module.

Check the condition of the air recycling flap control motor.
On the motor connector, measure the resistance between the two tracks.
Replace the recycling motor if necessary.

Check the continuity and insulation from earth and from 12 Volts of the wiring between tracks:

resistance module
connector



30 track blue connector for air
conditioning control unit

Repair the faulty wiring.

If the fault persists, replace the air conditioning control unit.

AFTER REPAIR	<p>Enter G0** on the XR25.</p> <p>Check that the system operates correctly.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>5</p> 	<p>Left hand bargraph 5 illuminated Fiche n° 61</p> <p><u>HEATED REAR SCREEN CONTROL</u></p> <p>XR25 aid : C.O. open circuit C.C.1 short circuit to 12 volts</p>
---	---

<p>NOTES</p>	<p>Before any removal, enter G0** on the XR25 and restart the system.</p>
---------------------	---

Check the electric wiring between track **3 on the control panel** and the **heated rear screen relay** and between **track 24** of the **30 track connector** for the **air conditioning control unit** and the rear screen relay.
Repair the wiring if necessary.

Check the rear screen relay feed (12 V on tracks 1, 3 and 5 ; 0 V on track 2).
Replace the relay if necessary.

Check the continuity of the wiring between the relay and the rear screen.
Repair if necessary.

If the fault persists, check the resistance of the rear screen and repair the screen if necessary.

<p>AFTER REPAIR</p>	<p>Enter G0** on the XR25. Check that the system operates correctly.</p>
----------------------------	--

Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Left hand bargraph 6 illuminated</p> <p style="text-align: right;">Fiche n° 61</p> <p><u>FAN (2) CONTROL</u></p> <p>XR25 aid : C.O. open circuit C.C.1 short circuit to 12 volts</p>
---	--

NOTES	<p>Check that the air conditioning has been selected. Check that right hand bargraph 6 is extinguished, if it is not, deal with right hand bargraph 6 first. Enter G0** on the XR25. If left hand bargraph 6 remains illuminated, you can begin the fault finding procedure.</p>
--------------	--

Check the relay operation by entering **G23*** on the XR25. The fan should be heard to operate.
Can the fan be heard to operate?

NO	<p>Check the continuity and insulation in relation to 12 volts of the wiring between track F2 and track 23 of the 30 track connector for the air conditioning control unit.</p> <p>Repair the faulty wiring.</p>
----	--

If the fault persists, replace the relay for fan 2.

YES	<p>End of fault finding.</p>
-----	------------------------------

AFTER REPAIR	<p>Enter G0** on the XR25.</p> <p>Check that the system operates correctly.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Right hand bargraph 6 illuminated</p> <p style="text-align: right;">Fiche n° 61</p> <p><u>FAN (1) CONTROL</u></p> <p>XR25 aid : C.O. open circuit C.C.1 short circuit to 12 volts</p>
---	---

NOTES	<p>Check that the air conditioning has been selected. Enter G0** on the XR25. If right hand bargraph 6 remains illuminated, you can begin the fault finding procedure.</p>
--------------	--

Check the relay operation by entering **G23*** on the XR25. The fan should be heard to operate.
Can the fan be heard to operate?

NO	<p>Check the continuity and insulation in relation to 12 volts of the wiring between track M2 and track 22 of the 30 track connector for the air conditioning control unit.</p> <p>Repair the faulty wiring.</p>
----	--

If the fault persists, replace the relay for fan 1.

YES	<p>End of fault finding.</p>
-----	------------------------------

AFTER REPAIR	<p>Enter G0** on the XR25.</p> <p>Check that the system operates correctly.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>13</p> 	<p>Left hand bargraph 13 illuminated</p> <p><u>AIR CONDITIONING PROHIBITED BY INJECTION</u></p>	Fiche n° 61
--	--	-------------

NOTES	<p>This bargraph should be extinguished when the engine is running. If it is illuminated, you can begin the fault finding procedure. The evaporator temperature must be > -1 °C and BG 14 LH and 14 RH must be extinguished.</p>
--------------	--

First check that the air conditioning has been selected (selection on the control panel).

Check the continuity of the wiring between:

- **track 5 on the injection computer and track 13 of the 30 track AC computer connector for engines D7F 720, E7J, K7M AT4 (AP information)**
- **track 23 on the injection computer and track 13 of the 30 track AC computer connector for engines D7F 726 (AP information).**

Repair if necessary.

Check the continuity of the wiring between:

- **track 51 on the injection computer and track 18 of the 30 track AC computer connector for engines D7F 720 and E7J,**
- **track 10 on the injection computer and track 18 of the 30 track AC computer connector for engines D7F 726.**

Repair if necessary.

If the problem persists, check the injection fault finding procedure, as it is a problem related to the injection.

AFTER REPAIR	<p>Check the system operates correctly.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

13 	Right hand bargraph 13 illuminated <u>AIR CONDITIONING PROHIBITED BY AUTOMATIC TRANSMISSION</u>	Fiche n° 61
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NOTES	This bargraph should be extinguished when the engine is running. If it is illuminated, you can begin the fault finding procedure.
--------------	--

Check the insulation from earth of the wiring between :
- **track 51 of the AT computer and track 19 of the 30 track AC computer connector for engines K7M.**
Repair if necessary.

If the problem persists, check the automatic transmission fault finding procedure, as it is a problem related to the automatic transmission.

AFTER REPAIR	Check the system operates correctly.
---------------------	--------------------------------------

—	Air distribution problem	Chart 1
—	Air flow problem	Chart 2
—	Heating not effective	Chart 3
—	No heat	Chart 4
—	Too much heat	Chart 5
—	Heating inadequate in the rear	Chart 6
—	Demisting/deicing ineffective	Chart 7
—	Heated rear screen does not operate	Chart 8
—	Ventilation ineffective	Chart 9

PASSENGER COMPARTMENT INCONVENIENCE

Controls stiff

Chart 10**PASSENGER COMPARTMENT FAN DOES NOT OPERATE****Chart 11****AIR RECYCLING DOES NOT OPERATE BUT THE WARNING LIGHT OPERATES****Chart 12****AIR CONDITIONING PROBLEMS**

No cold air

Chart 13

Too much cold air

Chart 14

Ineffective

Chart 15**COOLING FAN DOES NOT OPERATE****Chart 16**

AIR CONDITIONING WARNING LIGHT DOES NOT ILLUMINATE

Chart 17

AIR RECYCLING WARNING LIGHT DOES NOT ILLUMINATE

Chart 18

REAR SCREEN WARNING LIGHT DOES NOT ILLUMINATE

Chart 19

Chart 1

AIR DISTRIBUTION PROBLEMS

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

Place the passenger compartment fan on full, temperature control on maximum heat or maximum cold, and move the air distribution control. Check that the air output corresponds to the selection. Is it correct?

yes

The air distribution is correct.
If necessary, explain how the system works to the customer again.

no

Check visually or by touch, on the right hand side of the air distribution unit, that moving the control moves the sprockets and the lever. Do they move?

yes

Check the adjustment of the air distribution flap control cable.

no

In the case of a ventilation problem, check the ventilation ducts and the vents.
Repair if necessary.

If the fault persists, remove the air distribution unit and check the distribution flaps.
Repair or change the assembly.

Check the connection of the cable to the air distribution unit and the control panel and check the condition of the cable and its retention. Is it correct?

no

Change the control cable or repair the connection of the cable (clip) or change the faulty part (control panel or distribution unit).

yes

**AFTER REPAIR**

Check that the system operates correctly.

Chart 1
CONT

A

Check the condition of the gears (sprockets, levers...) on the air distribution unit and the control panel.
Is it correct?

no

Repair if possible,
otherwise change the distribution unit or the control panel.

yes

Remove the air distribution unit and check the distribution flaps.
Repair or change the unit.

AFTER REPAIR

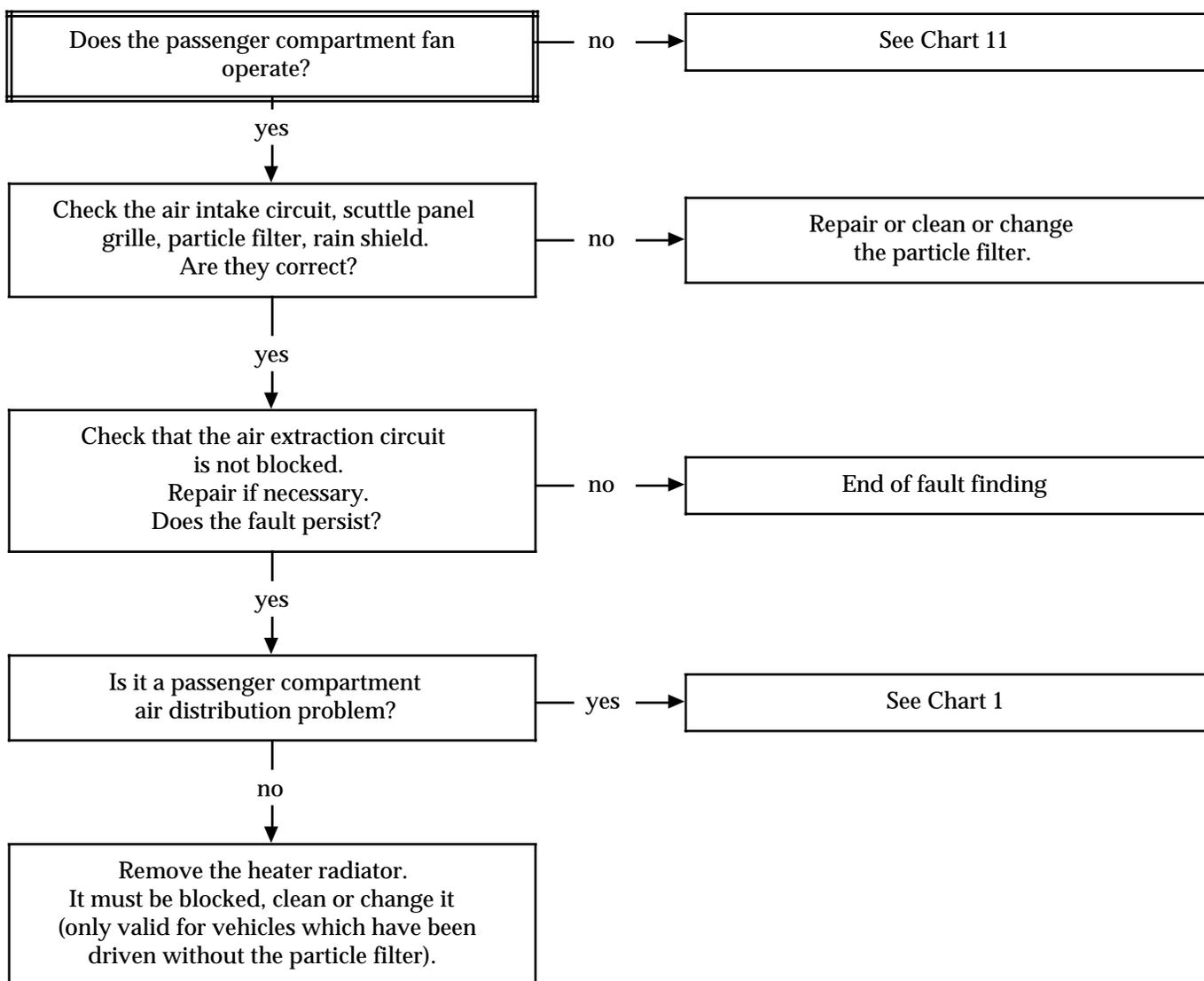
Check that the system operates correctly.

Chart 2

AIR FLOW PROBLEM

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

**AFTER REPAIR**

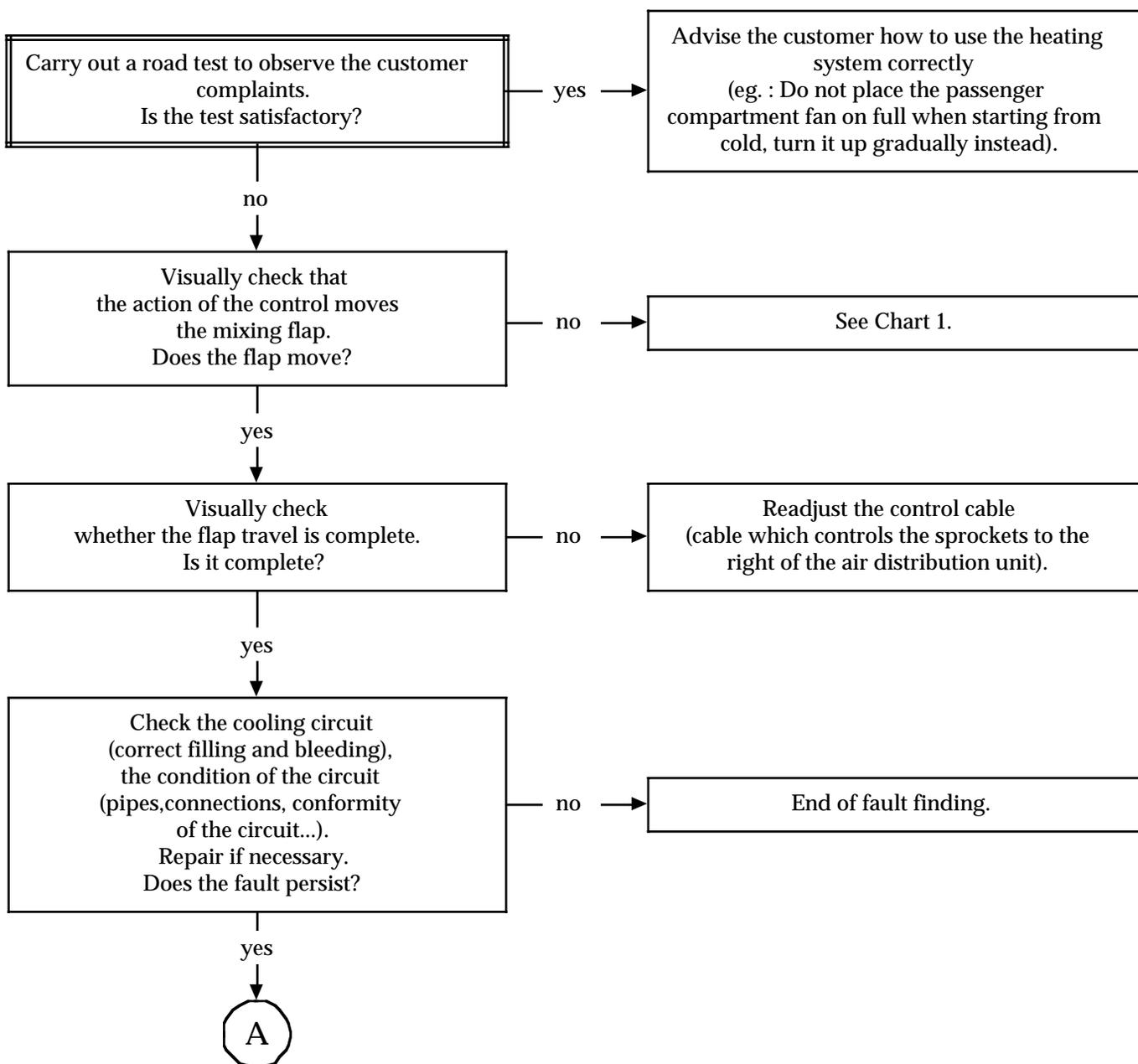
Check that the system operates correctly.

Chart 3

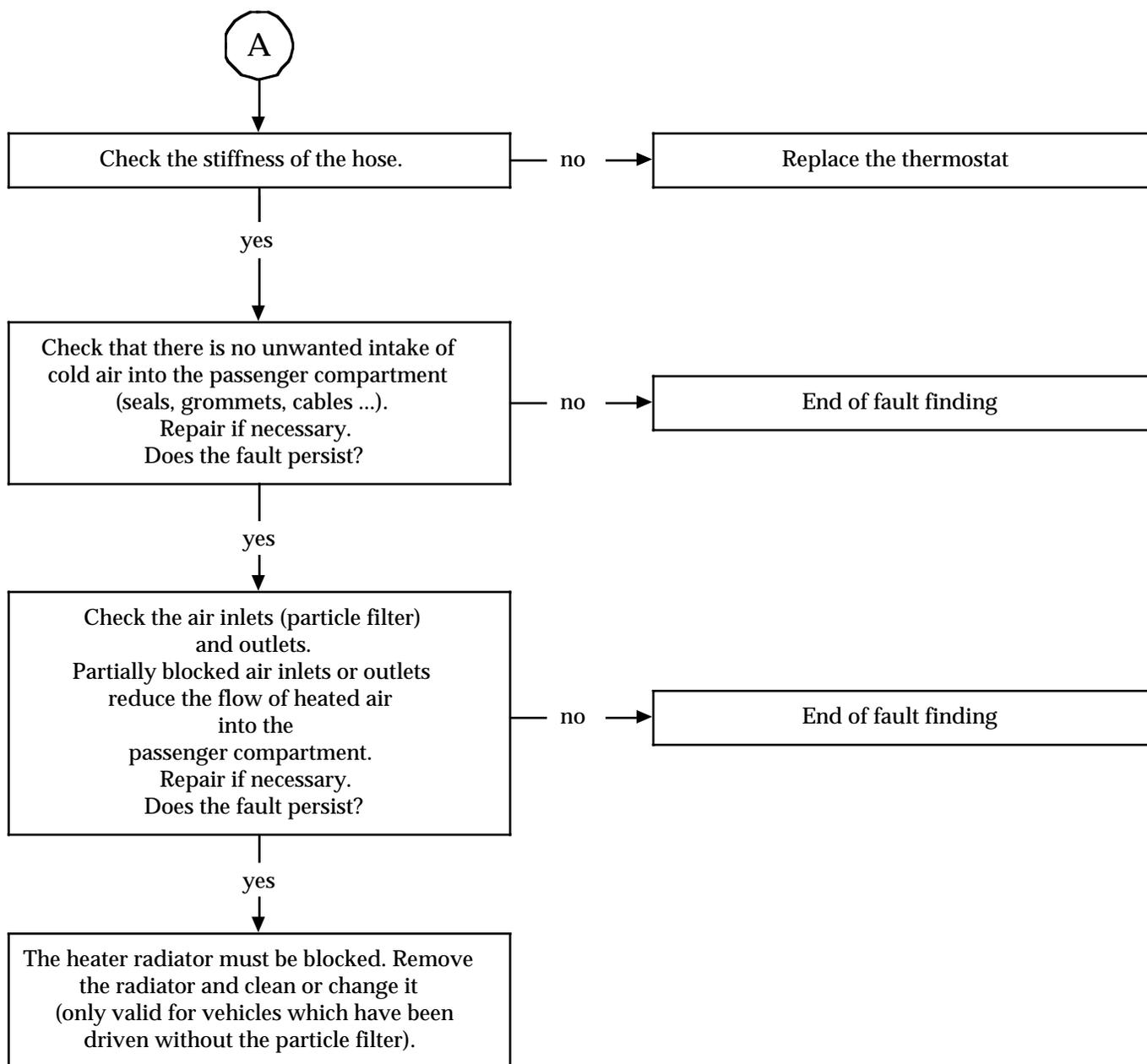
HEATING INEFFECTIVE

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

**AFTER REPAIR**

Check that the system operates correctly.

Chart 3
CONT**AFTER REPAIR**

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 4

NO HEAT

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

Is it an air flow problem?

yes

See Chart 2

no

Check the level of coolant in the cooling circuit.

NOTE: if the coolant level is too low, the circuit may become unprimed when driving at low load and at idle.

Repair if necessary.
Does the fault persist?

no

End of fault finding

yes

Visually check that moving the control moves the mixing flap.
Does it move?

no

See Chart 1

yes

Check the coolant circuit.

NOTE: fitting an oil, water or air cooler which has not been approved by the research centre and which is incorrectly connected may reduce or even stop the flow of coolant in the heater radiator.

Repair the coolant circuit if necessary.
Does the fault persist?

no

End of fault finding

yes

Remove the heater radiator.
Clean or change it if necessary.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 5

TOO MUCH HEAT

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

Visually check that moving the control moves the mixing flap.
Does it move?

no

See Chart 1.

yes

Check that the flap travel is complete.
Is the travel complete?

no

Readjust the cable
(to the right of the air distribution unit).

yes

Check the operation of the recycling flap.
Is it jammed in the recycling position?

yes

See Chart 12

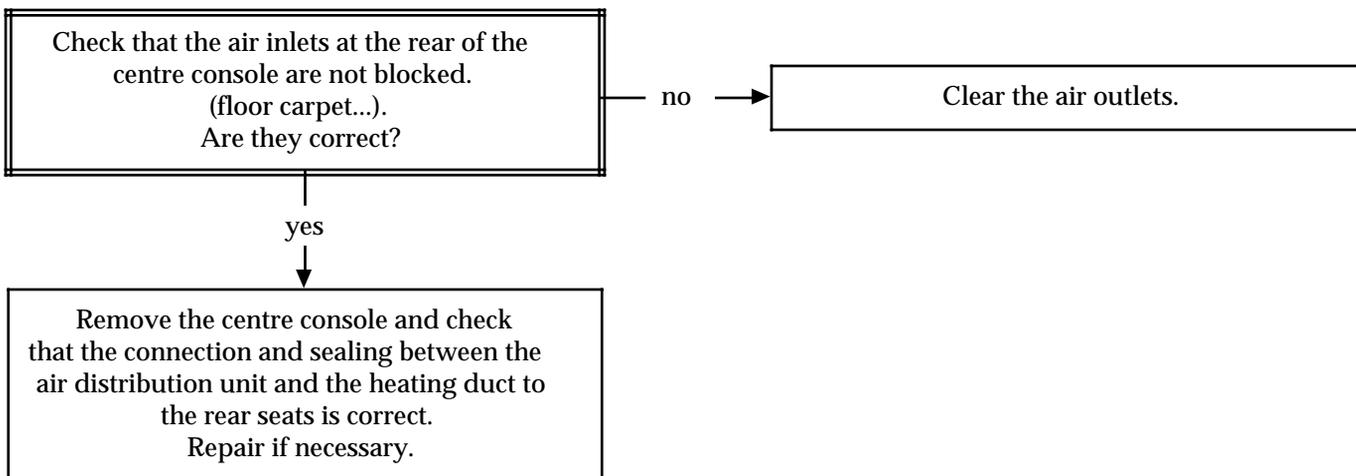
no

Check the operation of the engine coolant thermostat.
Change the thermostat if necessary.

AFTER REPAIR

Check that the system operates correctly.

Chart 6	HEATING INADEQUATE IN THE REAR
NOTES	None



AFTER REPAIR	Check that components that have been disconnected are correctly reconnected. Check that the system operates correctly.
---------------------	---

Chart 7

DEMISTING/DEICING INEFFECTIVE

NOTES

Check that the windows are clean on the inside.

Check that the air extractors are not blocked.
Repair if necessary.
Does the fault persist?

no

End of fault finding

yes

Ensure that there are no water leaks into the passenger compartment which would significantly increase the humidity level and reduce the effectiveness of the demisting.
Locate the leak and repair it.
Does the fault persist?

no

End of fault finding

yes

Is it an air distribution problem?

yes

See Chart 1

no

Is it an air flow problem?

yes

See Chart 2

no

Is it a heating effectiveness problem?

yes

See Chart 3

no

Check that the recycling flap is not jammed in the recycling air position (see CHART 12).
Repair if necessary.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 8

HEATED REAR SCREEN DOES NOT OPERATE

NOTES

Bargraphs 10 RH and 10 LH must be illuminated and bargraph 5 LH must be extinguished.
The engine speed must be higher than 600 rpm.

Check the wiring between track **12 on the control panel connector** and track **10 on the 15 track connector** for the air conditioning control unit.
Is the wiring in good condition?

no

Repair the faulty wiring.

yes

Check the condition of the fuse.
Is the fuse in good condition?

no

Replace the fuse.

yes

Check for 12 Volts on track **3 of the heated rear screen relay**.
Is there 12 Volts ?

no

Repair the faulty wiring.

yes

Check for 12 Volts on track **5 of the heated rear screen relay**.
Is there 12 Volts ?

no

Replace the relay.

yes

Check the condition of the wiring between track **5 of the relay** and the heated rear screen. Is the wiring in good condition?

no

Repair the faulty wiring.

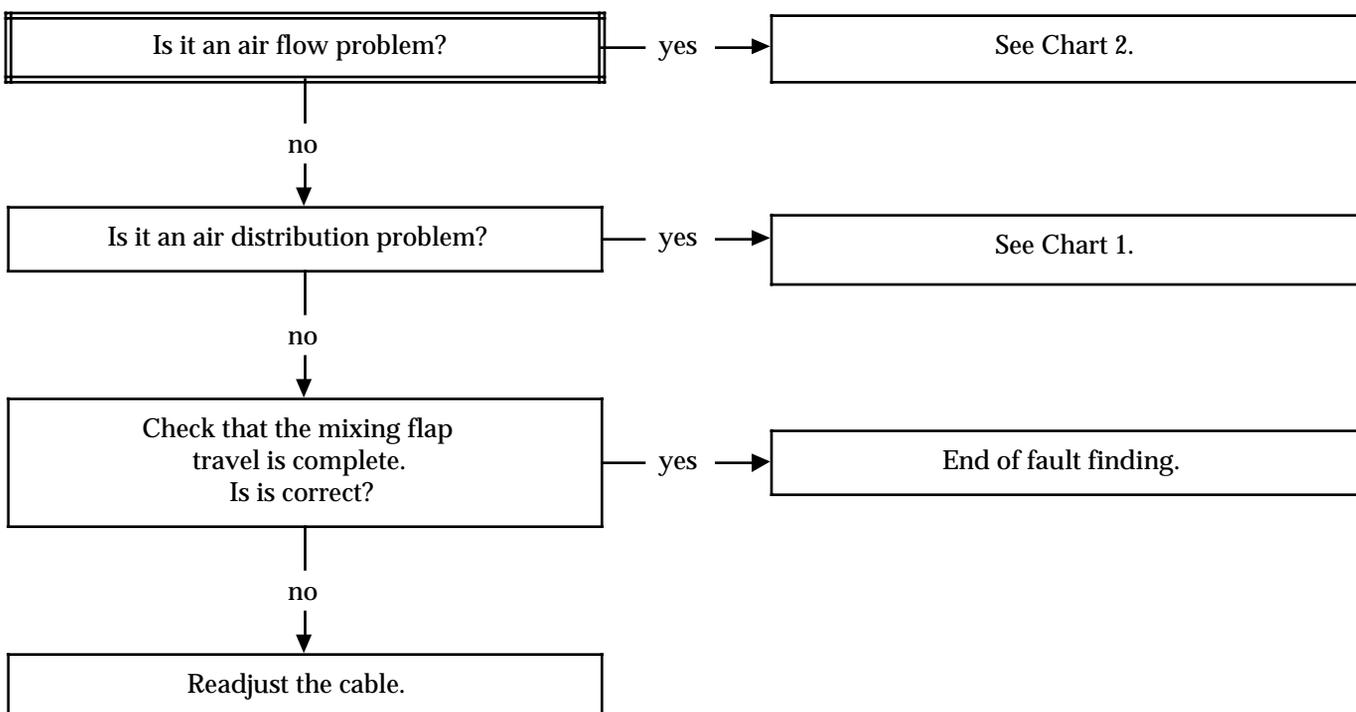
yes

Measure the resistance of the heated rear screen and repair the screen if necessary.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 9	VENTILATION INEFFECTIVE
NOTES	None.



