# CR-10S Pro BL Touch Install

Install a BL Touch on your Creality CR-10S Pro with a kit from Tiny Machines 3D.

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## INTRODUCTION

For this guide, we have disassembled a CR-10S Pro so we can better show how to install a BL Touch kit. If you leave your machine assembled, the processes are the same but you'll need to protect the build surface if you're going to use it as a workstation. Gravity cannot be disabled so keep that in mind.

### TOOLS:

- 2mm Hex Key (1)
- 2.5 mm Hex Key (1)
- 3mm Hex Key (1)
- Flush Wire Cutters (1)
- Phillips #1 Screwdriver (1)
- 8mm wrench (1)

*Double-Sided Wrench that came with your 3D Printer*

- Micro SDHC Memory Card (1)

*16 gb or smaller*

- Computer (1)
- USB-A to mini USB-B cable (1)

### PARTS:
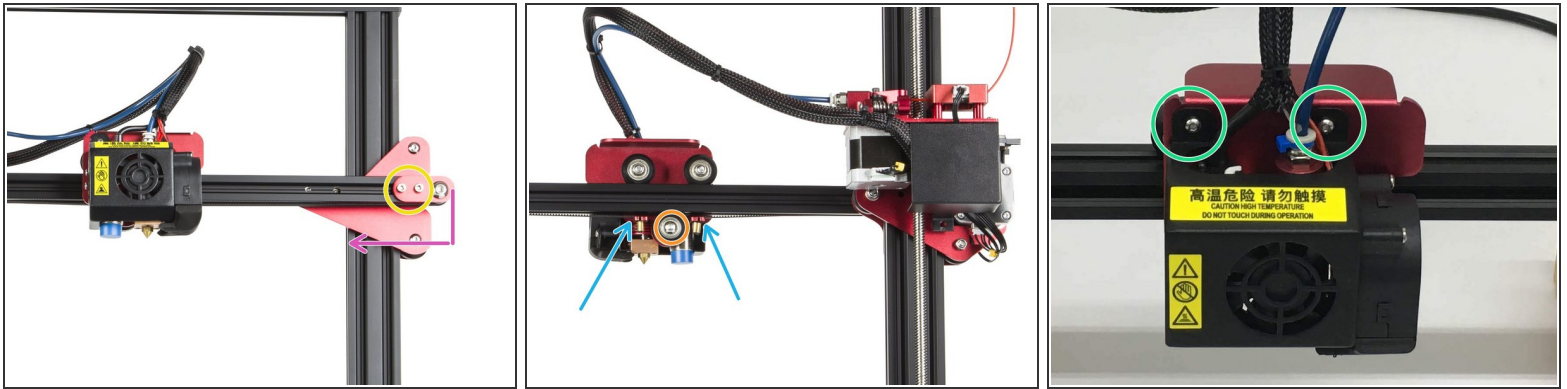
- BL Touch Kit from TM3D (1)

*http://bit.ly/10spro_bl*

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## Step 1 — Top Section 1a.



ⓘ During this procedure, keep all fasteners as, they will be reused during re-assembly.

● Loosen socket head screws securing the X-Axis belt idler using an M3 hex.

● Push the X-Axis belt idler towards the left to loosen the belt tension.

ⓘ The X-Axis idler can also be removed

● Remove the belt ends from the X-Axis carriage.

  ⓘ Note how the belt loops around the the tabs and re-install the same later. There is no need to fully remove the belt. Instead, just let both ends hang freely until re-assembly.

● Loosen the fasteners holding the bottom wheel in place using the double sided wrench and M3 hex until the . Do not fully remove the nut.

● Remove button screws using an M2 hex.

