



ESTES INDUSTRIES
1295 H Street
Penrose, CO 81240

PHOTON DISRUPTOR II™

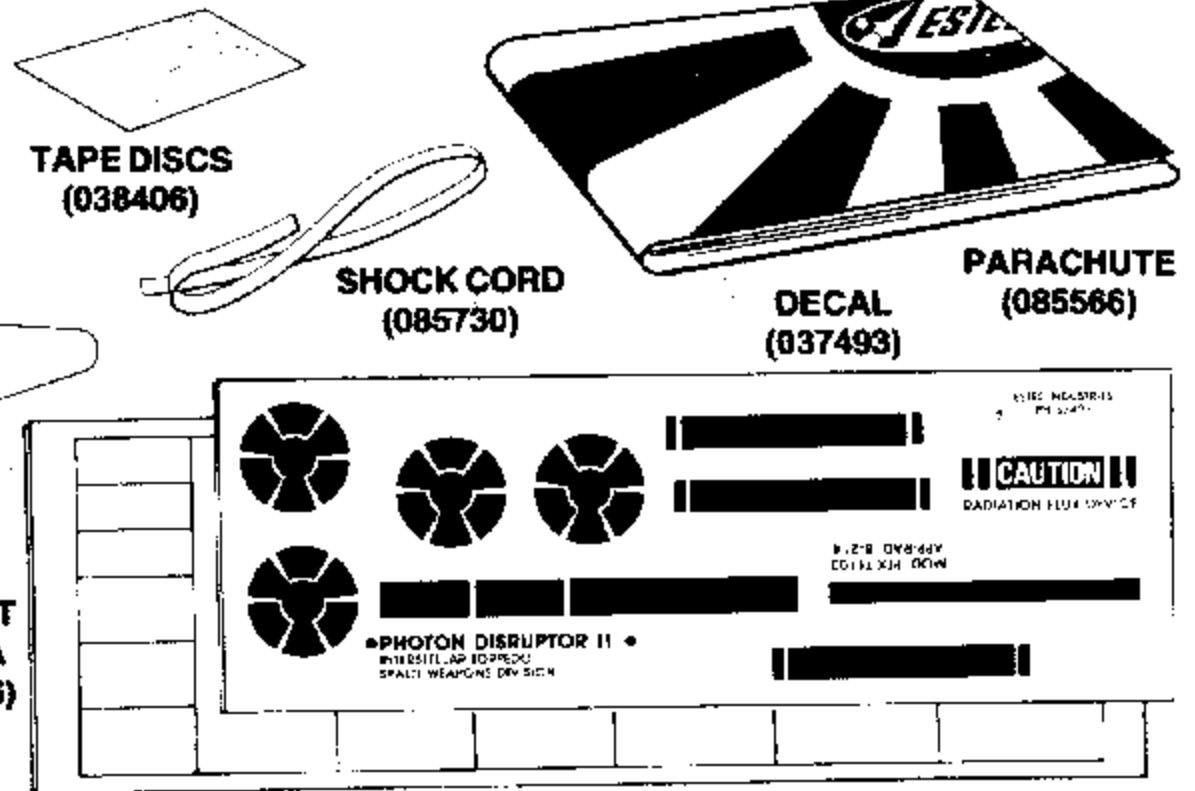
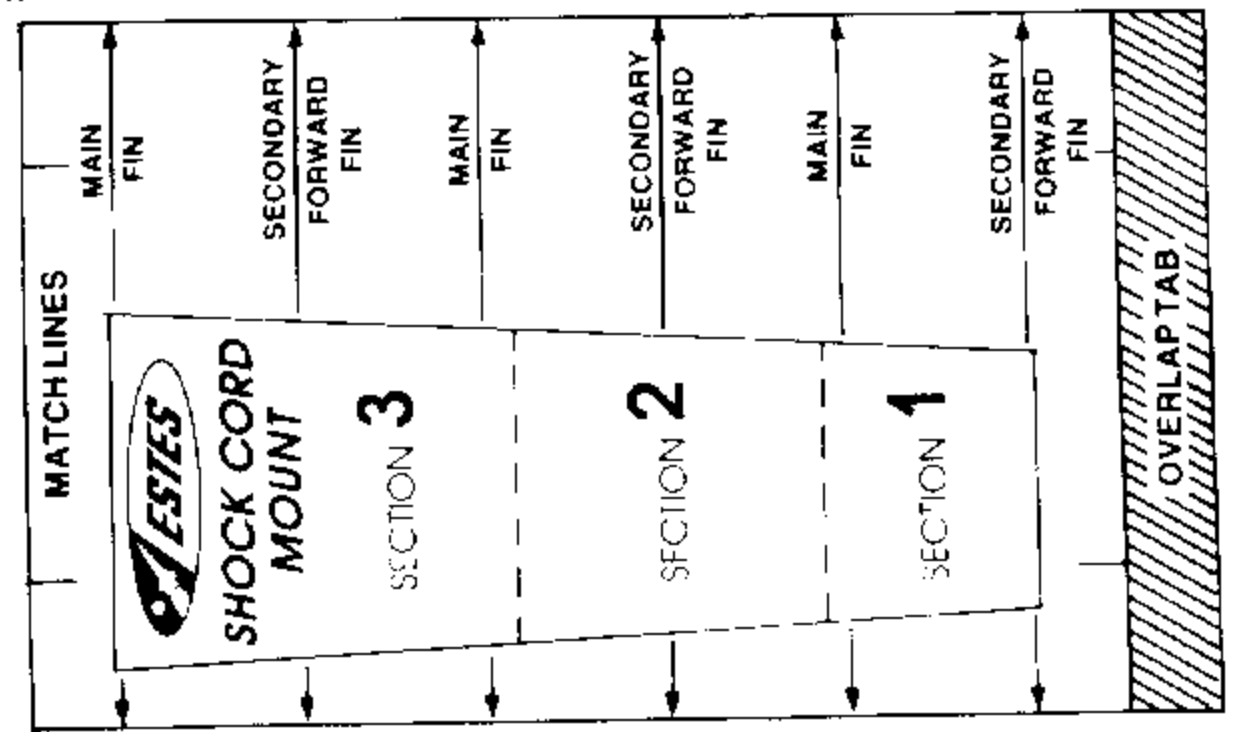
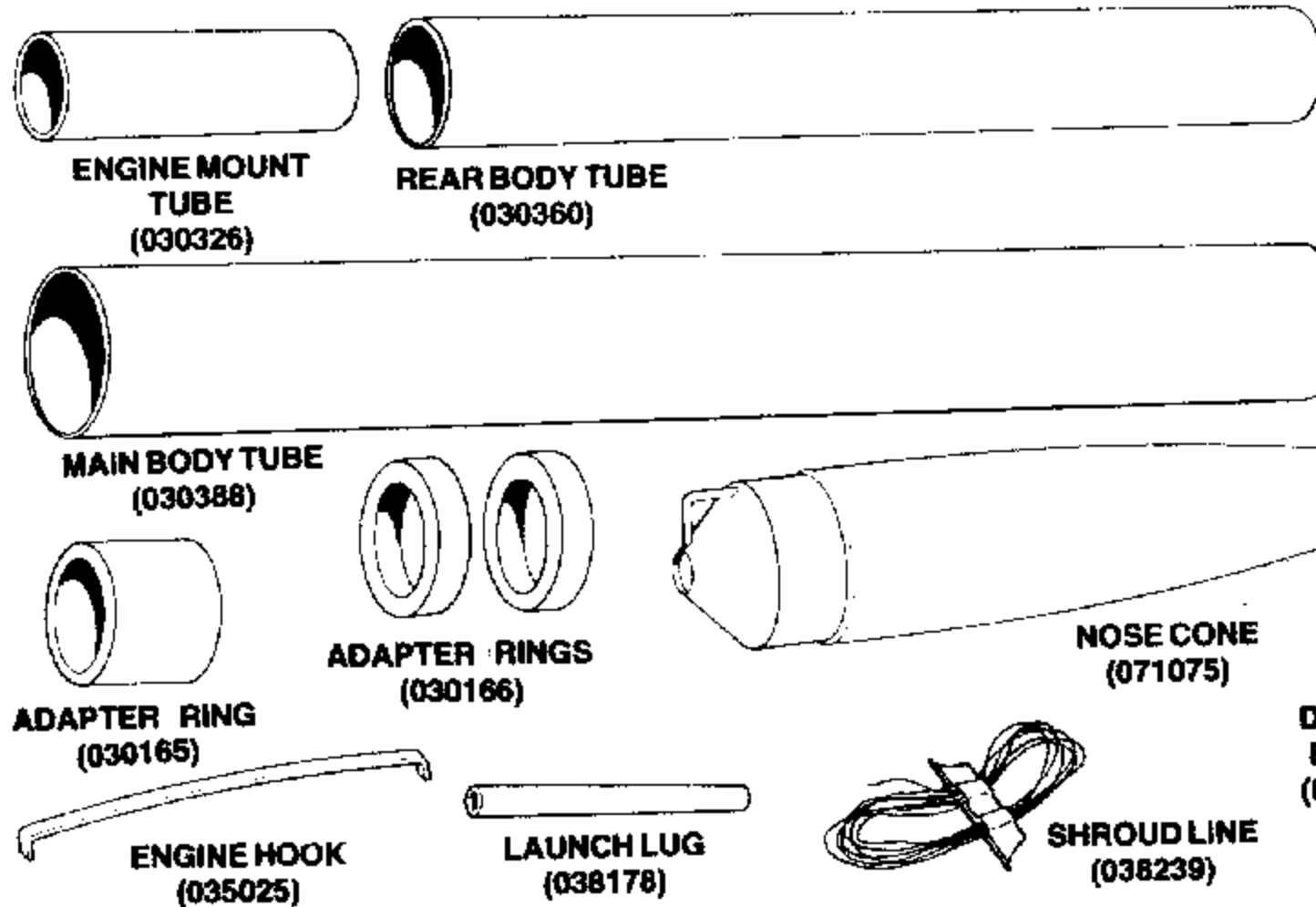
FLYING MODEL ROCKET #2052

