



## CDi Ignition Problems

A new CDi unit has not fixed your bike, possibly there are some confusing symptoms or worse the bike runs on an old CDi but not the new one.

### Why the new CDi unit has not fixed the problem, seems to be causing other problems or appears not to work.

It will not be the new CDi unit! Excluding old CDi box failure, the top 5 problems are as listed:

- #1= Generator failure, source or pick-up coil insulation that has weakened or failed.
- #2= Poor trouble shooting by inexperienced persons lacking in knowledge of CDi ignition.
- #3= Poor shop manual information - Resistance as little as 5% from specification shows a fault.
- #4= New old stock (NOS) parts - often over 30 years old. NOS electrical parts can prove to be failed warranty items, replaced when the bike was brand new.
- #5= Improper rewinds and repairs. Altering wire specification, for example using heavier wire, or adding a different number of turns can cause faults and have unforeseen consequences.

### Weak Windings

The most confusing symptoms are ones that happen only with a warm engine or where the bike runs with an old CDi but not the new one. Copper magnet wire has a fine coating of clear insulation covering it. When this coating is old it dries out and begins to break down. Insulation breaks down much more easily when its hot - hence some problems manifest only once the winding has warmed up. Electricity is like water in that it will always find the easiest path to flow, each time a new path is used it becomes a little easier. A 'weak winding' is one where the insulation is no longer perfect and the electricity is leaking away through failing insulation.

### New Vs Old CDi Units

As capacitors age their resistance increases and they lose their ability to hold a charge. A new ignition box charges up fully, in doing so the source winding is placed under a heavier load. This is normal in a correctly functioning system. A weak source winding is likely to be an easier path to earth than a new CDi capacitor. In this case a new CDi unit appears not to work or causes mis-firing or other running issues as power leaks to earth through failing insulation in the winding instead of fully powering the ignition.

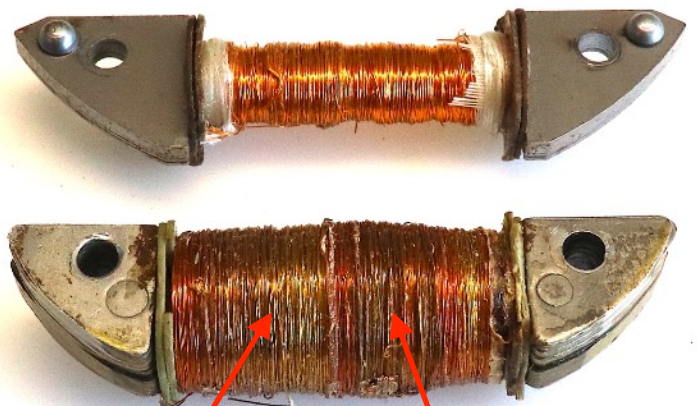
These phenomena are not covered in the manuals as such age related failures had not been predicted when the manuals were written.

### Our technicians will often assess a generator and HT coils etc sent to us - free of charge!

While we are not able to diagnose faults on your motorcycle we do have a free CDi ignition trouble-shooting guide to help you, also some model specific testing guides.

With the outer layer removed it is possible to see copper windings. The top winding is in good condition, the bright copper will darken with use and age but will remain uniform in colour.

The lower winding, shows a range of colours from copper at each end, an area that looks greenish in the photo but is actually much lighter due to getting too hot, and also a dark patch of failed, shorted insulation. This damage is the weak area causing the problem, it will spread until the winding fails completely. The winding resistance was only 10% off tolerance but the bike would not start hot, or run with a new CDi unit fitted. Once this winding was replaced the bike ran perfectly on its new CDi unit.



Insulation starting to fail

Darker area shows failed & shorted windings

**We charge 50% of the purchase price to retest any new CDi unit returned as 'not working'  
All CDi units are fully tested during manufacture and before being sent.**