MemoBike 6050

U N I V E R S A L - F A S T
S I M P L E A N D C O M P L E T E

Multibrand advanced diagnosis

User friendly – easy to learn

Costant upgrades

USER MANUAL - FIRST BOOT

EOS AUTOMOTIVE
MOTORSCAN®

Mod. 6050_EN

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Dear Customer,

This product is part of the **MOTORSCAN®** family of products. It is the result of many years of research and development.

The EOS S.r.l. Motorscan® Division is glad to have you as a customer.

Please contact one of our authorized distributors or our customer service department for any technical questions.

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INTRODUCTION

This manual is an integral part of the product. Read these instructions carefully before using the tool and keep them in a safe place. EOS S.r.l. Motorscan® Division apologizes for any errors in the text.

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IMPORTANT INFORMATION ABOUT PERSONAL SAFETY
GENERAL SAFETY IN THE WORKSHOP.

DANGER OF SUFFOCATION

GASOLINE ENGINES
Exhaust gases from gasoline vehicles contain Carbon Monoxide, a colorless and odorless gas which, in case of inhalation, can cause serious physical injury or death. When working under a vehicle, be very careful. Some components of exhaust gases are heavier than air. Be careful also when working on LPG-propelled vehicles.

DIESEL ENGINES
The exhaust gas from a diesel engine has a composition that varies according to: type of engine, of induction, conditions of use, and fuel composition. The diesel exhaust includes gas (CO, CO_2, NO and HC) and particles (soot, sulphates and PAHs). The small carbon particles forming soot remain suspended in the air and can be breathed in. Small amounts of toxic components are also present.

SAFETY MEASURES:
Always ensure good ventilation and breathing protection (especially when working under a vehicle. Always operate the exhaust fan system when working in confined spaces.

DANGER OF CRUSHING

Ensure that the vehicle is locked in place to prevent possible crushing.

SAFETY MEASURES:
Make sure that the vehicle is unable to move by engaging the hand brake and locking the wheels.

DANGER OF INJURY

Whether engines are at a standstill or operating, there are moving parts (belts, etc.) that can injure hands and arms. Pay particular attention to electrically operated fans since these may unexpectedly start up even when the engine itself is off.

SAFETY MEASURES:
Never place hands near moving parts when the engine is on. When working near electrically operated fans, let the engine cool first and then unplug the fan.
Keep the test instrument connection wires as far as possible away from moving parts of the engine.

DANGER OF BURNS

Some of the components in engines (exhaust gas manifold, etc.) can become very hot, as can certain sensors. Remember to never touch these parts.

SAFETY MEASURES:
Wear protective gloves. Never allow the test instrument connection wires to rest on or near hot parts. Never keep the engine running after the tests.

DANGER OF FIRE OR EXPLOSION

When work is being carried out on the fuel system (fuel pump, injectors and carburetor, etc.) there may be a risk of fire or explosion owing to the fuels used and/or the vapors that these products form.

SAFETY MEASURES:
Disconnect the ignition system. Allow the engine to cool.
Do not use open flames or anything liable to produce sparks.
Do not smoke.
Collect any spilled fuel.
Operate exhaust fans in closed rooms.

SOUND LEVEL

When working near a vehicle, especially at high engine speed, noise levels can reach 90dB. Long term exposure to such noise sources can cause hearing damage.

SAFETY MEASURES:
Wear hearing protection.
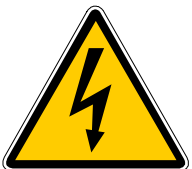
DANGEROUS VOLTAGE

Work safely on vehicle electrical systems. Do not touch electrically "live" parts of engines. Be aware of the risk of shock from damaged connections.

SAFETY MEASURES:
Only use the cables supplied with the test instrument. Make sure that the insulation is not damaged.
Do not touch live parts of the vehicle when testing with the engine running.
Only make test connections with suitable systems (test cables, specific adapter cables).

DANGER OF ASFIXIATION

If subjected to high temperatures (over 250 °C or owing to fire outbreaks), exhaust gas hoses may release highly toxic gases.

SAFETY MEASURES:
Immediately contact a physician if such gas is inhaled.
Use neoprene or PVC gloves to eliminate combustion residuals.
Fire residuals can be neutralized with a calcium hydroxide solution. This forms calcium fluoride which can be removed with water.

DANGER OF CORROSION

Acids can harm the skin if not protected.
The residual condensate in gas sampling hoses and the condensate separator unit contains acids.
Take great care when replacing the oxygen sensor (O_2) and the nitric oxide sensor (NO). They contain highly corrosive substances.
Corrosive liquid may be spilled if a liquid crystal indicator is broken. This liquid should never be touched, inhaled or swallowed.

SAFETY MEASURES:
In case of contact with the skin, immediately wash the affected area with water and contact a physician.
Immediately contact a physician if such products are inhaled or swallowed.

GENERAL INFORMATION

INSTALLATION

Never allow the instrument to be exposed to the sun for long periods of time or to allow it to stand near hot equipment (stoves, heaters, etc.): the maximum operating temperature is 40 °C/105 F.
Do not move the instrument from a hot place to a cold place and vice versa. The formation of condensation inside the device may damage the electronic circuits.
Protect the instrument from rain or from excessive moisture.

OPERATING INFORMATION

To prevent contamination from toxic gas, it is advisable to use the instrument in a sufficiently ventilated place or to channel exhaust gases outdoors.
Never pull on the instrument's cables.
All connections should be made when the vehicle engine in question is off.
Check that all cables are far away from hot parts (over 50 °C/130F) or moving parts.
Disconnect all engine connections before moving the vehicle in question.

CLEANING

When necessary, the outer surfaces of the instrument should be cleaned: never use cleaning products containing spirits, ammonia or gasoline. Only use neutral detergents and a soft, slightly moistened cloth.

IMPORTANT INFORMATION ABOUT PRODUCT SAFETY

This MOTORSCAN® product provides a high level of protection against the risk of electric shock.
The installer is responsible for connecting it to a correctly grounded electrical socket. Seek technical assistance before using an adapter or extension cable. These devices could interfere with the grounding circuit.
Connection of the appliance to an incorrectly wired electrical outlet could result in electrocution.

Comply with the following rules to protect against the risk of electrocution:
Only connect the instrument to electrical sockets delivering the correct voltage. Contact the electric utility if you are uncertain as to the outlet voltage.
If the instrument has other wires besides the power cable, these must be connected to their respective connectors before connecting the power cables to the electrical outlet. Disconnect the power cables from the sockets before removing other wires.

Strictly comply with the following instructions when servicing:
Always replace fuses with others of equal value (see indications on the label or in this manual).
NEVER open the cover of the instrument: you could risk electrocution. This operation may only be carried out by a qualified technician and not before having disconnected the power supply cable.
Deviating from the instructions in this manual or attempting to repair the instrument carries the risk of electric shock.

Pressing too hard on the display may damage the instrument.
Please contact a service technician if the instrument fails to correctly function after following the operating instructions.
Check that all installed spare parts have technical characteristics identical to those of the original parts. Other parts may not possess the same safety characteristics.

Always contact qualified technical personnel if repairs are required.

SYMBOLS

Symbols used in the DEVICE:

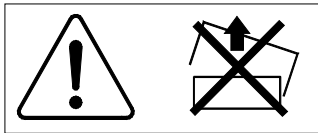**ALTERNATING CURRENT**

GROUND PROTECTION

CONSULT THE INSTRUCTION MANUAL

RISK OF BURNS
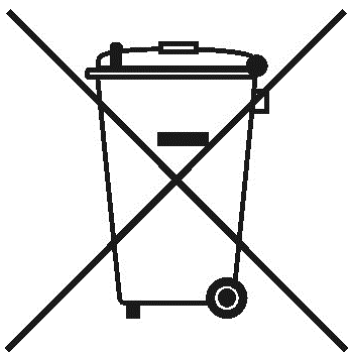
RISK OF ELECTROCUTION

**NEVER ATTEMPT TO REMOVE THE COVER
(operation only to be carried out by qualified
technicians)**

ISX1279

CE CONFORMITY MARK
It indicates compliance with the relevant European Union
Directives.

INFORMATION FOR THE USERS
*Pursuant to art.13 of the Law Decree 25 July 2005, n.151
"Implementation of directives 2002/95/CE, 2002/96/CE and
2003/108/CE on the reduction of the use of hazardous
substances in the electrical and electronic equipment and
waste disposal".*

The symbol of the bin with crossed lines on the equipment or
on the packaging indicates that the product at the end of its
useful life has to be collected separately from other waste.

Disposal of the equipment at the end of its life is organized
and managed by the manufacturer. The user wishing to
dispose of the equipment should contact the manufacturer
and comply with the system the latter has adopted for
disposal of the equipment at the end of its life.

Unauthorized disposal of the product by the owner may be
penalized under the relevant laws in force in the country in
question.

Entry to the National Registry of
Manufacturers of Electrical and
Electronic Equipment
n ° IT14010000008257

1.0 - PRODUCT DESCRIPTION

1.1 - GENERAL

The 6050 is a compact, user-friendly scan tool. This state-of-the-art technology that allows diagnostics on all types of motorcycle communication protocols.

The tool comes in a handy carrying case, to protect the tool and carry diagnostic cables.

1.2 - SPECIFICATIONS

CPU	Cortex M3 (96 Mhz)
RAM Memory	32 MB
Flash Memory	2GB
Display	LCD Led 3,5' 320x240
Interfaces	MiniUSB 2.0 Device
Wireless	Bluetooth Class 1[2]
Audio	1 Speaker
Dimension [mm]	175x112x36
Supply	External 5V LiPoly battery rechargeable From vehicle: 8-16V[1]
Keyboard	9 key keyboard
Vehicle interface	Db26 ISO22900-1 (MVCI) Internal Multiplexer

1.3 - FRONT / CONNECTIONS VIEW

1) LED LIGHT TO ILLUMINATE THE VEHICLE DIAGNOSTC SOCKET

2) USB INTERFACE FOR COMPUTER OR POWER SUPPLY CONNECTION

3) GRAPHIC DISPLAY

4) KEYBOARD

5) HD DB26 HD INTERFACE FOR DIAGNOSTIC CABLE CONNECTION

1.4 - KEYBOARD VIEW
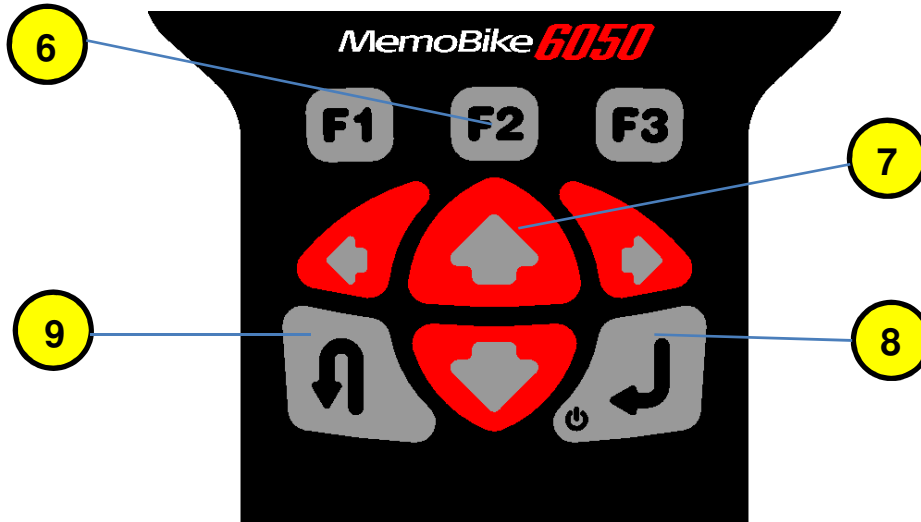
6) F1, F2, F3, KEYS **:** USE FUNCTION KEYS AS INSTRUCTED BY THE SOFTWARE.