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## Step 2 — Top Section 1b.
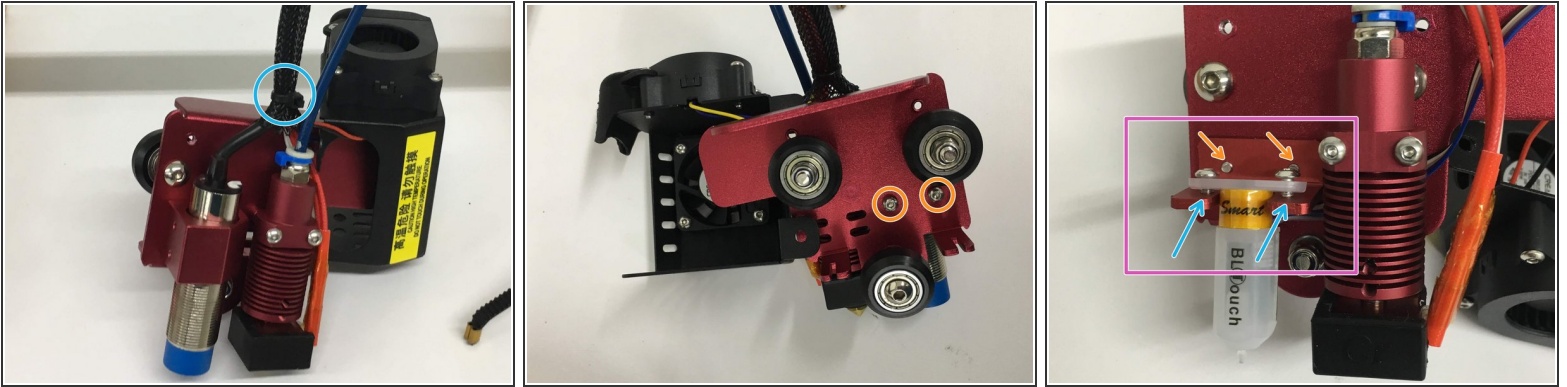


- Remove the X-Axis assembly from the machine.

- Cut the zip tie

- From the back side, remove button head screws using an M2 hex. This will detach the original probe and mount.

- Using the same screws, attach the BL Touch bracket as shown.

- The probe will be installed as shown but leave loose for now. The wiring harness will plug in easier with the probe removed.

- The included M3x 6 button head screws will attach the probe.

## Step 3 — Top Section 1c.
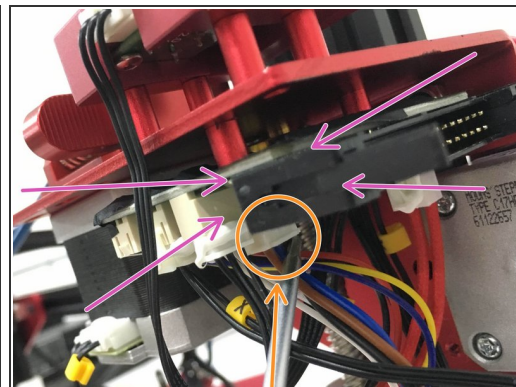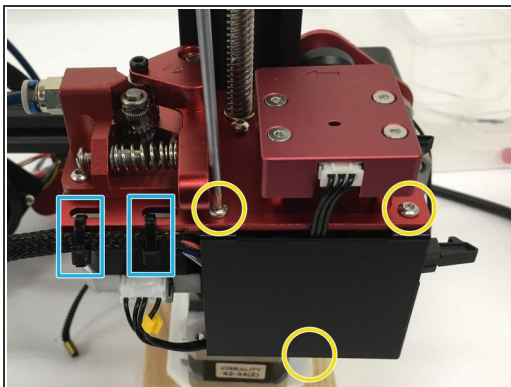


- Cut 2 zip ties.

- Remove 3 button head screws using M2 hex to remove the daughterboard cover.

- Unplug the original probe connector. It may have glue on it so pull on the connector, not the wires.

- (i) Daughterboard is marked with pink arrows.

- ⚠ No jumper needed for this install. We will not be using Z- port so these instructions are specific to using our firmware!

