

Sega Dreamcast Controller Port Repair Kit Installation Guide

Thank you for your purchase of a Sega Dreamcast controller port repair kit from Mortoff Games. This guide is designed to take you through the steps involved in the installation of your repair kit. If you have any questions during the course of the installation of your kit please contact us at CustomerService@MortoffGames.com

Thing you will need:

- 1) Sega Dreamcast controller repair kit
 - a. X1 13ohm 1/2W 5% resistor
 - b. X1 0.39ohm 1/4W 5% fusible resistor
 - c. X1 47uf 10V capacitor
- 2) Philips head screw driver
- 3) Soldering iron
- 4) Soldering Braid
- 5) Solder

Please Read

It is important to understand that the most common cause for a controller port not to function on a Sega Dreamcast system is because the 0.39ohm 1/4W \pm % fusible resistor is blown. Why does this happen is the really important part.

This fuse resistor regulated the flow of electricity from the controllers into the system. If there is a short caused by the controller it will blow to protect the system. This is often caused by third party controllers or defective OEM controllers. Please do not continue to use the controller that caused the problem after you repair your system as it will most likely blow the replacement fuse resistor.

Getting started:

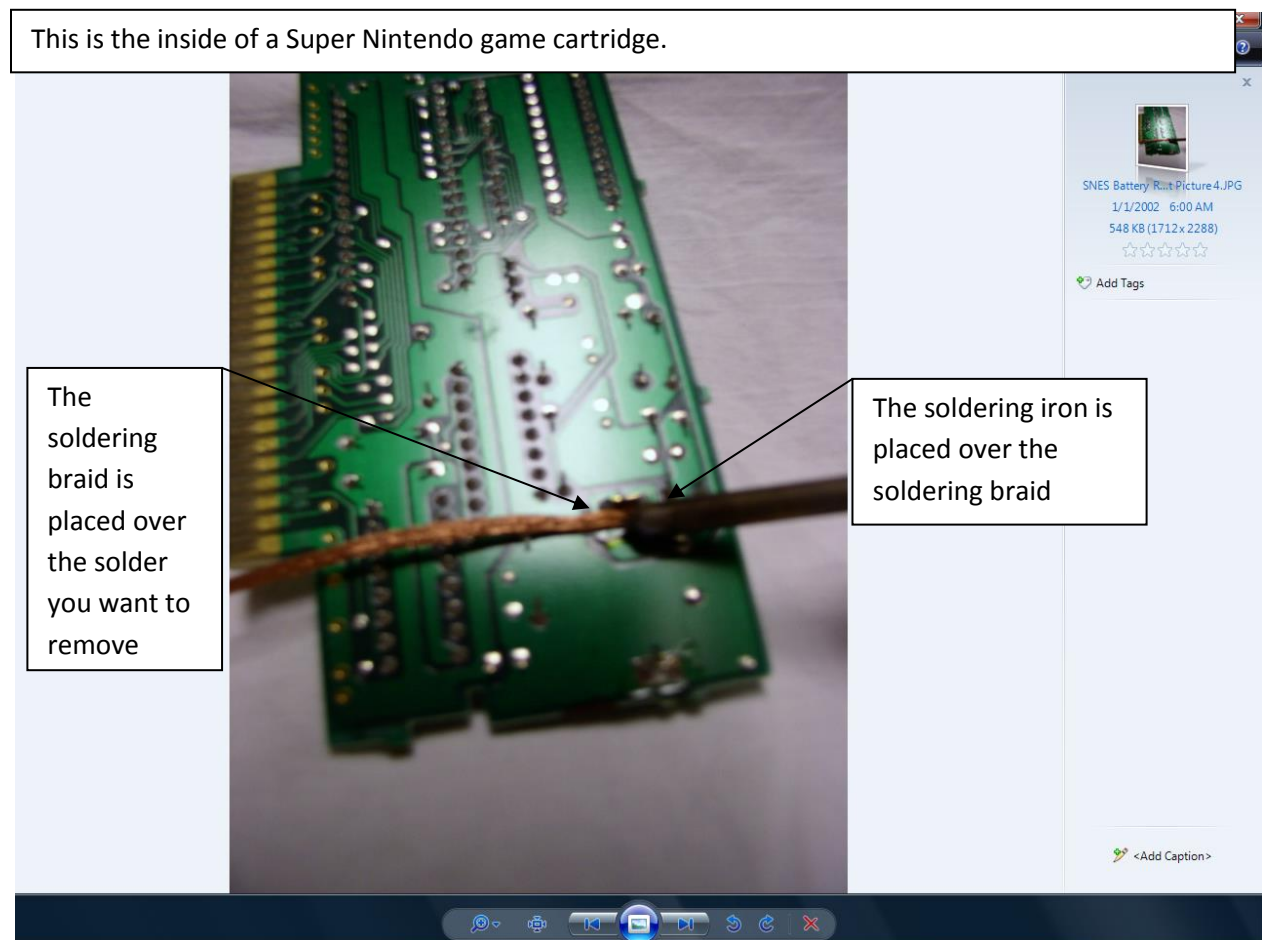
If you have a fair amount of soldering knowledge it is safe to skip ahead to step one, otherwise it is recommended that you read the following how to solder guide, which will discuss the soldering techniques you will need to successfully install your repair kit.

