ESTES INDUSTRIES
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EST 0834

X-RAY™

E2X® SERIES

ALMOST READY TO FLY

FLYING MODEL ROCKET KIT INSTRUCTIONS

TOOLS REQUIRED:

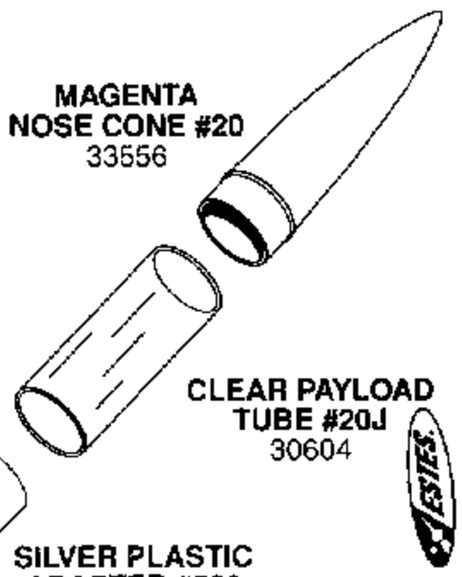
PENCIL, TUBE TYPE PLASTIC CEMENT, HOBBY KNIFE, MASKING TAPE, SCISSORS,

ALL GLUED AREAS ARE SHADED IN GRAY

PARTS LAYOUT

ENGINE HOOK #3A
35023

SHOCK CORD #1/8 x 9
38372



MAGENTA NOSE CONE #20
33556

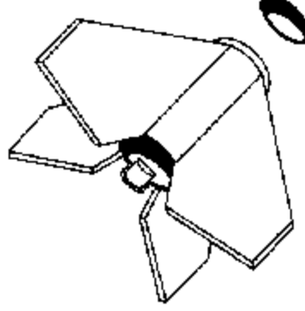
CLEAR PAYLOAD TUBE #20J
30604

