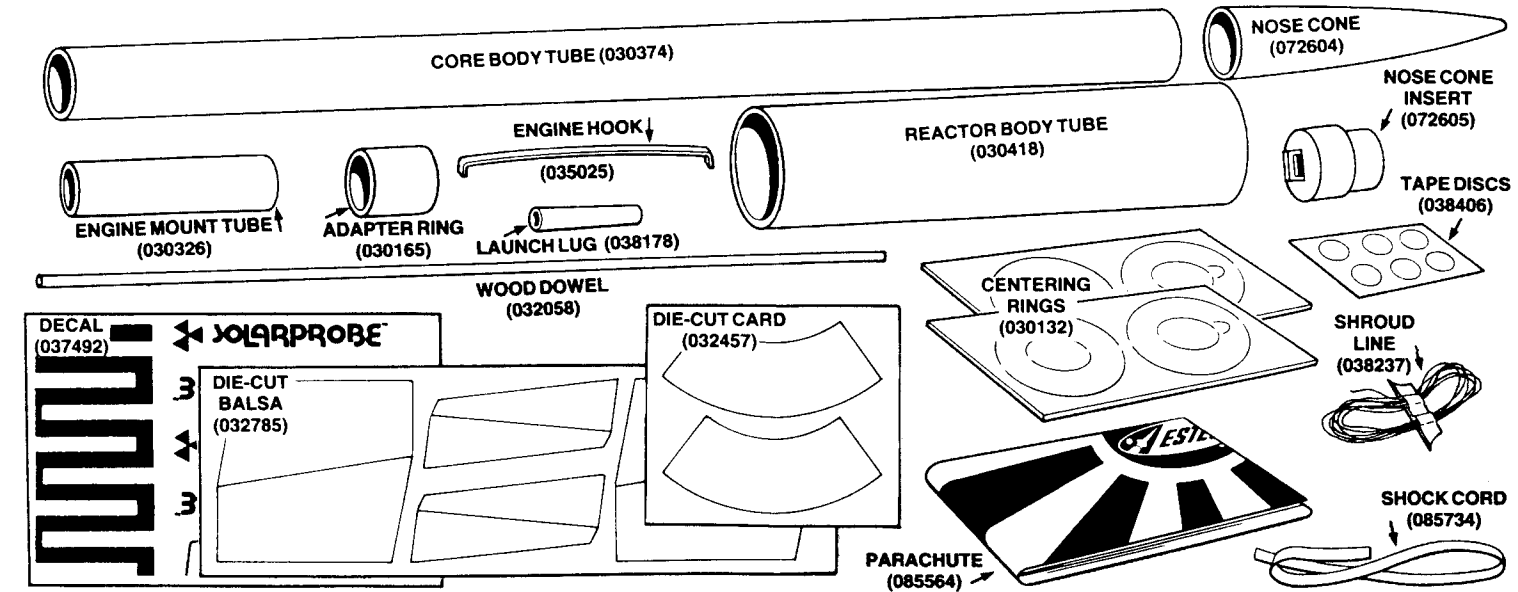


## ASSEMBLY TIP

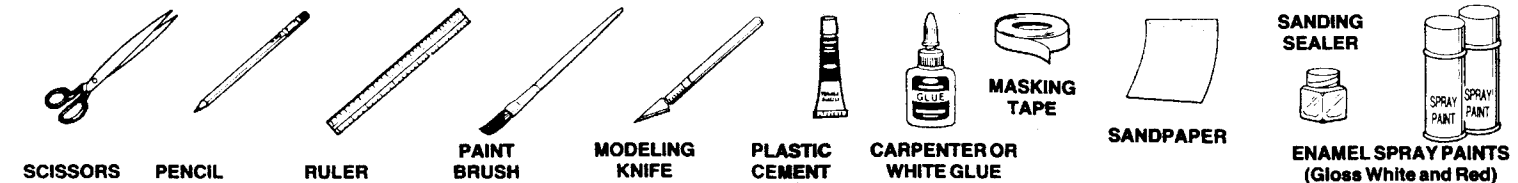
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

