

# Single Trigger Installation tutorial for Console Customs Xbox 360

## Dual Rapid fire Microchip for wired and wireless controllers (all versions)

This tutorial is designed to aid you in installation of a console customs dual rapid fire microchip. This tutorial covers the installation of our new 8-pin chip which is able to detect the type of PCB your controller has and set itself up properly for it. This simplifies the installation but installation must be done exactly as shown in this tutorial or your chip will not work correctly.

This installation requires soldering several wires to extremely small confined spaces. I do not advise attempting this installation if you are a beginner at soldering. I recommend reading through all of the instructions and understand them before beginning your installation.

**WARNING: Please proceed with this installation at your own risk. I will not be held responsible for any damage to yourself, your controller, your Xbox 360 console or any other equipment. This tutorial requires opening your controller which will void the warranty of your controller.**

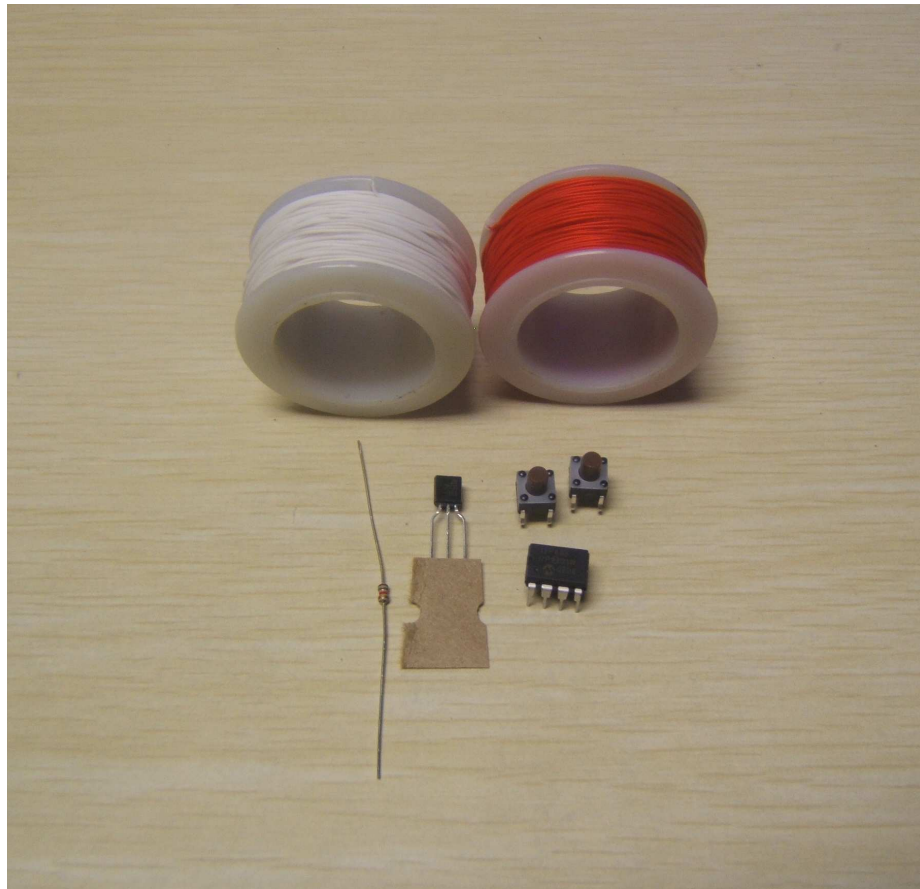
### Tools needed:

- Small Phillips head screwdriver (wired controller)
- Torx T8 Security/tamper proof driver (wireless controller)
- Soldering iron (A cheap 15w/30w from radio shack is about \$12)
- Solder ( I use rosin core solder from radio shack so there is no need for flux \$4)
- Wire strippers (that can strip 30ga wire, a 30ga wire wrap tool from radio shack includes a 30ga stripper \$8)
  - Wire cutters
  - Hot glue gun
  - 3/16 drill bit (or close to it)
- Small pocket knife or razor blade (optional but helpful)
- Please visit our website at [www.consolecustoms.net](http://www.consolecustoms.net)

