



ESTES® INDUSTRIES
1295 H Street
Penrose, CO 81240
Printed in China

LAUNCHABLES™



EST 1236

X-Flyer™ #1 Model Rocket Instructions

KEEP FOR FUTURE REFERENCE

SUPPLIES REQUIRED:



PLASTIC CEMENT



PENCIL



RULER



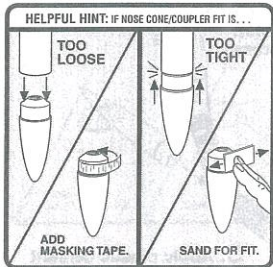
1/8" LAUNCH ROD

ASSEMBLY TIP: Read all the instructions before beginning work on your model. TEST FIT all parts before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

X-FLYER No 1

PARTS LAYOUT

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!



BLUE NOSE CONE (1)
72017

NOSE CONE INSERT (1)
72603-9'

UPPER BODY TUBE (1)
60228

BLUE PLASTIC COUPLER WITH LAUNCH LUG (1)
71073

CAVITY CAP (1)
71074

SHOCK CORD (1)
38374

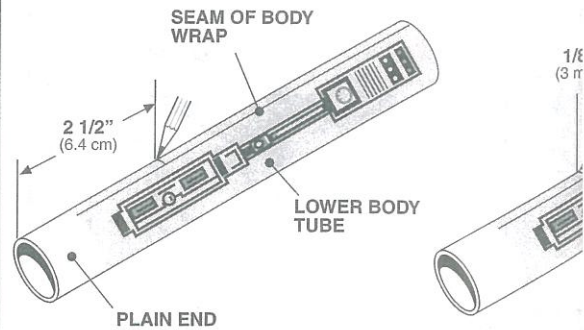
LOWER BODY TUBE (1)
60229

BLUE FIN UNIT (1)
72607

ENGINE HOOK (1)
35021

ASSEMBLED PARACHUTE 12" (30 cm) (1)
35801

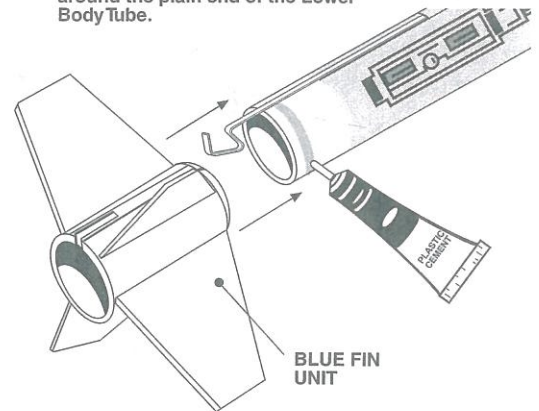
1. LOWER BODY TUBE ASSEMBLY



A. Make a mark 2 1/2" (6.4 cm) from the plain end of the Lower Body Tube along the seam of the body wrap.

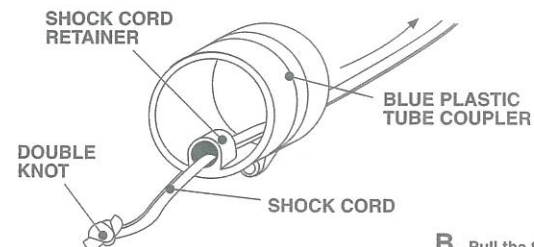
B. Make a 1/8" (3 mm) slit at the mark along the seam of the body wrap using a hobby knife.

D. Apply a thin layer of plastic cement around the plain end of the Lower Body Tube.

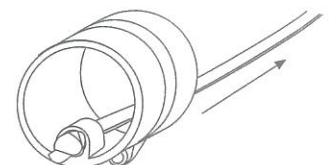


2. ATTACHING SHOCK CORD

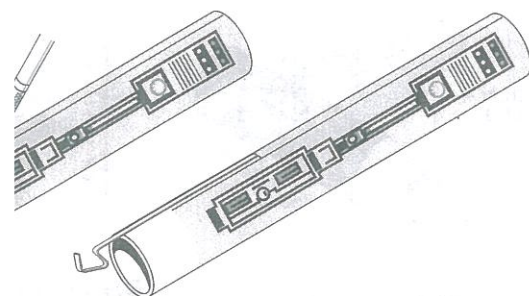
A. Tie a double knot in one end of the Shock Cord. Thread the non-tied end of the Shock Cord through the shock cord retainer inside the Blue Plastic Coupler.



