Unit 1, Russet Farm
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Robertsbridge
East Sussex
TN32 5NG

DT/IT/MX/YZ 250, 360 & 400 Ignition System Tests & Fixes

Machines that have a black plastic pick-up in the generator centre & rotor stamped FOT02173 (74-76)

Rex's are World renown specialists in motorcycle electronic ignitions and generator systems. We also manufacture the unique "Dual Power" ignition system that gives unrivalled performance. We design and manufacture new electronics, wound components and generators. We also carry out rewinds to existing equipment, often we can repair and restore parts others are not able to.

Ignition Problems

Models manufactured1974-76 with the black plastic trigger unit in the generator have more than their fair share of ignition problems. Both the trigger unit (pick-up) AND the CDi unit are of poor design and are known to cause running problems. Replacing one part often reveals that there is still an issue with the other part. For this reason we do not manufacture a direct replacement CDi unit for this system. If replacing a CDi didn't fix the bike its likely the trigger has failed, these are extremely hard to obtain.

Rex's Solutions for failed ignitions

There is no effective fix for the standard ignition; new trigger units are rare and the CDi unit is every bit as unreliable. However we have solutions to these problems, choose either a 'pulserless' CDi or a total system up-grade. We also manufacture brand new replacement source coils (127 ohm) our p/n SC-10, so you do not have to send yours to us if it has failed. Rex's Yamaha ignition experts will be able to help you getting these bikes running reliably.

✳**"Pulserless CDi Conversion"** A new type of CDi unit that runs on "Pulserless" technology replacing both the trigger and the Yamaha CDi unit. On the plus side this is the cheapest option and the 6 volt electrics are retained. The down side is you must machine the stator slots and set the timing with a strobe lamp. The CDi source coil must be in good condition too.

✳**Modern ignitions & 12 volt upgrade Stator.** We manufacture a brand new stator kit completely replacing the old ignition and giving options for a 12 volt lighting. Fitting is simple as the new stator just "bolts in" with no ignition timing adjustment needed, just the same as modern Yamaha ignitions. A simple up-grade that improves power from the engine and 12 volt versions give brighter lighting. If you want more - there's our "Dual Power" ignition - for serious competition use.

www.rexs-speedshop.com

Phone: 01580 880 768. E-mail: tech@rexs-speedshop.com

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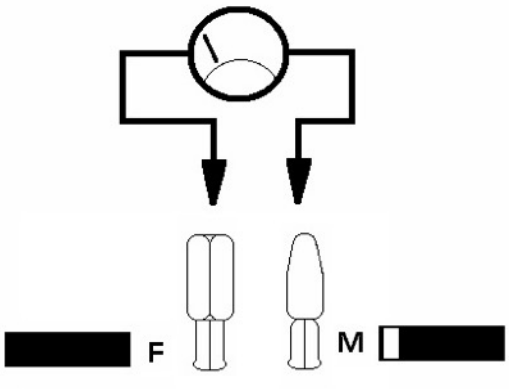
DT/IT/MX/YZ Factory CDi system testing. Revision 4 Issued March 2018

Fault Finding. Test 1 - No Spark. Check operation of the ignition and kill switches

At the CDi unit identify the black wire with white strip plus the plain black wire on the wiring loom (test the wires coming from the bike's loom **NOT** from the CDi unit). Use a multimeter set to a low range resistance range to measure the resistance on these two wires. Some models may only have a kill switch, if so do test 1A/1B, "off" equals when the kill switch is operated IE in the position when you want to shut down the engine. If there is an ignition switch only do test 1A/1B. Where both a kill and ignition switch are fitted carry out the full lists of tests.



TEST	KILL SWITCH	IGNITION SWITCH	OHMS
1A		OFF	0-3
1B		ON	INFINITE
1C	OFF	OFF	0-3
1D	OFF	ON	0-3
1E	RUN	ON	INFINITE
1F	RUN	OFF	0-3

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

Secondary Resistance: 6-14K
Primary Resistance 0.6 -1.5R

Replacement HT coils may give different readings from OEM. Different readings from those above don't always mean a failure. What you are looking for are sensible readings that remain steady. Typical values could be anything from 0.6R to1.5R for the primary and 6-14K for the secondary. A 'zero' or fluctuating reading is a fail.

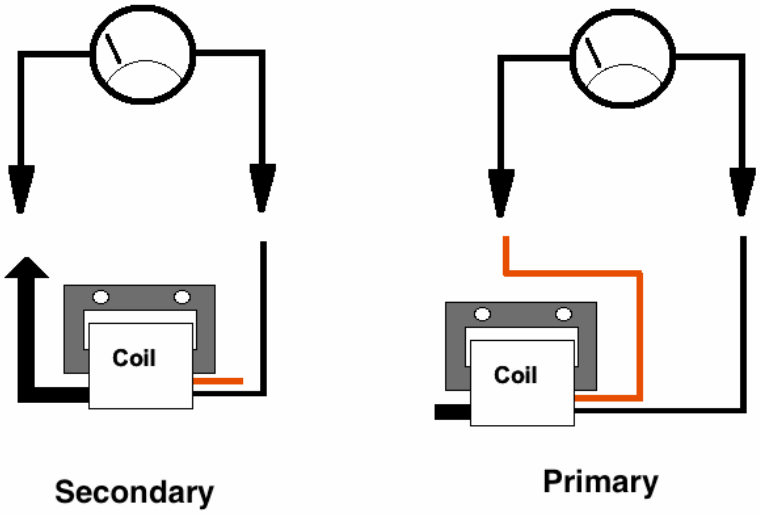
The HT cap should be removed to test the secondary.

