

12/1/44
finished 12/18/94



ESTES INDUSTRIES
1295 H Street
Penrose, CO 81240 USA

LUMINA™

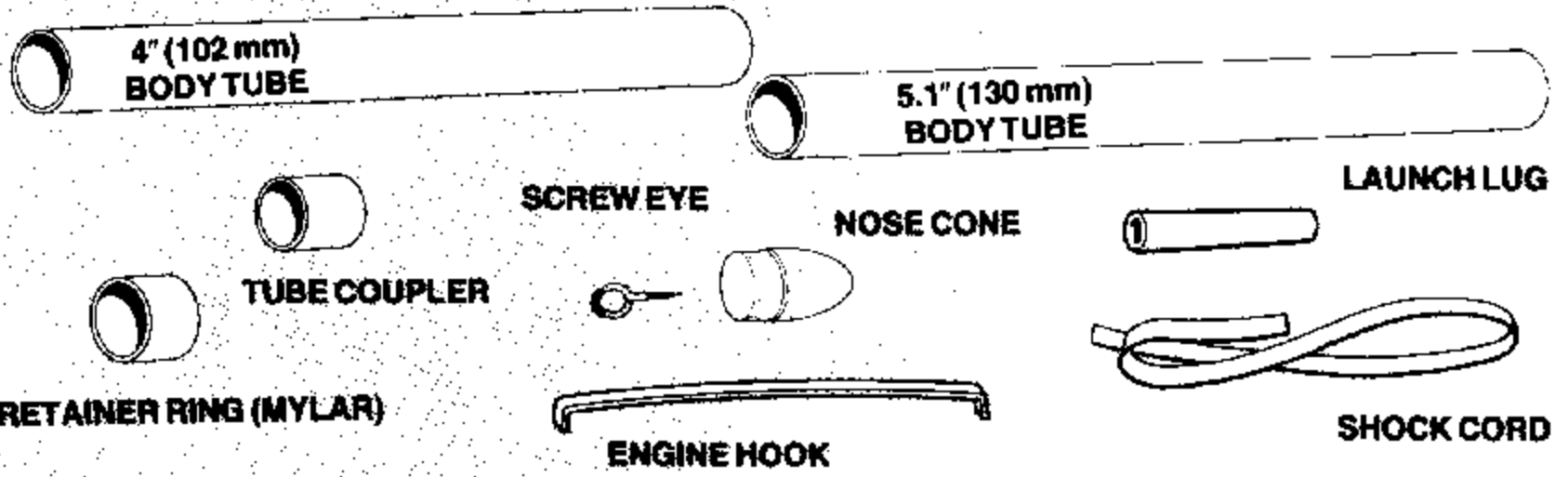
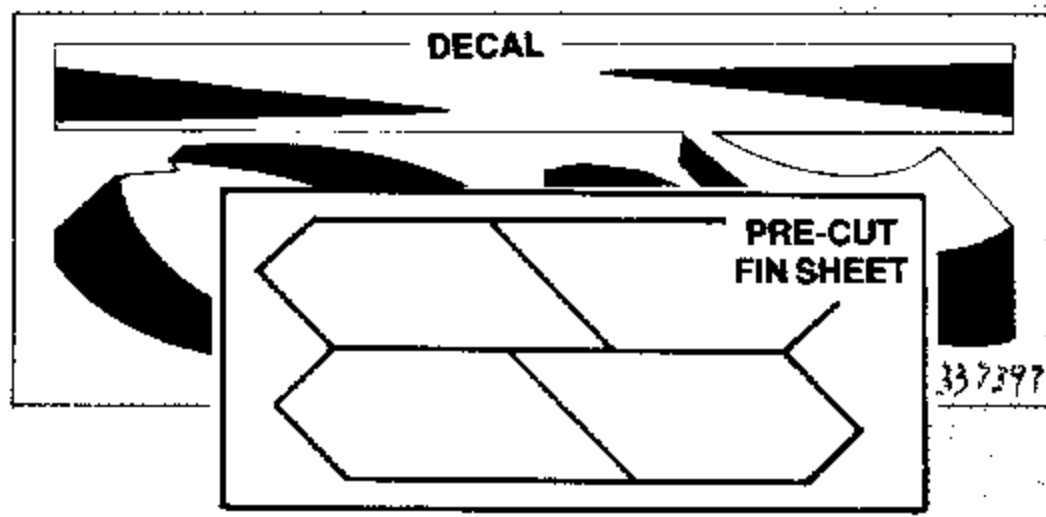
FLYING MODEL ROCKET #0897

ASSEMBLY TIP

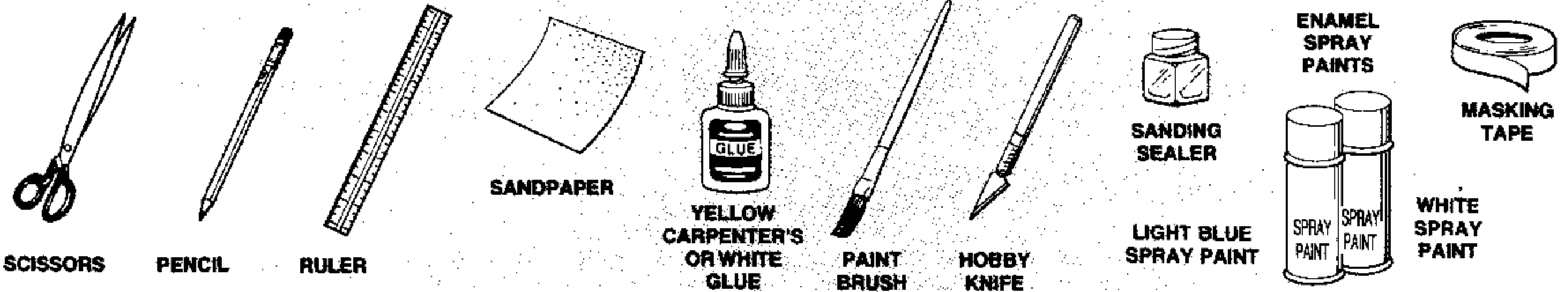
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

