

INFORMATION FLASH



SALES DIVISION
NETWORK TECHNICAL INFORMATION

JETFORCE 50cc

CONFIDENTIAL

Subject : DIAGNOSTIC AID

Please find enclosed a document setting out some general information on troubleshooting Jetforce 50cc machines.

This document does not claim to cover all known or possible problems you may encounter on these machines. On the other hand, we have covered the most frequently occurring faults and how to remedy them.

Page 1 to 6 : the diagnostic method and miscellaneous information.

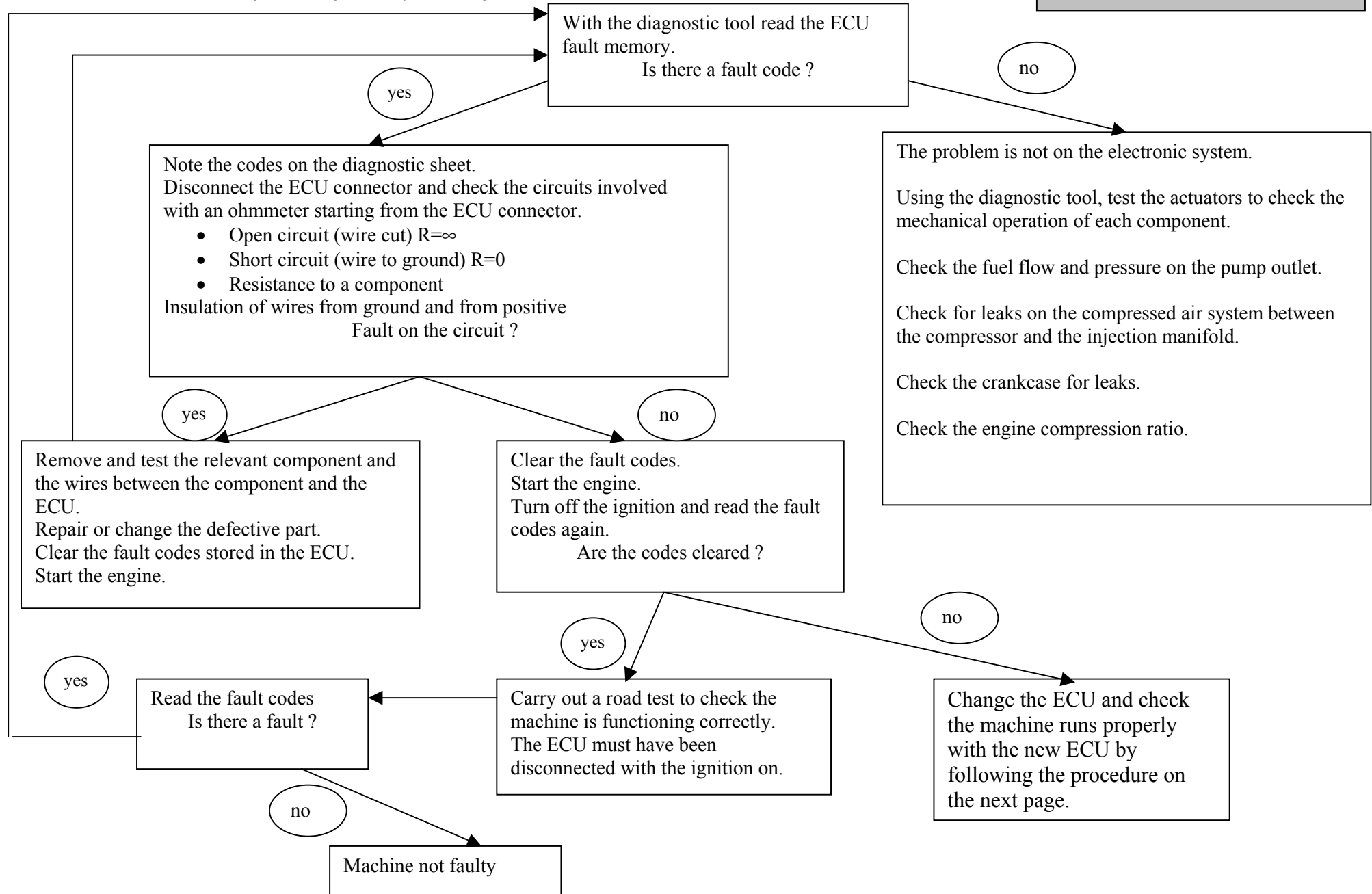
Page 7 to 13 : the main known faults.

