



Rex's Speed Shop

Robertsbridge - England

LED 12 Volt Conversion XT500

Skill Rating: Expert

Thank you for purchasing our XT500 LED 12 volt conversion kit. This kit will supply DC power to the lighting circuit specifically for use with a LED headlamp. This kit is designed to work only with our LED lighting coil which must be fitted to the generator in place of any designed for AC/DC operation. The new regulator rectifier will have to be mounted and the wiring altered in order for the lighting circuit to be fed with DC power. To work as intended and remain reliable the fitting and wiring must be carried out to high standards.

We have designed our XT500 LED charging system conversion to be straight forward to fit, however it requires change to the way the system works so there could be minor issues to address that occur due to market variations we don't see in the UK.

There are no changes needed to the ignition, which remains as standard in all cases.

This LED kit is compatible with all our XT500 electronic ignition kits & Yamaha stators

Some Tips Before You Begin!

- The fuse is not changed. Use the same rating as the 6 volt system.
- The Motobatt MB3U is the recommended battery. The Regulator is designed for lead acid type batteries.
- For safety of the LED headlamp it is not possible to use a battery eliminator.
- Indicators can be glass bulbs or LEDs. You will need both an electronic relay and a tweak kit with LED indicators.
- Use only LED lamps intended for road legal motorcycles with a design voltage suitable for 12V operation.
- Not suitable for use with heated grips or clothing.

Technical support is via e-mail only. Should you need help please e-mail:

tech@rexs-speedshop.com

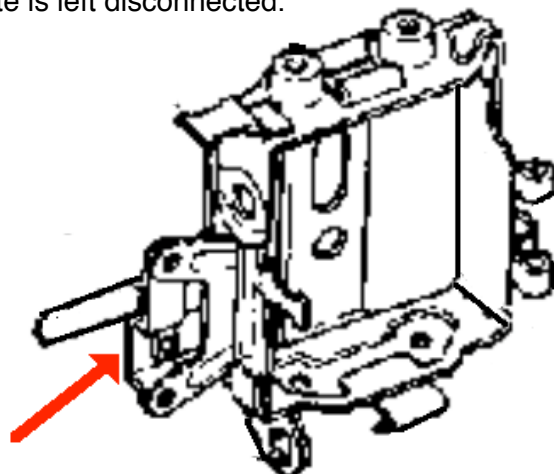
If you need an answer quickly, e-mail the tech team directly!

Please provide photos where possible.

Fitting Guide

1. Locate and remove the 6 volt regulator and the small black rectifier. The regulator has a single yellow wire (sometimes yellow & white). The regulator wire will be connected to the switched DC supply. The rectifier has two wires, one red and one white, the red is used the white is left disconnected.

The regulator & rectifier diode are under the left side panel mounted on the battery carrier. You may need to modify the mounting to accommodate the new larger RR unit



2. Fit the new combined regulator/rectifier unit to the bracket where the old regulator was fitted, you may need to modify this bracket in order to do this. The main loom earthing point is here, earth the RR unit here by securing the black wire from the RR unit together with the wiring loom main earth ring terminal. Make sure there is a good ground connection to the wiring loom.

3. Connect the red wire from the new RR unit to the red wire previously connected to the 6 volt rectifier. The white wire is not used and should be capped off and insulated.

The new connectors on the RR unit will match a standard loom - wire colours will match too. Note: older bikes may have faded wire colours, a red may have faded to pink for example.

4. Connect the new yellow wires from the generator to the RR unit, these go either way round.

5. Locate the indicator relay. At these connections create a link between the brown DC wire to the yellow headlamp circuit, via the old regulator connection. A brown wire for this purpose is included in the kit

- Identify the brown wire at the relay that becomes live when the ignition switch is in the 'on' position.
- Ensure this is a steady 12 volts. Do not make a connection to the brown/white wire.
- Remove the brown from any block connector at the relay, cut off the terminal.
- Make a spur connection at the relay. Use the brown supplied in the kit. Strip back the insulation and crimp the two wires together.
- Apply heat shrink over the terminal.
- If there was a block connector at the relay, replace it with loose terminals.



