

# Ender Extender™ 400

For the Ender 3 Non-Pro and Ender 3 Pro

Installation Guide

[www.enderextender.com](http://www.enderextender.com)

9/24/20

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## Document Revision History

Date	Revision No.	Summary
Sep 24, 2020	A	Initial document
Oct 19, 2020	B	Update control box instructions; keep control box in original location rather than using a printed box.
Dec 8, 2020	C	Added pictures for control box removal. Added slicer configuration instructions
Dec 18, 2020	D	Added pictures/instructions for non-pro Y end stop installation
Jan 8, 2021	E	Added more pictures for non-pro Y end stop assembly
Jan 24, 2021	F	Added pictures and instructions for heated bed wire restraint (with self-stick tape). Added pictures and instructions for heated bed wire extension installation using Wago connector.
Apr 5, 2021	G	Removed pictures and instructions for heated bed wire restraint (self-stick style) and reverted to original design with optional elongated bed wire restraint. Removed pictures/instructions regarding Wago connectors (no longer in use)

## Important Safety Instructions

**WARNING: ALWAYS DISCONNECT ELECTRICAL POWER FROM THE MACHINE BEFORE PERFORMING ANY MAINTENANCE.**

### SKILL LEVEL: ADVANCED

This product is an advanced level project and requires detailed knowledge of the mechanical nature of a 3D printer. Throughout the project, you will be challenged at many levels in order to successfully complete the project.

### Machine Safety

Never reach into the machine's working area while it is running. Always shut off and unplug the printer to perform maintenance, adjustments, or repairs.

### Sharp Edges

Some parts may have sharp edges and care should be exercised when handling all metal parts. Should you discover sharp edges, the best treatment is a sanding block of 80 grit sandpaper. Carefully rub the edges with the sandpaper until the sharp edge is reduced to a friendly edge.

### Electrical Wiring

The increased size of the printer will necessitate lengthening some of the wires for the printer's power supply, motors and end-stop switches. Suitable replacement wires have been included in your kit; however, you may need to trim, cut wires and crimp wire connectors. These steps require tools that are not included in the kit. These tools will be identified in the Required Tools section. Care should be taken that all connections are secure before powering on the printer.

## BEFORE YOU BEGIN

Take many pictures of your 3D printer, especially detail areas such as motors, wire connections, switches, screws, nuts, belts, etc. While we have included detailed photos of every step, it is very helpful for you to recall how your specific printer was set up prior to disassembly in preparation for installing the kit.

Inventory all parts of the kit before disassembly of your printer. You may need to print a missing part, or if there is an issue with the kit contents, there may be a delay in addressing the problem.

### About build surface choices and options

To date, none of the kits have included print surface materials. This may change, as sourcing options are developing, however, it is impractical to include a build surface at the current price of the kits.

Available options are:

Glass square or mirror (406x 406mm, or 16 inches by 16 inches) from local hardware store

Mirror from Amazon

<https://www.amazon.com/gp/product/B00PYHHU8E>

400 x 400mm 3D printing build sheet

<https://www.amazon.com/gp/product/B07M9JCX28>

## Ender 3 Machine Overview

In order to successfully install the Ender Extender 400 kit, it is necessary to review the overall machine structure to become familiar with several of the parts within the kit.

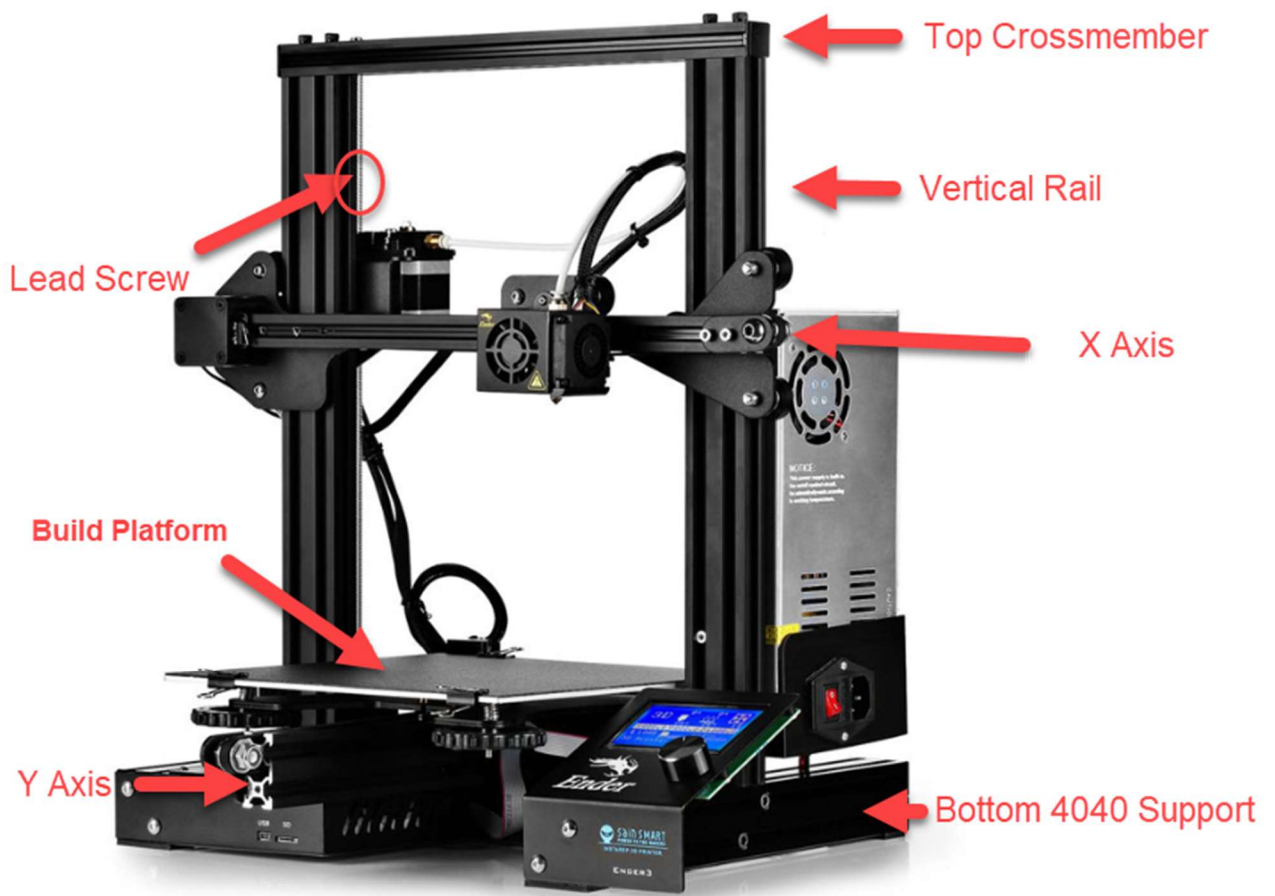


Figure 1-1

## Ender 3 Build Platform Carriage Plate

A crucial part of the Ender 3 is the Build Platform Carriage Plate. Notice this plate has 8 holes, four of which are unoccupied. This plate is used on both the Ender 3 and the Ender 3 Pro. Some versions of the Ender 3 were shipped with plates that do not have the additional four empty holes, and therefore will not fit the Ender Extender 400 kit. If your carriage plate has only four mounting holes for the V-wheels, you will need to order a suitable replacement. There may be several vendors, but the Amazon link below should give you an idea of what to look for.

<https://www.amazon.com/dp/B07YWGLL96>

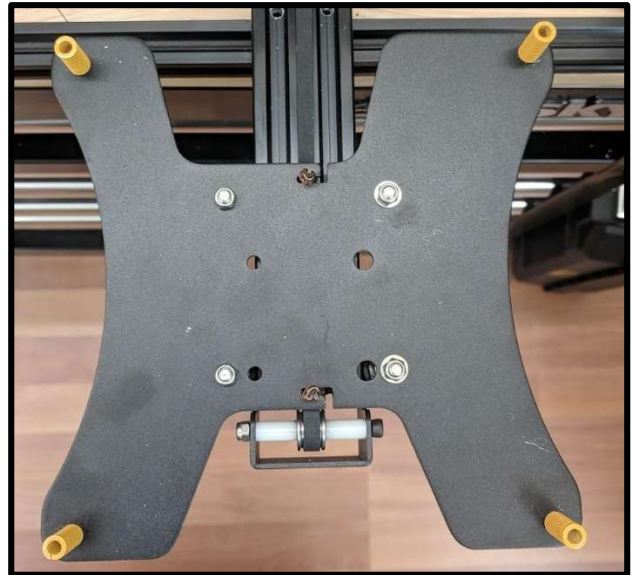
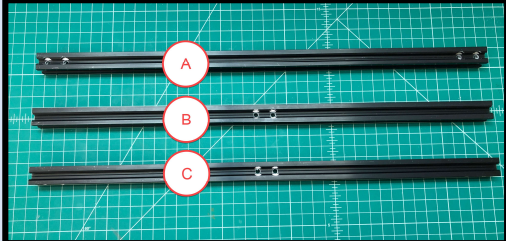
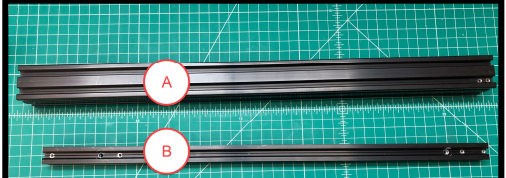








Figure 1-2






## Step 1: Inventory the Kit Contents




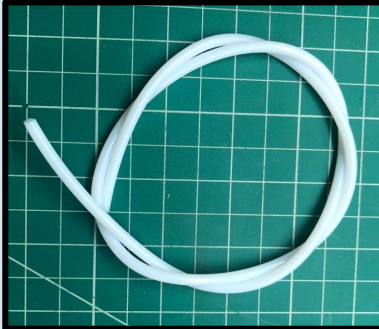
Your Ender Extender kit includes all the required screws, frame parts, belts and wires that you need for a typical installation. **There are many variations that you could choose to build, which may require additional components.** We've included links to a 3D printable LCD box that mounts to the left of the frame, and the wires supplied have appropriate length for this configuration. Alternative configurations may require longer wires than those supplied in the kit.

Quantity	Description	Picture
1 ea	Frame Crossmembers (A) Top frame crossmember (B) Bottom, Front frame crossmember (C) Bottom, Rear frame crossmember	
1 ea	(A) Y Axis profile (4040 for Pro; 2040 for Non-Pro) (B) X axis profile	
1	Y belt 400 (marked for Pro or Non-Pro) Or Y Belt 300	
1	X belt 400 or X Belt 300	



1 ea	Heated bed wire extension and couplers.	
1 ea	61cm LCD Cable	
2 ea	<b>(Non pro only)</b> M5x10 button head screw M5 flat washer For Y motor mount	
4 ea	<b>(Non-pro only)</b> M4 hex cap screw M4 t-slot nut For Y belt tensioner	

<p><b>1</b></p>	<p><b>(Non-pro only)</b> Y motor mount</p>		
<p><b>1</b></p>	<p><b>(Non-pro only)</b> Y belt tensioner</p>		
<p><b>8 ea</b></p>	<p>Bottom cross member frame screws M5x25 hex cap screw M5 star lock washer</p>		
<p><b>4 ea</b></p>	<p>Y Axis mounting screws M5x20 hex cap screw M5 star lock washer M5 t-slot nut</p>		
<p><b>1</b></p>	<p>Aluminum plate, .125" (3mm) thick (Size varies with material availability)</p>		

<p><b>4 ea</b></p>	<p>Heated build plate mounting screws, nuts and washers</p> <p>M4 nylon lock nuts and flat washers (for securing the large plate to stock plate) When using metal washers, ensure smooth side faces black surface of heat plate.</p> <p>Update: August 2020 – We now use plastic washers for safety purposes to avoid shorting out the electrical traces of the stock Ender 3 heat bed. If you received metal washers, we encourage you to purchase plastic washers at your local hardware store and replace the metal ones.</p>		
<p><b>1 ea</b></p>	<p>Printed End Stop Mount (Non-Pro Only)</p>		
<p><b>1 ea</b></p>	<p>Heated Bed Thermistor Extension Wire (400/400XL Kits only)</p>		
<p><b>1 ea</b></p>	<p>500mm Bowden Tube (400/400XL Kits only)</p>		

**1 ea**

Y Motor/End Stop wire loom  
(400/400XL kits only)

These wires will be phased out in January 2021 in favor of the extensions shown below.



