SABERTOOTHMAC-9

By. SMILODON on DEFCAD

STM-9 is a 3D design built upon the M-11/9 platform using upper receivers from the companies; Velocity Firearms, MAF-Corp, and MasterPieceArms. It is built to utilize a standard mil spec. AR-15 lower parts kit and standard Glock double stack magazines chambered in of course 9mm. The inspiration from the powerful saber-tooth tiger whose first ever fossils were discovered in my home state of California in the La Brea tar pits of Los Angeles earning them the scientific name of Smilodon Californicus. Their iconic set of two ferocious canine teeth bears similar resemblance to the two 9mm Glock magazines held in place of the STM-9 design. This dangerous predator packs a punch with its 15+ round capacity and a secondary magazine storage built into the fore grip for quick and tactical reloading along with the ability to install a foldable “arm brace” for cat like reflexes and stability. I would like to thank the designers of both the Mac-Daddy and the SVTR builds also as part of the DEFCAD and RocketChat community for giving me inspiration and giving their kindness of sharing their designs as well to further the online firearm 3D printing community, so it is my greatest pleasure to introduce to you all, the SaberToothMac-9.

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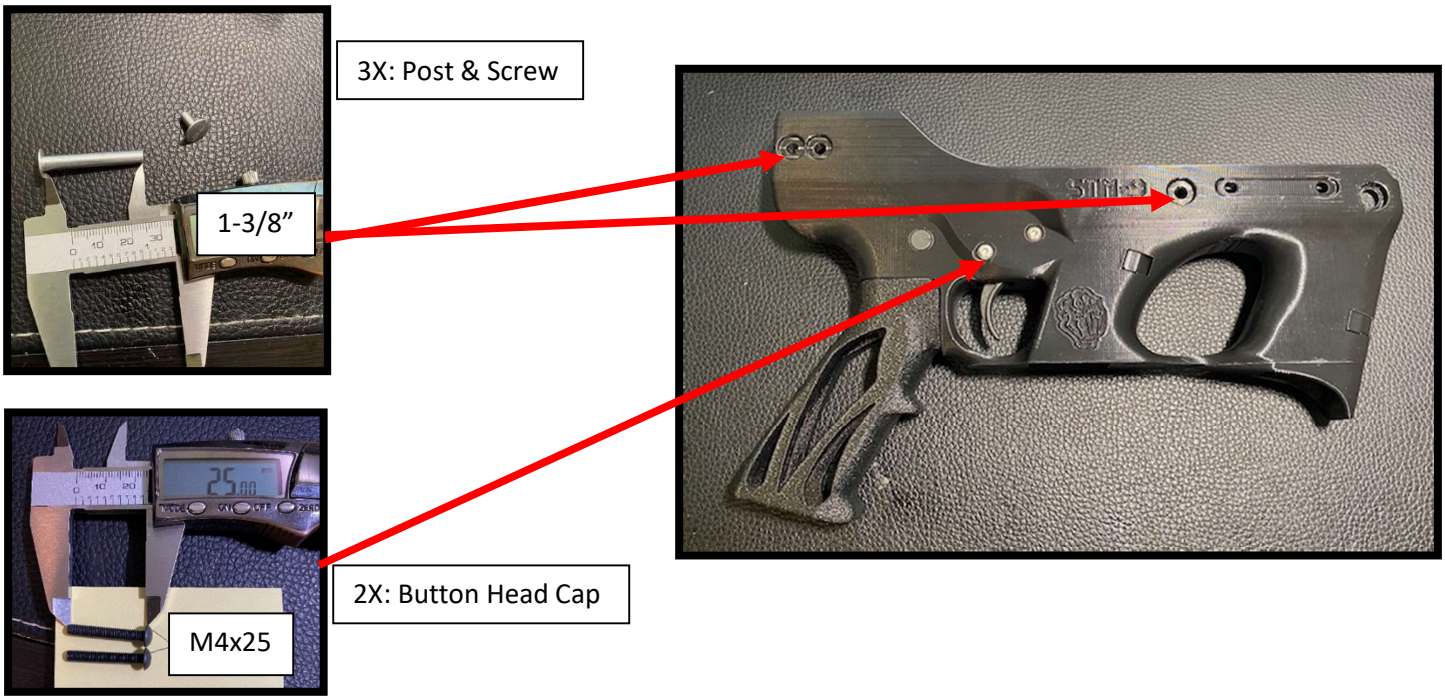
Special Thank you to all the individuals from RocketChat that helped with this beta you know who you are!

