

Start 11-76-94

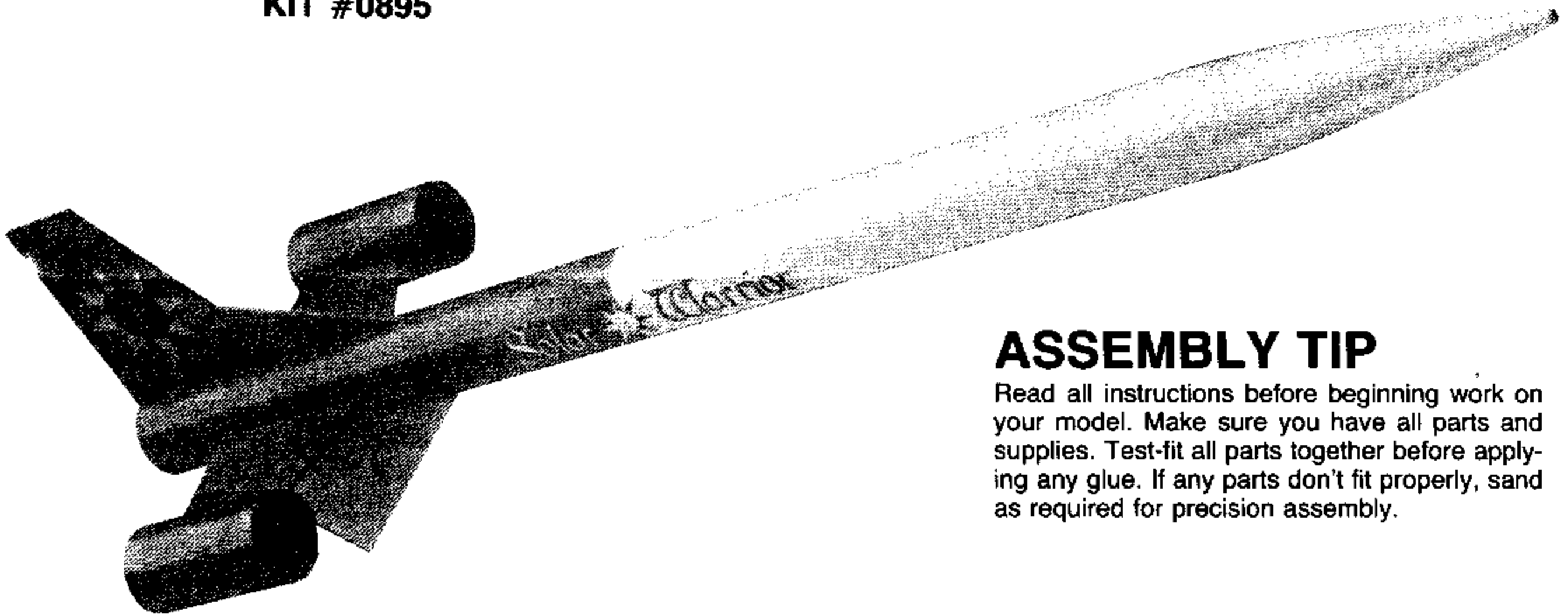
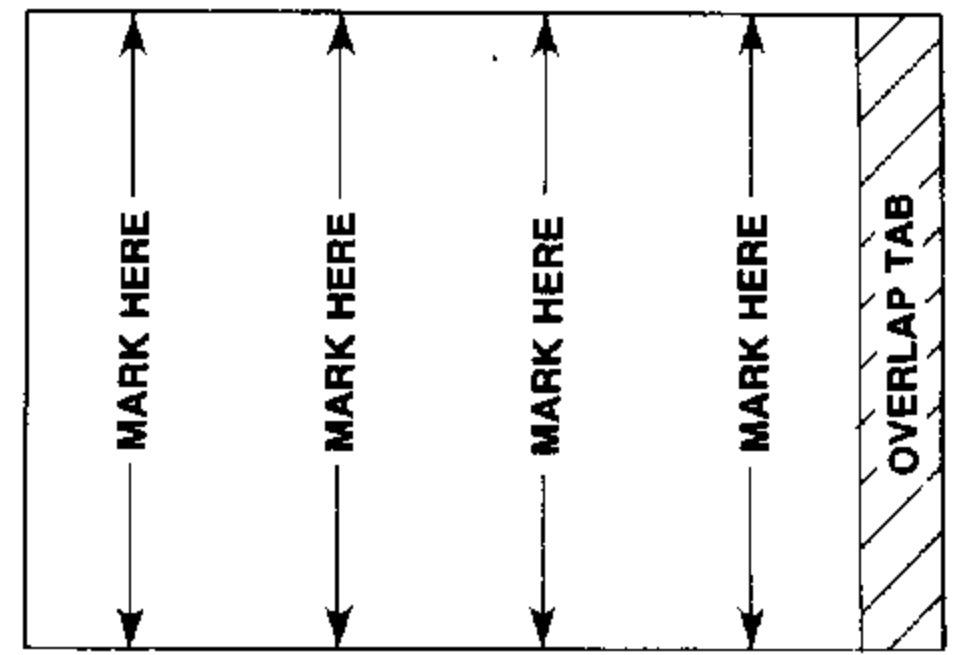
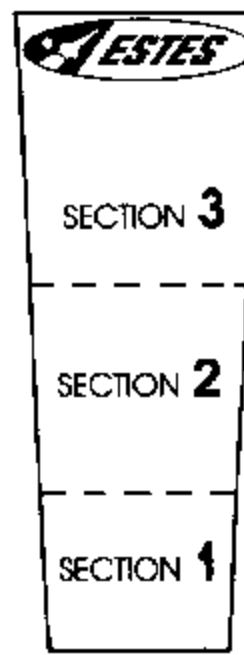


