MOD-9v3 Custom

Firearms Design and Testing by **Derwood1** and **Mussy**
Customizer by Memphistopheles

Introduction

Congratulations! You're just moments away from waiting a few days before you can assemble your own firearm. This guide will walk you through the process of selecting your options and exporting files for printing. I *strongly* suggest you render and export each part independently so that the next part can render while the first prints and also so that a print failure won't ruin every part, only one.

OpenSCAD is script driven parametric modeling software that is capable of much more than I'm using it for here. This script will add and subtract shapes and letters that have already been designed by Derwood and Mussy to create a MOD-9v3 that is unique to you. The most important feature is that you can choose what barrel you would like to use in the gun and it will generate the proper upper for you. Everything else is aesthetic. There are options for colors, logos, labels, badges, stipple patterns, etc. Once you've selected your options the program will take a while to render as it joins all the options together, but once it's done it can export an STL and you can start printing. Though there are options to use AWCY logos, please be aware that this is *not* an AWCY project and is only here through the hard work of Derwood and Mussy.

Additional thanks to users Doug-Fur, Gunder-Mifflin, and Cekfyajkbsneg for their contributions to the art pack.

Please refer to the assembly guide for assembly instructions as this guide *does not cover assembly of the MOD-9v3*.

I will assume that you have already extracted all of the files and folders of the zipped release into its own folder and that you are ready to begin.

Find a welcoming community at the @weightforward team on Matrix that will be happy to assist you with the assembly of your MOD-9.

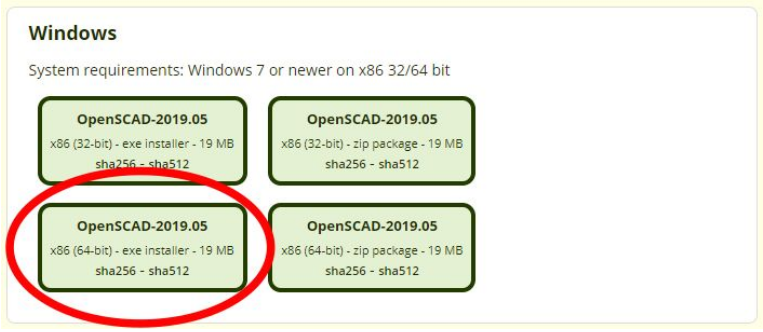
Matrix Room: #WeightForward-TheWaitingRoom:matrix.org

Install OpenSCAD

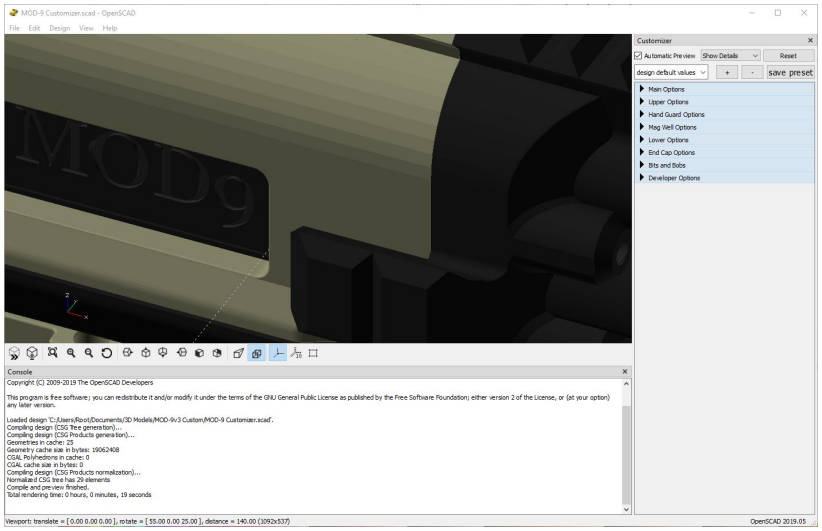
You will first need to download and install OpenSCAD. If you already have installed OpenSCAD, good for you! Skip ahead! The rest of you stick around. Go to:

https://www.openscad.org/downloads.html

to download the installer. There are options for Mac, Windows 32-bit, Windows 64-bit, and Linux. I'm going to assume that you have 64-bit Windows 10. Select the appropriate installer and download it.



