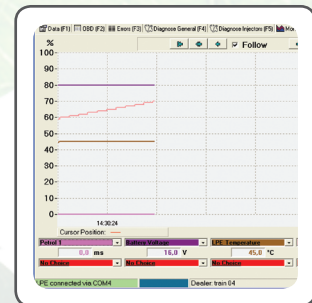
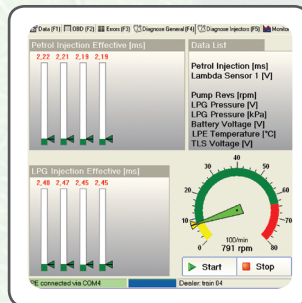




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Training manual



Version 3.1 November 2010

LDT user manual

LPi Diagnostic Tool

The LPi Diagnostic Tool has been developed as a diagnostic tool for the LPi system. The system operates under a Windows platform. The icons on the screen can be activated as follows:

- Using the mouse
- Using key combinations (fast keys). The fast key for the icon in question is visible the moment you touch the icon with the mouse.
- Or by a fast key that is indicated by characters which are shown underscore, for instance Erase.

The program is set up using 9 different tab screens. These will now be discussed.



LPi Diagnose kit

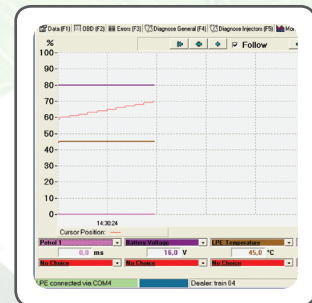
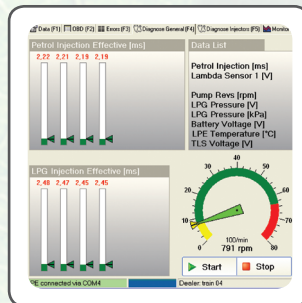
Index

5	Data (F1)
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19	Diagnose Injectors (F5)
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28	Level 2 - calibration software
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31	Level 4 - non-catalog
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Data (F1)

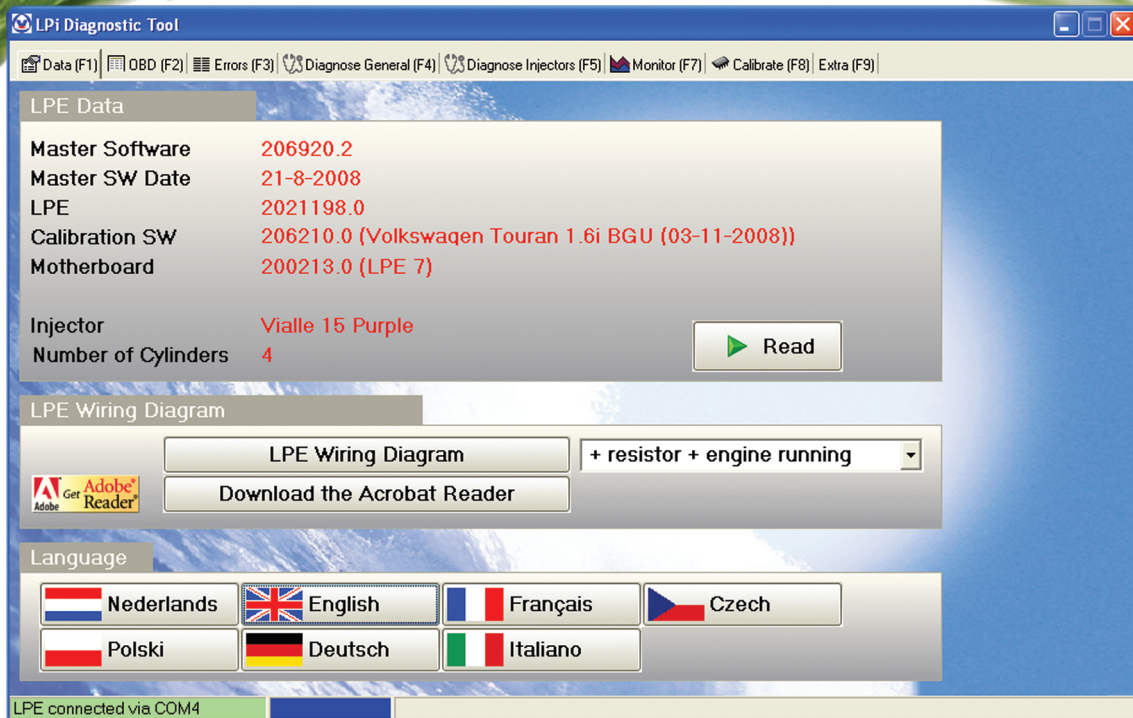


Figure 1 LPE data

Once the program is started up and contact is established with the LPE, the data screen appears. In the menu bar it can be seen if contact has been established. In that case you read, bottom left of the screen: LPE connected to COM X”.

Also, on the right in the status bar you find information about a function or knob that you activate at that moment, using the mouse cursor.

For a correct operation of the Lpi Diagnostic Tool (LDT) it is essential that the LPi Diagnostic Key has been installed and connected correctly!



Read out the system again.
The LPE data are shown on the screen [fast key: space bar].

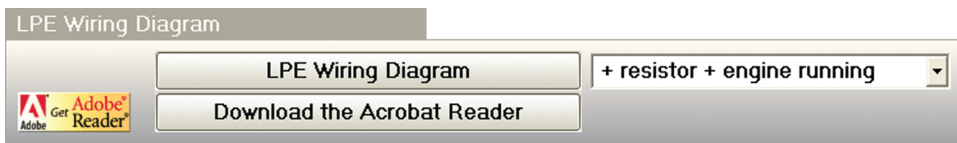


Figure 2 LPE Connection data

In the screen [Connection data] the wiring schematic can be pulled up of the LPi installation in question using the link [C:\Program files\LPi Diagnostic Tool\PDF]. This safeguards that you always possess the correct schematic.

In order to show this schematic, Acrobat Reader should be installed on your computer. If this has not been installed, you can download the program using the link [Download de Acrobat Reader]. You must be hooked up to the internet.



Language



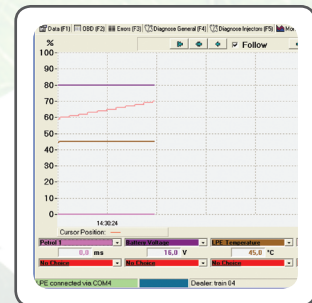
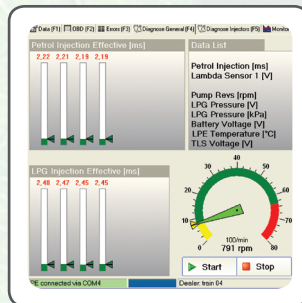
Figure 3 Language selection

In the screen [language] you can select the desired language.