**1 set**



Y Motor/End Stop Extension wires  
(400/400XL Kits only)

Y motor/end stop extensions

Beginning in late January, 2021, we will be providing these extensions for the Y motor/end stop.





<p><b>1 ea</b></p>	<p>X Motor/Extruder/Endstop Wire Loom (XL kits only)</p> <p>We are phasing out these wires in favor of the extensions shown below.</p>	
<p><b>1 set</b></p>	<p>XL kits only (Beginning late January 2021)</p> <p>X/E Motor/Endstop wire extensions  2x extension wires for stepper motors  1x Endstop extension  1x wire wrap  3x wire ties (not shown)</p>	

## Step 2: Ender 3 Non-Pro and Pro Differences

Key differences between the Ender 3 Non-Pro and Pro 3D printers exist primarily in the configuration of the Y axis. Relevant to the Extender 400 kit, the Ender 3 Non-Pro motor mount and belt tensioner will be replaced with 3D printed parts due to a change in configuration of the Y axis aluminum profile to give the large print bed more stability on par with the Ender 3 Pro. \*\* Replacement metal parts and motor are available for an additional purchase \*\*



## Step 3: Disassemble the Ender 3

Helpful links to other guides and videos:



[Original Creality Ender 3 assembly guide](#)

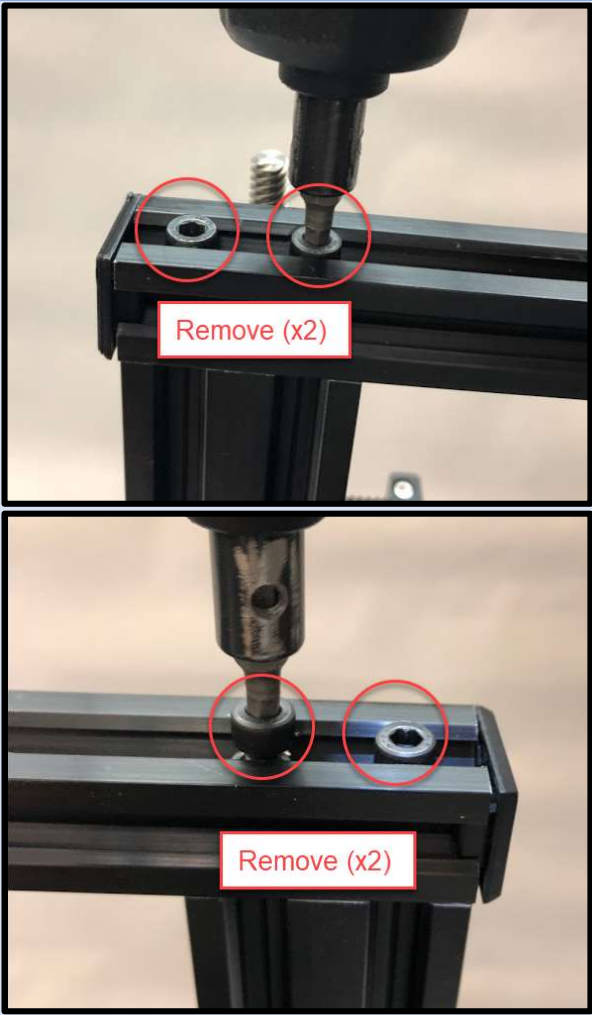
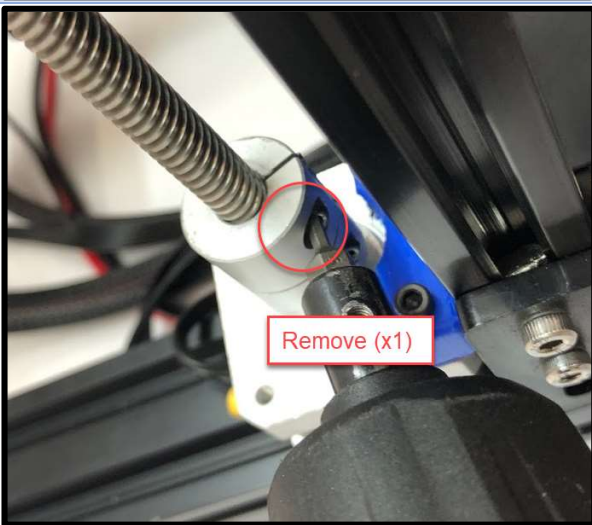
[Luke Hatfields Ender 3 assembly guide](#)  
[Edge of Tech Ender 3 assembly youtube videos](#)

In general, we will completely disassemble all the major frame components, power supply, X axis, LCD mount, control board, Y axis, print bed and carriage plate. So, get out those allen keys, grab your favorite beverage, and get to work!

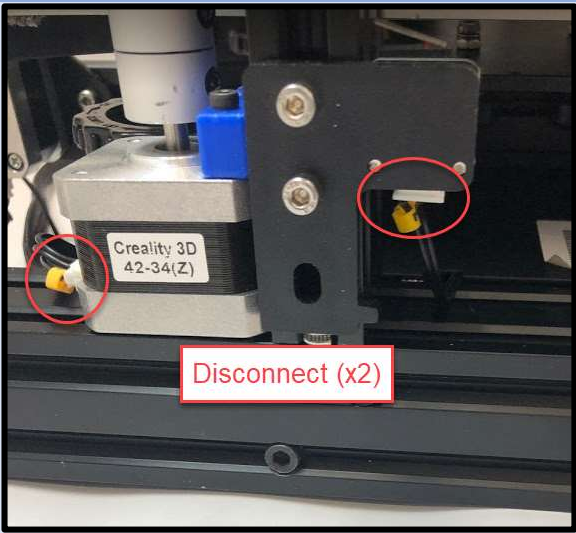
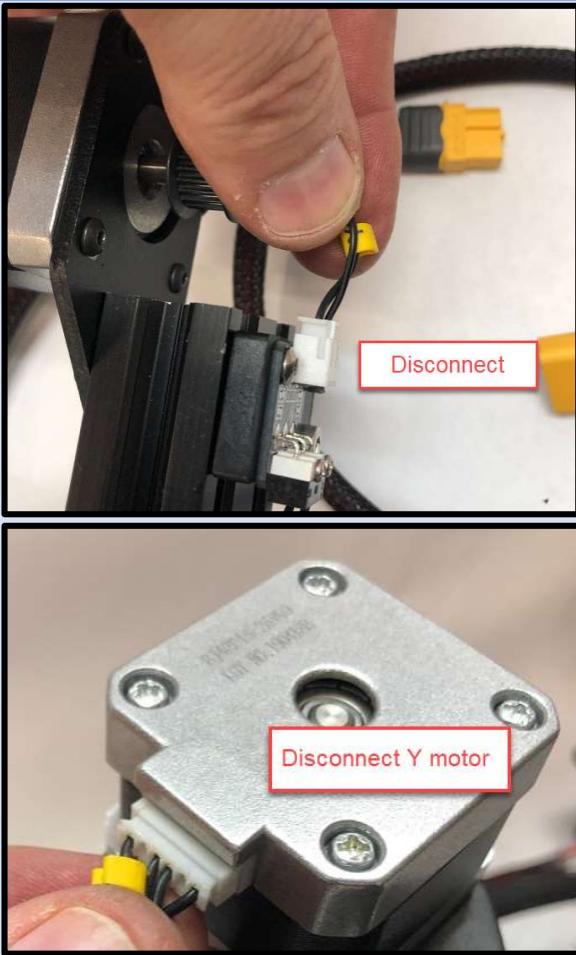
Work smart! Put those screws in a container so you do not lose them.

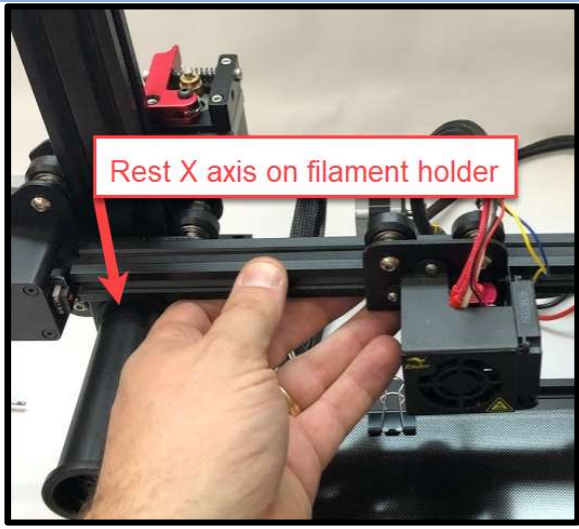
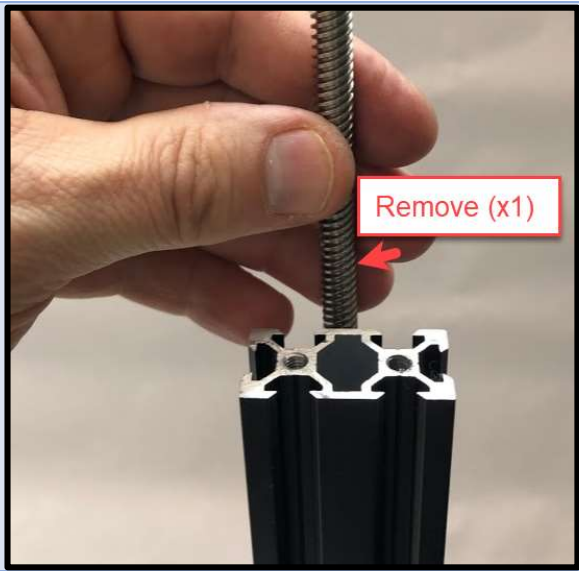
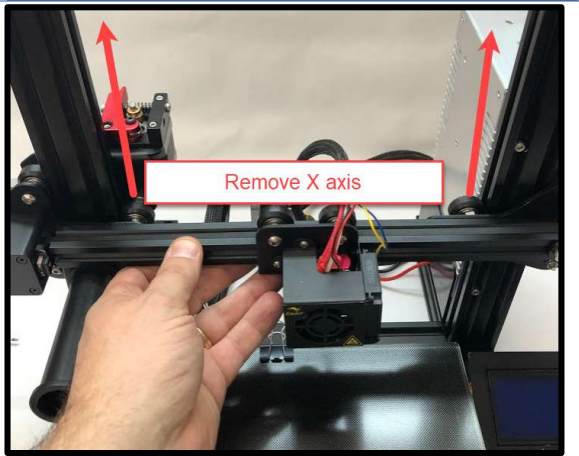
Depending on the kit that you are installing (tall, wide, wide+tall), you may or may not re-use some parts. Thus, you will be left with some left-over pieces at the end of the re-assembly.

