



Swatch Truck



ZombieHedgehog

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Summary

A quick and easy to print model that can be used as a swatch and test clearances, flow, first layers, size, and more!

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Introducing the Swatch Truck! This was created for the Printables “Filament Sample Swatches” competition. Designed in onshape, my goal was to create a fast, easy to print model that could test a variety of useful features in a short amount of time (~30 minutes) and use minimal filament (less than 10g). There is space on the back to write the filament brand/color

Update: I added a 3mf file with separate parts to test multi color extruders!

Print settings: 0.2mm layers, 40%+ grid type infill, 40mm/s surface speed.

Here are the features:

- Flow test: Using a surface flow method, the large flat surfaces can help calibrate your extrusion multiple in the slicer. To test, set the top layers to around 10 (assuming 0.2mm layers, make sure there are at least 2 layers of infill), 40%+ infill (a grid type works best), and a top

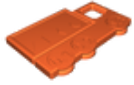
layer line with equal to the nozzle size (0.4mm for a 0.4mm nozzle etc). The finish should be smooth to the touch with no visible gaps between the lines. Note that the extruder e-steps should be calibrated first.

- First layer test: After calibrating the flow, the first layer can be adjusted. The goal is similar to the flow test, where the first layer should be smooth to the touch with no visible gaps. I find that “baby stepping” the Z up or down while printing allows to tune on the fly. A good tip is to lower the nozzle right until ridge lines start to form, then work back up until it's smooth. Also, increasing the first layer line width significantly helps with adhesion, especially on perimeters (I use 0.6mm with 0.4mm nozzles)
- Clearance test: Once the flow and first layer has been calibrated, the wheels should be able to spin. Ideally the 0.2mm and 0.3mm wheels will spin, but I've found the 0.1 wheel does spin after calibrating the extrusion multiple (it breaks free with a bit of movement, be careful not to snap off the container!)
- Detail test: There are a lot of fine details to test for quality, such as the raised shapes with different angled corners, recessed text on the wheels, and thin sections around the model. It's interesting to see the slicing differences between Classic and Arachne modes. Incorrect pressure advance settings will also show up on the perimeters since there are a lot of different length lines.
- Size test: The overall model is 50mm x 30mm, with the inside truck window 10mm x 10mm. If you pop out the 0.3mm wheel, it should equal 10mm. The container top is 35mm across, and the top of the cab to the base of the truck is 25mm. The overall thickness is 4mm (test on the truck base/body)
- Color swatch: Finally, this is a nice little model to test out new filament colors. The window can be used to attach multiple trucks together on a key chain. The model also stands up by itself and can be lined up on a desk. (Keep an eye out for a storage system on my profile page!)

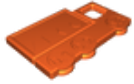
If you like this model, please post your makes of it right on Printables, make sure to list what filament was used. The colors shown in the example images are Polymaker Polylite PLA Pro Red, Polyterra PLA Earth Brown, Polylite PLA Silk Lime, Polylite PLA Galaxy Dark Blue, and Polylite PLA Silk Bronze (Check out the Polymaker discord for more colors!)

Edit: This project took major inspiration from this guide, well worth checking out! https://github.com/AndrewEllis93/Print-Tuning-Guide/blob/main/articles/extrusion_multiplier.md

Model files



swatch-truck-shapes.stl



swatch-truck-multicolor.3mf

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