ESTES INDUSTRIES
1295 H Street
Penrose, CO 81240

Finished 2-21-94

Solar Warrior™

FLYING MODEL ROCKET
KIT #0895

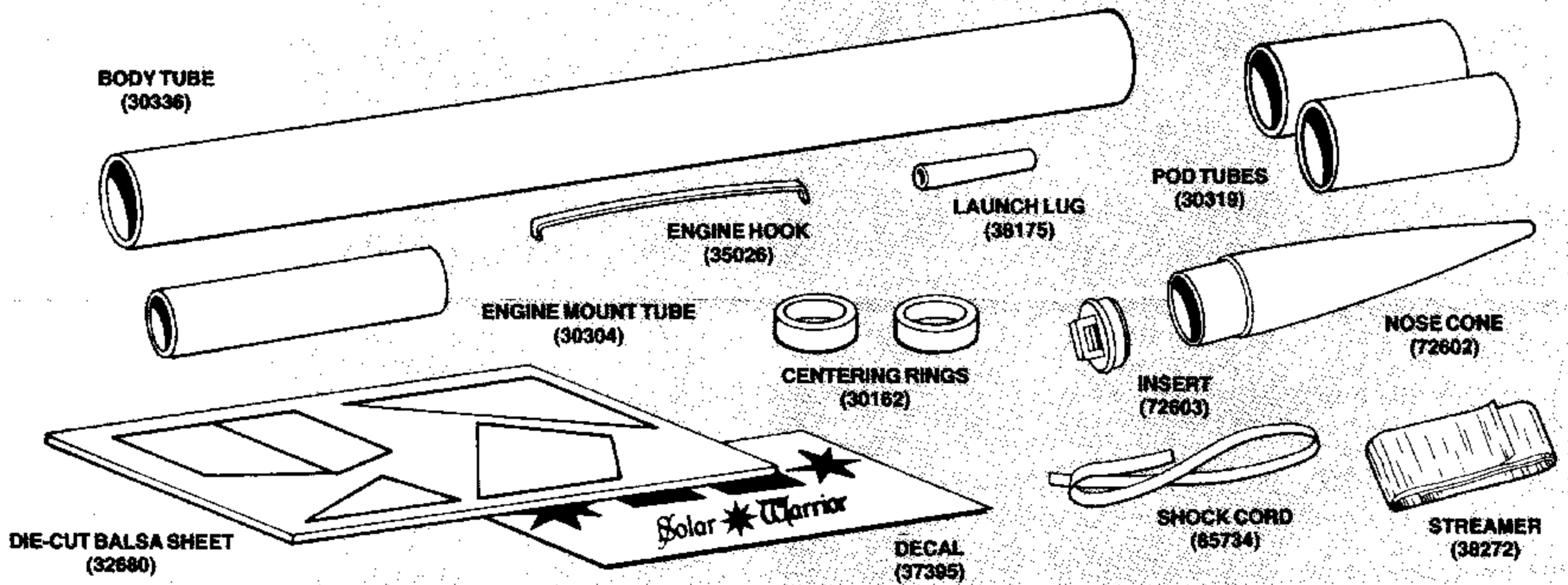


ASSEMBLY TIP

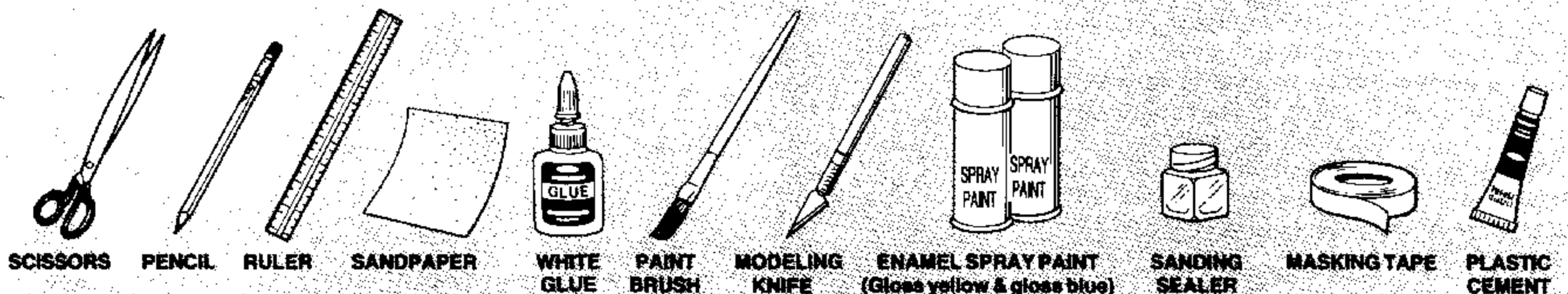
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

