SPARKER DCCDIP1 race v106

SPARKER DCCDIP1 race is an ignition unit suitable for 1 and some 2 cylinder motorcycles. The ignition principle is capacitive. The unit is programmable through PC. The unit is fully adjustable regarding the ignition timing. It contains two switcheable ignition advance curves / maps dependent on RPM and position of throttle or underpressure in the intake manifold. The ignition also contains output for tachometer, three multifunctional outputs, four multifunctional inputs, outputs and an input for the servomotor exhaust throttle and a configurable input for a correction potentiometer. The unit is also equipped with some racing features - mainly Quickshift, Gear shift light and Start limiter. During programming, the unit is connected to a computer via a serial port. DCCDIP1 RACE.EXE configuration software ("software") is included. Connection is provided via a waterproof connector JAE MX23A 34-NF1.

HARDWARE

Supply voltage +12 V input
The unit is possible power supply with two ways:
1) DC power supply (battery).
Nominal supply voltage should be 14 V. It must be within the range from 7 to 20 V. Within this range, the ignition unit is able to control all processes. The ignition unit will be switched off if voltage exceeds 20 V (overvoltage protection). With low voltage (under 10 V) spark energy can decrease at high engine speed. Supply voltage is connected with the positive pole to +12V (pin 5) and with the negative pole to GND (pin 10).
Pins 4, 10, 26 and 30 are interconnected inside the unit. They can all be used either to connect the power (power supply) ground or to connect the ground for sensors. Ground for sensors should be connected from unit and it should not be interconnected with power ground or with engine or chassis mass.
2) AC power supply (low voltage AC generator).
Main winding of AC generator should be connected to MAIN AC SUPPLY (pins 14 and 15). If AC generator contains also auxiliary winding - it should be connected to AUXILIARY AC SUPPLY (pin 17) and ground. Current capacity of each winding should not exceed 1.5 A.
During AC supply power is measured supply voltage in on-line monitor approx. 18 V. This value is not battery voltage at bike. We recommended to consult AC supply voltage with us.

Input for the engine load sensor
The input for engine load sensor can be realized by the throttle position sensor (TPS) or by intake air pressure sensor (IAPS). An input is ready for standard TPS or IAPS sensors used on motorbikes. It can accept voltages from 0 to 5 V. Setting up the voltage levels of the TPS for 0% and 100% or IAPS for 0-999 kPa is included in software.
Sensor is supplied with voltage +5V (pin 21 or 28) and SENSE GND (pin 4 or 30). Sensor output is connected to TPS/IAPS (pin 29).

Crankshaft position sensor (CKPS, pickup) input
The ignition unit has only one pickup input and it can be used with almost all sensing systems. Selected sensing systems can be set up directly from a drop-down list in the software. Other sensing systems can be set up using a special procedure in the software.
Input is standardly prepared for standard pick-up sensor (reluctant type, coil-magnet) used in motorcycles as CKPS. One outlet of the CKPS is connected to the CKPS (pin 27) and the second outlet is connected to SENSE GND (pin 4 or 30).
We can make also modified unit with input suitable for hall sensor (on demand). Hall sensor can by supplied with voltage +5V (pin 21 or 28) or with +12 V.

Multifunction inputs
The unit contains four multifunctional inputs. Inputs should activate with switch with respect to ground. Input can activate various functions preselected with software:

KILL SWITCH	- the unit will stop ignition when input is grounded.
BLOCKING	- the unit will stop ignition when input is ungrounded (security circuit of sidestand).
QUICKSHIFT	- activate Quickshift sequence (gear shift up with full gas).
RETARD	- decrease ignition advance with preselected value in full range.
START LIMTER	- activate Starting limiter (launch control).
2nd ADVANCE CHART	- switch to 2th ignition advance curve/map.
GEAR	- only multifunctional input 3 (standard resistor gear position sensor is expected).
SPEED	- only multifunctional input 4 (standard hall type vehicle speed sensor is expected).

