



3D SYSTEMS™

3D SYSTEMS University

CubeX Printer

“Lesson – Replacing the Z Limit Switch and Checking the X, Y, and Z
Limit Switches”

Revision date: 10/23/13



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Objectives

After completing this lesson you will:

- Be able to locate and identify the Z-Limit switch and replace it.
- Know how to check the function of the X, Y, and Z limit switches

Introduction

The Tools needed to complete the Z-Limit switch replacement procedure are:

- Z-Limit Switch



- 2.5 mm Hex Driver

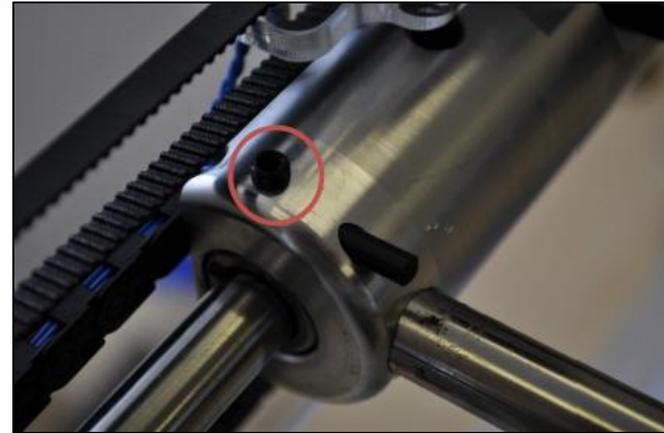


- or Flat Head Screwdriver



Introduction

If your CubeX has a metal set screw visible on the X axis then you will need to use the 2.5mm hex driver when the manual calls for a driver.



If your CubeX has a plastic set screw visible on the X axis then you will need to use the flat head driver when the manual calls for a driver.

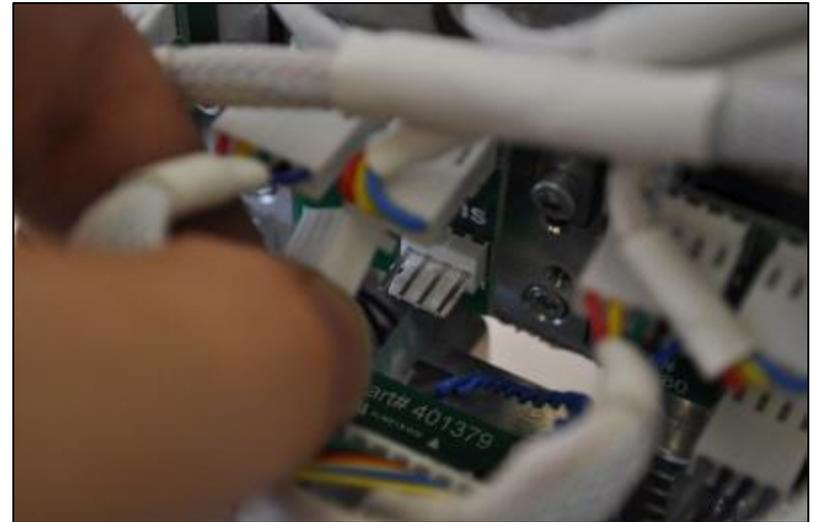
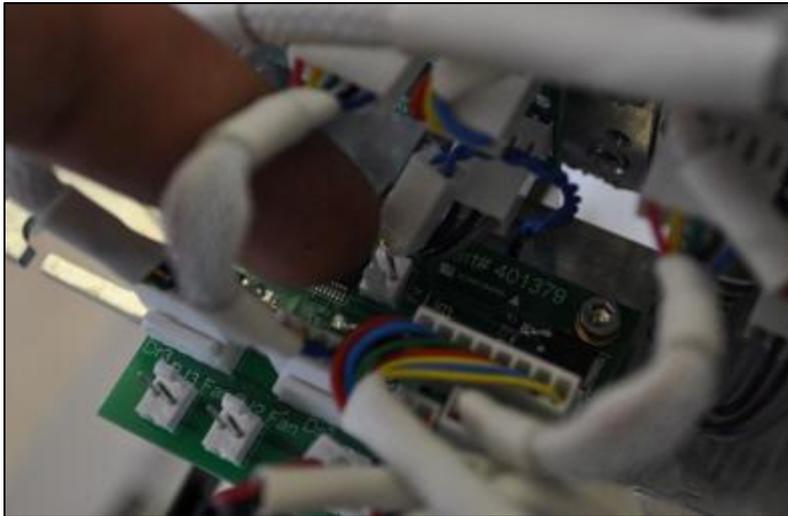