Soldering Techniques:

In order to solder and unsolder correctly you will need a soldering iron, solder and soldering braid. Once you have these items it is safe to proceed forward. For the duration of this project it is not recommended that you use a cold heat or any other instantaneous heating soldering gun, since these devices use an electrical current to melt the solder. Passing a strong electrical current through your games is not recommended and as such should be avoided. We recommend that you use a typical soldering gun, the type that you have to plug in and wait to heat up. In addition it is recommended that you set your soldering iron to 30watts for the duration of this project.

Unsoldering-

Correctly unsoldering a joint is rather easy once you get the hang of it. In order to unsolder a joint place soldering braid over the solder you wish to remove and then place the soldering iron over the soldering braid. The soldering iron will heat the braid and in turn the solder will liquefy, which will be sucked up by the braid. Please see picture one



Picture Introduction: Soldering braid usage

Although it might take a little while to completely remove all of the solder, patience and persistence will pay off in this case. Every 10-15 seconds remove the soldering braid and check to see if the solder has been fully removed. Take note to notice the accumulation of solder on the soldering braid. As it is sucked up you should periodically keep cutting off the used portion of the soldering braid and use fresh braid as needed. Once you have successfully removed the solder you will want to clean the area off with a little rubbing alcohol to ensure the area is clean.

Soldering-

Now that the solder has been removed you can now remove the object that the solder was holding in place and you are now ready to solder something new into place. The two most important things to keep in mind are:

- 1) Never allow patches of solder to overlap or touch, doing so creates a short, thereby rendering the circuit inoperable.
- 2) Make sure to use enough solder to securely attach whatever it is you are soldering, do not be afraid to test the joint out.