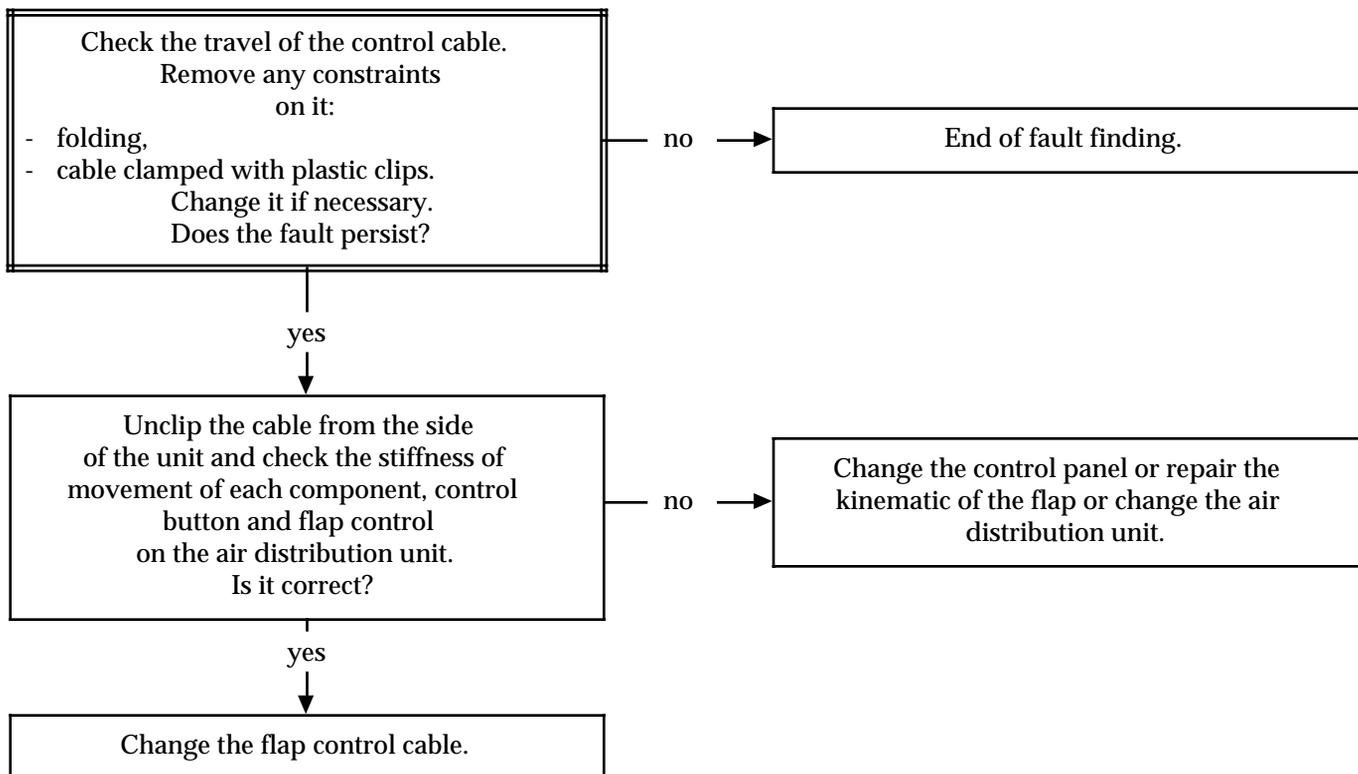
AFTER REPAIR	Check that components that have been disconnected are correctly reconnected. Check that the system operates correctly.
---------------------	---

Chart 10

STIFFNESS OF THE CONTROLS
(passenger compartment inconvenience)

NOTES

None.



AFTER REPAIR

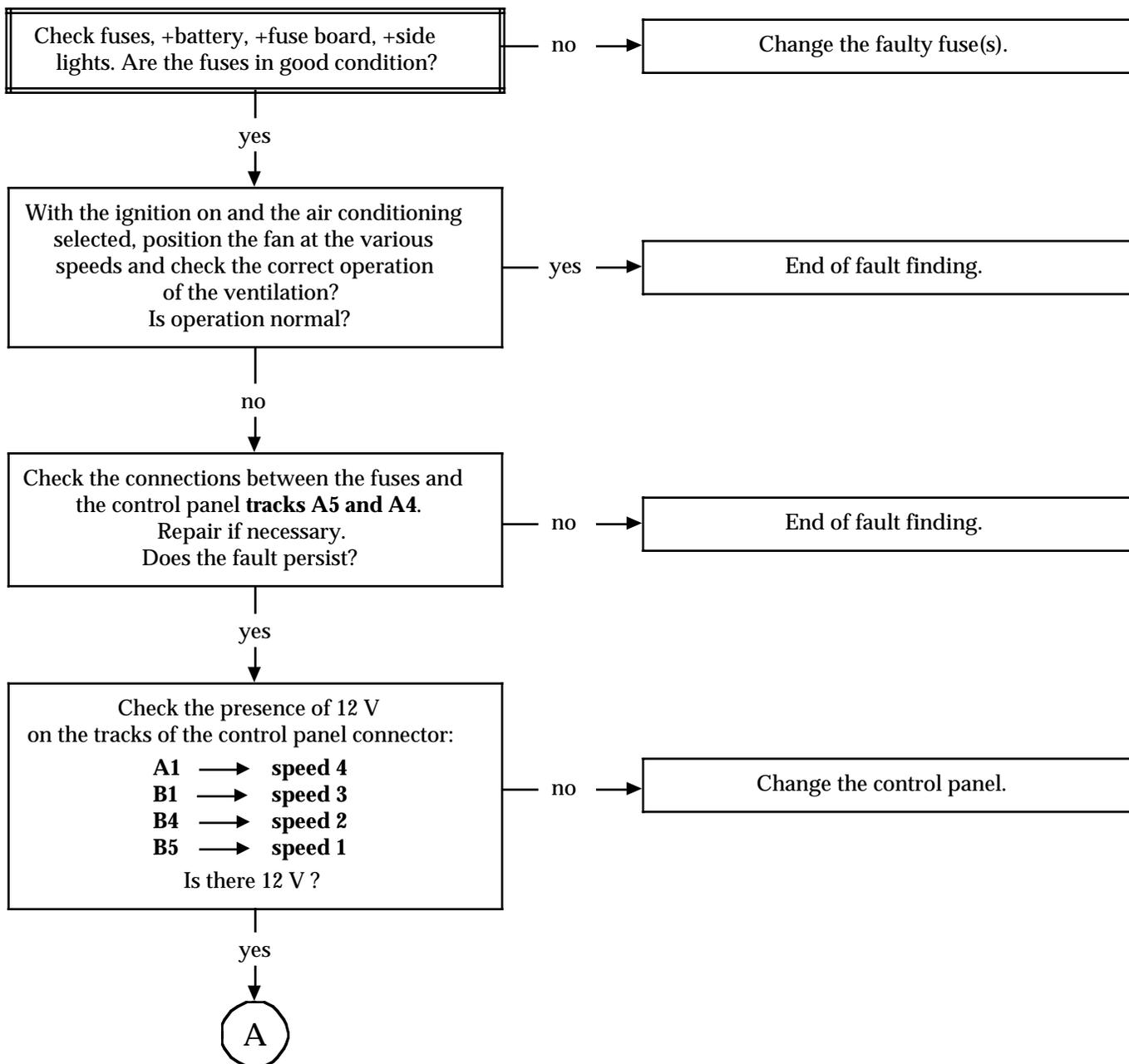
Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 11

PASSENGER COMPARTMENT FAN DOES NOT OPERATE

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

**AFTER REPAIR**

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 11 CONT

A

On the passenger compartment fan resistance module check for 12 Volts on tracks:

3 → **speed 1**
 4 → **speed 2**
 5 → **speed 3**
 12 → **speed 4**

Is there 12 V ?

no

Repair the wiring between the control panel and the passenger compartment fan.

yes

Check that the 2 track connector is correctly clipped on the fan motor.
Is this correct?

no

Reclip the connector.

yes

Check on the passenger compartment fan resistance motor for 0 Volt on tracks 14 and 15. Is there 0 Volt ?

no

Repair the wiring.

yes

Does the passenger compartment fan operate on speed 4 and not speeds 1, 2, 3?

yes

Replace the resistance module.

no

Does the passenger compartment fan operate on speeds 1, 2, 3 and not speed 4?

yes

Check for 12 Volts on tracks 10 and 11 of the **resistance module connector**.
Replace the fuse BP1.

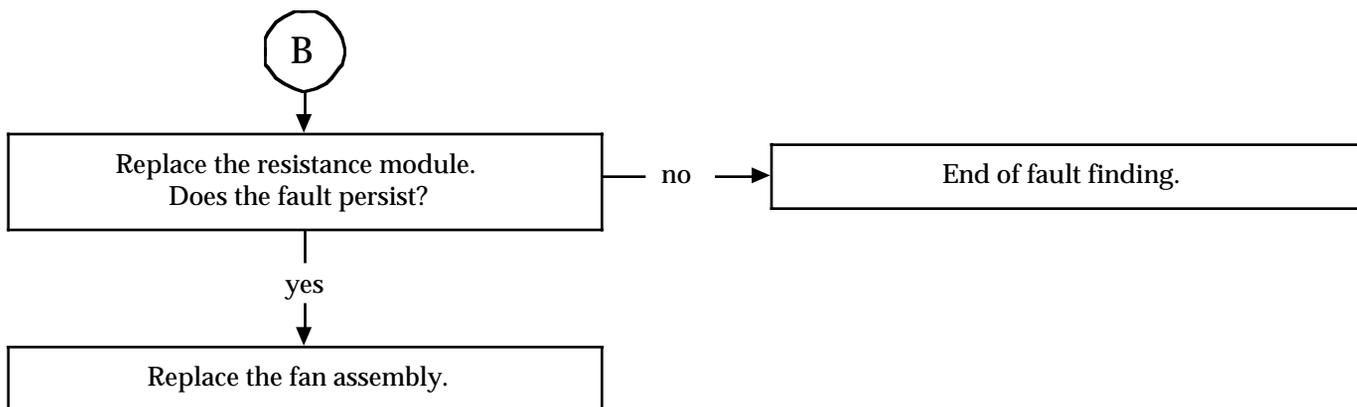
no

B

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 11
CONT



AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 12

AIR RECYCLING DOES NOT OPERATE BUT THE WARNING LIGHT OPERATES
NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

First of all check the condition of fuses
+battery, + fuse board, +after ignition.
Change them if necessary.

Press the air recycling key.
The warning light illuminates.
Check the recycling motor operates.
Is this correct?

yes

End of fault finding.

no

Measure the voltage between tracks **1 and 2**
of the resistance module in the 15 seconds
following pressing the recycling key.
Is a voltage of 12 Volts measured?

yes

Replace the recycling motor.

no

Check the insulation and continuity of the
electrical wiring between:

30 track connector	{	26 → 1	}	motor connector
		27 → 2		

Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

Replace the air conditioning control unit.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 13

AIR CONDITIONING PROBLEMS

No cold air

NOTES

Non regulated air conditioning.
The passenger compartment fan operates.
Check that bargraphs 2RH, 2LH and 4LH are extinguished.

First of all check the condition of fuses
+battery, + fuse board, +after ignition.
Change them if necessary.

yes

Check for the presence of + 12 Volts ACC on
track 5 on the red 15 track air conditioning
computer connector (BG 7LH).
Is there 12 Volts ?

no

Repair the wiring between the fuse and **track 5** of the connector.

yes

Check for the presence of + 12 Volts after
ignition on **track 1** on the grey 30 track air
conditioning computer connector.
Is there 12 Volts ?

no

Repair the wiring between the fuse and **track 1** of the connector.

yes

Connect the XR25, set the fan to speed 2 and
enter #08.
Is the value read greater than 7?

no

Repair the wiring between track **4** of the grey
connector and track **9** of the resistance
module connector.

yes

**AFTER REPAIR**

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

**Chart 13
CONT**
AIR CONDITIONING PROBLEMS
No cold air
NOTES

Non regulated air conditioning.
The passenger compartment fan operates.

A

Check that the air conditioning warning light illuminated on the control panel when the key is pressed.
Does the warning light illuminate?

no

See Chart 17.

yes

Check that bargraphs **13LH** and **13RH** are extinguished. The injection or automatic transmission is preventing air conditioning operation.
Are these bargraphs extinguished?

yes

Replace the refrigerant fluid.

no

Connect the XR25 and check that bargraphs **14 LH** and **14 RH** are extinguished.
Is this correct?

yes

See Chart 13A.

no

Check the connections between:

air conditioning	{	9	→	A	}	fluid pressure sensor
		10	→	B		
computer		11	→	C		

Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

Replace the refrigerant fluid.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 13 A

AIR CONDITIONING PROBLEMS

No cold air

NOTES

Non regulated air conditioning.
The passenger compartment fan operates.
Check that bargraphs 2RH, 2LH and 4LH are extinguished.

Air conditioning operating, fan on maximum speed, connect the XR25 and enter #03.
Check that the evaporator temperature does not remain below - 1 °C.
Is this correct?

no

Replace the evaporator sensor.

yes

Connect the XR25 and enter **G21***
(compressor clutch direct control).
Does the compressor engage?

yes

End of fault finding.

no

Check the wiring between :

air conditioning computer	{	2 → 1	}	compressor
		17 → 1		

Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

Directly supply the compressor with 12 Volts on **track 1**.
Does the compressor engage?

no

Replace the compressor.

yes

Replace the air conditioning computer.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 14

AIR CONDITIONING PROBLEMS

Too much cold air

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

Is the fan always operating?
(normal if high pressure ≥ 20 bars)

yes

Check the refrigerant circuit pressures using the XR25 or pressure gauges.
The fan operates if the high pressure ≥ 20 bars and stops if the pressure ≤ 15 bars.
If the pressures are correct, change the pressure sensor, otherwise, replace the fluid in the refrigerant circuit.

no

Check that the recycling flap does not remain in the air recycling position.
Operate the control button and check that the flap moves.
Does it move?

no

See Chart 12.

yes

Check that the action of the heater control moves the flap.
Does it move?

no

See Chart 1.

yes

Visually check that the flap travel is complete.
Is it correct?

no

Readjust the cable.

yes

Change the fan.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 15

AIR CONDITIONING PROBLEMS

Ineffectiveness

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

Check the tension of the compressor belt, the clutch air gap and its condition.
Retension the belt or change the compressor clutch.
Does the fault persist?

no

End of fault finding.

yes

Ensure that the recycling flap is in the recycling position in air conditioning recycling mode. Is it in this position?

no

See Chart 12.

yes

Check that the flap travel is complete, readjust the cable if necessary.
Does the fault persist?

no

End of fault finding.

yes

Is it an air flow problem?

yes

See Chart 2 or Chart 11.

no

**AFTER REPAIR**

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 15
CONT

A

With the vehicle stationary, engine running at idle, air conditioning on maximum, measure the pressure of the refrigerant circuit.

If the pressure is > 28 bars, there is :

- too little fluid,
- or the operation of the fan is abnormal,
- or the condenser is clogged,
- or the engine heats up too much.

Is the pressure < 28 bars ?

no

Replace the refrigerant fluid.

yes

Check the cleanness of the condenser wiring harness.
Clean or change the condenser.

If the fault persists, check the operation of the cooling fan at high speed (ventilation and air conditioning on maximum).

It should be:

- **operating if high pressure** ≥ 20 bars
- **stopped if high pressure** ≤ 15 bars

Is the operation of the fan normal?

no

See Chart 15.

yes

Clean the circuit and replace the refrigerant fluid.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

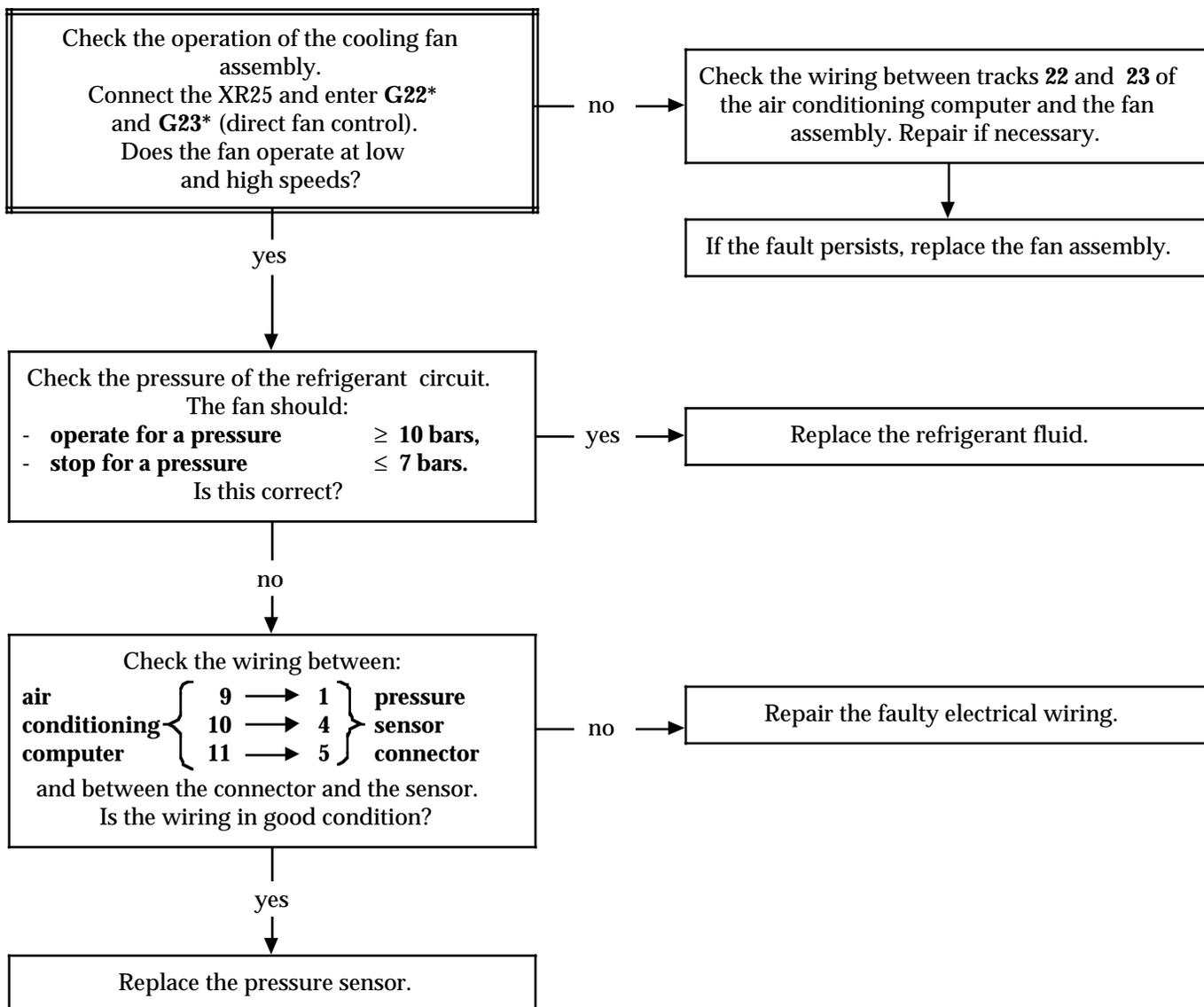
Chart 15A

AIR CONDITIONING PROBLEMS

Ineffectiveness

NOTES

Before carrying out any work, check that the customer uses the air conditioning correctly.
Non regulated air conditioning.

**AFTER REPAIR**

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 16

COOLING FAN DOES NOT OPERATE

NOTES

Non regulated air conditioning.
The compressor operates.

Check the condition of the fuses.
Change them if necessary.

Connect the XR25 and enter **G22*** and **G23***.
Does the fan operate at both speeds?

yes

See Chart 16A

no

Check the continuity and insulation in
relation to 12 Volts of the wiring
between:

air
conditioning
computer

22

→

K2

}

slow speed
relay

23

→

F2

}

high speed
relay

Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

Check the presence of 12 volts on **tracks 1 and 3**
of the low speed and high speed relays.
Is there 12 Volts?

no

Repair the faulty electrical wiring.

yes

Check the presence of 12 volts on **track 5** of
the low speed and high speed relays.
Is there 12 Volts?

no

Replace the faulty relay/s.

yes

A

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 16
CONT

A

Check that the fan is correctly supplied with 12 volts and 0 volts.
Is this correct?

no

Repair.
For slow speed, check the resistance in series with the motor.

yes

Directly supply the fan assembly with 12 Volts and check it operates.
Does the fan assembly operate?

no

Replace the fan assembly.

yes

Replace the air conditioning computer.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 16
CONT 1

Air conditioning requested and fan on maximum, check the pressure of the refrigerant circuit with the XR25 by entering #16 (engine idling).

- The fan should operate at slow speed for a pressure ≥ 10 bars,
- The fan should operate at high speed for a pressure ≥ 20 bars.

Are the pressure values correct?

yes →

End of fault finding.

no ↓

Replace the refrigerant fluid sensor.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 17

AIR CONDITIONING WARNING LIGHT DOES NOT ILLUMINATE

NOTES

+ after ignition feed

Check the condition of the + after ignition feed fuse. Replace it if necessary.

Connect the XR25 and check that when the key is pressed, bargraph **8LH** illuminates. Is this correct?

no

See Chart 17A

yes

With the XR25 still connected, enter **G26*** (warning lights control). Does the warning light illuminate?

yes

End of fault finding.

no

Check the condition of the wiring between **track 10 on the control panel connector** and **track 7 on the red air conditioning control unit connector**. Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

If bargraph **8 LH** is illuminated, check for **0 Volts on track 10 of the control panel connector**. Is there 0 Volts?

no

Replace the air conditioning control unit.

yes

Replace the control panel

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 17A

AIR CONDITIONING WARNING LIGHT DOES NOT ILLUMINATE

NOTES

+ after ignition feed

Check for the presence of 12 Volts on **track 4 of the control panel.**
Is there 12 Volts?

no

Repair the wiring between the fuse and track 4.

yes

Keep the air conditioning key depressed and check for 12 Volts on **track 9 of the control panel connector.**
Is there 12 Volts?

no

Replace the control panel.

yes

Check the condition of the wiring between **track 9 on the control panel connector and track 2 on the 15 track air conditioning control unit connector.**
Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

Replace the air conditioning control unit.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 18

AIR RECYCLING WARNING LIGHT DOES NOT ILLUMINATE

NOTES

+ after ignition feed

Check the condition of the + after ignition feed fuse. Replace it if necessary.

Connect the XR25 and check that when the key is pressed, bargraph 9LH illuminates. Is this correct?

no

See Chart 18A

yes

With the XR25 still connected, enter G26* (warning lights control). Does the warning light illuminate?

yes

End of fault finding.

no

Check the condition of the wiring between track 11 on the control panel connector and track 8 on the red air conditioning control unit connector. Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

If bargraph 9 LH is illuminated, check for 0 Volts on track 11 of the control panel connector. Is there 0 Volts?

no

Replace the air conditioning control unit.

yes

Replace the control panel

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 18A

AIR RECYCLING WARNING LIGHT DOES NOT ILLUMINATE

NOTES

+after ignition feed

Check for the presence of 12 Volts on **track 4 of the control panel.**
Is there 12 Volts ?

no

Repair the wiring between the fuse and track 4.

yes

Keep the air conditioning key depressed and check for 12 Volts on **track 8 of the control panel connector.**
Is there 12 Volts?

no

Replace the control panel.

yes

Check the condition of the wiring between **track 8 on the control panel connector and track 3 on the 15 track air conditioning control unit connector.**
Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

Replace the air conditioning control unit.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 19

HEATED REAR SCREEN WARNING LIGHT DOES NOT ILLUMINATE

NOTES

+after ignition feed

Check the condition of the + after ignition feed fuse. Replace it if necessary.

Connect the XR25 and check that when the key is pressed, bargraph 10LH illuminates. Is this correct?

no

See Chart 19A

yes

With the XR25 still connected, enter G26* (warning lights control). Does the warning light illuminate?

yes

End of fault finding.

no

Check the condition of the wiring between track 13 on the control panel connector and track 11 on the red air conditioning control unit connector. Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

If bargraph 10 LH is illuminated, check for 0 Volts on track 13 of the control panel connector. Is there 0 Volts?

no

Replace the air conditioning control unit.

yes

Replace the control panel

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

Chart 19A

HEATED REAR SCREEN WARNING LIGHT DOES NOT ILLUMINATE

NOTES

+after ignition feed

Check for the presence of 12 Volts on **track 4 of the control panel.**
Is there 12 Volts ?

no

Repair the wiring between the fuse and track 4.

yes

Keep the air conditioning key depressed and check for 12 Volts on **track 8 of the control panel connector.**
Is there 12 Volts?

no

Replace the control panel.

yes

Check the condition of the wiring between **track 12 on the control panel connector and track 10 on the 15 track air conditioning control unit connector.**
Is the wiring in good condition?

no

Repair the faulty electrical wiring.

yes

Replace the air conditioning control unit.

AFTER REPAIR

Check that components that have been disconnected are correctly reconnected.
Check that the system operates correctly.

ADDITIONAL TESTS

COMMAND MODE G--*

To use this function, enter G on the XR25 keypad, then the number of the command selected followed by an asterisk.

G20* : heated rear screen control

G21* : compressor clutch control

G22* : fan low speed control

G23* : fan high speed control

G24* : recycling motor control

G26* : control panel warning lights control

G13* : End of fault finding

COMMAND MODE #

03 : evaporator temperature

08 : fan assembly speed

15 : engine speed

16 : refrigerant fluid pressure in the circuit

IMMOBILISER

FAULT FINDING

SUMMARY

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NOTE :

The decoder unit is incorporated in the multi-timer unit (BMT).

INSTALLATION OF XR25 DIALOGUE / MULTI-TIMER UNIT

- Connect the XR25 to the diagnostic socket.
- ISO selector on **S8**
- Enter **D56**

n.56

IMPORTANT:

If there is a dialogue problem with the XR25 during fault finding on the immobiliser system for diesel vehicles, it will be necessary to disconnect the injection computer or the injection relay fuse during the test.

PRECAUTION

When carrying out the test using a multimeter, avoid using a test pin on connectors where the test pin is of a size which could damage the clips and lead to a poor contact.

Pay attention to key head numbers.

ERASING THE MEMORY

After repairing the immobiliser system, enter **G0**** on the keyboard of the XR25 kit to proceed with erasing the memorised fault.

