B.D.K. RACE ENGINEERING.

Suzuki SV650 Race Generator System

Contents:

1 x Generator coils
1 x Rotor Assembly
1 x Generator Holder
1 x Adjustable Ignition Pick Up Mounting Plate
2 x Button head cap screws M5 x 12mm
2 x M5 x 16 machined button head cap screws
3 x Low cap head screws M6 x 10mm
6 x Machined Button head cap screws M8 x 10mm 12mm
6 x Button head cap screws M5 x 30mm
1 x Connector block male
3 x Female crimp connectors
1 x Large diameter piece heat shrink
1 x Length sheathing for wires

Important : All bolts must be fitted with threadlock compound
Do not use standard regulator

SV650 Race Generator Fitting Info

1) Remove the original generator cover and the generator windings from it.
2) Cut the three black wires which pass through the original grommet and connect the original windings to the original reg/rec. Be careful not to damage the original grommet as this will be re-used. Remove the original regulator / rectifier.
3) Remove the standard flywheel assembly and unbolt the flywheel from the starter clutch
4) Take the new rotor assembly and bolt to the starter clutch using the 6 M8 screws provided, make sure the threads are clean and use thread locking compound.
5) Re-fit the new rotor assembly to the crankshaft, refit the original flywheel bolt use thread lock and torque to 22/25ftlbs (30/33Nm).
6) Fit the stator mounting plate to the original casing using thread-lock on the M6 screws supplied. The big slot in the holder needs to be lined up with the exit point for the wires.
7) Now push the silicone tube over the stator wires until they are fully home, and place the stator coils onto the mounting plate with the wires facing downwards and passing through the big slot in the back of the plate. It must be placed in so that the wires have plenty of clearance where they pass through the mounting plate.
8) Retain the coils using thread-lock on the M5 button head screws supplied and tighten the screws gently and evenly in several passes until the heads of the screws bite into the stator windings slightly and all screws are tight and secure.
9) Push the stator wires through the original grommet using oil or washing-up liquid to help lubricate them as they are passed through. If using washing-up liquid ensure that all

BDK RACE ENGINEERING ASHWELLTHORPE IND EST. NORWICH NR16 1ER.
TEL: +44(0)1508 481713. FAX :+44(0)1508 481714
Email: James@bdkraceeng.com Web Shop: www.bdkraceeng.co.uk/tc

traces are gone from the inside of the grommet and casing when finished. Holding the cover roughly in position and with the regulator roughly where it is to be mounted measure how long you wish your stator wires to be.

10) Cut the sheathing around 1.5" to 2" shorter than the stator wire length you require and slide the sheathing over the stator wires with the help of one or two drops of washing –up liquid or similar lubricant.
11) Fit the female cable fittings using crimping pliers taking care to trap the insulation in the larger crimp and the wire directly inside the smaller crimp. Push the fittings into the connector supplied ensuring that a 'click' is heard and that the fittings do not pull out of the connector.
12) Now remove the ignition pick up coil and bolt it to the adjustable using the M5 x 12 bolts with thread locking compound. Bolt the holder into the casing (using the M5 x 16 button head screws supplied) with the big recess for the adjusting bolts facing upwards. In this position the pick up coil should be upside down to how it sits originally. Standard ignition timing will be when the adjuster bolts line up with the pick up bolts, moving the pick up clockwise (as you look in the casing) will advance the static ignition timing and anti-clockwise will retard it.
13) Refit the casing to the engine making sure you line it up as you fit it so you don't damage the generator coils by catching them on the rotor.
14) Fit the new reg/rec wherever convenient. It only needs to be securely bolted through one hole and can be tie-wrapped through the other if necessary.
15) Attach the terminals from the reg/rec to the appropriate battery terminals and the blue and yellow wires to a switched 12V supply (12V+ should be constant with ignition on but off when ignition is off). Alternatively the blue + yellow wires can be connected to the positive battery terminal but the reg/rec must then be isolated when not in use to prevent drain.

Always start bike with a fully charged battery & Remove fuse from regulator after each use if not connected to a switched 12V supply.

When the light on the reg/rec is shining brightly the generator is overcoming drain on the battery and keeping it topped up.

Please note that running the bike for extended periods at low revs will drain the battery.

NEVER USE THE ORIGINAL REG/REC

ALWAYS USE THREAD LOCKING COMPOUND ON ALL BOLTS AND SCREWS ON ASSEMBLY – FAILURES HAVE OCCURRED IN THE PAST WHEN THIS HAS BEEN OMMITTED!

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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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