

## **Sega CD 2 CMOS Battery Replacement Guide**

Thank you for your purchase of a Sega CD 2 CMOS battery replacement kit from Nintendo Repair Hut. We appreciate your business and look forward to serving you again in the future. This guide is intended to take you through the steps involved in the installation of your repair part. If you have any questions along the way please contact us at [Starwander@Comcast.net](mailto:Starwander@Comcast.net)

### **Thing you will need**

- Sega CD 2 CMOS Battery
- Small Philips head screw driver
- Small flat head screw driver
- Soldering iron
- Solder
- Soldering braid
- Fume hood
- Patience
- A clean work area where small parts will not get lost
- About 30 minutes of spare time

### **Safety**

This repair requires hours of extensive solder and unsoldering. Much of the old solder is composed of lead and other harmful toxins. In addition the board is covered in plastic and glue that can be melted during this repair. All of these substances should not be inhaled. Throughout this repair you should use a fume hood to protect yourself from the dangers associated with breathing these fumes in. Please do not try to do these repairs without one. We are more than happy to provide you with a full refund on this repair kit rather than have you endanger yourself because you lack the proper protection equipment.

### **Soldering Skills Needed**

This repair requires extensive soldering skills and should not be attempted by a novice. You are more likely to damage the system if you don't have the proper skills. We recommend that if you are not completely comfortable with your soldering skills you return this repair kit for a full refund at this time.

### **Patience**

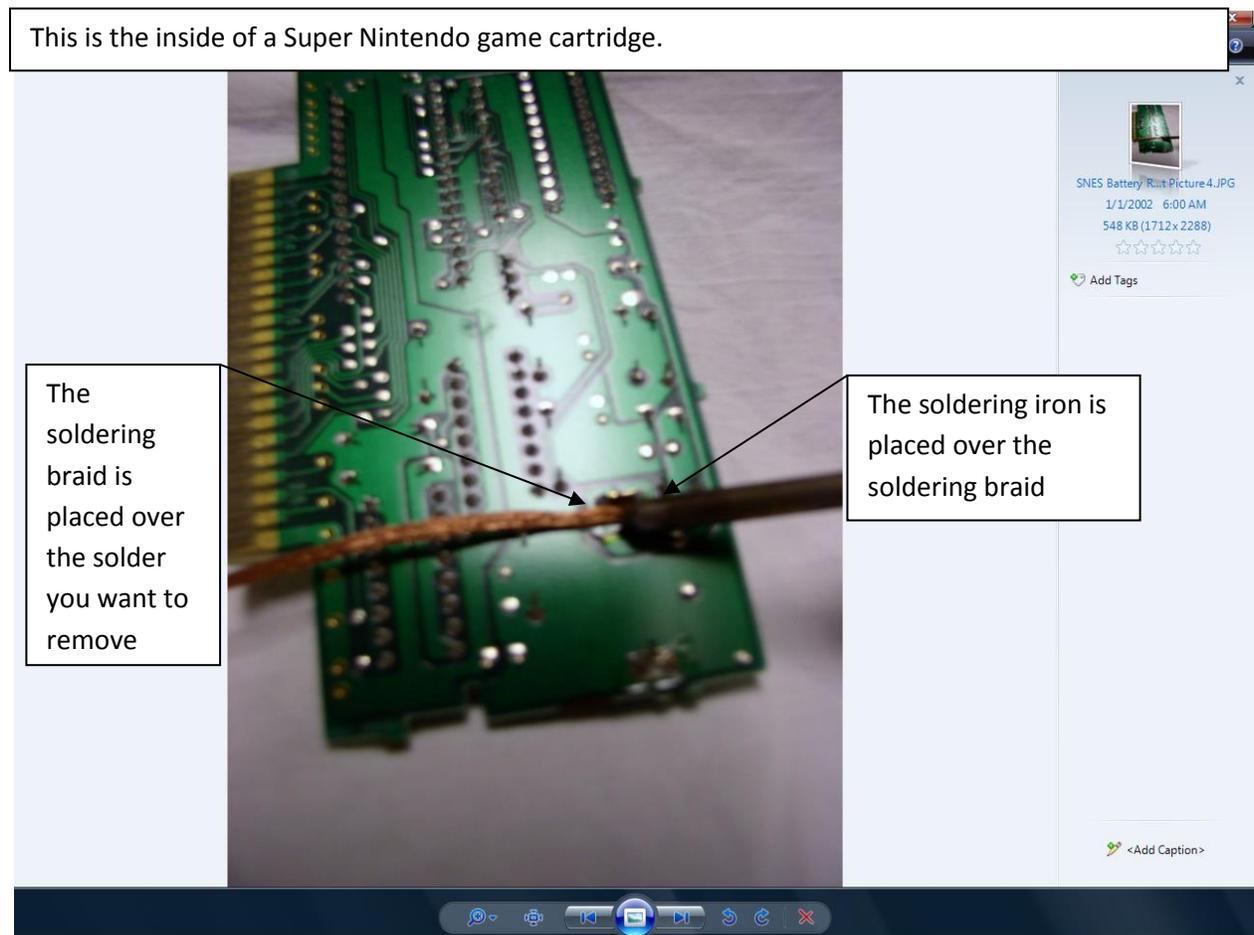
This repair requires roughly 30 minutes work. If you start to get tired we recommend that you stop and come back to the work at a difference time. Attention to detail is an absolute must during this repair.

