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# How to replace a Buddy control board (MINI)



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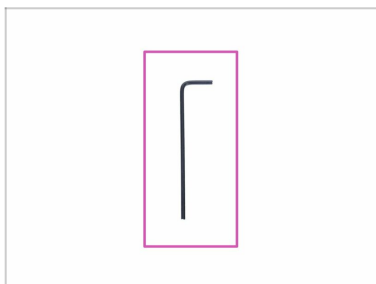
## STEP 1 Introduction



- ◆ This guide will take you through the replacement of the **Buddy control board** on the **Original Prusa MINI**.
- ◆ All necessary parts are available in our E-shop
- ⓘ Note that you have to be logged in to have access to the spare parts section.

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## STEP 2 Tools necessary for this guide



- ◆ 2.5mm Allen key (1x)

### STEP 3 Important: Electronics protection






**⚠ WARNING:** Make sure to **protect the electronics against electrostatic discharge (ESD)**. Always unpack the electronics right before you need them!

- Here are some **tips to prevent damage to the electronics**:
  - **Keep the electronics inside the ESD bag** right until you are asked to install them.
  - **Always touch the sides of the board** while manipulating with it. Avoid touching the chips, capacitors and other parts of the electronics.
  - **Before you touch the electronics** use any conductive (steel) structure nearby to discharge yourself.
  - **Be extra cautious in the rooms with carpets**, which are a source of electrostatic energy.
  - Clothes from wool and certain synthetic fabrics can easily gather static electricity. It is safer to wear **cotton clothing**.

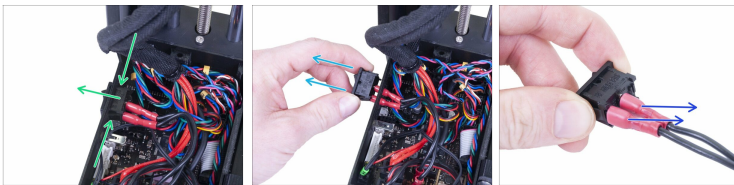
## STEP 4 Opening the box with the electronics






 **Turn the printer off and unplug it from the socket!**

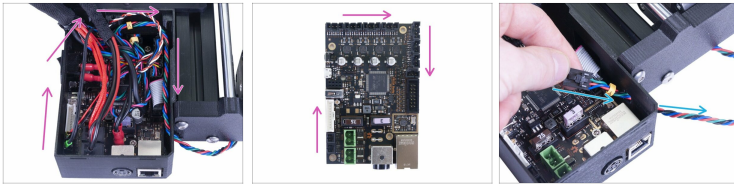
-  Release and remove the M3 screw on the box with the electronics.
-  Remove the printed cable cover.
-  Lift the second electronics cover slightly. Before you remove it completely, pull it first towards the aluminium extrusion to release both pins from the holes.

## STEP 5 Removing the power switch



-  Press the safety pins on both sides of the switch and push the switch out of the electronics box.
-  Remove the switch from the electronics box.
-  Disconnect power cables (pull them) from the switch.

## STEP 6 Disconnecting all the cables

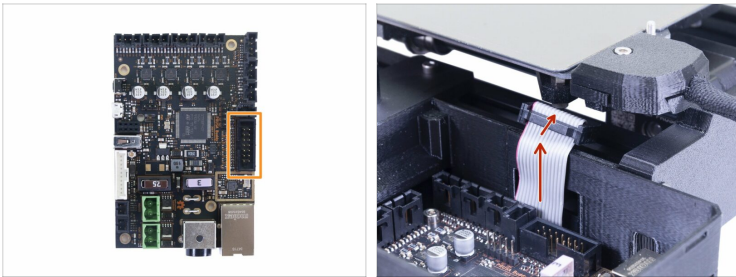


**Be careful, most connectors have a safety pin.  
Always press this pin first before disconnecting!**

- ◆ **Press the safety pin** on the connector and to disconnect cable from the board. **Do not pull out the connector without pressing the pin**, it may damage the connector or the board.
- ◆ Start in the bottom left corner with the heater cables and thermistors. Then proceed clockwise all the way round.
- ◆ Take the Y-axis motor cable and push it through the hole out of the electronics box.
- ⓘ No need to remember the position of the cables, it will be explained later on in this guide.