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OBD (F2)

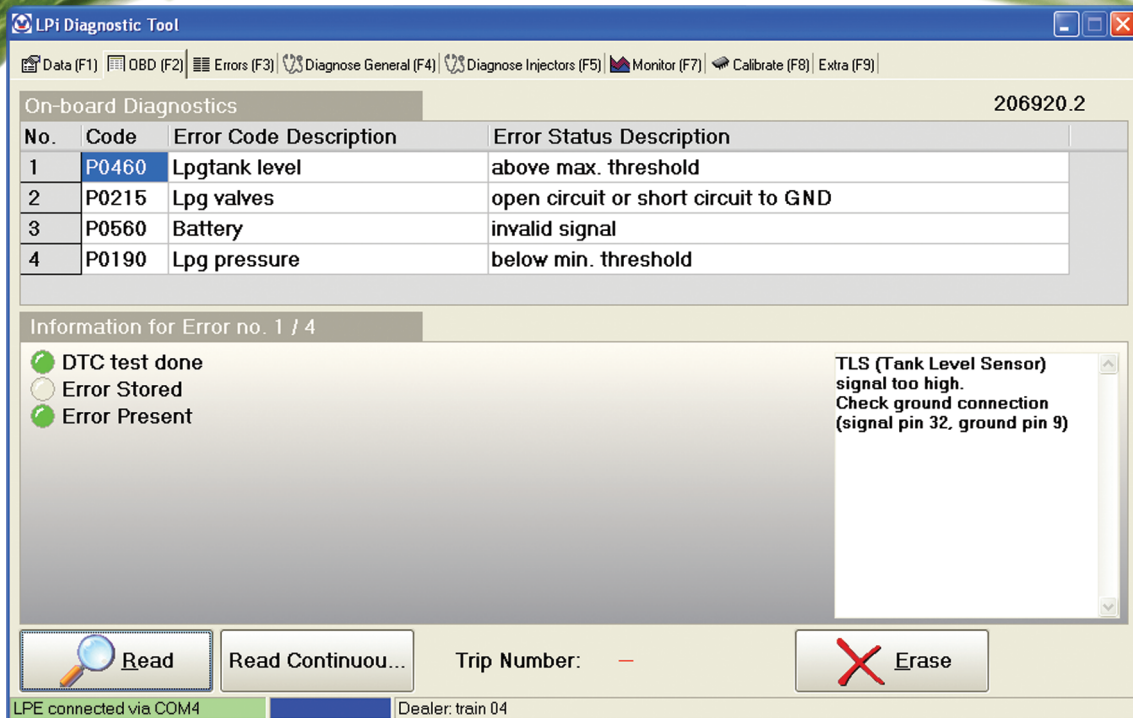


Figure 4 OBD-screen

This screen shows the fault codes, related to On Board Diagnostic. This feature is only available starting LPE-7. If a lower LPE version is connected, the OBD-screen will not be shown. Fault codes, if present, will be shown through the fault-screen [F3].

Attention: these OBD codes relate to exhaust emissions and are NOT OBD codes from the gasoline computer! The fault codes related to the LPI system are translated, wherever possible, to OBD codes.

On-board Diagnostics

Shows the fault codes which are stored in the LPE including a short description.

Information for Error no. 1 / 4

Here you find information regarding the selected fault code. This information was stored the moment the fault took place. The field on the right gives clues as to the cause and consequence of the fault code. Four parameters in this screen show information about when the code occurred and how often it occurs.

Trip Number: --

Shows the amount of starts made so far.

Trip No. 305

Shows during which trip number the fault code was stored. Storing a fault code always happens during a subsequent start after the fault occurred for the first time.

Example: the trip nr says "305". This means that the fault occurred during Trip Nr. 43 and has been stored at the start of the ride, Trip Nr 305.

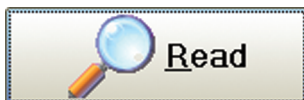


Seconds Counter 184

Indicats how many seconds, after start up, the fault was generated.

Counter 49

When a fault is stored, the counter will start at "64". With every new start up the counter indicator is reduced with "1". As long as the fault does not occur again, the counter resets, eventually back to "0". After that, the fault is erased. Should the fault occur again at a counter setting "30", the counter will reset to "65".



Read out the stored fault codes.

Read Continuou...

Read out the stored fault codes continuously. The moment the malfunctioning occurs, it is shown immediately on screen.

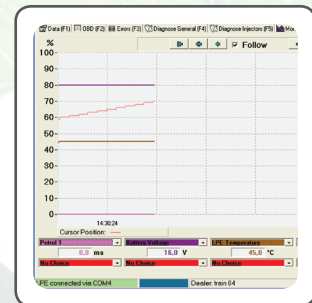
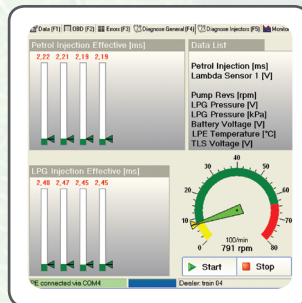


Erase the stored fault codes.



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Errors (F3)

