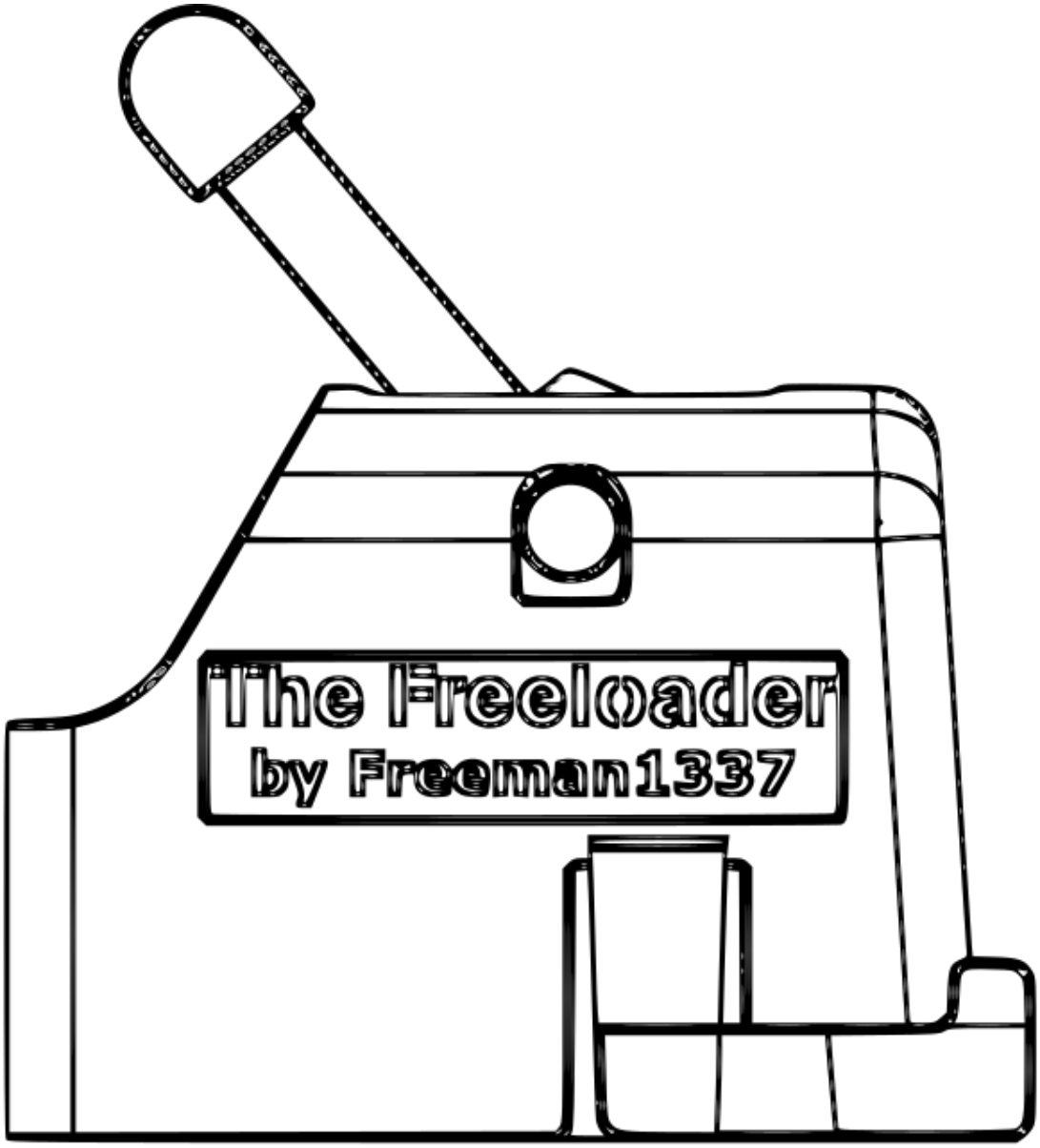
“The Freeloader” AR15 Magazine Speed-loader

by Freeman1337

(an magLula-style AR15 magazine loader with options using a milspec ar15 magazine catch or integrated plastic mag catch)



Released: 9/25/2021
Version: 1.0

Acknowledgments

After I announced my AR15 Tray Speedloader on FOSScad and Twitter, someone asked me “wHy NoT mAkE a mAgLUla sTyLE LoADeR!?!”. Frankly, I’d not heard of them before, so I bought one to see if they were worth the hype. They’re cool, but frankly better at unloading then loading compared to a tray loader. But… this one uses much less filament, and I can print lots of them to stow in my ammo cans… so it’s good for that application. Some people love these, some not so much, but at least it’s a less filament-invested print then my last AR15 speedloader.

Print, shoot, and enjoy!!

Description

This is an magLula-inspired 3D printable AR15 magazine speed loader. Initial versions of this model use a milspec AR15 magazine catch, though a 100% 3d printable version with an integrated plastic catch is also included here. This loader allows for fast loading (and unloading) of AR15 magazines. Using between 50-70 grams of filament (depending on which version you print), this model can be printed for around $3 of PLA+ filament (a 10X savings over purchasing an OEM loader. I encourage you to support magLula by purchasing their magazine loaders if you enjoy their style of products, but the intent behind this print is to be able to cheaply print a bunch, and throw them into range bags/ammo cans/etc in order to save ones thumbs/quickly unload mags without expending excess ammo.

Instructions

Materials Required:

- PLA+ filament of your choosing. Overture PLAPro

- x1 AR15 milspec magazine catch (optional)

Tools:

The only tools required for this release are related to post-print cleanup. Sandpaper, a sharp knife, etc could be helpful here, depending on how calibrated your printer is and what types of supports you choose to use. Use tools that allow you to remove small amounts of material in specific locations. Cleanup of the magazine catch area, and smooth operation of it, are vital to a functional speed loader.

