# B.D.K. RACE ENGINEERING Ltd

## Suzuki GSX1300R 2008+ - Alternator Fitting Info

### Contents:

1 x Stator assembly
1 x BP01 stator mounting plate
1 x Rotor assembly
1 x Piece silicone sheath 100mm
1 x Long wire sheathing
6 x M5 x 25 button head screws
3 x M6 x 10 machined button head screws
1 x Piece heat shrink
3 x Female crimp connectors
1 x connector block

### Fitting:

1) Remove the original alternator cover and stator assembly.
2) Unbolt the original flywheel and replace with our flywheel taking care to ensure that the key is still present and the rotor is resting on the taper rather than the key, replace the original bolt and tighten to 25 ft lbs torque.
3) Ensure the gasket face is clean and flat both on the crankcase and the alternator cover, replace the gasket if required and ensure both of the locating dowels are present and undamaged prior to reassembly.
4) Pull back the sheathing from the original stator wires outside of the grommet, cut the three wires to the OEM stator and slide the stator wires out of the OEM grommet.
5) With the help of a drop of washing-up liquid on the grommet holes and a pair of pliers to help push the new stator wires through the OEM grommet and draw through until the silicone sheath comes up to the grommet. Clean off any excess washing-up liquid.
6) Remove the original reg/rec and replace with the regulator supplied – it need not be fixed by both bolt holes but we recommend using at least one and if necessary a tie-wrap the other end. The body of the r/r does not need to be earthed but it assists cooling and longevity if it is against a flat metal surface and in the airflow. The positive and negative wires should wire direct to the battery. The thin blue wire should be attached to a 12V+ feed which is permanently on when the bike ignition is on but off at all other times. Alternatively it can be attached to the battery positive terminal with a switch but this must then be switched off whenever the bike is not running to avoid drains on the battery.
7) Check to see what length of wire will be required from the stator to reach the reg/rec plug and add a little for security. Cut the long sheathing to reflect this length.
8) With a couple of drops of washing-up liquid inside the sheathing feed the BDK stator wires through the sheathing (the straighter they are the easier this is). Then cut off the protruding wire around two inches longer than the sheathing.

BDK RACE ENGINEERING ASHWELLTHORPE IND EST, NORWICH, NR16 1ER, UK
+44 (0)1508 481713 James@bdkraceeng.co.uk Web Site: www.bdkraceeng.co.uk
Webshop: www.bdkraceeng.co.uk/tc

9) Slide the heat shrink over the sheathing and heat it with a hot air gun or hair dryer until the glue can be seen to melt and press the heat-shrink to the wire with an object (it will be hot).
10) With a good quality set of crimping pliers attach the three crimps to the stator wires – the colours or position are not important as this is a three phase generator. Push the crimps into the connector block until you hear a positive 'click'. Tug gently to make sure the wires are all firmly held in place.
11) Ensure the threads inside the generator casing are clean and dry and fix the stator mounting plate to the casing using the 3 x M6x10 machined button head screws. Threadlock must be applied to the threads of the screws to counter vibration.
12) Fix the stator cup to the mounting plate using the 6 x M5 x 25 screws. You should ensure the cup is firmly on the plate before commencing and tighten the six screws gently and in several passes until the screw head is firmly down flat against the surface. A drop of threadlock should be used on the ends of all the screws.
13) Put a small smear of RTV silicone on the inside of the grommet where the wires pass through it and more in the trough of the grommet, then take the new cover and alternator assembly and fit to the engine taking care to line up the casing when fitting so as not to damage the alternator coils through misalignment. The gasket faces should meet square before tightening the bolts.
14) The regulator plugs straight into the regulator and fitting is complete. With the battery charged and the ignition on the LED on the reg/rec should glow dimly. When the bike is running at over 5krpm the LED should glow brightly – this is the initial check that the generator is charging.

**Please Note:** Never run the bike with the battery or regulator/rectifier disconnected as this may cause damage to the alternator. Please also be aware that as the system is designed for race use it only starts charging the system at approx 5000rpm, if left running for long periods of time below this it will eventually flatten the battery.
When the generator starts overcoming losses the green light on the reg/rec will shine brightly.

**Always start bike with a fully charged battery & either remove the fuse from the regulator positive wire or isolate the 12V +ve supply when not running the bike.**
**Also note that the regulator body must be earthed at all times**

## Important : All bolts must be fitted with thread locking compound – FAILURES HAVE OCCURRED IF NOT!

## Do not use standard regulator

**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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