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## USER MANUAL PCDI-VE1 PROGRAMMABLE CDI IGNITION

Ignition controller is specially designed for Vespatronic flywheel magneto.

### **Very important!**

Resistor spark plugs must be used, because they produce less electromagnetic disturbances.

### TECHNICAL DATA

#### Limit values:

- minimum revs	200 RPM
- maximum revs	20000 RPM
- minimum supply voltage	8 Volts
- maximum supply voltage	16 Volts
- max. supply voltage for 1 minute	35 Volts
- current draw	25 mAmp
- maximum continuous current for shift light output	1 Amp
- peak current for shift light output	5 Amp

Circuit is protected against reverse supply voltage (wrong connection).

#### Features:

- CDI charged from hi voltage charging coils (generator)
- running from stator without pickups
- store and load function for 2 ignition maps
- external switch for changing ignition map while riding
- shift light output
- quick shift (shift kill)
- tachometer output
- advance/retard whole ignition curve
- three stage rev limit (retard timing, reduced spark, spark off)
- timing compensation curve
- timing calculation for every 1 RPM change (1000, 1002, .. , 9805, 9806, ...)
- easy and fast programming on the field, via hand held programmer
- programming while machine running - you can immediately see effects
- monitoring of rev's, ignition, via LCD(hand held programmer)
- fast processing for high accuracy - delays from 1us

## 1. HOW TO ENTER MENU

**PCDI** must be connected to power supply. Connect **programmer** to **PCDI** and wait few seconds for activation of **programmer** and then press . With pressing  or  you can move through menu and select with pressing . Exit menu with selecting *Exit*.

## 2. SET IGNITION PARAMETERS SUBMENU

<i>Load Ign. Curve</i>	- load previously saved ignition curve set (from #1 to #2)
<i>Save Ign. Curve</i>	- save new ignition curve set (from #1 to #2)
<i>Ignition Curve</i>	- ignition curve parameters submenu
<i>Advance</i>	- advance/retard whole ignition curve
<i>Shift Light</i>	- shift light
<i>Shift Kill Time</i>	- shift kill time
<i>Rev Limit</i>	- rev limit
<i>Static Angle</i>	- static angle (stator position)
<i>Remote SW</i>	- activating/deactivating external switch
<i>Compensation Curve</i>	- timing compensation curve
<i>Exit</i>	

## 3. LOAD IGN. CURVE

Enter menu and move to *Load Ign. Curve* with pressing  or  and then press . Now you can select position number of previously saved ignition curve set, with pressing  or  and then press .

## 4. SAVE IGN. CURVE

Enter menu and move to *Save Ign. Curve* with pressing  or  and then press . Now you can select position number to which you want to save your ignition curve set, with pressing  or  and then press .

## 5. Change IGNITION CURVE

Enter menu and move to *Ignition Curve* with pressing  or  and then press . Now you are in submenu for setting ignition curve.

Submenu organisation:

<i>Nr. of Points</i>	- number of ignition curve points (from 4 to 10)
<i>1)</i>	- first ignition curve point
<i>2)</i>	- second ignition curve point
...	...
...	...
<i>Exit Curve</i>	- exit submenu