ASSEMBLY TIP

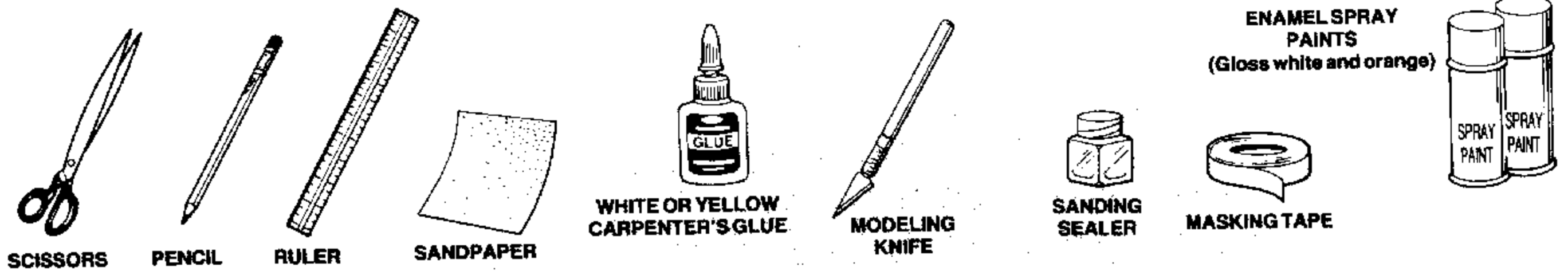
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

PARTS AND SUPPLIES

Locate the parts shown below and lay them out on the table in front of you.

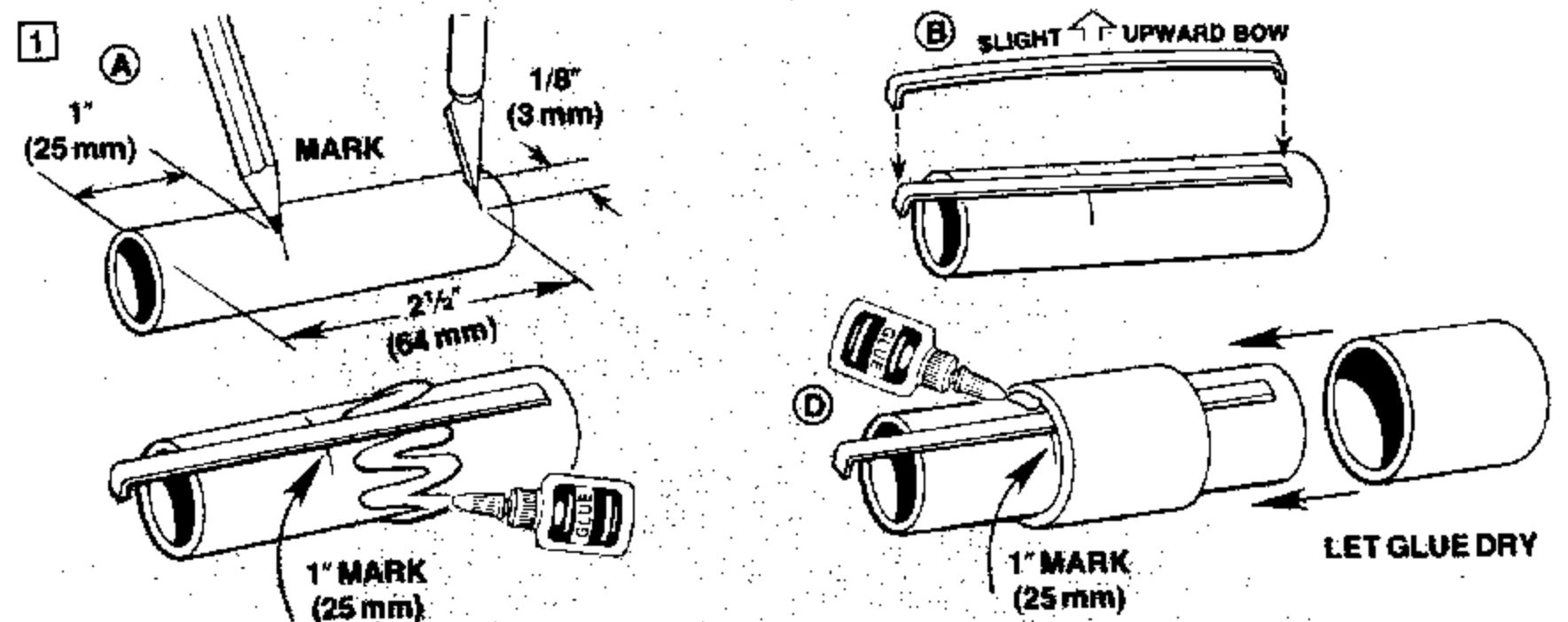


In addition to the parts included in the kit, you will also need:

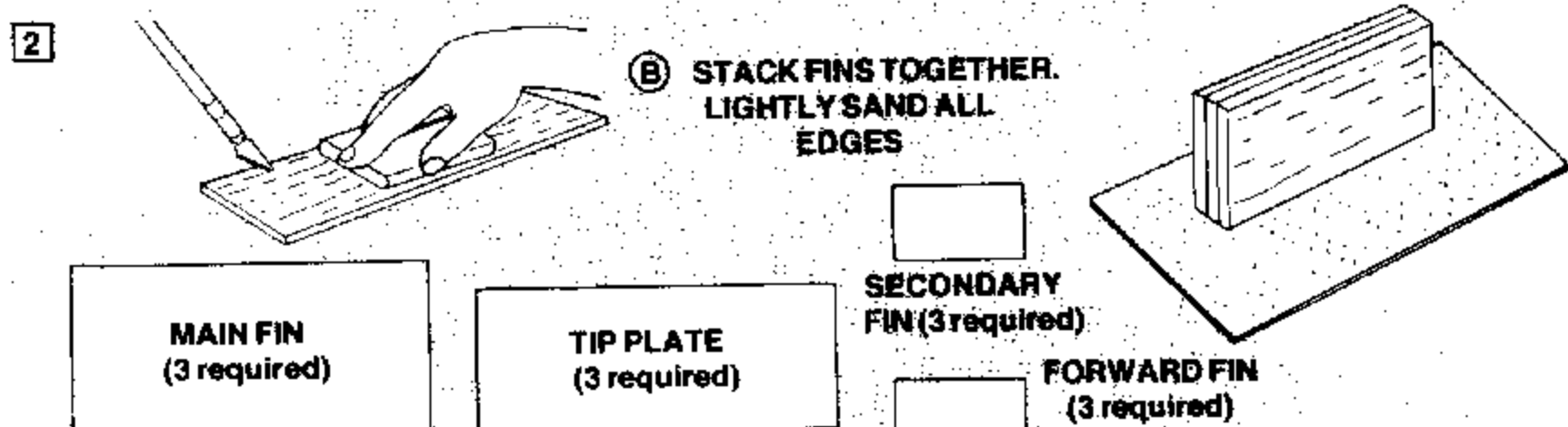


ROCKET ASSEMBLY

- Mark engine mount tube 1" (25 mm) and 2 1/2" (64 mm) from one end and then cut 1/8" (3 mm) long slit at 2 1/2" (64 mm) mark.
 - Insert one end of engine hook into slit.
 - Spread glue around engine mount above 1" (25 mm) mark as shown.
 - Slide adapter ring onto tube, as shown, to the 1" (25 mm) mark and then glue both ends of ring to tube.

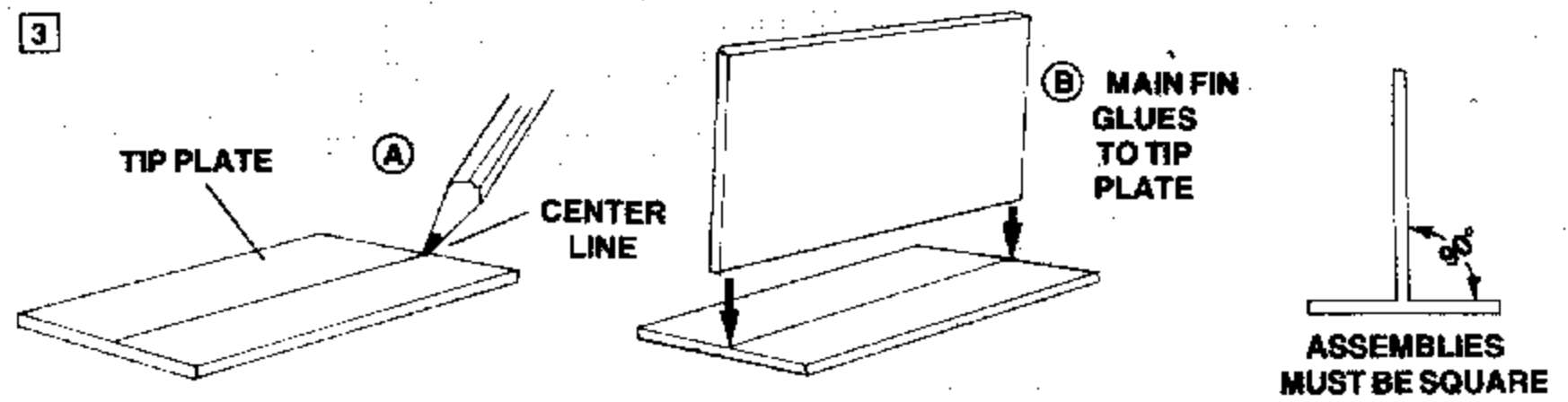


- Fine sand balsa die-cut sheet. Carefully remove fins by freeing edges with sharp knife.
 - Stack alike fins together. Sand all edges smooth.
 - Lay fin parts out and identify parts by illustrations shown.



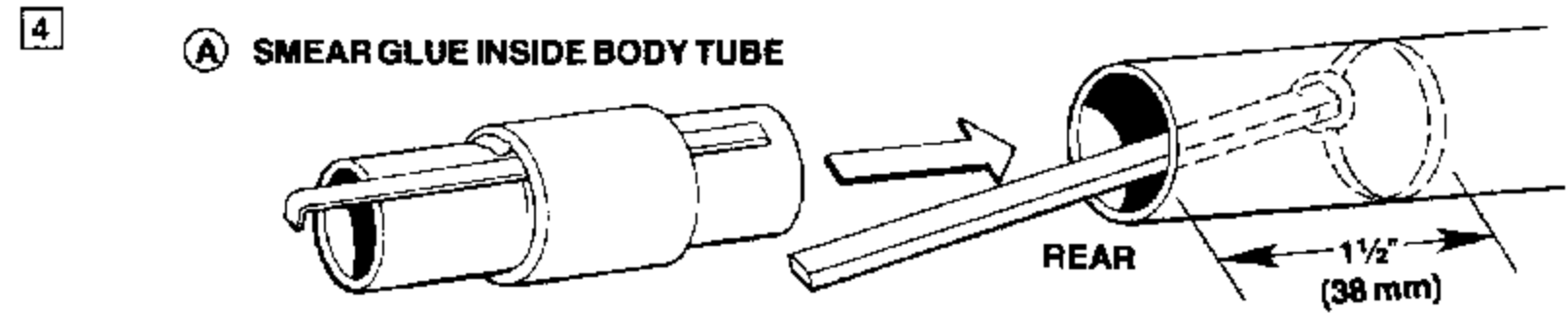
3.

- Mark the center of each tip plate at each end and draw an alignment line connecting marks as shown.
- Glue main fins to tip plates on alignment lines as shown. Make sure assemblies are square and set aside to dry.