PARTS AND SUPPLIES

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

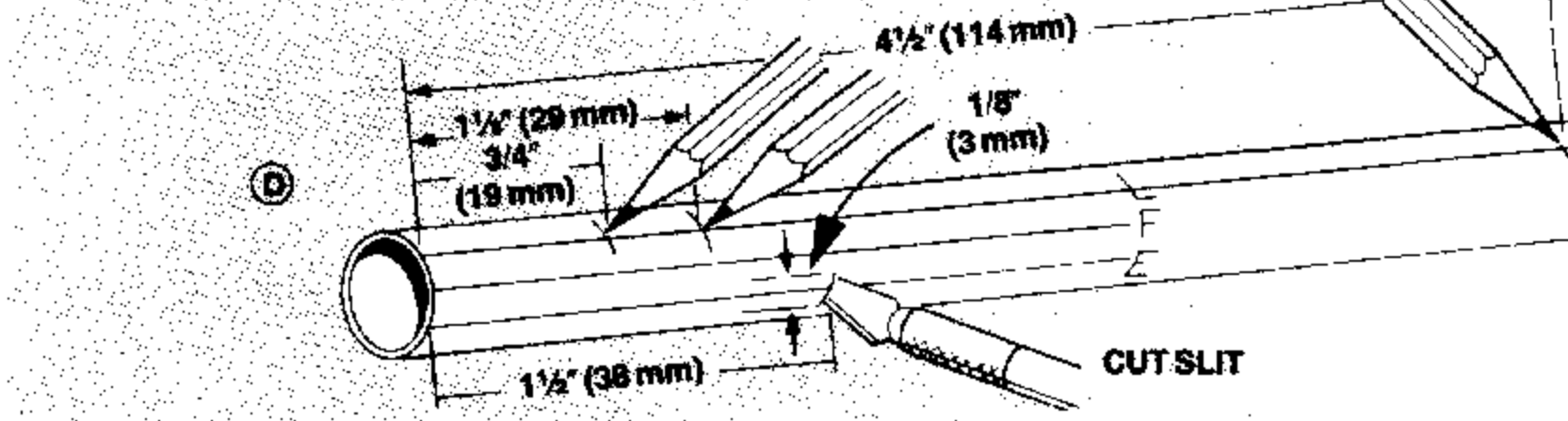
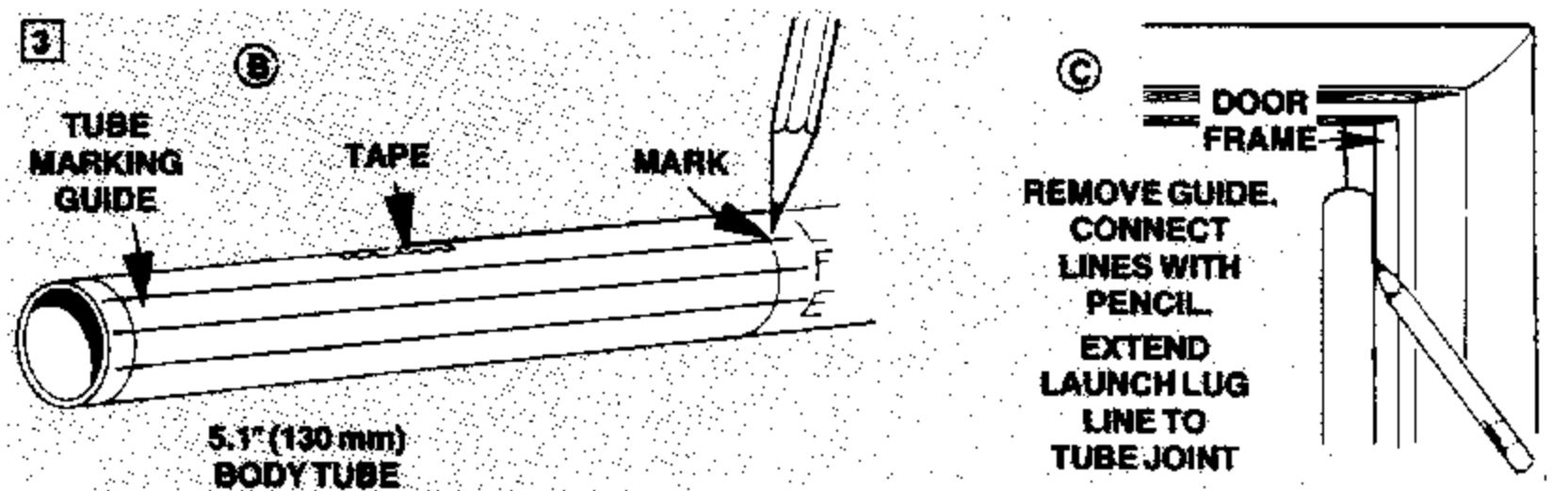
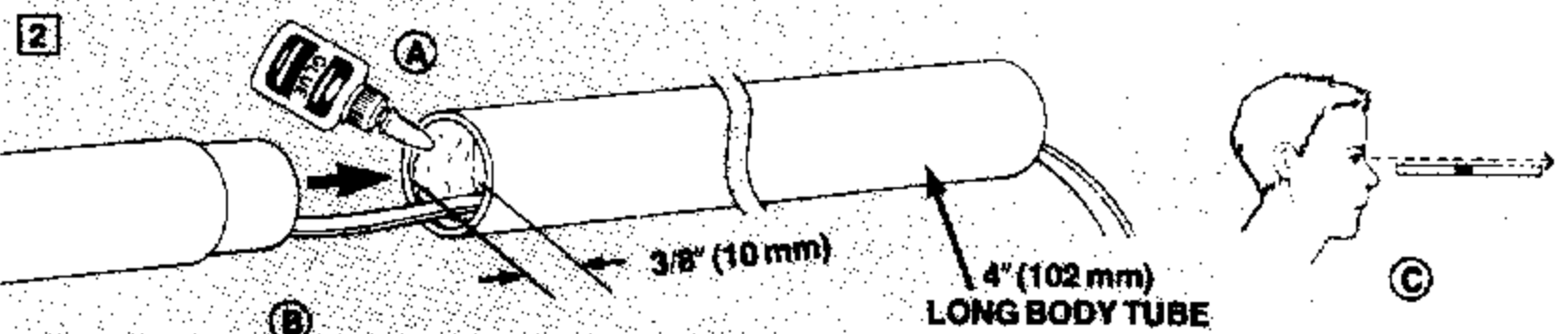
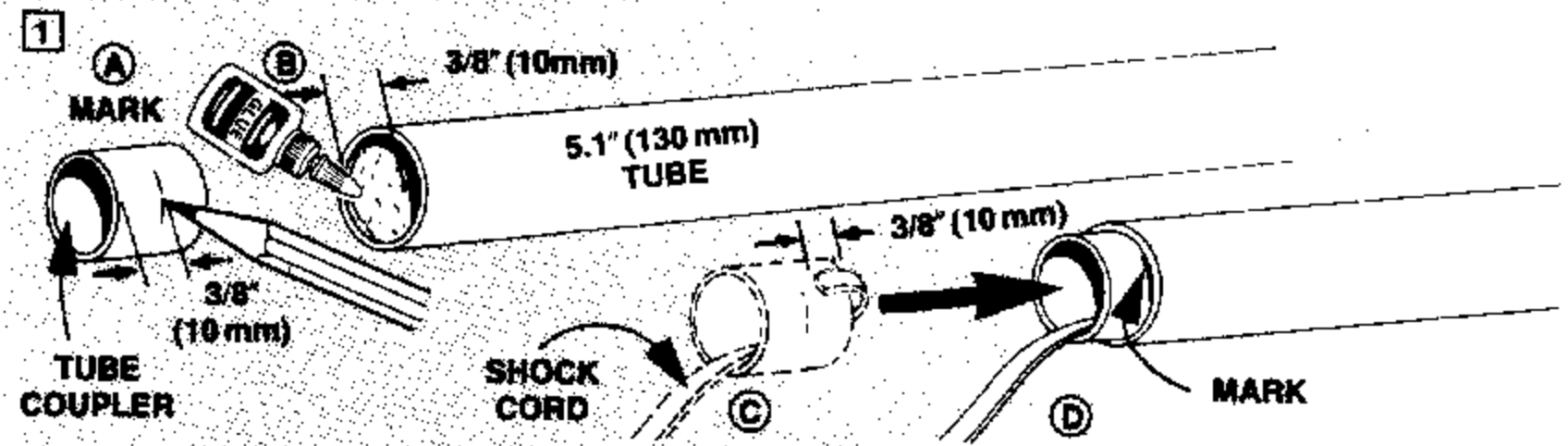