Step	Description	
1	<i>Disconnect power cable from power supply</i>	
2	Remove LCD bracket Remove LCD cable	
3	Remove Print bed	

<b>4</b>	Remove filament holder (if mounted)	
<b>5</b>	Remove top frame member Save screws and washers Set top frame member aside	
<b>6</b>	Remove Z rod from motor coupler	



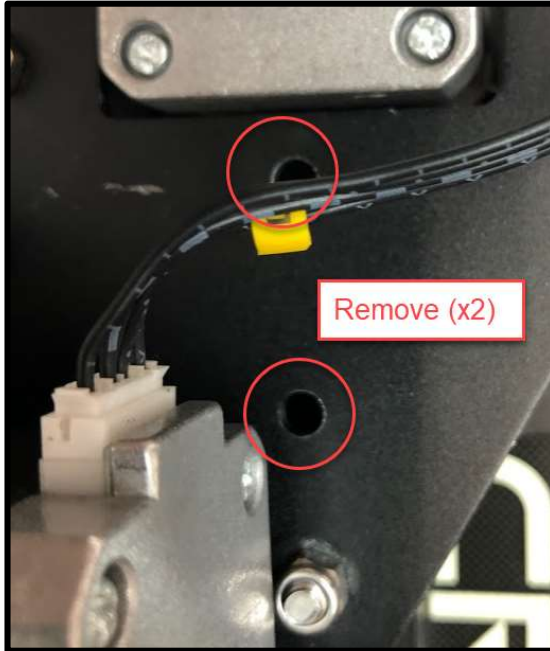
<p><b>7</b></p>	<p>Disconnect Z motor and end stop wire connections</p>	
<p><b>8</b></p>	<p>Disconnect X motor, E motor and X end stop wire connections</p>	
<p><b>9</b></p>	<p>Disconnect Y motor and end stop wire connections</p>	

<b>10</b>	Place filament holder beneath X axis and rest the axis bar on top of the holder	
<b>11</b>	Remove Z rod	
<b>12</b>	Remove X axis	

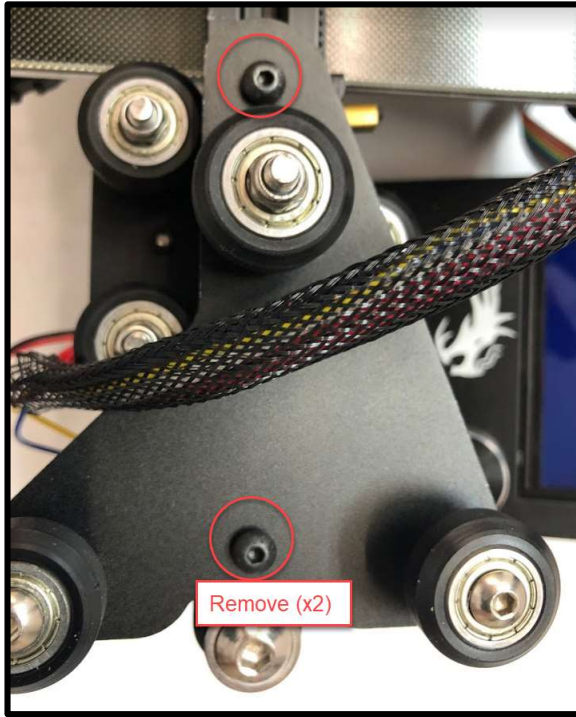
**13** Remove X belt tensioner and belt (can be done now or after removal of X axis)  
Set belt aside



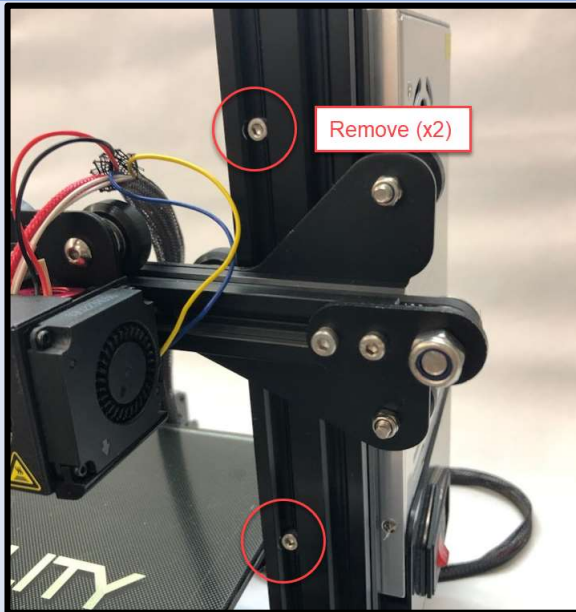
**14** Disassemble X axis  
Remove left motor mount  
(Screws are hidden behind motor plate)  
Remove right wheel carriage  
Remove hot end assembly  
Set X axis member aside



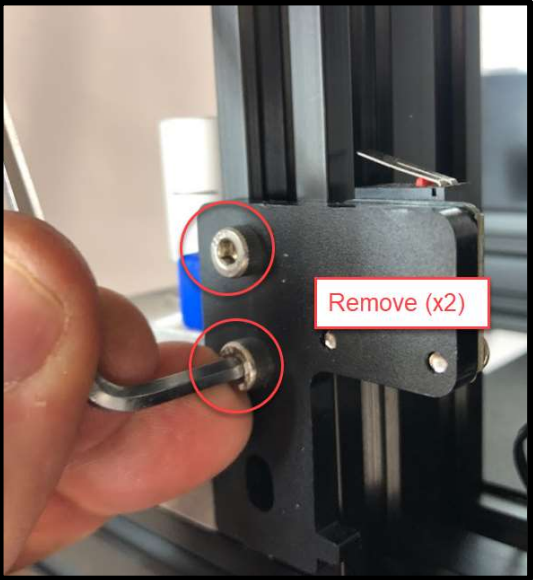

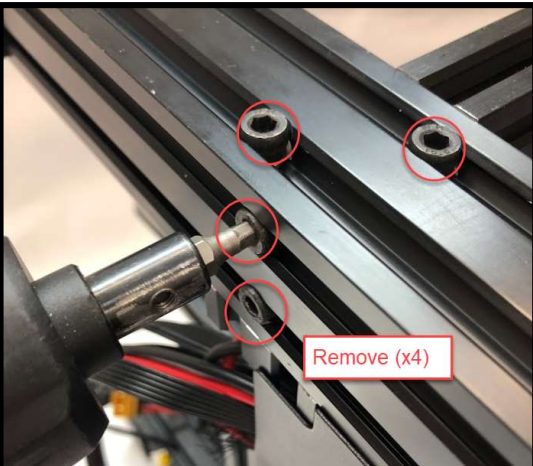
(Screws are hidden inside)

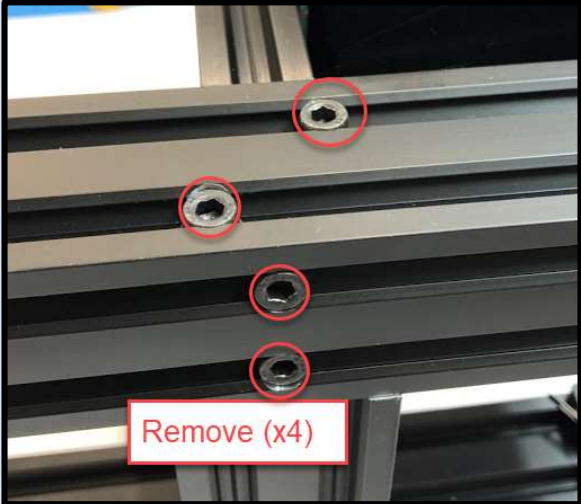
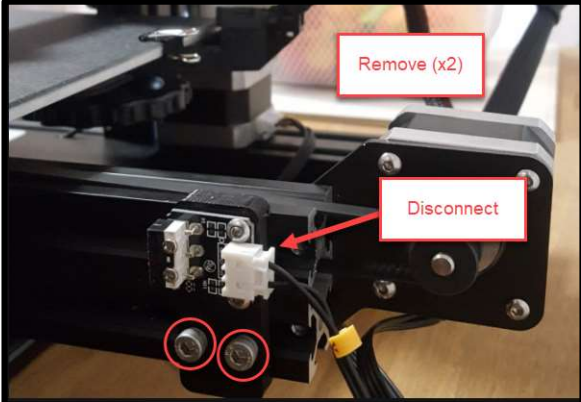
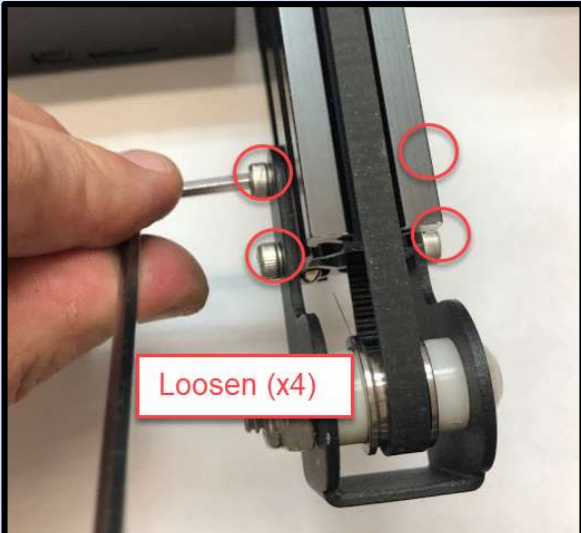


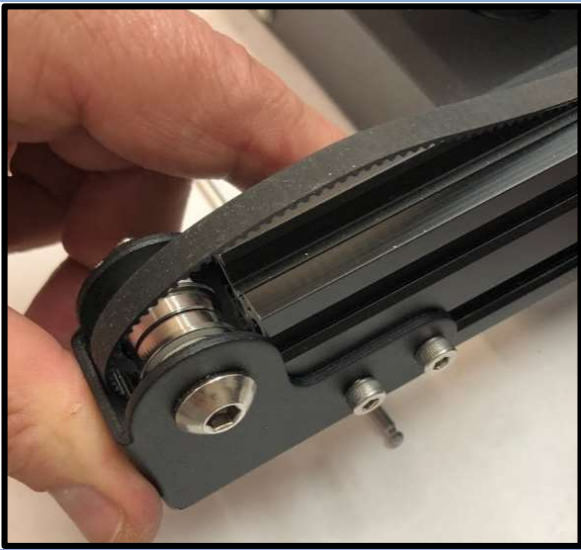

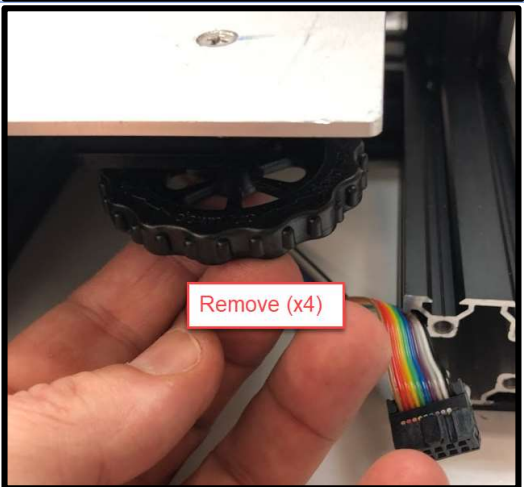
15 Remove power supply  
Disconnect power supply from control board