STREAMER #12
38275

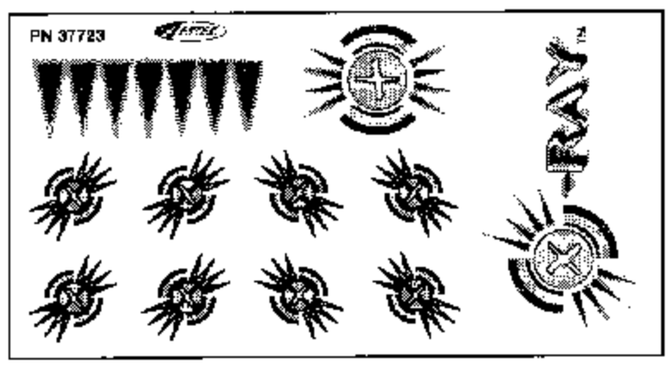
SILVER PLASTIC ADAPTER #520
33554

MAGENTA PLASTIC LAUNCH LUG #5
33561

BLACK BODY TUBE #5
30291



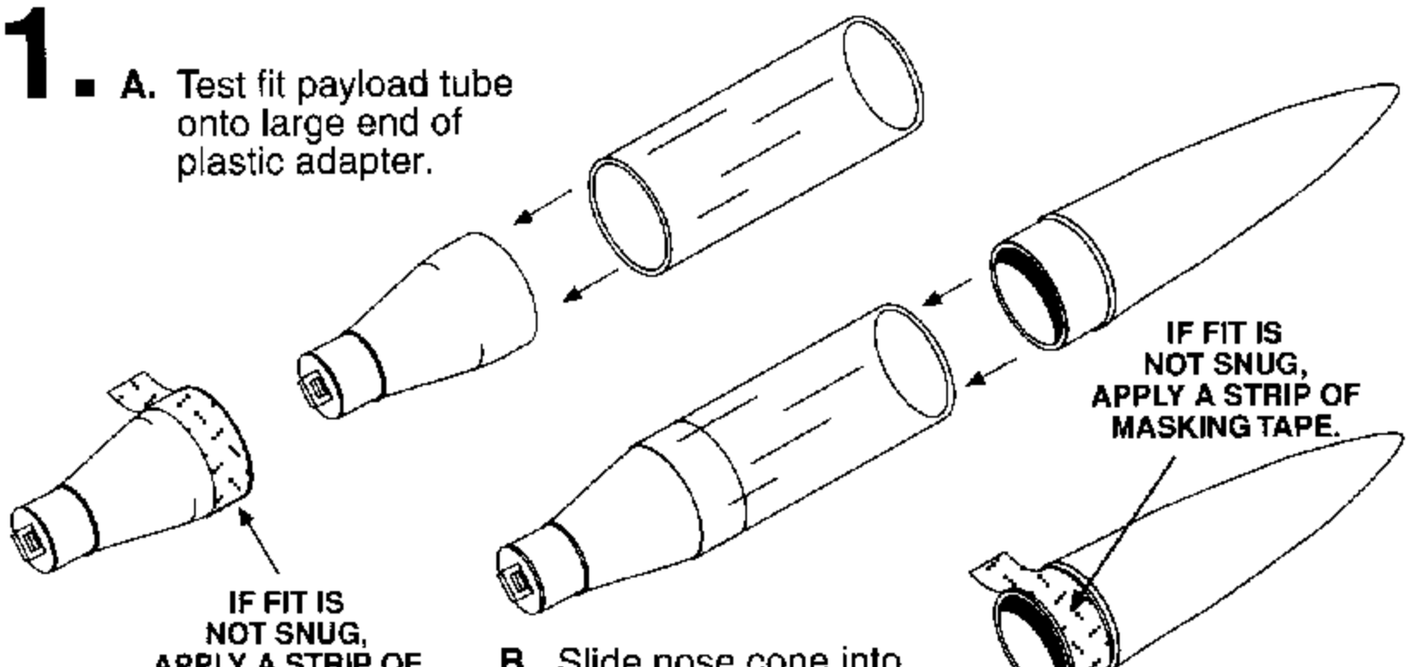
MAGENTA FIN UNIT
33555



DECAL
37723

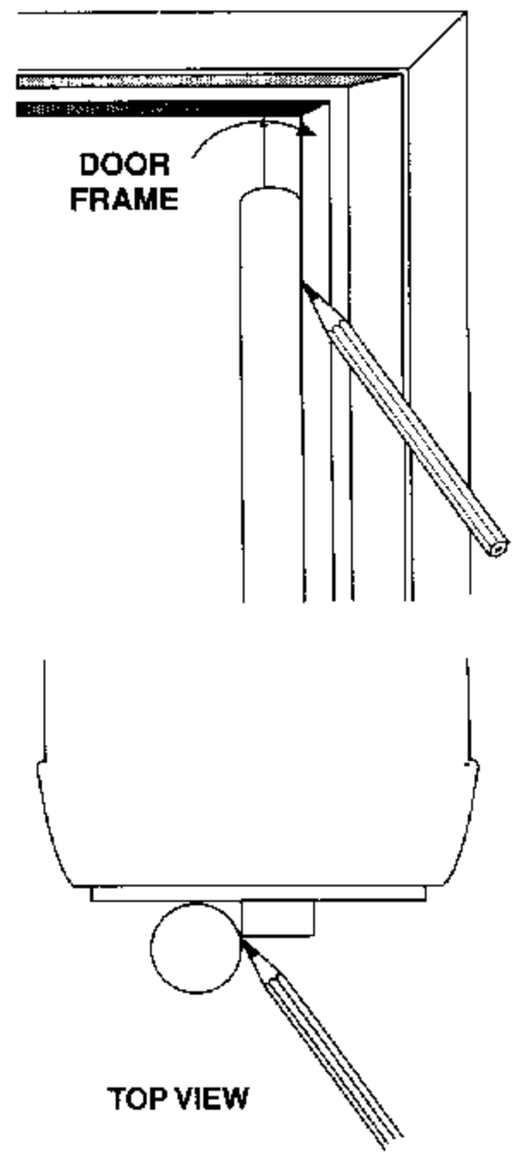
PN 37723

1. ■ A. Test fit payload tube onto large end of plastic adapter.

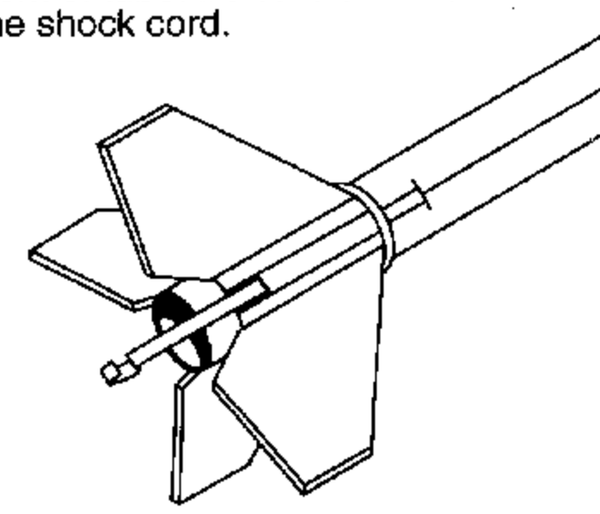


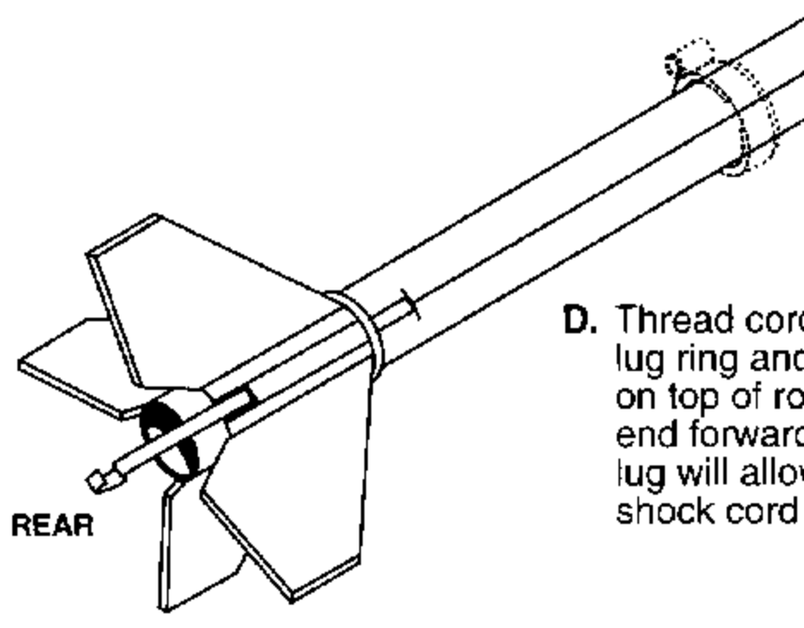
B. Slide nose cone into other end of payload tube.

