3D SYSTEMS University

CubeX Printer

“Lesson – Replacing the Main PCB and Breakout Boards”

Revision date: 10/23/13

Objectives

After completing this lesson you will:

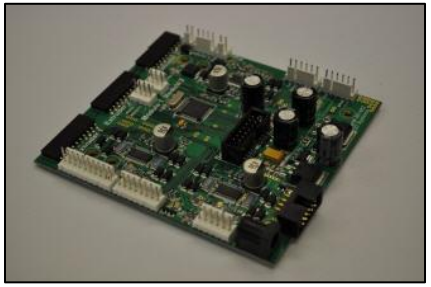
- ❑ Be able to replace the Main PCB (Mainboard)
- ❑ Know how to replace the Breakout PCB (Breakout Board)

Before beginning this process please ensure that the print pad is raised to the top of the machine, all cartridges and the wipe bin have been removed from the machine and that you have made a note of your Z height and offset settings as these settings will not be present on the new PCB. Unplug the CubeX from mains power.

Introduction

The Tools needed to complete the Main Board PCB replacement procedure are:

- Main Board PCB

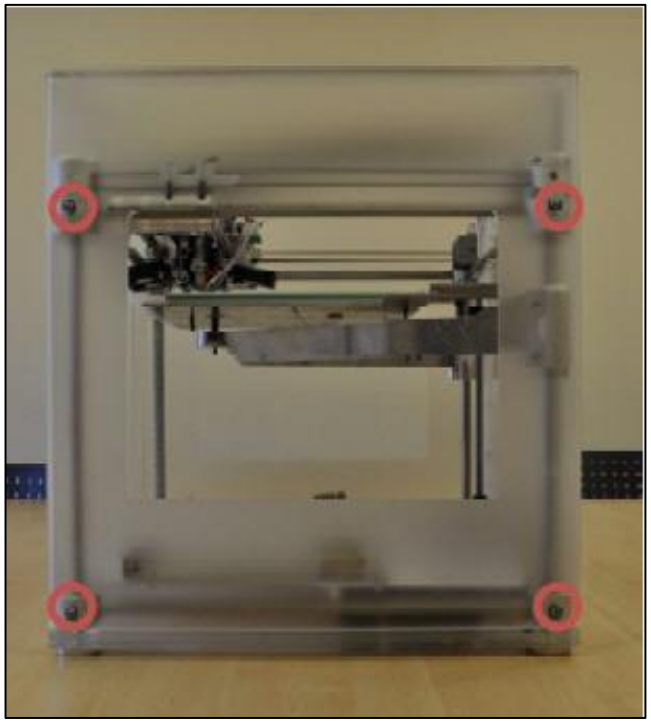


- 3 mm Hex Driver

- 2.5 mm Hex Driver

Removing the Case and Floor Panel

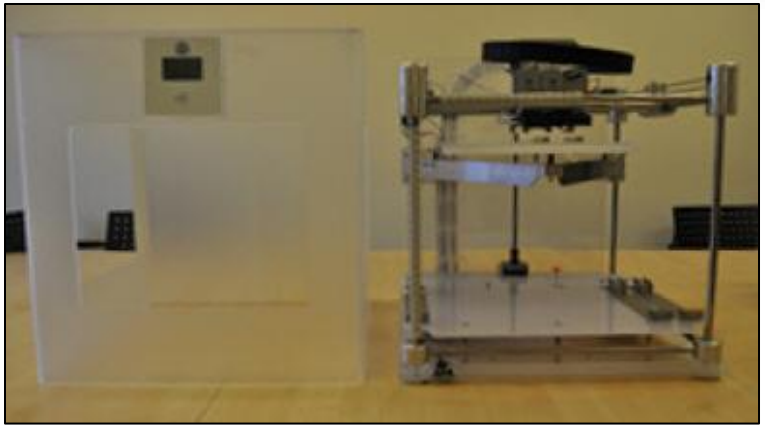
1. Use the 3mm hex driver to remove the 8 case bolts (4 on either side of the machine).



