



ESTES INDUSTRIES (6-96) 82125
 1295 H Street EST 2140
 Penrose, CO 81240



VENOM™

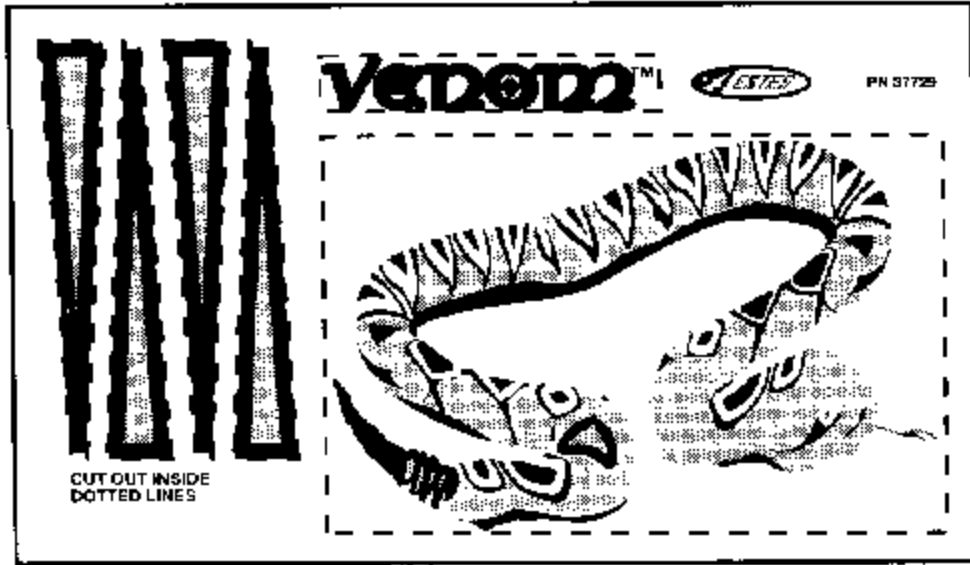
FLYING MODEL ROCKET KIT INSTRUCTIONS

TOOLS REQUIRED:

SCISSORS, PENCIL, RULER, HOBBY KNIFE, GLUE, PAINT, SANDING SEALER AND SANDPAPER

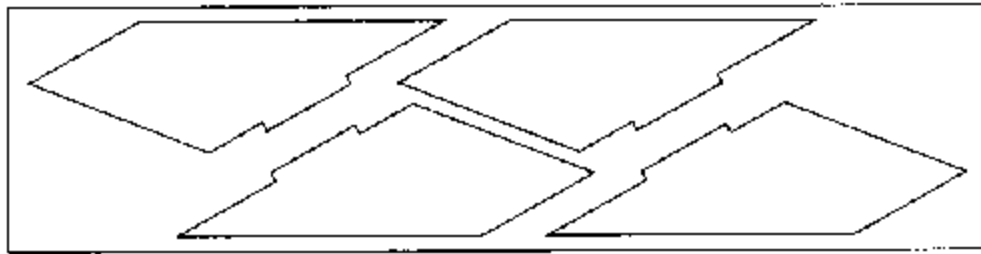
ALL GLUED AREAS ARE SHADED IN GRAY

PARTS LAYOUT



DECAL (1)
37729

NOSE CONE
#50SP (1)
71001



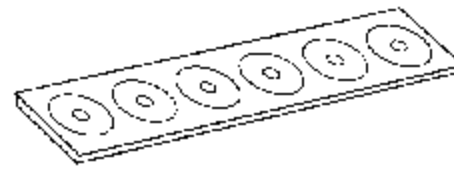
DIE CUT Balsa FIN SHEET
32256

BODY TUBE SLOTTED
#BT-50WH (1)
31180

LAUNCH LUG #21 (1)
38175



SHOCK CORD-ELASTIC
#1/8 x 18 (1)
38374



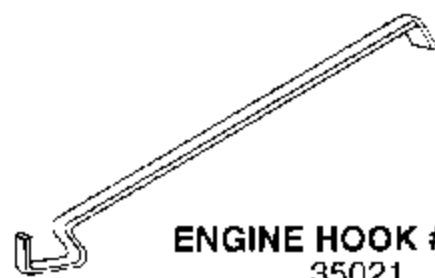
TAPE RINGS (1)
38407

ADAPTER RING
#2050 (1)
30164-2



SHROUD LINES #72 (1)
38237

ENGINE MOUNT
TUBE #BT-20J (1)
30326-1



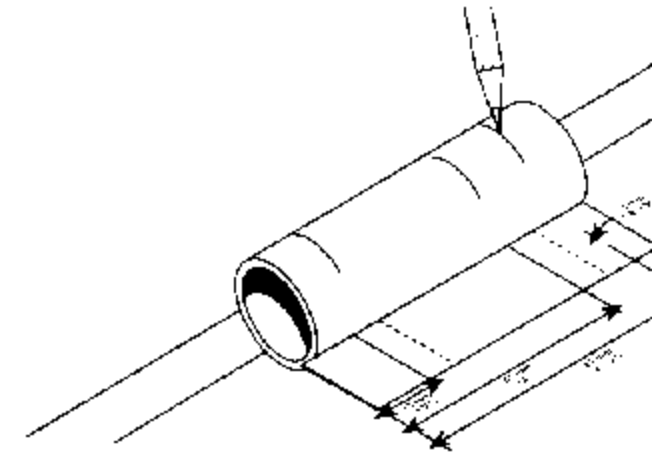
ENGINE HOOK #2A (1)
35021



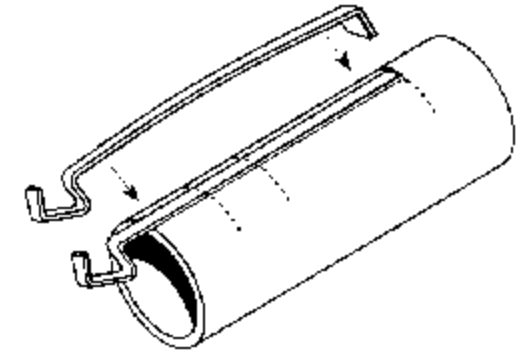
PARACHUTE #12 (1)
35820

ADAPTER RING #2050 (1)
30164-2

1.



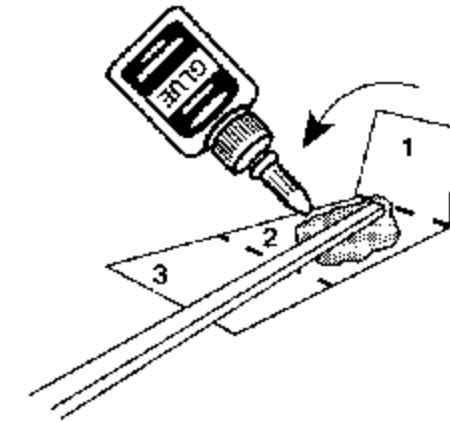
A. Lay blue engine mount tube on the body tube and mark the tube with a pencil as shown.



C. Insert the engine hook into the slit as shown.

2.

A. Cut out shock cord mount on page 3. Crease the mount on the dotted lines by folding.

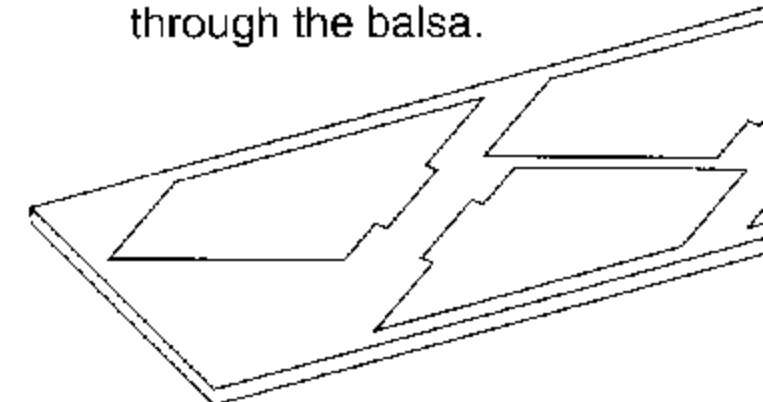


B. Spread glue on section 2 and lay one end of shock cord into glue at a slight angle as shown.

C. Apply glue to section 3.

5.