Strip the insulation back so the copper is long enough to sit in both crimp sections of the terminal.



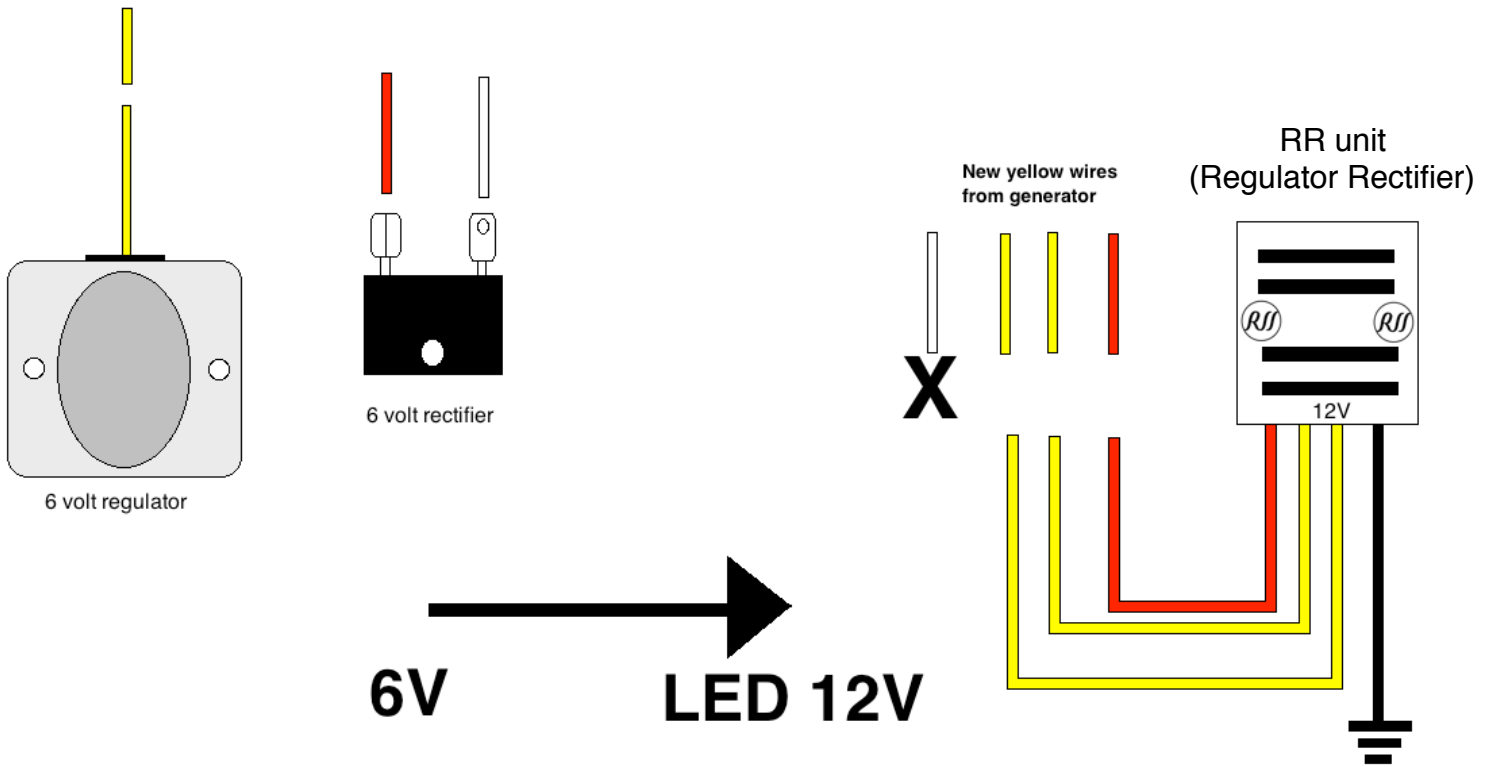
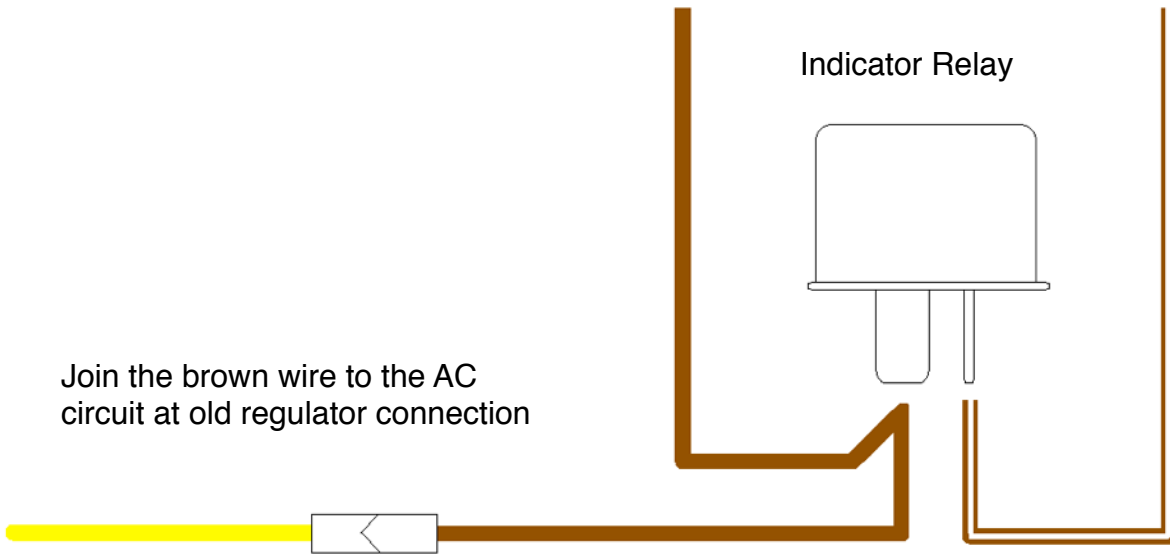
Crimp then apply heat shrink

