

Hey Everyone,

This PDF is to provide you all with the STL file of my Lower receiver, my recommended printer settings, the drill bit sizes needed and the few extra hardware screws I am using to replace some of the standard lower parts kit pins you probably already have and planned on using. The pins I am opting not to use and recommend you do not use either are both the trigger and hammer pins most commonly tapped into place with a hammer and punch and also the bolt catch lever pin which is also commonly tapped into place. I am not using them in order to prevent any cracking of the PLA+ 0.

3D printed lower and to prevent any trigger/hammer pins from walking out of place during use. Using the bellow pictured M4x25mm and M2.5x20mm screws for threading into the plastic will greatly prolong life of the 3D printed part and reduce risk of accidental cracking upon installation with a small hammer, just heat up the screws a small amount with a lighter and then carefully and smoothly force thread it into the plastic and let it fully cool before removal and part installation. (Do not attempt to remove and reinstall numerous times as this may wear down the threads if done too many times). I purchased these screws individually at a local hardware store that has an aisle of miscellaneous metric sized and imperial unit screws but also linked Amazon links in worst case scenario for you to buy packs of them if needed. You do not need to order an Amazon pack of these screws for your own lower and I would recommend finding a local store that carries these sized screws so you can just pick up the few three screws you need. (This file and what it is responsible for making as a direct result of its use is not to be used for commercial purposes or financial gain as it is illegal in all US states to sell fully functional AR lowers without being a registered FFL dealer with all the necessary documentation associated. Please use at your own risk and with responsibility in mind.)