## Step 4 — Top Section 1d./ 2a.
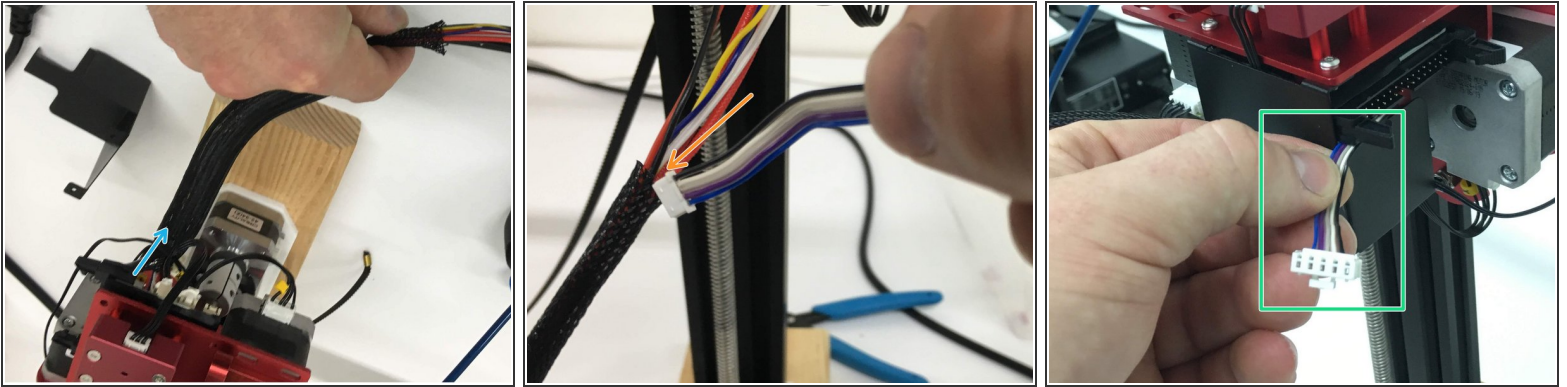


(i) Pull the expandable loom back towards the daughterboard. This will shorten and expand it, making it easy for the next couple steps

● Pull the original probe out from the opposite side to remove it from the loom.

● From the daughterboard side, insert the new probe harness with the small plug (probe side) going in first. With the loom still expanded, you should be able to get it completely through.

● Leave about 1-1.5 inches of the tail end of the probe harness exposed next to the ribbon cable connection and reattach the daughterboard cover.