Removing the Old Z-Limit Switch

*Before beginning this process please ensure that the print pad is lowered to the bottom of the machine, that all cartridges and the jet wipe have been removed and that the **CubeX is powered off at the mains.***

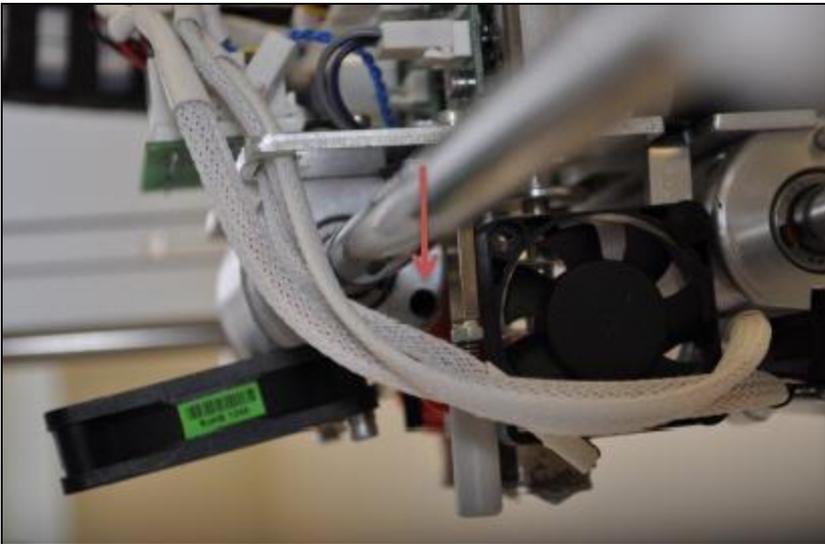
1. Unplug the Z-Limit switch from the breakout board on the Print Jet carriage.

2. Unplug the print tip from print jet 2 so the Z-Limit switch can be removed.



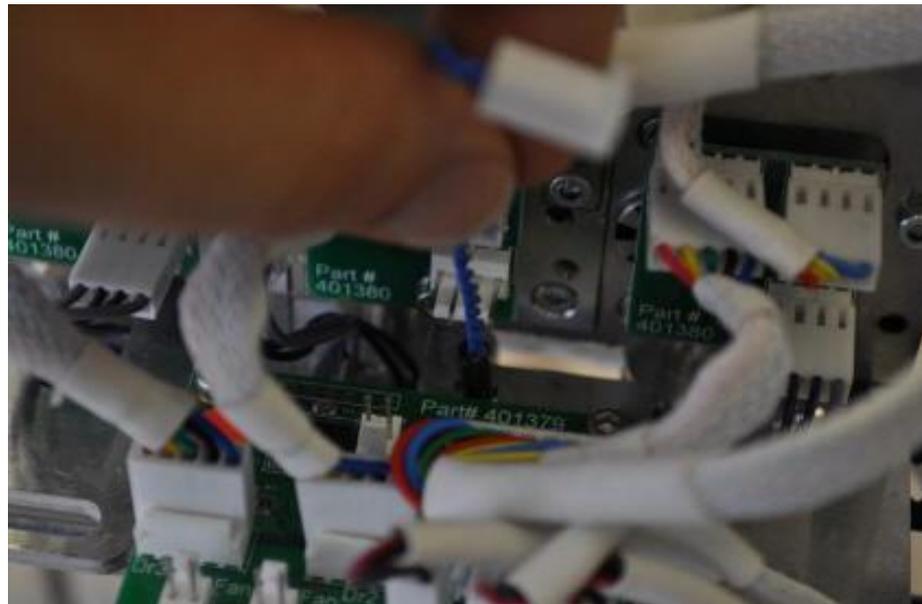
Removing the Old Z-Limit Switch

3. Loosen the set screw holding the Z-Limit switch by a full turn counter-clockwise. The set screw is located in the rear print jet carriage block