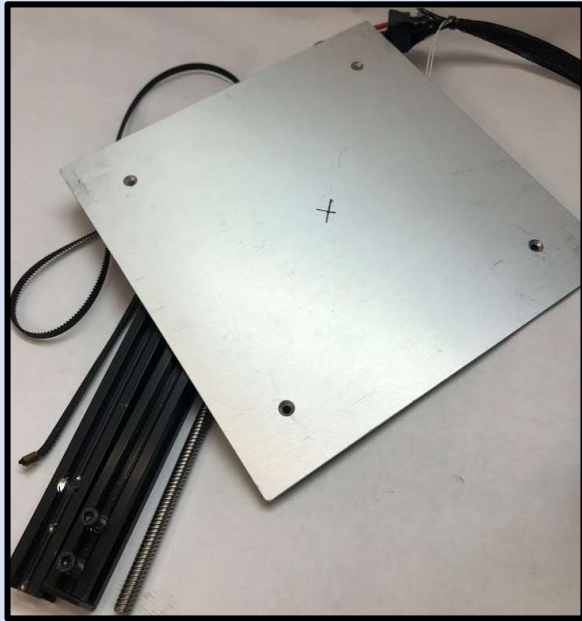


<p><b>16</b></p>	<p>Remove Z end stop bracket</p>	
<p><b>17</b></p>	<p>Remove Z motor mount screws (XL Kits only)</p> <p>You do not have to remove the motor for Non XL kits.</p>	
<p><b>17a</b> <b>17b</b></p>	<p>Remove left side bottom support</p> <p>Remove left side vertical Z axis (XL Kits only)</p> <p>You do not have to remove the vertical Z axis for non-XL kits.</p>	

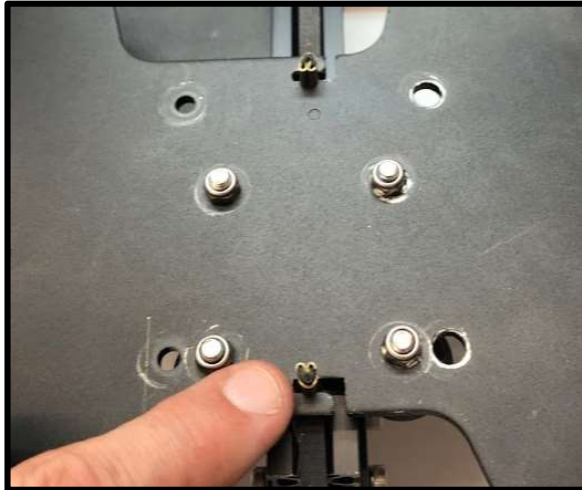
<p><b>18a</b> <b>18b</b></p>	<p>Remove right side bottom support</p> <p>Remove right side vertical Z axis (XL Kits only)</p> <p>You do not have to remove the vertical Z axis for non-XL kits.</p>	
<p><b>18</b></p>	<p>Remove Y end stop bracket</p>	
<p><b>19</b></p>	<p>Loosen Y belt tensioner screws (do not remove them)</p> <p>(Non Pro shown)</p>	

<p><b>20</b></p>	<p>Relax Y belt tension by pushing tensioner inwards towards build plate.</p> <p>(Non Pro shown)</p>	
<p><b>21</b></p>	<p>Remove top build surface (glass, PEI, etc). Set build surface aside.</p> <p>Remove Y axis belt tensioner at this time.</p>	
<p><b>22</b></p>	<p>Remove build plate adjustment wheels (x4), screws (x4) and springs (x4).</p>	

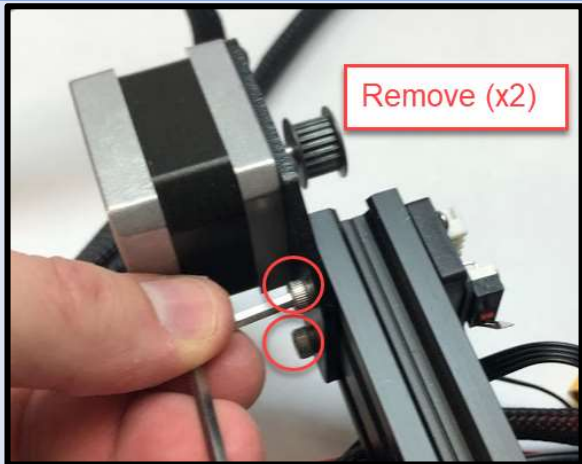
**23** Remove heated build plate.  
Set heated build plate aside.



**24** Remove belt restraints from carriage plate.  
Set belt aside.



**25** Remove Y motor mount

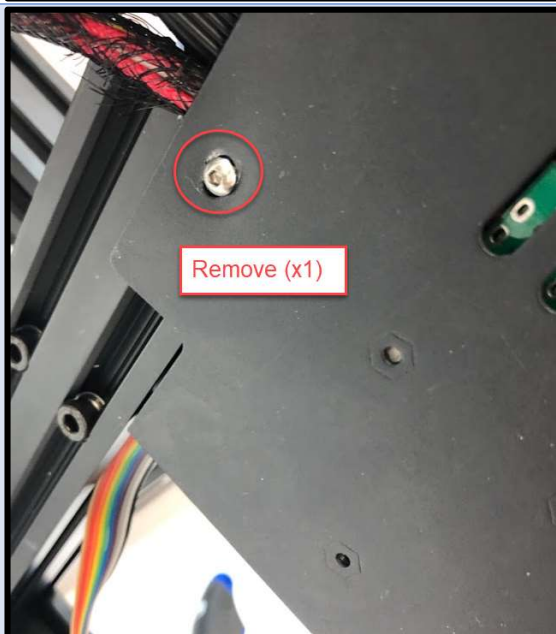




26 Remove electronics case top cover.



27 Remove electronics case bottom cover.  
You do not have to disconnect any internal wires at this time.



**28** Remove plastic covers from rear of bottom frame members.  
Inspect the holes of both ends of both bottom cross members. If the holes do not have threads inside, you will need to use the M5 tapping tool to create threads.

**Attention:**

Ender 3 Pro – use bottom two holes on all four ends

Ender 3 Non Pro – use top two holes on all four ends

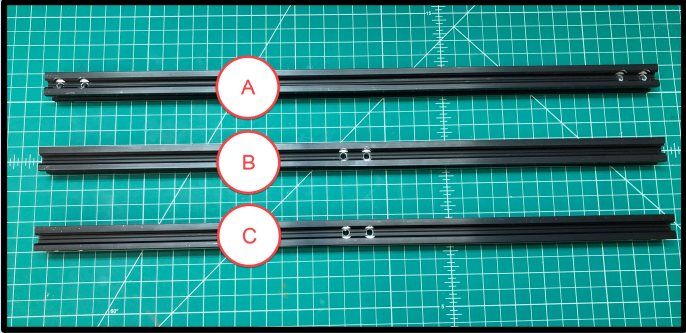
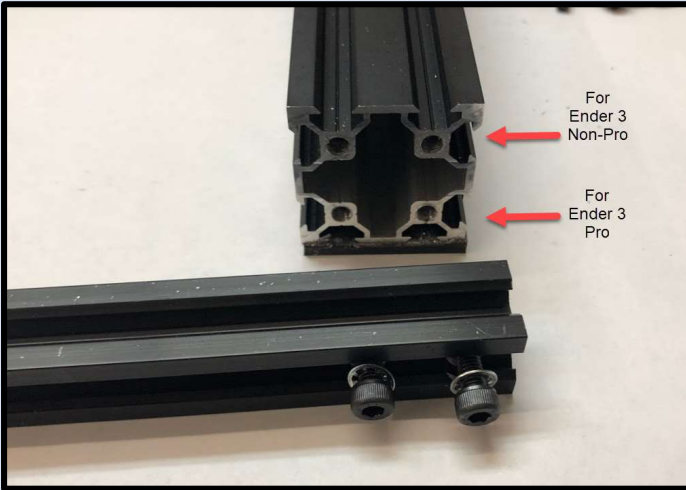
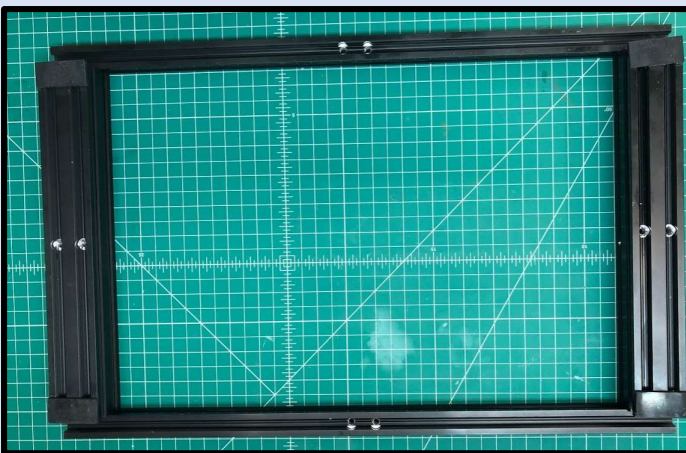


That was a lot of work! You should have the printer completely disassembled at this point.

You will have a pile of parts that you will not use in the re-build:

- Top frame cross member
- X Axis profile
- Center frame cross member
- Left / Right Z axis members (if you are building the 400XL kit)
- X and Y axis belts
- X/E motor and X end-stop wiring harness (if you are building the 400XL kit)

## Step 4: Assemble the Base Frame

Step	Description	
1	<p>Locate the bottom frame members in your kit. These are two 2020 V-Slot extrusions, 500mm in length, each will have two holes in the middle. These are labeled (B) and (C) in the picture.</p>	
2	<p>Locate the left and right base frame members from your original Ender 3. These are 40mm x 40mm square tubes.</p>	
3	<p>PRO - Attach cross frame member (B) to the <b>bottom</b> holes in the left and right Ender 3 base frame members.</p> <p>Non-Pro - - Attach cross frame member (B) to the <b>TOP</b> holes in the left and right Ender 3 base frame members.</p> <p>Ensure that the center holes with the recessed hole are facing downward in relation to the base frame members.</p> <p>The final base frame should appear similar to the photo at the right, shown bottom facing up for clarity.</p> <p><b>If you are going to leave the LCD holder in its original location, you will have to remove the front cross bar screws later after final assembly.</b></p>	
		
	<p>Use your carpenter square to ensure the frame is square in each corner before tightening the screws. Take your time and double check each corner.</p>	

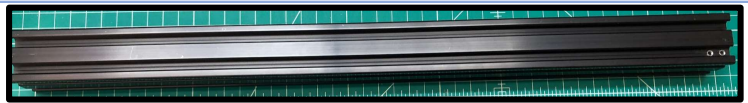
**4** Insert M5x10 button head screws from the underside of the cross members and attach T-Slot nuts as shown.



**5** Locate the long Y axis (4040 for Pro; 2040 for non-pro).

The Pro 4040 Y axis will have small holes drilled into the side for the belt tensioner.

The Non-Pro 2040 Y axis will not have holes drilled into the Y axis as the belt tensioner uses t-slot nuts.