Once downloaded, install the software. That was easy. Now locate and double click the "MOD-9v3 Customizer.scad" file in the folder that you unzipped. Don't be surprised if it takes several moments to open, there's a lot going on.



This should be the first thing that comes up. There will occasionally be errors or warnings, but if it looks right on screen, it will probably slice just fine.

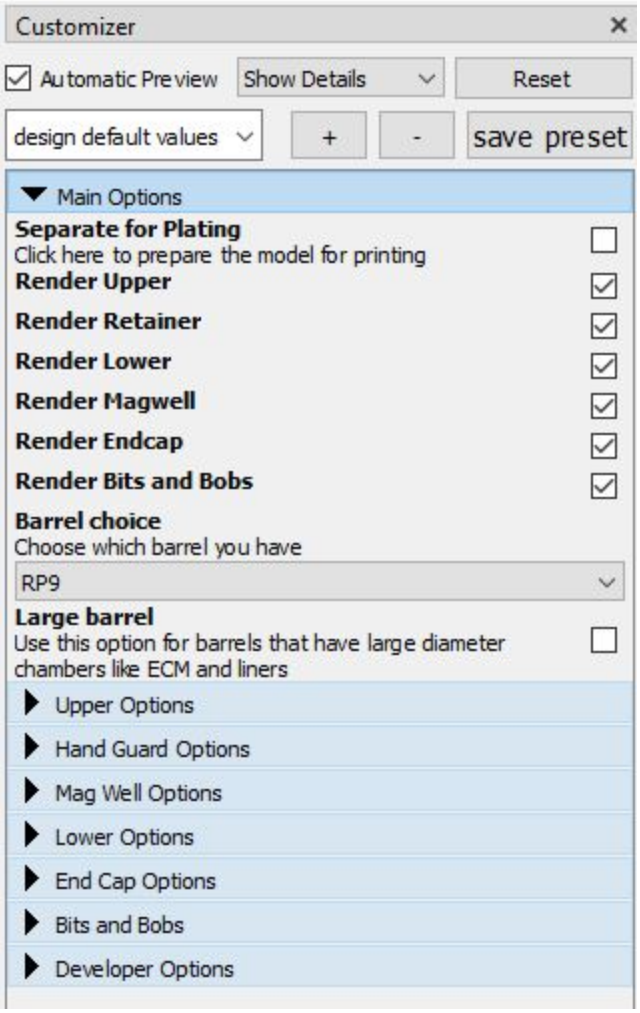
You can roll the mouse wheel to zoom out and get a view of the whole assembly, the right mouse button will pan, the left mouse will rotate. You may notice that the view is rendering slowly because of all the information that it has to render. Let's take care of that now.

Choose Your Options

On the right hand side of the window there is a pane titled “Customizer” and it’s where we will be spending almost all of our time. First click the arrow next to “Main Options”. Everything is rendered right now so you can see what the finished assembly will look like, but it takes a lot of system resources. Start unchecking items from the bottom until “Render Upper” is the only option left.

I strongly suggest that you work on one component at a time because the rendering time can stretch into hours if it has to compile and render everything. For fastest rendering, use blank options.

Main



Separate for Plating: This option will place all the components in proper orientation for printing and arrange them to all fit on one build plate. Be aware that if all components are printed at once, any failure could cause all parts to fail.

Render Upper: Show the upper receiver.

Render Retainer: Show the hand guard.

Render Lower: Show the lower receiver.

Render Magwell: Show the mag well.

Render Endcap: Show the end cap.

Render Bits and Bobs: Show the small parts of the assembly.

Barrel Choice: Select the barrel for your build. The default is the Ruger RP-9 Barrel, but options exist for Gen1-4 Glock 17, Gen 5 Glock 17, Smith and Wesson SW9VE, Chaszel Liners, and ECM barrels.

Large Barrel: If you choose a large barrel like the Chaszel or ECM, then you will need to select this option so the retainer screws will have enough material to bite into.

Upper

Upper Color: Use the 3 values under “Upper Color” to select the Red, Green, and Blue values to display on your upper. This is an opportunity to preview what your planned colors look like together, so it’s helpful to get close.