B. Pull the Shock Cord until the knot is in the shock cord retainer.



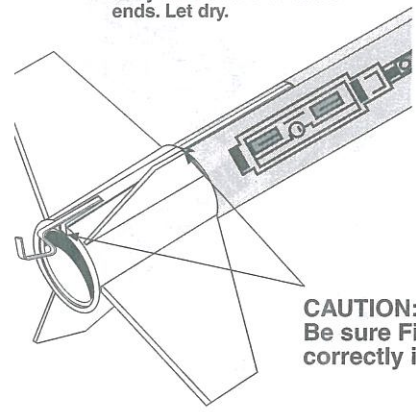
PLY



C. Insert Engine Hook into the slit as shown.

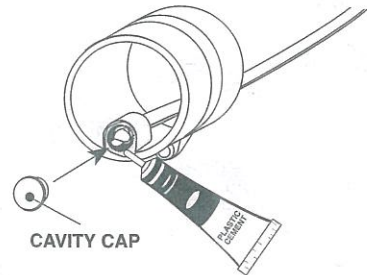
wide as the rap

E. Position the notch in the Blue Fin Unit over the Engine Hook and push the Fin Unit onto the body tube until even at the ends. Let dry.



CAUTION: Be sure Fin Unit is correctly installed!

C. Apply plastic cement around the inside of the retainer and press the Cavity Cap in place. Let dry.



CAVITY CAP



FINISHED ASSEMBLY

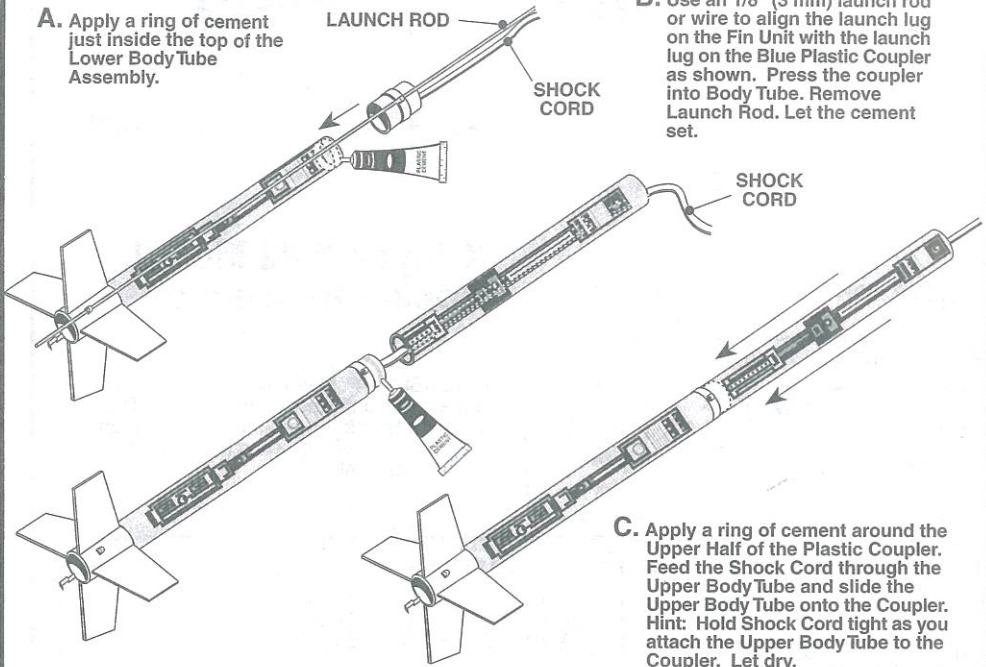
3. ATTACHING UPPER BODY TUBE

A. Apply a ring of cement just inside the top of the Lower Body Tube Assembly.

LAUNCH ROD

SHOCK CORD

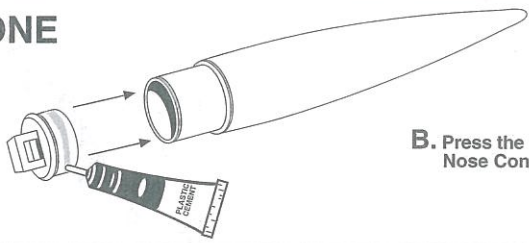
B. Use an 1/8" (3 mm) launch rod or wire to align the launch lug on the Fin Unit with the launch lug on the Blue Plastic Coupler as shown. Press the coupler into Body Tube. Remove Launch Rod. Let the cement set.