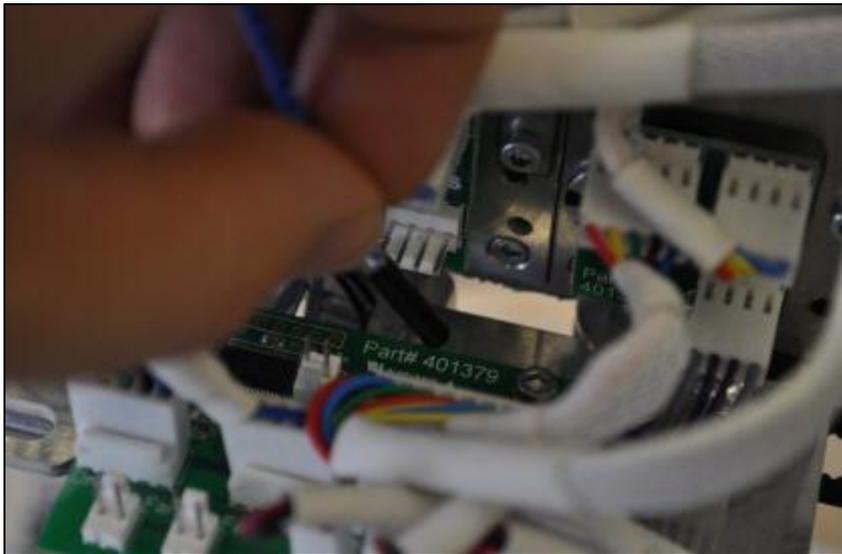
Removing the Old Z-Limit Switch

4. Pull the old Z-Limit switch out by its wire

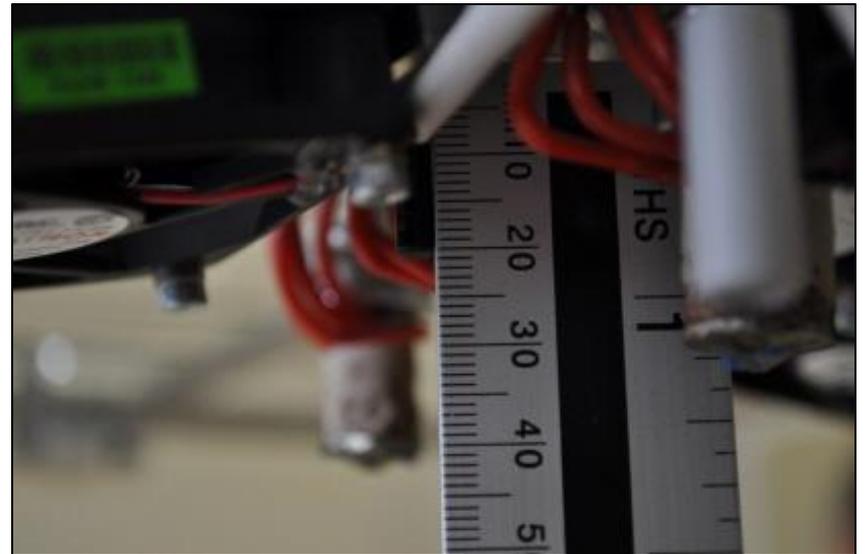


Fitting the New Z-Limit Switch

5. Fit the new limit switch into the same hole you removed the old limit switch from

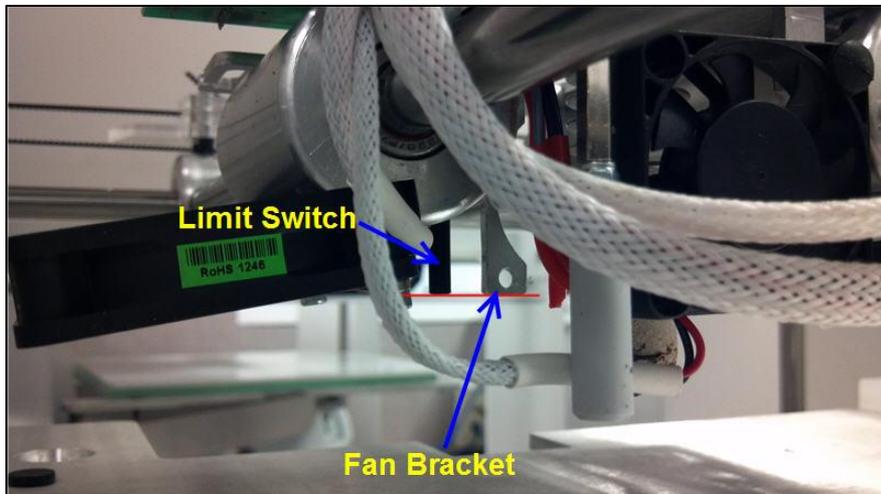


6. Pull the limit switch down until 20 mm of the limit switch is exposed on its longest side.



