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application version: 00.180718

PROGRAMMING MANUAL
ZeelProg PDCI-R24T

<u>Supported control units:</u> **PDCI-R24T**

ZeelProg is PC application for programming ZEELTRONIC engine *control units*.
For programming special PC-USB programmer is needed.

➲ **ZeelProg** automatically detects PC-USB programmer connection and enables all functions (without PC-USB programmer, **ZeelProg** application is locked).
➲ **ZeelProg** automatically detects type of engine *control unit* connected to PC-USB programmer.

CONTENT

ZeelProg SOFTWARE INSTALLATION GUIDE

Software can be downloaded from web site:
http://www.zeeltronic.com/page/zeelprog.php

ZeelProg application can be installed on Windows XP, Vista, 7, 8, 10.
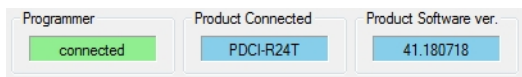"NET Framework 3.5" needs to be installed.


ZeelProg USER INTERFACE

Auto detection

*Zeelprog* automatically detects USB-Programmer and type of *control unit*.

⇨ Programmer connected, product (*control unit*) connected:

Programmer	Product Connected	Product Software ver.
connected	PDCI-R24T	41.180718

⇨ Programmer connected, product (*control unit*) not connected:

Programmer	Product Connected	Product Software ver.
connected	not connected	
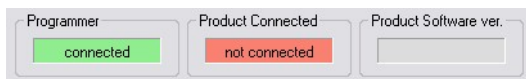
⇨ Programmer connected, product (*control unit*) not supported:

Programmer	Product Connected	Product Software ver.
connected	not supported	20.290110
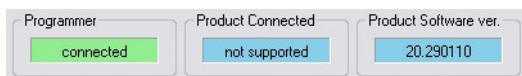
⇨ Programmer not connected, product (*control unit*) not connected:

Programmer	Product Connected	Product Software ver.
not connected	not connected	
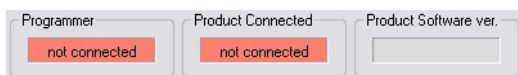
Menu structure
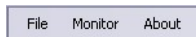
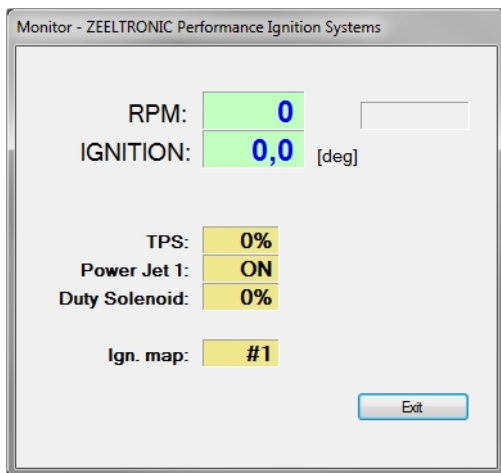⇨ **File menu** is active when PC-USB programmer is connected
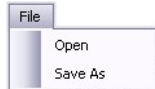
Open → Open an existing *.zee file
Save As → Save all parameters to *.zee file

⇨ **Monitor** is active when *control unit* is connected to PC-USB programmer.
Clicking on the **Monitor** opens Monitor window.

⇨ Clicking on **About** opens About window and show some basic information about *ZeelProg* application.

Ignition Parameters

Ignition Parameters

Ignition Map #1

12 ⬍ Nr. of Points

☐ Ign. Map Switch

1 ⬍ Select Ignition Map

TPS 100%

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	
1500	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	RPM
15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	deg

TPS 66%

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	
1500	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	RPM
15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	deg

TPS 0-33%

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	
1500	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	RPM
15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	deg

34,0 ⬍ Static Angle [°]

0,0 ⬍ Advance [°]

0,0 ⬍ Advance 1 [°]

0,0 ⬍ Advance 2 [°]

30 ⬍ Delay Compensation [us]

Ignition Map #2

12 ⬍ Nr. of Points

TPS 100%

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	
1500	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	RPM
15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	deg

TPS 66%

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	
1500	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	RPM
15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	deg

TPS 0-33%

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	Point 11	Point 12	
1500	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000	RPM
15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	deg

⇨ **Nr. of Points** for each ignition map can be set from 4 to 12.

⇨ **RPM** of each ignition point can be set from 100rpm to 20000rpm in 100rpm steps.

⇨ **deg**...advance of each ignition point can be set from 0deg to 85deg in 0,1deg steps

⇨ **Static Angle** is pickup advance position from TDC (Top Dead Centre)

⇨ **Advance**...advances, or retards whole ignition map from -10deg to 10deg in 0,1deg steps. Positive value advances and negative value retards.

⇨ **Advance 1**...advances, or retards ignition output 1 for -10deg to 10deg in 0,1deg steps. Positive value advances and negative value retards.

⇨ **Advance 2**...advances, or retards ignition output 2 for -10deg to 10deg in 0,1deg steps. Positive value advances and negative value retards.

⇨ **Delay Compensation**...ensure correct ignition angle through whole revs. Default value is 30us.

⇨ **Ignition Map Switch**...enables, or disables ignition map switch. Ignition map can be selected with switch, when function is enabled.

⇨ **Select Ignition Map**...selection is active only when **Ignition Map Switch** is not enabled.

Misc Parameters

⇨ **Pulses per Rev**...set to 1 for single cylinder and set to 2 for wasted spark twin cylinder.

⇨ **Rev limit**...limits maximum revolutions. Set to maximum 20000rpm in 100rpm steps.

⇨ **TCT mode**... Throttle Close spark Termination mode, reduces number of sparks above 8000rpm (spark is active every third revolution), when throttle is closed. TCT mode ensure better engine cooling.