In addition to the parts included in the kit you will also need:



ROCKET ASSEMBLY

1.
 - A. Mark tube coupler 3/8 inch (10 mm) from one end. Apply a ring of carpenter's glue 3/8" (10 mm) long inside one end of 5.1" (130 mm) long body tube.
 - B. Slip end of shock cord through tube coupler and wrap over 1/8" (3 mm).
 - C. Insert the tube coupler in one quick motion until the mark on the tube coupler is even with the end of the body tube. The shock cord should be tightly captured. Cut off excess shock cord if necessary. Allow glue to dry.
2.
 - A. Apply a 3/8" (10 mm) ring of carpenter's glue inside one end of the 4" (102 mm) long body tube and thread the free end of shock cord through.
 - B. Insert the tube coupler in one quick motion until the two tubes are butted together.
 - C. Make sure tubes are straight. Allow glue to dry.
3.
 - A. Cut out tube marking guide from the top of page 2.
 - B. Wrap the guide around the end of the 5.1" (130 mm) long body tube. Apply tape. Mark the tube at the arrows. Identify each fin line with an F, the engine hook line with an E, and the launch lug line with an L. Remove the guide.
 - C. Draw straight lines connecting each pair of marks. Extend the launch lug line to the tube joint.
 - D. Mark the launch lug line at 4 1/2" (114 mm) from the end of the tube. Mark the body tube at 3/4" (19 mm) and 1 1/8" (29 mm) from rear of body tube. Cut a 1/8" (3 mm) wide slit on the engine hook line at 1 1/2" (38 mm) from the rear of the tube.



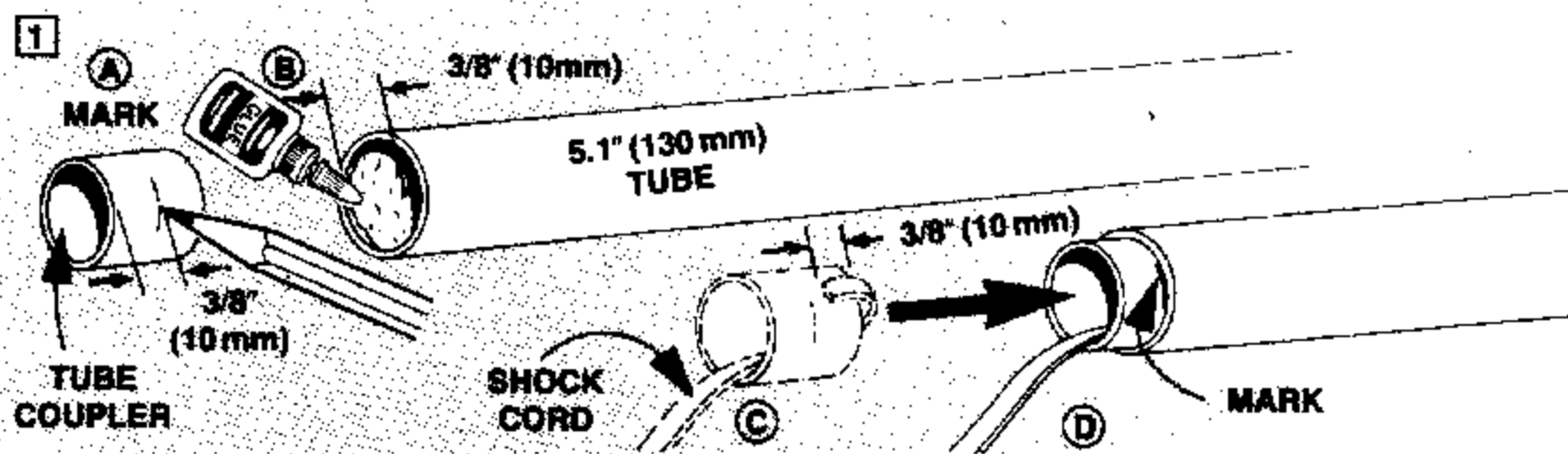
4.
 - A. Apply a line of glue on the engine hook line between the slit and the 3/4" (19 mm) line. Insert the end of the engine hook into the slit.
 - B. Apply a ring of carpenter's glue between the 3/4" (19 mm) and 1 1/8" (29 mm) marks.
 - C. Slide the retainer ring in one quick motion over the engine hook until centered between the two marks. Wipe off excess glue.



ROCKET ASSEMBLY

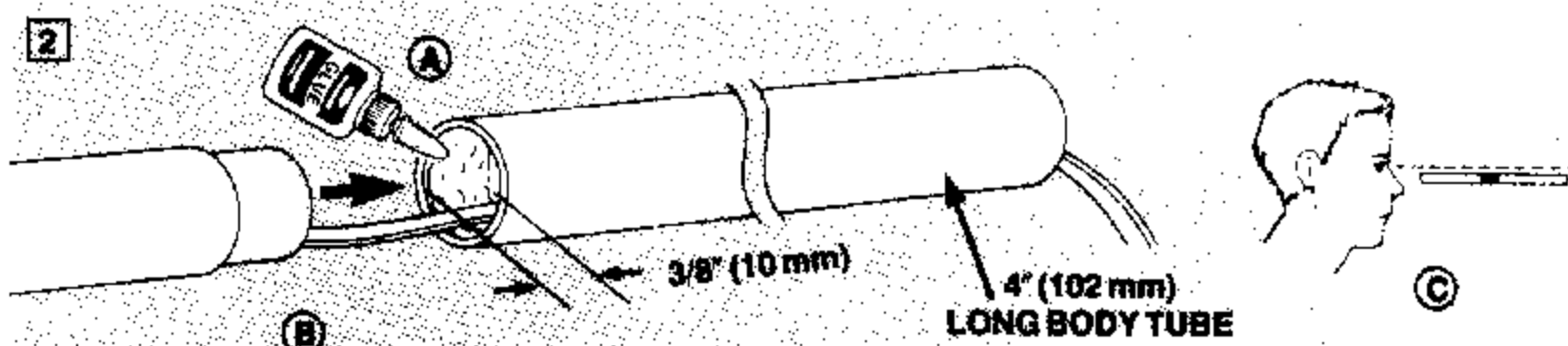
1.

