

## Jig for the application of boron to motor sticks Written & drawn by Tim Goldstein

When I first started in F1D my motor sticks all looked like they were built by the crooked man in the crooked house. The first year I was at Kibbie Dome Nick Leonard Sr noticed this and gave me a back of a napkin sketch of the jig he used to make his motorstick straight while putting his boron on and assuring that the boron was tensioned evenly. Following is my interpretation of his jig. I have been using it since and it sure does give you arrow straight motor sticks with boron that looks perfect.

There are no critical dimension on the jig so it is shown without units. Mine is constructed out of supplies I had on hand. I used some spruce for the bottom rails (dark blue), balsa sheet for the base plate (purple) and uprights (green & black), brass shim stock for the retainer plates on the uprights (gray), silicone R/C receiver foam for the pressure pad (olive or orange), and a R/C aileron bell crank (burgundy). The uprights are made tall enough so that when you put your mandrel through them the foam pad is pressing up enough to push the motor stick tight against the mandrel, but not hard enough to bow the mandrel. The retainer plates need to be thin enough that the boron lays snugly against the top of the motor stick.

To use the jig you slide your mandrel with the seamed motor tube on it into the jig. The foam pad will press the motor tube snugly against the mandrel so that it is dead straight. You then glue the boron to the retainer plate at the end opposite the bell crank and to the block attached to the bell crank. Once that glue has dried you put the weight of your choice on the horizontal arm of the crank ( I use about 80 gm). This tensions the boron and pulls it straight. Now use your favorite method to firmly attach the boron to the stick. Once that sets you snap the excess boron at the ends of the motor stick then slide the mandrel forward so the end towards the bell crank comes free. Now lift it up slightly to take the pressure of the foam off the motor tube and rotate the tube into position for the next strand. Now repeat the above until all strands are attached.

Besides straightening your motor stick this method also applies the boron with the exact same amount of tension on each strand so the stick stays straight.

