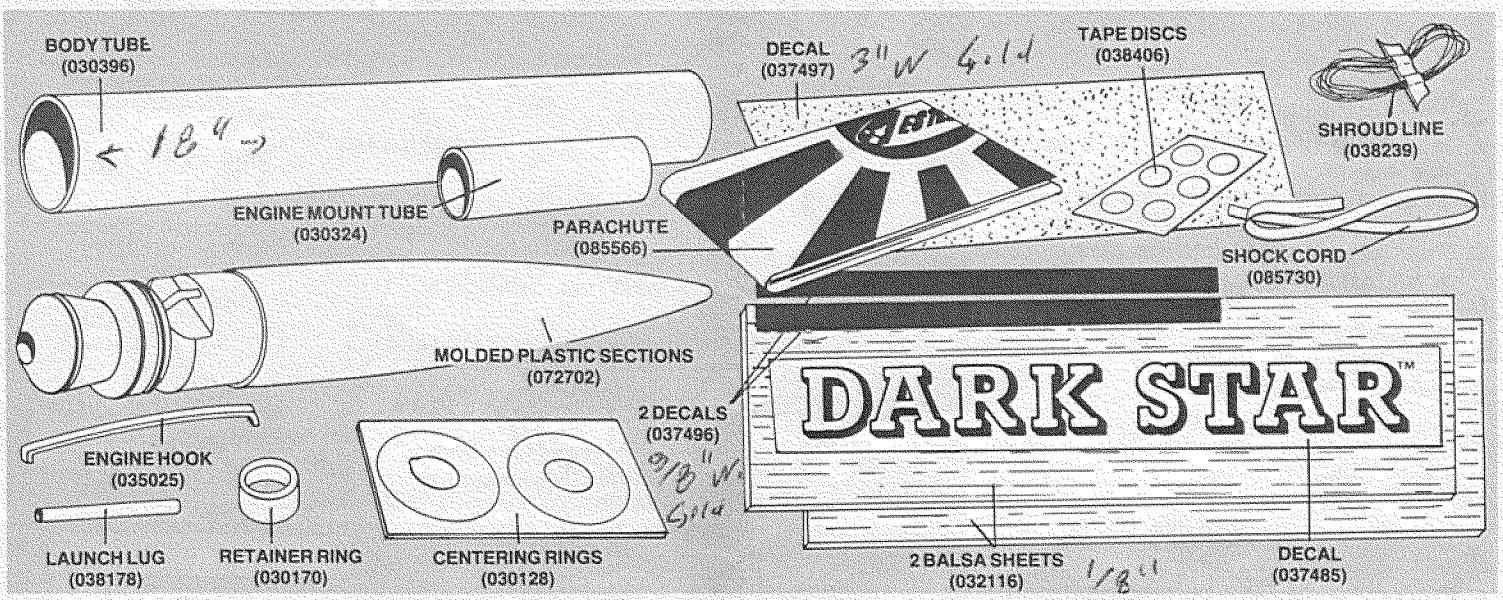

DARK STAR

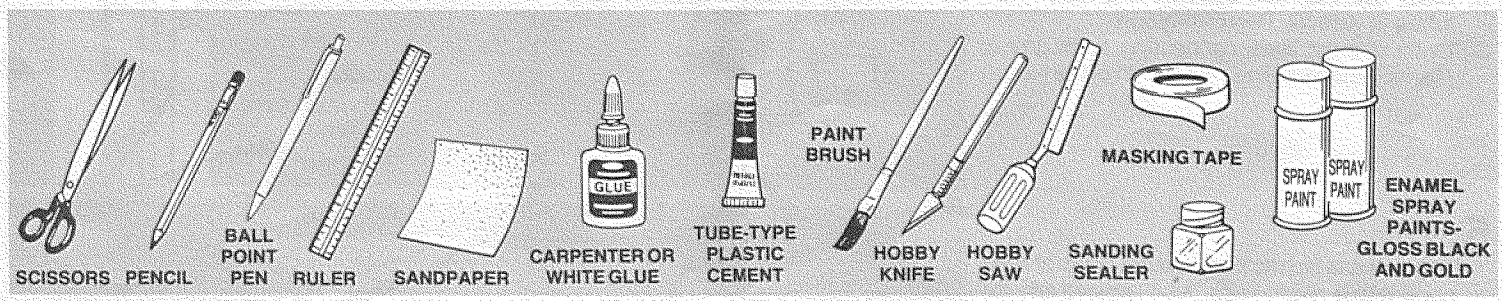
DARK STAR™

NG MODEL ROCKET KIT#2045

ASSEMBLY TIP

Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