A. Use a hobby knife to carefully cut fins out of balsa sheet. Be sure that the cuts go completely through the balsa.

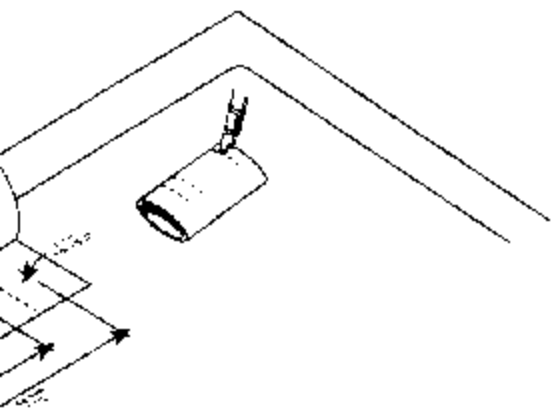


B. As you cut each fin, cut away from adjacent fins to avoid damage to them.

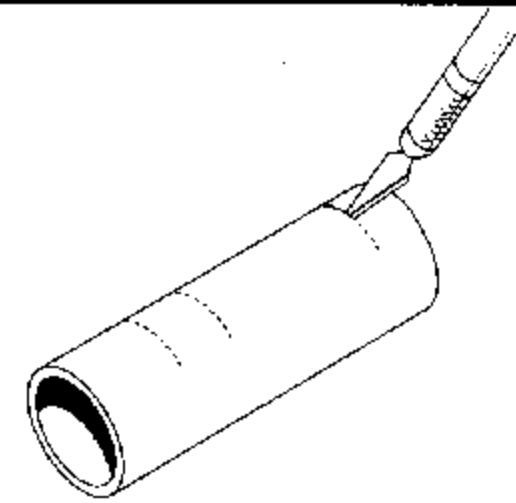
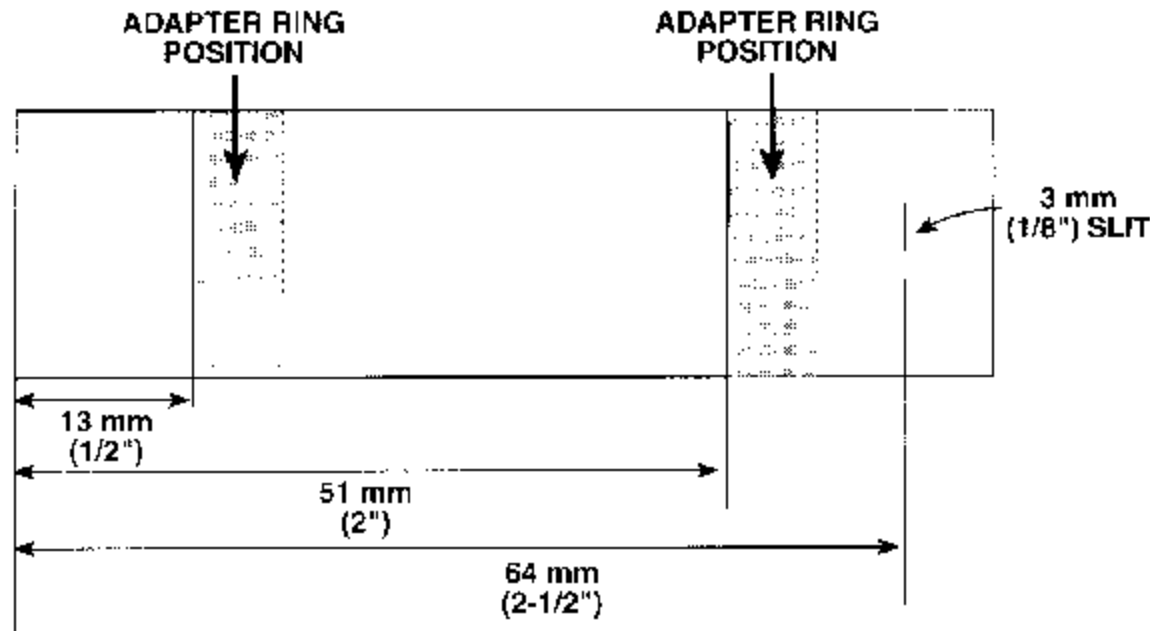
C. Carefully remove fins from sheet.

D. Keep a stick of balsa wood to use as a guide.

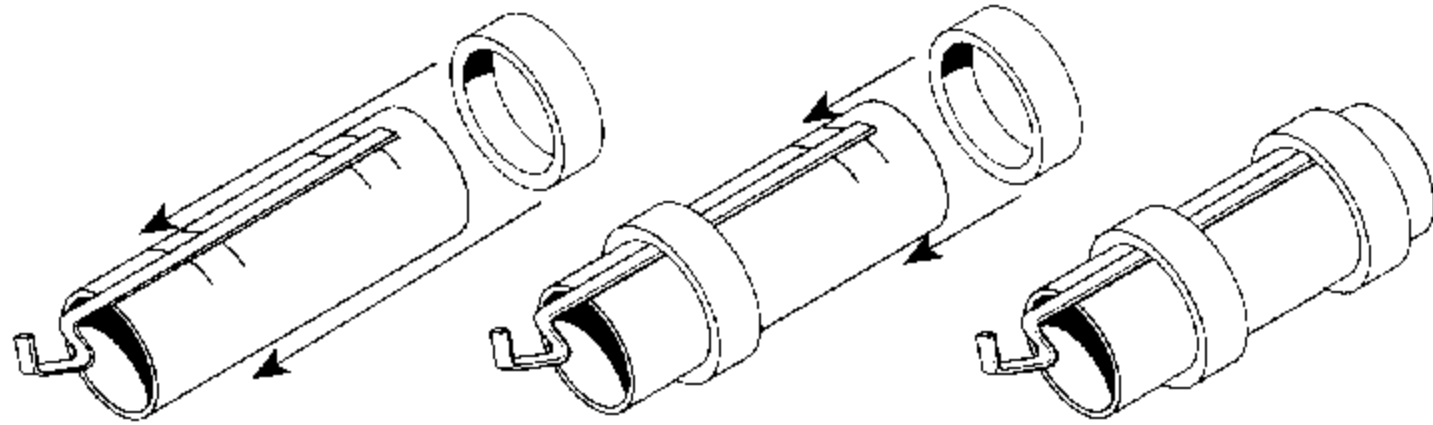
ENGINE MOUNT TEMPLATE



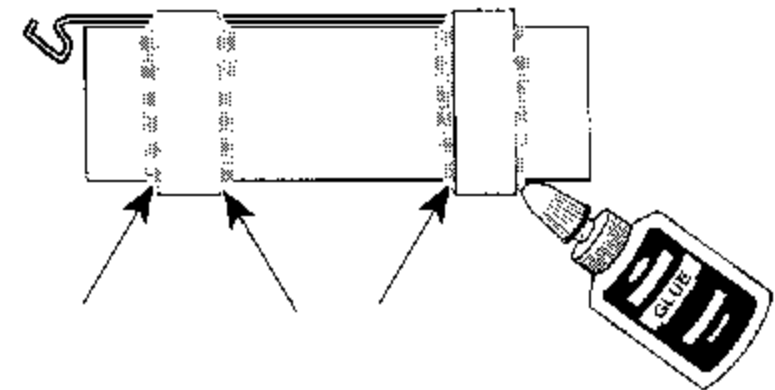
the template provided as indicated.



B. Cut a 3 mm (1/8") wide slit with your hobby knife at the front of the tube at the 64 mm (2-1/2") mark only as shown.

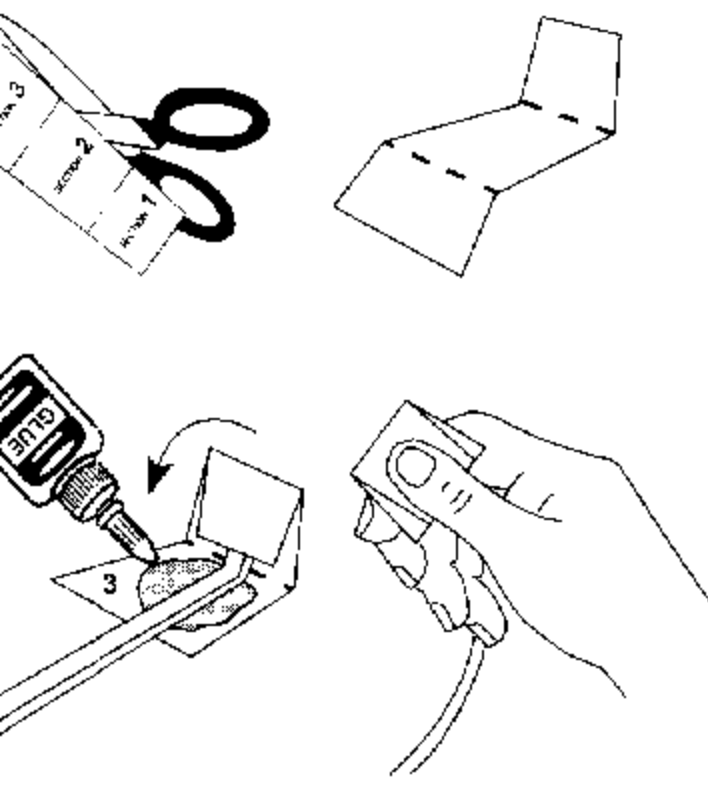


D. Slide both green adapter rings over the blue tube and engine hook so that they rest between their marks.



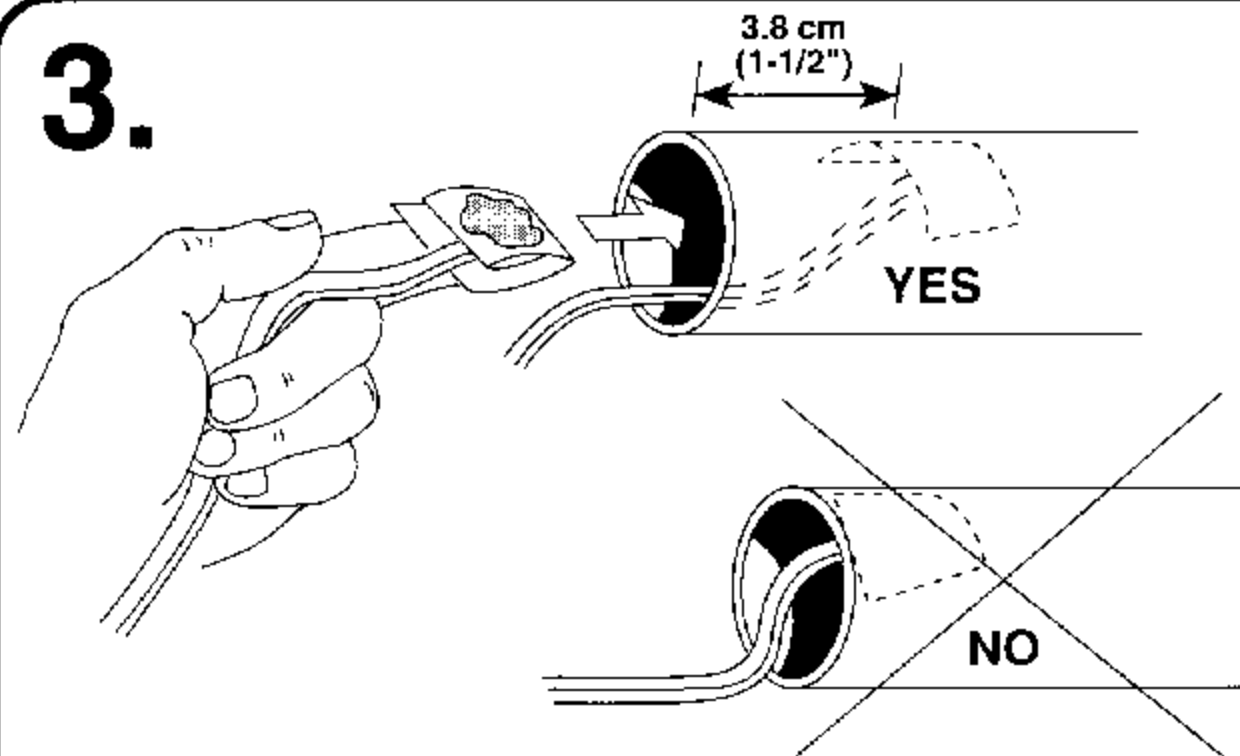
E. Apply a ring of glue to the back and front of the rear and forward adapter rings.

