STEYR MOTORS – EDT

ENGINE DIAGNOSTICS TOOL V1.4

User manual

1 Modifications history

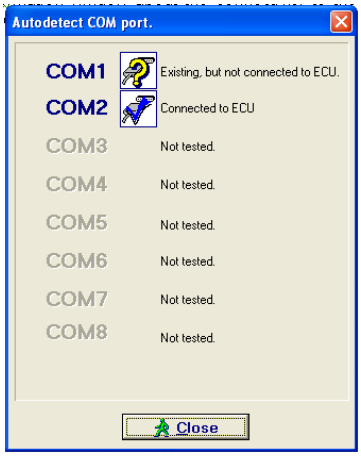
Revision	Information	Date
	Document created	28.09.2006
01	Document revision for EDT V1.4 10 Engine Setup included 11 3D Loadprofile included	05.03.2009

1. General Information

This software is used for diagnosis on “Steyr-Motors” Diesel engines. It supplies data out of the engine control unit (ECU) and allows measurements and malfunction detection.

2. Start up

After start up, information window about the connectivity to the ECU comes up. It shows information about the existing and connected COM-ports.

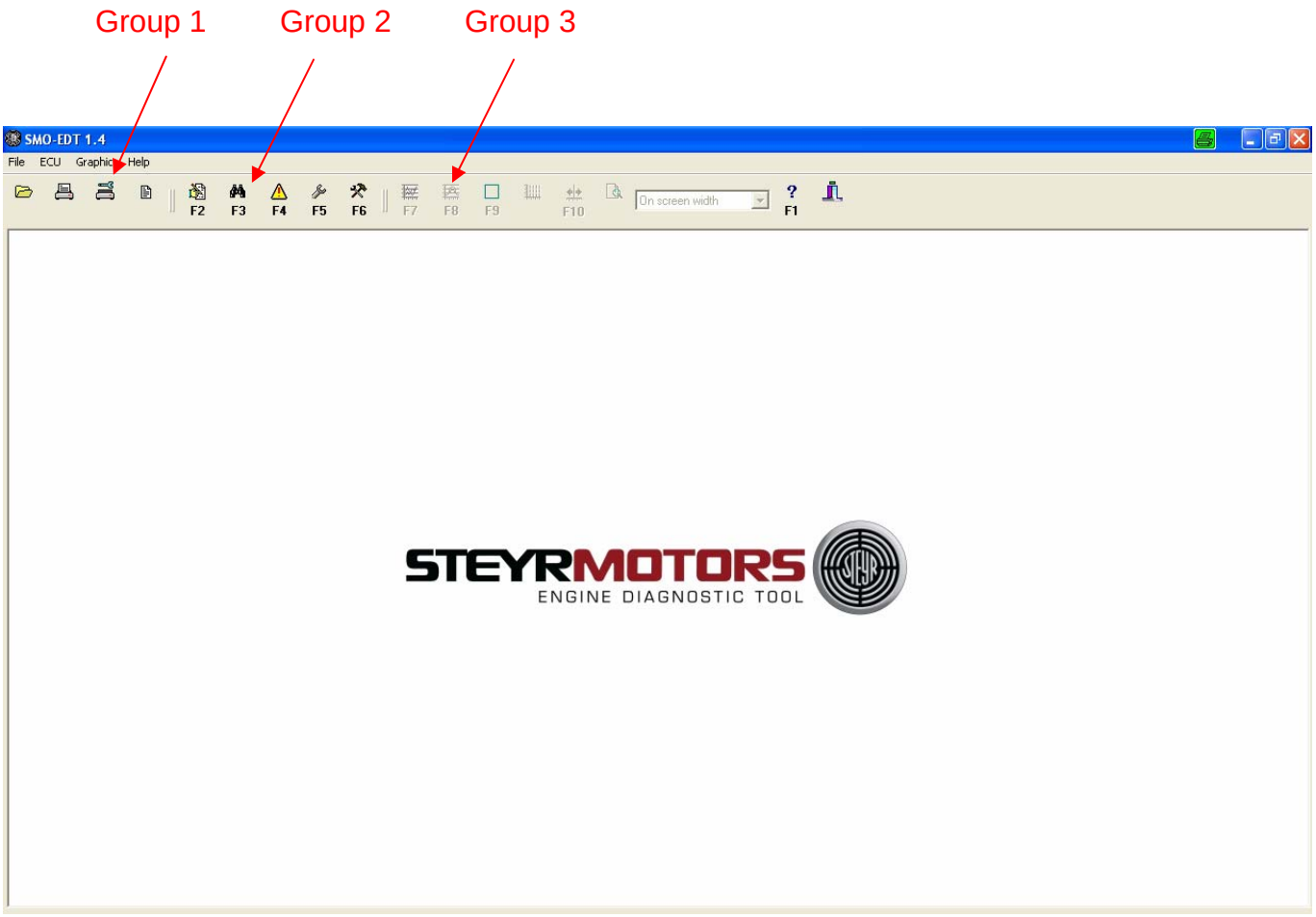


Press close to enter into main window.

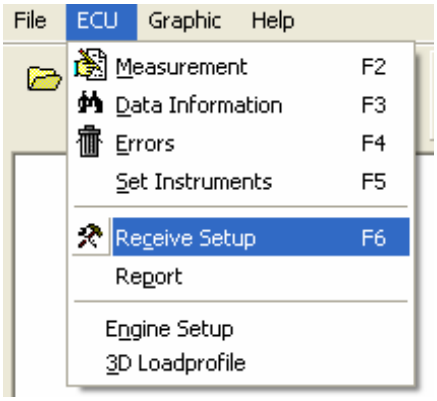
3. Main window

You can initiate functions by pressing buttons in the toolbar, or pressing the hard keys which are described below the buttons, or selecting corresponding item in the main menu.

The window is subdivided into three main function groups. Group 1 are the standard Windows functions like “open file”, “print”, “printer setup” and “page setup”. Group 2 are the online functions for the ECU. Group 3 are all the functions for recorded log-file analysis.