PRESENTATION OF XR25 FICHE N° 56

N°56		S8 code : D 5 6		read : n56	
1	<input type="checkbox"/> possible check on other side of fiche (x65)			CODE PRESENT <input type="checkbox"/>	
2	<input type="checkbox"/> TYPE OF PLIP <input type="checkbox"/> IR <input type="checkbox"/> RF	COMPUTER CONFIGURATION (fixed display)		INTERIOR LIGHT TIMER <input type="checkbox"/>	
3	<input type="checkbox"/> PROGRAMMING 1 key <input type="checkbox"/> 2 keys <input type="checkbox"/>			DIESEL CODED SOL VALVE <input type="checkbox"/>	
4	<input checked="" type="checkbox"/> + ACCESSOIRES PRESENT			+ APC PRESENT <input type="checkbox"/>	
5	<input type="checkbox"/> ELECTRIC DOOR LOCK BUTTON (CPE)				
6	<input type="checkbox"/> DIESEL SOL ACQUITTAL	FAULTS		CODED LINE * 26 <input type="checkbox"/>	
7	<input type="checkbox"/> KEY INTERROGATION (CC) (only if valeo unit)			CONNEX-RING/DE CODER * 27 <input type="checkbox"/>	
8	<input checked="" type="checkbox"/> RE-READ DIESEL ACQ	KEY PRESENT <input type="checkbox"/>		CONTROL MODES : G...*	
9	<input type="checkbox"/> PROTECTED MODE ENFORCED	RECVD (key code) <input type="checkbox"/>		23 Diesel sol. mechanical control Only if line 3 RH and line 6 RH/LH <input type="checkbox"/>	
10	<input type="checkbox"/> IMMOBILISER ACTIVE	VALID <input type="checkbox"/>		Test Switch off ignition, enter 023* Switch ign. on again, valve opens and closes for 20 secs (audible check)	
IMMOBILISER (PLIP and KEY)				03 Interior light control	
To read other side : G 02 *				08 Opening movement	
Erase memory : G 0 **				09 Closing movement	
11 <input checked="" type="checkbox"/> ACTIVATE PLIP (UNLOCKING) <input type="checkbox"/> SIGNAL RECVD <input type="checkbox"/> SIGNAL CORRECT				15 Raising electric window	
12 INT. LIGHT CUT-OUT PRESENT USING PLIP (option depending on equip.) <input type="checkbox"/>				04 Protected mode enforced	
13 <input checked="" type="checkbox"/> ACTIVATE PLIP (signal) UNLOCKING <input type="checkbox"/> LOCKING				40*xxxx* security entry code	
14 <input checked="" type="checkbox"/> *14 PRESS BUTTON : CPE UNLOCKING(!) <input type="checkbox"/> LOCKING(!)				Part No : G70 *	
15 <input checked="" type="checkbox"/> AUTHORISED ELECTRIC WINDOW (PLIP) (witch anti-pinch) WINDOW CLOSING <input checked="" type="checkbox"/>				MOTOR ACTION LOCKING(!) UNLOCKING(!) *34 <input checked="" type="checkbox"/>	
16 <input checked="" type="checkbox"/> DOOR SWITCHES (ILLUM. IF DOOR OPEN)					
17 <input type="checkbox"/> PROGRAMMING OR RESYNCHRO IN PROGRESS		PLIP		NOT PROGRAMMED <input type="checkbox"/>	
18 <input type="checkbox"/> PROGRAMMING 1st KEY				PROGRAMMING AUTHORISED <input type="checkbox"/>	
19 <input type="checkbox"/> NOT PROGRAMMED		KEY		PROGRAMMING NOT LOCKED (G80*) <input type="checkbox"/>	
20				TIMED DELAY SECURITY CODE ENTRY <input type="checkbox"/>	
SEE REPAIR MANUAL				17 ANG	

FI21756

a3011.0

DESCRIPTION OF BARGRAPHS

-  **Illuminates when dialogue is established with the product computer**, if it remains extinguished :
- the code does not exist,
 - there is a line , computer or tool fault.

REPRESENTATION OF FAULTS (always on coloured background)

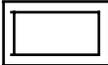
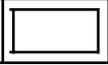
-  **Illuminated**, indicates a fault on the part tested, the associated text defines the fault.

-  **Extinguished**, indicates non-detection of fault on the product tested.

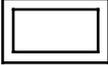
REPRESENTATION OF STATUS (always on white background)

Engine stopped, ignition on, no operator action

Status Bargraphs on the fiche are shown as they should appear, engine stopped, ignition on, without operator action

- If on the fiche, the Bargraph is shown as  the kit should show 
 - If on the fiche, the Bargraph is shown as  the kit should show 
 - If on the fiche, the Bargraph is shown as  the kit should show 
- either  or 

Engine running

-  Extinguished when operation or condition specified on the fiche is no longer met.
-  Illuminated when operation or condition specified on the fiche is met.

Fault finding - Interpretation of XR25 bargraphs

1 	Bargraph 1 RH side extinguished <u>XR25 / MULTI-TIMER UNIT COMMUNICATION</u>	Fiche n° 56
---	--	-------------

NOTES	Check that lines K and L are not being disrupted by another computer.
--------------	---

Check the condition of the + before ignition fuse.

Replace the fuse if necessary.

Ensure that the XR25 is not the cause of the fault by trying to communicate with another computer on the vehicle (air conditioning computer, injection computer,...).

Check that the ISO interface is in position **S8**, that you are using the latest XR25 cassette and the correct access code (**D 56**).

Check the battery voltage (**U > 10.5 volts**). Recharge the battery if necessary.

Check that the yellow multi-timer unit connector is correctly connected.

Check that the multi-timer unit is correctly fed:

- earth on **track A1 of the black connector** for the multi-timer unit.
- + before ignition feed on **track B1 of the black connector** for the multi-timer unit.

Ensure the diagnostic socket is correctly fed.

Check and ensure the continuity and insulation of the wiring for tracks **14 and 1 of the yellow connector** for the multi-timer unit.

If there is still no dialogue between the XR25 and the multi-timer unit, replace the multi-timer unit.

AFTER REPAIR	When communication has been established, deal with any illuminated fault bargraphs. Carry out a conformity check.
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

3 	Bargraph 3 RH side incorrect illumination <u>CODED DIESEL SOLENOID VALVE CONFIGURATION</u>	Fiche n° 56
---	--	-------------

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

Use the XR25 to correctly configure the multi-timer unit.

On the XR25, enter

G22*1* for a petrol vehicle

G22*2* for a diesel vehicle

NOTE : for a diesel version, incorrectly configuring the multi-timer unit does not prevent the immobiliser from operating correctly. If there is a fault, however, the immobiliser warning light will not illuminate.

AFTER REPAIR	Erase the memorised fault by entering G0** on the XR25. Carry out a conformity check. Check the operation of the immobiliser system.
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

4 	Bargraph 4 RH side incorrect illumination <u>+ AFTER IGNITION FEED PRESENT</u>	Fiche n° 56
---	--	-------------

NOTES	Reminder. For normal operation: <ul style="list-style-type: none">- BG 4RH illuminated, ignition switch in + after ignition position- BG 4RH extinguished, ignition switch in position other than + after ignition
--------------	---

Check the condition of the + after ignition fuse.

Replace the fuse if necessary.

Ignition on, check for + **12 volts on track 6 of the yellow connector** for the multi-timer unit.

Is there 12 volts ?

YES	Replace the multi-timer unit .
-----	--------------------------------

NO	Repair the wiring between track 6 of the yellow connector for the multi-timer unit and the passenger compartment fuse board.
----	---

AFTER REPAIR	Carry out a conformity check. Check the operation of the immobiliser system.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

6 	Bargraph 6 LH side illuminated <u>ACCEPTANCE (CLEARANCE) OF THE SIGNAL BY THE DIESEL SOLENOID VALVE</u>	Fiche n° 56
---	---	-------------

NOTES	Check that the computer configuration is correct: - diesel : bargraph 3 RH side illuminated - petrol: bargraph 3 RH side extinguished
--------------	---

Set the XR25 to pulse detection mode (button "G", input on terminal "Vin").
 Ignition on, check for pulses on **track 15 of the yellow connector for the multi-timer unit** (test connectors for the multi-timer unit and coded electronic unit of the solenoid valve connected).

Ignition on, if no pulses are noted, replace the multi-timer unit.

Switch on the ignition for longer than 30 consecutive seconds, then switch it off and wait for the immobiliser warning light to flash (immobiliser active).

Switch on the ignition again and wait for bargraph 8 LH side to illuminate permanently.

Is bargraph 8 LH side permanently illuminated?

YES	Replace the multi-timer unit .
NO	Replace the solenoid valve coded electronic unit.

AFTER REPAIR	Erase the memorised fault by entering G0** on the XR25. Carry out a conformity check. Check the operation of the immobiliser system.
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

<p>6</p> 	<p>Bargraphs 6 LH side and 6 RH side illuminated</p> <p style="text-align: right;">Fiche n° 56</p> <p><u>DIESEL SOLENOID VALVE AND CODED LINE CLEARANCE</u></p>
---	--

NOTES	<p>Before beginning fault finding, switch on the ignition for more than 30 consecutive seconds then switch off the ignition.</p>
--------------	--

For the diesel version, if **bargraphs 6 LH side and 6 RH side** are illuminated, check the impact sensor.

Ensure that the solenoid valve coded electronic unit is correctly connected and check the solenoid valve is supplied with 12 Volts.

Check the condition of the wiring between **track 15 of the yellow connector** of the multi-timer unit and **track 8 on the coded solenoid valve connector**.

Repair if necessary.

Set the XR25 to pulse detection mode (button "G", input on terminal "Vin").
Ignition on, check for pulses on **track 15 of the yellow connector** of the multi-timer unit (test with connectors for the multi-timer unit and coded electronic unit of the solenoid valve connected).

Do you note any pulses?

YES	Replace the electronic unit on the solenoid valve.
-----	--

NO	Replace the multi-timer unit .
----	--------------------------------

AFTER REPAIR	<p>Erase the memorised fault by entering G0** on the XR25. Carry out a conformity check. Check the operation of the immobiliser system.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

6 	Bargraph 6 RH side illuminated <u>CODED LINE</u>	Fiche n° 56
---	--	-------------

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

For the petrol version, if bargraph 6 RH side is illuminated, check the impact sensor.

Check the continuity and insulation from earth and 12 volts of the wiring between **track 15 of the yellow connector for the multi-timer unit** and **track ** of the injection computer**.

Repair the wiring if necessary.

Set the XR25 to pulse detection mode (button "G", input on terminal "Vin").
Ignition on, check for pulses on **track 15 of the yellow connector for the multi-timer unit** (test with the multi-timer unit and injection computer connectors connected).

Do you note any pulses?

YES	Replace the injection computer.
NO	Replace the multi-timer unit .

** track : 30, 37 or 58 depending on engine

AFTER REPAIR	Erase the memorised fault by entering G0** on the XR25. Carry out a conformity check. Check the operation of the immobiliser system.
---------------------	--

Fault finding - Customer complaints (petrol version)

NOTES

Only consult these customer complaints after a complete check using the XR25

NO XR25 / MULTI-TIMER UNIT COMMUNICATION	Chart 1
IGNITION ON, THE IMMOBILISER WARNING LIGHT FLASHES PERMANENTLY (starting is impossible)	Chart 2
THE IMMOBILISER WARNING LIGHT REMAINS ILLUMINATED (even with the ignition off) OR REMAINS EXTINGUISHED	Chart 3
IGNITION ON, THE INJECTION WARNING LIGHT FLASHES PERMANENTLY (starting is impossible)	Chart 4
WHEN DRIVING (deceleration) AND AT IDLE SPEED, THE INJECTION WARNING LIGHT FLASHES PERMANENTLY	Chart 5
THE VEHICLE CANNOT BE STARTED	Chart 6

Fault finding - Fault charts (petrol version)

Chart 1

NO XR25 / MULTI-TIMER UNIT COMMUNICATION

NOTES

Lines L and K are used by several computers which may disrupt them. If the fault persists, it may be advisable to check that lines L and K are not being affected.

Check the condition of the + before ignition fuse.
Replace the fuse if necessary.

Ensure that the XR25 is not the cause of the fault by trying to communicate with another computer on the vehicle (air conditioning computer, injection computer,...).

Check that the ISO interface is in position **S8**, that you are using the latest XR25 cassette and the correct access code (**D 56**).

Check the battery voltage (**U > 10.5 volts**). Recharge the battery if necessary.

Check that the 18 track multi-timer unit connector is correctly connected.

Check that the multi-timer unit is correctly fed:

- earth on **track A1 of the black connector** for the multi-timer unit.
- + before ignition feed on **track B1 of the black connector** for the multi-timer unit.

Ensure the diagnostic socket is correctly fed.

Check and ensure the continuity and insulation of the wiring for tracks **1 and 14 of the yellow connector** for the multi-timer unit.

If there is still no dialogue between the XR25 and the multi-timer unit, replace the multi-timer unit.

AFTER REPAIR

When communication has been established, deal with any illuminated fault bargraphs.
Carry out a conformity check.

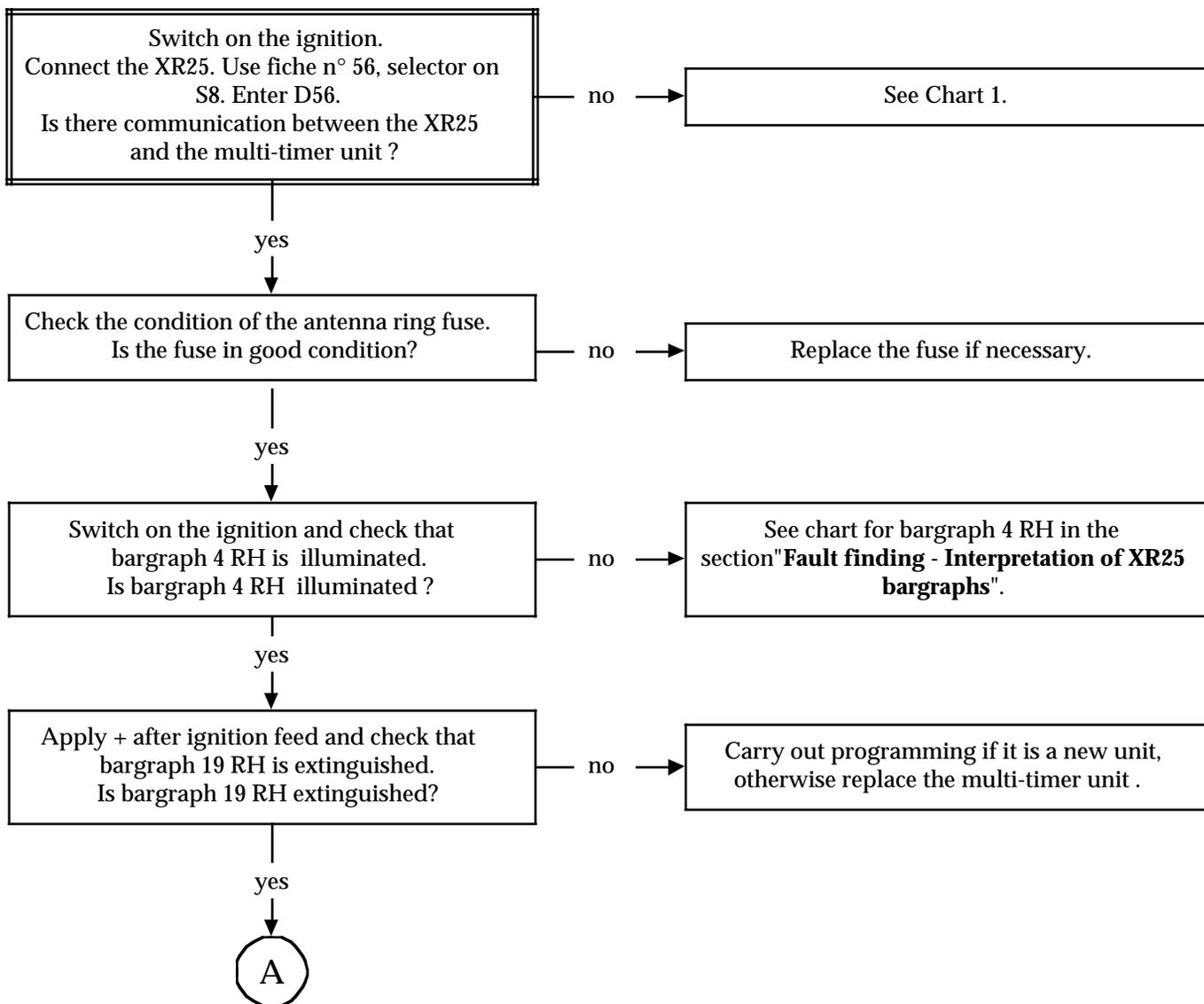
Fault finding - Fault charts (petrol version)

Chart 2

IGNITION ON, THE IMMOBILISER WARNING LIGHT FLASHES
PERMANENTLY (starting is impossible)

NOTES

None

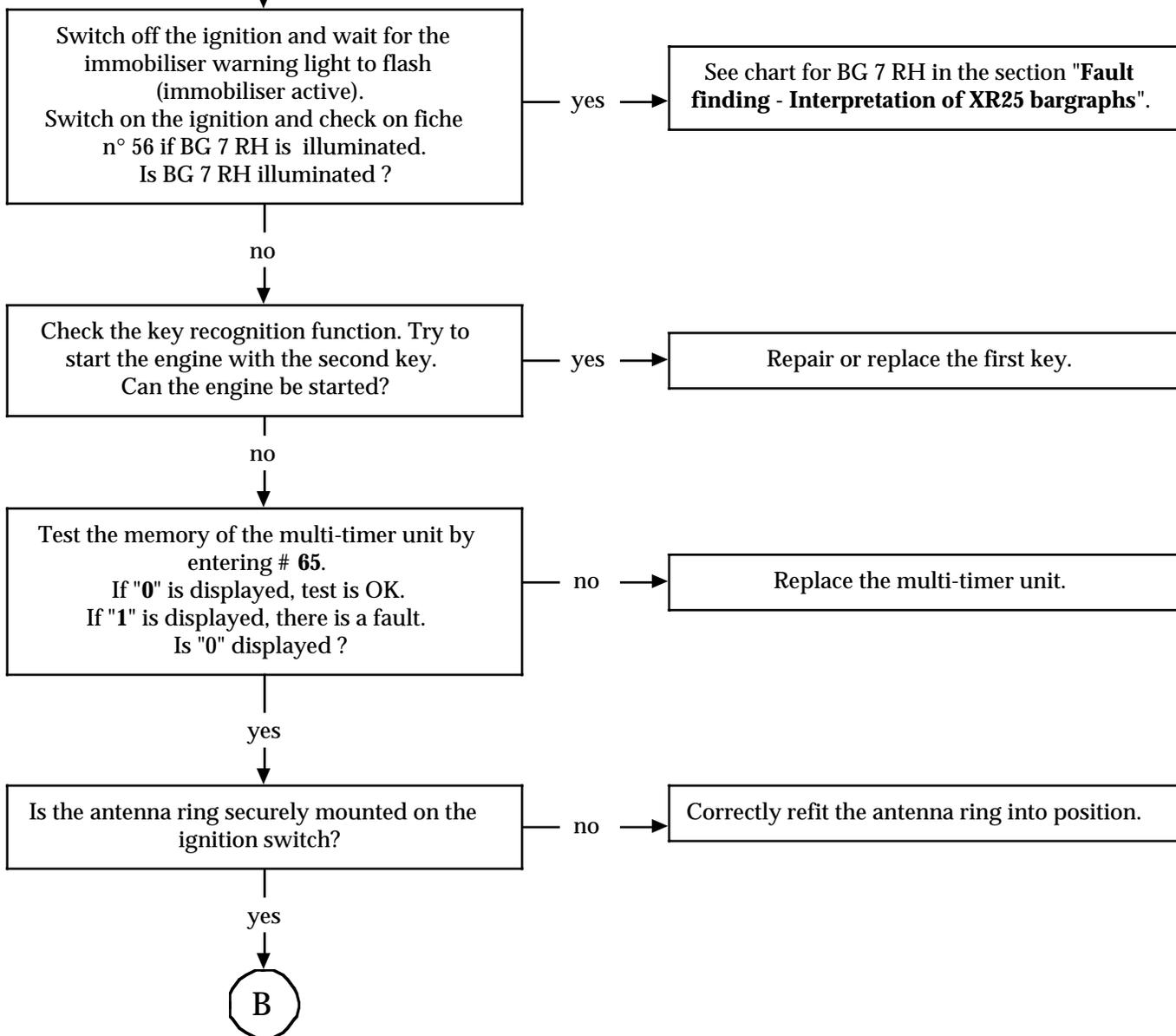


AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.
Erase the faults using G0**.

Chart 2
CONT 1

A

**AFTER REPAIR**

Carry out a conformity check.
Check the operation of the immobiliser system.

Chart 2
CONT 2

B

Check the continuity and insulation from earth and 12 volts of the wiring between :

antenna ring	{	2	→	earth	}	yellow connector
		3	→	+ AVC		
		4	→	2		

Is the wiring correct?

no

Repair the faulty wiring.

yes

Check for + 12 volts on track 2 of the multi-timer unit (multi-timer unit disconnected and antenna ring connector connected).
Do you note this voltage?

no

Replace the antenna ring.

yes

Switch off the ignition and wait for the immobiliser warning light to flash (immobiliser active). Set the XR25 to pulse detection (button "G", and input on terminal "Vin").
Switch on the ignition and check for a pulse on track 2 of the multi-timer unit (test with multi-timer unit and antenna ring connectors connected).
Do you note a pulse?

no

Replace the multi-timer unit .

yes

Replace the key.

AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.

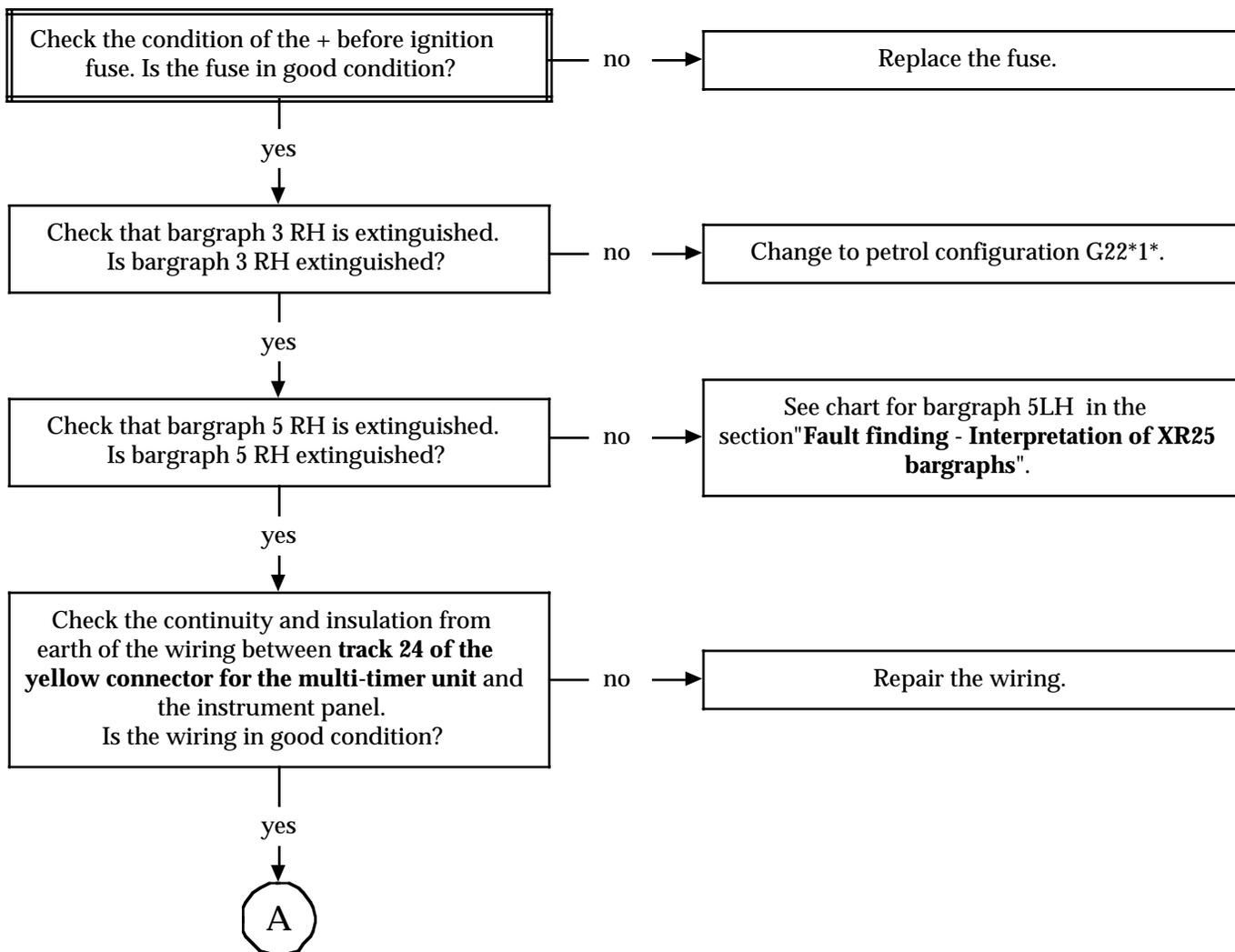
Fault finding - Fault charts (petrol version)

Chart 3

THE IMMOBILISER WARNING LIGHT REMAINS ILLUMINATED (even with the ignition off) OR REMAINS EXTINGUISHED

NOTES

Check that the multi-timer programming has been correctly carried out.



AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.
Erase the faults using G0**.

Chart 3
CONT

A

Carry out the following tests to determine the component at fault:

- if the immobiliser warning light is illuminated, disconnect the yellow connector for the multi-timer unit and check that the immobiliser warning light extinguishes,
- if the immobiliser warning light is extinguished, connect track 24 of the multi-timer unit connector to a vehicle earth and check that the immobiliser warning light illuminates.

Does the immobiliser warning light illuminate correctly during the test?

no

Replace the instrument panel.

yes

Replace the multi-timer unit .

AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.