## Step 5 — Top Section 2b.
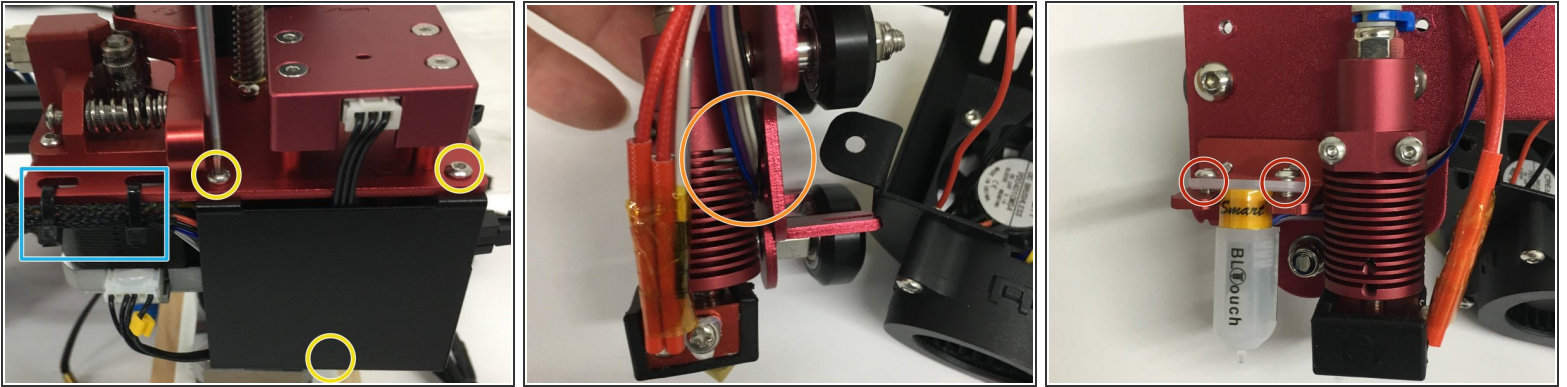


- Tighten button head screws with M2 hex. Start with the top 2 then position the bottom tab, aligning the holes to install the 3rd screw.

- Add new zip ties to hold the cable loom in place.

- On the hot end/probe side, route the wires behind the hot end and plug into the probe.

- Install and tighten the button head screws.

## Step 6 — Top Section 2c.
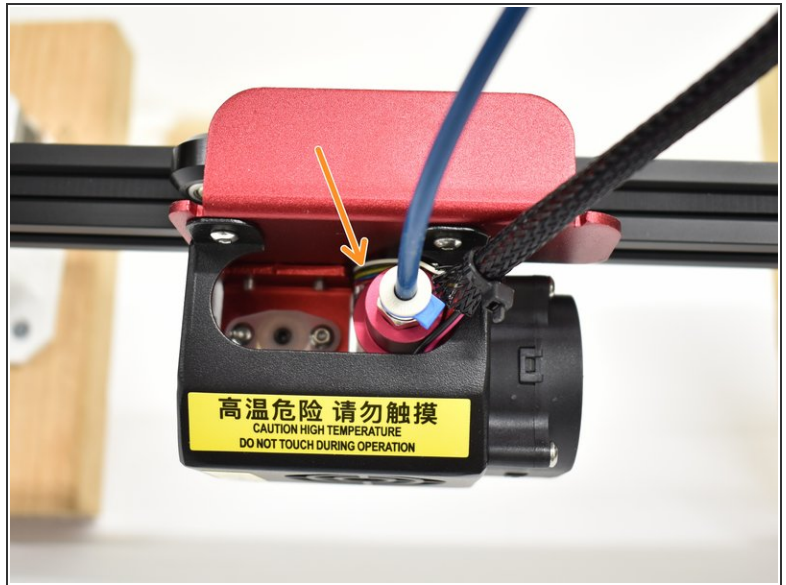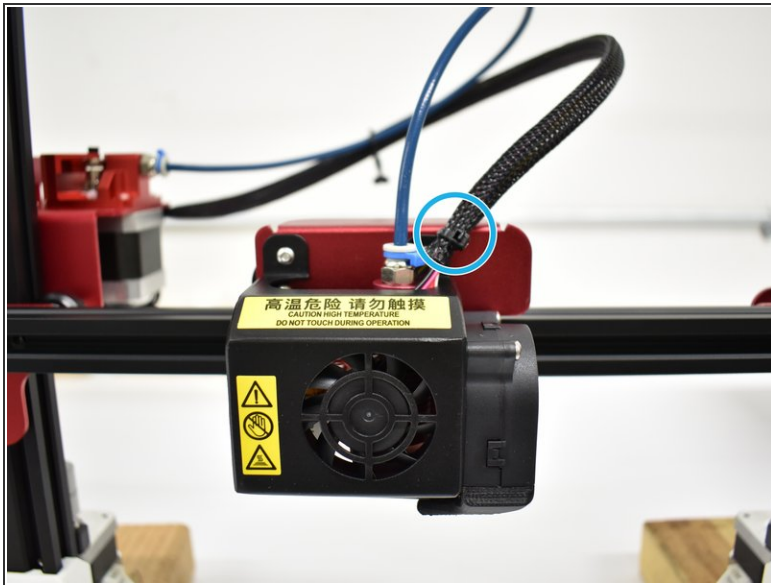


- Reinstall a new zip tie.

