Installation tutorial for Console Customs Xbox 360

5-Mode Dual Button (RFX-5B) Rapid fire Microchip for all Wired and Wireless controllers

This tutorial is designed to aid you in installation of a console customs 5-mode Dual Button (RFX-5B) rapid fire microchip. This Tutorial cover installation in all wired and wireless controllers. Some steps are specific to certain controller types. The next page will explain how to tell which controller you have so you can follow the correct steps when required.

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

WARNING: Please proceed with this installation at your own risk. We 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:

- Torx T8 Security/tamper proof driver (For opening wireless controller)
- Soldering iron (A 5w/30w from radio shack is about $12)
- Solder (rosin core solder from radio shack works great and there is no need for flux $4)
- Wire strippers (that can strip 30ga wire)
- Wire cutters
- Hot glue gun
- 9/64th drill bit (or close to it a 1/8th will also work)
- Small pocket knife or razor blade

Please visit our website at www.consolecustoms.net

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

Controller Identification

• Before you get started you need to know which Controller type you have so that you can follow the correct steps later in this tutorial. Wired controllers will follow the same steps as the Matrix PCB. The Left side images show the board from behind the battery door (no need to open the controller) and the right side is with the controller open.

Matrix PCB

From the battery door area you can see that there is no Capacitor on the left side while the other two versions do have a capacitor.

CG PCB

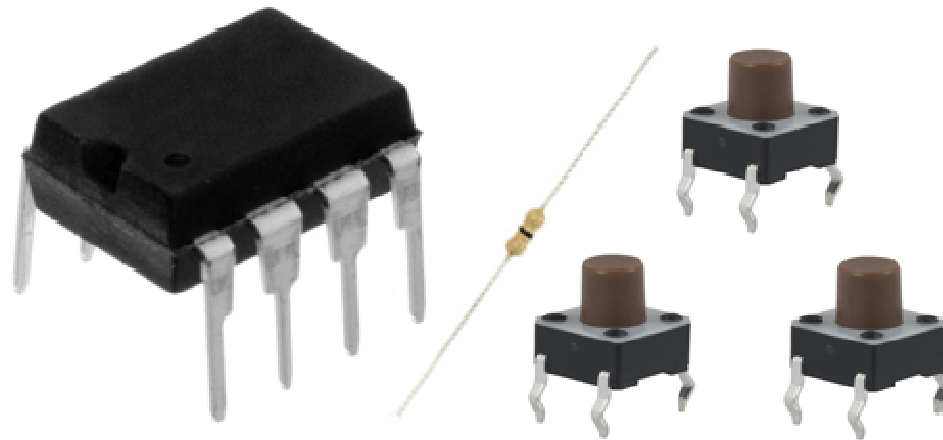From the battery door area you can see that the Capacitor is horizontally oriented.

CG2 PCB

From the battery door area you can see that the capacitor is vertically oriented.

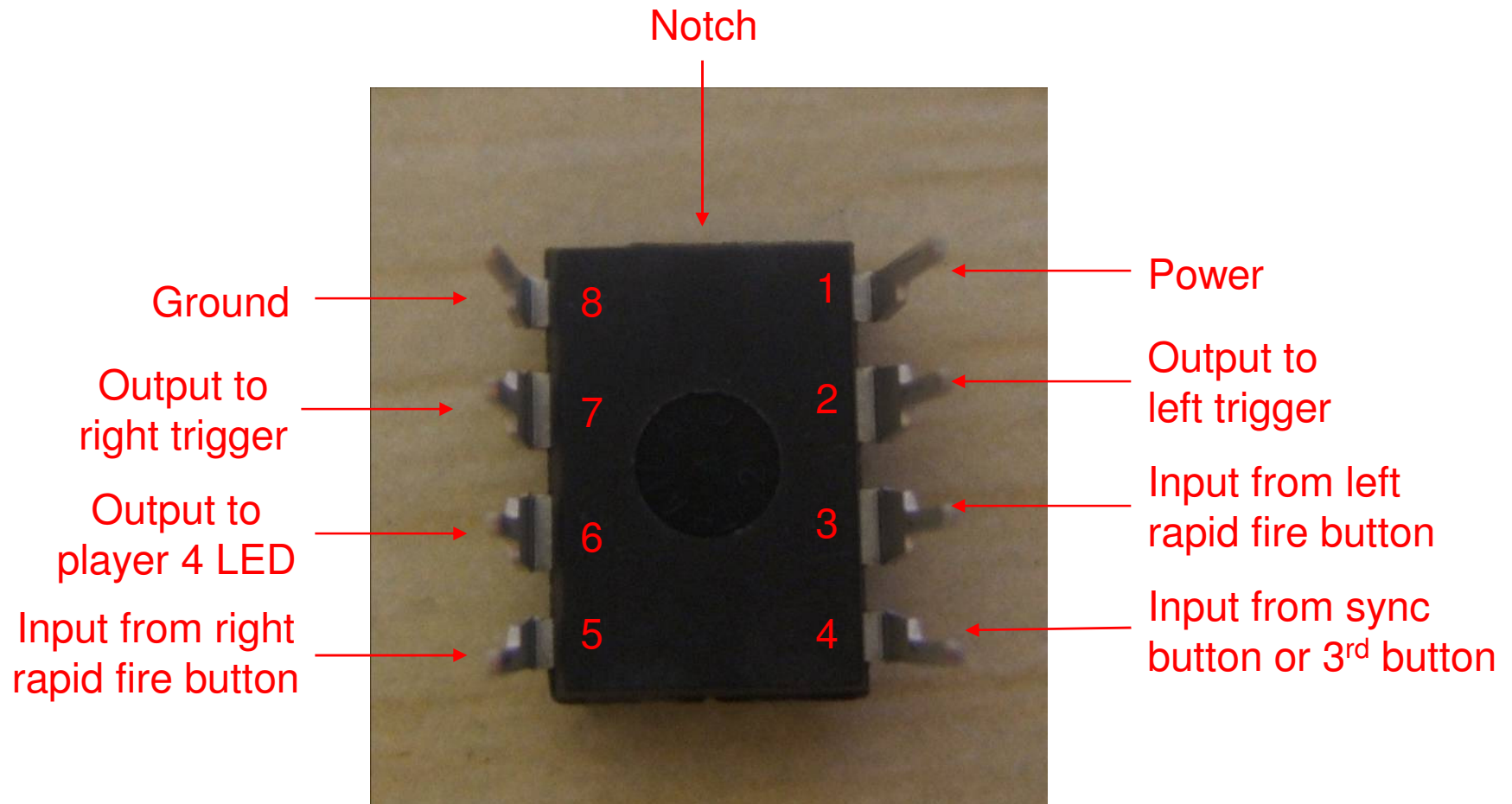Step 1: First lets start by looking at what is in your kit.

- You should have the following items in your kit
  1. (1) 8 pin PIC microcontroller
  2. (3) Buttons
  3. (1) 10K resistor
  4. 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.

- In this tutorial we will be using all of the pins on the chip.

Notch

Ground

Output to right trigger

Output to player 4 LED

Input from right rapid fire button

8

7

6

5

1

2

3

4

Power

Output to left trigger

Input from left rapid fire button

Input from sync button or 3rd button

Step 3: Installing the resistor.

- You will start by installing the resistor between pins 1 and 4. We prefer to place the resistor so it is on the middle of the chip and will be out of the way of the wires when we attach them in the next step.

- The easiest way to hook up the resistor is to solder one side of the resistor to pin 4 (step 1) and then the other side to pin 1 (step 2). Then cut off the excess wire from the resistor (step 3).