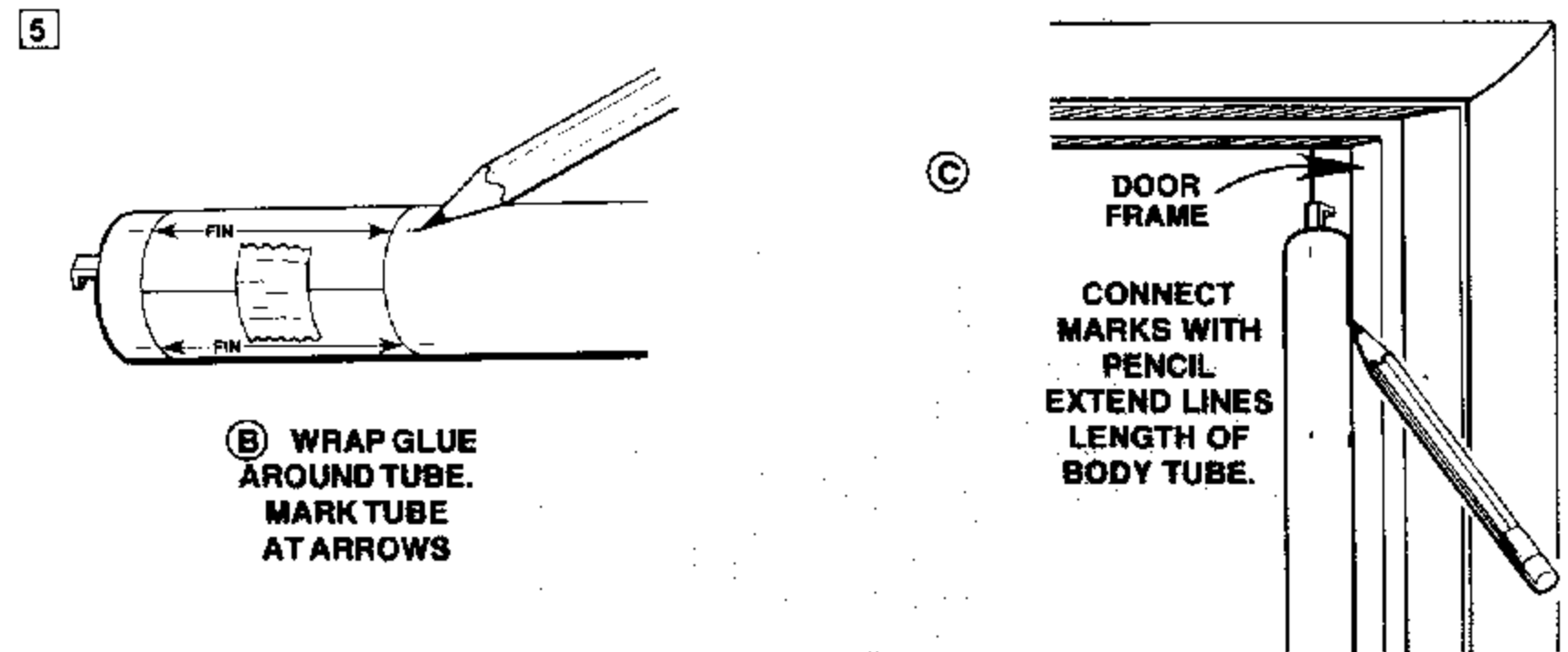
4.

- Using a piece of scrap balsa, smear glue inside body tube $1\frac{1}{2}$ " (38 mm) from rear or main body tube.
- Push engine mount in until tube ends are even.



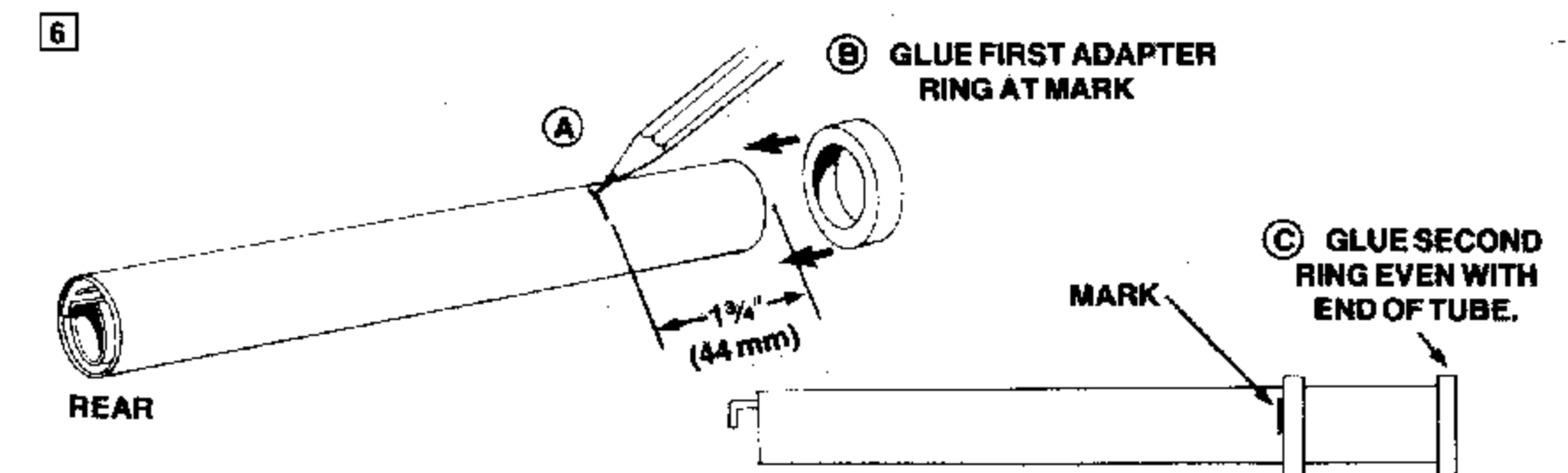
5.

- Cut out tube marking guides from front of instructions.
- Wrap body tube marking guide around rear body tube, tape ends together, and mark tube at arrows. Remove guide and save.
- Draw straight lines connecting each pair of marks.



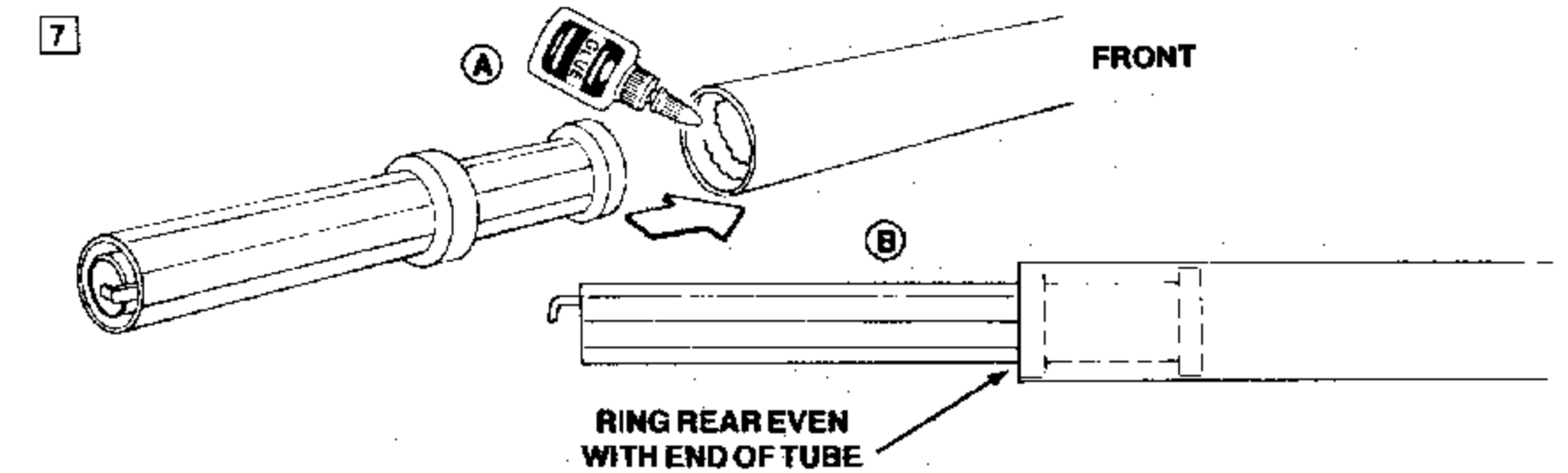
6.