- Route BL Touch wires behind hot end as shown.

- Reattach the X-Carriage
  - Tighten the bottom wheel and reattach the belt on both sides (look at step 1 for images).
  - Reattach the front fan cover, paying attention to all wires.

- Reattach belt ends to the X-Carriage
  - Push X-Axis idler to the right to tighten the belt tension and tighten the socket head screws.

⚠ Do not pinch any wires on reassembly.

## Step 7 — Bottom Section 1a.



- Using a #1 Phillips screwdriver, remove the 11 screws on the bottom and 2 screws on each side for a total of 15. Next, remove the bottom cover.

- Unplug the original ribbon cable (not shown)

- Plug in new connections.

  - Ribbon Cable (keyed)

  - 3 pin black plug into D11 (end row towards SD card slot) Orange wire will face the ribbon cable like in the picture.

  - 2 pin white plug into Z+ (connection closest to the ribbon cable) From the same view as the picture, use the right 2 pins.

- ⓘ Hot glue is optional.

## Step 8 — Prepare the SD card
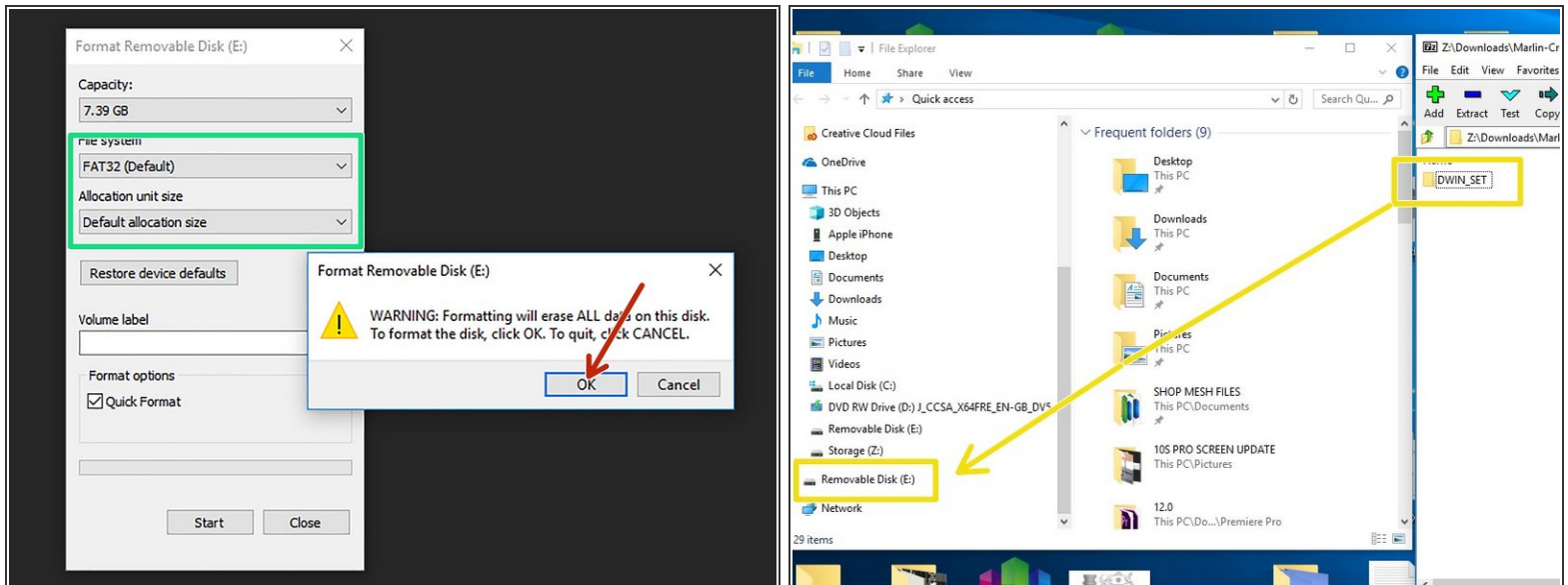


- Locate a micro SD card no bigger than 16gb in capacity and format it to FAT 32 / Default allocation size.