Logo Choice: Choose a logo for the side of your Upper. There are a lot of options here. See the appendix for instruction on how to upload your own logo.

Badge Choice: Imprints a small image near the front of the receiver. This image can also be customized using instructions found in the appendix.

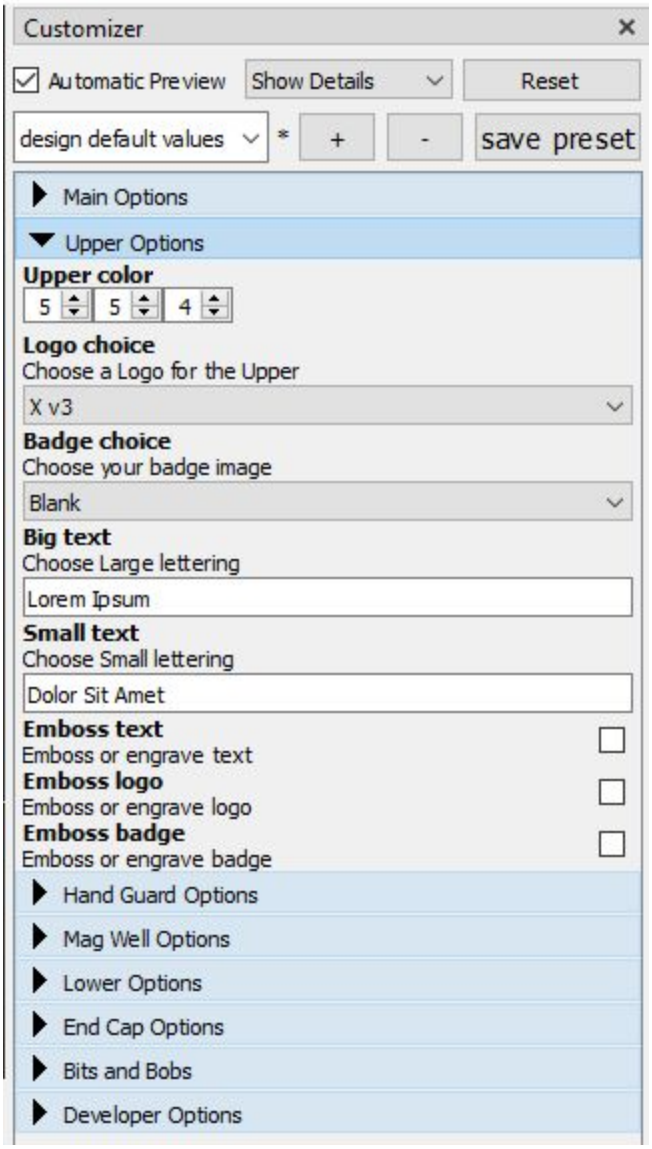
Big Text: Choose the large lettering imprinted on the left side of the receiver.

Small Text: Choose the small lettering imprinted on the left side. This is useful for identifying the maker or place of origin.

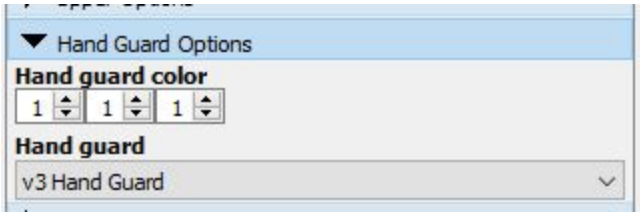
Emboss Text: This option will change the text from engraved (sunk in) to embossed (raised).

Emboss Logo: This option will change the logo from engraved (sunk in) to embossed (raised).

Emboss badge: This option will change the badge from engraved (sunk in) to embossed (raised).