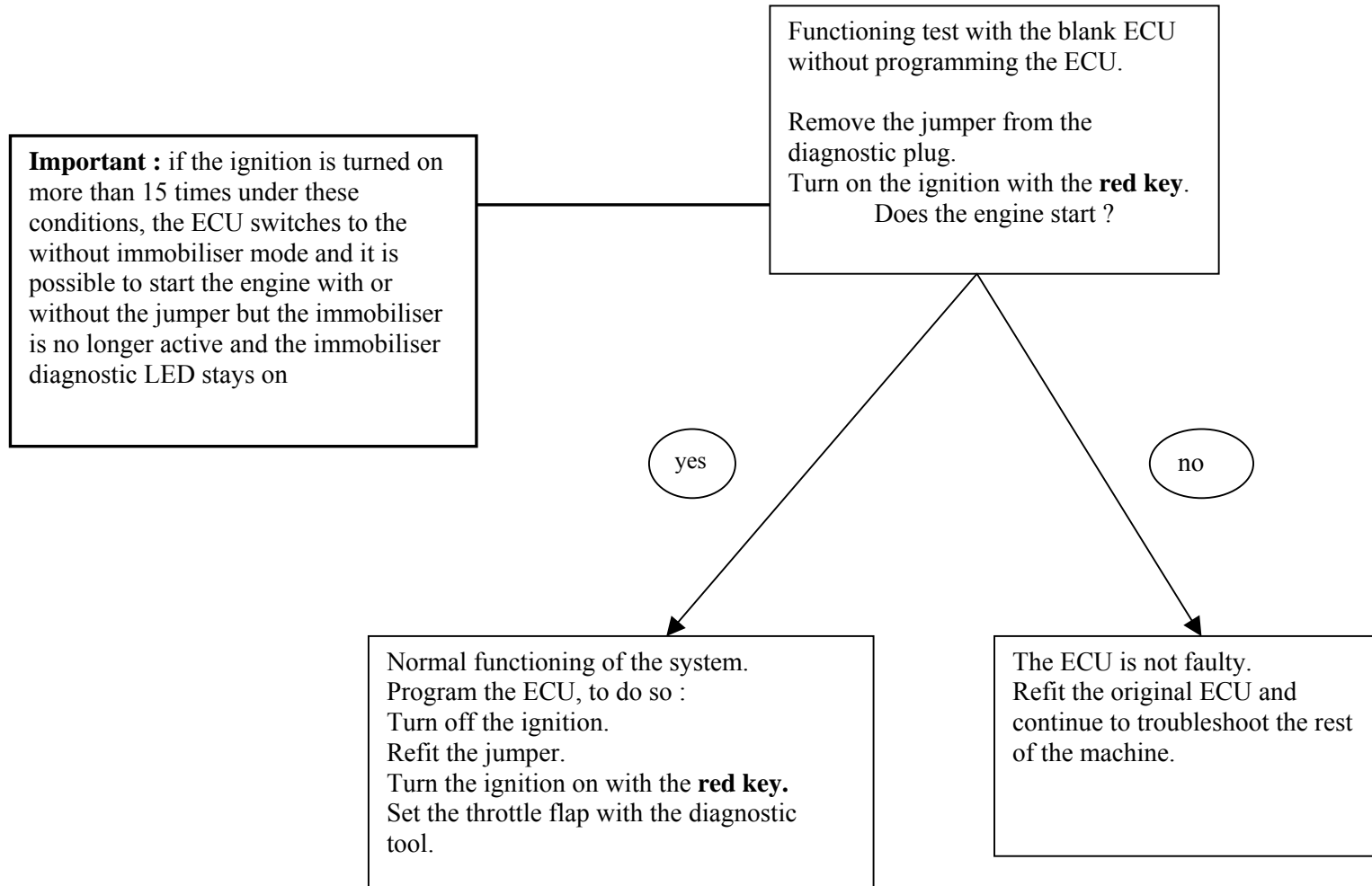
For the proper comprehension of this document, we must emphasise the absolute need to be fully familiar with the functioning principles of the TSDI 50 cc system, which you will find in the workshop manuals you received in 2002 and 2003.