Multifunctional switch 1 should connected with one outlet to M IN 1 (pin 19) and with second outlet to ground.
Multifunctional switch 2 should connected with one outlet to M IN 2 (pin 12) and with second outlet to ground.
Multifunctional switch 3 should connected with one outlet to M IN 3 (pin 1) and with second outlet to ground.
Multifunctional switch 4 should connected with one outlet to M IN 4 (pin 13) and with second outlet to ground.

POTENTIOMETER input
The correction potentiometer wiper will be connected to POT (pin 2). Start of potentiometer path will be connected to SENSE GND (pin 4 or 30) and end of potentiometer path will be connected to +5V (pin 21 or 28) . Use the software to select which value will be corrected by the potentiometer.

Output for ignition coil IC
One outlet of ignition coil IC will be connected to the IC (pin 9) and the second outlet will be connected to ground.
Warning!!! If you connect the second end of the induction coil to +12 V instead of the ground, the ignition unit will be destroyed.

Tachometer output.
The tachometer output is compatible with most dashboard instruments used on motorcycles. The number of pulses per one revolution is set in the software application.
The tachometer is supplied with +12 V wit respect to ground. The tachometer input is connected to the TACHO (pin 3).

Multifunctional outputs
The unit contains three multifunctional outputs (Power Outs). Outputs are type NPN opek collector (it provide ground when is switched on). Outputs can switch resistive or inductive load up to 2 A. Outputs can work with various modes preselected with software:

Fuel pump	- it is switched on for 4 seconds after unit switch on and always when engine is running.
Gear shift light	- two stage gear shift light.
PowerJet Honda	- behavior like PowerJet at Honda RS125.
Special	- switch on and and switch off according curve/map with pulse-width modulation possibility (powerjet).
Special PWM	- continuous control with pulse-width modulation according curve/map (powerjet for example).
Speciál pulse	- continuous control using the pulse length according curve/map (oilmaster for example).

Multifunctional output 1: Load should connected with one outlet to POWER OUT 1 (pin 6) and second outlet to +12 V.
Multifunctional output 2: Load should connected with one outlet to POWER OUT 2 (pin 7) and second outlet to +12 V.
Multifunctional output 3: Load should connected with one outlet to POWER OUT 3 (pin 8) and second outlet to +12 V.

Outputs and input for SERVO.
Outputs and input for servo are compatible with most brush servomotors used on motorcycles as exhaust valve (Yamaha EXUP for example).
The outputs for servo motor are at M+ (pin 32) and M- (pin 33). The sensing potentiometer wiper will be connected to STPS (pin 8). Start of potentiometer path will be connected to SENSE GND (pin 4 or 30) and end of potentiometer path will be connected to +5V (pin 21 or 28).

