



# How to Repair Electric Bikes

Diagnosing Electrical issues and a quick tour for an easy fix and solutions to ongoing issues and easy resolution to your problem.

Written By: EastCoastCanMan



# INTRODUCTION

What to inspect and do when looking to resolve an electrical problem or take apart a controller to inspect and enhance it as well as fix other minor issues if they exist- what to look for!

I bought this bike for \$80 Canadian and have to figure out issues which I believe I did quickly and now I am reassembling the bike (bought it with plastics taken off and controller removed but the person was wrong to consider replacing his good controller when it was only a wire shorting out even though everything looks new i found the shorted wire within 10 mins. These pics are not in sequence and are only a guide to things I do and why.

This will help you fix your bike and keep you going for years without spending a dime sometimes.

I am also posting these pics on the Endless Sphere website and hope to make YouTube videos soon.

You will need simple tools and very little know-how. You'll just need a bit of patience, and take your time doing research.

This is an ongoing mission, so check back for updates.

I'm only just beginning the project. These pics are from the last few hours.

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## TOOLS:

- [Soldering Iron](#) (1)
  - [Solder](#) (1)
  - [Phillips #0 Screwdriver](#) (1)
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## Step 1 — How to Repair Electric Bikes



- Note that you should not be wet or barefeet when handling batteries and powered stuff. Do Notice Swelling & cracks in lead acid batteries these are stone dead and are not revivable as they have 0 volts. Perhaps the Epsom Salts trick as noted on many YouTube videos will get some life from these but are junk to me.
- Look for corroded and loose connections - Note the wiring diagram of how these four batteries are wired to make 48 volts. For 36 volts simply remove a battery from the connection.

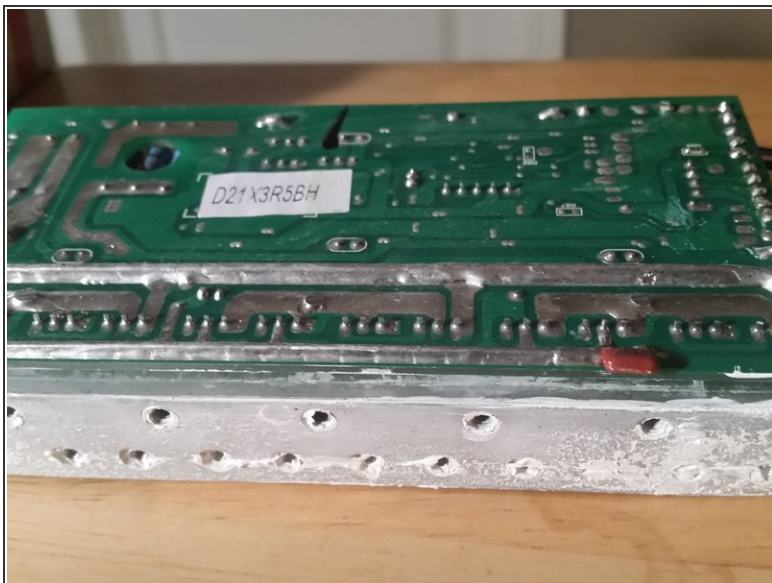
## Step 2 — Inspect controller connections and controller itself.



- Remove screws, loosen white plastic screw, slide casing end over wires to expose & remove controller. Look for any signs of water or overheat damages. In pic 3 notice the red wire and on the board next to it are two pieces what appears to be bare wires. They are shunts & can be soldered a bit on ends to add output power. DON'T solder all the way!!



### Step 3



- Notice the thick lines of solder on the board especially - this helps the power flow without burning out thin lines- this is an impressive controller on a cheap bike so far!

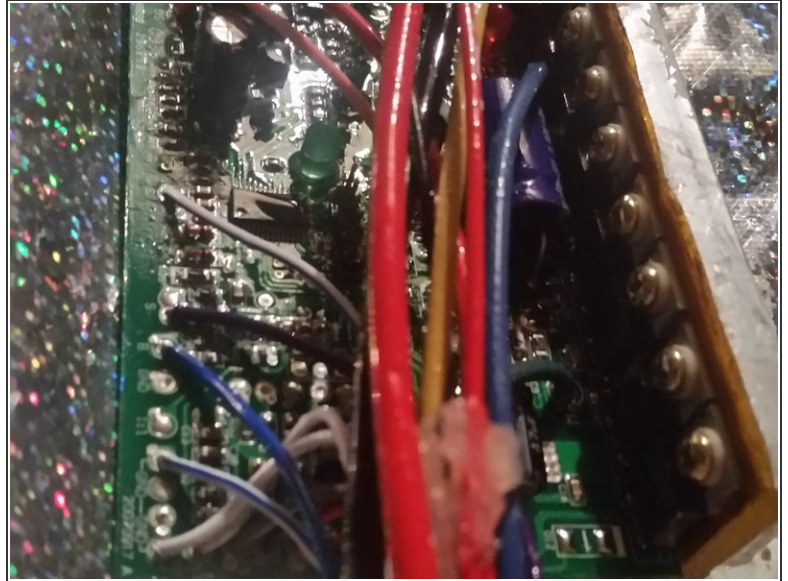
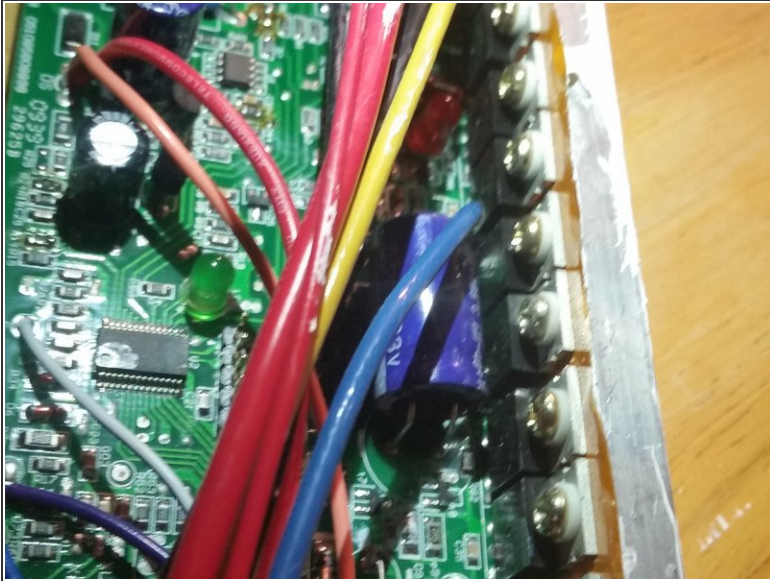
### Step 4



- Inspect connectors for melting corrosion & bad or broken wires or connectors- they should look clean like this one, absolutely No issues so far! This computer isn't burnt like the seller suggests and \$100. part from factory- No! Cheap ones available!!



## Step 5



- Inspect controller insides for broken wires and swelled capacitors and frayed wires loose solder points on the board. 2nd pic looks like the board is wet- normally a bad thing I have a new spray that protects it. Get to that later. I can smell burnt parts at times. Sniff around for the stinky electronic smell for clues and brown/black Hot spots!

## Step 6



- Inspect, lube, or replace bearings in center of wheels being careful not to damage wheel when removing or replacing. There may be a bearing place by you and bearing can be 3 to 5.00 You have to remove bearing so it can be measured.. some bearings can be taken apart and greased but not good unless in good shape prior.

To fix electrical issue look at pics and see how things come apart and what to look for.and simple fixes.