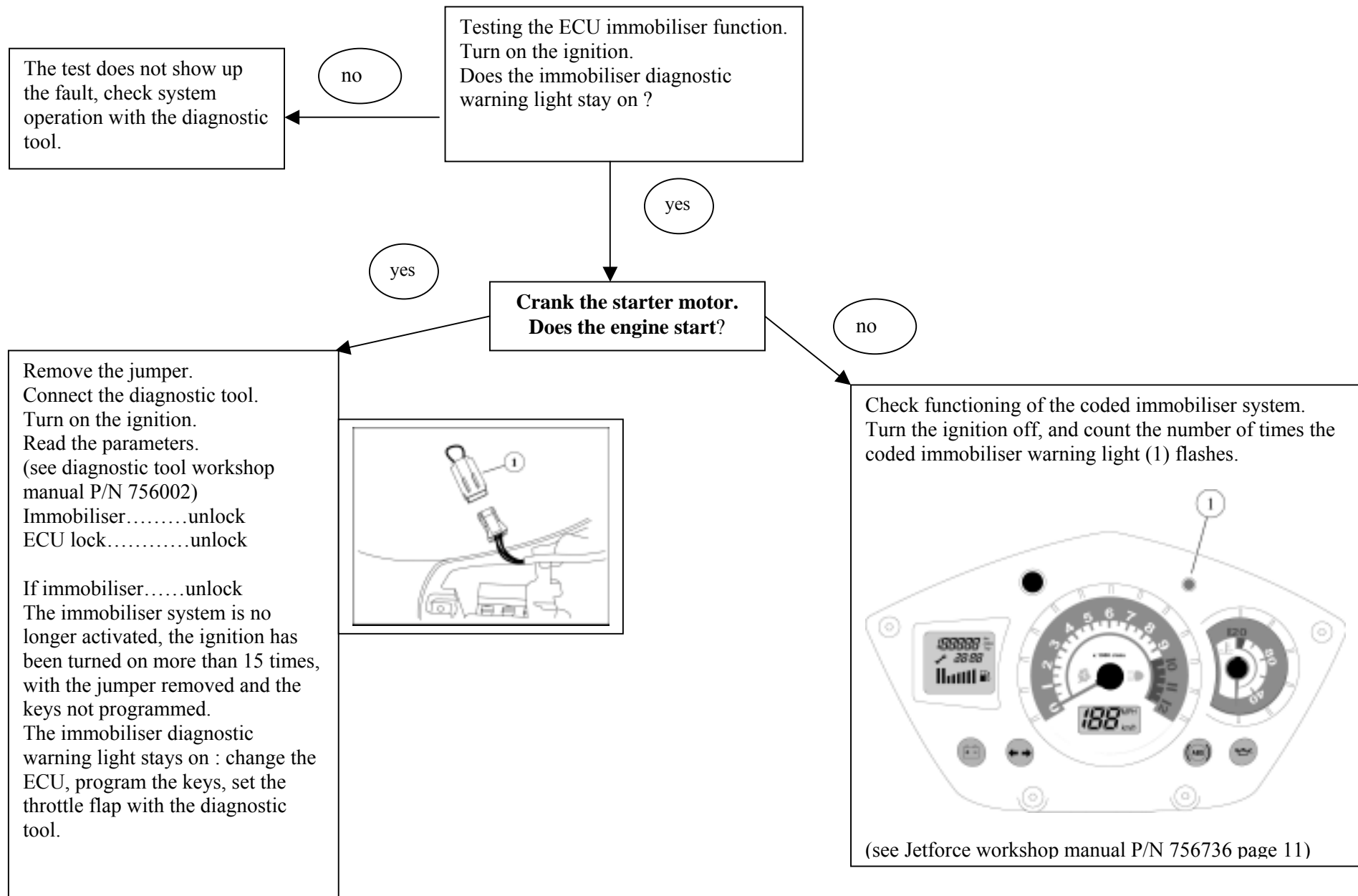
This confidential document is strictly for use by the Peugeot Motorcycles network and must under no circumstances be duplicated or divulged under whatever form.

We hope that this information will enable you to work more quickly on the machines.

	Dealership	Spare parts	Mechanic 1	Mechanic 2	Mechanic n 3
Signature					







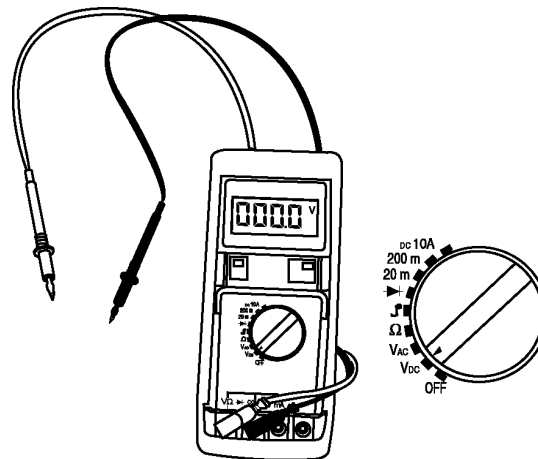
Wire colour coding :

Ref.	colour
BA :	White
BA-BE :	White / Blue
BA-NR :	White / Black
BC :	Light blue
BE :	Blue
GR :	Grey
JN :	Yellow
JN-BA :	Yellow / White
JN-BE :	Yellow / Blue
JN-NR :	Yellow / Black
JN-VE :	Yellow / Green
MC :	Light brown
MR :	Brown
MR-BA :	Brown / White
NR :	Black
OR :	Orange
RG :	Red
RG-BA :	Red / White
RG-JN :	Red / Yellow
RG-NR :	Red / Black
RS :	Pink
VC :	Light green
VE :	Green
VE-NR :	Green / Black
VI :	Purple

