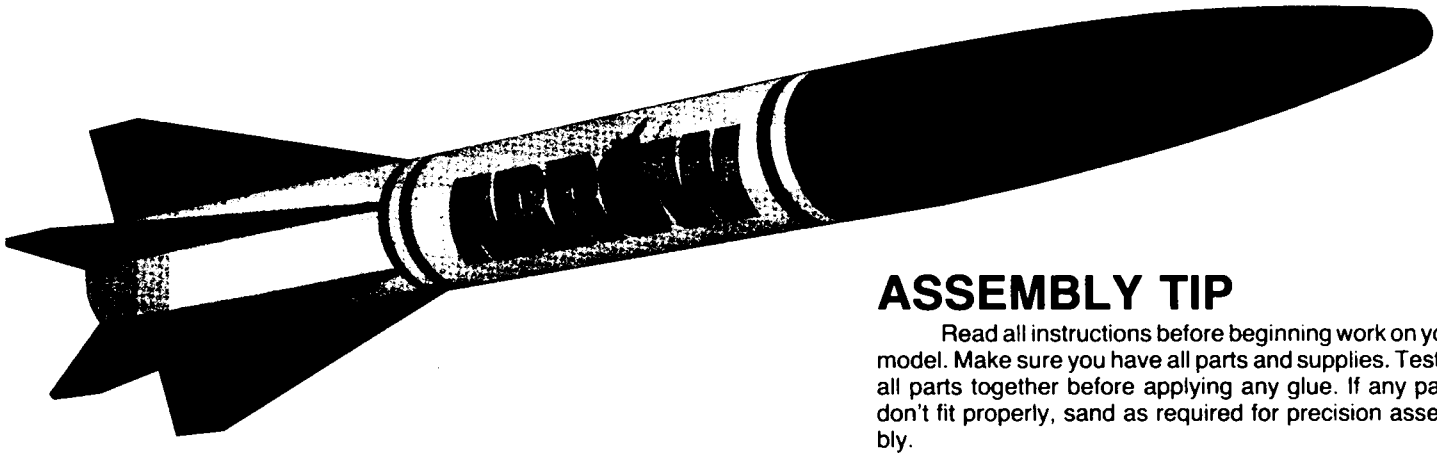

ARROW

A DAMON COMPANY
ESTES INDUSTRIES
1295 H STREET
PENROSE, COLORADO 81240 USA

ARROW #1983

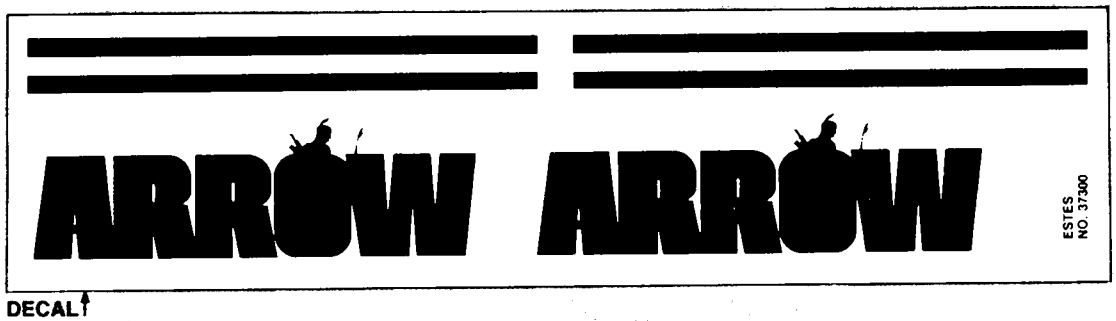


ASSEMBLY TIP

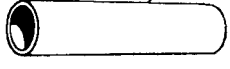
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

PARTS AND SUPPLIES

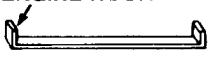
Locate the parts shown below and lay them out on the table in front of you.



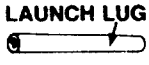
DECAL



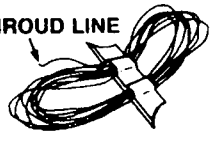
ENGINE MOUNT TUBE



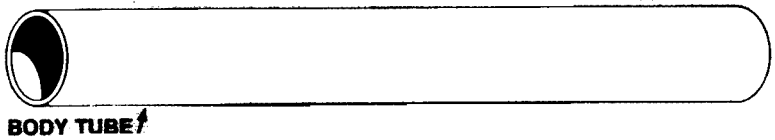
ENGINE HOOK



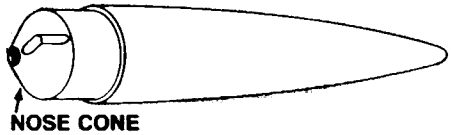
LAUNCH LUG



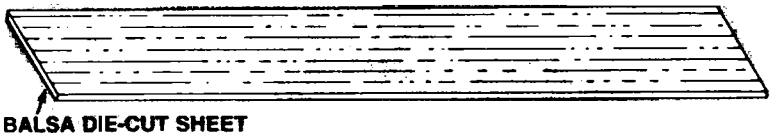
SHROUD LINE



BODY TUBE

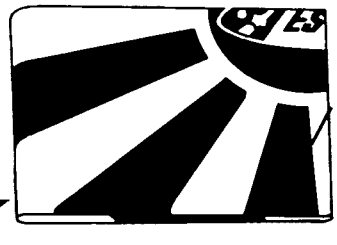


NOSE CONE



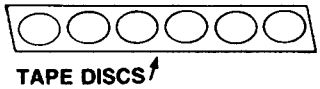
BALSA DIE-CUT SHEET

CENTERING RINGS



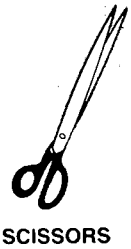
PARACHUTE

SHOCK CORD



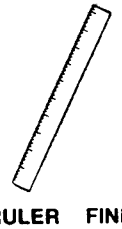
TAPE DISCS

In addition to the parts supplied, you will also need:

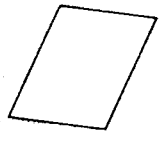


SCISSORS

PENCIL



RULER

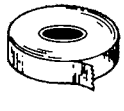


FINE SANDPAPER

WHITE GLUE

HOBBY KNIFE

PAINT BRUSH



MASKING TAPE

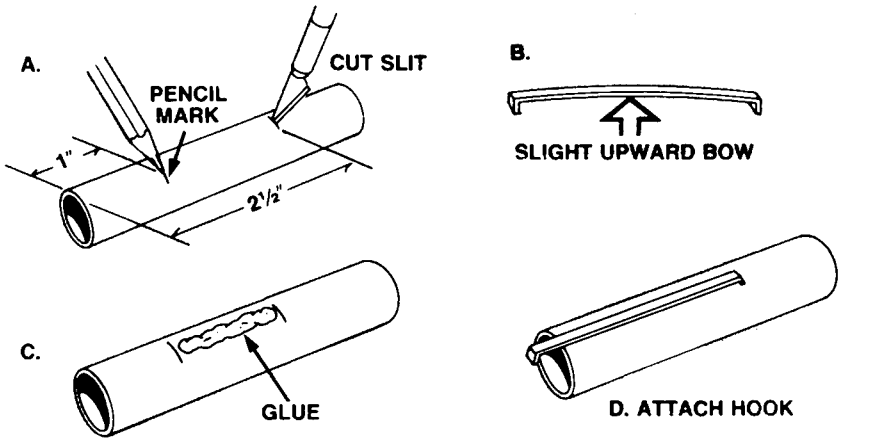
SANDING SEALER

ENAMEL SPRAY PAINT (White, Orange & Black)

ROCKET ASSEMBLY

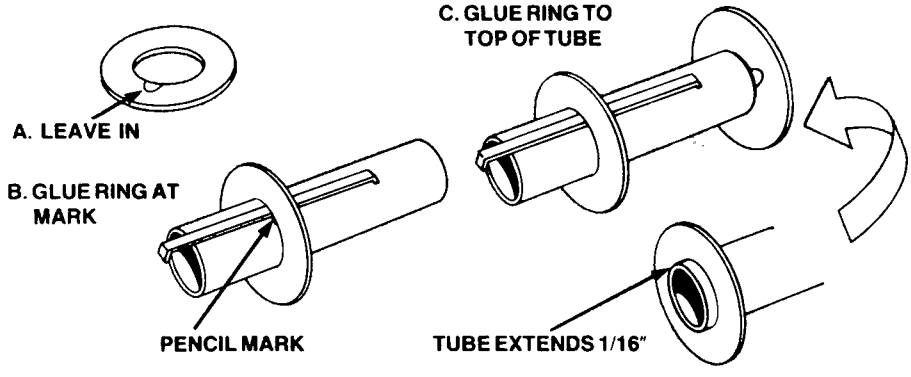
1

A. Mark engine mount tube 1 inch and 2½ inches from one end. Cut 1/8 inch wide slit at 2½ inch mark.
B. Bend the engine hook so it has a slight upward bow in the middle.
C. Apply a light bead of glue between the 1 inch mark and the slit.
D. Insert one end of the engine hook into the slit. Make sure the hook runs straight along tube.



2

A. Remove the centering rings from the die-cut card. The small cut-out in one ring may be left in place. Lay this ring aside and use the other one first.
B. Slide the ring over the tube and down to the 1 inch mark. Apply a bead of glue to both sides of the ring/tube joint.
C. Slide the second ring onto the front of the tube and position it about 1/16 inch from the end of the tube. Glue ring in place and set aside to dry.

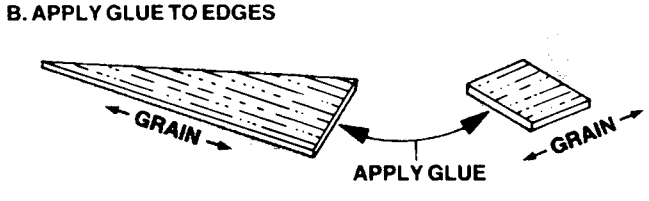


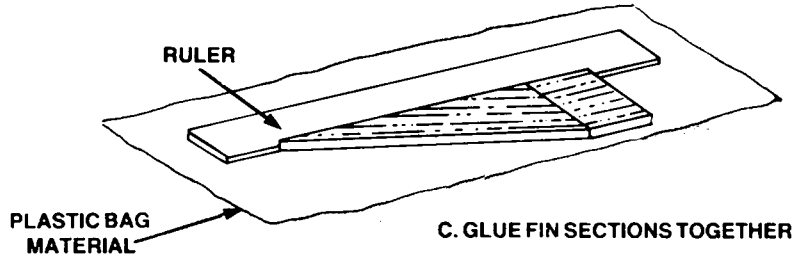
3

Before beginning this step, cut a large piece from the plastic kit bag. Since glue will not stick to the plastic, it will be placed beneath the fin sections when they are glued together.

