

ready to **FLY**

complete model rocket set
operations manual

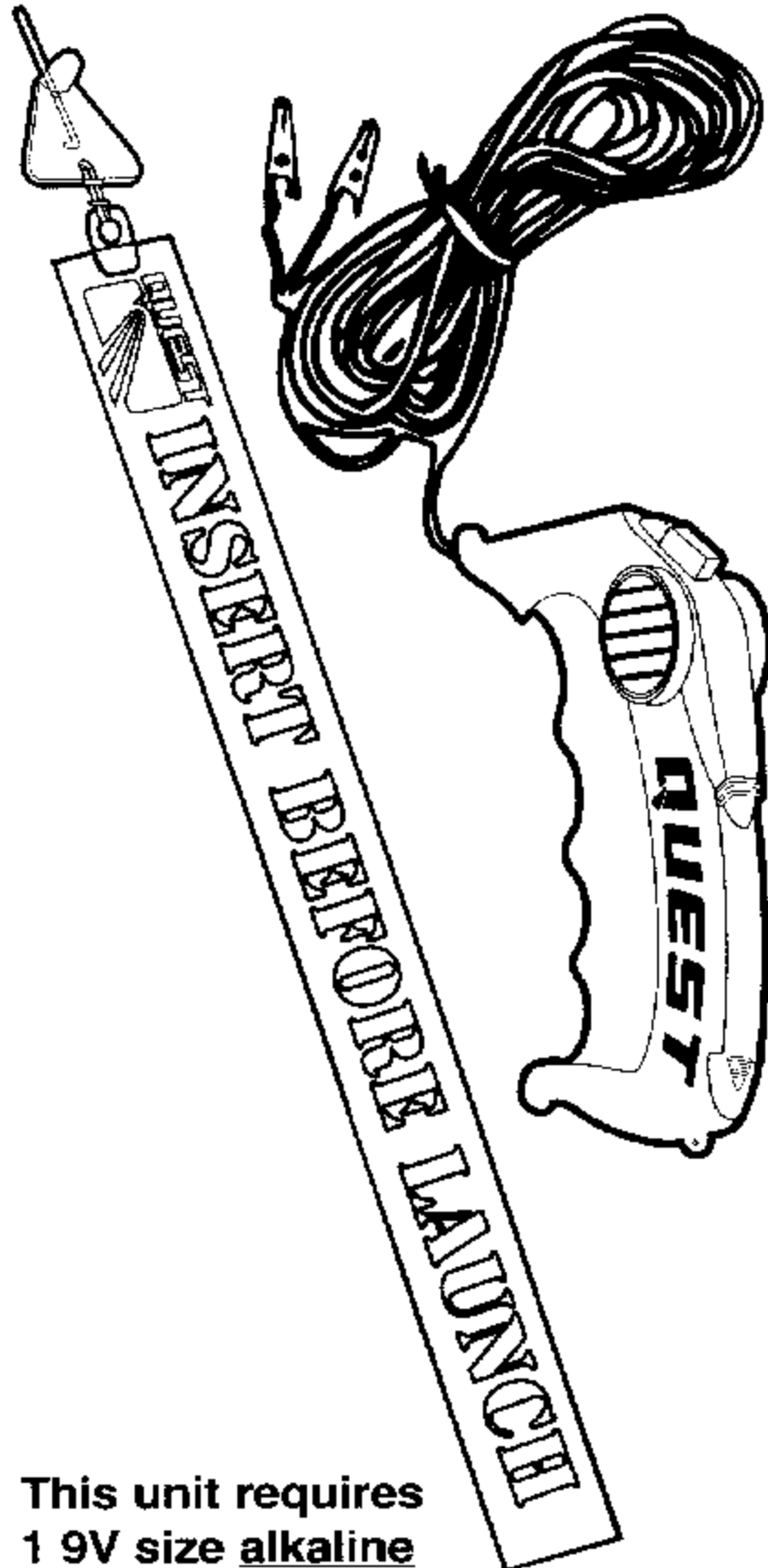
QUEST 



Quest Aerospace,
A Division of Toy Biz, Inc.
Yuma, Arizona 85364 USA

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