**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 recommend that you use a cold heat or any other instantaneous heating soldering gun, since these guns 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 the picture below.



Picture Introduction: Proper usage of solder braid

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 have been fully removed. As soldering braid is takes up solder periodically cut off these used sections as needed.

**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. During this project it is not safe to use excessive soldering material as bridging between joints is very easy due to their close proximity to each other.

The two most important things to keep in mind are:

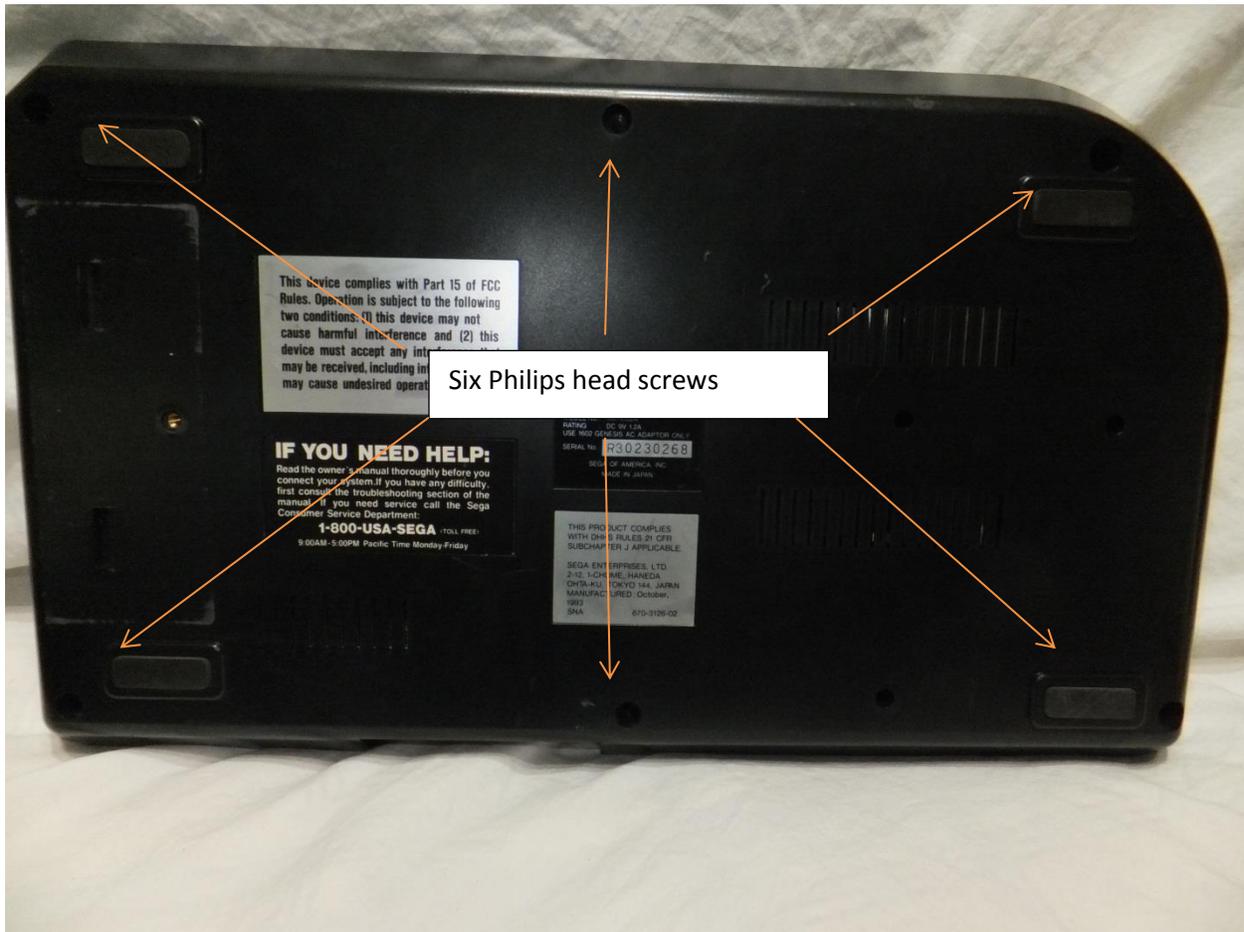
- 1) Never allow patches of solder to overlap or touch, doing so creates a short, thereby rendering the circuit inoperable.
- 2) Make sure to use enough solder to securely attach whatever it is you are soldering, do not be afraid to test the joint out.