- You will want to be sure that the resistor is only connecting and touching pins 1 and 4.

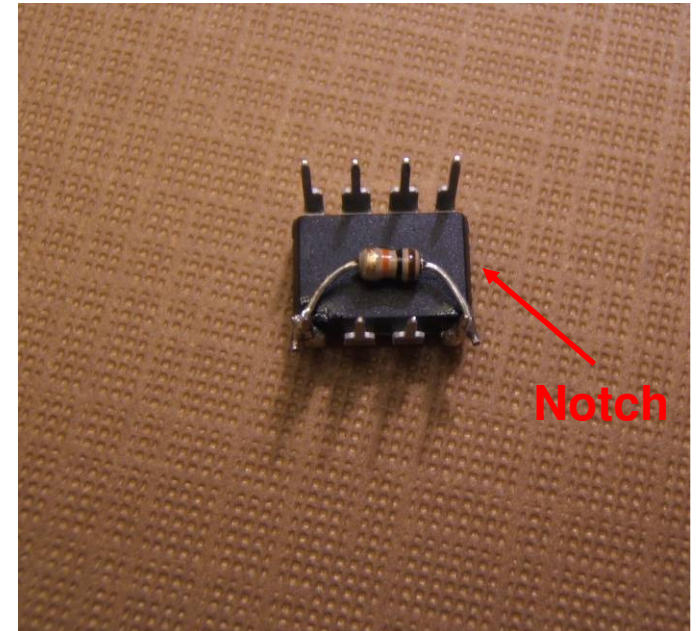- *tip: For information on proper soldering visit http://www.curiousinventor.com/guides/How_To_Solder*

Step 1

Step 2

Step 3

Notch

Notch

Notch
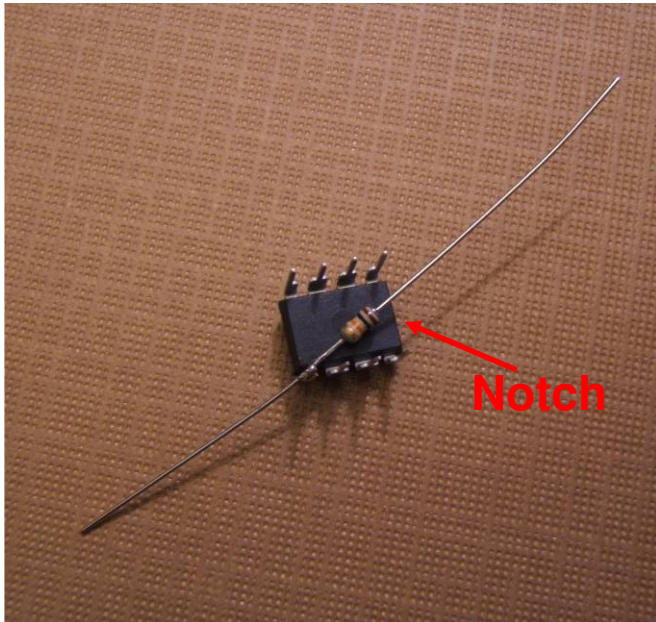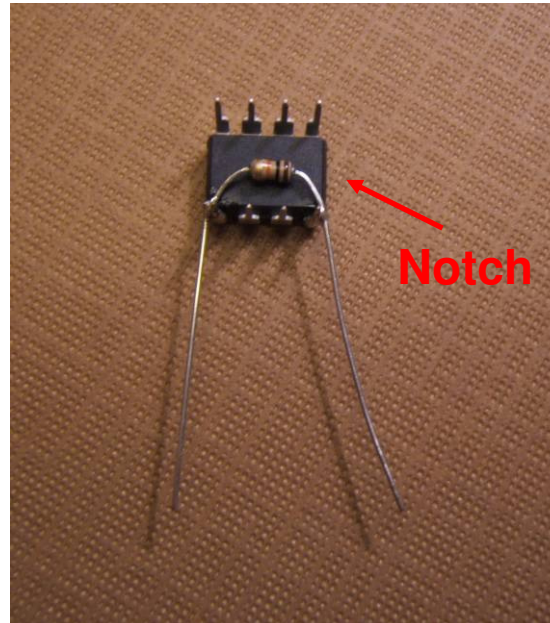
Step 4: You will now attach the wires to the chip.

• Left Image

- Pin 1 (red wire) is for Power and should be 2.5 Inches long.

- Pin 2 (blue wire) is for the connection to the left trigger and should be 4 Inches long.

- Pin 3 (white wire) is for the connection to the left side rapid fire button and should be 4.5 Inches long.

- Pin 4 (yellow wire) will connect to the sync button or 3rd button for changing the mode/speed. This wire should be 3 inches long

•Right Image

- Pin 5 (short white wire) This wire will connect to the right side Rapid fire button. This should be 2 inches long.

- Pin 6 (yellow wire) To player 4 LED. This wire should be 2 inches long.

- Pin 7 (blue wire) To Right trigger. This wire should be ½ inch long.

- Pin 8 (long white wire) To ground. This wire should be 3 inch long.

- *tip: Only strip about 1/8" of the wire for soldering. Exposing more bare wire could cause a short.*
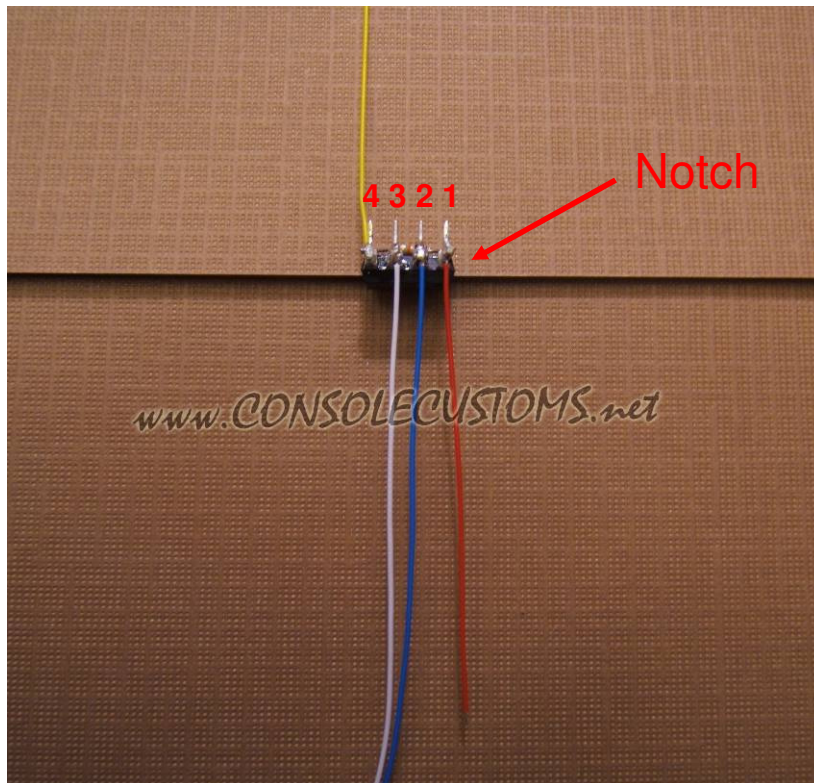
Step 5: Opening the controller

• 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 tool. This tool can be purchased from our website.

WIRELESS

Step 6: Now we will attach the chip to the PCB using hot glue.

• Mount the chip on it's back (dead bug) with hot glue so it is up against the white clip for the trigger and the pins from the rumble motor plug.