F. While glue is still wet, check the position of the rings against the template and adjust as necessary. Let assembly dry.



Apply glue to section 3. Fold forward again. Clamp firmly until glue sets.

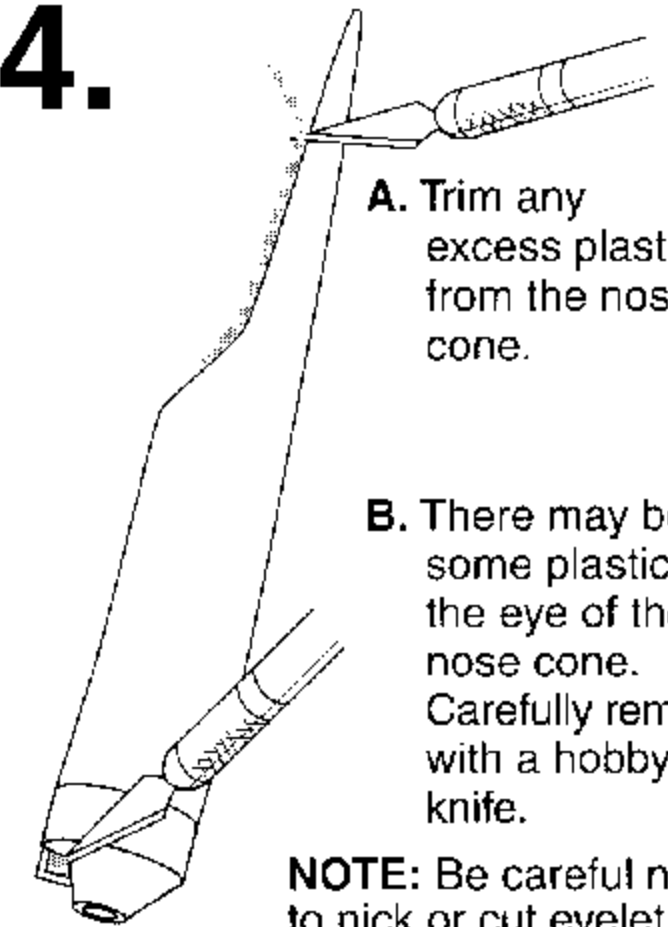
3.



A. Apply glue to the back side of the shock cord mount. Push the shock cord mount against the front (end without slots) inside of the body tube about 38 mm (1-1/2") down.

B. Be sure mount is securely glued to the inside of the tube.

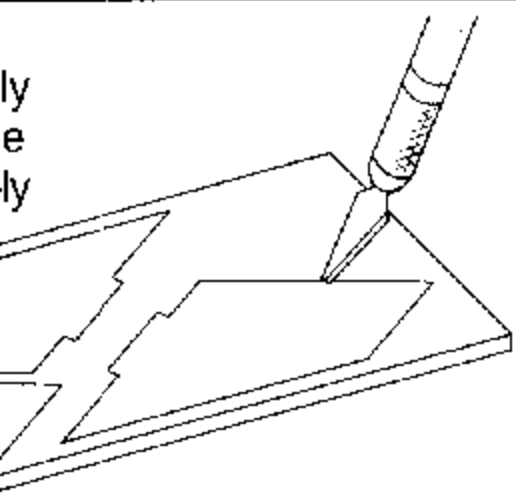
4.



A. Trim any excess plastic from the nose cone.

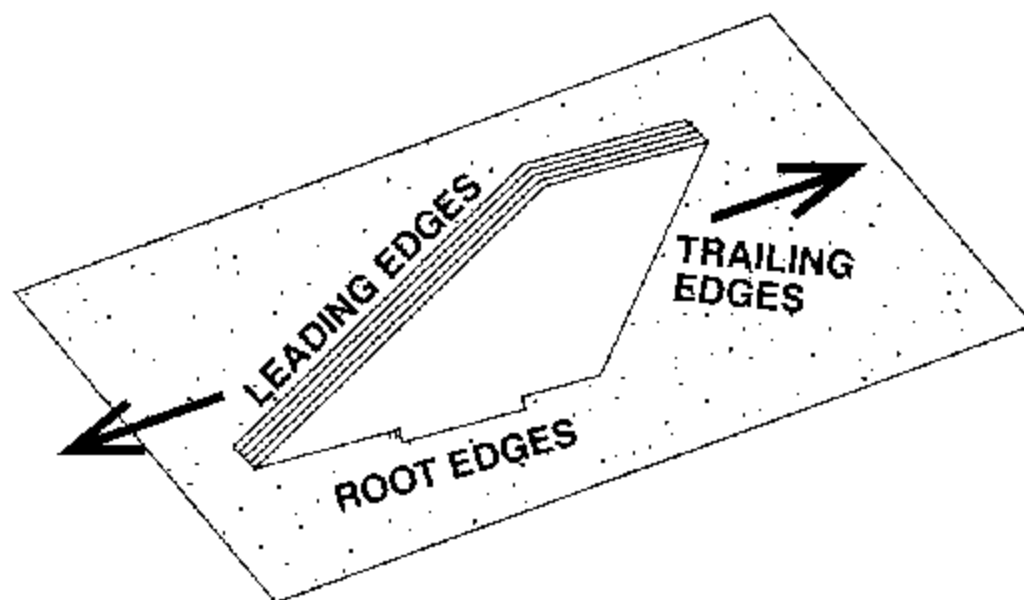
B. There may be some plastic in the eye of the nose cone. Carefully remove with a hobby knife.

NOTE: Be careful not to nick or cut eyelet.



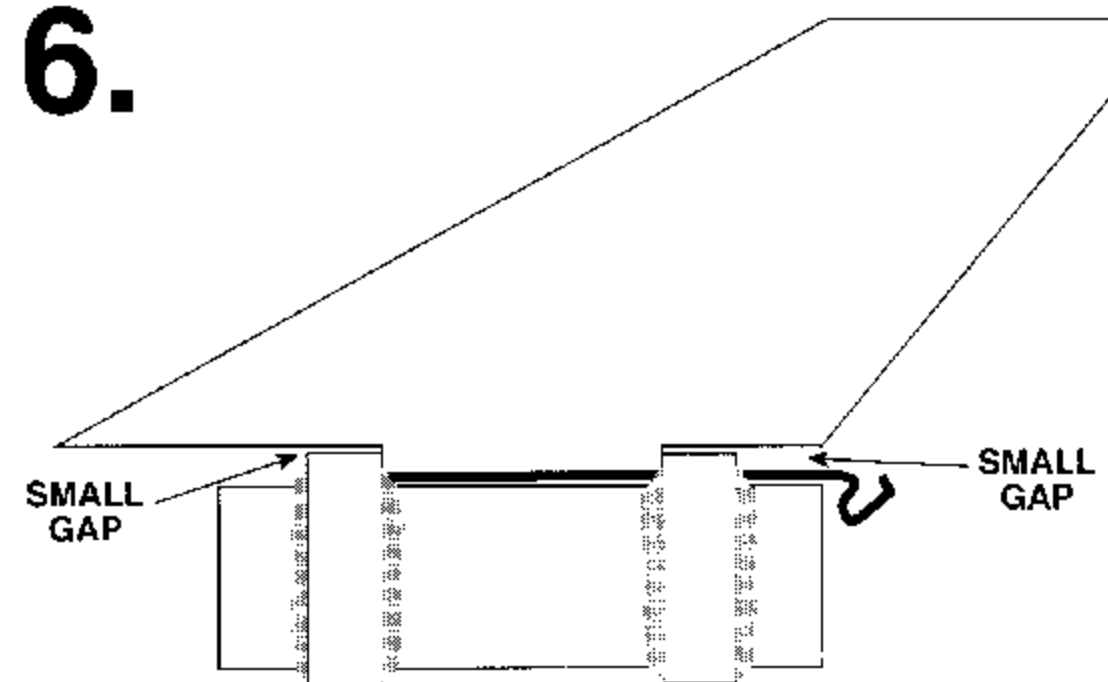
adjacent fins so you won't

SCRAP Balsa
is a glue applicator.



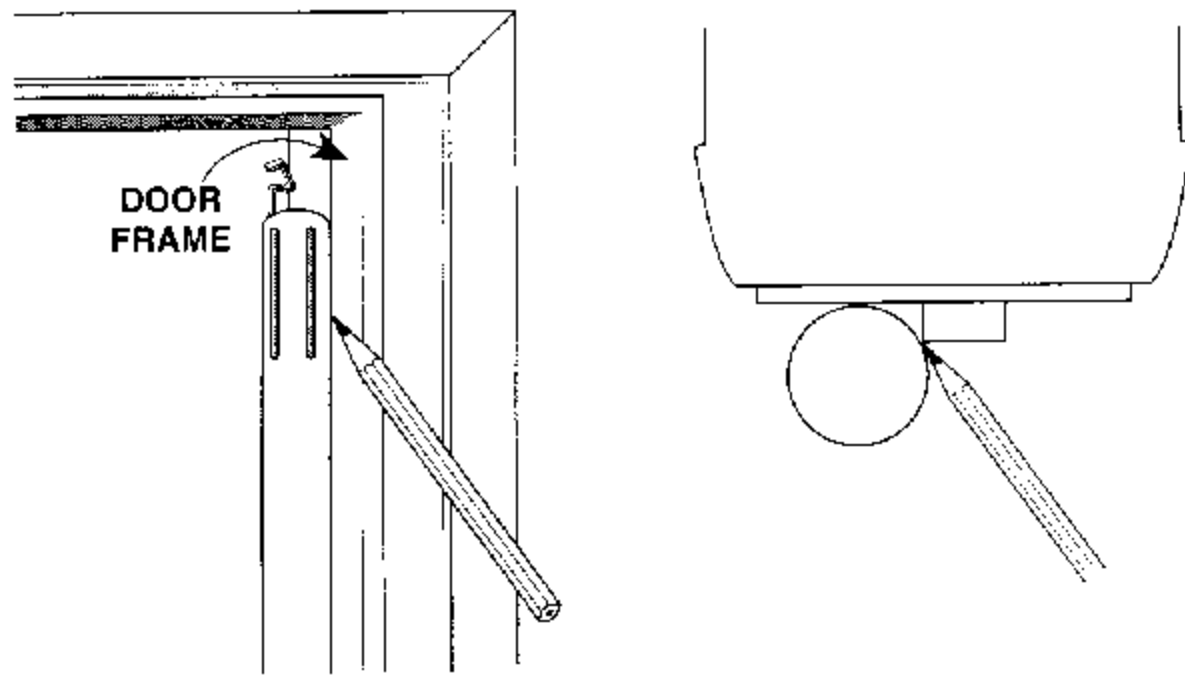
E. Lay sandpaper, rough side up, on table. Stack fins together and lightly sand the edges smooth and flat.