Keeping these items in mind lets continue with our demonstration. To apply the solder take it 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 replacement of that CMOS battery.

**Step One:**

To start please remove your Sega Genesis from the Sega CD if it is currently attached. The easiest method of doing this is to lift the system up from the Sega CD unit slightly and then pull. It might require a little force to get out. Once the system is removed please flip over the Sega CD system and remove the extension plate if it is attached. All that is required is the unscrewing of a Philips head screw. Afterwards your system should look like picture one below.



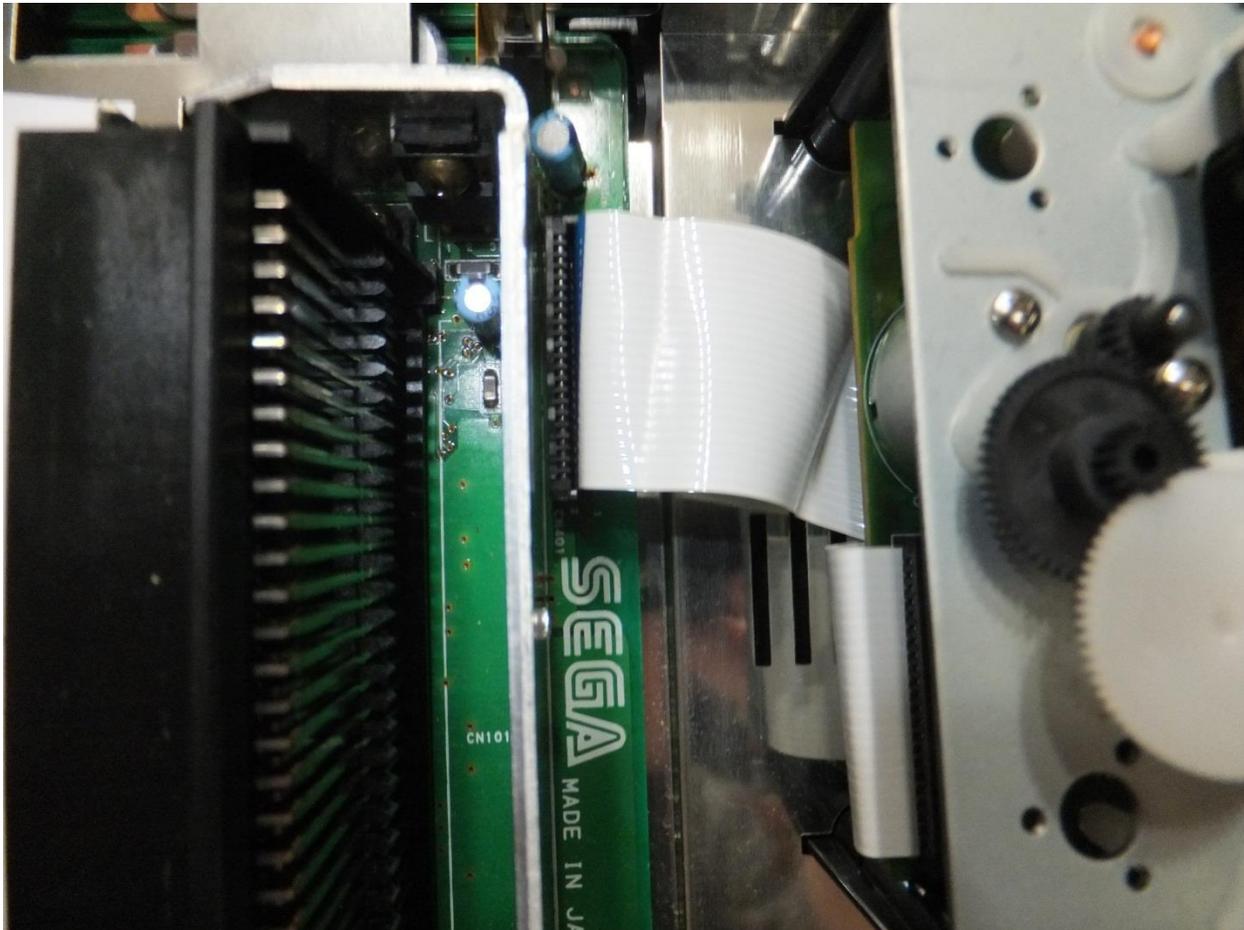
Picture One: Bottom of a Sega CD 2 system

Once you locate the six Philips head screws holding together the two parts of the casing please unscrew them and remove the top cover from the system. Once done please proceed to step two.

**Step Two:**

Now that the system is open it is time to really start the disassembly procedure. Fortunately it is pretty easy, although it is important to note that various lengths of screws are used to hold the system down to the casing. Please take note by marking on the inside of the system shell with a Sharpie marker which holes use the longer screws.

Before we can begin unscrews any screws however it is necessary to disconnect the laser assembly from the mother board. Please see picture two below.