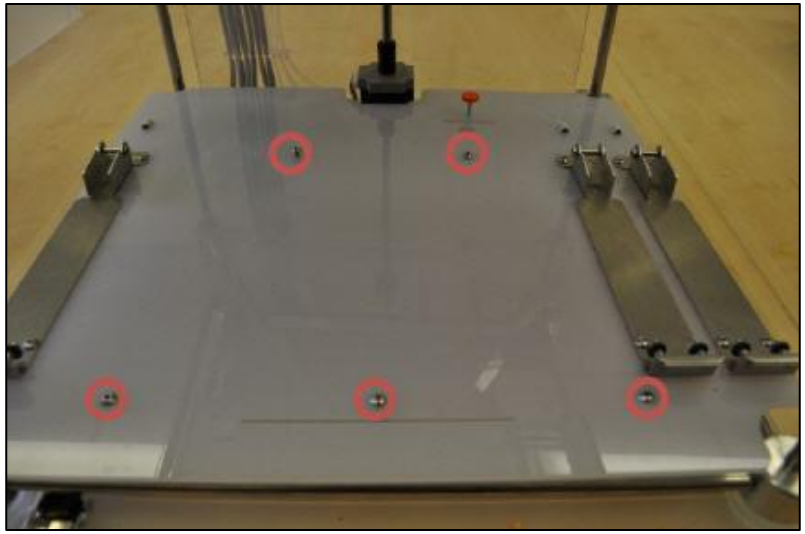
2. Unplug the CubeX screen.

Removing the Case and Floor Panel

3. Lift the case up off the CubeX.

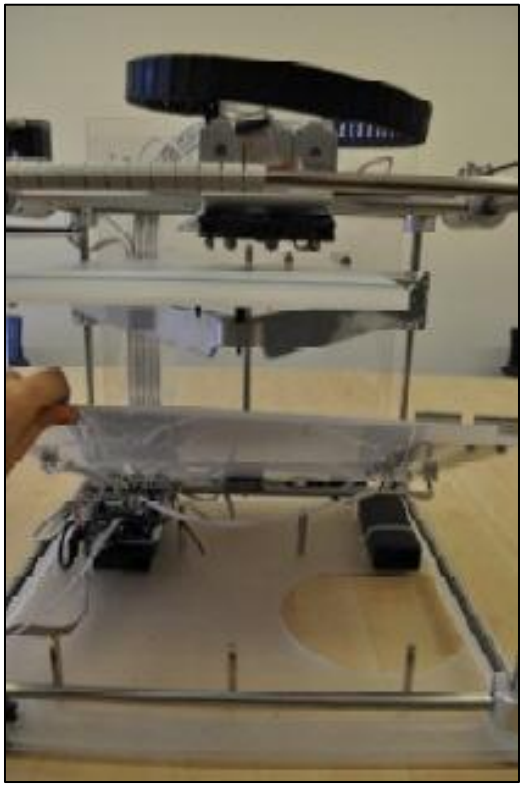


4. Use the 3mm hex driver to remove the 5 bolts holding the floor panel to the machine.



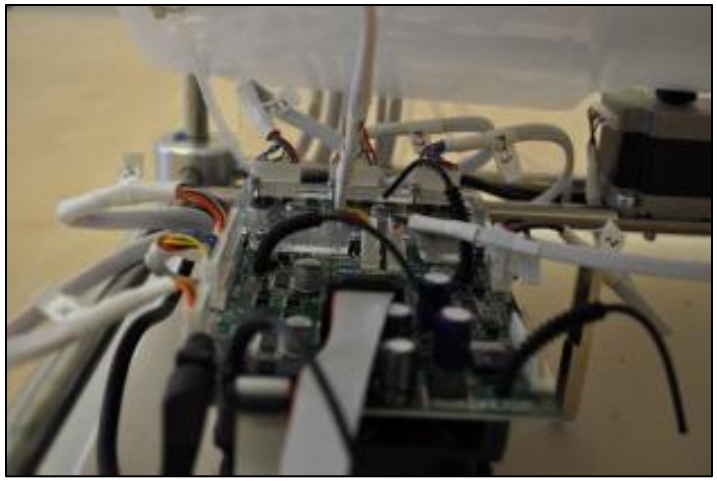
Removing the Case and Floor Panel

5. Lift the front of the floor panel and cable tie it to the bed arms. This will allow access to the Cartridge bay fastenings.

