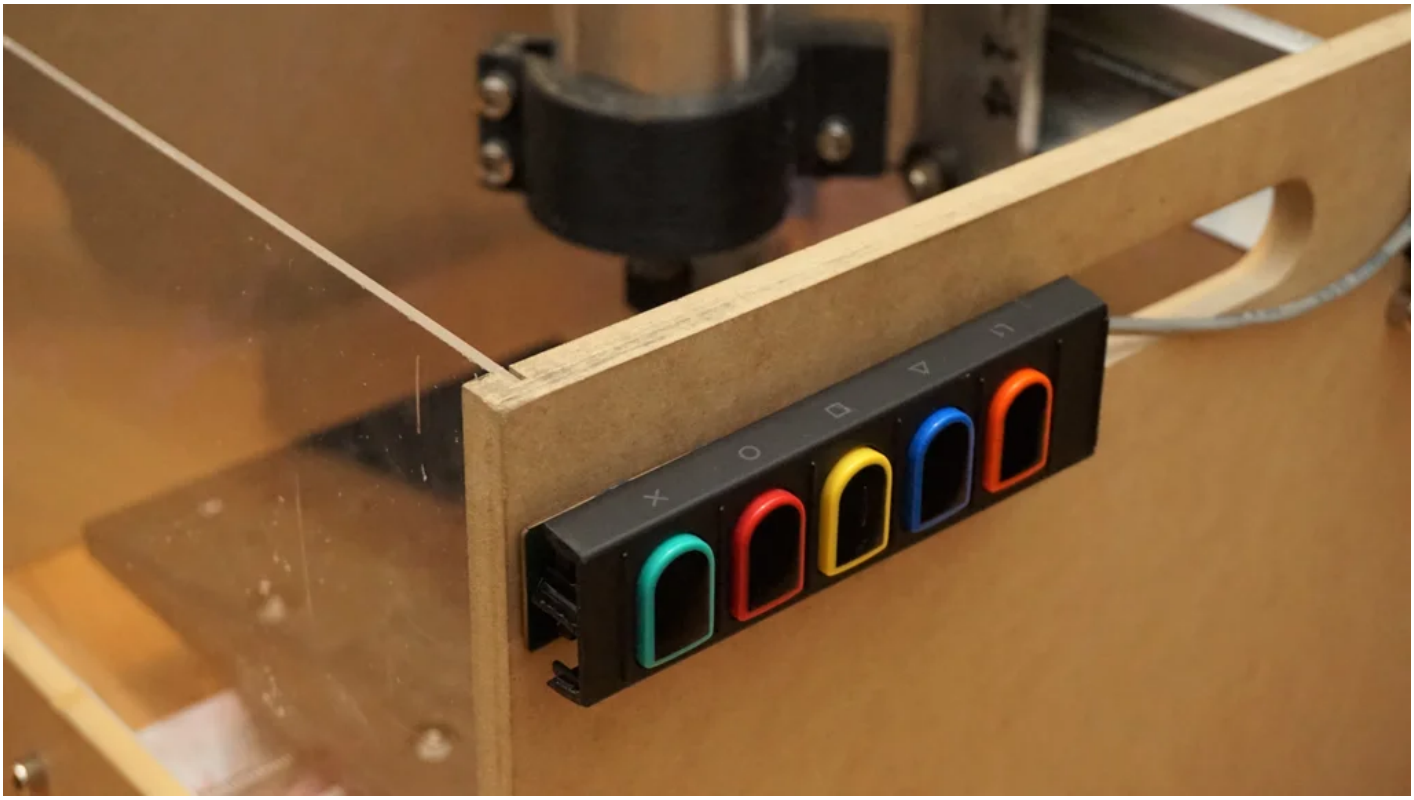
CNC Hero! Guitar-ify Your CNC Machine

By Sienci Labs in WorkshopCNC

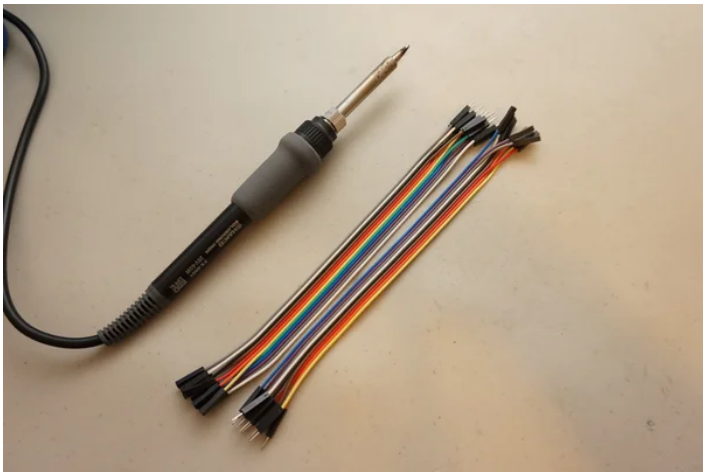
Introduction: CNC Hero! Guitar-ify Your CNC Machine

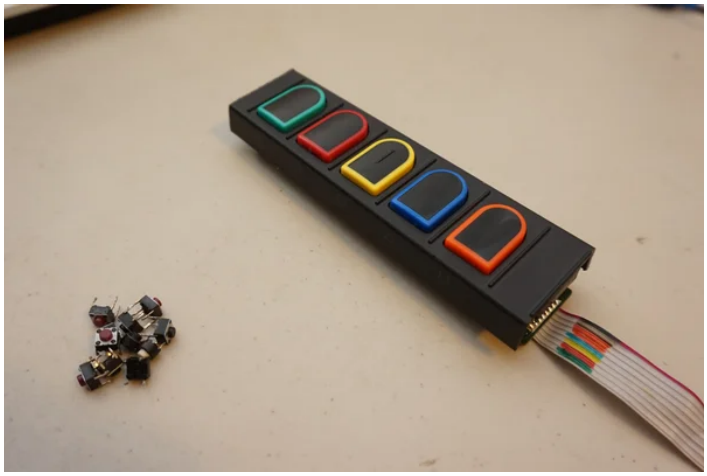


Welcome fellow hobbyists! Do you remember the days of Guitar Hero and Rock Band where you and your friends could feel like shredding on the guitar was your true calling in life? We sure do! Today we're going to be adding some of that feel back into your CNC machine of choice. And if you don't happen to have a broken Guitar Hero guitar laying around that you can salvage, don't fret ;) any momentary switch of your choosing will suffice!

This is a super simple upgrade that you can make to any CNC machine that runs via the CNC V3.0 HCARDU0086 Arduino Shield. This board is open-source and is very commonly used in the open-source CNC community. Able to easily interface with many Grbl enabled systems, this project is going to be tapping into some of the Grbl commands that are built into the shield which will allow you to add some simple, but very useful features without having to do any programming at all!

