

CR1616 with Tabs Installation Guide

Thank you for your purchase of a CR1616 coin cells battery with tabs from Mortoff Games. We know that you have a choice amongst online game stores and we appreciate your business. If at any time you have questions please don't hesitate to contact us at www.MortoffGames.com. This guide will take you through the steps of installing your replacement battery.

Things you will need:

- 1) CR1616 coin cell battery with tabs



Picture One: CR1616 coin cell battery with tabs

- 2) Soldering iron
- 3) Soldering braid
- 4) Solder
- 5) Clean work area and twenty minutes of free time

Getting started:

If you have a fair amount of soldering knowledge it is safe to skip ahead to step 1, otherwise it is recommend that you read the following how to solder guide, which will discuss the soldering techniques you will need to successfully replace your save game battery.

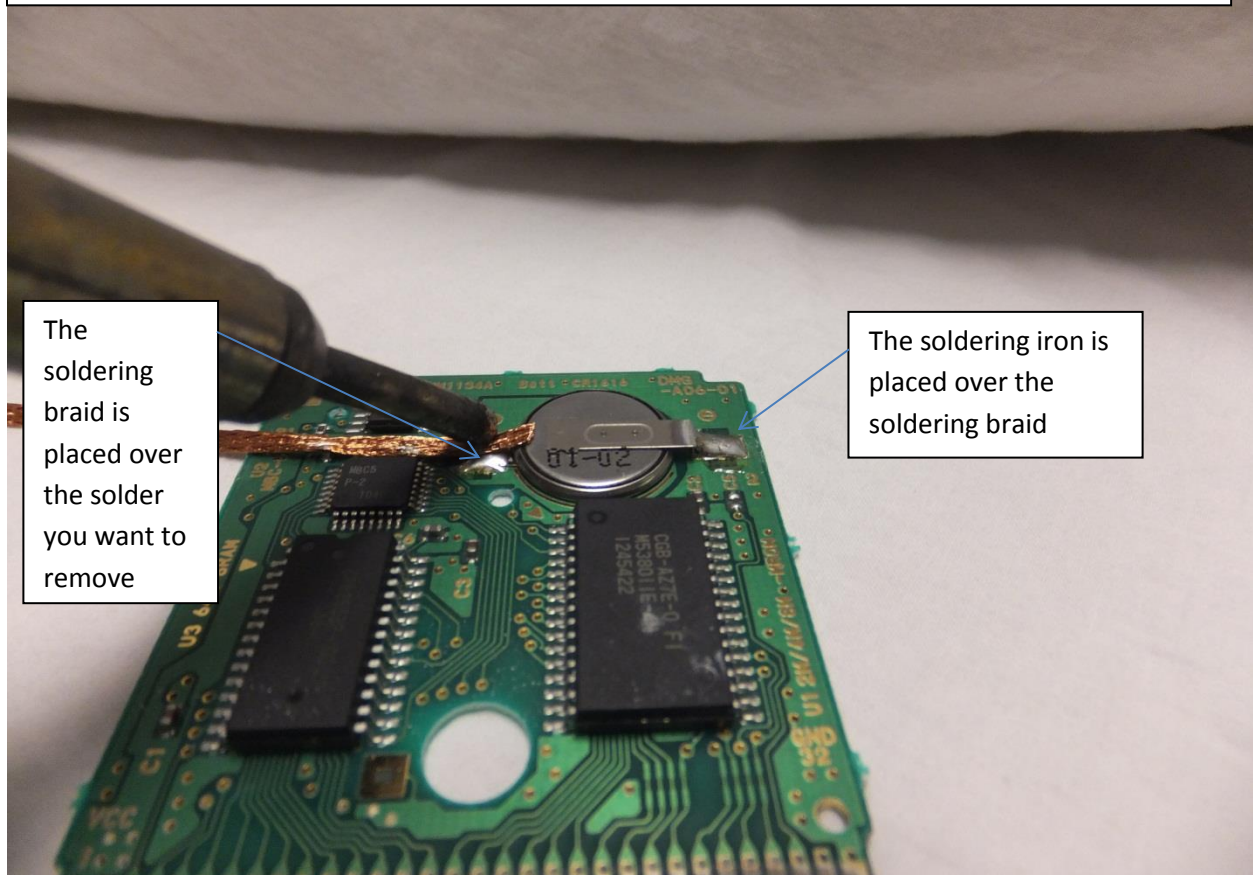
Soldering Techniques:

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 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

This is the inside of a GameBoy Color game cartridge.