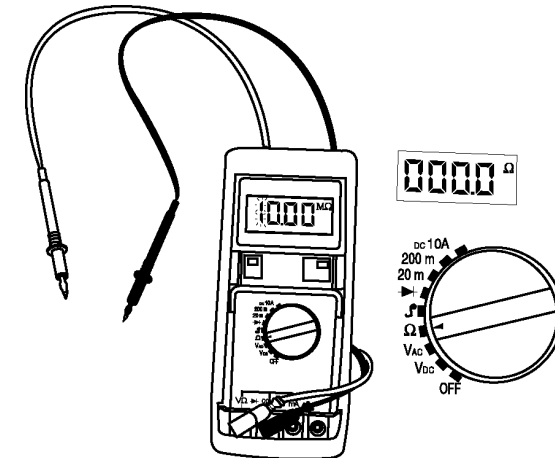
Service documentation available on the subject :

Description	P/N
50cc horizontal fuel-injected engine	756732
Jetforce Manual	756737
TSDI 2-stroke injection system	756007
Using the diagnostic tool	756002
Electrical tests	755711
Electricity	754282
Jetforce 50cc TSDI SBC2 technical data	756598
Jetforce 50cc TSDI IL/SBC2 IL technical data	756593

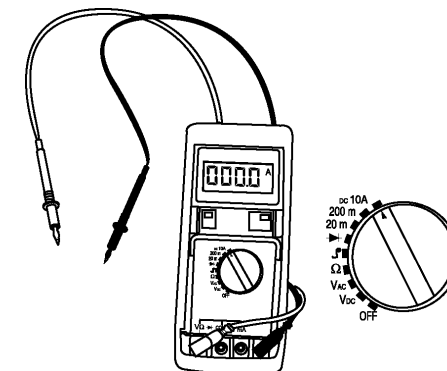
A direct current voltage measurement is taken with a multimeter set to the direct volts position **VDC** ≡ the red wire to the positive, the black wire to the negative. The tool must be connected in parallel on the circuit being measured.



Resistance is measured with the multimeter set to the Ω position. If the circuit is cut, the display shows 1000 and flashes, if the circuit is short-circuited, the display shows 0000.



Current is measured with the multimeter to the DC 10A min. position, with the tool connected in series on the circuit.



Various reminders :

Never disconnect the ECU with the ignition on.

All tests must be carried out on the injection ECU connector on the wire side in order not to damage the terminals.

When preparing a new machine

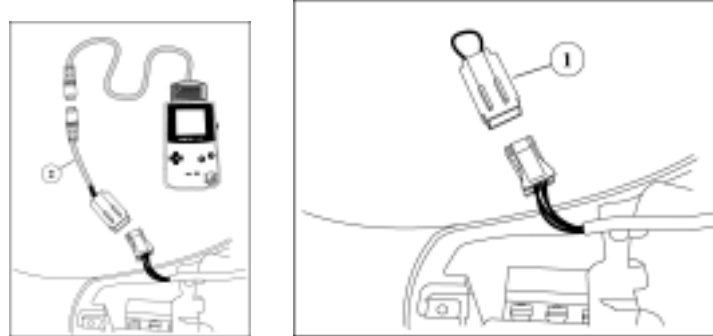
- Charge the battery for at least 2 hours before handing the machine over to the customer.
- Check there are no fault codes in the ECU memory.

An ECU fitted to one machine cannot be fitted to another. The key codes are recorded in the injection ECU memory.

When disconnecting the injection ECU connector :

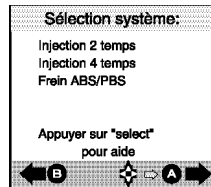
- do not pull from right to left
- do not pull downwards but along the ECU axis to avoid damaging the terminals.

Connecting the diagnostic tool :
Turn on the ignition.

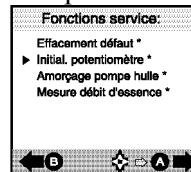
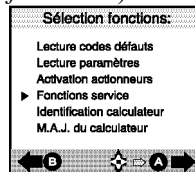


Remove the jumper (1).
Connect the diagnostic tool to the diagnostic plug located near the passenger seat.

Select the relevant system when using the diagnostic tool.



To set the potentiometer select "fonctions service" (*service functions*) then "initial. potentiometer".

