DYNACOM

ALL-FIBERGLASS HIGH PERFORMANCE HIGH POWER ROCKET KITS

PYTHON

ASSEMBLY INSTRUCTIONS

DYNAMIC COMPOSITES INCORPORATED
PITTSBURGH, PA 15131

RECOMMENDED MATERIALS AND TOOLS REQUIRED TO COMPLETE ASSEMBLY

80 GRIT SANDCLOTH

320 WET/DRY SANDPAPER

DENATURED ALCOHOL

15 MINUTE MID-CURE EPOXY

HALF ROUND AND SMOOTH FILES (OPTIONAL)

PC-7 EPOXY PASTE OR EQUIVALENT (OPTIONAL)

LOCTITE 495 INSTANT ADHESIVE OR EQUIVALENT CA

LOCTITE 242 SERVICE REMOVABLE THREAD LOCKING COMPOUND

CAUTION

EXPOSED EDGES OF FIBERGLASS ARE EXTREMELY SHARP AND WILL CUT THROUGH SANDPAPER AND SKIN. WITH THE EXCEPTION OF THE MATING SECTIONS OF AIRFRAME, BREAK ALL SHARP CORNERS LIGHTLY WITH SANDCLOTH OR SMOOTH FILE PRIOR TO DRY-FITTING KIT COMPONENTS IF NECESSARY.

WIPE DOWN ALL FIBERGLASS KIT COMPONENTS WITH DENATURED ALCOHOL AND LINT FREE CLOTH PRIOR TO FINAL ASSEMBLY.

THE NOSECONE SHOULD REMAIN IN ITS PACKAGING UNTIL THE ENTIRE KIT IS FINISHED AND READY FOR PAINT.

READ THIS PROCEDURE CAREFULLY.

IN SOME CASES IT WILL BECOME IMPOSSIBLE TO MECHANICALLY RECOVER FROM A MISSED STEP. IT IS RECOMMENDED THAT ALL COMPONENTS BE *DRY-FIT* AND *DRY-RUN* PER THIS PROCEDURE PRIOR TO FINAL ASSEMBLY AND FINISHING.

ASSEMBLY PROCEDURE

1. KIT COMPONENTS

1.1. AIRFRAME TUBE

1.2. TAILCONE

1.3. STABILIZER FIN SET

1.4. MOTOR MOUNT TUBE

1.5. RETAINING RING

1.6. CENTERING RING

1.7. LANYARD AND QUICK LINK ASSEMBLED TO FORWARD CENTERING RING

1.8. PAYLOAD SECTION

1.9. PAYLOAD BULKHEAD DISC WITH EYEBOLT AND NUT

1.10. INTERMEDIATE AIRFRAME SECTION

1.11. NOSECONE

1.12. LAUNCH LUG SET (ACME ENGINEERING 76-A)

1.13. EACH #6-32 X 1/4" SET SCREWS

1.14. ALLEN WRENCH

2. MOTOR MOUNT/TAILCONE ASSEMBLY

2.1. Circumferentially mark the motor mount tube 21" up from the open end of the retainer.

2.2. Insert the motor mount tube through the small bore of the tailcone until the end of the tailcone contacts the aluminum retainer sleeve.

2.3. Epoxy to the motor mount tube to the tailcone from the inside, at the joint between the tube and the tailcone.

2.4. Position the assembly vertically to allow the epoxy to flow down and around the motor mount tube. Let the epoxy cure.

2.5. Epoxy the intermediate centering ring at the 21" mark.

2.6. Install the forward centering ring (cables forward) on the motor mount tube. Recess the ring about 1/4" below the end of the tube and epoxy both sides of the plate to the tube. Form heavy, uiniform 1/4" fillets.

3. MOTOR MOUNT/ AIRFRAME ASSEMBLY

3.1. De-glaze about 1 1/4" of the aft bore of the airframe with 80 grit sandcloth.

NOTE: THE FOLLOWING STEPS MUST BE PERFORMED SIMULTANEOUSLY

3.2. Apply a thin uniform layer of epoxy on the outside diameter of the tailcone sleeve and inside the aft bore of the airframe (3.1).

3.3. Form a thick ring of epoxy on the top side perimeter of the intermediate centering ring and the forward centering ring (mix approximately 3/4 oz. for each ring).