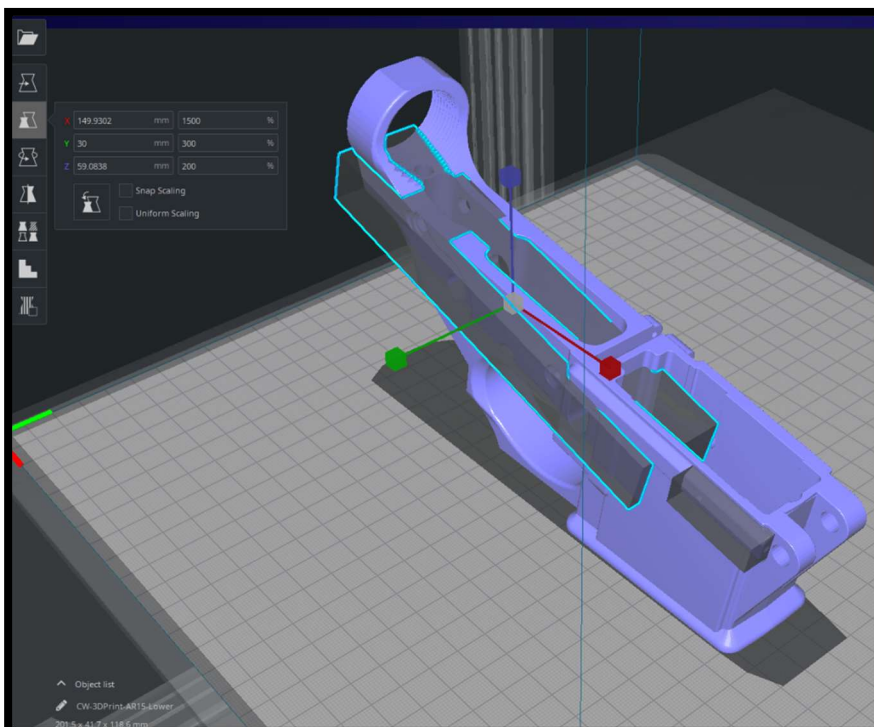
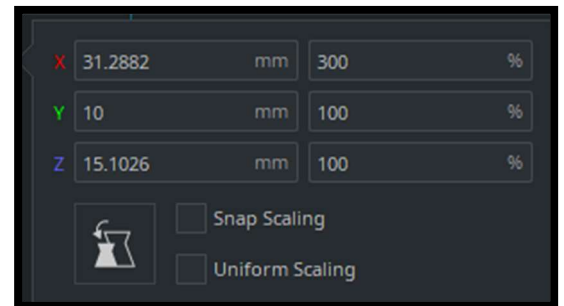
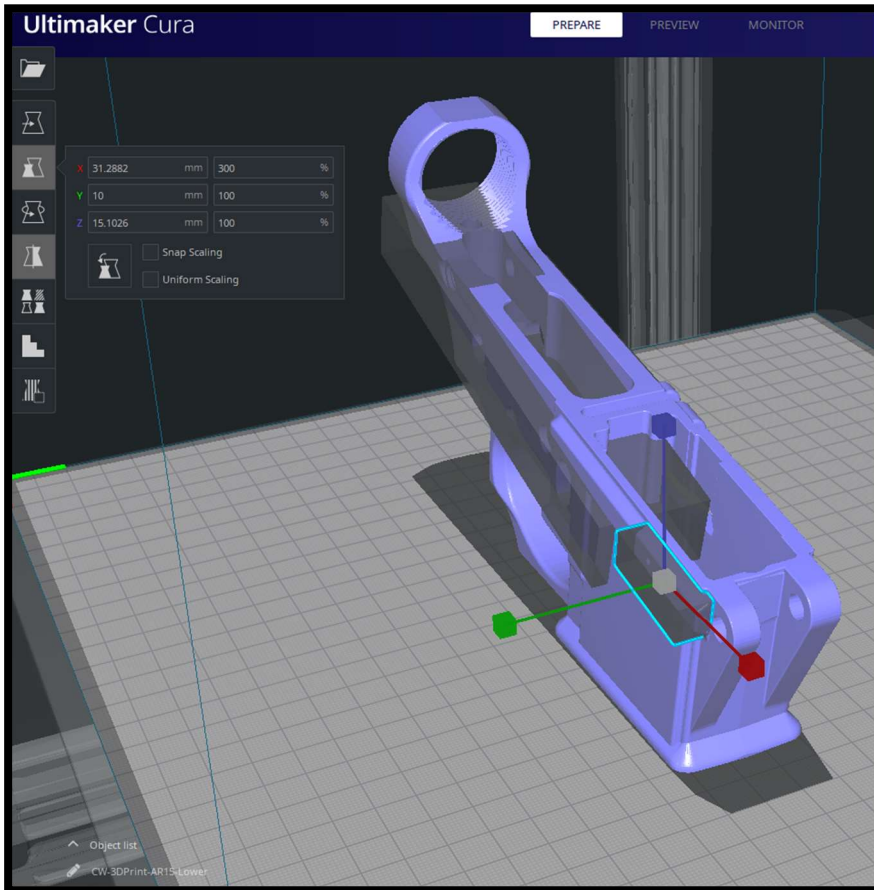
Links to the screws are below but are not required to purchase in large quantities.

<https://www.amazon.com/uxcell-M4x25mm-Button-Socket-Screw/dp/B01HFS94WY>

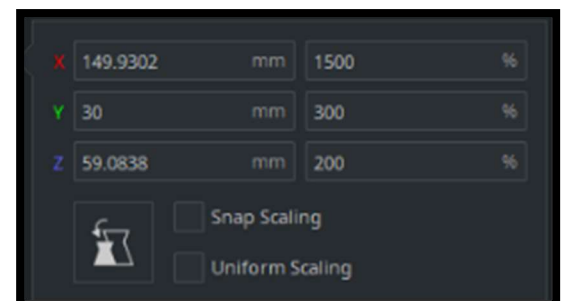
[Prime-Line 9180307 - Tornillo de cabeza de vaso, clase 12.9, hexagonal, M2,5-0.018 x 0.787 in, 10 unidades, M2,5-0,45, acero recubierto de óxido negro, 10 unidades](#)