Also visit our ebay store at <http://stores.ebay.com/console-customs>

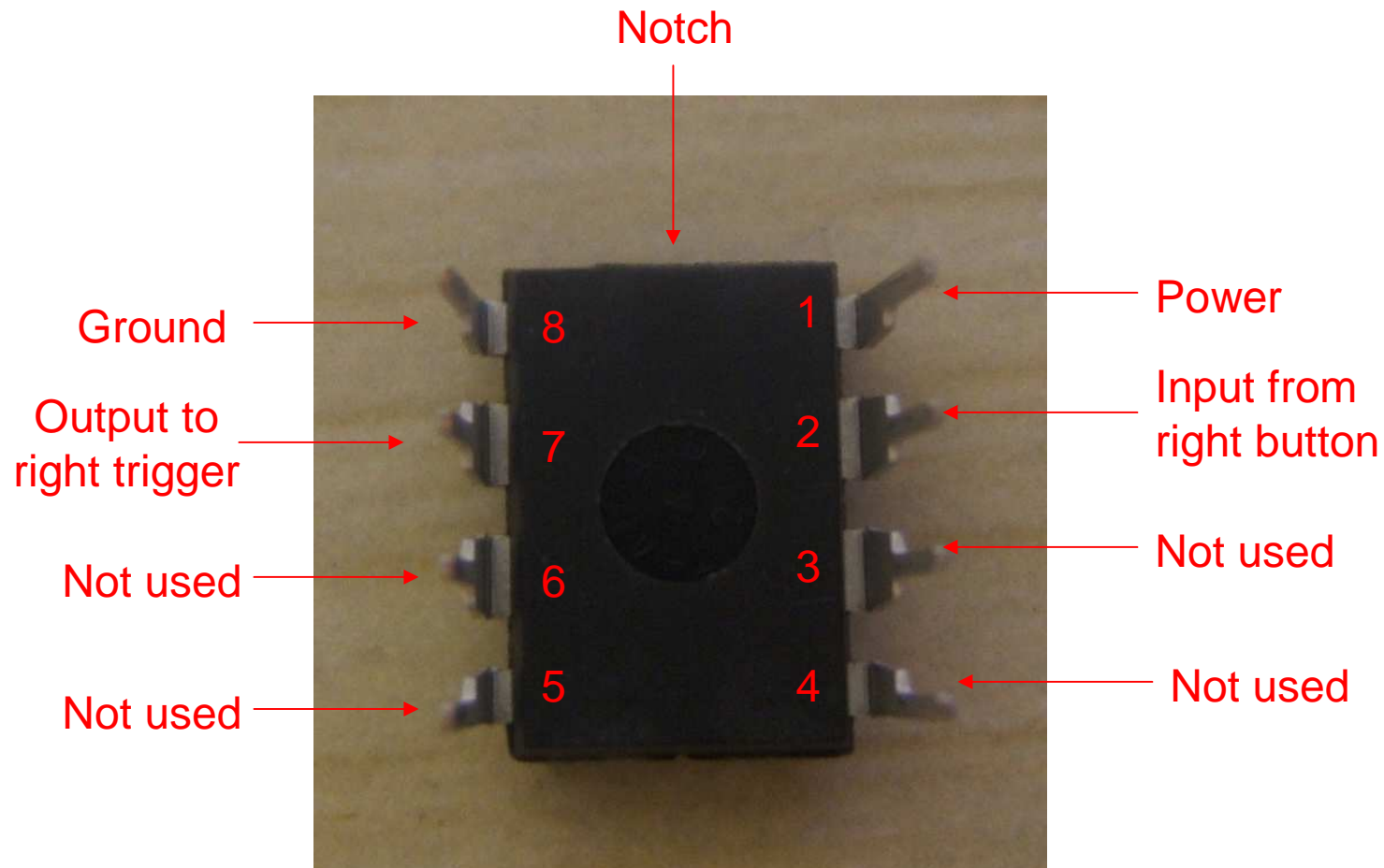
Step 1: First lets start by looking at what is in your kit.

- You should have the following items in your kit
  1. (1) 8 pin PIC microcontroller
  2. (1) 3 pin transistor
  3. (1) 1.8k resistor
  4. (2) Buttons
  5. 30ga. Wire ( We include multiple colors)



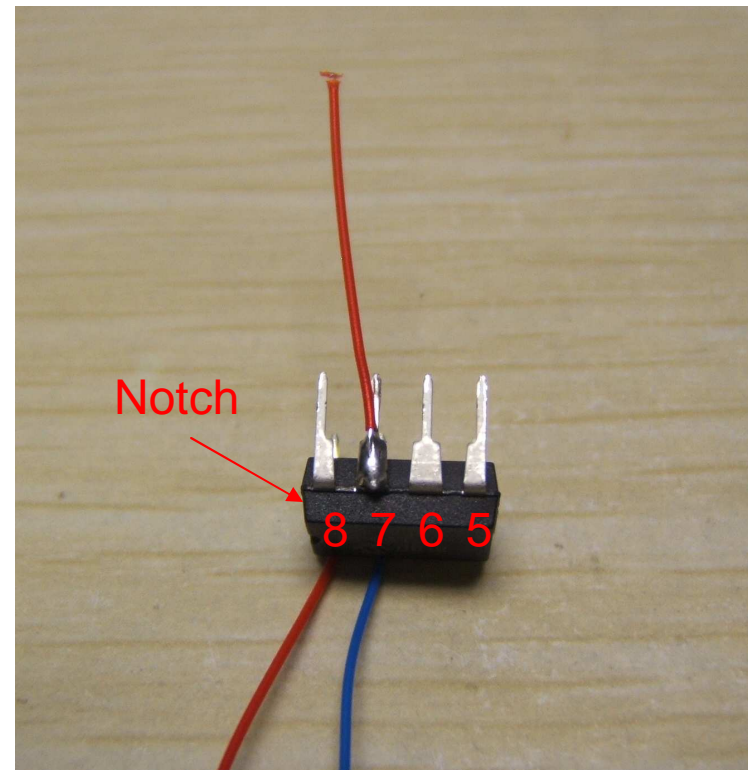
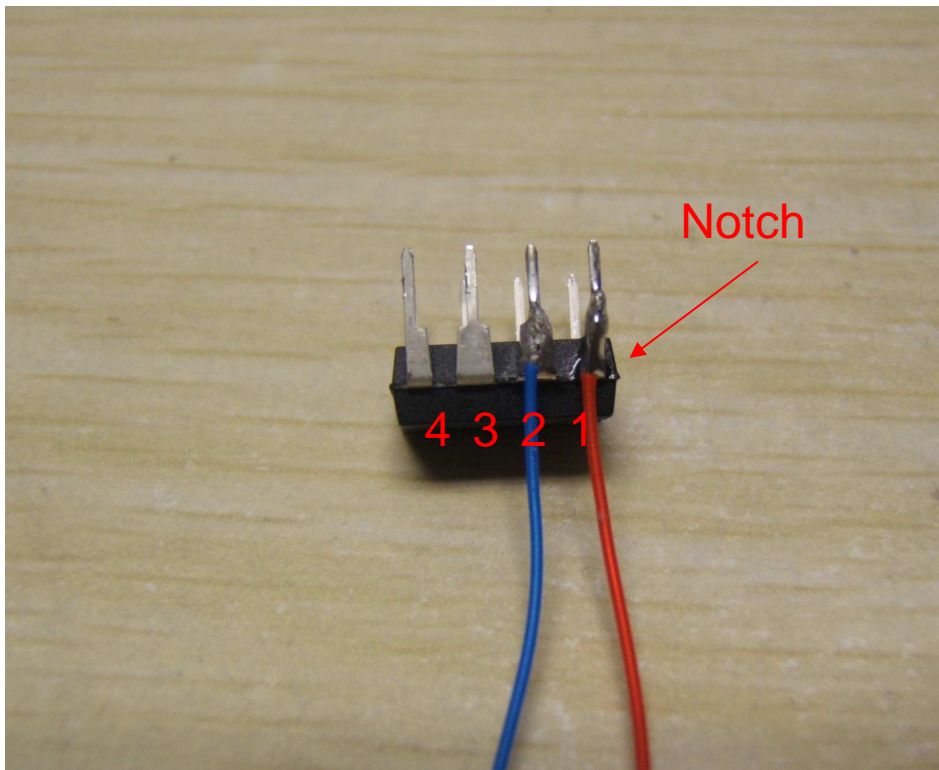
Step 2: You will start by taking the PIC chip and putting it on its back, also called (dead bug). Note the location of the notch that is on the top of the chip, the pin numbers and their purpose.