• Note the orientation from the location of the notch that is on the top of the chip.

Notch
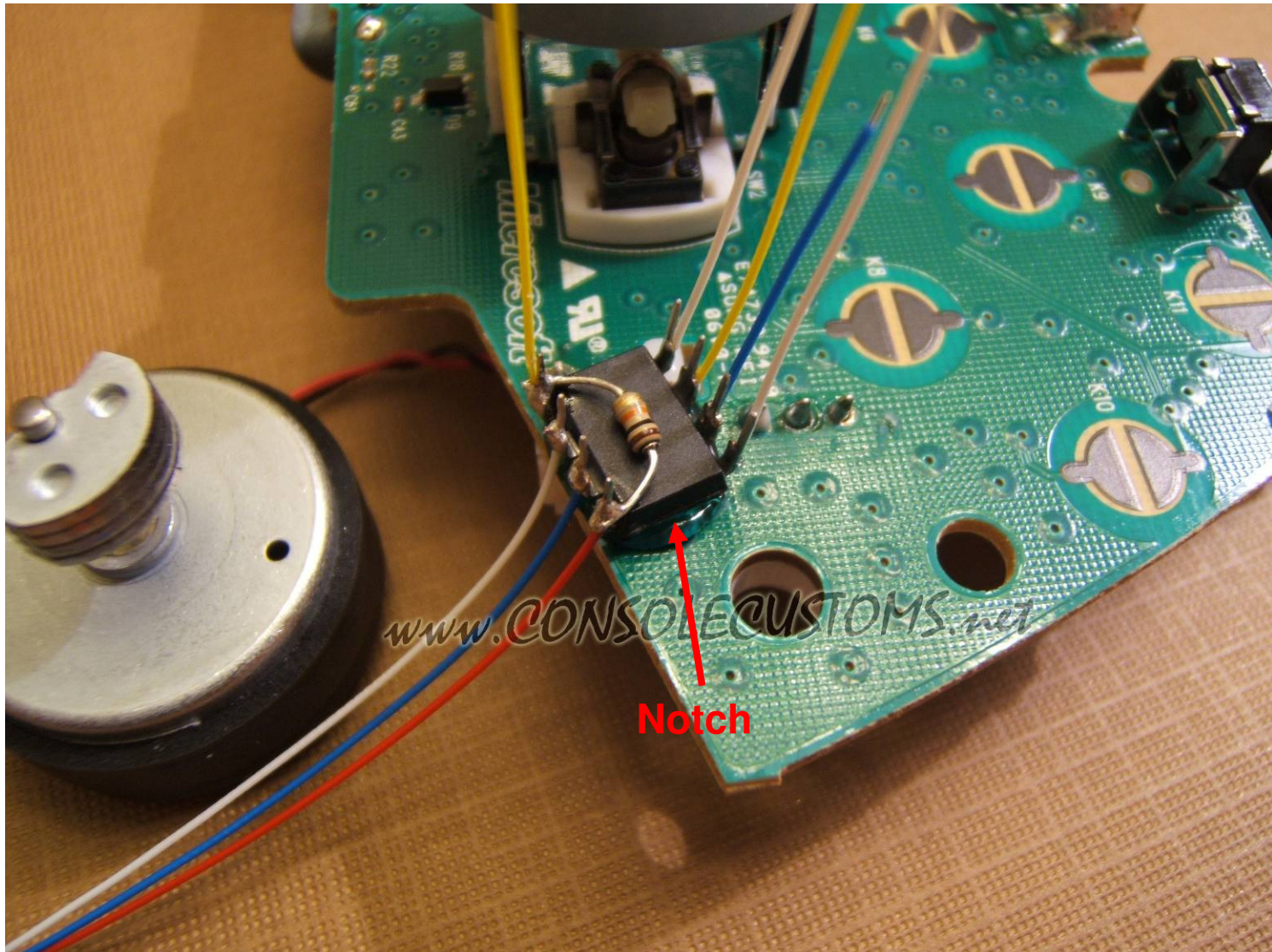
Step 7: Attach the power and ground wires.

• This step is same for all controller types.

- • The power wire from Pin 1 (red wire) must be soldered to the location below. This solder point is part of the headset jack.

- • The Ground wire from Pin 8 (white wire) should be soldered to the other side of the headset jack as shown, an alternate solder point is also shown.

