Installation tutorial for Console Customs

Xbox ONE MaxFire – ONE V1

This tutorial is designed to aid you in installation of a console customs MaxFire ONE modchip. This tutorial covers the installation of our new 20-pin chip .

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 ONE 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
 - Torx T6 screwdriver

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- Soldering iron (A 15w/30w from radio shack is about \$12)
- Solder (We 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
 - 1/8th inch drill bit (optional)
 - Small pocket knife or razor blade

Please visit our website at <u>www.consolecustoms.com</u>

For questions or help please email us at support@consolecustoms.com

Sending pictures with support requests will help us to help you quickly!

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

- You should have the following items in your kit
 - 1. (1) 20 pin PIC microcontroller
 - 2. (1) Button (Use of the button is optional)
 - 3. 30ga. Wire (We include multiple colors)



Opening the Controller, Part 1

First lets get the controller open. As you will notice there are no visible screws on the controller, Microsoft has hidden them under the hand grips and in the battery compartment. So to start you will want to remove the hand grip covers. You can use a plastic pry tool to do this or just your fingernails which we find to be faster and easier. The clips face inward so you want to pull out and away as demonstrated in the picture below. Don't try to just rip it all the way off from one side you may break clips this way. Just pull till you hear the clips pop off on one side then go to the other side and do the same thing.



Opening the Controller, Part 2

Next You will want to remove the 5 screws that hold the shell together. These are Torx T8 Security screws and have a small post in the center of them which require the use of a Torx T8 security screwdriver to remove them.

With the screws removed both the front and back halves of the shell are easily removed.



Opening the Controller, Part 3

With the shell apart you will see two circuit boards which have two connectors hooking them together. We will be mainly working with the Smaller "U" shaped circuit board that is on the back. To remove this you will want to remove the two Torx T6 screws on the lower right hand corners and de-solder the wires for all 4 rumble motors. With all these removed the back circuit board can be lifted out of the controller. because the two boards are plugged in together it can take a little bit of effort so separate the boards.



Chip Information

Below is a diagram of the chip while on it's 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.



Soldering wires to the Chip.

It is easiest to first solder wires to all of the legs before hot gluing the chip into the controller. For all of the connections except for the left trigger, Left thumbstick click and the LED use have used wires that are 2.25 inches long (57mm). For the left trigger, Left thumbstick click and the LED we have used wires that are 5 inches long (130mm).



ATTENTION!!

Microsoft has released new controllers which now have a 3.5mm headset port on the bottom (Please see the image below). These controllers have a circuit board inside that looks different from the original controllers without the 3.5mm port. Most connections are the same between these two controllers however the Right and Left triggers connections are different. The next few pages show the connection locations for both types of controllers. Please use the connection points appropriate for you controller and if you have any questions please email us at support@consolecustoms.com



Solder point location overview Part 1a

The Left trigger connection shown here is only for controllers WITHOUT the 3.5mm headset port. All other connections are the same for both controller types.

The chip can be mounted on either side of the back "U" shaped board as there is plenty of room for the legs in the handles. We recommend placing it on the Left side as it puts all of the pins in better locations for making the connections needed.

The Connections for R3, L3, the Left Trigger, trigger Signal and ground are on this side of the board and shown below. All other connections are made on the other side of this "U" shaped board.

The Connection for the Left trigger is to a small via and will be shown in more detail later.



Solder point location overview Part 1b

This image shows the Right and left trigger connection points for the new controllers WITH the 3.5mm headset port.

RT (red arrow) – This wire will solder to the very small solder pad directly to the right of the black resistor labeled "R39" For RT and LT take care that only a very small portion of wire is exposed there are many other components and solder pads next to these which cannot touch the bare wire.

LT (yellow arrow) – This wire will solder to the small pad directly below the Black resistor labeled R42



Solder point location overview Part 2

The Right Trigger Connection shown here is only for the Controllers WITHOUT the 3.5mm headset. All other connections shown are the same for both controller types.

All Button Connections can be made where the two plugs are on the other side of the "U" shaped circuit board. The connections are made to the small pins at the base of the connectors.

The "B" button is also on this side of this board and connected to directly by scraping the black carbon coating off part of the button pad. Please note there is only copper under the small circle at the side of the "B" button. To be sure of proper button function only scrape the coating off of <u>HALF</u> of the black circle starting from the bottom edge. If to much is scraped off and there is no carbon touching the copper pad underneath the button will stop working.



