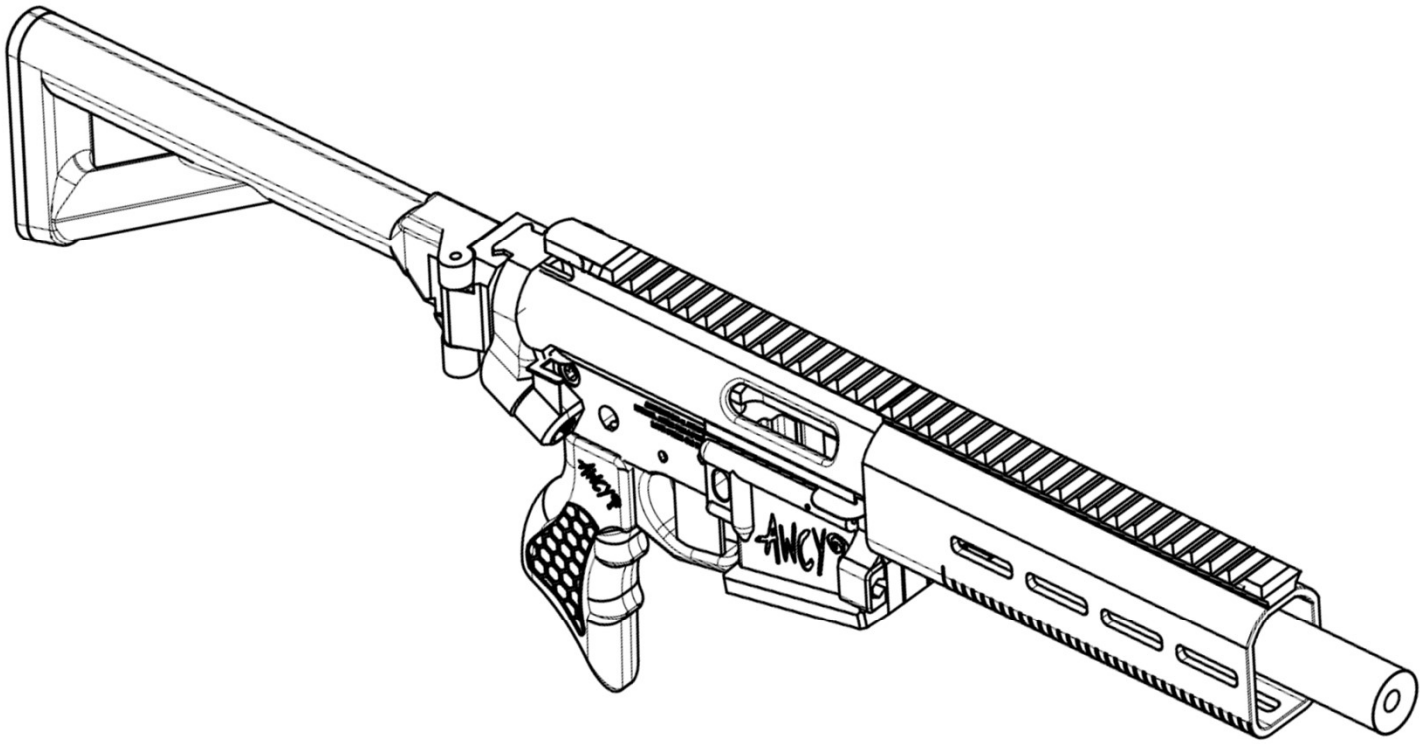
Tubee-22
Build Guide



VERSION 2.0 GUNDER_MIFFLIN SEPTEMBER, 3, 2021

WHAT IS IT?

The Tubee-22 started out with the idea of 3d printing a barrel and using a steel liner inside for a light weight and low-cost solution. The design was inspired by Mussy's G22, and each section is pinned and glued together for strength. This design evolved into an entire platform using the CMMG 22LR conversion kit for an AR15.