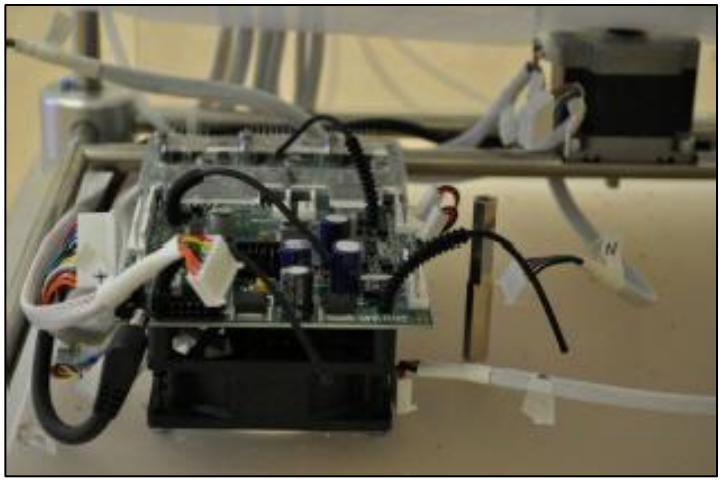


Removing the Damaged Main Board PCB

6. Before removing the Main board PCB, label each of the wire bundles that are plugged into it. The PCB is marked to tell you which wire bundle is plugged into which connector.