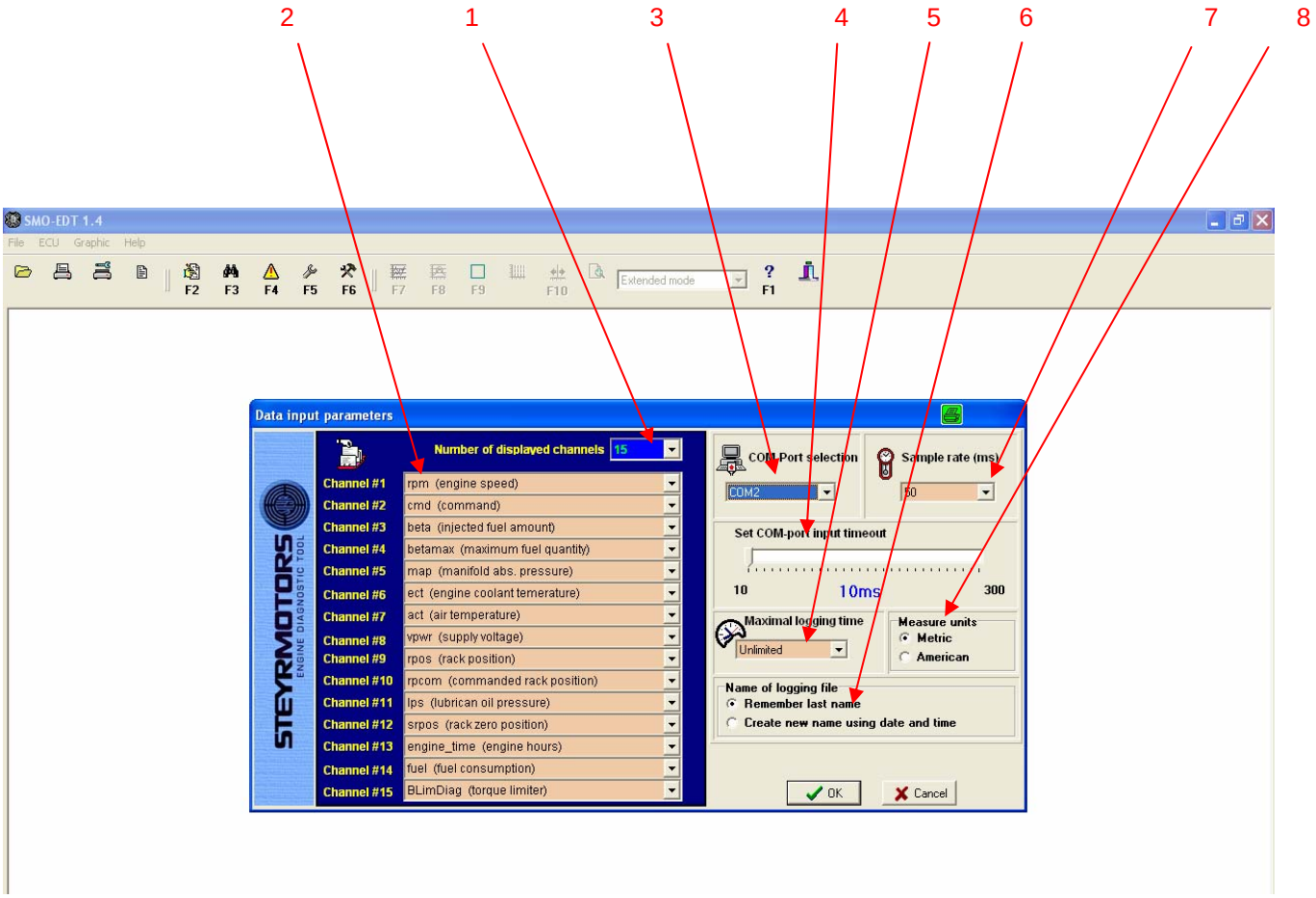


4. Receive setup

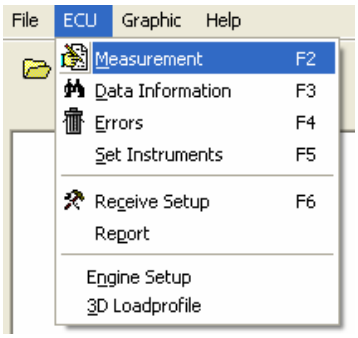


Menu “ECU -> Receive Setup” or the “F6” button on the toolbar calls the window for input parameter selection.
The number of displayed channels (1) and the recorded value of each channel (2) can be changed as well as the type of COM-port selection (3), the COM-port input timeouts puffer for serial communication (4), the maximum of recording time (5), the “save-as” name of the logging file (6), the sample rate (7) and the display of metric or American units (8).

The picture below shows the default settings after installation and is the setting for the normal user, useful for marine and vehicle applications.