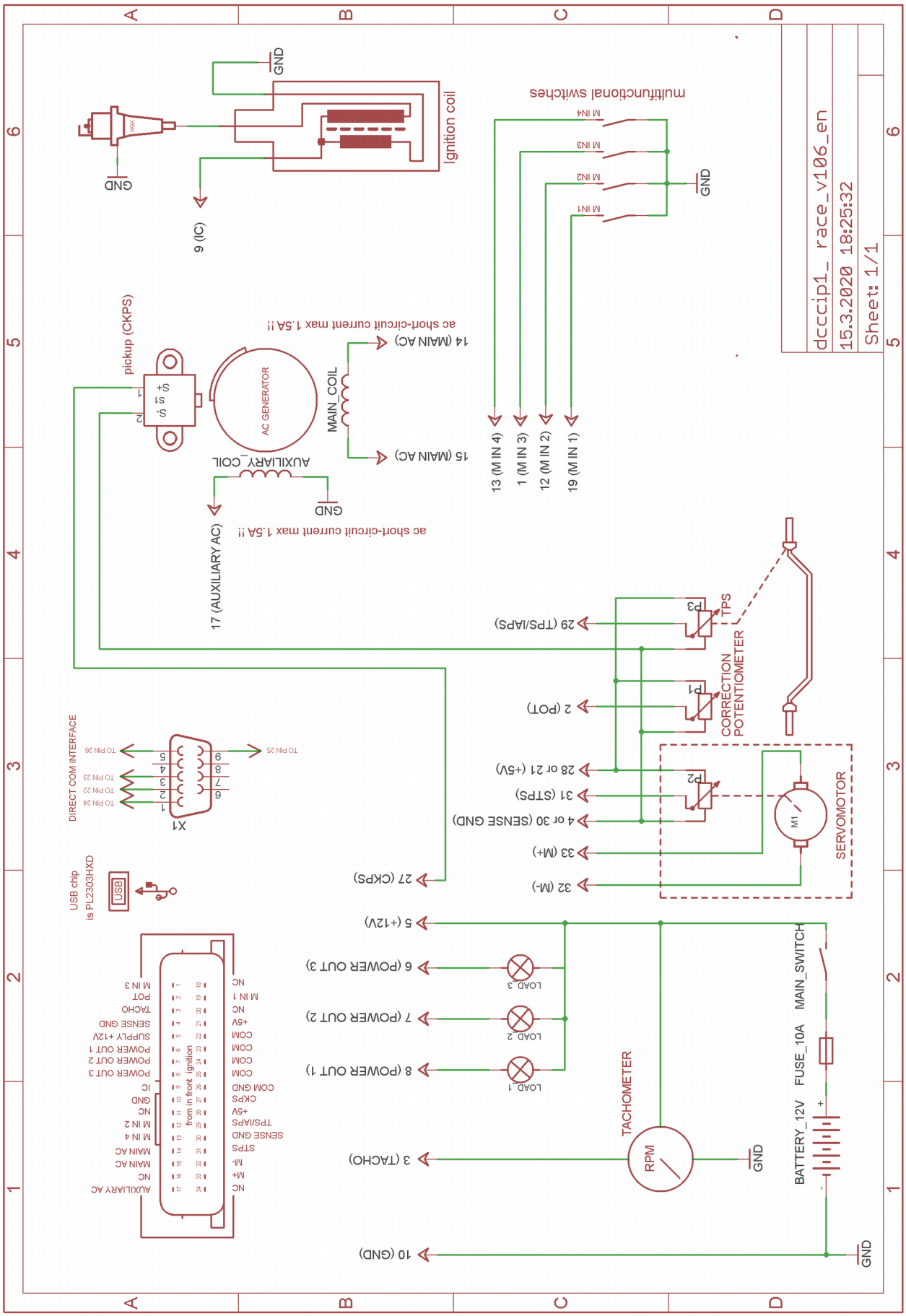
Outputs and inputs for COM connector
Serial connection is realised using 9-pin D-SUB female connector. Pin 1 in D-SUB connector is connected to pin 24 at unit. Pin 2 in D-SUB connector is connected to pin 22 at unit. Pin 3 in D-SUB connector is connected to pin 23 at unit. Pin 5 in D-SUB connector is connected to pin 26 at unit. Pin 9 in D-SUB connector is connected to pin 25 at unit.

Counterpart connector, connector adapter, basic harness, reduced basic harness
Unit counterpart connector include loose piece pins is included.
We produce Connector adapter for many motorcycles. This is short loom with unit counterpart connector at one side and original connectors at other side. It provide "plug and play" connection to original bike loom.
Next way for connection is Basic harness. This is unit conterpart connector with all wires with pins crimped and installed in connector housing.
Also we can make Reduced basic harness. It contains only basic wires needed for ignition work. Spare pins are included.
We use always wires color according next table.