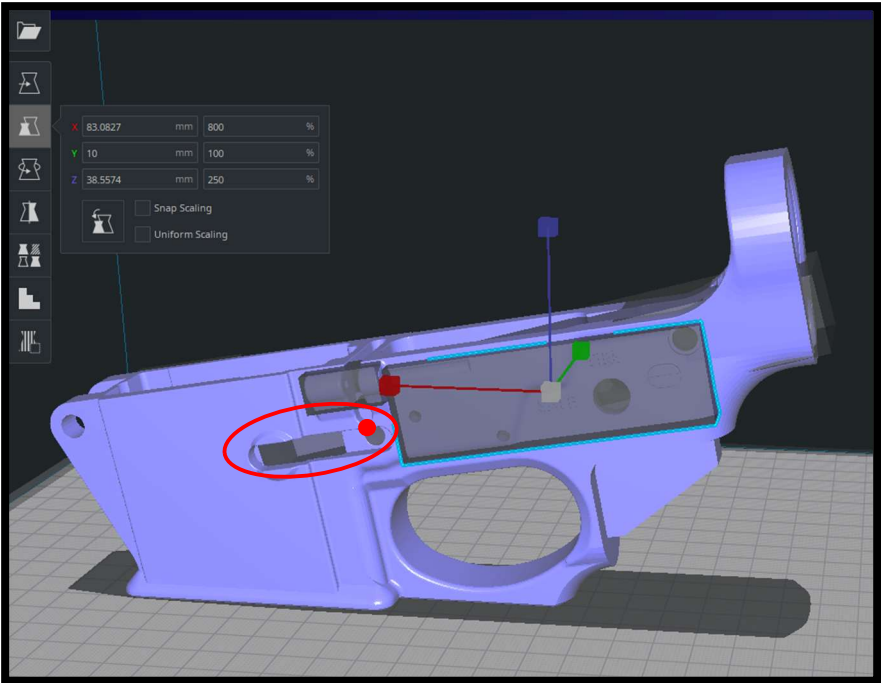
Moving on to the recommended printer settings I used 0.24mm initial layer height and 0.2mm layer height after that, (3) shells with 100% infill set to lines or zigzag pattern doesn't matter and z seam set to sharpest corner. Use whatever temps and flow rate works for your own filament, I used 213 and 70 respectively at 97% flow with my SUNLU PLA black filament. 65mm/s speed feel free to use what works best for you and your filament. use retraction and for supports I have (Support overhang angle) set to 60\* degrees with zigzag pattern at 25% support density. (Support Z distance TOP) is 0.15mm and (Support Z distance Bottom) is 0.2mm. (Support X/Y distance) is 0.25mm and I did not use towers. I used a Brim with 10-line count and that keeps it nice and on the build plate for me with no peeling of PLA but use the best settings still for yourself these are just mine and could be different for everyone. (Be sure to put support blockers on all the top section holes except for the magazine catch long almost horizontal oval shape section). (This file and what it is responsible for making as a direct result of its use is not to be used for commercial purposes or financial gain as it is illegal in all US states to sell fully functional AR lowers without being a registered FFL dealer with all the necessary documentation associated. Please use at your own risk and with responsibility in mind.)

For the images below which show the support blockers used, use them to your liking I just show the blocks I used and their orientation to get all the proper holes blocked off from generating supports and I know circular holes tend to print just fine when they are small enough. The pictures show the boxes XYZ positioning and the scale factor of each axis but not the tilt so be sure to tilt them all 10-15 degrees to match the slope of the flat top section to set them in proper locations as the last step after scaling them up accordingly. The only holes that I kept supports in are the front pivot pin holes, the long slot hole for the mag release and the buffer tube threads which, if your printer is well calibrated, should be able to practically unscrew themselves out with a little force from pliers.