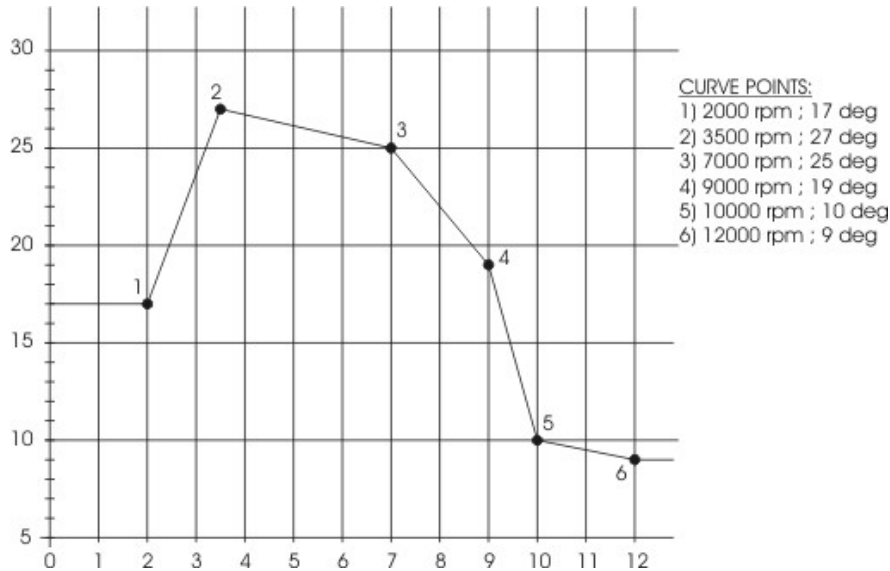
### **Important!**

To avoid wrong processing, don't make unreasonable curve course.

Every time you make any changes to ignition curve, it is automatically saved to #0 position.

Then you can save it to any other position number from #1 to #2.

Curve Example with six curve points:



### **5.1. Change NUMBER OF IGNITION CURVE POINTS**

Move to *Nr. of Points* with pressing  or  and then press .

Now you can select number of ignition points, with pressing  or  and then press .

### **5.2. Change PARAMETERS OF IGNITION CURVE POINT**

Move to point you want to change, with pressing  or  and then press .

Now you can change rev point with pressing  or  (in 100 rpm steps) and then press .

Now you can change advance angle with pressing  or  (in 0.1deg steps) and then press .

### **6. Set ADVANCE**

With this setting is possible to advance or retard whole ignition curve. When setting is positive then ignition curve is advanced and when setting is negative than ignition curve is retarded. With *Advance 0.0deg*, ignition curve is unchanged.

Enter menu and move to *Advance* with pressing  or  and then press .

Now you can set advance with pressing  or  (in 0.1deg steps) and then press .

## 7. Set SHIFT LIGHT

Enter menu and move to *Shift Light* with pressing  or  and then press .  
Now you can change rev point with pressing  or  (in 100 rpm steps) and then press .

## 8. Set SHIFT KILL TIME

Enter menu and move to *Shift Kill Time* with pressing  or  and then press .  
Now you can change kill time with pressing  or  (in 10 ms steps) and then press .

## 9. Set REV LIMIT

Enter menu and move to *Rev Limit* with pressing  or  and then press .  
Now you can change rev limit with pressing  or  (in 100 rpm steps) and then press .

## 10. Set STATIC ANGLE

Static angle of stator must be set to 1,60mm BTDC. For more information about setting procedure, look at Cagiva "Mito Workshop Manual" on page M18.

Default static angle for PCDI-M1V in degrees for 1,60mm BTDC is 20deg.

Enter menu and move to *Static Angle* with pressing  or  and then press .  
Now you can set static angle with pressing  or  (in 0.1deg steps) and then press .

## 11. Set REMOTE SW

Enabling or disabling external switch for changing ignition curves while riding.

Enter menu and move to *Remote SW* with pressing  or  and then press .  
Now you can enable or disable external switch with pressing  or  and then press .

## 12. Set COMPENSATION CURVE

Stator has only charging coils and no pickup. Trigger timing is not constant, because signal is taken from charging coils. Compensation curve is needed to correct possible timing error.

### **Important!**

Do not make any changes, if you are not sure about procedure. Unit is already compensated and normally does not need corrections.

To check, if timing is correct flat ignition curve must be programmed (for example 15deg). Make mark at 15deg on the flywheel and check with stroboscope light if timing is correct through all rev range.

Enter menu and move to **Compensation Curve** with pressing  or  and then press  . Programmer will show information **Read instructions!!!** and then press  .

Submenu organisation:

- 1) **1000 RPM; 0,0 deg**
- 2) **2500 RPM; 0,0 deg**
- 3) **4000 RPM; 0,0 deg**
- 4) **5500 RPM; 0,0 deg**
- 5) **7000 RPM; 0,0 deg**
- 6) **8500 RPM; 0,0 deg**
- 7) **10000 RPM; 0,0 deg**
- 8) **11500 RPM; 0,0 deg**
- 9) **13000 RPM; 0,0 deg**

**Exit**

- exit submenu

Move through submenu with pressing  or  to the point you want to change and press  . Set compensation angle with pressing  or  and press  to confirm.