Fitting the New Z-Limit Switch

7. When the limit switch is in its correct position it will appear flush with the fan brackets.

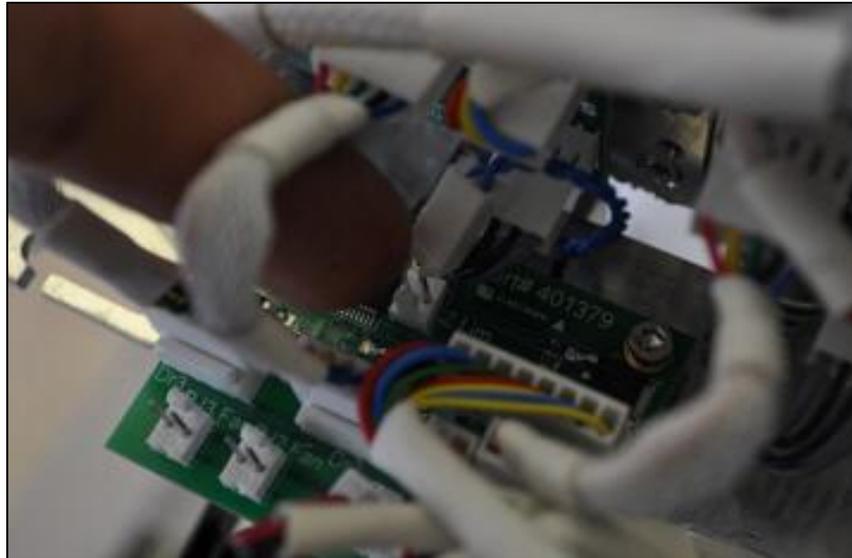


8. Fasten the limit switch in place by turning the set screw a full turn clockwise



Fitting the New Z-Limit Switch

9. Plug the new Z-Limit switch into the breakout board on the print jet carriage and plug print tip 2 back into the print jet 2 sensor board.

