BDK Race Engineering

Honda RC30 Race Generator

Contents:

1 x Generator coil assembly
1 x Rotor Assembly
1 x Generator coil mounting plate
6 x M5 x 30mm button head Allen screws
4 x M6 x 10 low head cap screws
1 x Regulator / rectifier

Please read before beginning assembly

1) Remove the original generator cover and the generator windings from it including the wire clamp (retain for later refitting).
2) Remove the standard flywheel assembly.
3) Take the new rotor assembly and fit to the crankshaft, refit the original flywheel bolt (do not refit the original washer as this is no longer required) using thread-lock and tighten to 35ftlbs.
4) Fit the generator mounting plate to the original casing using the M6 x 10 low head screws. Ensure that the threads are clean and coated in thread locking compound. Make sure the slot with the wires through corresponds with the exit point of the casing, and that the wires are not trapped.
5) Place the generator coil assembly on to the mounting plate using the M5 x 30 button head allen screws copiously coated in thread locking compound. The screws should be tightened gently and evenly in several passes until the heads cut into the stator core material.
6) Refit the casing to the engine making sure the gasket and dowels are present and undamaged and that you line it up as you fit it so you don't damage the generator coils by catching them on the rotor. The gasket faces should fit flush without locking the crank before tightening bolts to manufacturer's spec.
7) The kit reg/rec only needs to be securely attached by one end and can be cable tied at the other end. We recommend fitting it to a flat metal surface to assist dissipation.
8) The blue/yellow wire from the reg/rec must be connected to a switched positive 12V supply (as close after the ignition switch as possible), or alternatively to the battery via a switch or fuse which can be used to isolate the reg/rec when the bike is not running. If not there will be a drain on the battery when the bike is off.
9) Connect the black wire to the battery negative, the red wire to the battery positive and connect the reg/rec to the stator wire connector – job done!

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Important things to remember are:

- The battery must be charged for the system to work – if the battery falls below 11V then the regulator may fail to operate.
- Thread-lock must be used on ALL fasteners. If for any reason the generator needs to be dismantled we recommend using fresh M5x30 button heads and thoroughly cleaning the threads before refitting the fasteners with fresh thread locking compound.
- When the reg/rec is overcoming losses the LED light should shine brightly.
- The reg/rec should produce a maximum voltage at high revs of 13.7V – 14.5V generation at 10K rpm. Do NOT adjust the reg/rec unless instructed.
- If the generator is run without 12V positive supply and battery negative to the reg/rec DAMAGE WILL OCCUR.
- The point at which the generator overcomes losses will vary depending on the load, but running below about 3,500 rpm for extended periods will usually flatten the battery.
- Lithium batteries have less charge longevity than an equivalent lead-acid or gel battery when on partial or no charge (more cranking power but less longevity of charge).
- The generating system will not work with a dead battery that demands no load – this can usually be seen by the led flashing when bike is running.
- The stator will be damaged if used in conjunction with a standard reg/rec.
- No power will be generated at all if the blue wire from the reg/rec is not connected to a 12V+ supply.

If in doubt – ASK

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Testing your race generator if a fault is suspected:

1) Check that there is a 30 or 35A fuse in the reg/rec positive lead and that it is not blown.

2) Ensure that there is at least 12V DC at the blue wire feed with the ignition on and that the connection is secure.

3) Connect the reg/rec to the stator and with the battery terminals and blue wire fixed if your battery has 13+V you should see a very dim light from the reg/rec LED (you may need to shield out the light to see this).

4) Check that the three pins in both the stator side and reg/rec side connectors are firmly fixed by giving them a gentle tug each in turn.

5) Unplug the stator from the reg/rec and check continuity between the stator pins – you should have continuity between any two of them, but no continuity between any of them and earth.

6) With the stator unplugged from the reg/rec and whilst the engine is running at a fixed speed measure the voltage in AC across the pins out of the stator in turn (three different ways).
It is important that your meter is set to AC before doing this, and you should be getting the same voltage between any two pins. You should be getting somewhere between 3V & 4V per 1krpm, ie 9-12V for 3krpm.

7) Reconnect the stator to the reg/rec. Fire the bike up, set your multi-meter to DC and measure the voltage across the battery terminals. You should be seeing between 13V and 14.1V across the terminals at around 5k rpm. The generator will not fire below around 3krpm. The green LED on the reg/rec should be brightly lit – this indicates over 13.5V.

8) If all the above have been checked and yet the desired charging is not happening get in touch with us for further instruction and advice before sending the unit back.

Warranty and Liability Disclaimer

Due to the high stress environment of high performance riding, competition riding and especially from previous or future crash damage, in common with other racing parts no warranty, guarantee or liability is expressed or implied whatsoever in terms of but not limited to the item itself and any consequential damage. It is imperative that customers understand and recognise that they are purchasing racing equipment which has been designed with performance in mind over longevity and that they are solely responsible for their own skill and judgment when selecting and installing these products.

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