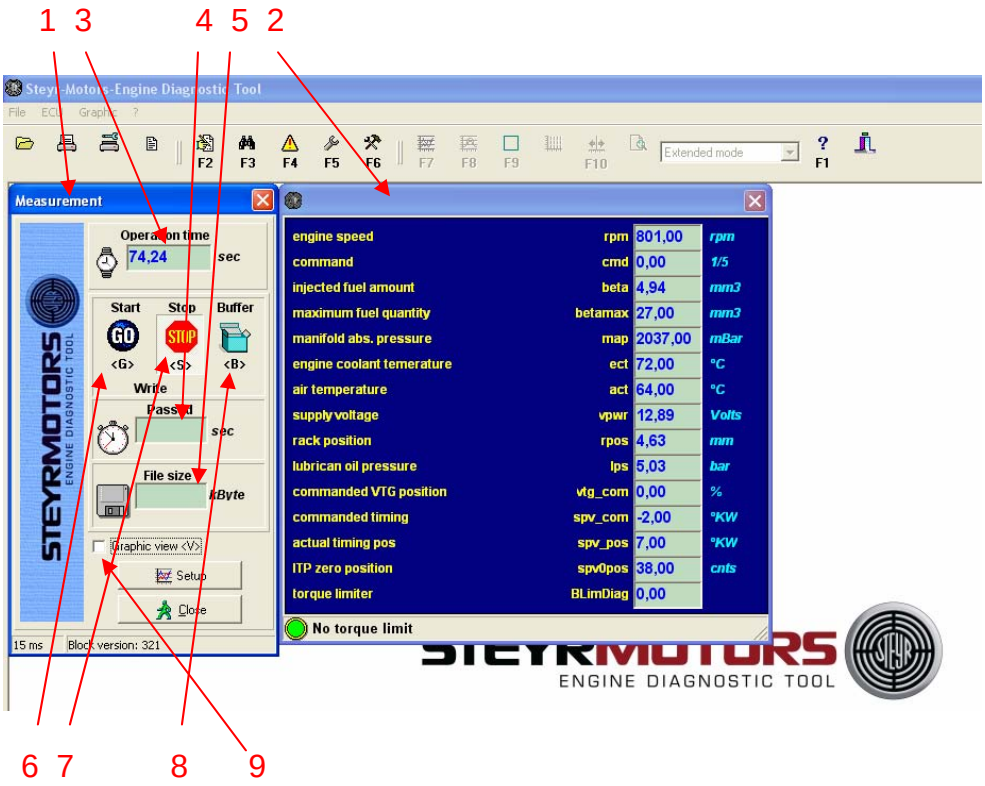


5. Receive data

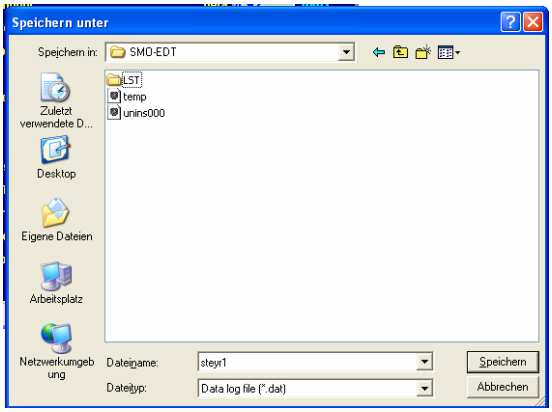


Menu “ECU -> Measurement” or the “F2” button on the toolbar calls the window for online measurements.

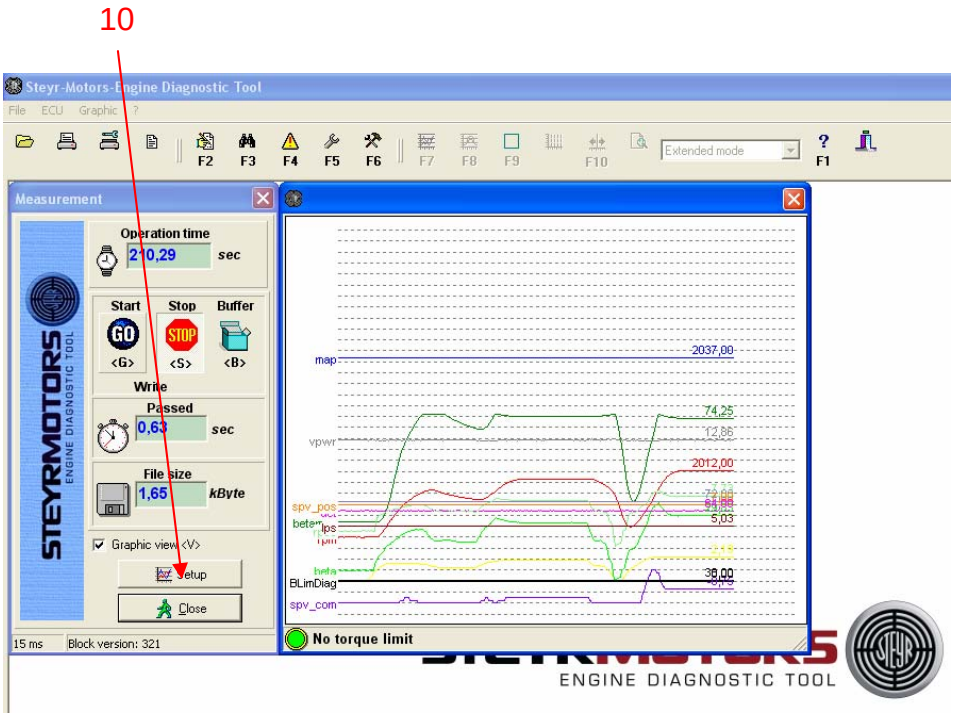
This window is subdivided in the control window (1) and the display window (2). The control window shows the operation time since ignition on (3), the passed time since logging was started (4), the file size of the current log file (5) and has control buttons for the data record functions.



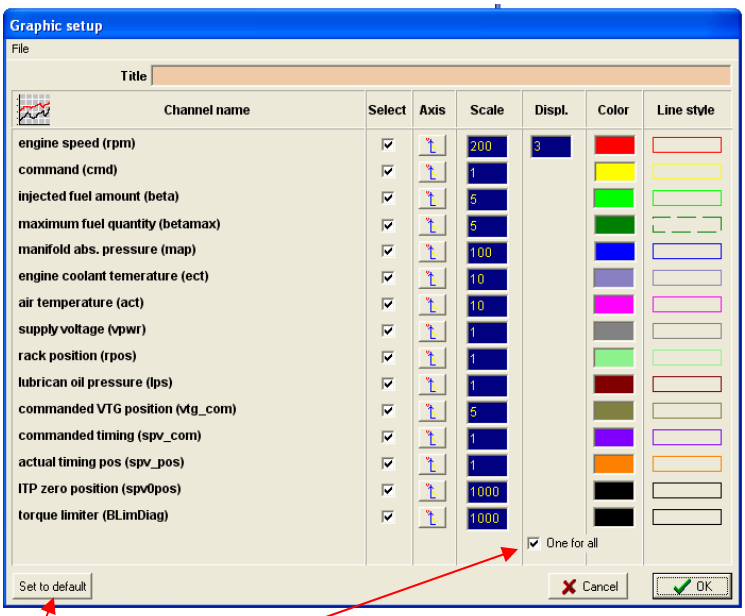
The button “Start” or hard key “G” (6) starts recording of engine data. The button “Stop” or hard key “S” (7) stops logging and calls the “save file as..” window, where a name for the recorded file (should be the engines serial for normal) can be typed in. With the button “Buffer” or hard key “B” (8), you activate a function that automatically stores the last 100 measuring points without the need to start logging first. It also calls the “save file as..” window immediately when pressed.



With the checkbox “Graphic view” or hard key “V” (9) you have the possibility to switch the display window (2) between graphical view and numeric view.

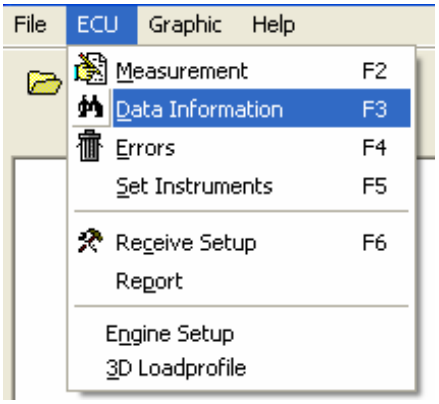


The setup button (10) calls the window for the graphic view setup.

