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Ignition Testing Guide - Rotax Powered Machines with Nippon Denso AC CDI

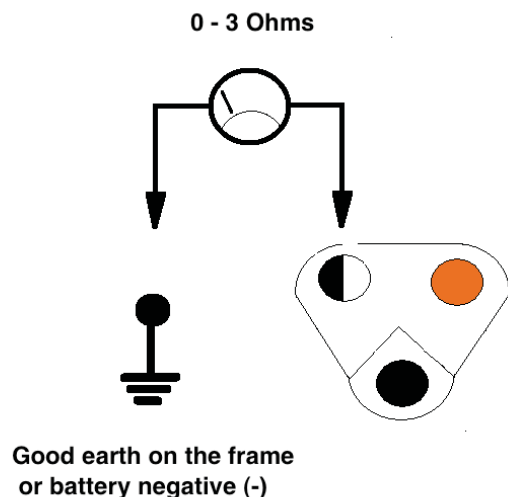
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Here are a few simple tests to aid trouble shooting the Rotax ignition system to decide where the fault lies. You will need a multimeter capable of reading 0-500 Ohms. These tests assume a good working knowledge of your bike and that you have carried out obvious checks first such as replacing the spark plug and checking for loose connectors. All tests are done with a cold engine, start by locating the CDI unit connectors and unplug them.

- *Tests are done on the BIKE side of the CDI (amplifier) connectors
- * Do not carry out these tests on the CDI unit side - all tests will fail.

Test 1 - No Spark - Check to operation of the ignition and kill switches

Check the kill switch, ignition switch and the associated wiring by carrying out continuity (resistance) checks on the loom 3 way plug. The ignition operates like a magneto - a connection to ground kills the sparks.



New CDI Units - CDI Unit Testing - Generator Repairs - Terminals, Wire, Connectors & Coils

Web: www.rexs-speedshop.com

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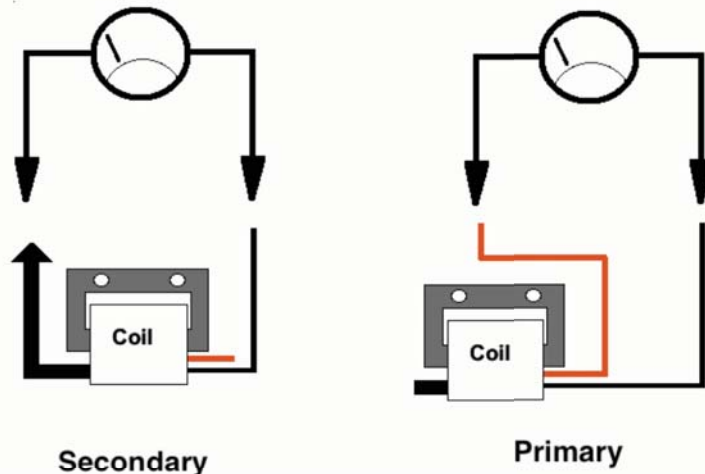
Correct Results - If yours don't match there is a fault with the switches or associated wiring

KILL SWITCH	IGNITION SWITCH	OHMS
OFF	OFF	0-3
RUN	OFF	0-3
OFF	ON	0-3
RUN	ON	INFINITE

Test 2 - No Spark - Check the HT Coil - You will need to remove the fuel tank to access the coil

Secondary Resistance: 11-12K
Primary Resistance 0.95 -1.1R

Non OEM coils may have different resistance readings which don't necessarily indicate a failure. Typical values could be anything about 0.6R 1.5R for the primary and 7-14K for the secondary. This type will run normally with Speed Shop CDi units. They also seem to run normally with the ND unit but the manufacturer specifies only the first set of values.



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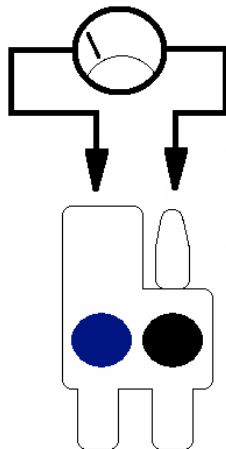
Poor Running

The ignition can fail suddenly or quite slowly, its wrong to assume it works or it doesn't. The first signs of trouble include; miss firing at speed, poor running when warm, failing to rev above 3,000 RPM, very stubborn to start when warm but OK when cold or running for a short period then cutting out. The ND CDi unit can fail partially and will give the same symptoms as a failing generator source coil windings.

We recommend you start by testing the generator and pulser coil windings as these are simple to test and don't require the generator to be removed. Despite what the Manufacturer's manual may say, testing the CDi with a multimeter can only show 50% of possible faults and gives inconclusive results at best.

The generator's 12 volt, 3 phase charging coils do not in any way affect the ignition so won't need checking.

Test 3 - Low Speed Pick up 120-180 Ohms



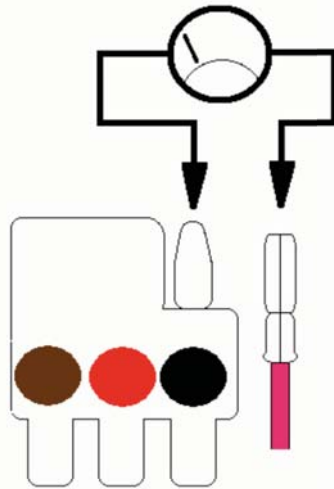
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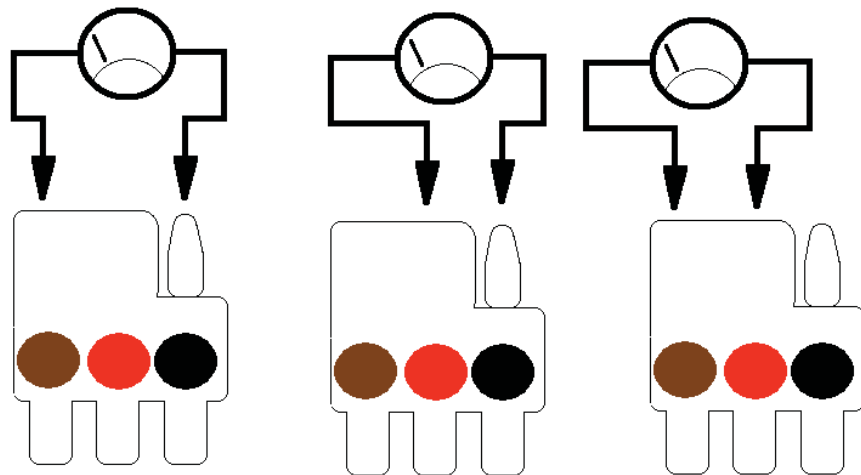
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Test 4 - High speed pick up 12-20 Ohms



Test 5 - Source coils

Brown to black 329 Ohms; red to black 334 Ohms; brown to red 4-6 Ohms
These should be measured with a cold engine. A 10% tolerance applies.



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