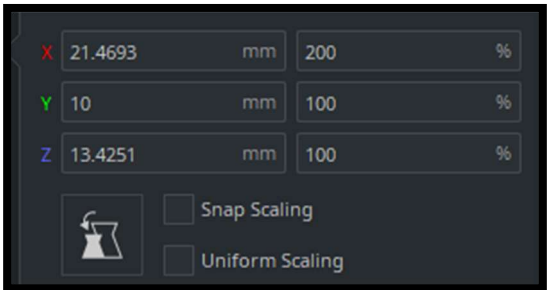
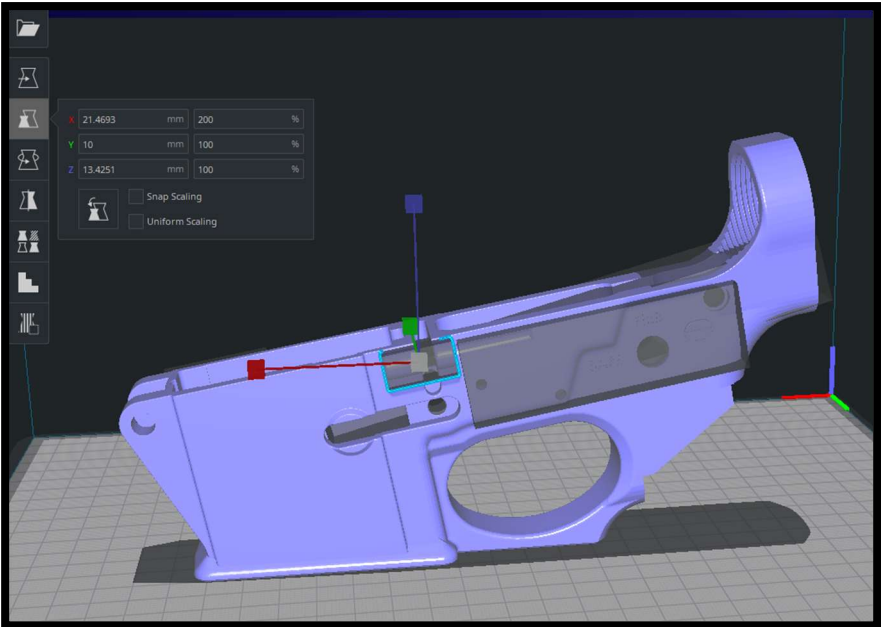


Note: This is the largest block and it is tilted more towards a 15-degree angle so as not to block supports for the section where the web of your hand would rest under the buffer tube but still blocking most holes in the body and especially the mag release button hole.