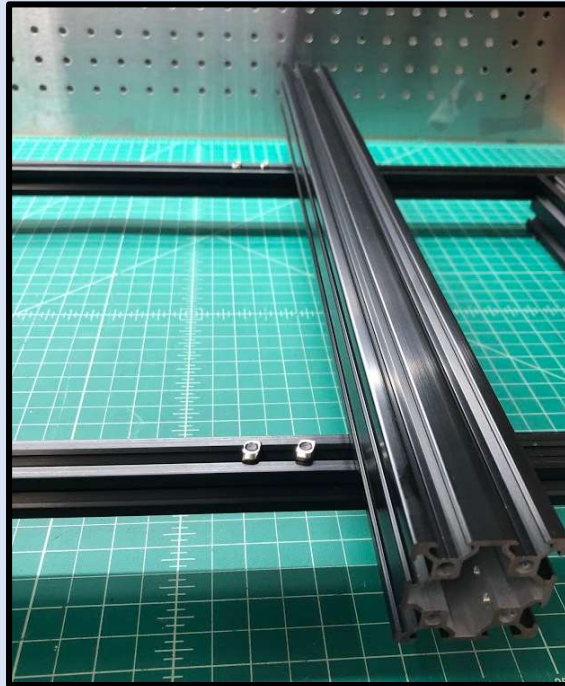
Ender Extender Pro Y Axis (4040)

**6** It is easiest to work without the Z frame members attached.

Note: Work from whichever orientation you feel the most comfortable. The author prefers placing the Y axis on the table and the frame on top, working with the base frame upside down.

Another way to manage this step is to position the base frame on your work desk in its natural position, rubber feet down, and lay the Y axis on top, then slide the frame to the edge of the desk to access the screw heads.

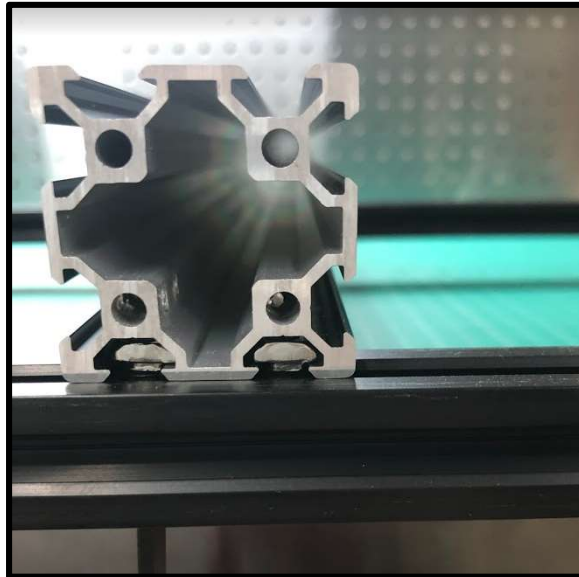
***Pictured is the PRO Y axis, which is a 4040 size V-Slot™ aluminum extrusion.***



**7** Turn the screws until the T-slot nuts engage fully. Tighten the screws just enough to keep the Y axis in place.

In this picture I am working from underneath, with the frame positioned just a little over the front of my desk to access the screws. Snug the screws and turn the frame around, repeat for the opposite end.

***Pictured is the PRO Y axis, which is a 4040 size V-Slot™ aluminum extrusion.***

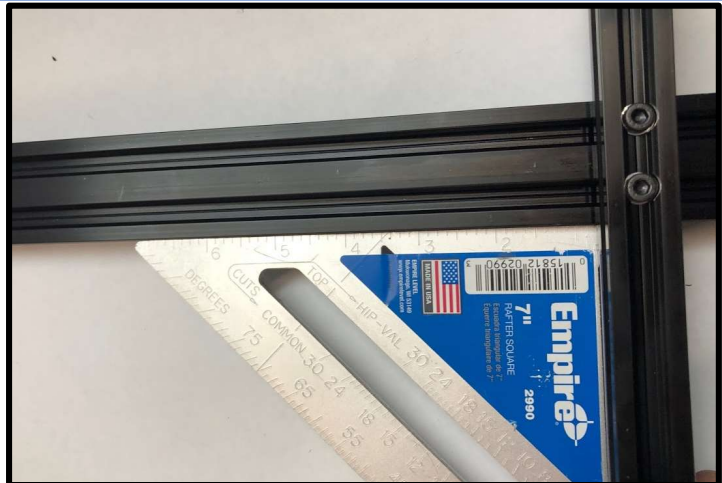




**8** One end of the Y axis has four holes drilled into the left and right sides for mounting the belt tensioner. The opposite end will have the four end holes threaded for the motor mount. Position the motor mount end of the Y axis approximately 55mm from the rear edge of the base frame member.



**9** Use the square tool to ensure the Y axis is square to the cross members and tighten the frame screws.



**10** The base frame assembly is complete! (Non-Pro pictured).

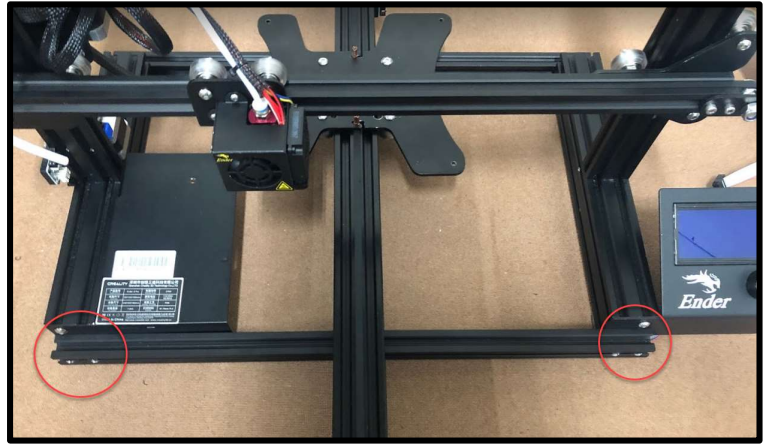


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If you plan to keep the LCD in the stock location, you should use the extended length LCD cable supplied in your kit and attach the front cross bar with one M5x25mm screw on each side. Likewise, for the control box, you can opt to leave it in the current position, in which case you will not need extended bed heating cables. This is the standard configuration, you may experiment with others, however, additional parts/wires may be required, not included.

Remember; Non-Pro mounting position of the front cross member are the top holes; Pro Ender 3 users will mount the cross member on the bottom holes.

If you were extra enthusiastic, you could drill holes through the sheet metal of the LCD bracket and the control box cover so that you can attach the additional screw. It makes no difference performance-wise, however.

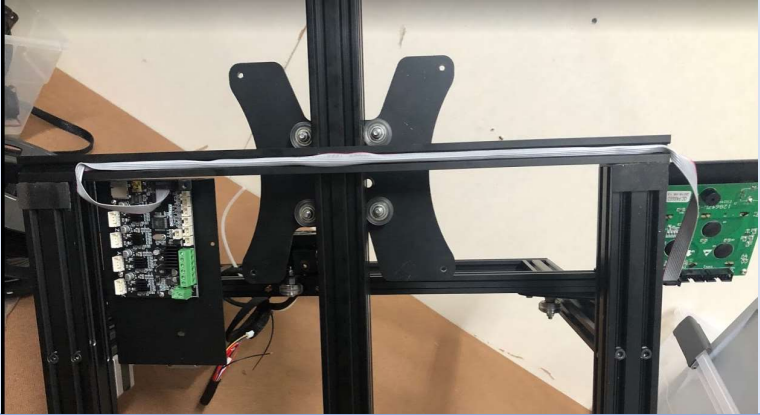


Example LCD mounting on a Non Pro kit:



Example control box mounting on a Non Pro kit:



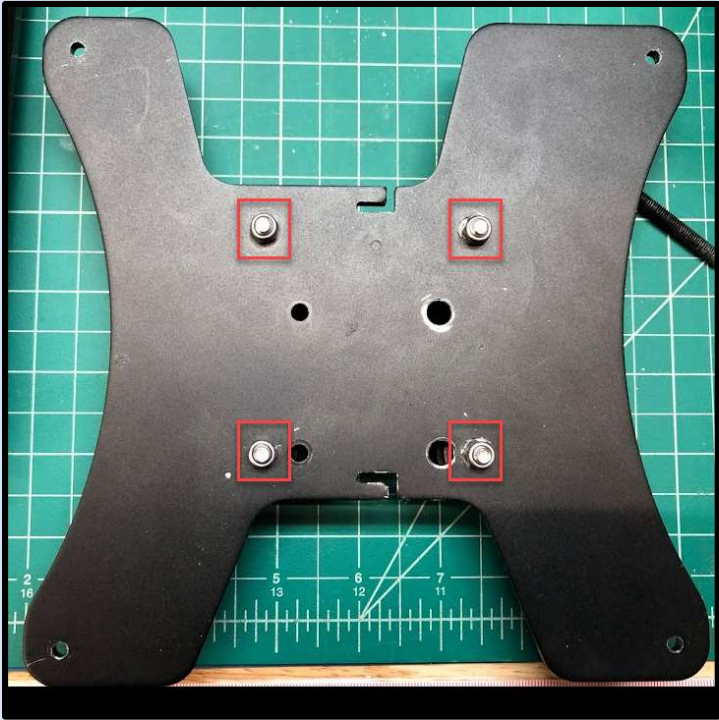
<b>12</b>	Secure the LCD cable in the groove of the extrusion or use zip ties to attach it to the extrusion.	



## Step 5: Assemble the Build Platform Carriage - Y Axis

Items needed in this step:

- Original carriage plate
- New Y belt
- Base frame assembly
- Y belt tensioner
- Y motor mount

Step	Description	
1	Locate the original Y carriage plate. If you have a Non-Pro Ender 3, move the four screws to the outer four holes.	 A black, T-shaped carriage plate is shown against a green grid background. Four screws are visible, two on the upper horizontal section and two on the lower horizontal section. Each screw is enclosed in a red square box. The plate has several circular holes and a central notch. A ruler is visible at the bottom of the grid, showing measurements in inches and centimeters.

**2** Locate the Y belt from your Ender Extender kit. Feed the belt through the Y axis aluminum extrusion, ensure the teeth of the belt face upwards and the belt is not twisted.

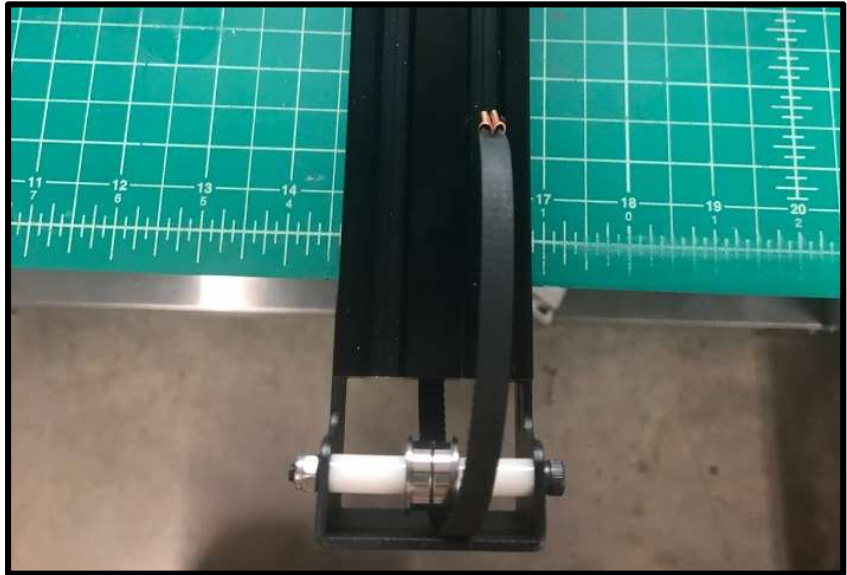


**3** Carefully slide the carriage onto the Y axis. To avoid damaging the wheels, turn the eccentric nuts so that the wheels are at their outer-most orientation.