    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 create a place for something to snag when closing the controller.
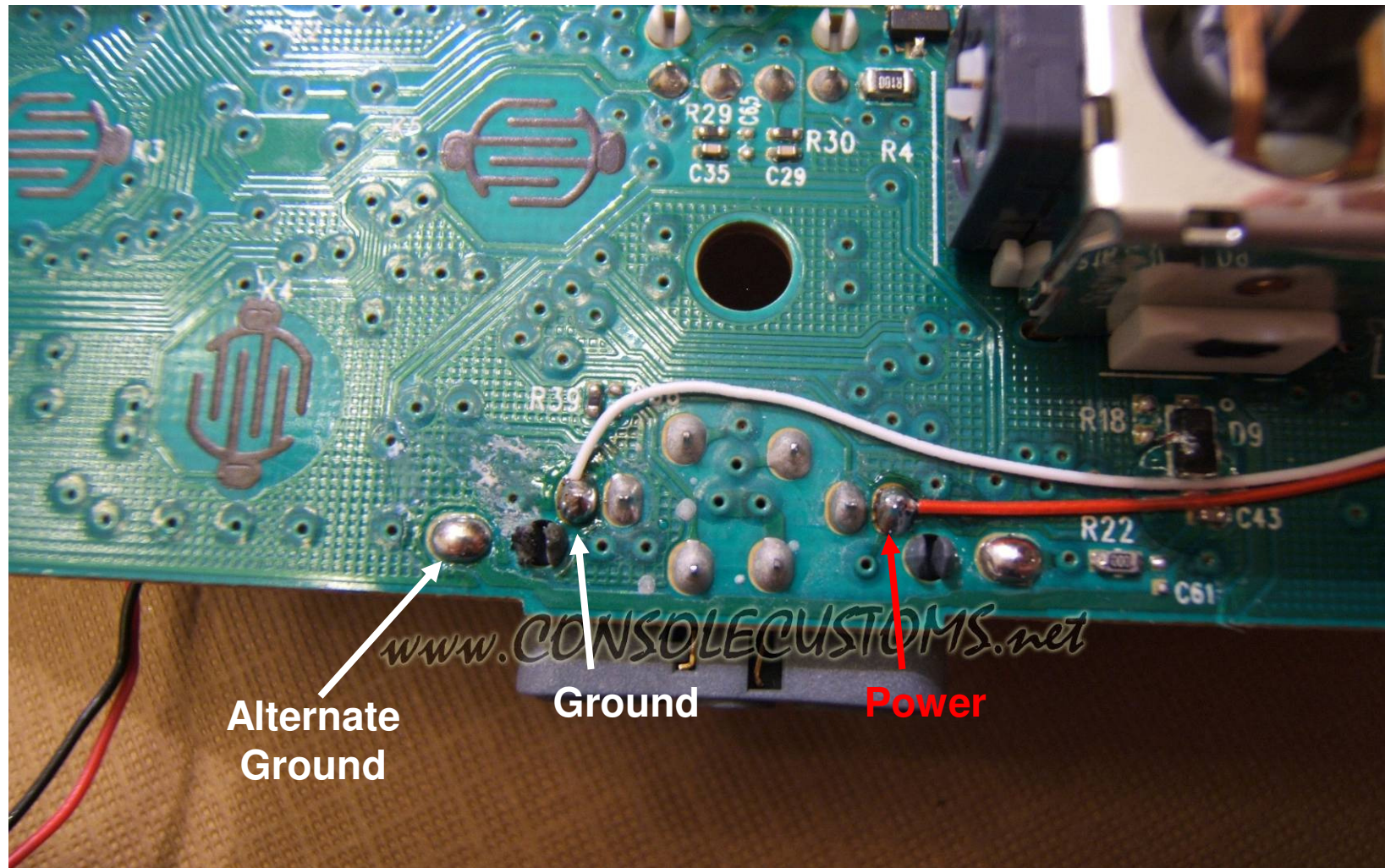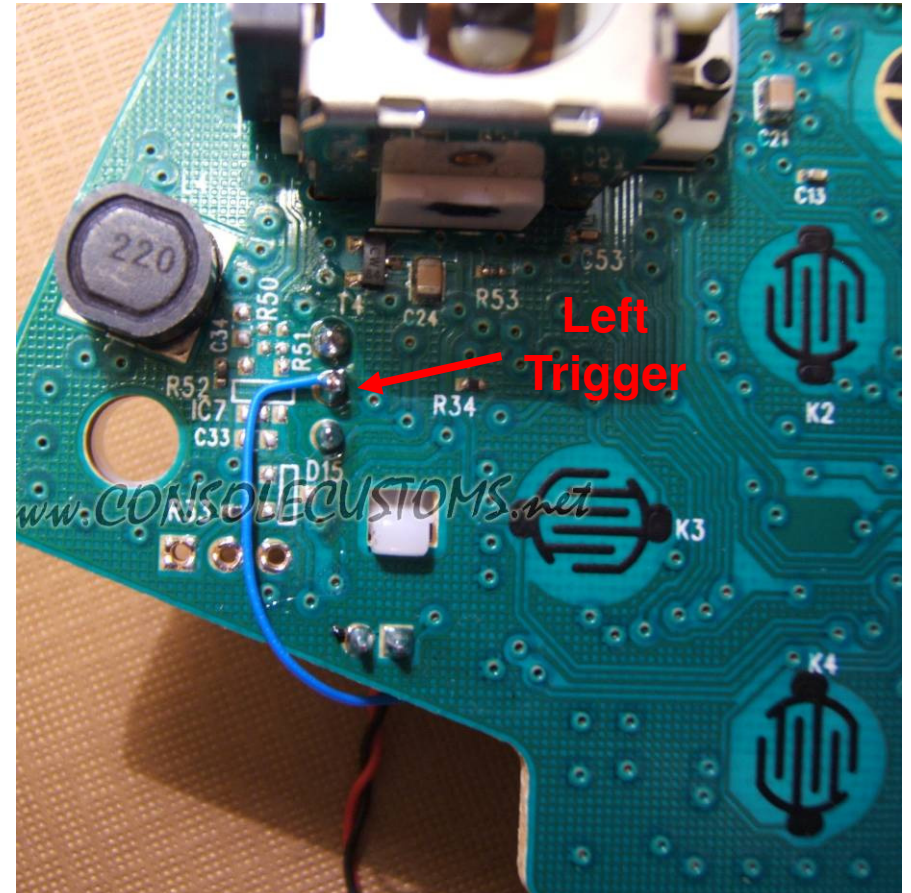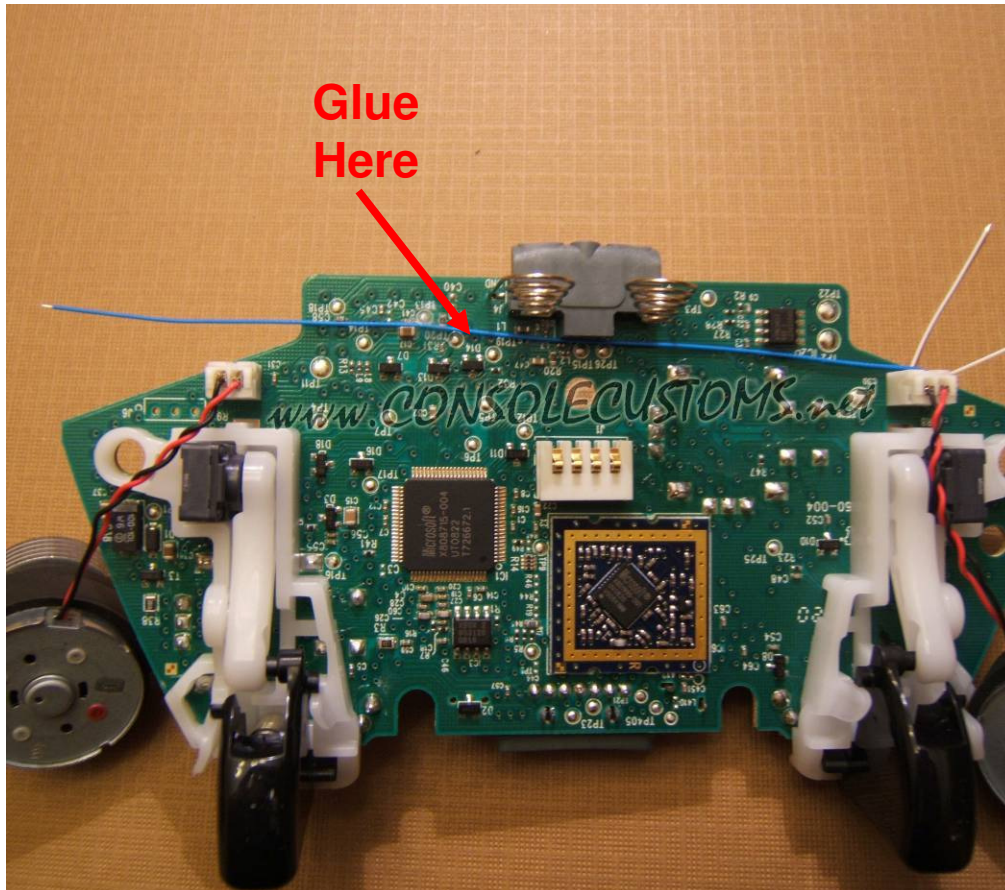
Step 8: Attaching the right trigger wire.

• This step is the same for all controller types.

   • Solder the wire from Pin 7 (trigger wire) to the middle of the three trigger pins as shown in the image.

