



# INSTALLATION MANUAL:

## Capacitor Discharge Ignition based, battery powered systems Replacement manual

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HPI wants to thank you for your confidence in its products.

Please read this manual carefully to ensure years of enjoyment of this specialised high end electronic device.

This manual shows you how to properly install the replacement control unit and how to test the other electrical devices of your bike.

### HT coil check:

Lots of OEM electronic control units (ECU) get destroyed by defective, worn out HT coils. A HT coil may still spark, but when the coils within are damaged, they will take more current than the ECU can deliver. This will eventually cause the ECU to break down.

How to check the HT coils:

- Unplug both plugs of the HT coil.
- Measure the resistance between the two terminals (primary winding).  
If only one terminal is present, measure between the terminal and the frame / GND.
- Typically the resistance is between 0.4 and 0.6  $\Omega$ .
- Is the resistance lower, than the HT-coil is broken and has to be replaced.  
We can provide you with replacement HT-coils for most engine models.

Only install the replacement ECU when you are sure the HT coils are ok.

### Battery voltage check:

Another common failure causing ECUs to fail is the regulator.

The regulator will transform the AC current from the generator in a DC current to load your battery. When the regulator is broken, the ECU will get an out of range supply voltage and will fail.

How to test the regulator

- Install the replacement ECU on your engine.
- Start the engine but **do not rev up!**  
Not even for a short period, just let the engine run idle.
- Measure the battery voltage, it should be about 14V
- Now slowly rev up, constantly checking the battery voltage, the battery voltage should always stay below 15V.
- If the battery voltage exceeds 15V immediately stop the test, your regulator is broken.  
We can provide you with a replacement regulator for most engine models.

Only drive your engine when you are sure the regulator is ok.

### Spark plug and spark plug caps:

All modern ECUs contain microcontroller technology. These electronic devices run on low voltage and are noise-sensitive. Therefore resistive spark plugs and spark plug caps are strongly recommended, typically their resistance is 5K $\Omega$ .

Resistive spark plugs and spark plug caps will reduce the electromagnetic interference with the ECU.

### **ATTENTION**

**Use resistive spark plug with resistive spark plug cap (typically 5K)**