DCCDIP1 race - color, position wires.

color in cable adapter	pin no. in connector	name	description
grey/black	1	M IN 3	multifunctional input 3
white/black	2	POT	correction potentiometer
green/yellow	3	TACHO	tachometer output
blue	4	SENSE GND	ground for sensors
red	5	SUPPLY +12V	supply +12 V
violet	6	POWER OUT 1	multifunctional power out 1
blue/white	7	POWER OUT 2	multifunctional power out 2
pink	8	POWER OUT 3	multifunctional power out 3
orange	9	IC	ignition coil
blue	10	GND	power supply ground
	11	NC	not connected
black	12	M IN 2	multifunction input 2
green/orange	13	M IN 4	multifunction input 4
red/black	14	MAIN AC SUPPLY	main ac supply
red/black	15	MAIN AC SUPPLY	main ac supply
	16	NC	not connected
yellow/black	17	AUXILIARY AC SUPPLY	auxiliary ac supply
	18	NC	not connected
grey/red	19	M IN 1	multifunction input 1
	20	NC	not connected
white/red	21	+ 5V	supply +5V for sensors
black	22	COM	RS232 connector (pin 2 in 9pin connector)
yellow	23	COM	RS232 connector (pin 3 in 9pin connector)
violet	24	COM	RS232 connector (pin 1 in 9pin connector)
orange	25	COM	RS232 connector (pin 9 in 9pin connector)
blue	26	COM GND	ground for RS232 (pin 5 in 9pin connector)
yellow	27	CKPS	pickup
white/red	28	+ 5V	supply +5V for sensors
grey	29	TPS/IAPS	throttle position sensor or inlet air pressure input
blue	30	SENSE GND	ground for sensors
white/blue	31	STPS	servomotor position sensor input
green	32	M+	output for servomotor
green	33	M-	output for servomotor
	34	NC	not connected

DCCDIP2 race - recommended wiring.



DCCDIP1 race software

Pull down menus

File - includes items:

New - default data setting.
New for current tab - default data settings only for the current tab.
Open - opens data file.
Open from exe dir - opens data file from the same directory as the control software.
Open for current tab - opens data file for the current tab only.
Save - saves data file.
Save to exe dir - saves data file to the same directory as the control software.
Nine last opened data files
Print - prints current settings of the current tab.
Exit - exits the program.
Clicking **New** results in automatic default settings of all parameters. These correspond to four-stroke engine without TPS.

Port - includes items to select the communication line.
COM offline - communication off.
COM XX - list of useable serial ports.
COM auto - automatic connection
For PCs without serial port (USB only) it is necessary to use USB/RS232 adapter.

Ignition - includes items **Read** - reads data from the unit.
Verify - |compares data in PC with data in the unit.
Program - sends data to the unit and performs verification.
Reset - resets the unit.

Tools – includes tools to set the advance, UNDO and REDO.

Language - language settings: **English, Czech, German**

Help - includes items **Help** - opens Assembly guide (this file).
About the program - information on the software (version, date).

Icons menus

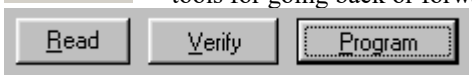
 - sets default values. Warning!!! Clicking this icon results in automatic default settings of all parameters.

 - opens data file.

 - saves data file.

 - prints the current settings.

 - tools for going back or forward step by step when changing the settings.



- see pull down menu Ignition.

Tab sheet Miscellaneous

Limiter - engine speed limiter value settings (limits with all ignitions off).
Soft limiter - engine speed soft limiter value settings (limits with omission every third ignition).
Start limiter - Start limiter value settings (limits with all ignitions off).
Start soft limiter - Start soft limiter value settings (limits with omission every third ignition).
Start limiter delay - Start limiter activation delay value settings. This is useful when Start limiter switch is located at clutch lever. Start limiter is activated with delay, so that are not problems if clutch is used for next driving.
Retard - sets the value for ignition advance retard if the function is active.