C. Apply a ring of cement around the Upper Half of the Plastic Coupler. Feed the Shock Cord through the Upper Body Tube and slide the Upper Body Tube onto the Coupler. Hint: Hold Shock Cord tight as you attach the Upper Body Tube to the Coupler. Let dry.

4. NOSE CONE

A. Apply cement around the flange of the Nose Cone Insert.



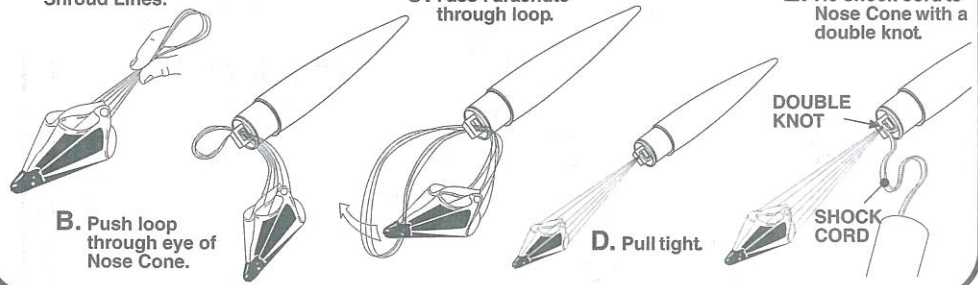
B. Press the insert into the Nose Cone. Let dry.

5. ATTACHING PARACHUTE & SHOCK CORD

A. Form loop with Shroud Lines.

C. Pass Parachute through loop.

E. Tie shock cord to Nose Cone with a double knot.



B. Push loop through eye of Nose Cone.

D. Pull tight.

DOUBLE KNOT

SHOCK CORD

6. PREPARING RECOVERY SYSTEM

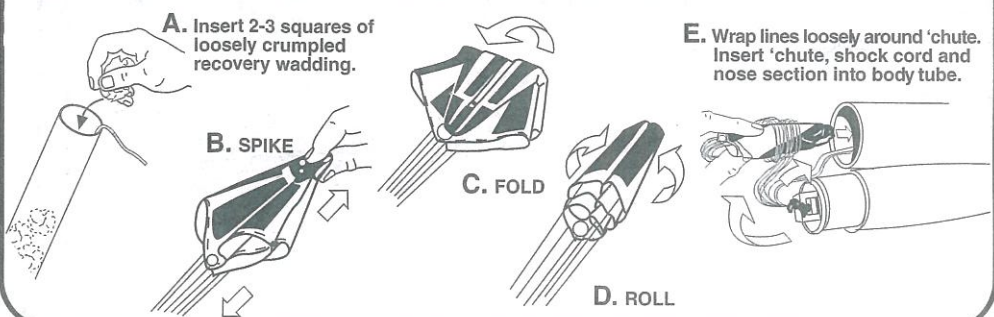
A. Insert 2-3 squares of loosely crumpled recovery wadding.

B. SPIKE

C. FOLD

D. ROLL

E. Wrap lines loosely around 'chute. Insert 'chute, shock cord and nose section into body tube.





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X-Flyer™ #2 Model Rocket Instructions

KEEP FOR FUTURE REFERENCE

SUPPLIES REQUIRED:



PLASTIC CEMENT



PENCIL



RULER



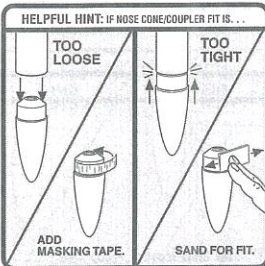
1/8" LAUNCH ROD

ASSEMBLY TIP: Read all the instructions before beginning work on your model. **TEST FIT** all parts before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