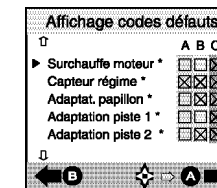


The fault codes are shown with a priority code representing the type of fault recorded :

A= permanent fault

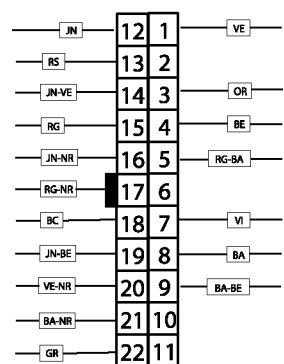
B= intermittent fault appeared and disappeared since the ignition was last turned on

C= intermittent fault appeared and disappeared since the memories were last cleared



JETFORCE 50cc Injection électronique diagnostic du système d'injection

12	JN	Ignition coil control
13	RS	Air injector control
14	JN-VE	Fuel pump control
15	RG	Battery positive power F15A
16	JN-NR	5V output to sensors
17	RG-NR	Ignition on power F7.5A
18	BC	Throttle potentiometer earth
19	JN-BE	Engine speed sensor
20	VE-NR	Engine speed sensor
21	BA-NR	Diagnostic plug
22		Not connected



Rear view of connector

1	VE	ECU earth
2	JN-BA	Oil level low
3	OR	Fuel injector control
4	BE	Injection diagnostic light
5	RG-BA	Temperature gauge
6	VC	Rev counter
7	VI	Throttle potentiometer track n°1
8		Not connected
9	BA-BE	Engine temperature sensor
10	GR	Throttle potentiometer track n°2
11		Not connected

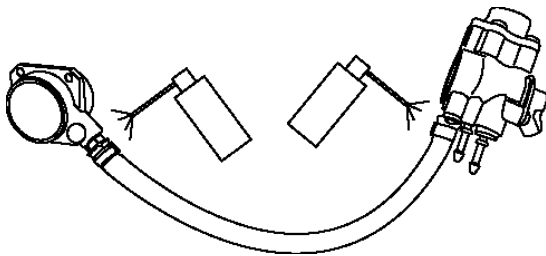
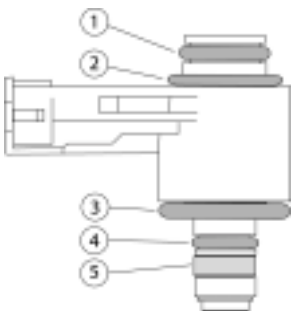
Reminder :

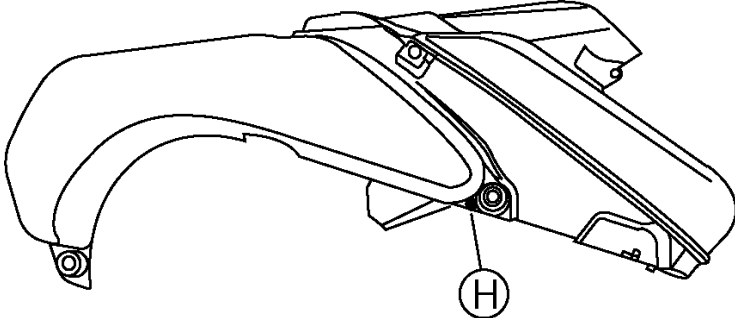
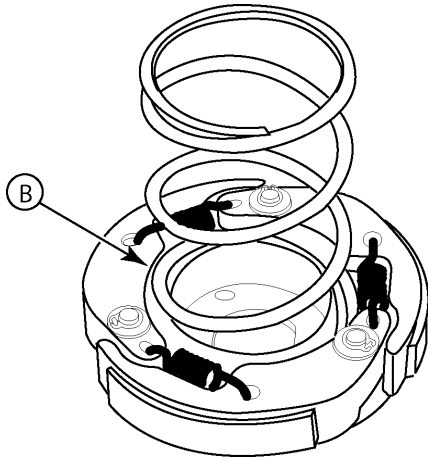
- All the components receive their battery positive power supply through the 10A fuse (7.5A until 17/07/03) and are operated through earthing in the ECU.
- The sensors powered with 5V by the ECU are those of the throttle potentiometer and engine temperature sensor.

Note :

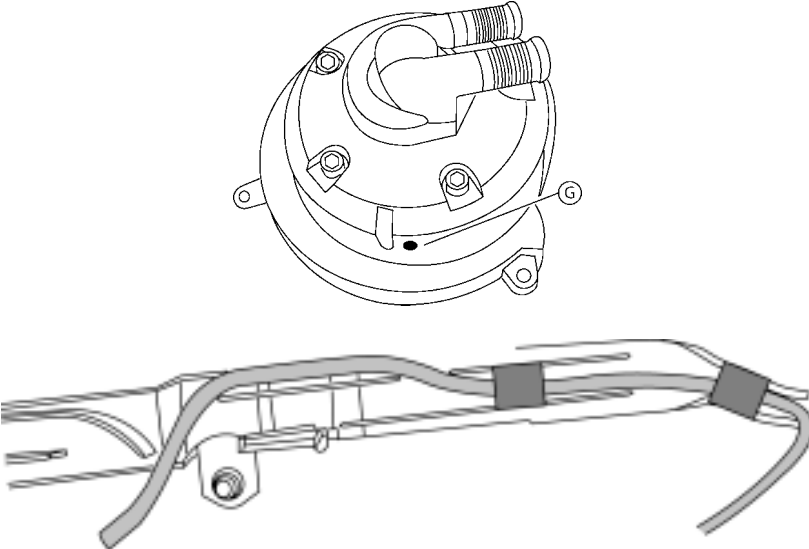
- On the Jetforce 50cc IL version the RS wire of the air injector is connected to terminal 3 of the ECU and the OR wire of the fuel injector is connected to terminal 13 of the ECU. The ECU is thus specific to this version.

