



TM

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Cube 3D Printer

“Lesson –Measuring Stepper Motor Chip Voltages”

Revision date: 10/20/13



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Objectives

After completing this lesson you will:

- Learn to disassemble the Cube X to get to the main board.
- Be able to locate where voltage is measured.
- Know how to read the voltages in each area.

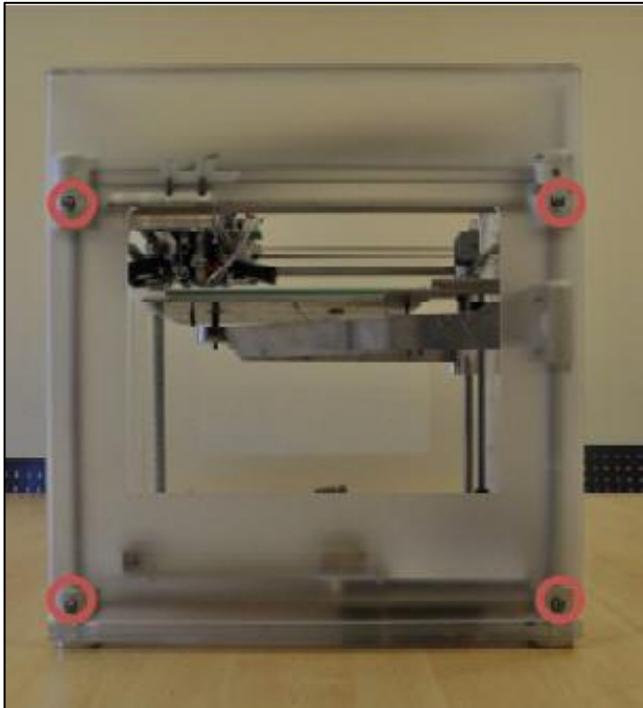
What Tools You Need

- Multimeter
- 3mm Hex Driver
- Small Screwdriver

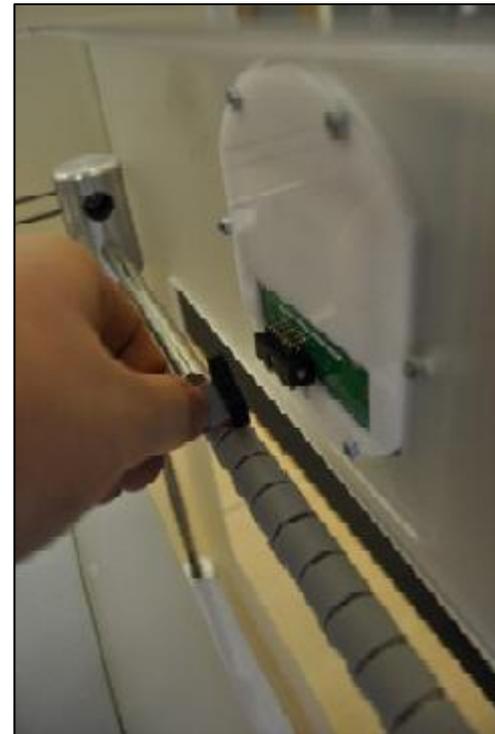
Before beginning this process please ensure that all cartridges have been removed from the machine.

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).

