



XL250/500

12 Volt Conversion

Skill Rating:



The Honda XL500 has an unusual electrical system composed of two separate charging systems in the same wiring loom. We can convert most models to a 12 volt system by re-configuring the generator and voltage regulator. The modified 12 volt system supplies up to 45 watts of AC power to the headlamp bulb as well as sufficient 12 volts DC to charge the battery and power the rest of the lights. The generator must be sent to us for reconfiguration to 12 volts, this is not something that can be done at home. The second part of the conversion involves replacing both 6 volt regulators for one single 12 volt unit. The conversion is neat and easily installed with only a minimal number of crimp terminals to replace.

Technical support is via e-mail only. Note that you must correctly identify which system your bike has and be in possession of the wiring diagram. We stock Haynes manuals that have the wiring diagrams if you need to purchase one. If you have read this guide and are still unsure about the wiring you should get the work carried out by an experienced mechanic. This modification is given an expert rating.

There are NO changes needed to the ignition, the original HT coil is still used.

How to convert your XL to 12 Volts

If you wish to convert your bike to 12 volts you should first send your generator assembly to us for reconfiguration. We change the windings to 12 volt and return them with the correct voltage regulator and revised matching wire colours for you to fit. Below are the fitting instructions so you can see what is involved.

At the same time you can then either purchase an "Accessory Pack" which comes with a suitable 12 volt AGM battery, indicator relay, horn and 12 volt bulbs or if you prefer find these locally. This pack is priced lower than buying the parts separately.

Important - you will need to select a headlamp bulb in addition to the accessory pack, bikes from different markets often use different bulbs from UK machines. With older machines its always best to look at the bulb fitted to your bike. Often we find the specified bulb has been changed to something else. Note that we are not able to look up the bulb for you, however our website has good clear pictures of the different types.

Recommendations

- Use the same fuse as specified in the manual, this does not need to be changed for a different one.
- Use only the correct Japanese motorcycle crimp terminals as supplied with the kit. Avoid using other types.
- All crimp connections must be made using the correct crimping tools.
- The earth is as important as the feed wires.

If our equipment is mixed with non-recommended parts and the kit does not work as expected, you will be required to fit the correct specified parts BEFORE our technicians can commence trouble shooting.

You must not use:

LED bulbs (LEDS are OK for the indicators)

HID 'projector' bulbs.

Lithium-ion batteries. Any battery you use must be compatible with a lead acid battery charging system with 14.7 volt nominal output. Note adding LED lights may cause the system to charge at a slightly higher level.

Any different voltage regulator than the specified part - RR12V-1.

It should be noted that LED headlamps or bulbs must not be used unless they can run on AC power

It is a condition of sale that the installer assumes all responsibility and liability in ensuring that the system complies with local vehicle lighting laws and safety regulations.

Warning: Serious injury and/or damage to your motorcycle can result if you apply 12 volts to a 6 volt battery. Batteries can explode or leak acid if the wrong voltage is applied to them. Battery acid is highly corrosive and toxic. We recommend only AGM or sealed lead/acid batteries, to reduce the possibility of injury and/or damage to equipment.