Connect the new brown to the old regulator (yellow wire)



Fit to indicator relay

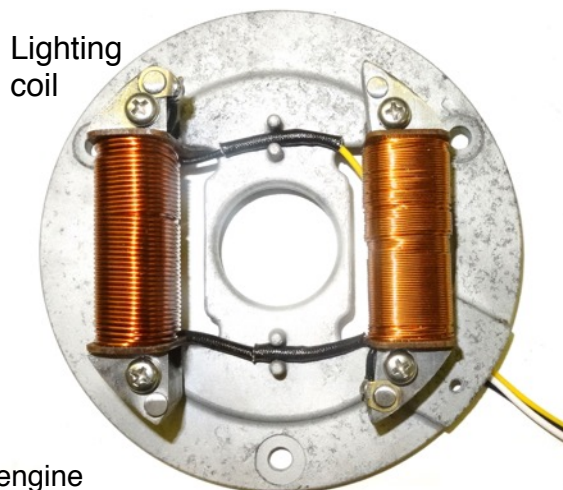
Wiring Diagrams



Fitting the Lighting Coil (Ignore this stage if you have a ready built stator kit)

Remove the fly wheel, use the correct fly wheel extractor (our p/n FWP-1) and either a pneumatic or electric impact driver ("rattle" or "buzz" gun) to remove the retaining nut.

Identify the lighting coil. It is the one on the **left** as the generator is fitted to the bike. The TT500 one is identical to the points source winding but has a red and white wire, so take care.



Remove the stator from the engine

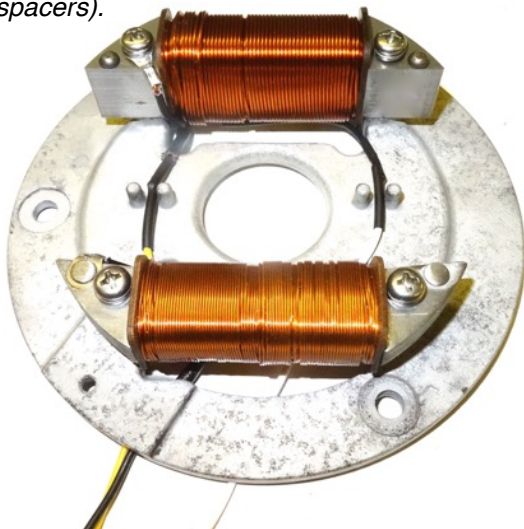
Undo the two lighting coil retaining screws. These screws are often very tight or corroded. Remove them with care.