X-FLYER No. 2

PARTS LAYOUT

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!**



BLACK NOSE CONE (1)
72018

UPPER BODY TUBE (1)
3" (7.6 cm)
60230

BLACK TUBE ADAPTER (1)
72613

MIDDLE BODY TUBE (1)
5" (12.7 cm)
60231

BLACK PLASTIC COUPLER WITH LAUNCH LUG (1)
30202

LOWER BODY TUBE (1)
4" (10.2 cm)
60232

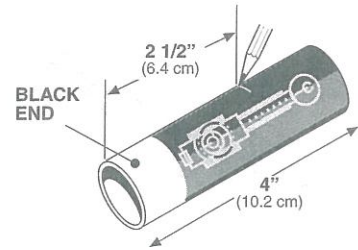
CAVITY CAP (1)
34061

BLACK FIN UNIT (1)
72612

ENGINE HOOK (1)
35021

ASSEMBLED PARACHUTE 12" (1)
35801

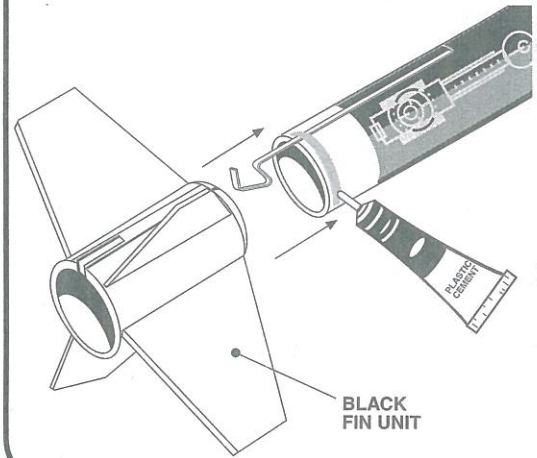
1. LOWER BODY TUBE ASS



A. Make a mark 2 1/2" (6.4 cm) from the plain end of the Lower Body Tube along the seam of the body wrap.

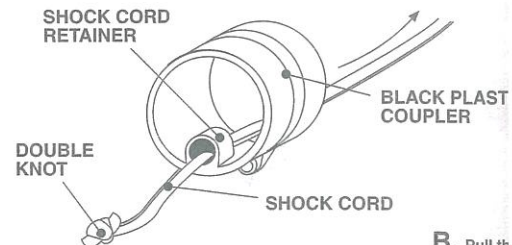
B. Make a 1 mark across wrap use

D. Apply a thin layer of plastic cement around the plain end of the Lower Body Tube.

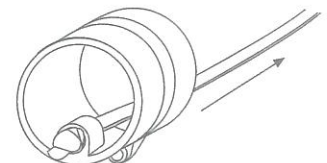


2. ATTACHING SHOCK CORD

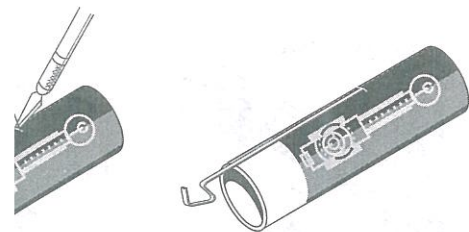
A. Tie a double knot in one end of the Shock Cord. Thread the non-tied end of the Shock Cord through the shock cord retainer inside the Black Plastic Coupler.



B. Pull the Cord to knot in the re



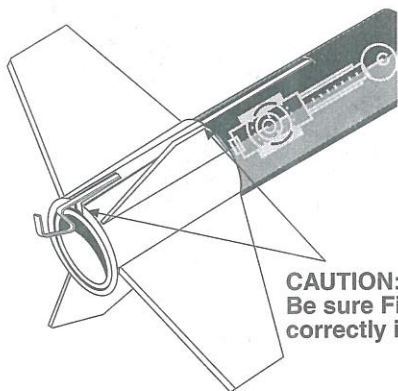
PLY



mm) wide slit at the seam of the body tube with a hobby knife.

C. Insert Engine Hook into the slit as shown.

E. Position the notch in the Black Fin Unit over the Engine Hook and push the fin unit onto the body tube until even at the ends. Let dry.