A. Carefully free the fins from the die-cut sheet with a hobby knife. Do not punch fins from sheet.
B. Lay a triangular and rectangular piece against the ruler and check the joint where they butt together (note the grain direction of the balsa). Sand, if necessary, to obtain a good fit at the joint. Apply a light bead of glue to both joining edges and let set for a minute.
C. Place the sections on the plastic and against the ruler with the sections pressed tightly together. Allow the glue to dry for 10 - 15 minutes, then set fin aside and proceed to the next.
D. After all fins are completed, rub a small amount of glue into both sides of each fin joint.

READ NOTE BEFORE STARTING

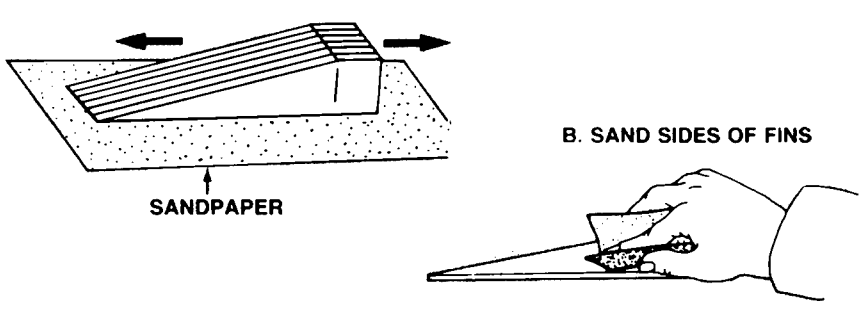




4

NOTE: Do not proceed with this step until glue on the fins is thoroughly dry.

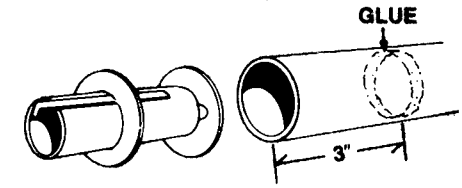
A. Place a sheet of sandpaper, face up, on the table. Stack the fins and sand all edges.
B. Lightly sand both sides of each fin.



5

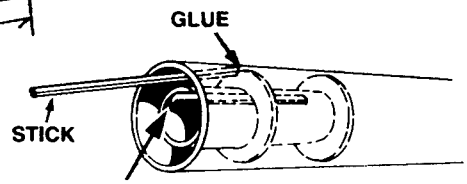
A. Apply a bead of glue around the inside of the body tube about 3 inches from one end. CAUTION: Study drawing. Do not install engine mount backwards. Slide the engine mount into the body. Push forward until end of engine hook is even with end of body tube. Stand body upright and allow glue to dry.

B. Using a piece of scrap balsa for an applicator, apply a bead of glue around the rear ring/body tube joint.



A. INSTALL ENGINE MOUNT

B. GLUE REAR RING

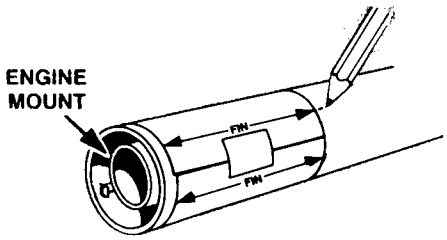


END OF HOOK EVEN WITH END OF TUBE

6

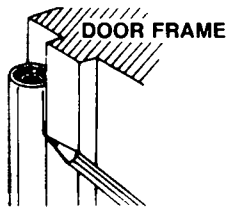
A. Cut the fin marking guide from the bottom of this page. Wrap the guide around the end of the tube in which the engine mount was installed and tape ends together. Mark the tube at each of the arrows, then remove guide.

B. Using a door frame as a guide, draw lines connecting the marks. Extend the lines about 7 inches from the end of the tube.



A. MARK TUBE AT ARROWS, THEN REMOVE GUIDE

B. CONNECT MARKS WITH PENCIL LINE



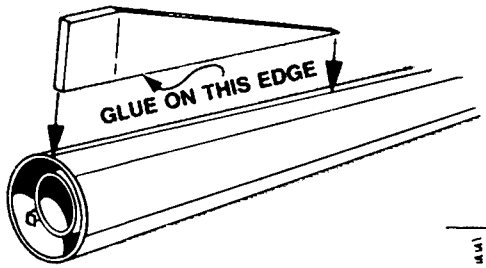
EXTEND LINES 7" ALONG TUBE

7

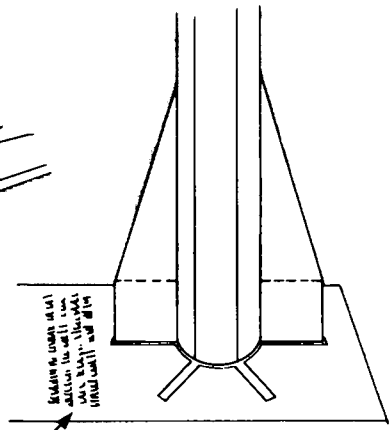
A. Apply a bead of glue to the root edge of a fin. Attach the fin to the body with the fin centered on a pencil line and the bottom of the fin even with the bottom of the tube.

B. Place the tube on the guide (on back of kit panel) and adjust fin so it points straight out. Let assembly stand until glue dries. Attach the remaining fins, allowing glue to dry on each fin before beginning the next.