- (i) It is critical to set the Allocation unit size to "Default..." or 4096.

- Download the Screen Files from *** and locate the directory called "DWIN_SET."

- Copy/Paste, drag or right click and send DWIN_SET to the formatted SD card.

## Step 9 — Flash the Screen Files
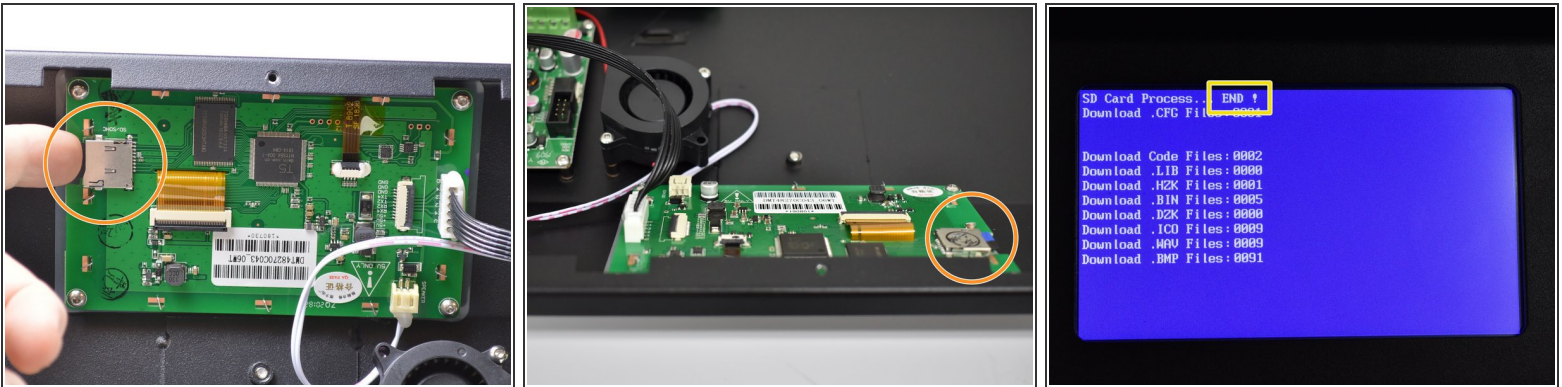


- Insert properly configured sd card into the slot on the display.

- Make sure the power switch is set to "0" then plug the power cable into your machine. Position the machine so you can see the screen and turn the power switch ON.

- If everything goes correctly, you will see files load, images flash then "END" at the top. See the next step for a video.