Pay careful attention to the upper left corner of the carriage plate, you will notice it as a slightly thinner profile than the rest of the corners.



**4** Attach the Y belt tensioner to the Y axis, feeding the end of the belt through the tensioner and onto the bearings. (Enter 3 Pro shown)



**5** Attach the Y motor mount to the opposite end of the Y axis, feeding the belt through the motor mount belt hole, and over the pulley. (Ender 3 Pro shown)





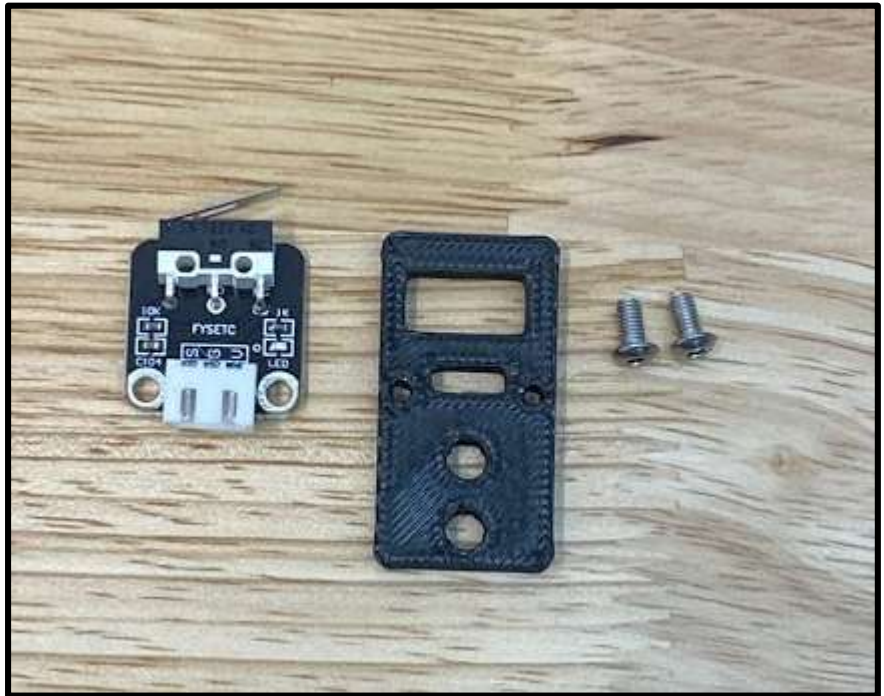
**7** Attach the end of the belt to the carriage plate as shown.



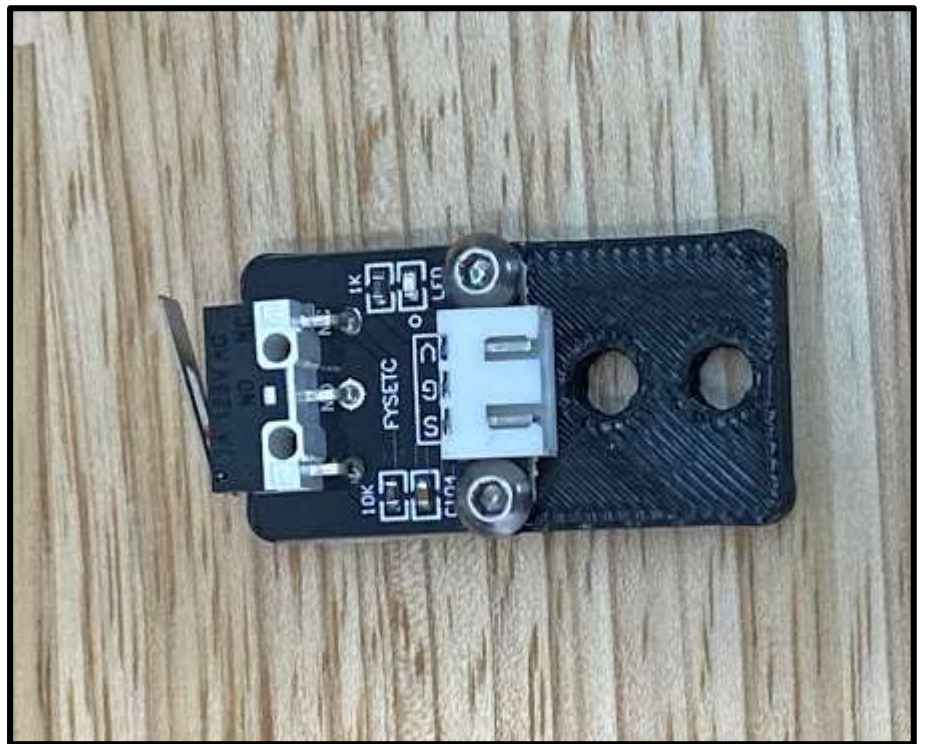
**8** Tighten the eccentric nuts on the Y carriage just to the point that the wheels cannot be turned without moving the carriage.

**9a** Adjusting the End Stop Switch Bracket (Ender 3 Non Pro)

Disassemble your existing Y end stop switch from its plastic mount.

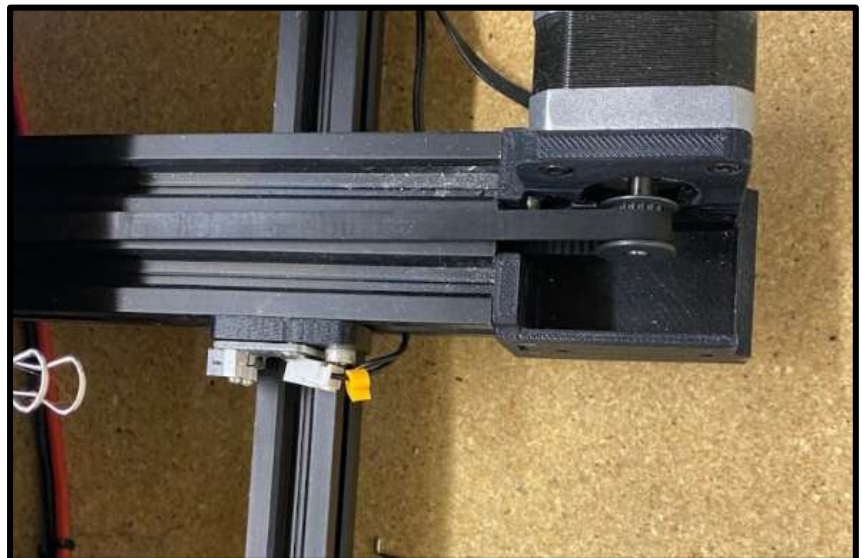


Attach the end stop switch board to the new plastic bracket using the existing M3 screws.

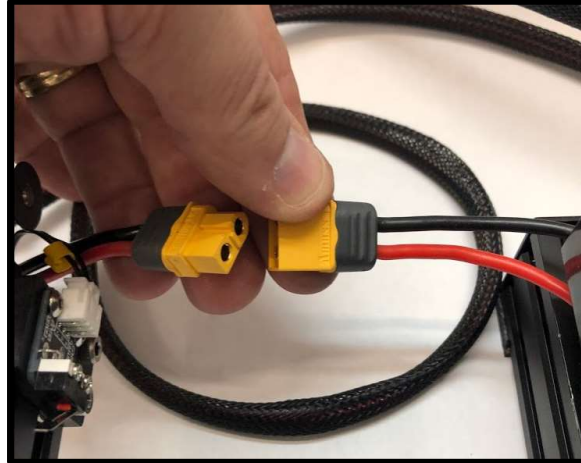


Using the included M4 screw and Tslot nut, attach the plastic bracket to the 2040 Y axis as shown in the picture below.

The switch mounts on the side of the Y axis 2040 extrusion just in front of the motor. You can move it and the extrusion too back or forward to adjust where the nozzle aligns with the front of the plate.



<b>9b</b>	Ender 3 Pro End Stop	End stop switch bracket mounts in the exact same position as original.
<b>10</b>	Power supply wires	Reconnect the power supply wires to the control board, paying close attention to positive + (red)/negative – (black).



## Step 6: Assemble the Build Platform – Plate Stack

Note: If you are installing the AC heat pad (optional), follow the heat pad installation instructions in place of this step.

Items needed in this step:


- Original heated build platform
- New 400mm build plate
- Four Phillips head M4 screws
- Four M4 Nylon lock nuts
- Four M4 flat washers
- Four levelling springs
- Four levelling wheels
- Extended wire strain relief

Notes:

Ender 3 Pro – The stock build platform has a self-adhesive magnetic sheet attached to the aluminum plate. Optimally, removing this will ensure better heat transfer to the larger aluminum plate which will attach to the top of the stock plate. Removal of the magnetic self-adhesive sheet is ideal; however, you may choose to leave it in place. If you leave it installed, simply cut holes around each screw head so that you can extract the screws.

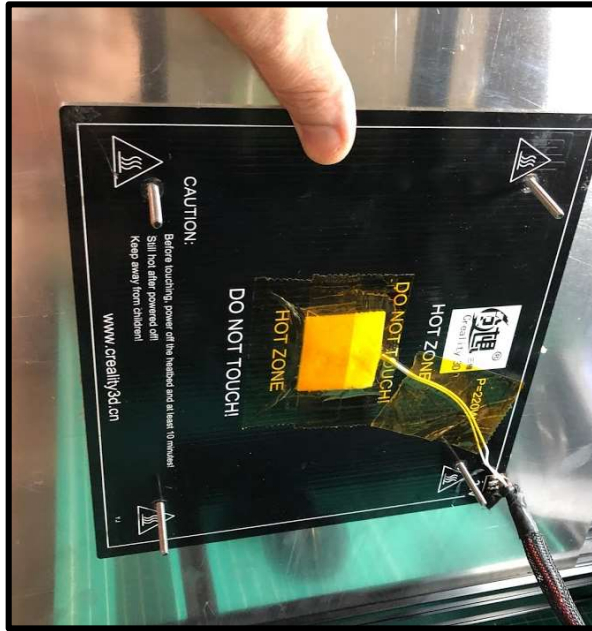
The nylon lock nuts and washers are necessary to ensure positive mechanical connection between the two plates.