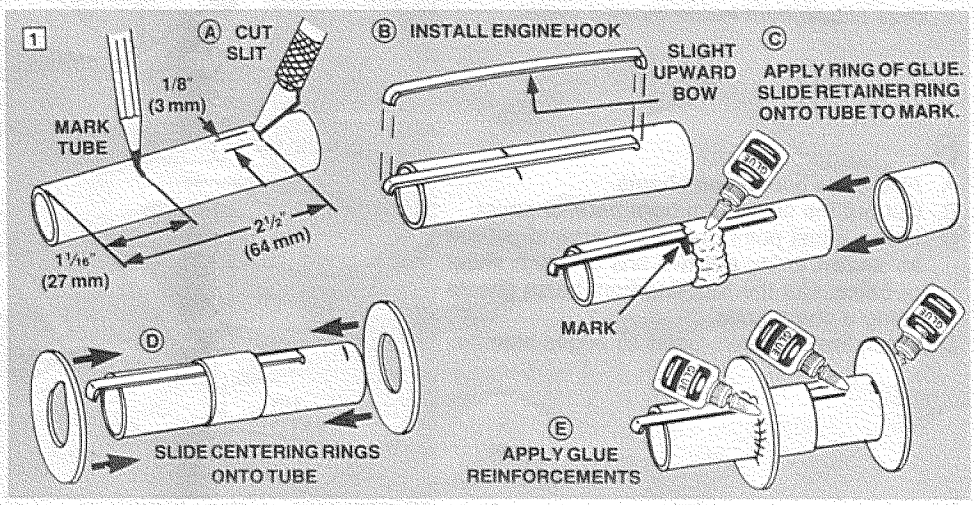


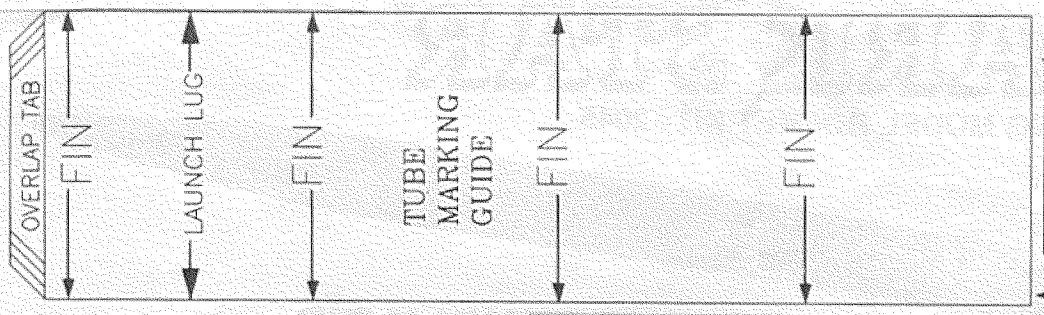


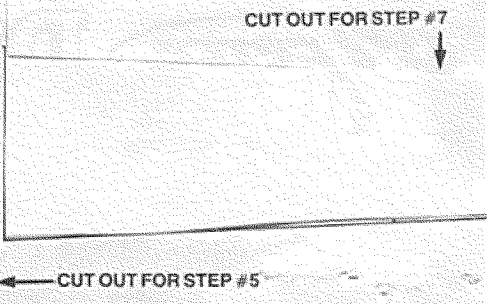
ROCKET ASSEMBLY

1.