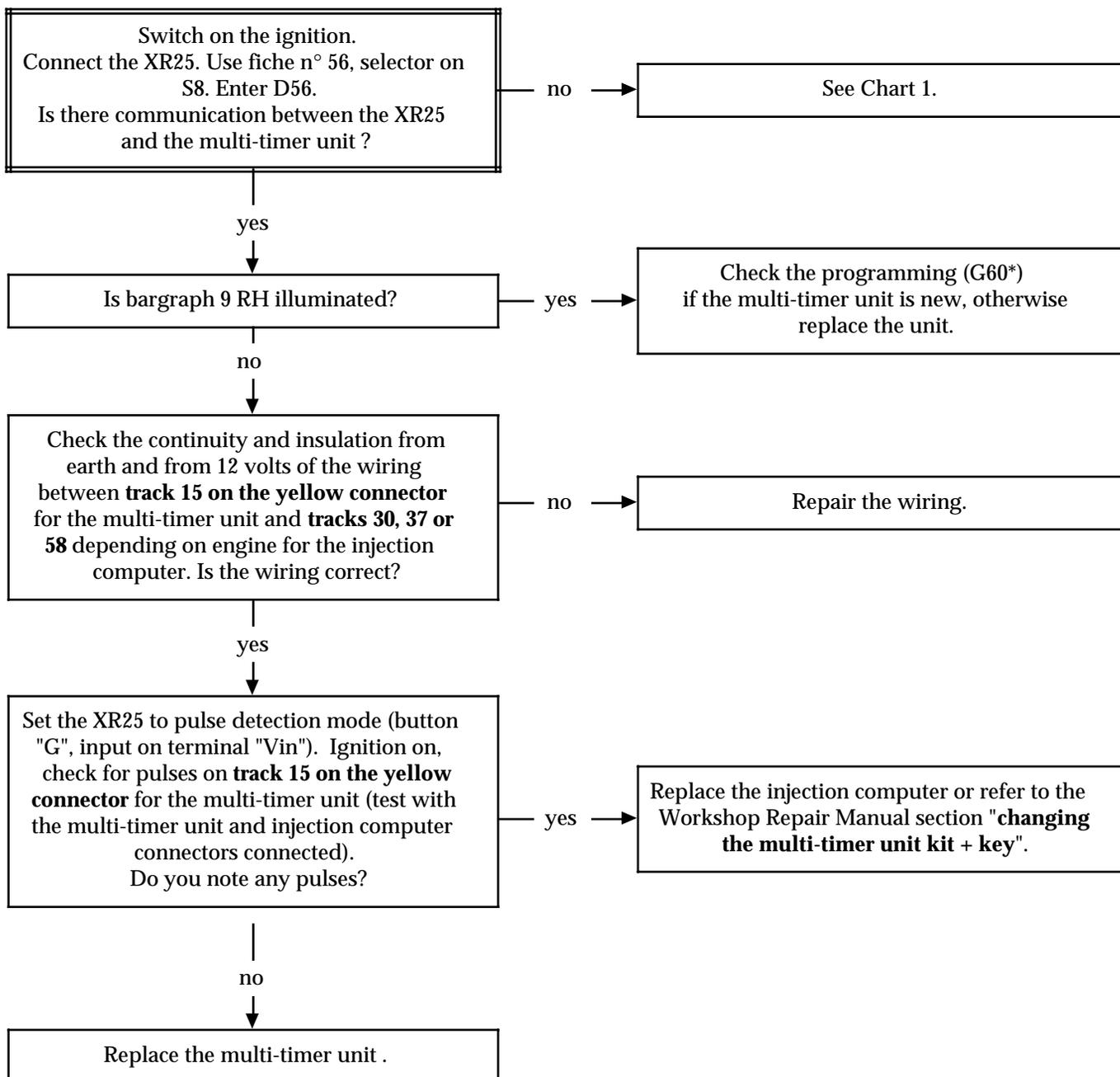
Fault finding - Fault charts (petrol version)

Chart 4

IGNITION ON, THE INJECTION WARNING LIGHT FLASHES
PERMANENTLY (starting is impossible)

NOTES

None

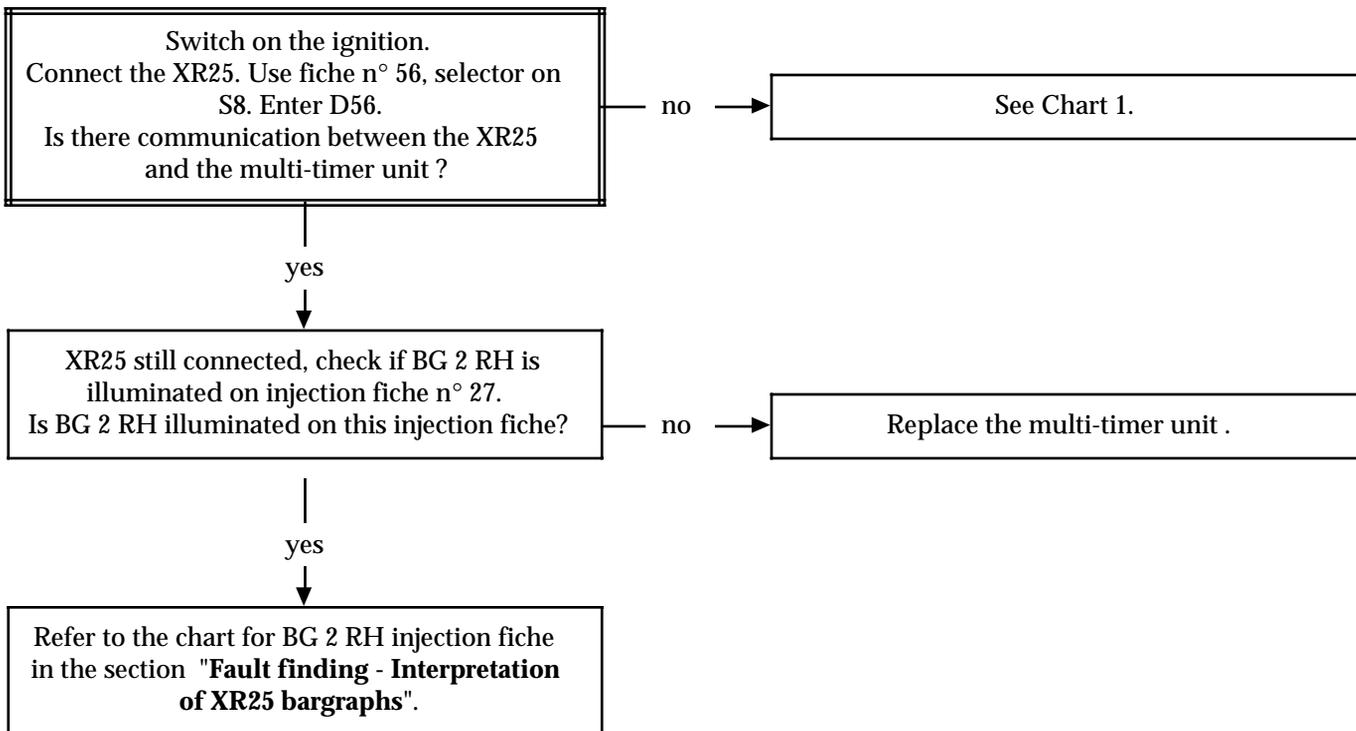


AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.
Erase the faults using G0**.

Fault finding - Fault charts (petrol version)

Chart 5	WHEN DRIVING (deceleration) AND AT IDLE SPEED, THE INJECTION WARNING LIGHT FLASHES PERMANENTLY
NOTES	None



AFTER REPAIR	Carry out a conformity check. Check the operation of the immobiliser system.
---------------------	---

Fault finding - Fault charts (petrol version)

Chart 6

THE VEHICLE CANNOT BE STARTED

NOTES

None

Check that bargraph 6 RH is illuminated.
Is bargraph 6D illuminated?

no

There is an engine fault.

yes

The impact sensor is faulty.

AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.
Erase the faults using G0**.

NOTES

Only consult these customer complaints after a complete check using the XR25

NO XR25 / MULTI-TIMER UNIT COMMUNICATION	Chart 1
IGNITION ON, THE IMMOBILISER WARNING LIGHT FLASHES PERMANENTLY (starting is impossible)	Chart 2
THE IMMOBILISER WARNING LIGHT REMAINS ILLUMINATED FOR MORE THAN 30 CONSECUTIVE SECONDS, IGNITION ON (the immobiliser warning light illuminates permanently as soon as the ignition is switched on, in the 16 seconds following switching on the ignition or the immobiliser warning light illuminates permanently for more than 30 consecutive seconds)	Chart 3
WHEN THE IGNITION IS SWITCHED ON, THE IMMOBILISER WARNING LIGHT ILLUMINATES FOR 3 SECONDS THEN EXTINGUISHES, BUT THE VEHICLE CANNOT BE STARTED	Chart 4
THE IMMOBILISER WARNING LIGHT REMAINS ILLUMINATED (even with the ignition off) OR REMAINS EXTINGUISHED	Chart 5
THE INJECTION AND IMMOBILISER WARNING LIGHTS ARE ILLUMINATED (3 seconds ON then OFF) BUT THE VEHICLE CANNOT BE STARTED	Chart 6

Fault finding - Fault charts (diesel version)

Chart 1

NO XR25 / MULTI-TIMER UNIT COMMUNICATION

NOTES

Lines L and K are used by several computers which may disrupt them. If the fault persists, it may be advisable to check that lines L and K are not being affected.

Check the condition of the + before ignition fuse.
Replace the fuse if necessary.

Ensure that the XR25 is not the cause of the fault by trying to communicate with another computer on the vehicle (air conditioning computer, injection computer,...).

Check that the ISO interface is in position **S8**, that you are using the latest XR25 cassette and the correct access code (**D 56**).

Check the battery voltage (**U > 10.5 volts**). Recharge the battery if necessary.

Check that the 18 track multi-timer unit connector is correctly connected.

Check that the multi-timer unit is correctly fed:

- earth on **track A1 of the black connector** for the multi-timer unit.
- + before ignition feed on **track B1 of the black connector** for the multi-timer unit.

Ensure the diagnostic socket is correctly fed.

Check and ensure the continuity and insulation of the wiring for tracks **1 and 14 of the yellow connector** for the multi-timer unit.

If there is still no dialogue between the XR25 and the multi-timer unit, replace the multi-timer unit.

AFTER REPAIR

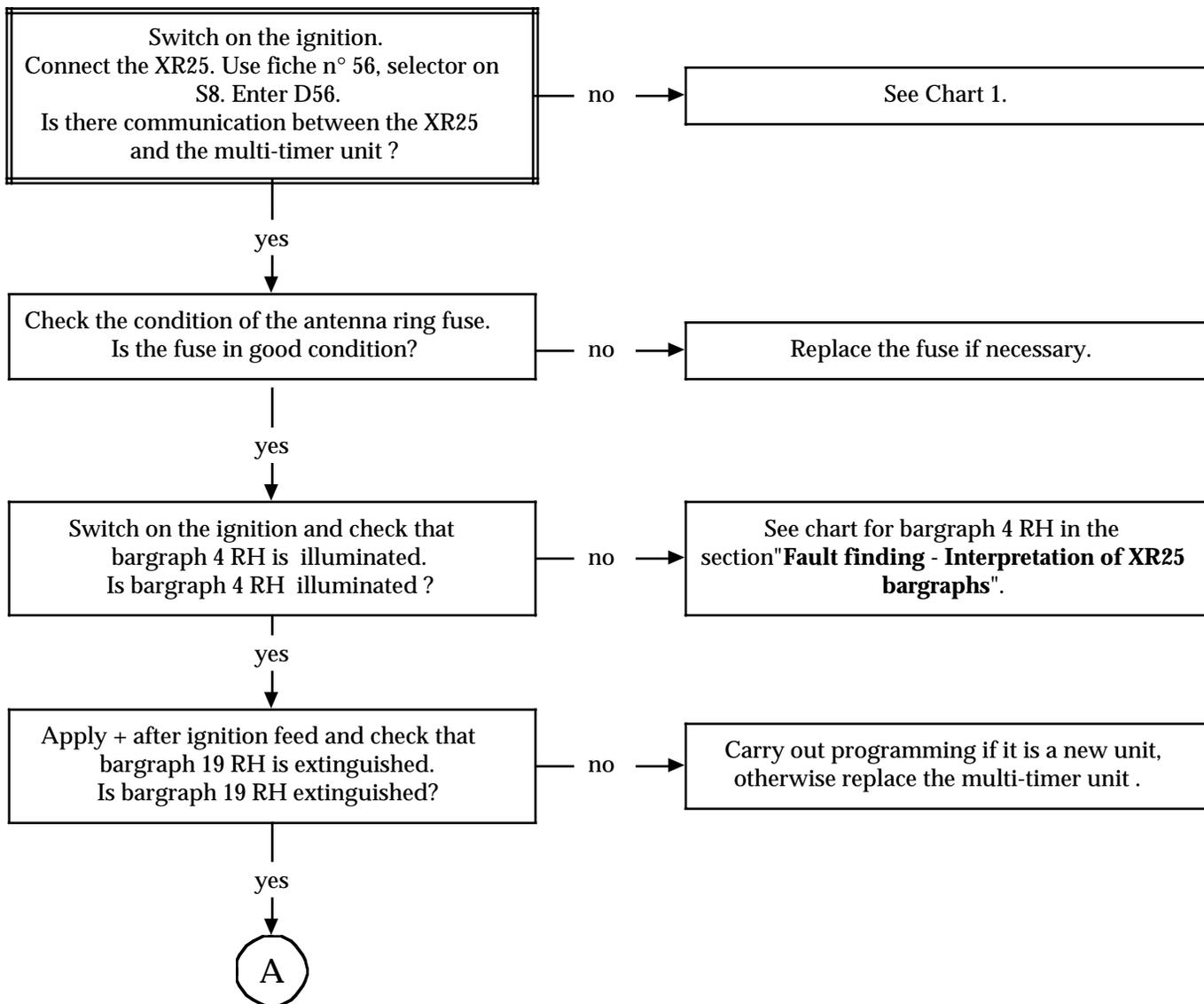
When communication has been established, deal with any illuminated fault bargraphs.
Carry out a conformity check.

Chart 2

IGNITION ON, THE IMMOBILISER WARNING LIGHT FLASHES
PERMANENTLY (starting is impossible)

NOTES

None

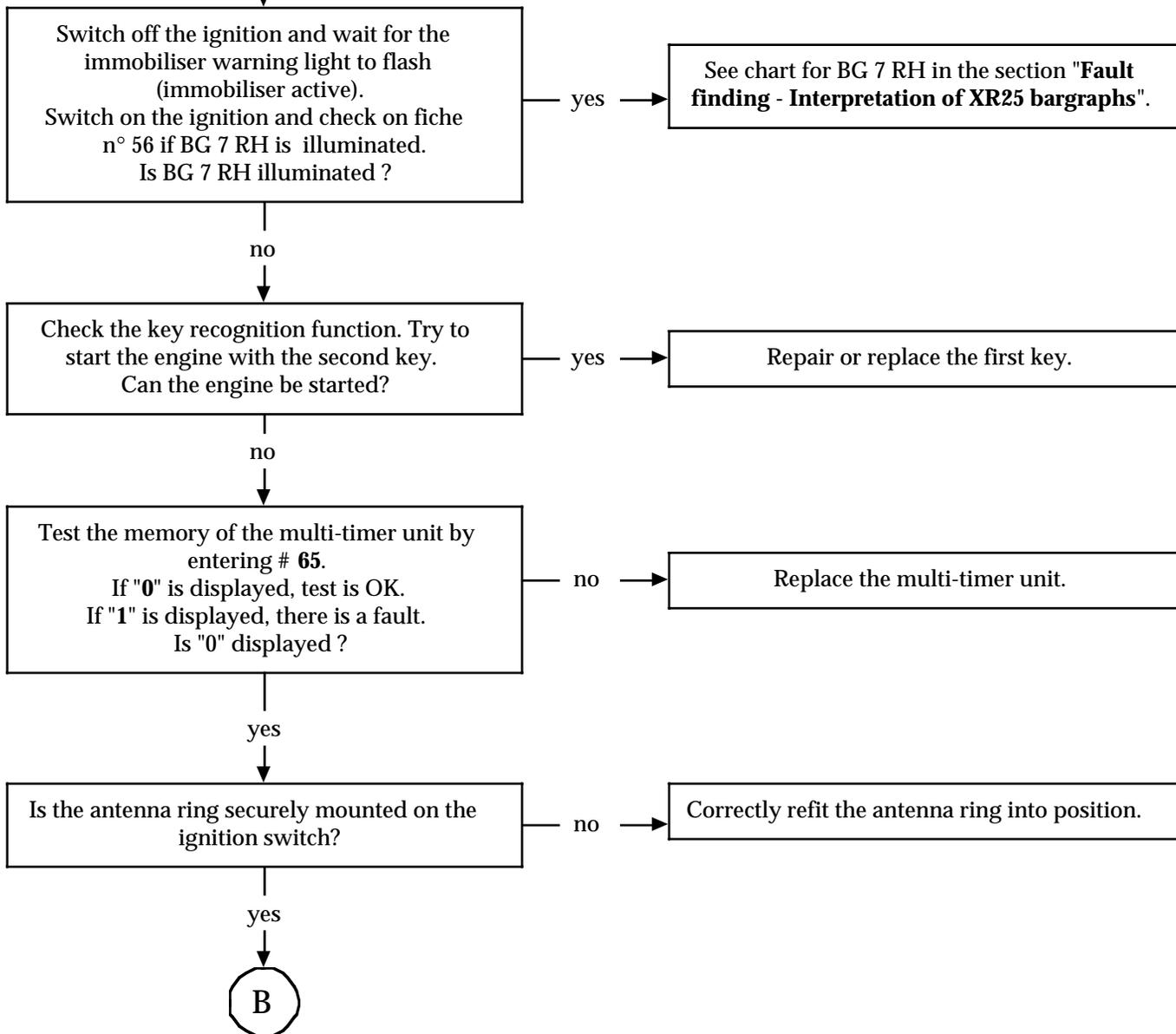


AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.
Erase the faults using G0**.

Chart 2
CONT 1

A

**AFTER REPAIR**

Carry out a conformity check.
Check the operation of the immobiliser system.

Chart 2
CONT 2

B

Check the continuity and insulation from earth and 12 volts of the wiring between :

antenna ring	$\left\{ \begin{array}{l} 2 \longrightarrow \\ 3 \longrightarrow \\ 4 \longrightarrow \end{array} \right.$	earth	} yellow connector
		+ AVC	
		2	

Is the wiring correct?

no

Repair the faulty wiring.

yes

Check for + 12 volts on track 2 of the yellow connector (multi-timer unit connector disconnected and antenna ring connector connected).

Do you note this voltage?

no

Replace the antenna ring.

yes

Switch off the ignition and wait for the immobiliser warning light to flash (immobiliser active). Set the XR25 to pulse detection (button "G", and input on terminal "Vin"). Switch on the ignition and check for a pulse on track 2 of the multi-timer unit (test with multi-timer unit and antenna ring connectors connected).

Do you note a pulse?

no

Replace the multi-timer unit .

yes

Replace the key.

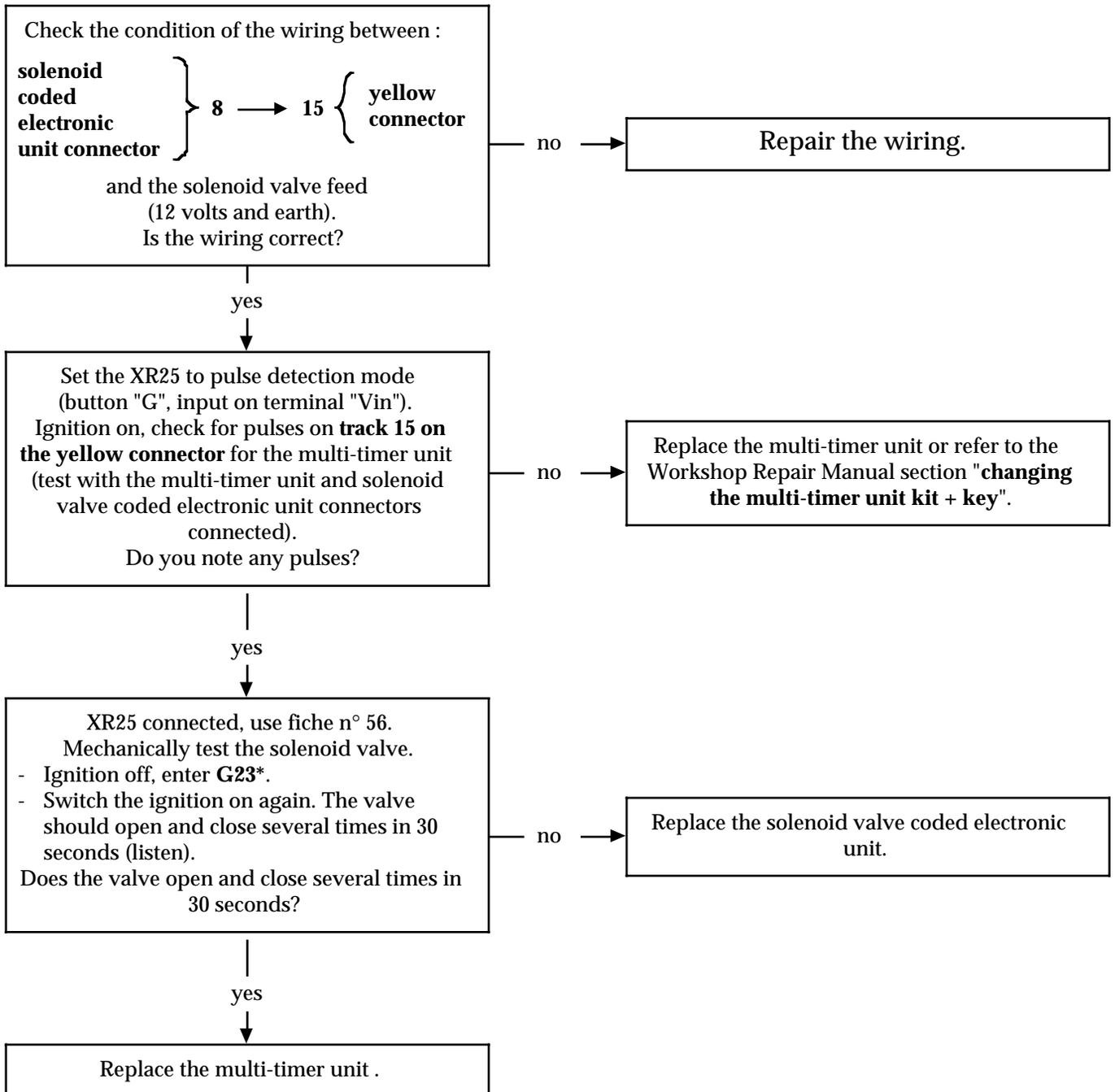
AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.

Fault finding - Fault charts (diesel version)

Chart 3	THE IMMOBILISER WARNING LIGHT REMAINS ILLUMINATED FOR MORE THAN 30 CONSECUTIVE SECONDS, IGNITION ON (the immobiliser warning light illuminates permanently as soon as the ignition is switched on, in the 16 seconds following switching on the ignition or the immobiliser warning light illuminates permanently for more than 30 consecutive seconds)
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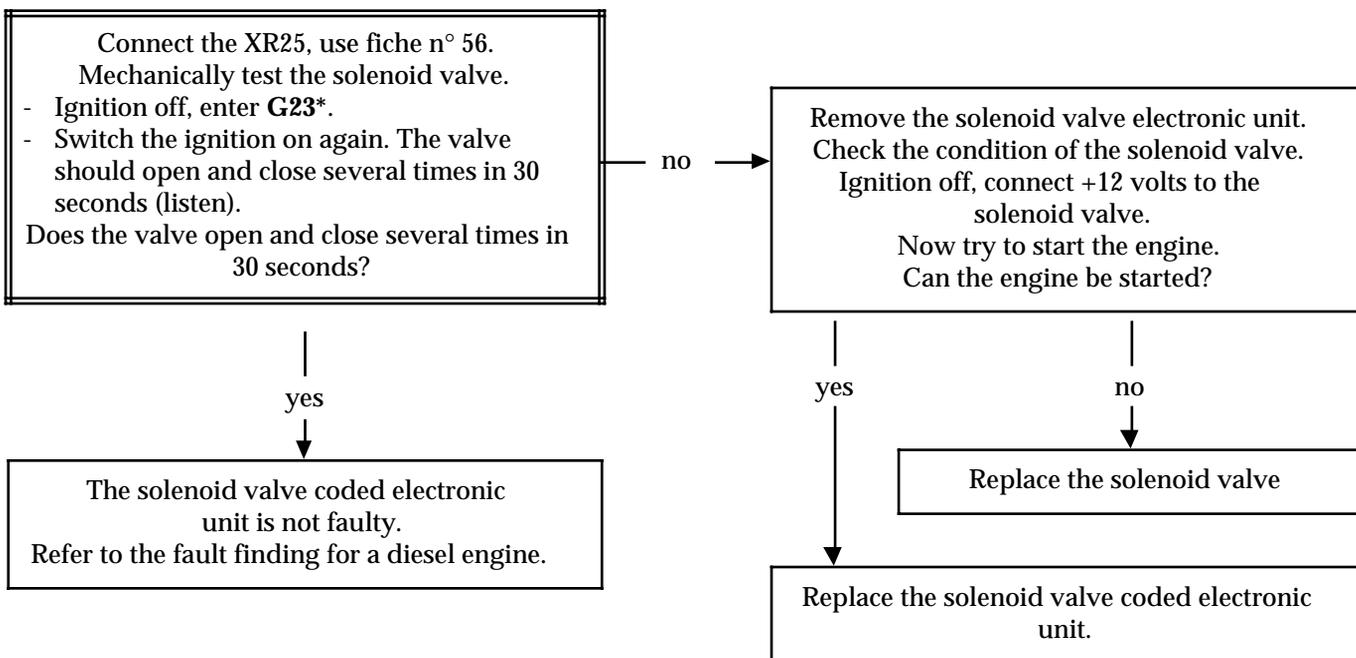
NOTES	None
--------------	------



AFTER REPAIR	Carry out a conformity check. Check the operation of the immobiliser system.
---------------------	---

Fault finding - Fault charts (diesel version)

Chart 4	WHEN THE IGNITION IS SWITCHED ON, THE IMMOBILISER WARNING LIGHT ILLUMINATES FOR 3 SECONDS THEN EXTINGUISHES, BUT THE VEHICLE CANNOT BE STARTED
NOTES	None



AFTER REPAIR	Carry out a conformity check. Check the operation of the immobiliser system.
---------------------	---

Fault finding - Fault charts (diesel version)

Chart 5

THE IMMOBILISER WARNING LIGHT REMAINS ILLUMINATED (even with the ignition off) OR REMAINS EXTINGUISHED

NOTES

Check that the multi-timer programming has been correctly carried out.

Check the condition of the + before ignition fuse. Is the fuse in good condition?

no

Replace the fuse.

yes

Check that bargraph 5 LH is extinguished. Is bargraph 5 LH extinguished?

no

See chart for bargraph 5LH in the section "Fault finding - Interpretation of XR25 bargraphs".

yes

Check the continuity and insulation from earth of the wiring between **track 24 of the yellow connector for the multi-timer unit** and the instrument panel. Is the wiring in good condition?

no

Repair the wiring.

yes

Carry out the following tests to determine the component at fault:

- if the immobiliser warning light is illuminated, disconnect the yellow connector for the multi-timer unit and check that the immobiliser warning light extinguishes,
- if the immobiliser warning light is extinguished, connect track 24 of the multi-timer unit connector to a vehicle earth and check that the immobiliser warning light illuminates.

Does the immobiliser warning light illuminate correctly during the test?

no

Replace the instrument panel.

yes

Replace the multi-timer unit .

AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.
Erase the faults using G0**.

Fault finding - Fault charts (diesel version)

Chart 6

THE VEHICLE CANNOT BE STARTED

NOTES

None

Check that bargraphs 6 RH and 6 LH are illuminated.
Are these bargraphs illuminated?

no

There is an engine fault or a coded solenoid valve fault.

yes

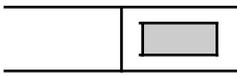
The impact sensor is faulty.

AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.
Erase the faults using G0**.

NOTES

If a fault bargraph illuminates, refer to the corresponding fault chart.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Dialogue with XR25	D56 (selector on S8)		n.56
2			1 	Code present
3	Conformity of multi-timer unit	G70*		X X X Part Number displayed in 2 sequences
4	Interpretation of bargraphs normally illuminated		3 	Illuminated if programmed for both keys Extinguished if programmed for one key
5	Computer configuration to petrol / diesel		3 	Illuminated if configured for a diesel vehicle with coded solenoid valve. Extinguished if configured for a petrol vehicle Command : - G22*1* petrol configuration. - G22*2* configuration for diesel with coded solenoid valve

NOTES

If a fault bargraph illuminates, refer to the corresponding fault chart.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
6	Forced protection mode		9 	<p>Illuminated only after entering command G04* on the XR25. Vehicle cannot be started as long as BG 9LH is illuminated.</p>
7	Immobiliser status		10 	<p>Illuminated if immobiliser active : switch off the ignition and wait approximately 10 seconds for the BG 10LH to illuminate. Extinguished if immobiliser inactive.</p>
8	Presence of the key		8 	<p>Illuminated when the ignition is switched on if the key is coded (on condition that the vehicle was protected before the ignition was switched on, immobiliser warning light flashing). NOTE : in normal operation, bargraphs 8RH, 9 RH and 10 RH should be illuminated together.</p>
9	Reception of key code		9 	<p>Illuminated when the ignition is switched on if the key is coded and has the correct format (on condition that the vehicle was protected before the ignition was switched on, immobiliser warning light flashing). NOTE : In normal operation , bargraphs 8RH , 9RH and 10RH should be illuminated together.</p>

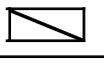
NOTES

If a fault bargraph illuminates, refer to the corresponding fault chart.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
10	Valid key code		10 	<p>Illuminated when the ignition is turned on if the key is coded and has the correct format and code (on condition that the vehicle was protected before the ignition was turned on, immobiliser warning light flashing).</p> <p>NOTE: In normal operation bargraphs 8RH, 9RH and 10RH should be illuminated together.</p>
11	Reception of door switch information		11 	Illuminated if the doors are open
12	Information received on programming in progress or resynchronisation of decoder or programming not carried out		12 	<p>17LH illuminated if programming or resynchronisation in progress.</p> <p>17RH illuminated if programming not carried out</p>
13	Programming of 1st key information received		13 	Illuminated if programming of 1st key in progress

NOTES

If a fault bargraph illuminates, refer to the corresponding fault chart.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
14	Reception of door switch information		14 	Illuminated if multi-timer unit has not been programmed with any keys.
	Reception of programming not locked information		14 	Illuminated when programming has not been locked by command G60*.
15	Reception of information that security code input is blocked for a timed period		15 	Illuminated after entering 3 incorrect security codes (antiscanning) Wait for this bargraph to extinguish with the ignition on (approximately 15 minutes) before entering a new code.

