

# Scorpion #1333



A DAMON COMPANY

ESTES INDUSTRIES  
1295 H STREET  
PENROSE, COLORADO 81240 USA



SHOCK CORD MOUNT

SEC. 3

SEC. 2

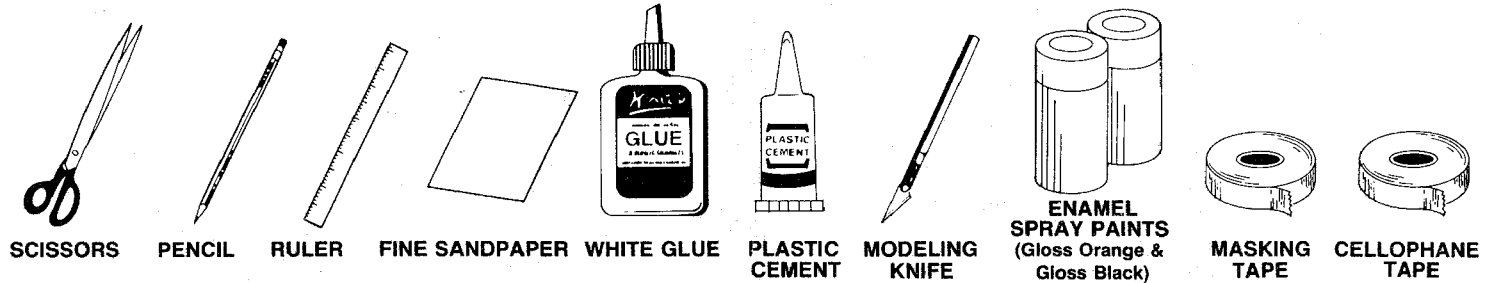
SEC. 1

## 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.

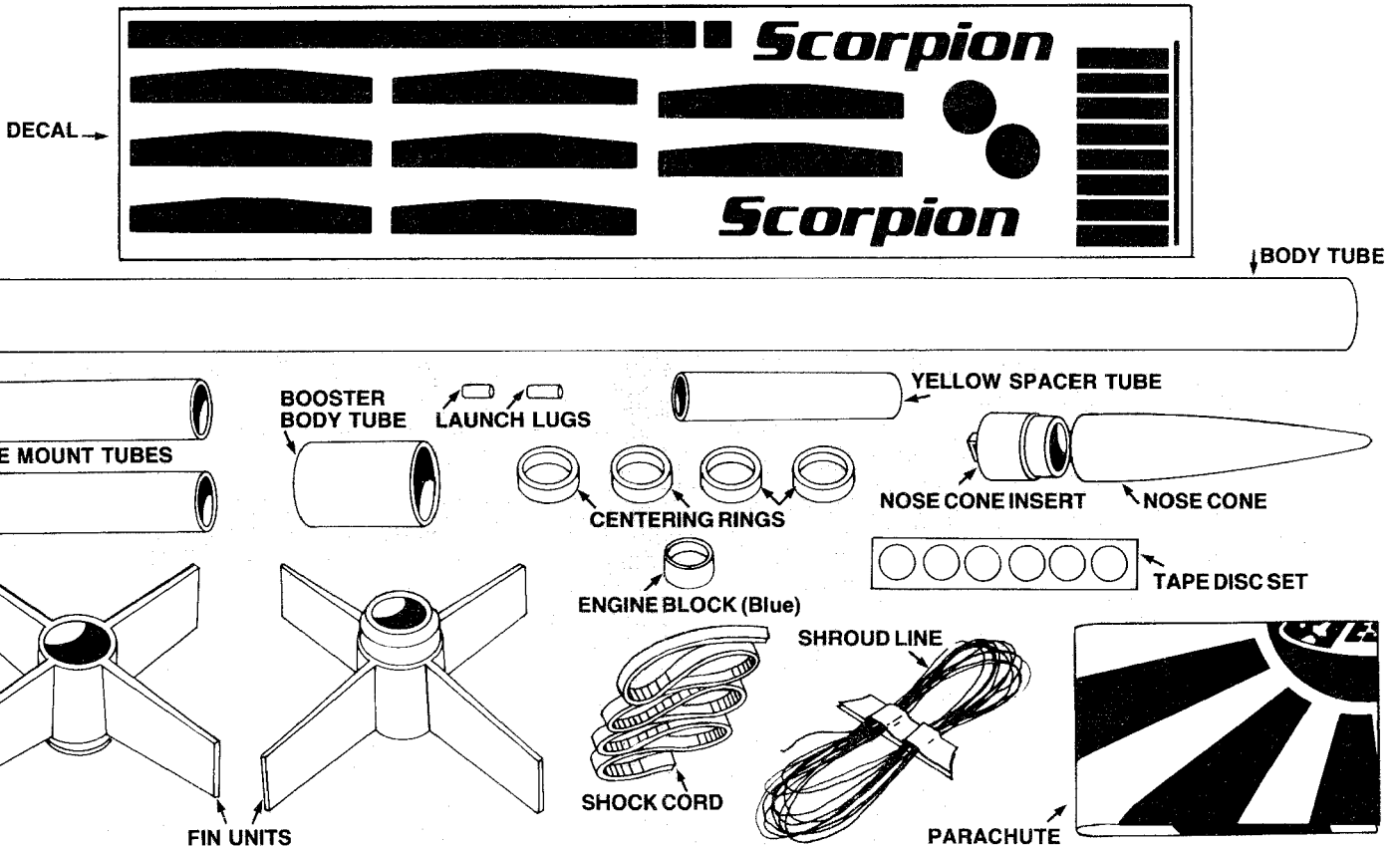
## SUPPLIES

You will need the items below to assemble your rocket.



## PARTS

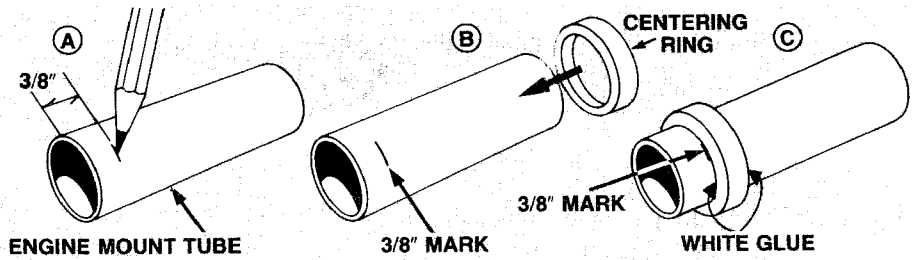
Locate the parts shown below and lay them out on the table in front of you.



# ROCKET ASSEMBLY

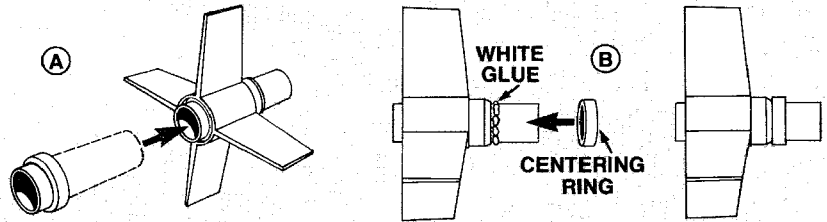
**1**

- A. Mark both engine mount tubes  $\frac{3}{8}$  inch from one end.
- B. Slide one centering ring onto each engine mount tube up to  $\frac{3}{8}$  inch mark.
- C. Apply glue to both sides of both centering rings where they meet the tube as shown.



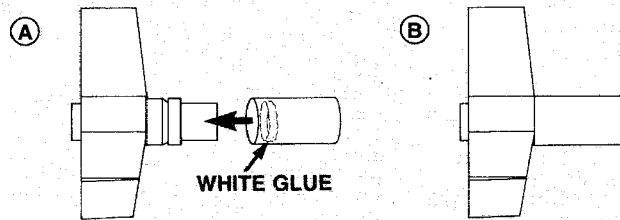
**2**

- A. Slide one of the engine mount tubes into one of the plastic fin units from rear until snug.
- B. Apply glue around engine mount tube  $\frac{1}{4}$  inch in front of fin unit. Slide centering ring onto engine mount tube up to fin unit as shown. The engine mount tube should protrude at least  $\frac{1}{8}$  inch from end of fin unit as shown.
- C. Repeat procedure with other engine mount tube, centering ring and fin unit.