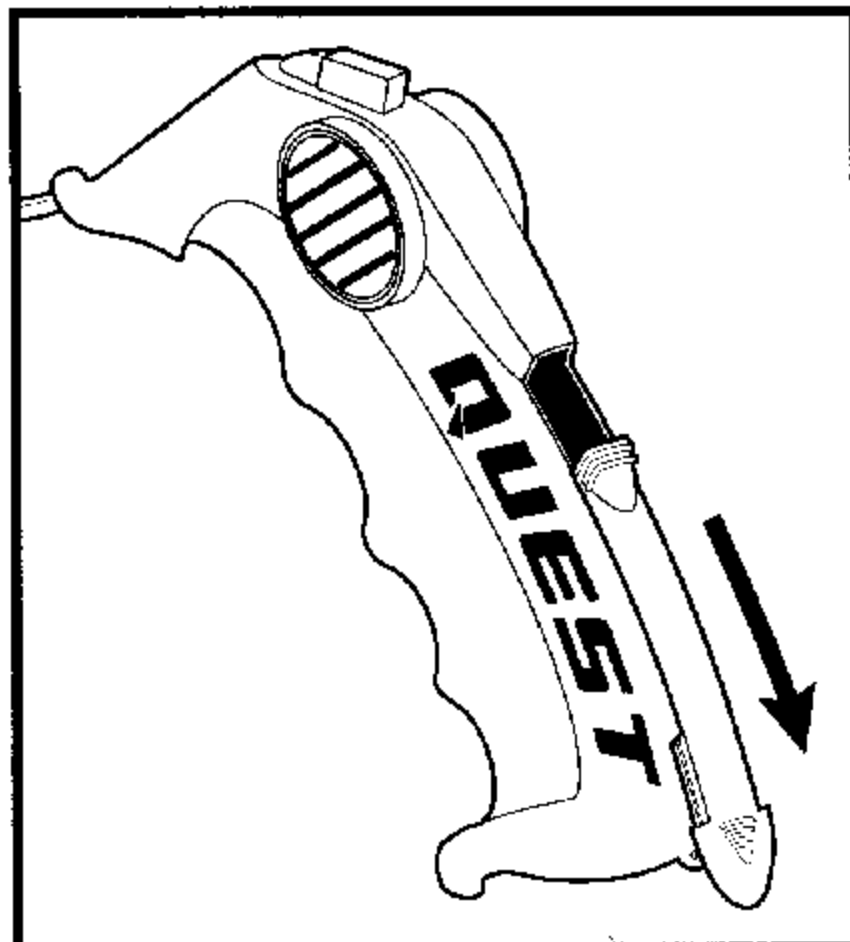
LAUNCH CONTROLLER OPERATING INSTRUCTIONS



This unit requires
1 9V size alkaline
battery for operation.

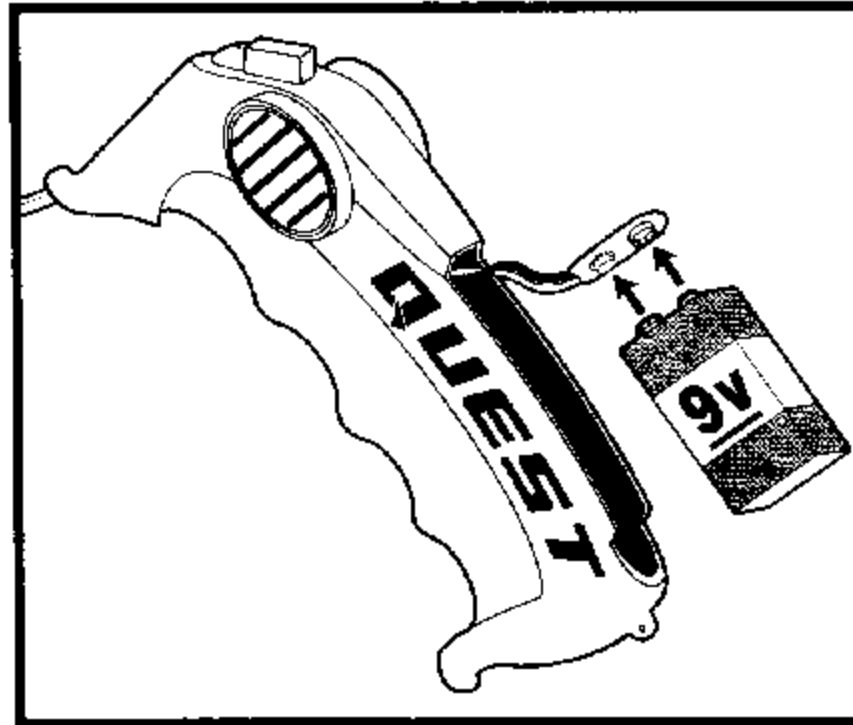
STEP 1

Slide battery cover off.