Inputs for neutral and side stand - multifunctional inputs 1 and 2 will be used for connection of neutral switch and sidestand switch. Function is similar to function Blocking, but using two inputs. If at least one multifunction input is grounded, the bike is not blocked).
Multifunctional inputs 1, 2, 3, 4
Off - no function.
Kill switch - when input is grounded - the unit will stop ignitions.
Blocking - when input is not grounded - the unit will stop ignitions.
Quickshift - function to interrupt or retard the ignition when gear up shifting. Settings is at tab sheet Race.
Retard - function to decreases the ignition advance by preset value.
Start limiter - function to activate Start limiter.
2nd advance chart - function to change ignition advance from curve/map 1 to curve/map 2.
Gear (input 2) - function for measure voltage from gear position sensor. Voltage is converted to gear position according setting at tab sheet Gear. This selection will be switch on automatically when choice Sensor will be selected in Determinig gear at tab sheet Gear. Voltage for each gear is possible to set at tab sheet Gear.
Speed (input 3) - function for count pulses from speed sensor. Pulses are converted to speed value according setting at tab sheet Gear. This selection will be switch on automatically when choice Ratio Rpm/Speed or Automatic ratio Rpm/Speed will be selected in Determinig gear at tab sheet Gear. Setting of ratio for each gear is possible to set at tab sheet Gear.
Inverse polarity - standard is that input is activated by grounding. Inverse polarity is that input is activated by ungrounding.
Input = - visualisation of input activation.
Sensor - here you can find the selection of engine load sensor.
None - no load sensor is in use.
TP - throttle position sensor is used.
IAP - inlet air pressure sensor in the intake manifold is used.
TPS sensor - here you can set values of the TPS voltage [mV] for 0% and 100% opening of throttle.
IAP sensor - here you can set characteristic of IAPS using two points voltage/pressure.

- by pushing it measures and sets voltage for 0% TPS (unit connected with PC, no gas).

-by pushing it measures and sets voltage for 100% TPS (unit connected with PC, full gas).

After determining the limit values, it is necessary to store these values in the ignition by pushing the "program" button, otherwise they will not be executed.
Switching into 2nd advance chart
Acc. tres. - acceleration treshold. Value of engine acceleration at which the map is switched from Advance map 1 to Advance map 2. If this function is not desirable, it is necessary to set a high acceleration value which cannot be reached (25000).
Acceleration = - visualisation of current engine acceleration.
Potentiometer - this is used to select which value will be corrected by correction potentiometer. Zero position is 2500 mV.
Off - no correction.
Ignition advance - the potentiometer will be to correct ignition advance by +/- the value set in the Range cell.
Starting limiter - the potentiometer will be to correct starting limiters by +/- the value set in the Range cell.
Gear-shift light - the potentiometer will be to correct gear shift light by +/- the value set in the Range cell.
Acceleration treshold - the potentiometer will be to correct acceleration threshold by +/- the value set in the Range cell.

Tab sheet Bike

Motorcycle type - crankshaft position sensing system selection for specific motorbike.
Tachometer output
Number of pulses per revolution - basic tachometer output settings.
Corrections - percentage corrections of tachometer values [%].
Compensation - frequency compensation of the phase error of engine position inputs. The phase error is due to the frequency dependency of trigger level of input and the delay that occurs when processing the input signal. The phase error is mainly dependent on the number of lobes of the pickup system of the motor position.
RPM without ignition - sets the number of starting revolutions without ignition. For a **kick start system** this value represents the number of revolutions when all channels ignite together.
Sensor polarity - sensor polarity selection (Plus/Minus/Auto).
Plus - designed for pickup connection, where - as the pulse lobe is getting near to the sensor, it generates positive voltage, and when the lobe is moving away it generates a negative voltage.
Minus - designed for pickup connection, where - as the pulse lobe is getting near to the sensor, it generates negative voltage, and when the lobe is moving away it generates a positive voltage.
Auto - unit itself determines correct polarity automatically (the algorithm is based on the assumption that the sum of pulse lobe angles is lower than the sum of gaps in between).
No polarity check - the unit controls polarity of the sensor using shape of the signal. If the actual polarity of the sensor is different from the selected one, the unit will block ignition. This option cancels the blocking of ignition.

