# Simple repairs and help for the Carsteen CS4-2 Controller

1. Intro
2. Maintenance
3. Brake
4. Output
5. Wire

1:

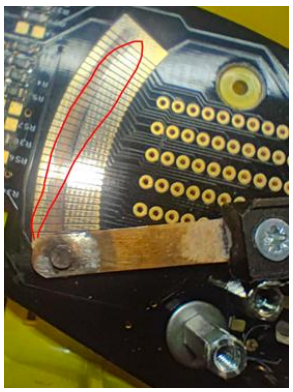
This small guide is based on my own experience repairing the controller and good help and assistance from Steen. The purpose of this guide is to help all racers that might have a problem with the controller, give some knowledge to fix it and share knowledge. As you all know Steen will not make many more repairs so we must share all info we have.

If anyone has more guides, please shared. In a short time, I will add something about the different voltages on the controller so it is easy to check if everything is ok, and also the different upgrades I know about.

Hopefully other people with better electronic skills can add diagrams and proposal for upgrades.

2:

Clean the surface often and lubricate with a single drop of WD40



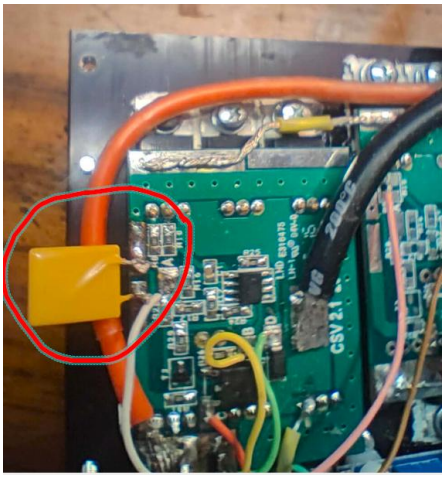
Make sure the trigger arm has good contact and the viper button is properly soldered to the arm.

3:

Missing brake, I have seen 3 failures on the controller

Bad connection at this point, clean and adjust the contact, have seen people add a set of contacts here to improve the contact. If this point doesn't work properly there will be app 4,5 volt on the output of the handle when you release the trigger. Shortening the spring a little, will also improve it.

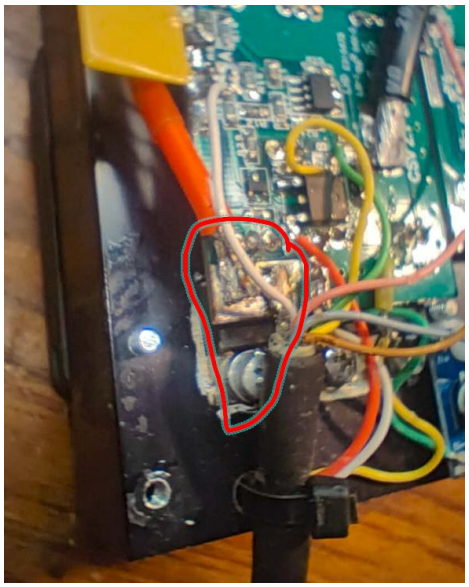
The Polyswitch, as you can see in the group Hans is already writing about this and hopefully this can be improved in the future. It is easy to change it normally it is 1,85amp, Steen recommended changing it to 8 amp, but this gave us a new challenge.



When racing high KV brushless motors the 1,85 seems to be too small and the Polyswitch opens, it will close again in a short period of time, but we have seen that the resistance is increased and therefore must be replaced.

Then when an 8 amp polyswitch is mounted we have another issue.

If a high current flows through the polyswitch it takes relatively long time before it opens, this will damage the mosfet 1404 for the brake, it is placed here under the pcb.

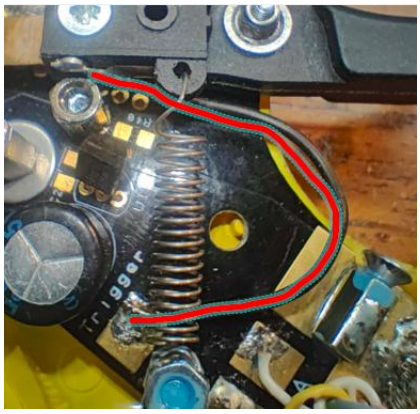


It is possible to exchange it, just dismantle the complete board and change the Mosfet std type easy to purchase

4:

No output on the controller.

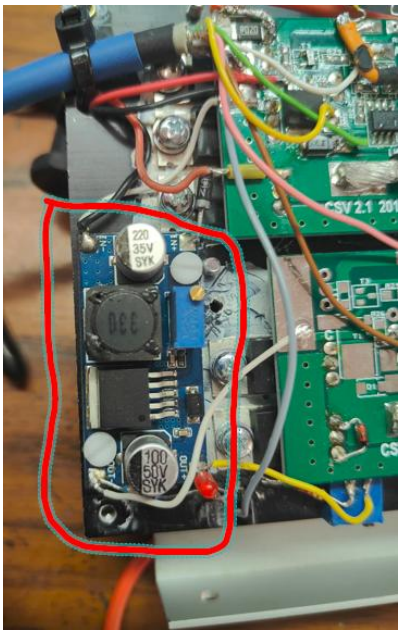
First I will check this wire.