REQUIREMENTS

The Tubee-22 is mostly printed, but some metal parts are required to make it function

- **22LR Barrel**
  - **0.305”, 0.3125”, 8mm or 0.375” OD barrel liner required**
  - **3mm or 1/8” by 20mm long metal pins (for attaching barrel sections)**
  - **JB-Weld (to affix the barrel liner to the barrel)**
  - **CA Glue**
  - **Chamfering Tool**
  - **¼” Drill Bit**
  - **~300g (for rifle length) of printing filament (Barrel has been tested in PLA+ and PETG, but other materials like ABS or Nylon should also work well)**

- **Lower and upper receivers**
  - **CMMG Bravo 22lr conversion kit (You MUST buy the kit that comes with the chamber adapter. “Dedicated” conversion kits will not work)**
  - **Mil-Spec AR15 Lower Parts kit (does not need to include bolt catch as it is removed from lower)**
  - **~1kg printing filament of your choice (Recommended to print the lower, upper, handguard and stock out of a high quality PLA+.)**

DESIGN AND PRINT SPECIFICATIONS

BARREL

- **Designed ONLY for CMMG Bravo 22LR Conversion**
- **Printable in 4.5”, 9” and 16” version**
- **Includes options for 1/2x28” and 13/16x16” threading**
- **4.5” version can be printed in 1 piece on a standard Ender 3**
- **9” and 16” versions print in 2 and 3 pieces**

PRINT SETTINGS

- **Material: PLA+, PETG, ABS, Nylon**
- **Printing Method: Beta testing only included FDM builds**
- **Nozzle Size: 0.4mm**
- **Layer Height: 0.2mm**
- **Wall Lines: 6 minimum for chamber, 4 for mid and end**
- **Infill: 100% Concentric for chamber, no lower than 20% cubic for mid and end**
- **Supports: Standard supports, touching build plate only for chamber. Supports not required for mid and end sections**
- **Build Plate Adhesion: It is highly recommended to print on a raft to prevent parts from breaking off during print. If you have an issue with parts breaking off even with a raft, change infill to 100% concentric and should work.**

DESIGN AND PRINT SPECIFICATIONS

UPPER/HANDGUARD

- Handguard comes in 2 different sizes, short for 4.5” builds, and long for 9” and 16” builds.
- To use the handguard, you MUST print both the included upper and lower receivers.
- Printable barrel nut is designed to be tightened by hand only, using a wrench will strip out the threads.

PRINT SETTINGS

- Material: PLA+, PETG, ABS, Nylon
- Printing Method: Beta testing only included FDM builds
- Nozzle Size: 0.4mm
- Layer Height: 0.2mm
- Wall Lines: 6 minimum
- Infill: 100%
- Supports: Standard supports, touching build plate only Build Plate Adhesion: It’s highly recommended to print on a raft to prevent parts from breaking off during print.
- Orientation: Print upper threads down. Print Handguard with barrel nut end down.