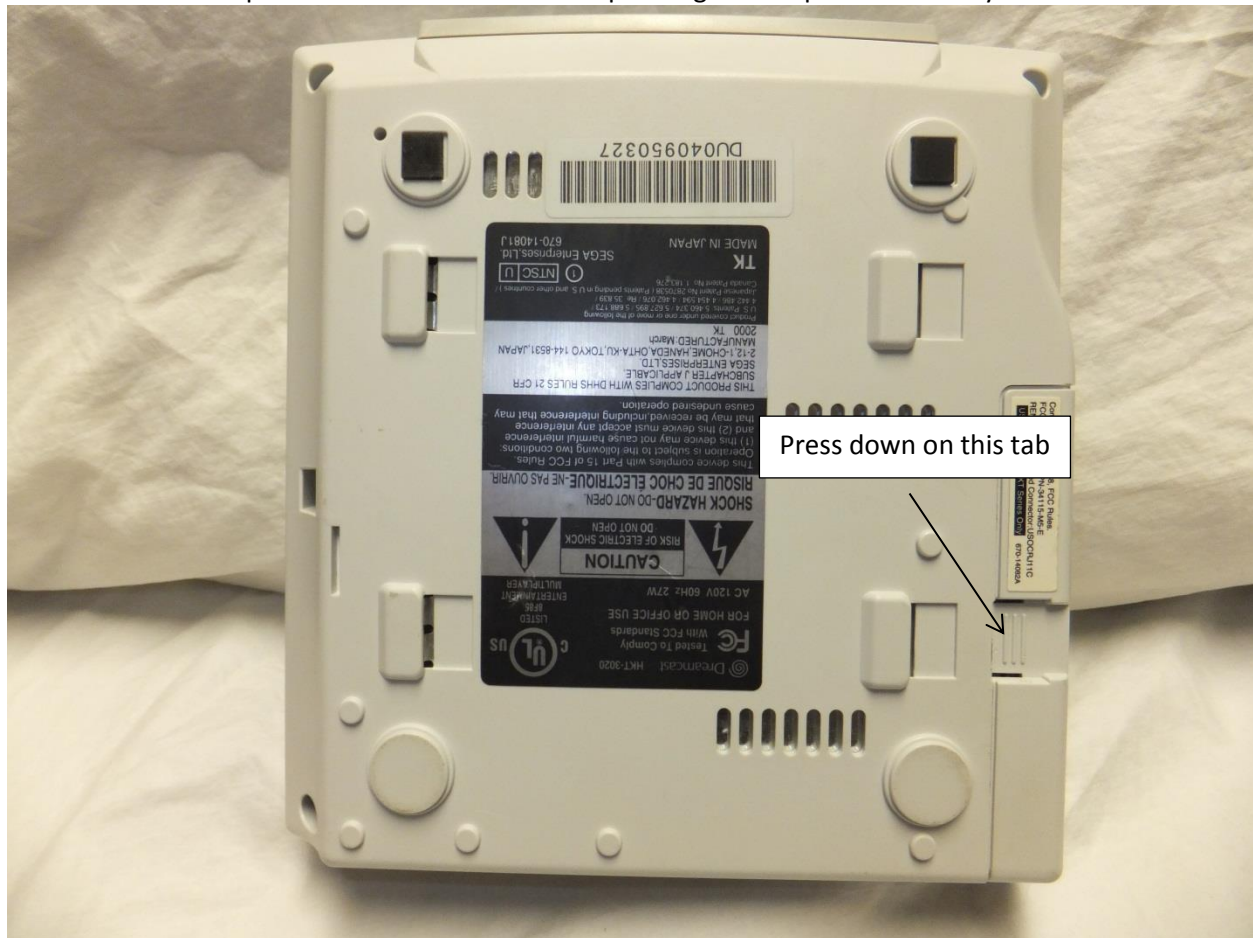
Keeping these items in mind lets continue with our demonstration. This part of the project is pretty easy once you get used to doing it. All you have to do is take your solder and place it over the soldering joint and then lightly place the soldering iron over the solder. This is just like unsoldering, although this time you are soldering and not unsoldering.

This part is a little tricky when you first start and is hard to describe with words alone. It is recommended that you test out melting solder first to get an idea of how it behaves. One ideal exercise you might want to try is to attempt to solder together two pieces of wire. Take two pieces of wire, strip the ends, twist the ends together and then practice applying solder over this twisted joint.

During the course of this project if you run into trouble remember you can always back track and remove the solder and try again, using the soldering braid. Soldering braid and solder are very cheap and as such are worth playing around with to get comfortable with before you go ahead and try to solder in a replacement battery. Now that we have covered the basics of soldering and unsoldering, let's get started with the installation of that repair kit.

Step One:

First flip your system over and disconnect the network adapter from the system by pressing down on the tab indicated in picture one below and then separating the adapter from the system.



Picture One: Separating the network adapter

Once the network adapter is removed please proceed to step two.

Step Two:

Now that the network adapter is removed please locate the four Philips head screws that are holding the two halves of the casing together and remove them.