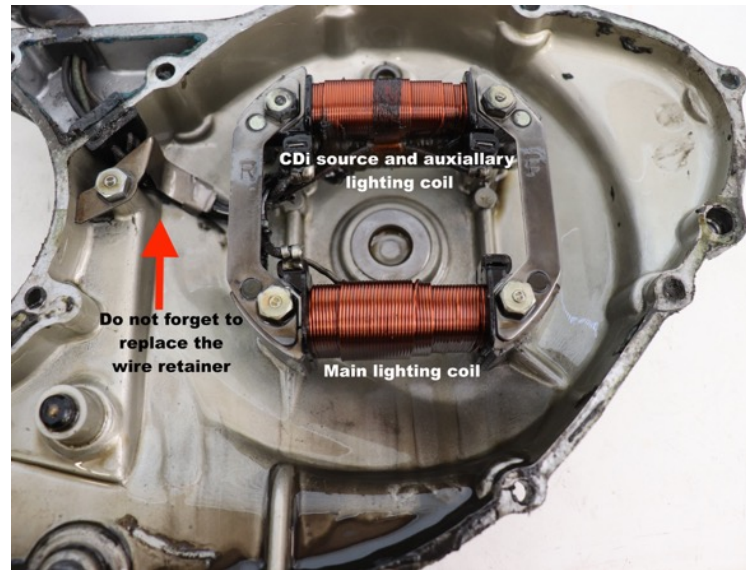
Fitting Guide

1. Some earlier models only have one regulator, however this conversion works equally as well on both systems. The wiring is exactly the same in both cases. Use your wiring diagram to determine which system you have. We sell Haynes manuals - these have the wiring diagrams.
2. The only changes to the wiring are made at the generator & DC regulator connection point. No other changes to the wiring loom are made.

3. Re-fit the reconfigured generator. Do not make any changes to the generator leads or connectors.

4. Locate and remove the 6 volt regulators. The AC regulator has yellow/white and green wires (green may have aged and look black). The DC regulator has 5 wires. These are usually located under the fuel tank.

Your shop manual will help you locate these parts.



5. Fit the new combined regulator/rectifier unit to the bracket where the old DC regulator was fitted. Place the green earth ring terminal wire 'A' wire along with the ring on the regulator's green wire 'B' under the mounting bolt.

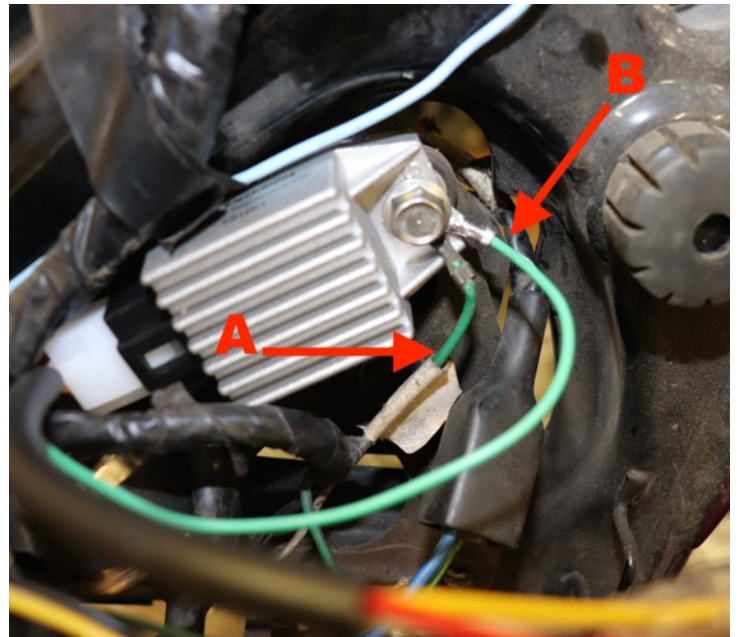
All of the following connections are made at the point the generator wire joins the wiring loom:

4. Connect the wires from the new 12 volt generator to the regulator loom. Use the terminals in the kit and replace those on the bike's wiring to suit what has been supplied on the generator and regulator leads.

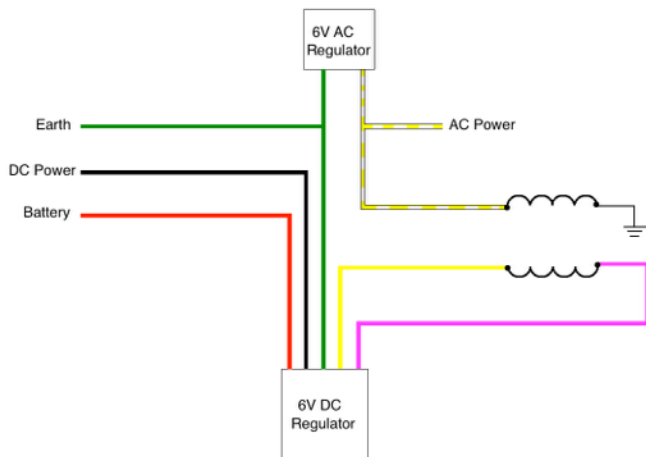
-The green wire from the generator connects to the green in the wiring loom.