- Mark tube coupler $\frac{3}{8}$ inch (10 mm) from one end.
- Apply a ring of carpenter's glue $\frac{3}{8}$ " (10 mm) long inside one end of 5.1" (130 mm) long body tube.
- Slip end of shock cord through tube coupler and wrap over $\frac{1}{8}$ " (3 mm).
- Insert the tube coupler in one quick motion until the mark on the tube coupler is even with the end of the body tube. The shock cord should be tightly captured. Cut off excess shock cord if necessary. Allow glue to dry.



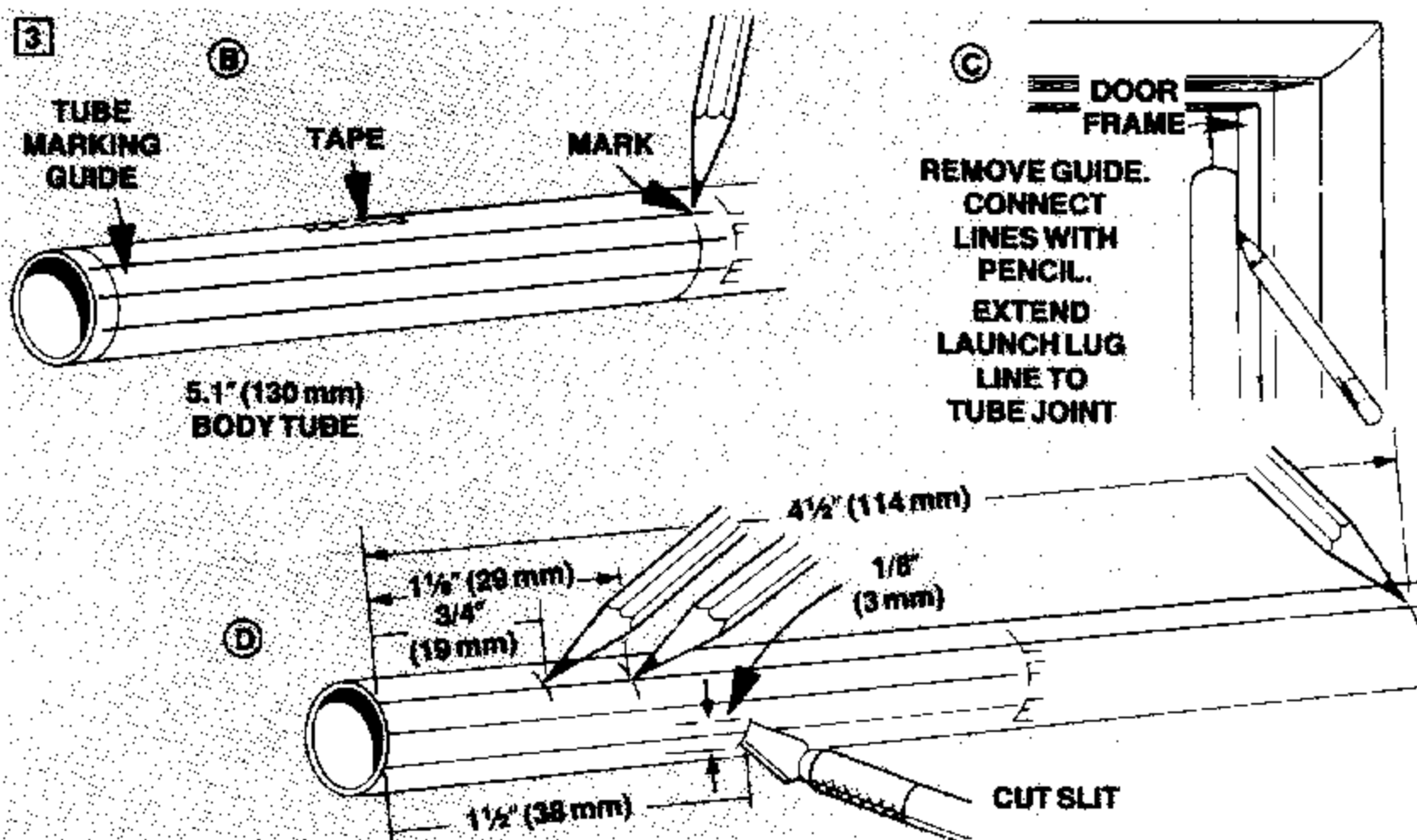
2.

- Apply a $\frac{3}{8}$ " (10 mm) ring of carpenter's glue inside one end of the 4" (102 mm) long body tube and thread the free end of shock cord through.
- Insert the tube coupler in one quick motion until the two tubes are butted together.
- Make sure tubes are straight. Allow glue to dry.

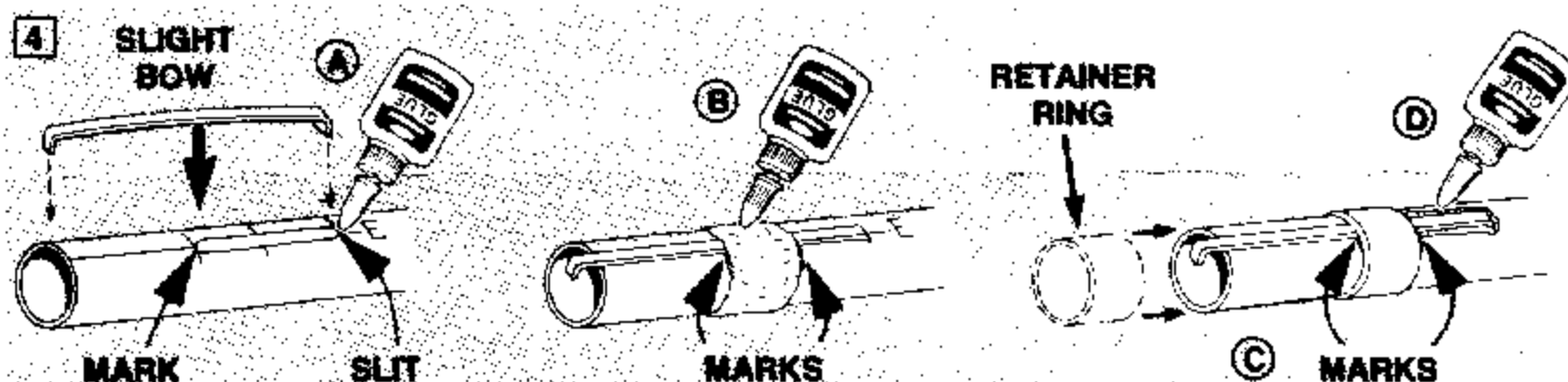


3.

