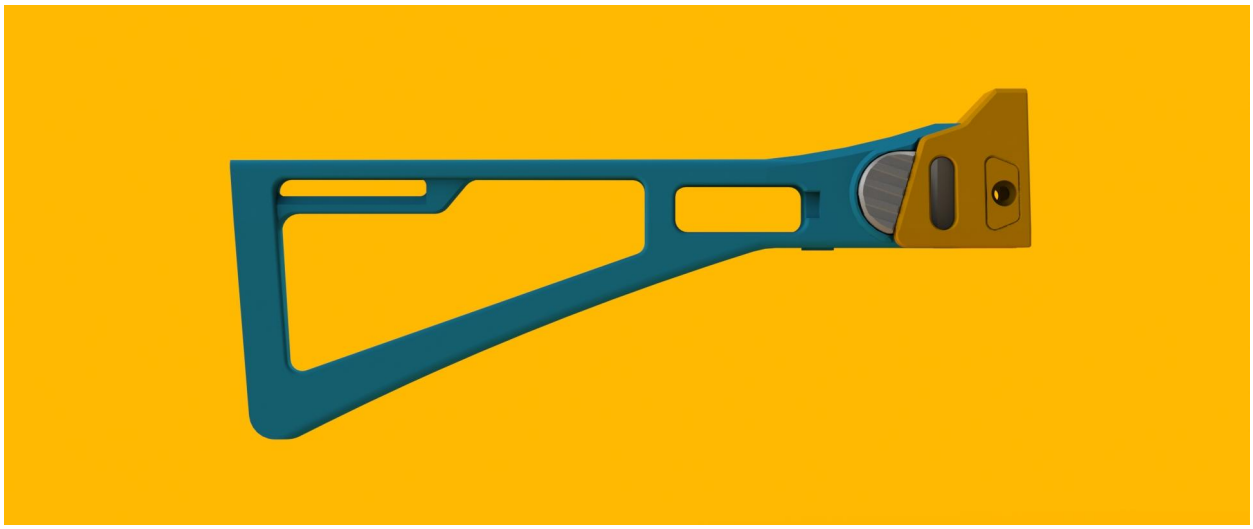
MIDDLETON MADE 3D

Sauerkraut Folding Brace - README



You are responsible for your own safety and checking laws governing your area prior to manufacturing.

Links:

- Defcad: https://defcad.com/users/MiddletonMade3D/
- Odyssey: https://odysee.com/@MiddletonMade:1
- Paypal: https://www.paypal.com/paypalme/middletonmade3d
- Buy Me a Coffee: https://www.buymeacoffee.com/MiddletonMade
- IG: https://www.instagram.com/middleton_made/
- FB: https://www.facebook.com/MiddletonMade
- YT: https://www.youtube.com/c/middletonmade3

Legal

The Sauerkraut is designed to have visual similarities to the HK G36 stock, however, this is designed to function as a brace. It has many queues and features borrowed from other known and established brace manufacturers to ensure legal NFA compliance on weapons with short barrels. I'd recommend installing a strip of velcro through the rear loop to further distinguish it as a brace. Keep your dogs safe.

Printing

For print orientation, please see the separate file named *"SuggestedPrintOrientation"*

Filament Type - PLA+

For any parts that receive stress, do **not** use metallic, silk, glow in the dark, fluorescent, or any other special type of filament. Stick with regular, single color PLA+.

I've also had an excess of worn/broken parts with GST PLA+. While I don't have a wide range of experience with a variety of brands for testing, eSun has been reliably strong and consistent for me.

Printing Instructions

Print Brace Button and Mount Key at .12mm. This isn't as important for the larger parts.

I typically use between 10-16 walls, 60-90% infill, tree supports, and a skirt. Your printer and material may require different settings to get a strong and clean print.

The rear of the brace is angled. Make sure to align the back of the brace to the print plate. You may need to use a brim or raft if you've had issues with tall prints before to ensure the supports or print don't peel from the plate near the end.

Assembly

To start, you'll need:

Printed Parts:

- Brace
- Brace Button
- Mount
- Mount Key

Pre-manufactured Parts:

- x2 30mm M4 Screws
- x1 20mm M4 Screws
- x3 M4 Screws
- 1 AR15 Magazine Catch Spring

Tools

- Alen Key (for M4 screws)
- Razorblade
- Snipping/cutting tool

Step-by-Step

1. When all prints are finished, clean up all support material. There are 3 areas that are extremely important to pay attention to for clean up for a perfect fit (clearance IS tight)
    a. The brace button-hole needs to be very clean. How well the button functions largely depends on if it binds up in the hole. This may require special attention to the area where the support material was attached.
    b. The area where the button interfaces with the mount needs to be very clean. Even the smallest burrs or bloops from printing can prevent the button from fully seating and providing that satisfying click into place. You can use the button its self to push into the pocket repeatedly or use a razor on the inside lip to make sure it has a clear path.
    c. The hinge area is the last area of higher attention. This area needs to have all the support material cleaned out well, otherwise, it will cause a huge spike in pressure and depending on how well the support material is fused to the print, possibly break the hinge.
2. Use a razor blade to chamfer the bottom edge of the button and ensure the button has a perfectly smooth outer wall.

3. Insert a screw into the small pocket, inside the buttonhole, and start the x20mm M4 screw. Insert the button with its spring, and tighten the screw all the way down. The proper position is fully tightened but not binding inside the button.
4. With the button installed, mate the hinged parts and insert your 30mm M4 screw through and tighten with a nut. Do not overtighten. A dab of blue lock tight may help prevent any premature loosening from heavy use.
5. Insert your last M4 screw through the key, and once on your intended picatinny rail, through the body and tighten with a nut on the opposite side.
6. Prior to use, check the function and ensure the button locks up tightly. There will be a video coming out to talk about the assembly of this design as well, so if you're not sure if it's functioning properly, search "Middleton Made 3D" on YouTube and watch said video.
7. Congrats, you made yourself some Sauerkraut.