



GUARDIAN

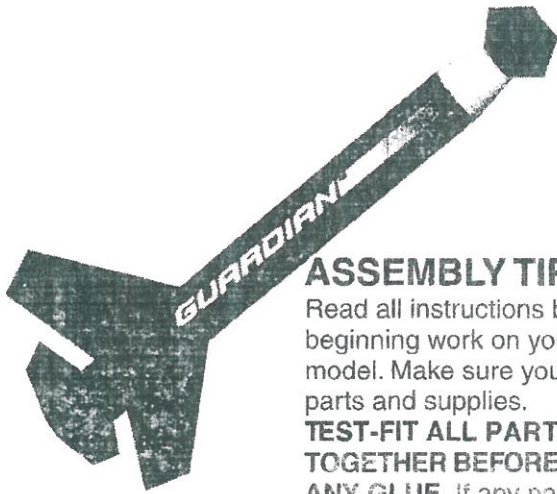
www.estesrockets.com

FLYING MODEL ROCKET KIT EST 2179
INSTRUCTIONS

Estes® Industries
1295 H Street
Penrose, CO 81240

KEEP FOR FUTURE REFERENCE

PRINTED IN CHINA

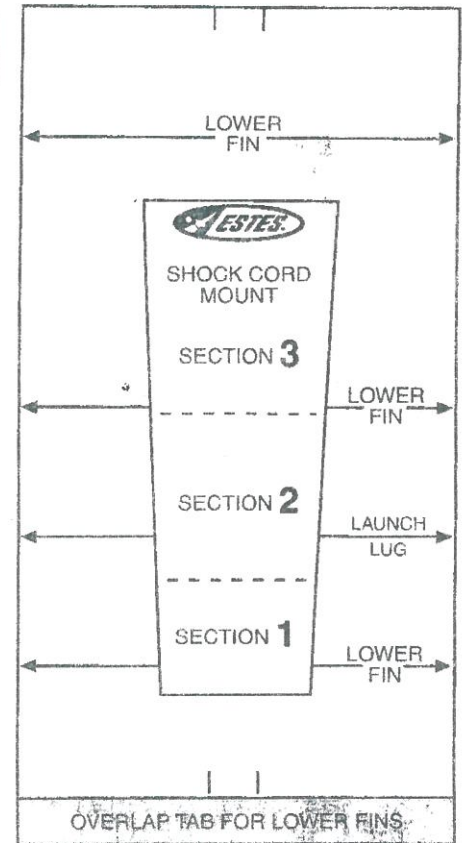
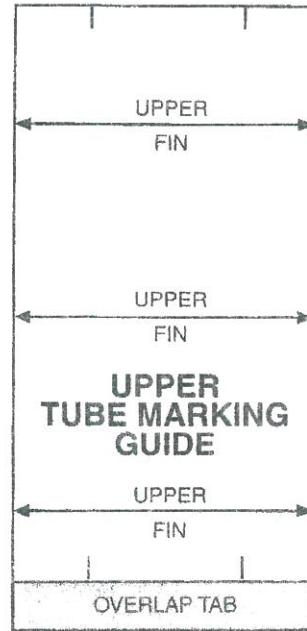


