



#### 1- Presentation & Index

Dear Customer,

We wish to thank you for the purchase of this product. This Manual is related to the program you are using, or a compatible version.

We strongly recommend that you carefully go through all the pages before starting any operation or setting of the system: this will allow you to get more confidence and avoid all possible troubles and delays during your job.

For any question you may contact our Distibutor's After Sales Service. Have a nice time with your job and our products.

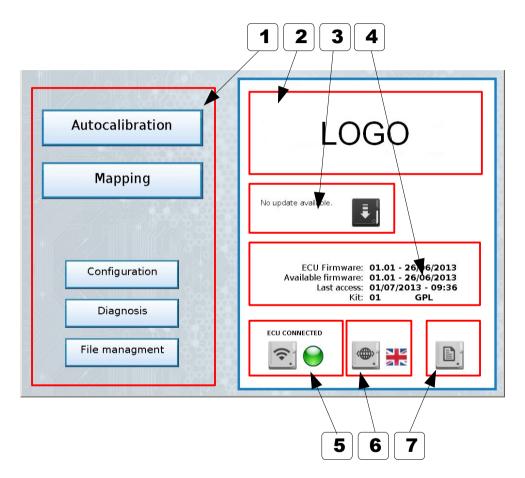
NOTE: All details about installation can be found in the Appendix 1: INSTALLATION and COMMUNICATION

IND	EX	
1	The HOME folder	
2	Read the Working folder & Monitor: "32" version	
2.1	Read the Working folder & Monitor: "48" version	
3	Autocalibration: Main folder	
3.1	Autocalibration: Step by Step	
3.2	Autocalibration: Error Messages	
4	Mapping: Main folder	
4.1	Mapping: MAP Adaptivity	
4.2	Mapping: MAP Adaptivity explained	
4.3	Mapping: Gas/Petrol Fuel Management	
4.4	Mapping: Modify Carburetion	
4.5	Mapping: OBD Adaptivity ("48" version ONLY)	
4.6	Mapping: OBD Adaptivity explained ("48" version ONLY)	
5	Configuration: Main folder	
5.1	Configuration: Sensors	
5.2	Configuration: Lambda	
6	Diagnosis: Errors	
6.1	Diagnosis: Diagnosis (Installation check)	
6.2	Diagnosis: Information	
6.3	Diagnosis: Logger	
7	File Management: Load	
7.1	File Management: Save	



#### 1- The HOME folder

The starting menu for all functions.

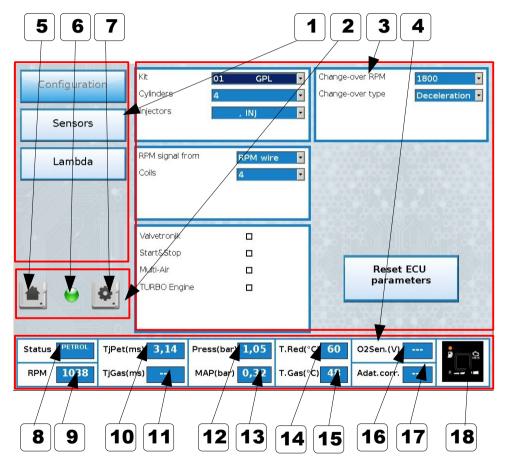


	Description	Value
1	WORKING FOLDER selection buttons	
2	LOGO / Trademark	
3	UPDATE button + INFO When an updated version of the SW or FW is available in the PC program, the info is shown	
4	ECU Firmware data and KIT details Useful when contacting After Sales Services	
5	Point the button and press the right mouse click to open the combo for the COM port selection. Or just press the button for automatic search	Green Led = OK Red Led = NO OK
6	LANGUAGE selection button.  Point the button and press the right mouse click to open the combo for the Language selection.  Or just press the button for scrolling	
7	DOCUMENTS Press to scroll the documents available: installation diagrams, manuals, ets.	



#### 2- Read the Working folder & Monitor "32" version: General description

Short review of the common details in any of the Working Folders. The screenshot below is only for sample.



THE MONITOR SECTION IS VISIBLE IN MOST SCREENS.
THE STRUCTURE IS THE SAME IN EVERY SITUATION:
PLS. REFER TO THIS PAGE FOR DETAILS

	Description	Value
1	WORKING SUB-FOLDER selection buttons, specific in any section	
2	HOME & ADVANCED selection buttons	
3	DIALOGUE area	
4	MONITOR section is shown in many pages. See below 8 to 18 for explaination	
5	HOME button: press to go back to HOME	
6	ECU Communication status	
7	ADVANCED functions button: press to enter the advanced settings for the actual folder	
8	FUEL in use	
9	RPM	
10	INJECTION TIME: Petrol	
11	INJECTION TIME: Gas	
12	REDUCER (GAS) Working Pressure	
13	MAP SENSOR (Vacuum) Pressure	
14	WATER Temperature (R	
15	GAS Temperature (Injectors)	
16	OXIGEN SENSOR (Lambda) Readout	
17	ADAPTIVITY CORRECTION values (MAP)	
18	VIRTUAL SWITCH: it is same as the real one	

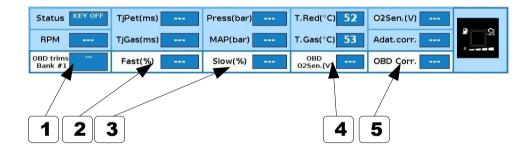


#### 2.1- Read the Working folder & Monitor "48" version: Changes vs. "32" version

The upper part is the same as "32" version: only the bottom line is added. The screenshot below is only for sample.

