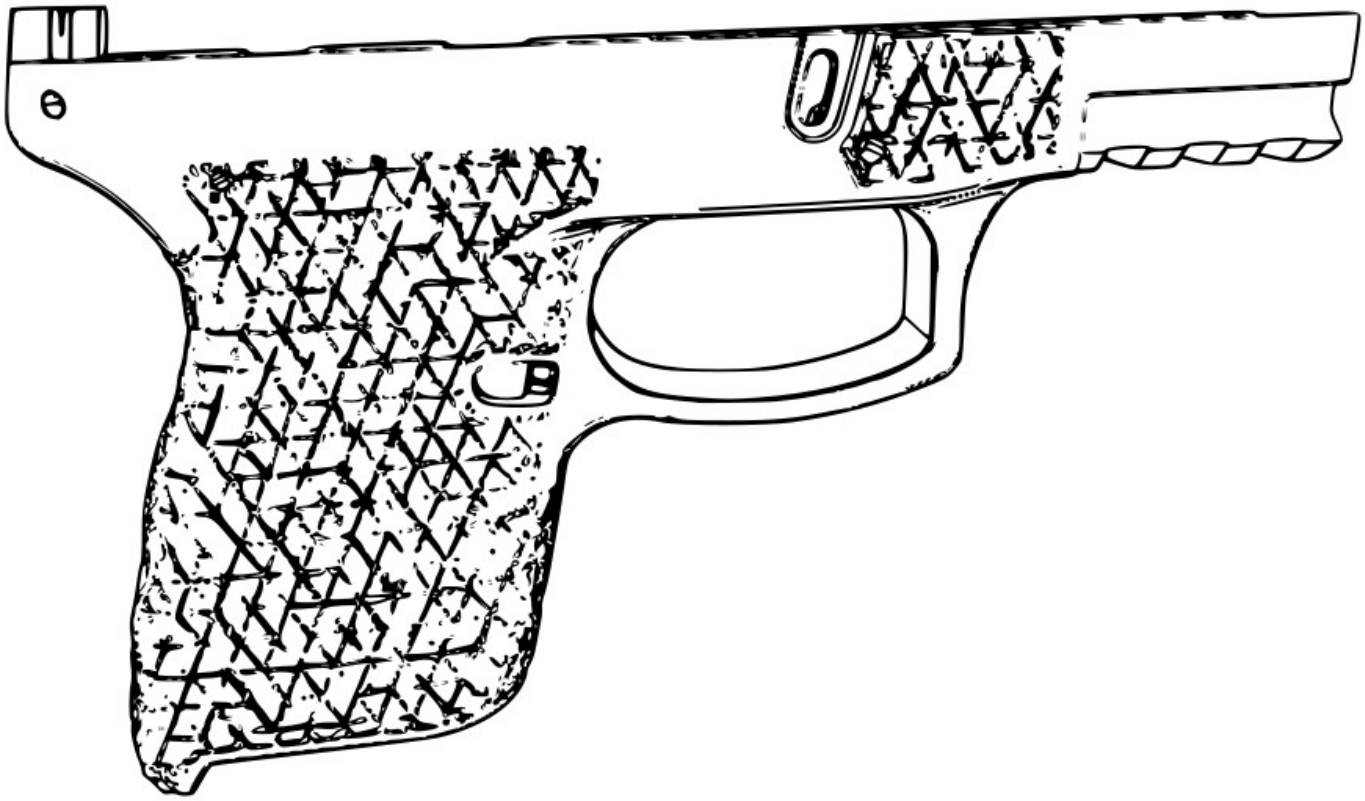
The “FOSS Cannon”

by Freeman1337

(a printable frame for the Taurus G2C, G3C, and PT111 G2)



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Version: 1.3

Acknowledgments

Thank you to all of my beta testers on Rocketchat, who supplied me with valuable feedback on each stipple, and verified function and durability of this frame design. Thank you to all who contributed!

Frame design and accessories by: freeman1337

Description

This frame is a hybrid design, which allows for using a variety of double stack Taurus 9mm pistol parts kits being used with it. Starting with the Taurus PT111 G2 frame (released by FMDA), this frame was developed and tested to provide compatibility with the widest variety of Taurus double stack 9mm parts kits available. After compatibility and function was perfected using parts kits supplied from Taurus PG111G2, G2, G2C, and G3C pistols, the frame was stippled with a variety of texture to suit most tastes. Never before this release have Taurus pistol owners/builders had so much choice in printable stippled grip textures available to them (usually, this is only available to Glonk fanboys).

Instructions

Hardware Requirements:

- A Taurus Pistol parts kit from any of the following models:
  - Taurus PT111G2
  - Taurus G2C
  - Taurus G3C

In some cases, your parts kit may be missing some small parts (such as a barrel pin bushing or mag release) or some of them may fly out while attempting assembly (such as the safety detent/spring, sear block, etc. The 3d printed parts supplied in this release were made out of necessity in some cases because our kits didn't come with them.

Tools:

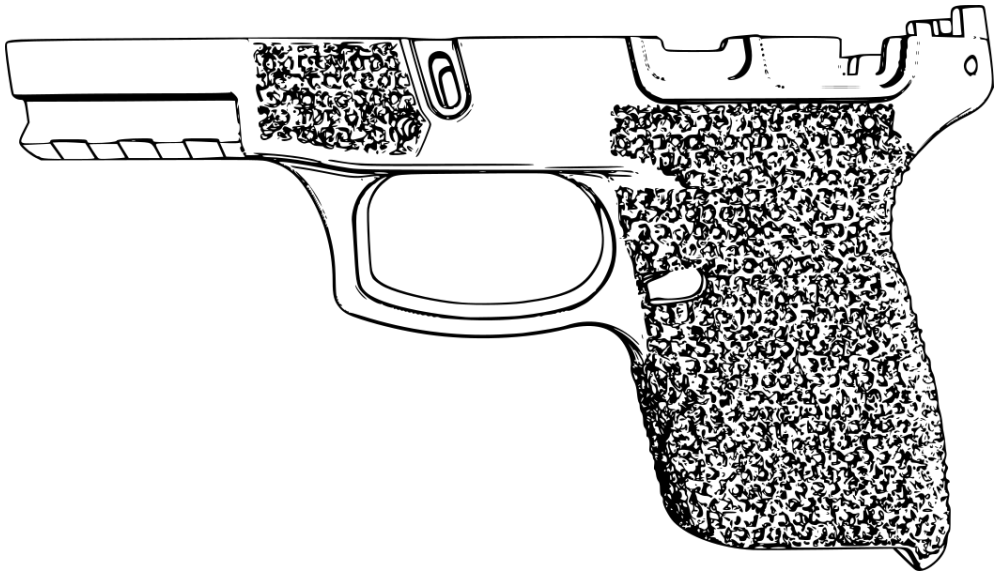
A selection of basic gunsmithing tools is needed to complete this build. The one we require are:

- gunsmithing hammer | link
- gunsmithing punches | link

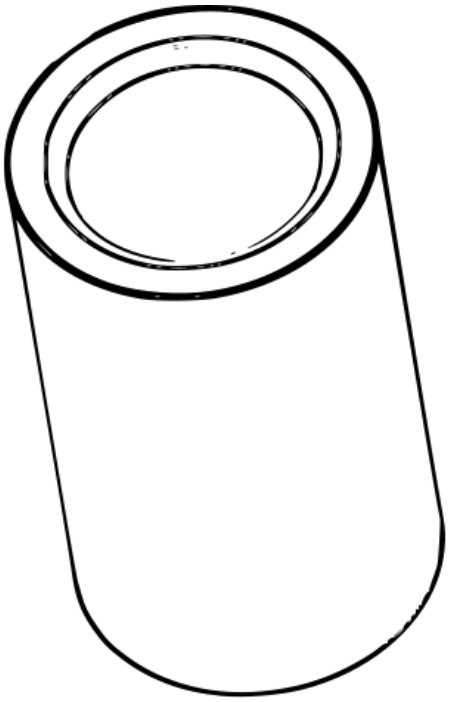
Print Settings:

Material	PLA+
Nozzle Size	0.4mm
Filament Size	1.75mm
Layer Height	0.15mm
Top/Bottom Layers	10/10
Wall line count (Perimeters)	10 walls
Infill Pattern	Line
Infill %	99-100%
Supports	Tree/45°/Everywhere

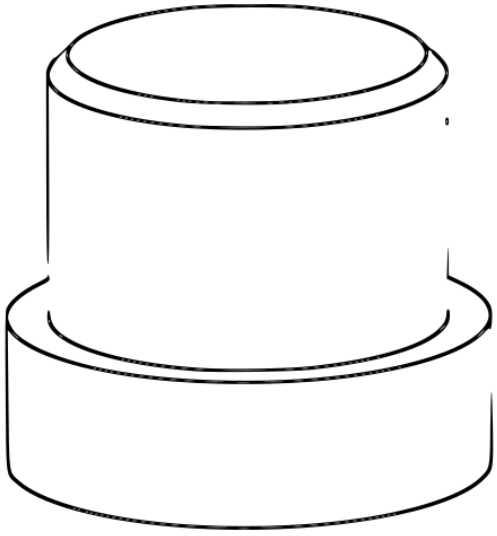
Model List:



Frame



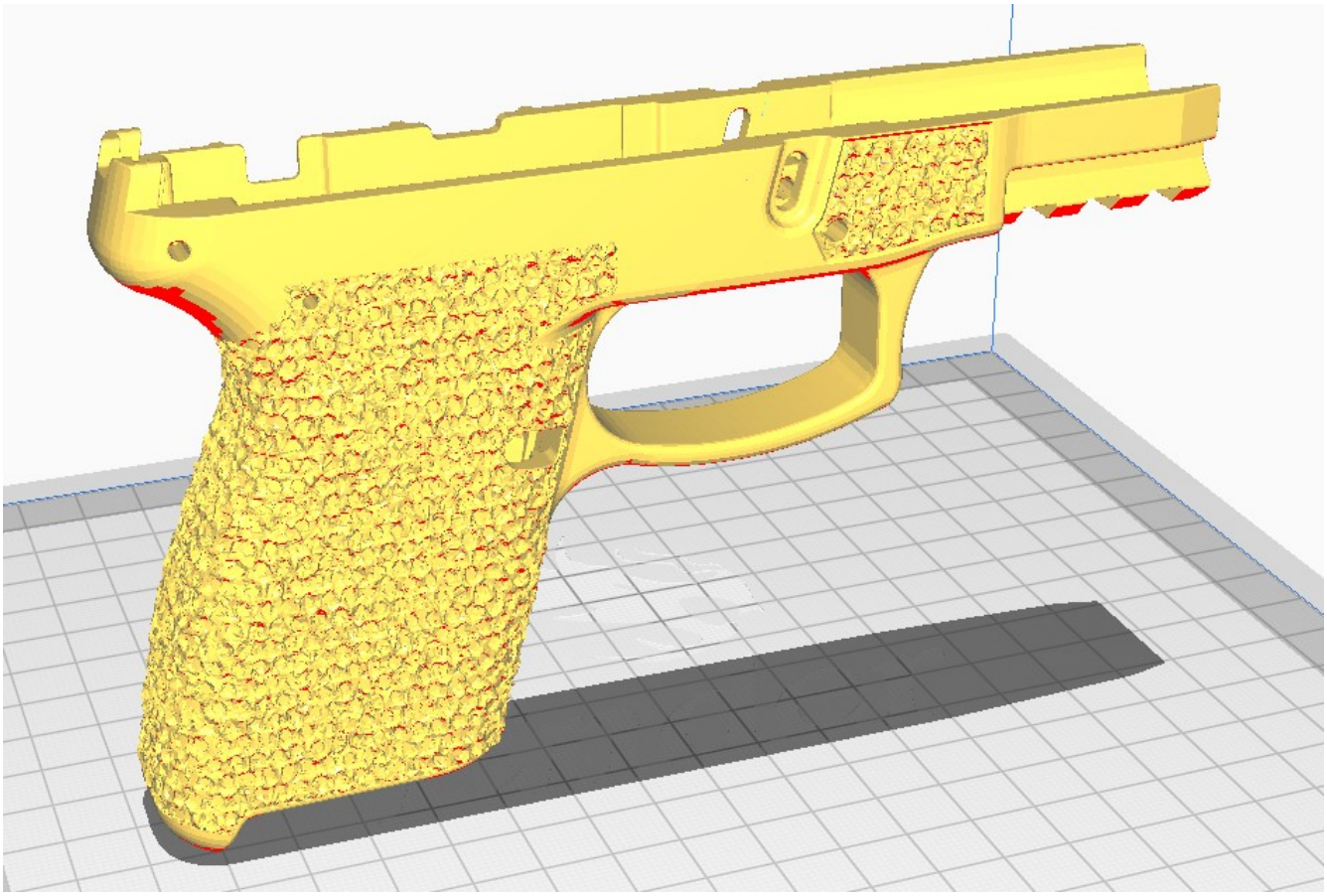
Trigger Block bushing



Slide retainer plunger

Print Orientation

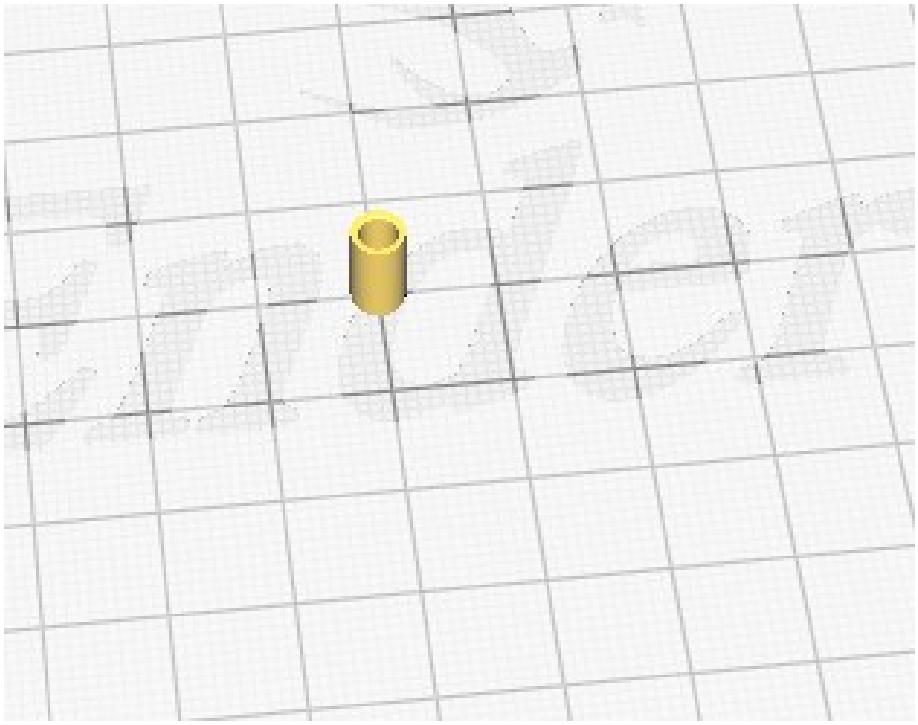
Frame



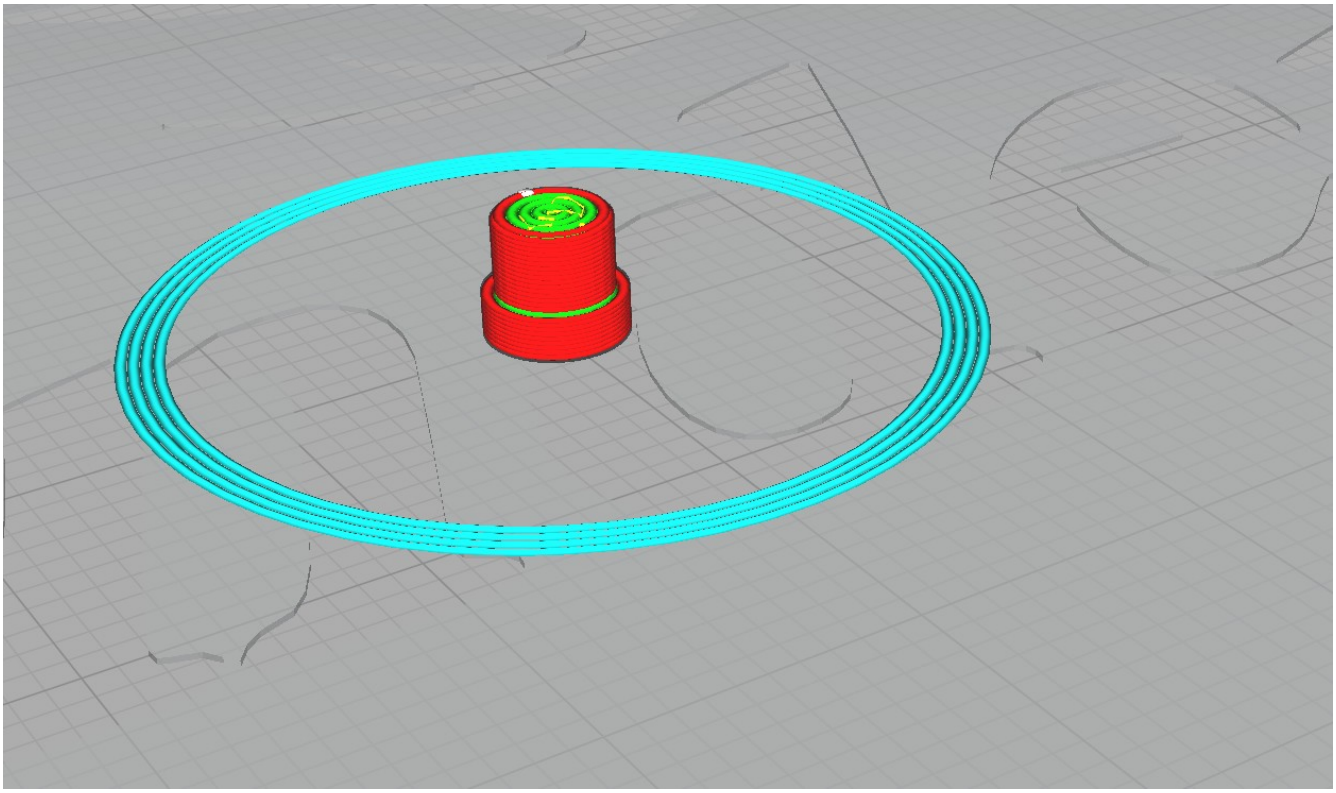
This frame needs to be printed magwell down. I highly recommend the use of tree supports for this frame, as cleanup is much more difficult and time consuming when using traditional supports. In this guide, I'll cover print orientation of each included model and cleanup of the frame.