- Mark rear body tube $1\frac{3}{4}$ " (44 mm) from front of tube as shown.
- Glue one adapter ring onto tube at the $1\frac{3}{4}$ " (44 mm) mark.
- Glue the other ring onto tube so its front is even with the front of the tube. Allow assembly to dry before following next step.



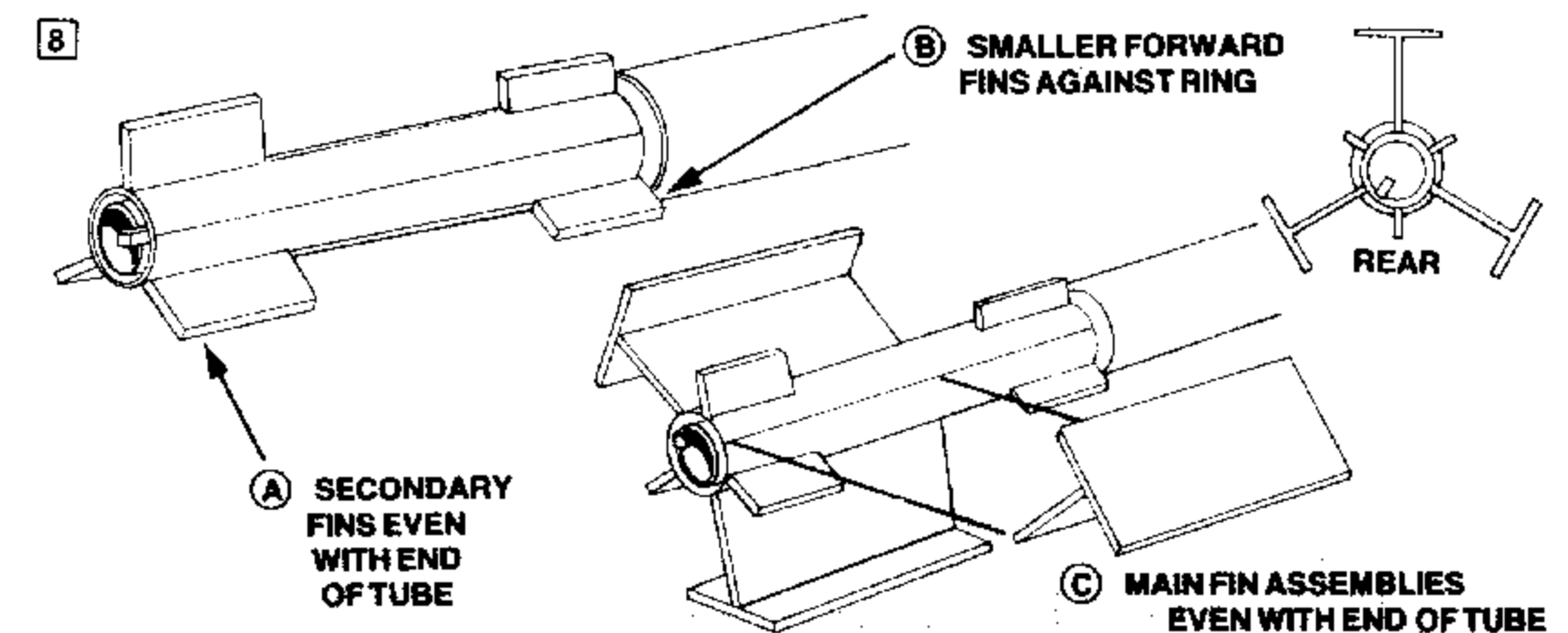
7.

- Smear glue inside main body tube at one end of the tube.
- Push the rear body tube assembly into main body tube with one smooth motion until rear ring is even with end of tube.



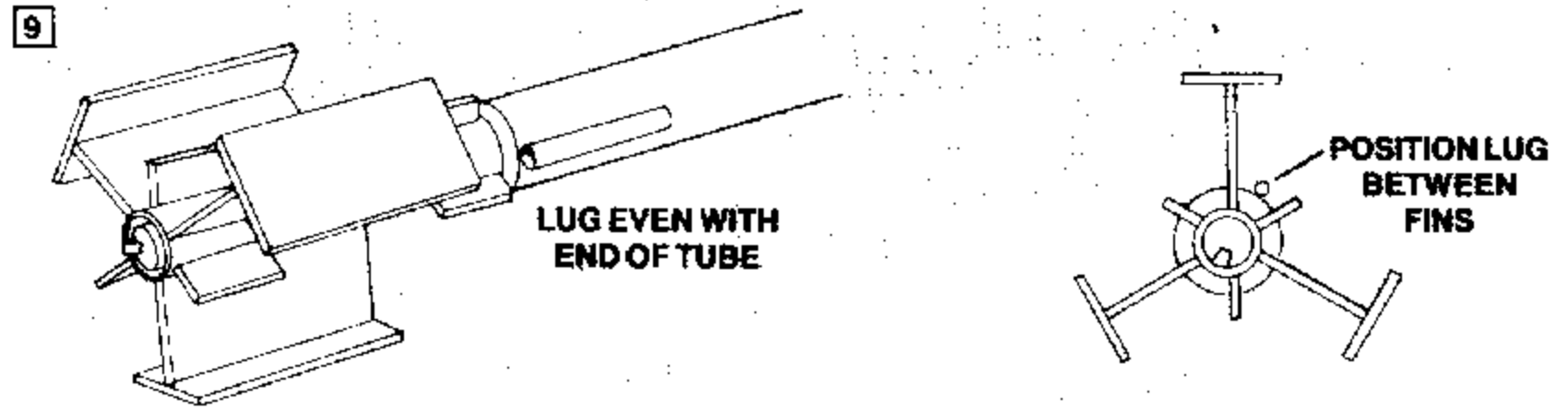
8.

