



Estes Industries
The World Leader in
Model Rocketry
1295 H Street
Penrose, CO 81240 USA

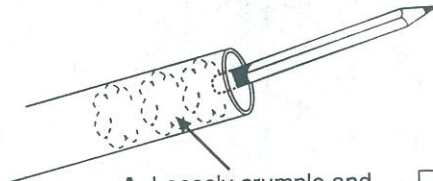
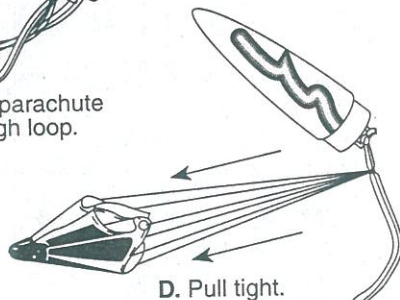
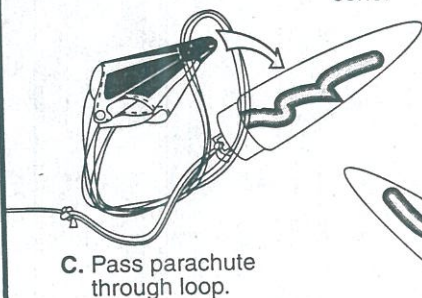
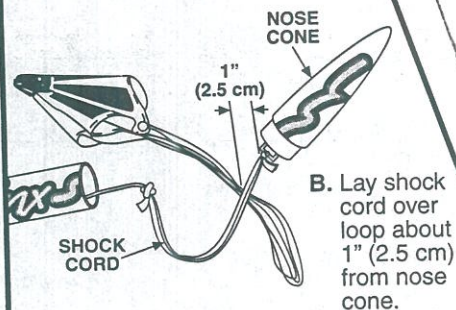
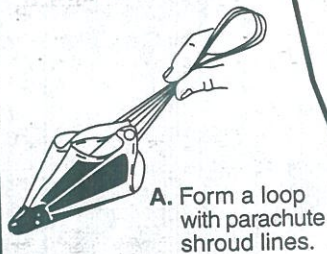
EST 1809
(9-98) 36399



READY TO FLY FLYING MODEL ROCKET INSTRUCTIONS

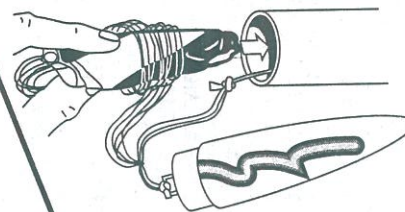
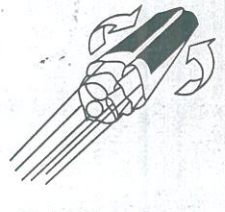
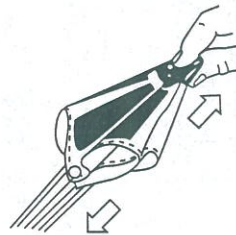
2. PREPARE PARACHUTE FOR FLIGHT

1. ROCKET PARACHUTE ATTACHMENT

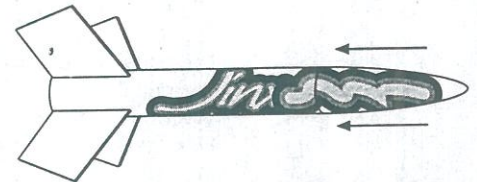


A. Loosely crumple and insert three squares of recovery wadding into rocket body.

IMPORTANT:
Wadding must be in place and slide freely for rocket to work properly!



E. Wrap shroud lines loosely around rocket chute. Insert parachute into rocket. Parachute should slide easily into body tube. If fit is too tight, unfold and repack.



F. For proper alignment, always insert nose cone so that decal lines up.

3. PREPARE ENGINE FOR FLIGHT

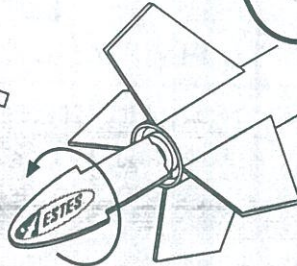
WARNING:

BEFORE PROCEEDING, READ INSTRUCTIONS AND NAR SAFETY CODE INCLUDED WITH ENGINES. PREPARE YOUR ENGINE ONLY WHEN YOU ARE OUTSIDE AT THE LAUNCH SITE PREPARING TO LAUNCH!

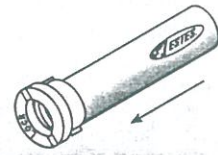
If you do not use your prepared engine, remove the igniter before storing your engine.



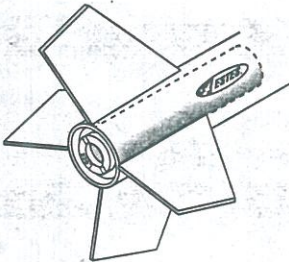
A. Separate Igniter and igniter plug.



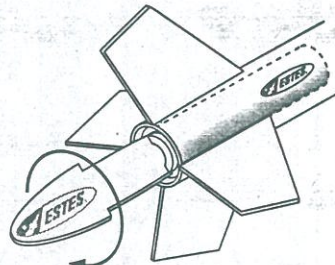
B. Use the engine key to twist off retainer ring at rear of rocket.