-The black wire that connected to the DC regulator is left dis-connected. This **MUST** be insulated as it live. The simplest way is to fit a female bullet with its insulator.

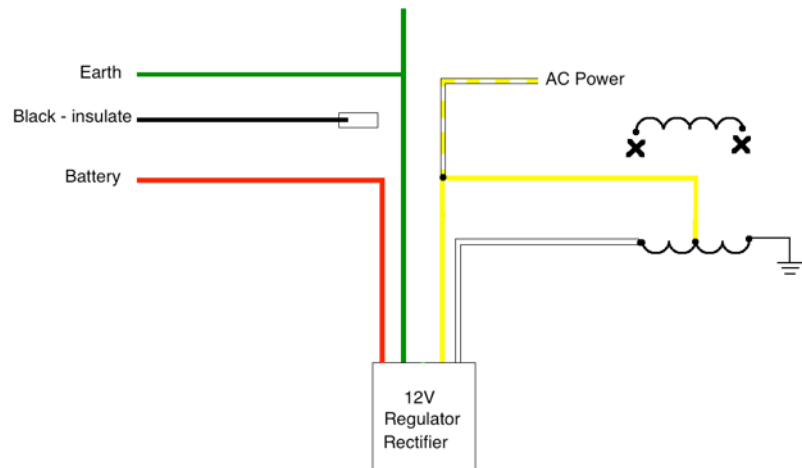
-The regulator yellow wire has a double connector, plug the yellow from the generator and the white/yellow from the wiring loom here.



Wiring Guide



Original generator wiring



Modified 12V generator wiring

5. Replace the 6 volt battery, bulbs, indicator relay & horn with 12 volt items. We recommend you replace the battery with a 12 volt AGM type of not less than 1.2 amp/hour.

6. Check that all the wiring is safe and secure and does not interfere with other controls. Confirm the lighting is working correctly, according to the law in your country. This is the responsibility of the person fitting this kit.

7. Check the system is charging, measure the battery voltage, at 2,500 RPM it should read between 13.8 and 14.7 volts regardless of whether the headlamp is on or off. Do not attempt to measure the AC voltage, most meters will not read correctly.

Troubleshooting

- **General:** Because the wiring system has not been changed, for all trouble shooting regarding issues such as lighting not working the shop manual must be followed.
- **Charging voltage slightly high:** Voltages that are slightly higher than the given levels are never usually traced to a faulty regulator. The fault is normally a number of bad earths in the standard wiring system. In older systems this is common, the fix involves remaking the earth connections and ensuring that the wiring loom has not been badly repaired in the past by removing the external covering and inspecting the condition of the wires beneath.
- **Charging voltage slightly low:** Rear brake light stuck on, headlamp bulb too high wattage (recommended 45 watt max). Battery too large (max 4.5 amp/hour). Accessories fitted, heated grips etc taking too much power.
- **Voltage over 20 volts:** Check regulator connectors. Regulators returned will be given full diagnostic testing on our charging system analysis equipment, those returned with damaged rectifiers due to incorrect connection to the battery will not be replaced under warranty.
- Never use a HiD "projector" or LED headlamps most are not able to run on AC power and will fail immediately.
- Never attempt to use only the DC output to power all electrical loads.
- This conversion is NOT suitable for use with heated grips or clothing.
- To reverse this conversion the generator will have to be rewound back to standard and new 6 volt regulators fitted.