Picture Two: 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 have been fully removed. Take note to notice that the solder is accumulating on the soldering braid as it is being sucked up. 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 braid 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. For the purposes of this project it is safe to use a generous amount of solder, though this is not always the case with most soldering projects. 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 replacement of that save game battery.

Step One:

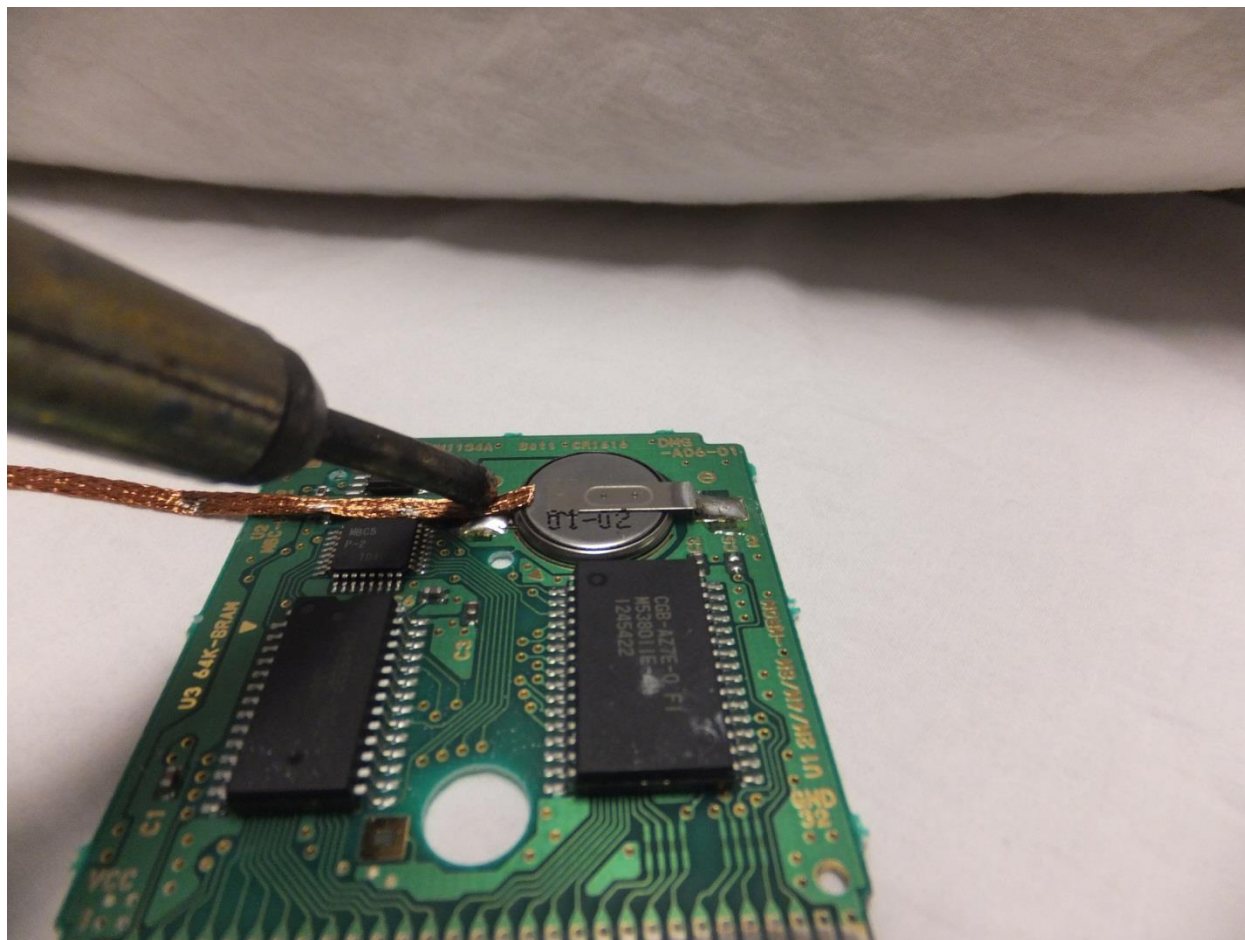
Firstly you will need to remove the 3.8mm Nutsetter security screw bit on the back of the cartridge, see picture three



Picture Three: Back of the game cartridge

Step Three:

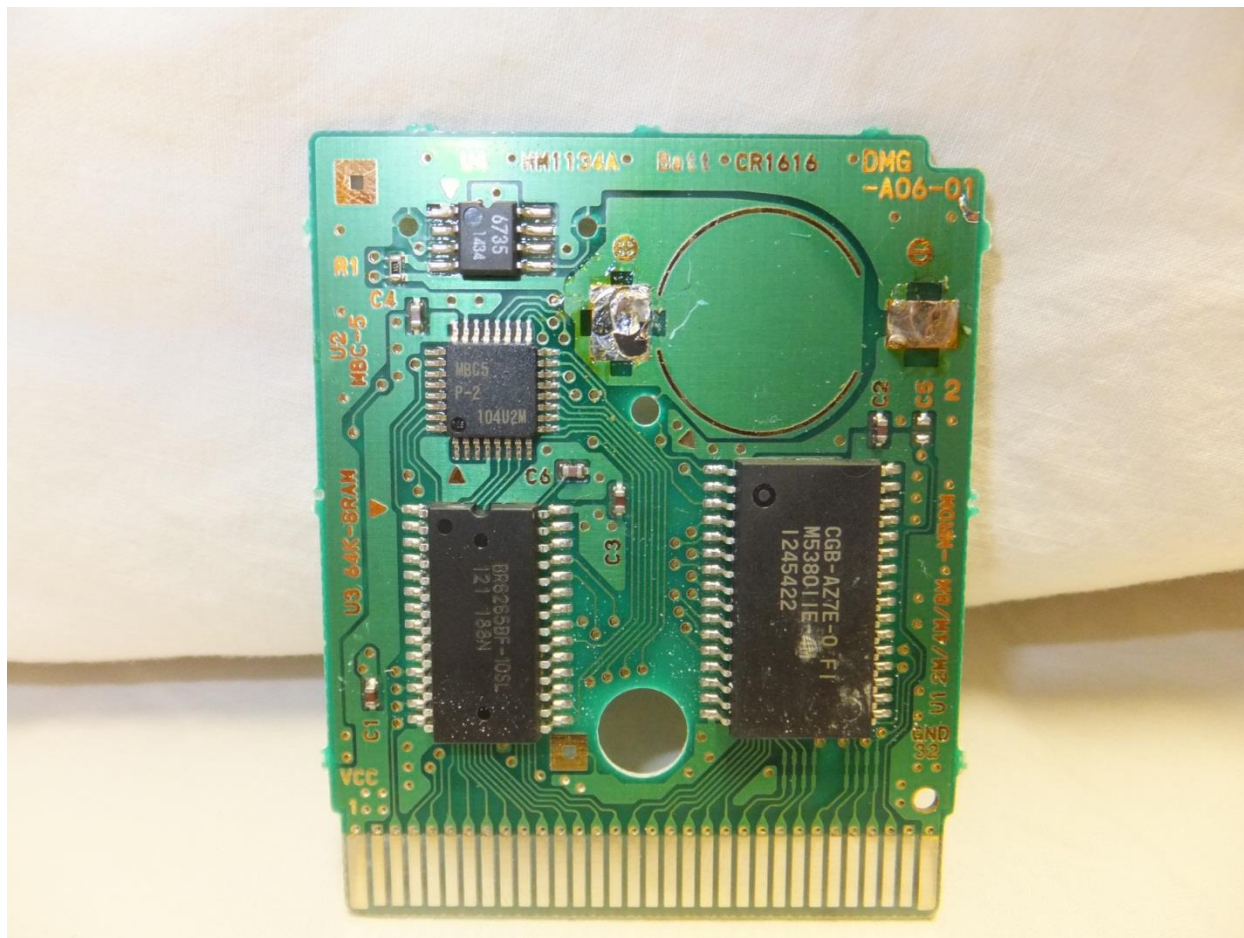
Now that you have made sure you are aware of the arrangement of the tabs now it is time to remove the old battery. Using the techniques described in the soldering guide above unsolder the two contacts that are holding the old battery in place. Please see picture five below.