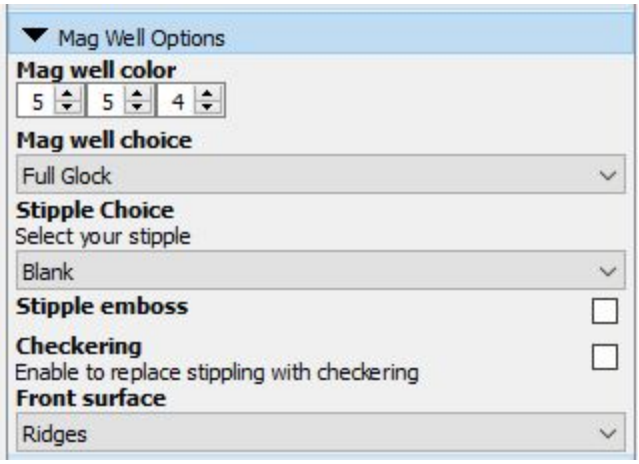
Handguard



Hand guard color: Use the 3 values to select the Red, Green, and Blue values to display on your hand guard.

Hand Guard: Select the style of hand guard to print. The customizer was designed for the v3 Hand Guard and might throw an error on the v2 options, but will still render and export.

Magwell



Mag well color: Use the 3 values to select the Red, Green, and Blue values to display on the mag well.

Mag well choice: Choose the style of mag well. See appendix for instructions on adding your own mag well.

Stipple Choice: Choose which stipple will appear on your mag well.

Stipple emboss: This option will change the stipple from engraved (sunk in) to embossed (raised).

Checkering: This option will replace the stippling with checkering *if available*. If checkering isn't available it will not render correctly.

Front surface: Choose the texture of the front of the mag well.

Lower

Lower color: Use the 3 values to select the Red, Green, and Blue values to display on the lower receiver.

End Cap

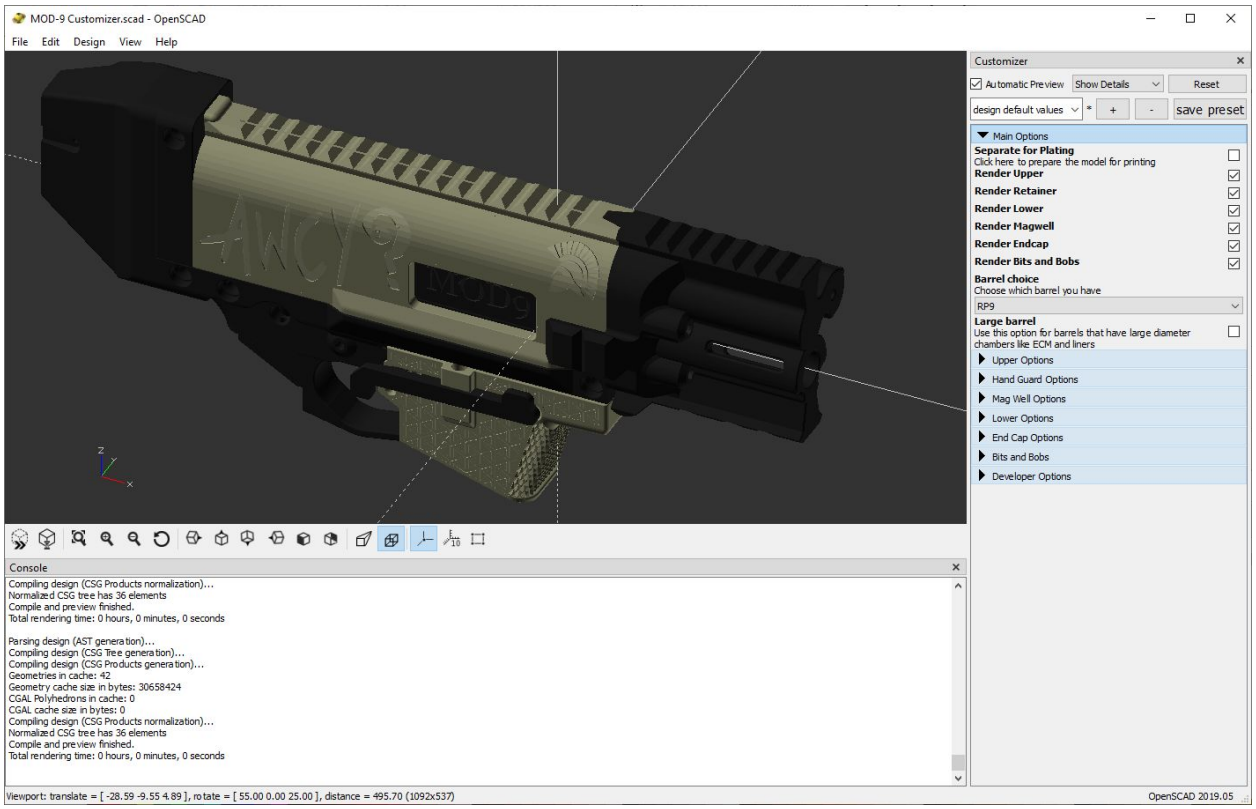
Endcap color: Use the 3 values to select the Red, Green, and Blue values to display on the end cap receiver.