Spark possible before lobe - during standard operation of the unit ignition can take place only in the section after the start of the virtual lobe. This option allows to burn even before the virtual lobe. Unfortunately this is at the cost of the virtual lobe being 360 °, which significantly affects the accuracy of ignition especially at low revolutions.
Lower advance at start (next edge) - this option decreases (moves) advance to the next start pulse edge compared to the standard starting position in advance. Valid only for starting speed (speed less than 500 RPM). This option can be used especially for large volume single-cylinder engines to prevent kick-back when starting el. starter. You can use this option only for some pickup systems.
Lower advance at start (%) - this option delayed starting advance upon angle. This angle is determined as % part of virtual lobe. Valid only for starting speed (speed less than 500 RPM). This option can be used especially for large volume single-cylinder engines to prevent kick-back when starting el. starter. You can use this option for most pickup systems.
Description of synchronization - here the current pickup system can be modified, or new one created (only when selecting **Special settings** in the **Motorbike type menu**). Each item allows you to define the so-called **Virtual pulse lobes.** The virtual pulse lobe can be either a single pulse lobe or a sequence of several pulse lobes and spaces between them. BEWARE: only for very experienced users. Please consult with us any atypical configurations of pickup systems.
Some settings in this menu are only active if a special type motorcycle is selected.

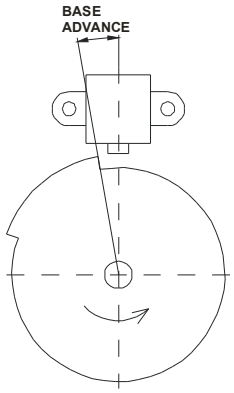
On the bottom left of this tab there are some statistical data collected from the unit. These data are read out even in the case when the version of the unit control firmware and software are not compatible. It is sufficient when the connection is established and active. The following data are read: The name of DCCDIP1 race unit, firmware version date, number of programming sessions.

Tab sheet Advance map

It contains two sub tab sheets of switcheable ignition advance curves/maps Advance 1 and Advance 2.

Advance map 1 and 2
The advance map contains up to 15x10 adjustable points depending on revolutions and the engine loads (TPS or IAP) value. If no load map is used, the advance map becomes just a 15-point curve of advance depending on the revolutions. Number of the columns is possibele to set with tool at right side of curve/map.
Setting of the advance map (curve) can be done in several ways.
- by writing individual values directly into the edit boxes of the PC keyboard.
- by using graphic tools up / down arrow (always to the right from the value of the edit field).
- using +/- buttons. This option allows you to change only the current edit box in the engine running mode(the active field is green) or when **ALL** option is activated the entire map (curve) can be moved in both running and off modes.
- by pressing F4 and F5, F4 has the same function as the button "-" and F5 has the same function as the button "+".
- using the scroll wheel of the mouse – by tapping the edit box the option to change by scrolling is activated.
- in display mode of the advance map **TAB** and **2D** it is also possible (using the mouse) to pull individual points of the curve.

Base advance - is the angular difference between the position when the crankshaft position sensor is directed to the end of the virtual pulse lobe pulse and the top dead centre position (see angle "base advance" in the picture below). **This value is always determined by the mechanical constitution of pickup system and shall never be changed by software settings!!!**
The field "**Base advance**" thus is not there to change the base advance: into this field the value must be entered that corresponds to the physical condition of the engine. Use stroboscope lamp for check of base advance value.
To the first point of the revolution of advance curve the unit ignites on the value of base advance (at the end of the virtual pulse lobe). The exception is the "**Start of lobe system**" that can ignite at the beginning of the of the virtual pulse lobe. **Therefore for revolutions lower than the first point of advance curve early ignition point cannot be set, as it is derived from the mechanical design of the pickup system!!! The first revolution point of the curve in most cases should be chosen above idle speed!!!**
Please contact us in case of any uncertainties regarding the design of the pickup systems and their functioning with unit.



Correction - correction of the advance of individual cylinders [°].