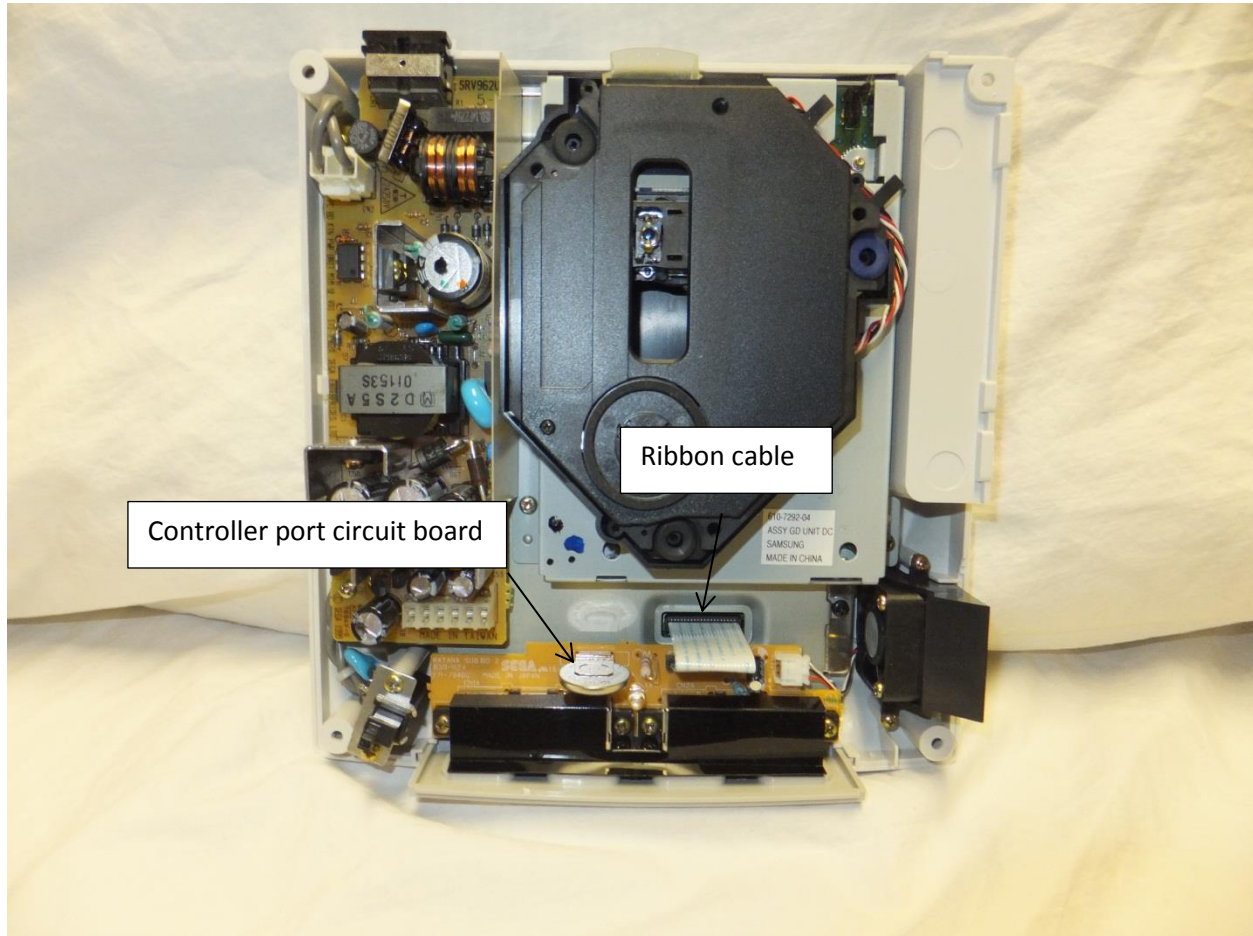


Picture Two: Removing the four screws holding the two halves of the casing together

Once the screws are removed please separate the two halves of the system's casing and proceed to step three.

Step Three

Now that the system has been opened please locate the controller port circuit board as seen in picture three below. Once you have located the board please proceed to do the following. Unscrew the four screws holding down the controller port circuit board and then disconnect the ribbon cable as seen below.