7) ↑ ↓ ← → KEYS **:** TO BROWSE THE SELECTION LIST OR TO MOVE THE CURSOR.

8) ENTER **–** ON/OFF KEY**:** TO PROCEED TO THE NEXT SCREEN OR TO SELECT A FUNCTION.

9) ESC KEY **:** RETURN TO THE PREVIOUS SCREEN OR TO INTERRUPT A FUNCTION.

1.5 - STANDARD ACCESSORIES

Next to each motorcycle model in the "Vehicles List" you can find the part number for the cable required for a particular function.

DESCRIPTION and PART NUMBER	PICTURE
Carrying case Code: 22ST5600KP3*A	
Scan tool Part number: SL6050	
KEY DRIVE First Start Part number: 26MUSB	
AC/DC power supply Part number: 2303W5V1AUSB	

DESCRIPTION and PART NUMBER	PICTURE
USB/Power cable Part number: 004	
Master Cable Part number: 520 **Required for the use of the slave cables.**	
Battery power cable Part number: 051	
"Universal" Cable *Applications: Aprilia[2], Benelli, BMW[5], Cagiva[2], Harley Davidson[3], Honda[1], Hyosung, Kawasaki[5], Kymco, Malaguti[2], Mondial, Polaris[5], Suzuki[4], Sym, Triumph[5], Yamaha.* Part number: 522 [1] Only blinking code and Hiss systems [2] Except Marelli systems [3] Only Marelli systems [4] Only display code systems [5] Except CAN-BUS systems	

1.6 - OPTIONAL

The part number for the cable required for a particular function is next to each motorcycle model in the *"Vehicles List".* Exact cables included vary by kit. Consult distributor.
The list of available cables is provided in the LISTENING BOOK with the instructions for use.

2.0 - CONNECTING

WARNING!

**NEVER CONNECT THE TWO CLIPS (RED AND YELLOW)
ON THE 522 CABLE TO THE BATTERY.**

**WHEN STARTING A DIAGNOSTIC PROCEDURE ON A MOTORCYCLE,
THE VCC CLAMPS ON THE 051 CABLE MUST BE CONNECTED ONLY
TO THE BATTERY ON THE MOTORCYCLE BEING TESTED.**

NEVER USE CABLES OTHER THAN THOSE SUPPLIED WITH THE TOOL.

**USE THE EXTERNAL POWER SUPPLY ONLY FOR UPDATING SOFTWARE OR FOR
REFERING TO DATA STORED IN THE SCAN TOOL.**

2.1 - POWERING THE TOOL

To turn the tool on, press the ENTER key.

2.2 - MOTORCYCLE IDENTIFICATION

To start the diagnostic procedure, identify in the VEHICLES LIST the correct diagnostic cable for the motorcycle being worked on (see Vehicles List). Note: there may be several ways (with different cables) to connect to each bike. These are listed in the vehicles list.

499 = SL0100499 Packard slave cable
051 = SL010051 battery alimentation cable
M = SL010520 Master cable

MODEL			SYSTEM	CABLES
Atlantic 250 i.e.	244cc	06-..	INJECTION	499+051+M
Atlantic 250 i.e.	244cc	06-..	IMMOBILIZER	499+051+M
Atlantic 400 Sprint	399cc	07-..	INJECTION	499+051+M
Atlantic 400 Sprint	399cc	07-..	IMMOBILIZER	499+051+M
Atlantic 500	459cc	01-05	INJECTION	499+051+M
Atlantic 500	459cc	01-05	IMMOBILIZER	499+051+M
Atlantic 500 Sprint	459cc	05-..	INJECTION	499+051+M
Atlantic 500 Sprint	459cc	05-..	IMMOBILIZER	499+051+M
ETV 1000 Caponord	997cc	01-..	INJECTION	342
ETV 1000 Caponord	997cc	01-..	SERVICE	051*
ETV 1000 Caponord ABS	997cc	04-..	INJECTION	342
ETV 1000 Caponord ABS	997cc	04-..	SERVICE	051*
ETV 1000 Caponord Rally Raid	997cc	03-..	INJECTION	342
ETV 1000 Caponord Rally Raid	997cc	03-..	SERVICE	051*

Follow the connection procedures below:

SECTION	VEHICLE LIST CODE	CABLES PART NUMBER
Connecting to the motorcycle using "UNIVERSAL" cable (section 1.5).	522	
Connecting to the motorcycle using BMW SLAVE cable (section 1.6).	525 + 520	
	525 + 051 + 520	
Powering the tool (section 1.5).	ON	-
	AD/DC	2303W5V1AUSB
Connecting to the motorcycle using MASTER/SLAVE cables (section 1.6).	458 + 520	
	459 + 520	
	460 + 051 + 520	
	461 + 051 + 520	
	462 + 051 + 520	
	463 + 520	
	464 + 051 + 520	
	475 + 520	
	476 + 520	
	480 + 520	
	481 + 520	
	483 + 051 + 520	
	489 + 051 + 520	
	490 + 051 + 520	
	491 + 051 + 520	
	493 + 051 + 520	
	499 + 051 + 520	
	500 + 520	
	501 + 520	
	502 + 520	
	505 + 520	
	508 + 520	
	509 + 520	
	510 + 520	
	512 + 051 + 520	
	516 + 520	
	518 + 051 + 520	
	519 + 520	
	526 + 051 + 520	
	528 + 051 + 520	
	538 + 520	

	539 + 520	
	541 + 520	
	551 + 520	
	557 + 051 + 520	
	562 + 051 + 520	

2.3 - CONNECTING TO THE MOTORCYCLE USING A MASTER/SLAVE CABLE

Connect the 520 MASTER cable to the tool.
Connect the 14 pin connector on the MASTER cable to the SLAVE cable indicated in the vehicles list.
If the SLAVE cable has a power jack, connect the 051 cable also.
Connect the clamps to the battery terminals on the vehicle being tested (red clamp on the positive terminal and black clamp on the negative terminal).
Connect the other end of the SLAVE cable to the diagnostic socket on the motorcycle.
Now make sure that the tool has switched on automatically (if not previously done manually), and that the tool start screen up is displayed.

2.4 - CONNECTING TO THE MOTORCYCLE USING THE "UNIVERSAL" CABLE

If the correct cable is missing, or when it is explicitly indicated in the "VEHICLE LIST", use the universal cable:

Connect the 522 cable to the tool. Connect the VCC clamps to the battery terminals on the vehicle being tested (red clamp on the positive terminal and black clamp on the negative terminal). Ensure that the tool has switched on automatically (if not previously done manually), and that the tool start up screen is displayed.

⚠ **WARNING!**

WHEN USING THE 522 "UNIVERSAL" CABLE, CONNECT TO THE DIAGNOSTIC SOCKET ONLY WHEN THE SOFTWARE TELLS YOU TO DO SO.

Before attempting to establish diagnostic communication with the vehicle, follow the instructions in the display, which indicate which of the universal cable clamps (red and yellow) connect to which pins on the diagnostic socket. These instructions will be displayed only if the Universal Cable is already connected to the scan tool and the connection is made using the manual selection (of vehicle or ECU).

The following screens are an example how to connect using the Universal Cable.

2.5 - CONNECTING TO THE MOTORCYCLE USING BMW SLAVE CABLE

Connect the MASTER 520 cable to the tool.
Connect the 14 pins connector on the MASTER cable to the SLAVE cable 525.
 If the 051 cable is indicated in the vehicle list, connect it to the jack on the SLAVE cable and to the battery terminals on the vehicle being tested (red clamp on the positive terminal and black clamp on the negative terminal).
If the 051 cable is required, connect the 3-pin end of the 525 cable to the diagnostic socket on the vehicle. If the 051 cable is not required, connect the BMW SLAVE 10-pin end.
Make sure that the tool switches on automatically (if not previously done manually) and that the start up screen is displayed.

WARNING!

WHEN USING THE BMW CABLE 525 TOGETHER WITH THE 051 CABLE, CONNECT TO THE DIAGNOSTIC SOCKET ONLY WHEN INSTRUCTED TO DO SO.

3.0 - OPERATION

After connecting the tool to the diagnostic socket or to the power supply, the following screen is displayed:

Select the central icon motorcycle logo , using the left and right arrow keys and confirm with ENTER Key.

The menu shown below appears on the scan tool:

This menu includes the list of all makes of motorcycles supported by the software version in the scan tool. The green coloured icons indicate the brands currently activated on the scan tool and the grey coloured icons indicate brands not activated.

4.0 - SETUP MENU

Select the SETUP icon (gears logo) using the left and right arrow keys and confirm with ENTER.   The menu shown below appears on the scan tool:

4.0.1 - USER ID

Set the User Name, Garage/ Workshop name and Contact (for printing reports)
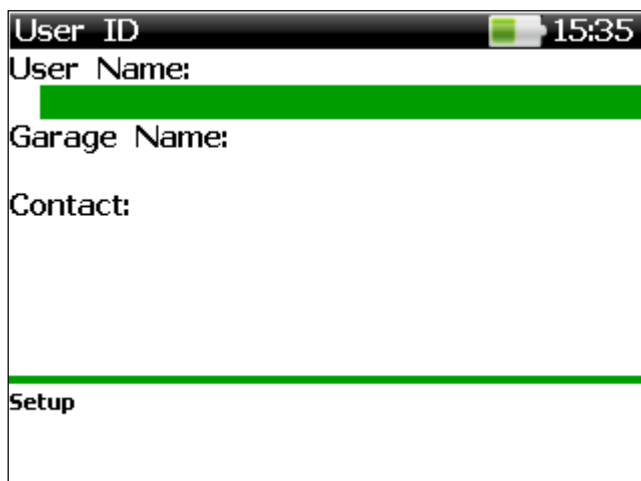
Use the up and down arrow keys to modify the selection and confirm with ENTER.

Navigate the virtual keyboard with the arrow keys, select the single characters with ENTER and confirm the text entered using the F3 key.

4.0.2 - SERIAL NUMBER

View the scanner's serial number.

Press ENTER to return to the Setup menu.

4.0.3 - SCREENSHOT MANAGEMENT:

Browse the SD memory section where screenshots, acquired are saved. Refer to the Screenshot Management" paragraph.
SETTING MENU : Software device settings. Refer to the "Metting Menu" paragraph

REPORT : Generated a printed report of the screenshots saved. Please refer to the "Report paragraph

UPDATE : Manual update of the device firmware

When a new software release is manually loaded into the device SD memory, to update the internal firmware, answer YES to the update confirmation message and wait until the procedure is successfully completed. Answer NO if you do not wish to proceed with the update.

4.1 - SETTING MENU

To change software settings, select the SETTING MENU software icon (gears logo) using the arrow keys and confirm the selection with ENTER
The menu shown below appears on the scan tool:

4.1.1 - SET TIME & DATE
Set time and date display

To set time and date answer YES to the confirmation message and use the following boxes to change the values:

Use the up and down arrow keys to change the value of the highlighted digit, and the left and right arrow keys to change the cursor position. Confirm the new value with the F3 key. To interrupt the procedure, press ESC. At the end, the following confirmation screen appears:

Select YES to confirm the new data or NO to discard the change.

4.1.2 - LANGUAGE SELECTION
Function used to select language.

Select the desired language using the arrow keys and save the new selection with ENTER or discard the change using the ESC key.

4.1.3 - MEASUREMENT UNITS

Function switches between the English/ Imperial measurement system (°F, mi, mph, in Hg) and the Standard International System (°C, km, km/h, mmHg).

Select the desired measurement units using the left and right arrow keys. Save the new value, using the ENTER key or discard the change, using the ESC key.