2. ■ A. Draw a straight line along the entire length of the body tube. A door frame can be used for this, but we recommend the Estes Tube Marking Guide (EST 302227)



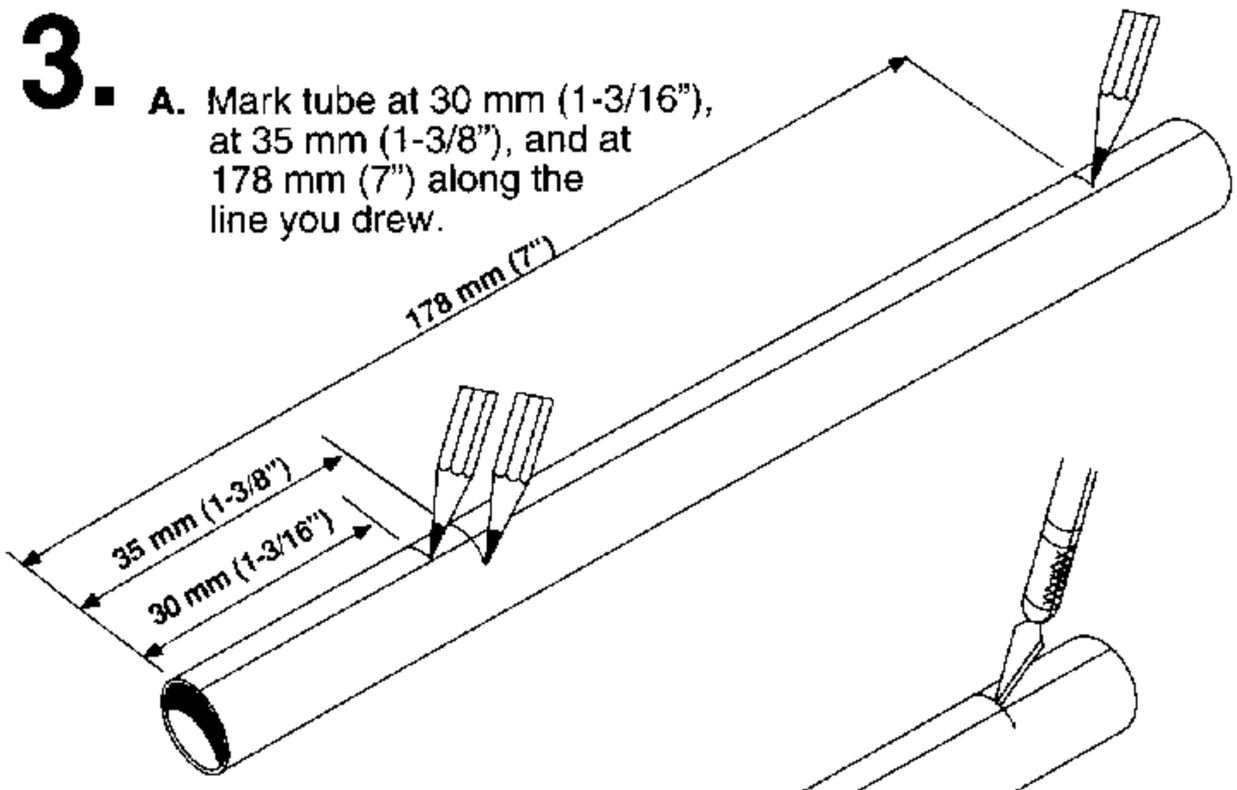
5. ■ A. Use a hobby knife or pencil to push o end of the shock cord into the forwar slot on body tube and feed through front of tube. Be careful to not cut the shock cord.



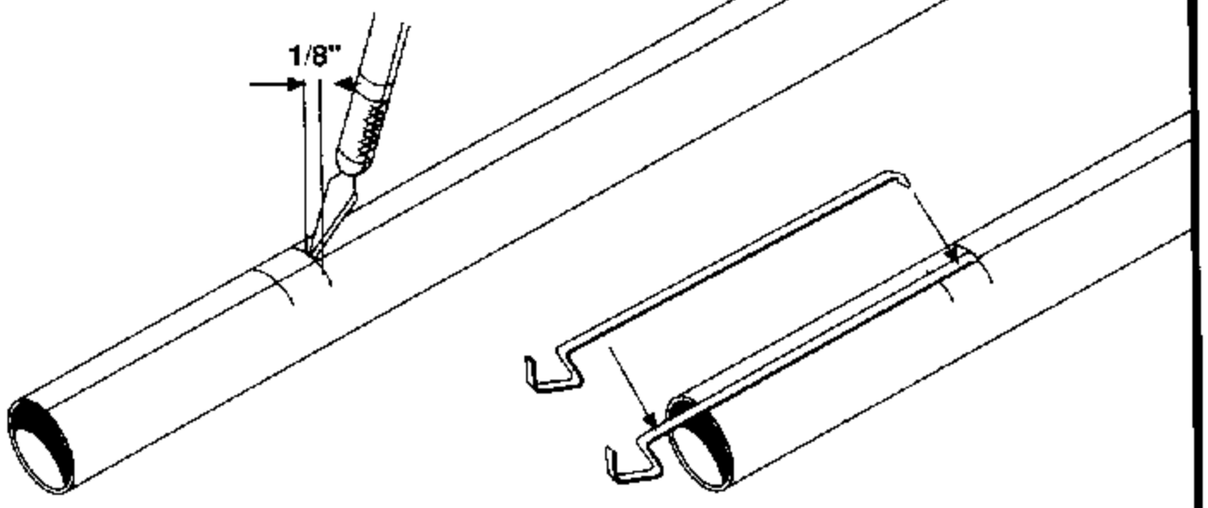


D. Thread cor lug ring an on top of ro end forwar lug will allo shock cord

3. **A.** Mark tube at 30 mm (1-3/16"), at 35 mm (1-3/8"), and at 178 mm (7") along the line you drew.