- Because this tutorial is for the single trigger installation we will only be using pins 1,2,7 and 8. For the dual trigger installation please visit our website at [www.consolecustoms.net](http://www.consolecustoms.net)



### Step 3: You will now attach the wires to the chip.

- In the left image you can see the power wire (red) attached to pin 1. This wire should be aprox 2" long. You can also see in this images the wire for the right button (Blue) attached to pin 2 this wire also needs to be about 2" long.
- In the right image is the other side of the chip. Here you can see only one wire for the right trigger (pin 7) which should be only ½" long.
- The ground wire (pin 8) will be attached later as this will differ with the type of controller you have.
  - *tip: Only strip about 1/8" of the wire for soldering. Exposing more bare wire could cause a short if the bare wire touches something it should not.*
  - *tip: For information on proper soldering visit [http://www.curiousinventor.com/guides/How\\_To\\_Solder](http://www.curiousinventor.com/guides/How_To_Solder)*



## Step 4: Opening the controller

- Remove the 7 screws indicated below. One is behind the small white label.
- The wireless controller requires a T8 Torx security driver. This is a star shaped tip with a hole in the middle of it. It is very difficult to open the wireless controller without this.
- If you have a wired controller you may skip to step 6, which is for identifying the type of wireless controller you have.
- If you have a wireless controller you must goto step 5 To identify the type of controller you have. This will determine how the chip is grounded inside the controller.

### WIRELESS



### WIRED

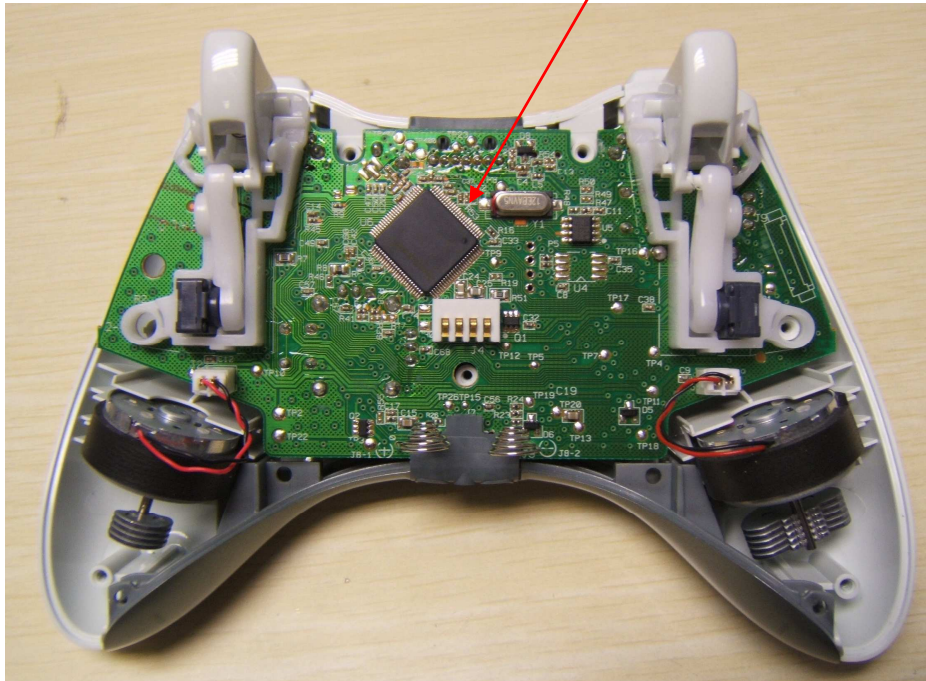


# Step 5: Wireless Controller Identification

- With the back cover removed it is easy to identify the old and new style controllers. Please see the images below.
- Depending on which PCB you have we will ground the chip differently in the controller in a later step.

In the new style controller you will see a single chip rotated 45 degrees

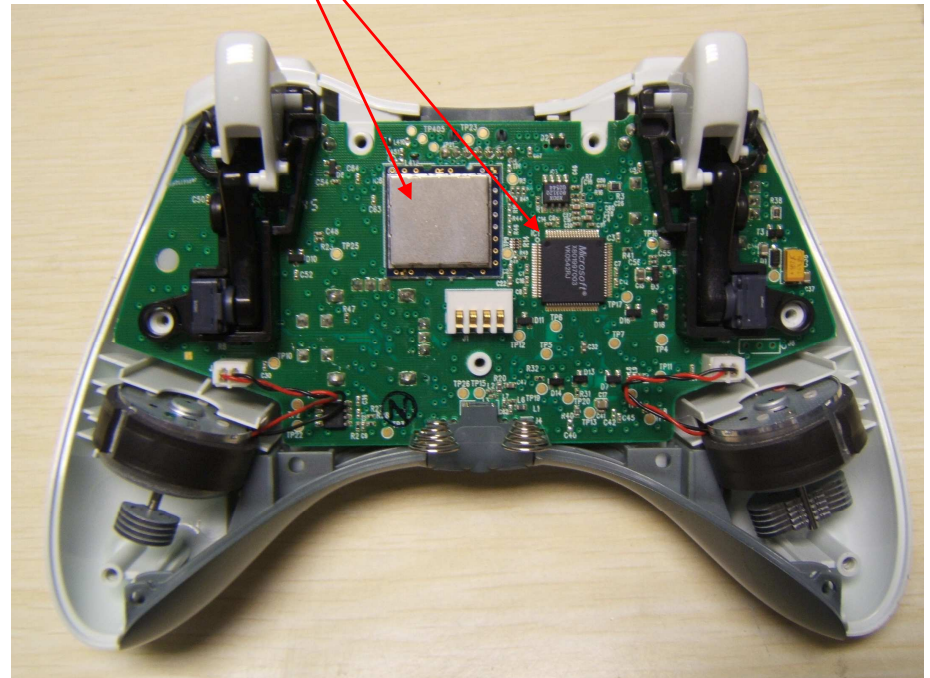
**New Style**



In the old style there are two chips.