4.1.4 - ENERGY SAVING

Energy saving and device auto-off settings

Select the desired function (Energy saving and Switching OFF delays), using the up and down arrow keys. Change the current value, using the left and right arrow keys. Save the new value, using the ENTER key or discard the changes, using the ESC key. To disable the Energy saving and/or Switching OFF delays, press the left arrow key repeatedly until the OFF message appears.

4.1.5 - VOLUME
Speaker volume and key-beep ON/OFF settings

Select the desired function (Speaker Volume or Key Beep), using the up and down arrow keys. Change the current value using the left and right arrow keys. Save the new value using the ENTER key or discard the changes using the ESC key.

4.1.6 - FONT
Font size settings (small, medium and big).
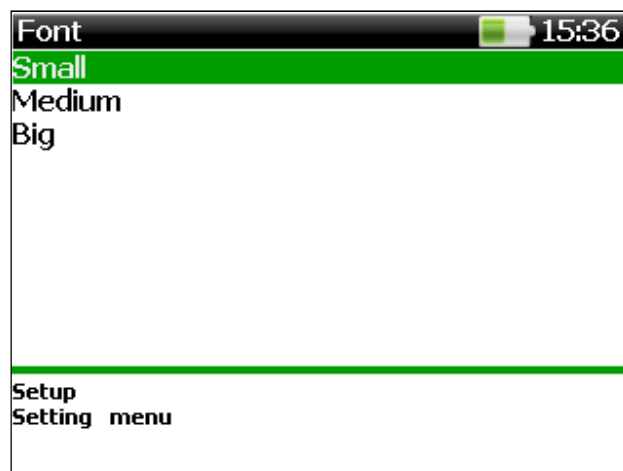
Select the desired font size, using the up and down arrow keys. Confirm using the ENTER key or discard the change using the ESC key.

4.1.7 - HARDWARE INFO
Boot/firmware versions and internal memory data display

Press any key to return to the Setting menu.

4.2 - SCREENSHOT MANAGEMENT

Anytime the **F2 key** is pressed a snapshot is taken of all items displayed in the screen.
To review the pictures saved, select the "Screenshot management" icon using the arrow keys and confirm with ENTER.   The menu shown below appears on the scan tool:
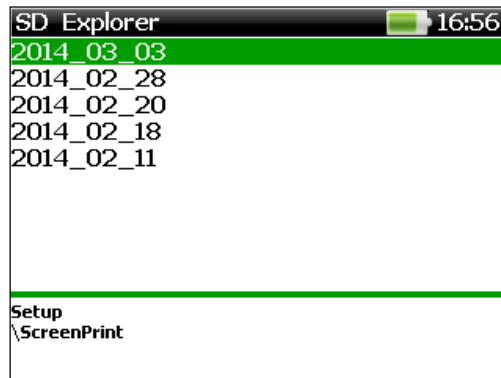
Screenshots are stored in the internal SD memory folders labelled with the date format YYYY_MM_DD. The label indicates the date the image was created. In each folder, the images are saved using bmp format. The file name contains the date and time of creation, according to the standard YYYY_MM_DD-HH_MM_SS.bmp. After selecting the desired folder, the following screen appears:
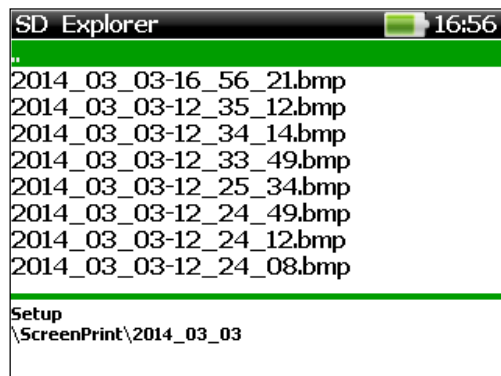
To display the desired bitmap, select the file in the list and confirm with ENTER. The bitmap with the superimposed text "File BMP" (lower right corner) is shown:
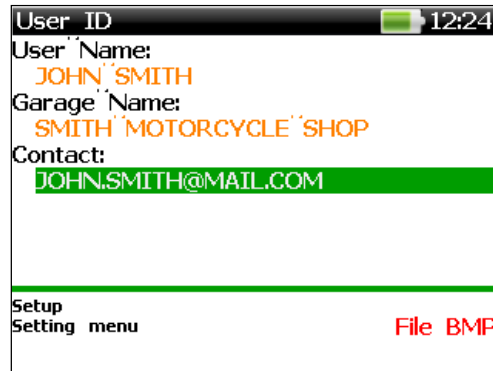
Press any key to return to the folder selection menu.

4.2.1 - REPORT

Anytime the **F2 key** is pressed a snapshot is taken of all items displayed in the screen.
To create a printable report with a selection of the screenshots saved, select the REPORT software icon using the arrow keys and confirm with ENTER.
The menu shown below appears in the scan tool:
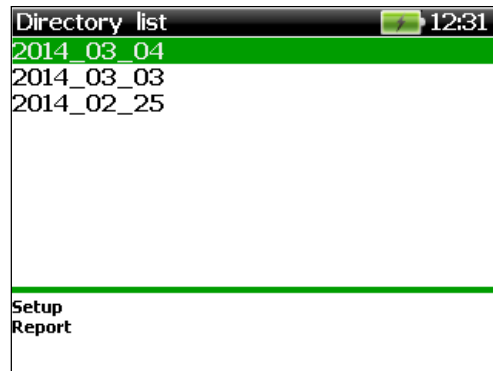
Screenshots are stored in the internal SD memory folders labelled with the date format YYYY_MM_DD. The label indicates the date of the image creation. In each folder, the images are saved using bmp format. The file name contains date and time of creation, according to the standard YYYY_MM_DD-HH_MM_SS.bmp. After selecting the desired folder, the following screen appears:
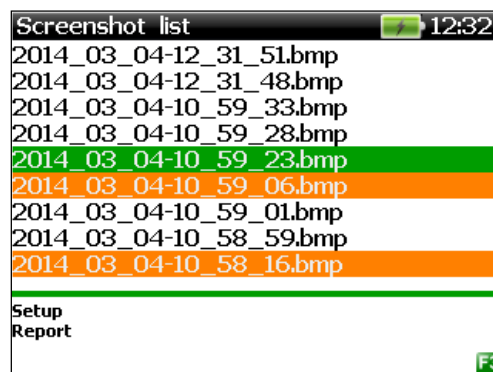
Select the screenshots to be added to the printable report using ENTER key and confirm multiple selections with F3 key. The file Report@HH_MM_SS.ps (PostScript standard) will be generated in the SD sub-folder "YYYY_MM_DD" of the "Print" folder. The complete path of the report generated is: Print\YYYY_MM_DD\ Report@HH_MM_SS.ps. A confirmation message appears in the scan tool display.

To print the report, install the PDF Creator software (freeware) in the computer connected by USB cable to the 6050 scan tool. Access the desired PS file, right click on the file name or icon and select "Create PDF and Bitmap files with PDF Creator". Follow the instructions and save thePDF document, ready to be printed. The following image is an example of a printable report.
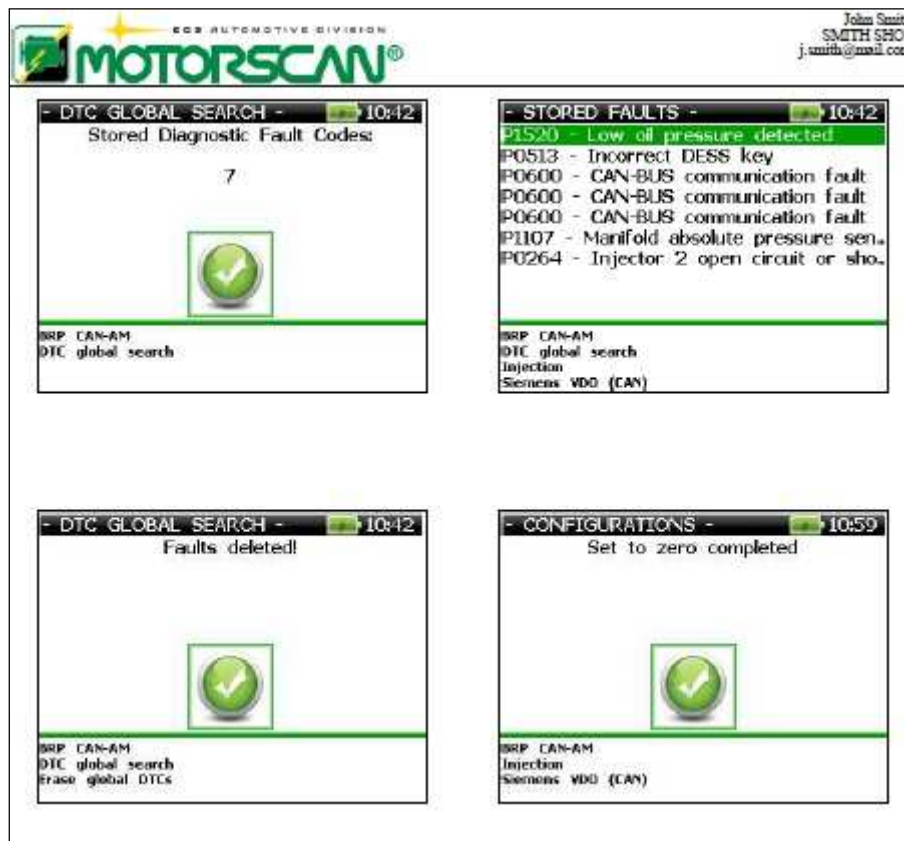
5.0 - BATTERY INFORMATION SCREEN

Select the Battery information icon (battery logo) using the left and right arrow keys and confirm with ENTER
The screen shown below appears in the scan tool display:

The previous screen displays on the left side the current power source: motorcycle battery, USB or none. The device battery current voltage and the residual charge are displayed on the left side of the screen. When the device is connected to a vehicle, the power source is the 12V battery and the battery screen changes as follows:

When the device is connected to the PC or to the external power supply, the power source comes from the USB interface and the battery screen changes as follows:

Press any key to return to the Start-up menu.

3.4 - DIAGNOSTIC FUNCTIONS

After selecting the make of the motorcycle to be tested, the diagnostic function selection menu appears.

The menu being displayed is not always the same. It varies by the manufacturer selected in the "MAIN MENU".

The following is a comprehensive list of diagnostic modules:

IGNITION:	Ignition ECU diagnostics.
INJECTION, display codes:	Electronic injection ECU diagnostics, display codes mode.
INJECTION, blinking codes:	Electronic injection ECU diagnostics, blinking codes mode.
INJECTION:	Electronic injection ECU diagnostics.
IMMOBILIZER/ANTI-THEFT::	Immobilizer/ anti-theft system diagnostics.
ABS:	ABS system management ECU diagnostics.
SERVICE:	Resetting the service light.
DASHBOARD:	Dashboard ECU diagnostics.
BODY COMPUTER:	Body computer ECU diagnostics.
INJECTION REGULATION	Adjustment the injection timing through the electronic injection ECU.
TRANSMISSION:	Automatic transmission ECU diagnostics.
EPT:	Diagnosing the ECU controlling the electronic throttle (drive-by-wire) module
PARKING:	Diagnosing the ECU controlling the parking brake for 3 wheel vehicles (i. e Piaggio MP3).
EPS:	Diagnosing the ECU controlling the electric steering wheels.
RDC:	Diagnosing the ECU controlling the tire pressure sensors.
RADIO:	Diagnosing the ECU controlling the entertainment system
DTC GLOBAL SEARCH:	Function automatically searches all fault codes stored in the vehicle ECU

HANDLEBAR CONTROLS: Diagnosing the ECU controlling the handlebar controls

DATA LOGGER: Function that allows the storage, and the next visualization, of a parameters set during a test session.

ELECTRIC TRACTION: Diagnosing the ECU controlling the electric traction

SUSPENSION Diagnosing the ECU controlling the suspension.