## Step 10 — Screen Flash Video
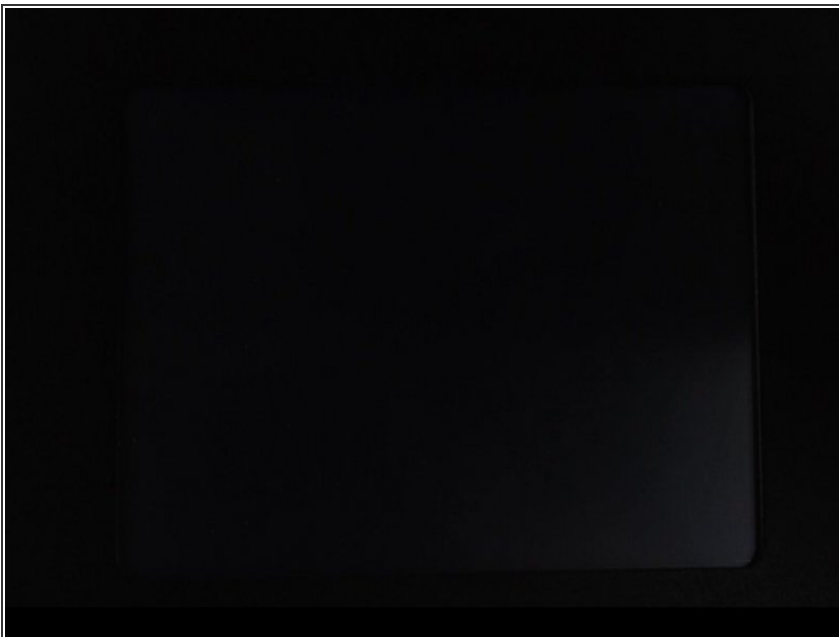


- If everything goes correctly, you will see files load, images flash then "END" at the top.

- (i) This video is at 8X normal speed.

## Step 11 — Top Section 2d.
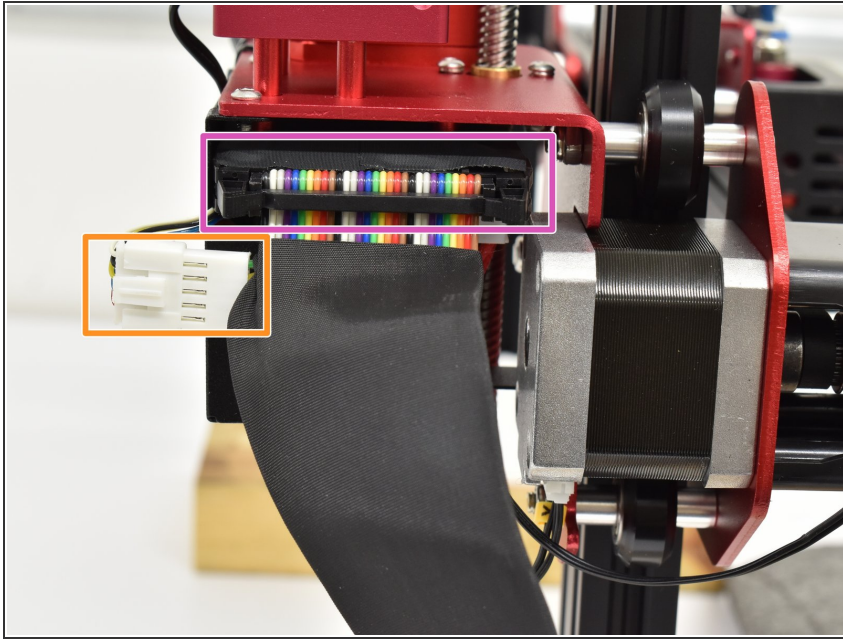


- Plug in the ribbon cable up top until you feel the clips on both sides click into place, locking the connection.

- Plug in 5 pin connection for BL Touch Probe. This plug also has a lock when fully seated.

- (i) Both connections can only plug in 1 way.

- (i) If removal is necessary, release locks before pulling on any cables.

## Step 12 — Flash the firmware



- Plug the USB-A side into your computer.

- Plug the other side of the USB into your 3D printer.

- (i) If you purchased your machine new, it came with the proper cable.

- (i) We suggest you use X Loader for PC and Hex Uploader for Mac computers (requires Arduino IDE to be in your Applications folder)

- FIRMWARE
  - Go to http://bit.ly/2DIIXNi to find files and firmware flashing info.

www.iFixit.com

## Step 13 — Finishing Up



- The setup process will be the same EXCEPT you do not have set probe height or sensitivity. You just need to set your Z-Offset.

- ⚠ ALWAYS make sure the probe works by Auto Homing then triggering the probe with your finger before the nozzle gets close to the bed. If the Z axis stops moving down, you've wired everything correctly and it should be smooth sailing.

Look back on earlier steps for images to help with reassembly.