

# CHOOSING A MOTOR SIZE FOR A NEW MODEL

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One of the great mysteries for beginners in rubber powered FF models can be choosing a motor for their new model. How Long? How wide? What color? Forget that last question. Stick with Tan.

Chris Parent gave me this "rule of thumb" formula some years ago and I have found that it works pretty well to find a good starting point. It assumes a model with a wing loading of somewhere near .5 grams per square inch.

Here's how It works: Figure the all up weight of the model. This includes the weight of the motor. Most models fly happily with a motor that's around 25% of the empty weight of the model. If you have a light wing loading, you can use some of that carrying capacity to haul around more rubber. If your model is heavy, you may have to use less rubber to keep the wing loading reasonable. Adjust accordingly. Now, take your all-up weight and multiply it by 1.1 to give you the total motor cross section in 100ths of an inch.

Example: 28 grams empty model x .25 = motor weight of 7 grams. All up weight: 28 + 7 = 35 grams. Multiply that by 1.1 (35 x 1.1 = 38.5 or .385") to get the cross section in inches. Multiply that by 16 to get a conversion factor to 1/16ths, If you like to think in a non decimal way. In any case, you'll want a motor that is around 6.16/16ths. That's about 3/8 total cross section.

A loop of 3/16" does the job. Make up a loop with that cross section that weighs around 7.5 grams and you are in business. Or, four strands of 3/32 if you like easy braiding.

Now, the fudge factors. If you have a short nosed model, you'll probably have to add ballast to balance. Aim a little high to allow for the weight of the ballast. Bigger models (over 24") often fly with motors that are closer to a 1.0 factor. Peanuts usually need more. 1.2 is marginal in some. Very clean models can get by with narrower cross sections. Draggy bipes and such may need a bit more oomph.