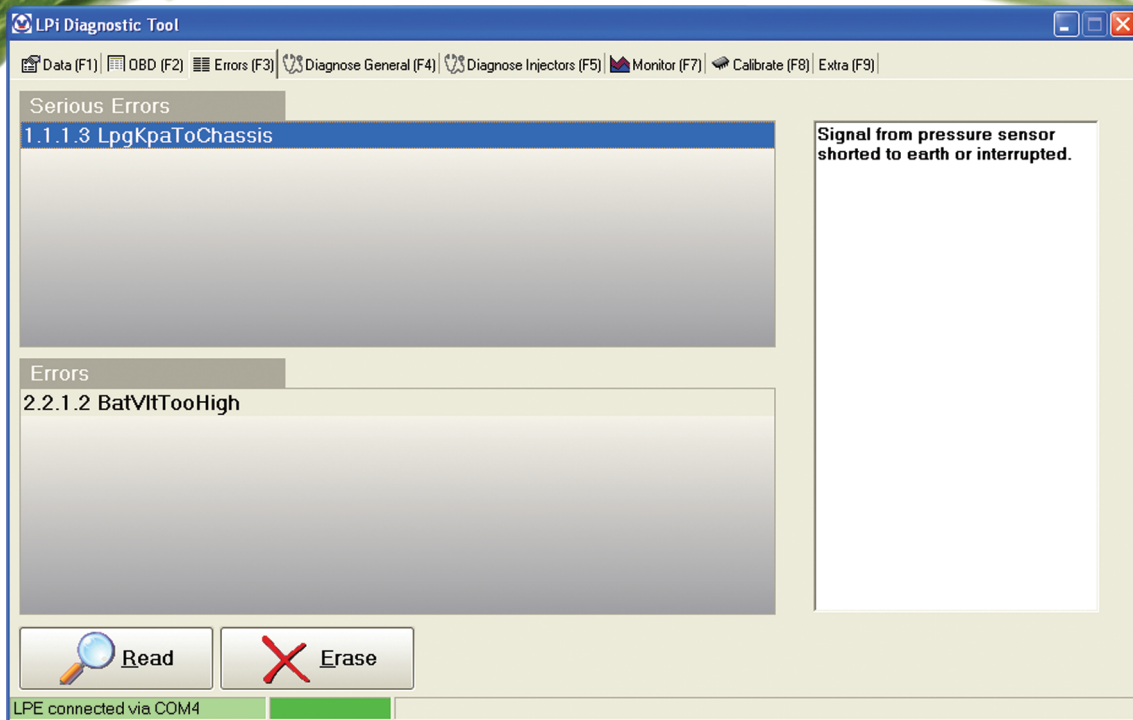


Figure 5 Fault codes

This screen indicates possible error codes of the LPI-system, which can not be displayed at the OBD-F2 screen.



Read out the codes stored by the LPE and display them.
[fast key: space bar or Alt-L]



Erase all codes
[fast key: DEL-key of Alt-W]

If the malfunctioning has been eliminated:

- First delete fault codes
- Next Read to check if the fault code indeed has been erased.

See fault code in the appendix.

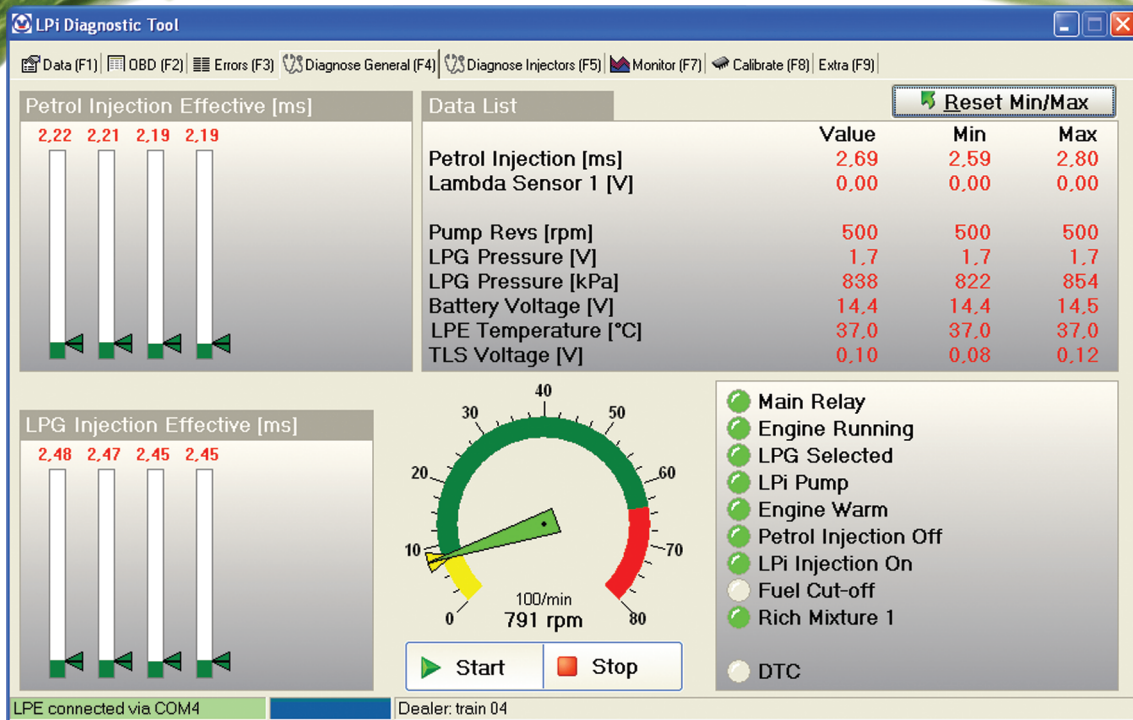


Figure 6 Diagnose general

Petrol Injection Effective [ms]

Gasoline injection times per cylinder (in milliseconds), without offset. These are therefore the true injection times.

LPG Injection Effective [ms]

LPG injection times per cylinder (in milliseconds), without offset. These are therefore the true injection times.

Data List

This shows the active parameters.

Value: actual value

Min: min. measured value

Max: max. measured value

Reset Min/Max

Again determine the min/max values. iBepaal de min/max waarden opnieuw. [fastkey:: Esc-key or Alt-R]

- Function of component is active.
- Function of component is inactive.



With this the measurements can be started or stopped. [fastkey: space bar]

Remarks:

On screen the following two signals are illustrated:

- lambda sensor 1
- rich mixture 1

Would a second sensor be connected and be integrated into the software, these signals will be generated automatically.

Data List

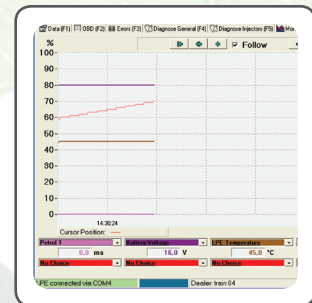
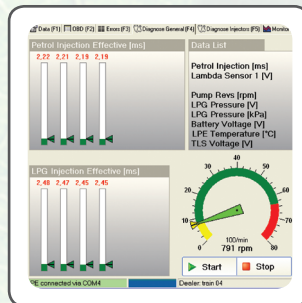
In the datalist the signal gasoline injection (ms) is shown.

The illustrated time is the electrical time and is longer than the mechanical time.