ADDITIONAL CHECKS

COMMAND MODES G--*

To use this function, enter G on the XR25 , then the number of the command followed by a star.

- 04** Forced protection mode : activates the immobiliser function even if the key is correct, which allows starting prevention to be checked. Bargraph 9 left should illuminate.
This command must be entered when the ignition is off and the immobiliser function is active.
IMPORTANT: switching the ignition off cancels this command.
- 05** Immobiliser warning light command (illuminates immobiliser warning light for 3 seconds).
- 13** End of fault finding.
- 22** Configuration :
- **G 22 * 1 *** = configuration for petrol vehicles (Bargraph 3RH should be extinguished).
- **G 22 * 2 *** = configuration for diesel vehicles with coded solenoid valve (Bargraph 3RH should be illuminated).
- 23** Forced solenoid valve test mode (used only on diesel vehicles).
Activates coded solenoid valve (opening/closing) for approximately 30 seconds (listen).
NOTE:
- the multi-timer unit must be configured for a diesel vehicle
- Bargraph 8 left should be illuminated during the test.
- 40** Entering the security code (Bargraph 10 LH must be illuminated and the ignition must be on).
This command mode may be used to enter the security code, but does not decode the injection computer or the coded solenoid valve.
Enter the emergency code number for the vehicle on the XR25 and validate with "*".
If the code number is correct, "**bon**" is displayed on the XR25 and Bargraph 10 LH extinguishes.
If the code number is incorrect, "**Fin**" is displayed on the XR25 and Bargraph 10 LH remains illuminated.
IMPORTANT: three attempts may be made to enter the code. If, after the third attempt, the code is not valid, you must wait for **15 minutes** before another attempt may be made (between each attempt to enter the code, the ignition must be switched off and on again).
- 70** Reading the Part Number (multi-timer unit reference).

MULTI-TIMER UNIT

FAULT FINDING

CONTENTS

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INSTALLATION OF XR25 / MULTI-TIMER UNIT (BMT) DIALOGUE

- Connect the XR25 to the diagnostic socket.
- ISO selector on **S8**
- Enter **D56**, then **G02***

2n.57

PRECAUTION

When carrying out the test using a multimeter, avoid using a test pin on connectors where the test pin is of a size which could damage the clips and lead to a poor contact.

ERASING THE MEMORY

After repairing the multi-timer unit, enter **G0**** on the keyboard of the XR25 kit to proceed with erasing the memorised fault.

PRESENTATION OF XR25 FICHE N° 57

N°57		read : 2r57	
1		CODE PRESENT <input type="checkbox"/>	
2	OVERSPEED ARABIE <input type="checkbox"/>	CONTROL MODES : G...* 03 Interior light 17 Dipped beam 18 Bulbs 19 Indicator 11 Door left-tale 08 Doors unlocking 09 Doors locking 28 Front screen wiper 29 Rear screen wiper 12 Lights 'on' warning 24 Driver's window lower 25 Driver's window raise 05 Immobiliser tail-tale 33 Headlamp washer 37 Buzzer 06 Open signal 07 Close signal 38 Plus after ignition	
3	COMPUTER CONFIGURATION		
4	RUNNING-LIGHT <input type="checkbox"/> VARIABLE FR. WIPER SPEED <input type="checkbox"/>		
5	DRIVER'S WINDOW RISER <input type="checkbox"/> RELAY <input type="checkbox"/>		
6	LOCKING <input type="checkbox"/> UNLOCKING <input type="checkbox"/>		
7	REAR WASH/WIPE button <input type="checkbox"/> FRONT <input type="checkbox"/>		
8	OIL PRESSURE <input type="checkbox"/> SIDE LIGHTS <input type="checkbox"/>		
9	LOWER WINDOW RISER button <input type="checkbox"/> RAISE <input type="checkbox"/>		
10	+ ACCESSORIES DEPENDING ON VERSION <input type="checkbox"/> + AFTER IGNITION <input type="checkbox"/>		
MULTI-TIMER UNIT To read other side : G 0 1 * Erase fault memory : G 0 **			
11	OVERSPEED <input type="checkbox"/> PRESS BUTTONS	ADDITIONAL CHECKS : # .. 01 Vehicle speed km/h 02 Battery voltage V 04 Screen wiper timer switch position 14 Equipment level	
12	REAR WASH/WIPE <input type="checkbox"/> FRONT WASH/WIPE <input type="checkbox"/>		
13	RAISE driver's window riser <input type="checkbox"/> LOWER <input type="checkbox"/>		
14	FRONT wiper speed <input type="checkbox"/> screen wiper park front <input type="checkbox"/>		
15	REAR wiper speed <input type="checkbox"/> rear <input type="checkbox"/>		
16	SIDELIGHTS <input type="checkbox"/> DIPPED <input type="checkbox"/>		
17	REVERSE GEAR LIGHTING CTRL <input type="checkbox"/> MAIN BEAM <input type="checkbox"/>		
18	HAZARD <input type="checkbox"/> INDICATOR <input type="checkbox"/>		
19	CONTROL CLUTCH (if control. clutch/lever in 3 and accelerate) <input type="checkbox"/>		
20	OIL PRESSURE (<input type="checkbox"/>) engine running <input type="checkbox"/>		
		Help : V9 Return to diag. mode : D Part No : G70 *	
		17 ANG	

FI21757

bmt 1112.0

DESCRIPTION OF BARGRAPHS

-  **Illuminates when dialogue is established with the product computer**, if it remains extinguished :
- the code does not exist,
 - there is a line , computer or tool fault.

REPRESENTATION OF FAULTS (always on coloured background)

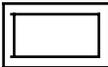
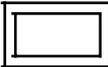
-  **Illuminated**, indicates a fault on the part tested, the associated text defines the fault.

-  **Extinguished**, indicates non-detection of fault on the product tested.

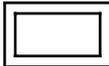
REPRESENTATION OF STATUS (always on white background)

Engine stopped, ignition on, no operator action

Status Bargraphs on the fiche are shown as they should appear, engine stopped, ignition on, without operator action

- If on the fiche, the Bargraph is shown as  the kit should show 
 - If on the fiche, the Bargraph is shown as  the kit should show 
 - If on the fiche, the Bargraph is shown as  the kit should show 
- either  or 

Engine running

-  Extinguished when operation or condition specified on the fiche is no longer met.
-  Illuminated when operation or condition specified on the fiche is met.

Fault finding - Interpretation of XR25 bargraphs

<p>5</p> 	<p>Bargraph 5 LH side illuminated</p> <p><u>DRIVER'S ELECTRIC WINDOW</u></p>	Fiche n° 57
---	---	-------------

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

Check the condition of fuse .

Replace it if necessary.

Connect the XR25 and enter **G24*** and **G25***.
The electric window relays should click.

Do the relays click?

NO	Replace the faulty relay/s. If the fault persists, replace the multi-timer unit.
----	--

YES	<p>Disconnect the blue 26 track connector and press the electric window button to raise the window.</p> <p>Check for the presence of 12 V on track 1 of the connector and 0 V on track 2 of the connector.</p> <p>Is this correct?</p>
NO	<p>Check the continuity of the wiring between the relays and the electric window motor.</p> <p>Repair if necessary.</p> <p>If the fault persists, replace the electric window button.</p>
YES	<p>Replace the electric window motor.</p>

AFTER REPAIR	<p>Enter G0** on the XR25.</p> <p>Check the system operates correctly.</p>
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

5 	Bargraph 5 RH side illuminated <u>RELAYS</u>	Fiche n° 57
---	--	-------------

NOTES	Check that bargraph 10 RH is illuminated (+after ignition feed present)
--------------	---

Check the correct operation of each component in the multi-timer unit.

If a component is not operating correctly, connect the XR25 and enter the command mode for the faulty component

- G08* for door unlocking,
- G09* for door locking,
- G17* for the dipped headlights,
- G18* for the side lights,
- G19* for the hazard warning lights,
- G24* for lowering the driver's electric window,
- G25* for raising the driver's electric window,
- G28* for the front wiper,
- G29* for the rear wiper,
- G33* for the headlight washers,
- G38* for + after ignition feed.

When the command mode for each component is entered, the corresponding relay should click.

If a relay does not click, replace it.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

6 	Bargraph 6 LH side illuminated <u>DOOR LOCKING</u>	Fiche n° 57
---	--	-------------

NOTES	Check that bargraph 5 RH is extinguished, otherwise deal with that bargraph first.
--------------	--

Check the insulation in relation to earth of the wiring between **track 7 of the yellow connector** for the multi-timer unit and track **1 of the door locking button**.

Repair the faulty wiring if necessary.

Replace the door locking button.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

6 	Bargraph 6 RH side illuminated <u>DOOR UNLOCKING</u>	Fiche n° 57
--	--	-------------

NOTES	Check that bargraph 5 RH is extinguished, otherwise deal with that bargraph first.
--------------	--

Check the insulation in relation to earth of the wiring between **track 22 of the yellow connector** for the multi-timer unit and **track 5 of the door locking button**.

Repair the faulty wiring if necessary.

Replace the door locking button.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>7</p> 	<p>Bargraph 7 LH side illuminated</p> <p><u>REAR SCREEN WASHER</u></p>	Fiche n° 57
---	---	-------------

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

Check the insulation from 12 Volts of the wiring between :

wiper stalk	{	B1	→	16	yellow connector for the multi-timer unit
		B1	→	B1	washer pump

Repair the faulty wiring.

Check for the presence of 12 V on track **B1 of the wiper stalk** when the rear washer is activated.

Replace the stalk if you do not note 12 V.

Check that the washer pump is operating by supplying it directly with 12 V on track **B1**.

Replace the pump if necessary.

Check the condition of the wiring between track **A1 on the pump** and track **A4 on the wiper stalk**.

Repair the wiring if necessary.

If the fault persists, replace the multi-timer unit.

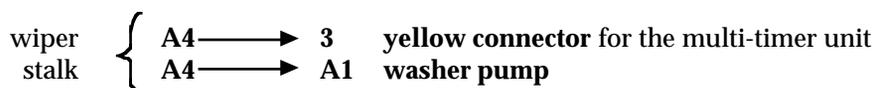
AFTER REPAIR	<p>Enter G0** on the XR25.</p> <p>Check the system operates correctly.</p>
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

7 	Bargraph 7 RH side illuminated <u>WINDSCREEN WASHER</u>	Fiche n° 57
---	---	-------------

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

Check the insulation from 12 V of the wiring between :



Repair the wiring if necessary.

Check for the presence of 12 V on track **A4 of the wiper stalk** when the windscreen washer is activated.

Replace the stalk if you do not note 12 V.

Check that the washer pump is operating by supplying it directly with 12 V on track **A1**.

Replace the pump if necessary.

Check the condition of the wiring between track **B1 on the pump** and track **B1 on the wiper stalk**.

Repair the wiring if necessary.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

8 	Bargraph 8 LH side illuminated <u>OIL PRESSURE</u>	Fiche n° 57
---	--	-------------

NOTES	None
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Check the insulation from earth of the wiring between track **1 on the oil pressure switch** and track **20 of the yellow connector** for the multi-timer unit.

Repair the wiring if necessary.

Replace the the oil pressure switch.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

8 	Bargraph 8 RH side illuminated <u>DIPPED HEADLIGHTS</u>	Fiche n° 57
---	---	-------------

NOTES	Check that bargraph 5 RH is extinguished, otherwise deal with that bargraph first.
--------------	--

Check the continuity and insulation from 12 V of the wiring between track **B5 on the lights stalk**, the **left and right hand headlights** and between **track B5 and track 6 of the blue connector** for extreme cold versions.

Repair if necessary.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

9 	Bargraph 9 LH side illuminated <u>DRIVER'S ELECTRIC WINDOW LOWER</u>	Fiche n° 57
---	--	-------------

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

Check that the button is not jammed in the lower position.

- If it is, release or replace the button.
- If it is not jammed, refer to the chart for bargraph 13 RH side.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

9 	Bargraph 9 RH side illuminated <u>DRIVER'S ELECTRIC WINDOW RAISE</u>	Fiche n° 57
---	--	-------------

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

Check that the button is not jammed in the raise position.

- If it is, release or replace the button.
- If it is not jammed, refer to the chart for bargraph 13 LH side.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

10 	Bargraph 10 LH side extinguished or permanently illuminated Fiche n° 57 <u>ACCESSORIES CIRCUIT</u>
---	--

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

The bargraph is permanently illuminated with no action at the ignition switch.

Check for the presence of 12 V on track **5 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

YES Check the insulation from 12 V of the wiring between the **ignition switch** and track **5 of the yellow connector**.
 Repair if necessary.
 If the fault persists, replace the ignition switch.

NO Replace the multi-timer unit.

The bargraph is permanently extinguished with no action at the ignition switch.

Check for the presence of 12 V on track **5 of the yellow connector** for the multi-timer unit when starting.

Is there 12 V ?

YES Replace the multi-timer unit.

NO Check the condition of fuse F3.
 Replace it if necessary.

Check the continuity and insulation from earth of the wiring between :

fuse BP 13	1	→	4	ignition switch
yellow connector	5	→	3	ignition switch

Is the wiring correct?

YES Replace the ignition switch.

NO Repair the faulty wiring.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

10 	Bargraph 10 RH side extinguished or permanently illuminated Fiche n° 57 <u>AFTER IGNITION FEED</u>
---	--

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

The bargraph is permanently illuminated, ignition switch in off position.

Check for the presence of 12 V on track **6 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

NO Replace the multi-timer unit.

YES Check the insulation from 12 V of the wiring between track **6 of the yellow connector** and track **1 of the ignition switch**.
 Repair if necessary.
 If the fault persists, replace the ignition switch.

The bargraph remains extinguished after + after ignition feed is applied.

Check for the presence of 12 V on track **6 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

YES Replace the multi-timer unit.

NO Check the condition of fuse F2.
 Replace it if necessary.

Check the continuity and insulation from earth of the wiring between :

fuse BP 13	1	→	4	ignition switch
yellow connector	6	→	1	ignition switch

Is the wiring correct?

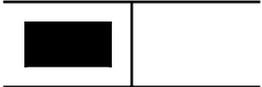
NO Repair the faulty wiring.

YES Replace the ignition switch.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>11</p> 	<p>Bargraph 11 LH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>OVERSPEED CIRCUIT</u></p>
--	---

NOTES	<p>Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first (Arabia equipment only).</p>
--------------	---

The bargraph is permanently illuminated with no action on the overspeed switch.

Check for the presence of 12 V on track **10 of the blue connector** for the multi-timer unit.

Is there 12 V ?

NO Replace the multi-timer unit.

YES Check the insulation from 12 V of the wiring between **the overspeed switch** and track **10 of the blue connector** .
Repair if necessary.
If the fault persists, replace the overspeed switch.

The bargraph remains extinguished when the overspeed programming switch is pressed.

Check for the presence of 12 V on track **10 of the blue connector** for the multi-timer unit.

Is there 12 V ?

YES Replace the multi-timer unit.

NO Check the condition of fuse F3.
Replace it if necessary.

Check the continuity and insulation from earth of the wiring between :

fuse BP 13	1	—→	overspeed switch
blue connector	10	—→	overspeed switch

Is the wiring correct?

NO Repair the faulty wiring.

YES Replace the overspeed switch.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	<p>Enter G0** on the XR25. Check the system operates correctly.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>12</p> 	<p>Bargraph 12 LH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>REAR WIPER CIRCUIT</u></p>
--	--

NOTES	Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first
--------------	---

The bargraph is permanently illuminated with no action at the rear wiper stalk.	
Check for the presence of 12 V on track 16 of the yellow connector for the multi-timer unit. Is there 12 V ?	
NO	Replace the multi-timer unit.
YES	Check the insulation from 12 V of the wiring between track 16 of the yellow connector and track B1 of the stalk . Repair if necessary. If the fault persists, replace the rear wiper stalk.

The bargraph remains extinguished when the rear wiper control is activated.											
Check for the presence of 12 V on track 16 of the yellow connector for the multi-timer unit. Is there 12 V ?											
YES	Replace the multi-timer unit.										
NO	Check the condition of fuse F3. Replace it if necessary.										
Check the continuity and insulation from earth of the wiring between :											
<table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">fuse BP 13</td> <td style="text-align: center;">1</td> <td style="text-align: center;">→</td> <td style="text-align: left;">B4</td> <td style="text-align: left;">rear wiper stalk</td> </tr> <tr> <td style="text-align: right;">yellow connector</td> <td style="text-align: center;">16</td> <td style="text-align: center;">→</td> <td style="text-align: left;">B1</td> <td style="text-align: left;">rear wiper stalk</td> </tr> </table>	fuse BP 13	1	→	B4	rear wiper stalk	yellow connector	16	→	B1	rear wiper stalk	
fuse BP 13	1	→	B4	rear wiper stalk							
yellow connector	16	→	B1	rear wiper stalk							
Is the wiring correct?											
NO	Repair the faulty wiring.										
YES	Replace the rear wiper control.										
If the fault persists, replace the multi-timer unit.											

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>12</p> 	<p>Bargraph 12 RH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>WINDSCREEN WIPER CIRCUIT</u></p>
---	--

NOTES	Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first
--------------	---

The bargraph is permanently illuminated with no action at the windscreen wiper stalk.

Check for the presence of 12 V on track **3 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

NO Replace the multi-timer unit.

YES Check the insulation from 12 V of the wiring between track **3 of the yellow connector** and track **A4 on the stalk**.
Repair if necessary.
If the fault persists, replace the windscreen wiper stalk.

The bargraph remains extinguished when the windscreen wiper control is activated.

Check for the presence of 12 V on track **3 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

YES Replace the multi-timer unit.

NO Check the condition of fuse F3.
Replace it if necessary.

Check the continuity and insulation from earth of the wiring between :

fuse BP 13	1	→	A7	windscreen wiper stalk
yellow connector	3	→	A4	windscreen wiper stalk

Is the wiring correct?

NO Repair the faulty wiring.

YES Replace the windscreen wiper control.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>13</p> 	<p>Bargraph 13 LH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>ONE-TOUCH WINDOW BUTTON IN RAISE POSITION</u></p>
--	---

NOTES	<p>Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first and check that bargraph 5 RH is extinguished.</p>
--------------	--

The bargraph is permanently illuminated with no action on the electric window switch.

Check for the presence of 0 V on track **1 of the blue connector** for the multi-timer unit.

Is there 0 V ?

NO Replace the multi-timer unit.

YES Check the insulation from earth of the wiring between track **1 of the blue connector** and track **2 of the switch**.
Repair if necessary.

If the fault persists, replace the electric window switch.

The bargraph remains extinguished when the switch is pressed.

Check for the presence of 0 V on track **1 of the blue connector** for the multi-timer unit.

Is there 0 V ?

YES Replace the multi-timer unit.

NO Check the continuity and insulation from 12 V of the wiring between track **1 of the blue connector** and track **2 of the switch**.
Repair if necessary.

If the fault persists, replace the electric window switch.

AFTER REPAIR	<p>Enter G0** on the XR25. Check the system operates correctly.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

13



Bargraph 13 RH side extinguished or permanently illuminated Fiche n° 57
ONE-TOUCH WINDOW BUTTON IN LOWER POSITION

NOTES

Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first and check that bargraph 5 RH is extinguished.

The bargraph is permanently illuminated with no action on the electric window switch.

Check for the presence of 0 V on track **2 of the blue connector** for the multi-timer unit.

Is there 0 V ?

NO Replace the multi-timer unit.

YES Check the insulation from earth of the wiring between track **2 of the blue connector** and track **6 of the switch**.
 Repair if necessary.
 If the fault persists, replace the electric window switch.

The bargraph remains extinguished when the switch is pressed.

Check for the presence of 0 V on track **2 of the blue connector** for the multi-timer unit.

Is there 0 V ?

YES Replace the multi-timer unit.

NO Check the continuity and insulation from 12 V of the wiring between track **2 of the blue connector** and track **6 of the switch**.
 Repair if necessary.

If the fault persists, replace the electric window switch.

AFTER REPAIR

Enter G0** on the XR25.
 Check the system operates correctly.

Fault finding - Interpretation of XR25 bargraphs

<p>14</p> 	<p>Bargraph 14 LH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>WINDSCREEN WIPER TIMER</u></p>
--	--

NOTES	Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first
--------------	---

The bargraph is permanently illuminated with no action at the wiper stalk.	
Check for the presence of 12 V on track 18 of the yellow connector for the multi-timer unit. Is there 12 V ?	
NO	Replace the multi-timer unit.
YES	Check the insulation from 12 V of the wiring between track 18 of the yellow connector and track A1 of the wiper stalk. Repair the faulty wiring.

The bargraph remains extinguished when the wiper stalk is activated.																
Check for the presence of 12 V on track 18 of the yellow connector for the multi-timer unit. Is there 12 V ?																
YES	Replace the multi-timer unit.															
NO	Check the condition of fuse F4. Replace it if necessary.															
Check the continuity and insulation from earth of the wiring between :																
<table style="border: none;"> <tr> <td style="padding-right: 10px;">yellow connector</td> <td style="padding-right: 10px;">18</td> <td style="padding-right: 10px;">→</td> <td style="padding-right: 10px;">A1</td> <td style="padding-right: 10px;">wiper stalk</td> </tr> <tr> <td style="padding-right: 10px;">wiper stalk</td> <td style="padding-right: 10px;">A3</td> <td style="padding-right: 10px;">→</td> <td style="padding-right: 10px;">A1</td> <td style="padding-right: 10px;">wiper motor</td> </tr> <tr> <td style="padding-right: 10px;">wiper stalk</td> <td style="padding-right: 10px;">A6</td> <td style="padding-right: 10px;">→</td> <td style="padding-right: 10px;">K3</td> <td style="padding-right: 10px;">relay</td> </tr> </table>	yellow connector	18	→	A1	wiper stalk	wiper stalk	A3	→	A1	wiper motor	wiper stalk	A6	→	K3	relay	
yellow connector	18	→	A1	wiper stalk												
wiper stalk	A3	→	A1	wiper motor												
wiper stalk	A6	→	K3	relay												
Is the wiring correct?																
NO	Repair the faulty wiring.															
YES	Replace the wiper stalk.															
If the fault persists, replace the multi-timer unit.																

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

14 	Bargraph 14 RH side extinguished or permanently illuminated Fiche n° 57 <u>WINDSCREEN WIPER PARK</u>
--	--

NOTES	Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first
--------------	---

The bargraph remains extinguished .

Check for the presence of 0 V on track **10 of the yellow connector** for the multi-timer unit.

Is there 0 V ?

YES Replace the multi-timer unit.

NO Check the continuity and insulation in relation to 12 V of the wiring between track **10 of the yellow connector** and track **A2** of the wiper motor.
Repair if necessary.

If the fault persists, replace the windscreen wiper motor.

The bargraph remains illuminated and the wiper moves from its park position.

Check for the presence of 0 V on track **10 of the yellow connector** for the multi-timer unit.

Is there 0 V ?

NO Replace the multi-timer unit.

YES Check the insulation from earth of the wiring between track **10 of the yellow connector** and track **A2** of the windscreen wiper motor.
Repair if necessary.

If the fault persists, replace the windscreen wiper motor.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

15 	Bargraph 15 LH side extinguished or permanently illuminated Fiche n° 57 <u>REAR WIPER TIMER</u>
--	---

NOTES	Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first
--------------	---

The bargraph is permanently illuminated without activation of the wiper stalk.

Check for the presence of 12 V on track **4 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

NO Replace the multi-timer unit.

YES Check the insulation from 12 V of the wiring between track **4 of the yellow connector** and track **B2** of the wiper stalk.
 Repair the faulty wiring.

The bargraph remains extinguished when the wiper stalk is activated.

Check for the presence of 12 V on track **4 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

YES Replace the multi-timer unit.

NO Check the condition of fuse F3.
 Replace it if necessary.

Check the continuity and insulation from earth of the wiring between :

yellow connector	4	→	B2	wiper stalk
wiper stalk	B4	→	L5	relay
relay	L3	→	1	motor

Is the wiring correct?

NO Repair the faulty wiring.

YES Replace the wiper stalk.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

15 	Bargraph 15 RH side extinguished or permanently illuminated Fiche n° 57 <u>REAR WIPER PARK POSITION</u>
---	---

NOTES	Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first
--------------	---

The bargraph remains permanently illuminated.	
Check for the presence of 0 V on track 19 of the yellow connector for the multi-timer unit. Is there 0 V ?	
YES	Replace the multi-timer unit.
NO	Check the continuity and insulation in relation to 12 V of the wiring between track 19 of the yellow connector and track 3 of the wiper motor . Repair if necessary. If the fault persists, replace the rear wiper motor.

The bargraph remains extinguished .	
Disconnect the rear wiper unit. Does the bargraph illuminate?	
YES	Replace the rear wiper motor.
NO	Check for the presence of 0 V on track 19 of the yellow connector for the multi-timer unit. Is there 0 V ?
NO	Replace the multi-timer unit.
YES	Check the insulation from earth of the wiring between track 19 of the yellow connector and track 3 of the windscreen wiper motor . Repair the faulty wiring.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>16</p> 	<p>Bargraph 16 LH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>SIDE LIGHTS CIRCUIT</u></p>
--	---

NOTES	None
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The bargraph is permanently illuminated with no action on the lights stalk

Check for the presence of 12 V on track **17 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

NO Replace the multi-timer unit.

YES Check the insulation from 12 V of the wiring between :

yellow connector	17	→	B	LH side light
lights stalk	B1	→	B	LH and RH side lights

Repair if necessary.

If the fault persists, replace the lights stalk.

The bargraph remains extinguished when the lights stalk is activated.

Check for the presence of 12 V on track **17 of the yellow connector** for the multi-timer unit.

Is there 12 V ?

YES Replace the multi-timer unit.

NO Check the condition of fuse F26.
Replace it if necessary.

Check the continuity and insulation from earth of the wiring between :

yellow connector	17	→	B	LH side light
lights stalk	B1	→	B	LH and RH side lights

Is the wiring correct?

NO Repair the faulty wiring.