(These files and what they are responsible for making as a direct result of their use is not to be used for commercial purposes or financial gain as it is illegal in all US states to sell fully functional lower receivers without being a registered FFL dealer with all the necessary documentation associated. Please use at your own risk and with responsibility in mind. Happy Printing!)

Hello Everyone,

This release is to provide you all with the STL files of my STM-9 design, my recommended printer settings, the drill bit sizes needed for hole reaming, the links to purchased hardware and attachments I used 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. I am not using them in order to prevent any cracking of the PLA+ 3D printed lower and to prevent any trigger/hammer pins from walking out of place during use. Using the bellow pictured **M4x25mm** button head 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 **(ACE Hardware)** that has an aisle of miscellaneous metric sized and imperial unit screws but also linked Amazon and or AliExpress links in case you want to buy packs of them still for a decently cheap price if no store is available to you nearby. 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 that you need.



Links to the metric and “Post and Screw” items are bellow but are recommended to just buy from closest hardware store that carries them because its cheaper than buying a full pack. I recommend your local ACE Hardware store or any local hardware store that has one of those aisles for nothing but metric and standard screws they are most likely to have individual post and screws available for purchase.
M4x25 screws: two options amazon or AliExpress
https://www.amazon.com/uxcell-M4x25mm-Button-Socket-Screw/dp/B01HFS94WY

https://www.aliexpress.com/item/10000148429238.html?spm=a2g0s.9042311.0.0.36d74c4dv787Zh
Post & Screw
https://www.amazon.com/Hillman-Group-3833-Aluminum-10-Pack/dp/B00IAVGWGM/ref=asc_df_B00IAVGWGM/?tag=hyprod-20&linkCode=df0&hvadid=198079933338&hvpos=&hvnetw=g&hvrand=11421876371219470584&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9013179&hvtargid=pla-318879586769&psc=1

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 218 and 70 respectively at 100% flow with my ESUN 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 55* degrees with zigzag pattern at 30% support density. (Support Z distance TOP) is 0.15mm and (Support Z distance Bottom) is 0.15mm. (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 where they are shown in the section discussed below otherwise it is a waste of time and filament).