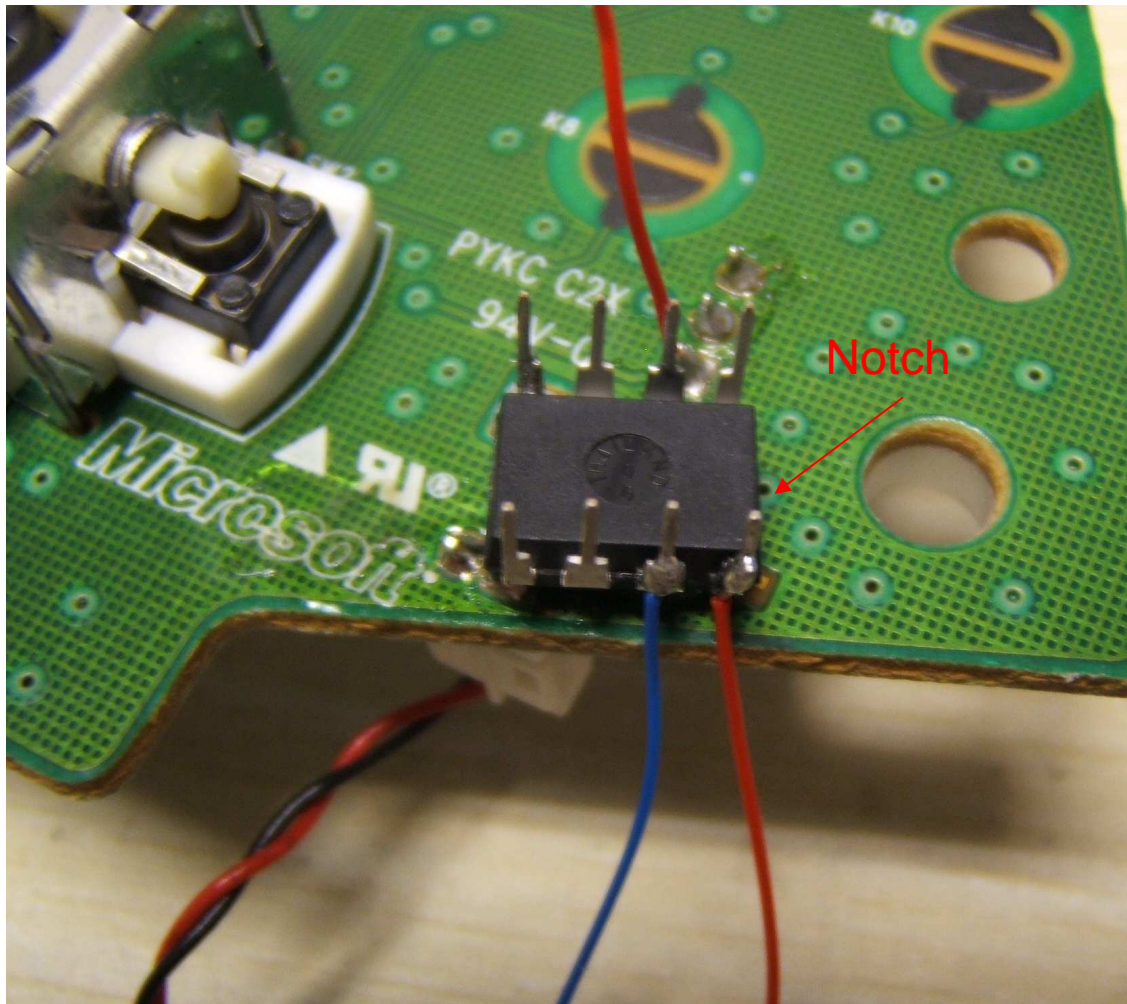
**Note:** Some controller will not have the silver shield over the larger chip.

**Old Style**



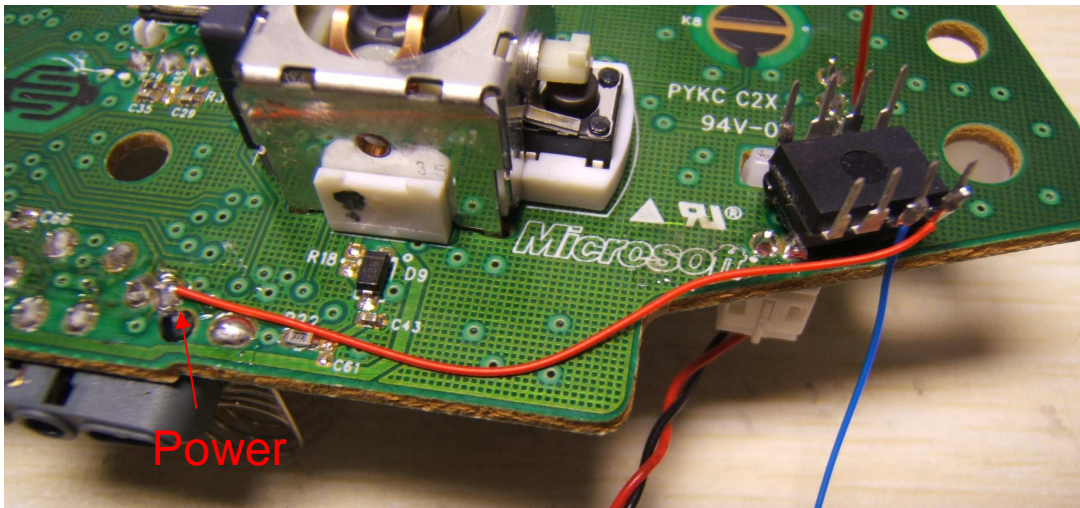
Step 6: Now we will attach the chip to the PCB using a generous amount of hot glue.