6.



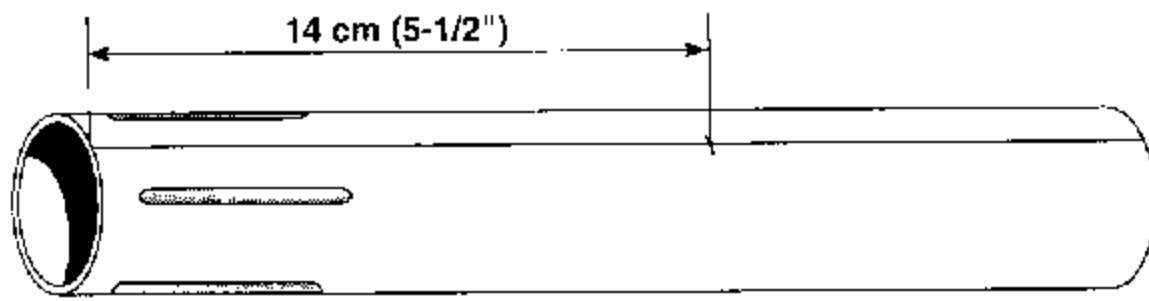
Now that your engine mount is dry, you need to test fit your fins. Insert the tab on the fin between the green adapter rings as shown. Sand tabs as necessary. **Do not glue yet!**

7.

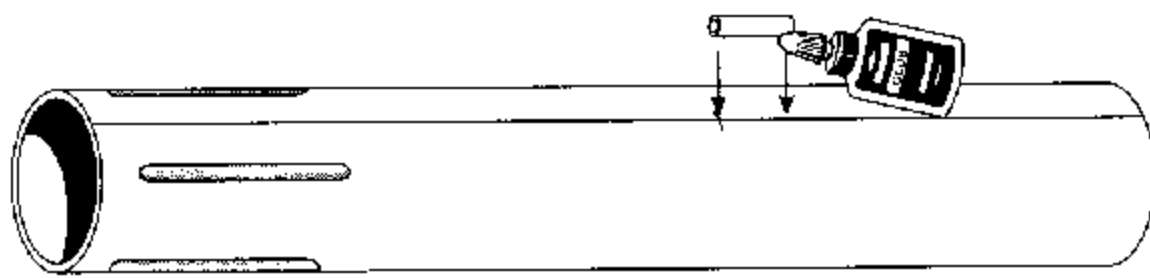


A. Lightly draw a straight line between two slots down the slotted body tube.

NOTE: A door frame can be used to do this, but we recommend the Estes® Rocket Builder's Marking Guide (EST 302227).

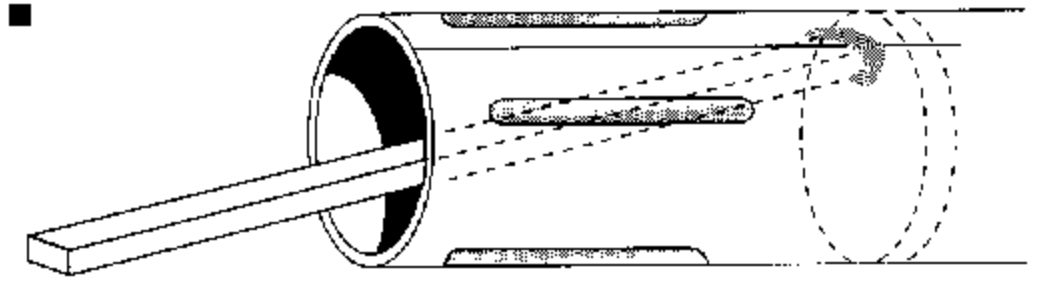


B. Make a mark at 14 cm (5-1/2") from the rear of the body tube on the line you just drew.

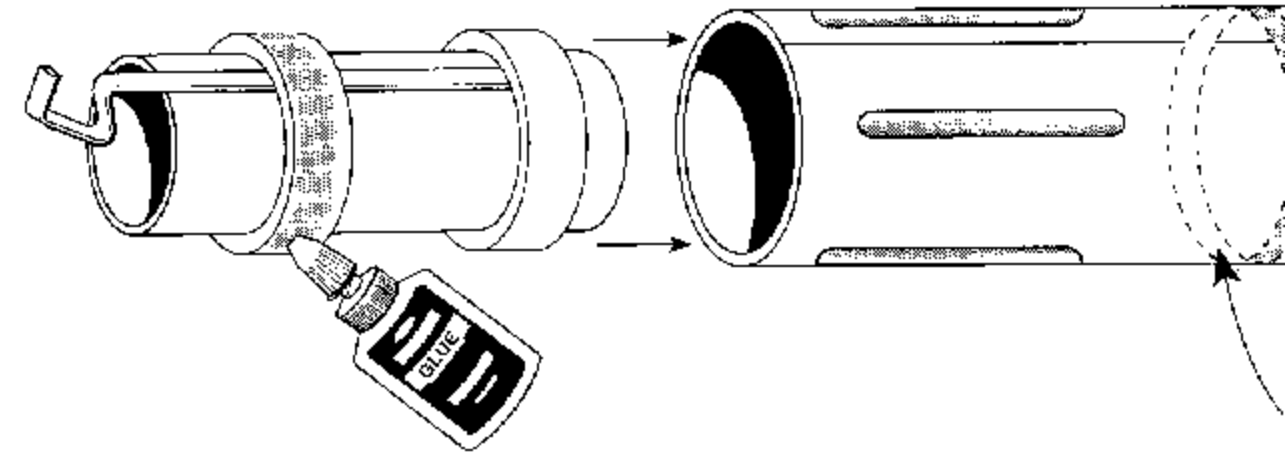


C. Apply glue to the launch lug and place on the line on the body tube with the rear of the lug touching the 14 cm (5-1/2") mark you just drew. NOTE: Be sure lug is perfectly aligned.

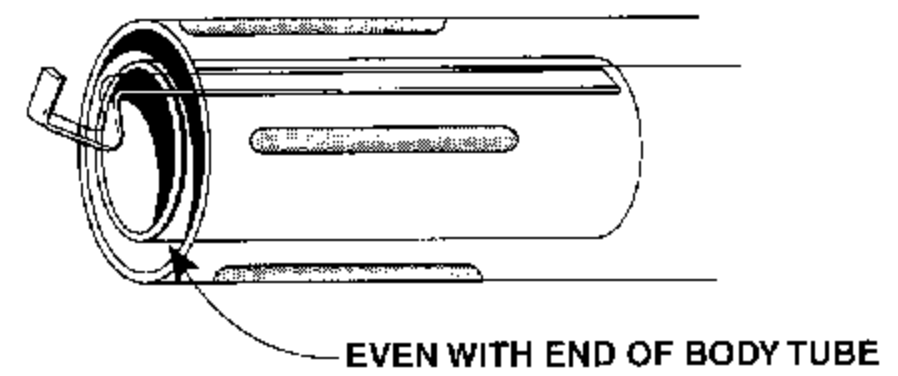
8.



A. Using the balsa stick, apply glue inside the body tube just in the slots as shown.

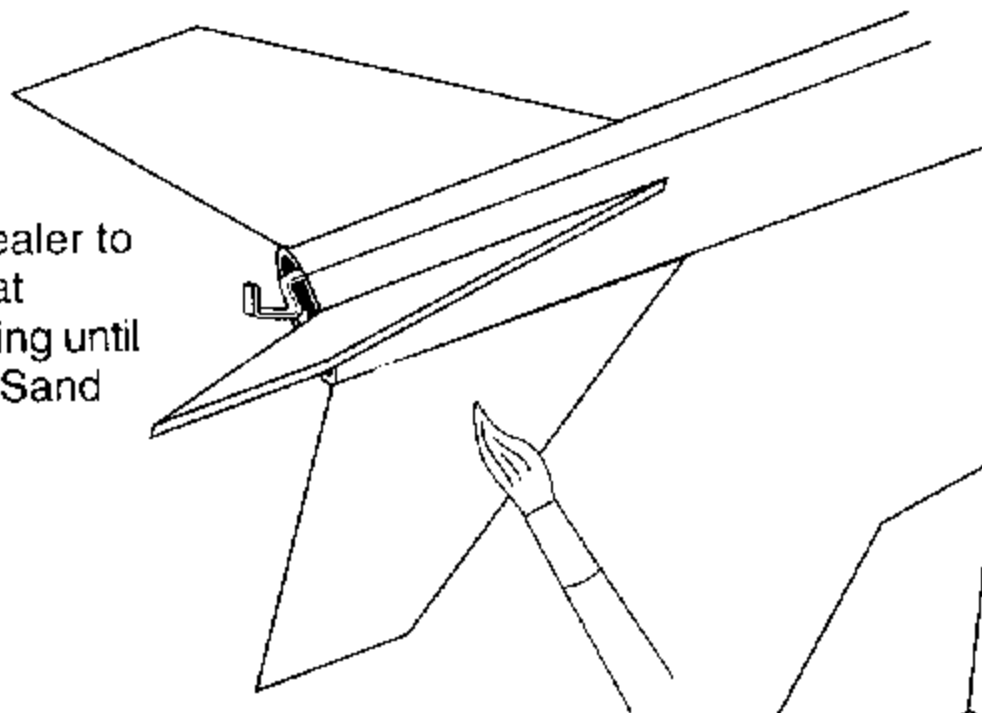


B. Apply glue to rear adapter ring as shown. Slide engine mount tube so that slots are centered between adapter rings and engine mount is aligned with the line you drew down the body tube (This will ensure the fins fit into the slots.)