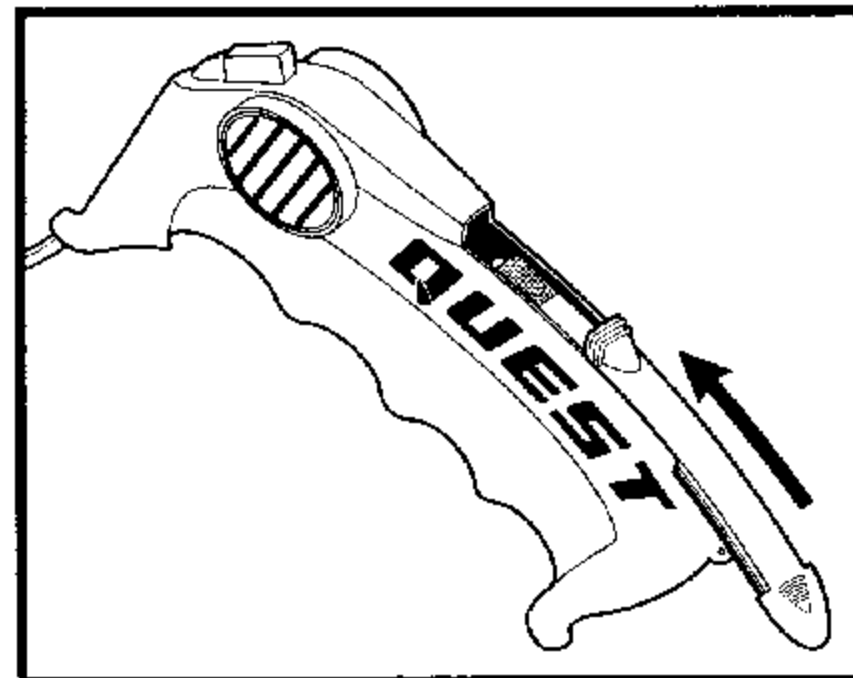
STEP 2

Install a fresh 9V Alkaline battery by firmly snapping the battery onto the connector.
IMPORTANT: USE ONLY 9V SIZE ALKALINE BATTERIES.



STEP 3

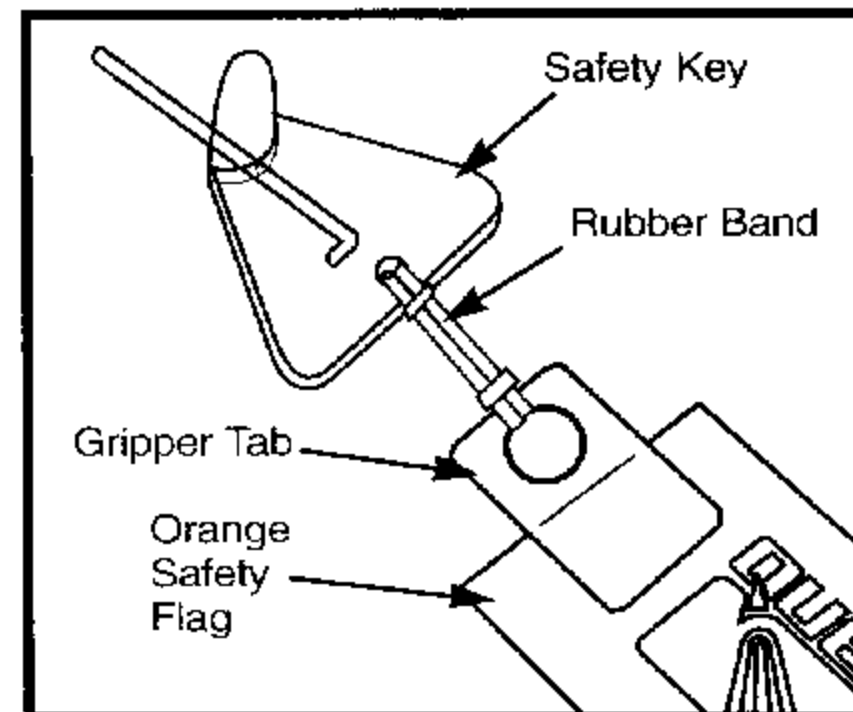
Place battery inside controller and replace the cover.



STEP 4

A. Peel the "Gripper" tab from the backing and attach it to the end of the orange safety flag.

B. Pass one end of the rubber band through the "Gripper" on the safety flag and then through itself. Pass the other end through the safety key and then through itself as shown.



TESTING YOUR CONTROLLER

NOTE: ALWAYS REMOVE THE SAFETY KEY AFTER LAUNCHING AND TAKE IT WITH YOU.

TEST 1

Clip the micro-clips together.

TEST 2

Insert the safety key. The arming light & beeper should go on.

TEST 3

Momentarily press the launch button. The arming light & beeper should go out while the button is pressed.

If the launch controller fails to operate as described, proceed to the troubleshooting section.

TROUBLESHOOTING

If the launch controller fails to operate or if the rocket motor fails to ignite, try the following.

- Wait one full minute before approaching the launch pad and rocket.
- Remove the safety key from the launch controller and take it with you.

1. Check the motor-clips to be sure they are not touching each other or the blast deflector plate.

2. Check the motor-clips to be sure they are not dirty. Usually after a few launches a black film will build-up on the micro-clip, which may cause poor electric contact. Clean the inside jaws of the micro-clips with fine sandpaper or an emery board.