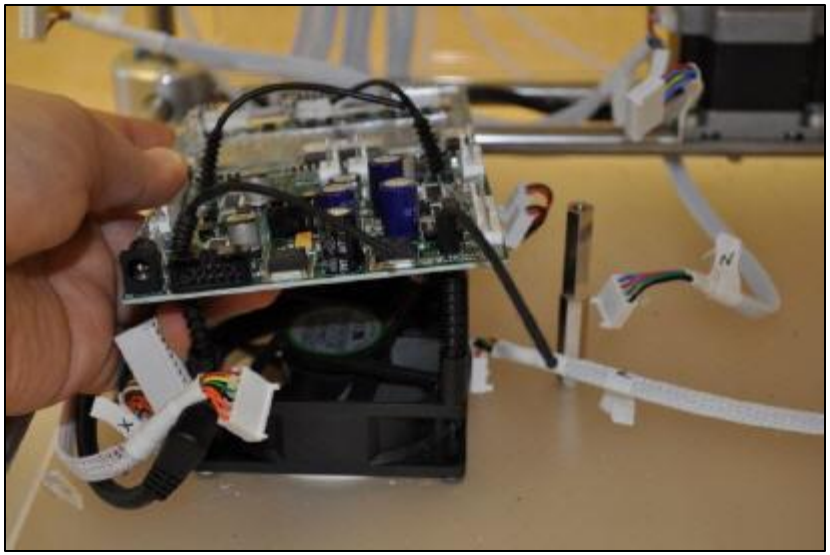


7. Remove the wire bundles and unplug the power supply from the main board PCB.



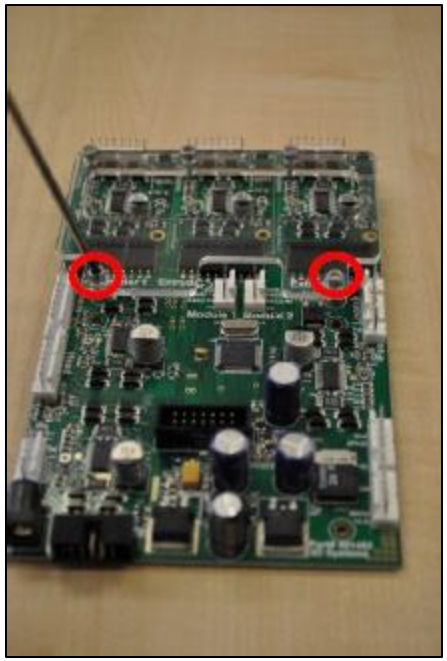
Removing the Damaged Main Board PCB

8. Gently pull up on the main board PCB to slide it off of the rubber ties holding it in place.



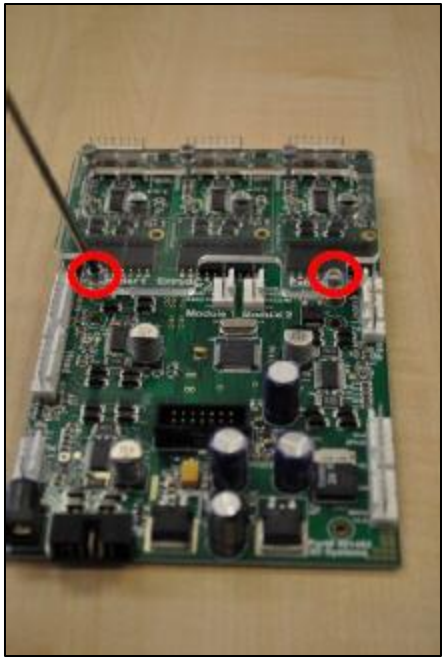
Removing the Damaged Main Board PCB

9. Using the 2.5mm hex driver, undo the bolts holding the Print Jet driver boards to the Main Board PCB and remove the Print Jet driver boards. (*Note: the amount of Print Jet driver boards will correspond with the amount of Print Jets present on your CubeX printer*)