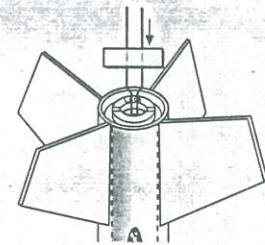
C. Slide the nozzle end of engine into retainer ring as shown.



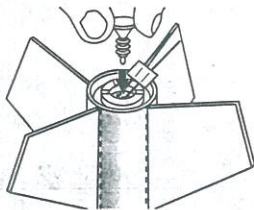
D. Slide the engine all the way into rear of rocket.



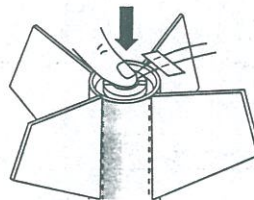
E. Use engine key to twist retainer ring into locked position. (Do not twist too hard.)



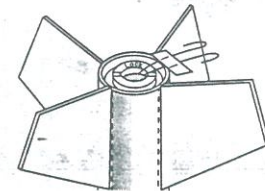
F. Hold rocket upside down, drop in igniter. Igniter must touch propellant.



G. Insert igniter plug.



H. Firmly push all the way in.



I. Bend igniter wires back as shown.

LAUNCH SUPPLIES

To launch your rocket, you will need the following:

- Launch Pad (Estes Porta-Pad® II)
- Launch Controller (Estes Electron Beam®)
- Recommended Estes Engines: 1/2A3-4T, A3-4T, A10-3T.

Use the 1/2A3-2T for your first flight to become familiar with your rocket's flight pattern.

- Recovery Wadding (EST 302274)
- Igniters and Igniter Plugs (included with Estes engines)

Use only Estes products to launch this rocket.

PROJECTED ALTITUDE

Engine	Feet	Meters
1/2A3-2T	72	22
A3-4T	203	62
A10-3T	209	64

TIPS FOR FLYING YOUR ROCKET

- Choose a large field away from power lines, buildings, 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.
- Launch area must be free of dry weeds and brown grass.
- Launch only during calm weather with little or no wind (wind speed less than 20 mph - 30 kph) 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 or baby powder to avoid sticking.
- Always follow the National Association of Rocketry (NAR) MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities. The safety code is enclosed with this kit.

COUNTDOWN AND LAUNCH

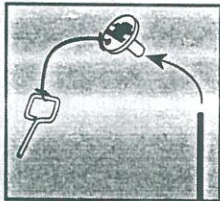
10...

Safety key must not be in launch controller.

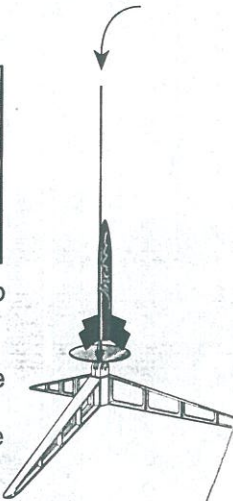
The safety cap with safety key attached should already be on the launch rod.



9...

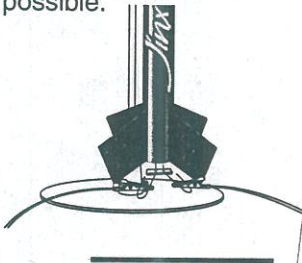


Remove safety cap from launch rod, slide launch lugs over rod. Make sure rocket slides freely and micro-clips are clean for good electrical contact.



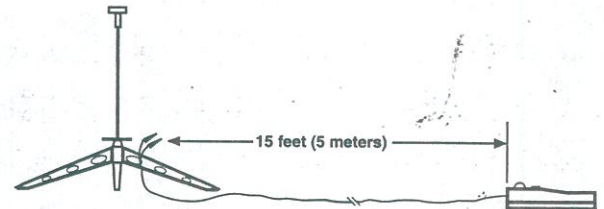
8...

Attach micro-clips to the igniter wires. Arrange the micro-clips so they do not touch each other or the metal blast deflector. Attach micro-clips as close to protective tape on igniter as possible.



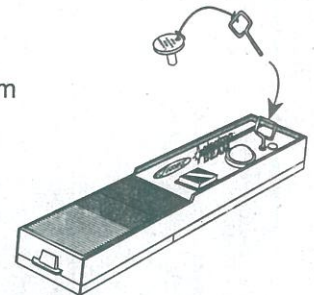
7...

Move everyone 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.



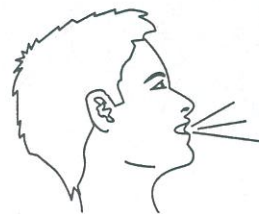
5...

Start audible countdown.

4...3...2...1...

LAUNCH!

Push and hold button until engine ignites. For safety, immediately remove safety key from launch controller and replace safety cap on launch rod.



MISFIRES

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. Broken or chipped coating will not affect the performance of the igniter. Reinstall the igniter plug as illustrated previously. Repeat the countdown and launch procedure.