Basically, in the "48" version, the only difference is that in any folder there is one more line of monitoring.

It is specifically dedicated to OBD connection and information updating. This powerful tuning tool is givin information at any time through this additional line.



# THE MONITOR SECTION IS VISIBLE IN MOST SCREENS. THE STRUCTURE IS THE SAME IN EVERY SITUATION: PLS. REFER TO THIS PAGE FOR DETAILS

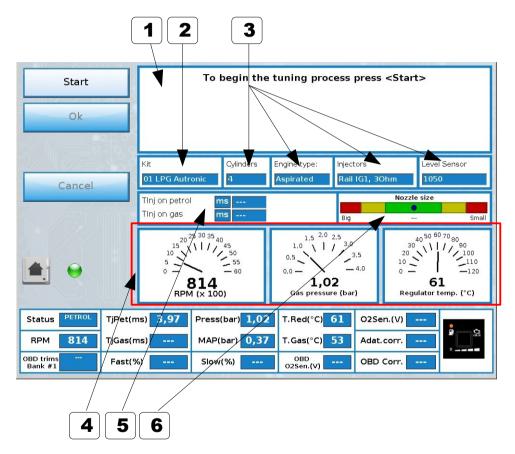
	Description	Value
1	OBD Trim bank #1 Shows the value of the bank #1 according the OBD	
2	Fast (%) Refers to OBD correction trim Fast (main O2 sensor)	
3	Slow (%) Refers to OBD correction trim Slow (back O2 sensor)	
4	OBD O2 Sen. (V) This is the value of O2 sensor (post-catalyst) through the OBD system (not same as using the wire of the gas system)	
5	OBD Corr.  Here is shown the actual value of correction that OBD system applies according to actual carburetion (being petrol of gas in use)	

**NOTE:** all the above values are same as read by the OBD of the car. So, it's possible to get an instant visualization of the changings that are made to the gas mapping/tuning and their effects on the "On Board Diagnosis" system of the vehicle.



#### 3- Autocalibration: Main folder

The first (and easier) way to get a map done ... with unexpected excellent results!



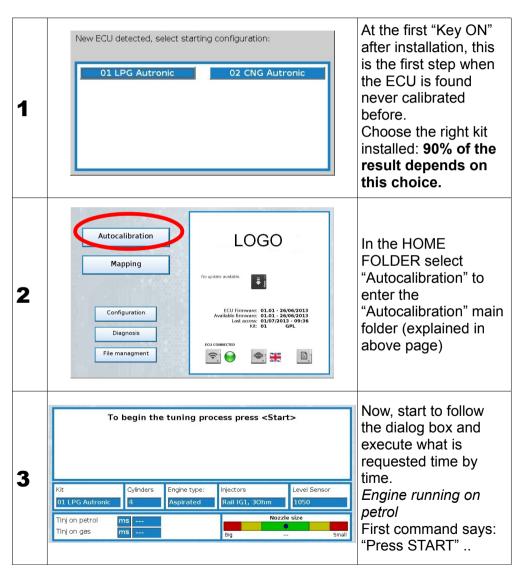
WHEN THIS PAGE IS SHOWN, FOLLOW THE STEP BY STEP INSTRUCTION AS SHOWN IN THE NEXT CHAPTER AND ON THE SCREEN ....
IT IS POSSIBLE TO REPEAT THE PROCESS
IT'S EASY