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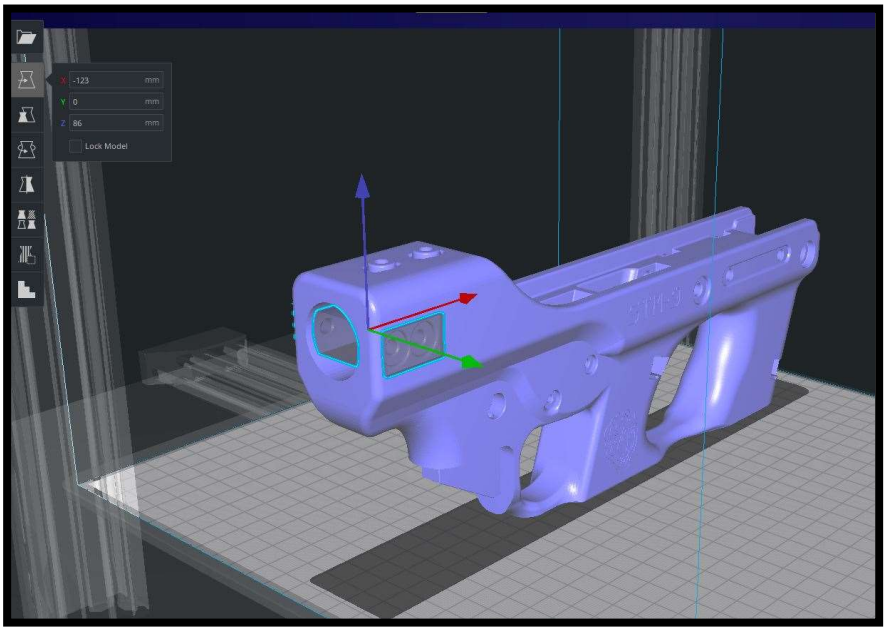
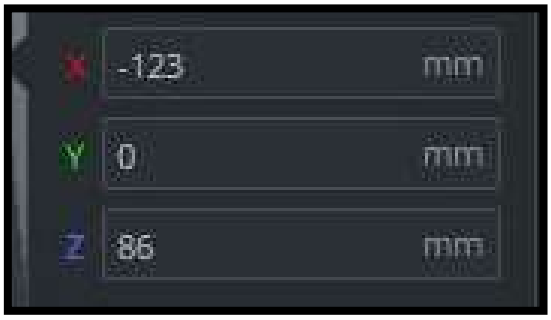
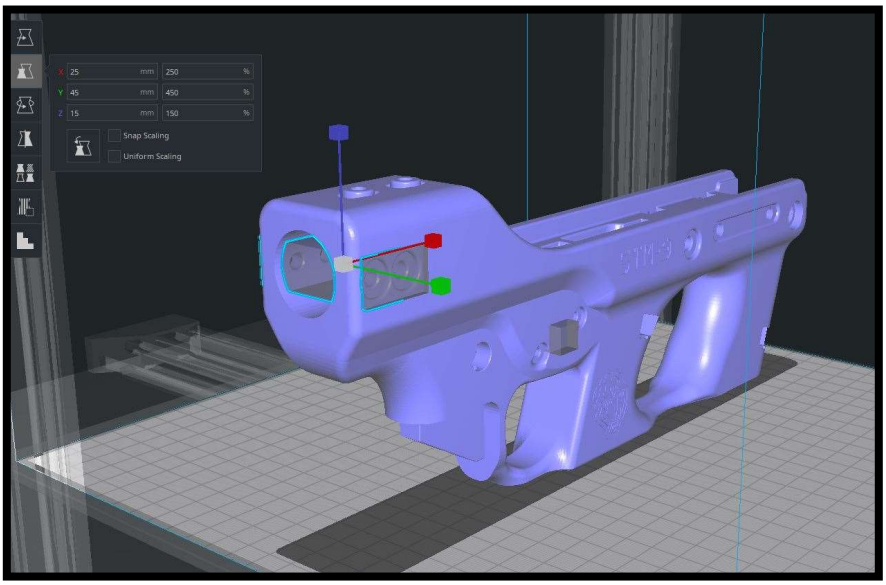
SUPPORT BLOCKER ORIENTATION:

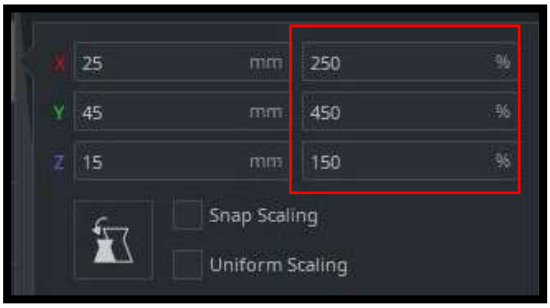
For the images below which show the support blockers used in **CURA 4.9**, use them to your liking I just show the blocks I used and their orientation to get all the proper holes blocked off from generating supports and I know circular holes tend to print just fine when they are small enough plus most holes will be drilled out in next steps. The pictures show the blocker boxes XYZ positioning and then scale factor of each box placed and if your printer is well calibrated the supports should snap right out with a good controlled hammer smack and yank of the plyers.

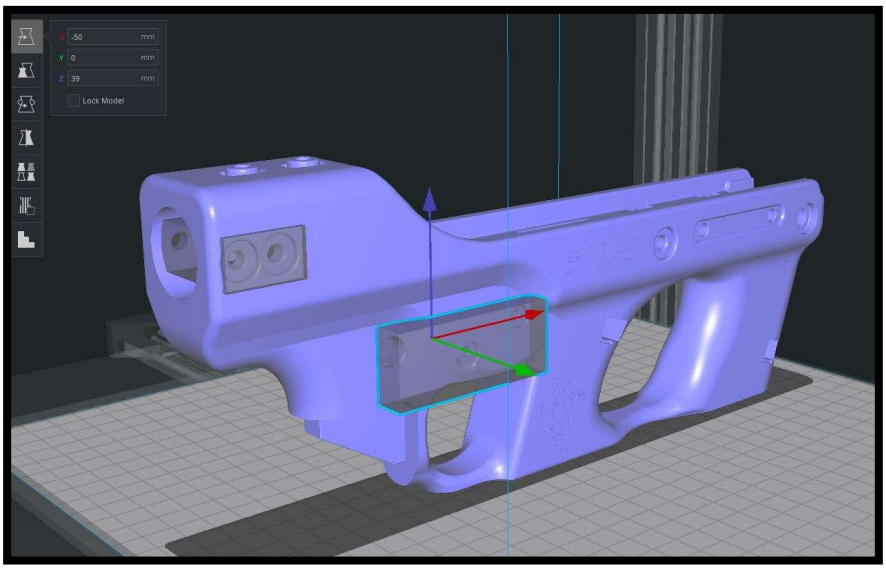
NOTE: These orientations are dependent upon the model orientation of the right side of the receiver facing the front of the 3D print volume. All STL files should open in their proper orientation for printing. If you would like to modify orientation to be more diagonal onto the plate then be sure to add the support blockers first and then rotate all entities uniformly on the plate to desired print angle.