Endcap choice: Choose the end cap that fits your build. The default option will require manipulation to achieve proper print orientation.

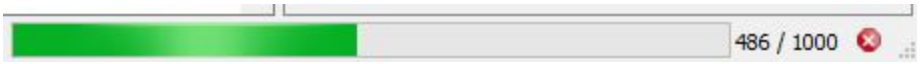
Bits and Bobs

Bits color: Use the 3 values to select the Red, Green, and Blue values to display on the various small parts of the assembly.

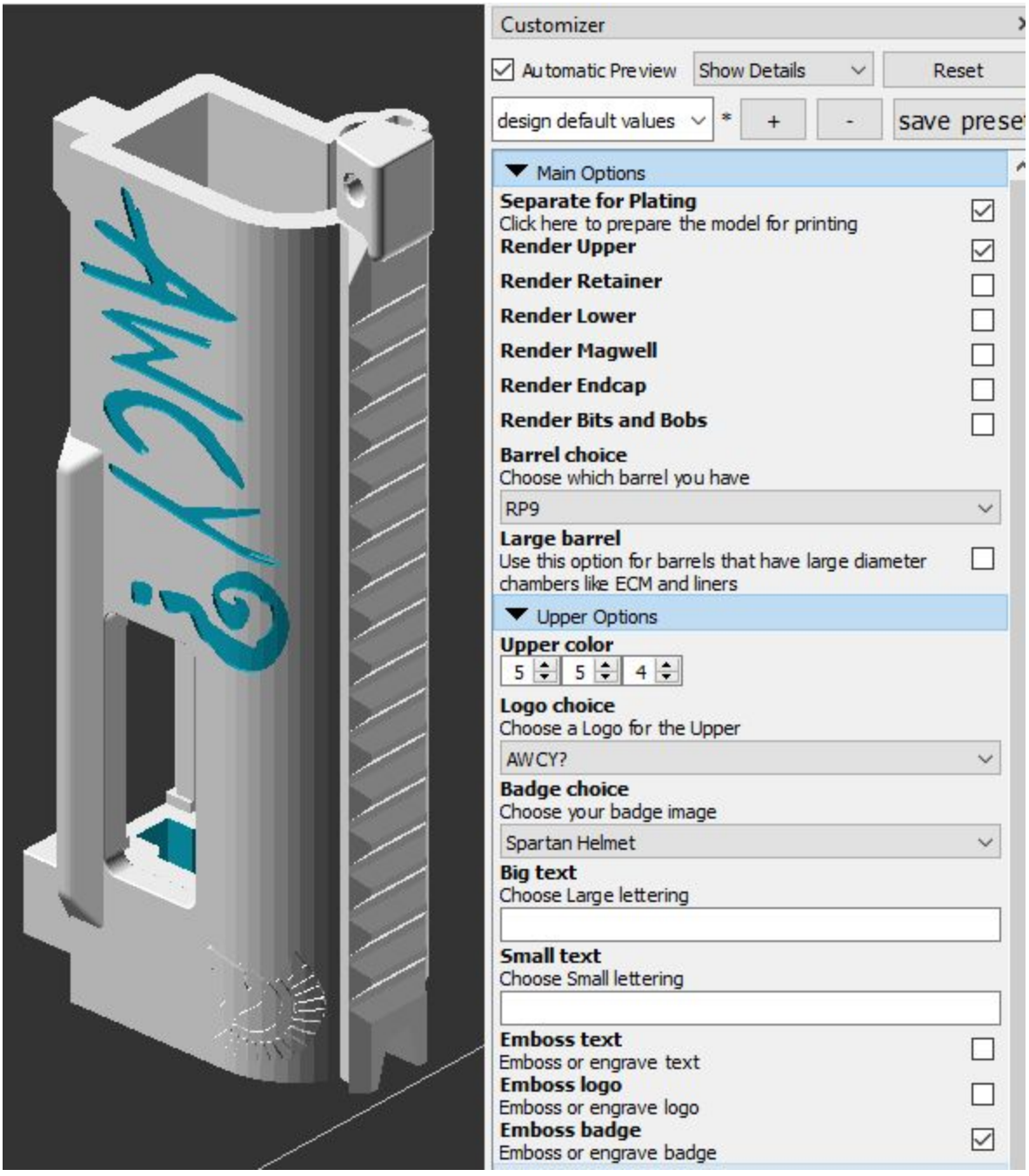
Bolt carrier text: Choose the text that will be imprinted on the bolt carrier.