## PARTS AND SUPPLIES

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

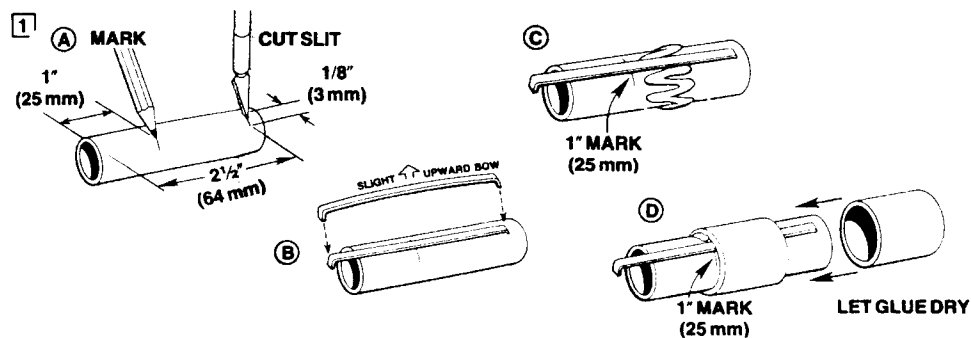


In addition to the parts included in the kit, you will also need:



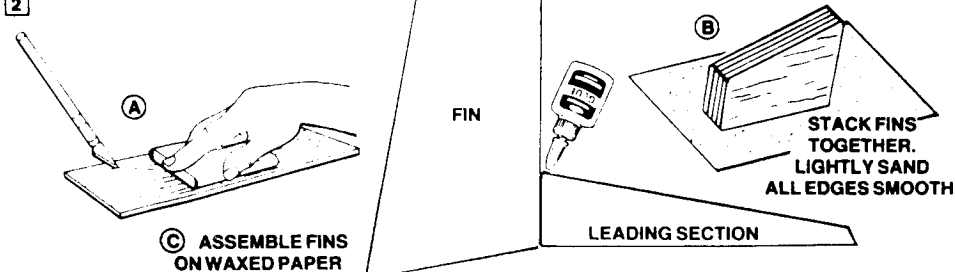
## ROCKET ASSEMBLY

1.
  - A. Mark 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.
  - B. Insert one end of engine hook into slit.
  - C. Spread glue around engine mount above 1" (25 mm) mark as shown.
  - D. Slide adapter ring onto tube as shown to the 1" (25 mm) mark and then glue both ends of ring to tube.



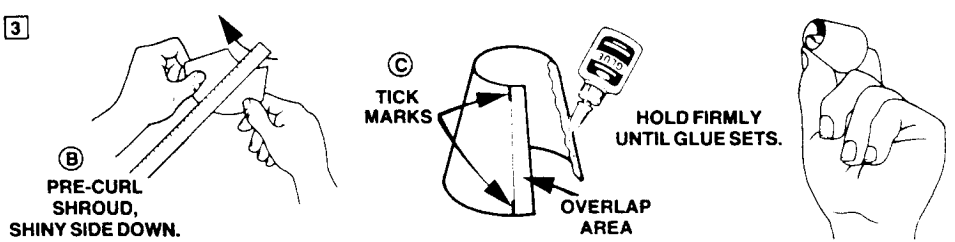
**2.**

- A. Fine sand balsa die-cut sheet. Carefully remove fins by freeing edges with sharp knife.
- B. Stack fins together. Sand all edges smooth.
- C. Assemble fins over a piece of waxed paper on a flat surface. Apply glue to rear edge of leading section and assemble as shown.