A. GLUE FIN TO BODY ON PENCIL LINE

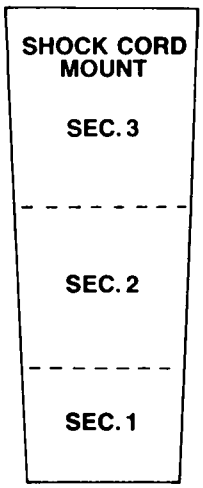


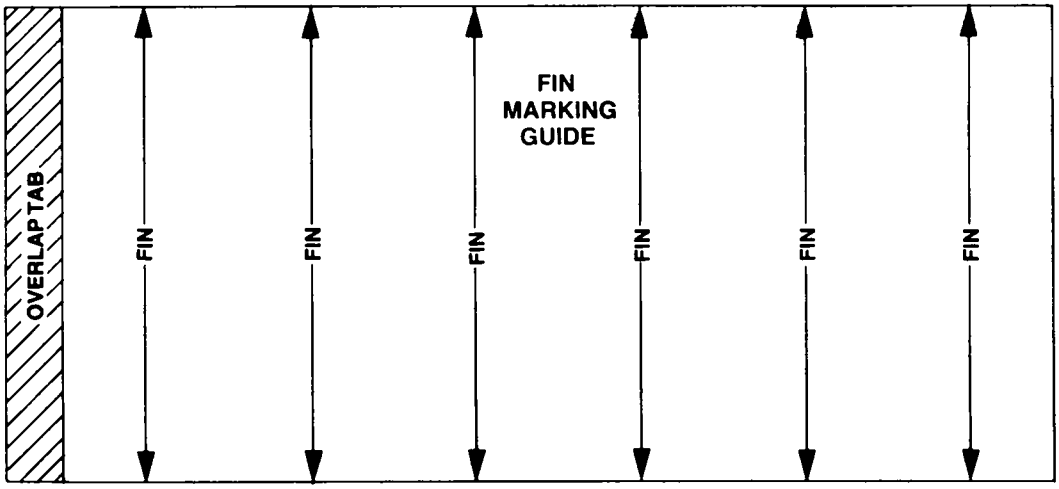
B. ALIGN FINS ON GUIDE



ALIGNMENT GUIDE ON BACK OF KIT PANEL

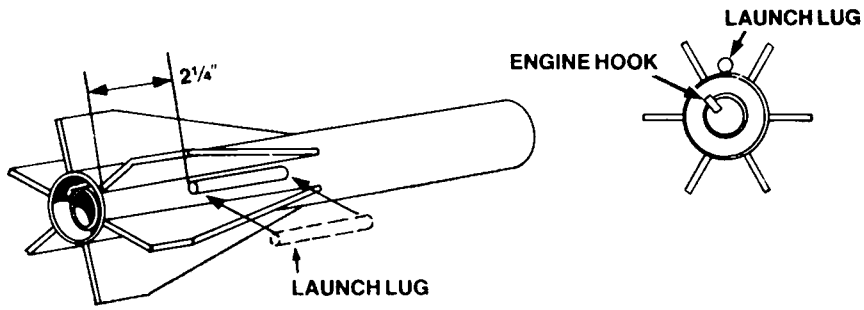
CUT OUT CAREFULLY





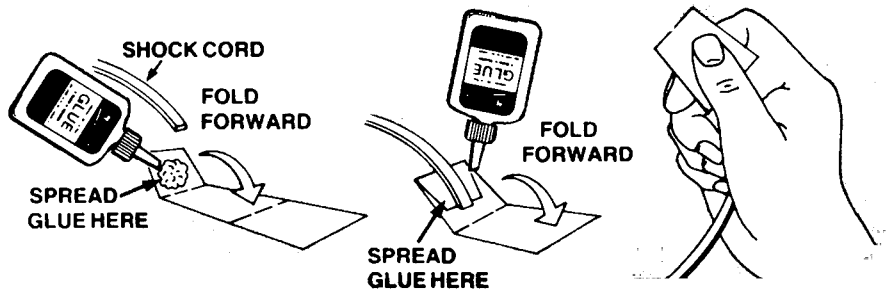
8

The launch lug is attached to the side of the rocket in the general area of the engine hook. Mark the body 2¼ inches from the rear and glue the launch lug in place, centered between two fins, with the rear of the lug on the mark. Make sure the launch lug runs straight along the body.



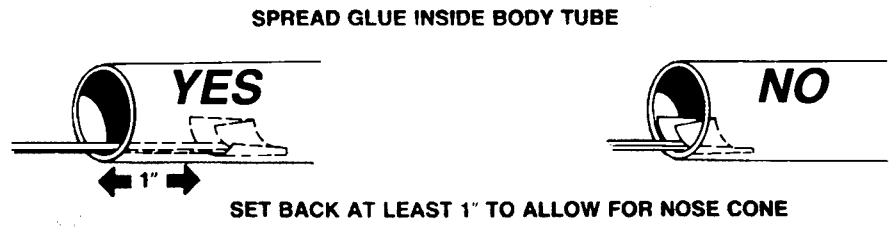
9

A. Cut the shock cord mount from the bottom of preceding page.
B. Crease on dotted lines by folding. Spread glue on section 1 and lay end of shock cord into the glue. Fold over and apply glue to back of first section and exposed part of section 2. Lay shock cord as shown and fold mount over again.
C. Clamp unit together with fingers until glue sets.