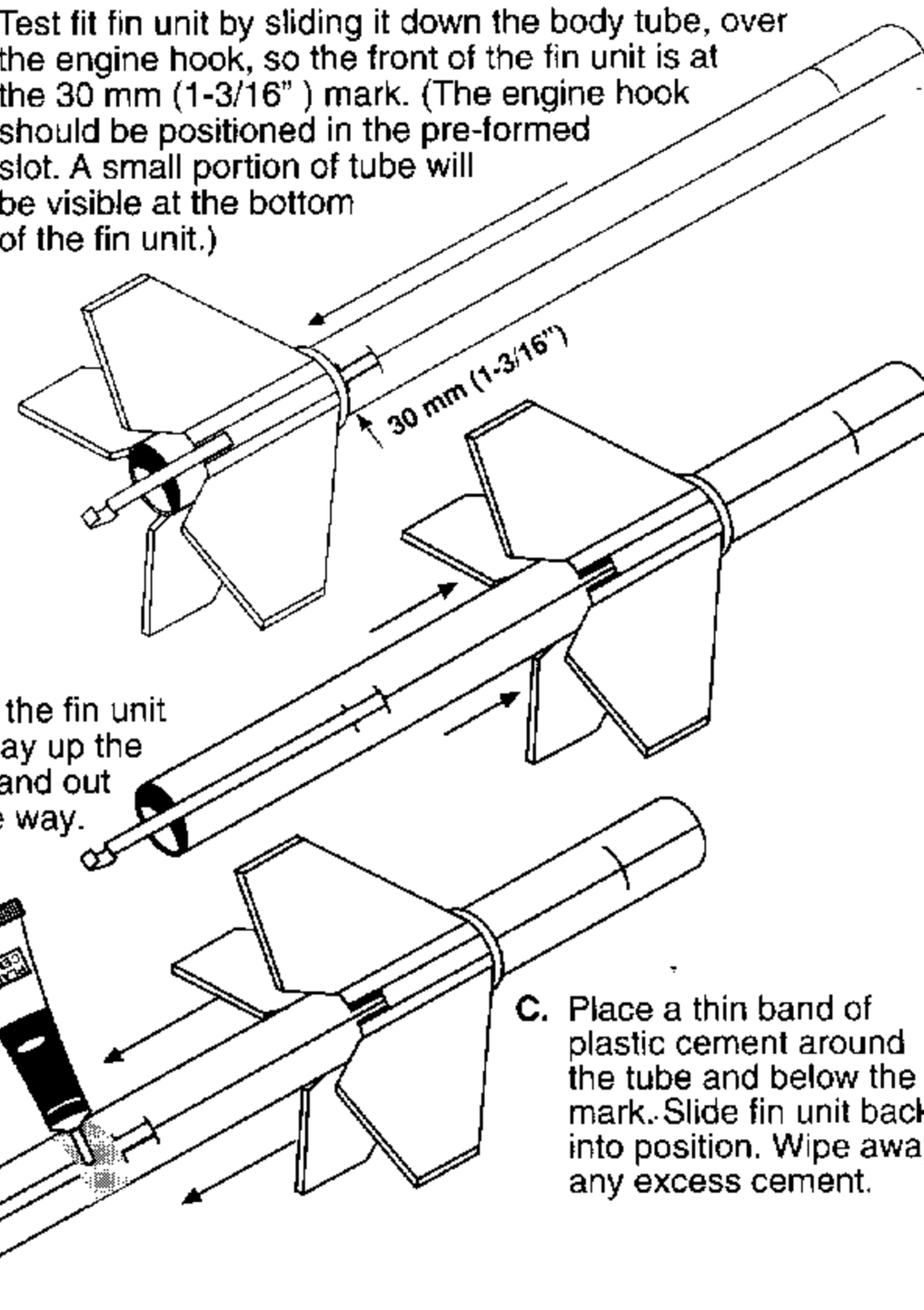


B. Use a hobby knife to make a 3 mm (1/8") cut at the 35 mm (1-3/8") mark and at the 180 mm (7") mark.



D. Insert engine hook into the 35 mm (1-3/8") cut as shown.

4. **A.** Test fit fin unit by sliding it down the body tube, over the engine hook, so the front of the fin unit is at the 30 mm (1-3/16") mark. (The engine hook should be positioned in the pre-formed slot. A small portion of tube will be visible at the bottom of the fin unit.)



B. Slide the fin unit 1/2 way up the tube and out of the way.

C. Place a thin band of plastic cement around the tube and below the mark. Slide fin unit back into position. Wipe away any excess cement.

