

Redsalamander's calibration sheet instructions

Each calibration area looks like this.

X	
Y	
x	y
ret	



The sections are completed once you finish a test print. Use contrasting colours in the print to adjust.

You will have the offsets you use from your measured distances that you use for the first print and those are entered with each print. Calculating this depends on which nozzle is your first and which is your second. If your 2nd nozzle is closer to the park position of the print carriage your X offset will be negative like mine is.

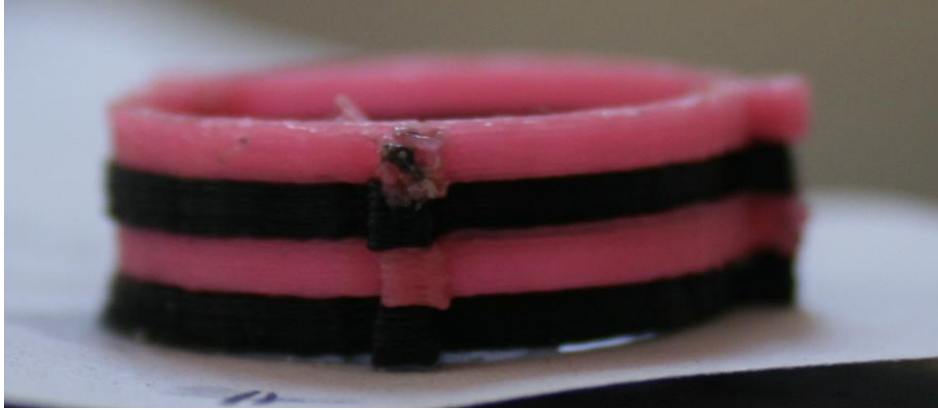
In the large square stick the completed print with the Y axis of the print facing y and the x axis of the print facing x

In the blocks underneath you will complete the setting as per the attached print. For the initial settings as you measured or estimated. In the Ret section insert the retraction you use between changing colours, allowing you to calibrate for oozing from the switch between nozzles.

X	
Y	
X -29.44	Y -0.06
Ret 16mm	

You may notice the axis on the sheet are inverted from how the axis prints. This is because they are indicating where you measure your print from to get your reading.

You will measure the difference between the two colours to figure out what the error in offset is



In this picture you can see the pink is sitting to the right of the black.

The 1st nozzle prints the 1st layer and as you can see the 2nd layer is to the right by less than 1mm so you will adjust by 0.1mm increments in the direction you need to. This print indicates that your printer thinks the heads are further away from each other than they are as it moves the head further than it should.

So for your next print you would change the X to -29.34 you would do the same for the y axis and adjust.

Then print another test, and when completed stick it to the next block. Check again and adjust. Till they squares line up perfectly on both axis.

The 45 deg indicator can be used for reference as when right it should also line up.

This may be fine for your requirements and you can leave it there. It took me 7 prints to get to where I was happy. And if you lose track of what you printed discard it and reprint. (You will notice the blank square where this happened.) Don't assume and adjust you may go backwards.

When you complete this you can adjust further which is done by eye as it is unlikely you will get accurate measurements sufficient to show you the distances.



For the fine tuning you will use the ooze shield to calibrate. As there shield is printed with a different colour every layer. So pink black pink black, this is also why contrasting colours are good.

You can see the print is black on the one side and pink on the other. This means you need to move the relevant axis more to adjust.

Here is another print from different angles.



And finally this is print you can see the colour is consistently black all around or a consistent colour



This took me another 7 prints to get to where I was happy.

My final setting for my machine was X -29.15 / Y -0.5 and retraction went up to 18mm. it took me about 2 hours to complete calibration to where I was happy but it's a once off process for a print head. If you adjust the nozzles or change tips you may need to check and fine tune a little, but I have taken mine apart and after putting it back together there was either no change or very little.

I can be reached via these websites and social groups.

<http://www.3done.co.za>

<http://www.print-3d.co.za>

<https://www.thingiverse.com/Redsalamander/about>

<https://www.youmagine.com/users/redsalamander>

<https://www.facebook.com/3dprintingInSA>

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