   Tip: keep your wires as short as possible so they do not interfere with the buttons when putting the controller back together.
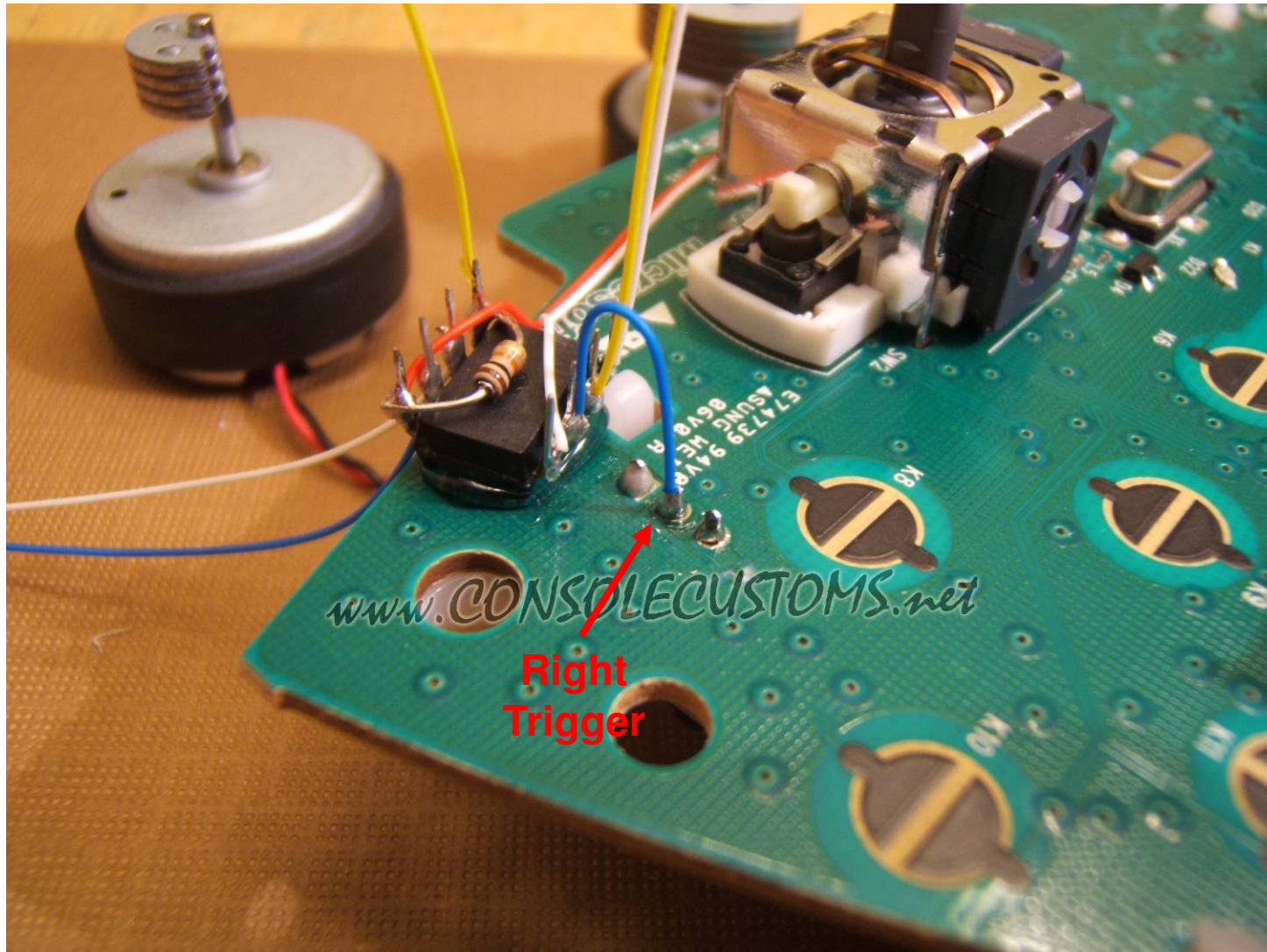
Step 9: Attaching the left trigger wire.

• This step is the same for all controller types.

> • Run the wire from Pin 2 (left trigger wire) along the bottom side of the board and use some hot glue to hold it in place.
>
> • Back on the top side of the board, solder the wire to the middle pin of the left trigger.

Step 10: Attaching the left trigger wire.

• This step is the same for all controller types.

> • Run the wire from Pin 6 (Yellow LED wire) along the path shown and solder to the bottom edge of the player 4 LED.
>
> • Make sure that the wire does not cross over any if the black circles on the board.
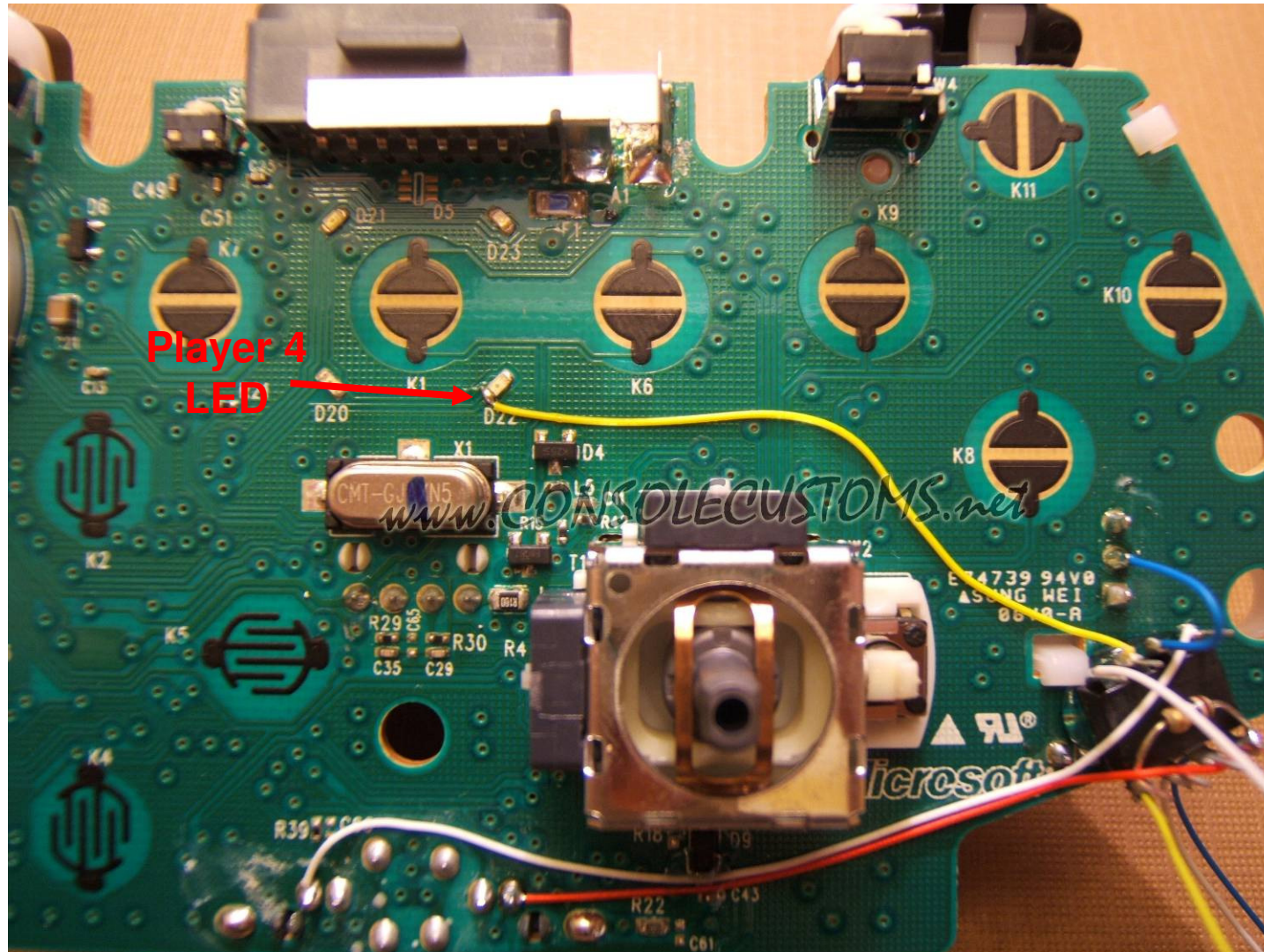
Step 11: Connecting to the sync button

See next page for alternate solder locations for each controller type

- When connecting directly to the sync button all wireless controller can use the same point shown to the right. Alternate locations for each controller type is show on the next page.

- Wired controller must use a 3rd button because there is no sync button on the wired controllers. A3rd button can also be used on any of the wireless controller instead of using the sync button. This will be shown later.