Render

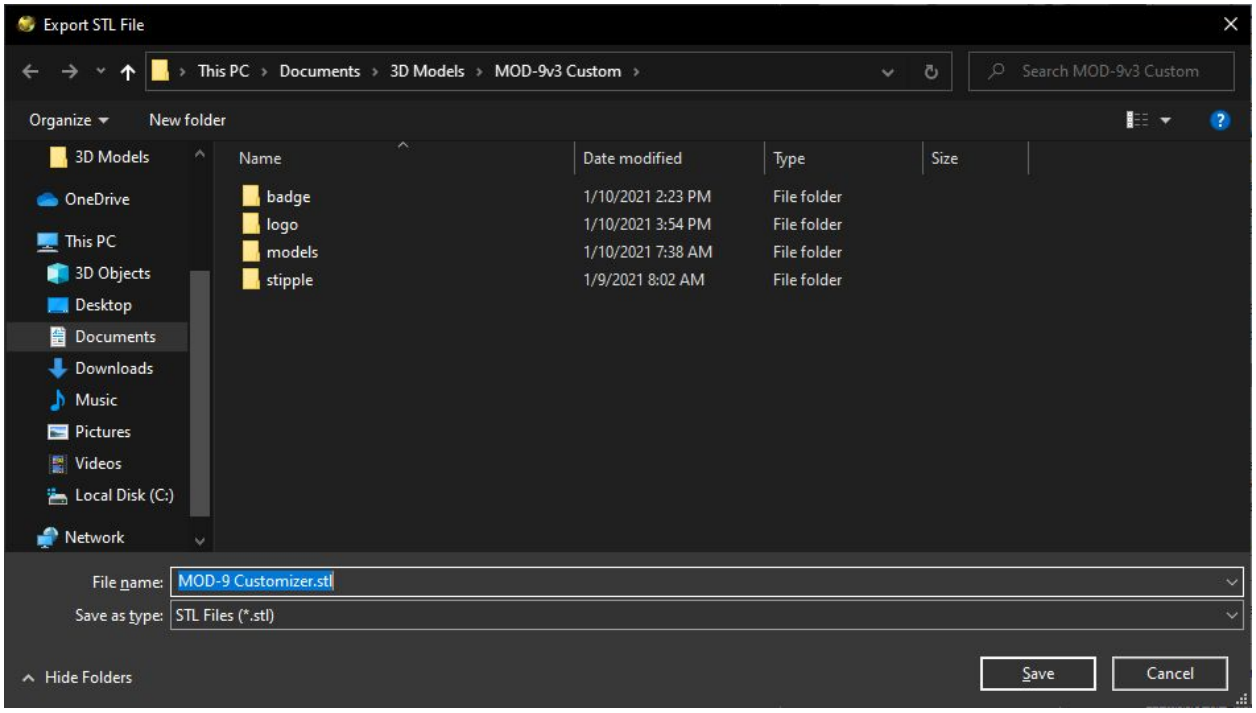


Once all the options for the chosen part/parts are selected **select *Separate for Plating***, then press **F6** to start rendering. This process could take anywhere from a minute to several hours depending on the complexity of the build and the capability of the computer. Choose a small simple part to begin with (like the lower) so the program can render the next part while the first prints. Stippling and complex logos add the most time to the rendering process.