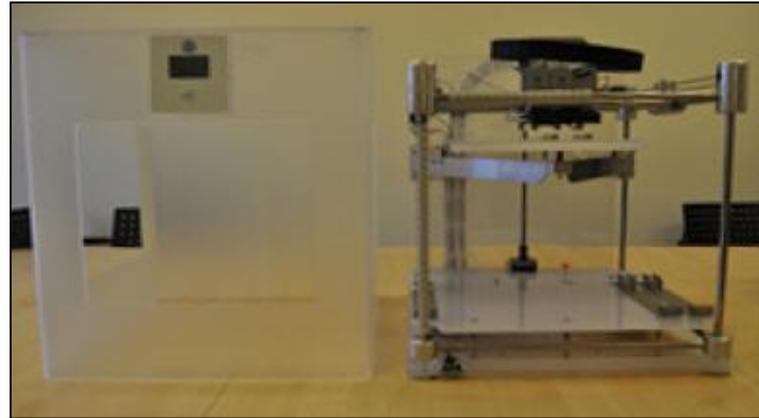


2. Unplug the CubeX screen.

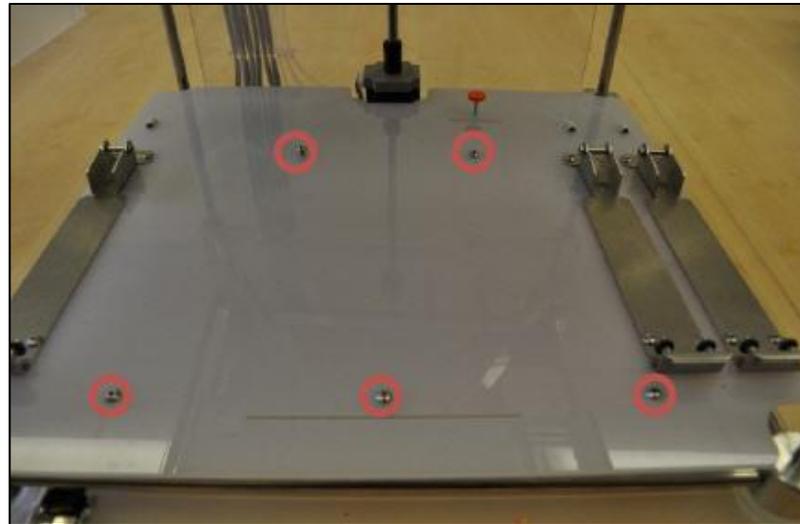


Removing the Case and Floor Panel

3. Lift the case up off the CubeX.

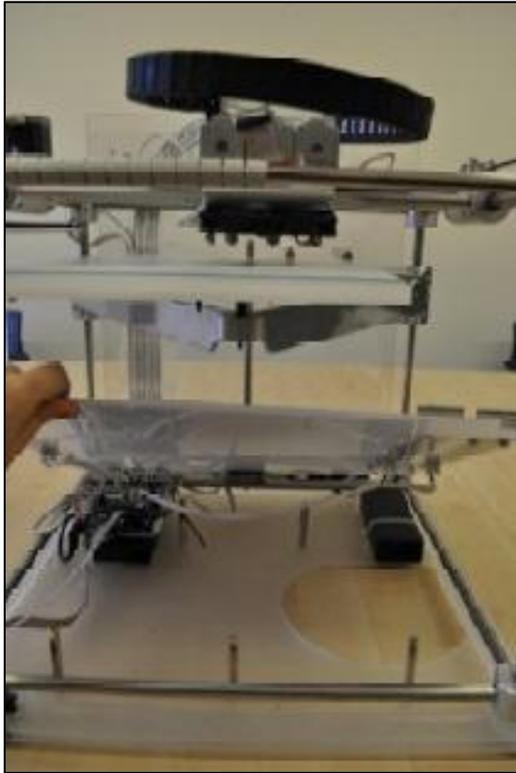


4. Use the 3mm hex driver to remove the 5 bolts holding the floor panel to the machine.



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.



Voltage Measurement Locations

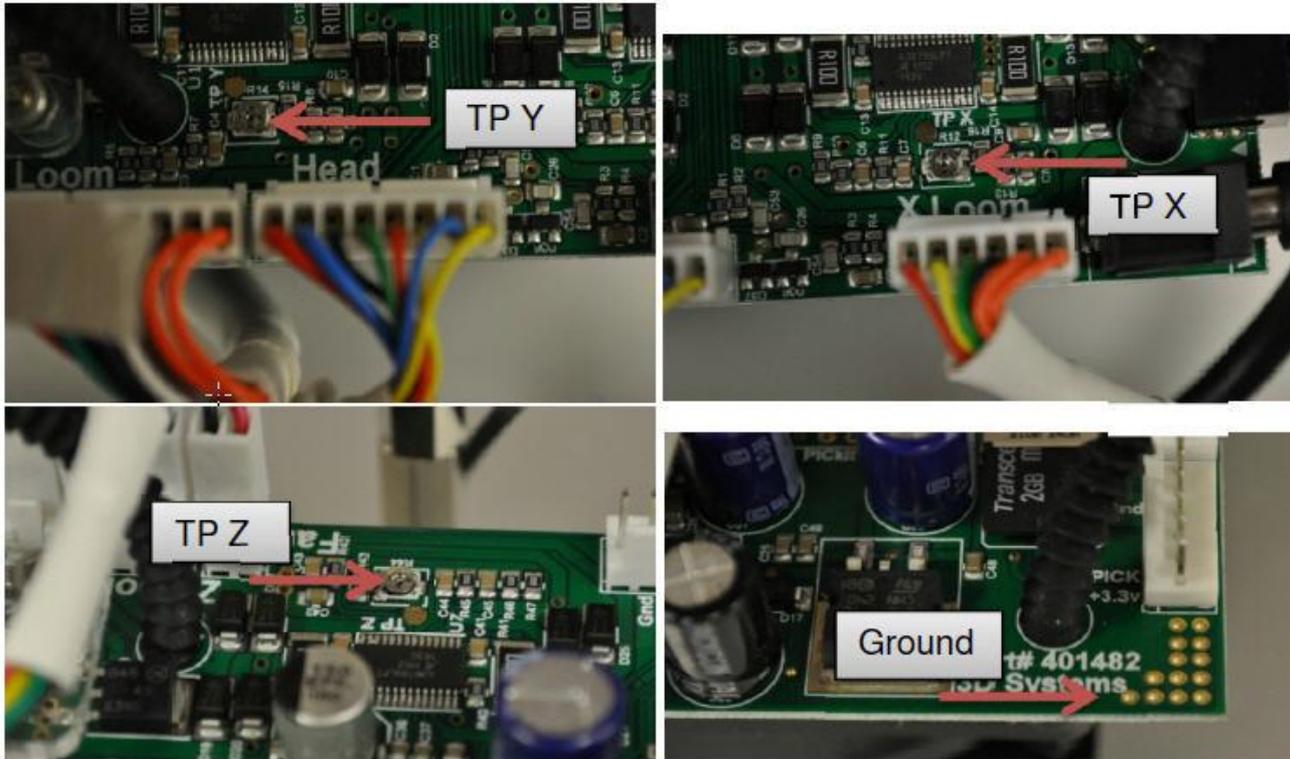
Depending which stepper motor chip voltage you want to read, you will need to position your multimeter in different positions of the board. You will need to place a small screwdriver with one end of the multimeter clipped onto it on the small screw head labeled TP – and another end of the multimeter will need to be set to ground on the board.