YES Replace the lights stalk.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	<p>Enter G0** on the XR25. Check the system operates correctly.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

16 	Bargraph 16 RH side extinguished or permanently illuminated Fiche n° 57 <u>DIPPED HEADLIGHTS CIRCUIT</u>
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NOTES	Check for "extreme cold" versions only.
--------------	---

The bargraph is permanently illuminated with no action on the lights stalk.	
Check for the presence of 12 V on track 6 of the blue connector for the multi-timer unit. Is there 12 V ?	
NO	Replace the multi-timer unit.
YES	Check the insulation from 12 V of the wiring between : lights stalk B5 ———→ fuse F9 fuse F9 ———→ C RH and LH headlights Repair if necessary. If the fault persists, replace the lights stalk.

The bargraph remains extinguished when the lights stalk is activated.											
Check for the presence of 12 V on track 6 of the blue connector for the multi-timer unit. Is there 12 V ?											
YES	Replace the multi-timer unit.										
NO	Check the condition of fuse F9. Replace it if necessary.										
Check the continuity and insulation from earth of the wiring between :											
<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">blue connector</td> <td style="width: 5%;">6</td> <td style="width: 10%;">————→</td> <td style="width: 10%;">B5</td> <td style="width: 40%;">lights stalk</td> </tr> <tr> <td>fuse BP13</td> <td>1</td> <td>————→</td> <td>B3</td> <td>lights stalk</td> </tr> </table>		blue connector	6	————→	B5	lights stalk	fuse BP13	1	————→	B3	lights stalk
blue connector	6	————→	B5	lights stalk							
fuse BP13	1	————→	B3	lights stalk							
Is the wiring correct?											
NO	Repair the faulty wiring.										
YES	Replace the lights stalk.										
If the fault persists, replace the multi-timer unit.											

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>17</p> 	<p>Bargraph 17 LH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>REVERSING CIRCUIT</u></p>
--	---

NOTES	Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first
--------------	---

The bargraph is permanently illuminated with no action for reverse gear.

Check for the presence of 12 V on track **3 of the blue connector** for the multi-timer unit.

Is there 12 V ?

NO Replace the multi-timer unit.

YES Check the insulation from 12 V of the wiring between track **3 of the blue connector** and track **2 of the reverse gear switch**.
Repair if necessary.

If the fault persists, replace the reverse gear switch.

The bargraph remains extinguished when reverse gear is engaged.

Check for the presence of 12 V on track **3 of the blue connector** for the multi-timer unit.

Is there 12 V ?

YES Replace the multi-timer unit.

NO Check the condition of fuse F3.
Replace it if necessary.

Check the continuity and insulation from earth of the wiring between :

blue connector	3	→	2	reverse gear switch
fuse BP 13	1	→	1	reverse gear switch

Is the wiring correct?

NO Repair the faulty wiring.

YES Replace the reverse gear switch.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>18</p> 	<p>Bargraph 18 LH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>HAZARD WARNING LIGHTS CONTROL</u></p>
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NOTES	None
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The bargraph is permanently illuminated with no action on the hazard warning lights switch.

Check for the presence of 0 V on track **23 of the yellow connector** for the multi-timer unit.

Is there 0 V ?

NO Replace the multi-timer unit.

YES Check the insulation from earth of the wiring between track **23 of the yellow connector** and track **6 of the hazard warning lights control**.
Repair if necessary.

If the fault persists, replace the hazard warning lights switch.

The bargraph remains extinguished when the hazard warning lights switch is pressed.

Check for the presence of 0 V on track **23 of the yellow connector** for the multi-timer unit.

Is there 0 V ?

YES Replace the multi-timer unit.

NO Check the continuity and insulation from 12 V of the wiring between :

yellow connector 23 \longrightarrow **6 hazard warning lights control**
hazard warning lights control 8 \longrightarrow **earth**

Repair the faulty wiring.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	<p>Enter G0** on the XR25. Check the system operates correctly.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>20</p> 	<p>Bargraph 20 RH side extinguished or permanently illuminated Fiche n° 57</p> <p><u>OIL PRESSURE</u></p>
--	--

NOTES	Check that bargraph 10 RH is illuminated, otherwise deal with this bargraph first
--------------	---

The bargraph remains extinguished when the engine is running.

Check for the presence of 0 V on track **20 of the yellow connector** for the multi-timer unit.

Is there 0 V ?

NO Replace the multi-timer unit.

YES Check the insulation from earth of the wiring between track **20 of the yellow connector** and track **1 of the oil pressure switch**.
Repair the faulty wiring.

If the fault persists, replace the oil pressure gauge.

The bargraph remains illuminated when the engine is not running.

Check for the presence of 0 V on track **20 of the yellow connector** for the multi-timer unit.

Is there 0 V ?

YES Replace the multi-timer unit.

NO Check the continuity and insulation in relation to 12 V of the wiring between track **20 of the yellow connector** and track **1 of the oil pressure switch**.
Repair the faulty wiring.

If the fault persists, replace the oil pressure gauge.

AFTER REPAIR	Enter G0** on the XR25. Check the system operates correctly.
---------------------	---

RUNNING LIGHTS FAULT

- Running lights fault - side lights **Chart 1**
- Running lights fault - dipped headlights **Chart 2**

COURTESY LIGHT FAULT

- Courtesy light remains extinguished **Chart 3**
- Courtesy light remains illuminated **Chart 4**

INDICATOR FAULT

- Loss of indicator function **Chart 5**
- Indicators permanently illuminated **Chart 6**
- Constant indicator noise with no indicator illumination **Chart 7**
- Relay operating twice as fast and bulbs extinguished **Chart 8**

HAZARD WARNING LIGHTS FAULT

- Hazard warning lights do not operate **Chart 9**

OPENING ELEMENTS WARNING LIGHT FAULT

- Warning light remains extinguished **Chart 10**
- Warning light remains illuminated **Chart 11**

ELECTRIC WINDOW FAULT

- Electric windows do not operate **Chart 12**

WINDSCREEN WIPER FAULT

Windscreen wipers do not stop in park position for intermittent wiping or for washing	Chart 13
Wipers do not return to park position after + after ignition	Chart 14
Windscreen wipers do not operate for intermittent wipe	Chart 15
Windscreen wipers do not operate for washing	Chart 16
Windscreen wipers do not operate for high speed	Chart 17
Variable intermittent wiping does not operate	Chart 18

REAR SCREEN WIPER FAULT

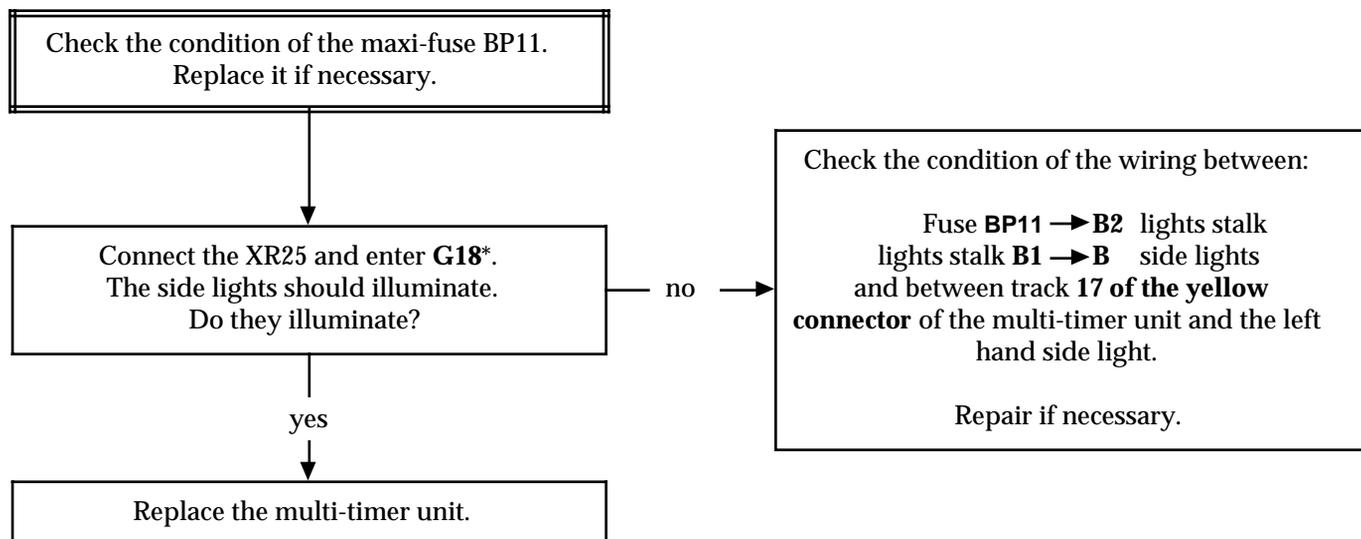
Rear screen wiper does not stop in park position for intermittent wiping or for washing	Chart 19
Rear screen wiper does not operate	Chart 20
Rear screen wiper does not operate for washing	Chart 21
Rear screen wiper does not operate for reverse gear	Chart 22

HEADLIGHT WASHER FAULT

Headlight washers do not operate	Chart 23
Headlight washers operate permanently	Chart 24

Chart 1**RUNNING LIGHTS FAULT - SIDE LIGHTS****NOTES**

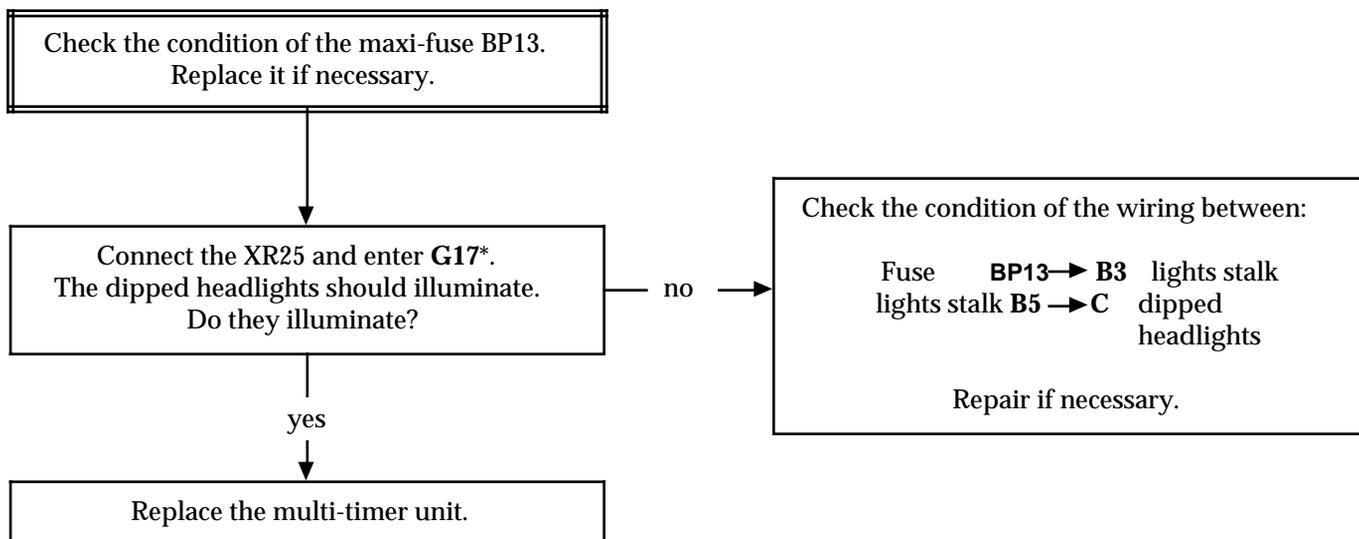
Only consult this customer complaint after checking for the absence of fault bargraph 5 RH and the presence of status bargraphs 10 LH, 10 RH, 16 LH, 16 RH and 4 LH.

**AFTER REPAIR**

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

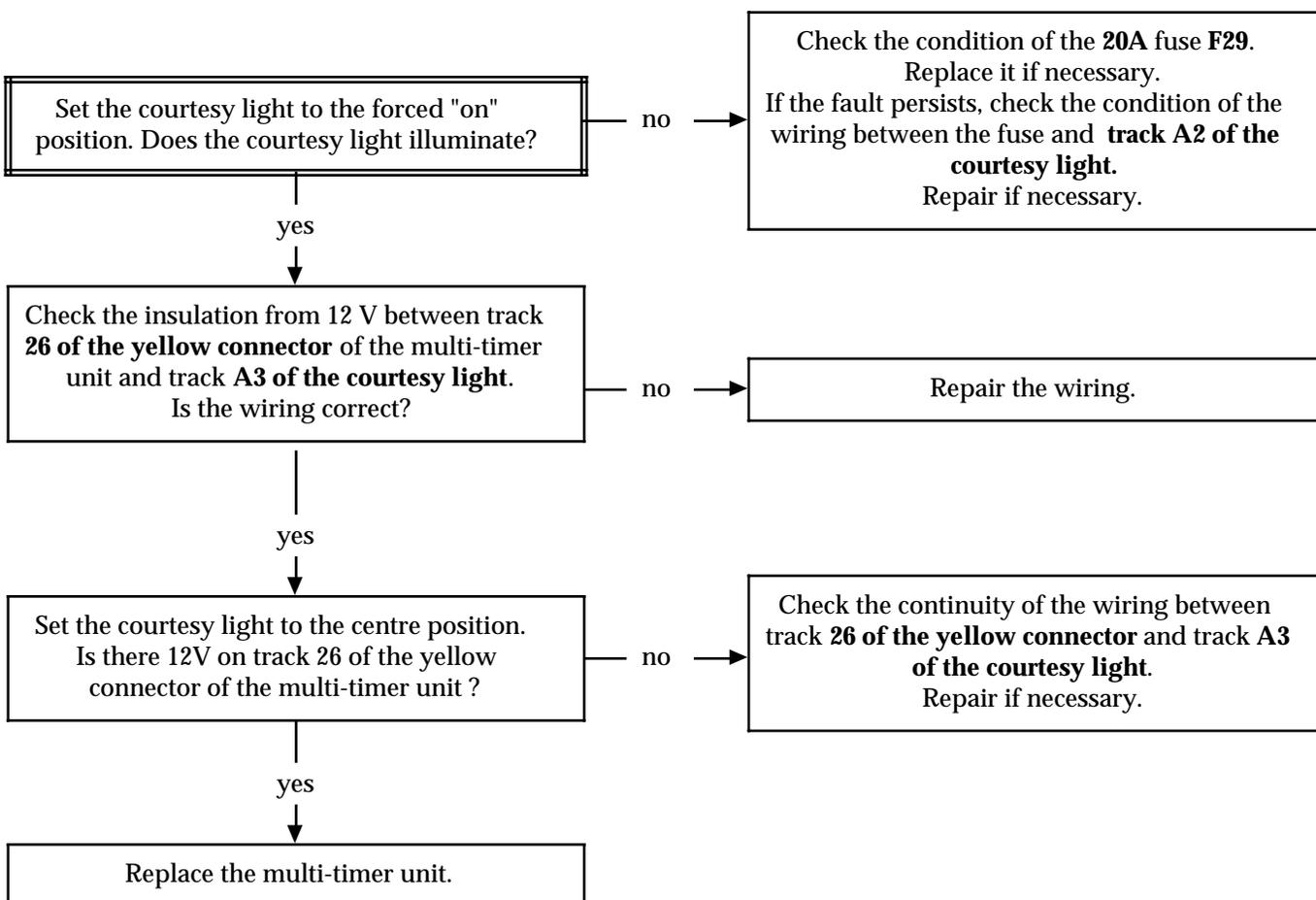
Chart 2**RUNNING LIGHTS FAULT - DIPPED HEADLIGHTS****NOTES**

Only consult this customer complaint after checking for the absence of fault bargraph 5 RH and the presence of status bargraphs 10 LH, 10 RH, 16 LH, 16 RH and 4 LH.

**AFTER REPAIR**

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 3	COURTESY LIGHT REMAINS EXTINGUISHED
NOTES	None



AFTER REPAIR	Check the components which have been disconnected are correctly reconnected. Check the system operates correctly.
---------------------	--

Chart 4**COURTESY LIGHT REMAINS ILLUMINATED, DOORS CLOSED****NOTES**

None

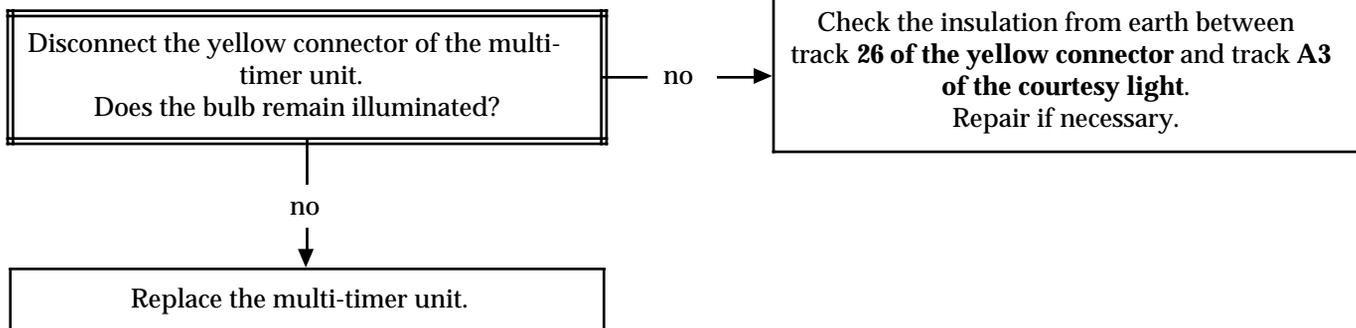
**AFTER REPAIR**Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 5**LOSS OF INDICATOR FUNCTION****NOTES**

Only consult this customer complaint after checking for the presence of status bargraph 10 RH and the absence of fault bargraph 5 RH.

Refer to the chart for bargraph 18 RH side.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 6**INDICATORS PERMANENTLY ILLUMINATED****NOTES**

Only consult this customer complaint after checking for the presence of status bargraph 10 RH and the absence of fault bargraph 5 RH.

Refer to the chart for bargraph 18 RH side.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 7**CONSTANT INDICATOR NOISE WITH NO INDICATOR ILLUMINATION****NOTES**

Only consult this customer complaint after checking for the presence of status bargraph 10 RH and the absence of fault bargraph 5 RH.

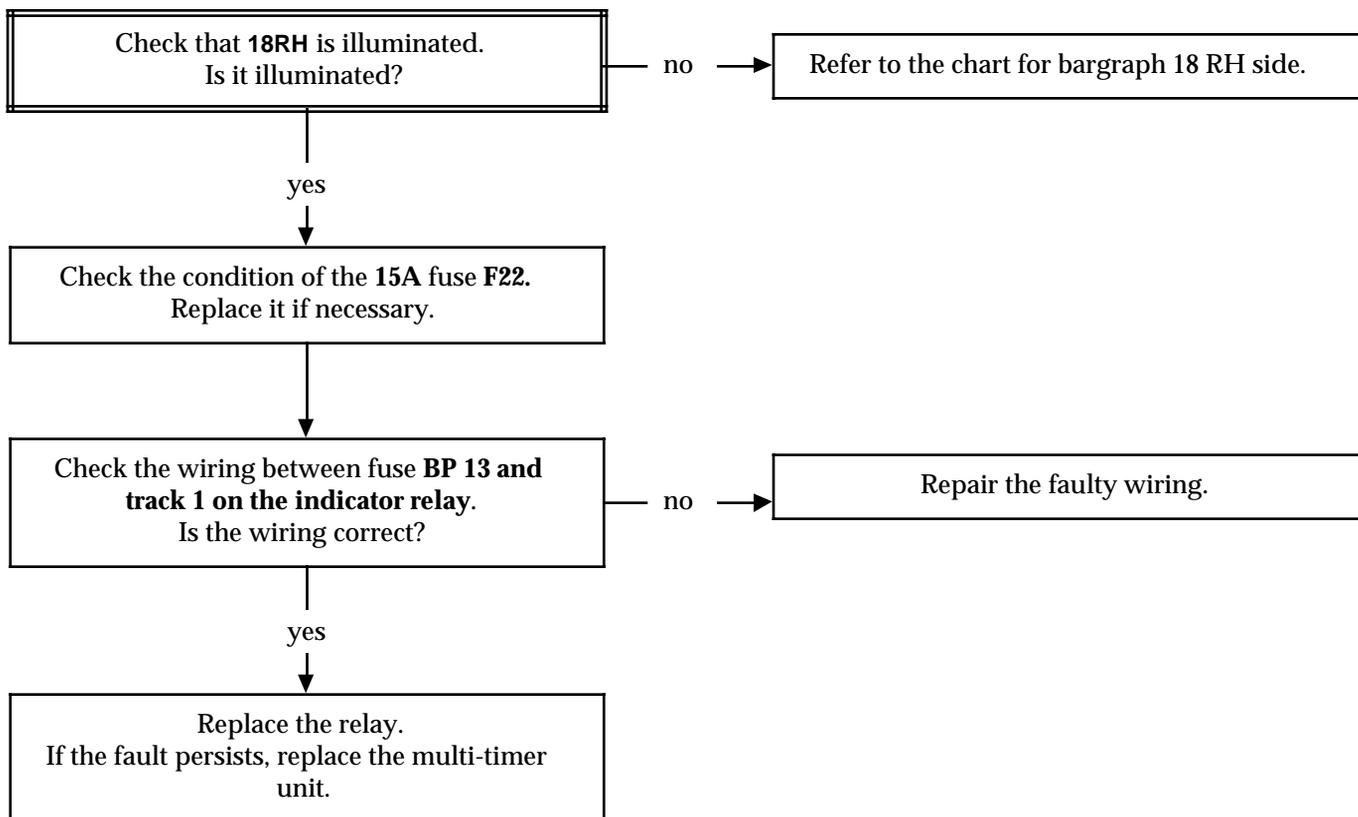
Refer to the chart for bargraph 18 RH side.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 8**RELAY OPERATING TWICE AS FAST AND BULBS EXTINGUISHED****NOTES**

Only consult this customer complaint after checking for the presence of status bargraph 10 RH and the absence of fault bargraph 5 RH.

**AFTER REPAIR**

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 9**HAZARD WARNING LIGHTS DO NOT OPERATE****NOTES**

Only consult this customer complaint after checking for the presence of status bargraph 18LH and the absence of fault bargraph 5 RH.

Check for 12 V on track 2
of the hazard warning lights switch.
Is there 12 V ?

yes

Replace the hazard warning lights switch.

no

Check the condition of the wiring between:

lights stalk **A6** → **A3** black multi-
timer unit
connector

lights stalk **A6** → **2** hazard warning
lights switch

Repair the faulty wiring.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 10**OPENING ELEMENTS WARNING LIGHT REMAINS EXTINGUISHED****NOTES**

Only consult this customer complaint after checking for the absence of fault bargraph 5 RH.

Check the condition of the fuse.
Replace it if necessary.

Check for 12 V on track **14**
of the **blue connector** of the multi-timer unit.
Is there 12 V ?

yes

Replace the multi-timer unit.

no

Check the wiring
between track **14 of the blue connector** and
track **7 of the instrument panel**.
Also check the feed to the warning light and
the bulb.
Repair if necessary.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 11**OPENING ELEMENTS WARNING LIGHT REMAINS ILLUMINATED****NOTES**

Only consult this customer complaint after checking for the absence of fault bargraph 5 RH.

Disconnect the blue connector of the multi-timer unit.
Is the warning light still illuminated?

yes →

There is a short circuit to earth on the wiring between track **14 of the blue connector** and track **7 of the instrument panel**.
Repair the faulty wiring.

no ↓

Replace the multi-timer unit.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 12**ELECTRIC WINDOWS DO NOT OPERATE****NOTES**

Only consult this customer complaint after checking for the absence of fault bargraph 5RH and the presence of status bargraphs 13 LH, 13 RH, 10 LH and 10 RH.

Check the mechanical operation of the electric window system is correct.
Repair if necessary.

If the fault persists, replace the multi-timer unit.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 13**WINDSCREEN WIPERS DO NOT STOP IN PARK POSITION FOR
INTERMITTENT WIPING OR FOR WASHING****NOTES**

Only consult this customer complaint after checking for the presence of status bargraphs 10LH, 12RH, 14LH, 14RH.

Check the mechanical operation of the windscreen wipers is correct.
Repair if necessary.
If the fault persists, replace the multi-timer unit.

AFTER REPAIRCheck the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 14**WIPERS DO NOT RETURN TO PARK POSITION AFTER + AFTER
IGNITION FEED APPLIED****NOTES**

Only consult this customer complaint after checking for the presence of status bargraphs 10LH, 12RH, 14LH, 14RH.

Check that bargraph 5 RH is extinguished.
Is the bargraph extinguished?

no

Refer to bargraph chart

yes

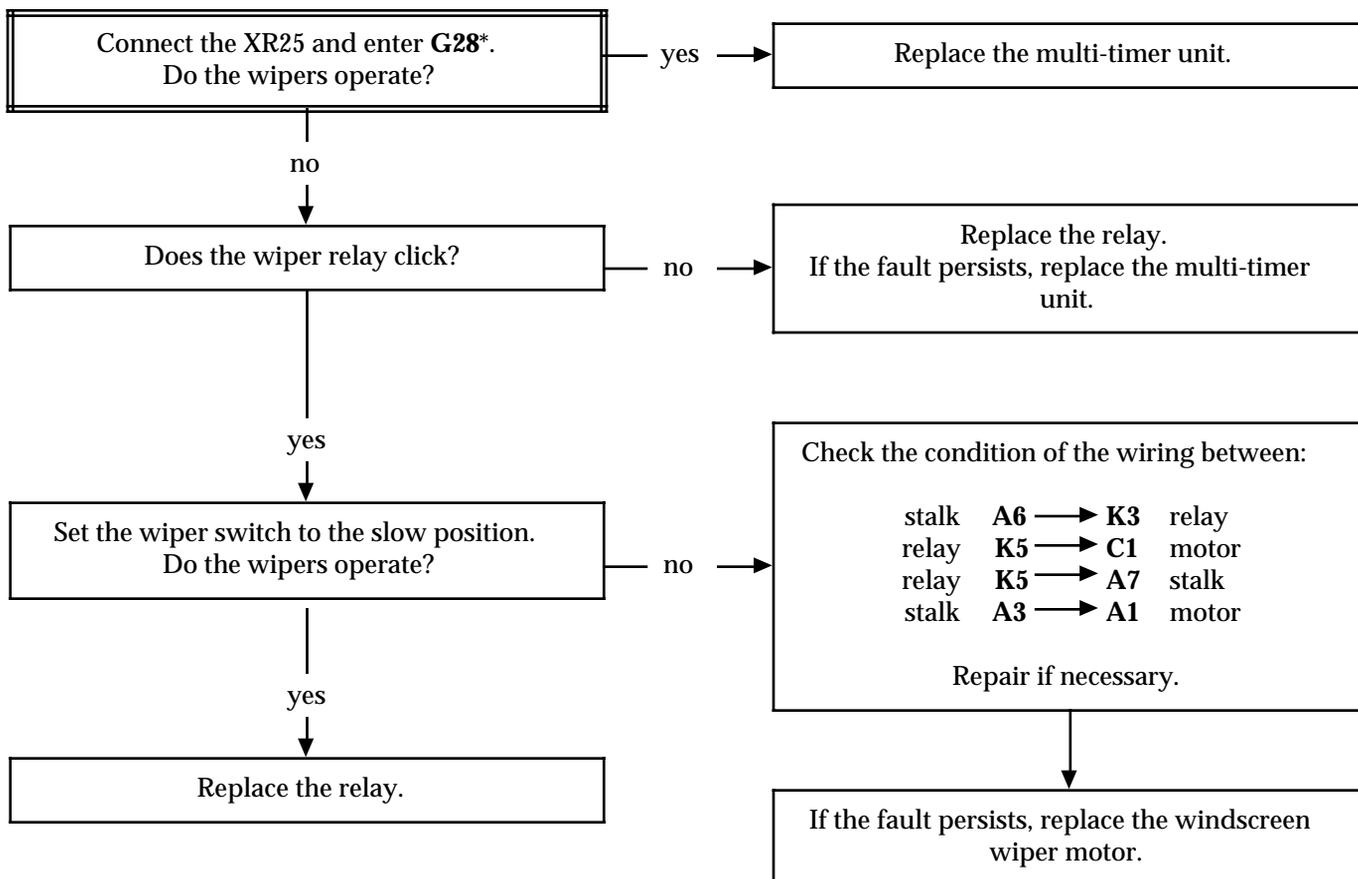
Switch in position 0, check the continuity of
the wiring between track **K4 of the relay** and
track **A2 of the wiper motor**.
Is the wiring correct?
Repair the faulty wiring.**AFTER REPAIR**Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 15

WINDSCREEN WIPERS DO NOT OPERATE FOR INTERMITTENT WIPE

NOTES

Only consult this customer complaint after checking for the presence of status bargraph 14LH.



AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 16**WINDSCREEN WIPERS DO NOT OPERATE FOR WASHING****NOTES**

Only consult this customer complaint after checking for the presence of status bargraph 12RH.

Check the windscreen wiper intermittent wipe function operates.
Is this correct?

yes →

Replace the multi-timer unit.

no ↓

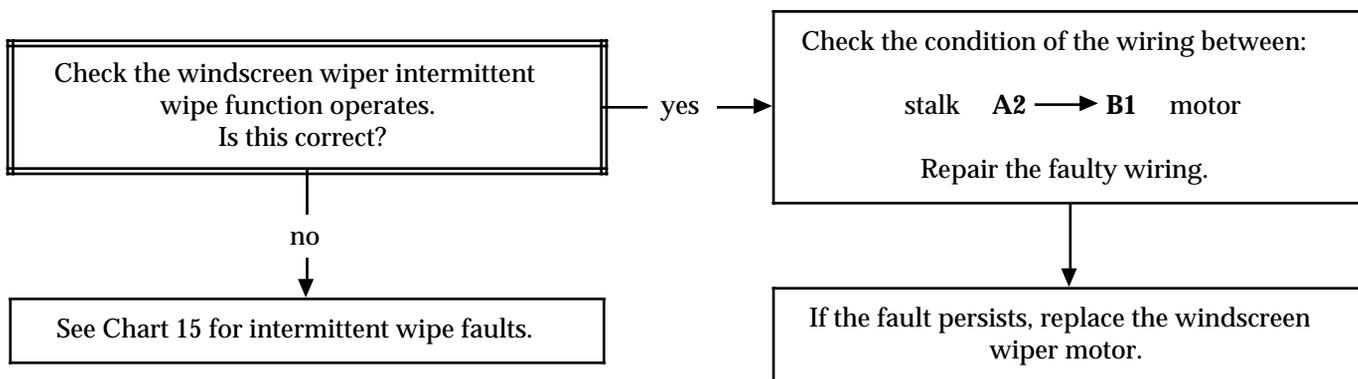
See Chart 15 for intermittent wipe faults.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 17**WINDSCREEN WIPERS DO NOT OPERATE FOR HIGH SPEED****NOTES**

Only consult this customer complaint after checking for the presence of status bargraphs 10LH, 12RH, 14LH, 14RH.

**AFTER REPAIR**

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 18**VARIABLE INTERMITTENT WIPING DOES NOT OPERATE****NOTES**

Only consult this customer complaint after checking for the presence of status bargraphs 10LH, 14LH, 14RH

Connect the XR25 and enter # **04**.
Check the position varies when the wiper stalk positions are altered.
Is this correct?

no

Replace the wiper stalk.

yes

Replace the multi-timer unit.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 19**REAR SCREEN WIPER DOES NOT STOP IN PARK POSITION FOR
INTERMITTENT WIPING OR FOR WASHING****NOTES**

Only consult this customer complaint after checking for the presence of status bargraphs 10RH, 15RH and the absence of fault bargraphs.

Check the mechanical operation of the wiper is correct.
Repair if necessary.
If the fault persists, replace the multi-timer unit.

AFTER REPAIR

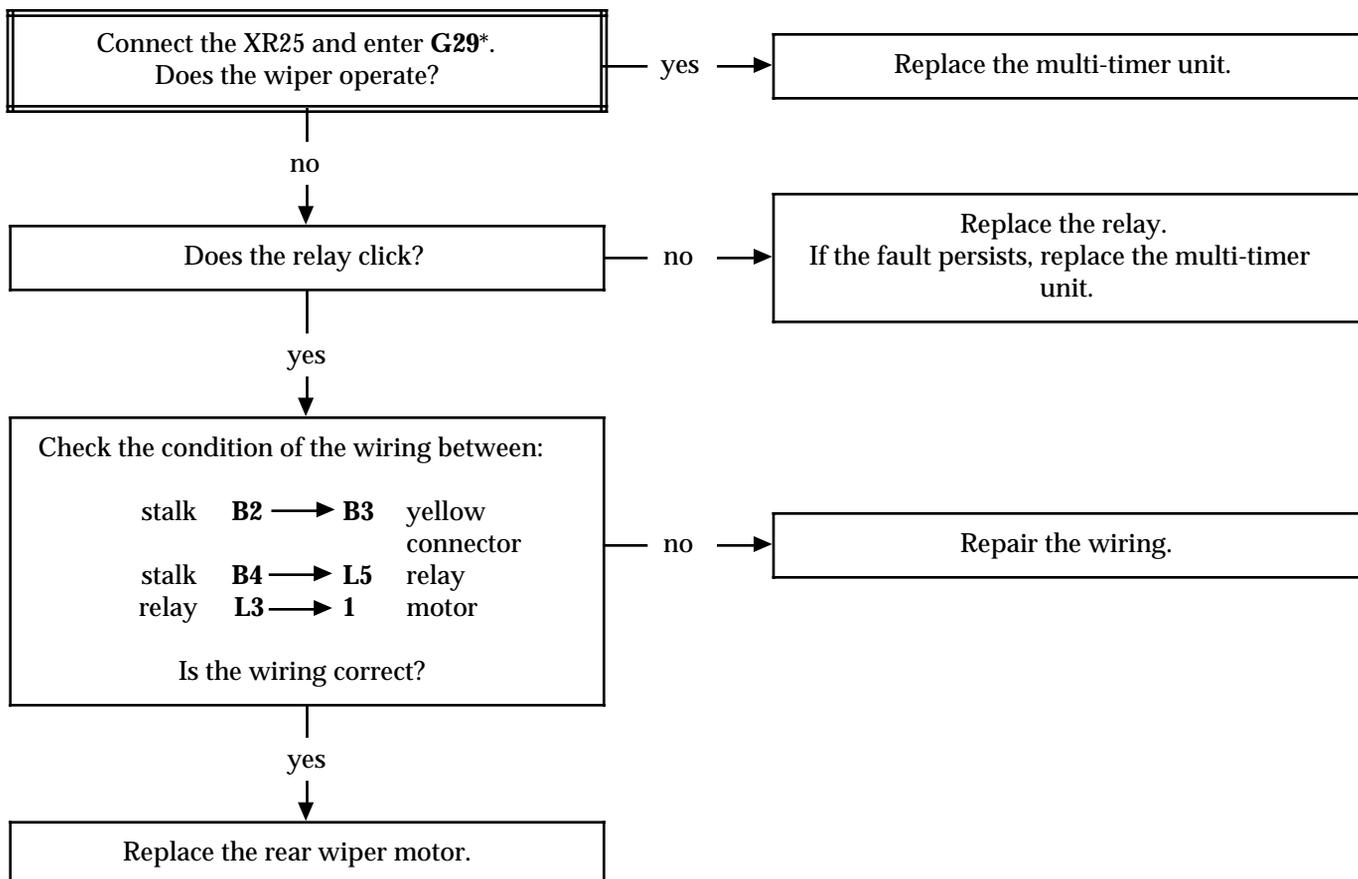
Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 20

REAR SCREEN WIPER DOES NOT OPERATE

NOTES

Only consult this customer complaint after checking for the presence of status bargraphs 10RH, 15LH, 15RH.



AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 21**REAR SCREEN WIPER DOES NOT OPERATE FOR WASHING****NOTES**

Only consult this customer complaint after checking for the presence of status bargraph 12LH.

Check the operation of the rear intermittent wipe function.
Is it correct?

yes →

Replace the multi-timer unit.

no ↓

See Chart 19 for intermittent wipe faults.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 21**REAR SCREEN WIPER DOES NOT OPERATE FOR REVERSE GEAR****NOTES**

Only consult this customer complaint after checking for the presence of status bargraphs 14LH, 17LH.

Check the operation of the rear intermittent wipe function.
Is it correct?

yes →

Replace the multi-timer unit.

no ↓

See Chart 19 for intermittent wipe faults.

AFTER REPAIRCheck the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 23

HEADLIGHT WASHERS DO NOT OPERATE

NOTES

Only consult this customer complaint after checking for the absence of fault bargraph 5RH and the presence of status bargraphs 10RH, 10LH, 12RH, 16RH, 17RH.

Check the condition of the 20A fuse **F33** and 10A fuse **F12**. Replace them if necessary.

Connect the XR25 and enter **G33***.
The headlight washers should operate.
Do they operate?

yes

Replace the multi-timer unit.

no

Check the condition of the wiring between
track **5 of the blue connector** of the multi-
timer unit and fuse **F12**.
Is the wiring correct?

no

Repair the wiring.

yes

Check the condition of the wiring between:

blue connector	7	→	2	relay
relay	5	→	A	pump

Is the wiring correct?

no

Repair the faulty wiring.

yes

Check the correct operation of the pump by
supplying it directly with 12 V.
Does the pump operate?

no

Replace the pump.

yes

Replace the headlight washers relay.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

Chart 24**HEADLIGHT WASHERS OPERATE PERMANENTLY****NOTES**

Only consult this customer complaint after checking for the absence of fault bargraph 5RH and the presence of status bargraphs 10LH, 10RH, 12RH, 16RH, 17RH.

Disconnect the blue connector of the multi-timer unit.
Do the headlight washers still operate?

no

Replace the multi-timer unit.

yes

Check the insulation from 12 V of the wiring between track 7 of the blue connector and track 2 of the relay.
Is the wiring correct?

no

Repair the faulty wiring.

yes

Check the insulation from 12 V of the wiring between fuse F33 and the headlight washers relay.
Repair the wiring.

AFTER REPAIR

Check the components which have been disconnected are correctly reconnected.
Check the system operates correctly.

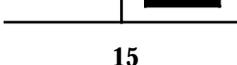
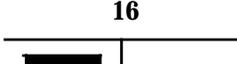
NOTES

If a fault bargraph illuminates, refer to the corresponding fault chart.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Dialogue with XR25	D56 (selector on S8) then G02*		<div style="border: 1px solid black; padding: 2px; display: inline-block;">2.n57</div> Use fiche 57
2	Conformity of the multi-timer unit	G70		<div style="border: 1px solid black; padding: 2px; display: inline-block;">XXXX</div> Part Number displayed in 3 sequences
3	Interpretation of bargraphs		<div style="text-align: center;">2</div>  <div style="text-align: center;">4</div>  <div style="text-align: center;">4</div> 	<p>Illuminated if overspeed buzzer configured for Arabia (level 4)</p> <p>Illuminated if front intermittent wipe ring present and configured</p> <p>Illuminated if running lights configured</p>
4	Checking faults Interpretation of + after ignition bargraphs		<div style="text-align: center;">5,6,7,8,9</div>  <div style="text-align: center;">5,6,7,8,9</div>  <div style="text-align: center;">10</div>  <div style="text-align: center;">10</div> 	<p style="text-align: center;">←</p> <p style="text-align: center;">Illuminated if faults present</p> <p style="text-align: center;">←</p> <p style="text-align: center;">indicates multi-timer unit receives + after ignition feed</p> <p style="text-align: center;">indicates multi-timer unit receives + accessories feed (L3 and L4)</p>

NOTES

If a fault bargraph illuminates, refer to the corresponding fault chart.

Order of operations	Function to be checked	Action	Bargraph	Display and notes	
5	Command button check		12		Illuminated when windscreen wiper activated (ignition on)
			12		Illuminated when rear wiper activated (ignition on)
			13		Illuminated when driver's window lower button pressed (levels L2, L3 and L4)
			13		Illuminated when driver's window raise button pressed (levels L2, L3 and L4)
6	Interpretation of wipers bargraphs		14		Illuminated when windscreen wiper is parked
	Command button check		14		Illuminated for intermittent windscreen wiping
	Interpretation of wipers bargraphs		15		Illuminated when rear wiper is parked
	Command button check		15		Illuminated for intermittent rear windscreen wiping
	Interpretation of lights control bargraphs		16		Illuminated for dipped headlights (level 4)
			16		Illuminated for side lights
			17		Illuminated for main beam headlights

NOTES

If a fault bargraph illuminates, refer to the corresponding fault chart.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
7	Command button check		17 	Illuminated for reverse gear, ignition on (levels 3 and 4)
8	Command button check		18 	Illuminated for hazard warning lights (ignition on)
	Command button check		18 	Illuminated direction indicators active (ignition on)
9	Interpretation of automatic clutch warning light bargraph		19 	Illuminated if automatic clutch and lever in position 3 and accelerating
	Interpretation of oil pressure warning light bargraph		20 	Illuminated engine running (oil pressure information) for levels 3 and 4

COMMAND MODES G--*

- G03* = illuminates courtesy light
- G08* = unlocks opening elements
- G09* = locks opening elements
- G11* = opening elements warning light
- G12* = lights on reminder buzzer
- G17* = dipped headlights
- G18* = side lights
- G19* = indicators
- G24* = driver's window lower
- G25* = driver's window raise
- G28* = windscreen wipers
- G29* = rear screen wiper
- G33* = headlight washers
- G37* = buzzer
- G38* = + after ignition feed

ADDITIONAL TESTS #-

- # 01 = vehicle speed
- # 02 = battery voltage
- # 04 = ring position; intermittent wipers
- # 14 = equipment level

AIR BAG AND PRETENSIONERS

FAULT FINDING

CONTENTS

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Aid	20

CONDITIONS FOR THE APPLICATION OF THE CHECKS DEFINED IN THIS FAULT FINDING

The checks defined in this fault finding should only be applied to a vehicle when the fault bargraph is illuminated, indicating that the fault is present on the vehicle at the time of checking. Only a computer fault will require replacement of the computer, whether the bargraph is permanently illuminated or flashing .

If the fault is not present but simply memorised, the bargraph flashes and application of the checks recommended in the fault finding section will not allow the origin of the fault to be found. In this case, only a check of the wiring and the connection of the component in question must be carried out (it is possible to test the wiring concerned in fault finding mode to try to obtain permanent illumination of the bargraph).

TOOLING REQUIRED FOR OPERATIONS ON THE AIR BAG AND SEAT BELT PRETENSIONER SYSTEMS :

- XR25 (with minimum XR25 cassette N° 17).
- XRBAG the updated N° 4 version (with the new 30 track B40 yellow computer base adaptor).

REMINDER:

When carrying out an operation on the air bag/seat belt pretensioner systems , it is essential to lock the computer with the XR25 command G80* to avoid all risk of triggering at the wrong time (all firing lines will be inhibited). This operating mode will be indicated by illumination of the warning light on the instrument panel.

Never carry out any measuring operations on the air bag and pretensioners trigger lines with equipment other than the XRBAG.

Before using a dummy ignition module, ensure that its resistance is between 1.8 and 2.5 ohms.

PRESENTATION OF XR25 FICHE N° 48

N°48		S8	code : D 4 9	read : 2Rb
1	<input checked="" type="checkbox"/> COMPUTER		CODE PRESENT	<input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/> +02 SUPPLY VOLTAGE		CONFIGURATION	<input checked="" type="checkbox"/>
3	reserved		reserved	
4	reserved		reserved	
5			reserved	
6	<input checked="" type="checkbox"/> *06 RESISTANCE (driver)	LINES AIRBAG	INSULATION (driver or passenger) *26	<input checked="" type="checkbox"/>
7	<input checked="" type="checkbox"/> *07 RESISTANCE (passenger)		INSULATION (driver or passenger) *27	<input checked="" type="checkbox"/>
8	<input checked="" type="checkbox"/> *08 RESISTANCE (driver)			
9	<input checked="" type="checkbox"/> *09 RESISTANCE (passenger)			
10	<input checked="" type="checkbox"/> *10 AIRBAG FAULT	TELL-TALE CIRC.		reserved
AIRBAGS/PRETENSIONERS			ADDITIONAL CHECKS : # . .	
Erase fault memory : G 0 ** End of test : G13 *			01 computer feed v 02 n° identifying the vehicle type	
11	<input checked="" type="checkbox"/> at own request	LOCKING causes following an impact	<input checked="" type="checkbox"/>	
12	reserved		reserved	
13	reserved		reserved	
14	reserved		reserved	
15	reserved		reserved	
16	<input type="checkbox"/> (<input checked="" type="checkbox"/>) ALL TRIGGERS LOCKED	computer STATUS	CONTROL MODES : G...*	
17				
18		computer CONFIGURATION (fixed display)	72 enter A/S date 73 read A/S date	
19	<input checked="" type="checkbox"/> WITH PASS. AIRBAG		Help : V9 Return to diag. mode : D Part no : G70 *	
20	reserved			
SEE REPAIR MANUAL			<input checked="" type="checkbox"/> ANG	

FI21748

MEANING OF BARGRAPHS

FAULT BARGRAPHS (always on coloured background)

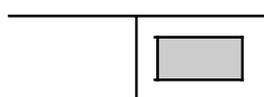


If illuminated, indicates a fault on the product tested. The associated text defines the fault.

This bargraph could be :

- Illuminated : fault present.
- Flashing : fault memorised.
- Extinguished : fault absent or not found.

STATUS BARGRAPHS (always on a white background)



Bargraph always located on the top right hand side

If illuminated , indicates establishment of dialogue with the product computer.

If it remains extinguished :

- The code does not exist.
- There is a tool, computer or XR25 / computer connection fault.

The following bargraph representations indicate their initial status :

Initial status: (ignition on, engine stopped, no operator action)



or



Indefinite

illuminated when the operation or the condition specified on the fiche is met.



Extinguished



Illuminated extinguished when the operation or the condition specified on the fiche is no longer met.

ADDITIONAL SPECIFICATIONS

Certain bargraphs have a *. The command *.., when the bargraph is illuminated, allows additional information on the type of fault or status to be displayed.

<p>1</p> 	<p>Bargraph 1 right hand side extinguished</p> <p><u>Code present</u></p>	Fiche n° 48
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NOTES	None
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Ensure that the XR25 is not the cause of the fault by trying to communicate with the computer on another vehicle. If the XR25 is not faulty and dialogue is not established with another computer on the same vehicle, a faulty computer may be disrupting the **K** and **L** fault finding lines. Disconnect computers in turn to locate the faulty computer.

Check that the ISO selector is in position **S8**, that the latest XR25 cassette and the correct access code are being used.

Check the battery voltage and carry out the operations necessary to obtain the correct voltage (**9 volts < U battery < 18 volts**).

Check the presence and condition of the 15 A air bag fuse.

Check the condition of the computer connector and the condition of the connections.

Check that the computer is correctly fed :

- Disconnect the air bag computer and fit the 30 track adaptor B40 of the XRBAG.
- Check and ensure the presence + after ignition feed between the terminals marked **earth 1 / earth 2** and + **after ignition**.

Check that the diagnostic socket is correctly fed :

- + **Before ignition feed on track 16**.

- **Earth on track 5**.

Check the continuity and insulation of the lines of the diagnostic socket / air bag computer connection:

- Between the terminal marked **L** and track **15** of the diagnostic socket .
- Between the terminal marked **K** and track **7** of the diagnostic socket .

If dialogue is still not established after these various checks, replace the air bag computer (consult the section on "Aid" for this operation).

AFTER REPAIR	When communication is established, deal with any illuminated fault bargraphs.
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<p style="text-align: center;">1</p> 	<p>Bargraph 1 left hand side illuminated or flashing Fiche n° 48</p> <p><u>Computer</u></p>
---	---

<p style="text-align: center;">NOTES</p>	<p>None</p>
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Replace the air bag computer (consult the section "Aid" for this operation).

<p style="text-align: center;">AFTER REPAIR</p>	<p>None</p>
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<p>2</p> 	<p>Bargraph 2 left hand side illuminated</p> <p><u>Voltage supply</u></p> <p>XR25 aid: *02 : 1.dEF : Voltage too low 2.dEF : Voltage too high 3.dEF : Too many micro-breaks dEF : Cumulative between faults 1.dEF/2.dEF/3.dEF</p>	Fiche n° 48
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NOTES	Use the 30 track adaptor of the XRBAG to operate on the computer connector .
--------------	--

1.dEF - 2.dEF	NOTES	None
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Carry out the operations necessary to obtain the correct computer power supply :

9 volts \pm 0.1 < correct voltage < 18 volts \pm 0.1.

- Check the battery charge.
- Check the charge circuit.
- Check the tightness and condition of the battery terminals.
- Check the computer earth .

3.dEF	NOTES	None
--------------	--------------	------

For a micro-break fault, check the computer power supply lines :

- Condition of the computer connections.
- Condition of the computer earths (tracks 6 and 20 on the 30 track connector to the FRH pillar earth).
- Condition / position of the fuse.
- Condition and tightening of battery terminals.

dEF	NOTES	None
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The *dEF* display on the kit indicates the minimum memorisation of 2 of the 3 faults declared by the display **1.dEF, 2.dEF and 3.dEF** (bargraph flashing).

Operation:

- Check the battery charge.
- Check the charge circuit.
- Check the tightness and condition of the battery terminals.
- Condition of the computer connections.
- Check the computer earth .
- Condition / position of the fuse.

AFTER REPAIR	Erase the computer memory using the command G0**.
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2 	Bargraph 2 right hand side illuminated <u>Configuration</u>	Fiche n° 48
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NOTES	None
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The illumination of **bargraph 2 RH side** corresponds to an incoherence between the computer configuration and the vehicle equipment detected by the computer.
The vehicle must be fitted with a passenger air bag and the computer must be configured for "without passenger air bag" shown by **bargraph 19 LH side** extinguished.
Modify the computer configuration using command G20*1*.

AFTER REPAIR	Erase the computer memory using the command G0**, then switch off the ignition. Carry out another check using the XR25.
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<p>6</p> 	<p>Bargraph 6 left hand side illuminated</p> <p><u>Resistance on the driver's air bag line</u></p> <p>XR25 aid : *06 : CC : Short-circuit CO : Open circuit</p>	Fiche n° 48
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NOTES	Never carry out measurements on the trigger lines with equipment other than the XRBAG.
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Lock the computer with the command **G80*** on the XR25.
Switch off the ignition and remove the two mounting bolts of the steering wheel cushion.
Check that it is correctly connected.

Disconnect the steering wheel cushion and connect a dummy ignition module to the ignition module connector. Switch on the ignition and carry out an XR25 check.
Replace the air bag cushion if the fault has been memorised (fault no longer declared).

With the ignition switched off, disconnect, then reconnect the connector for the rotary switch below the steering wheel. Operate on the connection if **bargraph 6 left hand side** begins to flash.

The XRBAG tool **MUST** be used for checking resistance at **point C2** of the driver's air bag circuit.
If the value obtained is not correct, replace the rotary switch below the steering wheel.

Reconnect the rotary switch below the steering wheel, disconnect the computer connector and fit the 30 track adaptor B40.
The XRBAG tool **MUST** be used for checking resistance on the wire marked **A** on the adaptor.
If the value obtained is not correct, check the 30 track connector connection (**tracks 10 and 11**) and replace the wiring if necessary.

If the checks carried out have not proven the existence of a fault, replace the air bag computer (consult the section "Aid" for this operation).
Reconnect the driver's air bag ignition module and remount the steering wheel cushion.

AFTER REPAIR	<p>Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and, if there is no fault, unlock the computer using command G81*. Destroy the air bag cushion if it has been replaced (tool Elé. 1287).</p>
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6 	<p>Bargraph 6 right hand side illuminated Fiche n° 48</p> <p><u>Insulation of driver's or passenger's air bag line</u></p> <p>XR25 aid : *26 : CC.1 : Short circuit at 12 volts CC.0 : Short circuit to earth</p>
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NOTES	Never carry out measurements on the trigger lines with equipment other than the XRBAG. If the vehicle does not have a passenger air bag, only test on the cable marked A on the adapter (driver's air bag circuits).
--------------	--

Lock the computer using command G80* on the XR25.
Switch off the ignition, disconnect the computer connector and fit the 30 track adapter B40.
The XRBAG must be used to measure the insulation appropriate to this type of fault as shown by the XR25 on the **cables marked A and B** for the adapter.
On which adapter cable is the insulation fault noted?

Cable A**NOTES**

Fault on driver's air bag circuits

Switch off the ignition and reconnect the computer connector.
Remove the 2 mounting bolts for the steering wheel cushion.
Check the condition of the trigger wire.

The XRBAG tool MUST be use for measuring insulation appropriate to the type of fault at **point C2** of the driver's air bag circuit .
If the value obtained is not correct , replace the rotary switch under the steering wheel .
If the value obtained is correct at C2, check the condition of the connections on the computer.
Replace the air bag wiring if the fault persists.

Cable B**NOTES**

Fault on passenger's air bag circuits

Check the condition of the connections on the computer.
Replace the air bag wiring if the fault persists.

If the checks carried out have not proven the existence of an insulation fault on one of the air bag circuits, check the connections on the computer.
Replace the air bag computer if the fault persists (consult the section "Aid" for this operation).

AFTER REPAIR

Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and, if there is no fault, unlock the computer using command G81*.
Destroy the air bag cushion or module if it has been replaced (tool Elé. 1287).

<p>7</p> 	<p>Bargraph 7 left hand side illuminated</p> <p><u>Resistance on passenger air bag line</u></p> <p>XR25 aid : *07 : CC : Short circuit CO : Open circuit</p>	Fiche n° 48
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NOTES	<p>Never carry out measurements on the trigger lines with equipment other than the XRBAG. If the vehicle does not have a passenger air bag, refer to the fault finding for bargraph 19 LH side.</p>
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Lock the computer using command G80* on the XR25.
Switch off the ignition, disconnect the computer connector and fit the 30 track adaptor B40.
The XRBAG tool **MUST** be used for checking resistance on the wire marked **B** on the adaptor.
Is the value obtained correct?

YES	<p>If the value obtained is correct at wire B on the adaptor, check the condition of the computer connection .</p>
------------	---

NO	<p>If the value obtained is not correct at wire B on the adaptor, check the 30 track connector connection (tracks 13 and 14).</p> <p>If the value remains incorrect, switch off the ignition and remove the dashboard to gain access to the wiring of the passenger's air bag module . Disconnect the ignition module of the passenger's air bag module, connect a dummy ignition module to the ignition module , then use the XRBAG to measure the resistance on the wire marked B on the adaptor.</p> <p>If the value obtained is correct , replace the passenger's air bag module . If the value obtained is not correct, replace the air bag wiring.</p>
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Reconnect the computer and the ignition module of the passenger's air bag module , then switch on the ignition again.
Carry out an XR25 check.
If the kit still indicates the presence of a passenger's air bag line fault and the checks carried out show no evidence of a fault, replace the air bag computer (consult the section "Aid" for this operation).