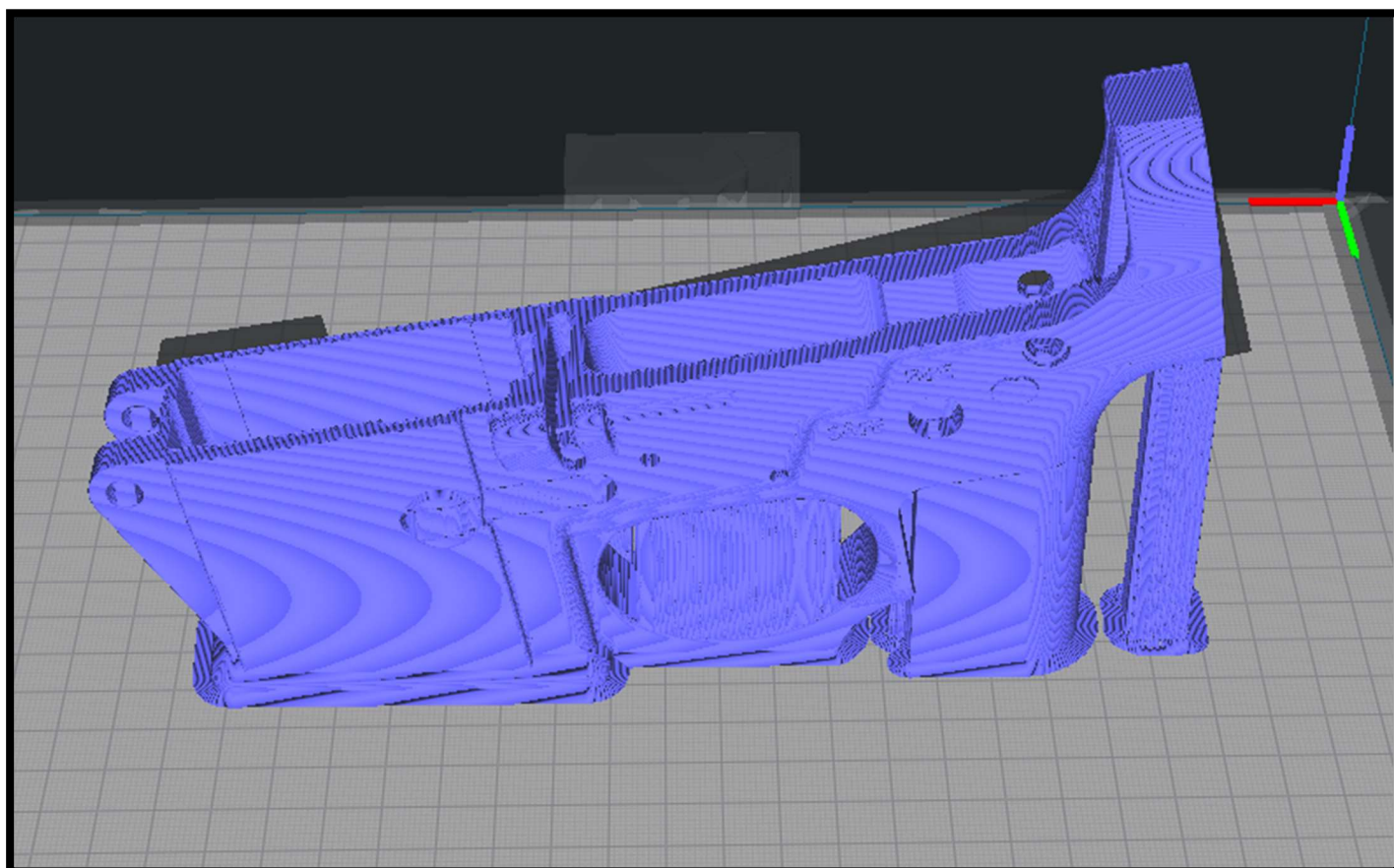
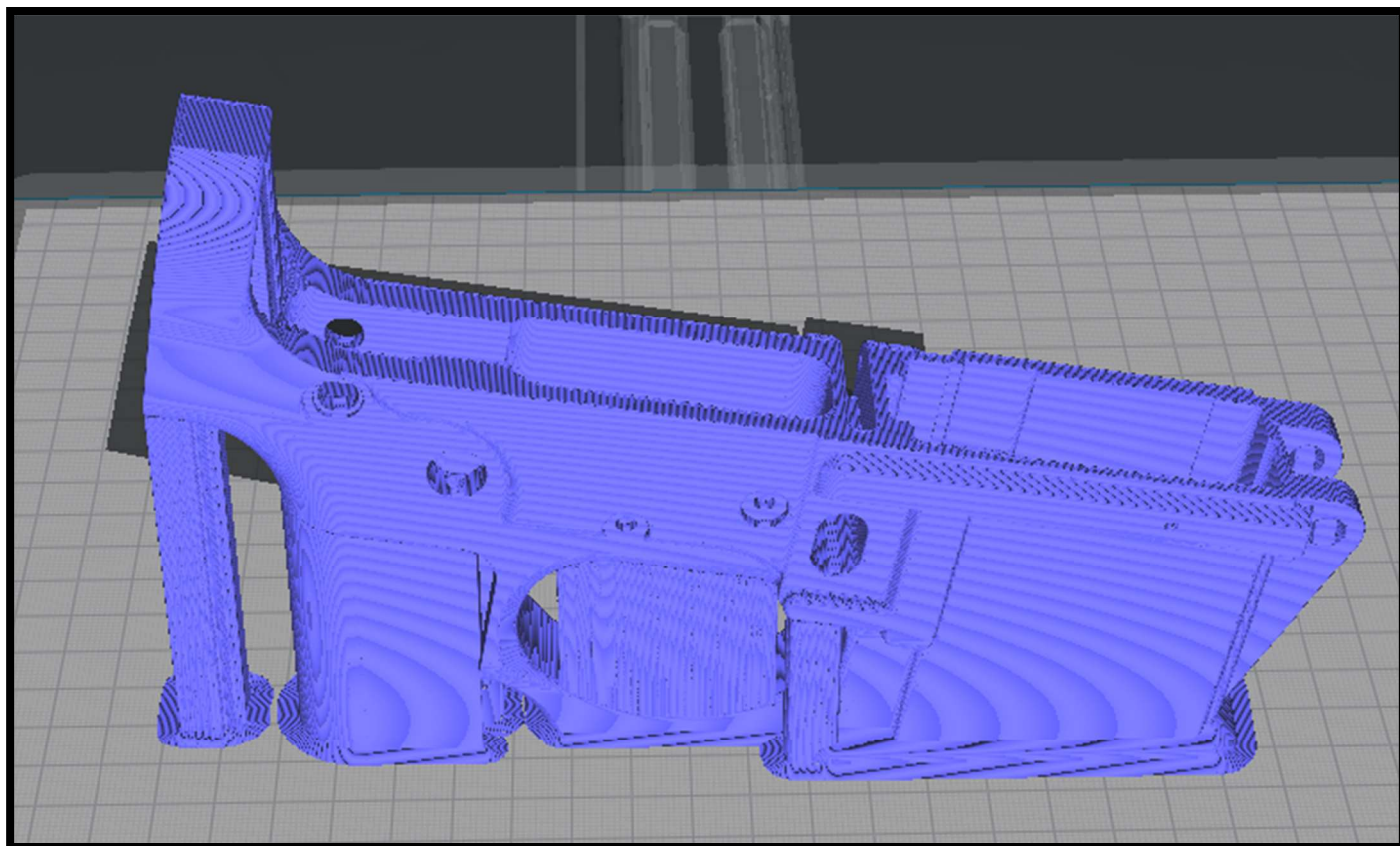