- Mount the chip with hot glue so it is up against the white clip for the trigger and the pin from the rumble motor plug.
- Note the orientation from the location of the notch that is on the top of the chip.

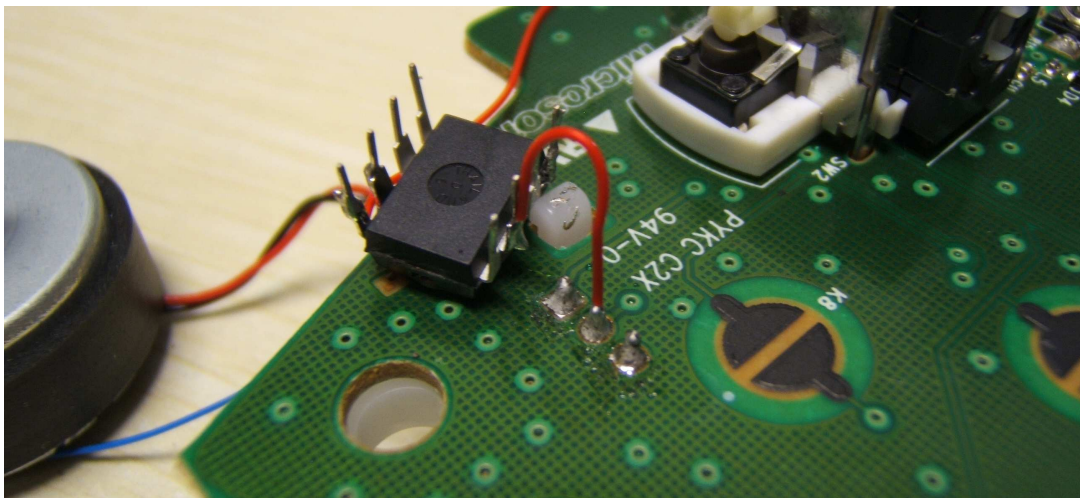
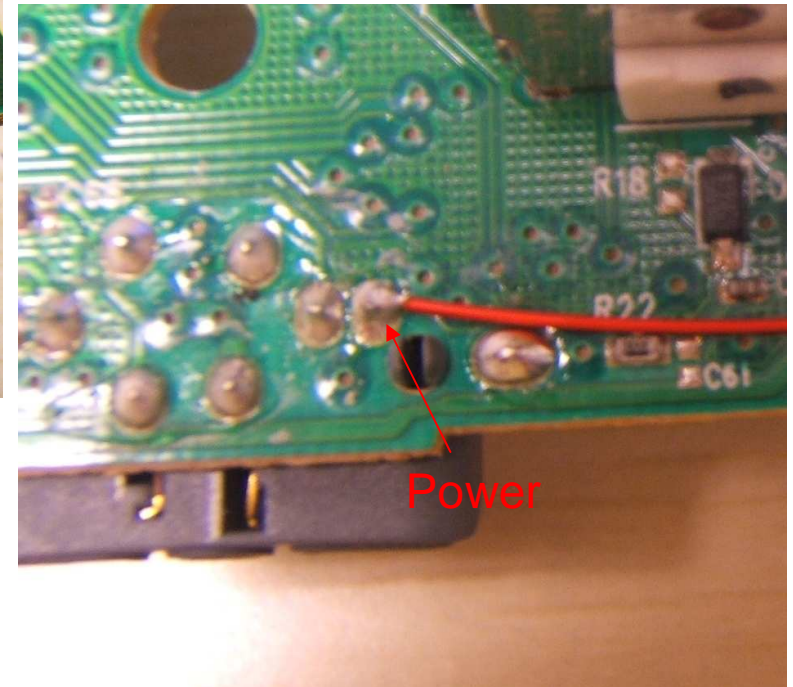


## Step 7: Attach the Power and trigger wires.

- Start by soldering the power wire in place from pin 1 to the location shown on the board. See the right side image for a close-up of the power connection to the board.
- Next solder the trigger wire from pin 7 to the middle pin for the trigger on the board (lower image)
  - *Tip: trim you wires so they are only as long as you need, then strip the end and solder into place. Long wires will just cause a place for something to snag when closing the controller.*