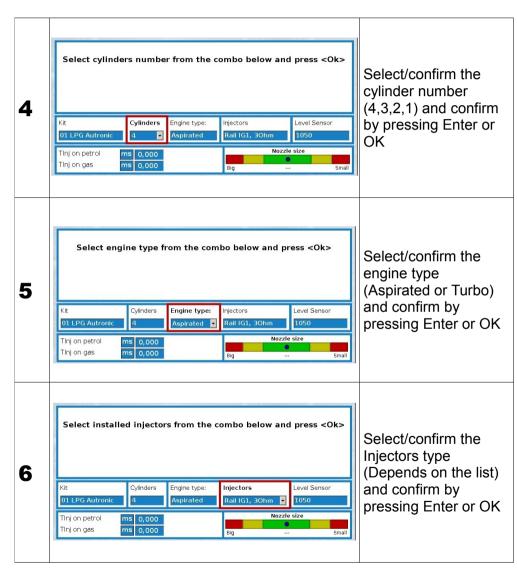
	Description	Value
1	INSTRUCTIONS/DIALOG BOX Follow the instructions in this box	
2	KIT TYPE In case of a brand new ECU, the choice is made after connection, when a screen as below is shown:	
	New ECU detected, select starting configuration:  01 LPG Autronic  02 CNG Autronic	
	In case of an already calibrated unit, it appears: "Preset already done: do you want to skip it?"	
3	PARAMETERS to be Confirmed/Changed During the process, these parameters will be asked for confirmation or modification. See next chapter	
4	ADDITIONAL MONITOR	
5	INJECTION TIMES DISPLAY When on petrol, petrol times are shown When on gas, petrol time is shown	
6	NOZZLE SIZE INDICATOR At the end of the process, can give an idea about how the size is close to the correct one. There are also error messages (see next chapter)	



#### 3.1 – Autocalibration: Step by step ... (1/3)

We follow all steps of this easy and fast tuning process which leads to almost perfect calibration

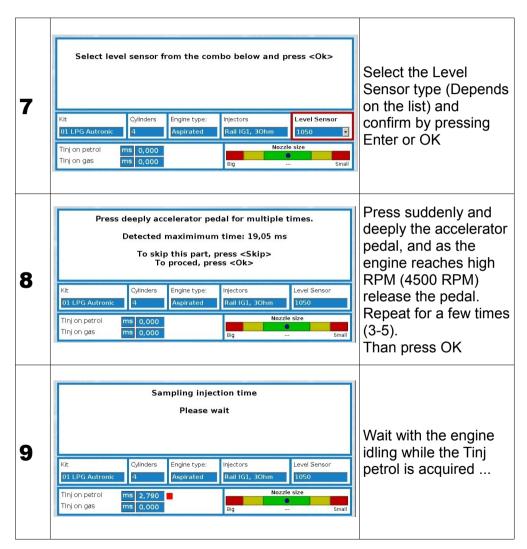


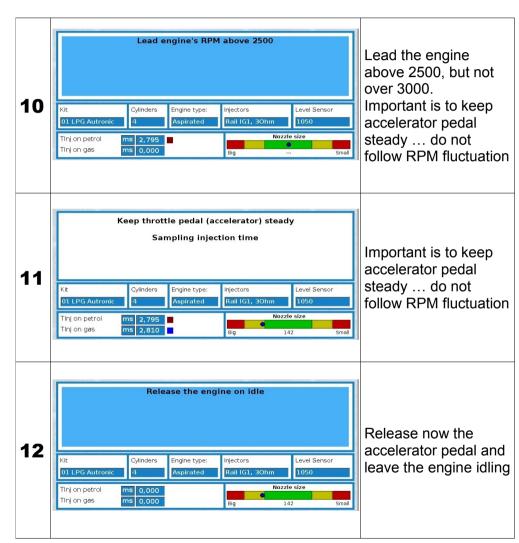




#### 3.1 – Autocalibration: Step by step ... (2/3)

We follow all steps and all questions have to be answered during the process ....

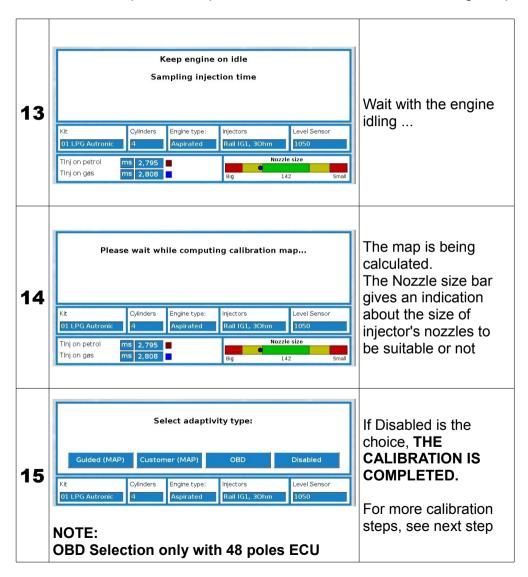


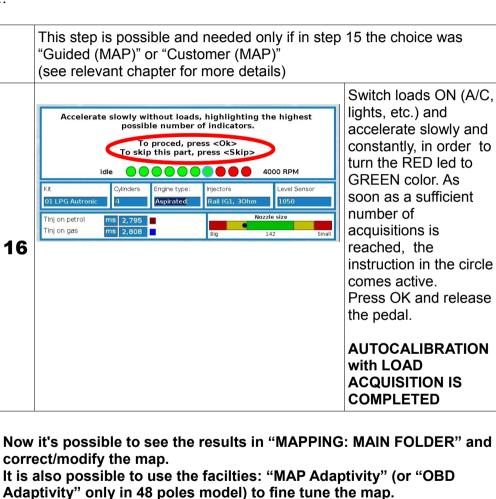




#### 3.1 – Autocalibration: Step by step ... (3/3)

We follow all steps and all questions have to be answered during the process ....