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Diagnose Injectors (F5)

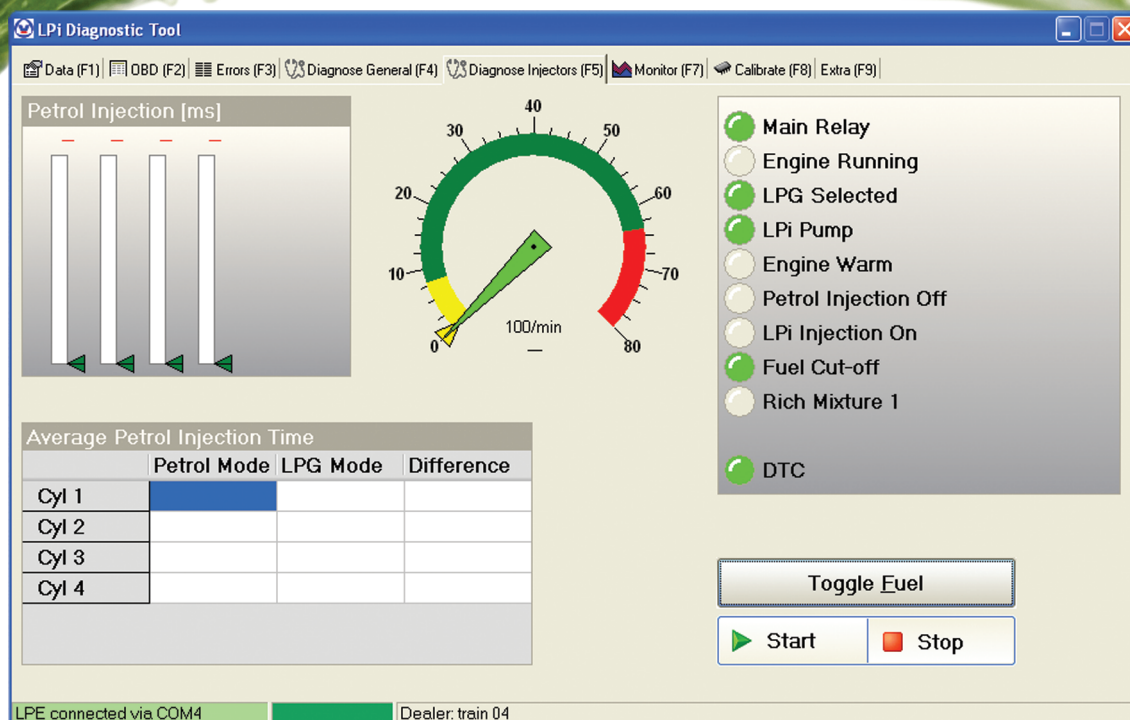


Figure 7 Diagnose injectors

Petrol Injection [ms]

Gasoline injector times per cylinder (in milliseconds) without offset. These are therefore the true injection times.

Average Petrol Injection Time

Illustrated are:

- the average gasoline injector times (on gasoline)
- the average gasoline injector times on LPG

The difference in injection time is illustrated in percentages.

During the switch over of fuel the injection time differs too much and is therefore not a representative figure.

Attention: engaging fans, airco etc directly influences the injection time!!!

Toggle Fuel

Change over fuel. [fastkey: Alt-F]

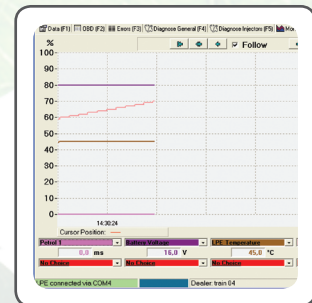
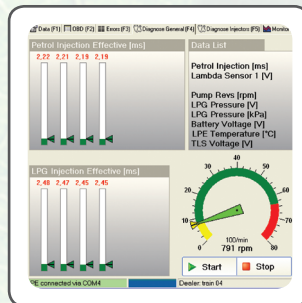
Start Stop

Start / stop measurements. [fastkey : spacebar]



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Monitor (F7)

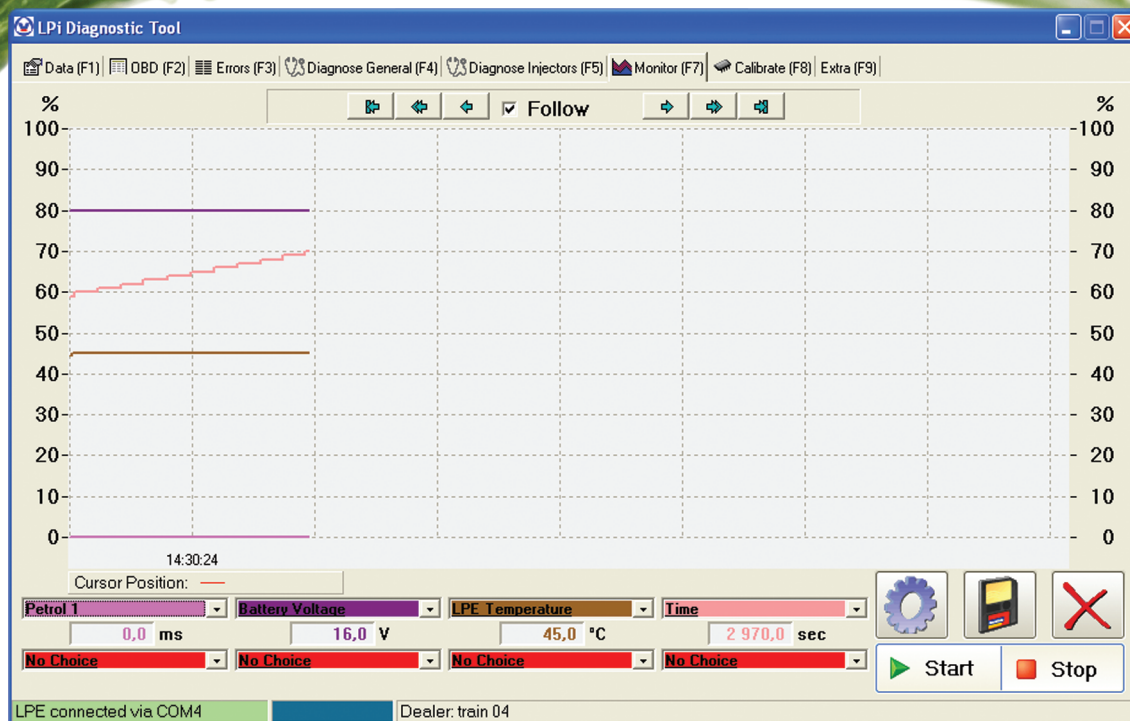


Figure 8: Monitor

Using the monitor function you can diagnose the LPi-system while driving. If you wish, you can store the parameters so you can analyse them after the ride. A maximum of 8 parameters can be logged at the same time. In making the diagnosis it is important to use the proper parameters. Selecting the parameters can be done using the help desk if necessary.