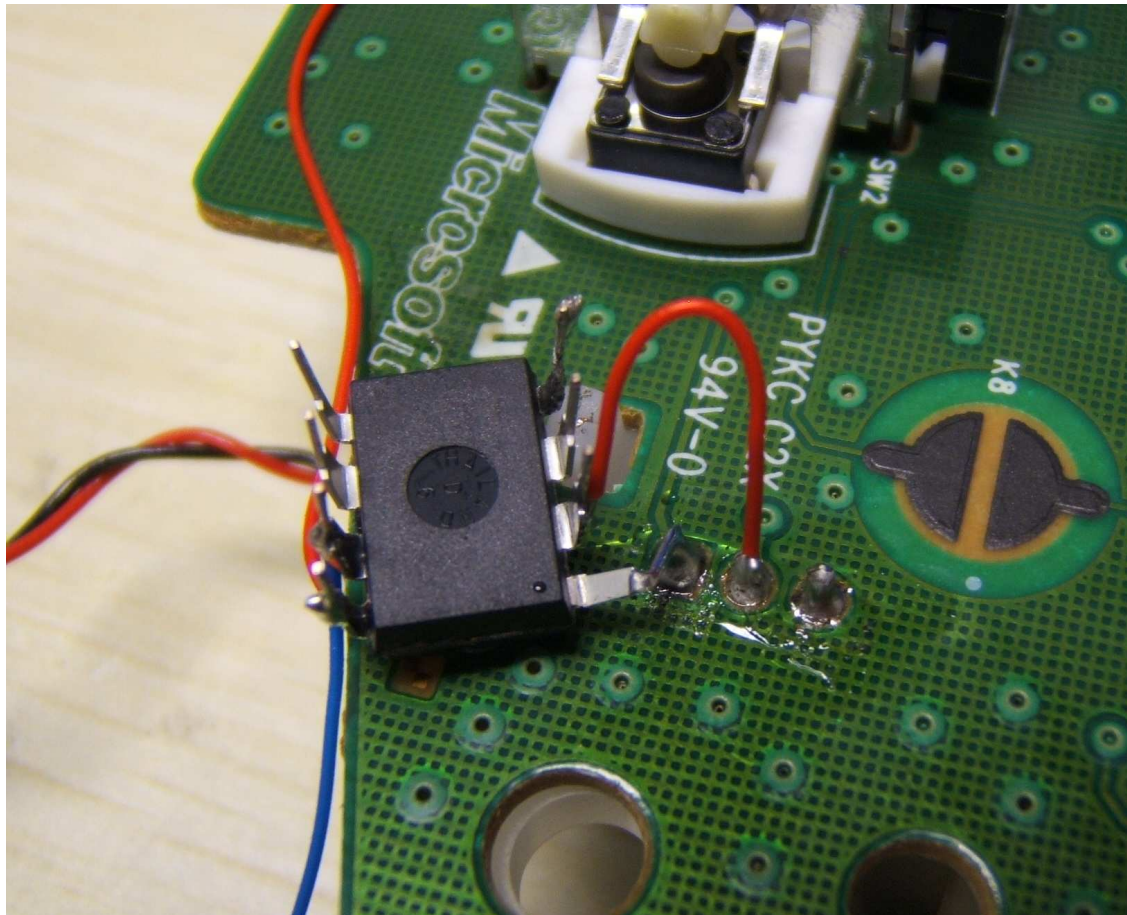
Power connection close-up



## Step 8a: Attaching to Ground.

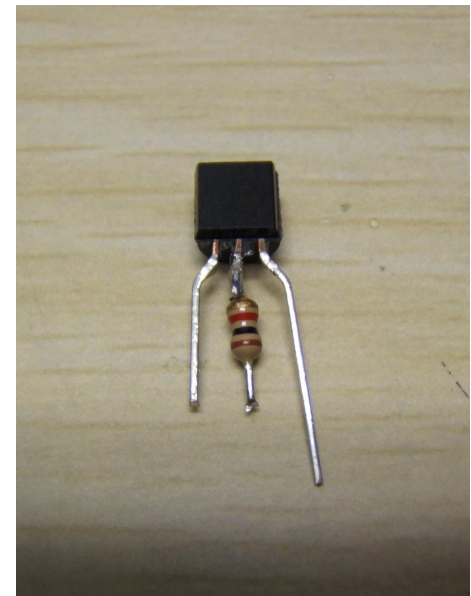
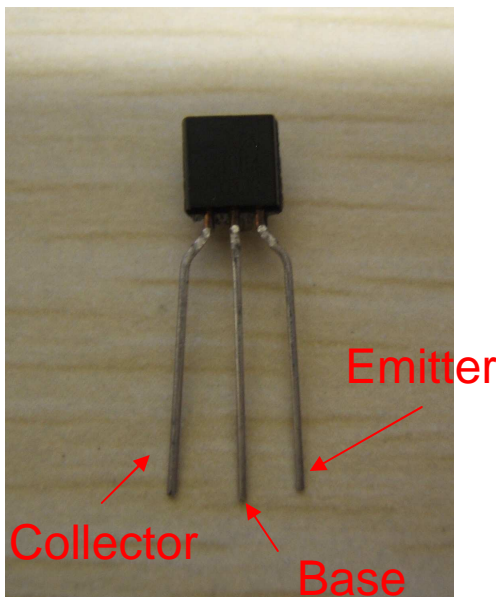
- This is the only part of the installation that is different between controllers. We will start with the new style wireless. The old style wireless and wired controllers require a bit more work and will be covered in step 9b.
- The image shows the new PCB wireless controller. The ground (pin 8) should be connected to the bottom pin (closest to the chip) of the three trigger connections. Here we show making the connection by just bending the pin of the PIC down to the bottom pin of the trigger and soldering them together. You could also use a short piece of wire here if desired.

### NEW PCB WIRELESS



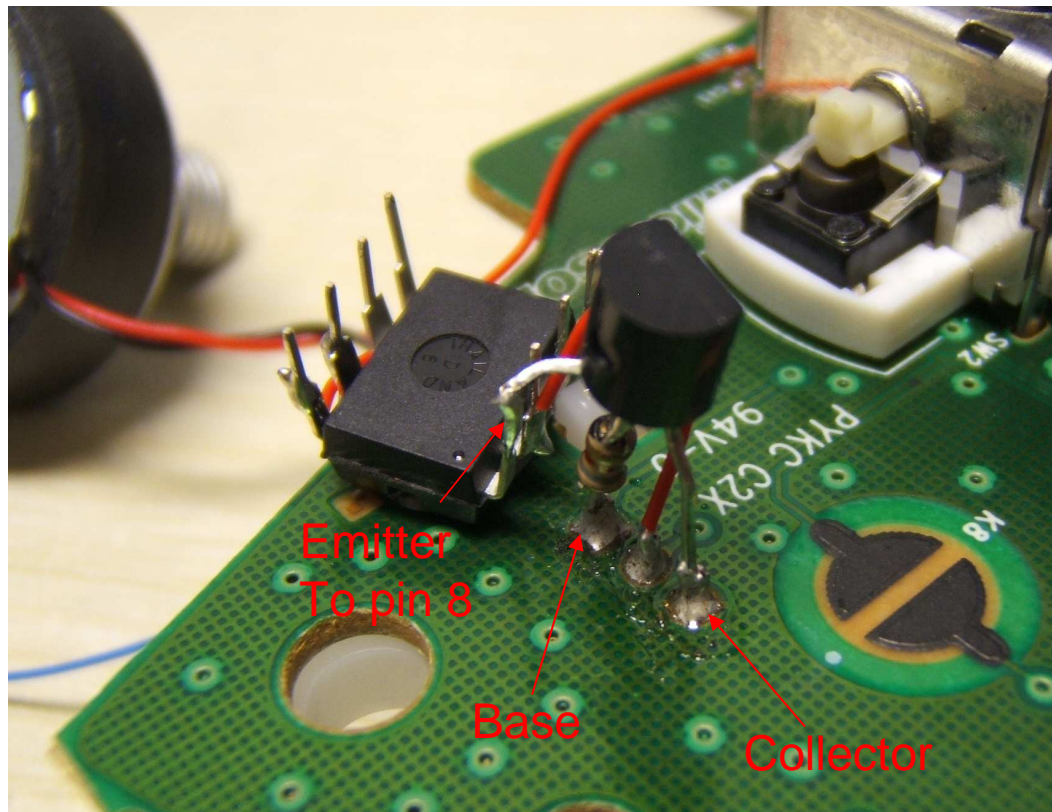
Step 8b: **This step is for the OLD PCB wireless and wired controllers only.**