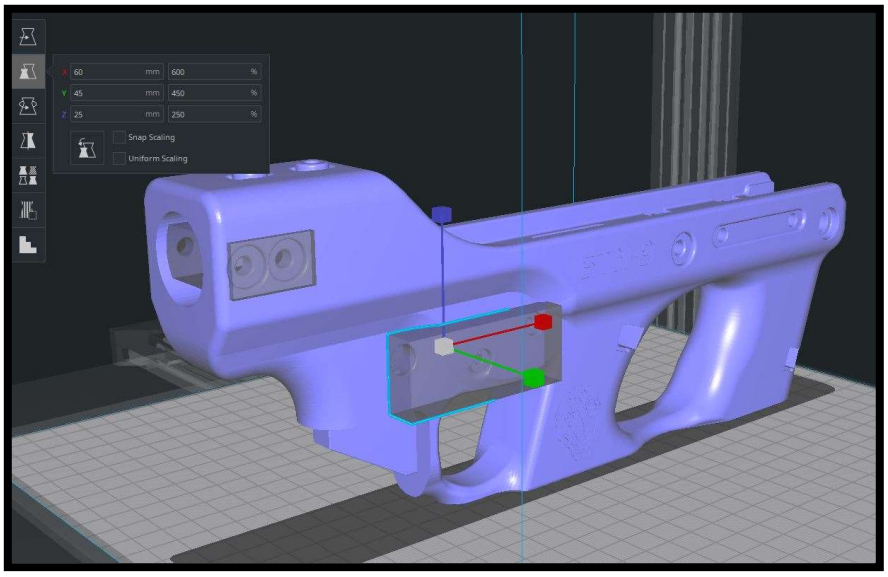




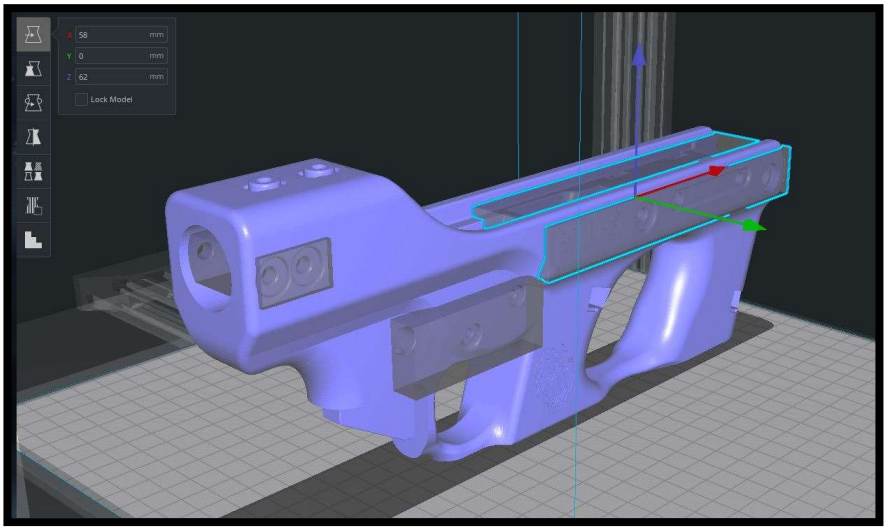


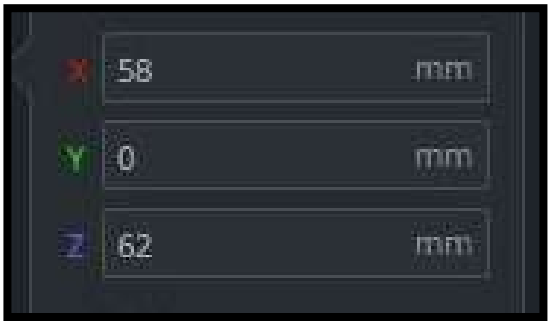


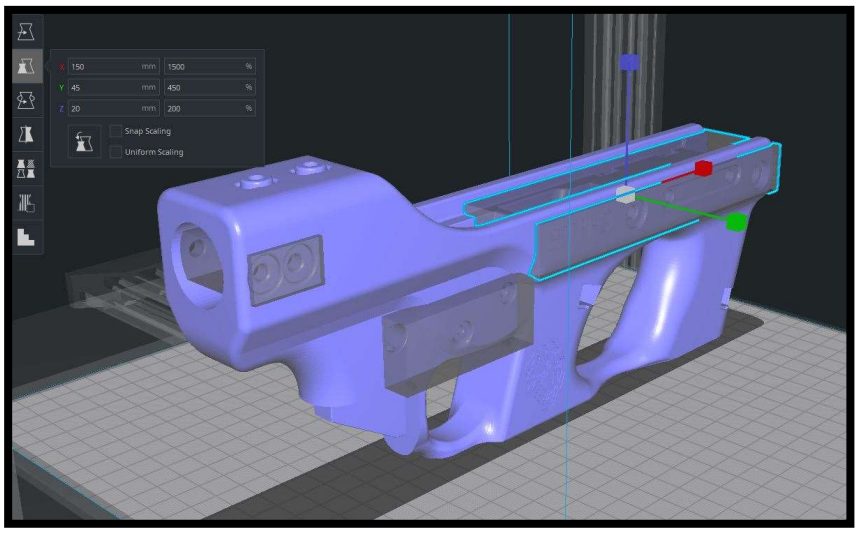

-50
mm
0
mm
39
mm

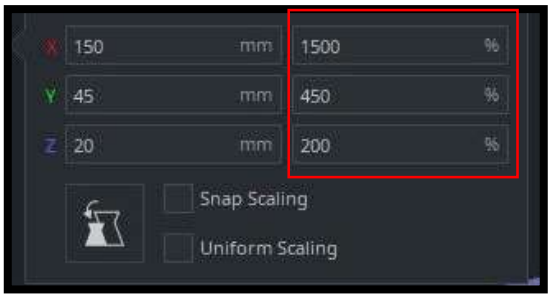


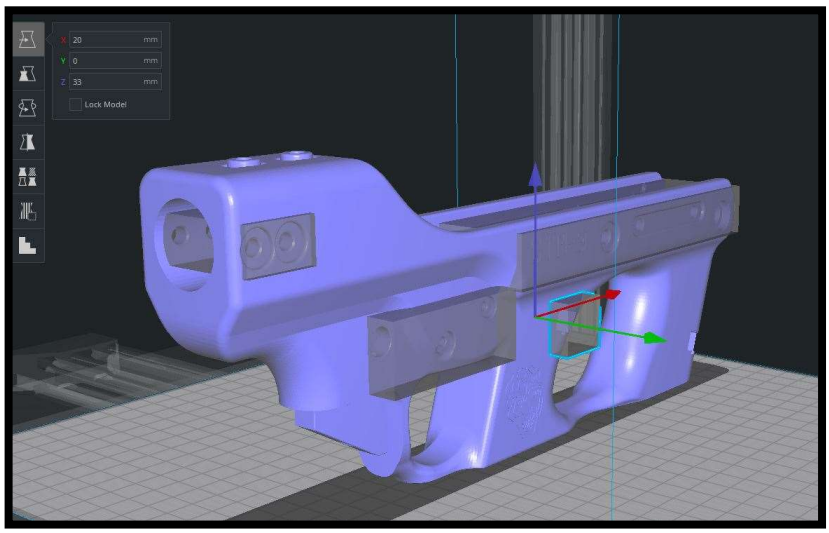

60
mm
600
%
45
mm
450
%
25
mm
250
%
Snap Scaling
Uniform Scaling



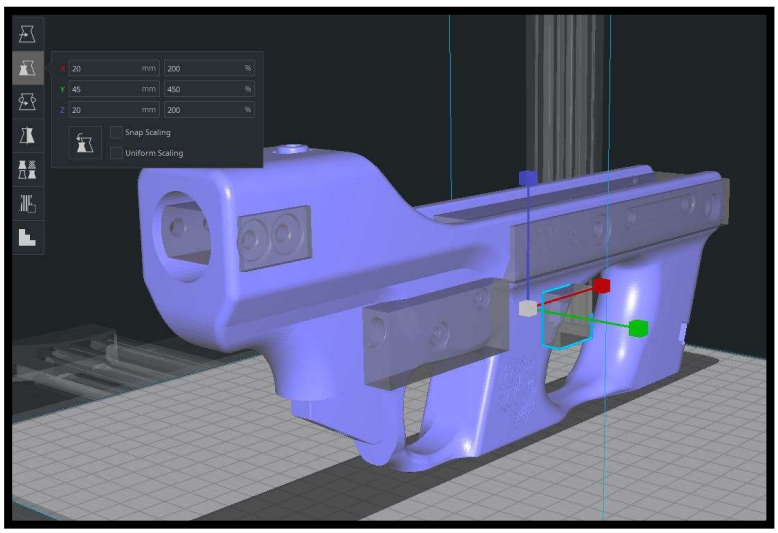

58
mm
0
mm
62
mm

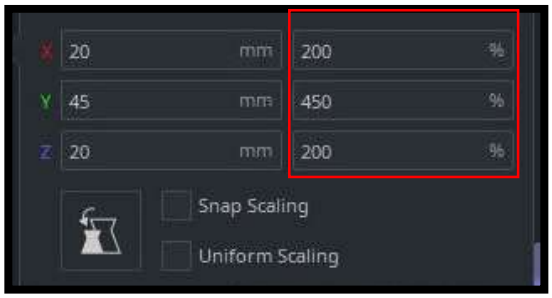


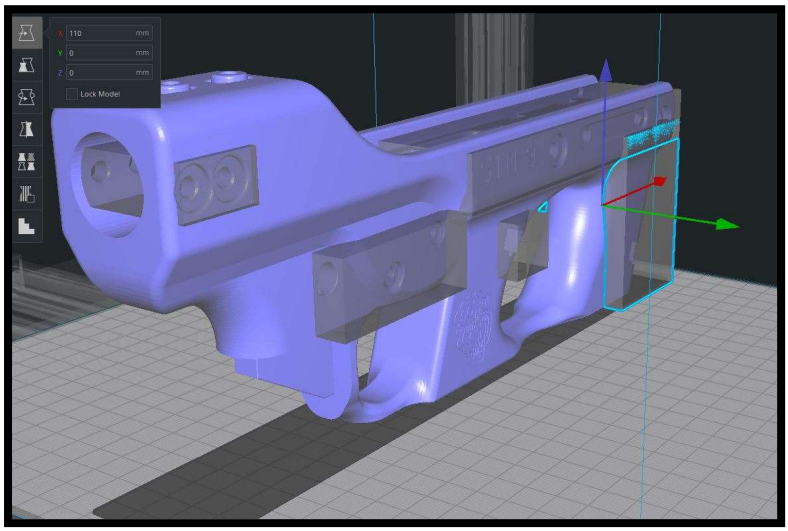

150 mm 1500 %
45 mm 450 %
20 mm 200 %
Snap Scaling
Uniform Scaling

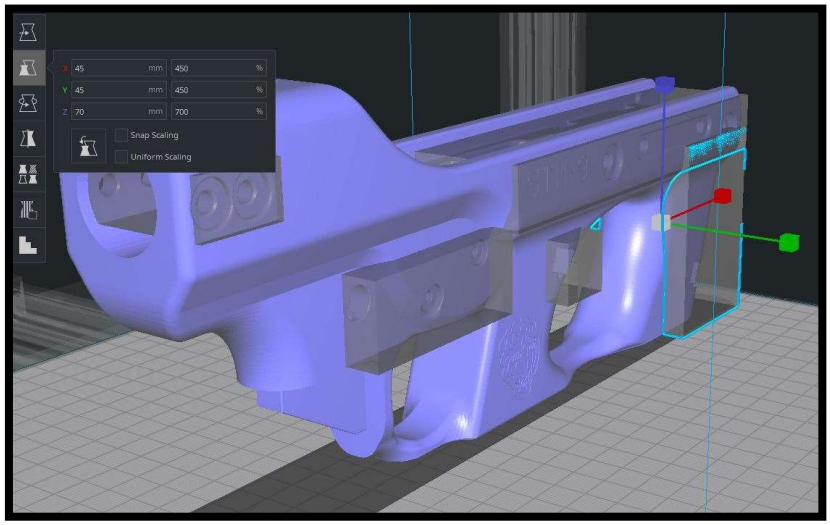


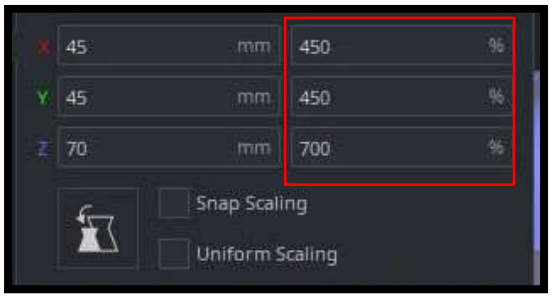

20 mm
0 mm
33 mm




20 mm 200 %
45 mm 450 %
20 mm 200 %
Snap Scaling
Uniform Scaling