PARTS AND SUPPLIES

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



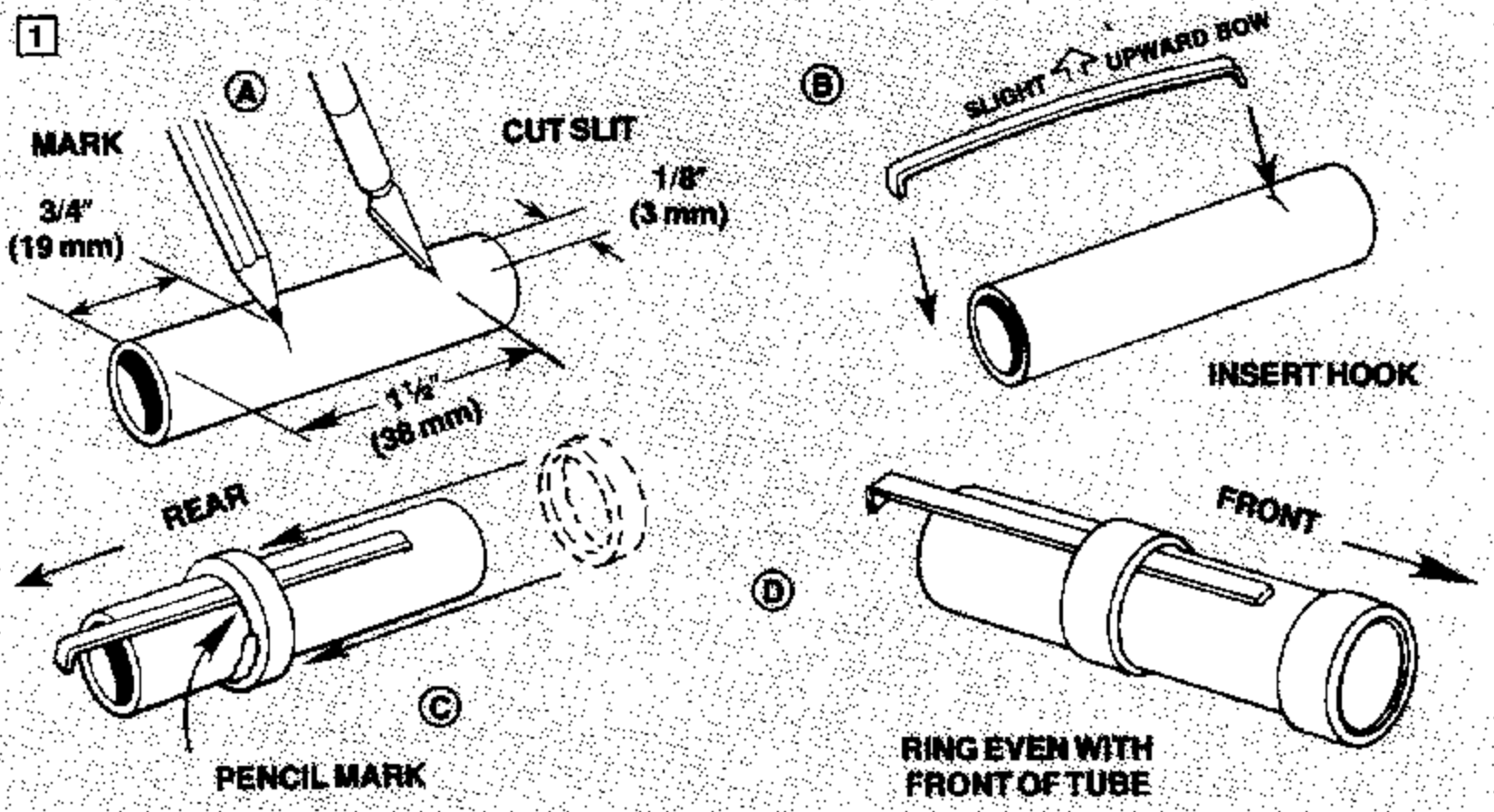
In addition to the parts included in the kit, you will also need:



NOTE: Use wood glue for all assembly except in step 9.

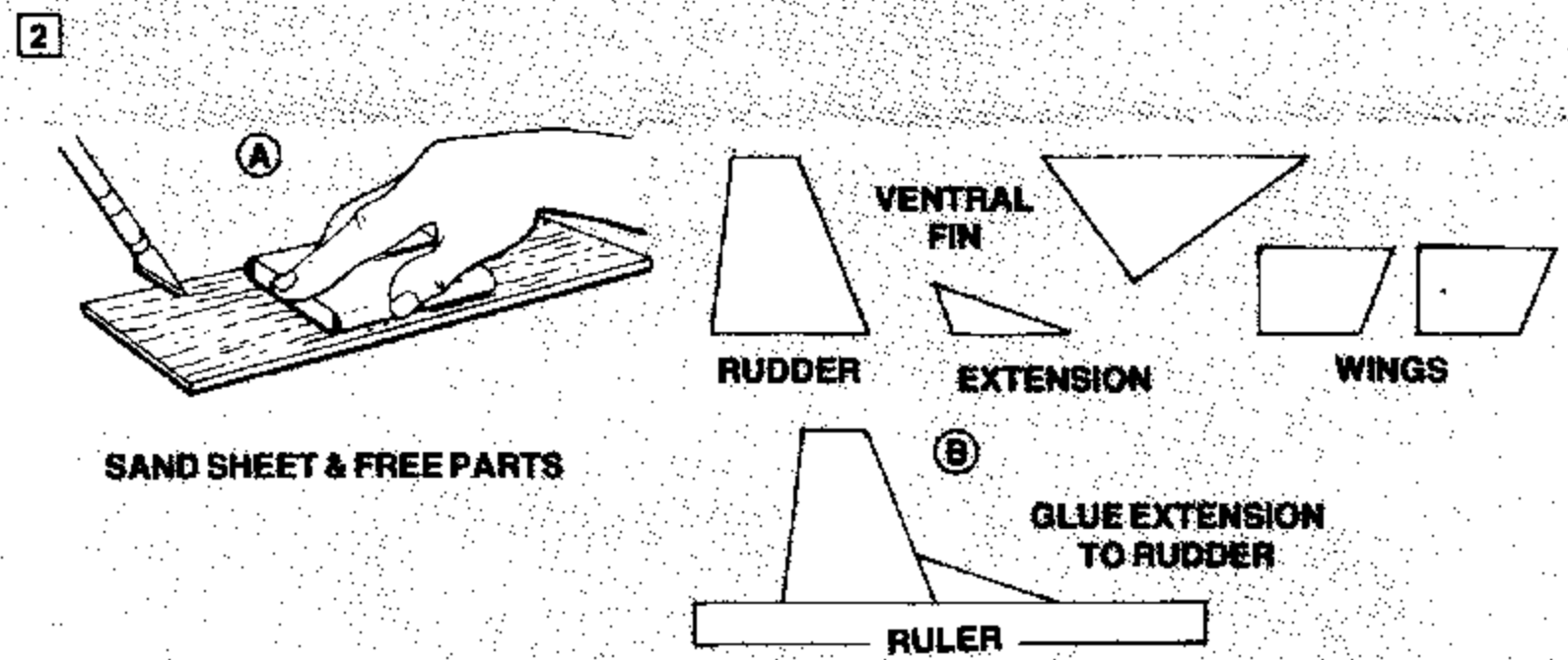
1.

- Mark the engine mount tube $3/4"$ (19 mm) and $1\frac{1}{2}"$ (38 mm) from one end. Cut an $1/8"$ (3 mm) wide slit in the tube at the $1\frac{1}{2}"$ (38 mm) mark.
- Bend engine hook so it has a very slight upward bow. Insert one end of engine hook in slit.
- Slide a centering ring over front of mount and push down to the pencil mark. Glue ring in place.
- Glue remaining ring to front of tube.