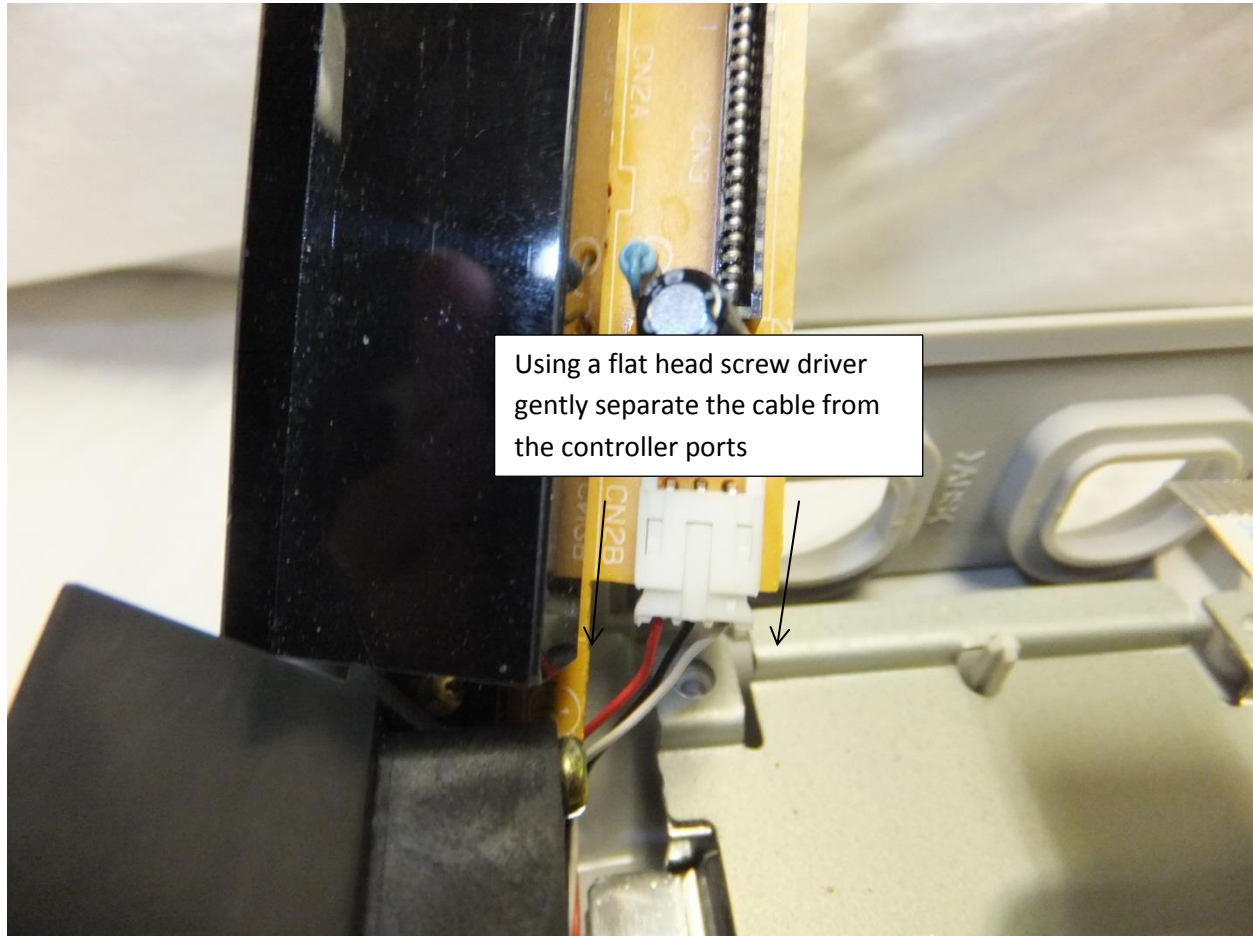


Picture Three: Controller port

Once the controller port circuit board is unscrewed and the ribbon cable is disconnected there is one more cable holding down the controller port circuit board. Please proceed to step four for instructions on its proper disconnection.

Step Four:

As seen in picture four below is the last cable connected to the controller port circuit board. Please do not pull on the two cables as this can damage either the port or the cable itself. We recommend that you use a small flat head screw driver to gently disconnect the cable from the controller port circuit board.