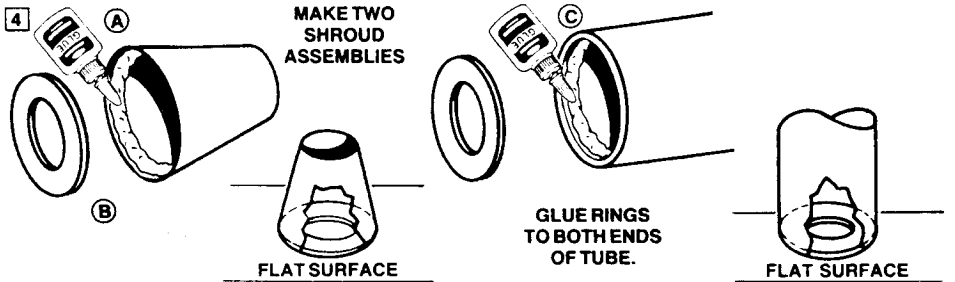
**3.**

- A. Remove shrouds from die-cut sheet.
- B. Pre-curl the shroud (shiny side out) by gently pulling it up from under a ruler.
- C. Apply glue to opposite side with overlap area. Line up edge of shroud with the tick marks and press together on a flat surface. Hold until glue sets. Repeat steps for second shroud.



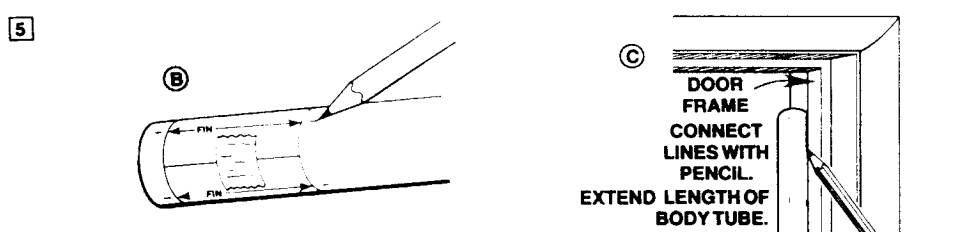
**4.**

- A. Apply a bead of glue around the inside rim of each shroud.
- B. Carefully slip one centering ring into each shroud. Set aside to dry.
- C. Apply glue to inside edges of reactor tube and slide the remaining two centering rings into each end of tube.



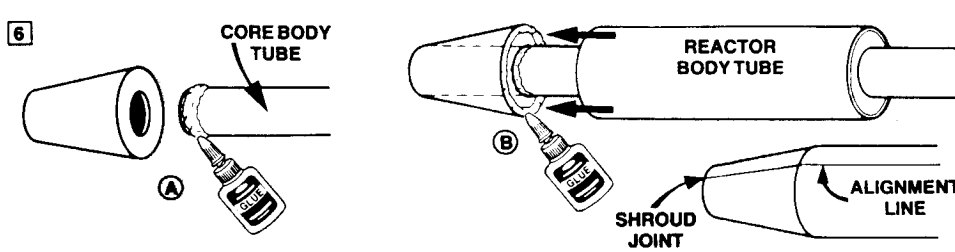
**5.**

- A. Cut out reactor tube marking guide from front of instructions.
- B. Wrap marking guide around tube and mark tube at arrows. Remove guide and save.
- C. Draw straight lines connecting each pair of marks.



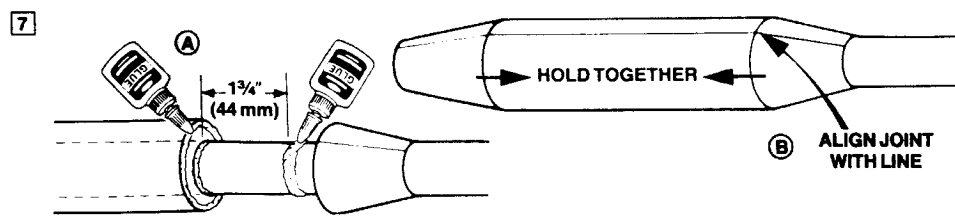
**6.**

- A. Glue one shroud assembly to core body tube as shown.
- B. Apply glue to outside edge of shroud and tube joint. Slide reactor tube into place against shroud and with shroud joint aligned with one of the drawn alignment lines.