Note: Support blocker from previous picture stops just before the mag catch pin hole opening to keep supports in the slotted section but not going into the inner hole section.





Final sliced product should look like this:



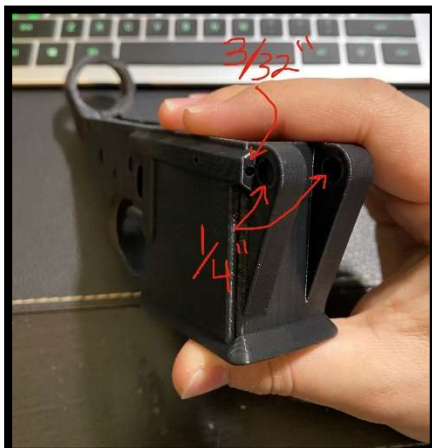


Last but not least you will need to do some drilling which is super simple and all you need is a standard imperial drill bit kit that has some common sizes and the exact kit I used is the craftsman 21 bit set linked here.

[https://www.amazon.com/CRAFTSMAN-964072-piece-Titanium-Coated/dp/B007C6KS8E/ref=sr\\_1\\_3?child=1&keywords=craftsman+drill+bit+kit+21+set&qid=1593359724&sr=8-3](https://www.amazon.com/CRAFTSMAN-964072-piece-Titanium-Coated/dp/B007C6KS8E/ref=sr_1_3?child=1&keywords=craftsman+drill+bit+kit+21+set&qid=1593359724&sr=8-3)



The following images are the correct sizes needed to drill in order to have a standard lower parts kit and all its corresponding springs and retainer pins fit perfectly and slide perfectly into place. (DO NOT OVER DRILL RETAINER SPRING HOLES TOO DEEP OTHERWISE THE SPRINGS WILL NOT PROPERLY PUSH ON THE RETAINER PINS TO WORK PROPERLY JUST DRILL THEM ENOUGH TO ATTAIN THE PROPER HOLE DIAMETER ESPECIALLY FOR THE FRONT PIVOT PIN'S RETAINER PIN HOLE)



(Please note the grip mounting hole should not need to be drilled out but if you want to prep it then whatever the next size up in drill bit just to smooth it out and prep it for force threading may help since installing the grip may be the trickiest part in order to not strip the threads rendering the grip useless. Heat up the bolt just a little with a lighter and then start the process of back and forth screwing in and out the bolt while screwing in a quarter to a half turn further every time until it is fully threaded. It may be beneficial to use a tap if you have one the proper size but not necessary. I will be improving the design soon to include a metal nut insert eventually so the grip can be nice and fixed into position without possibility of thread failure)

Good Luck everyone and Thank you for the support. I hope you all are able to get a functioning and safe lower receiver printed and functioning.  
best regards, C.W.

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