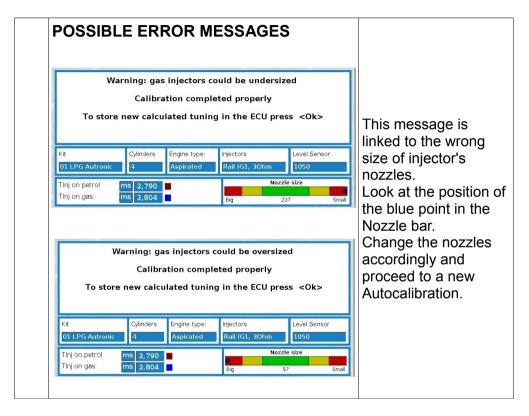






#### 3.2 - Autocalibration: Error Messages

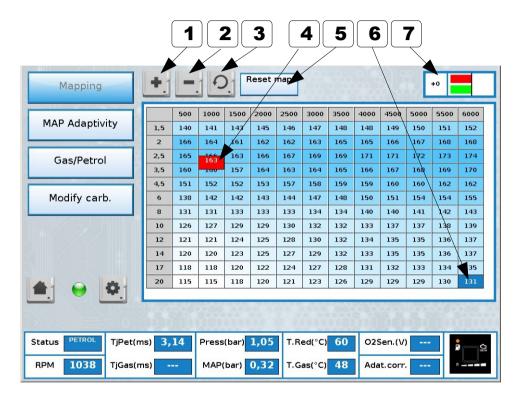
After the Autocalibration, the system could give some error messages ...





#### 4- Mapping: Main folder

The heart of the system: the gas map.



NOTE: - X axis shows RPM

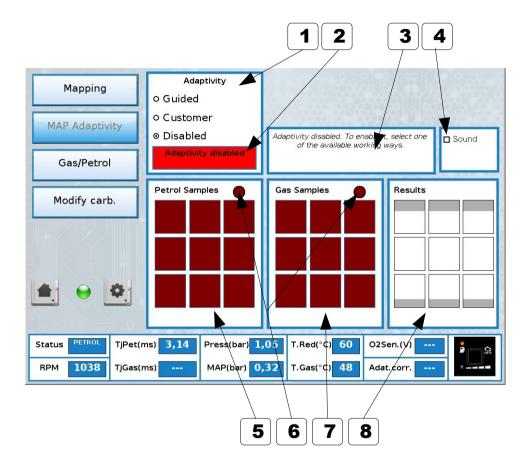
- Y axis shows Injection Times in milliseconds

	Description	Value
1	INCREASE VALUE	
2	DECREASE VALUE	
3	UNDO last change It is possible to go back for 1 step	
4	ACTUAL Engine Working Point	
5	RESET MAP button	
6	SELECTION of the MAP AREA where it is required to apply for an increase or decrease in correction values shown. Use the mouse to select one point or an area. The selected squares change to BLUE color	
7	TARGET AID BAR referred to ACTUAL Working point	
	How it works.  - When on Petrol, the RED bar is working around the centerline and the GREEN is shown but not changing  - When chage to Gas, the RED bar is shown and is the TARGET: depending on the actual gas injection time the bar is shorter (with a -X number) or longer (with a +Y number). Act on the buttons "+" or "-" to set the time as the TARGET	Increase gas  +15  Decrease gas  + 0  OK



#### 4.1 – Mapping: MAP Adaptivity

MAP adaptivity is a way to monitor the tuning using the MAP sensor and, if enabled, it modifies the map of the tuning.



	Description	Value
1	ADAPTIVITY enabling flag  - Guided: follow the wizard proposed by the system  - Customer: follow the status of the led on the virtual switch (or the real switch) and drive the adaptivity path.  - Disabled	Disabled (default) Guided Customer
2	ADAPTIVITY working status	RED = Disabled GREEN = Enabled
3	MESSAGES/INSTRUCTIONS BOX Follow carefully the instructions/messages shown	
	SOUND enabling flag For every valid acquisition during the process, a "bip" will be heard (the buzzer of the switch is used for the purpose)	
5	PETROL SAMPLES sub-map This sub-map shows a load/RPM diagram While driving on petrol, the 9 box will turn to GREEN as soon as the number of acquisitions for each box/condition is sufficient.	
6	NUMBER OF ACQUISITIONS REACEHD The light turns GREEN as soon as a sufficient number of valid acquisitions has been recorded. The next fuel acquisition can be started (or the result will be shown in the Results box)	RED = Not enough GREEN = Enough
7	GAS SAMPLES sub-map Same as above #4 but used for gas sampling.	
8	RESULTS sub-map As soon as enough acquisitions have been recorded, this box shows the results found.	Result is shown in form of a color scale