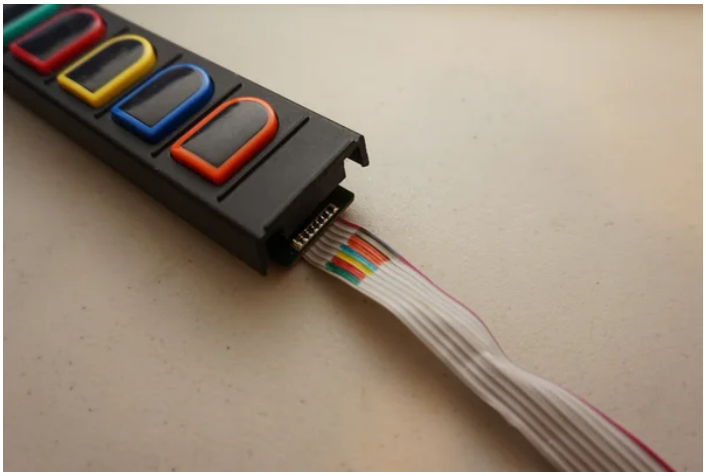
Step 1: Materials

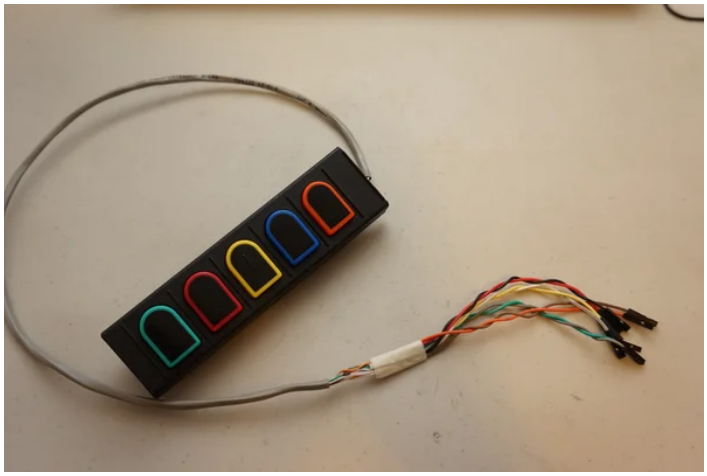




Not much is needed in order to bestow your CNC machine with its newfound power :) As long as you have some kind of momentary switch on-hand, or maybe some that you've found online that you really like, then you're already most of the way there! Grab a soldering iron and a set of female jumper cables (if you don't want to be soldering directly to your shield) and you'll be well on your way.

Step 2: Prepare and Solder

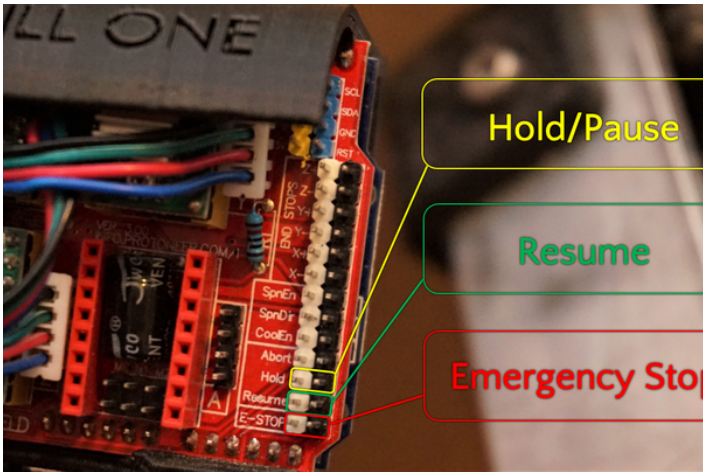


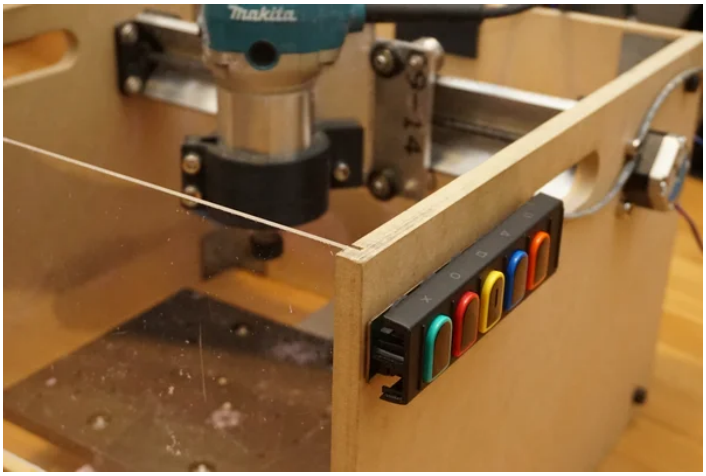


If you're taking apart an existing circuit like we did, it's always handy to have the set of multicoloured Sharpies on hand in order to easily mark which wires lead where. The nice part of having your own momentary switches is that you won't have to be concerned with checking the internals, however, you'll also need to create an enclosure for your switches to attach to.

Once all the soldering is completed, be sure to insulate your connections whatever way you prefer to ensure that none of your electrical connections are exposed to open air. If you're milling any types of metal then an airborne flake could short one of the buttons, and that could be a huge headache in lost hours.

Step 3: Plug and Play





With everything soldered together, the last step is just to plug the jumper wires into their respective pins. The Hold/Pause, Resume, and E-Stop pins are labelled clearly in the above diagram. If you've decided to use buttons which have a common side, ensure that the common wire gets plugged into a black pin and not a white one. With everything plugged in, fasten your buttons to your machine in whatever way you see fit! We used hot glue to quickly and securely mount it to the side of our Mill One V2 :)

With these buttons in place, you'll now have quick control over your machine without needing to touch your computer! Having a rock-out CNC machine will enable you to Play/Pause if at any time you'd like to change the positions of your clamps, move your material around, flip it over, change out bits, you name it! And having an E-Stop button handy might save a few endmills, pieces of material, or even your machine itself from seeing too much harm.

We hope that you've enjoyed this 'ible as much as we enjoyed making it! Happy trails :D