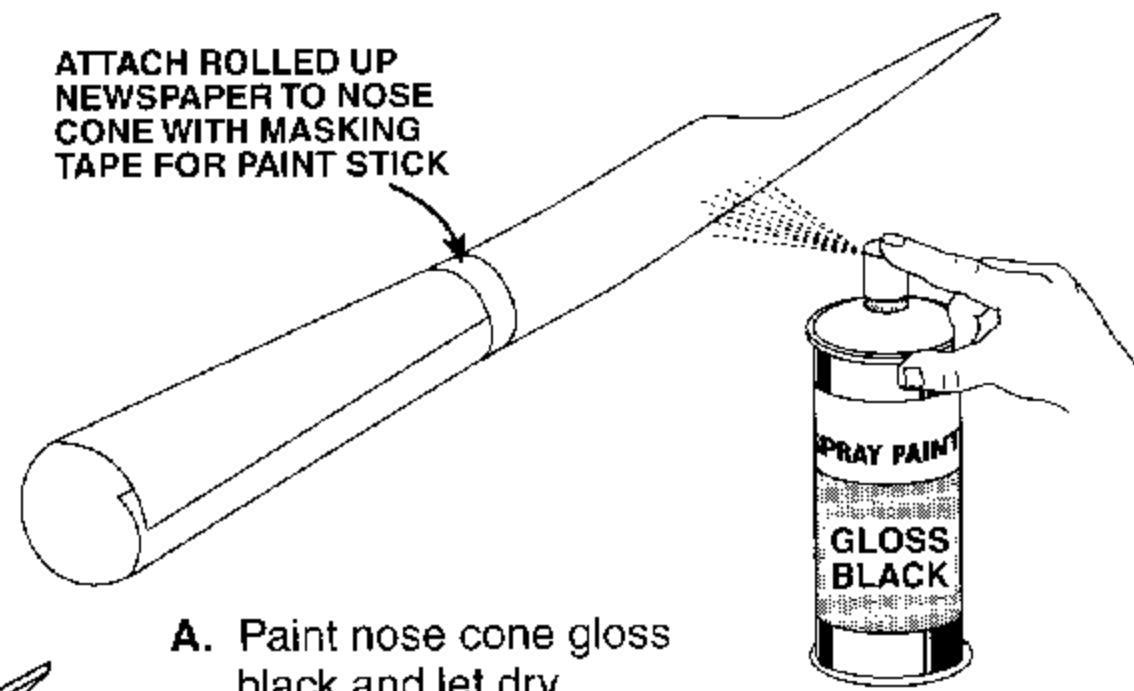


10.

Optional: Apply sanding sealer to balsa fins. Repeat sealing and sanding until fins are smooth. Sand when dry.

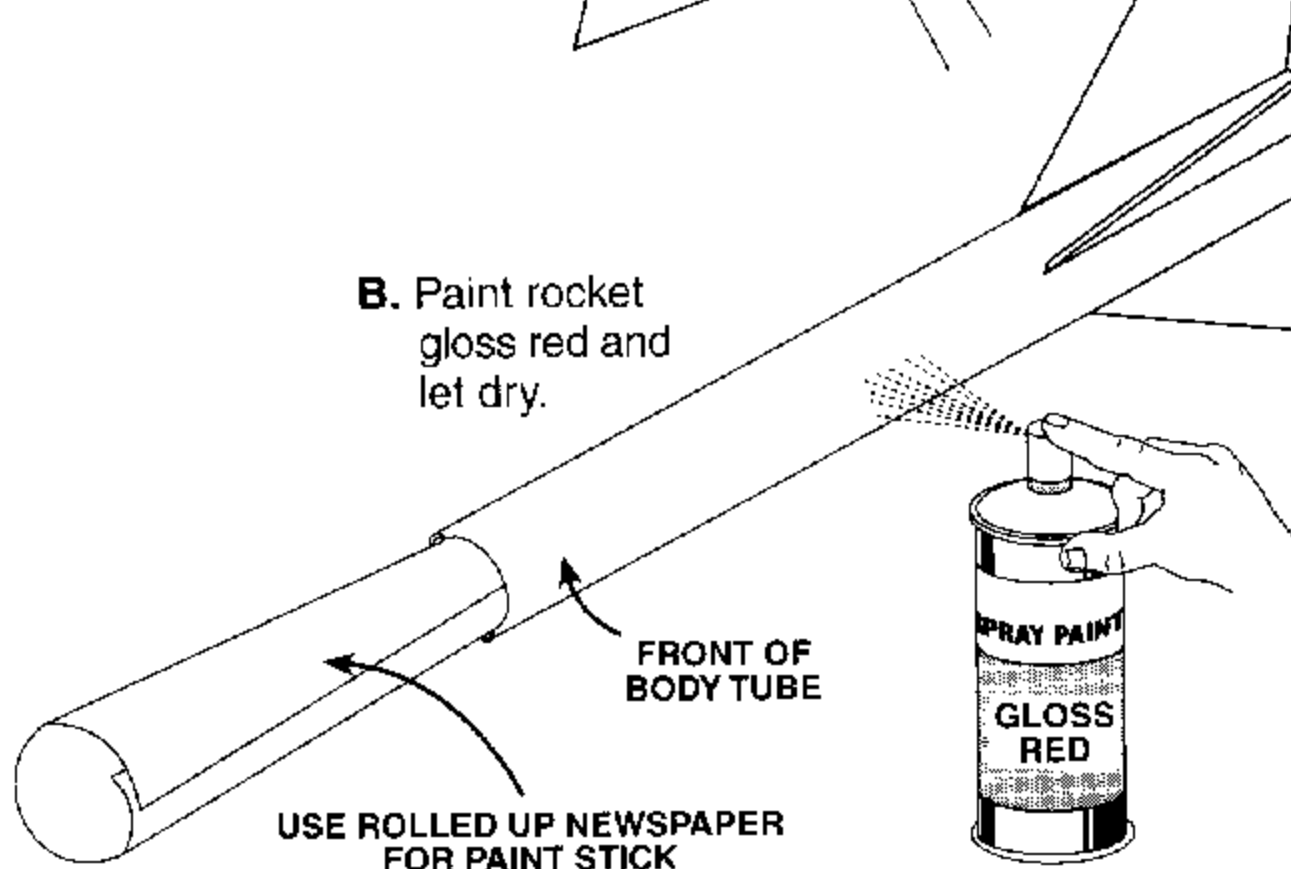


ATTACH ROLLED UP NEWSPAPER TO NOSE CONE WITH MASKING TAPE FOR PAINT STICK



A. Paint nose cone gloss black and let dry.

B. Paint rocket gloss red and let dry.



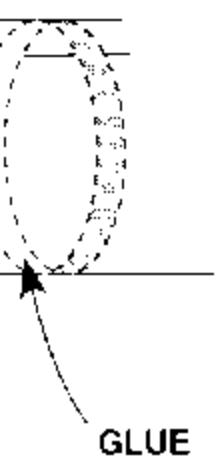
C. After paint is completely dry, cut decals out from the backing paper along dotted lines. Apply decals as shown on box art. When positioned correctly, rub down to remove bubbles.

11

B.

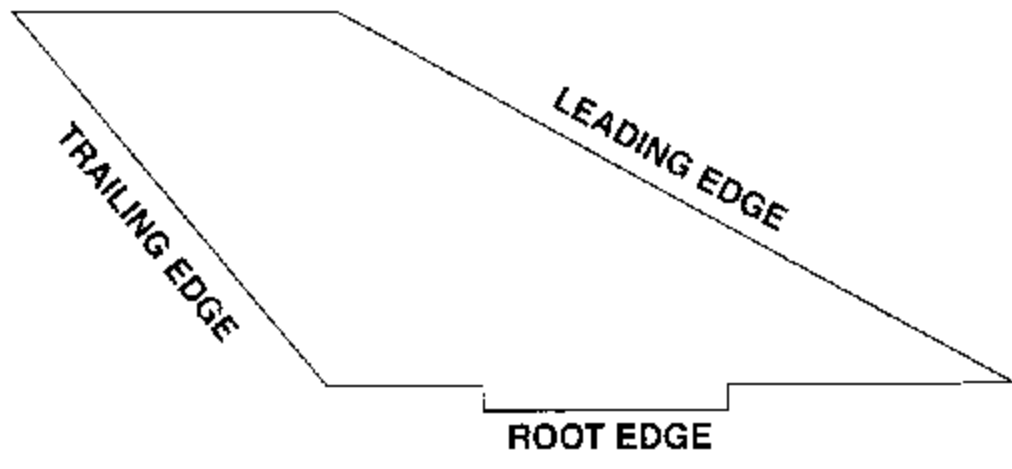
C. Pr
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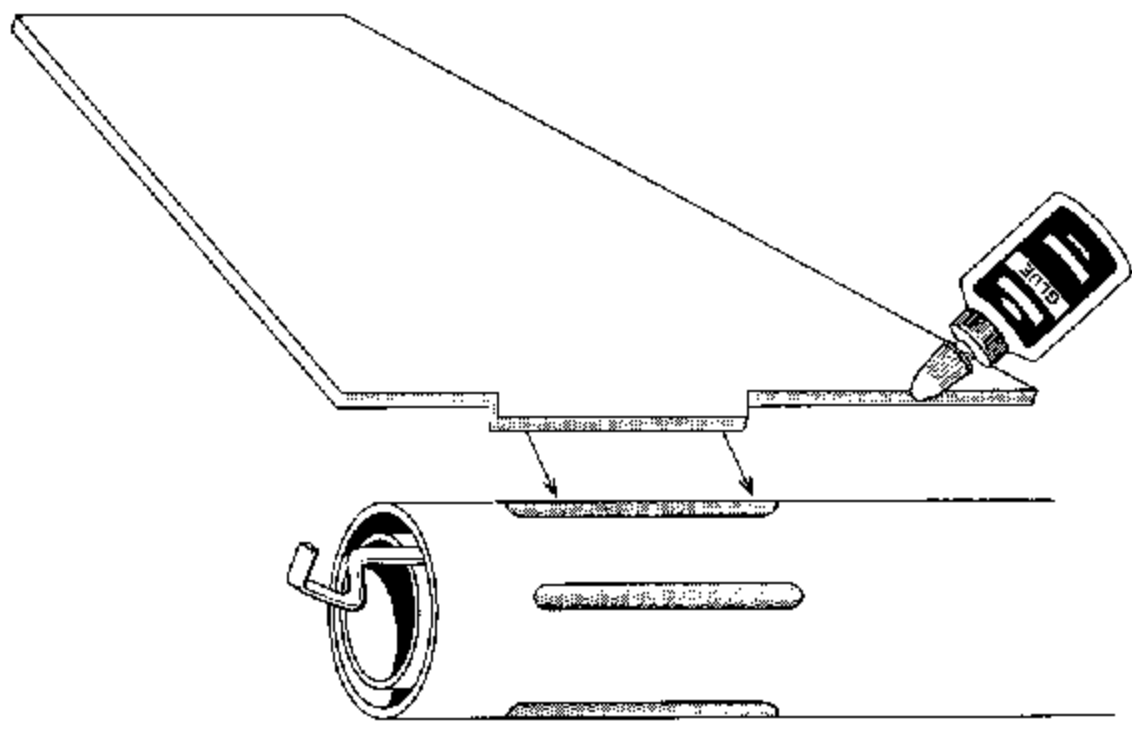


ount into body
and engine hook
s will insure that

9.