- Run the wire from pin 4 (A red wire is shown here but this is the yellow wire we attached in step 4) along the same path as the wire for the player 4 LED over to the sync button again making sure you stay away from the black circles and LED's.


From Pin 4
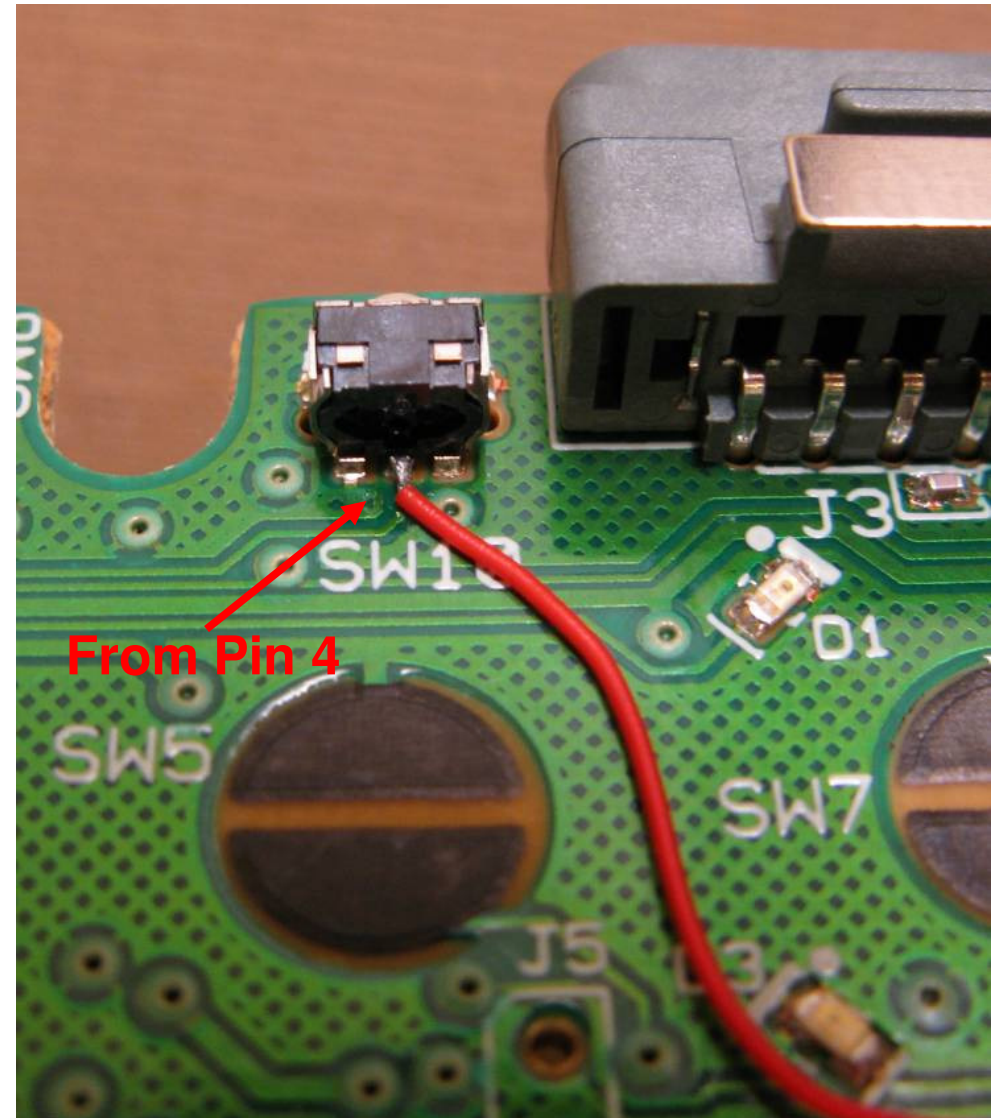
Step 11b: Alternate Sync button solder points.

- Soldering directly to the sync button is not the easiest task so here were are providing some additional locations that you can use that may be easier for you.

- The alternate location on the Matrix PCB is right next to sync button as show to the right. You will want to solder to the leg that is right under the label "D6".

- The location on the CG and CG2 boards are in the middle of the D-pad buttons. This solder point is a via and has a green solder mask over it that must be scraped clean before you can solder to it. Use a pocket know or razor to gently scrape away the green coating to expose the copper underneath.
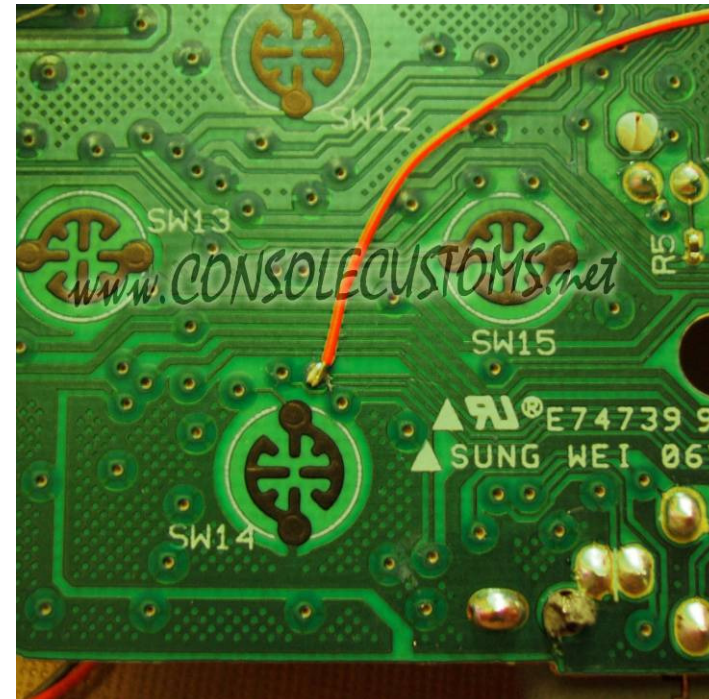
MATRIX

CG
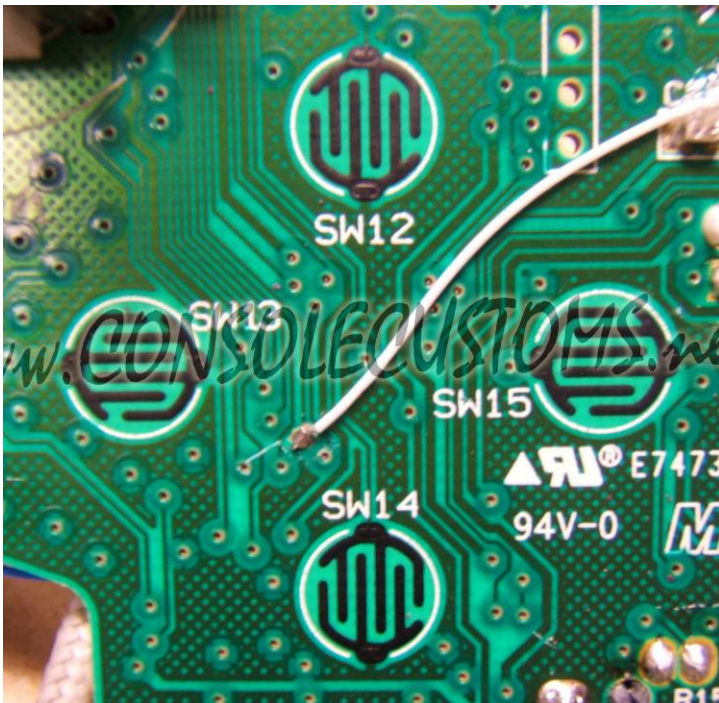
CG2

Step 12: Onto the case and buttons.