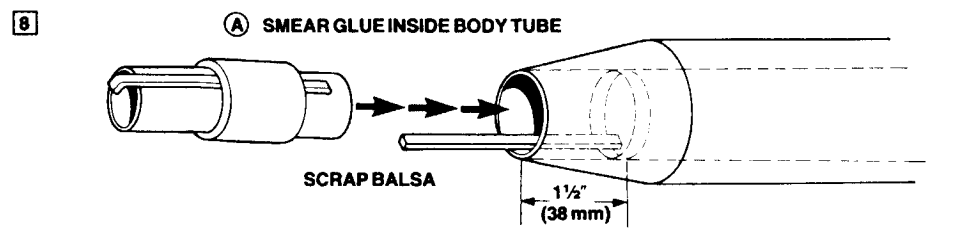
**7.**

- A. Apply glue to outside edge of reactor tube centering ring and tube joint. Apply glue around core tube 1 3/4" (44 mm) from disc.
- B. Slide remaining shroud into place. Wipe away excess glue. Align joint in shroud with alignment line and hold assembly together until glue sets.



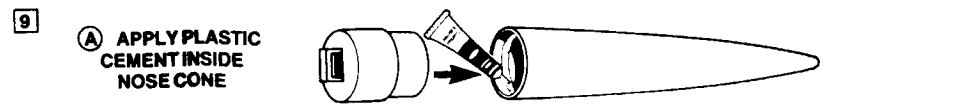
**8.**

- A. Using a piece of scrap balsa, smear glue inside rear of core body tube 1 1/2" (38 mm).
- B. Push engine mount in until tube ends are even.



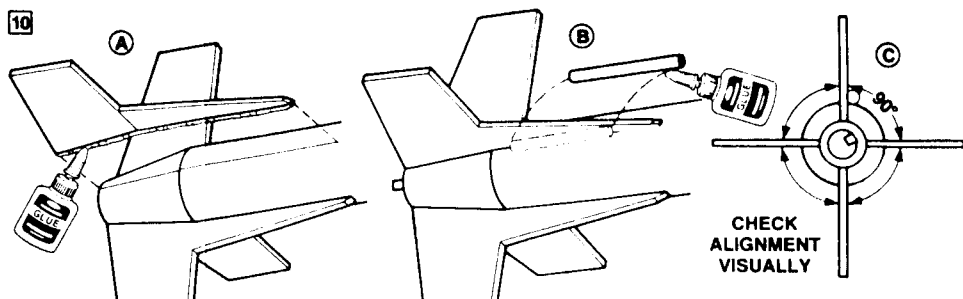
**9.**

- A. Apply plastic cement to inside edges of nose cone. Then install nose cone insert as shown.



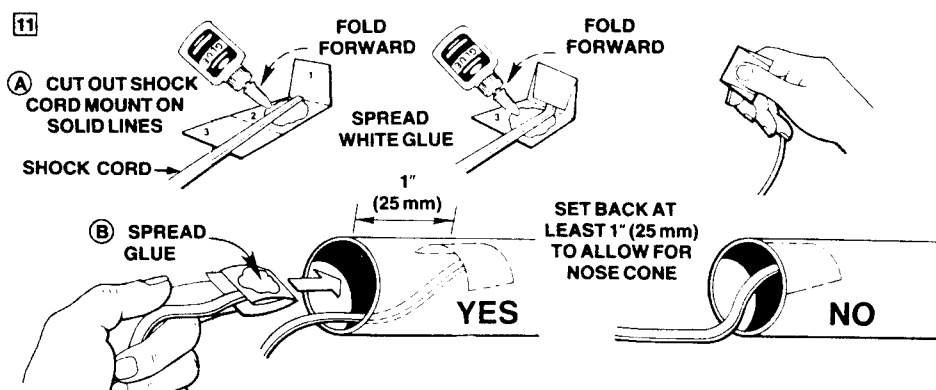
## 10.

- Glue fins on alignment lines, one at a time as shown. Let each fin dry several minutes before applying the next fin.
  - Glue launch lug against one fin as shown.
  - Looking from the rear of the rocket, the fins should be in the positions shown.
- FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT!**



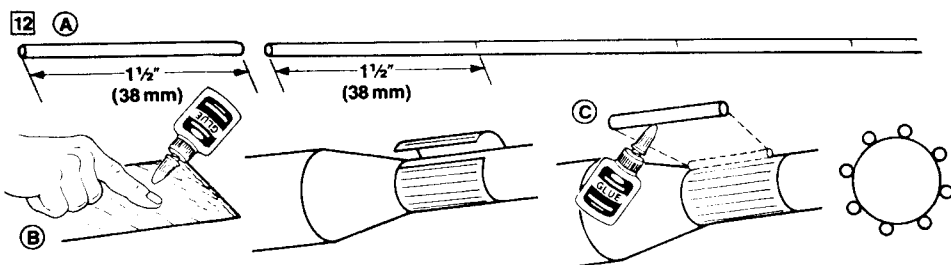
## 11.