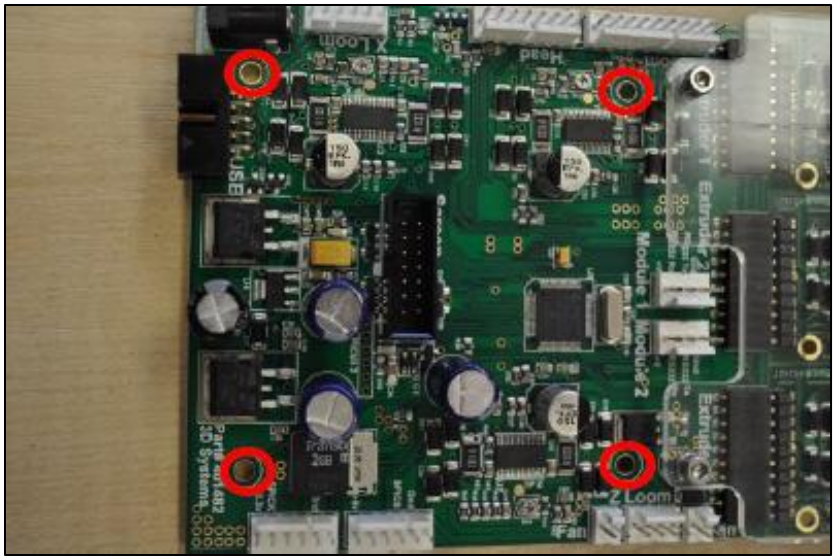
Fitting the New Main Board PCB

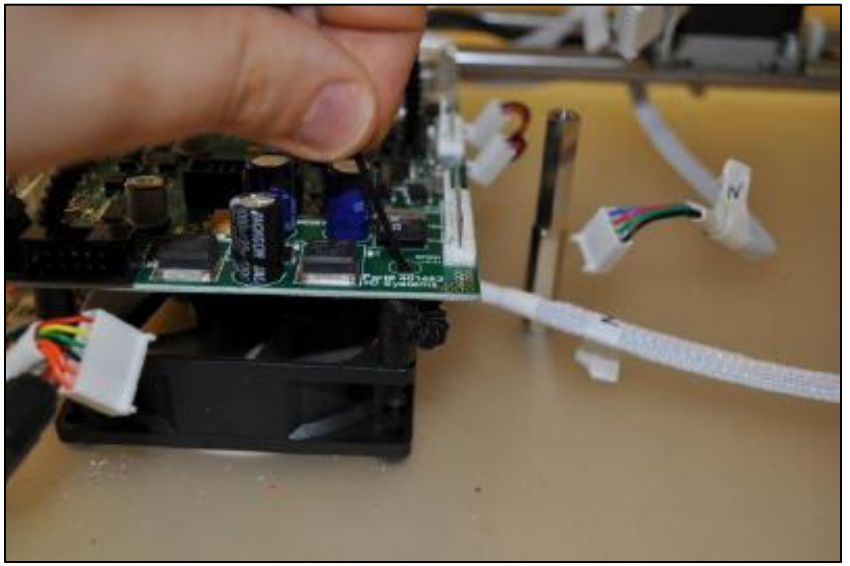
10. Plug the Extruder Driver boards into the new Main Board PCB and fasten with bolts.



Fitting the New Main Board PCB

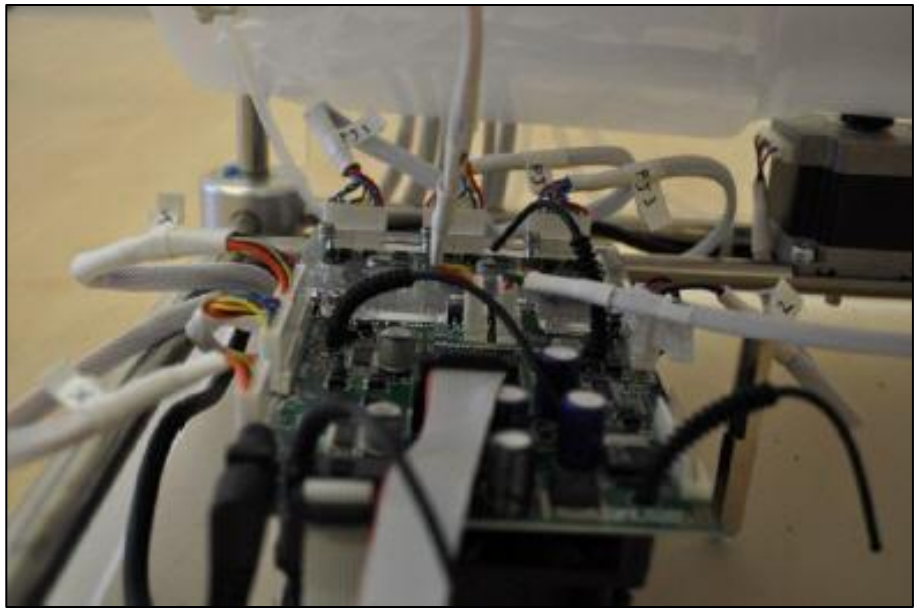
11. Pull the rubber ties up through the holes on the main board PCB to fasten it to the CubeX.





Fitting the New Main Board PCB

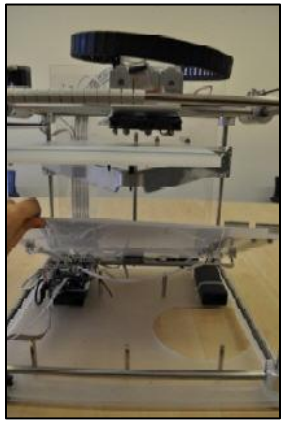
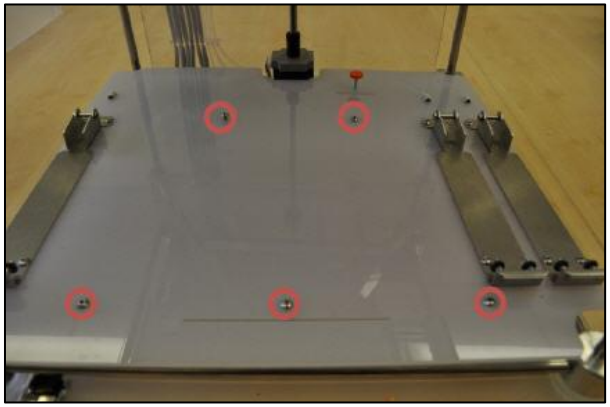
12. Plug the wire bundles and power supply back into their corresponding connectors.