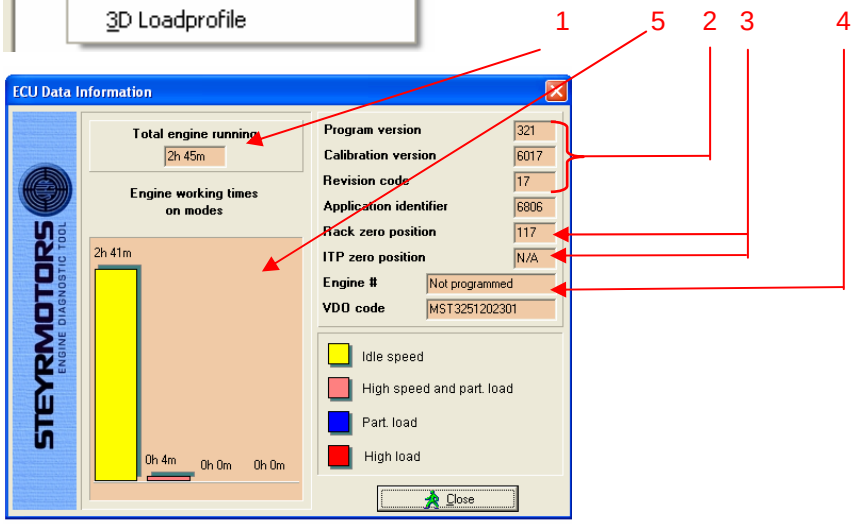


The checkboxes in the column “Select” chooses if the actual value is displayed in graphic mode or not. The column “Scale” selects the amount of every value per division. The column “Axis” enables an axis in graphic view on the beginning of the diagram. It is possible to choose this option for four different values. With the column “Displ.” you can choose the position of the zero-line for each single value and with the checkbox “one for all” (11) one global zero-line for all the values. The column “Color” selects the line color in graphic mode and the column “Line style” the style of the lines.
With the button “Set to default” you have the possibility to reset every setting to default. This also includes the channel selection in menu “Input parameter setup”.

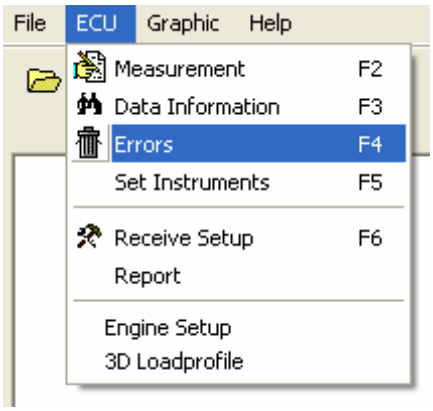
6. ECU information



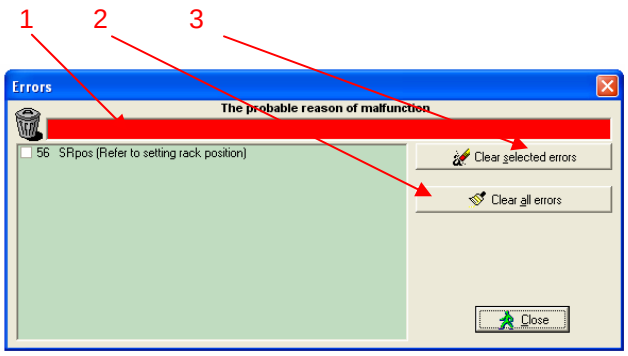
Menu “ECU -> Data Information” or the “F3” button on the toolbar calls the information window of the ECU. Here you can see the total engine runtime (1), the software version (2), the stored zero positions for the rack and the timing device (3) (timing device only for vehicle applications), if programmed the engine serial number (4) and the time the engine worked in the different modes (5).



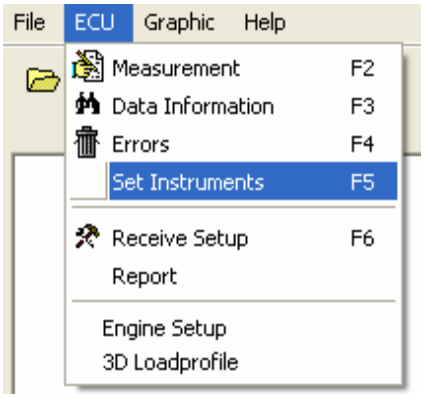
7. ECU errors



Menu “ECU -> Errors” or the “F4” button on the toolbar calls the window where every stored error code is shown. The probable reason of malfunction will appear in the red field (1) once you marked an error.
To clear the errors there are two possibilities. The first is to click on the button “Clear all errors” or push hard key “A” (2) and every error will be cleared. If an error is active, it will appear again after the update time of 1sec.
The second possibility is to mark an errors checkbox and click the button “clear selected errors” or hard key “S” (3), but it will also appear again if the error is active.



8. Set instruments



This window is called by “ECU -> Set Instruments” in the Menu or with hard key “F5”. This function allows to calibrate the instruments and set the idle speed between 600rpm and 1100rpm.
First you need to select the option that you want to set (1).

How to calibrate the RPM instrument:

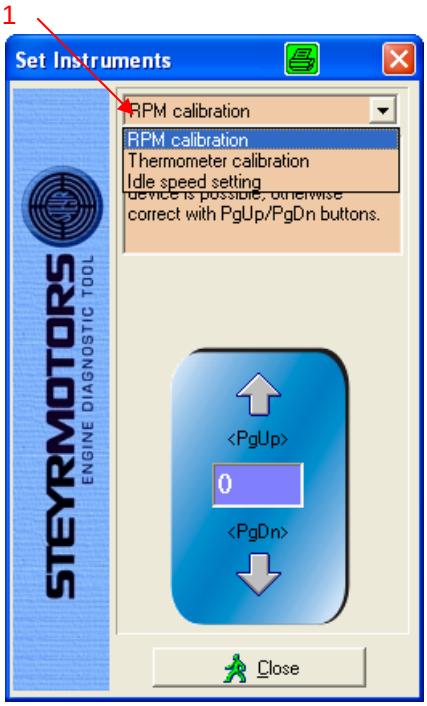
1) choose the option RPM calibration
2) push the buttons “PgUp” or “PgDn” as long until the instrument shows 4000 Rpm