- Identify the secondary fins, and glue to rear body, positioning them on every other alignment line and even with end of tube.
- Identify the smaller forward fins, and glue them on the same alignment lines as the secondary fins and against the adapter ring as shown.
- Glue main fin assemblies to rear tube even with end of tube and on their alignment lines. **FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT!**



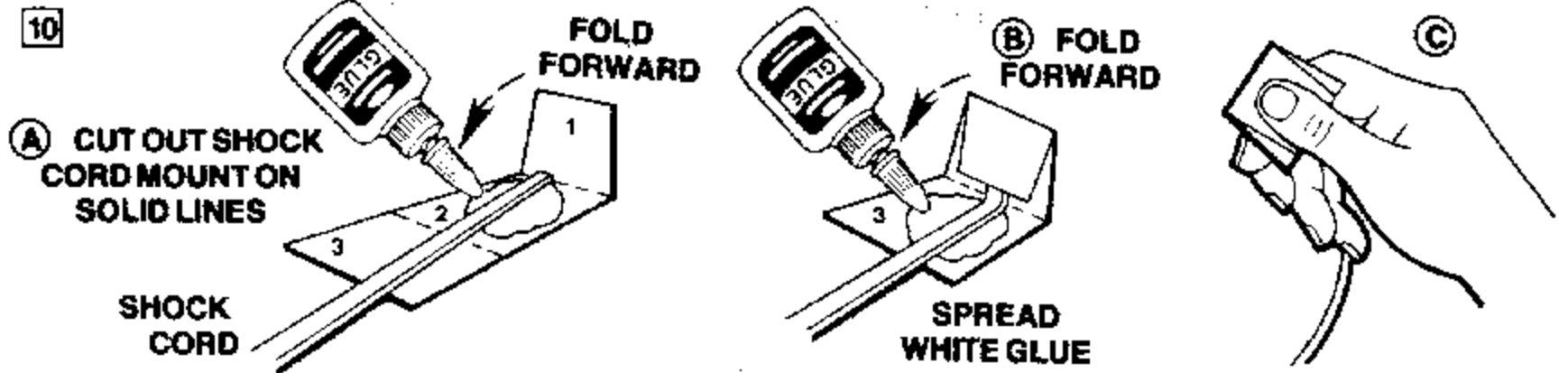
9.

Glue launch lug to main body, centered between a main fin and a secondary fin even with rear of body tube. Make sure lug is straight on body and between fins.



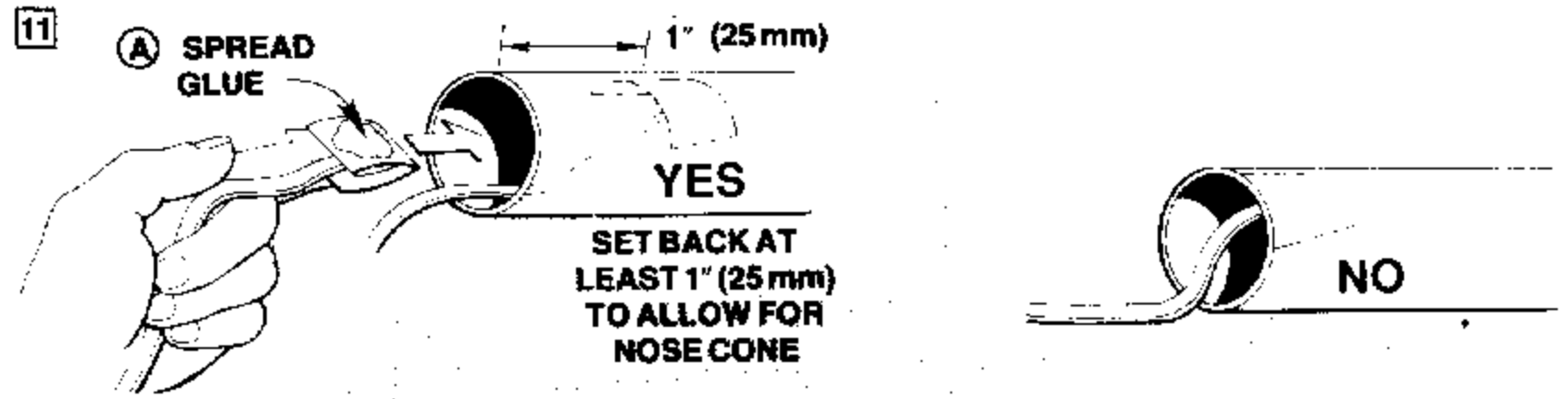
10.

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



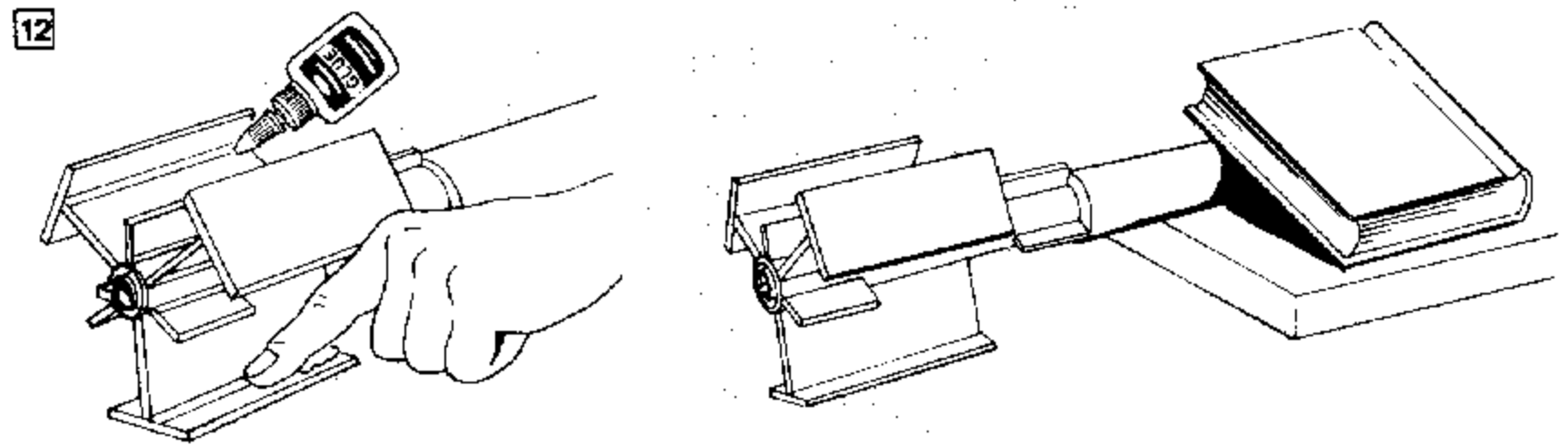
11.

Apply white glue to shock cord mount as shown. Position shock cord mount 1 to 2" (25-51 mm) inside body tube and press until glue sets.