AFTER REPAIR	<p>Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and, if there is no fault, unlock the computer using command G81*. Destroy the passenger air bag cushion if it has been replaced (tool Elé. 1287).</p>
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7 	<p>Bargraph 7 right hand side illuminated Fiche n° 48</p> <p><u>Insulation of driver or passenger pretensioner lines</u></p> <p>XR25 aid : *27 : CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth</p>
---	--

NOTES	<p>Never carry out measurements on the trigger lines with equipment other than the XRBAG.</p>
--------------	---

Lock the computer using command G80* on the XR25.
 Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector.
 Switch on the ignition and carry out an XR25 check.
 If the fault has been memorised (fault no longer declared), check the condition of the seat wiring.
 Replace the driver's pretensioner if the wiring is not faulty.
 Then carry out the same operation on the passenger's pretensioner (if not a driver's side fault).

The XRBAG tool MUST be used for measuring insulation appropriate to the type of fault at **point C1** (seat connector) of the driver's pretensioner line.
 If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).
 Then carry out the same measurement on the passenger's pretensioner line (if not a driver's side fault).

Disconnect the computer connector and fit the 30 track adaptor B40.
 The XRBAG tool MUST be used for measuring insulation appropriate to the type of fault on the adaptor wires marked **C (Passenger)** and **D (Driver)**.
 If one of the values obtained is not correct, check the 30 track connector connection (**tracks 3 / 4 for wire C and 1/2 for wire D**) and replace the wiring if necessary.

If the checks carried out have not proven the existence of a fault on one of the pretensioner circuits, replace the air bag computer (consult the section "Aid" for this operation).
 Reconnect the ignition modules of the seat belt pretensioners.

AFTER REPAIR	<p>Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and, if there is no fault, unlock the computer using command G81*. Destroy the pretensioner(s) if it has been replaced (tool Elé. 1287).</p>
---------------------	---

<p>8</p> 	<p>Bargraph 8 left hand side illuminated</p> <p><u>Resistance on driver's pretensioner line</u></p> <p>XR25 aid : *08 : CC : Short circuit CO : Open circuit</p>	Fiche n° 48
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NOTES	<p>Never carry out measurements on the trigger lines with equipment other than the XRBAG.</p>
--------------	---

Lock the computer using command G80* on the XR25.
Switch off the ignition and check ignition module of the driver's pretensioner is correctly connected.

Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out an XR25 check.
Replace the driver's pretensioner if the fault has been memorised (fault no longer declared).

The XRBAG tool MUST be used for checking resistance at **point C1** (seat connector) on the line of the driver's pretensioner .
If the value obtained is not correct , replace the wiring between points **C1 and C3** (seat wiring).

Disconnect the computer connector and fit the 30 track adaptor B40.
The XRBAG tool MUST be used for checking resistance on the wire marked **D** of the adaptor .
If the value obtained is not correct, check the 30 track connector connection (**tracks 1 and 2**) and replace the wiring if necessary.

If the checks carried out have not proven the existence of a fault, replace the air bag computer (consult the section "Aid" for this operation).
Reconnect the ignition module of the driver's pretensioner .

AFTER REPAIR	<p>Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and, if there is no fault, unlock the computer using command G81*. Destroy the pretensioner if it has been replaced (tool Elé. 1287).</p>
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<p>9</p> 	<p>Bargraph 9 right hand side illuminated</p> <p><u>Resistance on the passenger's pretensioner line</u></p> <p>XR25 aid : *09 : CC : Short circuit CO : Open circuit</p>	Fiche n° 48
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NOTES	<p>Never carry out measurements on the trigger lines with equipment other than the XRBAG.</p>
--------------	---

Lock the computer using command G80* on the XR25. Switch off the ignition and check that the ignition module of the passenger's pretensioner is correctly connected.

Disconnect the ignition module of the passenger's pretensioner and connect a dummy ignition module to the ignition module connector.

Switch on the ignition and carry out an XR25 check.

Replace the passenger's pretensioner if the fault has been memorised (fault no longer declared).

The XRBAG tool MUST be used for checking resistance at **point C1** (seat connector) of the passenger's pretensioner line.

If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).

Disconnect the computer connector and fit the 30 track adaptor.

The XRBAG tool MUST be used for checking resistance on the wire marked **C** on the adaptor.

If the value obtained is not correct, check the 30 track connector connection (**tracks 3 and 4**) and replace the wiring if necessary.

If the checks carried out have not proven the existence of a fault, replace the air bag computer (consult the section "Aid" for this operation).

Reconnect the ignition module of the passenger's pretensioner.

AFTER REPAIR	<p>Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and, if there is no fault, unlock the computer using command G81*.</p> <p>Destroy the pretensioner if it has been replaced (tool Elé. 1287).</p>
---------------------	--

11 	Bargraph 11 left hand side illuminated <u>Computer locked (voluntary request)</u>	Fiche n° 48
---	---	-------------

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

This bargraph 11 left hand side allows computer locked status to be seen .
When it is illuminated, all trigger lines are inhibited, preventing the release of the air bags and the seat belt pretensioners.
This bargraph is normally illuminated in two situations :

- The computer is new (it is sold in locked mode).
- The XR25 computer locking command has been used during an operation on the vehicle (G80*).

AFTER REPAIR	Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and if there is no fault, unlock the computer using command G81*.
---------------------	---

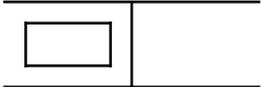
<p>11</p> 	<p>Bargraph 11 right hand side illuminated</p> <p><u>Computer locked after an impact</u></p>	Fiche n° 48
---	---	-------------

NOTES	<p>First deal with bargraph 1 LH side if this is also illuminated (computer fault).</p>
--------------	---

This bargraph is normally illuminated when an impact has been detected by the system and the computer was not locked before the impact.
The computer may be used again if the computer fault bargraph is not also illuminated.

Replace any components which have been triggered (air bags and pretensioners).
Unlock the computer using command G81*.
Erase the computer memory using the command G0** then switch off the ignition.
Carry out another check using the XR25 and ensure that no faults are present.

AFTER REPAIR	<p>Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and if there is no fault, unlock the computer using command G81*.</p>
---------------------	--

16 	Bargraph 16 left hand side <u>All trigger lines locked</u>	Fiche n° 48
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NOTES	None
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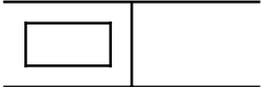
This bargraph 16 left hand side allows computer locked status to be seen .
When it is illuminated, all trigger lines are inhibited, preventing the release of the air bags and the seat belt pretensioners.

This bargraph is normally illuminated in the following situations :

- The computer is new (it is sold in locked mode).
- The XR25 computer locking command has been used during an operation on the vehicle (G80*).
- The computer is locked after an impact.

Bargraph 16 left hand side is therefore illuminated together with bargraphs 11 RH side and LH side.

AFTER REPAIR	Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25 and if there is no fault, unlock the computer using command G81*.
---------------------	---

19 	Bargraph 19 left hand side <u>Computer configuration "with passenger air bag"</u>	Fiche n° 49
---	---	-------------

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

Bargraph 19 left hand side allows the computer configuration to be visualised and to ensure that it is correct for the vehicle.

If bargraph 19 left hand side is illuminated and the vehicle does not have a passenger air bag, use command **G20*0*** to configure for "without air bag passenger".

AFTER REPAIR	Erase the computer memory using the command G0** then switch off the ignition. Carry out another check using the XR25.
---------------------	---

NOTES

Only carry out this conformity check after a complete XR25 check.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Dialogue with XR25	D49 (selector on S8)		2.Ab
2	Computer conformity	#02		6
3	Computer configuration		19 	Ensure that the computer configuration shown by this bargraph corresponds to the vehicle equipment.
4	Warning light operation - check computer initialisation	Switch on the ignition		3 second illumination of the warning light when switching on the ignition (consult fault finding if it remains illuminated or if it does not illuminate).

REPLACING THE AIR BAG COMPUTER

The air bag computers are sold in locked mode to avoid all risk of release at the wrong time (all trigger lines are inhibited). This operational mode is indicated by the illumination of the warning light on the instrument panel.

When replacing the air bag computer, follow this procedure :

- Ensure that the ignition is switched off.
- Replace the computer.
- Carry out an XR25 check.
- Unlock the computer using command **G81***, only when no fault is declared by the XR25.

If the vehicle is not fitted with a passenger air bag, configure the computer to "without air bag passenger" using command G20*0*.

REMOTE CONTROL FOR DOOR LOCKING FAULT FINDING

CONTENTS

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INSTALLATION OF XR25 DIALOGUE / MULTI-TIMER UNIT

- Connect the XR25 to the diagnostic socket.
- ISO selector on **S8**
- Enter **D56**

n.56

PRECAUTION

When carrying out the test using a multimeter, avoid using a test pin on connectors where the test pin is of a size which could damage the clips and lead to a poor contact.

Pay attention to key head numbers.

ERASING THE MEMORY

After repairing the immobiliser system, enter **G0**** on the keyboard of the XR25 kit to proceed with erasing the memorised fault.

Resynchronising the keys

- Press the central locking button for a few seconds until the immobiliser warning light illuminates and the door motors operate.
- Check that bargraphs 14LH, 14RH, 17LH, 17RH illuminate for a few seconds.
- Press the PLIP key twice; the doors will unlock then lock.
- Check bargraphs 14LH, 14RH, 17LH, 17RH again.

The resynchronisation is complete.

Programming a second PLIP key or a replacement key

- Enter G04* and check that bargraph 9 LH is illuminated.
- Put the key in the ignition and switch the ignition on (+APC).
- Enter G40*, then the security code (4 character code from Techline) and validate with * (the display shows "FIN").
- Switch off the ignition. Enter command mode G32*. The door motors operate.
- Press the remote control twice, the door motors operate again.

PRESENTATION OF XR25 FICHE N° 56

N°56	S8	code : D 5 6	read : n56
1	<input type="checkbox"/>	<input checked="" type="checkbox"/> possible check on other side of fiche (x65)	CODE PRESENT <input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/>	TYPE OF PLIP <input checked="" type="checkbox"/> IR <input type="checkbox"/> RF	COMPUTER CONFIGURATION (fixed display)
3	<input checked="" type="checkbox"/>	PROGRAMMING 1 key <input type="checkbox"/> 2 keys <input checked="" type="checkbox"/>	INTERIOR LIGHT TIMER <input checked="" type="checkbox"/>
4	<input checked="" type="checkbox"/>	+ ACCESSOIRES PRESENT	DIESEL CODED SOL VALVE <input checked="" type="checkbox"/>
5	<input checked="" type="checkbox"/>	ELECTRIC DOOR LOCK BUTTON (CPE)	+ APC PRESENT <input checked="" type="checkbox"/>
6	<input checked="" type="checkbox"/>	DIESEL SOL ACQUITTAL	FAULTS
7	<input checked="" type="checkbox"/>	KEY INTERROGATION (CC) (only if valeo unit)	CODED LINE * 26 <input checked="" type="checkbox"/>
8	<input checked="" type="checkbox"/>	RE-READ DIESEL ACQ	CONNEX. RING-DE CODER * 27 <input checked="" type="checkbox"/>
9	<input type="checkbox"/>	PROTECTED MODE ENFORCED	CONTROL MODES : G...*
10	<input type="checkbox"/>	IMMOBILISER ACTIVE	KEY PRESENT <input type="checkbox"/> RECVD (key code) <input type="checkbox"/> VALID <input type="checkbox"/> 23 Diesel sol. mechanical control Only if line 3 RH and line 6 RH/LH <input type="checkbox"/> Test Switch off ignition, enter G23*. Switch ign. on again, valve opens and closes for 30 secs (audible check) 03 Interior light control 08 Opening movement 09 Closing movement 15 Raising : electric window 04 Protected mode enforced 40*xxxx* security entry code Part No : G70 *
IMMOBILISER (PLIP and KEY) To read other side : G 02 * Erase memory : G 0 **			
11	<input checked="" type="checkbox"/>	ACTIVATE PLIP (UNLOCKING) SIGNAL RECVD SIGNAL CORRECT <input type="checkbox"/>	
12	<input type="checkbox"/>	INT. LIGHT CUT-OUT PRESENT USING PLIP (option depending on equip.) <input type="checkbox"/>	
13	<input checked="" type="checkbox"/>	ACTIVATE PLIP (signal) UNLOCKING LOCKING <input checked="" type="checkbox"/>	
14	<input checked="" type="checkbox"/>	*14 PRESS BUTTON : CPE UNLOCKING(1) LOCKING(0)	MOTOR ACTION LOCKING(1) UNLOCKING(1) *34 <input checked="" type="checkbox"/>
15	<input checked="" type="checkbox"/>	AUTHORISED ELECTRIC WINDOW (PLIP) (witch anti-pinch)	WINDOW CLOSING <input checked="" type="checkbox"/>
16	<input checked="" type="checkbox"/>	DOOR SWITCHES (ILLUM. IF DOOR OPEN)	
17	<input type="checkbox"/>	PROGRAMMING OR RESYNCHRO IN PROGRESS	PLIP NOT PROGRAMMED <input type="checkbox"/>
18	<input type="checkbox"/>	PROGRAMMING 1st KEY	KEY PROGRAMMING AUTHORISED <input type="checkbox"/>
19	<input type="checkbox"/>	NOT PROGRAMMED	KEY PROGRAMMING NOT LOCKED (G80*) <input type="checkbox"/>
20	<input type="checkbox"/>		TIMED DELAY SECURITY CODE ENTRY <input type="checkbox"/>
SEE REPAIR MANUAL			17 ANG

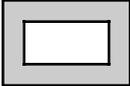
FI21756

DESCRIPTION OF BARGRAPHS

-  **Illuminates when dialogue is established with the product computer**, if it remains extinguished :
- the code does not exist,
 - there is a line , computer or tool fault.

REPRESENTATION OF FAULTS (always on coloured background)

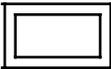
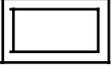
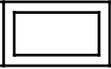
-  **Illuminated**, indicates a fault on the part tested, the associated text defines the fault.

-  **Extinguished**, indicates non-detection of fault on the product tested.

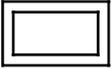
REPRESENTATION OF STATUS (always on white background)

Engine stopped, ignition on, no operator action

Status Bargraphs on the fiche are shown as they should appear, engine stopped, ignition on, without operator action

- If on the fiche, the Bargraph is shown as  the kit should show 
 - If on the fiche, the Bargraph is shown as  the kit should show 
 - If on the fiche, the Bargraph is shown as  the kit should show 
- either  or 

Engine running

-  Extinguished when operation or condition specified on the fiche is no longer met.
-  Illuminated when operation or condition specified on the fiche is met.

Fault finding - Interpretation of XR25 bargraphs

1 	Bargraph 1 RH side extinguished <u>XR25 / MULTI-TIMER UNIT COMMUNICATION</u>	Fiche n° 56
---	--	-------------

NOTES	Check that lines K and L are not disrupted by another computer.
--------------	---

Check the condition of the + before ignition feed fuse.

Replace the fuse if necessary.

Ensure that the XR25 is not the cause of the fault by trying to communicate with another computer on the vehicle (air conditioning computer, injection computer,...).

Check that the ISO selector is in position **S8**, that the latest XR25 cassette is being used with the correct access code (**D 56**).

Check the battery voltage (**U > 10.5 volts**). Recharge the battery if necessary.

Check that the 18 track multi-timer unit connector is correctly connected.

Check that the multi-timer unit is correctly fed:

- **earth on track A1 of the black connector** for the multi-timer unit.
- **+ before ignition feed on track B1 of the black connector** for the multi-timer unit.

Ensure the diagnostic socket is correctly fed.

Check and ensure the continuity and insulation of the wiring for tracks **1 and 14 of the yellow connector** for the multi-timer unit.

If dialogue is still not established between the XR25 and the multi-timer unit, replace the unit.

AFTER REPAIR	When communication has been established, deal with any illuminated fault bargraphs. Carry out a conformity check.
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

<p>5</p> 	<p>Bargraph 5 LH side illuminated</p> <p><u>CENTRAL LOCKING BUTTON</u></p>	Fiche n° 56
---	---	-------------

NOTES	Check that the central locking button is not permanently present due to a mechanical problem.
--------------	---

Check the insulation from earth of the wiring between :

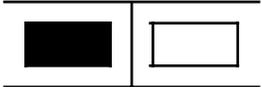
<p>multi-timer unit yellow connector</p>	<p>{ 22 → 5 } 7 → 1 }</p>	<p>central locking button</p>
--	---------------------------------	---

Repair if necessary.

If the fault persists, replace the central locking button.

AFTER REPAIR	<p>Erase the memory using G0** on the XR25.</p> <p>Carry out a conformity check.</p> <p>Check the operation of the immobiliser system.</p>
---------------------	--

Fault finding - Interpretation of XR25 bargraphs

<p>11</p> 	<p>Bargraph 11 LH side illuminated and bargraph 11 RH side extinguished</p>	Fiche n° 56
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NOTES	<p>If BG 17 RH side is illuminated, do not apply the fault finding as the multi-timer unit is new. Carry out the procedure for programming the PLIP keys. Only consult this fault finding below if BG 11 LH side remains extinguished after trying to lock or unlock the vehicle doors using the PLIP.</p>
--------------	--

Check that the key will mechanically open the door.

Can the door be opened?

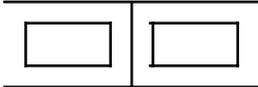
NO	Use the correct key.
----	----------------------

YES	<p>Check the condition of the key battery and resynchronise the key. Press the PLIP. If the doors do not open, replace the key.</p>
-----	---

If the fault persists, replace the multi-timer unit.

AFTER REPAIR	<p>Carry out a conformity check. Check the operation of the immobiliser system.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>11</p> 	<p>Bargraphs 11 LH side and 11 RH side extinguished</p>	<p>Fiche n° 56</p>
--	--	--------------------

NOTES	<p>Do not consult the fault finding below if, when the PLIP is pressed, BG 11 LH side illuminates for 3 seconds and BG 11 RH side remains extinguished. Check that the keys belong to the vehicle.</p>
--------------	---

Check that the key tell-tale illuminates when the key is pressed.
Replace the battery if necessary and replace the key if the fault persists.

Connect the XR25 as a pulse detector (**button G, input via terminal Vin**) and check for the presence of a signal on **track 11 of the yellow connector** for the multi-timer unit.
Is there a signal?

YES	<p>Check the condition of the wiring between track 11 of the yellow connector and track 2 on the PLIP receiver. Repair if necessary.</p>
NO	<p>Replace the PLIP receiver.</p>

AFTER REPAIR	<p>Carry out a conformity check. Check the operation of the immobiliser system.</p>
---------------------	---

Fault finding - Interpretation of XR25 bargraphs

<p>14</p> 	<p>Bargraph 14 LH side illuminated or extinguished after pressing the PLIP</p>	<p>Fiche n° 56</p>
--	---	--------------------

NOTES	<p>Bargraph 10 LH side must be illuminated.</p>
--------------	---

Check the continuity and insulation in relation to 12 V and earth of the wiring between:

<p>multi-timer unit yellow connector</p>	<p>{ 22 → 5 } 7 → 1 }</p>	<p>central locking button</p>
--	---------------------------------	---

Repair the wiring if necessary or replace the switch.

if the fault persists, replace the multi-timer unit.

AFTER REPAIR	<p>Erase the memory using G0** on the XR25. Carry out a conformity check. Check the operation of the immobiliser system.</p>
---------------------	--

Fault finding - Customer complaints

NOTES

Only refer to these customer complaints after a complete check using the XR25.

OPENING ELEMENTS CANNOT BE LOCKED OR UNLOCKED

Chart 1

DOOR OPENING PROBLEM USING PLIP FUNCTION

Chart 2

Chart 1**OPENING ELEMENTS CANNOT BE LOCKED OR UNLOCKED****NOTES**

Check that no fault bargraphs are illuminated.
If they are, deal with those bargraphs first.

Check the correct operation of the mechanical opening system for the opening elements.

Otherwise replace the multi-timer unit.

AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.

Chart 2

DOOR OPENING PROBLEM USING PLIP FUNCTION

NOTES

Check that no fault bargraphs are illuminated.
If they are, deal with those bargraphs first.

Do bargraphs **11LH** and **11RH** illuminate
when the PLIP is pressed?

no

Refer to fault finding for bargraphs.

yes

Check the condition of the 20 A fuse.
Replace it if necessary.

Press the central locking button.
The relay should click.
Does the relay click?

no

Refer to fault finding for bargraphs
5 LH and 14 LH.

yes

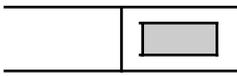
Replace the multi-timer unit.

AFTER REPAIR

Carry out a conformity check.
Check the operation of the immobiliser system.

NOTES

If a fault bargraph illuminates, refer to the corresponding fault finding.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
1	Dialogue with XR25	D56 (selector on S8)		n.56
2			1 	Code present
3	Multi-timer unit conformity	G70*		X X X Part No. displayed in 2 sequences
4	Interpretation of bargraphs normally illuminated		<div style="text-align: center;">2 </div> <div style="text-align: center;">2 </div> <div style="text-align: center;">3 </div>	<p>Remote control type:</p> <ul style="list-style-type: none"> - Illuminated for infrared remote control. - Extinguished for radio frequency remote control <p>Illuminated if fitted with courtesy light timer. Extinguished if not fitted with courtesy light timer.</p> <p>Illuminated for programming with 2 keys. Extinguished if programming with 1 key.</p>

NOTES

If a fault bargraph illuminates, refer to the corresponding fault finding.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
5	Computer configuration as petrol/diesel		3 	Illuminated if configured for a diesel vehicle. Extinguished if configured for a petrol vehicle. Command : - G22 *1* configuration for petrol - G22 *2* configuration for diesel
6	Forced protection mode		9 	Illuminated only after entering G04* on the XR25. Vehicle cannot be started while BG 9 LH side is illuminated.
7	Immobiliser status		10 	Illuminated if immobiliser is active: switch off ignition and wait for 10 seconds for BG 10 LH to illuminate permanently. Extinguished if immobiliser inactive.
8	Presence of the key		8 	Illuminated when ignition switched on if a coded key is used (on condition that the vehicle was protected before switching on the ignition, immobiliser warning light flashing). NOTE: for normal operation, bargraph 8 RH, 9 RH and 10 RH illuminate together

NOTES

If a fault bargraph illuminates, refer to the corresponding fault finding.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
9	Reception of the key code		9 	Illuminated when ignition switched on if a coded key of the correct format is used (on condition that the vehicle was protected before switching on the ignition, immobiliser warning light flashing). NOTE: for normal operation, bargraph 8 RH, 9 RH and 10 RH illuminate together
10	Key code valid		10 	Illuminated when ignition switched on if a coded key of the correct format is used (on condition that the vehicle was protected before switching on the ignition, immobiliser warning light flashing). NOTE: for normal operation, bargraph 8 RH, 9 RH and 10 RH illuminate together
11	Reception of infrared signal from the PLIP		11  11 	Illuminated for approximately 3 seconds if the infrared signal is received by the multi-timer unit via the infrared receiver. Illuminated for approximately 3 seconds if the infrared signal received by the multi-timer unit via the infrared receiver is a correct signal.
12	Presence of interior lighting cut-out after PLIP operation		12 	Not used

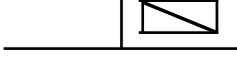
NOTES

If a fault bargraph illuminates, refer to the corresponding fault finding.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
13	Reception of door lock/unlock information from the central door locking button		14 	<p>Illuminated when door lock/unlock information is received from the central door locking button.</p> <p>Enter * 14 on the XR25 to determine the information received by the multi-timer unit:</p> <ul style="list-style-type: none"> - if * 14 = 0 door lock information - if * 14 = 1 door unlock information
14	Sending of door lock/unlock information by the multi-timer unit to the locking micromotors		14 	<p>Illuminated when door lock/unlock information is sent from the multi-timer unit to the locking micromotors.</p> <p>Enter * 34 on the XR25 to determine the information sent by the multi-timer unit:</p> <ul style="list-style-type: none"> - if * 34 = 0 door unlock information - if * 34 = 1 door lock information <p>(NOTE : ignore what is written on fiche n° 56, XR25 cassette, n° 16).</p>
15	Reception of electric window information		15 	Not used

NOTES

If a fault bargraph illuminates, refer to the corresponding fault finding.

Order of operations	Function to be checked	Action	Bargraph	Display and notes
16	Reception of door switch information		16 	Illuminated if doors are open
17	Reception of information that programming is underway or multi-timer resynchronisation or programming has not been carried out		17 	17 LH illuminated if programming or resynchronisation underway. 17 RH illuminated if programming has not been carried out
18	Reception of programming with 1st key information		18 	Illuminated if programming of 1st key underway
19	Reception of information that programming has not been carried out Reception of information that programming has not been locked		19  19 	
20	Reception of information that security code input has been temporarily blocked		20 	

ADDITIONAL TESTS

COMMAND MODES G--*

To use this function, enter G on the XR25 followed by the number of the command mode selected and a star.

- 03** Courtesy light command (illuminates the courtesy light for 3 seconds).
- 04** Forced protection mode: activates the immobiliser function even if the key is correct, which allows checking of starting prevention. Bargraph 9 LH side must illuminate.
This command must be entered when the ignition is off and the immobiliser is active.
- IMPORTANT:** switching off the ignition cancels this command.
- 05** Immobiliser warning light command (illuminates the immobiliser warning light for 3 seconds).
- 08** Door unlock command (operates the micromotors for 3 seconds, unlock side).
- 09** Door lock command (operates the micromotors for 3 seconds, lock side).
- 13** End fault finding.
- 22** Configuration :
- **G 22 * 1 *** = configuration for petrol (bargraph 3 RH side must be extinguished).
- **G 22 * 2 *** = configuration for diesel (bargraph 3 RH side must be illuminated).
- 23** Solenoid valve forced test mode (used on diesel vehicles only).
Activates the coded solenoid valve (open / close) for approximately 30 seconds (listen).
NOTE:
- the multi-timer unit must be configured for diesel
- bargraph 8 LH side must be illuminated during the test.

ADDITIONAL TESTS

COMMAND MODES G--*

To use this function, enter G on the XR25 followed by the number of the command mode selected and a star.

- 32** Programming for 2nd PLIP key.
- 40** Entering the security code (bargraph 10 LH side must be illuminated and the ignition must be on). This mode can be used for entering the security code, but does not allow decoding of the injection computer or coded solenoid valve.
Enter the security code number for the vehicle on the XR25 and validate with "*".
If the code number is correct, "**bon**" is displayed on the XR25 and bargraph 10 LH side extinguishes.
If the code number is incorrect, "**Fin**" is displayed on the XR25 and bargraph 10 LH side remains illuminated.
IMPORTANT: three attempts to enter the code may be made. If, at the end of the third attempt, the code is invalid, you must wait for **15 minutes** before another attempt may be made (the ignition must be switched off and on again between each attempt to enter the code).
- 47** Courtesy light timer configuration:
- **G 47 * 0 *** = cancels courtesy light timer.
- **G 47 * 1 *** = activates courtesy light timer.
- 70** Reading the part number (of the multi-timer unit).

LIST OF VARIOUS

- 26** Source of the last opening element command:
1 → Infrared remote control
2 → Central locking button
- 27** Type of last opening element command:
1 → Unlock
2 → Lock
- 95** Manufacturer (1 = Valéo, 2 = Sagem).