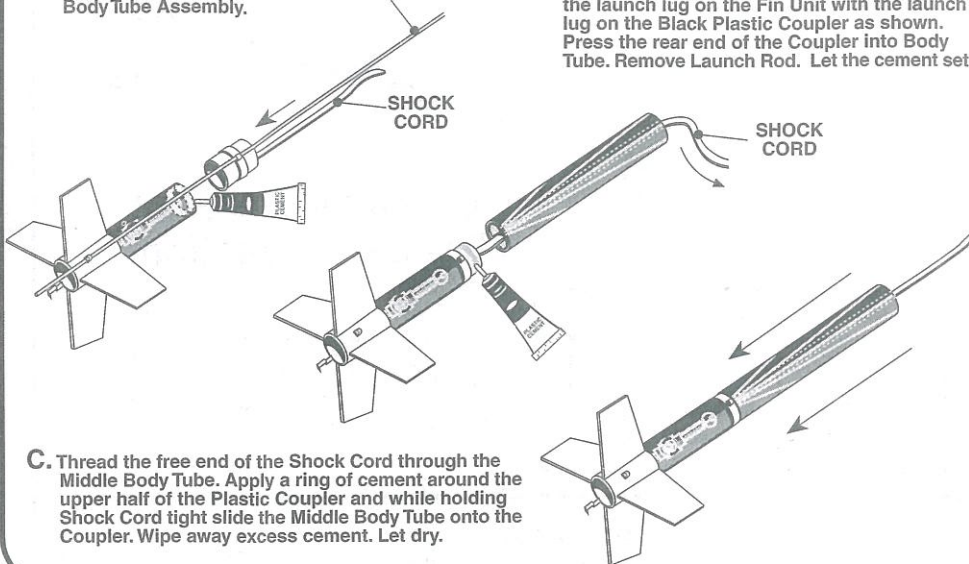
CAUTION: Be sure Fin Unit is correctly installed!

3. ATTACHING UPPER BODY TUBE

A. Apply a ring of cement just inside the top of the Lower Body Tube Assembly.

LAUNCH ROD

B. Use an 1/8" (3 mm) launch rod or wire to align the launch lug on the Fin Unit with the launch lug on the Black Plastic Coupler as shown. Press the rear end of the Coupler into Body Tube. Remove Launch Rod. Let the cement set.



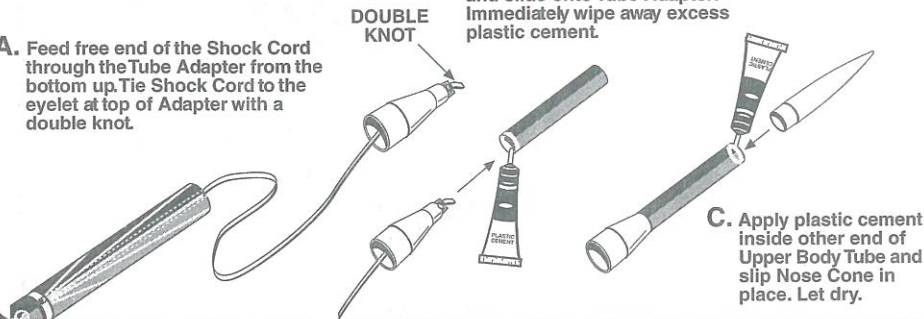
C. Thread the free end of the Shock Cord through the Middle Body Tube. Apply a ring of cement around the upper half of the Plastic Coupler and while holding Shock Cord tight slide the Middle Body Tube onto the Coupler. Wipe away excess cement. Let dry.

4. NOSE CONE

A. Feed free end of the Shock Cord through the Tube Adapter from the bottom up. Tie Shock Cord to the eyelet at top of Adapter with a double knot.

DOUBLE KNOT

B. Apply plastic cement just inside one end of the Upper Body Tube, and slide onto Tube Adapter. Immediately wipe away excess plastic cement.



C. Apply plastic cement inside other end of Upper Body Tube and slip Nose Cone in place. Let dry.

5. ATTACHING PARACHUTE & SHOCK CORD

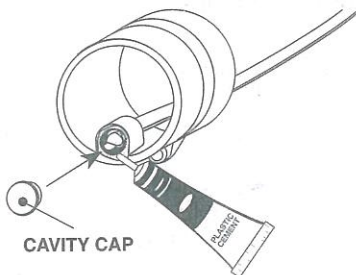
A. Form loop with Shroud Lines.