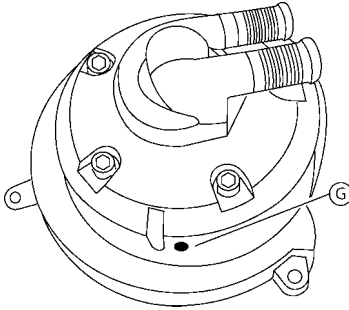
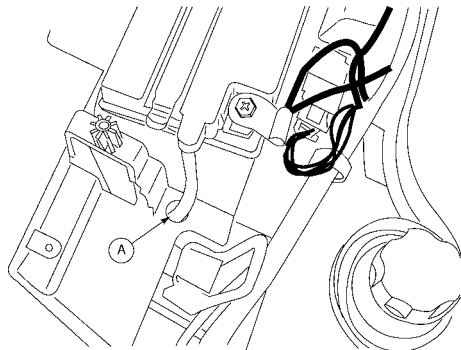
Problem	Checks	Operation
The coded immobiliser LED stays on and the machine starts <u>Cause :</u> Coded immobiliser function disabled in the injection ECU.	<p>The image shows the instrument cluster of a Jetforce 50cc machine. A small light labeled '1' is illuminated, indicating the immobiliser is active. The cluster includes a speedometer, a tachometer, and a digital display showing '188'.</p>	<p>Carry out the "Test of the ECU immobiliser function" (see page 4 in this document) to confirm that it is no longer active.</p> <p>In case of confirmation, change the injection ECU and turn on the ignition with the red key to program in the key codes then set the throttle flap with the diagnostic tool ("service functions" - "initial potentiometer").</p> <p>Start the machine, the coded immobiliser light (1) should go off.</p> <p><u>Production change :</u> This function is necessary for machines without a coded immobiliser, no production change necessary.</p>

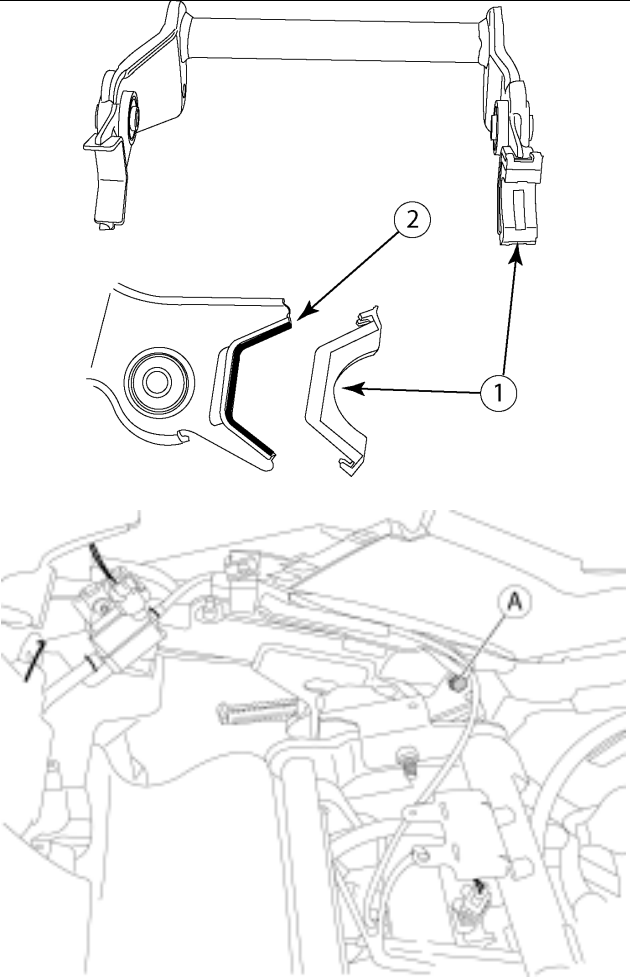
Problem	Checks	Operation
Very uneven idling speed Engine will not idle Engine difficult to start Engine does not start Loss of power <u>Possible causes :</u> Problem with a component Air filter not in compliance Transmission Premature engine wear Engine seizure	Check the condition of the spark plug. The spark plug is abnormally black ! <u>Leak detector :</u> Automobiles Peugeot P/N 973307 Loctit 7100   <div style="border: 1px solid black; padding: 5px; width: fit-content;"> 1. O-ring Φ 10x14.2 mm core Φ 2.4 mm 2. O-ring Φ 13.3x18 mm core Φ 2.4 mm 3. O-ring Φ 13.7x21 mm core Φ 3.5 mm 4. O-ring Φ 7.4x10.5 mm core Φ 1.7 mm 5. O-ring </div>	Remove the air duct (hose) located between the compressor and the injection manifold. <ul style="list-style-type: none"> • Blow into the duct to clean it (condensation and dirt) • Refit the duct with new collars and of proper diameter.(12mm diameter black identification sticker) • Check the tightness of the duct, either with soapy water or with a can of leak detection fluid sprayed onto the duct ends, while actuating the starter motor in order to increase the pressure inside the duct. • Make sure there is pressure inside the duct when the engine is running (hose hardens under pressure) <i>Jetforce workshop manual P/N 756737, page 38 and page 40</i> Remove the air compressor <ul style="list-style-type: none"> • Check the condition of the seal • Check the condition of the roller (wear marks ?) • Check the general condition of the compressor (no dirt, no abnormal play, ...) <i>Jetforce workshop manual P/N 756737, page 38</i> <u>Production change :</u> 07/2003 improved assembling process VIN N° VGA1AAJA00003910 or VGA1AAJB00000968 Remove the air injector <ul style="list-style-type: none"> • Check the condition of the seals and make sure they are properly positioned. • Check that the injector is clean. • Test the mechanical operation using the actuator function of the diagnostic tool. <i>50cc TSDI horizontal engine manual P/N 756732 page 30</i> <i>Jetforce workshop manual P/N 756737 page 40</i> <i>Diagnostic tool manual P/N 756002 page 15</i>