The signals of the chosen parameters can be visualised by activating the starting function. The selected parameters are then logged, as long as the stop button is activated (logging no longer than necessary). The moment the fault occurs, you press the space bar twice. This generates a pause bar over the screen, allowing you later to view exactly when the malfunctioning occurred. in case of communication with the help desk

See appendix monitor variable.



Adjust the configuration of the monitor menu. This allows for an adjustment of the minimum and maximum monitor value. Also, the color of the monitor variable can be chosen and the back ground can be adjust.



Store the logged data. [fastkey: Ctrl-s]
In case of complex malfunctioning you can send this fle to the helpdesk.



By activating this button the logged data can be erased from the monitor screen.



Start / stop the monitor function.

After stopping and restarting there is a pause bar over the screen.

[fastkey: spacebar]

After activating the used parameters the monitor function can be started.

The screen now shows the chosen parameters.

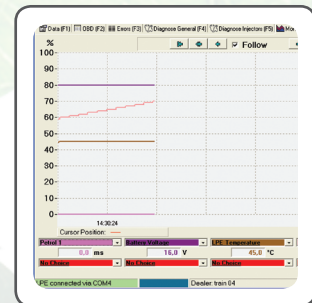
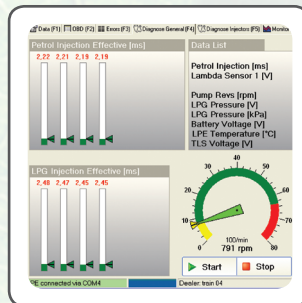


In this task bar the "cursor position" can be chosen. If continuous run is chosen, the screen follows automatically in time. If this option is not active you can go through the screen (left and right) manually using the arrow buttons.



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Calibrate (F8)

Level 1 - Diagnose

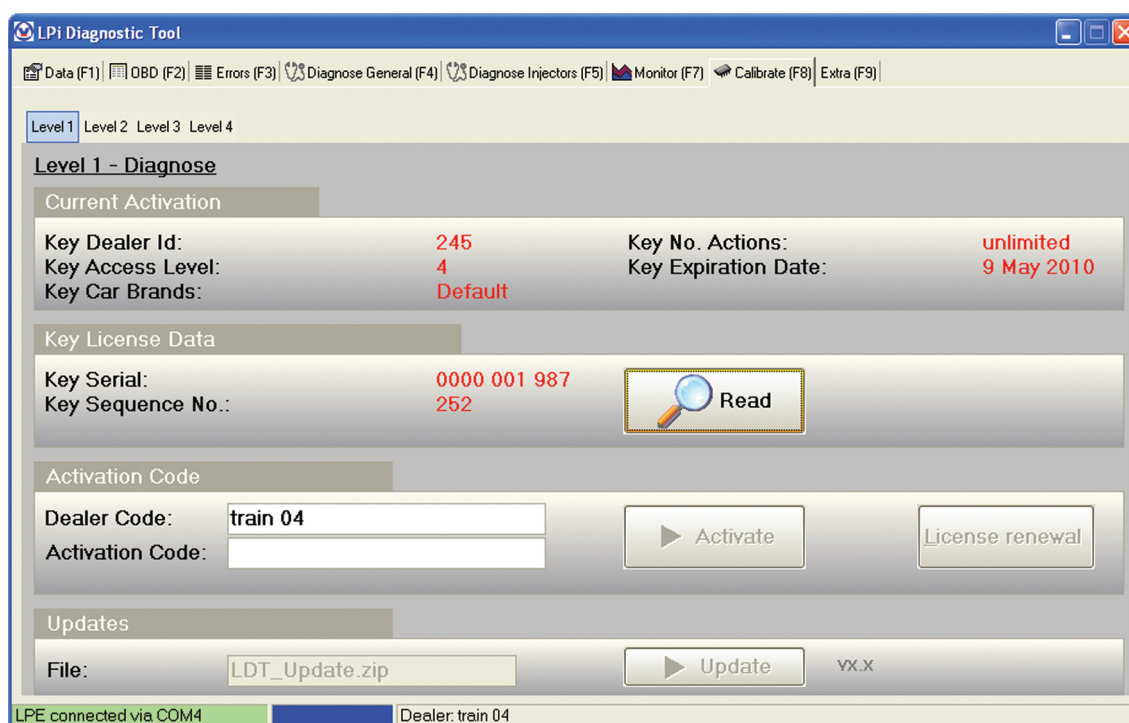


Figure 9 Calibration

In the screen "Calibrate" it is possible to upload master- and calibration software from LDT into the LPE. Depending on the given rights, a dealer gets disposal at multiple "levels" on his LDT. Standard level 1 is shown as illustrated in figure 10. In this level data is shown from the diagnostic key. If more rights are administered for access to more levels, this is activated in the field "activating code".

Current Activation			
Key Dealer Id:	245	Key No. Actions:	unlimited
Key Access Level:	4	Key Expiration Date:	9 May 2010
Key Car Brands:	Default		

Data from the diagnostic key.

- Key Dealer Id: Identification number dealer.
- Key Acces Level: The level the key has acces to.
- Key Car brands: The brands that can be programmed by this key.
- Key No Actions: The number of times the key has rights to programm a softwarefile.
- Key Expiration Date: Date the key expires. After this date, no software can be programmed.

Key License Data	
Key Serial:	0000 001 987
Key Sequence No.:	252

Key License Data: The Key Serial is a unique number which is linked to the key. Based on this data and the Key Dealer ID, Vialle can provide you with a Level admission.



Activation Code

Dealer Code:

Activation Code:

 Activate

License renewal

Levels can be obtained manually as well as automatically.

- Manually: After Vialle has received your Diagnostic Key data, you will be provided with a Dealer code and an Activationcode. You enter this in the screen. After pressing “Activate” the given levels will become visible. A new Diagnostic Key must always be activated manually when it is used for the first time.
- Automatically: After Vialle has received your Diagnostic Key data, your licence data will be stored on our server. As soon as your Key is about to expire, LDT will try to contact our server to obtain a new licence. If this is available, the button “Licence Renewal” will light. Press the button to renew your activation. Your code will automatically be filled out in the screen “ActivationCode”. Press “Activate” to confirm.