#### 4.2 - Mapping: MAP Adaptivity explained

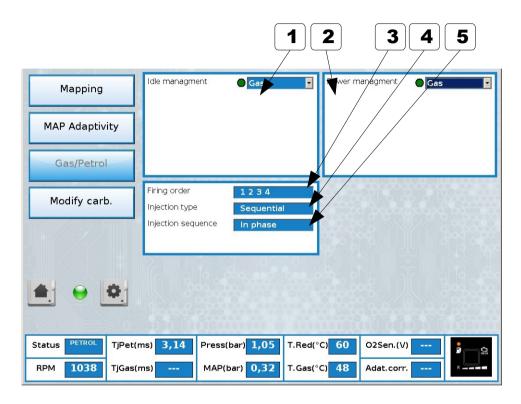
Few more details about the boxes and how to interpretate and use them.

Under construction Under construction



#### 4.3- Mapping: Gas/Petrol Fuel Management

The management of fuels to increase performance or keep the check engine light off.

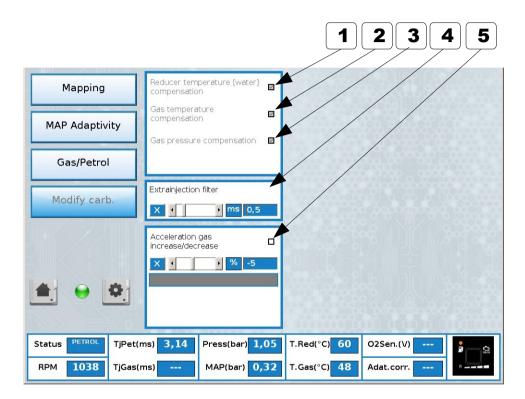


	Description	Value
1	IDLE MANAGEMENT When GAS is the choice, no more parameters RPM Wire shall be connected to enable the alternative choices	Default = Gas Petrol steady, Return only
2	POWER MANAGEMENT When GAS is the choice, no more parameters RPM Wire shall be connected to enable the alternative choices	Default = Gas Contribution, Petrol
3	FIRING ORDER Petrol injection sequence	Display only
4	INJECTION TYPE	Display only
5	INJECTION SEQUENCE The gas injection sequence	Display only



#### 4.4- Mapping: Modifify carburetion

Choice of compensations, signal filtering, strategies ....

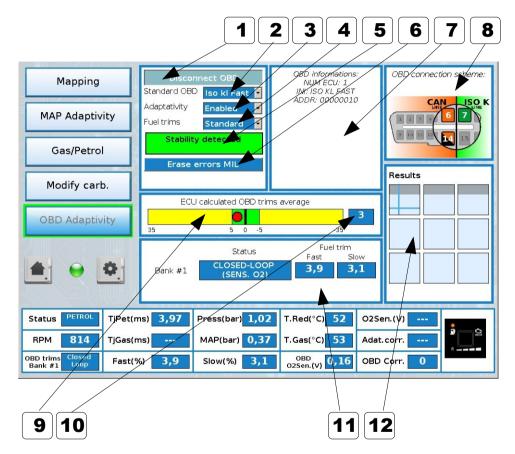


	Description	Value
1	Reducer Temperature COMPENSATION When flagged, there is a gas increase or decrease in injection time linked to the water temperature (usually measured at reducer) according to a preset table. The table is linked to the reducer type selected during calibration.	Flag
2	Gas Temperature COMPENSATION When flagged, there is a gas increase or decrease in injection time linked to the gas temperature (usually measured at the injectors rail) according to a preset table. The table is linked to the rail type selected during calibration.	Flag
3	Gas Pressure COMPENSATION When flagged, there is a gas increase or decrease in injection time linked to the gas pressure (measured by the MAP sensor) according to a preset table.	Flag
4	Extrainjection filter The threshold filter of the petrol injection times. Injection times undr the threshold are not considered valid for gas injection.	Default = 0,5 Range = 0,1 to 2,5 (Values in ms) X = reset default
5	Acceleratrion gas increase / decrease This parameter is used to compensate for certain situation depending on the engine or the fuel. When an acceleration status is detected, the system increases / decreases the gas injection time according to the selected value (on a fix basis)	Default = 0 Range = -30 to +30 (Values in %) X = reset default



#### 4.5- Mapping: OBD Adaptivity ("48" version ONLY)

The use of OBD signals to improve the adaptivity of gas ECU



#### NOTE:

When the OBD Standard is unknown, it is possible to try one connection (see box #8) and push "Connect OBD". If the standard is compatible with connection, the details will appear in box #7. Or try with another connection and do the same.