Placing the Chip.

The chip should be hot glued to the left side of the "U" shaped board. We have found it works well to line the chip up with the bottom left corner of the raised portion of the circuit board.

You may also want to double check that the trigger does not contact the chip, as you can see from the lower picture it does get close to the chip.





Prepping the connector points.

The legs of the connectors do not have enough solder on them to solder the wire by itself so you will need to add some. We recommend adding a little bit of solder to each used pin before connecting the wire. This way you can just reheat the solder and introduce the wire to make the connection. (see the end of the tutorial for help if you bridge together two of the connector legs with solder.)



Prepping the B Button.

As mentioned earlier you do not want the scrap the entire area of carbon from the B button connection as it will cause the button to stop working. Below you can see that we have exposed only half of the small copper pad using a rounded tip pocket knife. The exposed copper is then tinned with solder in preparation for the wire.





Prepping the trigger connection Vias.

The Connections for the triggers are to small vias, vias are places where copper passes from one side of the board to the other. These are covered with a green solder mask which must be removed before you can solder to it. To remove this mask you will want to use a small pocket knife, preferably with a curved tip. Lightly scrape across the via to remove the mask, <u>DO NOT place the tip of</u> the knife in the hole and twist, this can cut through the copper and disconnect the trigger.

Below the top images are close up images of each trigger via with the solder mask removed and the bottom images the same via with a small amount if solder added to it ready for soldering the wire to it.









Soldering the wires to the back side of the board.

Run the wires from the chip to the back side of the board and solder to each wire to it's appropriate location as shown below. It is best to keep the wires as close to the inside corner as possible as there is more room for the wire here when putting the controller back together.

If you run into the situation where you have to much solder and bridge together two legs of the connector, skip to the last page of this guide for information on how to fix it.



Soldering the wires to the front side of the board.

Now Flip the board back over and make the connections for the Left trigger, Trigger signal, Thumbsticks (R3 and L3) and Ground. Be sure to keep the wires away from the black pads near the triggers.



Soldering the LED wire.

The Final Connection is the LED wire. You must put the "U" shaped circuit board back into the controller to make this connection. The LED connection is on the larger circuit board that the "U" shaped one plugs into. Make sure that the wire lays flat across the larger circuit board. This area is where the batteries go when the shell is together and you will not be able to close the shell if the wire is taught. We used a little hot glue to hold the wire to the larger board.



Complete.

You are now complete with the chip installation. You can re-solder the rumble motors wires, replace the 2 torx T6 screws and put the shell back together.

The full user guide for this modchip can be found at this link

http://www.consolecustoms.com/dl/xone/maxfire_one_user_guide.pdf

If you have any questions please email is at support@consolecustoms.com

Installing the optional Button.

If you would like to use a button instead of Left on the D-pad for operating the main controller features you can hook the wire from Pin 4 to the included button instead of Left on the D-pad.

To do this take the button and remove one pair of legs. A pair of legs are on the same side edge of the button (see image below). With the two remaining legs you will solder the wire from pin 4 to one leg and a wire from the other leg to the same ground connection as the chip inside the controller.

To mount the button drill a 1/8th inch hole in the shell in your desired location, normally somewhere on the back of the shell. Just be sure before drilling that when closing the controller the button will fit and not make contact to the circuit board or other shell components. There is a lot of open area in the Xbox One shells so it should not be hard to find a location that works for you.

After drilling the hole glue in the button using HOT GLUE, do not use super glue as super glue can seep into the button can cause it to stop working. Most thicker 2 part epoxies will also work if hot glue is not available.



Troubleshooting.

With the small connections in the controller a common problem cab be bridging together legs of the connectors as shown below.



If this happened you can do two things.

- 1. Try and swipe the solder away between the pins. This does not always work but works best with a clean soldering tip and first allowing the solder to cool, If you keep trying this method on solder that is hot it will just become more fluid and less likely to separate.
- 2. Remove the excess solder and start again. There are several ways to remove solder such as using a solder sucker or desoldering braid. We prefer desoldering braid as is easier to work with and can be purchased at electronics stores like Radio shack for around \$3 \$4. As shown in the picture below you just take the braid and place it over the solder you want to remove then place your soldering iron on top of the braid. Allow a few seconds for the iron to heat the braid and the solder and you should see the solder wick into the braid. Then just quickly remove the iron and the braid leaving nice clean connections.