Updates

File:

 Update

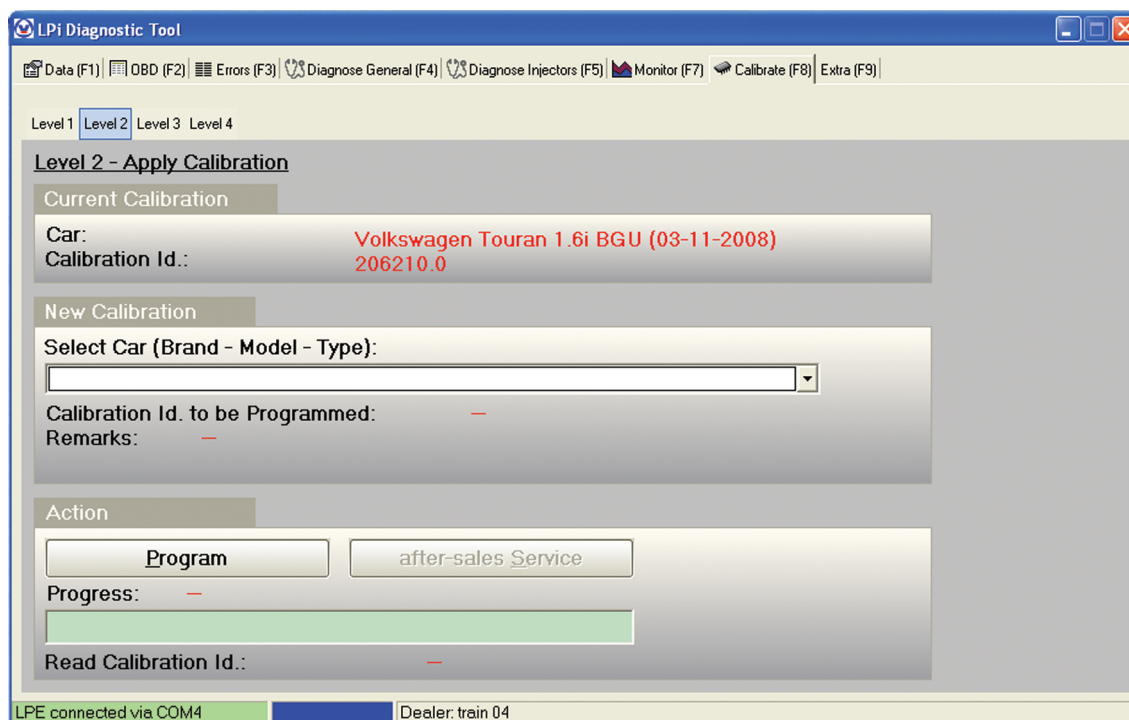
VX.X

Frequently new / renewed LPE master- and calibration software becomes available. You will have to load this data into the LDT software so they become available in the software list. Updating LDT can be done in 2 ways:

- Manually: Updating can be done by installing the update file (LDT_Update.zip). After copying this zip file to the standard folder (c:\Program Files\LPi Diagnostic Tool\), in LDT the button “Update” is now active. After pressing the “Update” button, the files will be installed. The updates are numbered. The current version number will be displayed next to the “Update” button.
- Automatically: Every time LDT starts, the program will try to contact the Vialle server over the internet to check if a more recent version of the LDT_Update.zip file is available. If this is the case, a pop-up will be shown with the question if the new update must be installed. If you confirm the update will be downloaded. After downloading the button “Update” will become active. By pressing the “Update” button, the files will be installed and you will have the latest master- and calibration files available.

In order to use the automatic update function, your computer requires to be connected to the internet before LDT is started!

Level 2 - calibration software



Current Calibration

Car: Volkswagen Touran 1.6i BGU (03-11-2008)
Calibration Id.: 206210.0

The "Current Calibration" heading indicates which brand/type is currently programmed, with the associated calibration number. The number behind the dot indicates the version. The starting situation is usually version 0.

New Calibration

Select Car (Brand - Model - Type):

Calibration Id. to be Programmed: -
Remarks: -

Select the relevant design from the list under the "New Calibration" heading. You can select different design and engine combinations for the brand for which the LPE has already been programmed. Make sure you select the correct one! The calibration number to be programmed will now be displayed. It only make sense to carry out the programming if the version displayed is higher than the current calibration number. In practise, it is possible to program a lower version. You should therefore always ensure that you have saved the most recent LDT_Update.zip file (see spruitstuk.nl).

! If the model you require to be calibrated is crossed off, you can not programm it. This has 2 possible causes:

- You are not authorized to programm the concerning brand. Please notify the Vialle helpdesk.
- The current Master software doesn't fit to the Calibration software. Start with programming the right Master software.



Action

Program

after-sales Service

Progress: —

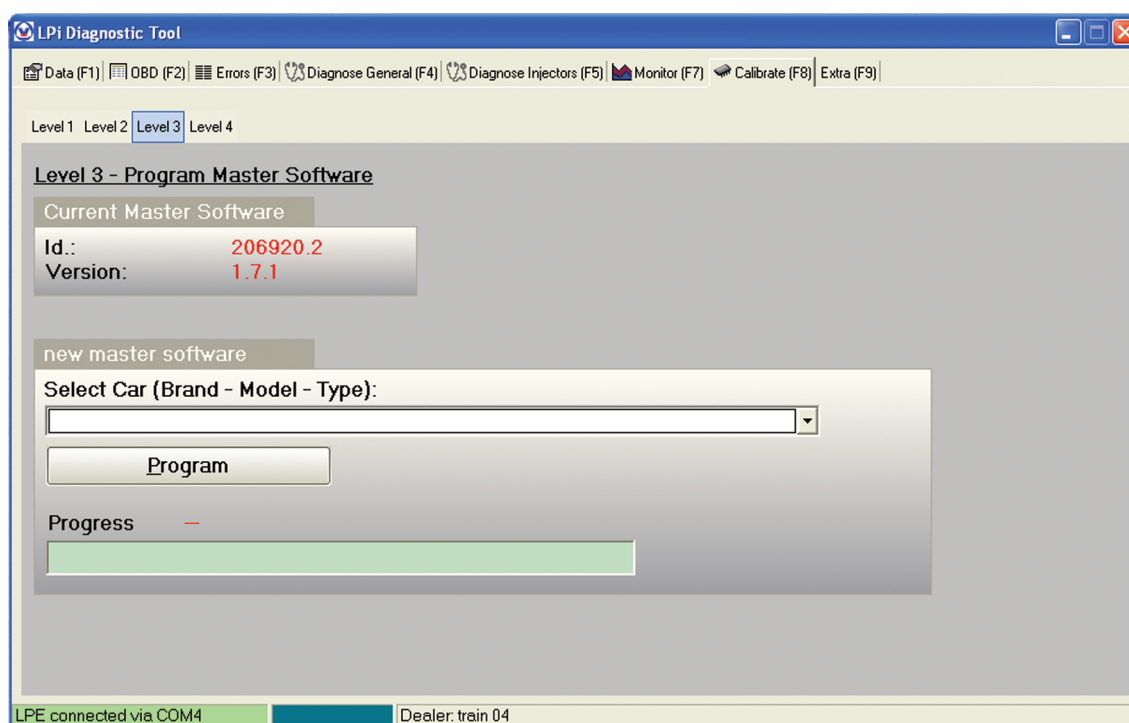
Read Calibration Id.: —

Click “Program” to program the calibration file. This will take half a minute.

