FLYING MODEL

ROCKET

BETA'S SERIES

Skill Level 1

- Flights to 700 ft (over 210 meters)
- Mini-Engine Powered
- Tumble Recovery

MADE IN CHINA

Length: 13.2 cm (5.2 in.)
Diameter: 13 mm (.5 in.)
Weight: 3 grams (0.1 oz.)
Recommended Engines: 1/2A3-4T (First Flight), A3-4T, A10-3T

CAUTION: Use of this product with any other brand-name rocket product containing any defect or causing any damage may void the Estes warranty.

EST 802

0 47776 00802 1

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BETA™ SERIES

EST 0802

SKILL LEVEL 1

QUARK™

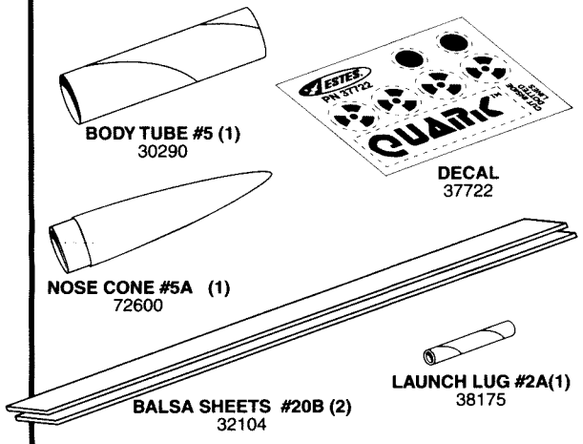
FLYING MODEL ROCKET KIT INSTRUCTIONS

TOOLS REQUIRED:

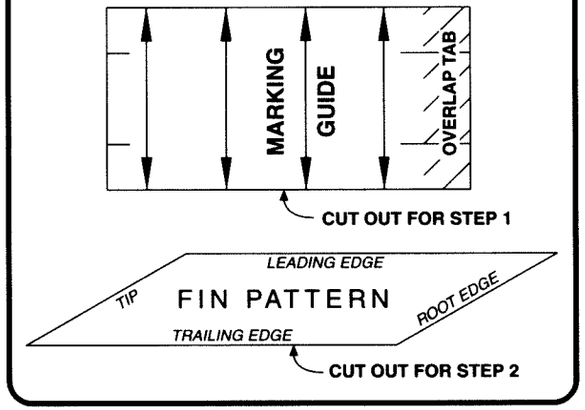
SCISSORS, WOOD GLUE, SPRAY PAINT, MASKING TAPE, SANDPAPER, TUBE-TYPE PLASTIC CEMENT, RULER, HOBBY KNIFE

ALL GLUED AREAS ARE SHADED IN GRAY

PARTS LAYOUT

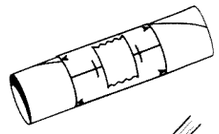


PATTERNS SECTION

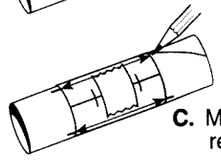


1.

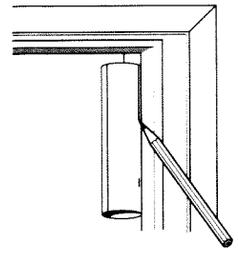
A. Cut the marking guide from the patterns section along the outside edge.



B. Wrap the guide around the body tube & tape it in place as shown.



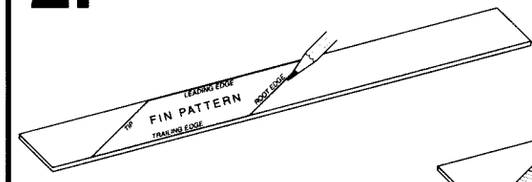
C. Mark tube at all arrows and remove marking guide.



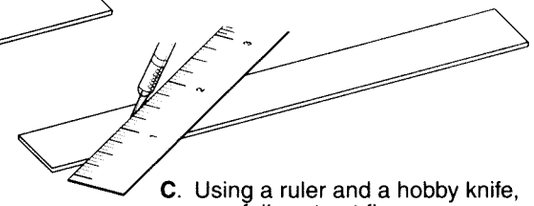
D. Using a door frame as a guide, connect marks with straight lines (This is where you will attach your fins).