- Cut out tube marking guide from the top of page 2.
- Wrap the guide around the end of the 5.1" (130 mm) long body tube. Apply tape. Mark the tube at the arrows. Identify each fin line with an F, the engine hook line with an E, and the launch lug line with an L. Remove the guide.
- Draw straight lines connecting each pair of marks. Extend the launch lug line to the tube joint.
- Mark the launch lug line at $4\frac{1}{2}$ " (114 mm) from the end of the tube. Mark the body tube at $\frac{3}{4}$ " (19 mm) and $1\frac{1}{8}$ " (29 mm) from rear of body tube. Cut a $\frac{1}{8}$ " (3 mm) wide slit on the engine hook line at $1\frac{1}{2}$ " (38 mm) from the rear of the tube.

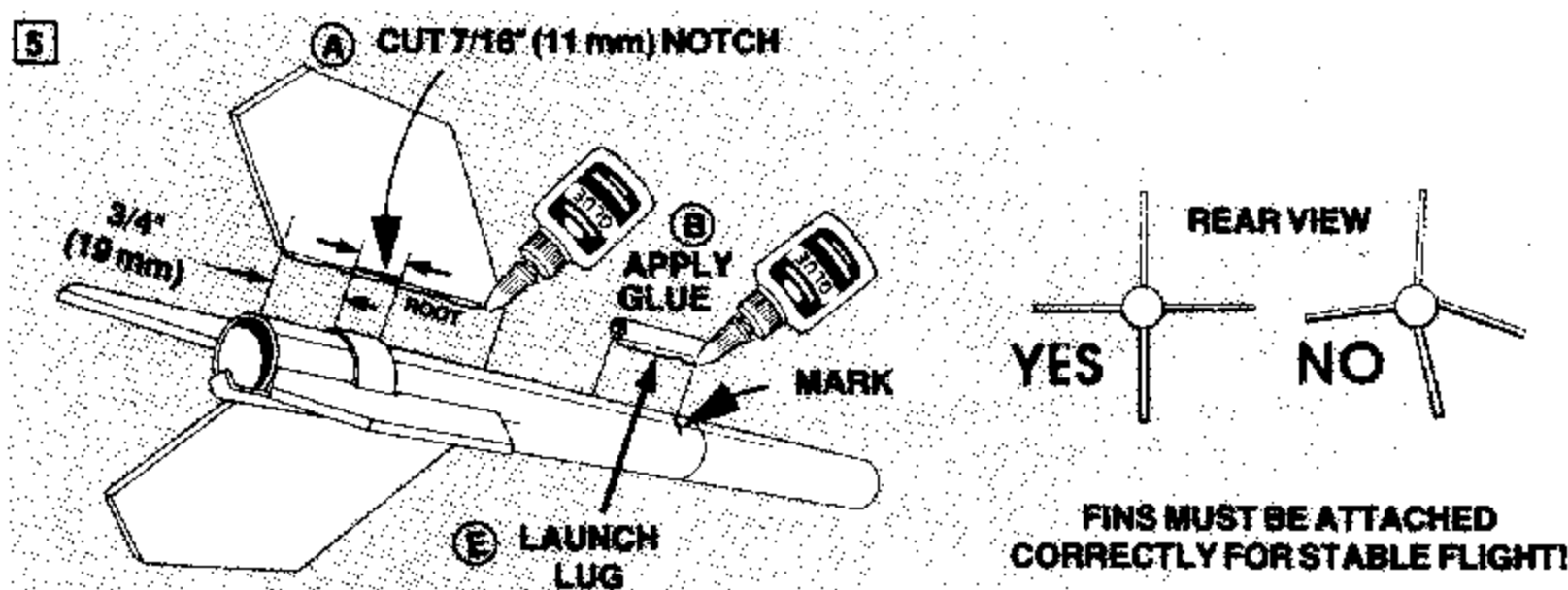


- Apply a line of glue on the engine hook line between the slit and the $\frac{3}{4}$ " (19 mm) line. Insert the end of the engine hook into the slit.
- Apply a ring of carpenter's glue between the $\frac{3}{4}$ " (19 mm) and $1\frac{1}{8}$ " (29 mm) marks.
- Slide the retainer ring in one quick motion over the engine hook until centered between the two marks. Wipe off excess glue.
- Apply a line of reinforcing glue along sides of the engine hook in front of the retainer ring. Let glue dry completely.