- For these controllers we must use a transistor to make the ground connection for the chip to work properly. This is only needed for the old PCB wireless and wired controllers. You must install this transistor and use the included resistor as shown or your chip will not work properly.
- The transistor has a base collector and emitter as shown in the first image, note the flat side is facing up. Later we will connect the collector to ground of the controller, the base to a switched power source and finally the emitter to the ground of the chip (pin 8).
- First take and cut the middle leg (base) to about 1/8" long. Then cut one side of your 1.8K resistor to 1/8" as well. Solder these two together as shown in the middle image.
- Next cut the collector and base to the same length as shown in the third image.
- Continued on next page....



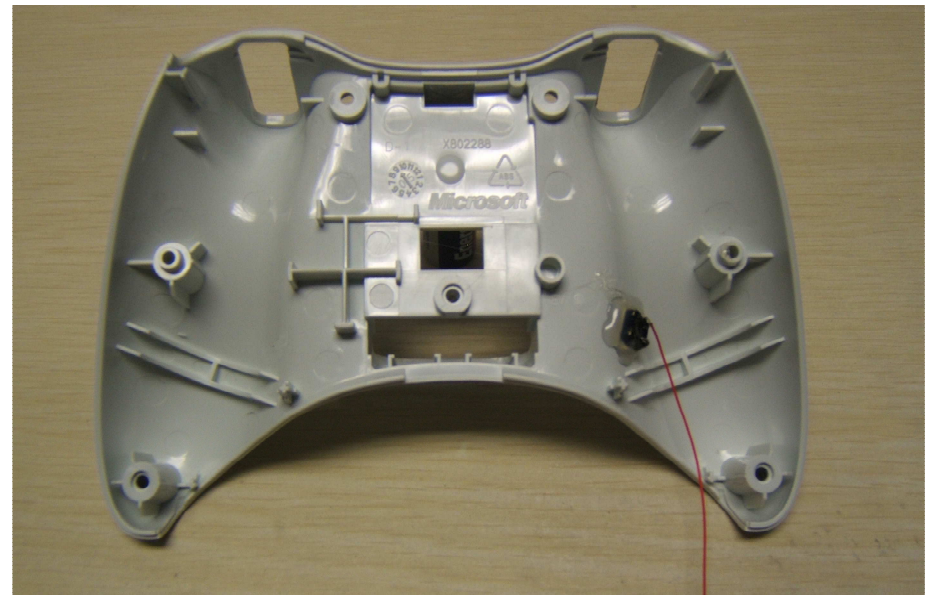
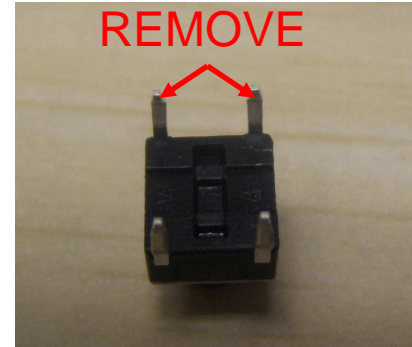
## Step 8b: Old style PCB wireless and wired ground continued. Installing the transistor.

- Now we will install the transistor in your old style PCB or wired controller. Note the direction the flat side of the transistor is facing.
- Start by soldering the base (middle leg) of the transistor to the lower of the three trigger pins as shown.
- Next solder the collector to the top of the three trigger pins as shown.
- Finally solder the emitter (longer leg) to the ground of the chip (pin 8). You can trim this leg down if needed.