C. Pass Parachute through loop.

C. Apply plastic cement around the inside of the retainer and press the Cavity Cap in place. Let dry.

B. Lay Shock Cord over loop.

D. Position 1" (25 mm) from end and pull tight.

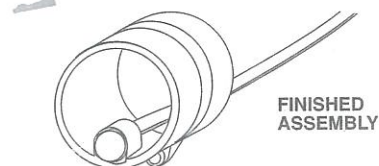


CAVITY CAP

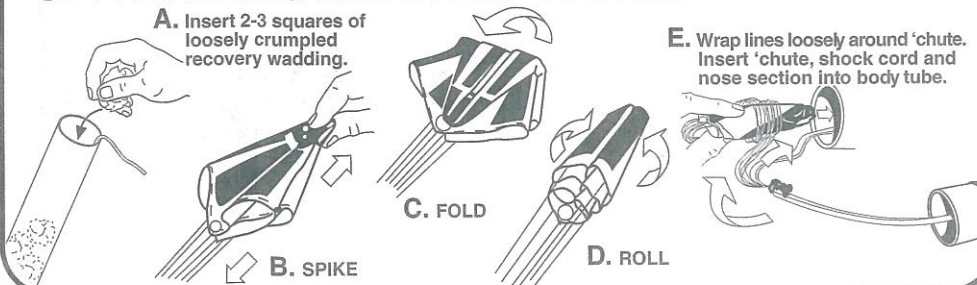
6. PREPARING RECOVERY SYSTEM

A. Insert 2-3 squares of loosely crumpled recovery wadding.

E. Wrap lines loosely around 'chute. Insert 'chute, shock cord and nose section into body tube.



FINISHED ASSEMBLY



C. FOLD

D. ROLL

NAR MODEL SAFETY CODE

(Basic Version, Eff. Feb. 2001)

1. **MATERIALS** - I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.
2. **MOTORS** - I will use only certified, commercially-made model rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer.
3. **IGNITION SYSTEM** - I will launch my rockets with an electrical launch system and electrical motor igniters.
4. **LAUNCH SAFETY** - I will use a countdown before launch, and will ensure that everyone is paying attention and is a safe distance of at least 15 feet away when I launch rockets with D motors or smaller, and 30 feet when I launch larger rockets.
5. **MISFIRES** - If my rocket does not launch when I press the button of my electrical launch system, I will remove the launcher's safety interlock or disconnect its battery before allowing anyone to approach the rocket.
6. **LAUNCHER** - I will launch my rocket from a launch rod, tower, or rail to ensure that the rocket flies nearly straight up. I will use a blast deflector to prevent the motor's exhaust from hitting the ground, and I will cap the end of my launch rod when it is not in use.
7. **SIZE** - If my model rocket weighs more than one pound (453 grams) at liftoff or has more power than a single G motor, I will check and comply with Federal Aviation Administration regulations before flying.
8. **FLIGHT SAFETY** - I will not launch my rocket at targets or near airplanes, and will not put any flammable or explosive payload in my rocket.
9. **LAUNCH SITE** - I will launch my rocket outdoors, in an open area and in safe weather conditions, (*LITTLE OR NO WIND) and will ensure that there is no dry grass close to the launch pad (*OR IN THE FLYING FIELD).
10. **RECOVERY SYSTEM** - I will use a recovery system such as a streamer or parachute in my rocket so that it returns safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.
11. **RECOVERY SAFETY** - I will not attempt to recover my rocket from power lines, tall trees, or other dangerous places.

*ADDITIONAL ESTES® REQUIREMENTS



FULL ONE-YEAR WARRANTY

This Estes® product is warranted against defects in materials or workmanship for one year from the date of the original purchase. If this Estes® product, because of a manufacturing mistake, malfunctions or proves to be defective within the one-year warranty period it will be repaired or replaced, at Estes® option and at no charge to you, provided it is returned to Estes® with proof of purchase.

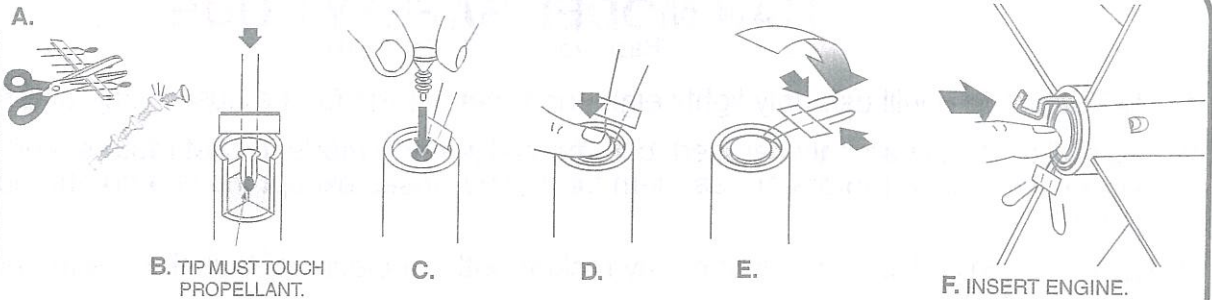
This warranty does not cover incidental or consequential damage to persons or property caused by the use, abuse, misuse, failure to comply with operating instructions or improper storage of the warranted products. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For repair or replacement under this warranty, please return the defective part of your Estes product with proof of purchase to: Estes® Industries, Customer Service Department, 1295 H Street, Penrose, Colorado 81240.