ACS Diagnosing the ECU controlling the air control suspension.

DPS Diagnosing the ECU controlling the dynamic power steering.

TRACTION CONTROL Diagnosing the ECU controlling the traction control.

6.0 – DIAGNOSIS FUNCTIONS

6.1 - DTC GLOBAL SEARCH

If a vehicle is equipped with a BUS network, interconnecting more than one ECU, the DTC global search function allows the user to easily and quickly check and erase all the fault codes stored in the vehicle ECUs. The following screens show an example of the steps required to perform this procedure.
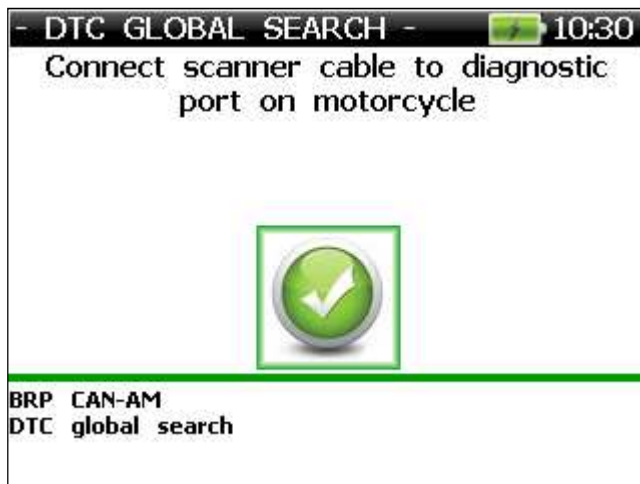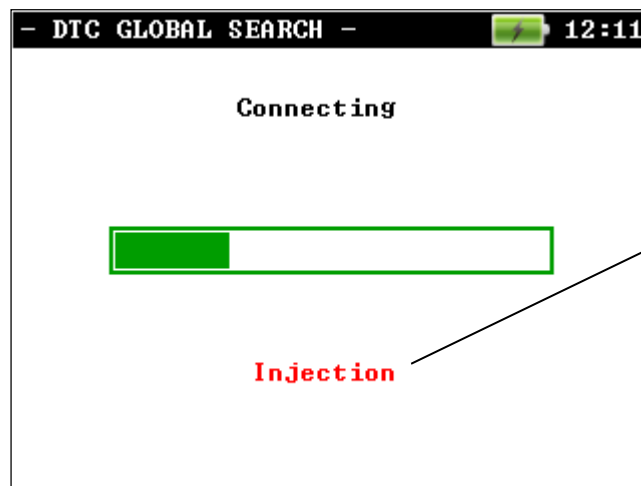
Visualization of the systems on which execute the search.

At the end of the search is displayed the list of systems that contain errors.

Procedures to the errors reading as the chapter "READING STORED FAULTS".
Select "Erasing global DTCs" and the following confirmation message appears:
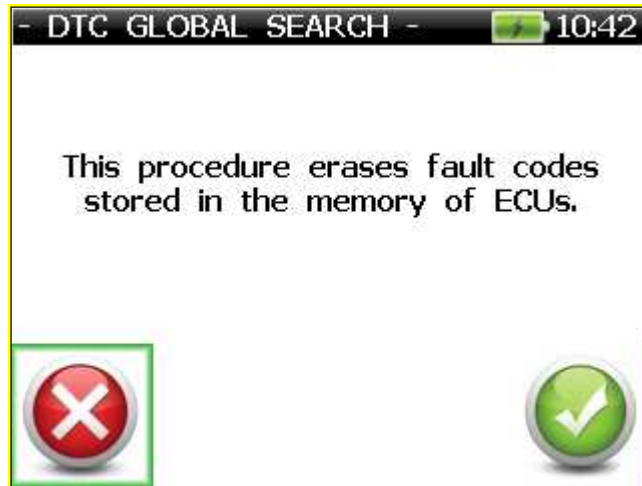
Confirm the erasing procedure by selecting ✔ or to stop by selecting ✗.

WARNING!
BY CONFIRMING THE ERASE GLOBAL DTCs PROCEDURE, ALL FAULT CODES STORED IN THE VEHICLE ECUs WILL BE IRREVERSIBLY ERASED

A confirmation message appears at the end of the erasing procedure

6.2 - DATA LOGGER

In the function "Data Logger", selecting "Acquisition" You can proceed with the storage of parameters of test run at the moment:
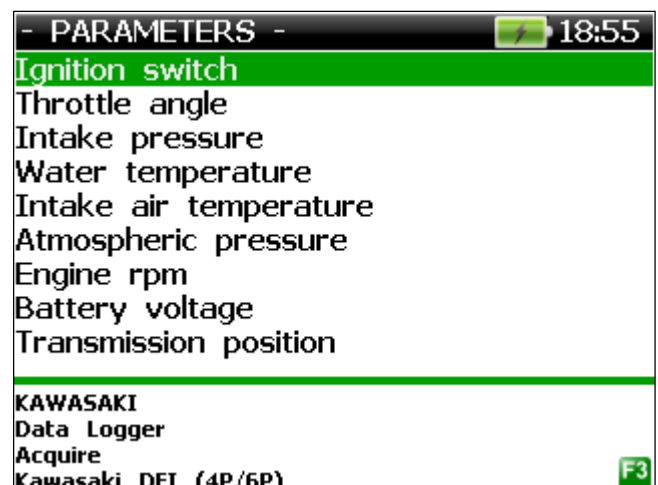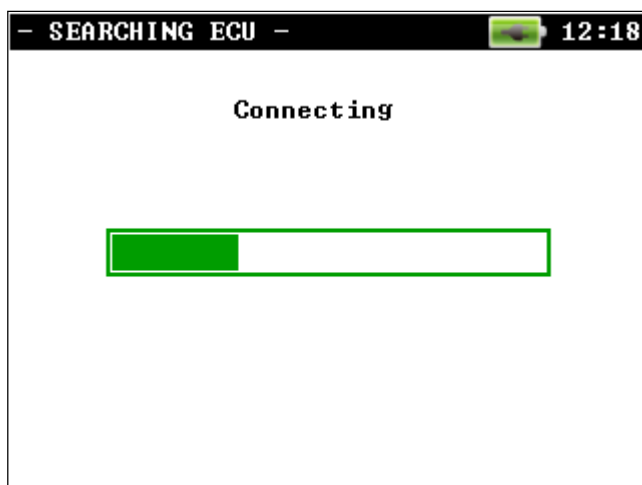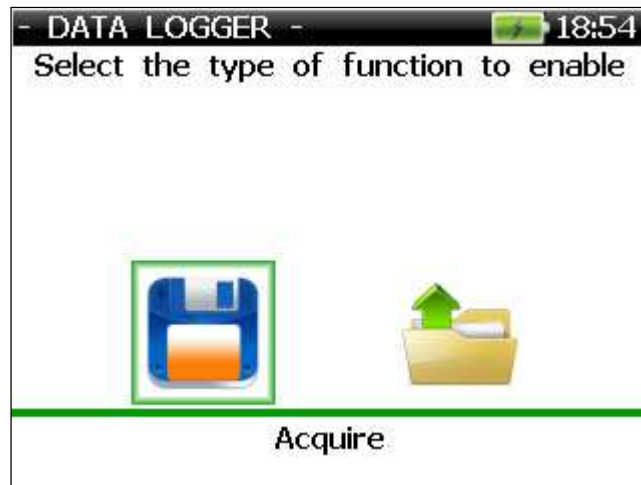
Using the key ➷ select a list of parameters (18 max. simultaneously).

Push **F3**.

In the following screen is displayed a pre-calculation of sampling frequency and of maximum duration of data acquisition.

NOTE: DATA VARY, DEPENDING ON THE SYSTEM ON THE VEHICLE AND THE NUMBER OF PARAMETERS SELECTED
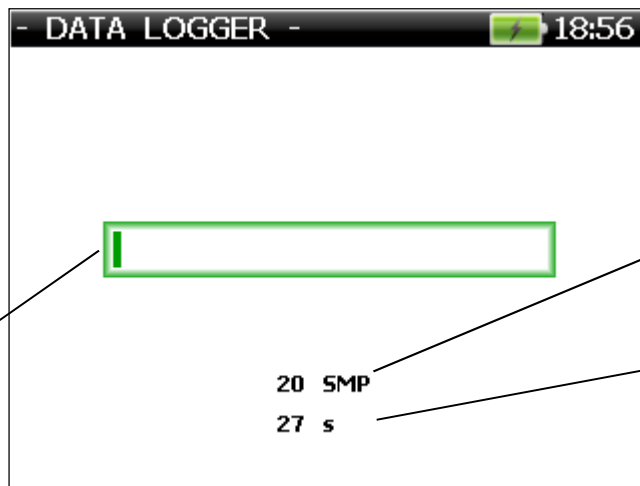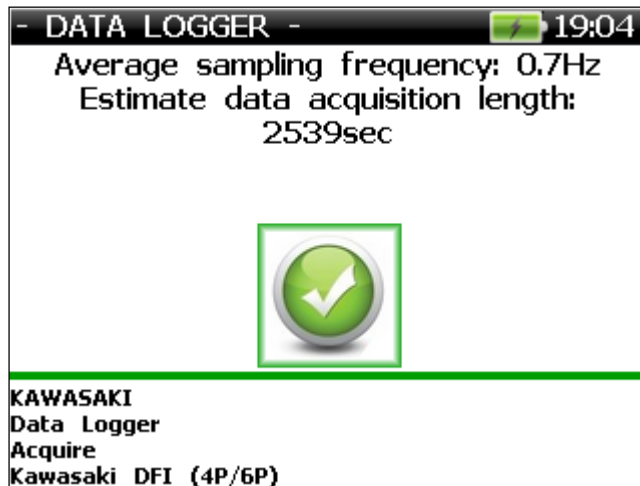
To interrupt the acquisition before of the exhaustion of available memory press ESC
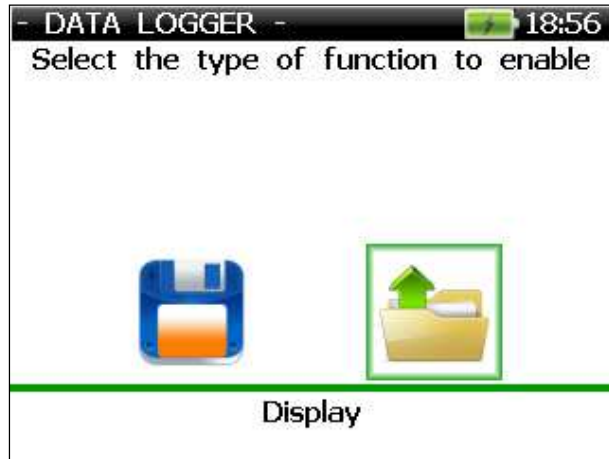
After the acquisition the parameters can be displayed (also if in the meantime the instrument has been switched off and re-switched on):
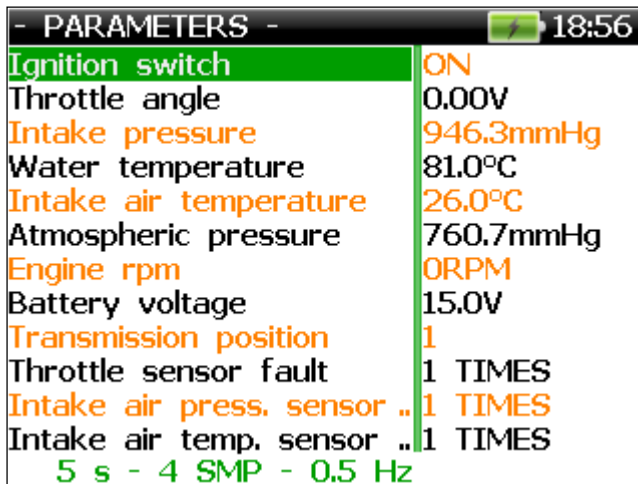
| Acquisition time | Sample counter | Frequency of samples update. |

increase or decrease frequency of update.