3. Check the "grip" of the micro-clips. If the spring of the micro-clips become worn, the jaws will no longer close tightly and may fail to make a good contact with the TigerTail igniter. This can be corrected by squeezing the outside of each grip firmly after it is attached to your TigerTail igniter.

4. If the motor fails to ignite, remove the TigerTail igniter from the motor. If the black material at the end of the igniter has burned away, then the igniter worked, but failed to ignite the motor. Install a new TigerTail igniter per the instructions included with it.

5. Cold temperatures also limit battery power. Be sure batteries are at least at room temperature (70 degrees).

LAUNCH PAD ASSEMBLY INSTRUCTIONS

SAFETY TIPS

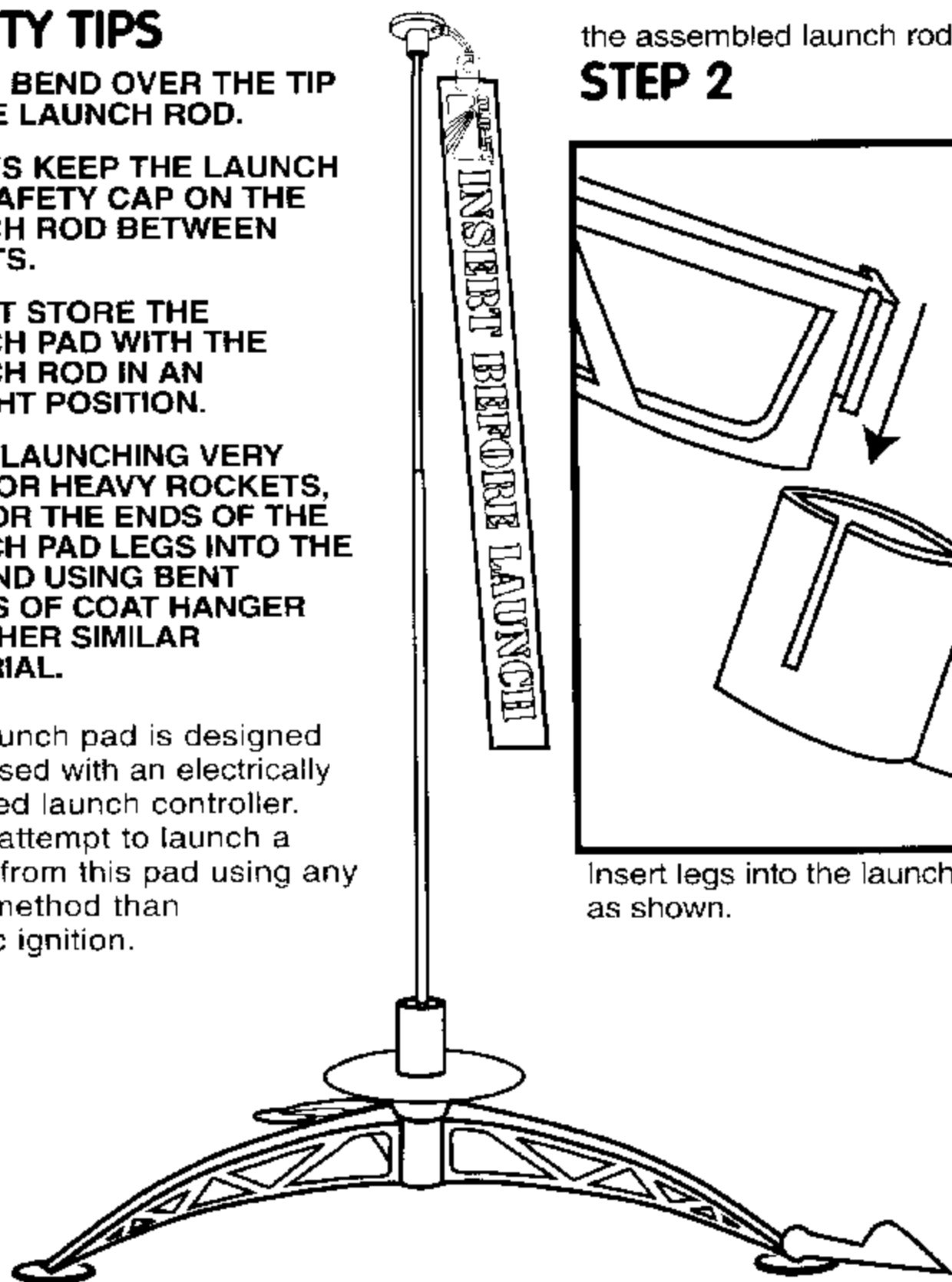
NEVER BEND OVER THE TIP OF THE LAUNCH ROD.

ALWAYS KEEP THE LAUNCH ROD SAFETY CAP ON THE LAUNCH ROD BETWEEN FLIGHTS.