How to calibrate the Thermometer:

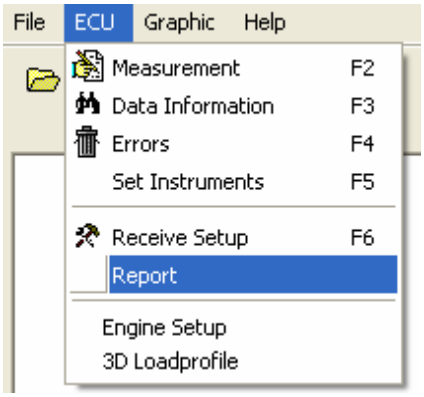
1) choose the option Thermometer calibration
2) push the buttons “PgUp” or “PgDn” as long until the instrument shows 105°C or 221°F

How to set the idle speed:

1) choose the option Idle speed setting
3) push the buttons “PgUp” or “PgDn” as long until the idle speed has reached an accurate value for you



9. Warranty Report



This Report contains all data of the vehicle and its owner. Parts of this report are filled automatically when online with the ECU. If you are not connected to the ECU, you need to open this report from the installation folder of SMO-EDT. With every new installation, every inspection, and every time when servicing an engine and with every claim you need to send this report to Steyr-Motors.

STEYRMOTORS
INNOVATION WITH LIGHTNESS

Installation and pre delivery inspection log: Not programmed

Engine Owner:
Company/Name:

Address/Phone:

Engine Dealer:
Company:

Address/Phone:

Safeguarding instruction carried out yes ☐
Manual, warranty and operation explained yes ☐

Type of Vehicle:
Model No.:
Boat length:
Boat weight:
Diving system:
Propeller:

Dimension of propellers:
Transmission:
Gear reduction:
Engine type:
Engine model:
Engine serial number:

Level of operating fluids (motor oil, gear oil, hydraulic oil, cooling agent) checked yes ☐

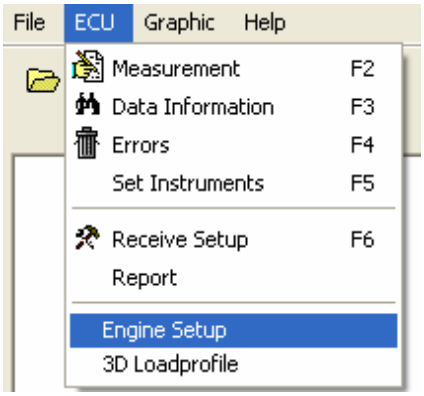
Measuring data with rated power:
Max. boat speed:
Max. engine speed:
Cross-sect. air intake duct eng.comp: cm^2
Temperature engine compartment °C
Boost-pressure at max. rpm.: mbar
Exhaust backpressure: mbar

Motor oil pressure: bar
Engine coolant temperature: °C
Exhaust gas / rawwater temperature: °C
Fuel flow at idle speed
(measured from return line): l/min
Idle speed: rpm
Name of datalog:

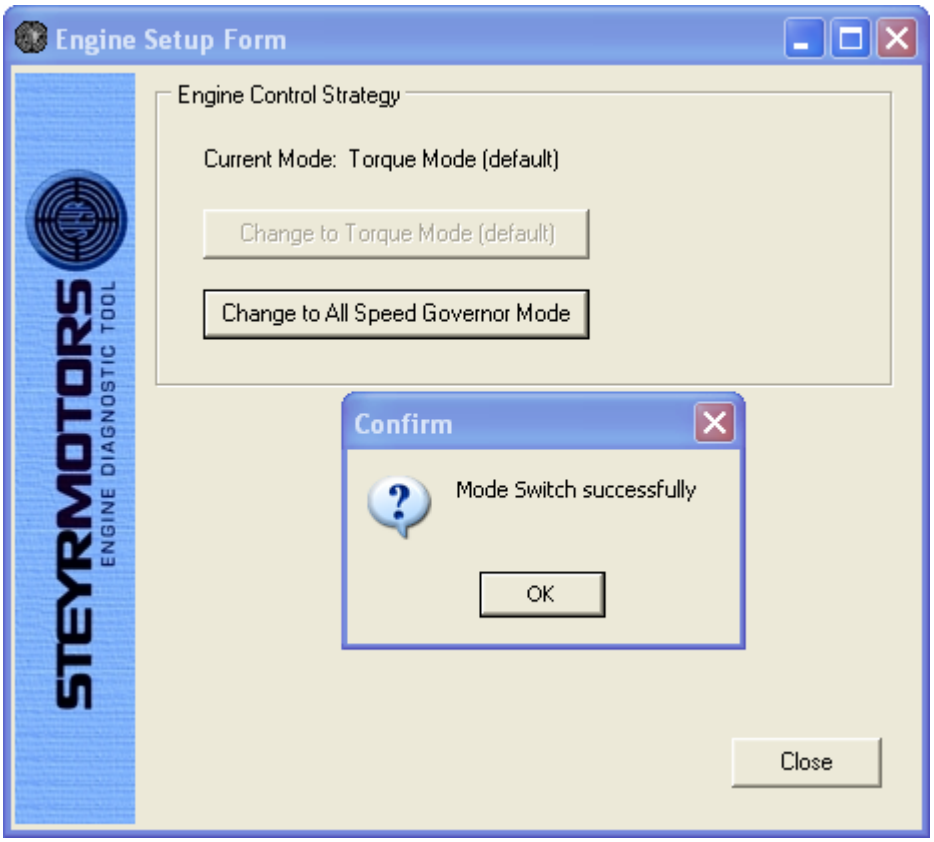
Leakage (oil, fuel, coolant) checked:
Instruments adjusted:
Type of secondary drive (if available):
Type of cabin heating (if available):
2nd control station (if available):
CEL – extinguishes after 0,7 sec: YES
Test made on: ,by (Name in block letters)

Please return immediatly a copy of this report and the warranty registration card to your STEYR-MOTORS GENERAL DISTRIBUTOR , otherwise your guarantee will expire !