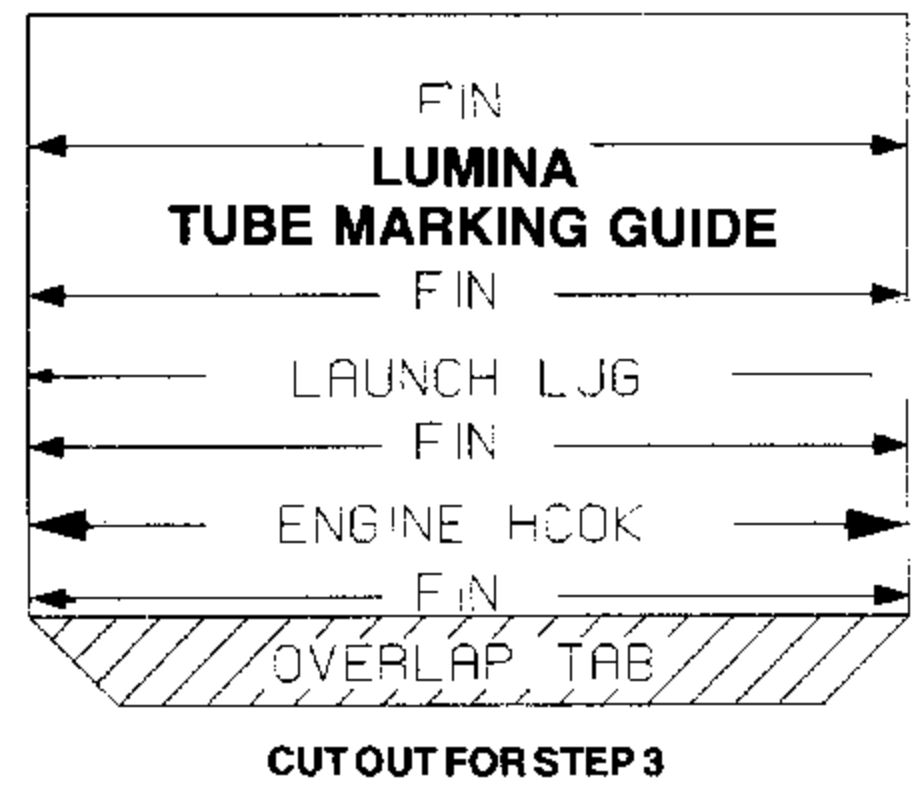
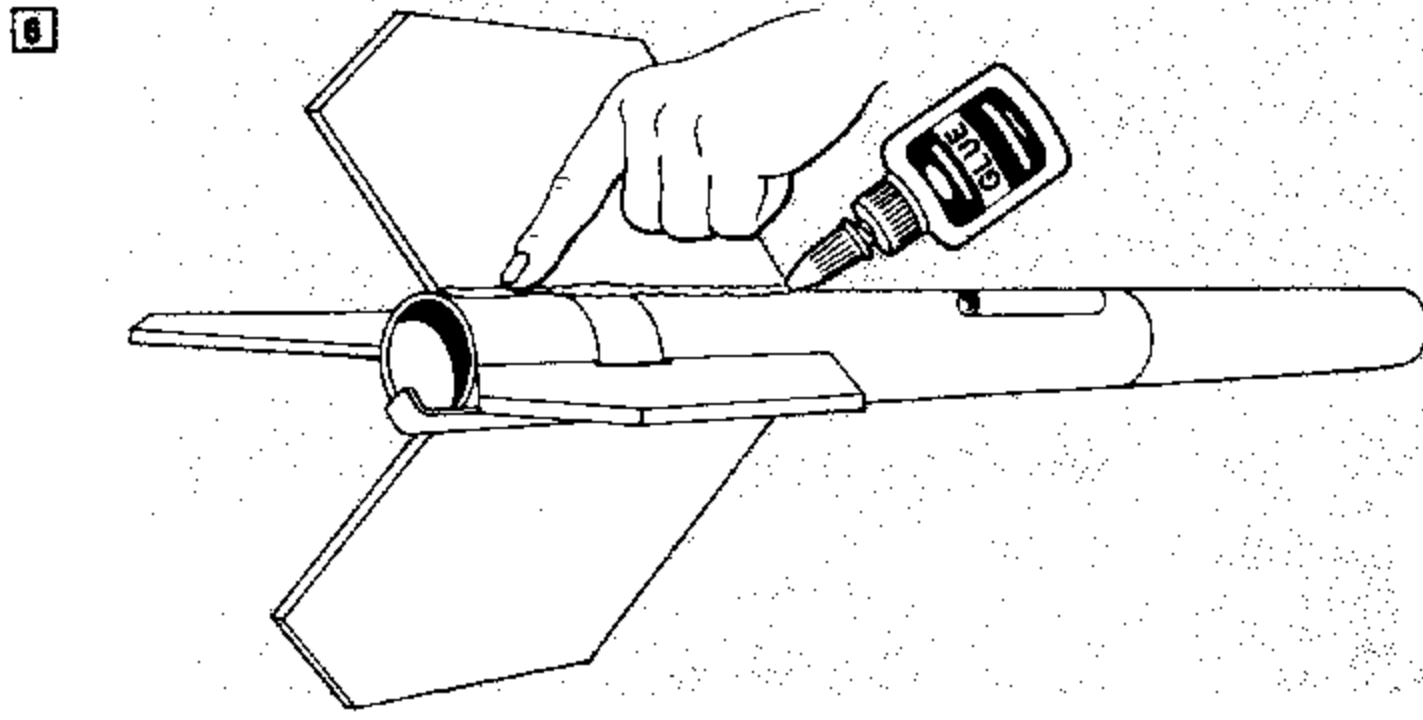


5.

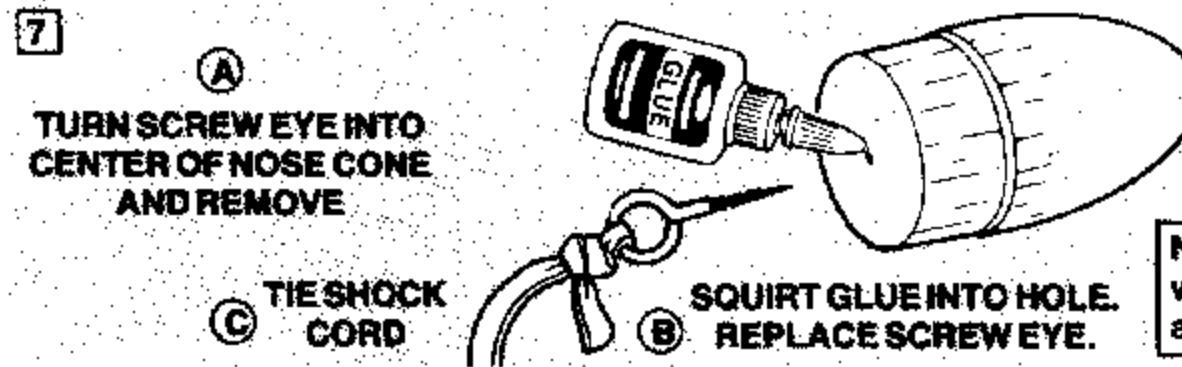
- Remove fins from pre-cut sheet. Cut a $\frac{7}{16}$ " (11 mm) long notch in root edge of each fin beginning $\frac{3}{4}$ " (19 mm) from rear of root edge. Test to see if each fin notch straddles the retainer ring completely.
- Apply a small line of carpenter's glue along fin root edge.
- Place fin on body tube line. Remove and allow glue to become tacky.
- Add a bit more glue. Place back on tube line. Repeat for remaining fins.
- Use carpenter's glue to attach launch lug straight on launch lug line with the front at the $4\frac{1}{2}$ " (114 mm) mark.



6. Apply a reinforcement of carpenter's glue on each side of fins and launch lug.



7. A. Turn screw eye into center of nose cone shoulder and remove.
 B. Squirt glue into hole and replace screw eye.
 C. Tie end of shock cord to screw eye.
 D. Insert shock cord and nose cone into rocket.



NOTE: If nose cone fits too loosely, wrap tape around the shoulder until a snug but not tight fit is achieved.

FINISHING YOUR ROCKET

When completely dry, paint entire model with a light colored primer or white enamel spray paint. Allow paint to dry and then paint entire model light blue. Use the photo on the front of the wrapper card

as decal placement guide. Gently lift one decal at a time and lightly lay it down in position. If position is correct, rub it down with your finger to remove bubbles and stick it securely.

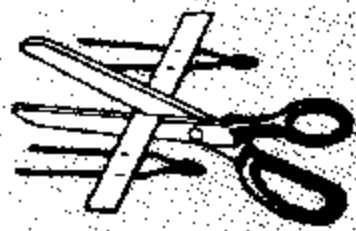
PREPARE ENGINE



IGNITER PLUGS COME WITH ENGINES AND ARE NOT INCLUDED IN THIS KIT

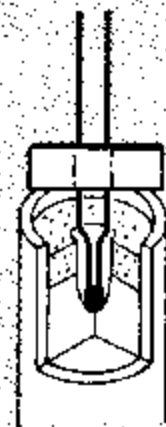
If your engines do not come with igniter plugs, follow the instructions that come with the engines for securing igniters.