Low cost, low quality HT coils often cause faults such as poor starting, misfiring at speed or holding back at speed. These should be replaced. Reliable HT coils do cost a little more but generally give years of trouble free service. We stock good quality replacements at reasonable cost for all models with points or electronic ignition. Our techs can help you get the right one.

If there is no black wire, put one lead on the metal core of the coil for both primary and secondary tests. The orange wire is the tag that comes out of the plastic on the coil

Don't forget to measure the resistance of the HT cap, faulty caps are rare but checking saves time and expense.

If your multimeter is not the auto ranging type, set the resistance to 20 ohms for the primary and 10 or 20 kilo ohms for the secondary tests. Consult the meter's hand book if you are not sure which range to use.



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Poor Running (Standard Yamaha Ignition)

Here is where we run in to problems. Trouble shooting is particularly difficult on this system as failing CDi will give the same symptoms as a failing trigger unit or a failing source coil. We do manufacture a brand new source coil (P/N SC-10),so that's one problem thats easy to solve, the other two parts are not available.

Below are some resistance reading you can take that may help identify where the problems are. A reading out of tolerance will show you the failed part. Its important to remember that the resistance of machine wound parts will be within 2% of each other when new. The manual gives a limit of 10% which is should be disregarded, anything as little as 5% different shows a fault. Temperature at which the readings are taken is important as these figures are what you should see at 20 degrees C (70F) with a cold engine. If you are in doubt, write down your readings and the temperature they were taken at and e-mail our tech team with this information. Measuring voltages is a complete waste of time as there is no data to tell you what speed to rotate the engine at, what meter to use and what voltages to look for. Digital meters will read differently due to their sample rates IE the speed they react at.

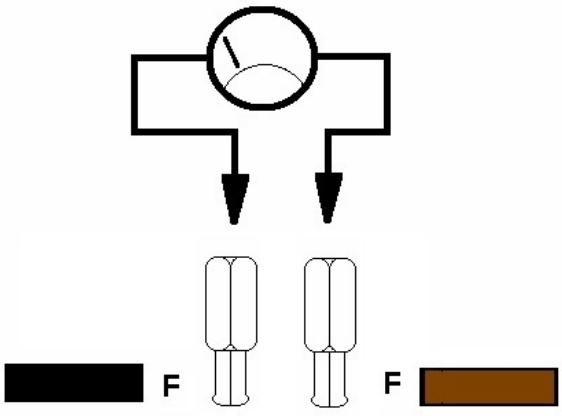
Trigger Coil	100 Ohms +/- 5%
Source Coil	127 Ohms +/- 5%
250cc Machines	
Lighting Coil	Yellow 0.23Ohms
	Green 1.73 Ohms
	Red/Green 0.54 Ohm
400cc Machines	
Lighting Coil	Yellow 0.21Ohms
	Green/Red 0.3 Ohms

Note that lighting coils have a very low resistance and most multimeters will not be able to read this accurately. These windings are generally reliable and a visual inspection for burning, loose copper, missing insulation or other defects is a better way to check them.

These windings are earthed so will show continuity to the stator plate

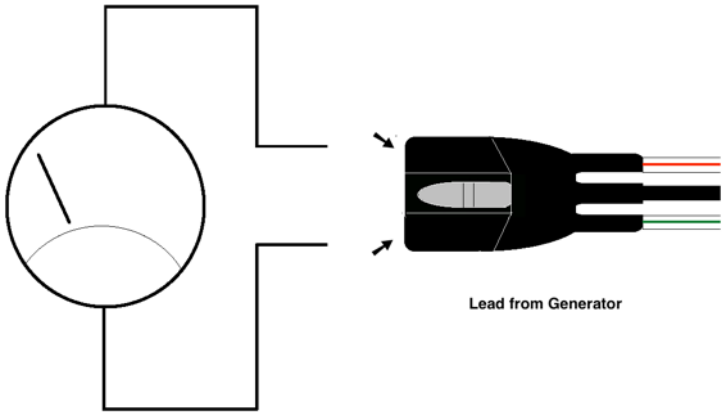
Test 3 - Low speed source coil

Brown to black 127 ohms at 20 degrees C (70F). A 5% tolerance applies. We have brand new source windings. P/N SC-10



Test 4 - High speed source coil

White/green to white/red 100 ohms. A 5% tolerance applies. Any reading 95 ohms or less at 20 degrees C (70F) shows a failure



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REX'S SpeedShop Classic Performance™

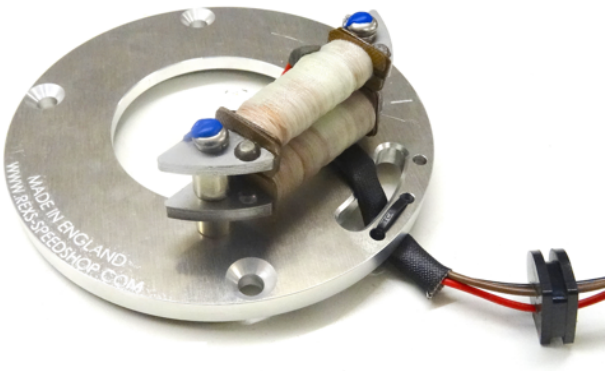
Test Results

Never take stator resistance readings from an engine run within 6 hours.

Ambient temperature when readings taken:		**C/F**

Standard Yamaha Factory Ignition Test Results, Model:			
Test	Item under test	Results	
1	Kill switch	1A	
		1B	
		1C	
		1D	
		1E	
		1F	
2	HT Coil	Primary. Ohms	
		Secondary. K Ohms	
3	Source	Ohms	
4	Trigger	Ohms	

"Dual Power"competition ignitions
Unrivalled Performance



Full DT Electronic ignition
& 12 volt up-grades

If you e-mail tech@rexs-speedshop.com our Yamaha experts will look at your results.