- Cut the shock cord mount from reactor body tube marking guide. 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. Fold section 1 forward. Apply glue to section 3. Fold forward again. Clamp firmly with your fingers until glue sets.
- 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.



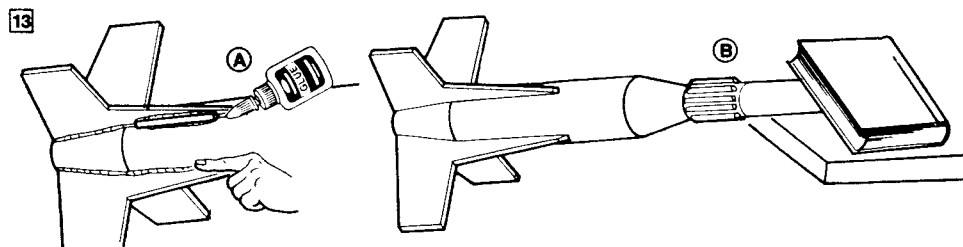
## 12.

- Cut eight 1 1/2" (38 mm) lengths from the 12" (305 mm) wood dowel.
- Carefully cut reactor vane guide from front of instructions. Lightly apply glue to back side and wrap around core tube as shown.
- Glue each reactor vane into position on guide. Align with lines of guide.



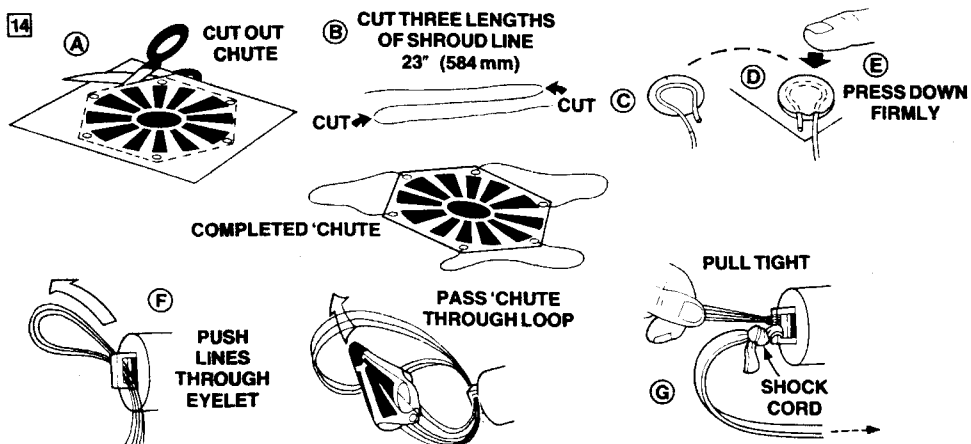
## 13.

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



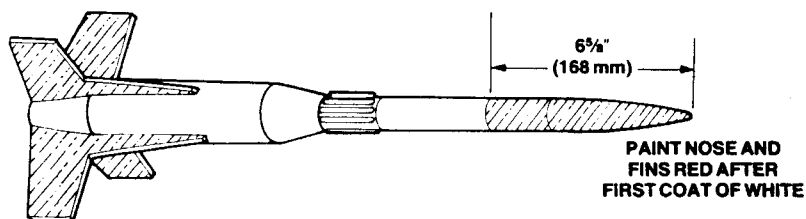
## 14.

- Cut out parachute on edge lines.
- Cut three 23" (584 mm) lengths of shroud line.
- Form small loop with shroud line ends and press onto sticky side of tape discs.
- Attach tape discs to parachute.
- Press tape discs firmly into place until both tape discs and parachute material are molded around shroud line loops.
- Gather and pass shroud line loops through eyelet on nose cone. Pass parachute through loop ends and pull lines tight against the nose cone.
- 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 masking rocket and painting the second color. Refer to the panel photo for rocket decor and color.