Tab sheet Power Out

Contains settings for three multifunctional outputs **Power out 1, 2, 3**
Off - the output is not active.
Fuel pump - to control the fuel pump relay, after the ignition is activated for 4 s, when engine running always activated.
Gear shift light - to control the two-state gear shift indicator. One state blinking, second state lighting.
Power jet Honda - to control PowerJet. The output is activated according to truth table (marked cell) after the comparison limits derived from values on table axes are exceeded. Settings is predefined as original control at motorcycle Honda RS125.
Special - to control specific devices (pair valve, Powerjet). The output is activated according to truth table (marked cell) after the comparison limits derived from values on table axes are exceeded.
Hysteresis [RPM] - engine speed hysteresis. Difference of RPM for switch on and switch off. (for Special and Power jet Honda).
PWM [%] - percent value of duty for pulse-width modulation (for Special). Frequency of modulation is 10 Hz.
Special PWM - to control specific devices (pair valve, Powerjet) using PWM (pulse-width modulation). Values of PWM you can set in curve/map. Frequency of PWM can be set 2-20 Hz.
Special pulse - to control specific devices (oil master) using repeated pulses. Periode of pulses you can set in curve/map. Lenght of pulses can be set 5-500 ms.
POUT1, POUT2, POUT3 = - Power out work visualisation.

Tab sheet Servo

Servo on - software activation of servo controller.
Map of positional requirements - of servo controller has up to 15x10 adjustable points depending on revolutions and engine load (TPS angle or the pressure in the intake manifold IAP). If no load map is used, the map becomes only (up to) 15-point curve. Number of the columns is possibele to set with tool at right side of curve/map.
The requirement for the position of the servo controller has two modes.
Voltage (option "percent" is not checked) - the servo controller searches for the calculated voltage resulting from the map (or curve). After the ignition is switched on the unit checks the servo controller so that it must find the highest and lowest required voltage value, which is located on the map (or the curve) of voltage requirements. When these voltage values are not found (whether due to mechanical obstructions or due to wrong settings), the servo is shut down.
2) **Percent** (option "percent" is checked) - the servo controller searches for the calculated percentage values resulting from the map (or the curve). After the ignition is switched on the unit finds (through mechanical stops - must be available!!!) lower position, which is marked as 0% and the upper position, which is marked as 100%. The servo controller then moves between these points according to calculated current requirements.
1/P[mV] - this is the voltage deviation from which there is linear decrease of the performance of the servo controller towards the required value. Size must be set so that the engine does not tremble and at the same time it must have the smallest regulation deviation. In practice 100 - 600 mV. BEWARE - in case you set too low value there is a risk of servo oscillation.
Off [mV] - voltage deviation from which the servo is completely switched off towards the required value of servo position. In practice 5-50 mV.
Servo = - actual demanded/measured value of servomotor position [mv].

Tab sheet Gear

Determining of gear - defines the method of determining an engaged speed gear.
Number of speed gears - here it is necessary to enter the number of the motorcycle's speed gears (except the neutral gear).
Sensor - determination according to voltage measured on Multifunctional input 2. A rheostate (resistance) monitor is used as the sensor (mostly it is a part of the gearbox) and its highest resistance should not exceed 20 kOhm. The activation of this selection automatically sets the selection for Multifunctional input 2 as Speed on the tab sheet Miscellaneous. Gear ratios are entered manually by inserting values in the Voltage of gears fields or by shifting to the given gear and clicking the respective button "Gear 0-6". The values must be saved in the unit using the Program button.
Gear voltage= - currently measured voltage at gear position sensor.
Ratio Rpm/Speed - determination using a calculation of the engine speed/vehicle speed ratio with manual input. The activation of this selection automatically sets the selection for Multifunctional Input 3 as Speed on the tab sheet Miscellaneous. It is necessary to use a HALL type sensor with an open collector or a reed contact. Gear ratios are entered manually by inserting values in the Rpm/Speed fields or during engine run by shifting to the given gear and clicking the respective button Gear 0-6. The values must be saved in the unit using the Program button.
Automatic ratio Rpm/Speed - determination using a calculation of the engine speed/vehicle speed ratio with automatic search. The activation of this selection automatically sets the selection for Multifunctional Input 3 as Speed on the tab sheet Miscellaneous. It is necessary to use a HALL type sensor with an open collector or a reed contact. In order to guarantee the correct operation of this function, it is necessary to fill in the "Automatically from ratio Rpm/Speed column.
Min time [s] - this is the minimum time for the stabilization of the Rpm/Speed ratio which is necessary for the overwriting of the ratio for the given speed gear.