A. Mark engine mount tube 1 1/16" (27 mm) and 2½" (64 mm) from one end. Then cut 1/8" (3 mm) long slit at 2½" (64 mm) mark.
B. Insert one end of engine hook into slit.
C. Apply a ring of glue around the tube in front of the mark. Slide retainer ring onto tube stopping at mark.
D. Slide notched centering ring onto rear of engine mount tube to retainer ring with notch over engine hook. Slide remaining centering ring just over front end of engine mount tube.
E. Add glue reinforcements to both sides of centering rings and around engine hook near slit.

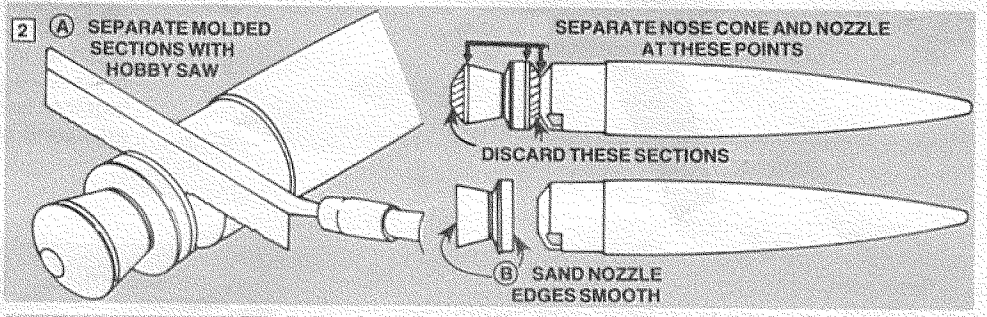






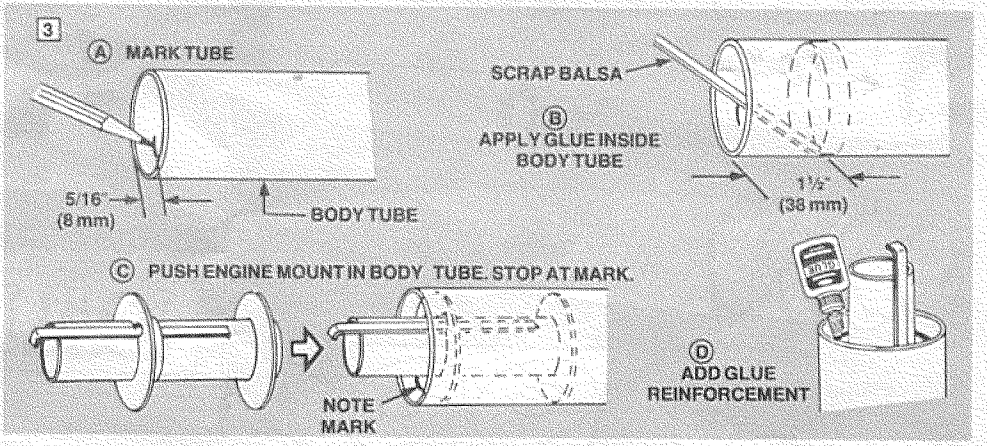
2.

A. Separate the plastic nose cone and nozzle sections using a hobby saw. Discard the sections indicated.
B. Sand indicated nozzle edges smooth. Set nozzle aside for step #11.



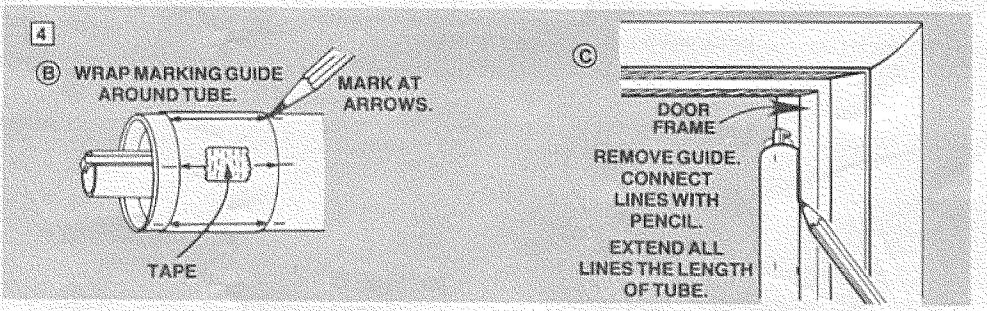
3.