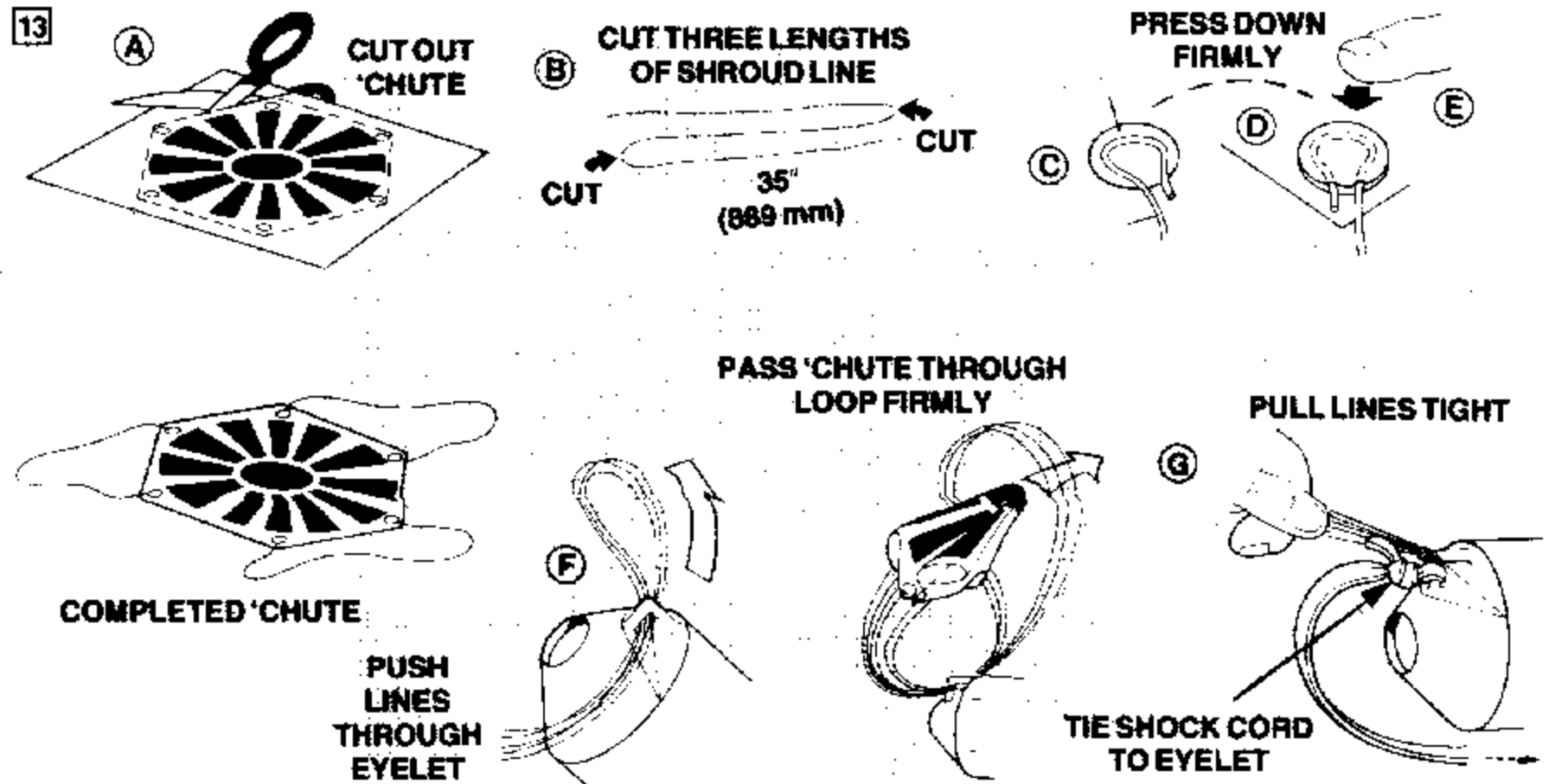
12.

- A. Apply glue reinforcement to each fin and body tube joint and each side of launch lug.
- B. Support rocket as shown until glue dries.



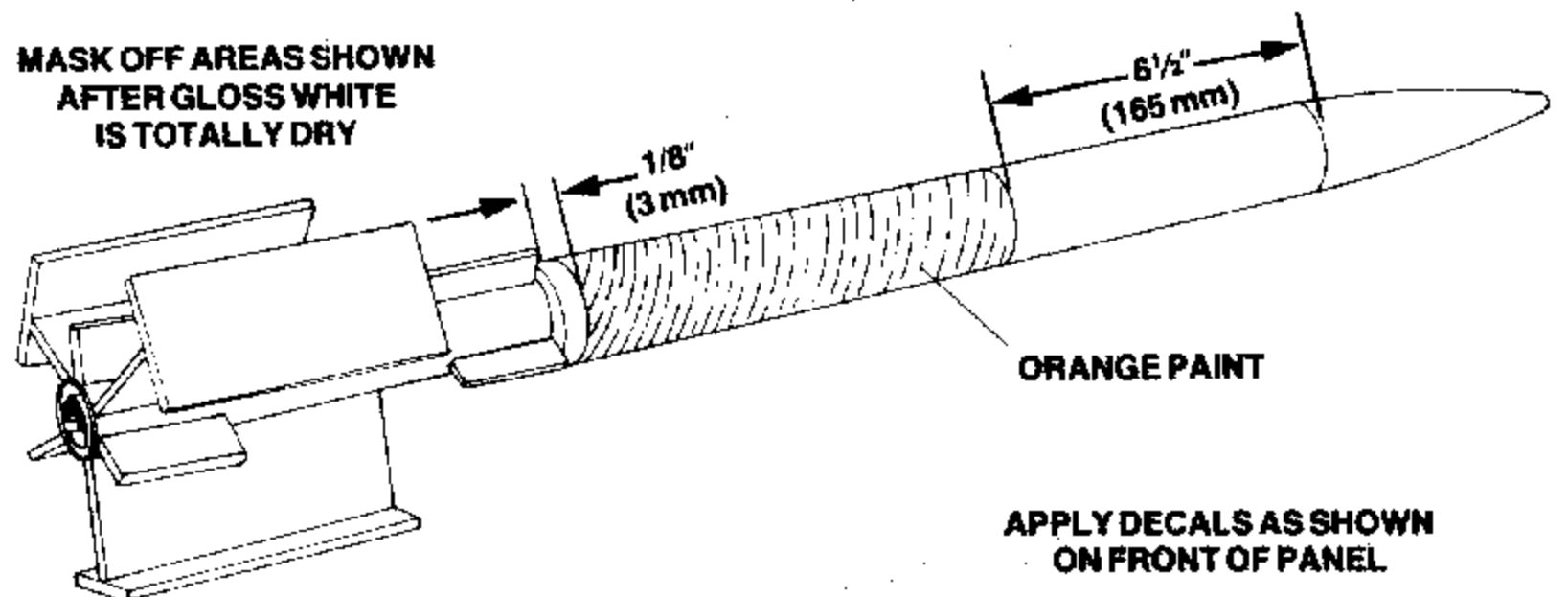
13.

- A. Cut out parachute on edge lines.
- B. Cut three 35" (889 mm) lengths of shroud line.
- C. Form small loop with shroud line ends and press onto sticky side of tape discs.
- D. Attach tape discs to parachute.
- E. Press tape discs firmly into place until both tape discs and parachute material are molded around shroud line loops.
- F. Gather and pass shroud line loops through eyelet on nose cone. Pass parachute through loop ends and pull lines tight against the nose cone.
- G. Tie free end of shock cord to nose cone eyelet.