Barrel pin bushing

This barrel pin bushing usually ships with parts kits stuck where it needs to go (using a little grease to hold it in). In some cases, it’ll be loose in the bag or missing. Without this bushing, the locking block can move around excessively, causing wear on the parts kit and possible frame breakage if not used (so make sure you use one, printed or otherwise). Smaller layer heights and speeds are recommended for this model.

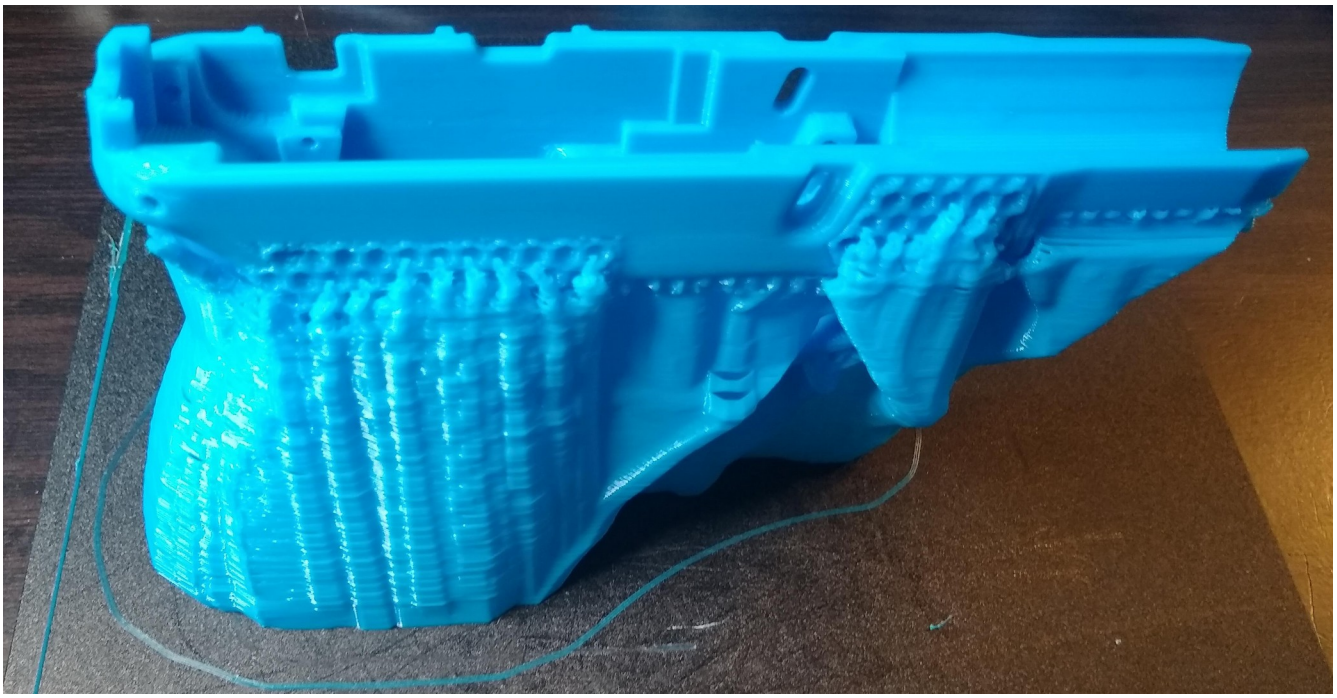


Slide Retainer Spring Bushing

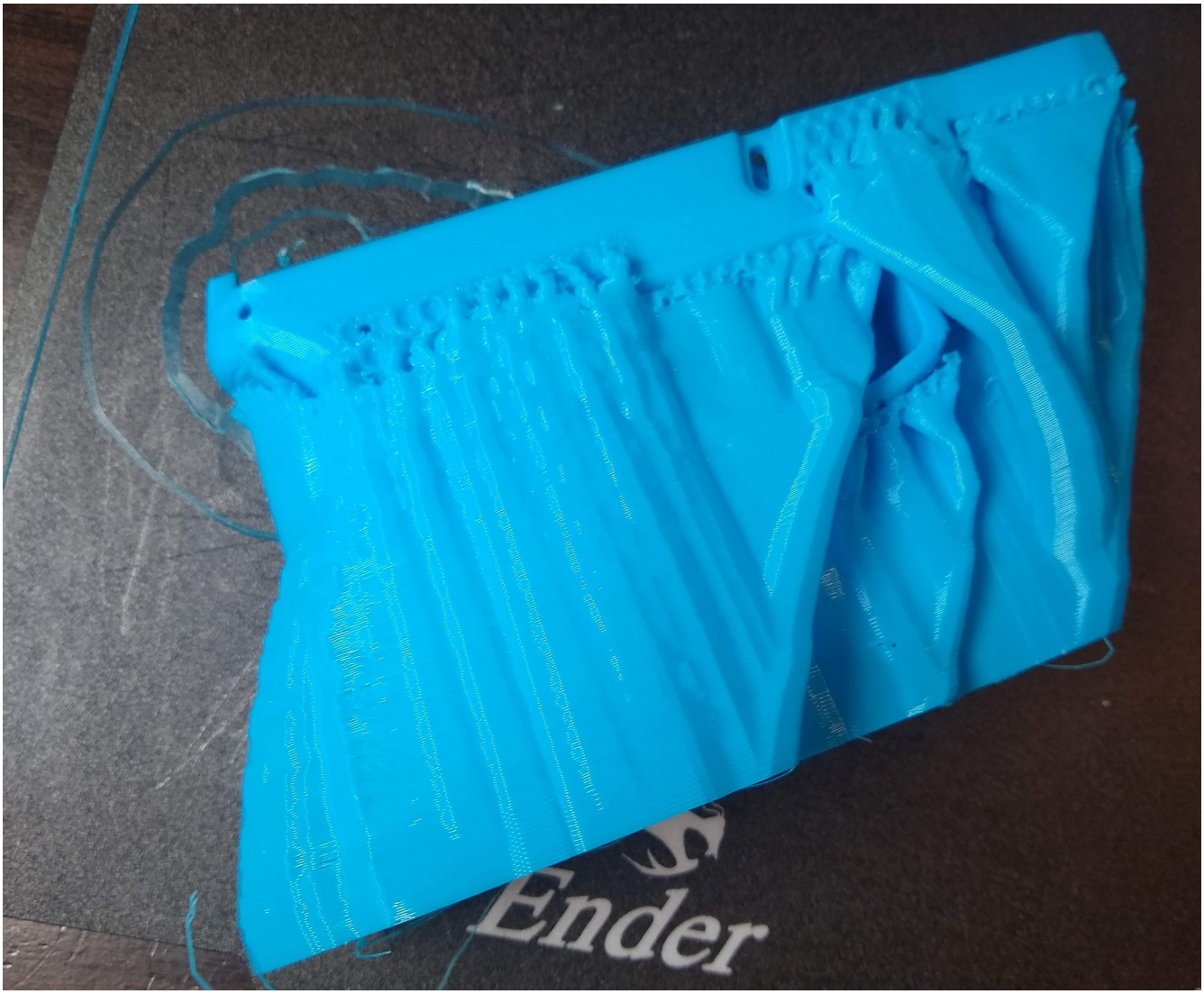


Frame Post-Print Cleanup

Here’s a look at this frame straight off the print bed:



First, lets peel it off:

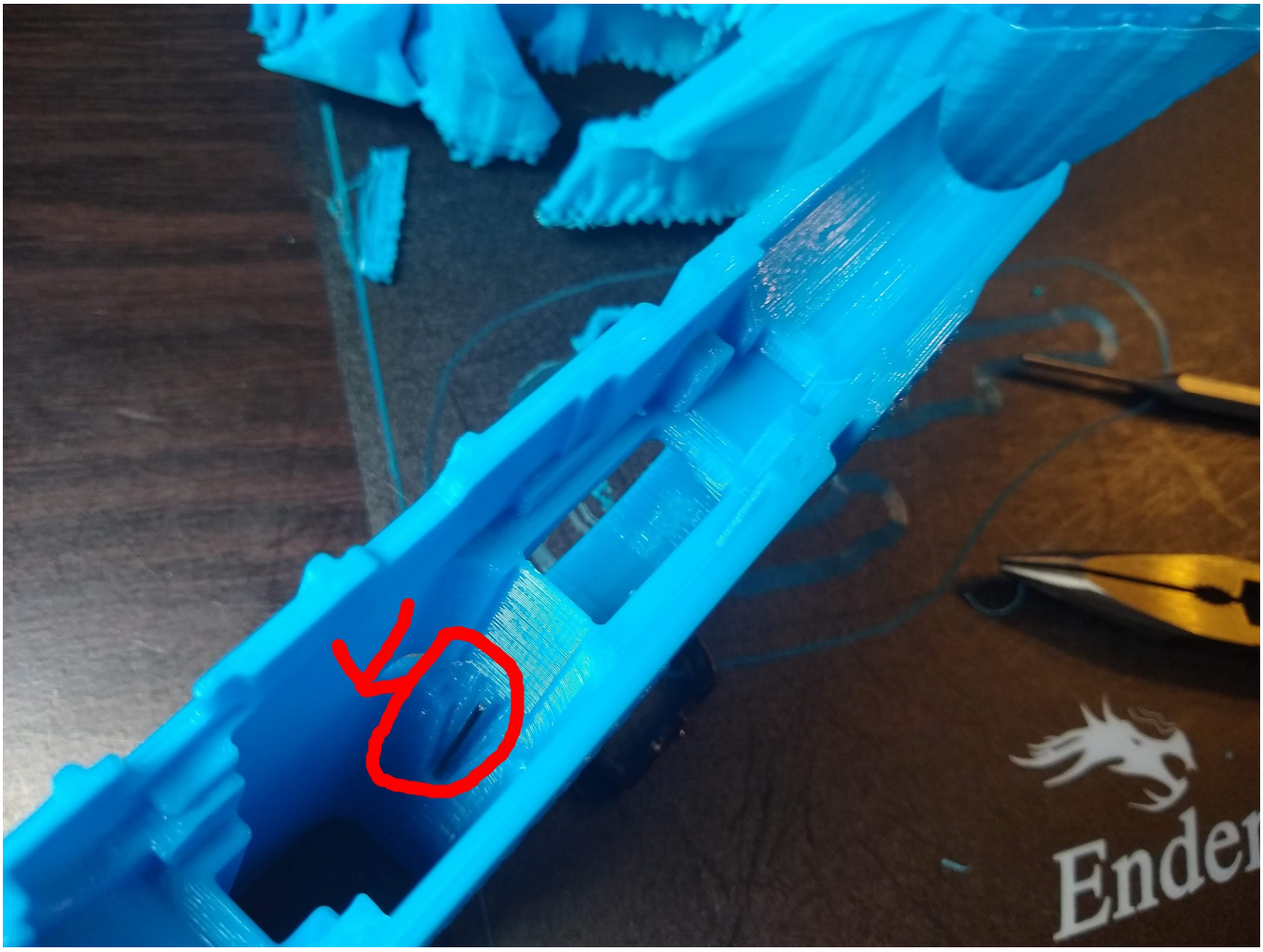


Starting with the front supports, start peeling the support material off of the frame:

Be sure to clean up the following areas, if support material remains. Also, be sure to remove support material from inside of the grip.

Assembly:

First, let’s grab the mag catch spring (the longest skinniest pin looking thing) with a pair of pliers, and install it into it’s hole:



The spring should not require force to install. If it does, tune your printer and re-print (as other dimensions are also likely off)

Note:
If you need to make a mag spring, here's how to do it:

-Use 0.051" music wire, trim to 27.85mm

-bake at 550F for 1.5 hours, allow to cool slowly in oven.

- -Baking on cast iron seems to work pretty well.

Next, loosely insert your mag catch into it's hole. Make sure it's installed at the correct orientation on both sides of the magwell:

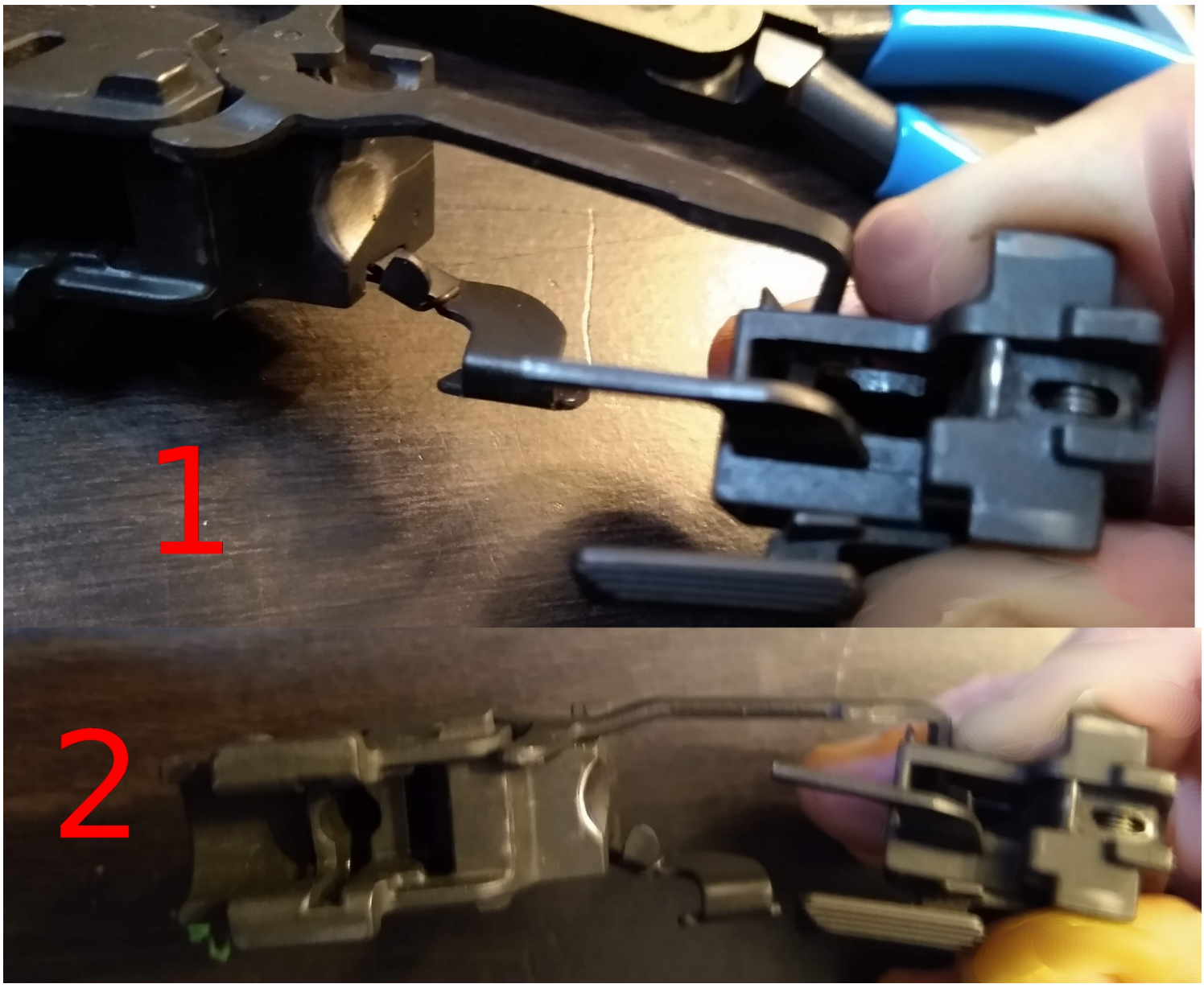
Next, use a gunsmithing punch and hammer to drive the mag catch into position. Use as little effort as required.