ASSEMBLY TIP

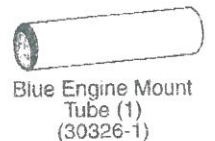
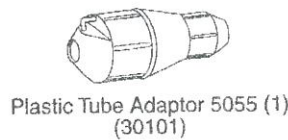
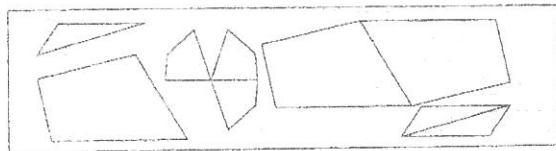
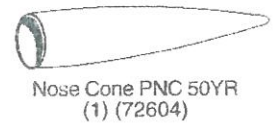
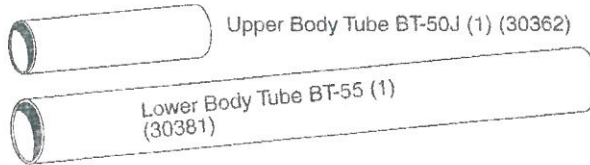
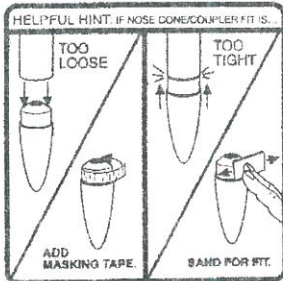
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. **TEST-FIT ALL PARTS TOGETHER BEFORE APPLYING ANY GLUE.** If any parts don't fit properly, sand as required for precision assembly.

PARTS

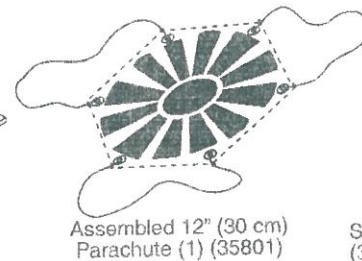
Locate the parts shown below and lay them out on the table in front of you. **DO NOT USE THIS DRAWING TO ASSEMBLE YOUR ROCKET.**



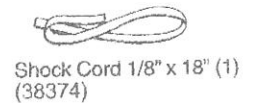
LOWER TUBE MARKING GUIDE AND SHOCK CORD MOUNT



Die-cut Balsa Sheet (1) (60415)

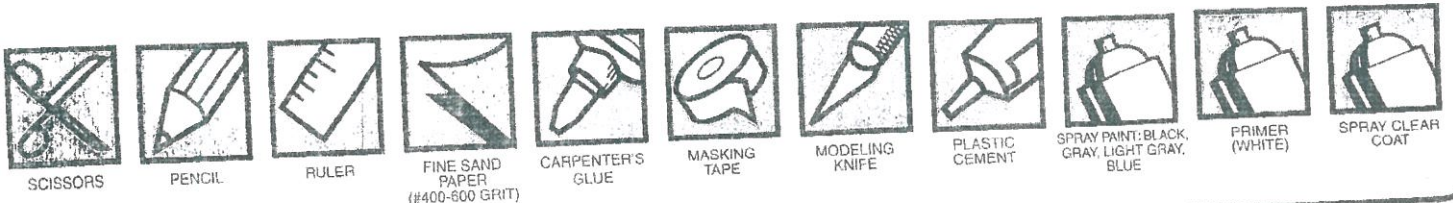


Decal Sheet (1) (60379)