A. Mark inside long body tube 5/16" (8 mm) from one end.
B. Smear a band of glue around the inside of the tube 1½" (38 mm) from the marked end.
C. Push engine mount into the tube stopping when rear centering ring is at mark.
D. Apply glue reinforcement where ring touches tube. Allow glue to dry.



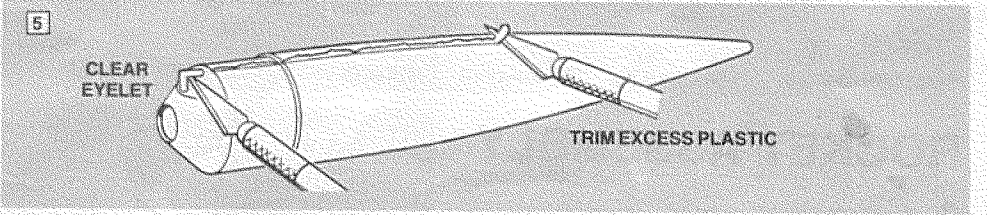
4.

A. Cut out tube marking guide from top of page.
B. Wrap guide around the tube and tape. Mark tubes at arrows. Remove guide.
C. Draw straight lines connecting each pair of marks. Extend all lines the length of the tube.



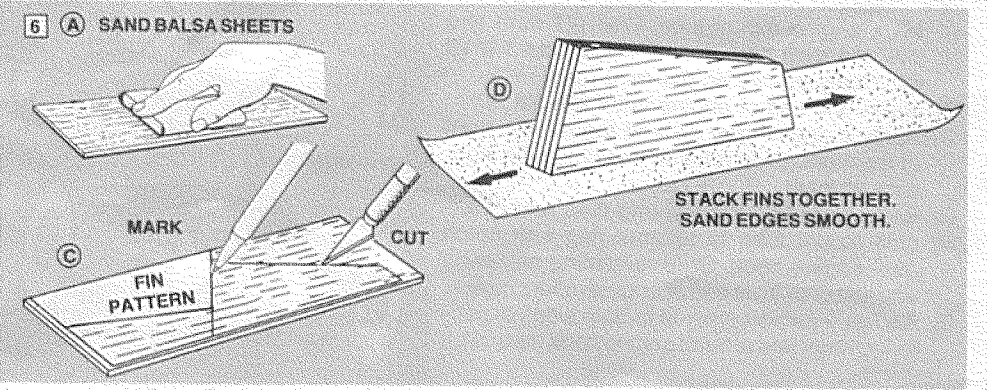
5.

Trim excess plastic from around sides of nose cone with a sharp knife. Also remove any excess plastic from inside molded eyelet.



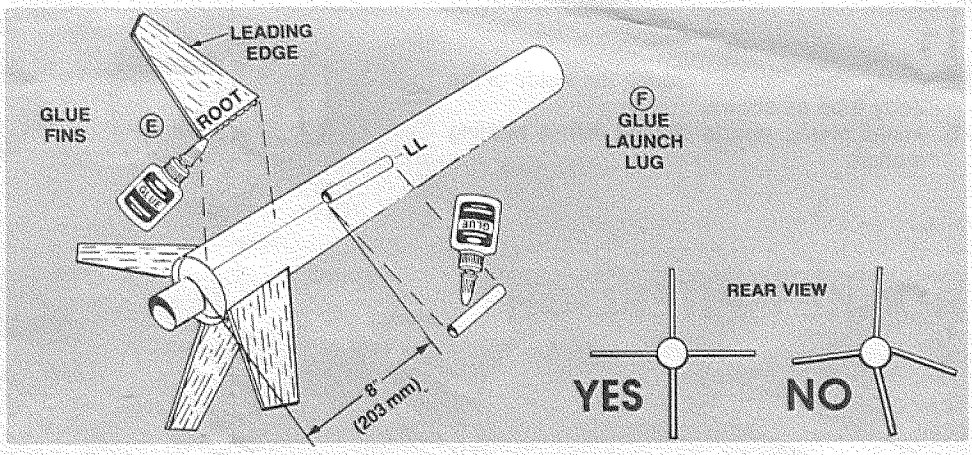
6.