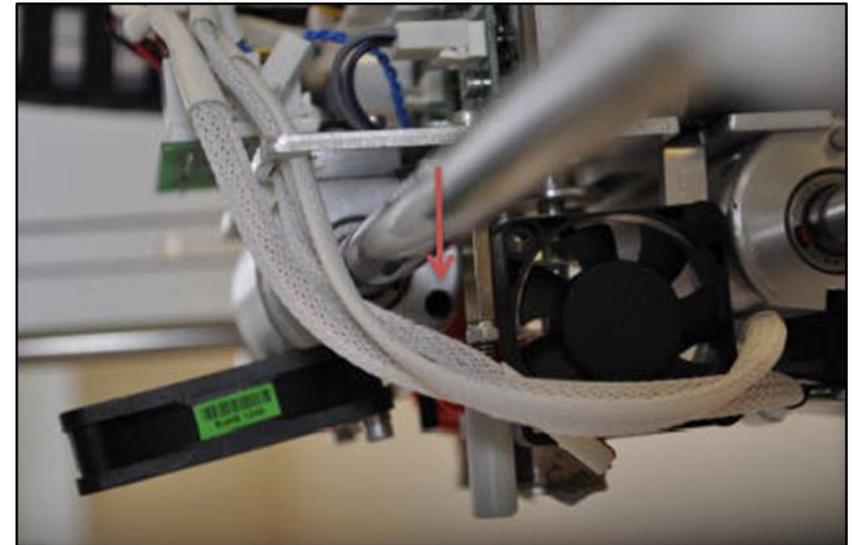
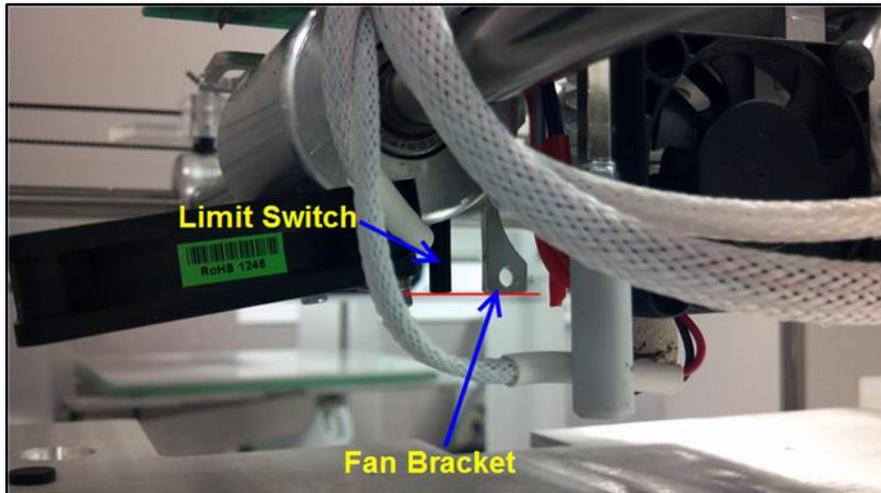


Checking that the Limit Switches are Set Correctly

Z-Limit Switch

The bottom of the Z-Limit switch should align with the bottom of the print jet fan brackets. If it is not correctly aligned it will need to be adjusted.

First loosen the set screw holding the limit switch in place by a full counter-clockwise turn.



Checking that the Limit Switches are Set Correctly

Slide the limit switch up or down until it is in the correct position with 20mm measurable on its longest side.



Once the limit switch is in position fasten it by turning the set screw a full turn clockwise and check it is fastened by gently pulling on the Z limit switch.

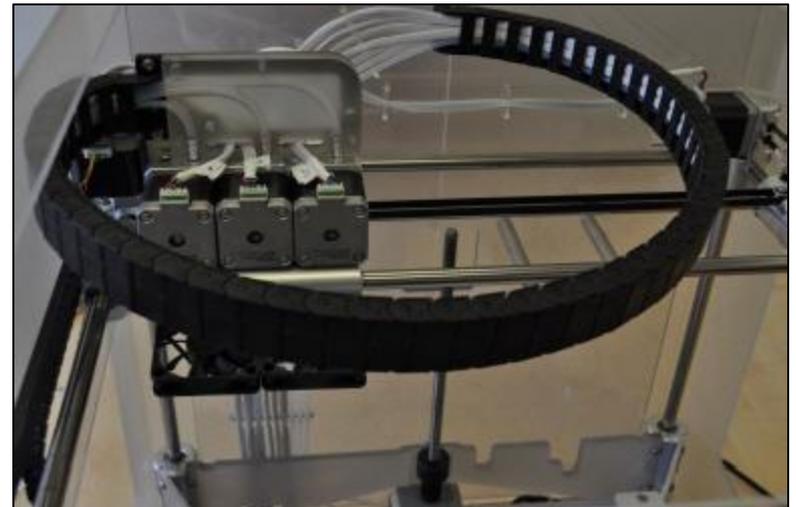
Checking that the Limit Switches are Set Correctly

X-Limit Switch

To test if your X limit switch is set in the correct position, go into the manual move option on the menu screen.