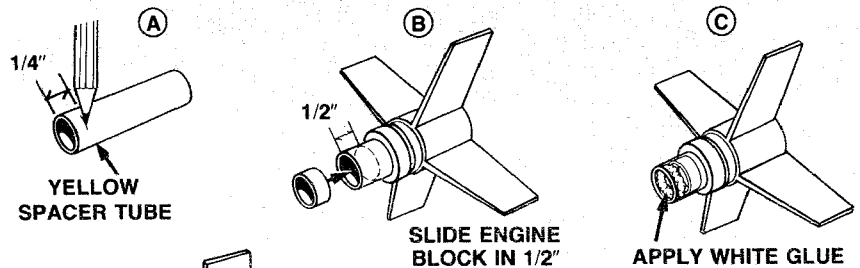
**3**

- A. Apply glue to inside edge of booster body tube about  $\frac{1}{4}$  inch from end. Slide booster body tube onto front of one fin unit as shown.
- B. Booster body tube should fit flush to fins as shown. Set booster unit aside.



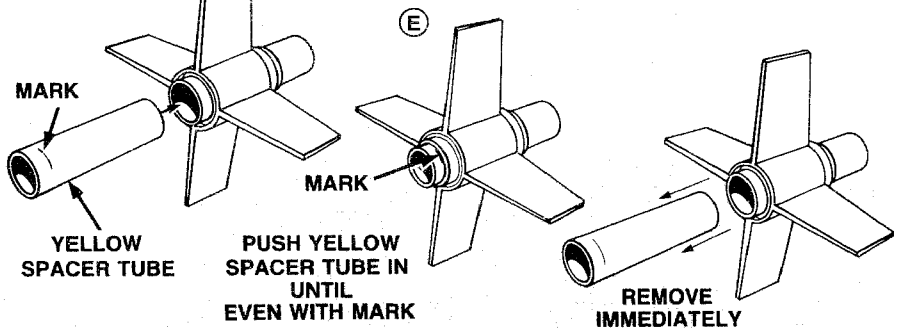
**4**

- A. Mark the yellow spacer tube  $\frac{1}{4}$  inch from one end.
- B. Slide the engine block into the forward end of the remaining fin unit/engine mount assembly. Position the block  $\frac{1}{2}$  inch in from the front end of the tube as shown.



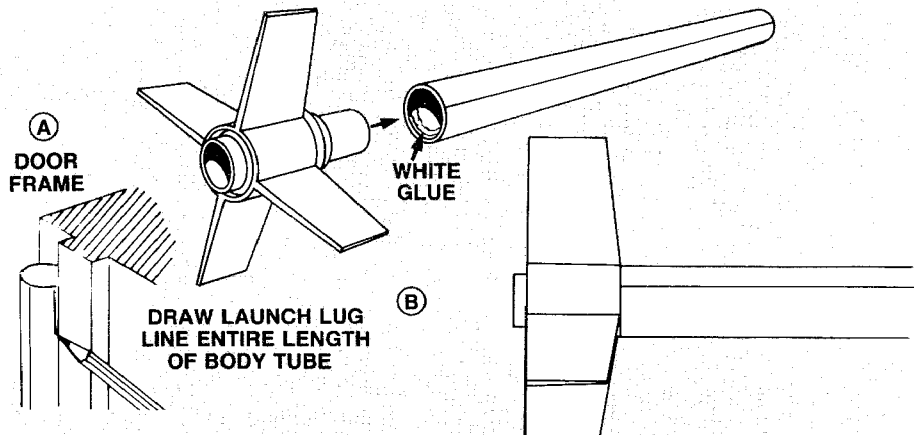
*THE FOLLOWING PROCEDURE MUST BE DONE QUICKLY.*

- C. Apply glue to the inside edge of the front end of the tube, just in front of the engine block.
- D. Insert yellow spacer tube with the mark to the rear into the rear of the fin unit/engine mount as shown.
- E. Push the yellow spacer tube forward until the mark on the yellow spacer is even with the end of the tube as shown. The engine block is now in its proper position. Remove the yellow spacer tube immediately and discard it.