DO NOT STORE THE LAUNCH PAD WITH THE LAUNCH ROD IN AN UPRIGHT POSITION.

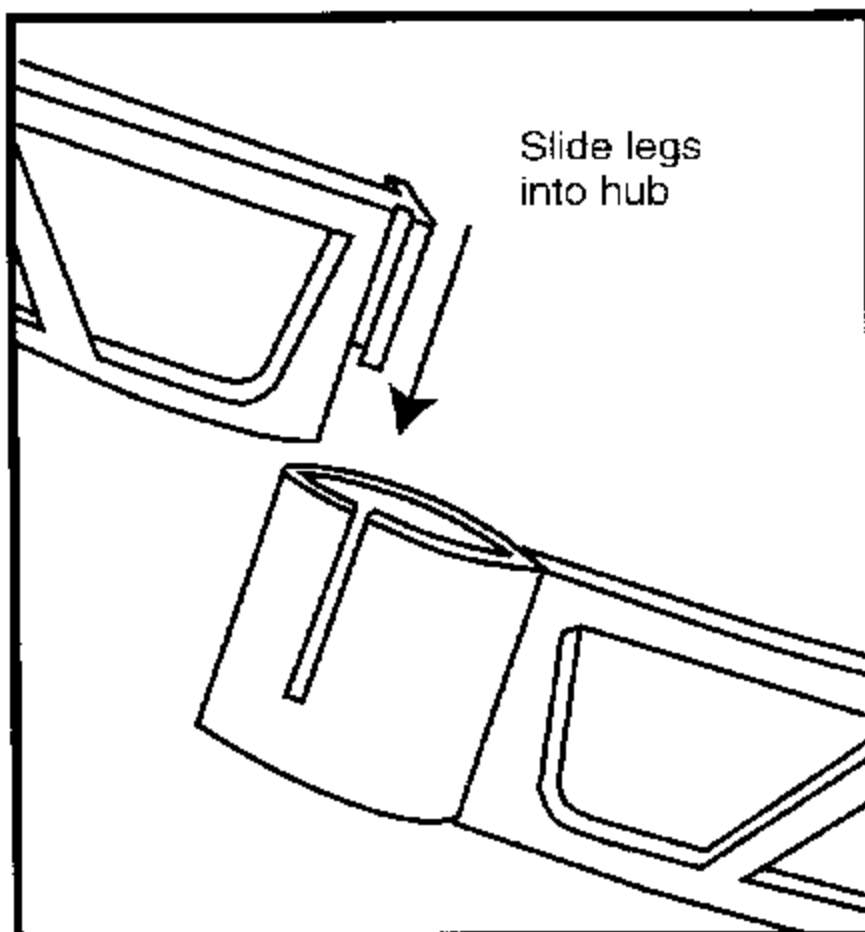
WHEN LAUNCHING VERY LONG OR HEAVY ROCKETS, ANCHOR THE ENDS OF THE LAUNCH PAD LEGS INTO THE GROUND USING BENT PIECES OF COAT HANGER OR OTHER SIMILAR MATERIAL.

This launch pad is designed to be used with an electrically operated launch controller. Never attempt to launch a rocket from this pad using any other method than electric ignition.



the assembled launch rod apart.

STEP 2



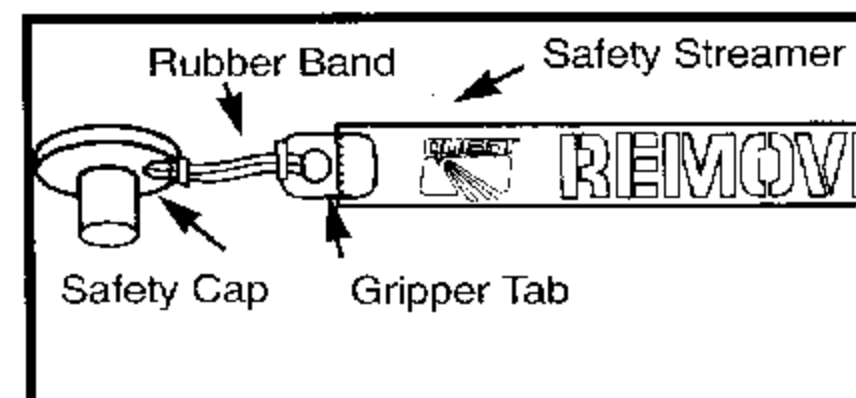
Insert legs into the launch pad hub as shown.

the tilt adjustment.

STEP 4

A. Peel the "Gripper" tab from its backing and attach it to one end of the yellow safety streamer.

B. Pass one end of the rubber band through the "Gripper" on the safety streamer and then through itself. Pass the other end through the launch rod safety cap and then



through itself as shown.