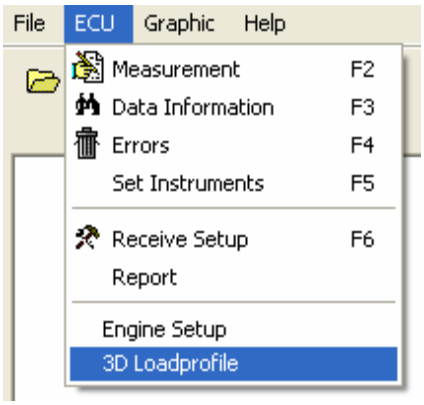
10. Engine Setup:



This window called by „ECU Mode", and allowed to set the ECU in "All speed governor- or Torque Mode" (=default).
To change this Mode, the engine have to operate in ignition (no running engine), window confirm the changing mode.
Engine Setup "Mode change" is only in MARINE version available.

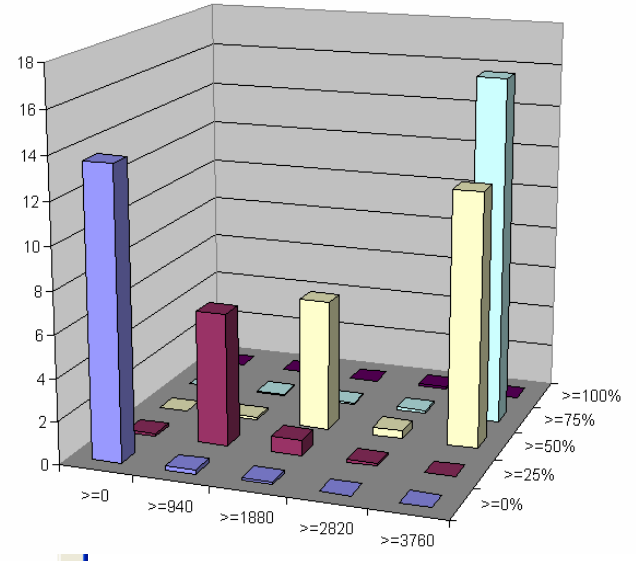


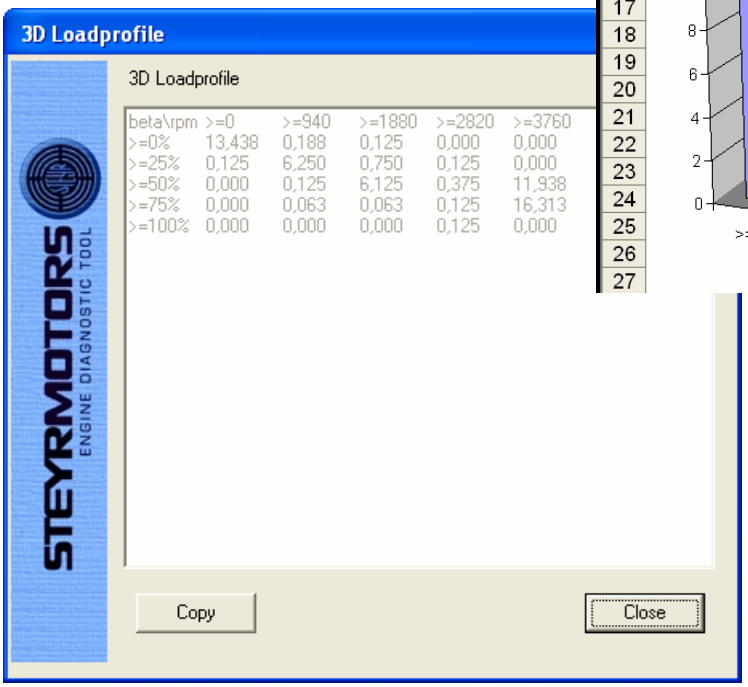
11. 3D- Loadprofile:



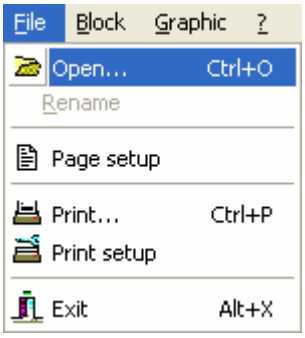
This window shows 3D- Loadprofile about the ECU operation.
The information can be copied and displayed in Excel.
3D Loadprofile is not in all Software version available.

	A	B	C	D	E	F
1	beta\rpm	>=0	>=940	>=1880	>=2820	>=3760
2	>=0%	13,625	0,188	0,125	0	0
3	>=25%	0,125	6,25	0,75	0,125	0
4	>=50%	0	0,125	6,125	0,375	11,938
5	>=75%	0	0,063	0,063	0,125	16,313
6	>=100%	0	0	0	0,125	0