	Description	Value
1	Connect/Disconnect OBD button	
2	OBD Standard Choice (combo)	Default = Generic (List of standards)
3	Adaptativity (combo)	Default= Disabled Frozen, Enabled
4	Fuel Trims (combo)	Default = Standard Inverted, Fiat
5	Stability Detection = GREEN background Adaptivity disabled = RED background	Info box/light
6	Erase MIL errors button	Clears MIL errors
7	OBD: connection INFO	Info only
8	OBD: connection Diagram	Info only
9	ECU calculated OBD trims average (graphic) See next pages for an explanation	Red Dot shown
10	ECU calculated OBD trims average (value) Same as above but in numeric value	Numeric value shown
11	OBD Fuel Trim visualization This panel shows the actual OBD System readouts for the paremeters shown.	Display only
12	Results box visualization See next pages for an explanation	Display only

#### **IMPORTANT NOTE:**

When Adaptativity is ENABLED, a message is shown in the Mapping Main Folder: "Adaptativity = Enabled". It's not suggested to change the map with adaptivity enabled.



4.6- Mapping: OBD Adaptivity Explained ("48" version ONLY)

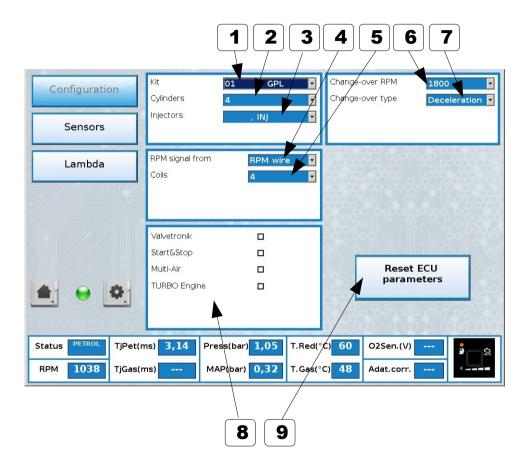
This chapter is under construction...

Under construction Under construction



#### 5- Configuration: Main folder

How to give instructions to the system about possible choices about the engine management and gas kit configuration

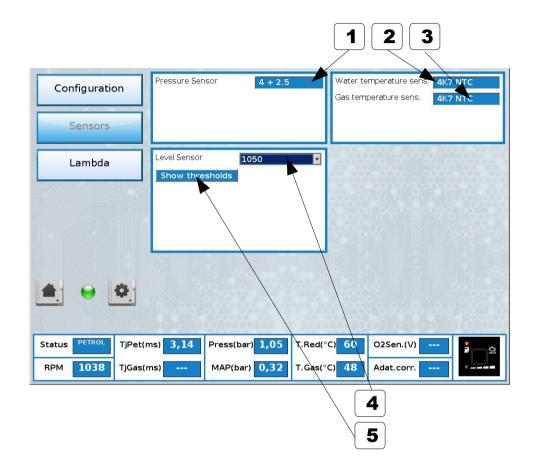


	Description	Value
1	Kit type	01 to xx (List)
2	Cylinders number	Default = 4 Range = 1 to 4
3	Injector type Here are listed all the possible chioices. They are set according to Distributor/Manufacturer request	List upon request
4	RPM signal from  "Injectors" selection = many functions of the board are disabled  (i.e. Petrol management and more)	Default = Injectors RPM Wire
5	RPM Multiplier When RPM at idle is not 700/900, selection of the multiplier takes the RPM to the real value readout	Default = x2 x1
6	Change-over RPM	Default = 1600 Range = 0 to 2600
7	Change-over type	Def. = Deceleration Acceleration
8	Flag selections These are linked to some engine management characteristics. Flag the ones that occurr on the converted vehicle	
9	Reset ECU parameters Push the button and all values will be restored to default ones NOTE: ALL VALUES OF ECU will be set to default, even the map, not only the ones of this page	



#### 5.1- Configuration: Sensors

Configuration and thresholds for level sensors

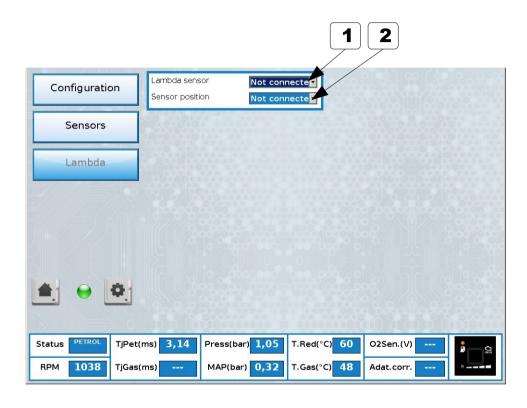


	Description			Value
1	Pressure sensor			Display only
2	Water Temperature ser	nsor		Display only
3	Gas Temperature sens	or		Display only
4	Level Sensor selection Pls. select correctly the se	•		Default = 1050 0-90 ohm, 806, Custom, Custom (INV)
5	Show thresholds Push the button and the bo	ox below will be	shown	
5	Push the button and the bouse the cursors or the arrothresholds or Reset to set	ows to modify the default value	he	
5	Push the button and the bo Use the cursors or the arro thresholds or Reset to set	ows to modify the default values	ne ues.	
5	Push the button and the bo Use the cursors or the arro thresholds or Reset to set	ows to modify the default value	ne ues.	
5	Push the button and the bouse the cursors or the arrothresholds or Reset to set  Level Sensor  Show thresholds	ows to modify the default values	ne Jes.	
5	Push the button and the bouse the cursors or the arrothresholds or Reset to set  Level Sensor  Show thresholds  3/4 - 4/4	ows to modify the default values	ne Jes.	