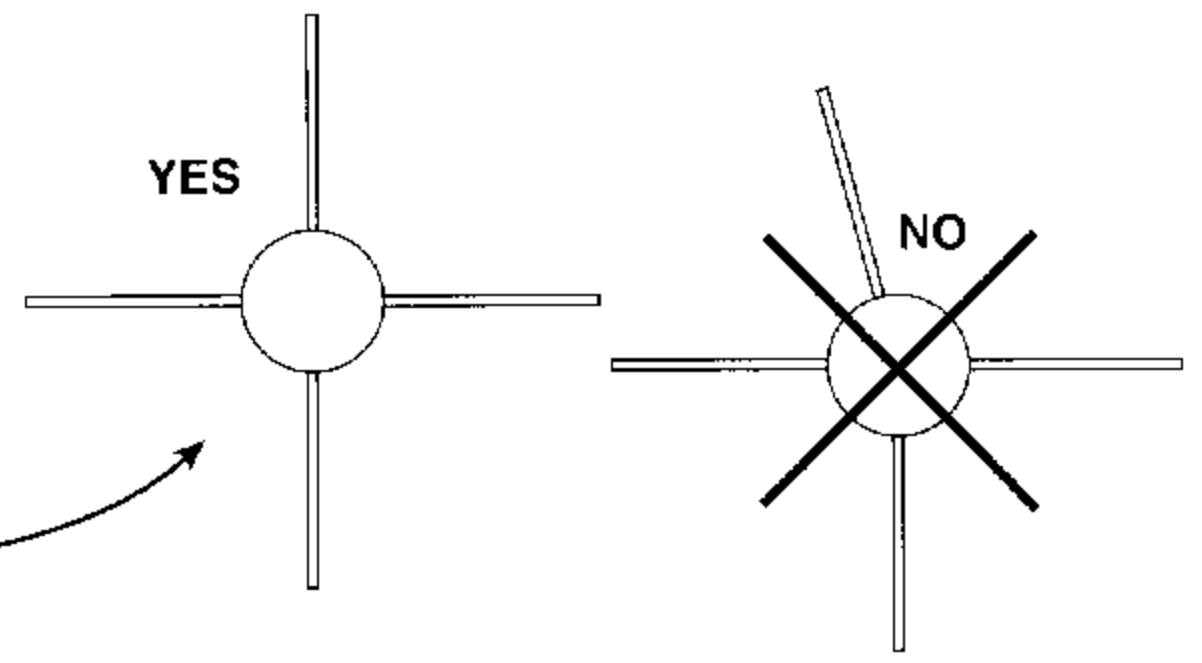
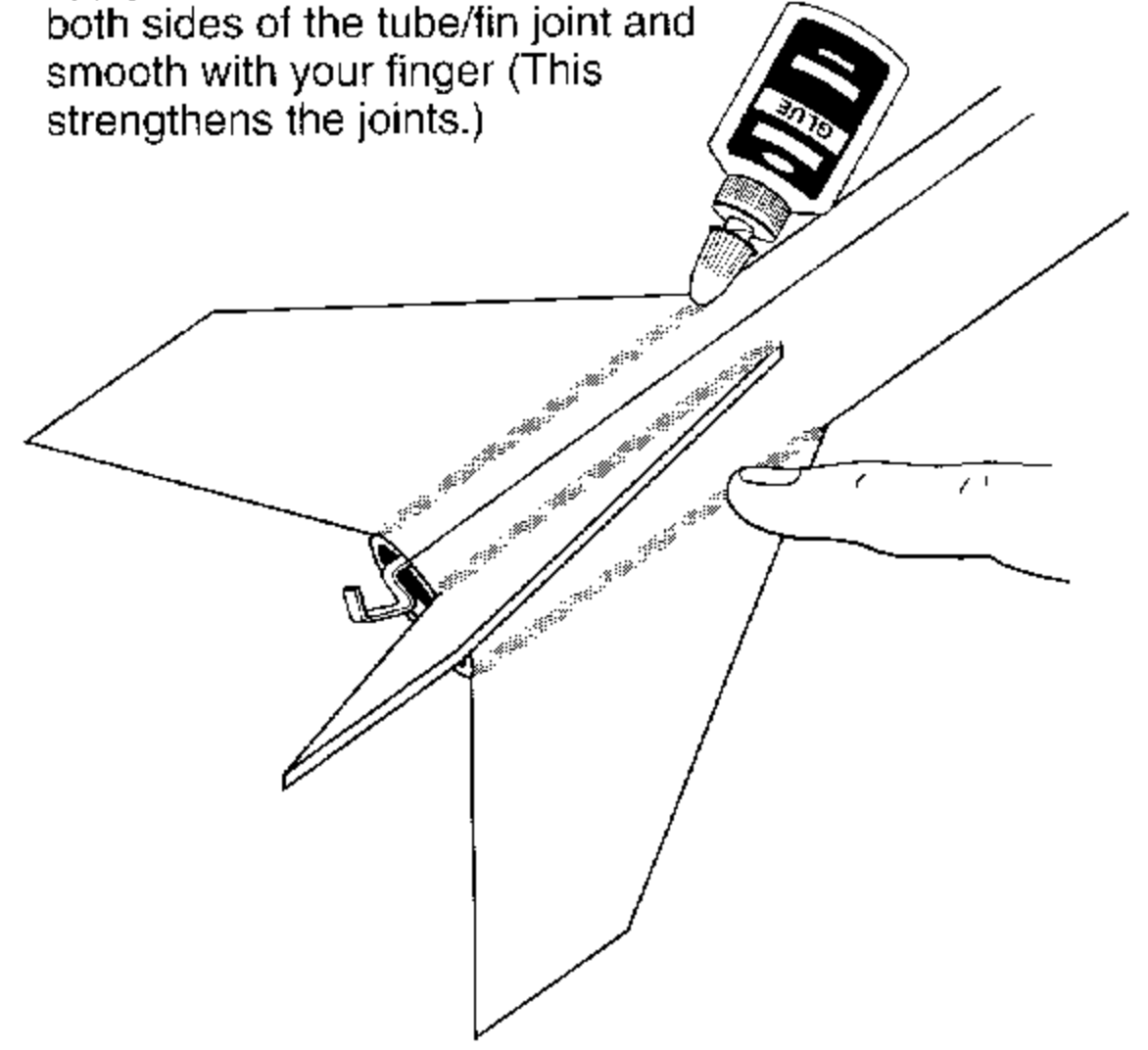


A. Before gluing your fins, identify the root, leading and trailing edges. Remember: Fins must be attached correctly for stable flight.



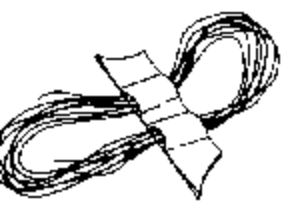
B. Apply glue to the tab on the fins and along the fin root as shown. Insert the fins into slots, checking alignment to make sure fins are straight.

C. Once the fins are positioned correctly, apply a thin beading (fillet) of glue on both sides of the tube/fin joint and smooth with your finger (This strengthens the joints.)

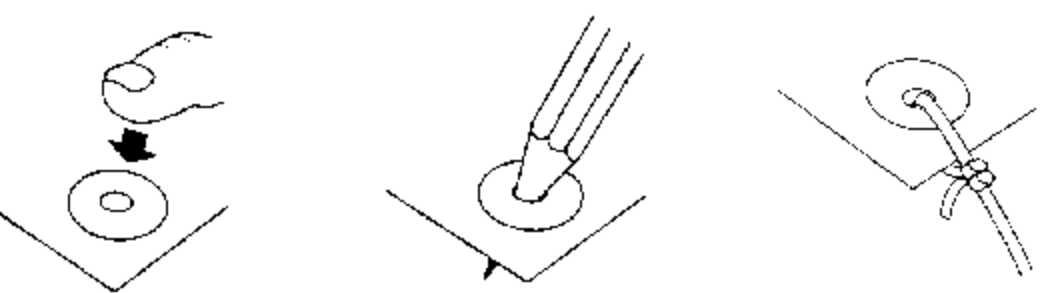


11.

A. Cut out parachute on



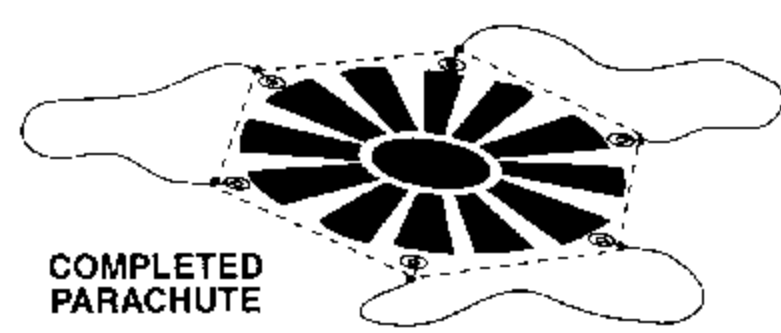
B. Find shroud line material. Remove tape. Fold and cut the entire length of the shroud line into three equal lengths.



C. Press tape rings onto marks on corners.

D. Punch holes with sharp pencil.

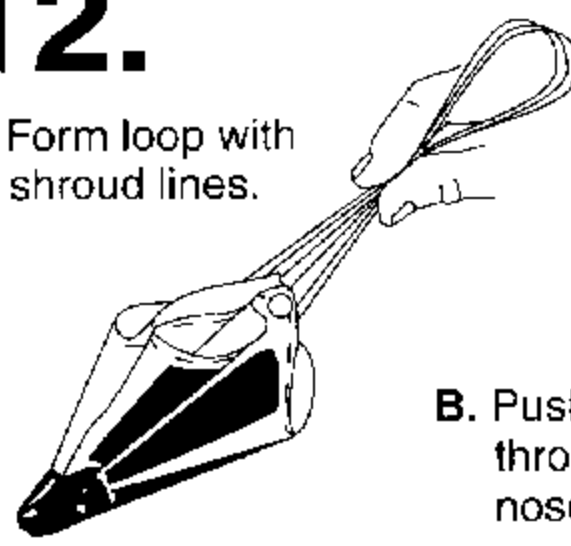
E. Tie lines off.