⇨ **TPS Enable**... enable, or disable TPS (Throttle Position Sensor).

⇨ **TPS closed [0%]**... for correct TPS operation, TPS close position must be calibrated!

⇨ **TPS opened [100%]**... for correct TPS operation, TPS open position must be calibrated!

⇨ **Stop Switch Mode: Low Level Stop**... engine stops with low level signal (stop switch connected to the ground)

⇨ **Stop Switch Mode: High Level Stop**... engine stops with high level signal (stop switch is opened)

⇨ **Invert Output Polarity**... when checked, operation of power jets is inverted.

⇨ **Power Jet 1 'ON' rpm**... revs for activating Power Jet 1

⇨ **Power Jet 1 'OFF' rpm**... revs for deactivating Power Jet 1

⇨ **Power Jet 1 'ON' TPS**... throttle position for activating Power Jet 1

⇨ **Power Jet 1 'OFF' TPS**... throttle position for deactivating Power Jet 1

Power Jet 1 example:
Power jet 1 ON (RPM) = 8000rpm
Power jet 1 OFF (RPM) = 10000rpm
Power jet 1 ON (TPS) = 70%TPS
power jet 1 OFF (TPS) = 90%TPS

Power jet is switched on when revs are between 8000-10000rpm and throttle position is between 70-90%, otherwise power jet is switched off.

Solenoid parameters

⇨ **Output Type**... Solenoid output function can be configured as Power Jet 2, or Duty Solenoid. Duty solenoid is used for adjusting A/F ratio on some carburettors.
⇨ **Invert Output Polarity**... when checked, operation of power jets is inverted.
⇨ **Power Jet 2 'ON' rpm**... revs for activating Power Jet 2
⇨ **Power Jet 2 'OFF' rpm**... revs for deactivating Power Jet 2
⇨ **Power Jet 2 'ON' TPS**... throttle position for activating Power Jet 2
⇨ **Power Jet 2 'OFF' TPS**... throttle position for deactivating Power Jet 2
⇨ **RPM** of each Duty Solenoid point can be set from 100rpm to 20000rpm in 100rpm steps.
⇨ **%** of each Duty Solenoid point can be set from 0% to 100%.

Power Jet 2 example:
Power jet 2 ON (RPM) = 8000rpm
Power jet 2 OFF (RPM) = 10000rpm
Power jet 2 ON (TPS) = 70%TPS
power jet 2 OFF (TPS) = 90%TPS

Power jet is switched on when revs are between 8000-10000rpm and throttle position is between 70-90%, otherwise power jet is switched off.

PROGRAMMING AND SETTING NEW PARAMETERS

➲ While programming or reading, *control unit* does not need to be connected to power supply, because it is supplied through PC-USB programmer.

Changing control unit parameters

① Read parameters from connected *control unit*, by pressing **Read** button.

Progress bar indicate read and verify process.

Successful reading is indicated as:

Error while reading is indicated as:

If error occurs, then repeat reading.

② Change parameters

③ Program parameters to connected *control unit*, by pressing **Program** button.

Progress bar indicate program and verify process.

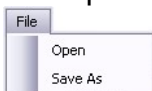Successful programming is indicated as:

Error while programming is indicated as:

If error occurs, then repeat programming.

Make new *.zee file without connecting control unit

① Connect PC-USB programmer to PC.

② Set parameters

③ Save parameters by clicking **Save As** from **File menu**.
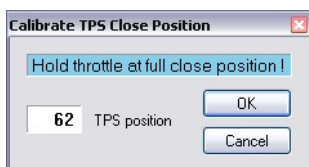
TPS Close Position [0%]

For correct operation of TPS function, TPS close position must be calibrated!

TPS close position can be set manually by entering number, or calibrated by clicking on **Calibrate** button.
Using **Calibrate** function is more recommended.

Clicking on **Calibrate** button opens **Calibrate TPS Close Position** window.

⇨ to finish calibration: hold throttle at full close position and press **OK** button
⇨ to cancel calibration: press **Cancel** button
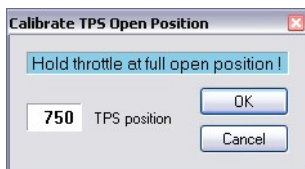
TPS Open Position [100%]

For correct operation of TPS function, TPS open position must be calibrated!

TPS open position can be set manually by entering number, or calibrated by clicking on **Calibrate** button.
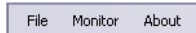Using **Calibrate** function is more recommended.

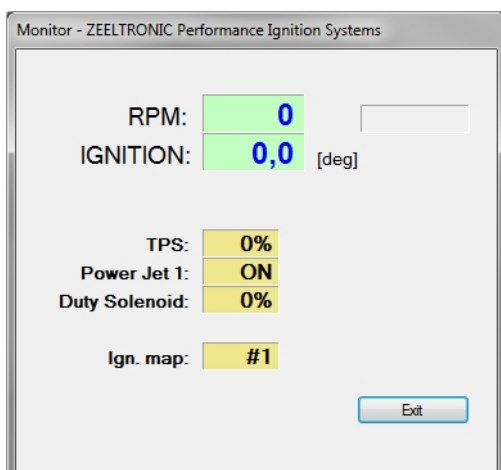Clicking on **Calibrate** button opens **Calibrate TPS Open Position** window.

⇨ to finish calibration: hold throttle at full open position and press **OK** button
⇨ to cancel calibration: press **Cancel** button

MONITOR FUNCTION

⇨ **Monitor** function is active when *control unit* is connected to PC-USB programmer.

Clicking on **Monitor** opens Monitor window.

⇨ Monitor show engine revolution, ignition advance angle, TPS position, selected ignition map, rev limit operation, power jet 1 operation, duty solenoid operation

NOTES