

## Motorcycle CDI Ignition Systems

### Hints for Diagnosis

A typical motorcycle system would consist of a stator, flywheel, CDI and HT coil

#### Most Common Faults in Order

1. Bad connections. The most common cause of no spark. For early models with 'non-sealed' connections, cut off old connectors and replace including earth ring terminals, crimp and solder all connections, do not use 'pre-insulated' terminals. These typically come in red or blue colours, the problem with them is that you cannot see if you are crimping onto the copper or the sleeving even when you think you have made a good connection the plastic insulation prevents sufficient pressure being applied to make a reliable joint. We have many professional quality uninsulated connector systems available for purchase.
2. HT coil – early models had a single cable to the HT coil with the frame used as the 'return' earth circuit – this does not work. Add a new earth cable to the metal body of the HT coil and connect to the engine. Join all earth connections together.  
The HT coil itself is often suspected of being at fault but these are surprisingly reliable. If there is a fault with a CDI HT coil it is normally on the HT side of the circuit and the reading would be measured in thousands of ohms, anywhere between 5000 and 30000 ohms. If it is open circuit it is definitely at fault.
3. Stator Unit – these usually consist of the 'source coil' which provides the energy for the spark and external pick-up coil. They are not easy to test as a simple resistance check of the source coil would generally show the correct reading but could still be at fault as internal insulation failure is difficult to detect without specialized equipment.  
The pick-up coils are usually reliable as they only provide a low power signal current to the CDI unit and are therefore low stressed. If a resistance reading is present across the two cables to the pick-up coil they are usually OK.
4. CDI Units – these are usually reliable but can be damaged by bad connections to the HT coil. They are not easy to diagnose without the other components in the system working correctly.