6.3 - SELECTING THE SEARCH MODE FOR SYSTEMS INSTALLED

After selecting the diagnostic module, select the mode for searching for systems installed on the motorcycle and for connecting to the motorcycle:
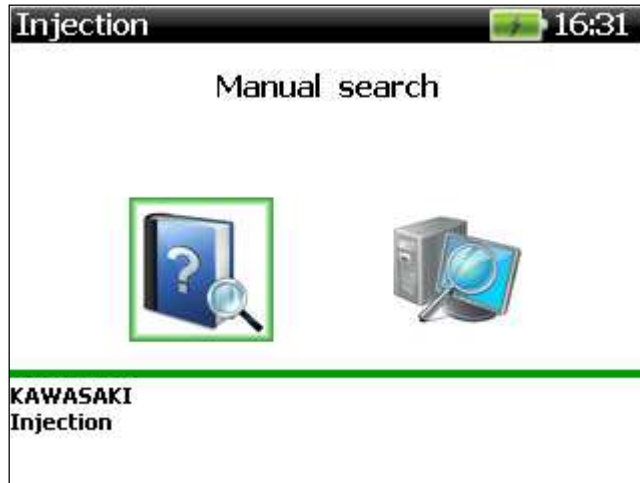
MANUAL SEARCH: search for systems and connect by selecting motorcycle model or ECU.
AUTOMATIC SEARCH: only for systems equipped with serial communication. If no system with serial communication is available for the selected make, the "automatic search" will be not work. Connect using the Manual Search mode.

6.3.1 - MANUAL SEARCH

The manual search by vehicle selection is the easiest operation for users lacking a thorough knowledge of the motorcycle being tested.
The manual search by ECU selection is the quickest operation but the user should know beforehand which systems are installed on the vehicle, where the diagnostic connector is located, and what type it is.

6.3.2 - MANUAL SEARCH BY VEHICLE SELECTION

This function lists the models covered for the manufacturer selected, and supported by the current software version.

Selecting the model of the motorcycle to work on brings up the following screens:
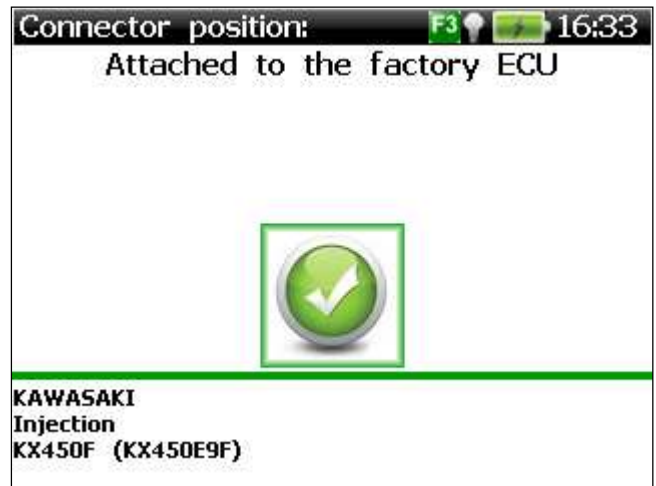
MODEL: Name of the selected motorcycle

TYPE OF DIAGNOSTICS:
Type of diagnostics supported by the system on the model selected.
The types of diagnostics supported   by the tool are the following:

Serial communication;
Blinking codes;
Display codes;
Manual procedure.

TYPE OF CABLE: required diagnostic cable.

CONNECTOR POSITION: indication of the position of the diagnostic connector.

CONNECTOR IMAGE: picture of the connector

For further information, please refer to the APPENDIX.

Screens for the selected system are displayed, indicating the status and connections, if any, of the diagnostic cable and of the key.
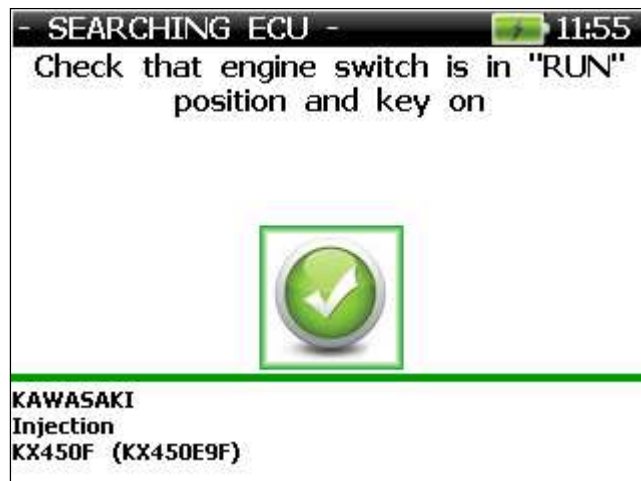
WARNING!
WRONG CONNECTIONS CAN IRREPARABLY DAMAGE THE TOOL.

If the ECU is equipped with serial communication, a connection is attempted.

If the ECU search is successfully, a screen appears similar to the one below.

If the search fails, a screen appears similar to the one below.
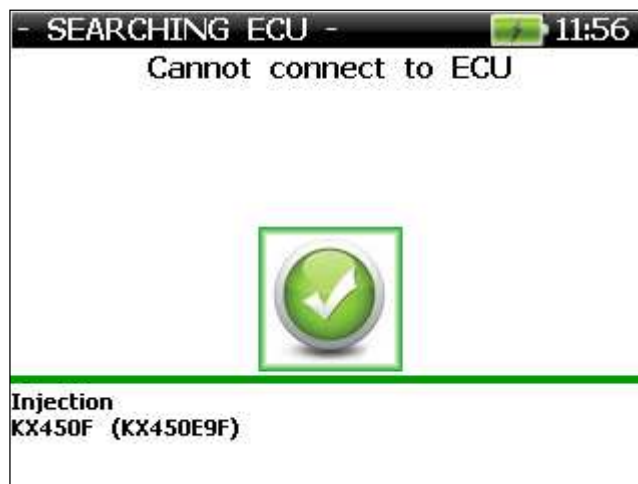
6.3.3 - MANUAL SEARCH BY ECU SELECTION

This function lists the ECUs for the manufacturer selected and supported by the current software version installed on the scanner.
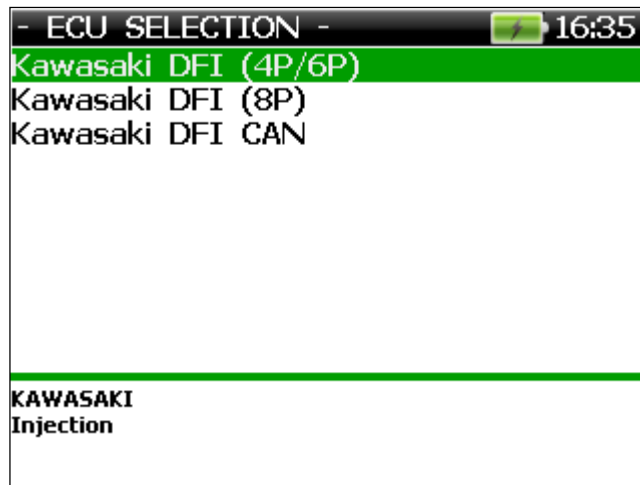
After selecting the ECU for the motorcycle being tested, the selection is confirmed.

After selecting PROCEED, further instructions are displayed (see examples).

- SEARCHING ECU -   11:55
Check that engine switch is in "RUN"
position and key on

KAWASAKI
Injection
Kawasaki DFI (4P/6P)

WARNING!
WRONG CONNECTIONS CAN IRREPARABLY DAMAGE THE TOOL.

If the ECU is equipped with serial communication, a connection is attempted.

- SEARCHING ECU -   12:18
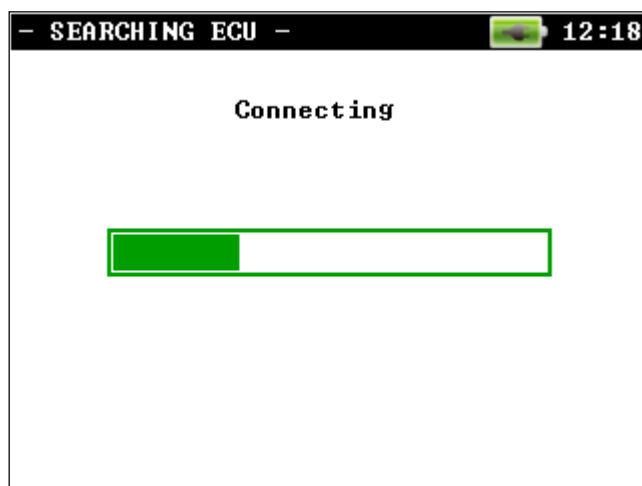
Connecting

If the ECU search is successful, a screen appears similar to the one below.

If the search is negative, error messages are displayed.
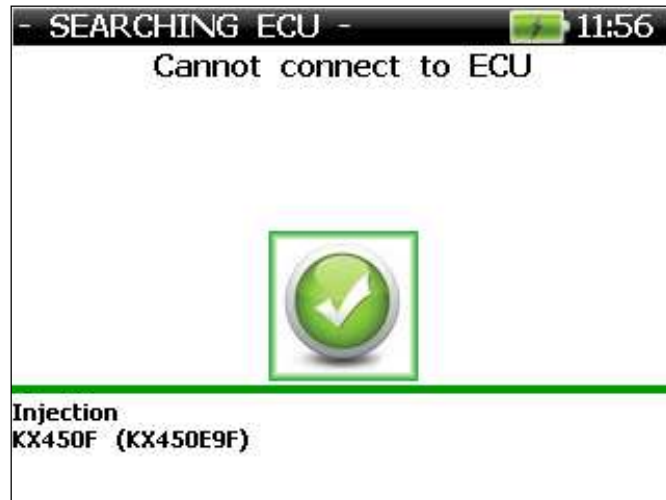
6.3.4 - AUTOMATIC SEARCH CONNECTION

Use this function to connect automatically to the selected manufacturer if that manufacturer supports automatic connection.

The user should be familiar with the position, type of diagnostic socket and connection instructions beforehand.

WARNING!
WRONG CONNECTIONS CAN IRREPARABLY DAMAGE THE TOOL.

The following instructions are displayed.

After completing the above steps, connection to the ECU is attempted.
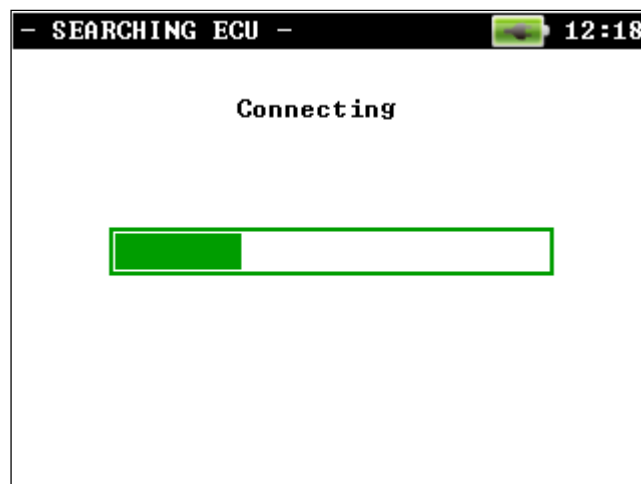
If the automatic search is successful, a screen appears similar to the one:

If the automatic search fails, an error message is displayed.

In this case it is asked to TURN OFF the vehicle in diagnosis.

If we do not get no communication returns as described in section 6.3.2 on page 55

6.3.5 - ECU MENU

If the system search is successful, a menu appears similar to the one below.