- First you will prepare your buttons by removing one pair of legs Use the image to the right so you know which legs to remove. Once you have the two legs removed bend the remaining two legs so they are flat against the bottom of the button this will keep them from touching something when you reassemble your controller.

- Now you are ready to drill the holes in your controller. The left side image below shows the location where we drill our holes. But you can put hem where ever is comfortable for you. In the image you can see a red Oval. This red oval is to show were there is a oval shaped indention in the case left over from the molding process. You will find this on both sides of the controller to use as a reference point.

- If you are installing in a wired controller or want to use a 3rd button instead of the sync button on a wireless controller we have marked two good locations for the 3rd button on the right side image. You can put the button just about anywhere you like, these locations are only suggestions.

- Next install you buttons using hot glue and ONLY hot glue. Using super glue or other liquid adhesives will soak into the button and cause it to no longer function. Once glue in bend the legs of the button down so they do not stick up and make contact with the board when the controller is assembled.

- Finally attach a wire to one of the legs of each button. It is easiest to use only one wire and start with the right side button and then melt the casing to attach it to the left side button leaving about 1.5 inches of wire to solder to ground later on.

REMOVE

Suggested 3rd button locations
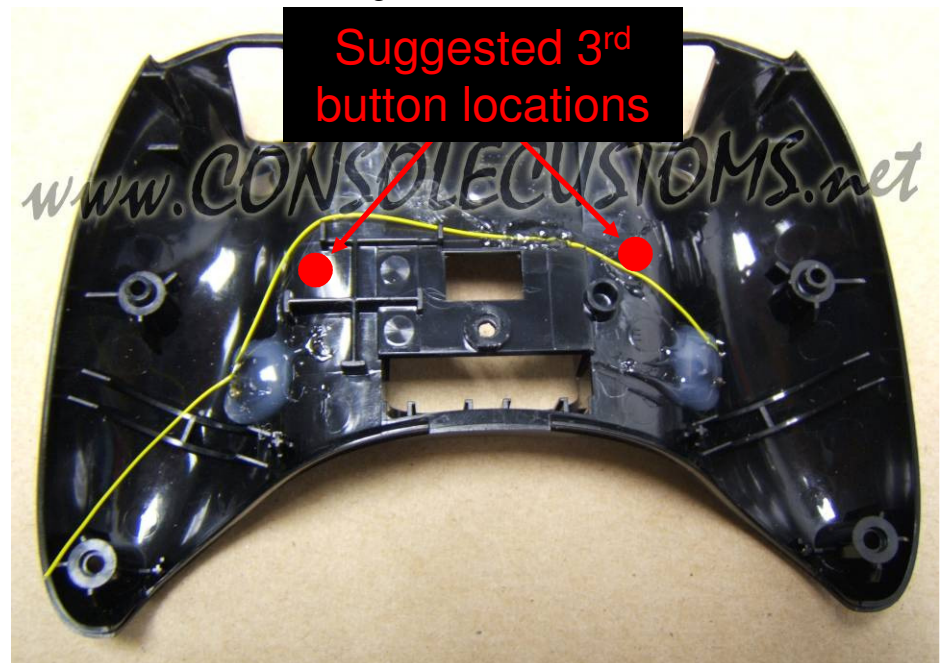
Step 13: Connecting the wires from the chip to the Buttons

• You should only have two wires left on your chip that are not attached to anything. One from Pin 3 and one from Pin 5.

• Take the PCB and flip it over and bring it close to the back cover as shown below. Take the wire from pin 5 and attach it to the free leg of the right side button. Do the same with the wire from Pin 3 and the free leg of the left side button.

• Keep the wires in place using some hot glue. Route the wires going to the left side so they go around the raised area in the middle of the controller.

Step 14: Attaching the Ground wire for the buttons.

• This step is different based on your controller type. Please pay attention to the information below.

- • After attaching the wires from the chip to the buttons, flip the board over and set it onto the back of the case. You should have only one wire left that is from the buttons and this needs to be connected to ground.

- • There are many places the wire can be attached to ground and any ground location is fine to use. Below we show locations that are closest to where the wire is already located so that it can be kept as short as possible.

- • For the CG and CG 2 controllers the wire should goto the <u>bottom</u> pin of the three trigger pins for the left trigger.

- • For the Matrix and all wired controllers the wire should goto the <u>top</u> pin of the three trigger pins for the left trigger.


CG and CG2 Controllers
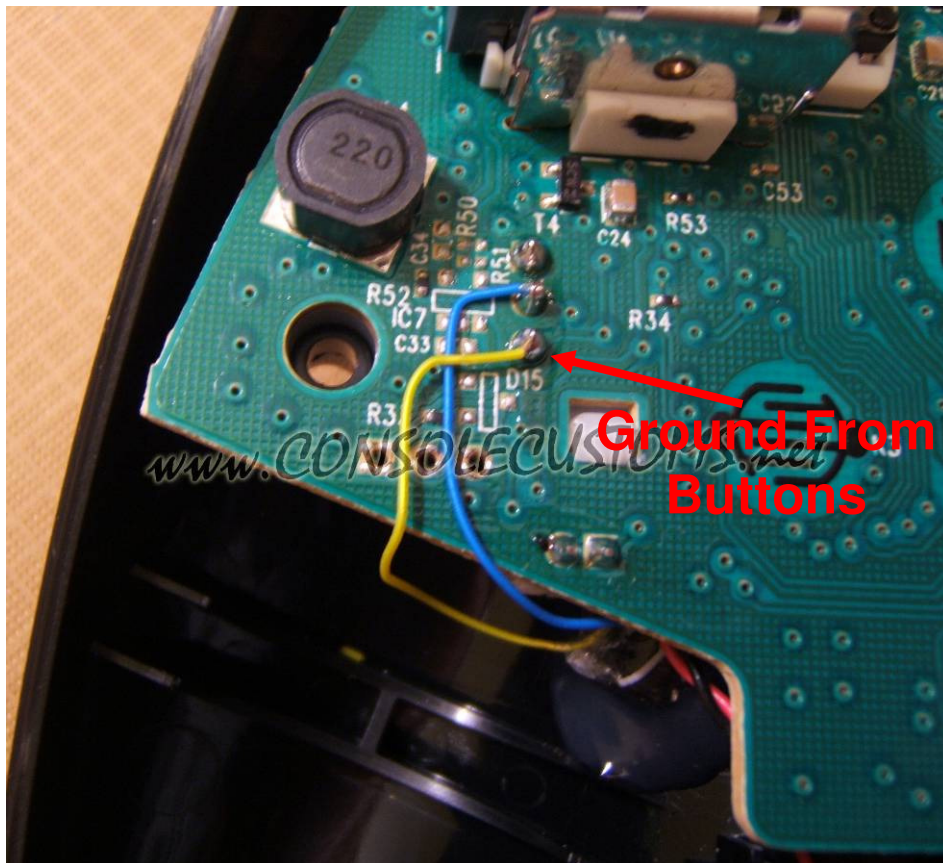
Matrix and Wired controllers

Step 14: 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 we 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. This allows more room for the chip to fit into the controller.