Print Settings:

Layer Height

Body	0.3mm

Shell

Wall Line Count	10
Outer Wall Wipe Dist	0.4
Top/Bottom Thickness	1.32mm
Top Layers	10

Infill

Infill	20%
Pattern	Grid

Material

Print Temp	217 C
Bed Temp	60 C

Speed

Print Speed	50 mm/s

Infill Speed	60 mm/s
Outer Wall Speed	30 mm/s
Inner Wall Speed	60 mm/s
Top/Bottom Speed	40 mm/s

Travel

Enable Retraction	True
Combing Mode	All

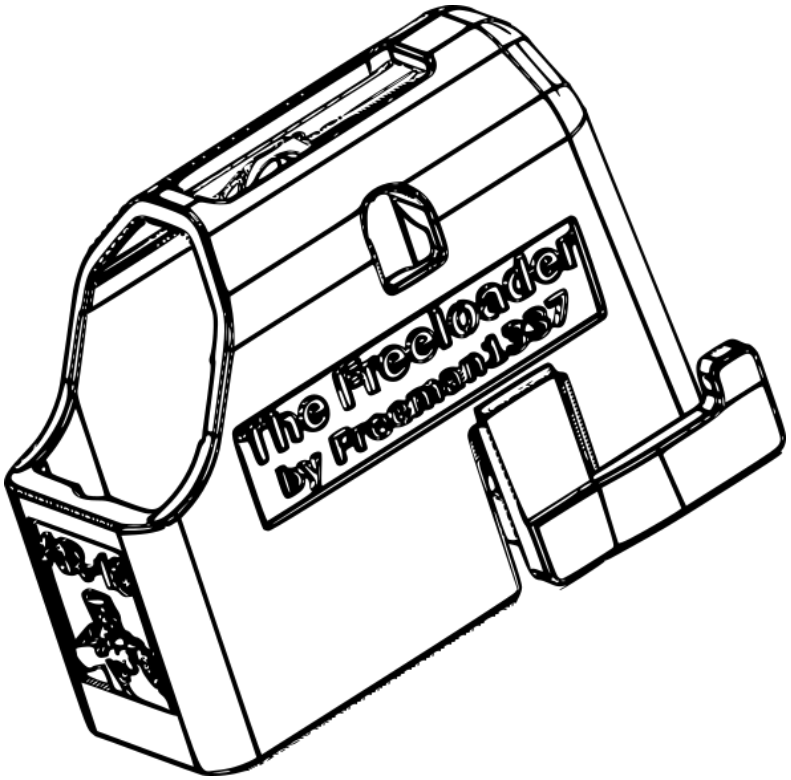
Cooling

Enable Fan Cooling	True
Fan Speed	85%

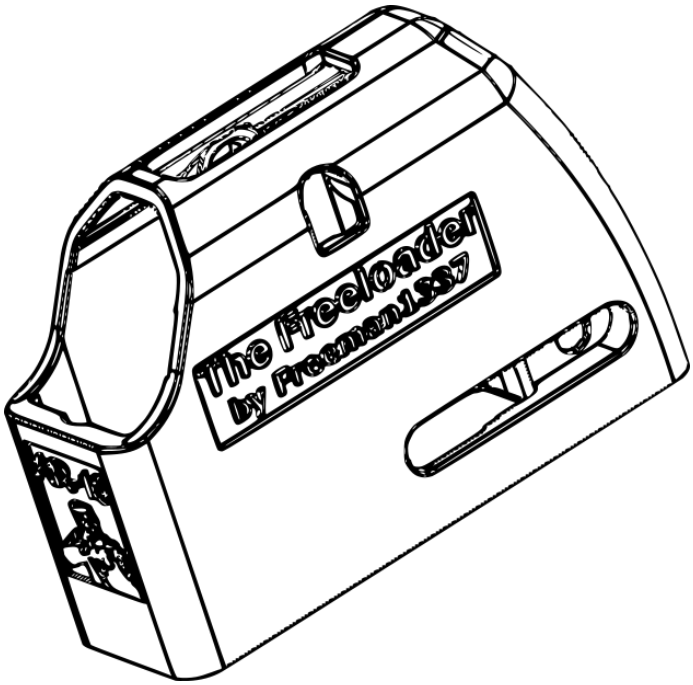
Support

Generate Support	True
Support Structure	Tree
Support Placement	Touching Build Plate
Support Overhang Angle	Autogen (cura)

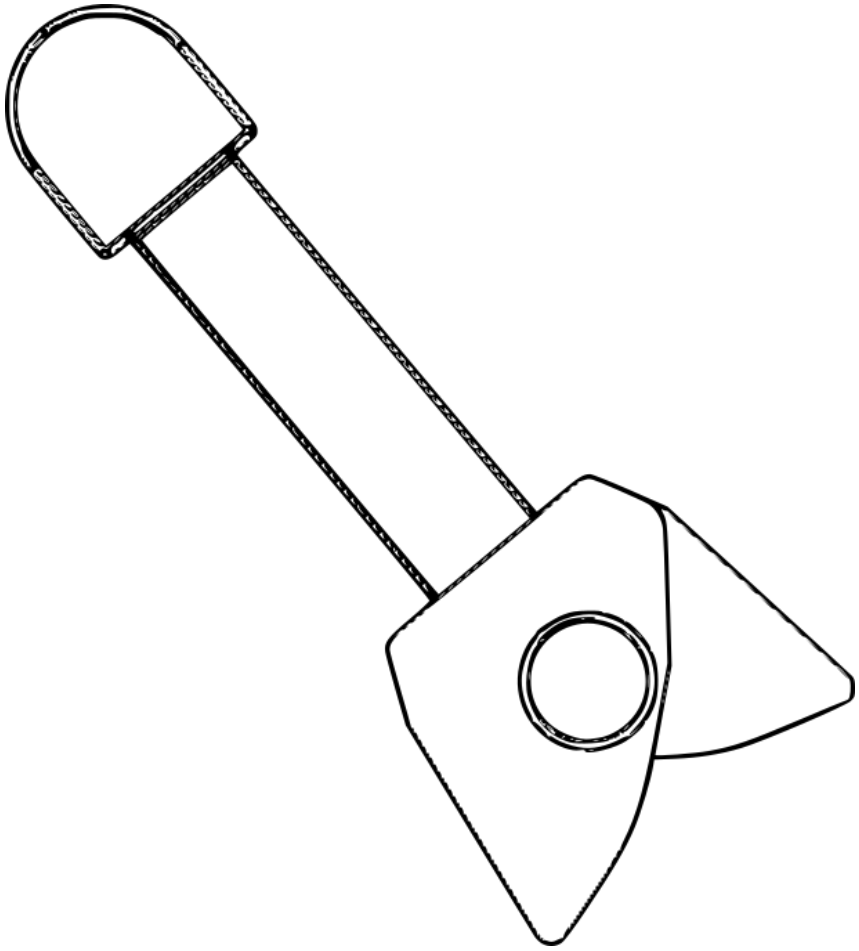
Material List:



Loader Body (integrated catch)



Loader Body (milspec catch)



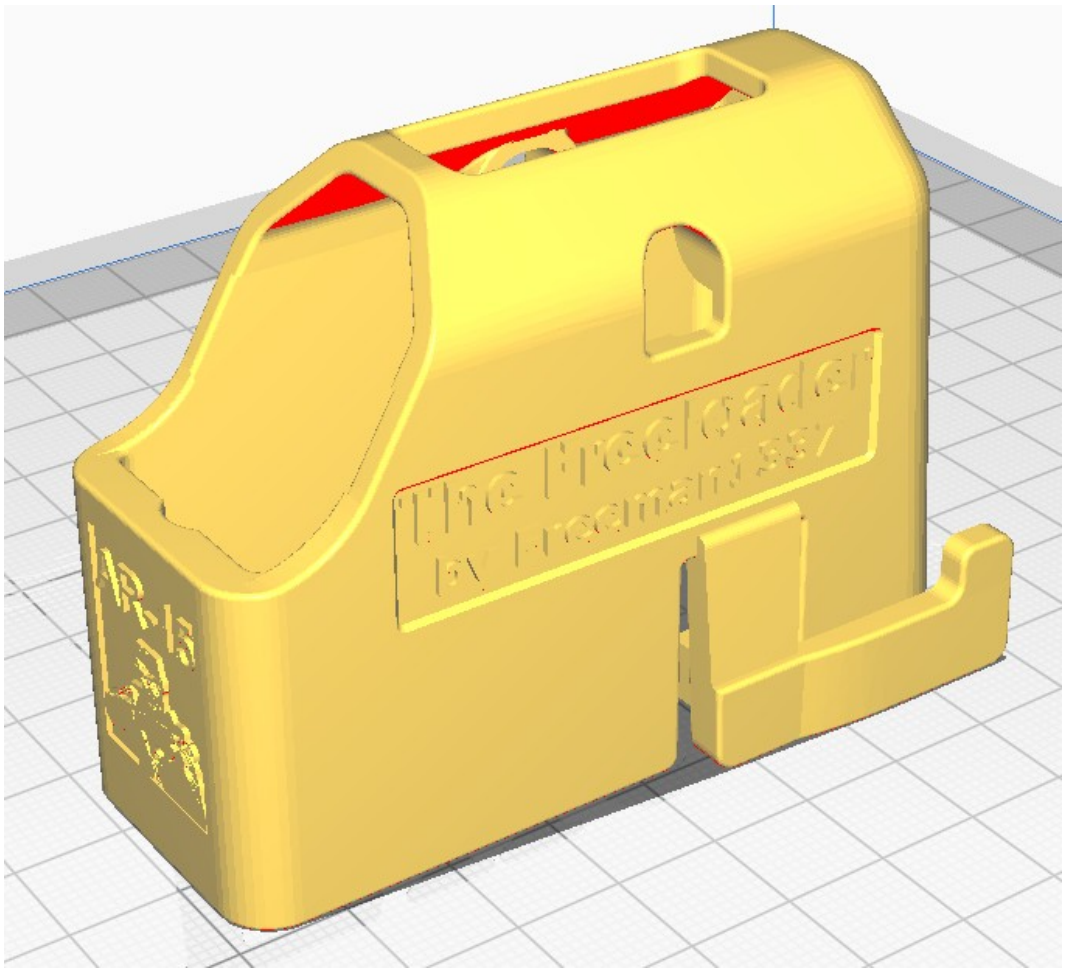
Loader Lever

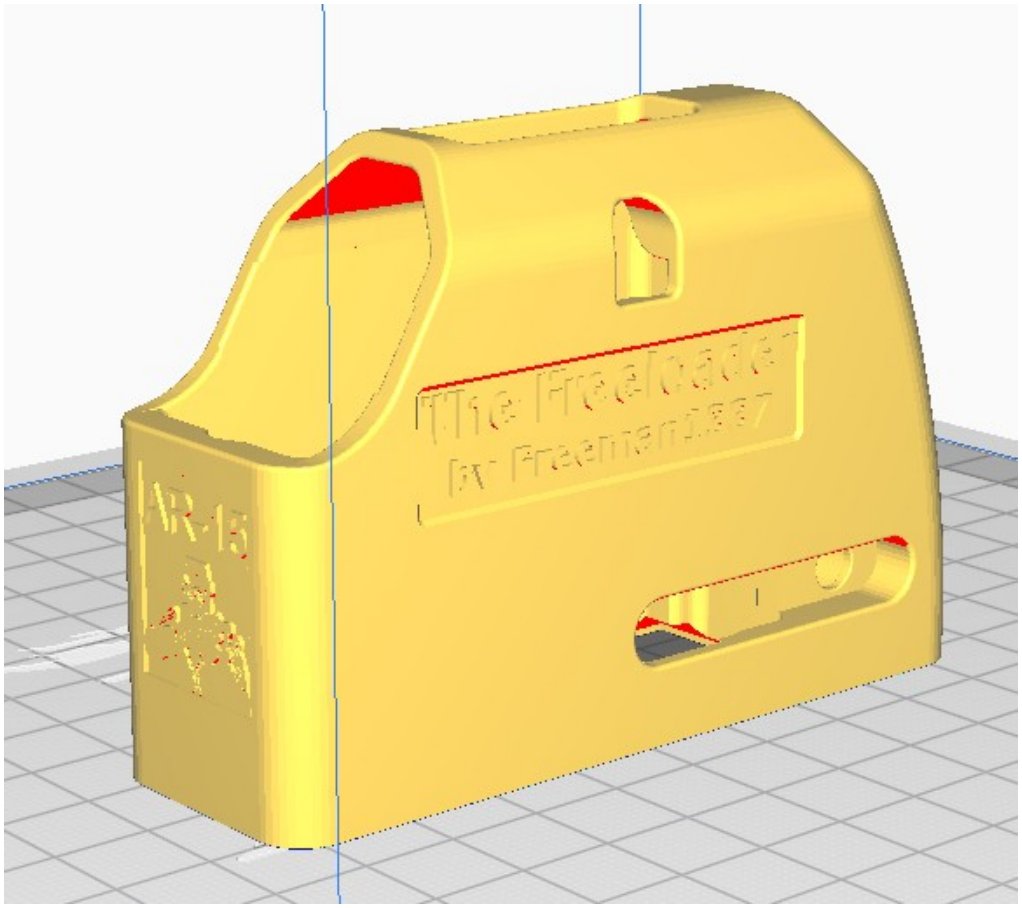
Print Orientation

Loader Body

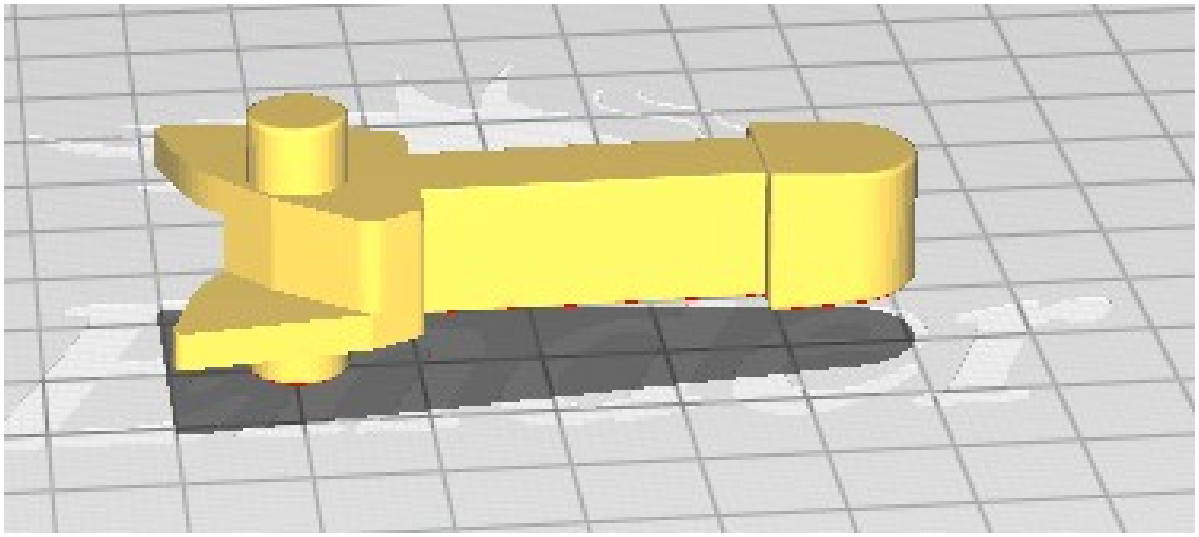
Note: all STLs are properly oriented in this package. These images provided as reference, in the even your slicer ignores the orientation I've set using Cura

Print in this orientation:



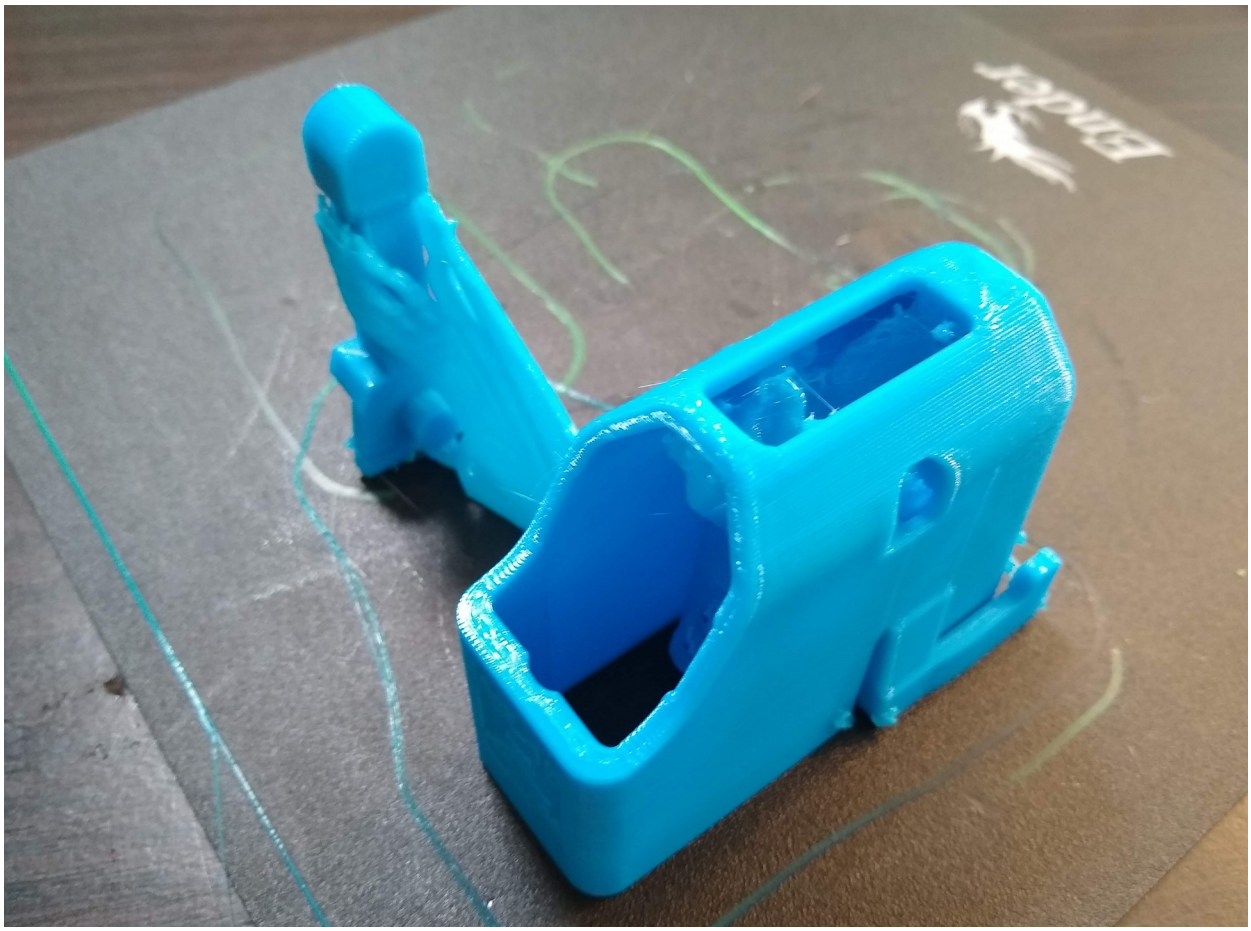


Loader Lever

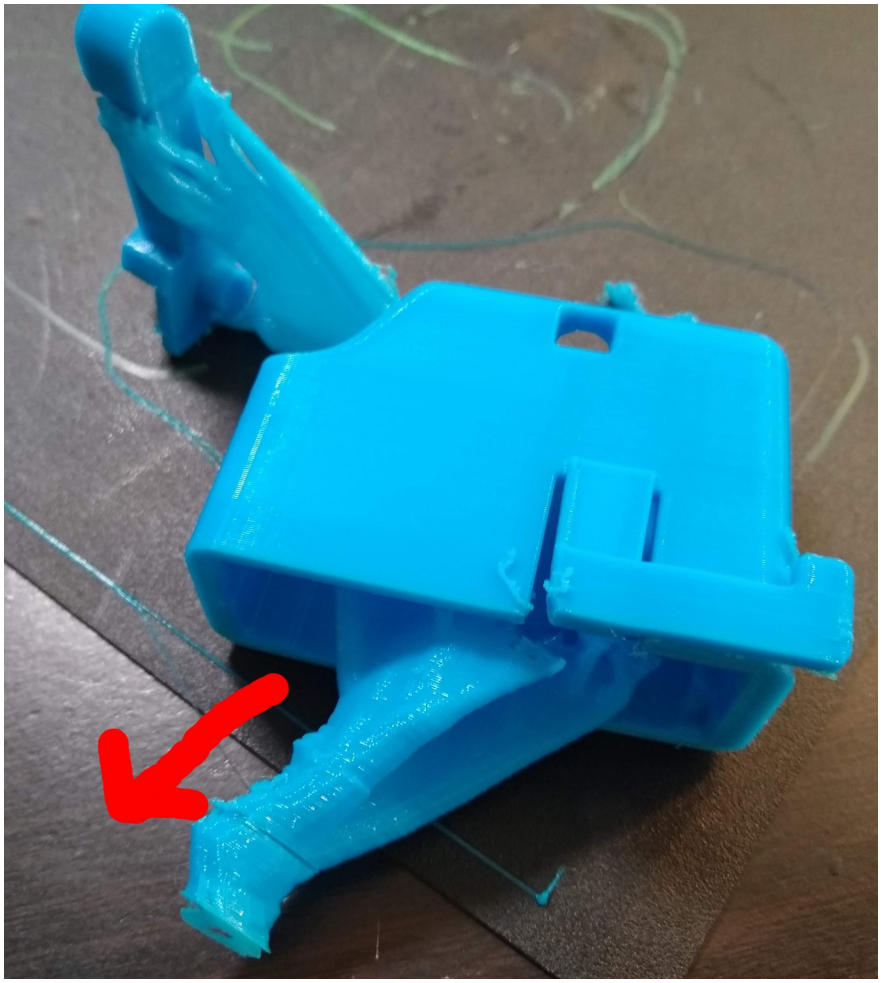


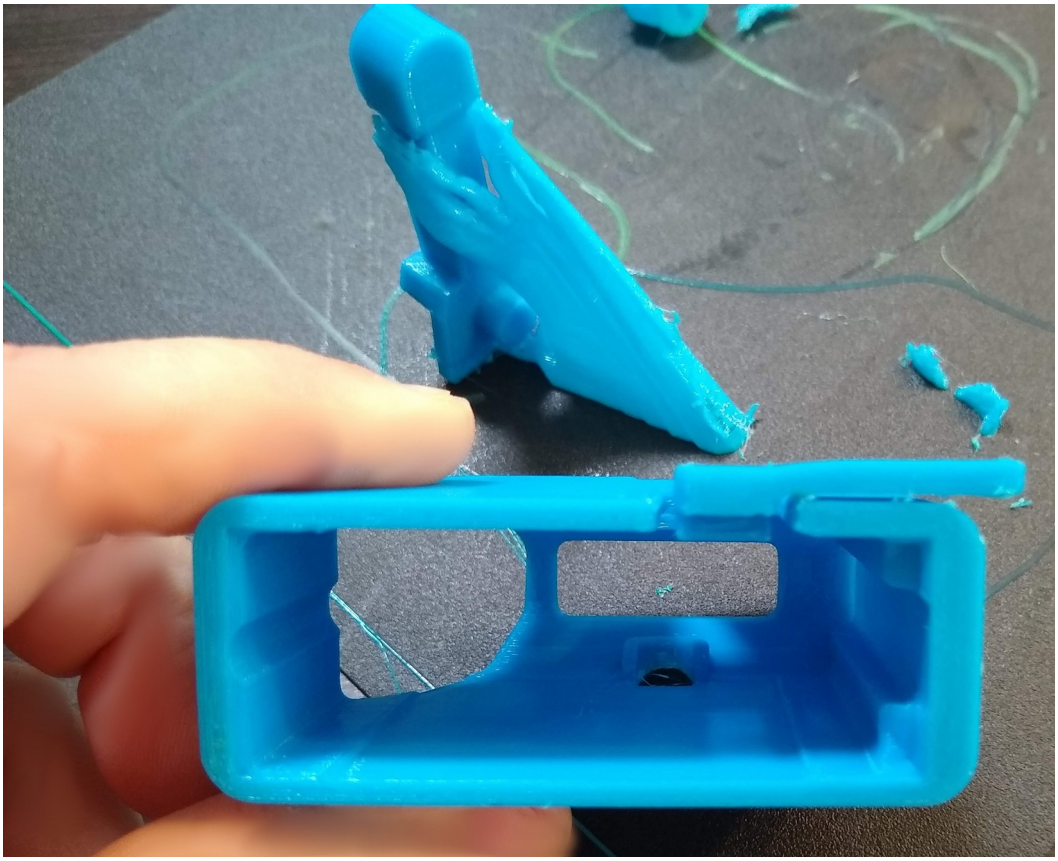
Assembly

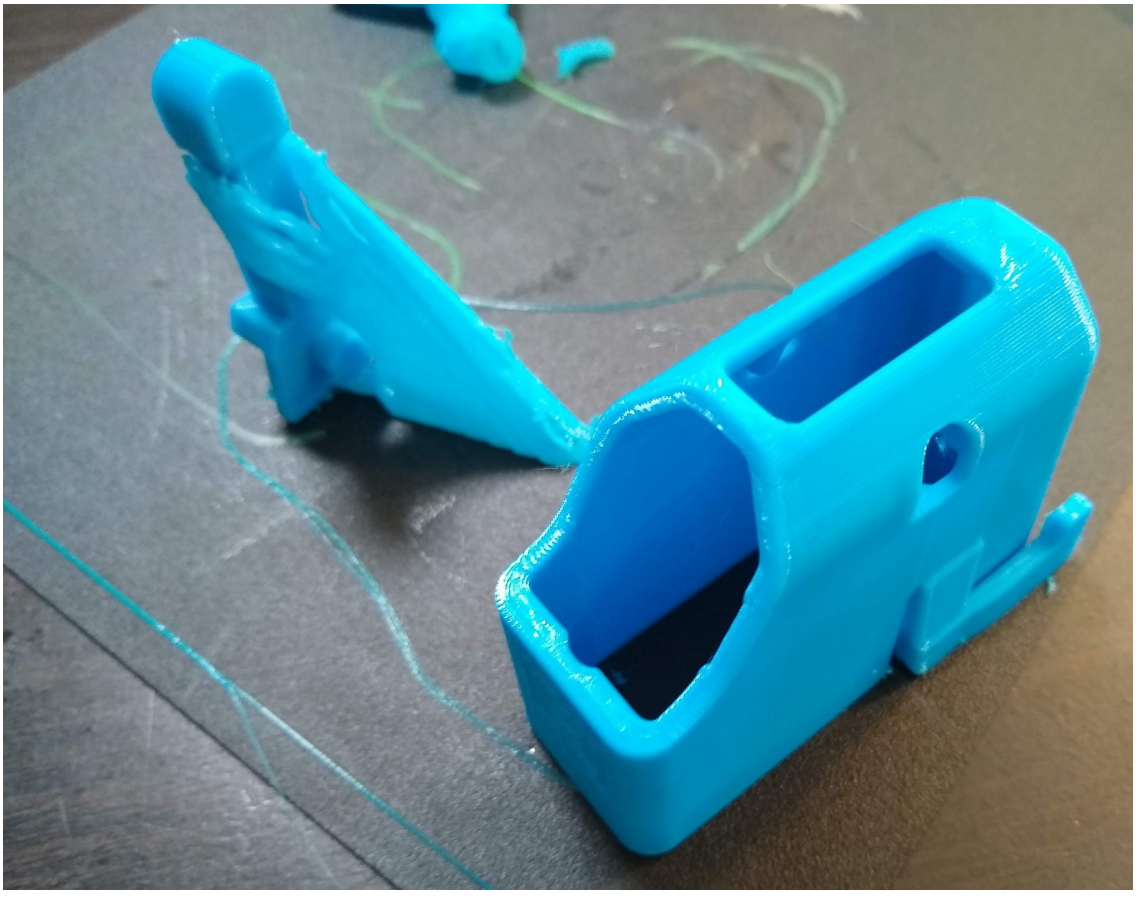
01. Peel the parts off of the print bed. Though I have both required parts printed at the same time, printing each part individually is recommended:



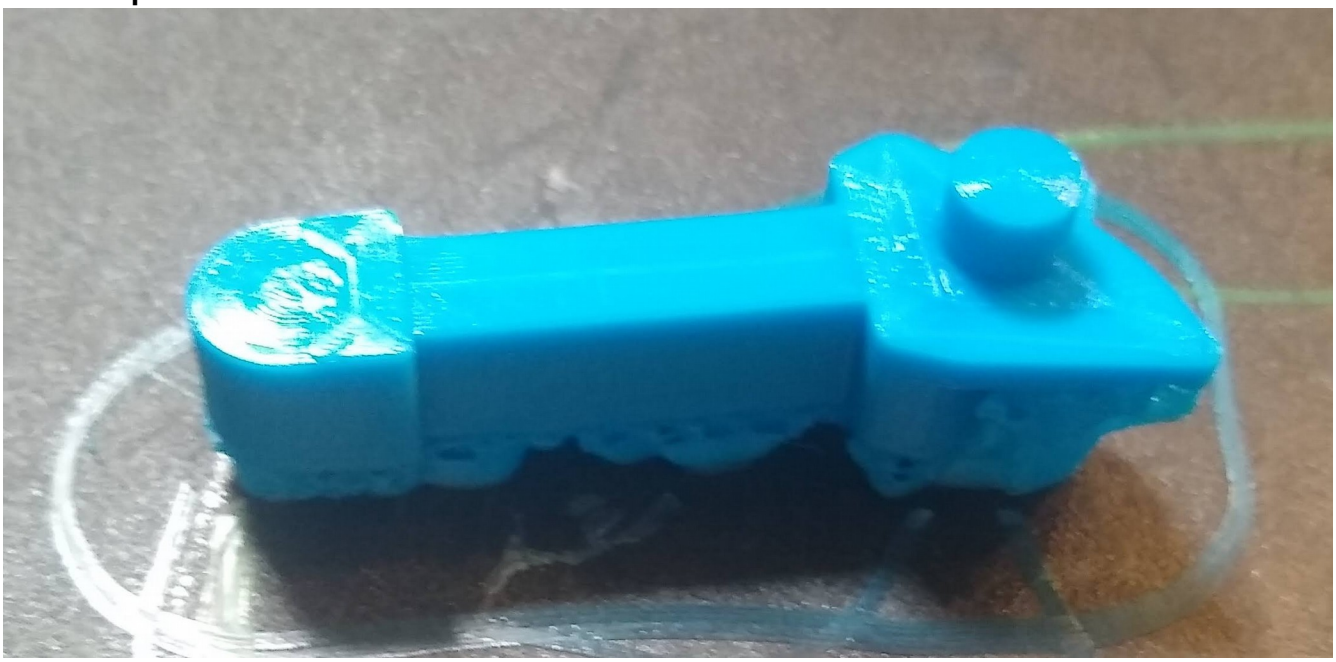
02. Remove all supports from whichever loader body you choose to print:

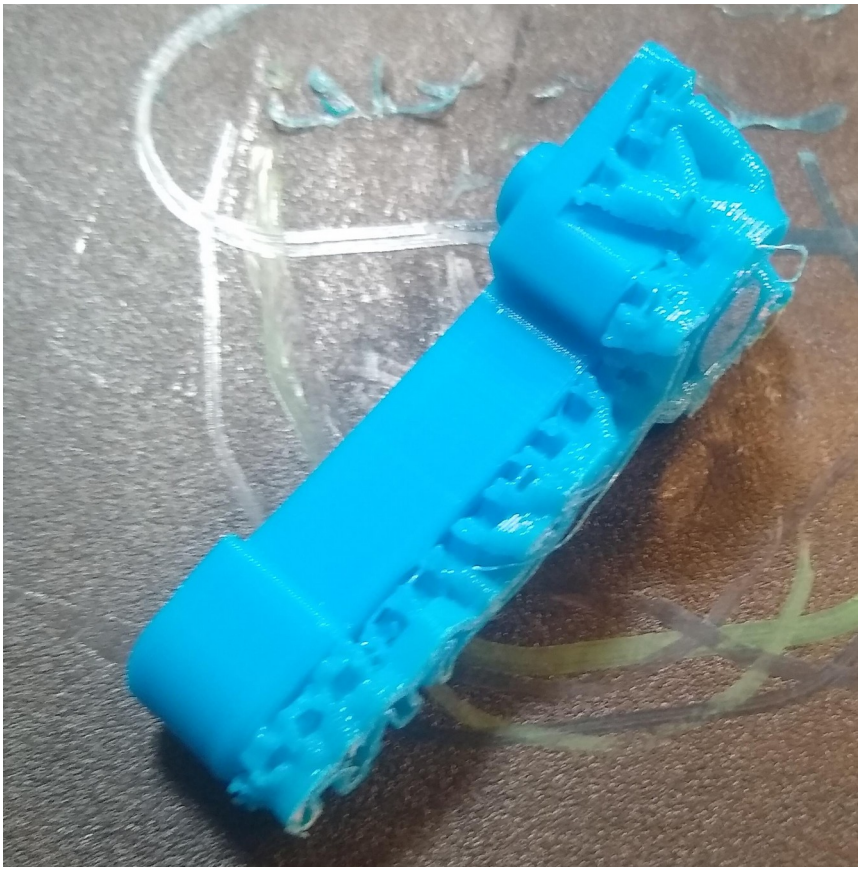


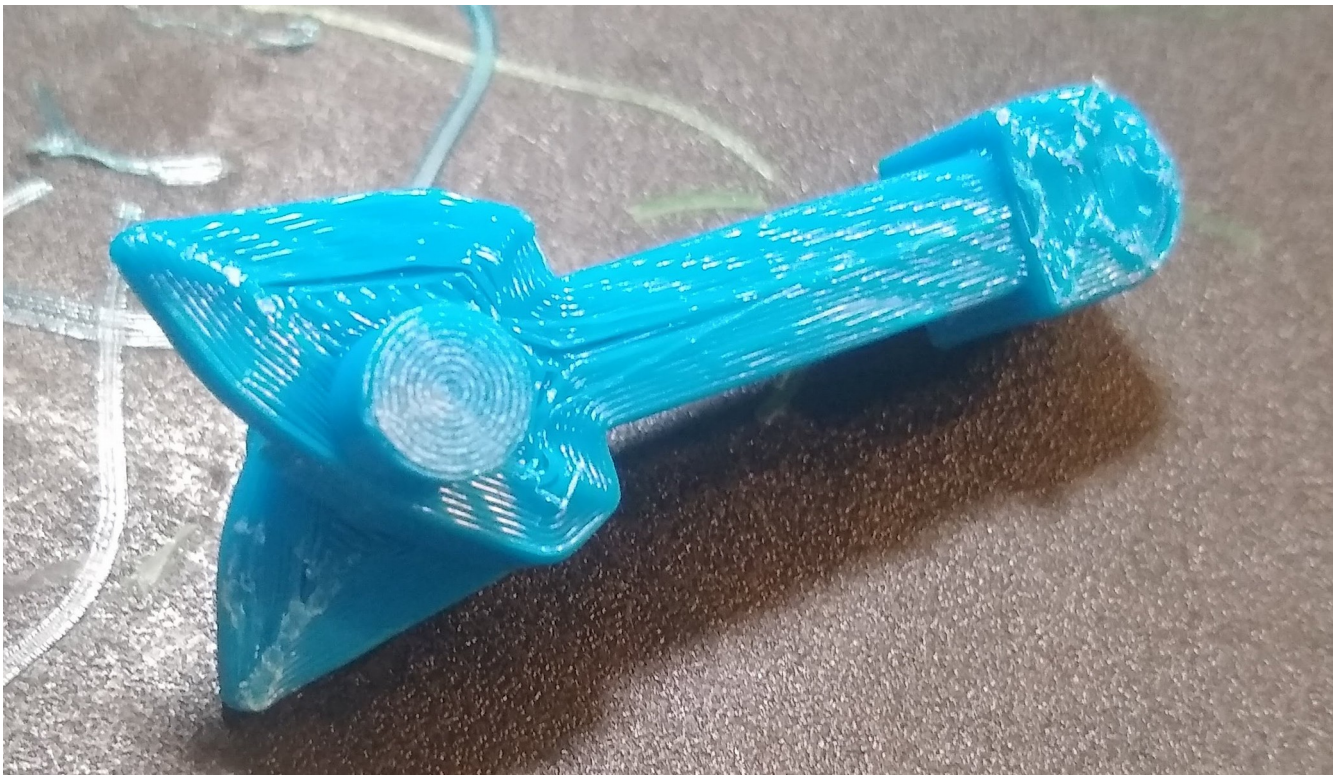




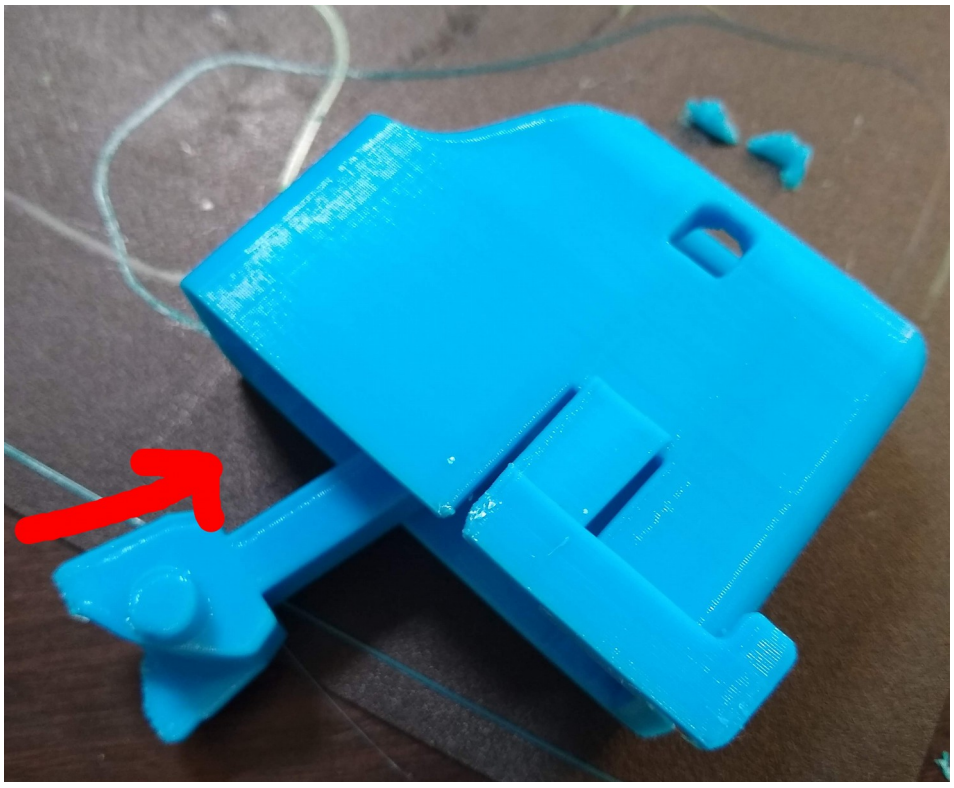
03. Remove supports from Loader Lever. Cleanup all edges as required for smooth function:







04. Insert the lever into the body as shown:



05. Pull the lever all the way through, and seat it in the required position.

Finished: your loader is complete and ready to use.

Note: If you've printed a version using a milspec mag catch, it installs as any AR15 mag catch would be installed. If it doesn't go together easily, cleanup the loader body until the catch functions smoothly. This may be extensive if the printer producing the body isn't well tuned

Usage -Loading

01). Insert a magazine into the body of the loader, ensure it is retained by the mag catch.

02). Using the lever, depress the mag follower on the so that the first round may be slid into place.

03). Moving the lever back and forth to insert subsequent rounds, continue loading the magazine until full

NOTE: If using the version with an integrated mag catch, the loader may want to come off the magazine when loading the last few rounds (depending on actual print settings/material/etc). If this happens, lightly holding the plastic mag catch in place on the last few rounds helps to prevent the mag loader from being released prematurely.

Usage -Unloading

01). Insert a loaded magazine into the loader body

02). turn the magazine and loader down so that loaded rounds will fall downwards.

03). Move the lever back and forth, allowing rounds to fall out of the loaded magazine. Continue until magazine is empty.

Licensing

GPL v3.1

Note: Resulting prints derived from this design or it’s derivatives may not be sold for commercial purposes or significant financial gain of any kind. The printing and selling of magazine “parts kits” for sale close to the cost of manufacture is encouraged, especially for those of you behind enemy lines.

Closing Thoughts

This was a quick, fun build that I made while procrastinating the finishing of docs for my Taurus G3 “Wooly Bully” and Taurus 709 slim G2 “Fanny Blaster” frames. The irony is not lost on me that in finishing this project, I’ve had to write yet more documentation. Anyway, I hope this project saves you a few bucks. If it breaks for some reason… take a few hours and $3 in filament and print yourself another ;)

As always,

Freeman1337