A. Fine-sand both balsa sheets.
B. Cut out the fin pattern from back of panel.
C. Using a ball point pen, trace around pattern as shown to lay out two fins on each sheet of balsa. Cut the four fins from balsa sheets using a sharp knife.
D. Stack fins together. Sand all edges smooth.



E. Rub a line of glue into root edge of each fin and allow to dry. One fin at a time, add more glue to root edge and position fin next to alignment line. Fins should be even with rear of tube.
FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT!

F. Glue the launch lug to the body tube straight on the launch lug line. Locate the rear of launch lug 8" (203 mm) from rear of tube.

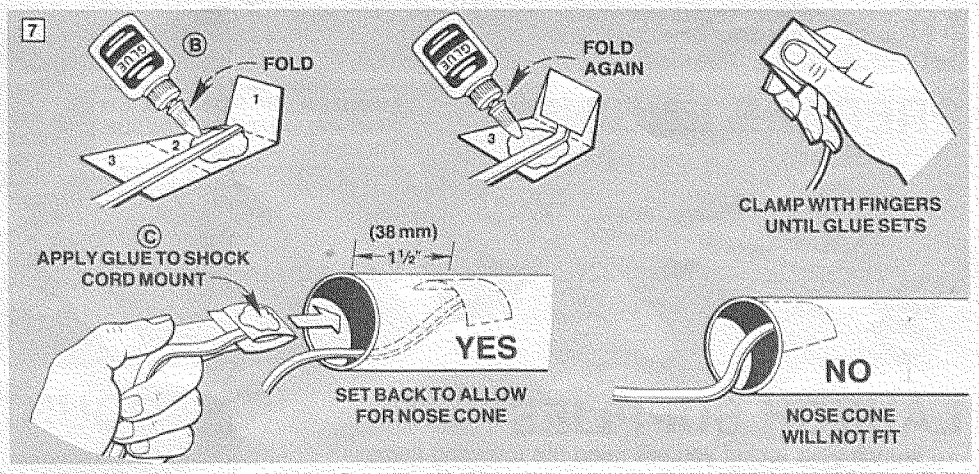


7.

A. Cut shock cord mount from page 2.

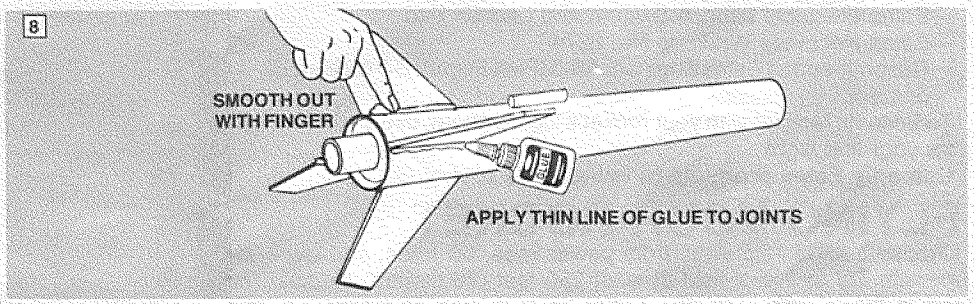
B. Crease on dotted lines by folding. Spread glue on section 2 and lay end of shock cord into glue at a slight diagonal as shown. Fold section 1 forward. Apply glue to section 3. Fold forward again. Clamp firmly with your fingers until glue sets.

C. Apply glue to the shock cord mount. With the shock cord mount positioned on the end of your finger or a pencil, gently position the mount into the front of body tube. Set back far enough from the front edge of the tube to allow the nose cone to fit into place (1½" - 38 mm). Press shock cord mount into position. Smear a film of glue over the mount and surrounding area in the body tube to insure a good bond and a smooth surface.



8.

Apply a glue reinforcement to each side of each fin/body tube joint and to each side of the launch lug. Smooth them out with your finger.



9.