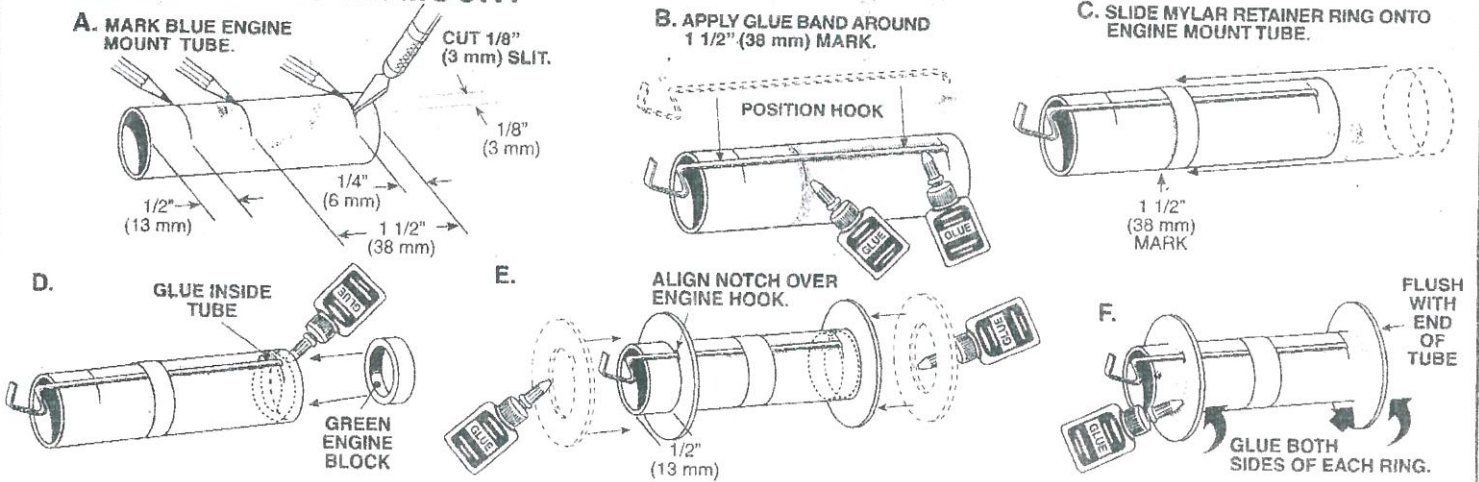


SUPPLIES

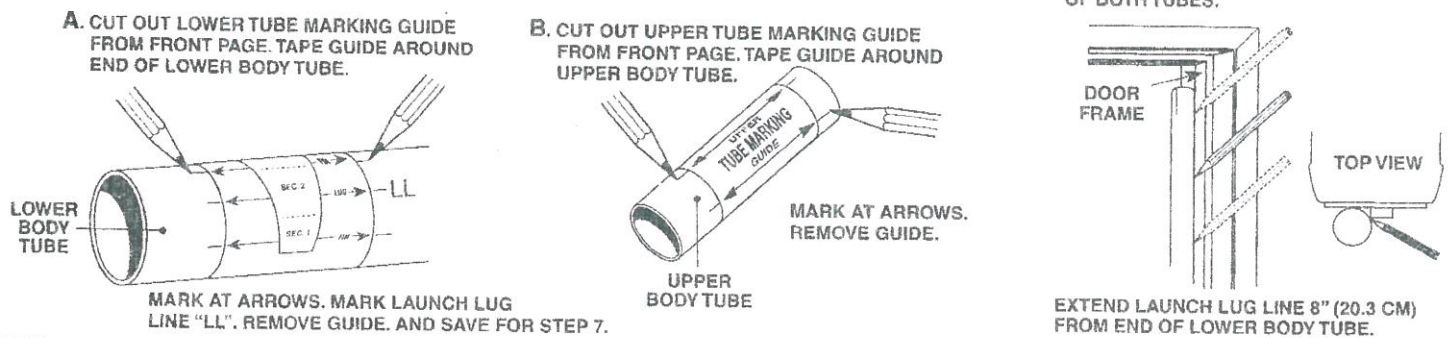
In addition to the parts included in the kit you will also need:



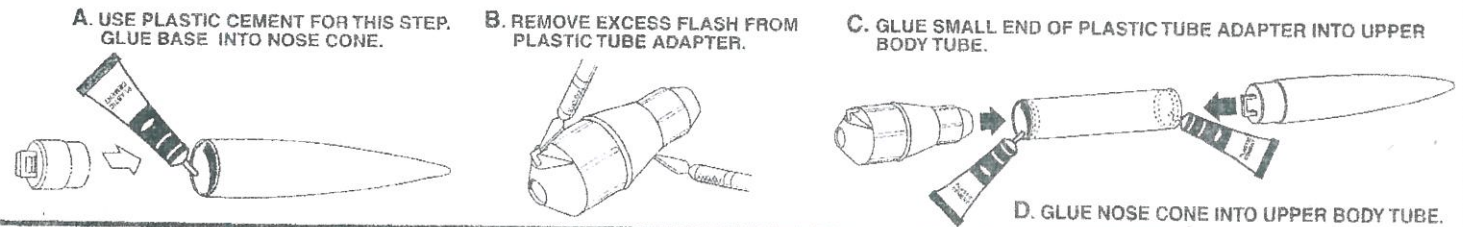
1. ASSEMBLE ENGINE MOUNT



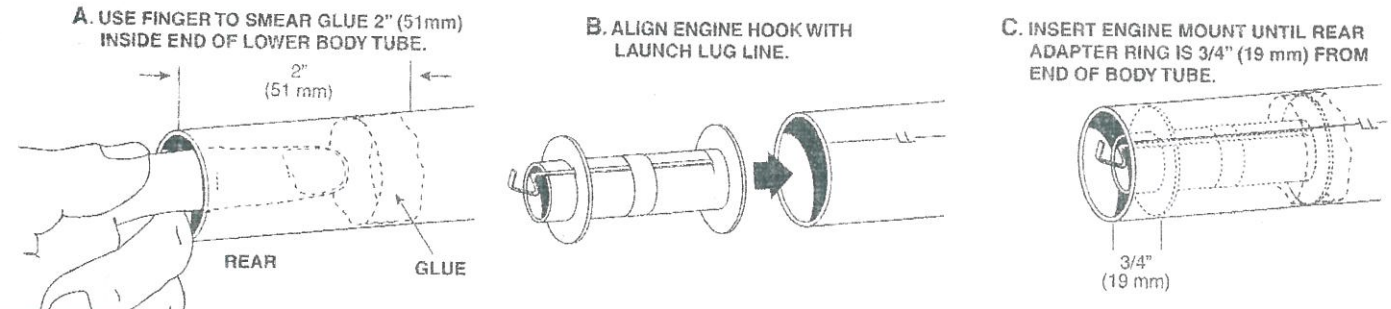
2. MARK FIN AND LAUNCH LUG LINES



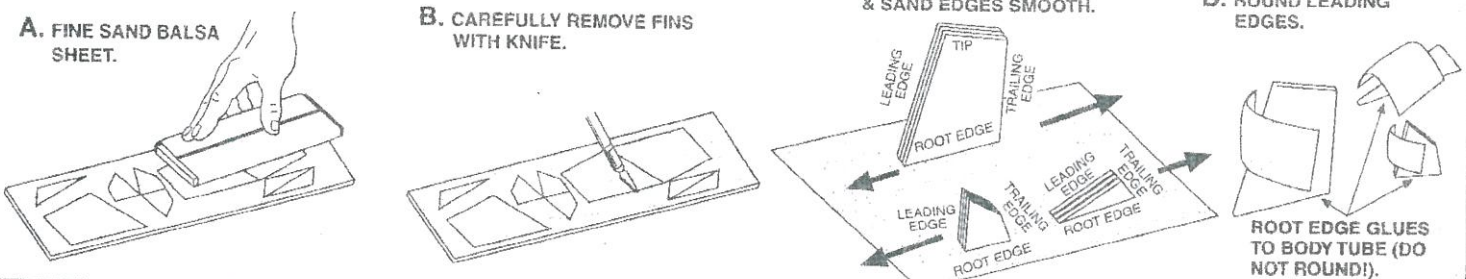
3. ASSEMBLE NOSE CONE SECTION



4. INSERT ENGINE MOUNT

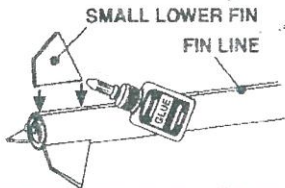


5. PREPARE FINS

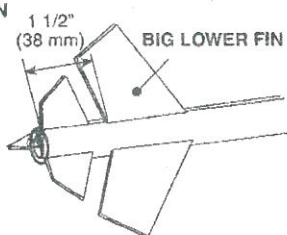


6. ATTACH FINS

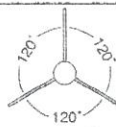
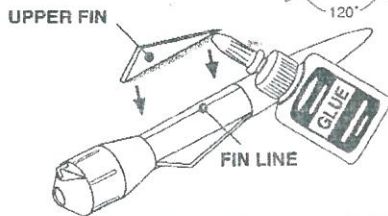
A. APPLY THIN LAYER OF GLUE. WAIT 1 MINUTE. APPLY 2ND THIN LAYER AND ATTACH FIN CENTERED ON FIN LINE. REPEAT FOR OTHER FINS.



