

# B.D.K. RACE ENGINEERING.

## KTM 790 & 890 Race Alternator fitting instructions

### Contents:

1 x Stator Windings Assembly  
1 x Rotor Assembly  
1 x Regulator Rectifier  
6 x M6x16 Countersunk Screws  
3 x M6 x 10 Low-head Cap Screws

### Fitting:

- 1) Remove the original alternator cover and flywheel assembly
- 2) Remove the starter clutch from the original flywheel and install on to the back of the new supplied one using the M6x16 bolts and THREADLOCK
- 3) Mount our flywheel in place of the original using the original bolt and tighten to 75ftlbs (102Nm), do not torque to manufacturers original setting..
- 4) Remove the original windings from the cover noting where the wires fit and carefully clean the threads.
- 5) Coat the M6 machined screws liberally with thread locking compound and use these to mount the backing plate, taking care that the wire follows the same path as before and is not trapped or pulled particularly when fitting the wire clamp back in place.
- 6) Coat the M5 screws with thread locking compound and (after checking that the wires are not trapped) fix the winding cup to the mounting plate. Please note the screws should all be engaged before tightening and you should tighten the screws evenly over several passes until the heads bite into the surface of the stator. It is normal for the heads of the screws to deform slightly.
- 7) Apply silicone sealant to the groove in the grommet and on the internal side where the wires pass through the grommet ensuring a good bond there.
- 8) Whilst the silicone is still soft carefully refit the cover making sure that the locating dowels are in place and undamaged and taking care to align the cover so that the rotor does not damage the windings on insertion. Tighten bolts to manufacturer's spec.
- 9) Remove the original regulator / rectifier (r/r). The connector for the original r/r should be protected from corrosion as it will not be used.
- 10) Fit the enclosed reg/rec wherever convenient. We recommend that it be fitted securely where it gets a good flat contact to a metal surface along with airflow if it is possible.
- 11) The blue/yellow wire must be connected to a switched 12V positive supply (right after the ignition switch) .If it is connected to the battery positive then the unit must be isolated when the bike is not running (remove the fuse).
- 12) Plug the stator to the r/r ensuring good connection and attach the positive and negative wires direct to the battery.

**Please Note:** Never run the bike with the battery or regulator/rectifier disconnected as this will 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 & remove fuse from regulator OR isolate the 12V power supply after each use**

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

**Do not use standard regulator**

If in doubt – ask:

## **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.

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## 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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