Snip the wires coming from the lighting coil just past where they join the winding. Route the new wires and pull them through the loom. Add female bullet connectors to the yellow wires

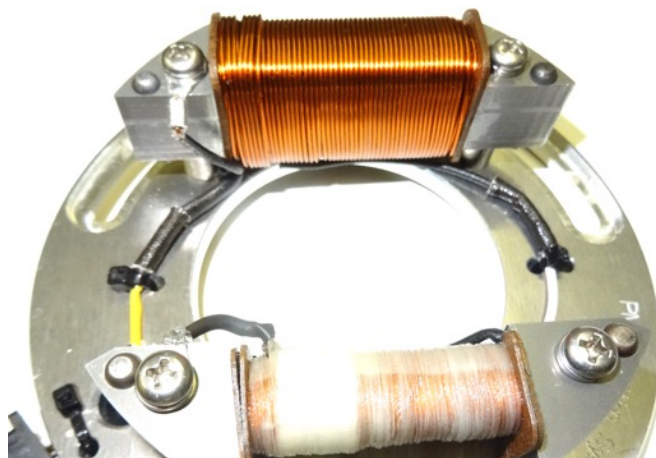
The terminals can be cut or removed from the connector block using a small jewellers screw driver.

Fit the new LC-2 lighting winding. On RMK kits you will need to place the spacers under the winding to mount it on. Run the wires as shown and use a blob of epoxy glue to hold them in place on a stock stator, or with small cable ties as shown on an RMK Stator kit.

Mount the lighting coil directly to OEM stator (no spacers).



Use 10mm spacers and screws supplied in kit to mount lighting coil to our billet stator



On LED windings both wires are yellow

Feed the new wires through the loom, trim to length and add female crimp terminals to the yellow wires.

Refit the stator plate and flywheel. Rotate the engine through 2 turns with the spark plug out and ensure there is no contact between the new winding and flywheel.

If there is contact with the winding, even very slight, remove the flywheel, loosen the winding retaining screws, push the winding away from the point of contact and retighten.

Refit the flywheel and re-check. If there is no contact, torque tighten flywheel to the value in the shop manual.

Applicable to all kits:

Connect a 12 volt battery, a Motobatt M3U is the recommended battery. Consult with your local battery supplier for other suitable alternatives.

You must ensure all equipment you fit to the bike is suitable for 12 volt operation.

The system is working correctly when the voltage is between 13.8 - 14.7 volts DC with the engine running between 1,100 - 2,500 RPM.

LED Lighting

As aftermarket LED lighting sets vary in build quality and suitability, with little in the way of design standards it may be a case of trial and error to find a system suitable for your intended application.

Trouble shooting

Lights not working or coming on when they shouldn't.

It is a case of carefully checking and following the circuits much as you would trace a pipe looking for a leak (or misconnection of pipes). A simple bulb type tester will help in tracing where the connection is lost or made wrongly.

TIP! Check connections in the headlamp. This is where most of these faults occur!

LED Indicators

If all four indicators come on at once you need a 'tweaker' kit available separately (p/n: ITK1). Incorrect flash rate will need an electronic relay to fix (p/n: IR-E12V). There is more information on the Tech Support page of our website regarding LED indicator problems and fixes.

Use of filament headlamp bulbs.

The XT system is designed to run filament headlamp bulbs on AC power. Changing this so that the system supplies only DC means there may not be sufficient power to run standard filament bulbs. Rectifying AC causes power to be used up in this process, heat is produced inside the rectifier which is simply wasted generator output. Where LED lamps are fitted, their power requirements are low enough for this not to be an issue. However if filament bulbs are fitted to the DC system, low battery charging rates or no charging at all may result.

You must not use:

Lithium-ion (iron) batteries
Battery eliminators