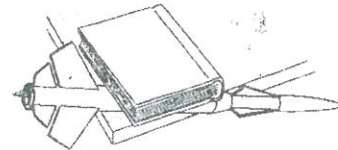
B. REPEAT STEP A FOR BIG LOWER FINS.



C. REPEAT STEP A FOR UPPER FINS.



D. SUPPORT ROCKET UNTIL GLUE DRIES.



NOTE: FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT.

7. ATTACH SHOCK CORD MOUNT

A. CUT OUT SHOCK CORD MOUNT FROM LOWER TUBE MARKING GUIDE.



B. FOLD FORWARD. SMEAR GLUE.

C. FOLD FORWARD. SMEAR GLUE.

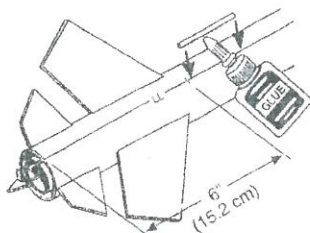
D. SQUEEZE TIGHTLY.

E. GLUE MOUNT INSIDE FRONT OF LOWER BODY TUBE.

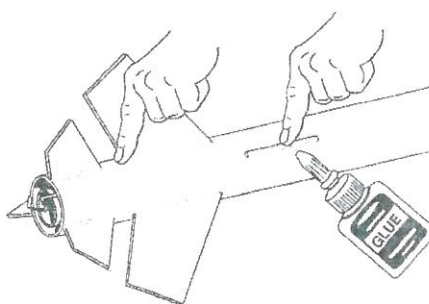
HOLD UNTIL GLUE SETS.

8. ATTACH LAUNCH LUG AND APPLY FILLETS

A. GLUE LAUNCH LUG TO LOWER BODY TUBE AS SHOWN.



B. APPLY GLUE FILLETS TO ALL FIN AND LAUNCH LUG/BODY TUBE JOINTS.

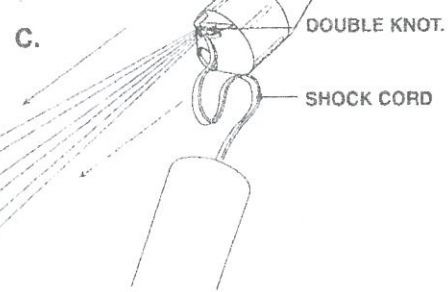
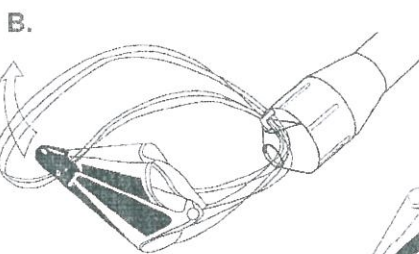
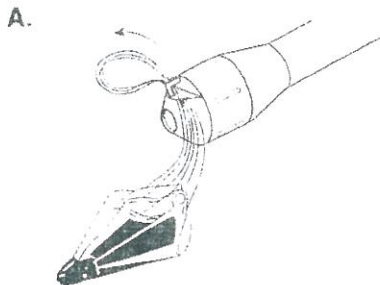


C. SMOOTH WITH FINGERTIP.

D. ALLOW GLUE TO DRY.

NOTE: PROCEED WITH THE NEXT STEP ONLY AFTER THE GLUE ON FINS AND LAUNCH LUG IS THOROUGHLY DRY.