2.

A. Cut the fin pattern out of patterns sections.



B. Transfer the pattern to balsa strips as shown, with light pencil lines. You will need to get 2 fins from each strip.

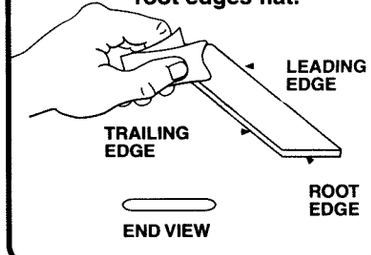


C. Using a ruler and a hobby knife, carefully cut out fins.

Hint: Make several light cuts instead of one deep one.

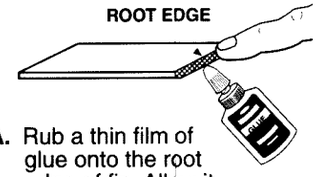
3.

Optional: For a better looking & higher performance rocket, round the leading & trailing edges of each fin as shown. **Leave root edges flat.**



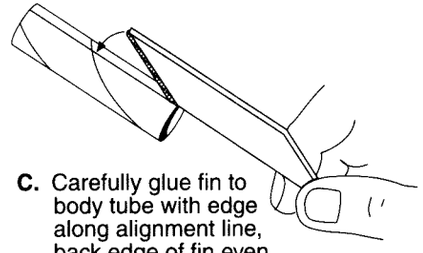
4.

Note: Before gluing the fins, match the fin shape to the fin pattern. Identify the root edge that will be glued to the body tube & the leading edge. This will help you attach your fins correctly. **Remember:** Fins must be attached correctly for stable flight.



A. Rub a thin film of glue onto the root edge of fin. Allow it to set for a minute or two to become tacky.

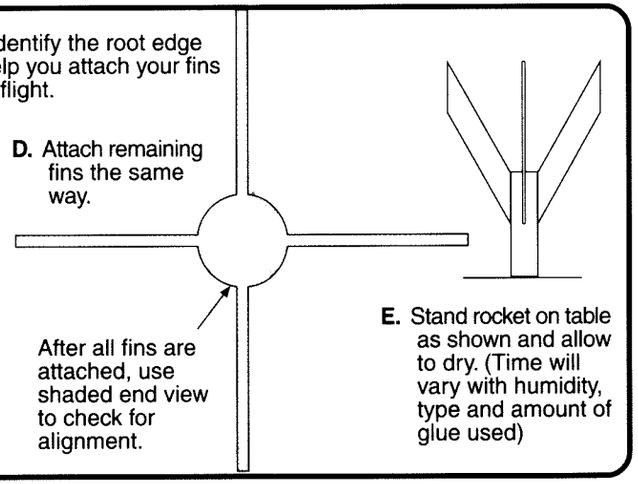
B. Apply a second thin coat of glue to the root edge of fin.



C. Carefully glue fin to body tube with edge along alignment line, back edge of fin even with back of body tube. Adjust fin so it projects straight away from body tube.

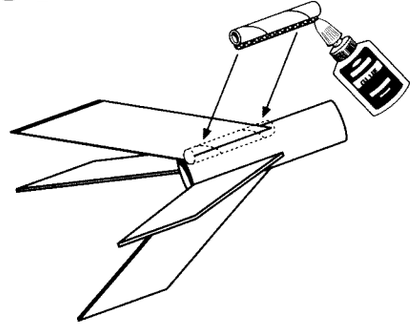
D. Attach remaining fins the same way.

After all fins are attached, use shaded end view to check for alignment.



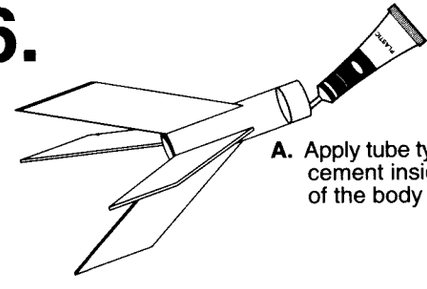
E. Stand rocket on table as shown and allow to dry. (Time will vary with humidity, type and amount of glue used)

5.