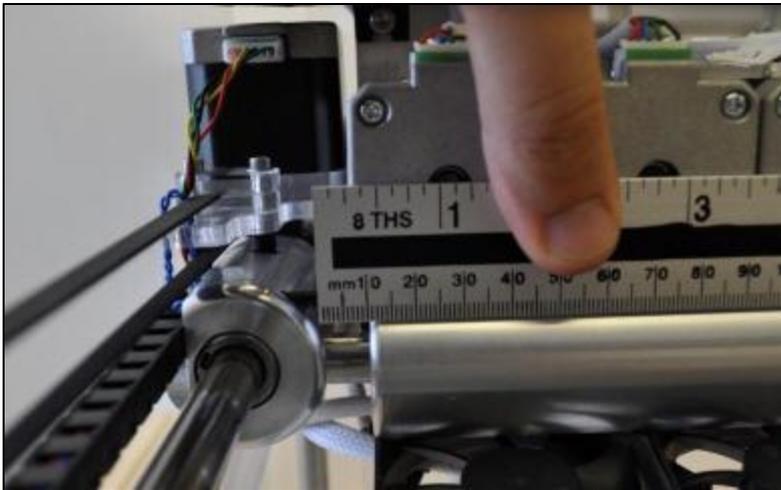
Move the Print Jet carriage to the left until it stops.



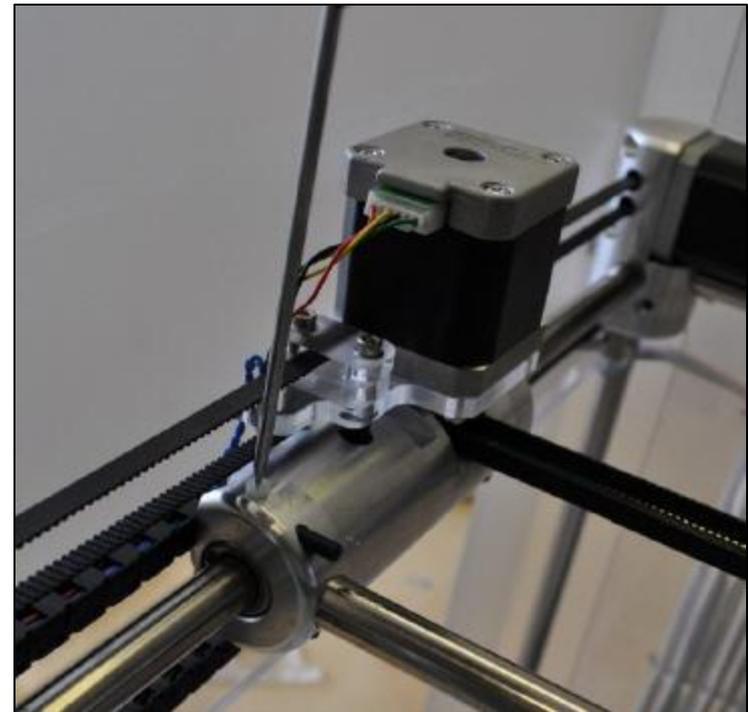
Checking that the Limit Switches are Set Correctly

X-Limit Switch

The distance between the Print Jet carriage bearing block and the Y bearing block should be 10mm. If this is not the case you will have to adjust it.



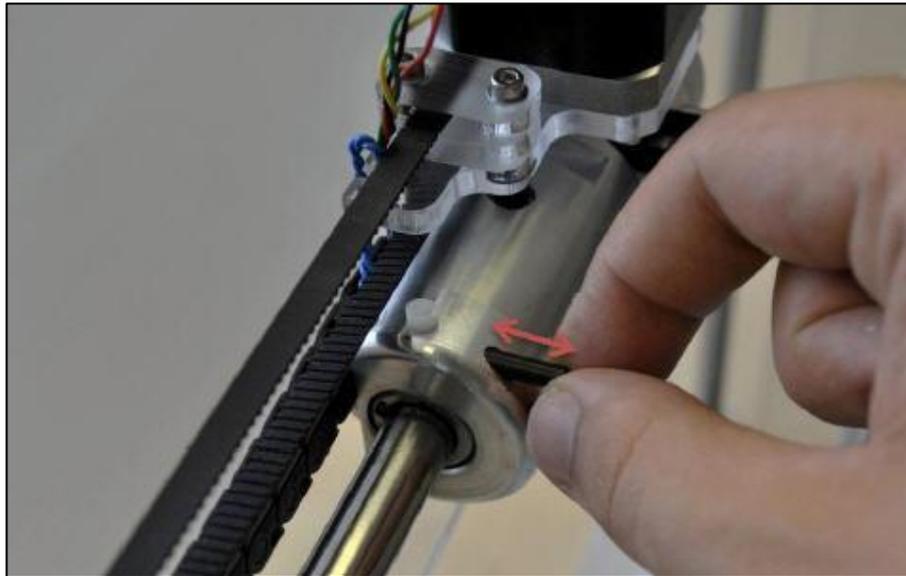
To adjust the X limit switch, first undo the grub screw on top a whole turn counter-clockwise.