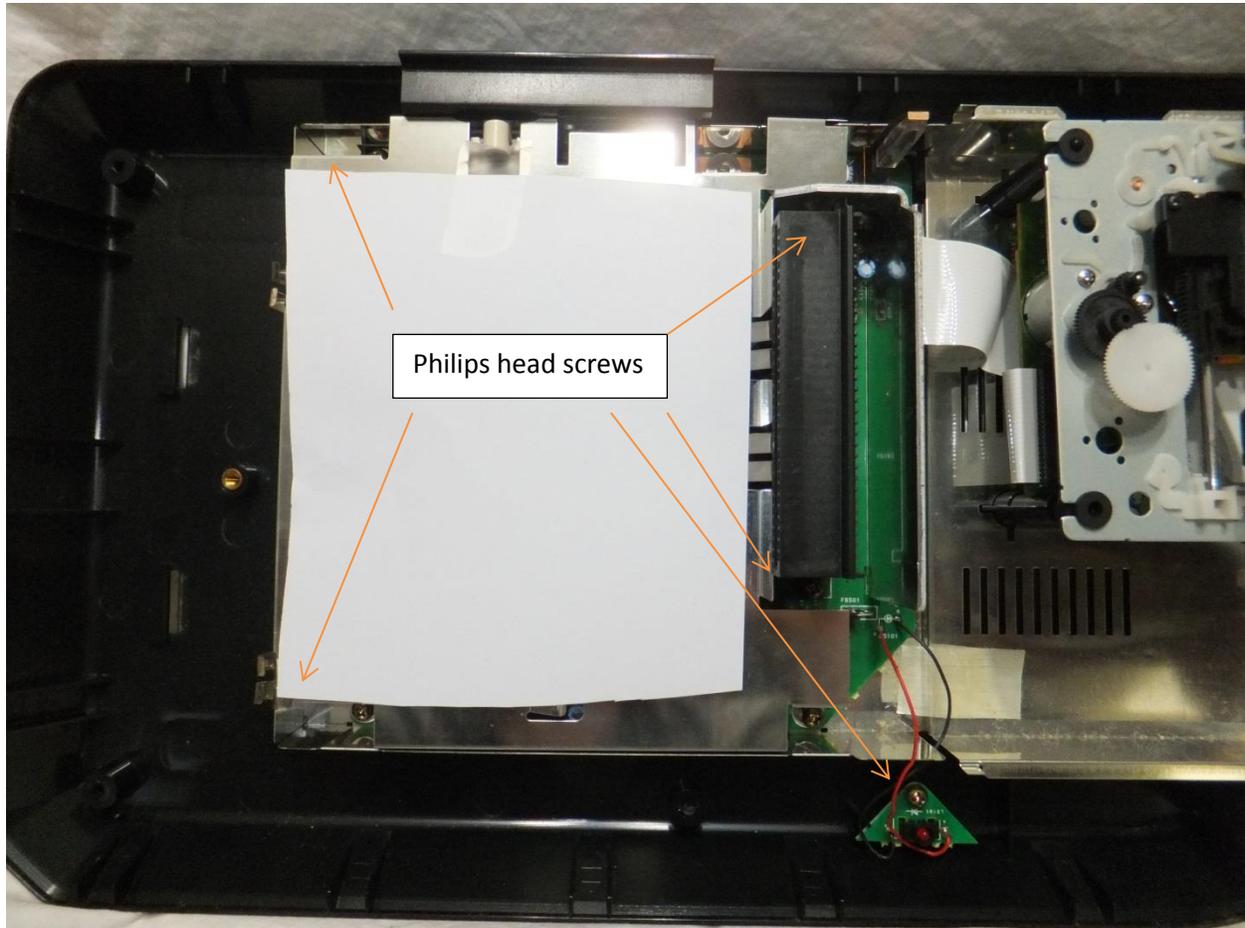


Picture Two: Laser assembly ribbon cable

Please unplug the ribbon cable by pulling it directly upwards. Once it is unplugged the laser assembly can be removed from the system. Please proceed to step three.

### Step Three

There are only six Philips head screws to unscrew left before you are finished with the disassembly process. Please locate the screws marked in picture three below and unscrew them.



Picture Three: The last stage of disassembly

Once the screws are removed you should be able to remove the motherboard from the system. Now that the system is fully disassembled you are ready to replace the CMOS battery. Using the soldering techniques discussed earlier please unsolder the old battery and replace it with the replacement.

Please remember that the replacement battery's leads must be inserted into the appropriate terminals on the system so that the positive leads go to the positive terminal and the negative leads to the negative terminal.

If the old battery has leaked please be careful to clean up the residue left behind, although take note that the residue is battery acid and is toxic. Use appropriate personal protective equipment. If your system fails to work correctly after the battery is installed please see the troubleshooting section at the end of this guide.

### **Troubleshooting Section**

We are sorry to hear that you ran into complications from your repair. Unfortunately this particular repair is difficult to troubleshoot due to the complexity of the repair job, although here are some general guidelines.

- 1) Make sure that the battery leads are soldered to the correct terminals (Positive to positive and negative to negative).
- 2) Make sure that none of the terminals are bridge with solder