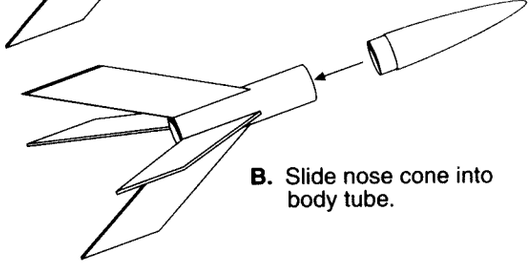


A. Glue launch lug to body next to a fin so that the end of the lug is flush with the end of your body tube.

6.

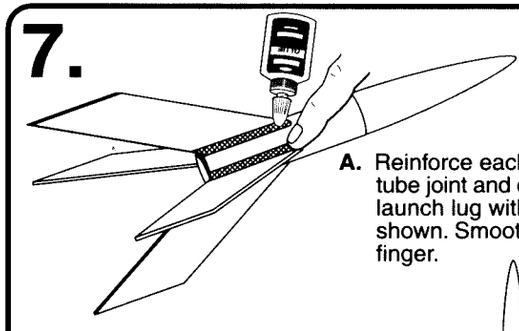


A. Apply tube type plastic cement inside the top of the body tube.



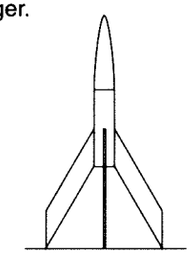
B. Slide nose cone into body tube.

7.

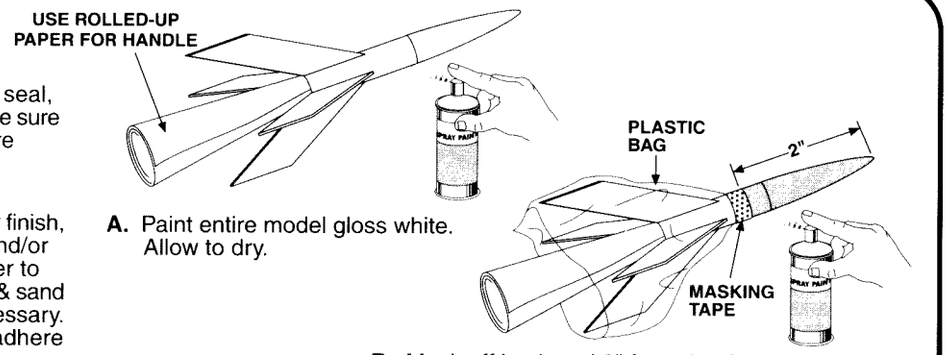


A. Reinforce each fin/body tube joint and each side of launch lug with glue as shown. Smooth out with finger.

B. Stand rocket on table as shown. Wipe away any excess glue (runs) and allow to dry.



8.



Hint: Before you sand, seal, or paint your rocket, make sure all of your glue joints are completely dry.

Option: For a smoother finish, apply sanding sealer and/or automotive grade primer to your rocket. Allow to dry & sand smooth. Reapply if necessary. Primer allows paint to adhere to your rocket better. Use spray paint to paint your model.

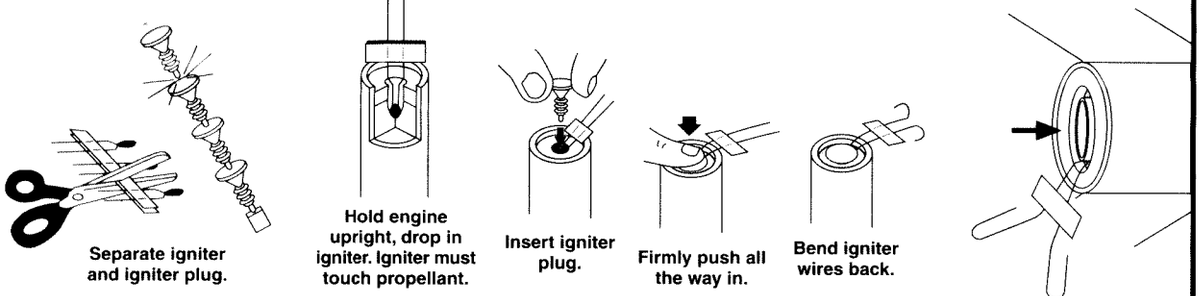
A. Paint entire model gloss white. Allow to dry.