SEPARATE IGNITER AND IGNITER PLUG



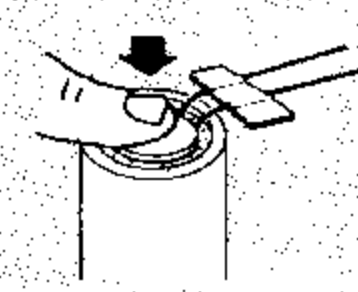
HOLD ENGINE UPRIGHT, DROP IN IGNITER

IGNITER MUST TOUCH PROPELLANT

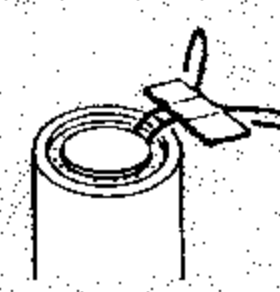


INSERT IGNITER PLUG

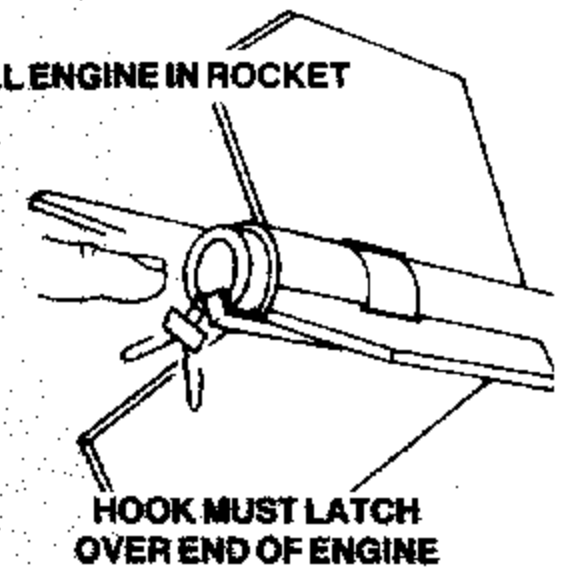
FIRMLY PUSH ALL THE WAY IN



BEND IGNITER WIRES BACK



INSTALL ENGINE IN ROCKET



HOOK MUST LATCH OVER END OF ENGINE

LAUNCH SUPPLIES

- To launch your rocket you will need the following items:
 —An Estes Model Rocket Launch System and Launch Pad
 —Estes Recovery Wadding No. 2274
 —Recommended Engines: 1/2A3-2T, 1/2A3-4T (First Flight), A3-4T, or A10-3T.
 Use 1/2A3-4T engine for your first flight to become familiar with your rocket's flight pattern.
 Use only Estes products when launching 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.

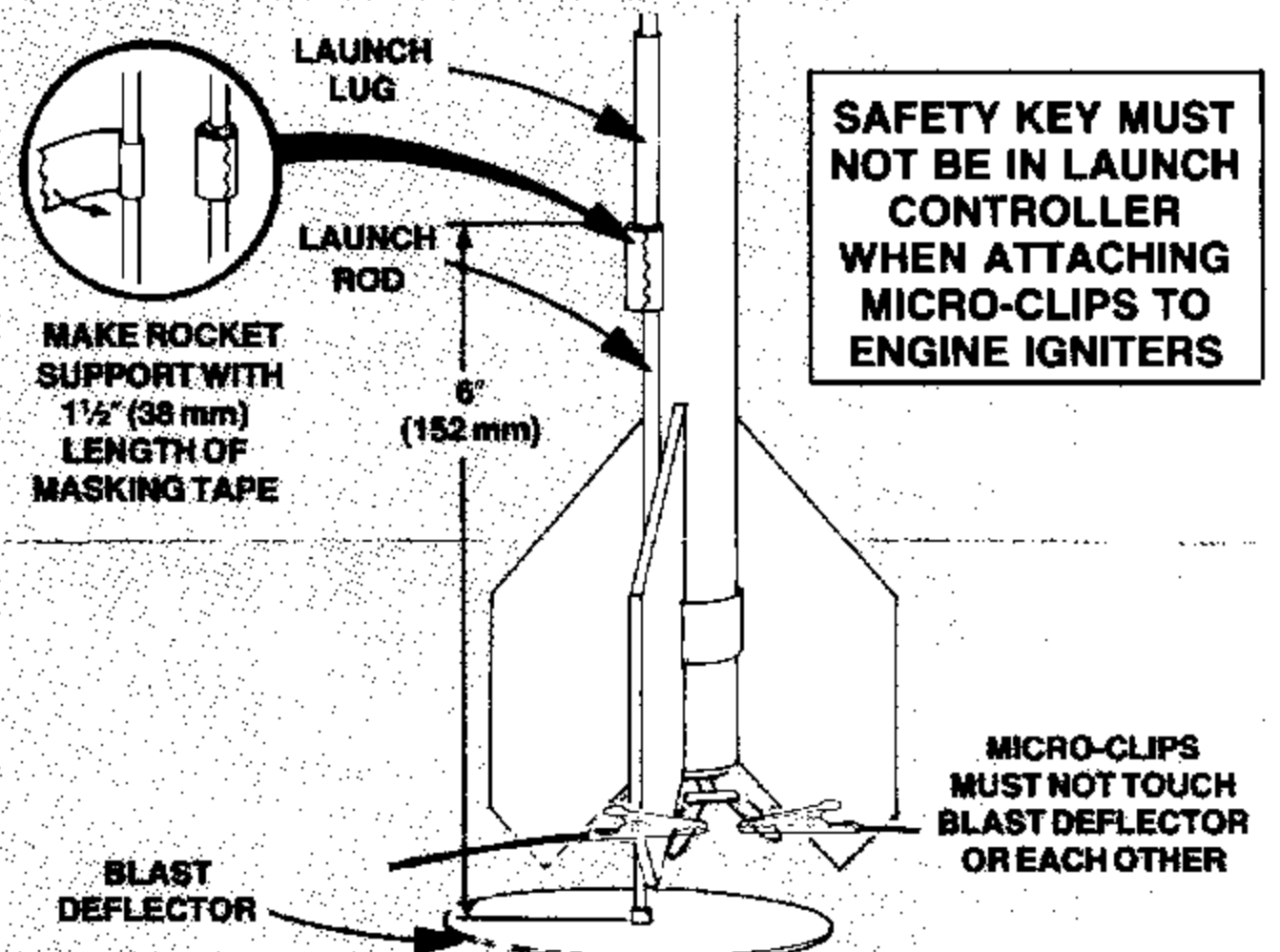
Launch area must be free of dry weeds and brown grass.

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

MISFIRES

Failure of the model rocket engine to ignite is nearly always caused by incorrect

COUNTDOWN AND LAUNCH



SAFETY KEY MUST NOT BE IN LAUNCH CONTROLLER WHEN ATTACHING MICRO-CLIPS TO ENGINE IGNITERS

MICRO-CLIPS MUST NOT TOUCH BLAST DEFLECTOR OR EACH OTHER

- 10 BE CERTAIN SAFETY KEY IS NOT IN LAUNCH CONTROLLER.