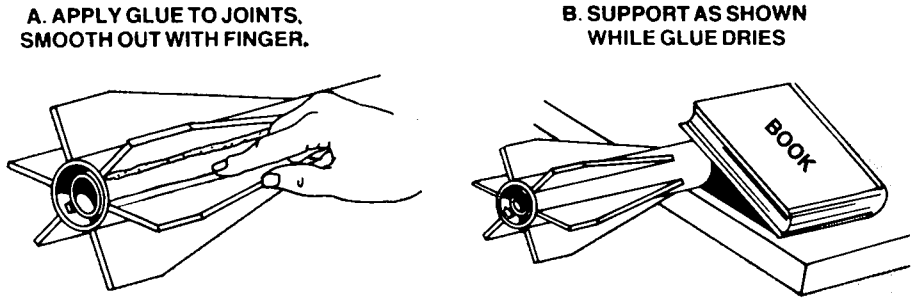
10

A. Apply glue to inside front of body tube to cover an area no less than 1 inch to 2 inches from end. The glued area should be same size as shock cord mount.
B. Press mount firmly into glue as shown.
C. Hold until glue sets.



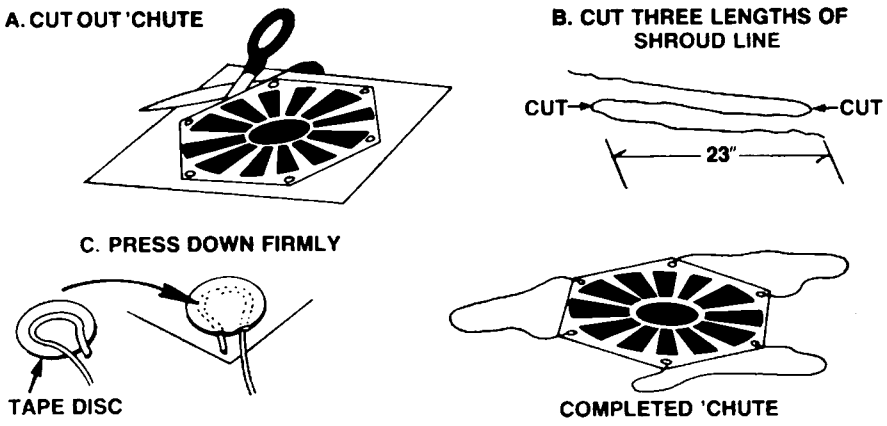
11

A. Apply a bead of glue to both sides of a fin/body joint. Pull you finger along the joint to smooth the glue into an even fillet. Repeat with the remaining fins and launch lug.
B. Lay the rocket down with the fins extending off the edge of the table. Place a book or other weight on the front of the body and allow glue to dry.



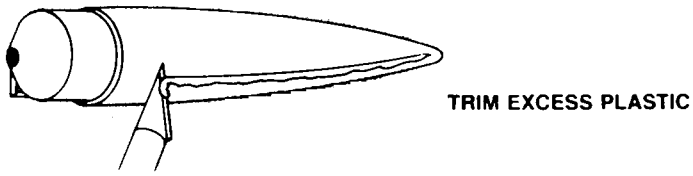
12

A. Cut out parachute on edge lines.
B. Cut three 23 inch lengths of shroud line.
C. Form small loops with shroud line ends and press onto sticky side of tape discs. Attach tape discs with line ends to top of parachute as shown. Firmly press tape discs into place until both tape discs and parachute material are molded around shroud line loops.



13

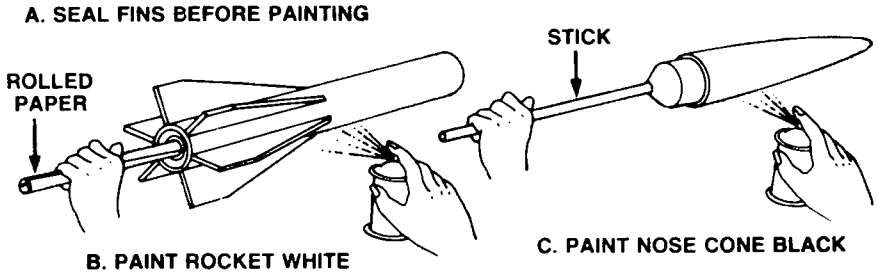
Trim excess plastic from the sides of the nose cone and lightly sand the seams. Wash the nose cone in warm water and lay aside for painting.

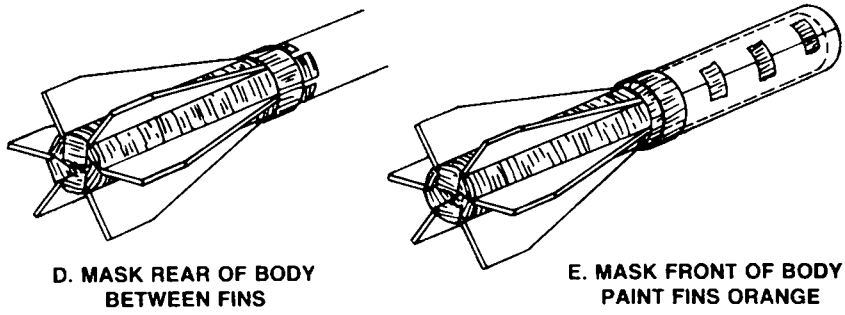


14

NOTE: Glue on fin joints must be thoroughly dry before proceeding with this step.