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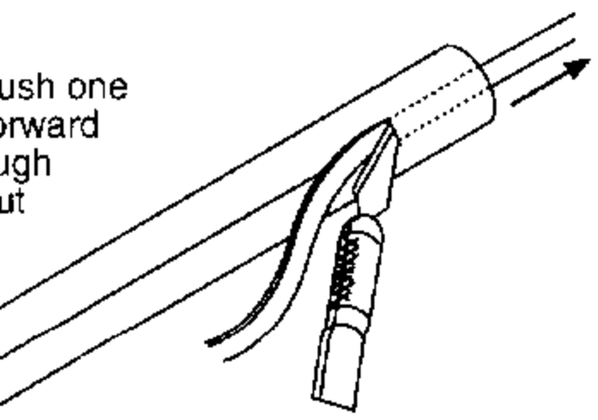
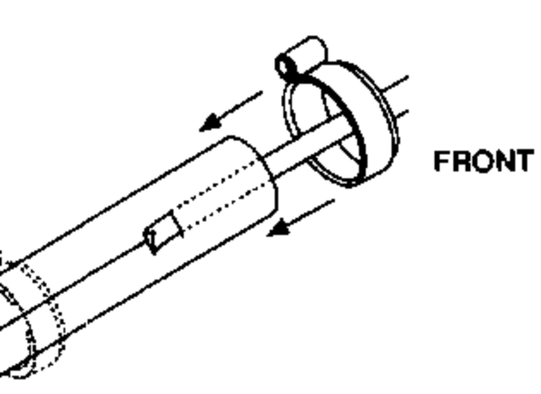
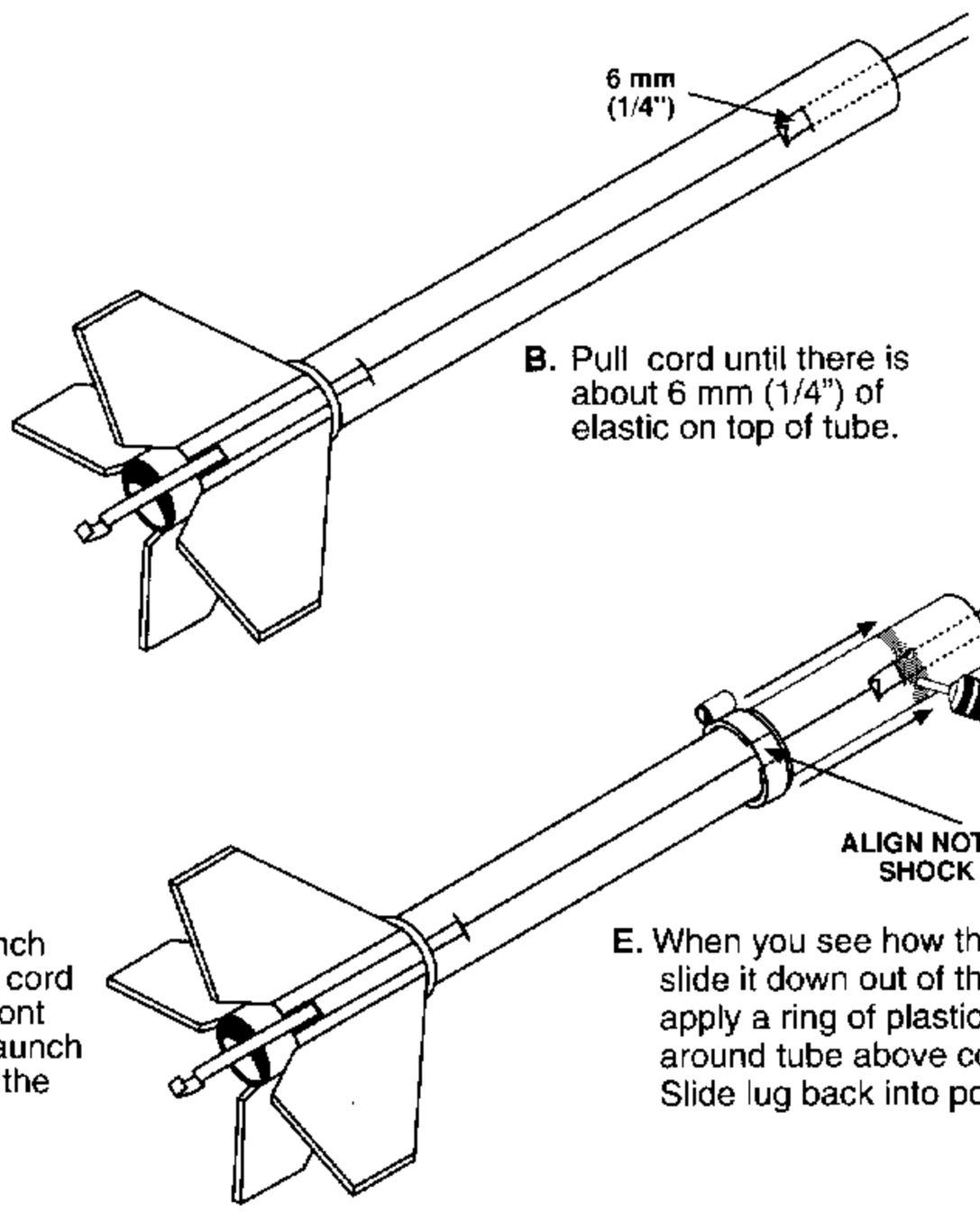




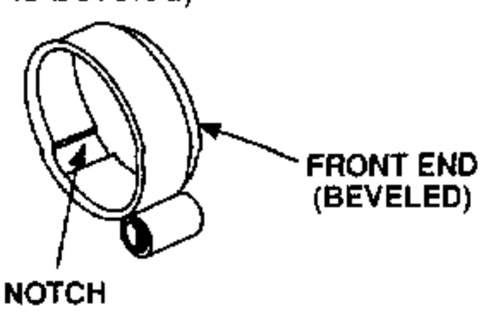
d cord through large opening in launch
g and test fit ring over end of shock cord
of rocket. (Be sure the lug ring is front
rward.) The indentation inside the launch
ll allow you to position the ring over the
cord on top of the tube.