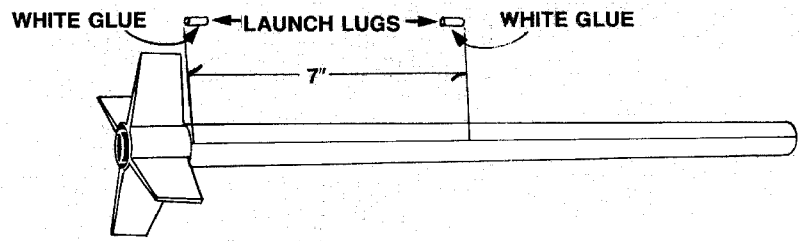


**5**

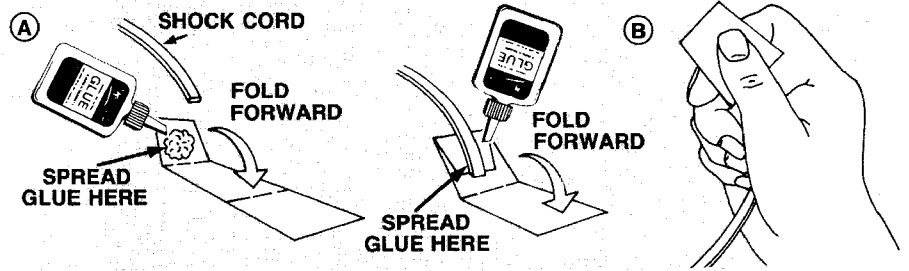
- A. Draw a straight line along entire length of the main body tube.
- B. Apply glue around inside edge of body tube and insert fin unit (completed in Step 4) into body tube. Make sure line on body tube is between fins and tube is seated evenly.



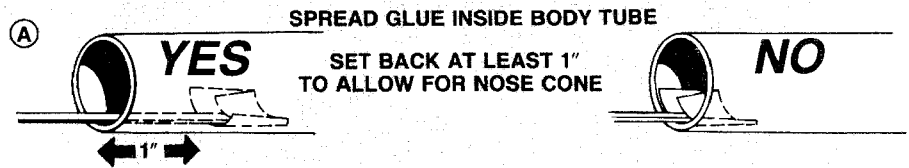
- 6** Glue launch lugs on launch line line as shown. The first launch lug is at the front of fin unit and the second launch lug is 7 inches from the front of fin unit.



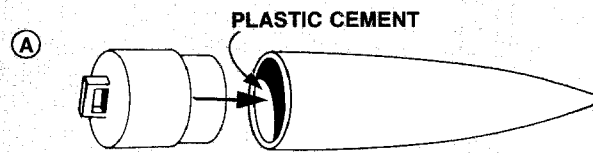
- 7**
- A. Cut shock cord mount from front of instructions and fold on dotted lines. Spread glue on section 1 and lay end of shock cord into glue. Fold over and apply glue to back of first section and exposed part of section 2. Lay shock cord as shown and fold mount over again.
- B. Clamp unit together with fingers until glue sets.



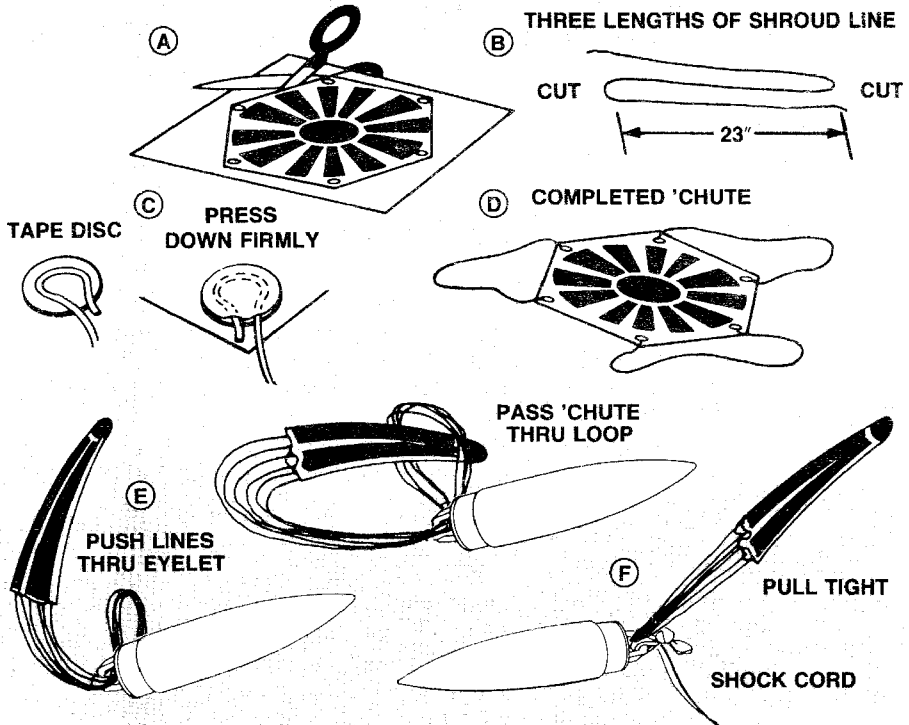
- 8**
- A. Apply glue to inside front of body tube to cover an area at least 1 inch to 2 inches from end. The glue area should be the same size as the shock cord mount. Press mount firmly into glue and hold until glue sets.