Min RPM [RPM] - this is the RPM value which the engine must reach for the overwriting of the ratio for the given speed gear.
Min TPS [%] - This is the minimum angle for the opening of the throttle which is necessary for the overwriting of the ratio for the given speed gear.
Range [%] - this is the percentage value of the deviation in tenths of the gear ratio, under which the respective gear ratio is determined.
Speedometer setting
Number of pulses - number of pulses per 1 second for 100 km/h (suitable for a higher number of pulses – for example for the sensor in the gearbox).
Distance - distance between individual pulses in millimetres of distance covered (suitable for a small number of pulses – for example one per a wheel revolution).

Tab sheet Race

Quickshift mode - setting of the quickshift mode. The quickshifter can be set in such a way that either ignitions are blocked for the period during which the quickshift is in operation, or retardation of advance (set to Quickshift advance).
Quickshift - various - setting of various quickshift parametres.
Quickshift pause 1 - this is the dealy time between the quickshift switch signal and the beginning of the quickshift procedure. It is used in cases when a sensor of the position of the gear-shift lever is used.
Quickshift pause 2 - this is the protective period during which no other requirements are accepted from the quickshift sensor. This prevents the undesirable switching-on of the quickshifter, e.g. when the gear-shift lever returns.
Min Rpm for quickshift - this is the value of engine speed, under which the quickshift function is not executed.
Quickshift advance - this is the value of advance which will be implemented when the Retard mode is selected.
Setting according gear
Quickshift time - here are the values of quickshift times for individual gears.
Correction according to speed gear
Advance - here are the +/- corrections of ignition advance for individual speed gears.
Limiter: - here are the +/- corrections of the revolutions of limiters for individual speed gears.
Servo: - here is the value of revolutions which is added or subtracted from actual revolutions, and the result is used to make a selection from the map (or curve) of the servodrive.
Pout1-3: - here are the +/- values of revolutions for individual speed gears which are added or subtracted from actual revolutions, and the result is then used as a value for the switching of power outputs 1 to 3.

Tab sheet Tests

Here you can manually perform some actions that are used to test the outputs of the unit.
Ignition - test of ignition output.
Servo - test of servo outputs (both directions). The parameter Time specifies the time period during which the servo test is carried out.
Rpm - test of tachometer output. Rpm parameter specifies the engine speed with which the output will be tested.
Powerouts - test of multi-function outputs 1, 2, 3.
Hourmeter - running hours counter
monitor PickUps - run window for pickups signals monitoring.

Monitor

The monitor is located in lower section. Sensor values and engine's operational characteristics can be observed here. Should there be **No connection with PC** prompt displayed in the upper right corner, the unit is not connected, switched on, or it correct COM port is not selected.
When unit start communication - software reads data from unit and compare it with current data in software. If data in unit and in software are different - software will notice you.
If you will open setting data file - you can see full path to file location at upper toolbar.

Programming after a change - automatic programming settings (after every change).
No reading - reading is not allowed (after programming with this option data cannot be retrieved from the unit).
COM - signal of currently used communication port.
RPM - current engine speed.
TP/IAP - current throttle position.
Potentiometer - current voltage at correction potentiometer.
Potentiometer correction - current correction from correction potentiometer.
Pick-up (CKPS) - pickup work or error of pickup system visualisation.
U - current supply voltage.
Advance - current ignition advance.
Gear - current engaged gear.

Speed - current vehicle speed.
Kill switch - visualisation of Kill switch function activation.
Blocking - visualisation of Blocking function activation.
Quickshift - visualisation of Quickshift function activation.
Retard - visualisation of Retard function activation.
Limiter - visualisation of rev Limiter activation.
Start limiter - visualisation of Start rev limiter activation.
2nd advance chart - visualisation of switch to 2nd advance chart.