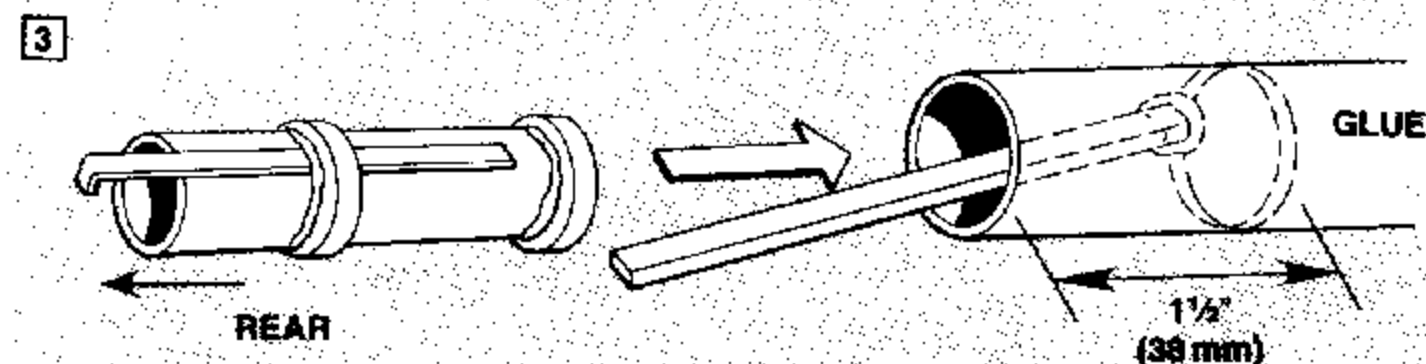
2.

- Sand both sides of the balsa sheet and free the die-cut parts with a knife. Sand edges of parts and sort and identify them.
- Using a ruler as a guide, glue the extension piece to the rudder. After glue has dried, smear a film of glue over joint, let dry, turn over and apply a film of glue to other side.



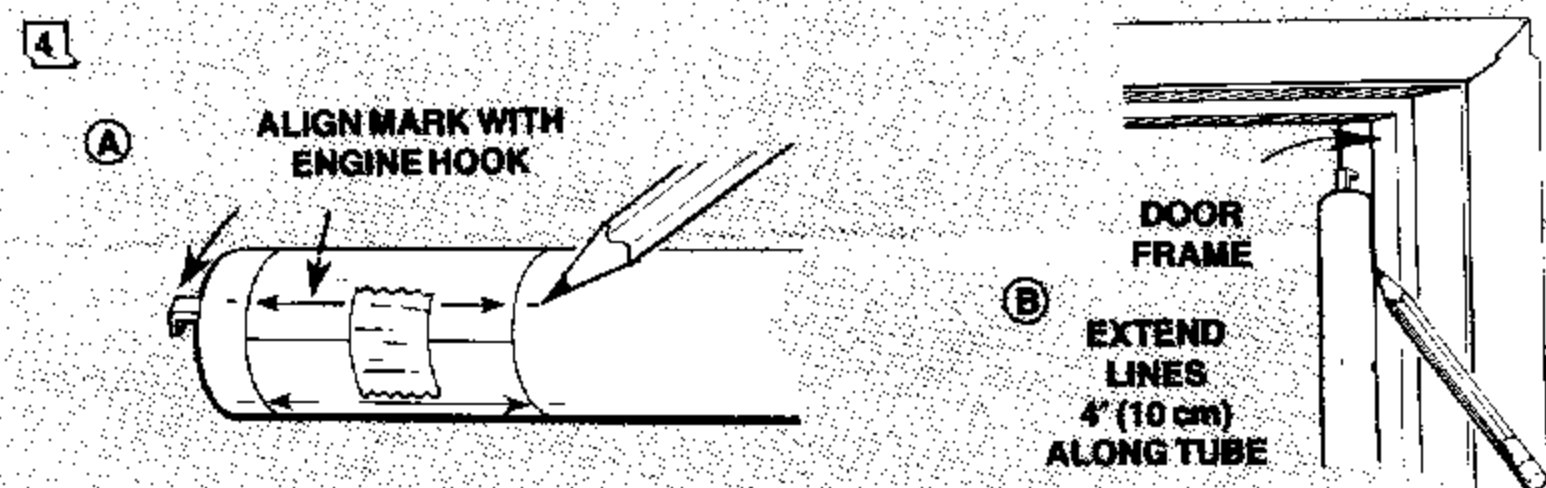
3.

- Use a piece of scrap balsa to apply a bead of glue around inside of body tube about $1\frac{1}{2}"$ (38 mm) from one end. Push engine mount into body until ends of tubes are even. **CAUTION:** Do not glue mount in backwards. Stand body upright until glue dries.