Checking that the Limit Switches are Set Correctly

X-Limit Switch

If you need to move the carriage to the left, push the limit switch in by approximately 1mm. If you need to move the carriage to the right, pull the limit switch out by approximately 1mm. Fasten it by turning the set screw 1 full turn clockwise and repeat the measuring process. If it is still not correct then repeat the adjustment process.

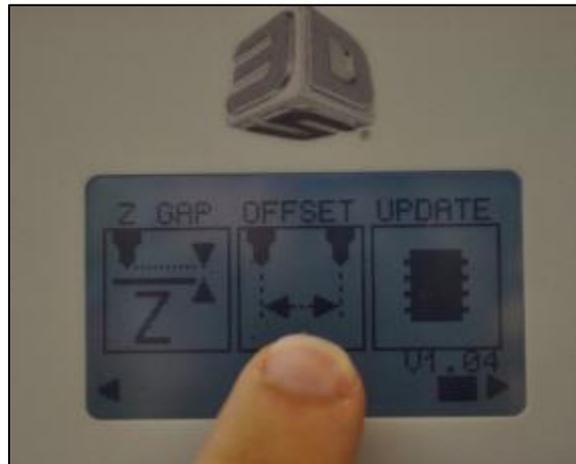


Checking that the Limit Switches are Set Correctly

Y-Limit Switch

The Y limit switch is in a fixed position. The Y axis is set up using the wiping stick offset and can be set by following these instructions.

Navigate the main menu to the Offset option and press it. The machine will automatically move into position for you to set the Wiping Stick offset.



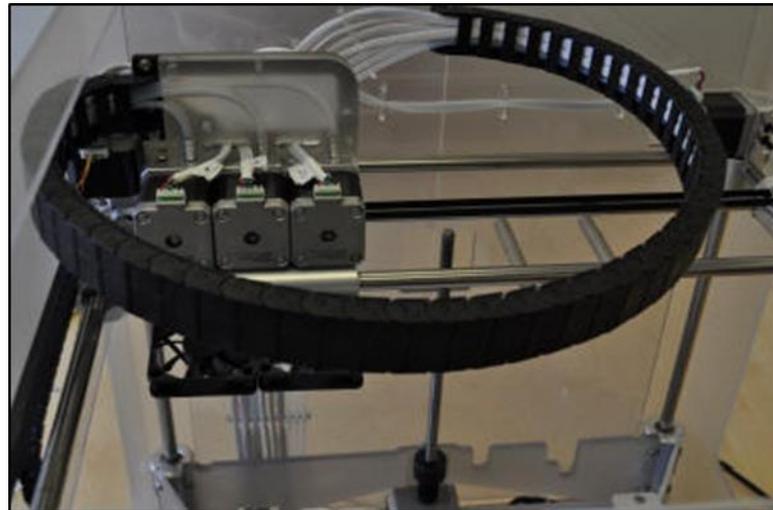
Please see Lesson 3.4: Setting up the Print Tip Wiping System for further detail

Testing the Function of the Limit Switches

The CubeX uses magnetic limit switches. You can test whether the limit switches work by using the magnets that are already on the machine.