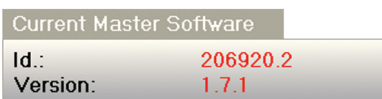
With the button “after sales service” a service calibration file can be programmed which is supplied by Vialle. Such a service file is necessary for example to fix a vehicle specific problem. Service files, which are sent by email, should be stored in the folder “My File” in the LDT program folder (c:\Program Files\LPI Diagnostic Tool\My File). LDT will search this folder every time the program is started. If a service file is available, the button “After sales Service” will be active. The button will only be active when the LPE has a calibration of the same vehicle type. Click to program the service file.

A service calibration file can be identified by the “s” in the filename, for example: “2062901s.ecr”.

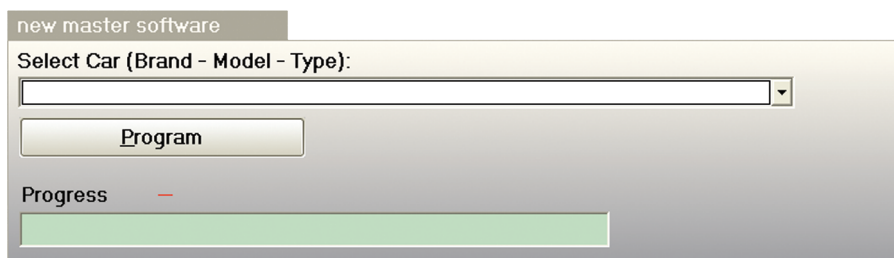
Level 3 - mastersoftware



If the master software has been modified, you can carry out an update from here (LPE-7). It is also possible to program any available master software. Always re-program the calibration software afterwards, as it will be deleted during this process. The calibration software can only be programmed if the correct master software is present, however. If you are not successful, you should therefore program another master software. **The programming of the master software must always be carried out while the engine is running (on petrol)!** This prevents the LPE being switched off due to a possible disappearance of the “Engine running” safety signal.

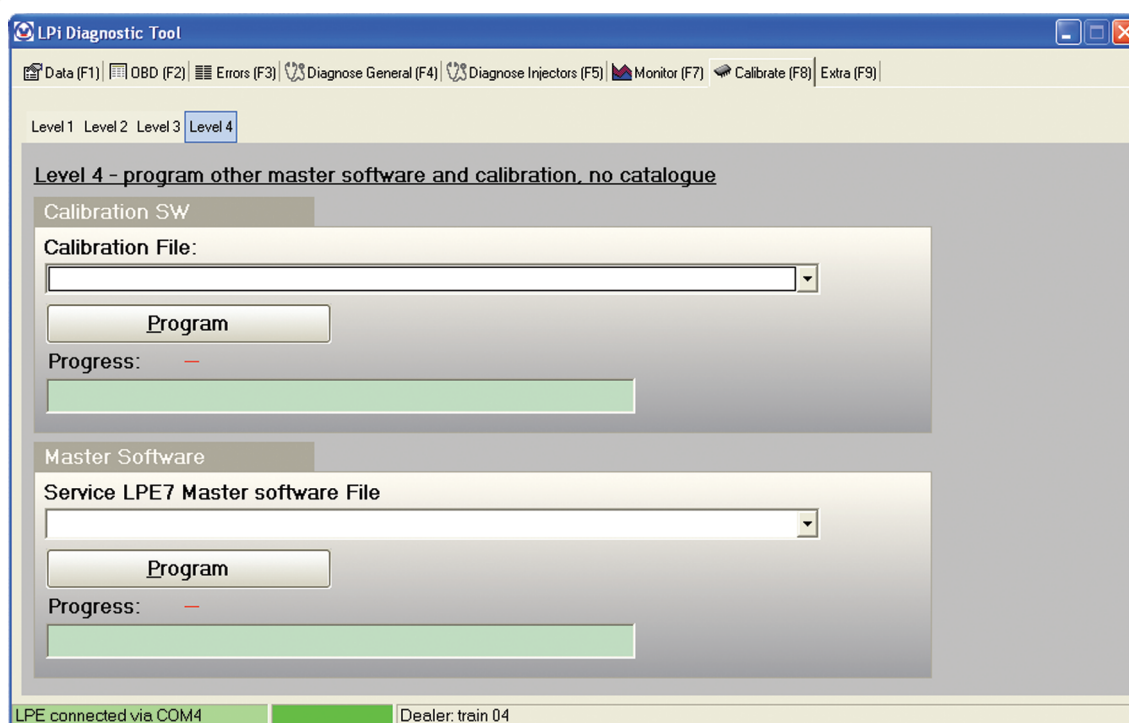


The heading “Current Mastersoftware” indicates the current master software version.

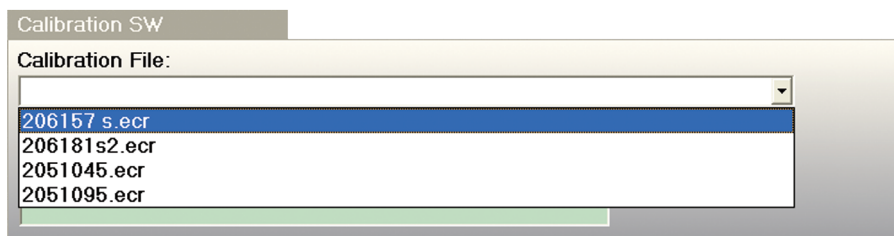


In case an update of the master software is required you can pick the vehicle type from a dropdown-list. Click “Program” to program the chosen master software. It takes a few minutes to complete the programming. Finish by clicking “OK”. The LPE will re-start automatically, after which you must program the desired calibration file. To do this, follow the procedure as described in the chapter “Level 2 - calibration software”.