NOTE: Your final sliced receiver should still have some support on the rear most overhang where the hand grips below, where the pistol grip mount location, inside the trigger guard cavity, inside a limited section of the fore grip thumb hole, inside the larger “buffer tube” hole and finally inside the square overhang section of the M-11 receiver butt end. It all should be relatively easy to remove and still a minimal amount of support compared to similar designs in the Mac-11/9 class. Use a brim of no less than 5-10 layers if possible or until the pistol grip support brim meets the semi-circle rear overhang support brim layers at the base plate.

PARTS & ADD-ONS LINKS:

Post & Screw Fasteners if hardware store is unavailable:

https://www.amazon.com/Hillman-Group-3833-Aluminum-10-Pack/dp/B00IAVGWGM/ref=asc_df_B00IAVGWGM/?tag=hyprod-20&linkCode=df0&hvadid=198079933338&hvpos=&hvnetw=g&hvrand=11421876371219470584&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9013179&hvtargid=pla-318879586769&psc=1

Button Head Cap M4x25mm screws if hardware store unavailable: Amazon has only black and is bit more expensive to get to you sooner while Aliexpress has black or stainless and it will take about a month and a half to arrive.

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

https://www.aliexpress.com/item/10000148429238.html?spm=a2g0s.9042311.0.0.28c04c4dHSDGK8

Optional Universal speed loader that is cheap and helps load up Glock magazines fast:

Tactical 1911 Glock Speed Load er For 9mm .40 .357 .45 .22 22LR Hunting Accessories| | - AliExpress

Aluminum anodized black Picatinny rails: I am unsure if other somewhat similar 5 and 3 slot rails have the same spaced mounting holes as they are meant for M-Lok rails so you might be able to purchase any standard 5 &3 slot rails to work.

https://www.amazon.com/dp/B08RJ4LLJX/ref=redir_mobile_desktop?_encoding=UTF8&psc=1&ref=ppx_pop_mob_b_asin_image

If picatinny rails are ordered then you must get M4x16 Socket flat head screws found at link below to mount them as stock screws that come with them are too short to mount properly. Once again you can most likely find these at the local hardware store you may already have the other parts from.

https://www.amazon.com/M4-0-70-8mm-Stainless-Countersunk-MonsterBolts/dp/B078YYW35J?ref_=ast_sto_dp&th=1

Quick Release Pins: These work great as the retainer pin replacement for the upper receiver and can be removed easily with just a pull.

https://www.amazon.com/dp/B07N1JYDJG/ref=redir_mobile_desktop?_encoding=UTF8&psc=1&ref=ppx_pop_mob_b_asin_title