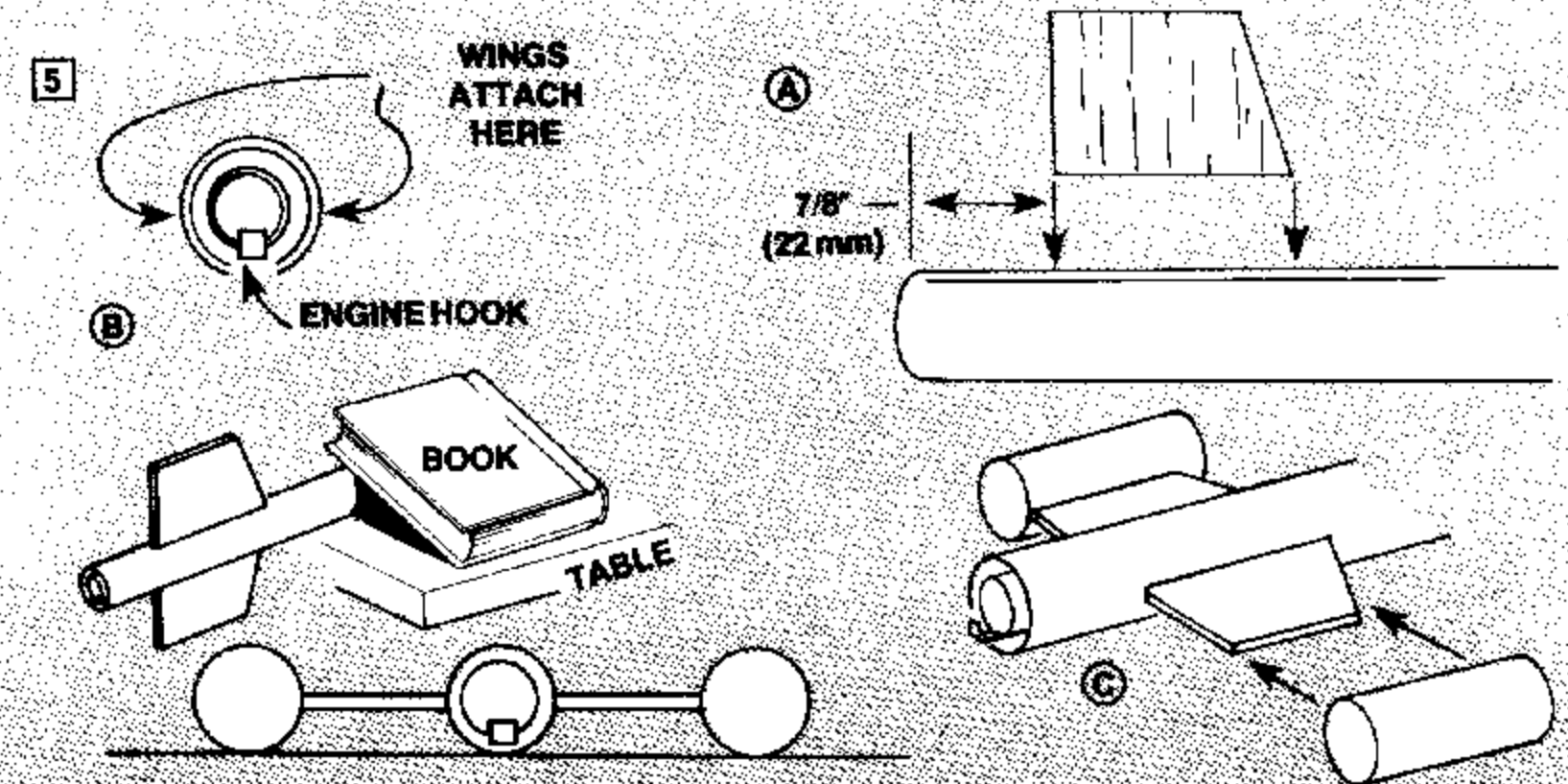
4.

- Cut the body marking guide from front page of instructions. Wrap the guide around rear of body and tape ends together. Rotate the guide so one arrow point is aligned with engine hook. Mark tube at arrow points. Remove guide.
- Using a door frame as a guide, draw lines on tube at the marks. Extend lines $4"$ (100 mm) from rear of tube.



5.

- Mark two lines on either side of engine hook line $7/8"$ (22 mm) from rear of tube. Glue a wing to body, centered on line with rear of wing on mark. Make sure wing extends straight from tube. Support with wing pointing straight up until glue dries.
- Glue remaining wing to opposite side of body in same manner. Support as shown while glue dries.
- Place body on a flat surface and glue a pod tube to one wing. Rear of tube is even with rear edge of wing. Glue remaining pod tube to other wing.

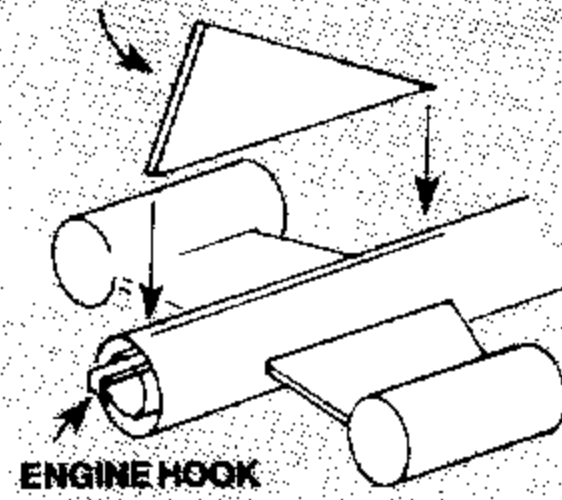


6.

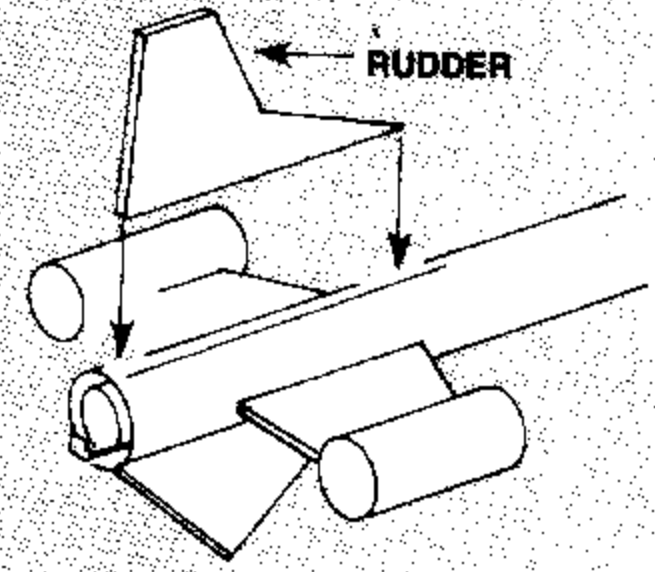
- A. Glue ventral fin to body on line that is aligned with engine hook. Rear of fin is even with rear of body. Make sure fin extends straight from body then support with fin pointing straight up while glue dries.
Glue rudder to remaining line in same manner.

6

VENTRAL FIN



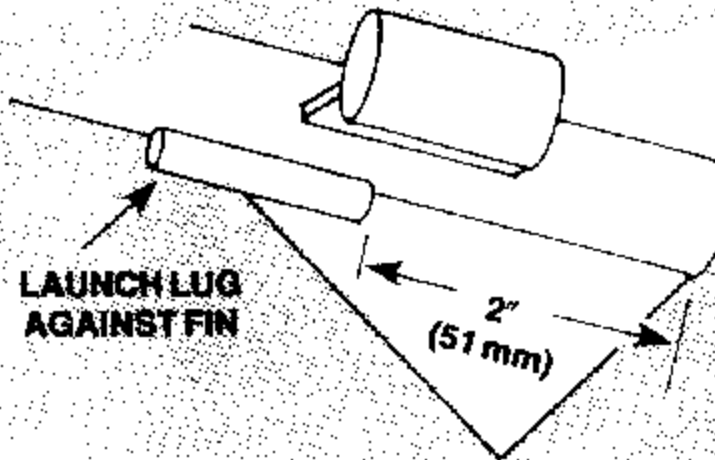
RUDDER



7.