Step	Description
1	<p>If you have the Ender 3 Pro, remove the screws from the build plate magnetic sheet if it is still attached to the stock plate.</p> <p>Use a hobby knife or kitchen knife to cut circles around the screw heads while pushing the screws up from the bottom</p> <p>NOTE: DO NOT REMOVE THE PLASTIC WIRE RESTRAINT.</p> <p>An optional step (discussed below in step 6 is the attachment of an extended wire restraint. However, we have found that leaving the original in place works just as well. You can find the STL for the longer version of this restraint on our thingiverse page.)</p>





**2** Position the new larger plate atop the stock heated build plate.

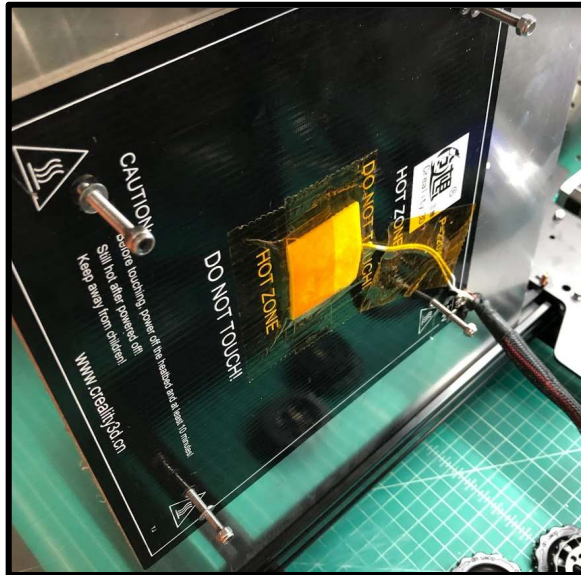


**3** Insert the screws through the two plates.

**4** Attach the M4 washers and nylon lock nuts to the build plate screws and tighten.

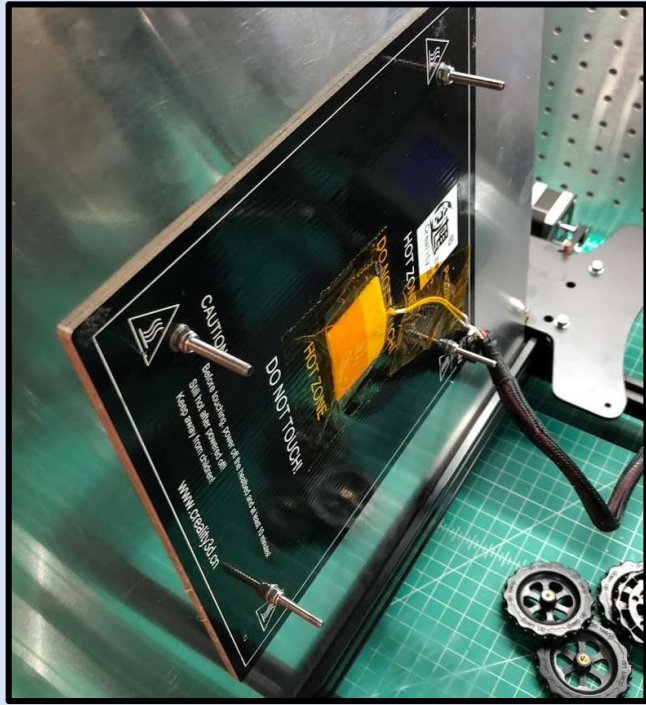
**IMPORTANT NOTE:**

AS OF August, 2020, we are shipping nylon washers instead of metal for the bed assembly. Please avoid using metal washers.

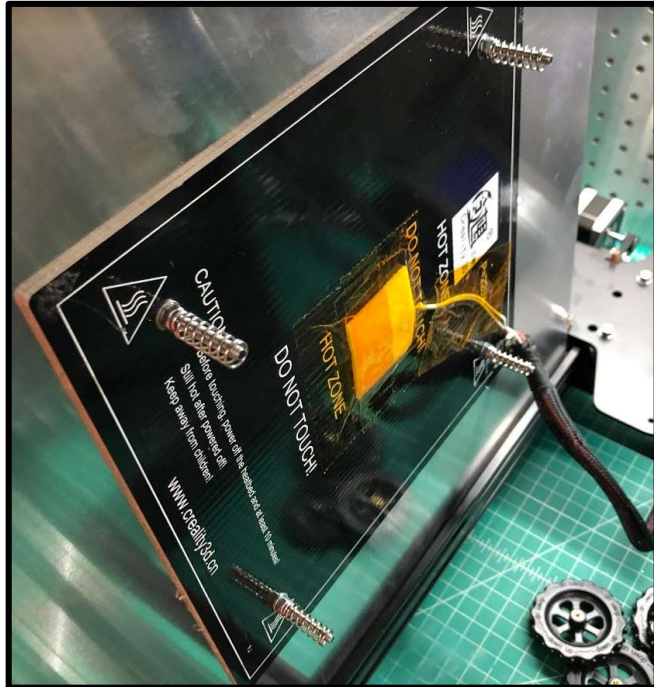




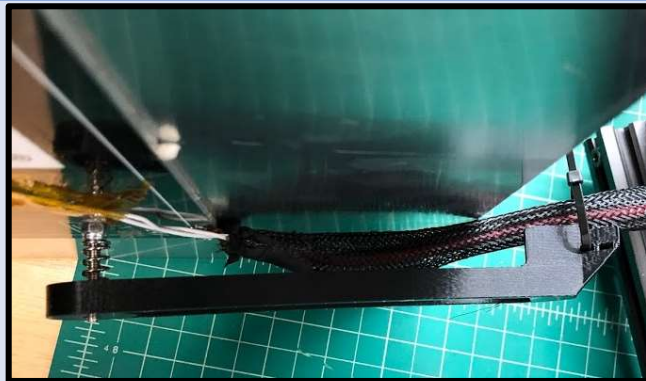
Tighten the M4 lock nuts against the washers and stock heater plate.



5 Position the levelling springs on the levelling screws.



6 Optionally, you may attach the plastic wire support bracket (if included; if not, you may print this part at your leisure). The stock piece works just as well, if you have not removed it already.



<b>8</b>	Attach the aluminum plate stack and screws through the springs and carriage plate.	
<b>9</b>	Attach the levelling wheels.	

## Wire connections and extensions

Depending on the kit that you purchased, you may have received various replacement wires and/or wire extensions. Additionally, depending on stock availability, we may substitute or omit certain wires. Each are described below.

(If you purchased a kit and it was lacking any of these wires, please reach out to us at [support@enderextender.com](mailto:support@enderextender.com) and we will work on getting something to you as soon as possible)

### All kits

All kits should have a heated bed extension wire and connector; and an extension wire with connectors for the bed thermistor. If you are also ordered the A/C heat pad; these parts will be substituted for the A/C heat pad installation wires.

400, 400 V2, 400 XL and 400 V2 XL

These kits include wire extensions for the Y axis motor and end stop.

### Extension wires - all XL kits

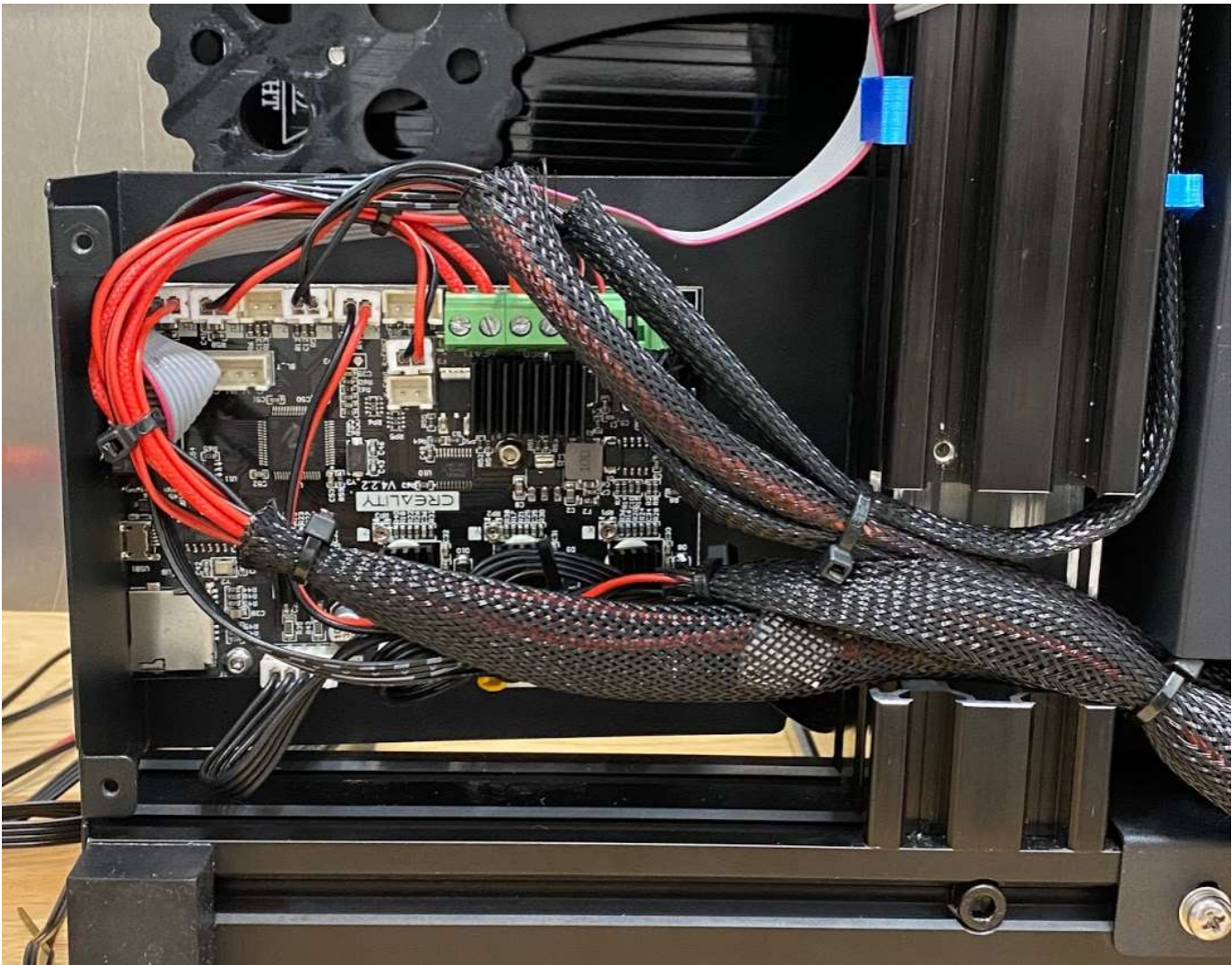
Beginning in January 2021, we are providing extension wires for the X/E motor and X end stop, as well as the stock hot end wires. If you are using a non-standard setup, such as direct drive, you may need to fabricate additional wire extensions. We are in the process of writing a guide for installing them, but here are some notes while we finish the documentation:

Practice the fine art of splicing wires. The hot end heater wire and the small fan wire both will need to be spliced to extend the stock wires.

Label the white connectors according to their purpose.

Use zip ties to restrain wires. Try to be patient and make the end result as neat as possible.

Here is our V2 400 XL build we have been using to create the documentation. (BLTouch is not connected in the picture below.)





## Slicer Settings

### Caveats

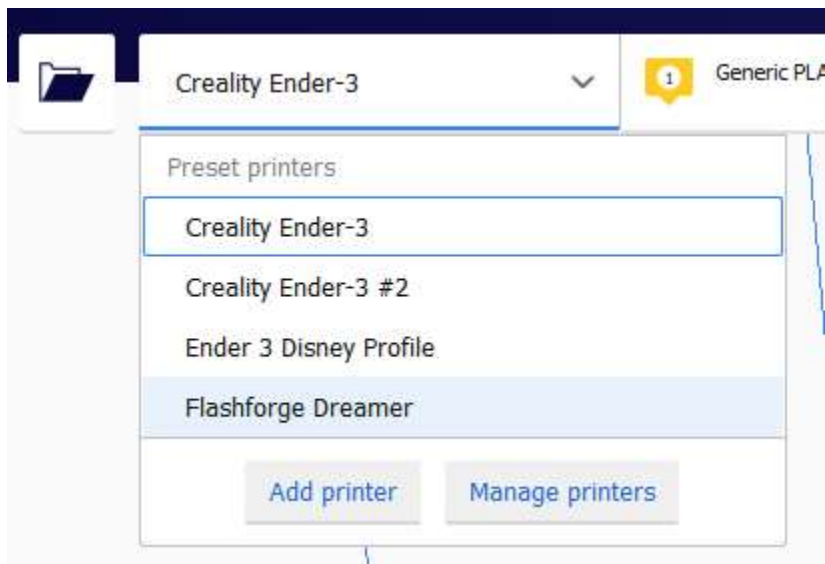
It's not really practical to document all possible slicers and how to print on a larger bed without updating firmware, so we're just going to go with Cura here and you should be able to adapt the concepts to any slicer.