STEP 5

A. Grip launch rod about 1 inch from the end and gently push/twist it into the top hole in the launch pad hub. If rod fits too tightly, drop the rod on a hard floor to help advance the rod through the hole. Push the rod into the hub until it "seats" itself securely into the hub.

B. Slide blast deflector onto rod.

C. Slide black stand-off tube onto rod and position on top of blast deflector.

D. Place the launch rod safety cap/streamer on the tip of the launch rod. Do not remove safety cap until you are ready to launch.

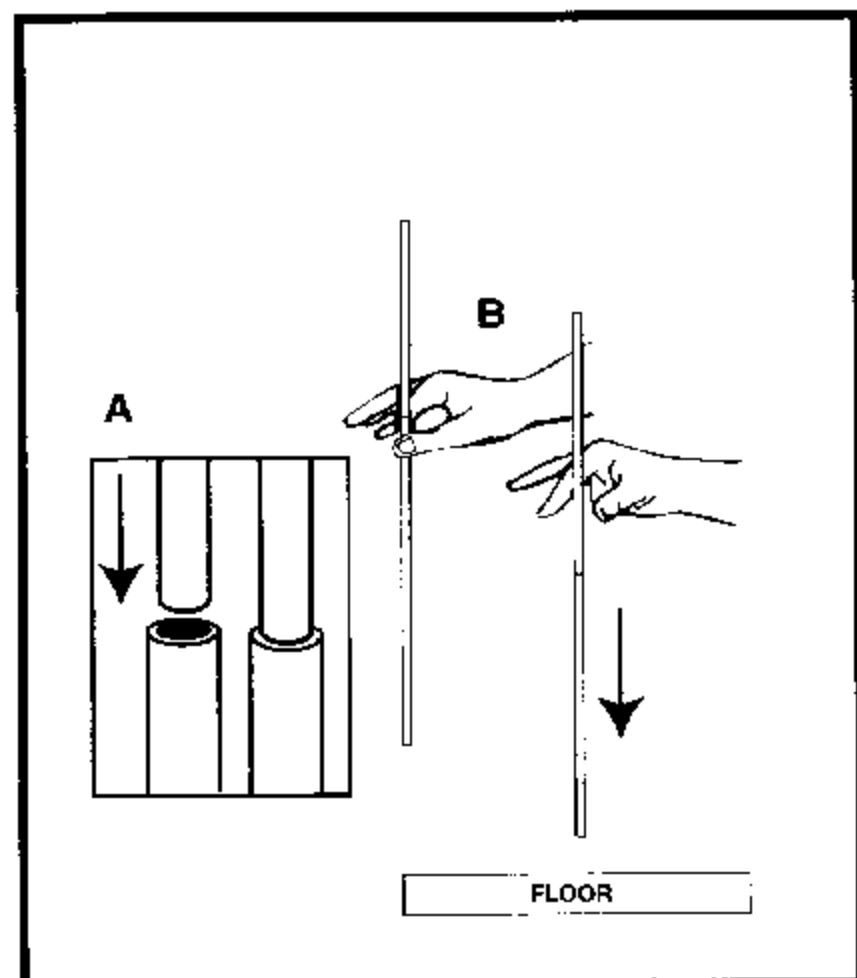
IMPORTANT: When storing your launch pad, leave launch pad hub on rod and only

STEP 1

A. Test fit both ends of the upper launch rod (smaller rod) into the hole in the lower rod. Use the tighter fitting end and push the two rods together.