#### 5.2- Configuration: Lambda

Questo capitolo descrive la rottura del programma



	Description	Value
1	Lambda sensor	Default = Not connected 01, 05 Direct, 05 Inverted, 0,81,6, UEGO, 2,53,5
2	Sensor position	Default = Not connected Front, Rear



#### 6- Diagnosis: Errors

Questo capitolo descrive la rottura del programma

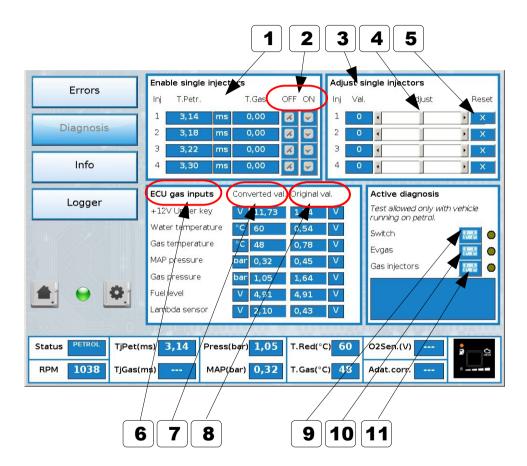


	Description			Value	
1	ERRORS Code and Description				
	00	Gas Injector 1	11	Gas temperature	
	01	Gas Injector 2	15	Supply voltage	
	02	Gas Injector 3	17	Lock-off reducer Lock-off tank	
	03	Gas Injector 4	18		
	08 Reducer Pressure 09 Intake manif. Pres.	20 21	Petrol injector nr.		
			OBD Gas trim	ias trim	
	10	Water temperature	22	Adapt. Gas trim	
2		ORDED Errors s recorded on a Key ON - Ke	y OFF cyc	le	
3		RED Errors s saved on the ECU memory	after the k	(ey OFF	
4	ERASE Errors button Used to erase all Recorded and Stored errors				



#### 6.1- Diagnosis: Diagnosis

Diagnosis information about installation and settings for injectors.

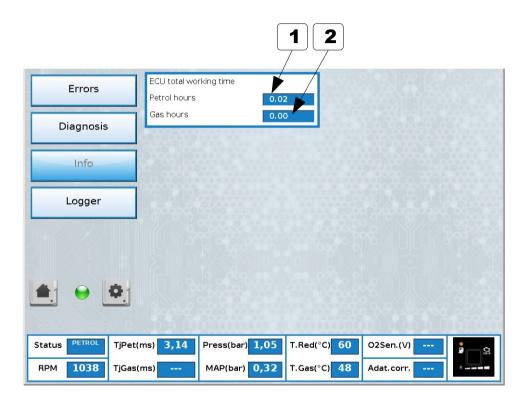


	Description	Value
1	ENABLE SINGLE INJECTORS Used to check each single gas injector after installation: verifies the correspondence between the petrol and gas injector working on the same cylinder.	
2	ENABLE SINGLE INJECTORS: ON / OFF Buttons/command to verify point #1	
3	ADJUST SINGLE INJECTORS The values of opening/closing can be modified for each single injectors (i.e used to correct for defective injector, for different lenght of the hose, etc.	
4	ADJUST INJECTORS: Commands Use either the cursor or arrows to change the value. NOTE: the values shown are in points referred to the main map.	
5	ADJUST SINGLE INJECTORS: Reset	Reset to Default
6 7 8	ECU GAS INPUTS Some basic values of the inputs for the gas ECU are shown to compare the real input "Original value" (always in Volts) to the readout "Converted values" (shown in different scale)	Display only
9	ACTIVE DIAGNOSIS: Switch Press and follow instructions in the window to verify switch functions.	
10	ACTIVE DIAGNOSIS: Gas Lock-off (EvGas) Same as 9 but for the lock-off valves.	
11	ACTIVE DIAGNOSIS: Gas injectore Same as 9 but for the gas injectors.	



#### 6.2- Diagnosis: Information

Info about how long the ECU worked on gas.