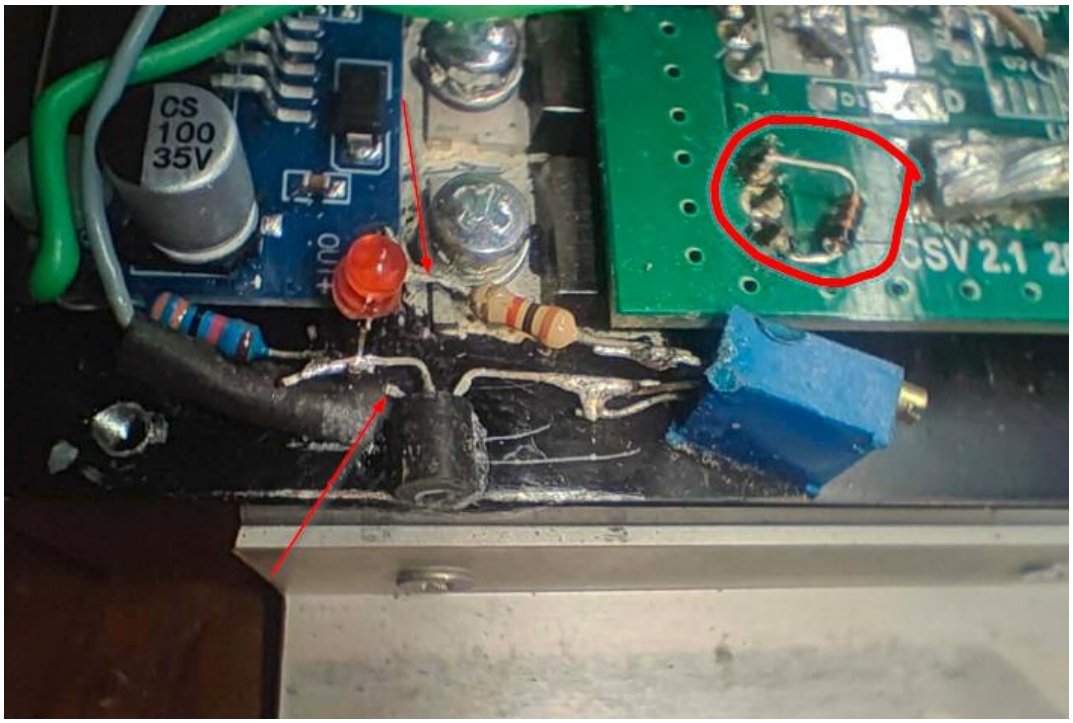
Easy to fix and it is common that this will break at some point.

So, change it and it will never fail during a race 😊

On the cooling block there is this dc-dc step up module mounted. It is a std module you can buy at many places, only note the amp on the board must be min. 2 amp



We must check the following




LED must be lightening, otherwise, change it, normal red led.

Measure voltage on OUT on the dcdc converter, at the LED and before the resistor going to the trim pot.

Voltage must be around 30v, if it is broken it is 0V,

Then there is transistor (bc558B) check the connection to the grey wire, this wire is mounted on the handle, we must have 18V here, If 0V check replace transistor and Led and check resistors.

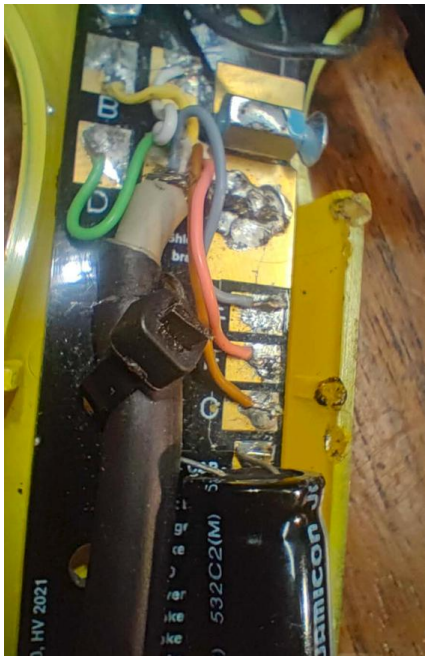
If you measure app 29v here, you must replace the small 18v Zenerdiode marked with red.

Failure here is normally due to the grey wire on the transistor touches the minus on the diode, due to missing protection, has seen it several times. So, give it some shrink tubing.

Please pay attention to the pot-meters, especially the soldering they tend to get a bad connection over time, just resolder them and they are also std pot-meters and easy to purchase and replace.

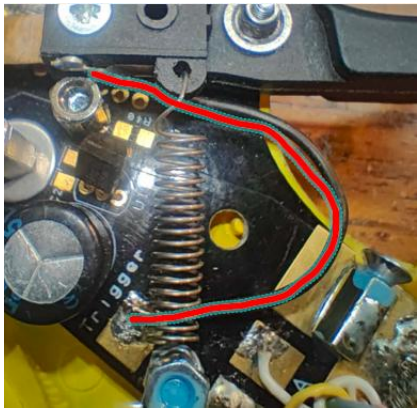
5:

Cable for controller, it is a twisted shielded 6*0,14 reinforced, easy to buy and not so difficult to install



Take a picture and just mount it the same way on the handle and on the control unit.

And as we have seen the small wire on the trigger




I don’t have the exact data on the wire yet but app 1*0,35 or 0,5  silicone wire

Good luck with your controller and please write if you have issues

Claus