Voltage Measurement Locations

TP X will measure the voltage for the X axis.

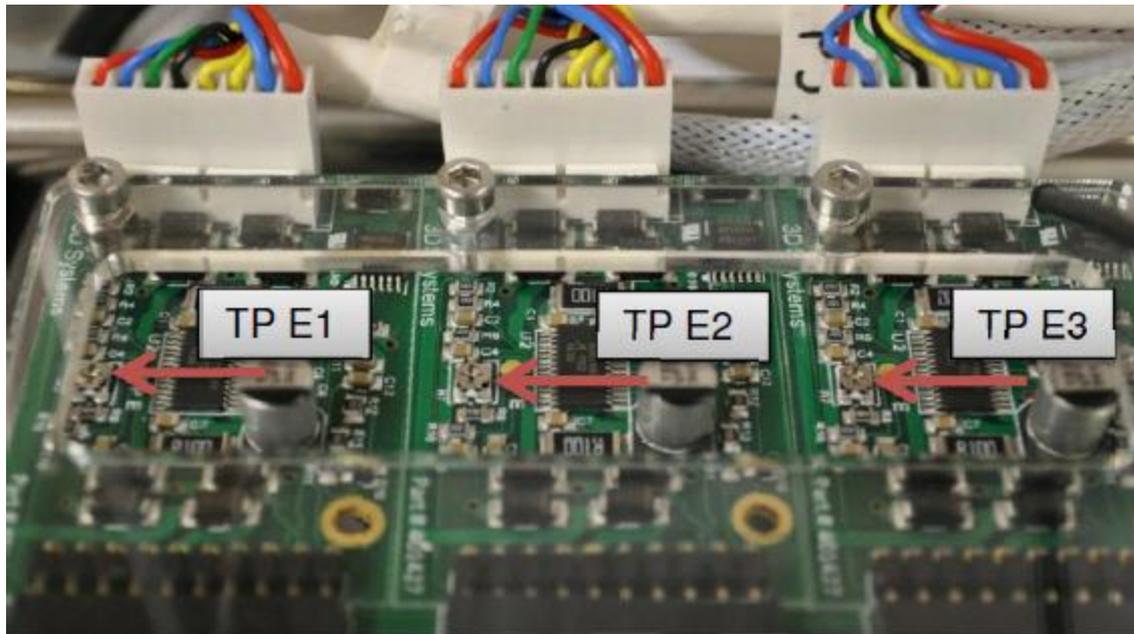
TP Y will measure the voltage for the Y axis.

TP Z will measure the voltage for the Z axis.



Voltage Measurement Locations

TP E1, TP E2 and TP E3 will measure the voltage for print jets 1, 2 and 3.