NOTE: Nome items in the ECU menu might be not be shown. Not all manufacturers support all functions.

ECU DATA: select to display the ECU data.

PARAMETERS: select to display the parameters and live data supported by the ECU.

READING STORED FAULTS: indicates the number of faults, the fault codes and relevant descriptions (if available). Will also indicate possible causes, if available.

ERASING STORED FAULTS: resets all stored faults.

DIAGNOSTIC PROCEDURE: test the components controlled by the ECU.

CONFIGURATIONS: change the settings of some of the components controlled by the ECU.

EXIT: press to stop communication.

6.3.6 - ECU DATA

By selecting "ECU data" from the "ECU MENU", a screen appears similar to the one below.

```
- ECU DATA - 1/2          17:32
ECU part #:
 21175-0246
Vehicle model:
 1) '09
Model year:
 2) KX450E9FA
Specification:
 2) AU

KAWASAKI
Injection
Kawasaki DFI (4P/6P)
```

```
- ECU DATA - 2/2           9:28
Vehicle model:
 2) KX450E9FA
Model year:
 2) '09
Specification:
 2) AU



KAWASAKI
Injection
Kawasaki DFI (4P/6P)
```
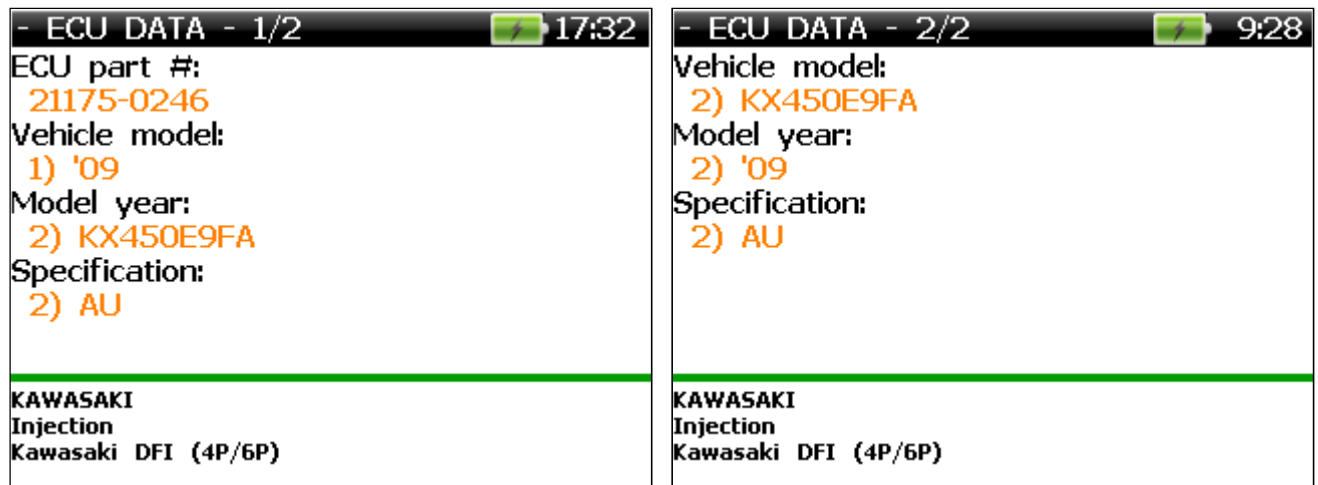
6.3.7 - PARAMETERS

By selecting "Parameters" from the "ECU MENU", the list of parameters supported is displayed.

```
- PARAMETERS -            17:33
Ignition switch
Throttle angle
Intake pressure
Water temperature
Intake air temperature
Atmospheric pressure
Engine rpm
Battery voltage
Transmission position

KAWASAKI
Injection
Kawasaki DFI (4P/6P)          F3
```

Using the key ↩ select a list of parameters (the maximum number of parameters simultaneously displayed may change, depending on the font size selected).

Push **F3** to display the selected parameters.

After confirming the selection, a table (see below) displays the data in real time.

```
- PARAMETERS -              17:33
Ignition switch          ON
Throttle  angle          0.00V
Intake  pressure         946.3mmHg
Water  temperature       81.0°C
Intake air temperature   26.0°C
Atmospheric  pressure    760.7mmHg
Engine  rpm              0RPM
Battery  voltage         15.0V
Transmission  position   1
Throttle sensor fault    4  TIMES
Intake air press. sensor .. 4  TIMES
Intake air temp. sensor .. 4  TIMES
```

Use the arrows ( ) to move the cursor to scroll long texts.
Push the **F3** key to display live data on further parameters supported by the ECU.

6.3.8 - READING STORED FAULTS

Select "Reading stored faults" from the "ECU MENU", to read faults stored in the ECU.

If no faults are stored, the following screen (or something similar) appears.

```
- STORED  FAULTS -          9:29
          No  fault  stored




              ✓


KAWASAKI
Injection
Kawasaki DFI (4P/6P)
```
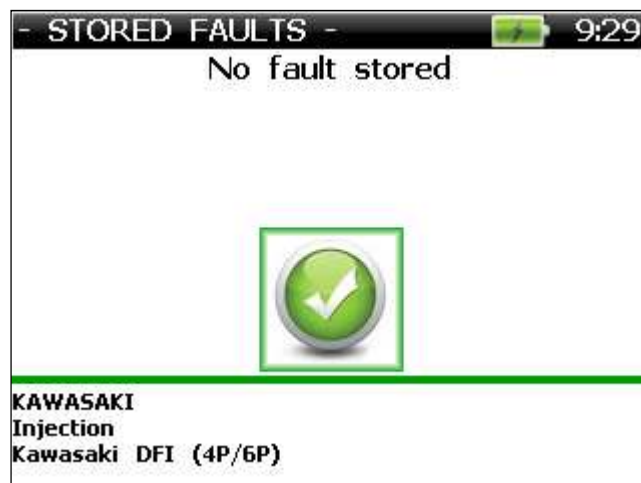
Press to return to the ECU menu.

If faults are present in the ECU, a screen appears similar to the one below, indicating the number of saved DTCs.

- STORED FAULTS -   17:33
Stored Diagnostic Fault Codes: 8

KAWASAKI
Injection
Kawasaki DFI (4P/6P)
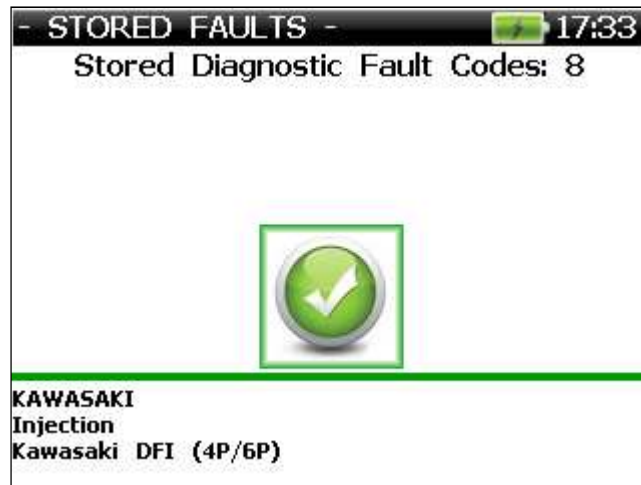
Press to display the list including code and description of faults stored.

- STORED FAULTS -   11:54
P0201 - Injector #1
P1514 - Gasoline pump relay locked
P0120 - Throttle sensor
P1101 - Intake air pressure sensor
P0115 - Coolant temperature sensor
P0110 - Air intake temperature sensor
P1504 - Speed sensor
P1510 - Secondary throttle valve positi ..

KAWASAKI
Injection
Kawasaki DFI (4P/6P)
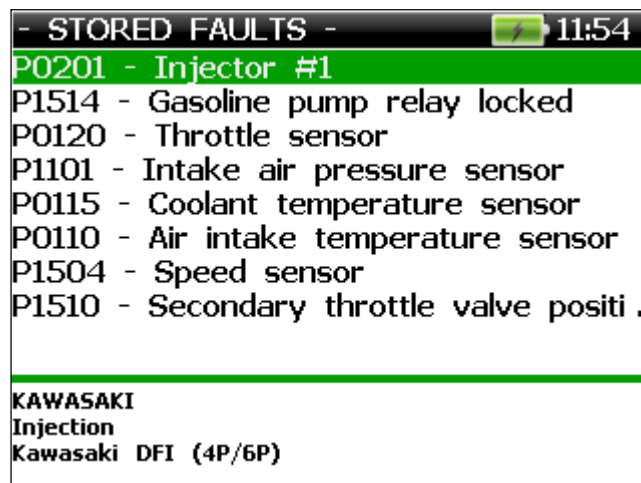
Selecting an item from the above list brings up a screen for the specific fault, with additional information, as in the following image.

P0201   11:54
DESCRIPTION:
Injector #1

6.3.9 - ERASING STORED FAULTS

Selecting "Erasing stored faults" in the "ECU MENU" deletes faults stored in the ECU.

Confirm the erasing procedure by selecting ✓ or to stop by selecting ✗.
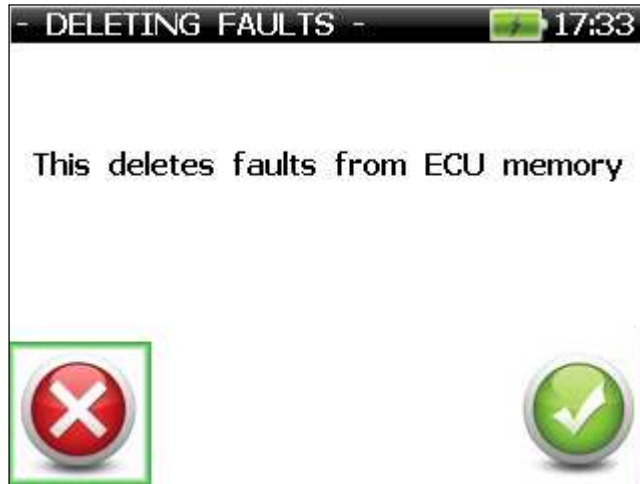
WARNING!

BY CONFIRMING THE ERASING STORED FAULT PROCEDURE, ALL FAULT CODES STORED IN THE ECU WILL BE IRREVERSIBLY ERASED

Once the procedure has been completed, the status is displayed.

6.3.10 - DIAGNOSTIC PROCEDURES

Select "Diagnostic procedures" in the "ECU MENU", to display the list of tests of components controlled by the ECU and supported by the scan tool.

Selecting a diagnostic procedure in the menu starts the test in question.
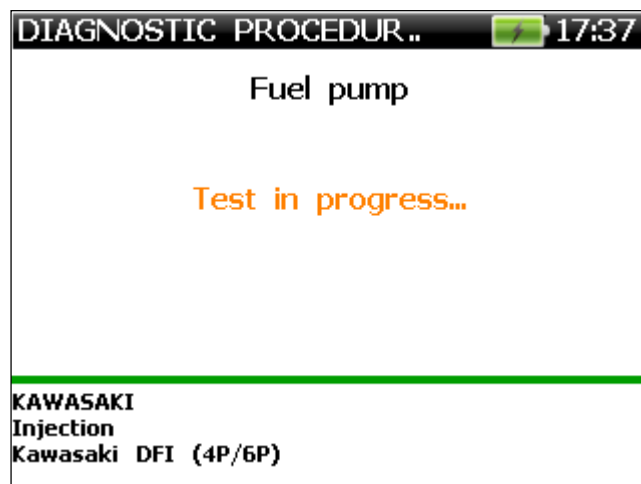
Press ⟋ to stop the test, before the automatic end (option not always available)

When the diagnostic procedure is complete, the result of the test is displayed.