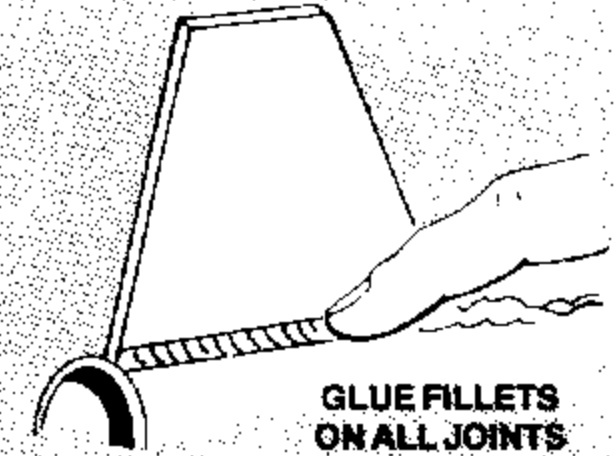
- A. Glue launch lug to body in position shown.
B. Apply a bead of glue to each balsa/body joint. Smooth glue into an even fillet with your finger.

7



LAUNCH LUG AGAINST FIN

2" (51 mm)

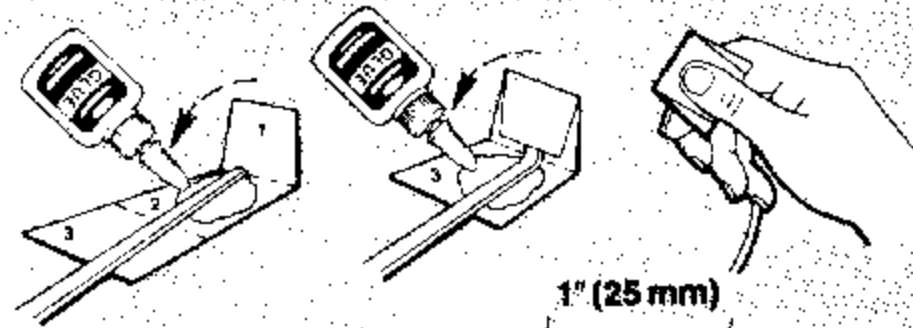


GLUE FILLETS ON ALL JOINTS

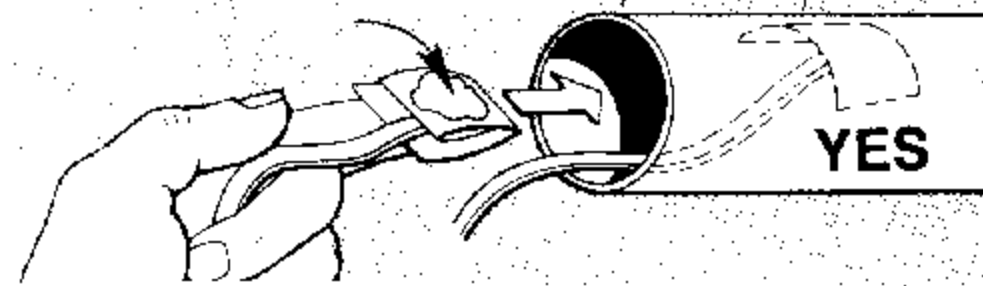
8.

- A. Cut shock cord mount from front page.
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 (1" - 25 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.

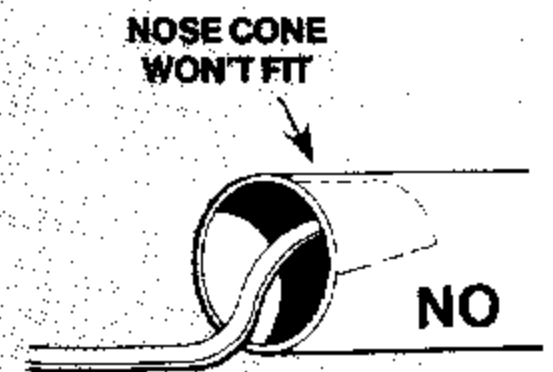
8



1" (25 mm)



YES



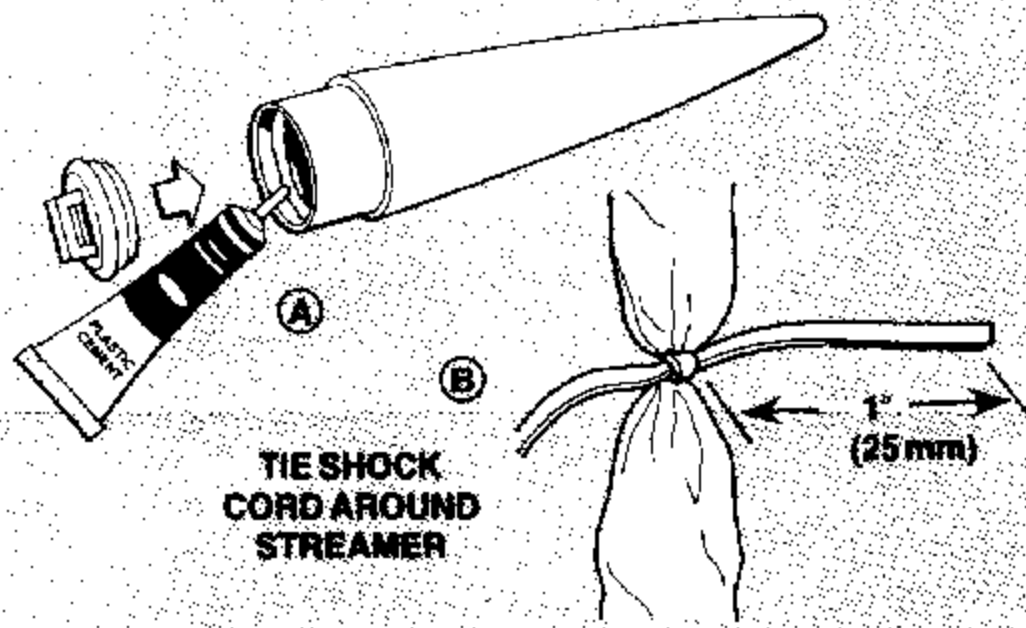
NOSE CONE WON'T FIT

NO

9.