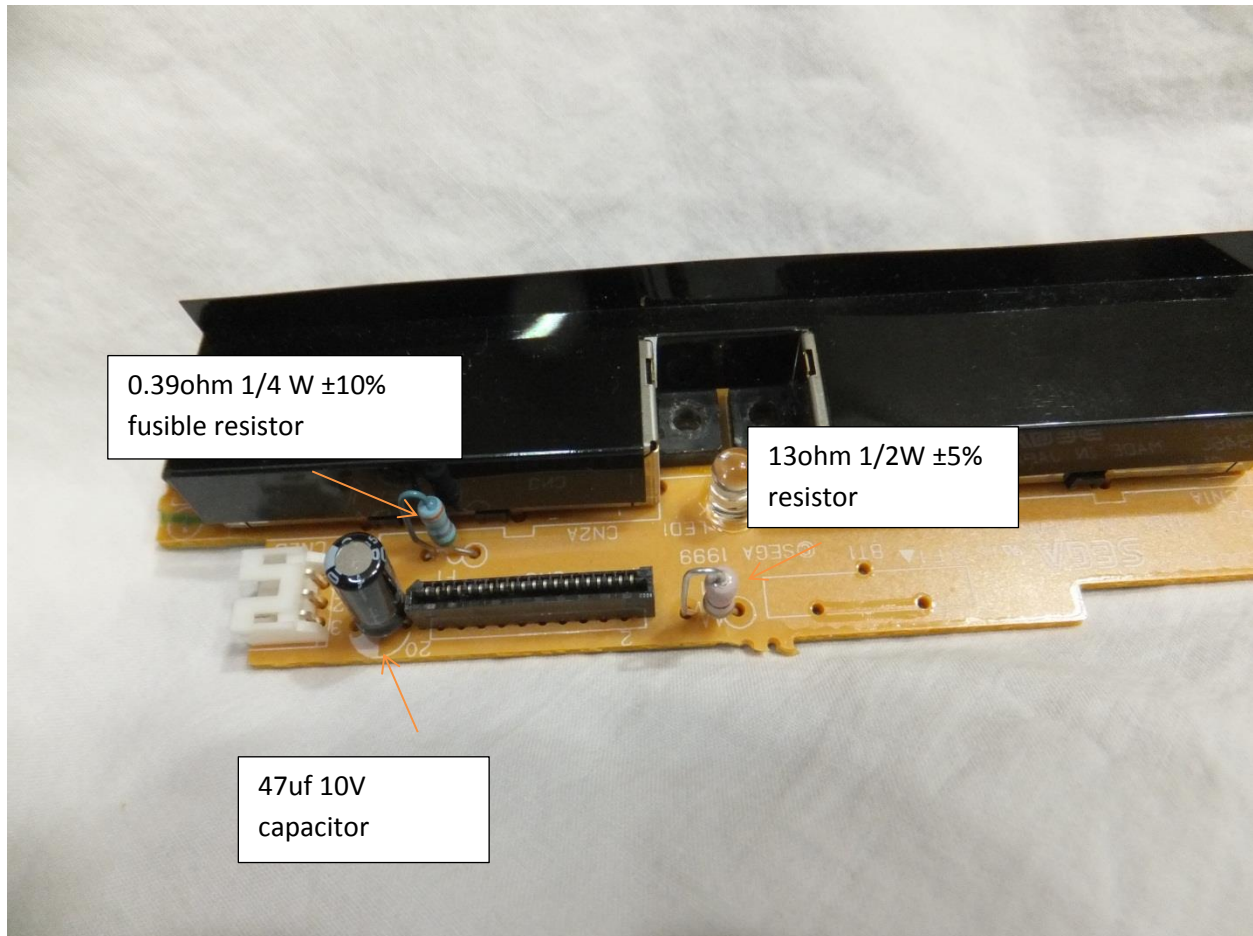


Picture Four: Last cable holding down the controller port

Once the last cable is removed please proceed to step five.

Step Five:

Now that the controller port is free please familiarize yourself with the parts that we are interested in replacing. As seen in picture five below the parts are identified.



Picture Five: Parts that we are interested in replacing

First it is important to note that you do not have to replace all of the parts, only those that are defective need to be replaced. The most common part to blow out is the 0.39ohm 1/4W ±10% fusible resistor. This is because it acts like a fuse to prevent current overloads from faulty controllers. Therefore if you are going to replace only one part this is the one to try first; however there is not harm in replacing all three parts with the brand new ones provided.