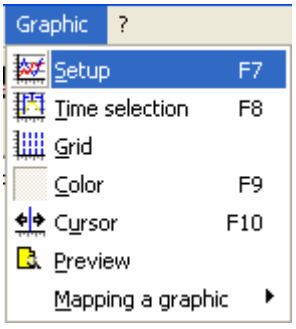
12. Open saved file



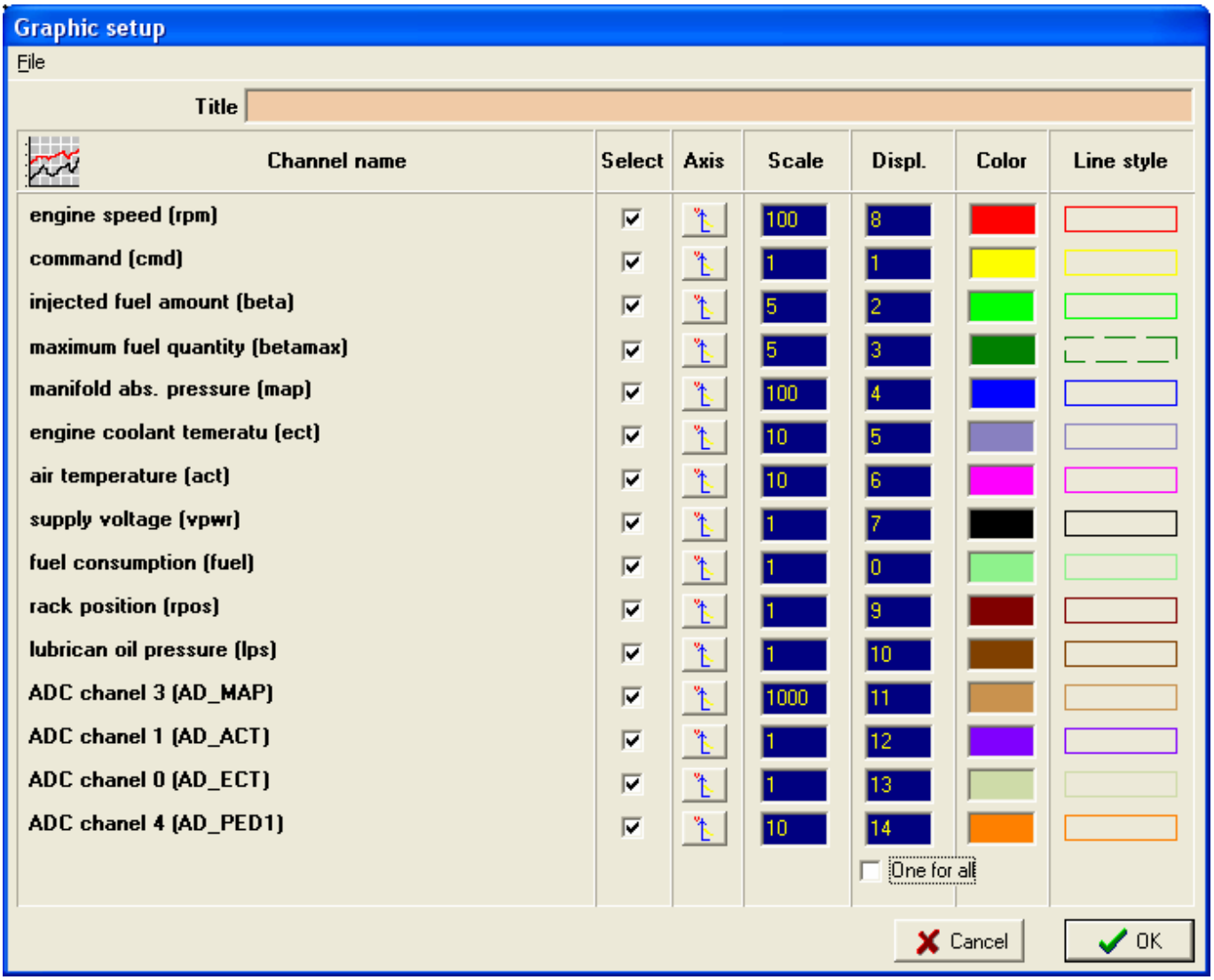
To open a stored logfile, select “Menu -> Open…” or use the button (1) on the toolbar and load the file which you want to evaluate. All the recorded data is now displayed in graphical view with the following additional information:

(2) The date of recording
(3) The file name
(4) The software version
(5) Stored error codes

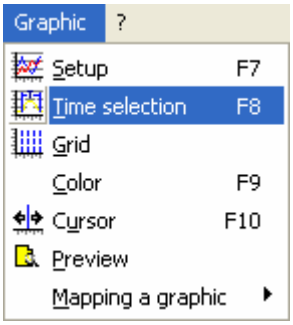
13. Graph setup



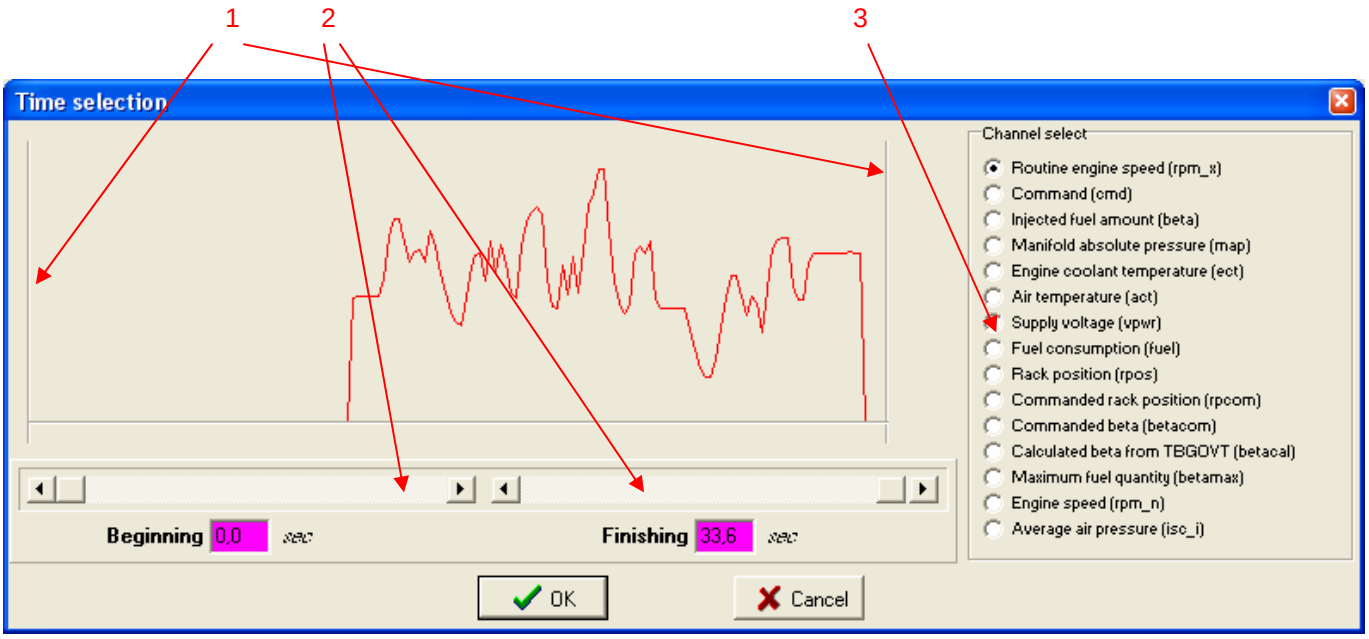
This option is called by pressing the button “F7”or with “Menu -> Setup”. The functionality is described in point **Receive data**.



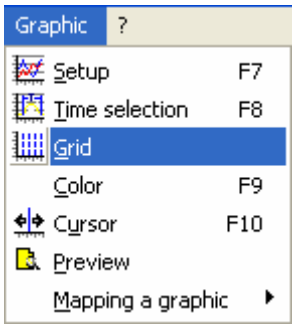
14. Time selection



Using this window enables a feature which allows you to set the beginning and ending time of the logfile by moving the time cursors (1) with the scrollbars (2). This function is used to “zoom” into a specific area of the logfile by choosing the channel of interest (3).