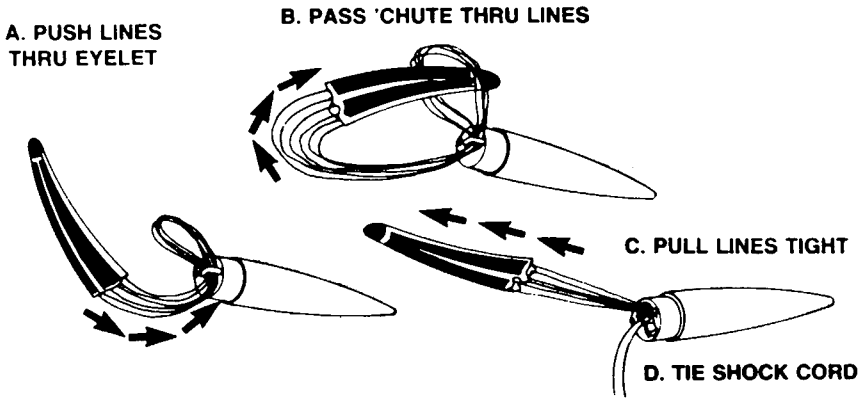
A. Brush a coat of sanding sealer onto the balsa fins. Let sealer dry, then sand the fins. Repeat sealing and sanding step until fins are completely smooth.
B. Roll a piece of paper and insert into the engine tube. Spray paint the rocket white. Allow the paint to dry overnight before masking for second color.
C. Insert a stick into the rear of the nose cone and spray paint nose black.
D. Standard 3/4 inch wide masking tape will fit exactly between the fins. Mask the body between the fins. Extend the tape forward an inch beyond the fins. Wrap a piece of masking tape around the body at the top edge of the fins.
E. Wrap paper around upper portion of body and tape it down. Make sure there are no openings where paint overspray can penetrate the masked areas. Spray the fins orange. After paint is dry, carefully remove tape.





15

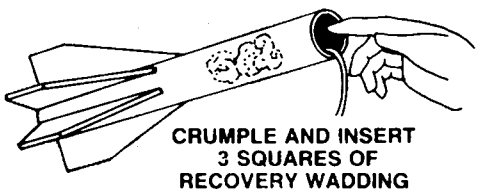
A. Pass parachute shroud line loops through eyelet on nose cone.
B. Pass 'chute through loops in shroud lines.
C. Pull lines tight.
D. Tie the end of the shock cord to the nose cone eyelet. Tie a double knot.

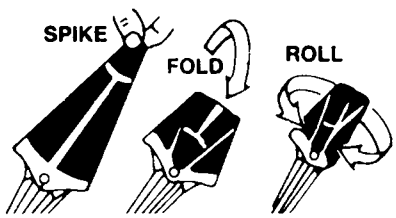


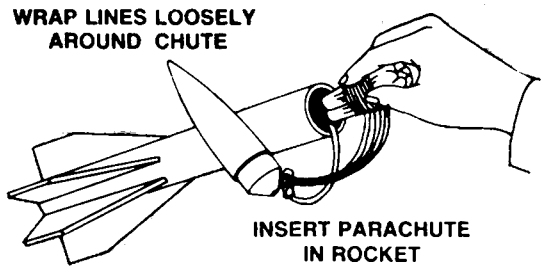
16

For decal placement, refer to the photo on the front of the instructions. To apply decals, cut each out, dip in water for 20-30 seconds, and hold until it uncurls. Slip decal off backing material and onto model. Blot away excess water.

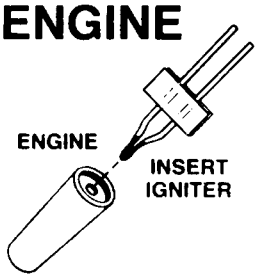
ROCKET PREFLIGHT



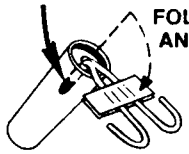




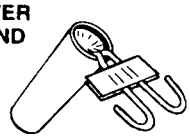
PREPARE ENGINE

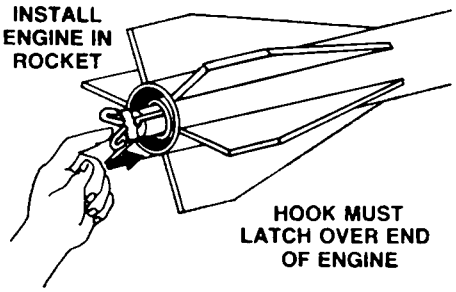


IGNITER TIP MUST TOUCH PROPELLANT DEEP INSIDE NOZZLE OPENING



APPLY AND FIRMLY PRESS TAPE DISC OR MASKING TAPE IN PLACE





LAUNCH SUPPLIES

To launch your rocket you will need the following items:
—An Estes model rocket launching system
—Estes Recovery Wadding (No. 2274)
—Recommended Engines: A8-3, B4-4, B6-4, B8-5, C6-5
Use an A8-3 engine for your first flight, to become familiar with your rocket's flight pattern.

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 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)].

MISFIRES

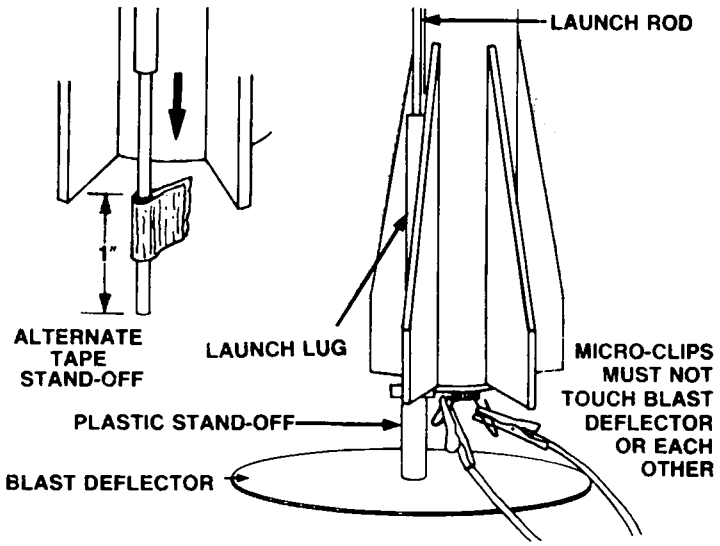
Failure of the rocket engine to function properly is nearly always caused by a failure to install the igniter correctly. This failure permits the igniter to heat and burn into two pieces without igniting the engine.