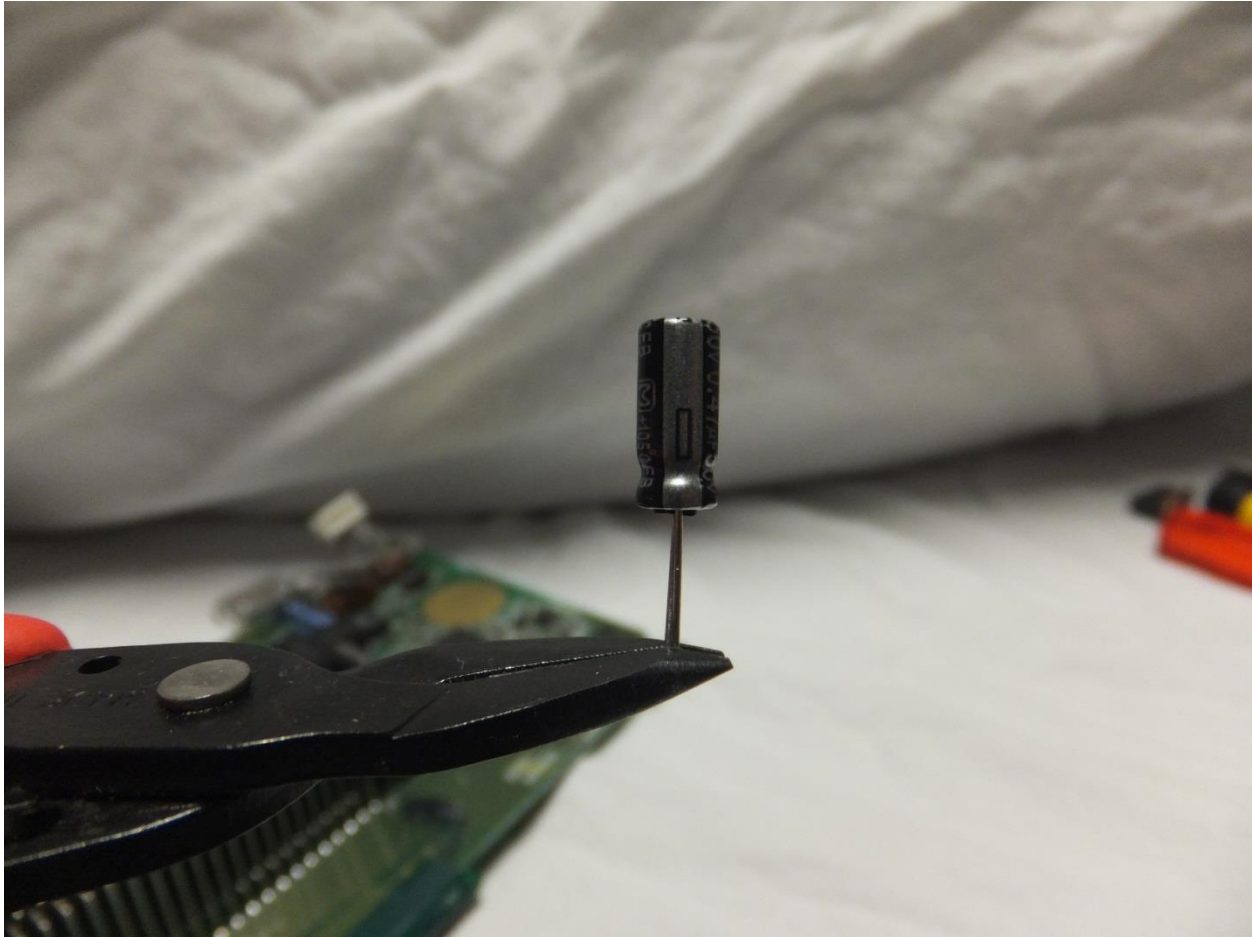
The installation is quite easy for the resistors as they can be installed in either direction in that they do not have positive or negative ends. Therefore simply remove the resistor and solder in the replacement.

The only part that has a directional flow is the capacitor. This is discussed in the next page.

Step Five Continued

Capacitors have a positive and negative terminal and it is very important that you install them so the positive terminal of the capacitor is soldered to the positive terminal on the circuit board and vice versa.

As seen in picture six below the negative terminal of the capacitor originates from the part of the capacitor that has a strip running down it. This strip can vary in color.