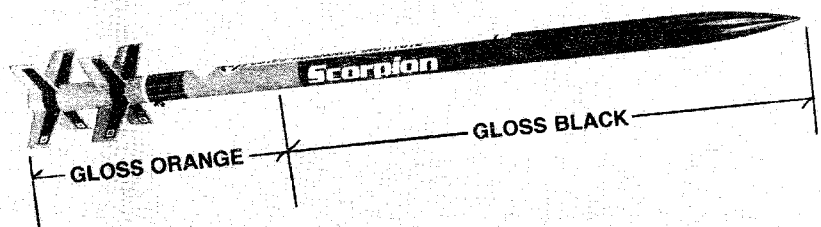
- 9**
- A. Apply plastic cement to inside edge of nose cone and then insert nose cone insert as shown.



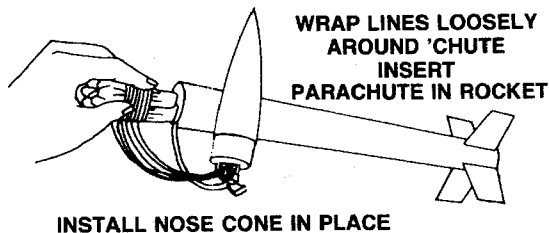
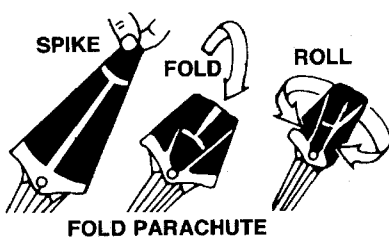
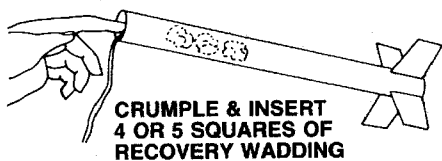
- 10**
- A. Cut out parachute on edge lines.
- B. Cut three 23 inch lengths of shroud line.
- C. Form small loops with shroud line ends and press onto sticky side of tape discs. Attach tape discs with line ends to top of parachute as shown.
- D. Press tape discs into place until both tape discs and parachute material are molded around shroud line loops.
- E. Pass shroud line loops through eyelet on nose cone. Pass parachute through loop ends and pull lines against the nose cone.
- F. Tie free end of shock cord to nose cone eyelet.



- 11**
- Paint entire model gloss orange. From front launch lug forward, paint gloss black. Decal: To apply decals, cut each out, dip in water for 20 seconds, and hold until it uncurls. Slip decal off backing sheet and onto model. Refer to photograph for decal placement.