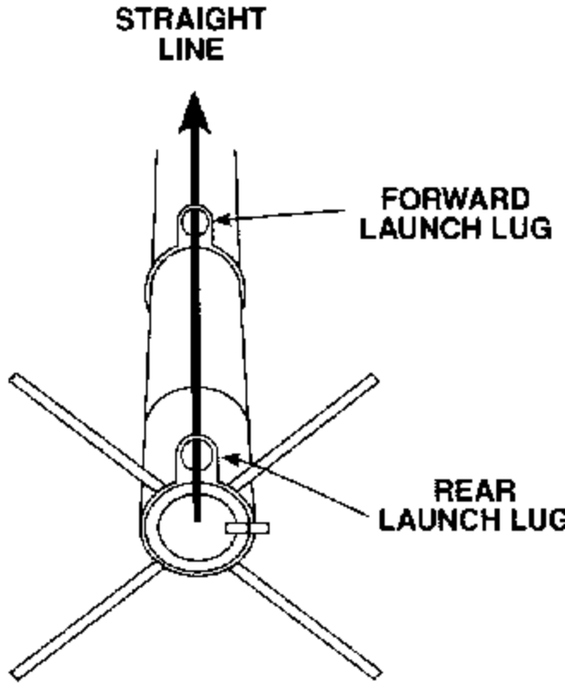


B. Pull cord until there is about 6 mm (1/4") of elastic on top of tube.

E. When you see how the lug fits, slide it down out of the way and apply a ring of plastic cement around tube above cord slit site. Slide lug back into position.

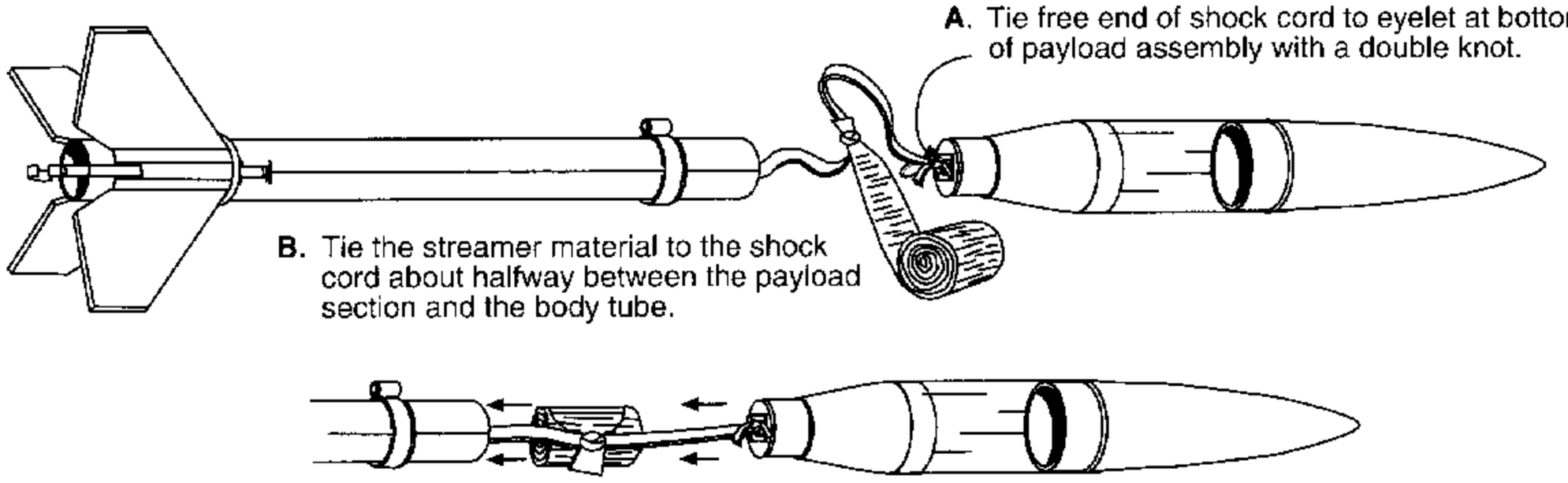
C. Find the notch, and identify the front and rear of the launch lug ring (the front end of lug is beveled).





F. Make certain launch lugs are aligned. Gently erase pencil line on body tube.

6.

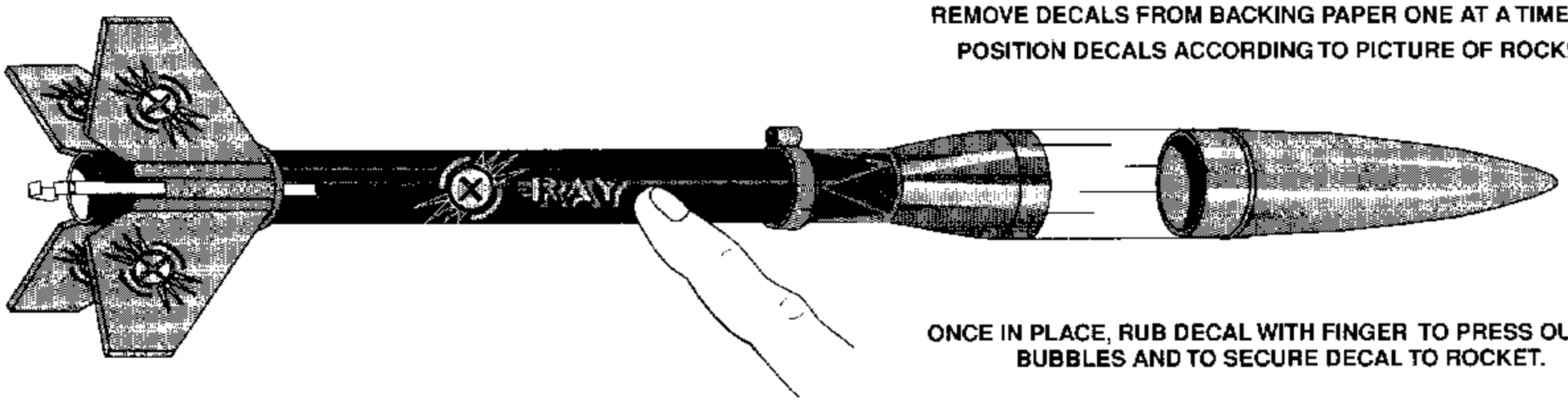


A. Tie free end of shock cord to eyelet at bottom of payload assembly with a double knot.

B. Tie the streamer material to the shock cord about halfway between the payload section and the body tube.

C. Roll streamer. Insert streamer, shock cord, and payload section into X-Ray™ body. Recovery device should slide easily into body tube. If fit is too tight, unfold and re-pack.