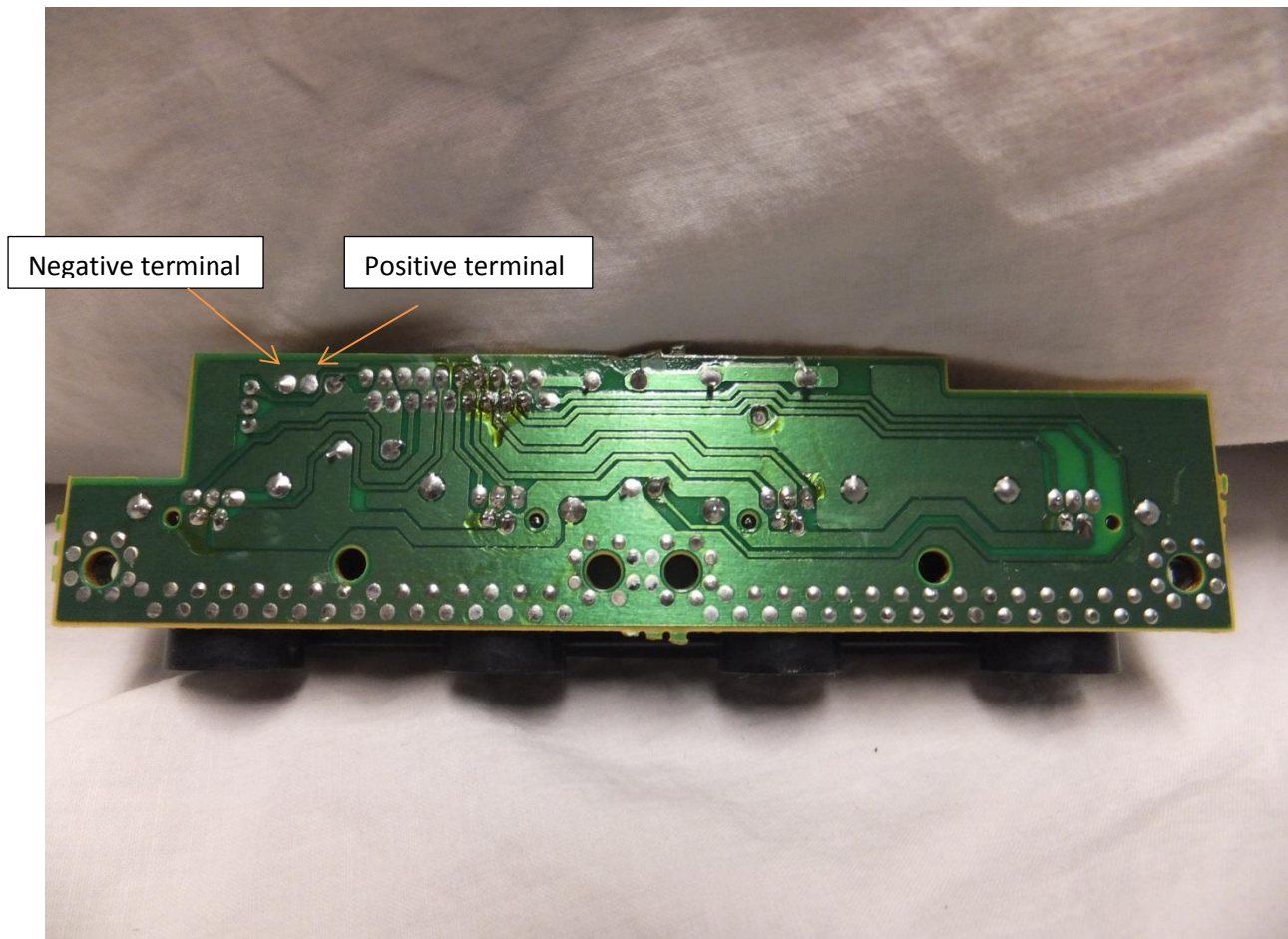
Picture Six: Replacement capacitors

In this case the strip is silver in color. Please don't be fooled as the strip can be different colors. Just remember that the strip always denotes the negative terminal of the capacitor. Lastly the microfarad (μf) rating and the voltage (V) of the capacitor are listed on the capacitor itself.

Please proceed to the next page

Step Five Continued

As seen in picture seven below the negative and positive terminals of the capacitor are listed below.



Picture Seven: Capacitor terminals

After you are done replacing the defective parts please reassemble your system and enjoy your repaired system. If you run into any problems after the installation of your controller repair kit please see our troubleshooting section at the end of this guide.

Troubleshooting Guide

We are sorry to hear that you ran into problems during the installation of your controller repair kit. Please select the problem that is the closest to the one that you are experiencing from the list below. If you have additional questions please contact us at CustomerService@MortoffGames.com

1) I have to enter the date and time every time I start the Dreamcast system up

- a. This is because the CMOS battery is defective and needs to be replaced. We sell them on our website.

2) My controller ports don't work

- a. Did you make sure to plug the cables back into the controller port circuit board?
- b. Did you replace all three parts that came in the kit?
- c. Did you make sure that the leads on the capacitor were arranged in the right direction? Positive to positive and negative to negative?
- d. Did you make sure to try another controller? As mentioned in the introduction to this guide the reason that the 0.39ohm 1/4W fusible resistor blows is because of a power overload caused by a defective controller. If you used that controller again and the fuse is blown you will need a replacement. Contact us for purchasing options.