- A. Apply plastic cement around inside of end of nose cone and install nose cone insert.
B. Tie shock cord around middle of streamer at a point about 1" (25 mm) from end of shock cord.
C. Tie end of shock cord to nose cone using a double knot. Roll streamer and place it and shock cord into body and socket nose cone in place.

9

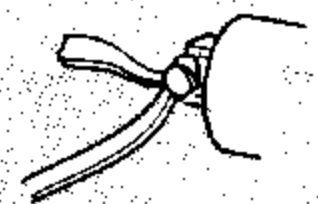


TIE SHOCK CORD AROUND STREAMER

1" (25 mm)

C

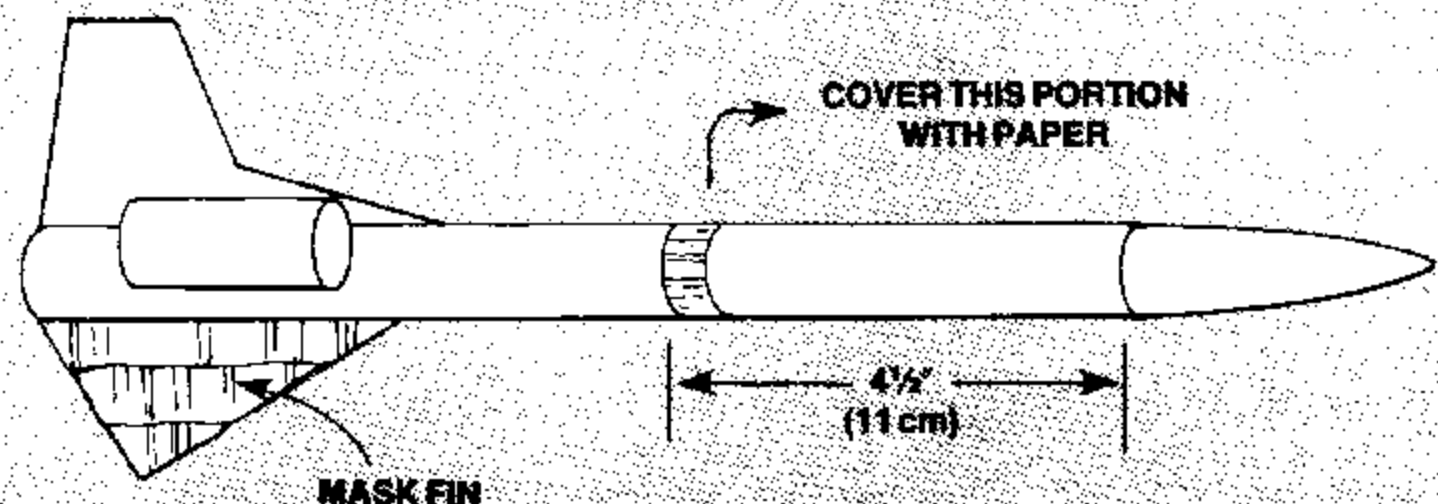
TIE END OF SHOCK CORD TO NOSE CONE



10.

- A. Proceed only if glue fillets (step 7) are thoroughly dry. Apply a coat of sanding sealer to all balsa surfaces. Let sealer dry, then lightly sand. Seal and sand again. Several coats may be required for a really smooth finish.
B. Paint the rocket yellow. Set aside to dry overnight. Mask the ventral fin. Wrap a piece of masking tape around body at point shown. Mask the forward portion of rocket with paper. Make sure all edges are sealed with tape. Paint the rear portion of rocket blue. Let paint dry and remove tape and paper. Apply decals using kit panel as a guide. To apply decals, cut them one at a time from the sheet. Dip in water until decal slides on backing (usually 20 to 30 seconds). Slide decal from backing sheet onto model. Position decal where desired. Let it set a few minutes, then gently blot away water with a soft cloth.