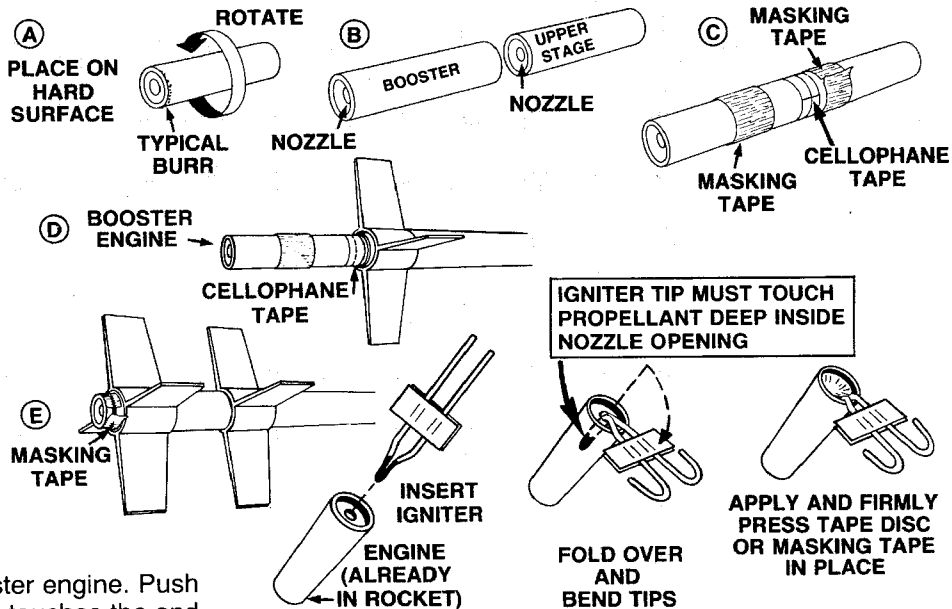


# ROCKET PREFLIGHT



# PREPARE ROCKET

- Select an upper stage engine and a booster engine. Remove any burrs from ends of engine as shown.
- Position the engines with the nozzle of the upper stage engine against the top end of the booster engine. Wrap a layer of cellophane tape tightly around the joint as shown.
- Wrap masking tape around the upper stage engine 1/4 inch up from the engine joint. Wrap one layer of masking tape around the mid section of booster engine.
- Insert the upper stage end of the engine unit into the upper stage engine mount. If the engine won't go in, remove a bit of masking tape. If the engine does not fit tightly, add more tape.
- Slide the first stage booster unit onto booster engine. Push the booster unit forward until its body tube touches the end of the upper stage fin unit. Align the fins on the booster unit with those on the upper stage unit. Secure the booster unit by wrapping masking tape around end of engine mount tube and the end of the engine as shown.



# 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: **Single Stage:** A8-3 (First Flight), B4-4, B4-6, B6-4, B6-6, C6-5, C6-7
  - Upper Stage:** A8-5 (First Flight), B4-6, B6-6, C6-7
  - Booster Stage:** A8-0 (First Flight), B6-0, C6-0

# FLYING YOUR SCORPION

Your Scorpion model has been designed as a high performance, two-stage, sport model. The upper-stage may also be flown by itself as single-stage model. When flying as a single-stage model, make sure the engine is securely held in place.

Obtain a copy of Estes Industries Classic Collection and study it before flying two-stage models.

Use care when installing engines. Make sure they face the correct direction for proper staging. Secure the engines tightly in place to insure proper recovery operation.

Launch in calm weather. The upper-stage will drift a long way in wind.

# 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.

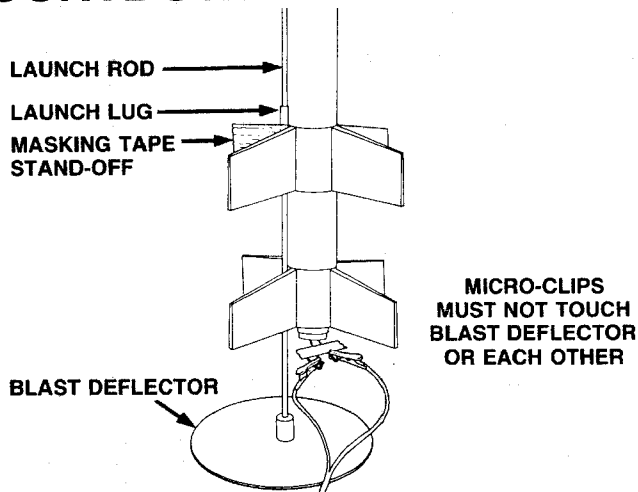
Always follow the Countdown and Launch Procedure.

# 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  
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# COUNTDOWN AND LAUNCH



- REMOVE SAFETY KEY to disarm the launch controller.
- Remove safety cap and slide launch lugs 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).
- INSERT SAFETY KEY to arm the launch controller.

**LAUNCH!!!** PUSH AND HOLD LAUNCH BUTTON UNTIL ENGINE IGNITES  
Remove safety key—Replace cap on rod.

# ESTES RESEARCH INSTITUTE

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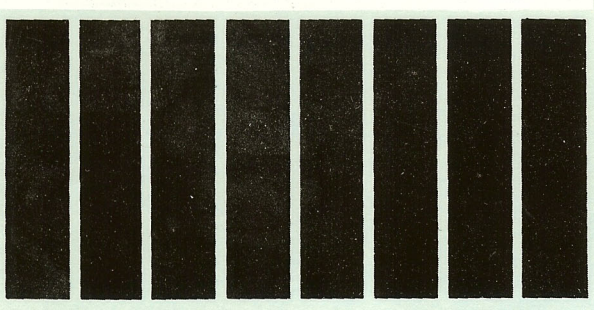
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Estes Scorpion #1333

The Body tube lengths are-

BT-50 18.0" Sustainer body tube

BT-50 1.50" Booster body tube

Engine tubes- (2X) BT-20 x 2.75"