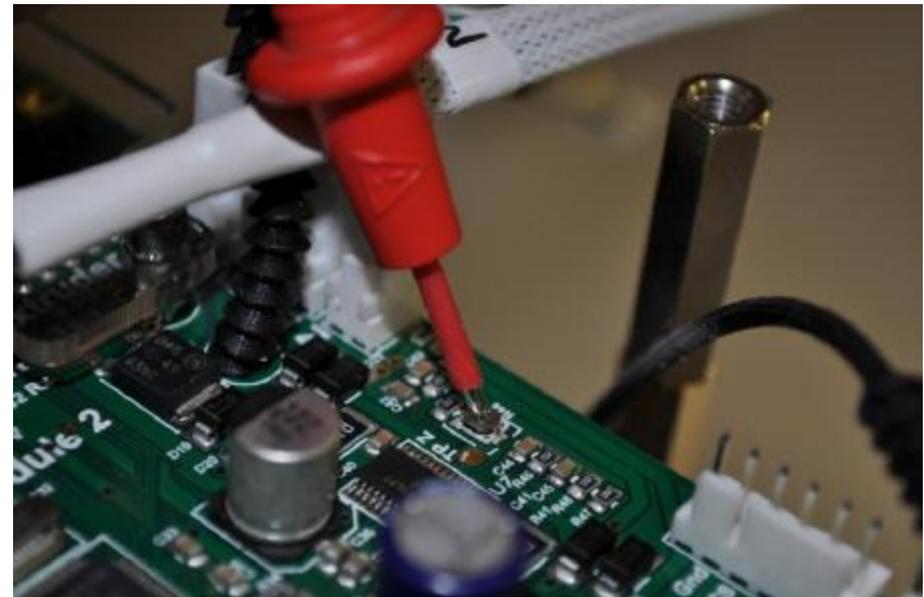


Reading the Voltages

Plug the CubeX into mains power.

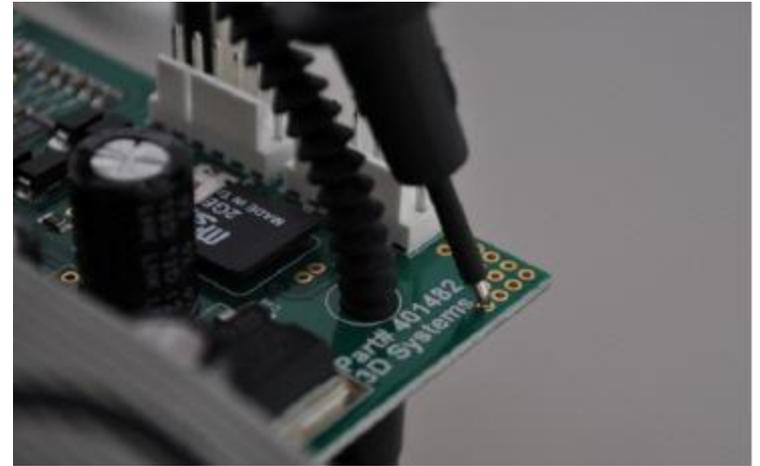
Set the multimeter to read DC voltage.

Place the Red (positive) lead onto the desired TP screw head.



Reading the Voltages

Hold the other end of the multimeter against the ground point.



The multimeter screen will give you your voltage reading.



Reading the Voltages

TP X should read 1.3VDC

TP Y should read 1.6VDC

TP Z should read 1.3VDC

TP E1, E2 and E3 should read 1.1VDC

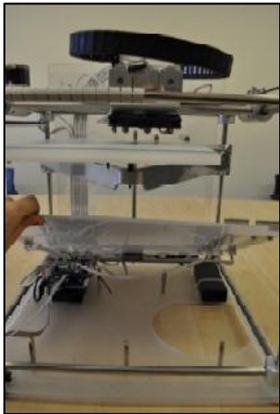
If your voltage is not correct use the small screwdriver to turn the screw head in very small increments measuring the voltage between each turn until it is correct.

Unplug your CubeX from mains power.

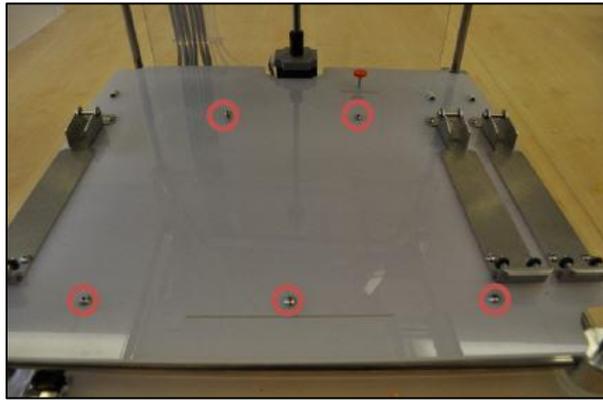
Reassemble the CubeX

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.
5. You may now power up your CubeX.



2.



3,4.



5.