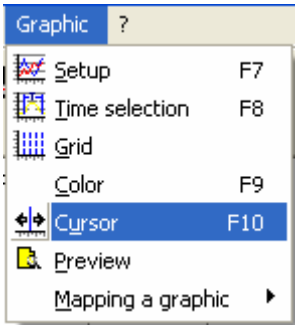


15. On/Off grid/background color

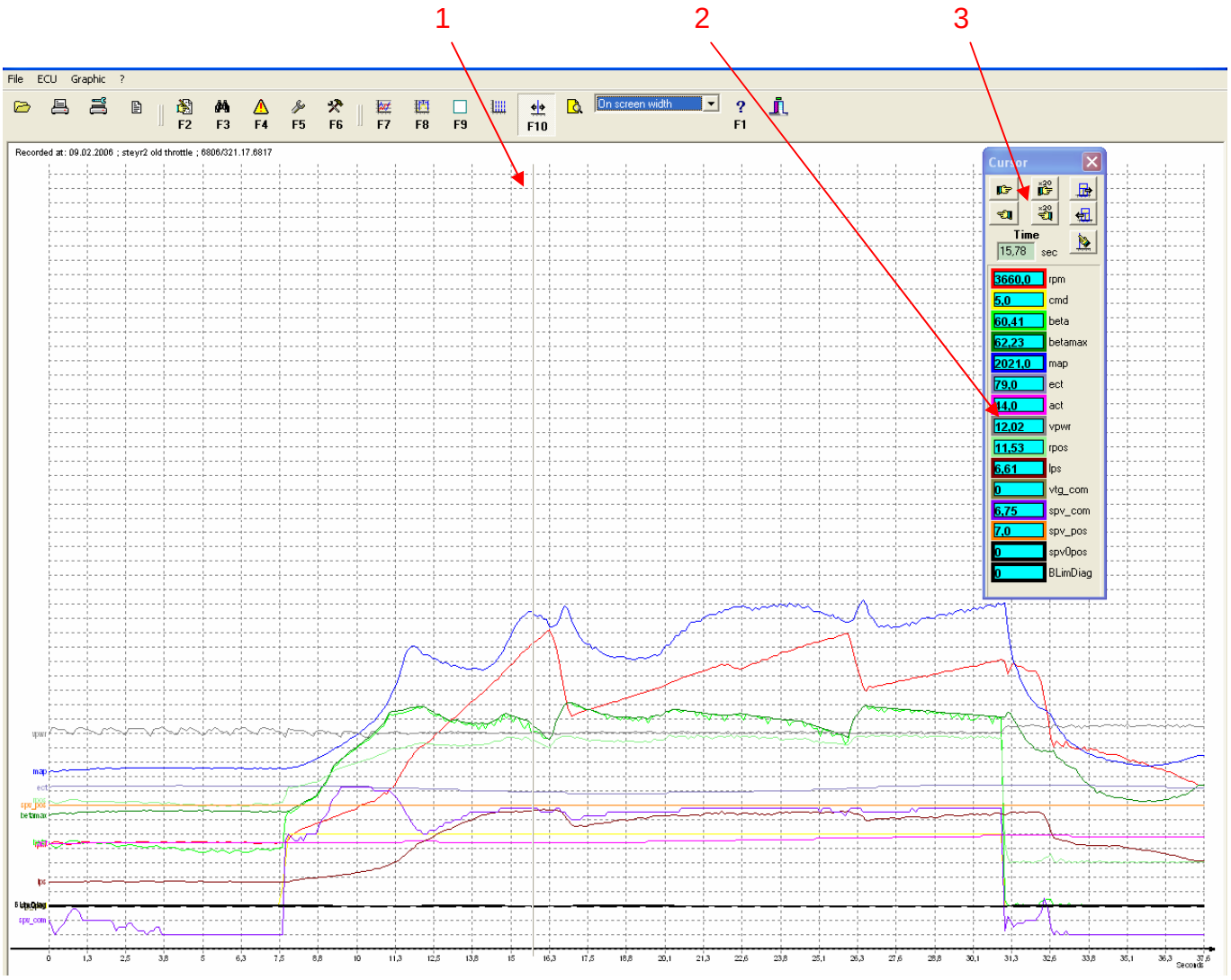


Using this functions enables and disables the grid in the graphic view and switches the background color from black to white.
The black background is used for viewing the file on the screen while the white background is needed on the printout.

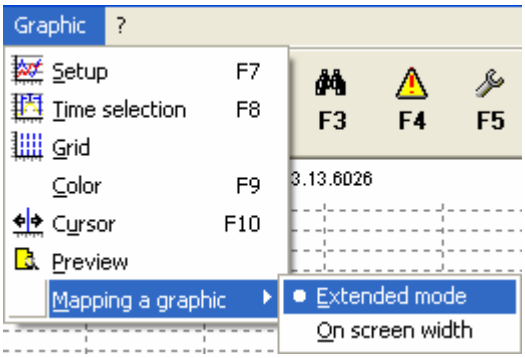
16. Graph cursor



"Menu -> cursor" or the "F10" button on the tool calls the cursor control and measuring window. The value of every channel in the intersection of the cursor (1) is displayed in the line colored boxes (2).
To move the cursor, you can click on the buttons (3), move it by drag&drop or simply use the arrow key on the keyboard.

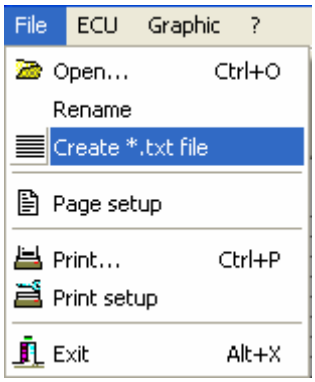


17. Mapping a graph



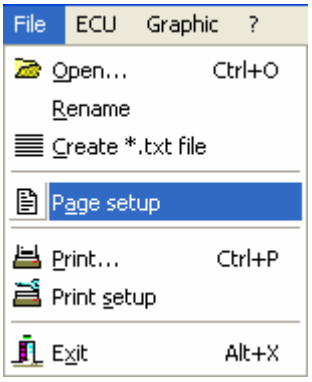
This parameter locks the whole logging time on the screen

18. Create txt-file



With the function „Create *.txt file“ you can create a text document from the actual opend logfile.
It will be automatically stored in the same folder as the opend file and can simply be opend with Microsoft Excel. All the recorded data will be sorted into a table

19. Page setup



Using this window makes it possible to place margins for printing.