Testing the X and Y limit switches

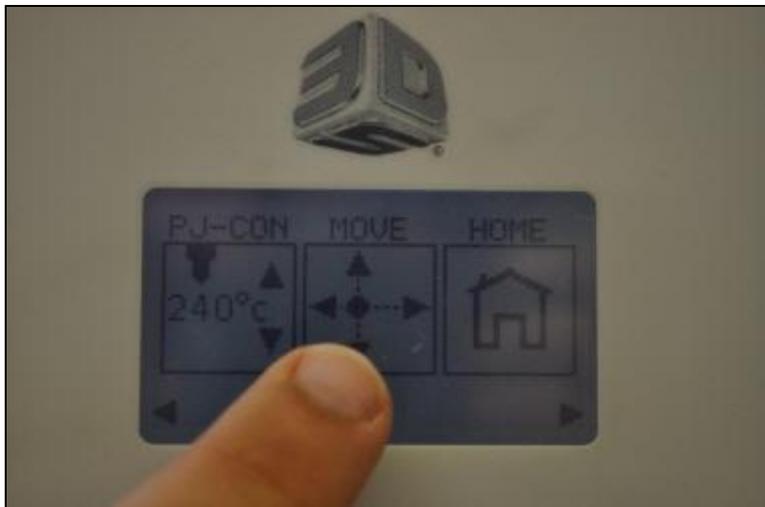
To test the X and Y limit switches, when the machine is powered off at the mains, push the print jet carriage to its limits in the back left corner of the machine.



Testing the Function of the Limit Switches

X- and Y-Limit Switches

Power the machine on and select the manual move option.



If the machine is pushed back to its limits, there should be an X and a Y present in the bottom left hand corner of the screen.

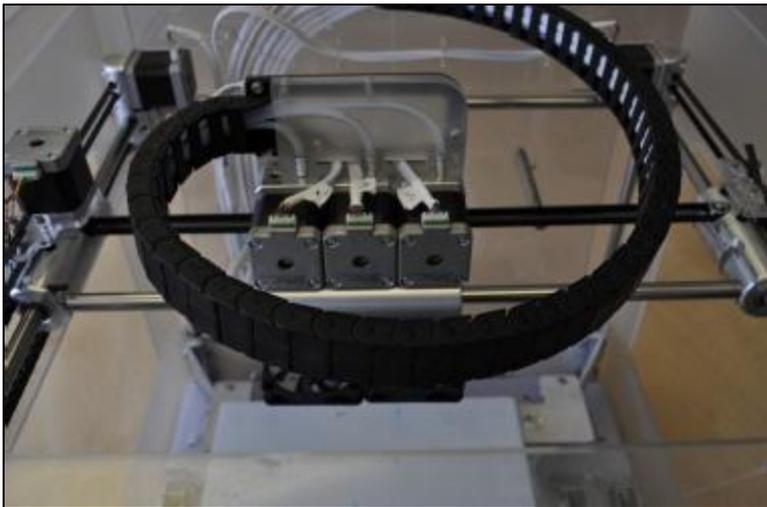


If the X or Y is not present, please contact Cubify support: cubifysupport@cubify.com

Testing the Function of the Limit Switches

Testing the Z limit switch

To test the Z limit switch, move the Print Jet carriage to the center of the machine.



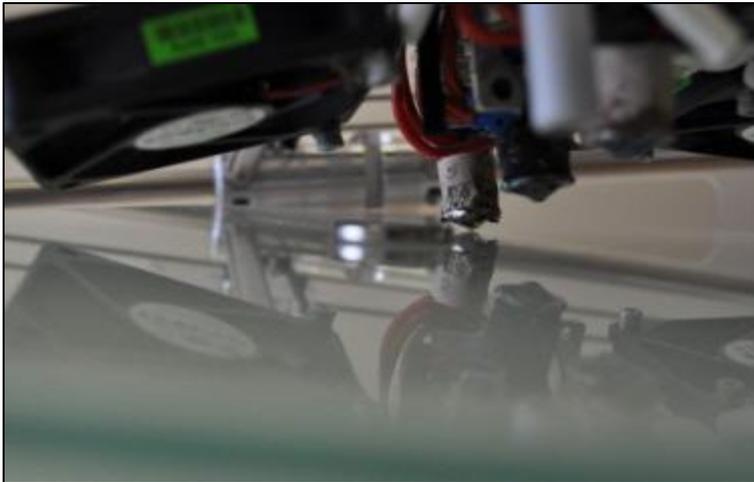
If you remove the print pad from the machine and turn it over you will see a magnet.



Testing the Function of the Limit Switches

Testing the Z limit switch

Position the print pad so that the magnet is as close as possible to the Z limit switch.



A “Z” should appear in the bottom left hand corner of the manual move screen. If it does not, please contact Cubify support.