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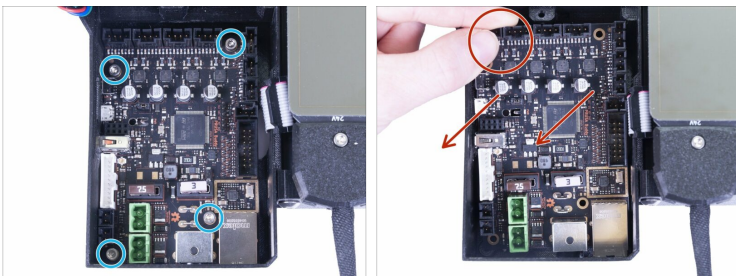
## STEP 7 Disconnecting of the LCD cable



- ◆ If you haven't disconnected the LCD cable from the board, do it now.
- ◆ Carefully push the connector temporarily under the Y-carriage.

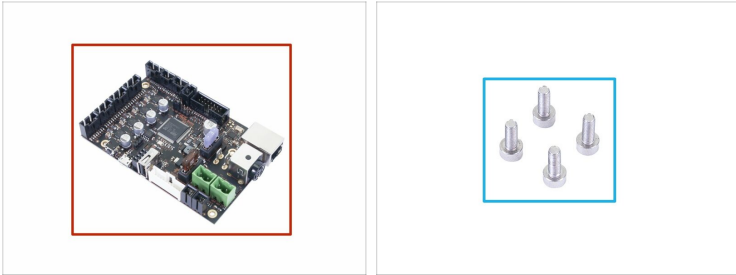
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## STEP 8 Removing the Buddy control board



- ◆ Release and remove four screws on the Buddy board.
- ◆ Grab the board by the motor cable connectors and pull it out.

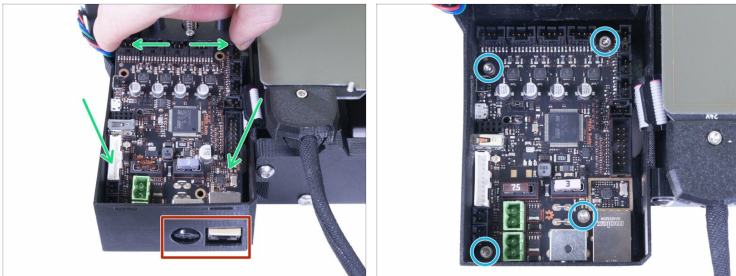
## STEP 9 Buddy control board - preparation



◆ For the following steps, please prepare:

- ◆ New Buddy control board (1x)
- ◆ M3x8 screw (4x)

## STEP 10 Buddy control board installation



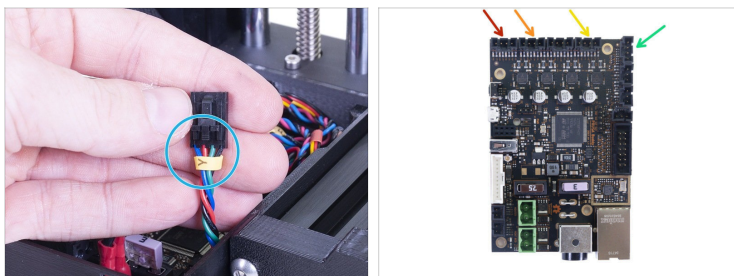
- ◆ Grab the new Buddy control board on the sides and insert the board into the electronics box.
- ◆ Make sure the LAN and power connectors are properly seated in the holes.
- ◆ Secure the board with four M3x8 screws.

## STEP 11 Installation of the power switch



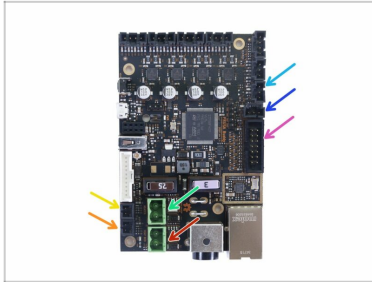
- ◆ Connect two power cables to the switch.
- ◆ Guide the power cables through the square hole in the electronics box like in the picture.
- ⚠ **Do not bend the power cables too much! If the cable breaks, the printer won't turn on.**
- ◆ Connect both power cables to the board. The cable polarity doesn't matter.