Reassemble the CubeX

Follow the disassembly instructions in reverse to reassemble the CubeX:

1. Cut the cable tie holding the floor panel in place and gently lower it down.
2. Use the 3mm hex driver to reattach the 5 bolts that hold the floor panel.
3. Slide the case onto the CubeX and plug in the CubeX screen.
4. Use the 3mm hex driver reattach the 8 case bolts.

1. 
2. 
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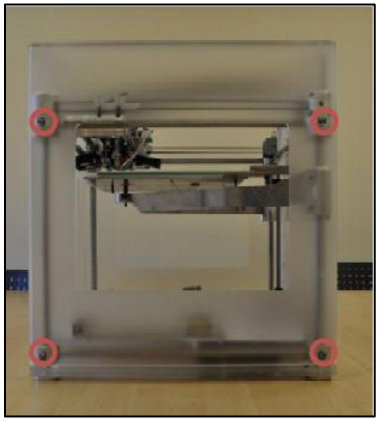
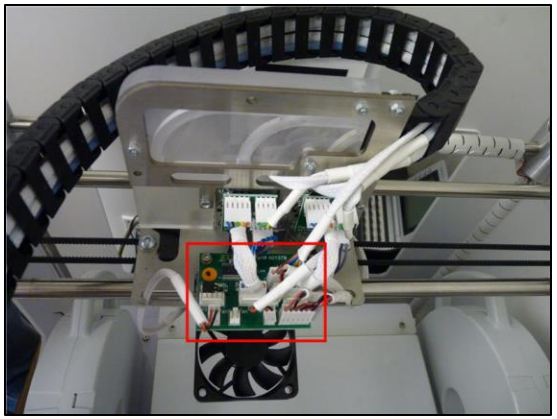
5. 

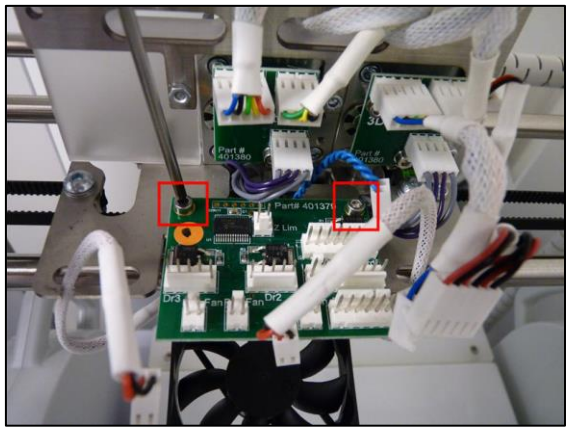
Replacing the Breakout Board

If the electronics on your machine were shorted, you will also need to replace the breakout PCB located behind the print jets.

1. Unplug the wire harnesses connected to the breakout board, making note of where each harness connects to the board.
2. Use the 2.5 mm hex driver to remove the 2 bolts that anchor the breakout board to the print jet carriage.
3. Remove the old breakout board and replace it with the new one.
4. Connect the wiring harnesses to the new board in the same places they were connected on the old board.



*Views from rear of CubeX



Conclusion

You may now power up your CubeX.

You will need to reactivate your CubeX using the activation code associated with your CubeX. You will also need to reset your Z height and offsets, if you did not make a note of these settings you can find instructions on how to set them in the CubeX Lessons "Leveling and Z-Gap" and "Setting the Print Jet Offsets".