

## Epoxying a Nut Inside an Airframe or Coupler Tube

My starting point is that the holes are already drilled through the tubing (phenolic, canvas phenolic, quantum, fiberglass, carbon fiber or any other high power tubing) and the inside of the tube is roughed up for better gluing. I prefer using [stainless] steel nylon-insert lock nuts if it is not too tall for the space.



I use a Dremel grinding attachment to roughen up all surfaces of the nut so the epoxy will have something to grab: bottom, hex sides, and top. See photo above, nut labeled A.

I only use nylon bolts, studs, and nuts to keep the nut in place. Epoxy does not stick to nylon and if I have to drill it out, it is much easier to drill. Every bolt or stud has a nylon nut on it. See above photo, nuts labeled either B or C.

All nylon threads exposed to epoxy, along with the top of the lock nut are covered with colored wax. The wax color is so I can make sure I did not miss any spots. See above photo nut labeled C.

For holes that are easily reached, I use option C, loosely installing the nut in the airframe hole. See photo below.



Epoxy is put all over the nut, being careful not to get too much under the nut or on top of the nut. See bottom nut in the picture below.



The nylon nut is used to tighten the lock nut against the airframe, spinning the lock nut a couple of times to spread out the epoxy. Make sure you spin to tighten the lock nut so it does not fall off. See top nut in the photo above.

This works for almost any sized nut. See photo below with #12 nuts in the lower tube and smaller #8 nuts in the upper tube.



For lock nuts that are deep inside a tube and not easily reached, I use the B configuration with a nylon stud. The stud is screwed into the waxed lock nut and the lock nut is covered with epoxy before putting anything in the tube. Then hold the nylon stud with long nose pliers or taping it to the end of a stick. The assembly is carefully inserted into the tube and the stud is poked through the tube hole. The stud is grabbed outside the tube and the nylon nut is screwed on and tightened until everything is snug. Sorry, no pictures of doing this.

Howard Druckerman

President, Champlain Region Model Rocket Club

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