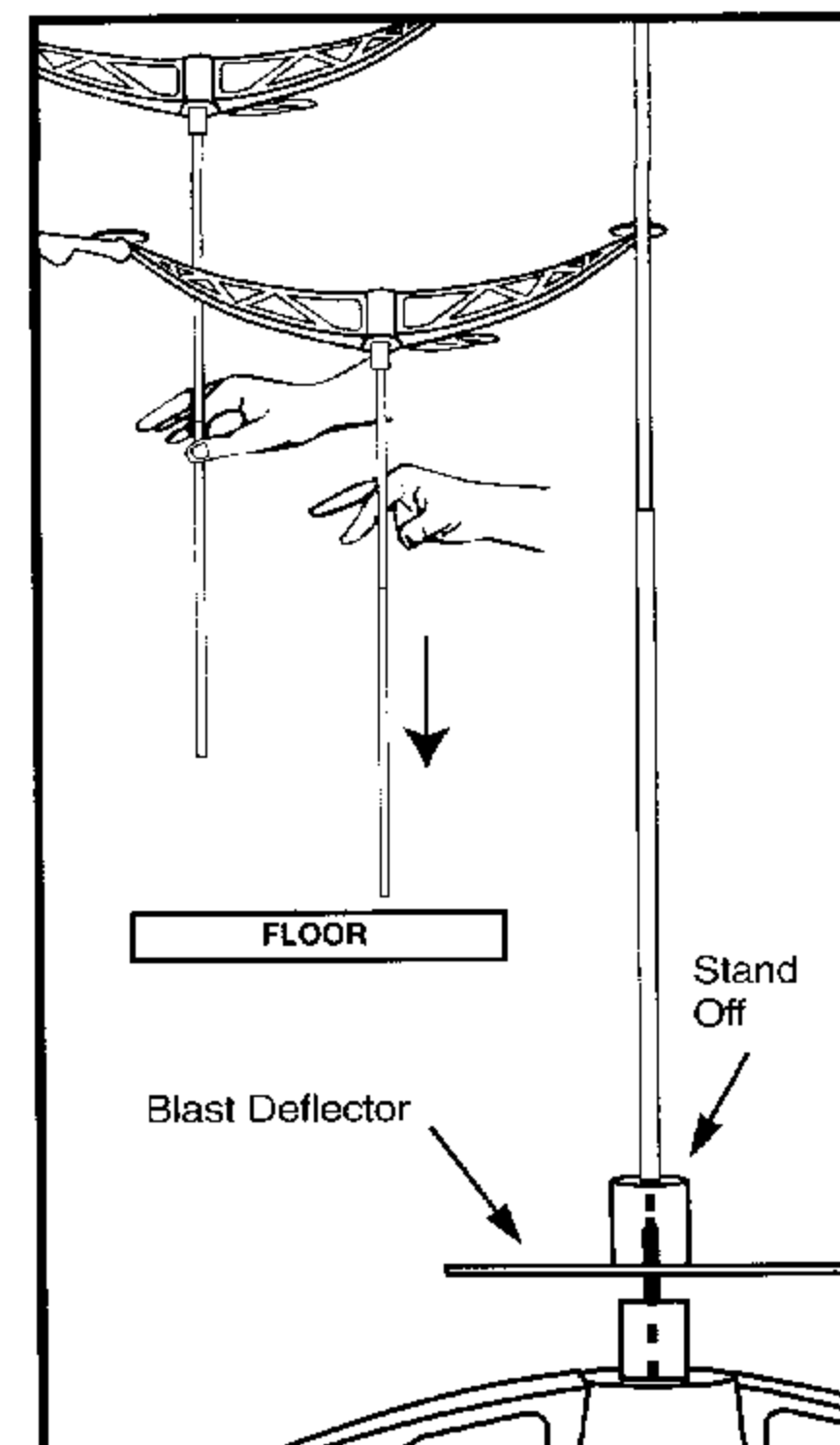
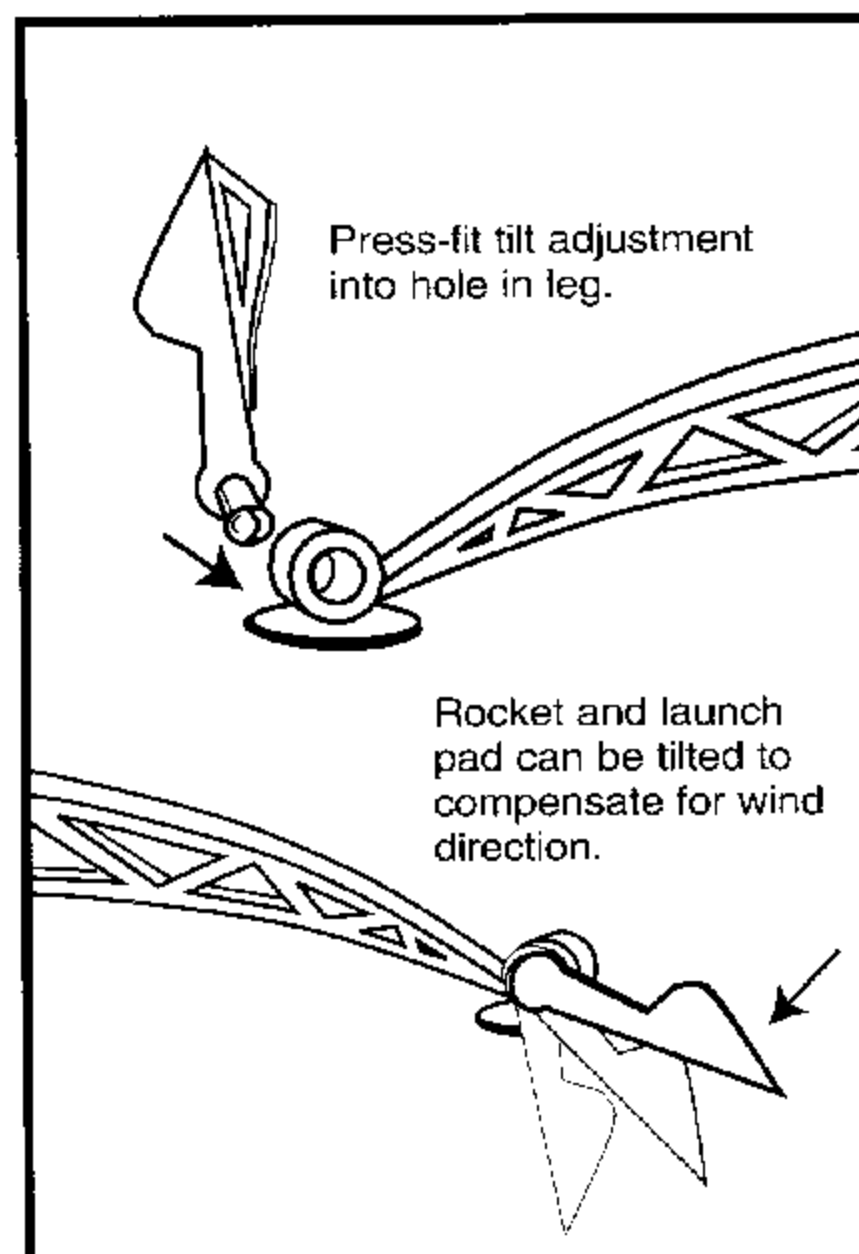
B. If rod halves fit tightly, drop the rod on a hard floor to push halves together.