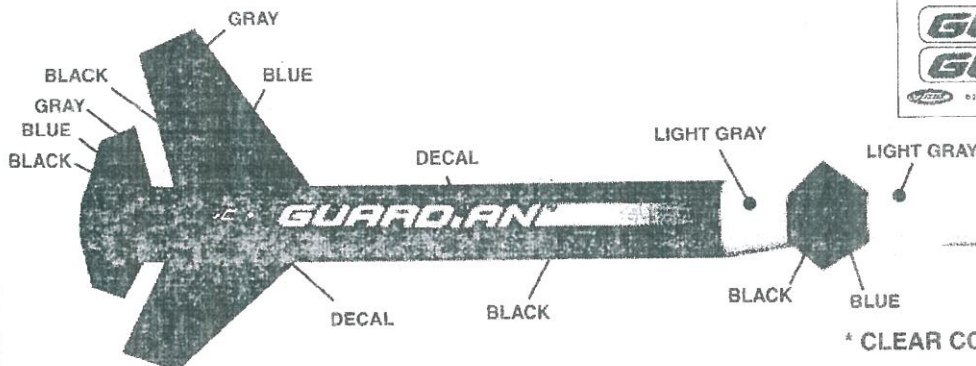
9. ATTACH PARACHUTE



PAINT SCHEME

FIRST SPRAY ROCKET WITH WHITE PRIMER, LET DRY AND SAND. REPEAT UNTIL ROCKET IS SMOOTH.

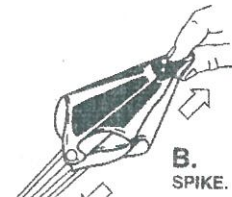
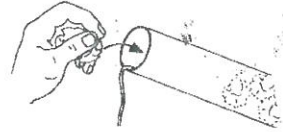
DECAL



* CLEAR COAT ENTIRE ROCKET WHEN PAINT DRIES.

ROCKET PREFLIGHT

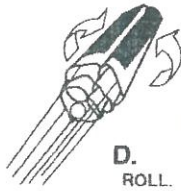
A. INSERT 3 OR 4 LOOSELY CRUMPLED SQUARES OF RECOVERY WADDING.



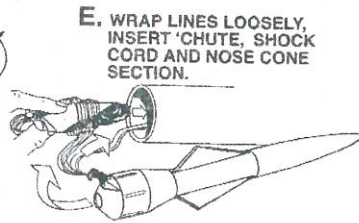
B. SPIKE.



C. FOLD.



D. ROLL.



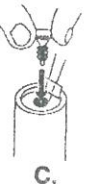
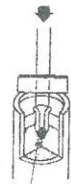
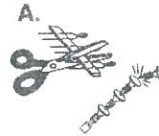
E. WRAP LINES LOOSELY, INSERT CHUTE, SHOCK CORD AND NOSE CONE SECTION.

ENGINE PREP

WARNING: FLAMMABLE

To avoid serious injury, read instructions & NAR Safety Code included with engines.

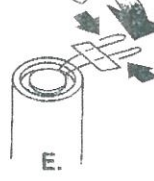
PREPARE YOUR ENGINE ONLY WHEN YOU ARE OUTSIDE AT THE LAUNCH SITE PREPARING TO LAUNCH! If you do not use your prepared engine, remove the igniter before storing your engine.



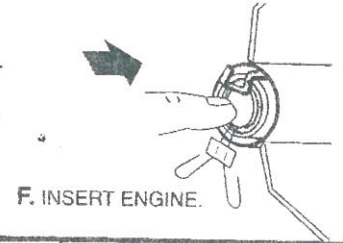
B. TIP MUST TOUCH PROPELLANT.



D.



E.