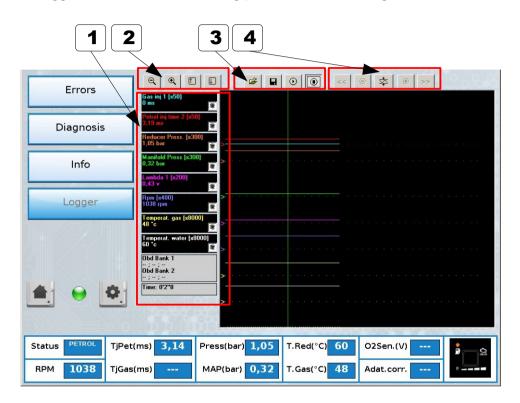
	Description	Value	
1	Ecu total working time ON PETROL	Hours	
2	Ecu total working time ON GAS	Hours	

This detail is useful to get idea for After Sales Services and Assistance.



#### 6.3- Diagnosis: Logger

The logger shows the main working parameters of the engine. It works both off-line (as a player) and real time (show or record).

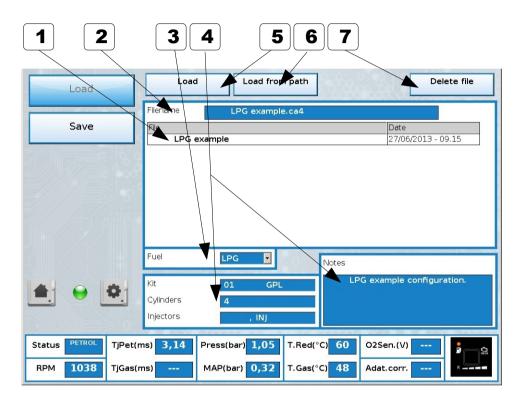


	Description		
1	Vehicle variables:		
	<ul> <li>- 8 variables are possible to be checked.</li> <li>- Use the muose right button on the square to choose the variable</li> <li>- The Eye button is enabling or disabling the variable visualization</li> <li>- The gray label at the bottom of the column shows the elapsed time</li> </ul>		
2	Zoom and vertical position tools:		
	- Lens buttons allow to change the zoom of the selected parameter (amplitude, thus Y axis).		
	- The arrow buttons allow to move up and down the position of the variable, so that a table with own priority can be set.		
3	Mode:		
	These commands allow to: - Open a saved log file (Offline mode) - Save a .log file - Start / stop the recording / playing		
4	Scroll and time base:		
- "+" and "-" bottons are used to change the zoom (time base, the - ">>" and "<<" buttons are used to fast move forward and backwest - The wave button is used to shrink or enlarge the time window for channels			
	NOTE: the limit for the .log file is linked to your HD capacity, as the file is recorded on the HD of your PC. Of course, keep in mind that if you have to send it for assistance or consultancy, the size is important. As an average, 1 hour is approx. 8 MB.		



#### 7- File management: Load

Here it's possible to find all saved configuration of the connected ECU.

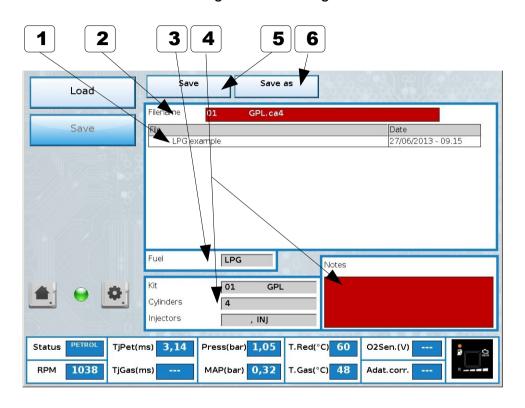


	Description	Value
1	FILES LIST	Select the file with the mouse
2	Selected file indication	
3	Filter for file selection (usually is the type of gas, LPG or CNG)	
4	Main details of file, with reference to: - Kit type - Number of cylinders - Type of injectors - Notes	See "Files Management: Save" for more details
5	LOAD button Press to load into the gas ECU the file selected	
6	LOAD FROM PATH button Press to load a known file from a path in the PC	It opens "the File Manager of the PC
7	DELETE FILE button Press to delete the selected file	



#### 7.1- File mamagement: Save

How to save the actual configuration of the gas ECU for future needs.



	Description	Value
1	FILES LIST	Select the file with the mouse
2	Naming the file can be filled by the installer at his own discretion	
3	Filter for file selection (usually is the type of gas, LPG or CNG)	
4	Main details of file, with reference to: - Kit type - Number of cylinders - Type of injectors - Notes can be filled by the installer at his own discretion	See "Files Management: Save" for more details
5	LOAD button Press to Load into the gas ECU the file selected	
6	LOAD FROM PATH button Press to Load a known file from a path in the PC	It opens "the File Manager of the PC



#### 99- Sample page

Short description

	Description	Value
1		
2		
3		
4		
5		



#### **APPENDIX 1** (Under construction)

This section shows how to install and start the Software of the unit and relevant devices

INSTALLATION & COMMUNICATION (Appendix 1)			
1.1	Software features		
2	Program installation		
3	Start / Exit the program		
3.1	Connection successful		
3.2	Connection failed		

	Description	Value
1		
2		
3		
4		
5		

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**NOTE**