When installed properly, this is what the mag catch looks like on both sides of the magwell:

Next, let’s take a look at the sear block. Make sure the spring and detent are installed, and ensure the sear is in just the right position so that you can feel and hear the detents engaging properly prior to installation with the trigger block into the frame. You’ll have to hole the safety and detent down with pressure as you’re inserting it into the frame. Good luck!! When in doubt, assemble it inside of a ziplock bag to lessen the chances of loosing parts.

Now, lets take a look at the trigger block. Our Last Round Hold Open lever and it’s spring are already installed, as is the trigger block pin bushing. Note, this bushing must be installed for safe firing, otherwise the trigger block can be allowed to move excessively when firing (which will quickly break the frame and send parts flying):

Now, lets insert the trigger block into the sear block. Install the trigger bar sideways into the sear block, then turn it upright. It’s very difficult to install this wrong, but don’t use force:



Next, install the assembled action into the frame. Insert the sear block first, then tilt the trigger block into position. Make sure to push the sear block down and back, and don’t fully seat at first. The trigger block should be pushed all the way home first, and should seat into place easily with little resistance:

At this point, the trigger block has been pushed all the way home. Now, do the same for the sear block. When fully seated, the pin holes for the sear block should be perfectly aligned with corresponding holes in the frame. Fine adjustment may be necessary, DO NOT USE A HAMMER AND PUNCH TO DO THIS!:

At this point, the sear block has been pushed home and is in the correct position:

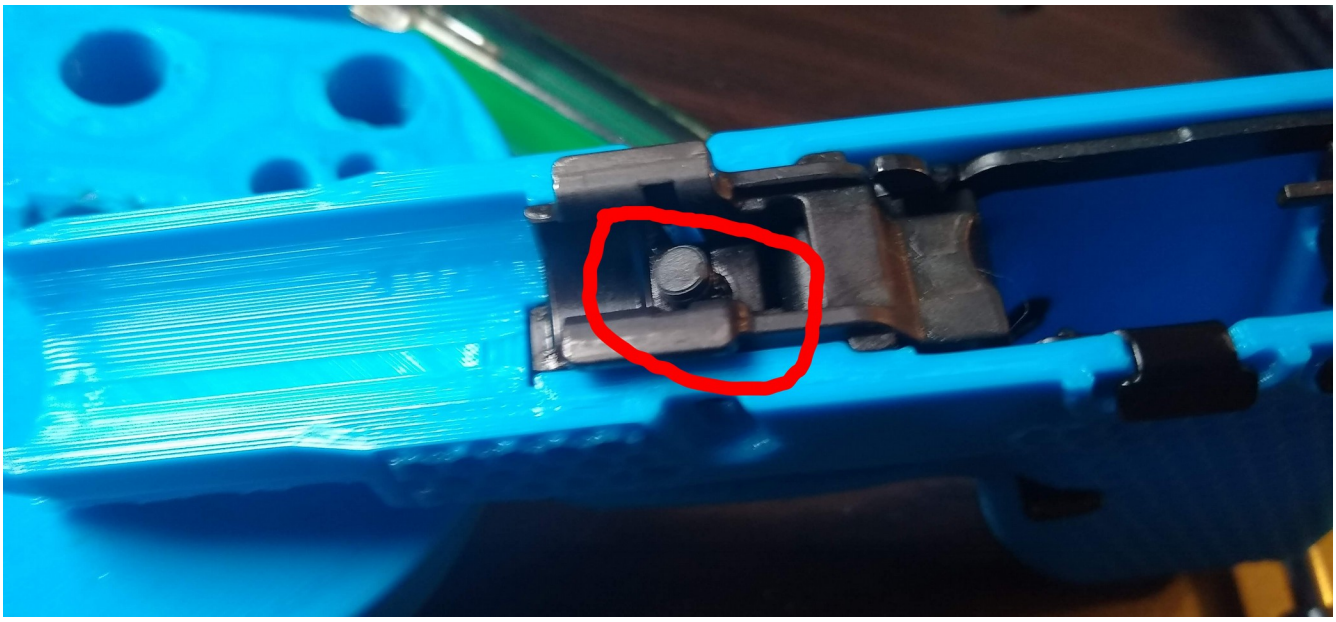
Before pinning anything into place, make sure you didn’t forget this flappy piece that goes in place on the sear block above the trigger bar. This must be installed before the assembled block can be pushed into the frame.
Before installing the front sear pin, lets take a look at it. One end is knurled, the other is not. Insert the smooth side into the frame, and hammer it into the frame. The knurled bits prevent the pin from being driven all the way through, DO NOT FORCE IT TOO FAR!

Once driven into it’s final position, not the depth of this pin into the frame. Drive it no further:

Next, let’s install the rear sear pin. Orientation doesn’t matter, but do note how far it get’s installed. We want to go for symmetry on both sides here:

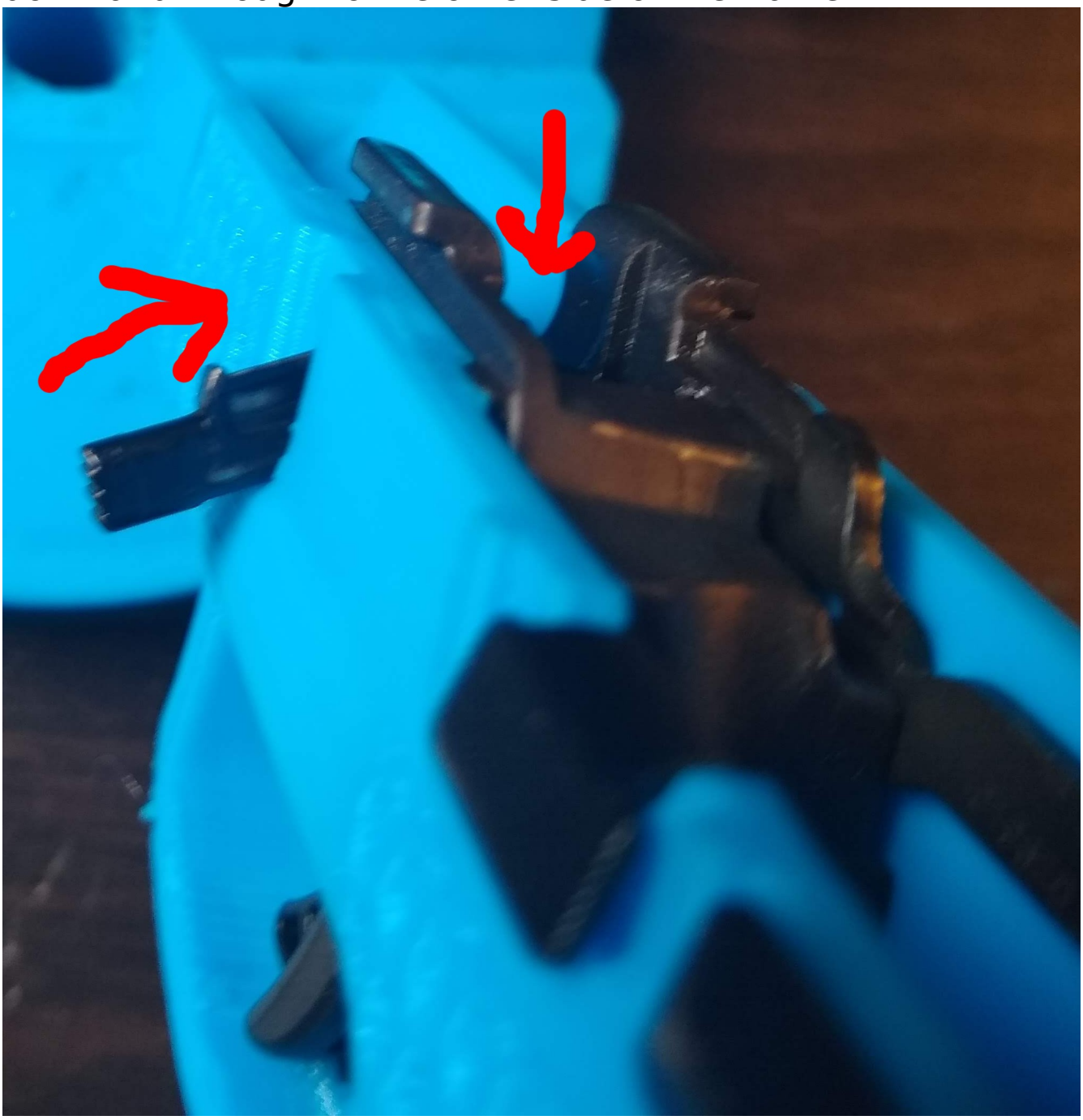
Next, we’ll install the trigger block pin. Make sure the trigger block pin bushing is installed prior to doing this!:

Next, insert the slide retainer spring into it’s plunger, and insert it into it’s position on the trigger block:



Now, let’s note the slide retainer. There’s a skinny and fat end. The skinny end is what gets inserted into the frame first (counter-intuitive I know).

Here’s a picture of the slide retainer once it’s installed far enough to retain the spring and plunger. At this point, push it down and through to the other side of the frame:



Finally, install the slide onto the frame. The slide should move freely and return without drag. Insert an empty magazine and

rack the slide back, the slide should lock back. Then, without removing the magazine, use your thumb to depress the LRHO lever, and the slide should rack back forward.

Huzzah! Your assembly is finished!! Run some snap caps through your firearm, and enjoy!:

Kit cleaning and Pistol Lubrication

It’s a universal fact that (almost) everything is better with lube, and this is no different. When buying kits, depending on where the last gang-banger to use it was stowing their former “piece”, your kit may range from being a little dirty to looking like it was stored at the bottom of a lake. Either way, cleaning up your kit is vital to success with a pistol built from such a kit. Make sure all the dirt and lint is off as much as you can, and remove visible rust *carefully*. A little rust isn’t a huge deal, but you don’t want to be removing massive amounts of material to get them shining. Doesn’t have to be gleaming, just dirt free.

Once your kit is clean and assembled onto your frame, it’s vital to place a small amount of appropriate lubrication on these areas. I use Break-Free CLP, but there’s lots of options out there. Please see the pictures below for the appropriate locations.:

In essence, you want to lightly lubricate the rails, trigger, LRHO, sear bar, and sear bar retainer. DO NOT lubricate the feed ramps, mag catch, or anywhere else that isn’t noted. Don't go nuts, just a very small drop in each location, install the slide, and work it in. Should work much better then when dry ;-)

Before installing the slide, lubricate the areas mentioned above. Just a drop. We want to lube the rail slots, the barrel (where it engages into the trigger block), guide rod and spring, etc. It’s not pictured, but once assembled, lock the slide back with the LRHO lever, and put a few drops of lube on the barrel and wipe it into a fine film. Release the slide, and now we’re ready to rock and roll.

Parting thoughts from Freeman1337:

Greetings all,

Well, it’s the Christmas season. There’s a new COVID-19 variant spreading throughout the world, Australia has COVID concentration camps, and Everytown is trying to doxx me and other developers, and Jstark has passed under troubling circumstances. As this… “interesting”… year draws to a close, I hope that this frame gives y’all something pretty to look at and play with in this festive season. Self defense is a universal human right, and I wish for y’all to practice it safely. Happy Holidays, and lets hope this year is better then the last

Warmly,

freeman1337