7. APPLYING DECALS

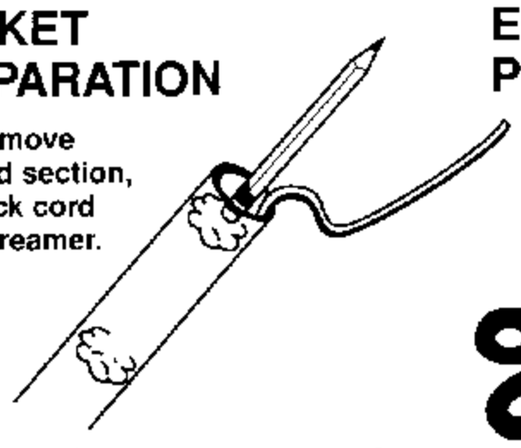


REMOVE DECALS FROM BACKING PAPER ONE AT A TIME AND POSITION DECALS ACCORDING TO PICTURE OF ROCKET.

ONCE IN PLACE, RUB DECAL WITH FINGER TO PRESS OUT AIR BUBBLES AND TO SECURE DECAL TO ROCKET.

8. FLYING YOUR ROCKET

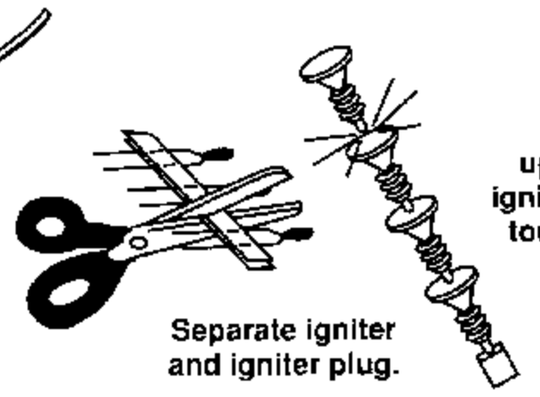
ROCKET PREPARATION



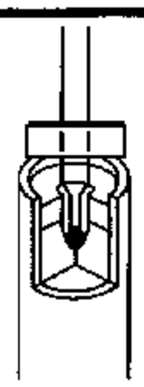
Remove payload section, shock cord and streamer.

Crumple and insert two squares of recovery wadding. Repack and insert streamer, shock cord and payload section.

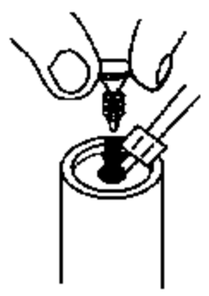
ENGINE PREPARATION



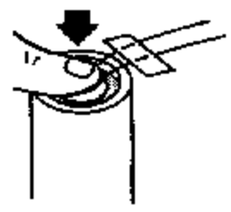
Separate igniter and igniter plug.



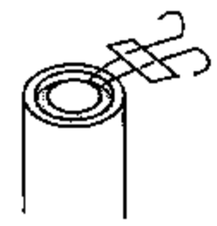
Hold engine upright, drop in igniter. Igniter must touch propellant.



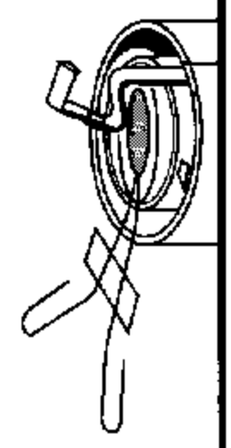
Insert igniter plug.



Firmly push all the way in.



Bend igniter wires back.



Insert engine into rocket.

LAUNCH SUPPLIES

To launch your rocket, you will need the following items:

- Estes Electrical Launch Controller and Launch Pad
- Estes Recovery Wadding No. 302274
- Recommended Estes Engines: 1/2 A3-2T, 1/2 A3-4T, A3-4T or A10-3T

Use a 1/2A3-2T for your first flight to become familiar with your rocket's flight pattern.
Use only Estes products to launch this rocket.

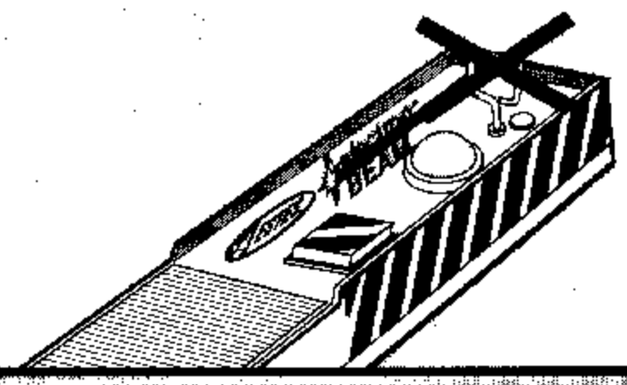
ENGINE	PROJECTED ALTITUDE Feet	Meters
1/2 A3-2T or 1/2 A3-4T	255	77
A3-4T	510	155
A10-3T	485	148