Problem	Checks	Operation
	<p>Test the compression (using a compression tester, 5 bars minimum), the pressure is lower !</p> 	<p>Remove the air filter</p> <ul style="list-style-type: none"> • Check that the green identification sticker is on the filter, (see XAP campaign) and change it if necessary. • Check the throttle flap housing is clean (absolutely no dirt) • Check that the reed valve housing is clean and its condition (the blades shall not be seized by dirt) <p><i>Jetforce workshop manual P/N 756737 page 36 and page 42</i></p> <p><u>Production change :</u> 06/2003 improved filter VIN N° VGA1AAJA00009460 or VGA1AAJB00001707</p> <p>Remove the cylinder and the piston</p> <ul style="list-style-type: none"> • Check the condition of the cylinder and the piston (dirt, seizure, wear,...) • If it is dirty, remove the engine crankcase and clean it thoroughly <p><i>50cc TSDI horizontal engine manual N/P 756732 page 20 to 27</i></p>
	<p>The engine does not rev up and the machine's speed stays low</p> 	<p>Remove the drive pulley and driven pulley</p> <ul style="list-style-type: none"> • Check that there is no grease inside the drive pulley, otherwise clean it • Check the condition of the rollers • Check that the driven pulley operates properly. In case of seizure, dismantle it. • On the driven pulley check that the big spring does not contact the linings in (B), otherwise change the pulley. <p><i>50cc TSDI horizontal engine manual N/P 756732 page 31 to 33</i> <i>Service Information N° 147 dated 05/2003</i></p> <p><u>Production change :</u> 09/2003 guarantee pulleys are in compliance.</p>

Problem	Checks	Operation
Engine does not start <u>Possible causes :</u> Burnt out fuse ECU locked Faulty component Dirt in the fuel Engine overheating Lack of grease	Test the lights (lights are switched on when turning on the ignition) Lights do not operate !	Check the condition of the fuse If the fuse is 7.5A replace it with a 10A fuse <i>Jetforce manual N/P 756737 page19</i> <u>Production change :</u> 07/03 fitting a 10A fuse VIN N° VGAA1AAJA00013178 or VGAA1AAJB00002460
	Check that there is a jumper on the diagnostic plug There is a jumper !	Follow the locked ECU check procedure described in page 4 in this document
		Check the connection of the high voltage coil <i>XAP campaign</i> <u>Production change :</u> 06/2003 on-line connection check VIN N° VGAA1AAJA00005870 or VGAA1AAJB00000968
	When turning on the ignition check that the fuel pump operates for a few seconds. The pump operates !	<ul style="list-style-type: none"> • Check the flow of the fuel pump • Drain the fuel tank • Check that the filter is provided • Change the fuel pump if there is dirt in the drained fuel <i>Manual on 2-stroke injection principle N/P 756007 page 21</i> <i>Jetforce manual N/P 756737 page 32 and 33</i> <i>XAO campaign</i> <u>Production change :</u> 06/2003 cleaning the tanks VIN N° VGAA1AAJA00009460 or VGAA1AAJB00001707
	Using the diagnostic tool in the parameter reading mode, check that the information on the throttle valve position changes when you accelerate. The value does not change !	<ul style="list-style-type: none"> • Check the throttle cable and its attachment on the throttle housing • Check that the throttle housing is properly connected. <u>Production change :</u> 07/2003 assembly guarantee that cable hangers are not broken VIN N° VGAA1AAJA00013180 or VGAA1AAJB00002470