B. Mask off back end 2" from tip of nose cone & paint front end light blue or a bright color. Allow to dry.

C. Cut out decals from decal sheet inside dotted lines. Remove from paper backing and position in place (see front of package for locations). Rub down smooth with finger.

9.

Note: Because the Quark is so small and light, it uses featherweight or tumble recovery. The engine ejects at the highest point of flight and both the engine and rocket tumble safely to the ground.



If engine will not stay in rocket when rocket is set on fins, you may need to wrap a piece of masking tape around engine to make a snug fit. Do not make too tight.

LAUNCH SUPPLIES

To launch your rocket, you will need the following:

- Launch Pad (Estes Porta-Pad® II)
- Launch Controller (Estes Electron Beam®)
- Recommended Estes Engines: 1/2 A3-2T (First Flight), A3-4T, or A10-3T
- Igniters and Igniter Plugs (included with Estes engines)

Use only Estes products to launch this rocket.

ENGINE	PROJECTED ALTITUDE Feet	Meters
1/2A3-2T	205	63
A3-4T	300	92
A10-3T	250	76

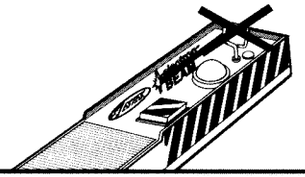
TIPS FOR FLYING YOUR ROCKET

- Choose a large field away from power lines, buildings, tall trees, and low flying aircraft. Try to find a field at least 76 meters (250 feet) square. The larger the launch area, the better your chance of recovering your rocket.
- Launch area must be free of dry weeds and brown grass.
- Launch only during calm weather with little or no wind and good visibility.

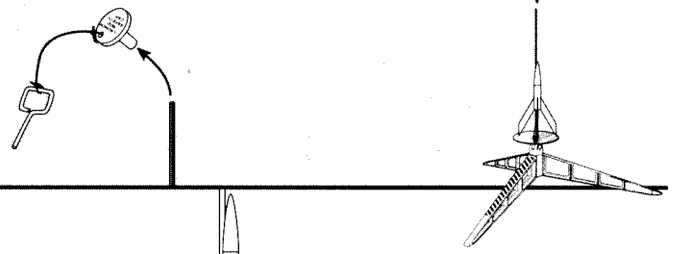
FOR YOUR SAFETY AND ENJOYMENT

- Always follow the National Association of Rocketry (NAR) MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities. The safety code is enclosed with this kit.

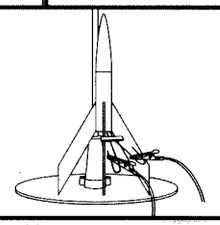
COUNTDOWN AND LAUNCH



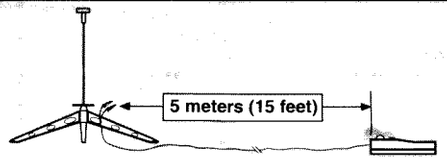
10... **Safety key must not be in launch controller.** The safety cap with safety key attached should already be on the launch rod.



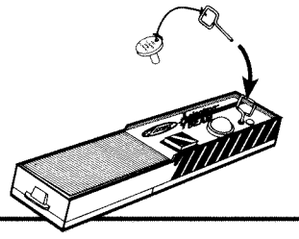
9... **Remove safety cap from launch rod, slide rocket launch lug over rod. Make sure rocket slides freely and micro-clips are clean for good electrical contact.**



8... Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to protective tape on igniter as possible.



7... Move everyone back from your rocket as far as launch wire will permit (at least 5 meters - 15 feet).

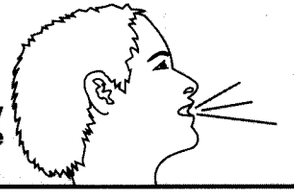


6... **Insert safety key to arm the launch controller.**

5... Start audible countdown.

4...3...2...1..... LAUNCH!

Push and hold button until engine ignites.



For safety, immediately remove safety key from launch controller and replace safety cap on launch rod.

MISFIRES

When an ignition failure occurs, remove the safety key from the launch control system and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant. Broken or chipped coating will not affect the performance of the igniter. Reinstall the igniter plug as illustrated previously. Repeat the countdown and launch procedure.