A. Cut out parachute on edge lines.

B. Cut three 35" (889 mm) lengths of shroud line.

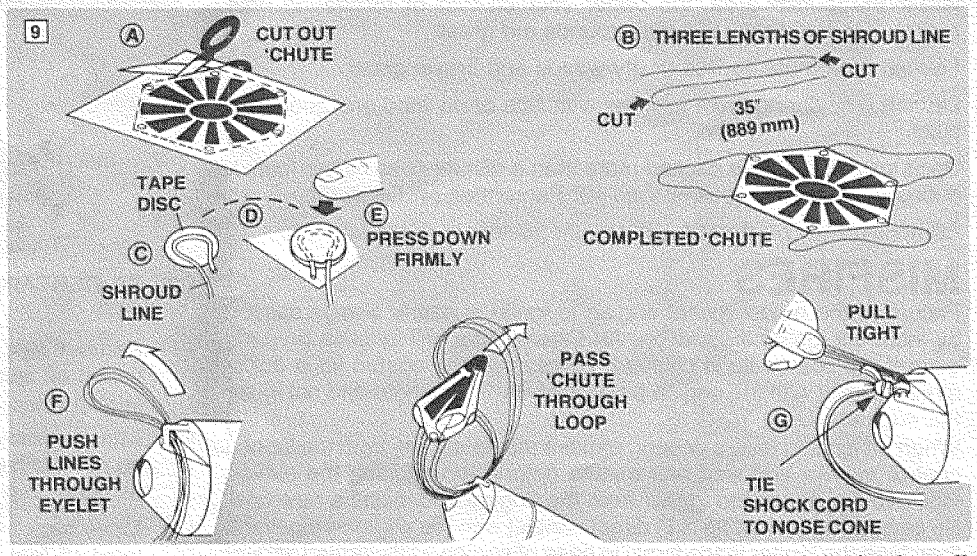
C. Form small loops with shroud line ends and press onto sticky sides of tape discs.

D. Attach tape discs with the line ends to top of parachute as shown.

E. Firmly press tape discs into place until both tape discs and parachute material are molded around shroud line loops.

F. Pass shroud line loops through eyelet on nose cone. Pass parachute through loop ends and pull lines against the nose cone.

G. Tie free end of shock cord to nose cone eyelet using a double knot.



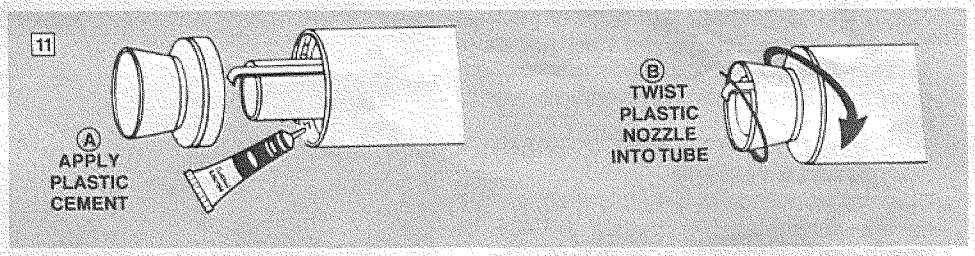
10. FINISHING YOUR ROCKET

Apply sanding sealer to wood parts with a small brush. When sealer is dry, lightly sand all sealed surfaces. Repeat sealing and sanding until balsa grain is filled and smooth. Let dry completely. Paint entire body gloss black. Paint plastic nozzle gold. Follow directions on spray can for best results. Let paint dry overnight.

