



Improved Caliburn Plunger



Cooper's Creations

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Summary

Less air leakage-more FPS. Everything has been redesigned from scratch and improved.

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Improved Caliburn plunger.

1. Smaller diameter spring hole. Now 24mm instead of ≈ 28 mm. This adds rigidity to where the spring sits when primed. NOT compatible with k14. Just get a machined plunger.
2. No hexagon pattern. I know we all love hexagons, but in this case, it takes away rigidity and material from the body of the plunger.
3. Entire redesign of contact point on rambase. Removed the six slits on the plunger, as that is a potential area for air leakage. Entire contact point is now flat, instead of the indent in original.

Every part of the plunger has been redesigned. See GIFs for how I did this.

Please lubricate the o ring. Less friction=More fps. Most people use super lube but I use Vaseline and it works completely fine. Honestly I do not know why the original is designed so poorly. Fight me in the comments to defend the original. There is a possibility that this is stronger than machined Acetal, at a fraction of the cost. (for the math nurds thank you

for reading this. Frontline foam charges USD \$21 for an acetal plunger, this costs \$1.15, if your filament is \$20. If your filament is not USD \$20, this weighs an approximate 55 grams and uses 19 meters of filament. You can calculate that. This is around 18 times cheaper than acetal version [21÷1.15=18.25])

Print Settings: Any filament will work. But you should probably use a high-impact filament. I know a lot of you think 'You should print high impact parts with \$100/kg CF-Nylon' Honestly it doesn't really matter, PLA(+) (yes, the '+' is in brackets!) will work completely fine. But print as you wish. For strongest results, print with 100% infill (I hope you already knew that). Print with **inside brim**, and use a deburring tool to go around the inside of the plunger. Set **Elephant's Foot Compensation** to around 0.3-0.5mm. **No supports** needed, just like the original!

You can also print using a 0.4mm nozzle, with 0.6mm extrusion width! Lots of youtube videos on how to do. I have done that plenty before and it works without flaw. Or use 0.6mm nozzle profile, with a 0.4mm nozzle. Make your printer think it's using 0.6mm nozzle.

Print time: Slicer says it takes 1h 45m with 0.6mm nozzle (settings), 0.3mm layer height, 4 perimeters and 100% Infill, 10mm inside brim on mk3s+. Would be much faster on bambu lab printer or mk4. Printed on Ender 2 Pro, also took 1h 45m.

DISCLAIMER: I have not long term tested/battle tested. But I can say that it works and it works well. Only tested for the purpose of this upload. This is already much stronger than the original.

If there are any weak points, keep in mind the original is worse. If you have any issues let me know and I'll try to fix them.

This remix is based on



Caliburn Mag-Fed Pump-Action Nerf Blaster

by captainslug

Model files



improved-caliburn-plunger.stl

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