Export STL

After the program has rendered the part you can view it in the main window to make sure it meets your expectations. If everything looks good, then press **F7** to export the model as an STL. *Only what was rendered will be exported!* Name the file and save it (the default directory is the one that contains **Mod-9 Customizer.scad**.



Print

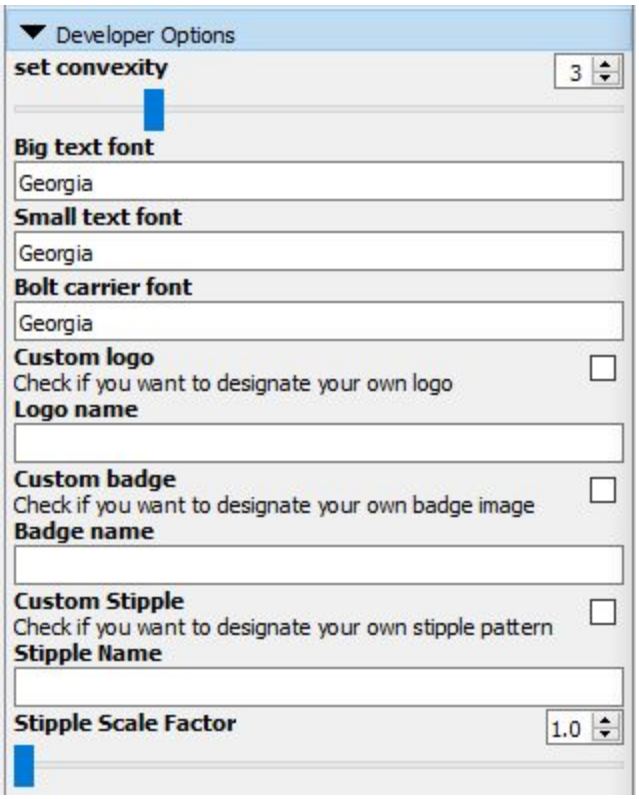
Load the STL into your slicer and begin printing! This concludes the instructive portion of the manual. The remaining sections will be devoted to shaming and belittling those that choose to continue.

Assemble

What kind of idiot are you?! Can you not read or do you just *choose* not to? You think I got time to make this guide *and* an assembly guide. Oh! Let me drop everything and cater to your every whim! How ‘bout you just be grateful you get anything at all. Yeah. That’s what I thought.