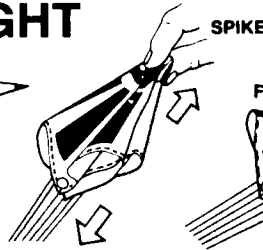
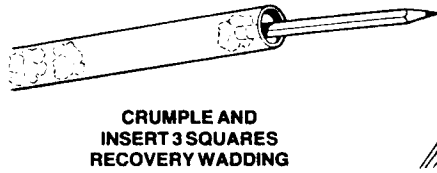


# ROCKET DECOR

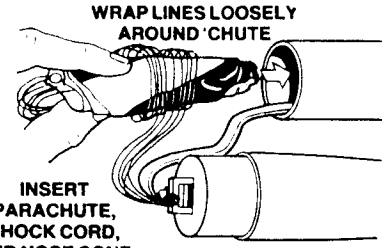
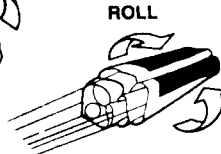
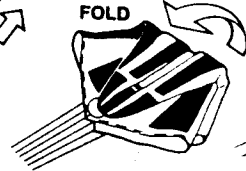
To apply decals, cut each out, dip in lukewarm water for 20 seconds, and hold until it uncurls. Refer to photograph on front of panel for decal

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

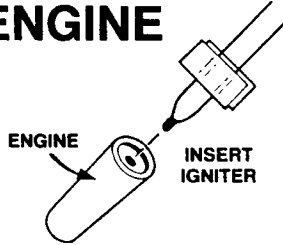
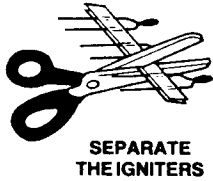


NOTE: If nose cone fits too loosely, wrap tape around the shoulder until a snug but not tight fit is achieved.

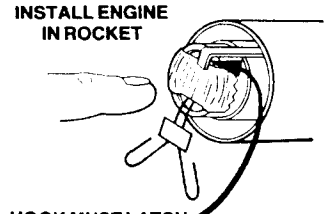
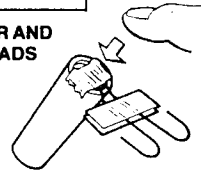
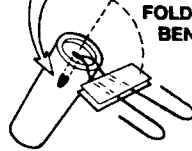


INSERT PARACHUTE, SHOCK CORD, AND NOSE CONE IN ROCKET.

## PREPARE ENGINE



IGNITER TIP MUST TOUCH PROPELLANT DEEP INSIDE NOZZLE OPENING



HOOK MUST LATCH OVER END OF 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.

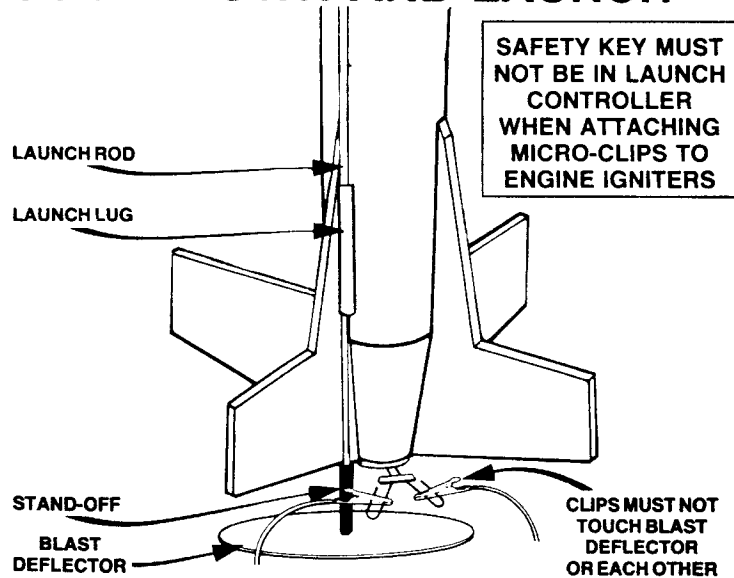
When an ignition failure occurs, remove the safety key from the launch control system and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant, then tape the igniter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