DESIGN AND PRINT SPECIFICATIONS

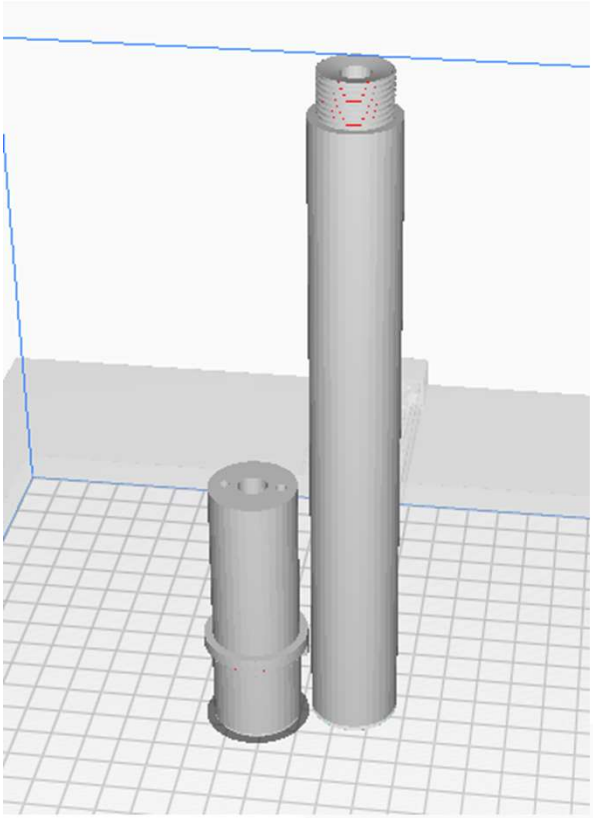
LOWER/PIC RAIL ADAPTER

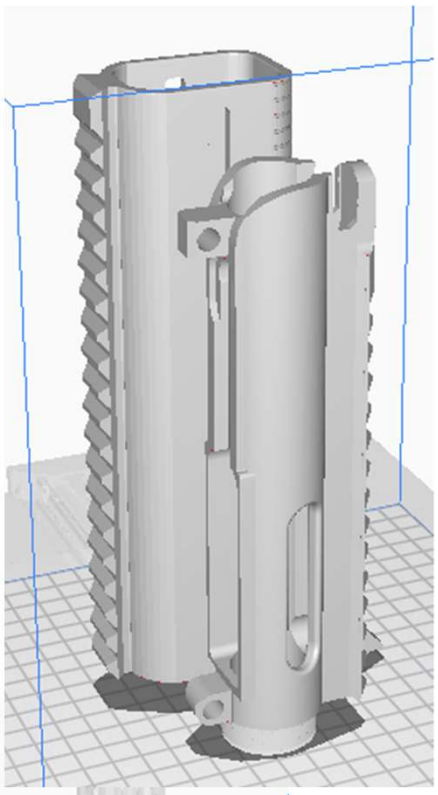
- **Print lower according to Anderson Firearms build guide (included in “Lower” folder).**
- **Print Pic Rail buffer adapter with pic rail down.**

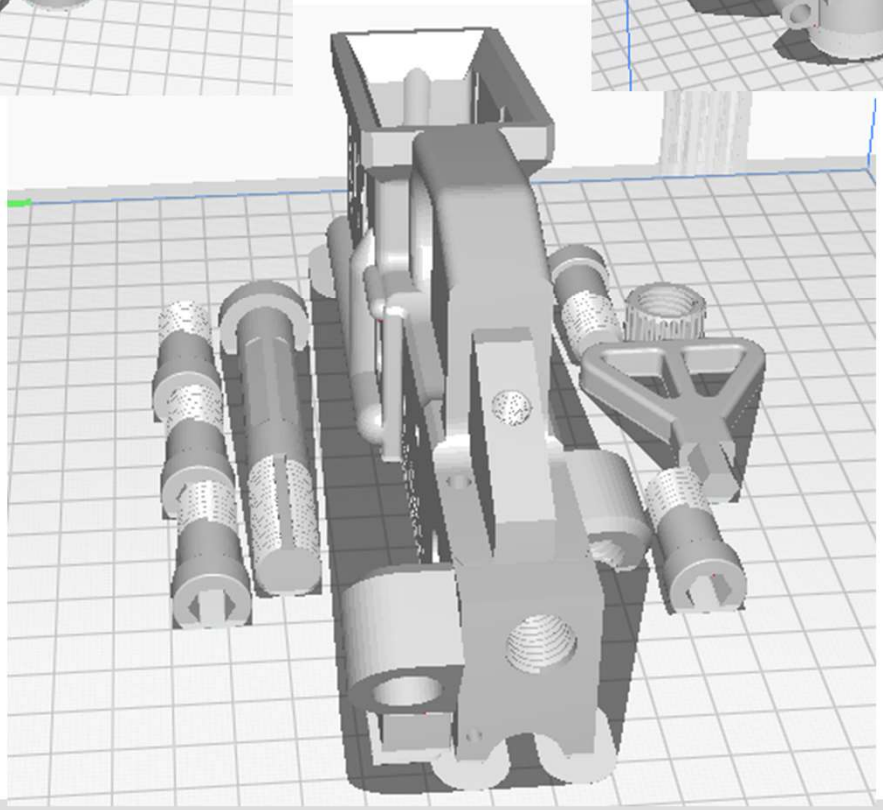
PRINT SETTINGS

- **Material: PLA+, PETG, ABS, Nylon**
- **Printing Method: FDM ONLY! Not for resin printing**
- **Nozzle Size: 0.4mm**
- **Layer Height: 0.2mm**
- **Wall Lines: 6 minimum**
- **Infill: 100%**
- **Supports: Standard supports touching build plate only for Pic Rail buffer adapter. No supports for lower.**
- **Build Plate Adhesion: Lower has brim built in, pic rail buffer adapter should not need a brim or raft.**

PRINT OREINTATION







BARREL LINER FINISHING AND INSTALLATION

Using a ¼” drill bit, drill into the liner ~1/4” deep. This will allow the liner to slip over the chamber adapter and ensure a gas tight seal. Use a chamfering tool to clean up the end of the liner.