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



(5) REMOVE SAFETY KEY to disarm the launch controller.

(4) 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. You will need to use the rocket stand-off that comes with your launcher to launch this rocket. If you do not have one, you can make a stand-off by wrapping masking tape around the rod as shown. The rocket is turned so the tape extends under the body and holds the rocket above the blast deflector.

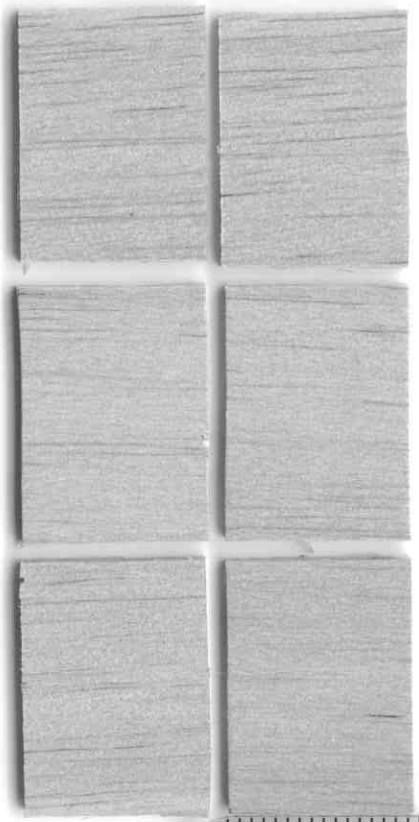
(3) Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to protective tape on igniter as possible.

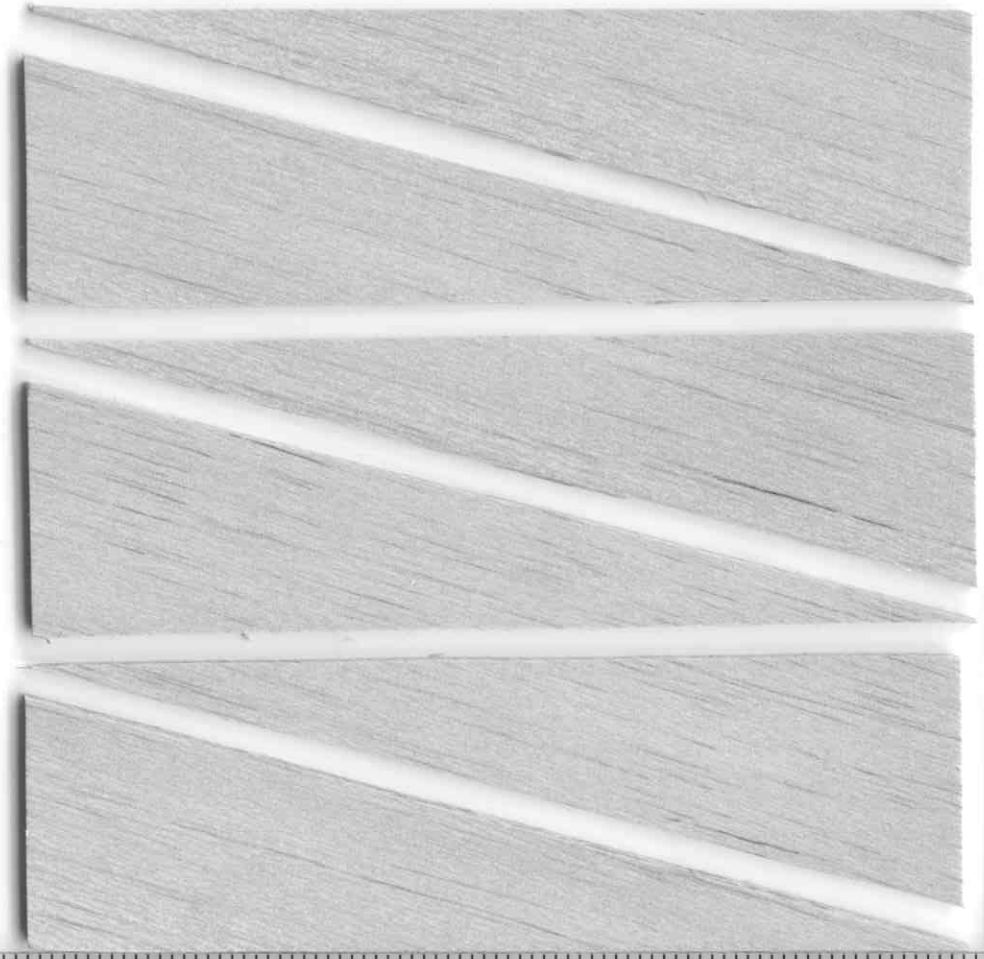
(2) Move back from your rocket as far as launch wire will permit (at least 15 feet).