3.4. Insert the motor mount/tailcone assembly into the aft end of the airframe until the tailcone is fully seated against the end of the airframe.

3.5. Hold the airframe on about a 45° angle and rotate the tailcone against the shoulder several turns to evenly distribute the epoxy. Remove excess epoxy from the shoulder joint with a dry lint-free cloth.

3.5.1. It is advisable to rotate in one direction only - either clockwise or counter clockwise.

3.6. Repeat step 3.5 as required to distribute the epoxy from the centering rings to the inside diameter of the airframe.

3.6.1. Alternate turing the tailcone and the airframe. This will help pull the epoxy from the centering rings to the airframe.

3.6.2. Continue rotating until it is obvious that the epoxy is forming a fillet on the bore of the airframe. Check the formation of the forward fillet often.

3.7. Allow this assembly to fully cure in the vertical position. Additional epoxy may be applied to the forward centering ring but is not necessary.

3.7.1. Remove all traces of epoxy from the forward 4 inches of the airframe (payload sleeve region).

4. FIN ASSEMBLY

4.1. Using 80 grit sandcloth, deglaze 3/4" of both sides of the fins at the root edges.

4.2. Apply a stringer of epoxy on the 1/8" thickness of the root edge of a fin and install the leading edge first into the slot in the airframe until it contacts the motor mount tube.

4.3. Pull the fin back firmly until the trailing edge is flush with the tailcone shoulder joint.

4.3.1. Check fin alignment for perpendicularity with the airframe

4.3.2. Repeat 4.3.1 for each fin only after the epoxy on the previous fin has cured.

4.4. Epoxy the fin/airframe joints.

4.4.1. Form single, thin fillets on each root. Two (2) adjacent fin roots may be done simultaneously , but allow the epoxy to cure before moving to the next set.

4.5. Apply additional eopxy or "*PC-7 EPOXY PASTE*" as required to form a minimum 3/8" radius at the roots.

4.5.1. Follow step 4.4.1 for layer build-up.

5. PAYLOAD SECTION

5.1. Form a small ring of epoxy around each of the threaded inserts inside the payload compartment. Do not allow epoxy to flow into the threads.

5.2. Using 80 grit sandcloth, deglaze both sides of the payload bulkhead (blank disc). Assemble the eyebolt and locknut to the bulkhead and tighten the nut.

5.3. Apply a ring of epoxy to the inside edge of the sleeve end of the payload compartment.

5.4. Insert and recess the bulkhead disc 1/4" . Rotate the assembly to achieve a uniform fillet and allow the epoxy to cure.

5.5. Form a uniform epoxy fillet in the recess joint between the bulkhead disc and the payload compartment.

6. NOSECONE/PAYLOAD ASSEMBLY

6.1. Form a small ring of epoxy around each of the threaded inserts inside the nosecone. Do not allow epoxy to flow into the threads. Allow epoxy to cure.

6.2. Apply a drop of *"LOCTITE 242"* to each set screw.

6.3. Install the #6-32 set screws into the threaded inserts in both nosecone and payload compartment sleeves until slightly recessed from the sleeve outside diameters.

6.4. Assemble the intermediate airframe to the payload section by aligning the through holes with the set screws and back the set screws out flush with the airframe.

7. L AUNCH LUG ATTACHMENT

7.1. Draw a straight line about 34" in length on the airframe between one set of fins.

7.2. Locate the lugs along the line approximately 6" and 30" from the joint between the tailcone and airframe.

7.3. Remove the paper backing on the lug to expose the adhesive and press the lug onto the airframe using the 34" line as a guide.

8. FINISHING

8.1. Wet-sand the entire airframe, including all fillets and fin surfaces with 320 wet/dry paper.

8.2. Warm air dry and prime the airframe with lacquer base primer.

8.3. Dry-sand with 320 wet/dry paper.

8.4. Repair scratches with glazing putty (*"NITROSTAN"* or *"RED-CAP"*) followed by dry-sanding and re-primer.

8.4.1. DO NOT USE CA'S to fill or repair scratches.

8.5. Wipe the nosecone with denatured alcohol only. Prime and apply paint.

8.5.1. DO NOT USE LACQUER THINNER on primered surfaces.

8.6. Lacquer or epoxy base paint is recommended for the entire airframe.