FINISHING YOUR ROCKET

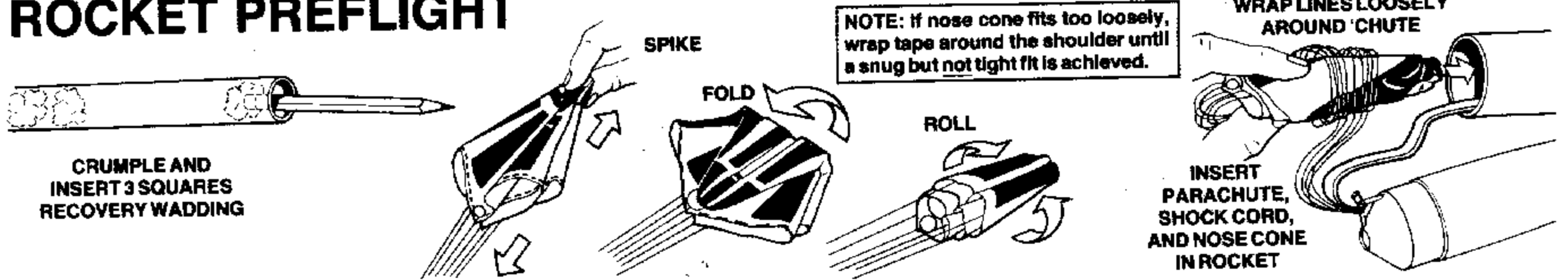
Apply sanding sealer to wood parts with small brush. When sealer is dry, lightly sand all sealed surfaces. Repeat sealing and sanding until balsa grain is filled and smooth. When sanding sealer and glue are completely dry, paint model with gloss white enamel spray paint. Follow instructions on spray can for best results. Let paint dry overnight before painting the second color as shown.



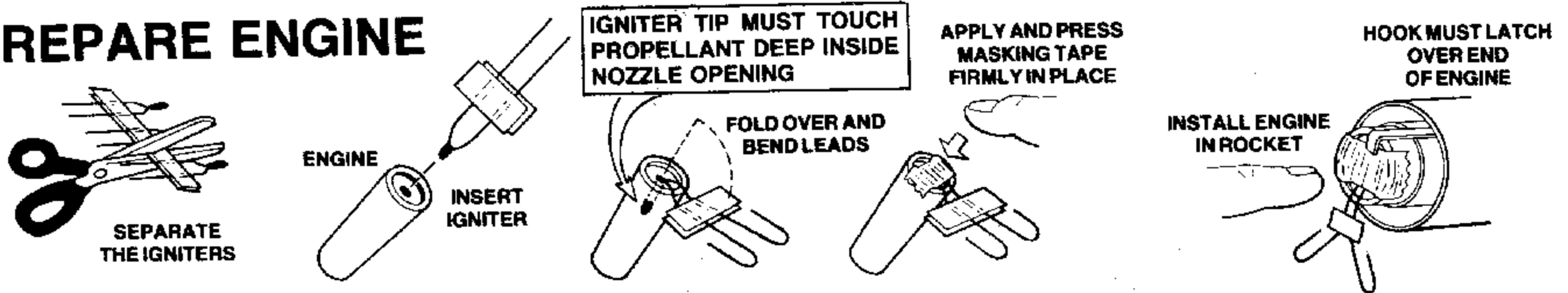
ROCKET DECOR

To apply decals, cut each out, dip in lukewarm water for 20 seconds, and hold until it uncurls. Refer to photograph on front of panel for decal placement. Slip decal off backing sheet and onto model. Blot away excess water. For best results, let decals dry overnight and apply a coat of clear spray paint to protect decals.

ROCKET PREFLIGHT



PREPARE ENGINE



LAUNCH SUPPLIES

To launch your rocket you will need the following items:
 —An Estes Launch System
 —Estes Recovery Wadding No. 2274
 —Recommended Estes Engines: A8-3, 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

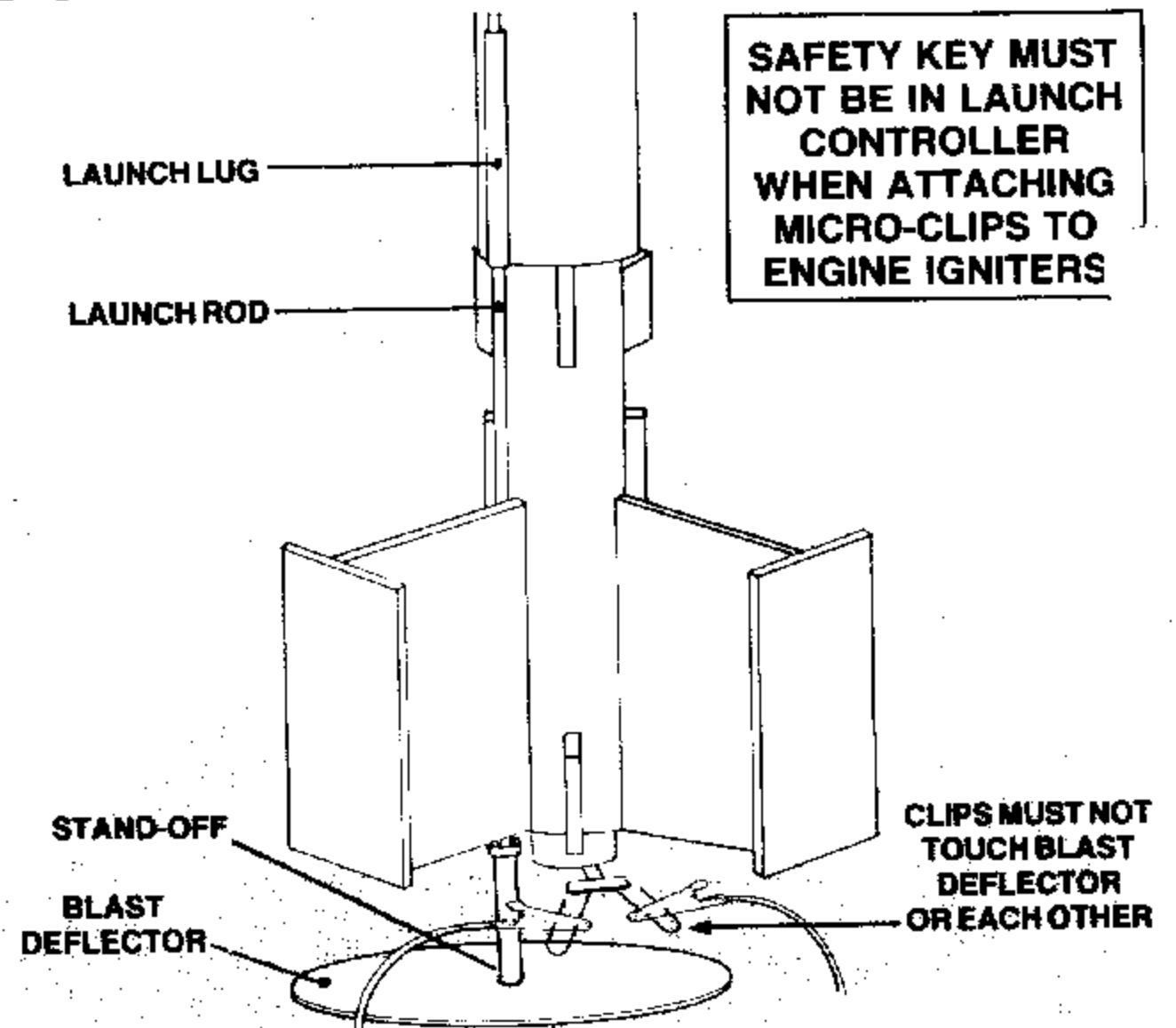
Failure of the model rocket engine to ignite is nearly always caused by incorrect igniter installation. An Estes igniter will function properly even if the coated tip is chipped. However, if the coated tip is not in direct contact with the engine propellant, it will only heat and not ignite the engine.
 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* MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities.

*National Association of Rocketry
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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.