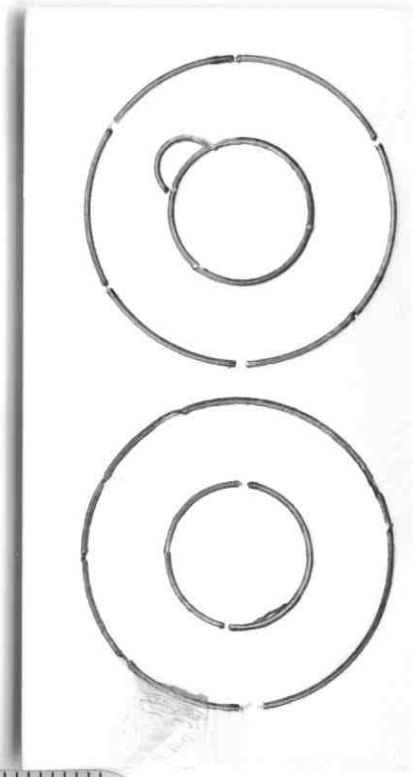
(1) INSERT SAFETY KEY to arm the launch controller.

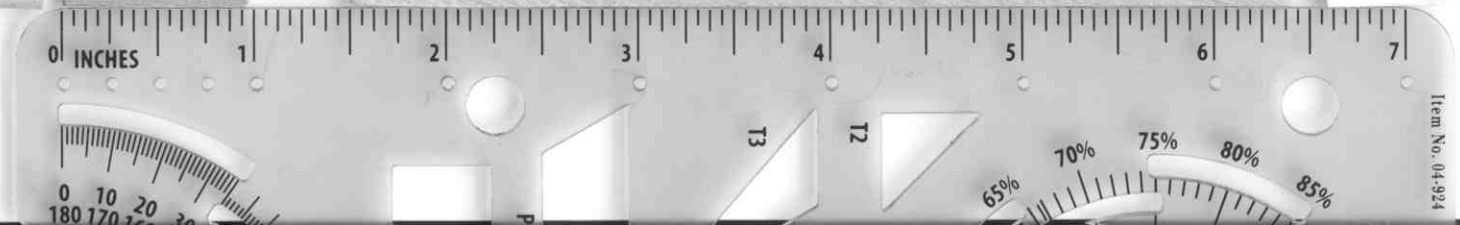
LAUNCH!!! **PUSH AND HOLD LAUNCH BUTTON UNTIL ENGINE IGNITES**

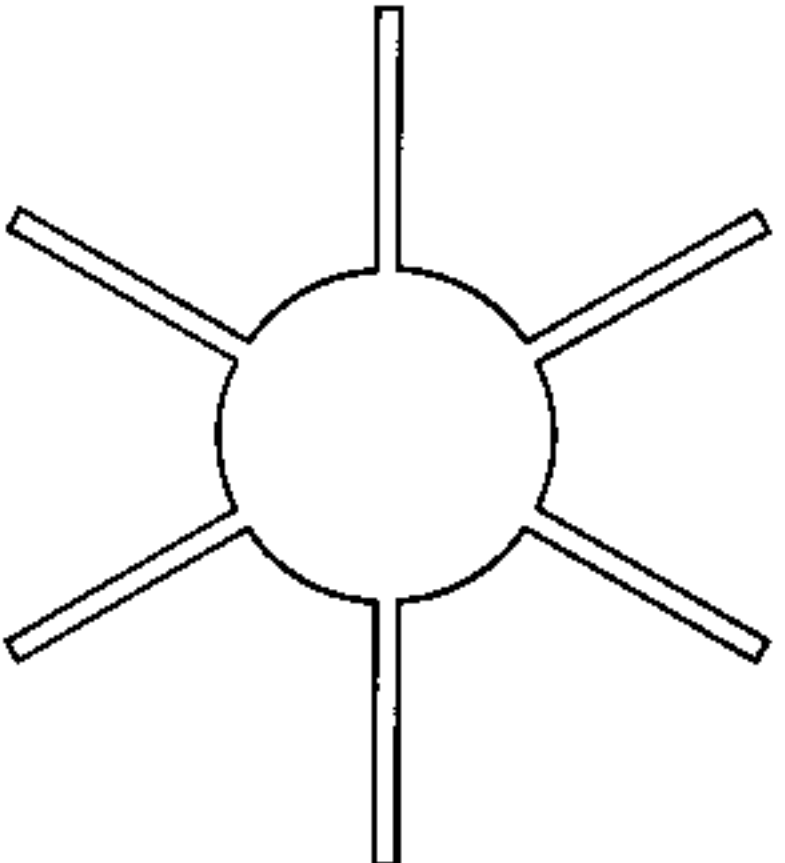
Remove safety key—Replace cap on rod.








INCHES
1
2
3
4
5
6
7
T3
T2
65%
70%
75%
80%
85%
Item No. 04-924



ARROW

ARROW

ESTES
NO. 37300

Arrow Estes #1983 Parts Measurements List

Quanity	Part Description	Length
1	Main Body Tube	12 1/2"
1	Engine Mount Tube	3 1/2"
1	Rubber Shock Cord	20 3/4"
1	1/8" Launch Lug	2 3/8"

*Notes
*Balsa Thickness is 3/32"
*Centering Rings are 1/16" Heavy Card Stock


ARROW
FLYING MODEL ROCKET
SKILL LEVEL 2
• Six-Fin Sport Model
• 12" Parachute Recovery
• Plastic Nose Cone
• Quick-Release Engine Mount
FLIES OVER 900 FEET!
ARROW
#1983
ESTES
ESTES INDUSTRIES