BARREL LINER FINISHING AND INSTALLATION

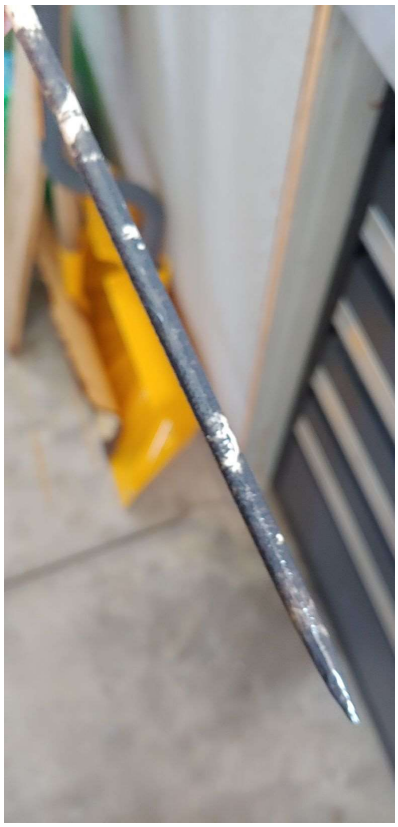
Dry fit barrel pieces together and insert the chamber adapter into the chamber portion of the barrel. Slide your liner down the barrel until it is fully engaged on the chamber adapter. Using a pick/knife/sharpie, mark where the liner will need to be cut. Cut the liner using a small pipe cutter and a drill. Youtube "Cutting a barrel liner" if you need help. Using a chamfering tool, remove the edge from where you cut the liner.

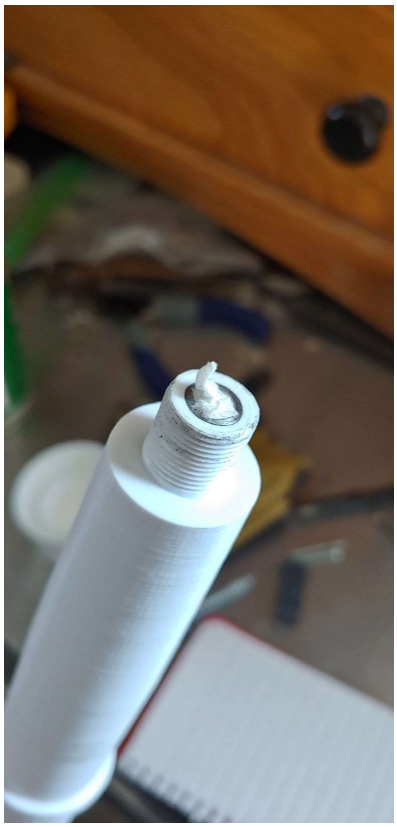
BARREL LINER FINISHING AND INSTALLATION

Using coarse grit sandpaper or a sandblaster, rough up the outer surface of the barrel liner to give the epoxy something to stick to. Clean the outside of the liner using solvent like acetone/brake clean/alcohol. Use pieces of paper towel to plug both ends of the liner to ensure epoxy does not get inside of it.

BARREL LINER FINISHING AND INSTALLATION

Prepare epoxy. Only a small amount is needed for installation of the liner. Use a BBQ skewer or another long tool to spread the epoxy all along the inside of the barrel. With a twisting motion, slide the liner in to place in the barrel. If printing a multiple part barrel, it is best to install the chamber section first, then slide the next section over the liner and use super glue to bond the chamber part to the mid or end part. Don't forget to install your 20mm rods for strength with a drop of CA in each hole! Allow 24 hours for epoxy to cure before continuing assembly.





BARREL LINER FINISHING AND INSTALLATION

Congrats! You made yourself a barrel, don't you feel special? Now go someplace safe and shoot it!