10

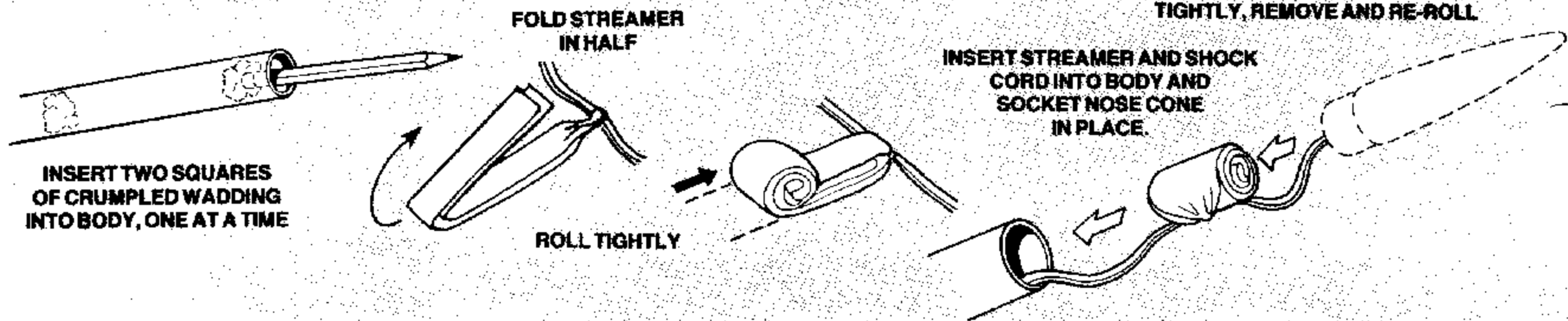


COVER THIS PORTION WITH PAPER

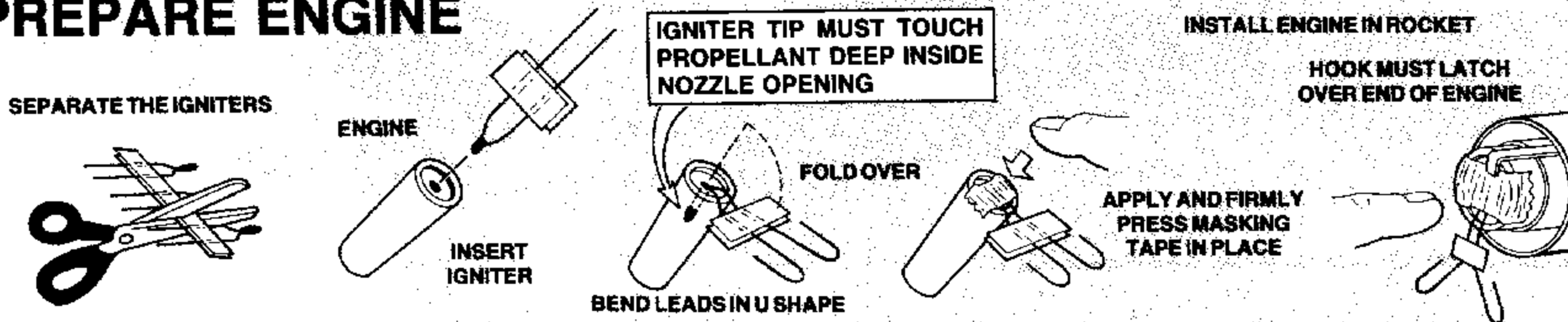
4 1/2" (11 cm)

MASK FIN

ROCKET PREFLIGHT



PREPARE ENGINE



COUNTDOWN AND LAUNCH

LAUNCH SUPPLIES

To launch your rocket you will need the following items:

- Estes Electrical Launch System
- Estes Recovery Wadding No. 2274
- Recommended Estes Engines: A3-4T and A10-3T

To become familiar with your rocket's flight pattern, use an A3-4T 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.

MISFIRES

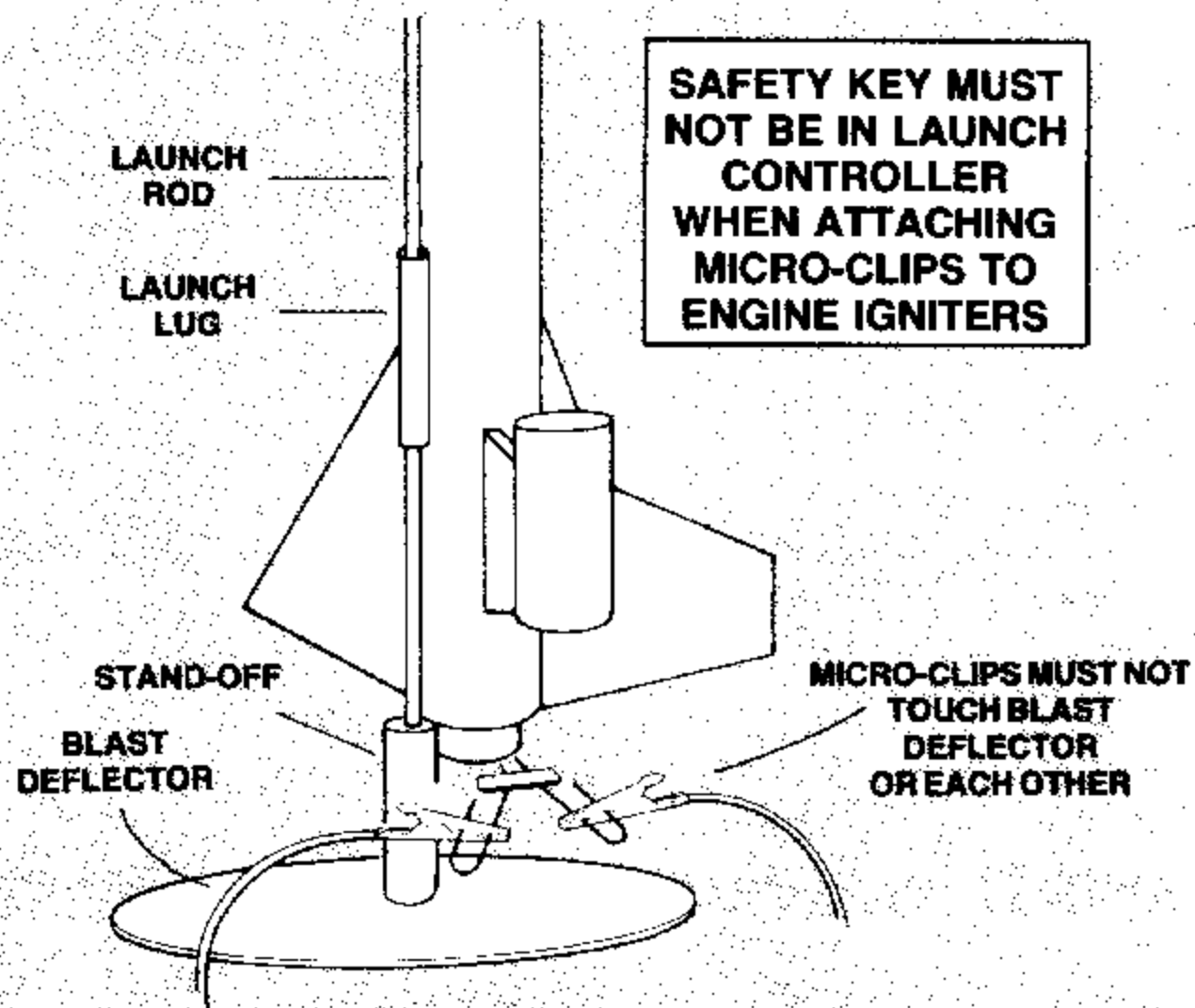
Failure of the model rocket engine to ignite is nearly always caused by incorrect igniter installation. An Estes igniter will function properly even if the coated tip is chipped. However, if the coated tip is not in direct contact with the engine propellant, it will only heat and not ignite the engine.

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



- 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.