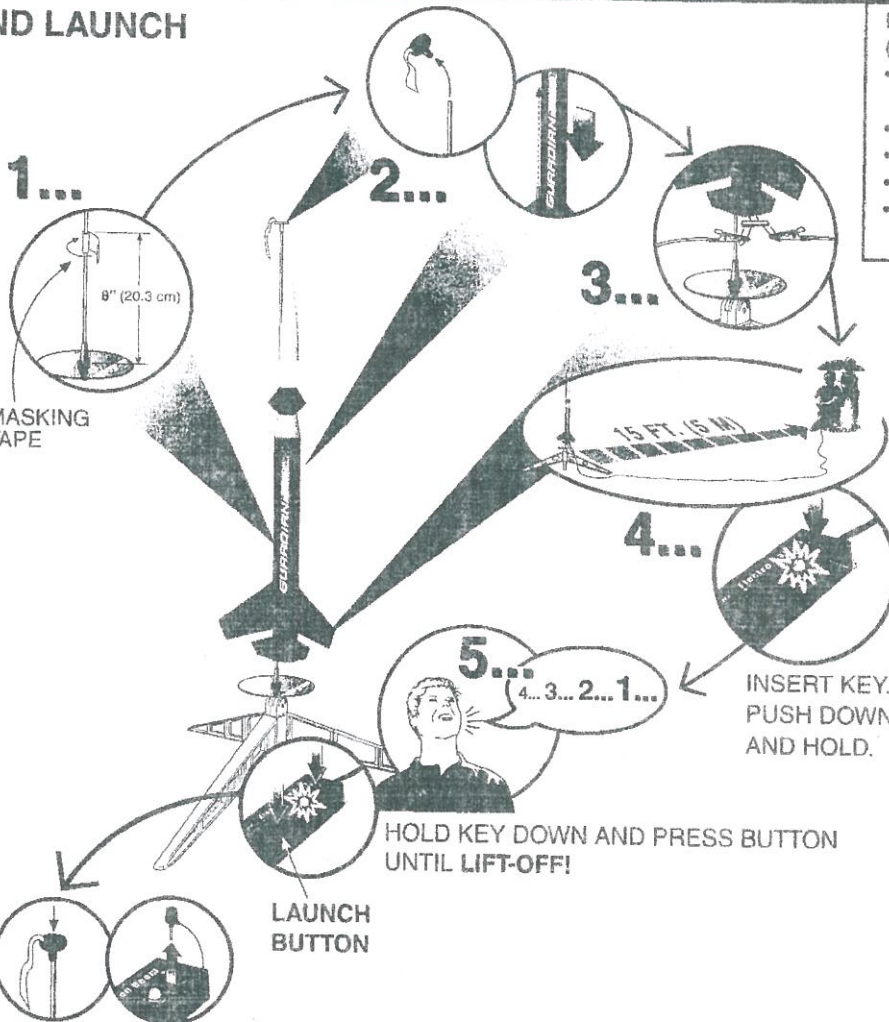


F. INSERT ENGINE.

COUNTDOWN AND LAUNCH



KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!



LAUNCH SUPPLIES

- (Sold Separately)
- Estes® Porta Pad® II and Electron Beam® Controller
 - Recovery Wadding
 - Igniters (with Engines)
 - Igniter Plugs (with Engines)
 - Estes® Engines: A8-3, B4-4, B6-4, B6-6, C6-5

PRECAUTIONS

NAR Safety Code



NO DRY GRASS OR WEEDS

FLYING YOUR ROCKET

Choose a large field (500 ft. [152 m] square) free of dry weeds and brown grass. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great. Launch only with little or no wind and good visibility.

Always follow the National Association of Rocketry (NAR) SAFETY CODE.

MISFIRES

TAKE THE KEY OUT OF THE CONTROLLER. WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET! Disconnect the igniter clips and remove the engine. Take the plug and igniter out of the engine. If the igniter has burned, it worked but did not ignite the engine because it was not touching the propellant inside the engine. Put a new igniter all the way inside the engine without bending it. Push the plug in place. Repeat the steps under Countdown and Launch.