Problem	Checks	Operation
	<p>Test the compression (using a compression tester, 5 bars minimum), the pressure is lower !</p>  <p>Check that the oil hose is properly routed</p>	<p>Remove the cylinder and the piston</p> <ul style="list-style-type: none"> • Check the condition of the cylinder and the piston (seizure) • Test the water pump (pump modified with green identification sticker (G)) • Drain the circuit by means of the temperature sensor • Make sure the coolant hoses are properly positioned (they should not be trapped) • Check that the oil hose is properly routed • Check draining and operation of the oil pump (using the diagnostic tool) • Check update of injection ECU. It must at least be version V4 Europe.(calibration JF50A3.1.2 or later) <p><i>50cc TSDI horizontal engine manual P/N 756732 page 20 to 27, page 29,</i></p> <p><i>Jetforce manual P/N 756737 page 29 and 30, page 38</i></p> <p><i>XAP campaign</i></p> <p><i>Diagnostic tool manual P/N 756002 page 17</i></p> <p><i>Service Information N° 152 dated 06/2003</i></p> <p><u>Production change :</u></p> <p>06/2003 new water pump engine P/N 12731310</p> <p>VIN N° VGAA1AAJA00010072 or VGAA1AAJB00001760</p> <p>05/2003 new shape of hoses</p> <p>guarantee position of coolant hoses</p> <p>06/2003 oil hose is fixed in its channel and guarantee drained hose</p> <p>VIN N° VGAA1AAJA00007465 or VGAA1AAJB00001415</p> <p>08/2003 new oil mapping</p> <p>VIN N° VGAA1AAJA00011375 or VGAA1AAJB00002149</p>

Problem	Checks	Operation
Engine overheats <u>Possible causes :</u> The water pump is defective Cooling system drain	Check that the water pump is in compliance (green spot) 	<ul style="list-style-type: none"> • Test the water pump (pump modified with green identification sticker (G)). • Drain the circuit by means of the temperature sensor • Make sure the coolant hoses are properly positioned (they should not be trapped) • Check update of injection ECU. It must at least be version V4 Europe.(calibration JF50A3.1.2 or later) <i>50cc TSDI horizontal engine manual P/N 756732 page 29</i> <i>Jetforce manual P/N 756737 page 29 and 30, page 38</i> <i>XAP campaign</i> <i>Service Information N° 152 of 06/2003</i> <u>Production change :</u> 06/2003 new water pump engine P/N 12731310 VIN N° VGAA1AAJA00010072 or VGAA1AAJB00001760
Oil leaks through the rear wheel axle <u>Possible cause :</u> Leaky transmission box		<ul style="list-style-type: none"> • Remove the rear wheel. • Locate the leak. • Change the transmission box seal on the wheel side <i>50cc TSDI horizontal engine manual P/N 756732 page 14</i> <u>Production change :</u> VIN N° VGAA1AAJA00013180 or VGAA1AAJB00002470
Deterioration of muffler finisher <u>Possible cause :</u> Battery breather hose too short		Install a longer battery breather hose (A) (200mm instead of 150mm) <i>Jetforce manual P/N 756737 page44</i> <u>Production change :</u> 06/2003 drilling a 14mm thru-hole in the rear cover for the breather hose. 08/2003 installing a 200mm long hose. VIN N° VGAA1AAJA00011375 or VGAA1AAJB00002149

Problem	Checks	intervention
<p>Rattling noise near the engine or shock absorber</p> <p><u>Possible cause :</u> Bad position of engine silentblocs.</p>		<ul style="list-style-type: none"> Glue the engine mounting linkage (1) with Loctit glue Automobiles Peugeot P/N 973163 on (2). <i>Manuel Jetforce P/N 756737 page26</i> Remove the rearend frame's RH and LH attachment screws on frame (A), add a washer P/N 726145 underneath the screw's head and torque at $3,2^{+0,5}$ daN/m <i>Jetforce manuel P/N 756737 page26</i> <p><u>Production change :</u> 06/2003 gluing the rubber blocks on the engine hanger. VIN N° VGAA1AAJA00009400 or VGAA1AAJB00001659</p>
<p>Vehicle on stand, the wheels touch the ground</p> <p><u>Cause :</u> The stand is not in compliance.</p>		<p>Replace the stand.</p> <p><u>Production change :</u> 02/2003 new stand. VIN N° VGAA1AAJA0001000 or VGAA1AAJB00000400</p>