Cirrus
Assembly instructions
Please read and understand all instructions before continuing!

Step 1
NOTE: Be sure to scuff all parts to be bonded using medium sand paper.

1) Apply a bead of thick CA into a "dado" slot on the airframe. Push the fin into the slot. Make sure that the fin is perpendicular to the airframe. Use tape to hold the fin in position while the CA cures or spray it with CA accelerator. Repeat this process for all fins.

2) Apply an epoxy fillet to both sides of each fin. Carefully smooth the epoxy with your finger before it begins to gel. Allow the epoxy to set-up before rotating the rocket to do the next set of fins. Once the epoxy has fully cured, you should sand the fillet smooth with 150 grit sandpaper. Also sand all fin surfaces and the area of the airframe between the fins and 1" above the fins using 220 grit sandpaper.

Step 2
Remove the fiberglass cloth from the plastic wrapper. 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. 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 on all sides. 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 E-Acto knife. Don't worry about making it perfect at this point. Repeat this process on all three sides. When the epoxy has completely cured, sand off any bumps that may have occurred using 150 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 320 grit sandpaper.

Step 3

1) Pull about 3 inches of the strap (the non-stretchy one!) into the coupler and epoxy it to the inside wall. Use a slow setting epoxy for maximum adhesion. Use masking tape to hold the strap in place while the epoxy cures.

2) After the epoxy has cured, stuff the remainder of the strap into the motor mount tube to keep it out of the way for the next few steps.

Step 4
Draw a pencil mark around the coupler 1.5" from the end opposite the protruding strap. Spread some epoxy inside the lower airframe to a depth of about 1". Push the coupler into the lower airframe to the line. Do not allow epoxy to run down the inside of the airframe or into the coupler. Allow the epoxy to set. Then spread some epoxy inside the upper airframe to a depth of about 1". Push the upper airframe over the coupler protruding from the lower airframe. Do not allow epoxy to run into the coupler tube or onto the strap stuffed inside. Allow the epoxy to set.

Step 5
The strap referred to in this step is the strap you installed on the motor mount in Step 2.

A) Pull the free end of the strap through the slot in the piston bulk plate. Slip the metal "D" ring over the strap.

B) Wrap the strap around the "D" ring twice, then feed the strap back through the slot.

C) Flip the assembly over. Fold the short end of the strap flat against the bulkplate and epoxy in place.

D) When the epoxy has cured, pull the strap until the "D" ring is wedged at the slot. Apply epoxy to the strap at the "D" ring.

E) Epoxy the bulkplate inside the piston body 1/8" from the top. Apply an epoxy fillet to both sides of the bulkplate.
Measure off the midpoint of each parachute shroud line and mark it with a pen. Gather all the shroud lines making sure they are not twisted or tangled. Keep all the marks on the shroud lines together. Tie the lines together using a simple overhand knot leaving a small loop where all the marks meet. Tie the parachute to the elastic shock cord 1/3 of the way from one end. Tie the long end of the shock cord to the "D" ring on the piston. Tie the short end of the shock cord to the eyebolt on the payload section.

Draw a pencil mark around the coupler 1.5" from the end opposite the bulkplate. Spread some epoxy inside the payload section to a depth of about 1.0". Push the coupler into the payload section using a slow twisting motion up to the pencil mark. Drill a 1/8" hole in the payload section 4" from the top to bleed off air pressure build-up during flight.

Screw a nut onto the eye bolt. Thread the eye bolt through the hole in the coupler bulkplate. Place the washer over the eye bolt threads protruding through the bulkplate. Tighten the other nut against the washer. Apply a drop of CA to the threads of the eyebolt to keep the nuts from loosening.

Epoxy the bulkplate assembly inside the coupler tube about 1/8" from the end. Apply an epoxy fillet to both sides of the bulkplate.

NOTE:
When tying the shock cord to the parachute and the "D" ring, loop the shock cord through twice then tie a double overhand knot. Pull the knot tight and leave 2-3 inches of excess cord after the knot.

Now it's time to paint and detail your rocket!

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