Appendix

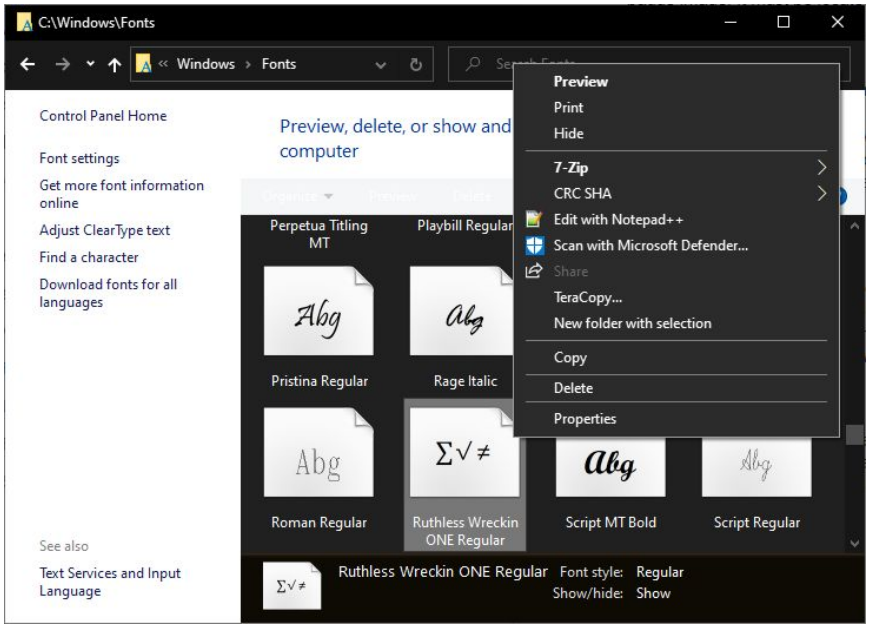
Developer Options



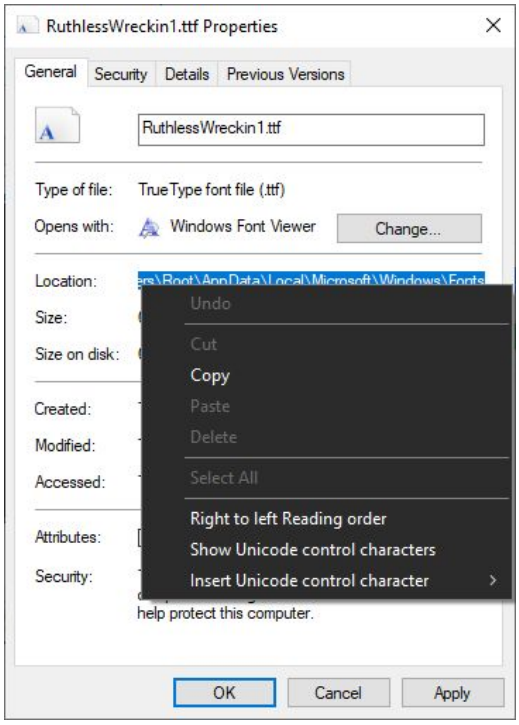
Set convexity: This option will make the preview more accurate (fewer visual gaps in the model) at the expense of speed. It has no effect on the final render.
Big text font: Enter the system name of the font that you want the big text to use.
Small text font: Enter the system name of the font that you want the small text to use.
Bolt carrier font: Enter the system name of the font that you want the Bolt carrier text to use.
Custom Badge: Check to use a custom badge image. This will override the badge selection box.
Badge Name: Enter the filename of the badge image. It must be located in the /**badge/** folder.
Custom Stipple: Check to use a custom stipple image. This will override the stipple selection box.
Stipple Name: Enter the filename of the stipple image. It must be located in the /**stipple/** folder.
Stipple Scale Factor: This will scale the stipple up. Don't do it. It takes forever and you really want to be scaling it down anyway.
Custom logo: Check to use a custom logo image. This will override the logo selection box.
Logo name: Enter the filename of the logo image. It must be located in the /**logo/** folder.

Fonts

All of the fonts registered to the system should be available to enter in the text boxes, but *new* fonts installed after OpenSCAD usually won't be. To add new fonts to this project you will have to edit the code. I'll walk through adding a font on a Windows 10 machine. First locate the TTF in the



C:\Windows\fonts folder and *right click* on the font you want to add and select **Properties**.



Now right click on the **File Location** (make sure the whole filename is highlighted) and **Copy** the path.

Now use the editor panel of OpenSCAD to scroll down to line **107** and delete the **//** in front of the line **use <New/font/location.ttf> //use / instead of \ for folder separators**. Select **New/font/location.ttf** and paste in the correct path (including the **.ttf** file name at the top of the properties window). Now change all the **** to **/** and save the file (ctrl+s). The new font should now be installed for this OpenSCAD project. You can copy and paste the **use** line to add more fonts to the project.

My line looks like this:
use <C:/Users/Root/AppData/Local/Microsoft/Windows/Fonts/RuthlessWreckin1.ttf> //use / instead of \ for folder separators

Logo Image

The logo should be on a document 187mmx 58mm with the origin in the top left corner, Inkscape style. This roughly matches the available space for engraving, but the image can extend past the document borders.

Badge Image

The badge image should be on a document 30mm x 30mm with the origin in the top left corner, Inkscape style. This roughly matches the available space for engraving, but the image can extend past the document borders.

Stipple Image

The stipple image should be on a document 100mm x 100mm with the origin in the top left corner, Inkscape style. This roughly matches the available space for engraving, but the image can extend past the document borders. *The more complex the stipple pattern the longer it will take to render.*