Picture Five: Unsoldering the old battery

Step Four:

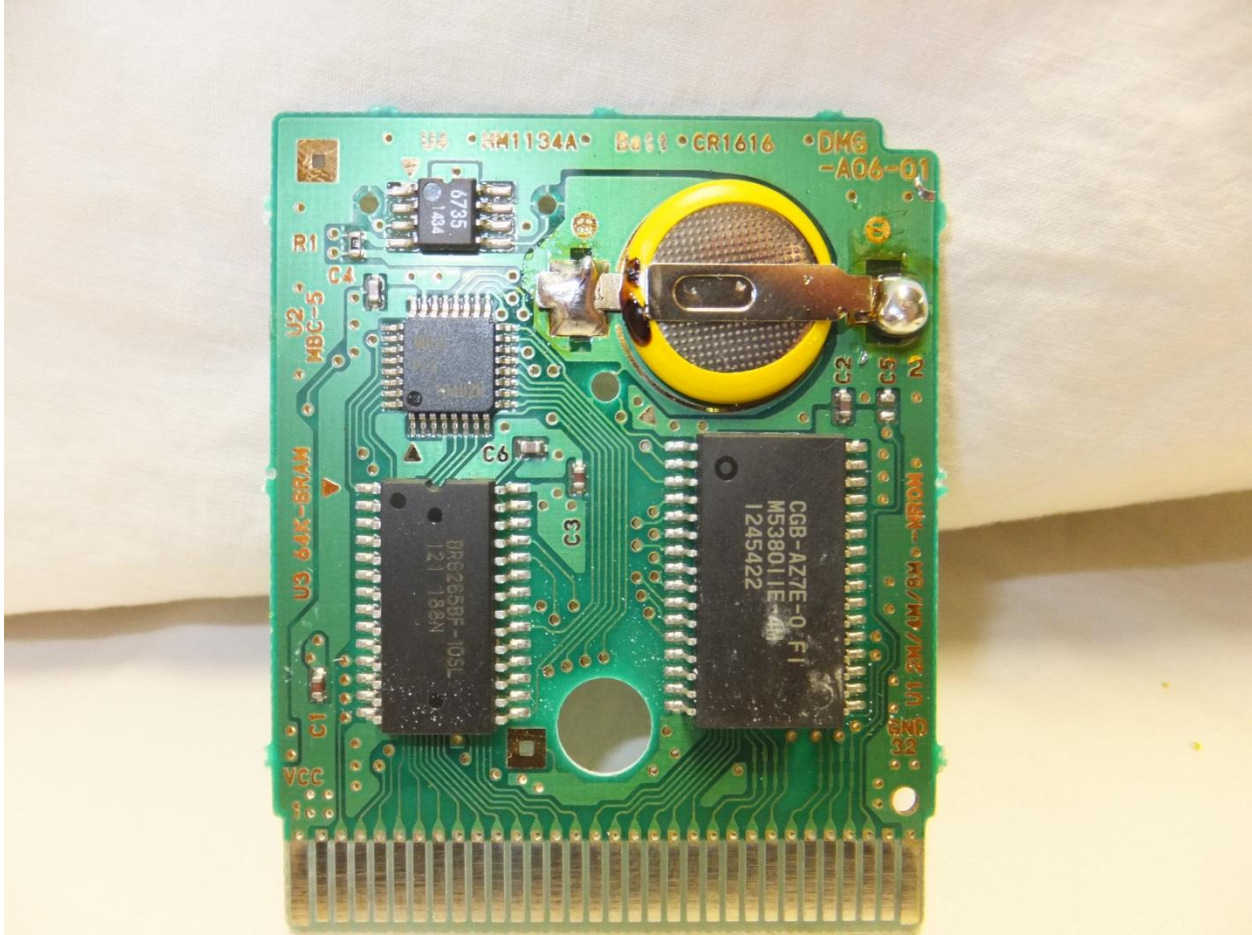
Once you have removed the solder and the battery your terminal should look as clean as those seen in picture six.



Picture Six: Battery removed

Step Five:

Once the battery's tabs are properly oriented solder on the prongs with solder using the techniques discussed earlier. Your circuit board should look something like picture seven when this is accomplished.



Picture Seven: New battery firmly soldered in place

Now that the batteries' terminals are soldered on you are now finished. Reassemble the game and you are ready to play. If you experience any issues after this project is performed please see our troubleshooting section below.

Troubleshooting Section

Please choose the problem that is most similar to the one you are experiencing. If you cannot find your problem listed or if you have any questions please contact us at www.MortoffGames.com

- 1) My save games are being erased
 - a. This is a sign that the battery is not working correctly. Open your game and ensure that it is soldered firmly onto the board. If it is make sure that you soldered the tabs onto the right terminals, as seen in picture four above.
- 2) My game no longer works
 - a. This problem is typically only caused by the usage of an instantaneously heating or cold heat soldering gun. Most likely the game has been permanently damaged and needs to be replaced.