

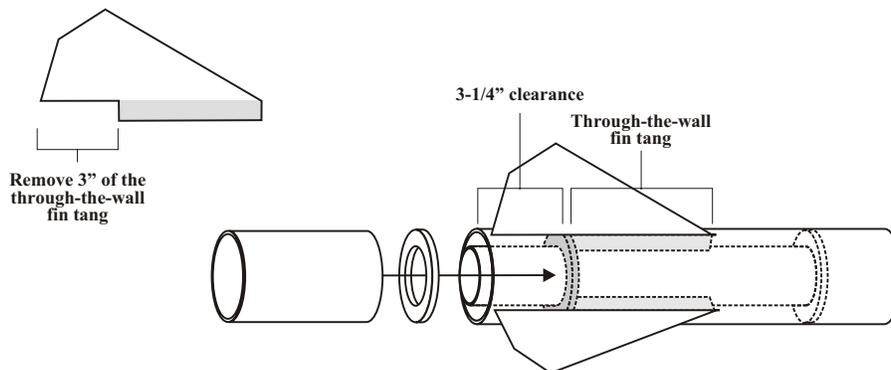
Important design criteria for upper stage

To use the Inter-stage 3000 system, the upper stage motor mount and fins must be constructed in the manner described below in Step A. The Inter-stage 3000 system requires 3-1/4" of clearance between the base of the airframe and the lower centering ring. To accomplish this, the fin tabs must be cut and removed from the lower 3" of each fin and the fin slots in the airframe should begin 3-1/4" from the base. The lower centering ring must be slid up into the airframe until it contacts the fin tabs.

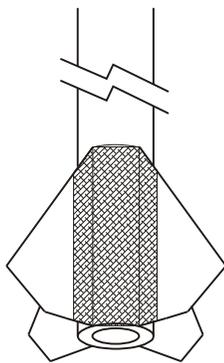
Now because the bottom 3" of each fin is essentially surface mounted to the airframe, we recommend fiberglass reinforcement for added strength as described in Step B.

Step A

Using a stick, apply a layer of epoxy in the base of the airframe just below the fin tangs. Press the centering ring into the base of the rocket using the coupler tube. Push the ring in until it contacts the fin tangs. Immediately remove the coupler tube and wipe off any epoxy residue using a cloth.



Step B



Because of the partial fin tabs necessary on the sustainer stage, fiberglass cloth is recommended to strengthen this area. Be very careful not to distort or fray the edges of the fabric. Mix up a batch of 20 minute finishing epoxy in a small cup. Using a 1" wide disposable brush, Coat the facing sides of two adjacent fins and the airframe between and 1/4" above the fins with the epoxy as shown. Apply just enough epoxy to completely wet the surfaces, but not enough to run or sag.

Apply a piece of glass cloth to the coated surfaces. The cloth should over hang the fins at the top and bottom. Press the cloth into the epoxy by dabbing it with the brush. Be sure there is no air trapped under the cloth. The cloth becomes transparent when it is properly wetted with epoxy. If some areas do not appear wet, dip the brush in the epoxy and dab the dry area.

When the epoxy has set firm, but not completely cured, trim the overhanging cloth with an X-Acto knife. Don't worry about making it perfect at this point. Repeat this process on all four sides. When the epoxy has completely cured, sand off any bumps that may have occurred using 120 grit sandpaper. Wipe clean and apply another coat of finishing epoxy to the entire fiberglass surface. When cured, sand with 220 grit sandpaper. Repeat if necessary until smooth. Sand the edges of the fins smooth and round. Apply thin CA to all the edges of the fins and cloth. Fill any imperfections with spot putty or other filler. Allow to cure, then sand again lightly using 220 grit sandpaper.