

Easy Built Models - How-to Series

Making a Rubber Motor

There are a lot of factors that affect the size of the rubber motor for your model. Kits come with the closest estimate of what you may work but there are a lot of assumptions made. This is just a short description on the motor but for more information we direct you to "*Rubber Powered Model Airplanes*" by Don Ross available through our website.

Things that affect the size motor you need include the weight of your model, drag inherent of the design and your details, the size of the prop, the number of winds you put in the rubber, lubrication of the motor and the angles you set the wing and tail surfaces at as well as how windy it is when you are flying. A change in each of these affects the rubber selection. Only experience will help you get better here.

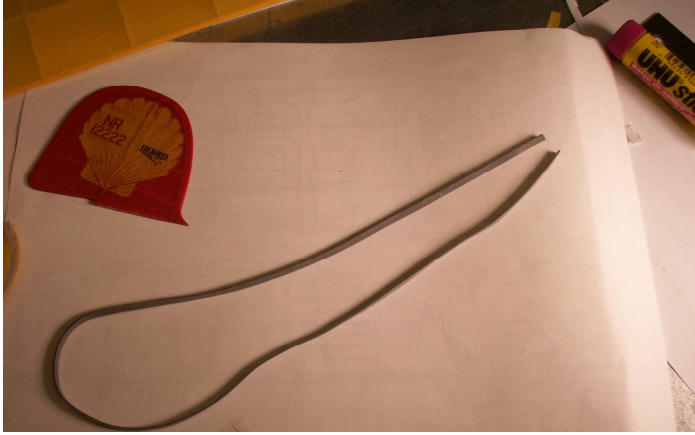
Before you start putting the motor and prop on your treasure, go find the magical soft, tall grass and do some test glides to get the CG set where you get the best flight. Once you have this then you can install your motor and prop followed by rebalancing the CG to where you got that optimum glide. Move on to the test winds once you have this set and use thrust adjustments to deal with the affects of torque and power bursts.

I like to use a large prop, about $1/3$ the wing span when I'm flying. This is combined with 1 or 2 loops of rubber about twice the distance from the motor hook to peg distance for competition flying. If you are flying in a back yard or small area where flight distances are limited then a shorter loop will work.

About rubber, the thicker the cross section the more power the motor will have. Making a loop longer will reduce the power of the motor. The desired CG location remains the same no matter what size motor you prepare. Changes in the motor though will cause the physical CG to move as would be expected with changes in weight distribution.

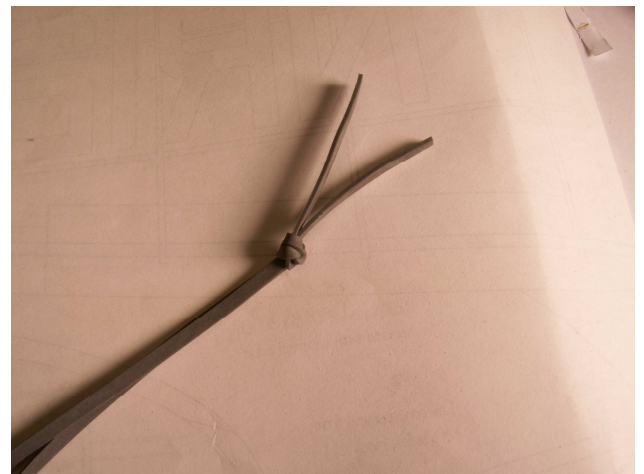
Lubricating a motor can reduce wear and tear on the rubber and make them last longer. There are several choices for these available from home brews to off the shelf automotive products like Armorall.

Rubber for the motor comes in a strip and not a prepared loop. If there is what appears to be a really long strip then there is probably enough to do a double loop.



You start by laying out the rubber in a single loop, you can then twist it halfway down the loop and double it over creating a double loop half the length with twice the power.

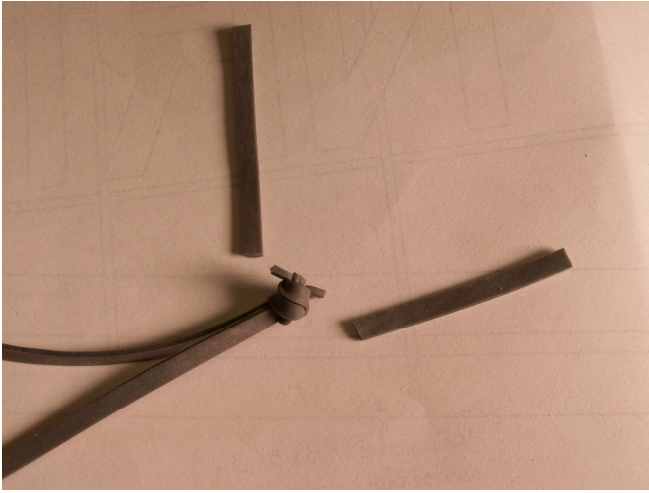
Next start with a granny knot but before you pull it tight wet the rubber with some water to lubricate the rubber so it does not cut through itself. Form a loop using both ends of the rubber and take the tails through the loop. Then snug it up.



Next use a square not at the ends over against the first knot, keep it wet and snug up.



Snip off the tails and it is ready to install.



Don Ross' book will take you deeper into this subject - braiding the motors, lubricating, stuffing sticks, blast tubes, helper motors, tube in tube motor pegs, reverse "S" hooks and all other kinds of high performance gumbandery to get those 2 minutes plus flights.

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