6.3.11 - CONFIGURATIONS

Select "Configurations" in the "ECU MENU" to display the list of setup and adjustment operations controlled by the ECU and supported by the scan tool.

```
- CONFIGURATIONS -          10:58
Setting TPS to zero
Customer name change




BRP CAN-AM
Injection
Siemens VDO (CAN)
```
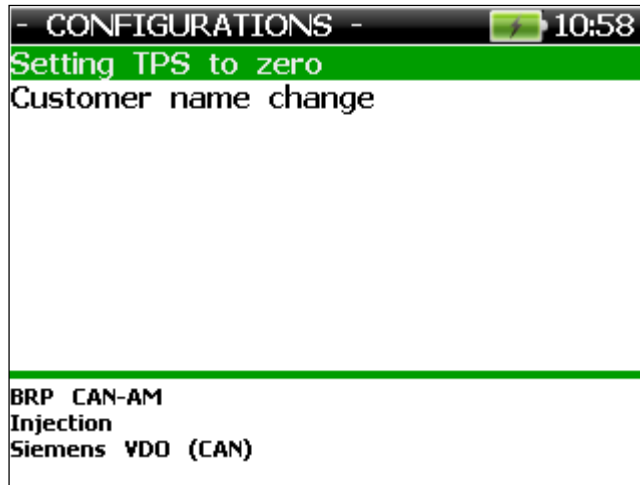
Selecting an item from the list starts the process.

For some setup operations, confirm by selecting ✔

```
- CONFIGURATIONS -          10:58



This procedure sets the throttle valve
position to zero.
```
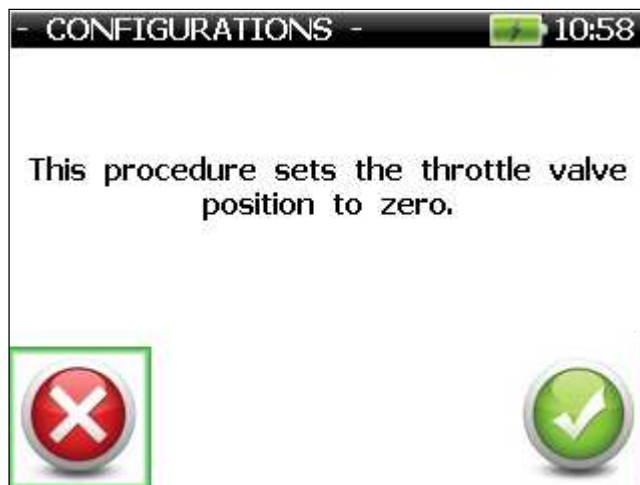
WARNING!

BEFORE PROCEEDING WITH A CONFIGURATION FUNCTION, BE SURE THAT IT IS STRICTLY NECESSARY AND FOLLOW THE INSTRUCTIONS IN THE DISPLAY PRECISELY. CONFIGURATION FUNCTIONS MAY MAKE IRREVERSIBLE CHANGES TO THE VEHICLE ECUs.

The following screen shows an example of a supported setup function.

When the setup or adjustment procedure is complete, the result is displayed.

7.0 – SCREEN

7.1 – APPENDIX

This section describes the main types of screens displayed when using the diagnostic software. The screens shown in the following sections are examples and may be subject to modification.

7.1.1 - "START-UP" SCREEN

LED light status. Use F3 key to turn LED on/off

Device battery charge information

Device software release

Battery information icon. The icon color indicates the vehicle battery status:
GRAY: Not connected.
RED: Low Voltage (under 11.0V)
GREEN: Correct Voltage (over 11.0V)

Current hour

Main Menu icon

Setup Menu icon

Use ↖ and ↗ to select the desired function. The icon selected becomes bigger. To confirm the selection use ↵.

7.1.2 - "MENU" SCREEN

The "MENU" screen is for selecting an item from a list.

The functions of navigation keys are described below:

🔙 :   return to the previous screen.

🔚 :   select the item indicated.

🔼 :   move the selection arrow up 1 item.

🔽 :   move the selection arrow down 1 item.

↩ :   move the selection arrow up 6 items
            (only if the menu has more than 6 items).

↪ :   move the selection arrow down 6 items
            (only if the menu has more than 6 items).

7.1.3 - "PROCEED - EXIT" SCREEN
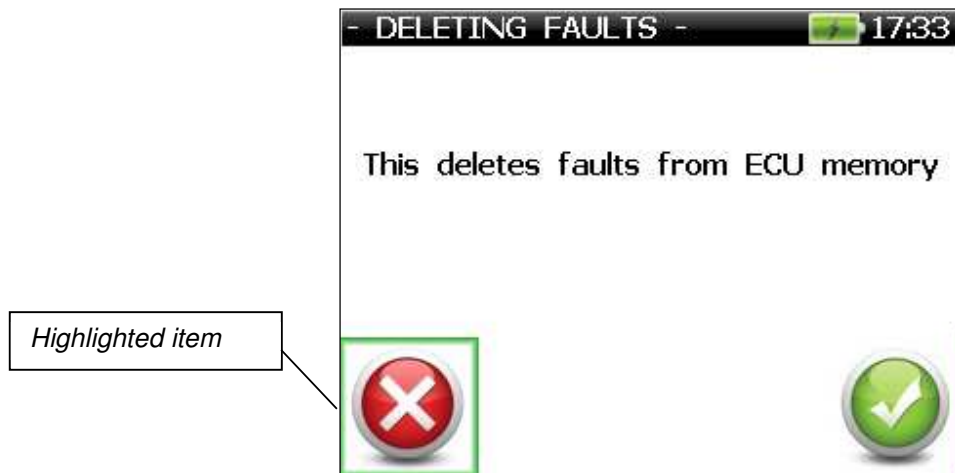
Highlighted item

Use the "PROCEED – EXIT" command to continue by selecting ✓ or to stop by selecting ✗.
The functions of navigation keys are described below:

   :   confirm the highlighted item.

   :   move the selection to the left.

   :   move the selection to the right.

7.1.4 - "BINARY SELECTION" SCREEN
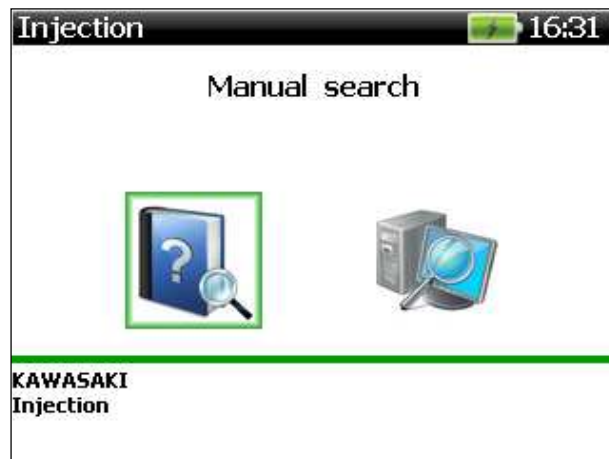
In the *"BINARY SELECTION"* screen select one of two options.
The functions of navigation keys are:

   :   return to the previous screen.

   :   confirm the option that has been selected.

           move the selection arrow up.

   :   move the selection arrow down.

7.1.5 "MESSAGE" SCREEN

The "MESSAGE" screen displays a message.
The functions of navigation keys are described below:
⮐ : 	display the next message or screen.

7.1.6 "MULTIPLE SELECTION" SCREEN

Selection background
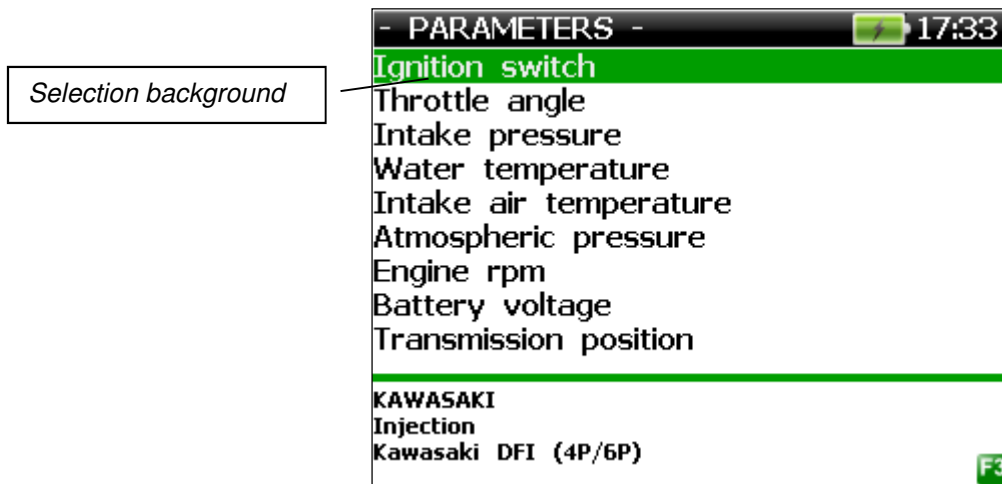
The "MULTIPLE SELECTION" screen allows one or more options to be selected from a list.
The functions of navigation keys are described below:

↩ : 	return to the previous screen.

⮐ : 	add an item to the multiple selection.

⬆ : 	move the selection arrow up 1 item.

⬇ 	move the selection arrow down 1 item.

⬅ : 	move the selection arrow up 6 items
	(only if the menu has more than 6 items).
➡ : 	move the selection arrow down 6 items
	(only if the menu has more than 6 items).
F3 	confirm the multiple selection

7.1.7 - "PARAMETERS TABLE" SCREEN

The "PARAMETERS TABLE" screen displays live data from the ECU.

To scroll the long texts, press the arrow key (↓) once.

The functions of navigation keys are described below:

↰ :   return to the parameters selection menu.

↑ :   move the enabling cursor up 1 line.

↓ :   move the enabling cursor down 1 line.

← :   move the enabling cursor from the right column to the left column.

→ :   move the enabling cursor from the left column to the right column.

F3   display the table of the following parameters supported by the ECU (18 simultaneously).

7.2 - TYPES OF DIAGNOSTICS

7.2.1 - SERIAL COMMUNICATION

Serial communication is the most advanced diagnostics mode. A communication handshake is established automatically between the scan tool and the ECU. This type of diagnostic capability also allows the display of live data from the ECU and may support the adjustment of certain functions.

7.2.2 - BLINKING CODES

Blinking codes are a simple diagnostic mode for identifying fault codes stored in the ECU. Fault codes are indicated by a series of long and short blinks from the malfunction indicator lamp (LED), as described below.

When the malfunction indicator lamp blinks, long blinks denote tens. Short blinks denote units. For instance, in case of error 15, the malfunction indicator gives one long blink (1 ten) and 5 short blinks (5 units).

In the event of more than one fault code, the ECU stores all fault codes. These are then displayed in sequence. The code sequence is repeated until the autodiagnostics mode is activated.

If no fault is present, the malfunction indication lamp does not light up.

For instance, if two faults occur, 12 and then 15, maintenance codes are displayed as follows.

The autodiagnostics function activation mode is explained by messages displayed on the instrument panel of the motorcycle being tested.

7.2.3 - DISPLAY CODES

Display codes identify fault codes stored in the ECU. Fault codes are indicated by a number or by an alphanumeric code shown on the display of the motorcycle dashboard.
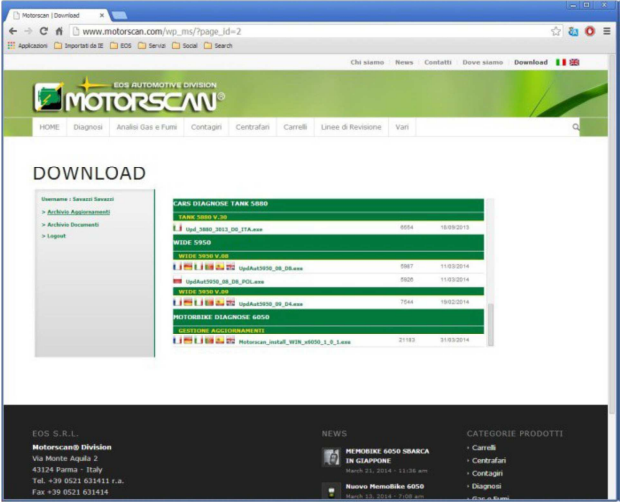
If more than one fault is present, the ECU stores all fault codes, which are then displayed in sequence. Codes are repeated in sequence until the diagnostics mode is activated.