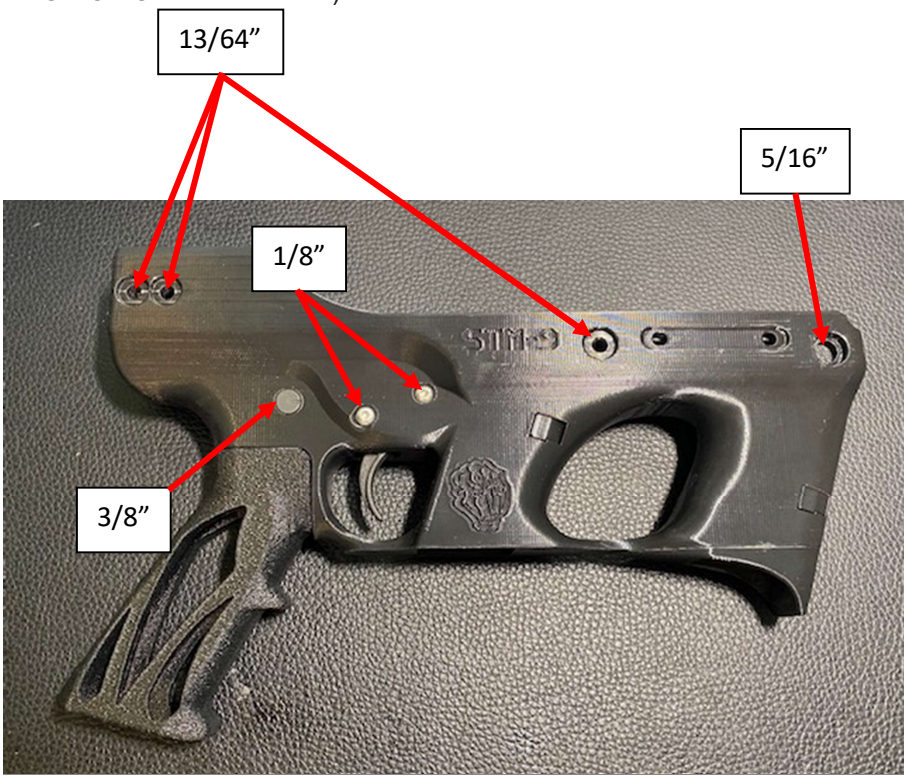
Foldable Nerf style attachment stock: (NOTE: Stock is only legally compatible with 16”in+ carbine upper assemblies.) This is a toy stock attachment made for nerf toys only! It just so happens to be very sturdy and well build and can handle a significant amount of foam dart “blowback”

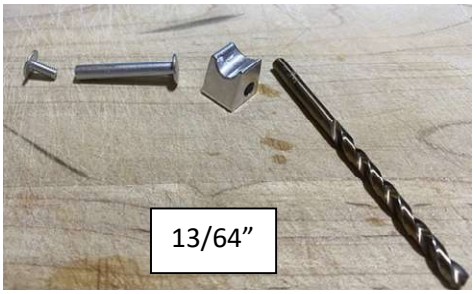
https://www.amazon.com/dp/B07SFDYWZV/ref=redir_mobile_desktop?_encoding=UTF8&psc=1&ref=ppx_pop_mob_b_asin_title

DRILL BITS FOR HOLE BORING:

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?dchild=1&keywords=craftsman+drill+bit+kit+21+set&qid=1593359724&sr=8-3

The following images and text boxes are the correct sizes needed to drill in order to have a standard lower parts kit, the post&screw fasteners and the (M-11/9 receiver retention pin/amazon ordered detent pull pins) from the page before all fit perfectly and slide perfectly into place. (DO NOT OVER DRILL THE MAIN UPPER RECEIVER RETENTION PIN HOLE, SIMPLY DRILL OUT WITH 3 PASSES THEN TEST FIT RETAINER PIN AND RECEIVER UNTIL DESIRED FIT. ADD DROP OF OIL IF NEEDED.)





NOTE: You can use the feed ramp from RipTide Rails made for the Mac-Daddy or the 3D printed version but you must bore the hole to fit the new 13/64” size. Be cautious and use an oil lubricated drill bit with little pressure to ensure a clean hole is made then fit into its location with the post and screw fastener.

(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 is not necessary.)

You may also like to know that if you already have the Mac-Daddy parts printed and you already enjoy the stock attachments then both the feed ramp and the stock attachment pieces can be adapted to fit this design as well to help save time and money. Good Luck everyone and thank you for the support. I hope you all are able to get a functioning and safe STM-9 build made for yourselves. Don't forget to follow on DEFCAD https://defcad.com/users/Smilodon/

Best regards, Smilodon

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