• 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 we have found to do this is leave the top piece face down so all the buttons do not fall out. And hold the PCB and the back of the controller together, then 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! See the next page for additional information on using your new mod.
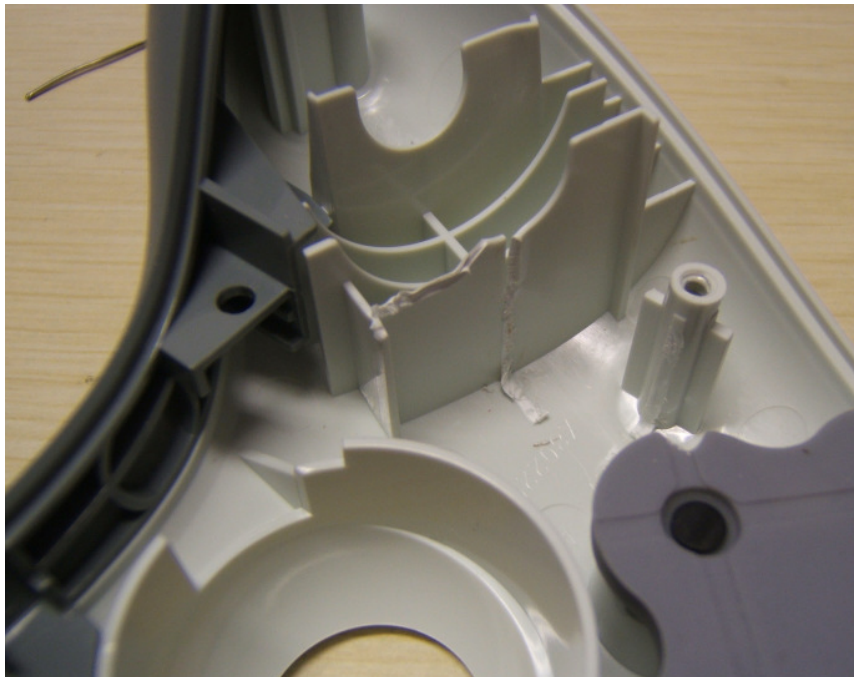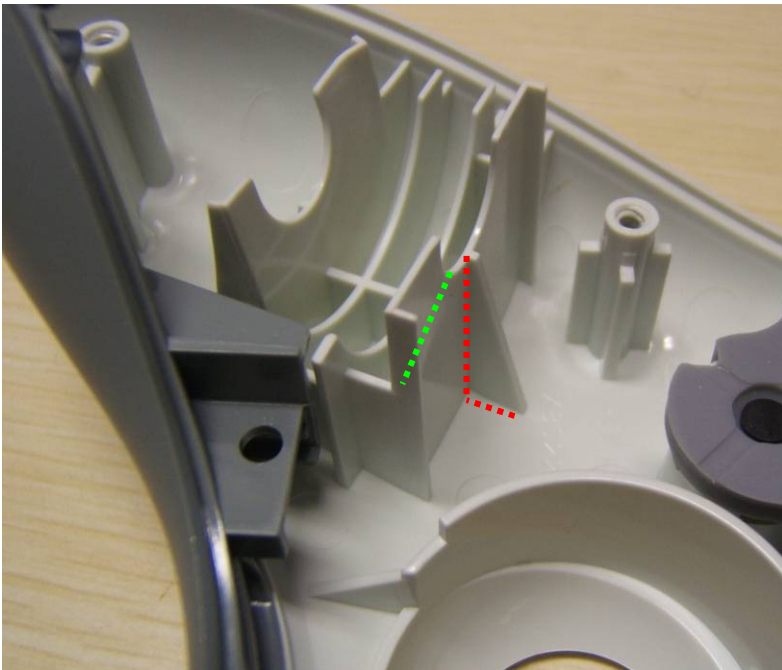
Xbox 360 RFX-5B Dual Button 5-mode rapid fire:

- This mod has many different features and functions which we will explain below. Video tutorials are available for all of these features on our website www.consolecustoms.net or from our youtube page www.youtube.com/consolecustoms.

- First off are the LED modes. Because of the requests from our customers we have made this mod with the ability to change how the LED functions. There are two modes for the LED's described below. To change how the LED works you must hold in the right side rapid fire button <u>while you are turning on the controller.</u>

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  - **LED MODE 1** - Blink LED. The LED will blink 1, 2, 3 or more times depending on the mode or speed you are switching to.
  - **LED MODE 2** - No LED, the LED will be off all the time. For the ultra stealth look.

- Next are the game modes, This mod has 5 different game modes. Each mode has speeds designed for specific games but these are not the only games they will work for, this mod chip will work for almost every first person shooter available with the addition of our user programmable mode. To switch the game mode you must hold in the sync button (or 3rd button) for aprox 3 seconds. You will see the player 4 LED flash. The number of flashes indicates the game mode. When you switch the chip to a game mode it will stay in that game mode unless you change it again by holding in the button, even if you turn off your controller.

  - **Mode 1:** Call of Duty 4 – This game mode has 3 setting; Fast, Slow and Burst fire. The fast fire rate will only work in COD 4 when you have the double tap perk equipped.
  - **Mode 2:** Call of Duty: Worlds at War - This game mode has 3 setting: Fast, Slow and Burst fire. This mode is specifically for COD WaW to work around that patch that tries to detect rapid fire controllers.
  - **Mode 3:** Gears of War 2 - This game mode has 2 setting, Slow and Fast. The slow speed works for the hammer burst and pistol. The fast mode is only for the pistol.
  - **Mode 4:** Halo 2/3/ODST - One Extremely fast speed designed for Halo 2/3 and Halo ODST
  - **Mode 5:** User Programmable - This mode has one speed that can be set by the user from 6-25 shots per second. **<u>Programming instructions on next page.</u>**

- To cycle through the settings you only need to tap the sync button (or 3rd button). Once you are in the game mode you would like and change the speed setting, you will continue to use new buttons for firing.

Changing the User adjustable rapid fire speed

These instructions are also available as a video from our website www.consolecustoms.net and also our youtube page www.youtube.com/consolecustoms.

1. You first need to be in the user adjustable game mode. Use the procedure described on the previous page to switch the controller to the correct mode.
2. Once in the user adjustable game mode. You will need to first hold in the trigger and while holding the trigger press and hold the mode change button on the back. (or sync button for stealth controllers). **You must hold in the trigger first, before pressing and holding the button. If you do not follow this order you will just switch the game mode instead of entering to programming mode.**
3. Hold both the trigger and the button for aprox 3 seconds. After 3 seconds you will see the player 4 LED come on for 1 second then go out. After you see this you can release both the trigger and the button. You are now in the programming mode.
4. When you enter the programming mode the user programmable speed is set back to 6 shots per second (166 milliseconds per sot). This is so you always know where you are at and also allows the programming to be done with only using one button.
5. While in the programming mode every time you press the button on the back of the controller (sync button on stealth controllers) the firing rate will increase by 2ms. The player 4 LED will also flash. The rate can be increased until you reach 25 shots per second (40 milliseconds per shot). At this point the player 4 led will not flash and pushing the button will no longer increase the speed.
6. At any time you can test you speed by just pulling the trigger.
7. Once you are at the desired speed follow steps 2 and 3 above to return to the user adjustable game mode.

Tips:
- Every time you enter the programming mode the speed is set back to 6 shots per second (166 milliseconds per sot)
- Remember or better yet write down the number of times you pressed the button. So you can go back and make adjustments if needed.
- This mode works in milliseconds each time you press the button the speed is decreased by 2ms. So you can easily calculate you speed.
- The default is 6 shots per second or 166ms. There are 1000 milliseconds in 1 second. So 1000/166 = 6.02 or approximately 6 shots per second.
- If you press the button 20 times you are now at 126ms. 1000/126 = 7.94 approximately 8 shots per second.
- If you want to go slower in speed you must exit and re-enter the programming mode and start over.