

8th Elephant's V-Tail Clamp



Below is a diagram and template for use with V-Tail clamp available at the 8th Elephant Shapeways shop found here: http://www.shapeways.com/model/423247/v_tail_clamp_for_passer_and_other_glidern.html?gid=sg5095

Originally created for the R2 Hobbies Passer X series of gliders, but also applicable to many other sailplanes with **Top-Mounted** V-tails of the **same angle**. This clamp was designed to make fixed V-Tails removable and completely separated into 3 main parts (Left & Right Tails + Clamp) for ease of transport. 2x plastic 3mm bolts and matching metal nuts will be needed for completion.

Disclaimer: Please measure the template and V-Tail Clamp prior to preparation & installation as some printers may automatically change sizes and proportions to fit different media. Be sure that "Scale to Fit" is unchecked in your preferences before printing.

Preparation:

Cutout and score the templates along the "Fold lines." Tape the tails together (Painter's tape ideal) at the top & bottom joining lines and tape the "Tail Template" to the top of the assembly, aligning the "Fold Line" at the joining line and the rears of the v-tail and template. The Pointed part should face the front of the fuselage.

Temporarily tape the v-tail assembly to the fuselage adjusting it as needed for perfect alignment.

With the fuselage clamped and level in a vice, mark and Drill small pilot holes for the 2 center "Mount Holes," then progressively sand out to the final 3mm diameter hole with a rotary tool or a series of rolled sandpaper tubes.

***note:** **Option #1** you only need drill through the top layer of the fuselage.
Option #2 requires drilling through both top and bottom of the fuselage perfectly straight.

Remove the tail assembly from the fuselage and gently cut the Tail Template on the Fold Line; separating the 2 halves. Now drill and sand the six "3mm V-Tail Holes" from the top down. Trial fit and remove them from the V-Tail Clamp and then line the holes with some thin CA glue for added rigidity.

Installation:

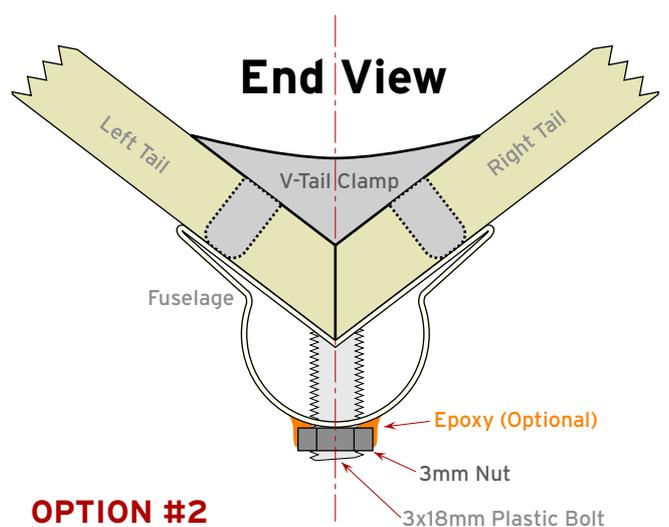
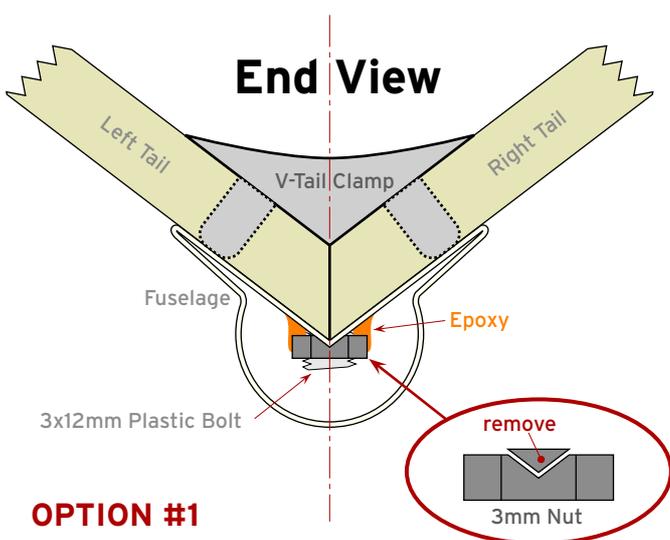
Option #1 (harder installation but cleaner appearance) conceals the 3mm nut inside the fuselage.

For this to be successful, I recommend putting a notch or bevel on the top center of the 3mm nuts for better mating to the fuselage. With the top and sides of the nut roughened up, use double stick tape to mount the bottom on a piece of scrap and apply a little epoxy to the top. Line up the whole v-tail assembly and slide each nut inside the fuselage till centered with the mount holes and bolt each one in place. Bolts can be pre-greased to repel any excess epoxy. Once the initial layer of epoxy sets, use additional epoxy+filler to mate the sides of the bolts with the fuselage and allow to fully cure before use.

Option #2 (easier but less elegant appearance and nuts can be damaged in harsh landings) puts the nuts outside the fuselage. Nuts can either be glued for added convenience or just screwed in upon each assembly. For gluing nuts in place, roughen fuselage in the placement area and the tops & sides of the nuts. Screw in nuts firmly and apply epoxy around the edges and gap between the fuse and nuts. Be sure to let this cure fully before flight. Trim Plastic Bolts to desired size for a cleaner install.

Happy Soaring! -8th

Diagrams



Templates