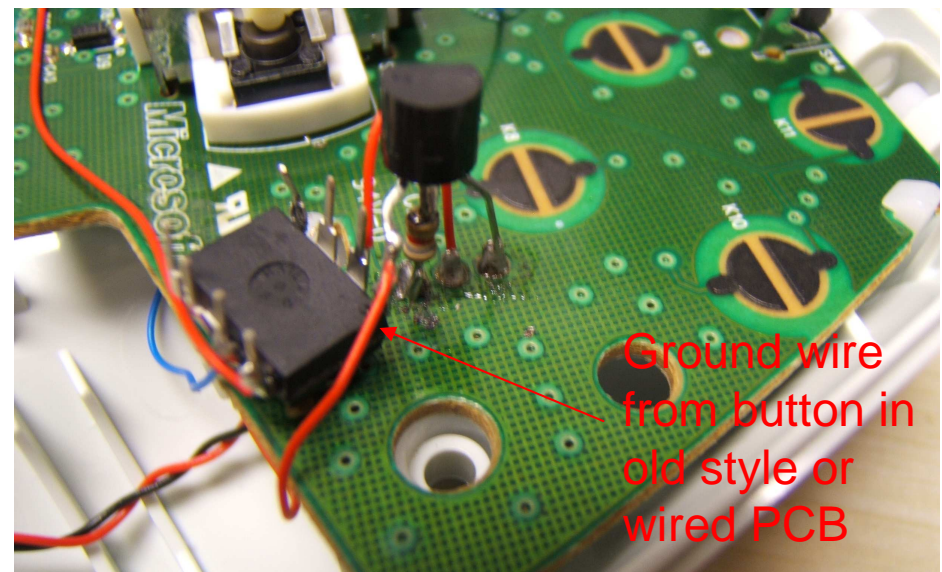
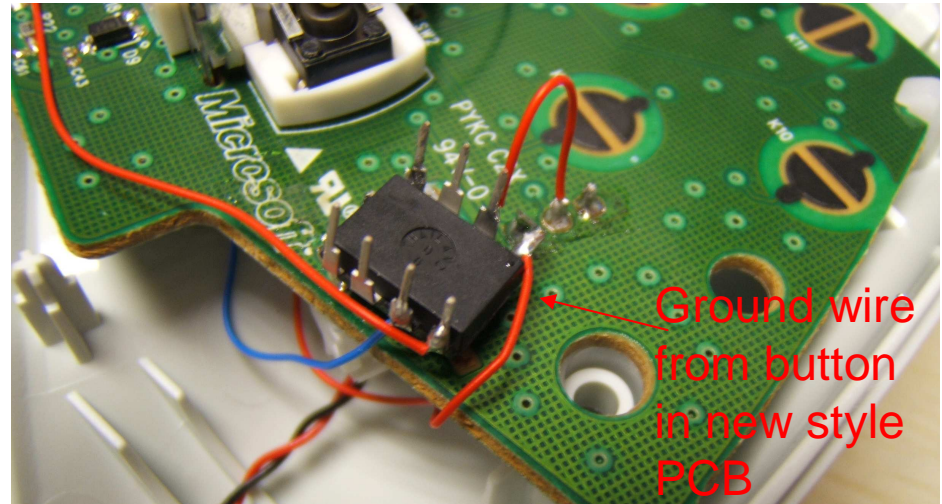
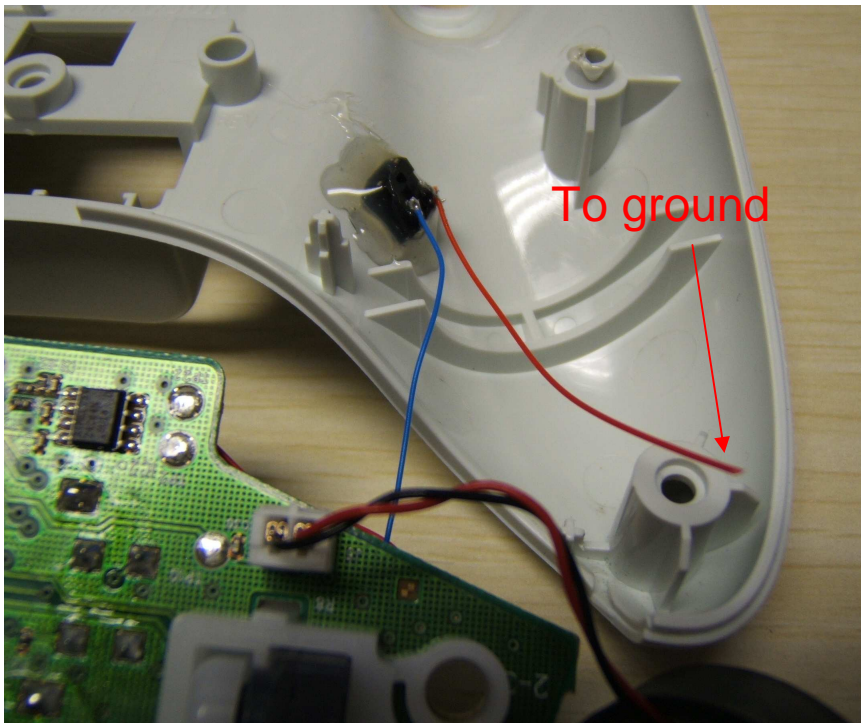
Step 9: Onto the case and buttons. Here we will cut the hole needed for the button and secure the button in place.

- For the right button there is a small oval behind the support for the rumble motors that is leftover from the injection molding process. It is highlighted here in red. We put our hole just behind this and about 1/8<sup>th</sup> inch lower than the top of the oval. Placement of this button is really up to you. For the best fit and location you may want to hold a controller and find the natural resting place of your middle finger. Once you find your location drill the hole with your 3/16<sup>th</sup> drill bit.
- Next take your button and we are going to remove one pair of legs because we only need one pair. Use the image to the right so you know which legs to remove. Then bend the remaining legs down over the back of the button.
- Next use hot glue to secure the button in place. Do not attempt to use super glue or other adhesives as it will soak into the button mechanism and cause it to stop working.
- Then cut another small piece of wire about 2" long and solder to one leg of the button. This will later be connected to the ground of the chip (pin 8).



Step 10: We will now connect the wire from the chip to the button.

- flip over the controller PCB and bring it in close to the back half of the case. Take the one wire that is not connected, the wire from pin 2 and solder it to the remaining pin of the button.
- Finally flip the PCB over onto the back of the case and attach the remaining wire from the button (red wire in the images) to the ground of the chip (pin 8).



## Step 11: Almost done

- Now onto the top of the case. To make it all fit we may have to make a little bit more room. Just to be sure I use a knife or side cutters to remove the plastic support shown in the image in red. This is the angled support for the right side rumble motor.
- Depending on your button placement you may also need to remove part of the back support for the rumble motor. This is shown in green in the images.
- The last thing you need to do is reassemble everything. The easiest way I have found to do this is leave the top piece face down so all the buttons do not fall out. And hold the PCB to the back of the controller and flip it over on the top of the case. Align the rumble motors so they are in their holders and lay the PCB and back of the case onto the front of the case. Keep it face down and use your finger to work the thumbsticks through the holes and work the case closed. Do not force it you may have wires preventing the case from closing entirely. Just go slow and look at any areas to see what is stopping it from closing all the way.
- Now just screw your controller back together and your done!