## COUNTDOWN AND LAUNCH

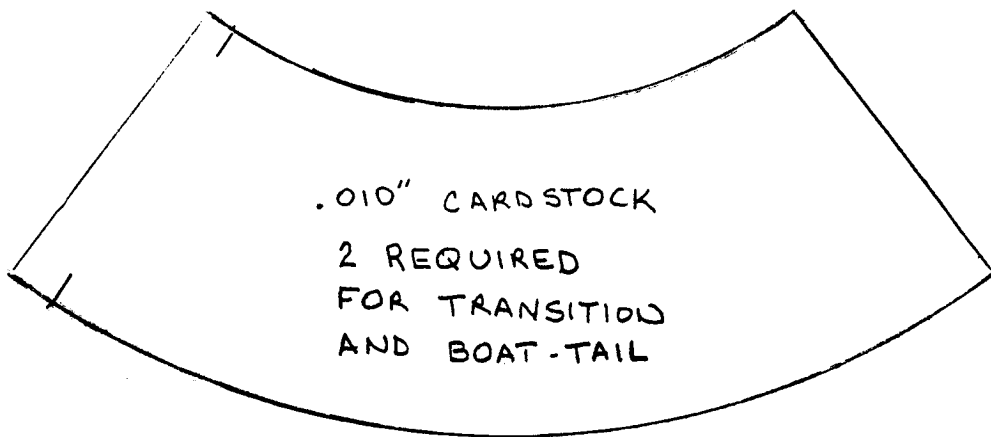


- BE CERTAIN SAFETY KEY IS NOT IN LAUNCH CONTROLLER.
- Remove safety cap and slide launch lug over launch rod to place rocket on launch pad. Make sure the rocket slides freely on the launch rod.
- Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the metal 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.

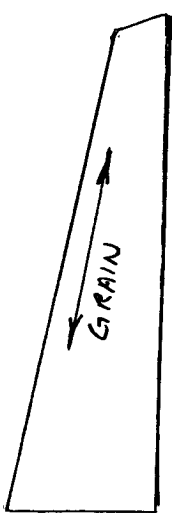
Give audible countdown 5...4...3...2...1

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

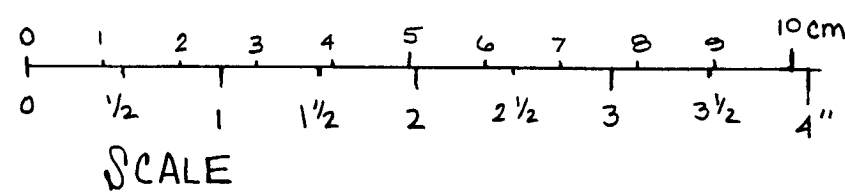
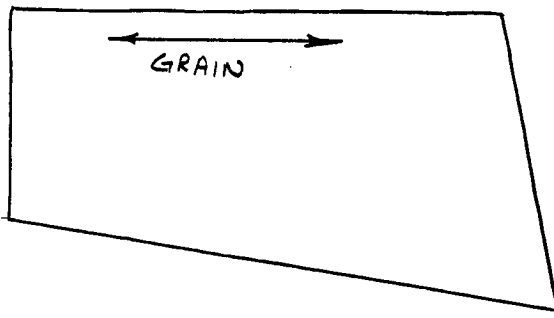
REMOVE SAFETY KEY FROM LAUNCH CONTROLLER. REPLACE SAFETY KEY AND SAFETY CAP ON LAUNCH ROD.

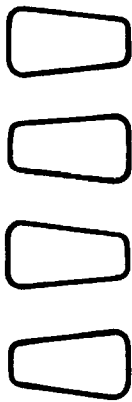


- CORE BODY TUBE  
BT 50 15 <sup>13</sup>/<sub>16</sub>" LONG
- REACTOR BODY TUBE  
BT 60 5" LONG
- PARACHUTE 12"  
PLASTIC
- DECAL COLOR BLACK
- WOOD DOWEL FOR REACTOR  
VANES .060" DIA.



FIN PIECES  
1/16" Balsa  
4 REQUIRED





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