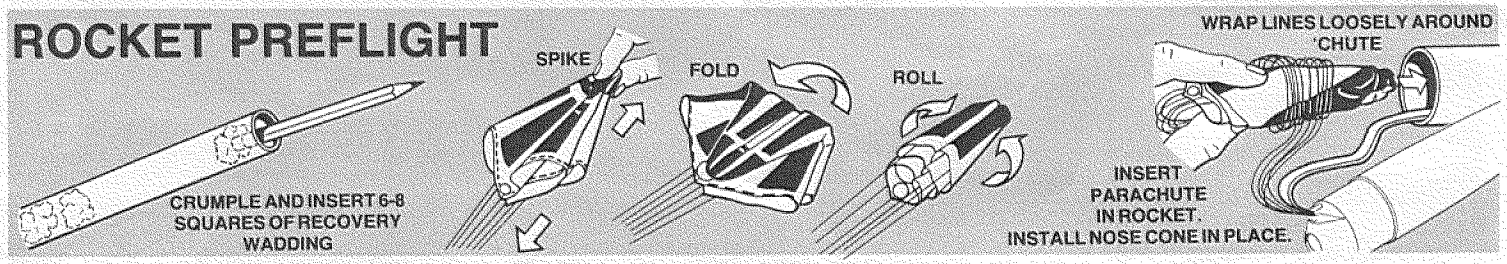
To apply the three pressure sensitive decals, peel the backer off and wrap decals around body tube as shown on the panel. To apply water transfer decal, cut it out, dip in lukewarm water for 30 seconds, and hold until it uncurls. Refer to front panel for decal placement. Slip decal off backing sheet and onto model. Blot away excess water. For best results, let decal dry overnight and apply a coat of clear gloss spray to protect the decal.
(SEE STEP 11 FOR NOZZLE ASSEMBLY)

11.

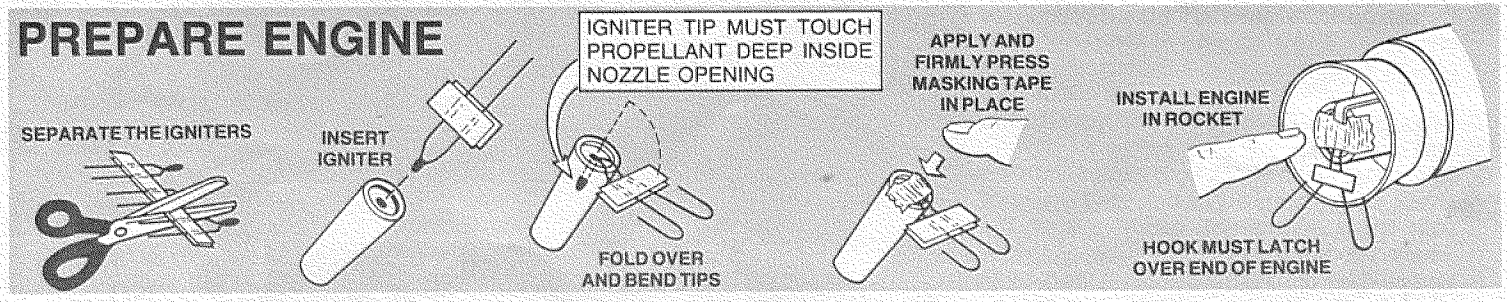
A. Apply plastic cement around the inside of the body tube as shown.
B. Install plastic nozzle section with a twisting motion.



ROCKET PREFLIGHT



PREPARE ENGINE



LAUNCH SUPPLIES

To launch your rocket you will need the following items:
—Estes Electrical Launch System and Launch Pad
—Estes Recovery Wadding No. 2274
—Recommended Estes Engines: A8-3 (First Flight), B4-4, B6-4, B8-5, or C6-5.

To become familiar with your rocket's flight pattern, use an A8-3 engine for your first flight.

Use only Estes products to launch this rocket.

FLYING YOUR ROCKET

Choose a large field away from power lines, tall trees, and low flying aircraft. Try to find a field at least 250 feet (76 meters) square. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great.

Launch area must be free of dry weeds and brown grass.

Launch only during calm weather with little or no wind and good visibility.

Don't leave parachute packed more than a minute or so before launch during cold weather [colder than 40° Fahrenheit (4° Celsius)].

Parachute may be dusted with talcum powder to avoid sticking.

MISFIRES

Failure of the model rocket engine to ignite is nearly always caused by incorrect igniter installation. An Estes igniter will function properly even if the coated tip is chipped. However, if the coated tip is not in direct contact with the engine propellant, it will only heat and not ignite the engine.