The diagnostics function activation mode is explained by messages displayed on the instrument panel of the motorcycle being tested.

7.2.4 - MANUAL PROCEDURE
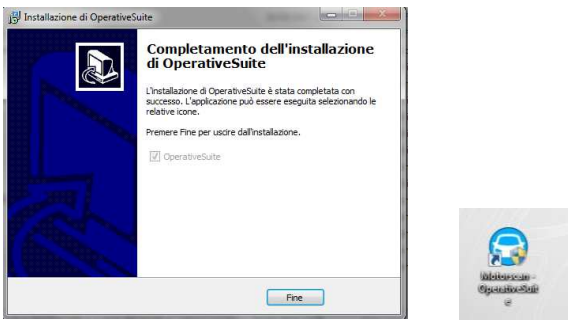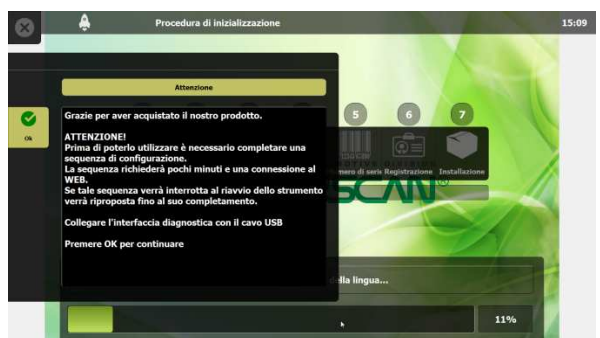
Some diagnostics functions can be activated with manual procedures and are described by the scanner on a case by case basis.
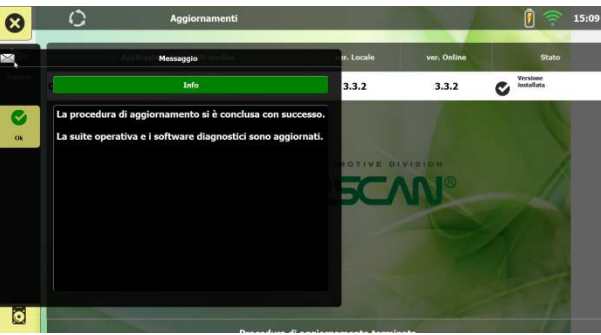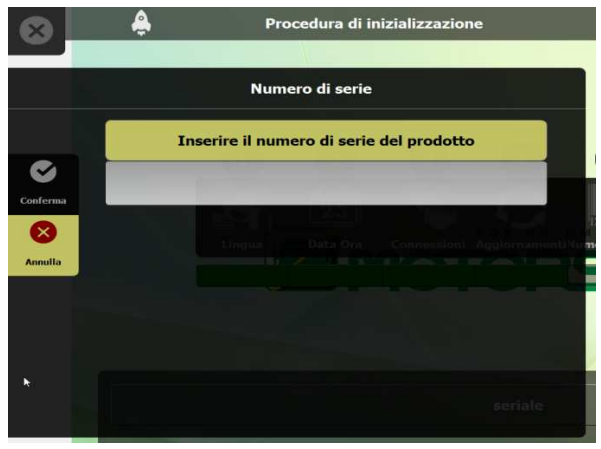
8.0 – SOFTWARE UPDATE

- Connect to www.motorscan.com

- Go to section "Download", enter username and password

- If present on the PC please suspend anti-virus during program installation

- Select last updated version of:

- Operative Suite in section MOTORBIKE DIAGNOSE 6050

- Install the downloaded package by launching :
  Motorscan_install_WIN_OperativeSuite.exe

- Connect 6050 to the PC via USB cable
- Turn it on 6050
- Remain in the startup page on 6050

- If it is the first time connection, please:
  A) wait until driver installation finishes
  B) wait until the remote storage device 6050 is detected from PC.
- Otherwise wait until remote storage device 6050 is detected from PC.

Follow the instructions

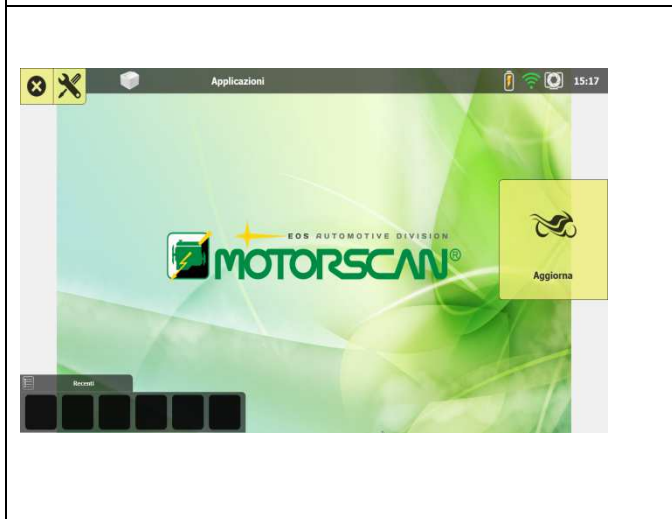|	
	• Press EXIT / installation END • Press OPERATIVE SUITE icon that appears on the desktop
	• Select the language
	• Select / flag "MEMO BIKE"
	• Confirm with OK and follow the instructions that appear on the monitor

	• Enter the date and time and CONFIRM
	• Procedure ended successfully press OK to continue
	• Enter the HW ID of the product (located on the back sticker of the instrument), if not automatically read. • Then CONFIRM
	• It will be displayed the welcome screen • Press Continue
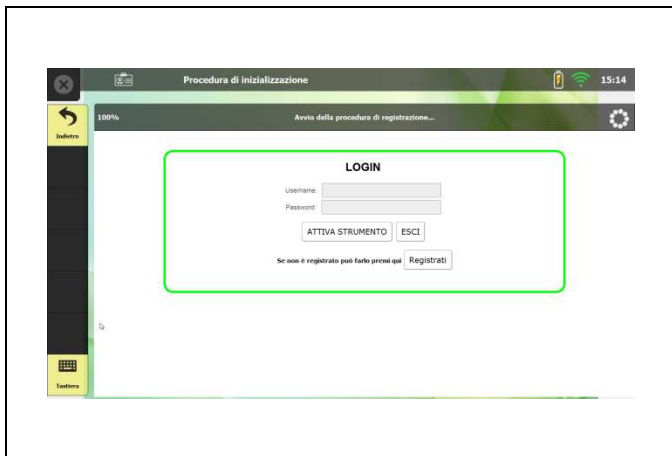
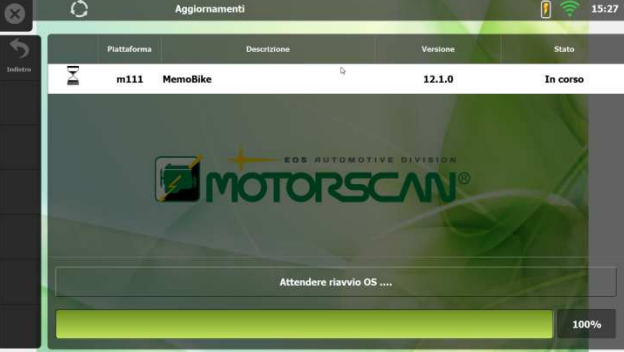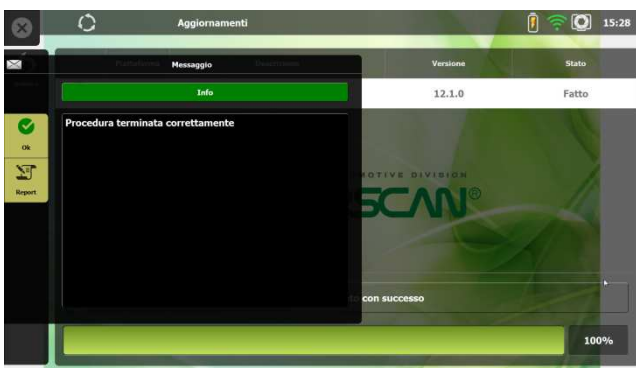|	
	• Enter Username and Password. • If you do not have User and PSW you must register by pressing REGISTER
  	• Continue the operations by viewing the Conditions of use, taking care to select the FLAG at the end of the Conditions. • Press CONTINUE
	• The screen at the side will appear • Click on "Update" to proceed
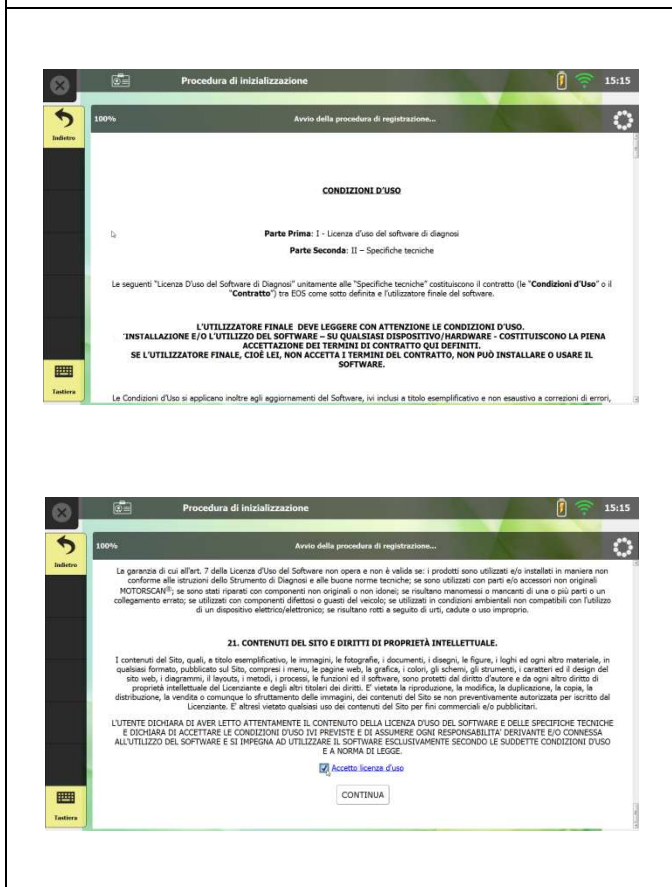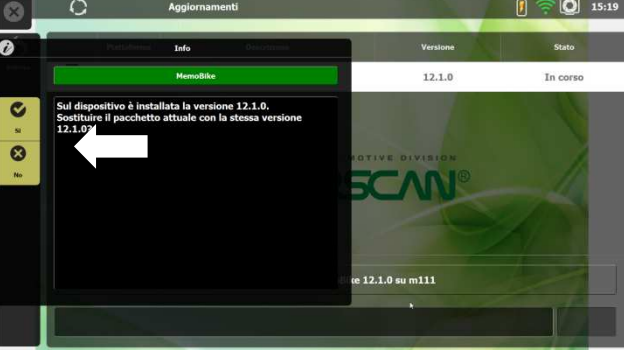
	• After selecting the desired product "Memobike". • Press "UPDATE"
	• At this stage the update is downloaded • Maintain the connection with 6050. • Press OK
	• During the Update, information is given on the current release of the instrument and on the one that is being installed. • Confirm with OK
	• At the end of this operation the procedure restarts the 6050 instrument to allow the reading of the new update

- The update procedure has been completed successfully.
- Press OK
- LOGOUT
- Disconnect the cable from the 6050

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