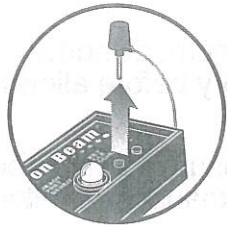
ENGINE PREP

WARNING: FLAMMABLE
Before proceeding read instructions & NAR Safety Code included with engines.

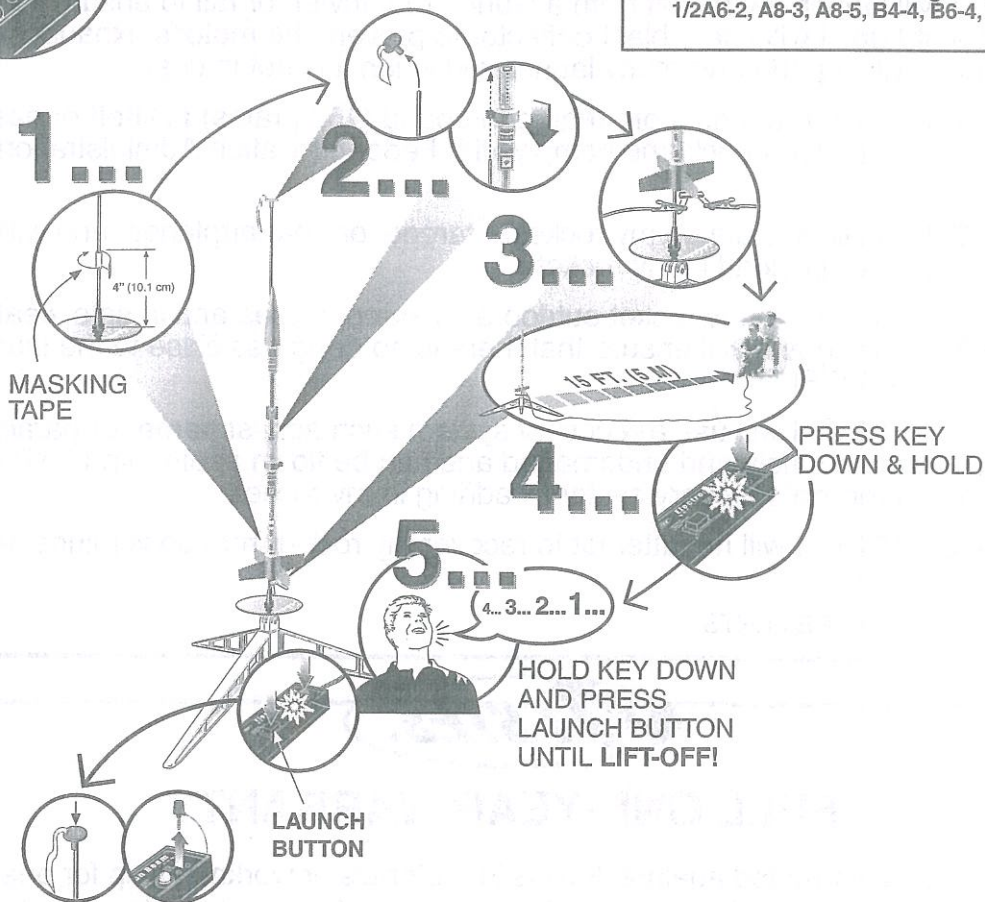
PREPARE YOUR ENGINE ONLY WHEN YOU ARE OUTSIDE AT THE LAUNCH SITE PREPARING TO LAUNCH!
If you do not use your prepared engine, remove the igniter before storing your engine.



COUNTDOWN AND LAUNCH



KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!



LAUNCH SUPPLIES (Sold Separately)

- Estes® Porta Pad® II Launch Pad
- Electron Beam® Controller
- Recovery Wadding
- Igniters (with Engines)
- Igniter Plugs (with Engines)
- Estes® Recommended Engines:
1/2A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

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.