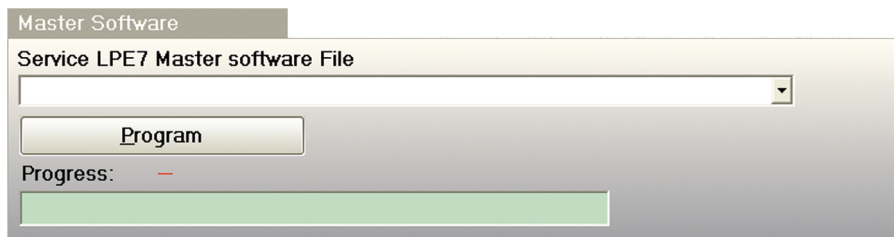
Level 4 - non-catalog



In Level 4 any random calibration or master software can be programmed. Also here, you can pick your file from a list. You will find here all the master and calibration software that is stored in the folder "My File" (c:\Program Files\LPI Diagnostic Tool\My File). Always make sure to store your software in this folder.



In "Calibration SW" all calibration files from the folder "My File" (c:\Program Files\LPI Diagnostic Tool\My File) will be listed. Both service and regular calibration files can be chosen here. Click "Program" to load the file.

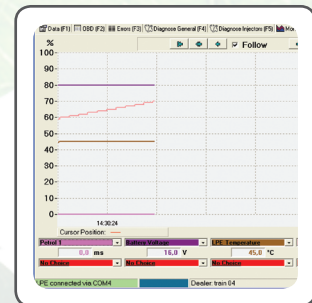
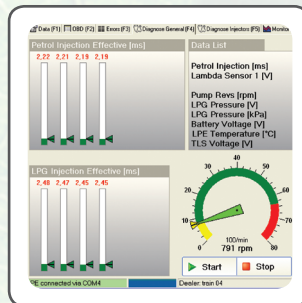


In "Master Software" all master software files from the folder "My File" (c:\Program Files\LPI Diagnostic Tool\My File) will be listed. Both vehicle specific service software and regular master software can be chosen here. Click "Program" to load the file. Master software files can be identified from the file extension ".s37". After programming the master software you ALWAYS have to program a calibration of the vehicle.



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Extra (F9)

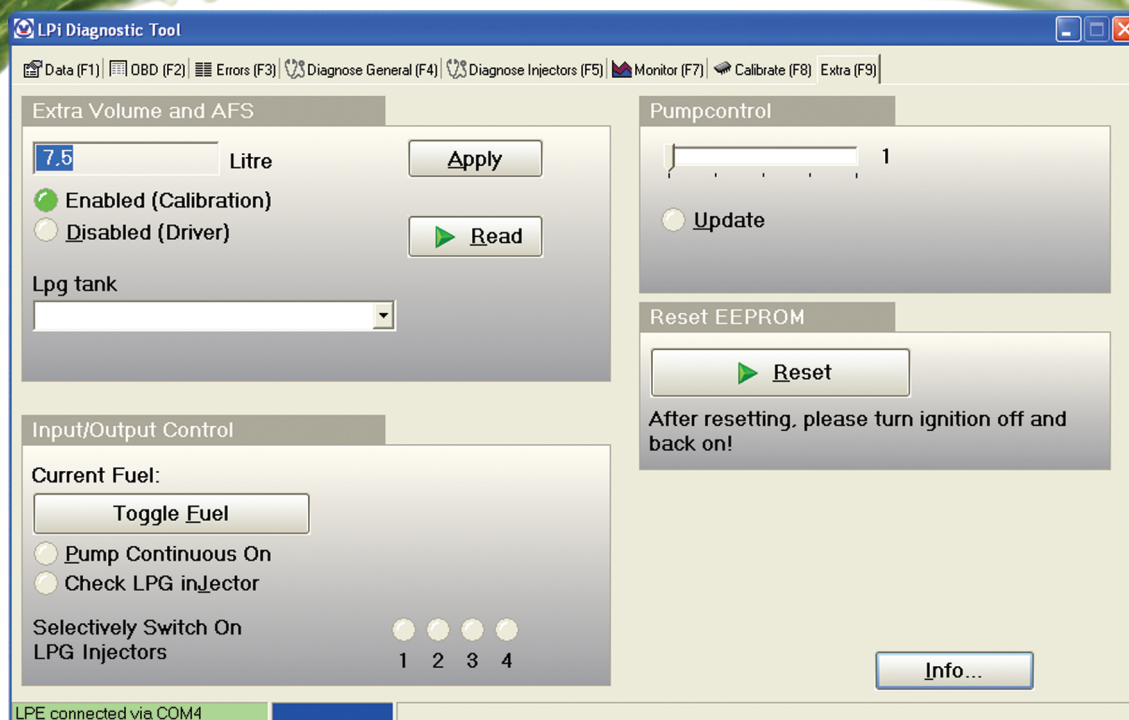


Figure 11: extra

Extra Volume and AFS

Here you can allocate the extra liters for AFS by activating the button [allocate]. By activating the button [fastkey: Alt-T] the extra liters are activated.

Enabled (Calibration)

Shows, if the LPE has been calibrated with AFS.

Disabled (Driver)

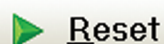
Shows if the driver turned off AFS manually. If this is the case, you can only, by selecting "LDT AFS engage again) engage it again.



Shows the selected extra volume. [fastkey:Alt-L or spacebar]
Using the drop down menu "LPG tank" you can select the mounted tank. If you next press on "apply", the extra volume is automatically selected.

Reset EEPROM

In the screen [Reset EEPROM] the EEPROM can be reset. Resetting the EEPROM has to be carried out both after initial installment of the system and after work has been done to it. If fault codes were present, the fault codes and learnt values will be erased.



Carry out a reset. [fastkey:Alt-R]

Input/Output Control

In the screen [Input/Output Control] the main relay, the pump and injectors can be activated and checked. Also, the switch between gasoline and LPG can be made.

Toggle Fuel

For switching between gasoline and LPG. [fastkey: Alt-F]

Selectively Switch On LPG Injectors



During gasoline operation, on a selective basis, one or more of the gasoline injectors can be cut off. Of the cylinder in question the LPG injector is activated.

Pump Continuous On

Energizing the relay and energize the pump.

Check LPG injector

Check the injector by energizing it.

Pumpcontrol

In the screen [Pump rpm] the pump rpm can be selected. This option is meant for diagnosing the pump unit and pump governing [fastkey: Alt-A].

Update

Activate the selected pump rpm.

Attention: this is the desired rpm. The LPE can overrule this, meaning the requested rpm is not reached! wordt!

Info...

Give information about this LDT version and supply me with contact information of Vialle.