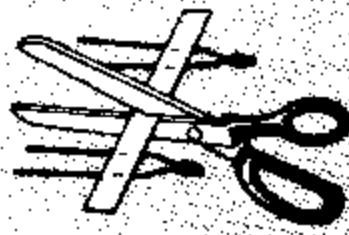
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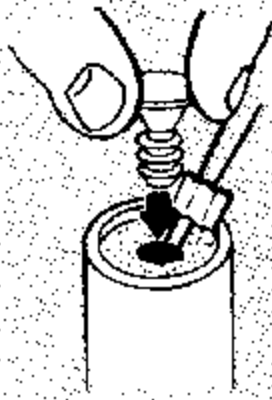
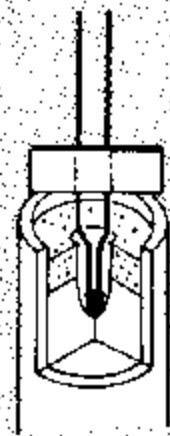


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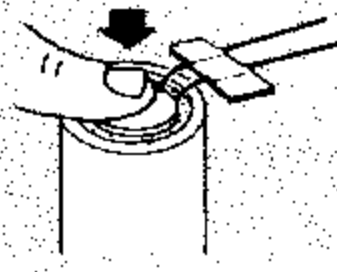
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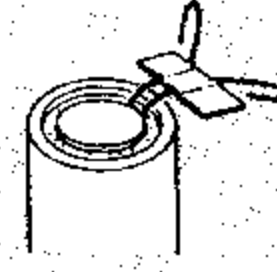


INSERT IGNITER PLUG

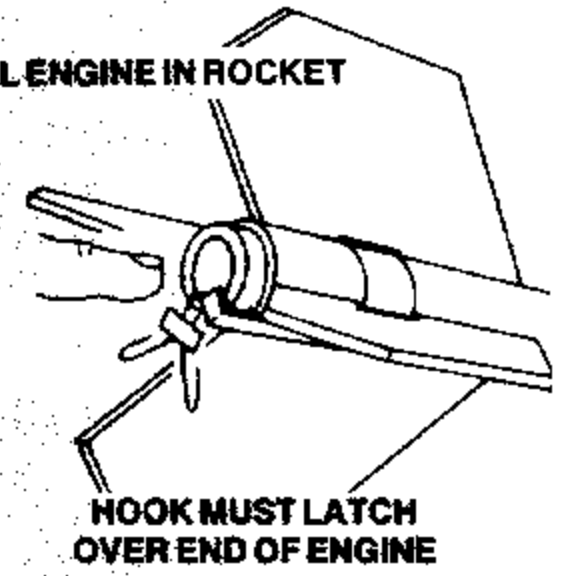
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Choose a large field away from power lines, tall trees, and low flying aircraft. Try to find a field at least 250 feet (76 meters) square. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds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

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.

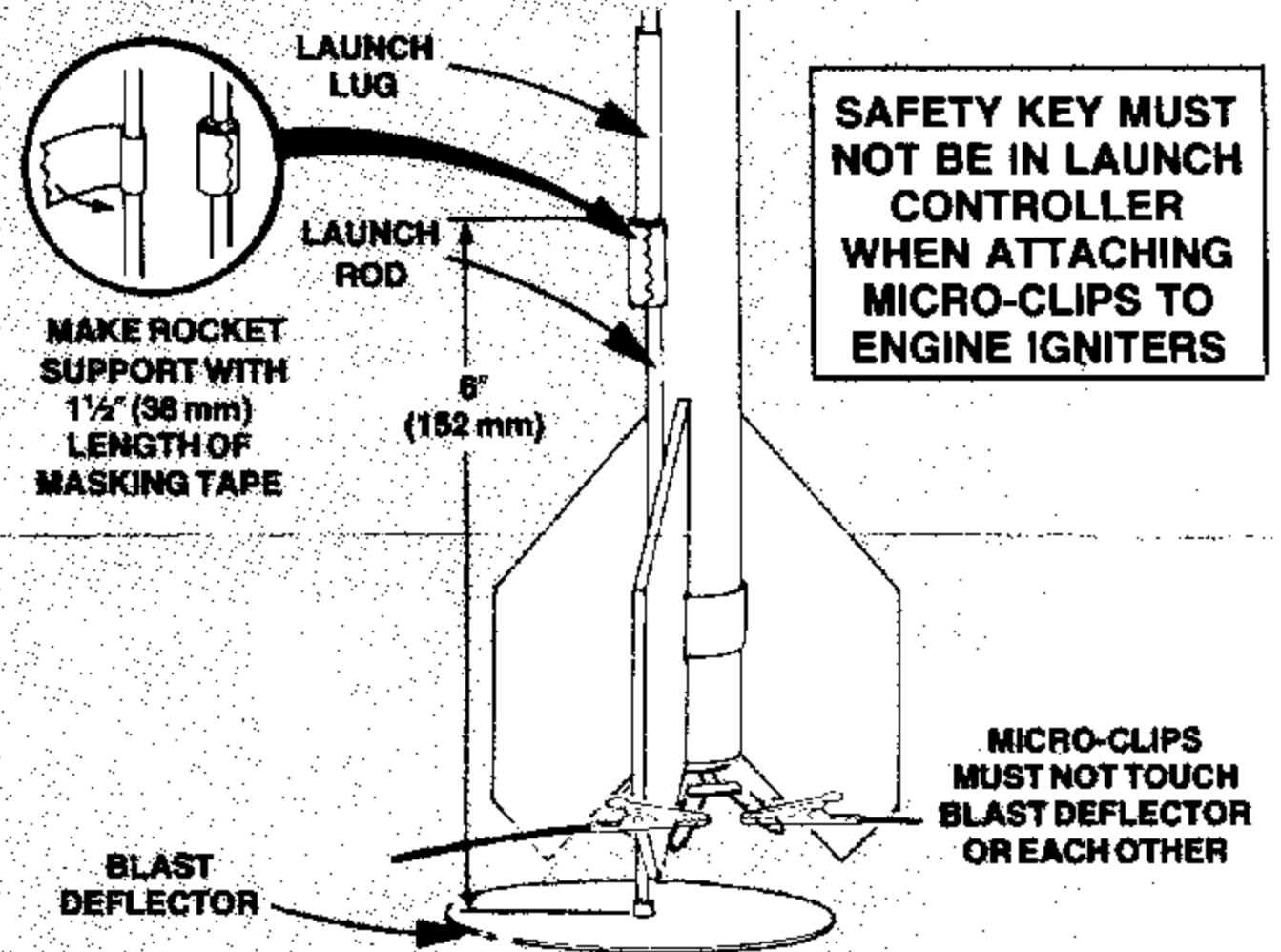
When an ignition failure occurs, remove the safety key from the launch control system, and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant, then insert the igniter plug into the 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



- BE CERTAIN SAFETY KEY IS NOT IN LAUNCH CONTROLLER.
- 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.
- 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.
- Move back from your rocket as far as launch wire will permit (at least 15 feet - 5 meters).
- 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.