## STEP 12 Connecting of electronics



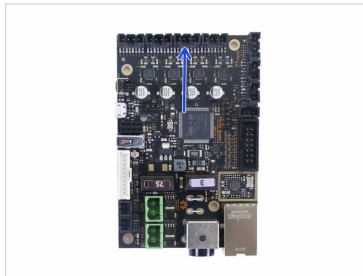
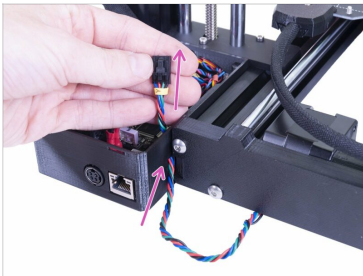
- ◆ Let's connect the cables to the Buddy board. **Start on the top left and proceed "clockwise"** according to the instructions. Some ports will remain unused, also **don't remove any jumpers from the board.**
- ◆ Almost all cables are labelled. Check the cable marking to be sure:
  - ◆ Z-axis motor
  - ◆ X-axis motor
  - ◆ E-axis motor
  - ◆ M.I.N.D.A. / SuperPINDA sensor
- ⓘ Continue in the next step...

## STEP 13 Connecting of electronics



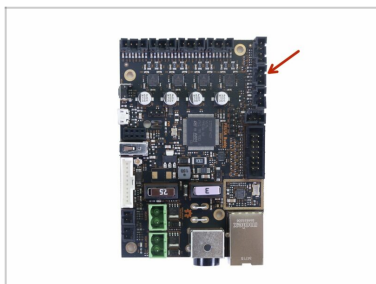
- ◆ Print fan
- ◆ Hotend fan
- ◆ LCD display
- ◆ Heatbed
- ◆ Thermistor heatbed
- ◆ Thermistor hotend
- ◆ Hotend heater

## STEP 14 Connecting the Y-axis cable



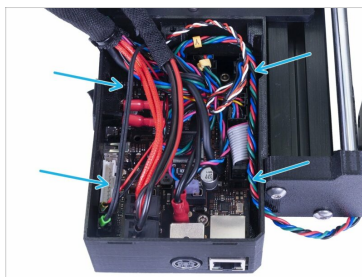
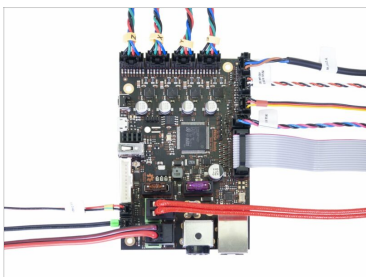
- ◆ Take the motor cable (labelled Y) and push it through the hole.
- ◆ Connect the connector to the appropriate socket. See the picture for more detail.

## STEP 15 Connecting of the filament sensor (optional)



- ◆ Connect the filament sensor cable to the Buddy board.
- ⓘ Note that your printer might not be equipped with the filament sensor.

## STEP 16 Cable management



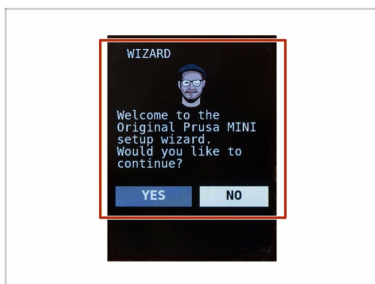
- ◆ Check the wiring connection according to the picture.
- ◆ Arrange all the cables according to the picture. Keep in mind that the electronics cover must fit into place.

## STEP 17 Covering the electronics



- ◆ Before covering the electronics, make sure the square nut is correctly positioned in the printed part. **The nut must not fall out!** This can cause fatal damage to the electronics.
- ◆ Insert the cover back in, make sure it is properly seated in the holes.
- ◆ **Place the second cover on the top and arrange the cables:**
  - ◆ **Extruder bundle**, ensure the textile sleeve is partially in. Also, it must be tilted away from the printer.
  - ◆ **Heatbed bundle**, ensure the textile sleeve is partially inside the box.
  - ◆ **Filament sensor cable** (optional), ensure that the textile sleeve wrapped around the cables is partially inside the box.
- ◆ Now, tighten the second cover. Check that no cable is pinched.

### STEP 18 It is almost done!



- ◆ Plug in the printer and turn it on.
- ⓘ The first time you start the printer with the new Buddy control board, you will need to go through a self-test and printer calibration using the Wizard.
- ◆ Follow the steps in the Wizard on the screen. Use the knob to control the printer.
- ◆ **...and it is done!  
Great job :)**



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