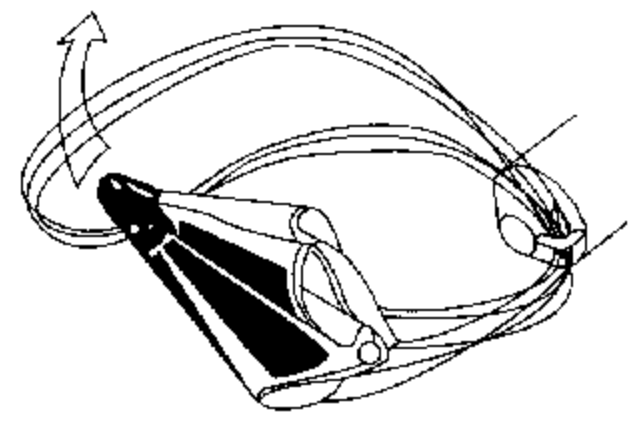
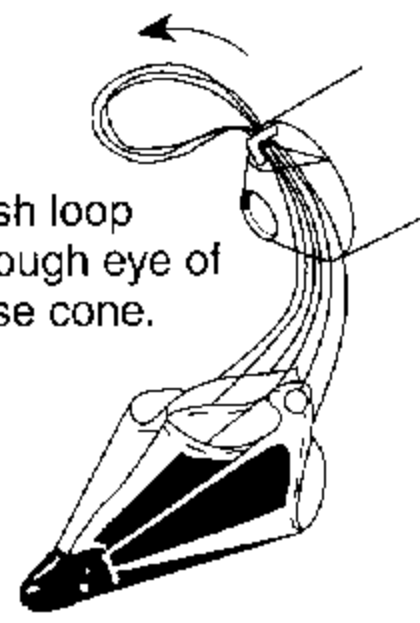
COMPLETED PARACHUTE

12.

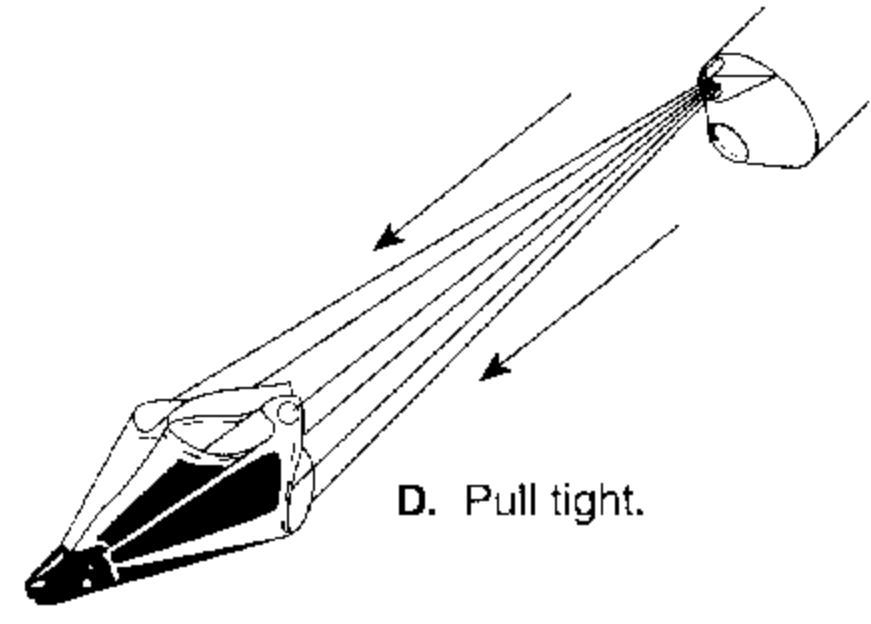
A. Form loop with shroud lines.



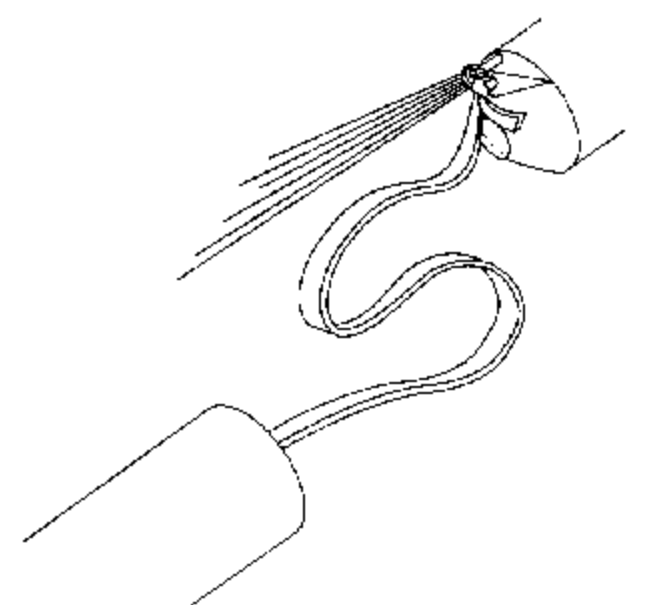
B. Push loop through eye of nose cone.



C. Pass parachute through loop.

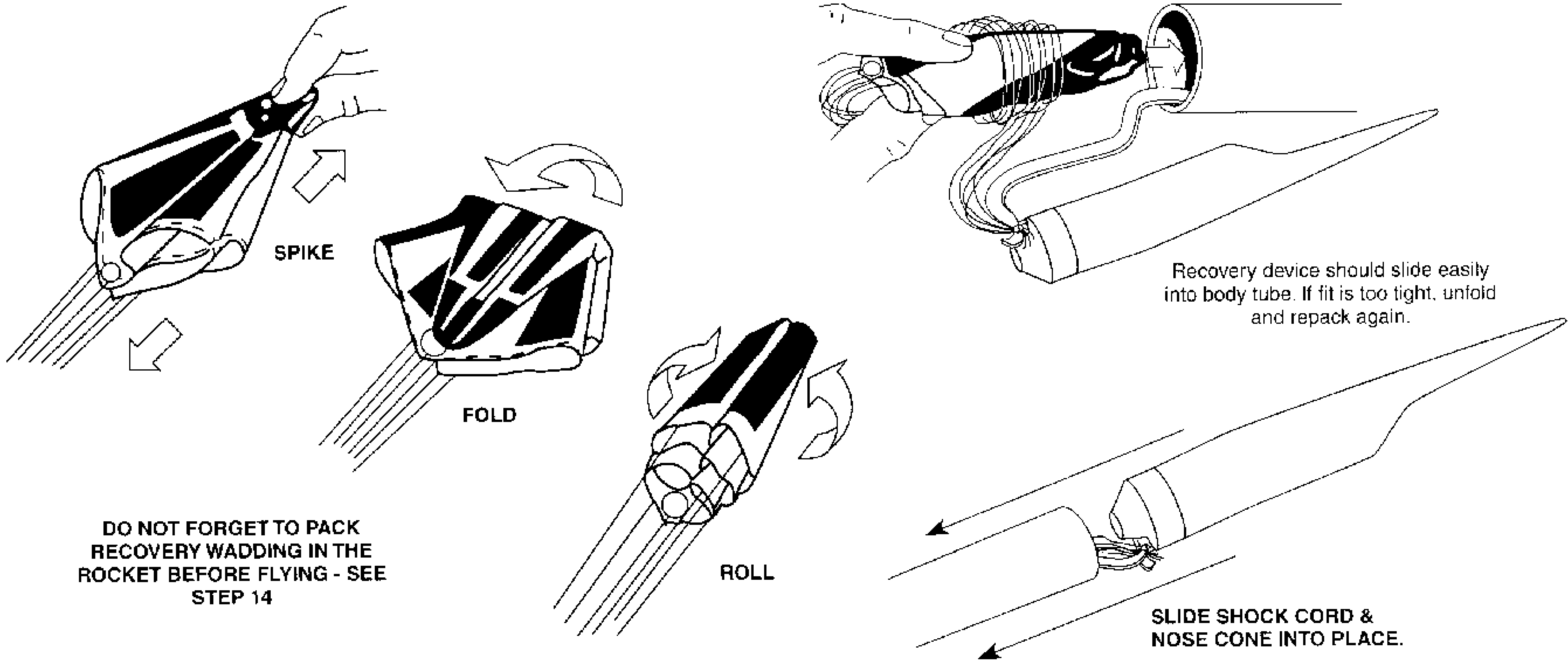


D. Pull tight.



E. Tie shock cord to nose cone with a double knot.

13. PACKING PARACHUTE



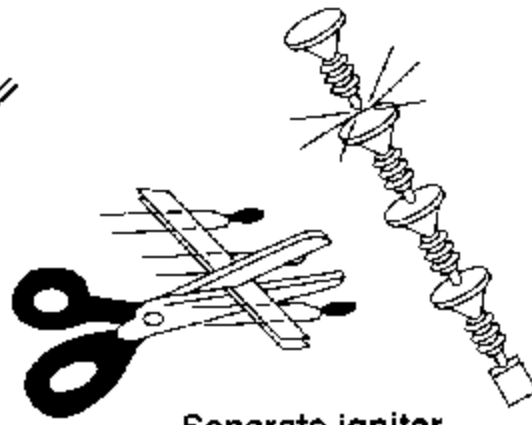
14. FLYING YOUR ROCKET

ROCKET PREPARATION

Remove nose cone, shock cord and parachute.

Crumple and insert three squares of recovery wadding. Repack and insert parachute, shock cord and nose cone.

ENGINE PREPARATION



Hold engine upright, drop in igniter. Igniter must touch propellant.

Insert igniter plug.

Firmly push all the way in.

Bend igniter wires back.

Insert engine into rocket.