We also can't document all the possible boards, firmwares, firmware versions, etc. Lastly, we do not provide precompiled firmware, and any firmware found in the Facebook group is contributed by individuals not associated with EnderExtender.com. We provide no support or warranty for installing firmware, or the failure of your printer by installing any firmware suggested, linked to, or provided by members of the Facebook Group Ender XL Builders Club.

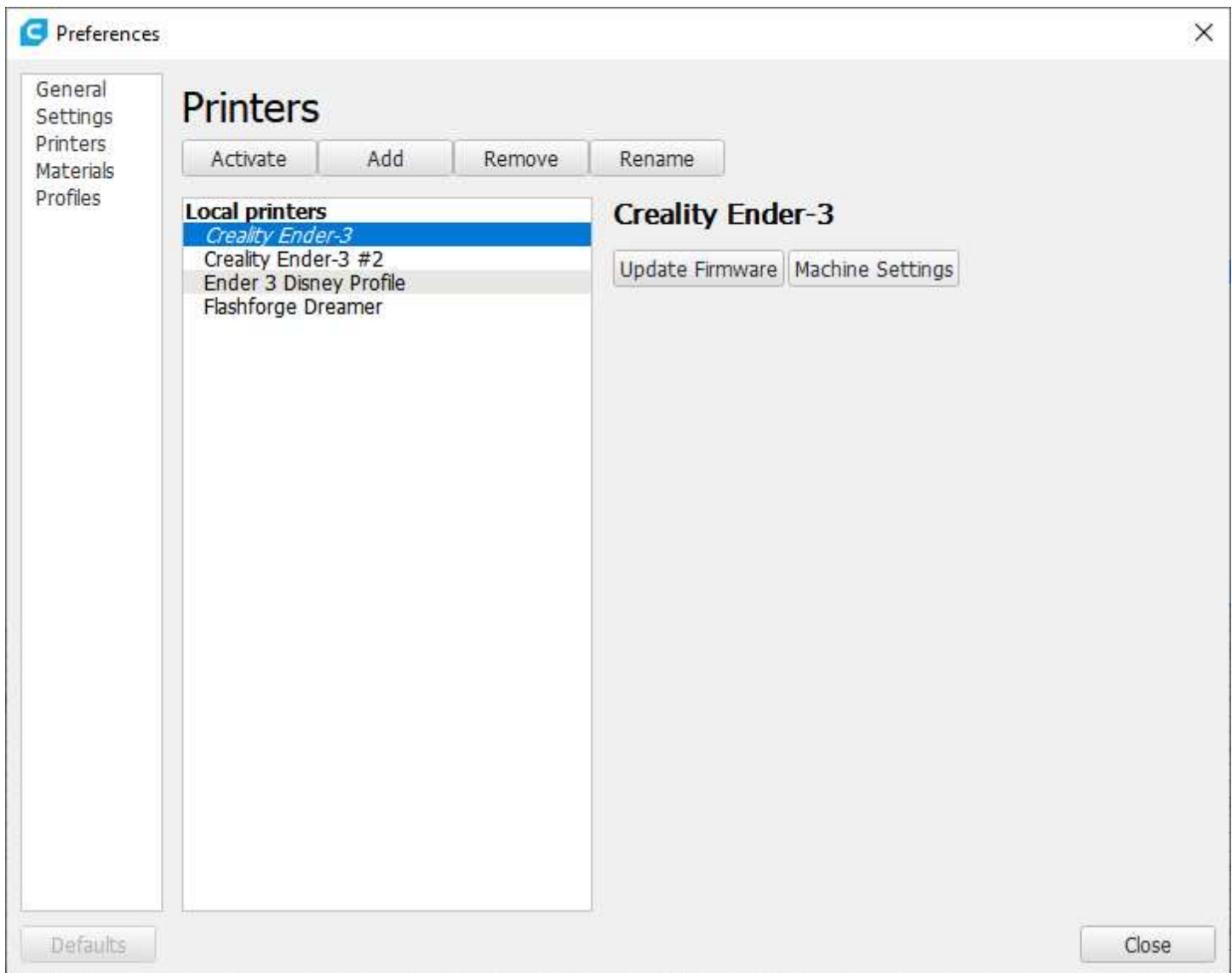
Most versions of Marlin firmware (the firmware installed on all Creality printers) support a special Gcode command called M211, which controls the firmware's internal "software endstops" which prevent the machine from exceeding the physical internal limits set by Creality. These limits are 235 (X), 235 (Y), and 250 (Z). This command accepts a parameter (S1 or S0, which means turn the feature on or off). By turning the feature off, we can print beyond the pre-set limits.

This feature is not available in all brands of Marlin, specifically TH3D firmware, and some older versions of marlin from the original Ender 3. However, it is available on all modern versions of Marlin found on Ender 3 Pro, and V2 boards.

Assuming you have already created a profile for your Ender 3 (Ender Extender) in Cura, you will access the profile/machine settings from the menu in the upper left corner under the printer's name:



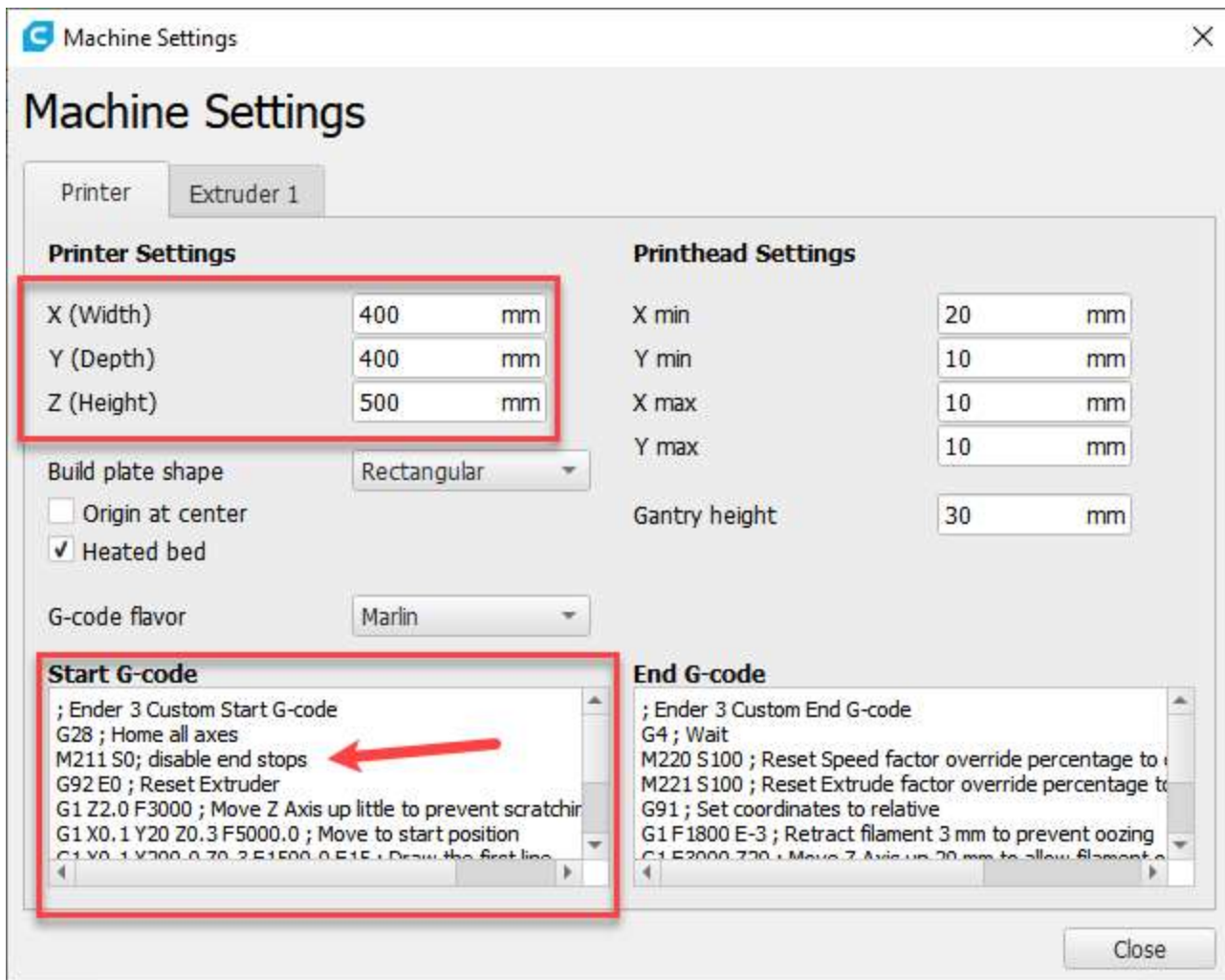
Click the button labelled Manage Printers.



Highlight the printer profile that you will use with your Ender Extender, and click the button labelled Machine Settings.

Note the G28 line in your Start G-Code. If you are using some form of BLTouch or other auto levelling system, we are going to assume you've already learned how to update the firmware, so you would be best suited by updating your machine's X, Y and Z size in the configuration.h file and reflashing. However, we will continue here with the custom g-code. First, we want to set our printer dimensions for X, Y, Z. Depending on the kit you purchased, fill in the values accordingly.





Note the line M211 S0; disable end stops

We need to ensure this line exists after G28 line.

These settings will allow the printer to print full size on the larger bed. However, depending on the Cura version, you may have another issue where Cura is forcing you to a small printable area defined by the Ender 3. This “feature” was introduced recently in 2020, and it is rather annoying. This is called the Keep Out area. See video below.

<https://www.youtube.com/watch?v=Il1sierB4Yk>

## Finishing up

Congratulations! At this point, the Ender Extender specific portions of your kit have been assembled. The remainder of the assembly is the same as the original Ender 3, and I encourage you to refer to the following materials to complete your build:

Edge of Tech Help Guides for Ender 3

<https://www.youtube.com/playlist?list=PLVctiritf4zQhJeXFqaimrCKjhH9DPza1>

Edge of Tech Ender 3 Performance Assembly Build Section 1.1

<https://www.youtube.com/watch?v=GLvpfpK5mo8>

Edge of Tech X Gantry Rework

<https://www.youtube.com/watch?v=4bFYH0X3qjk>

[Luke Hatfields 3D Printer Help Guide.pdf](#)

Teaching Tech's Ender 3 Conversion to 400x400 with Ender Extender Kit

<https://www.youtube.com/watch?v=Qi6Qo-SY2pk>

Note: There was a miscommunication with Teaching Tech and we inadvertently sent him a Pro kit, however, he assembled the kit to his Ender 3 (Non-Pro) printer. This necessitated several customizations which he ingeniously figured out and made it work. I appreciate his creative problem-solving skills; however, some portions of his video will not apply to standard builds. If, however, you want to install a PRO kit onto your NON-PRO printer, his video describes the steps thoroughly. Also, Teaching Tech decided to attempt to cut his own glass for the build platform. We do not recommend this, and it is typically very economical to purchase glass cut to size at a local hardware store.