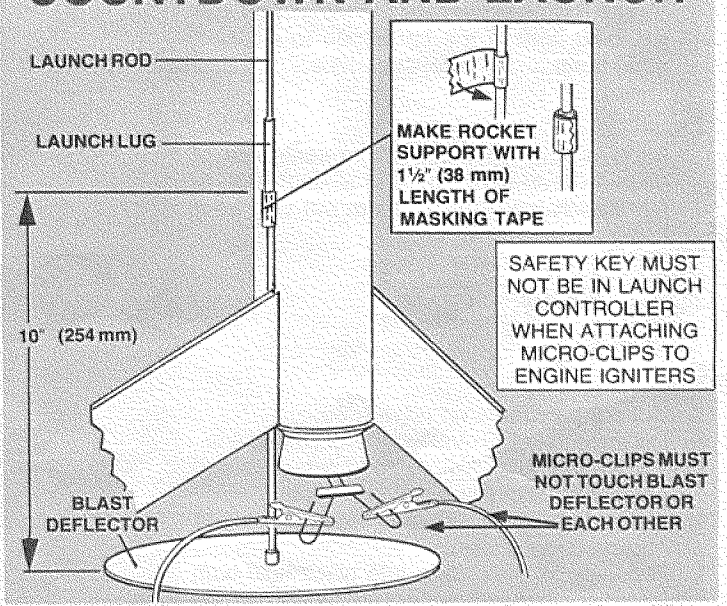
When an ignition failure occurs, remove the safety key from the launch control system and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant, then tape the igniter leads firmly to base of engine as illustrated above. Repeat the countdown and launch procedure.

FOR YOUR SAFETY AND ENJOYMENT

Always follow the NAR-HIA* MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities.

*National Association of Rocketry-The Hobby Industry of America

COUNTDOWN AND LAUNCH



⑩ BE CERTAIN SAFETY KEY IS NOT IN LAUNCH CONTROLLER.

⑨ Remove safety cap and slide launch lug over launch rod to place rocket on launch pad. Make sure the rocket slides freely on the launch rod.

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.

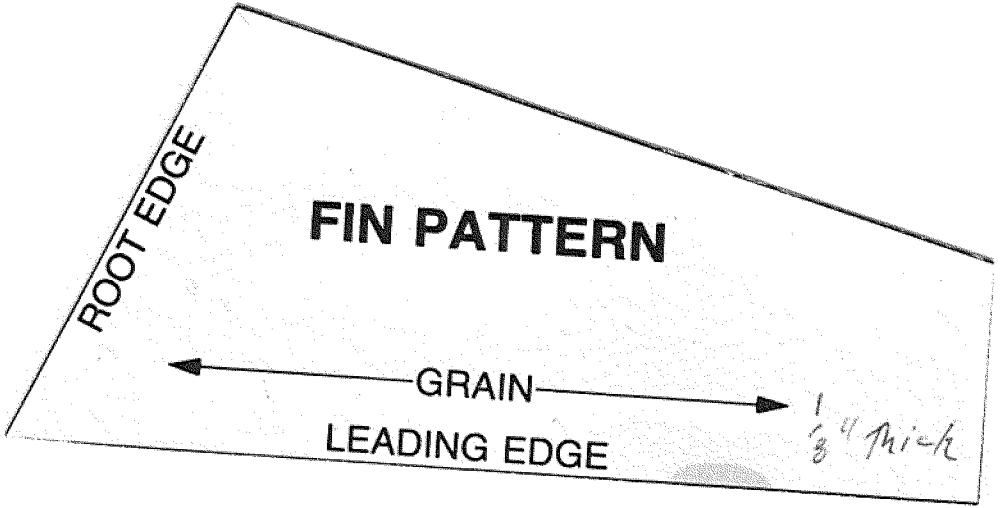
⑦ Move back from your rocket as far as launch wire will permit (at least 15 feet - 5 meters).

⑥ INSERT SAFETY KEY to arm the launch controller.

Give audible countdown 5...4...3...2...1

LAUNCH!! **PUSH AND HOLD LAUNCH BUTTON UNTIL ENGINE IGNITES**

REMOVE SAFETY KEY FROM LAUNCH CONTROLLER. REPLACE SAFETY KEY AND SAFETY CAP ON LAUNCH ROD.


FIN PATTERN
ROOT EDGE
GRAIN
LEADING EDGE
1/8" Thick

DARK STAR™