TIPS FOR FLYING YOUR ROCKET

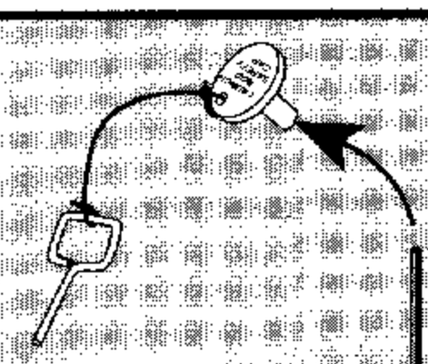
- Choose a large field away from power lines, buildings, tall trees, and low flying aircraft. Try to find a field at least 76 meters (250 feet) square. The larger the launch area, the better your chance of recovering your rocket.
- Launch area must be free of dry weeds and brown grass.
- Launch only during calm weather with little or no wind and good visibility.
- Don't leave streamer packed more than a minute or so before launch during cold weather (colder than 4° Celsius [40° Fahrenheit]).
- 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.

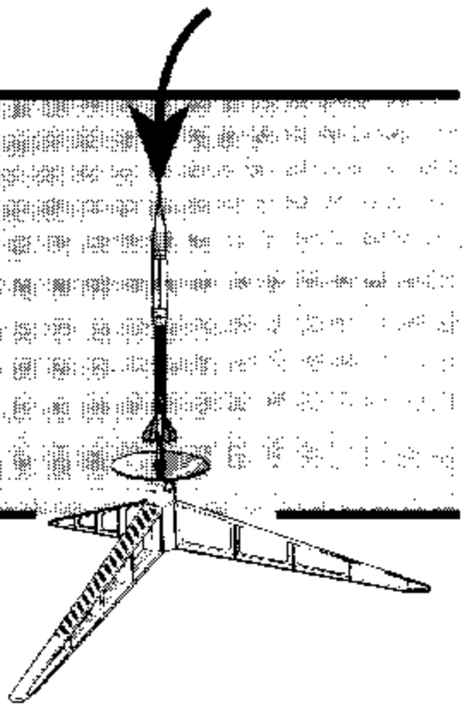
COUNTDOWN AND LAUNCH

10... **Safety key must not be in launch controller.**
The safety cap with safety key attached should already be on the launch rod.

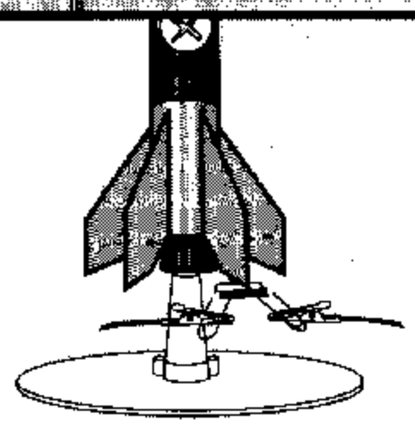


9... **Remove safety cap from launch rod, slide launch lugs over rod. Make sure rocket slides freely and micro-clips are clean for good electrical contact.**

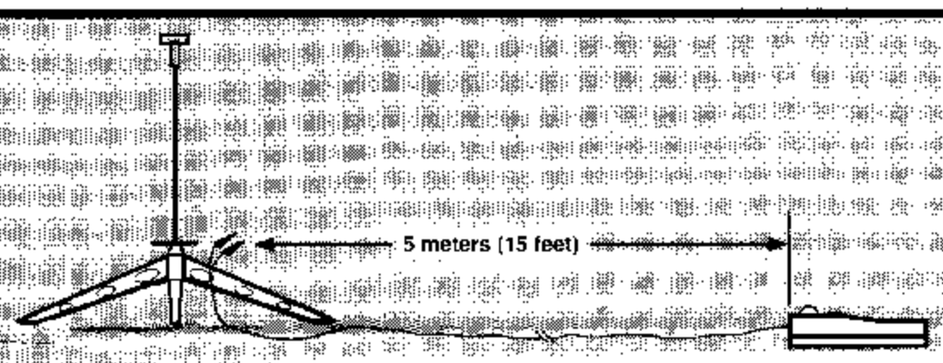




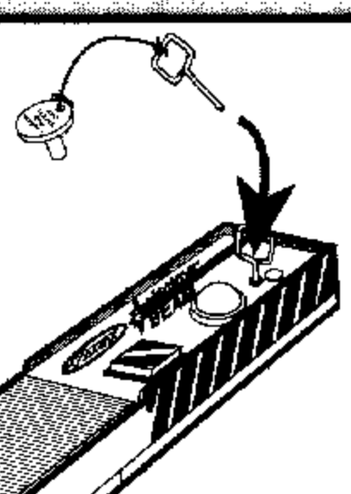
8... Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to protective tape on igniter as possible.



7... **Move everyone back from your rocket as far as launch wire will permit (at least 5 meters - 15 feet).**

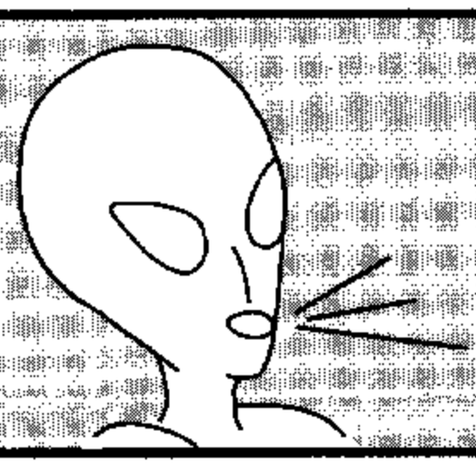


6... **Insert safety key to arm the launch controller.**



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.