Rex's 12 Volt Solid State Regulator Rectifier: RR12V-10

Rex's 'universal' solid state regulator/rectifier is designed to control single phase permanent magnet alternators with an output up to 200 watts. Requires either a suitable capacitor or a lead acid battery connected to its DC connections. Not suitable to be used with Lithium batteries.

Fitting guide

Fitting is straightforward providing you follow some basic guidelines. Nothing in this guide overrides any safety precautions given in the machine's original shop manual.

Warning: Incorrectly connecting the new solid state unit to the battery will destroy it in a second. Units returned with burnt out rectifiers caused by incorrect polarity connection or short circuiting will not be replaced as defective under warranty. Basic precautions and thorough checks are your friends here.

The red wire is positive. The black wire is negative.

The yellow wires connect either way to alternator output wires.

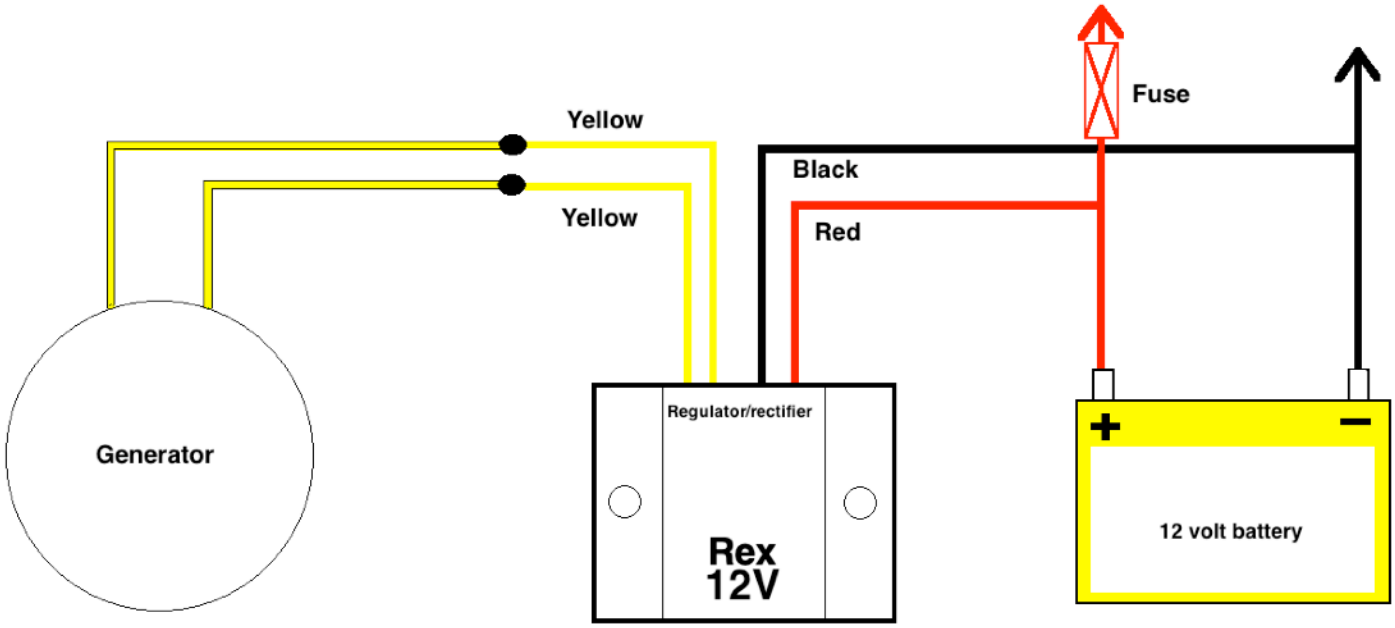
1. Disconnect and remove the battery while working on the machine.
2. Securely mount the unit to the machine.
3. Identify the AC output wires coming from the generator, usually white or yellow, Honda sometimes use yellow and a pink. Connect the two yellows from the new RR unit to these.

   It does not matter which order the yellow wires are connected to the alternator

4. Connect the red to the bike's positive (often red) and the black to the negative (often black). Please ensure you have access to the bike's wiring diagram or shop manual to confirm wire colours.

5. Refit the battery and check that the battery is being charged.

Wiring Diagram



Warning: Double check wire connections before connecting the battery.

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Regulator RR12V-10 Testing
Refit the battery. To test the system is working correctly simply measure the battery voltage using a suitable multimeter with the engine running.

The voltage should rise above the battery's terminal voltage and settle between 13.8 and 14.7 volts.

An ideal figure is 14.2 volts +/- 0.5V.
Excessive charging is over 14.7 volts. Under charging is below 13.8 volts.

The exact figure will depend on the alternator's power output, the load on the system, the condition, temperature and state of charge of the battery

Running with a battery eliminator and no battery will cause higher readings, 15 volts (with the lights off) are not uncommon. This is because the capacitor draws no power, as a battery does when being charged by an alternator.

Note: A slight drift away from ideal is never caused by a faulty solid state unit. You will see a marked departure from the nominal value if there is a fault. Alternator output, battery state of charge or load on the system causes small variations in observed voltage readings.

Cautions
-NEVER interrupt the DC connections between the solid state unit and the battery while the engine is turning. This will damage the regulator circuit inside the unit.

-Follow the machine's manual for fuse size. Where no other advice is given a fuse of 15 to 20 amps is sufficient. This will protect your electrical system in the event of a fault developing.

- Avoid lithium batteries. Your solid state regulator/rectifier is not designed to for them.

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