LAUNCH SUPPLIES

To launch your rocket, you will need the following:

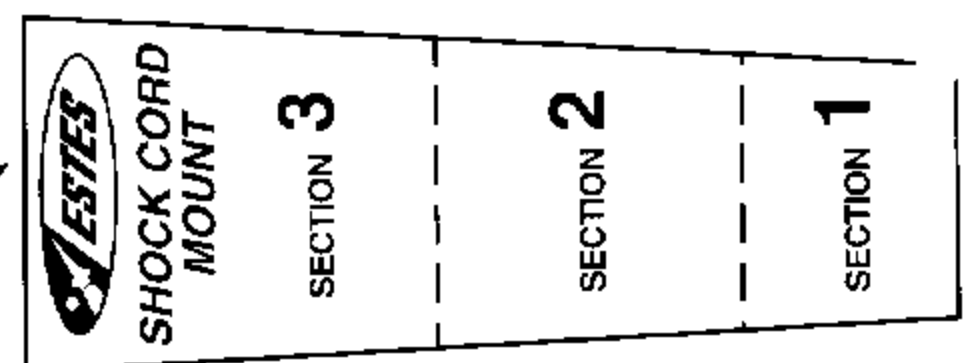
- Launch Pad (Estes Porta-Pad® II)
 - Launch Controller (Estes Electron Beam®)
 - Recommended Estes Engines: A8-3, B4-4, B6-4, B6-6, or C6-7.
 - Use an A8-3 engine for your first flight to become familiar with your rocket's flight pattern.
 - Recovery Wadding (EST 302274)
 - Igniters and Igniter Plugs (included with Estes engines)
- Use only Estes products to launch this rocket.

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.
- Don't leave parachute packed more than a minute or so before launch during cold weather (colder than 4° Celsius [40° Fahrenheit]). Parachute may be dusted with talcum or baby powder to avoid sticking.
- 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.

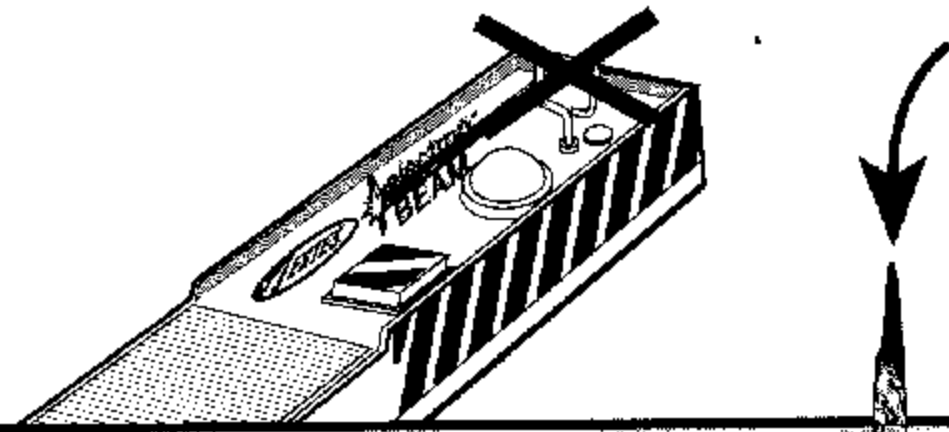
ENGINE	PROJECTED ALTITUDE	
	Feet	Meters
A8-3.....	260	80
B4-4.....	590	180
B6-4/B6-6.....	620	190
C6-7.....	1150	350

CUT OUT FOR STEP 2

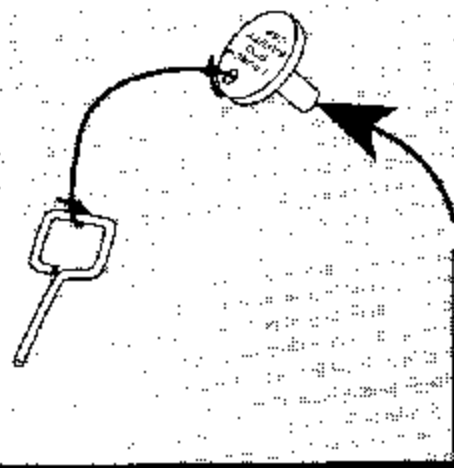


COUNTDOWN AND LAUNCH

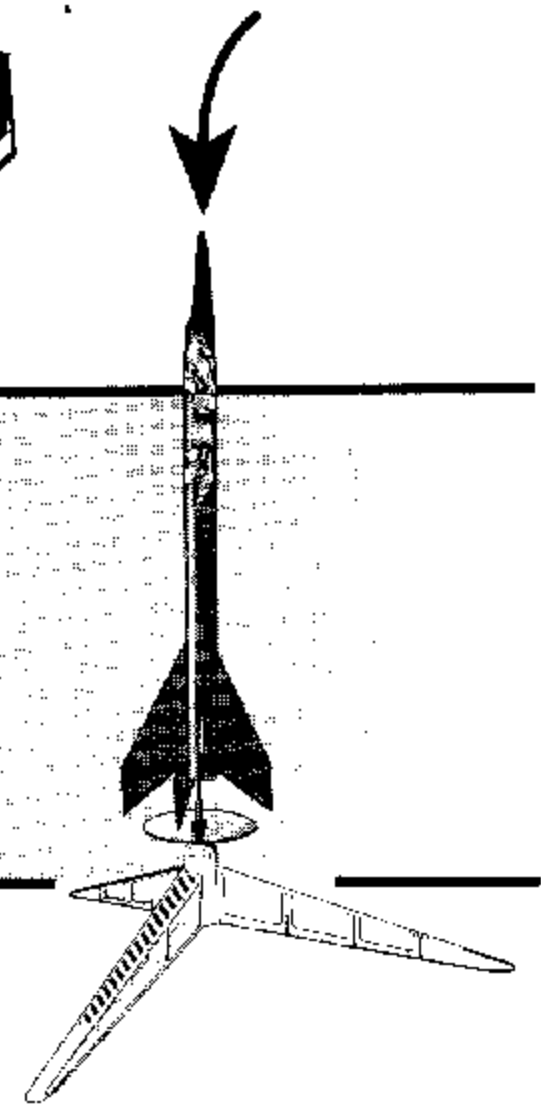
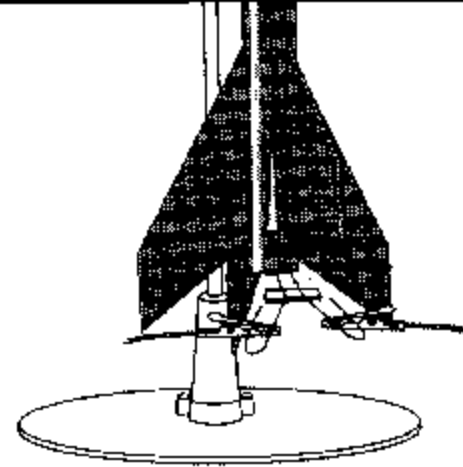
- 10...** Safety key must not be in launch controller. The safety cap with safety key attached should already be on the launch rod.



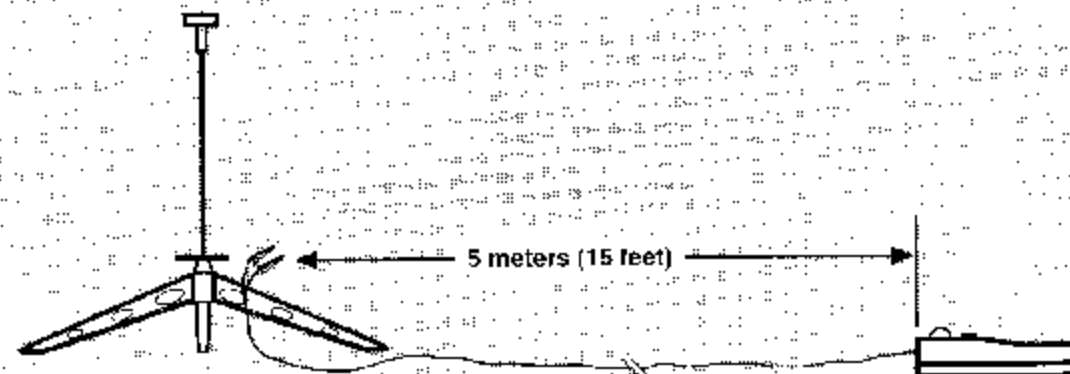
- 9...** Remove safety cap from launch rod, slide launch lug over rod. Make sure rocket slides freely and micro-clips are clean for good electrical contact.



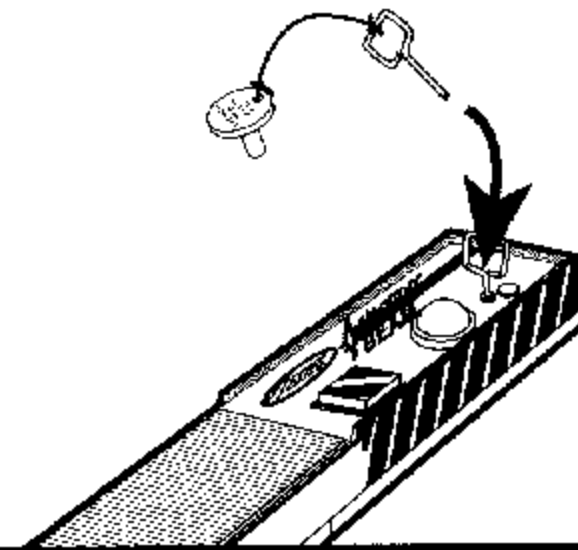
- 8...** Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to protective tape on igniter as possible.



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

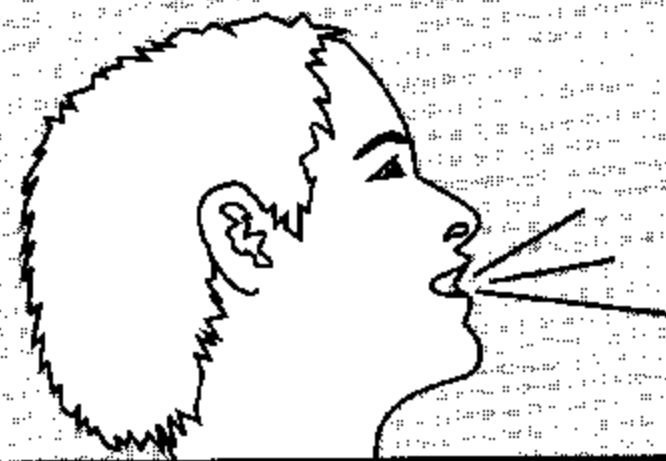


- 6...** Insert safety key to arm the launch controller.



- 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.