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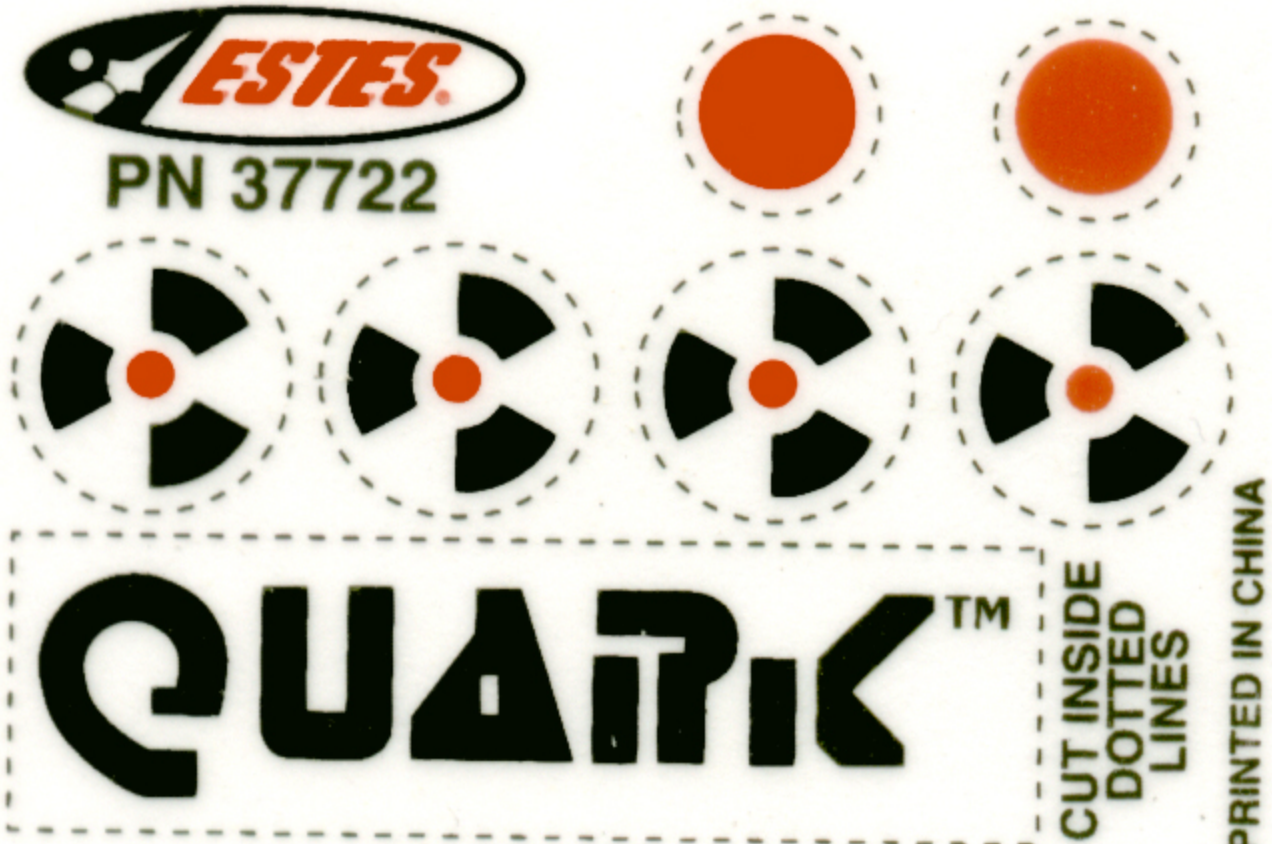

Peel-n-stick decal scan

Estes #0802 Quark Parts List

Nose Cone	PNC-5	Kit uses a non-standard size nose cone, 2.125" long, plastic. Nearest replacement is the PNC-5AX or the BMS BNC-5AX, 2.25" long.
Body Tube	BT-5	Kit body length is 1.75" long. The nearest standard length would be the BT-5T, 1.5" long. If using the BMS nose, cut the tube 1.625" long to compensate for the 0.125" difference. Tube is Apogee-type, white paper outer surface.
Launch Lug	LL-2	1.25" (BMS LL-18-125)
Fin Stock	BFS-20	Two strips, 1/16" x 6" x 1/2" each.