SAFETY NOTE: Rods should fit together tight enough so that you cannot easily pull



STEP 3

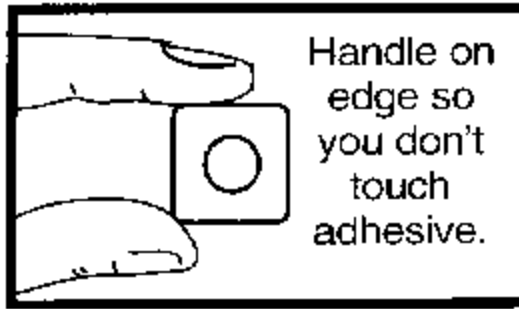
Attach launch pad tilt adjustment to launch pad leg as shown. Only one of the 3 launch pad legs is designed to attach



PARACHUTE ASSEMBLY INSTRUCTIONS

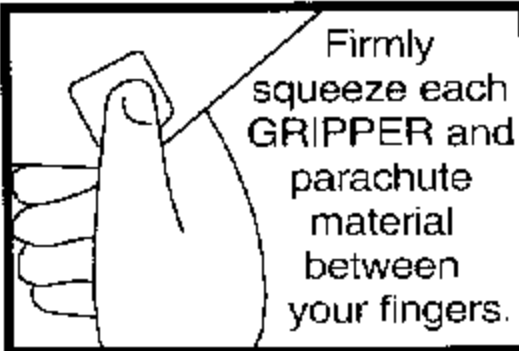
STEP 1

Remove the GRIPPER shroud line fasteners from the strip. Always handle GRIPPERS by the edge so you don't touch the adhesive. Place the gripper on one of the six corners of the parachute as shown. Be sure the center of the hole in the GRIPPER is directly over the hole in the parachute.



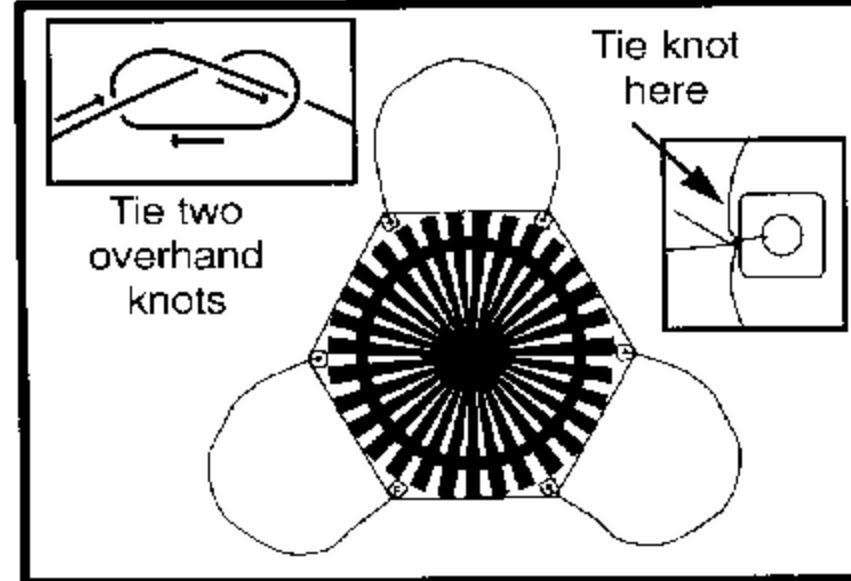
STEP 2

Firmly squeeze each GRIPPER and parachute material between your fingers.



STEP 3

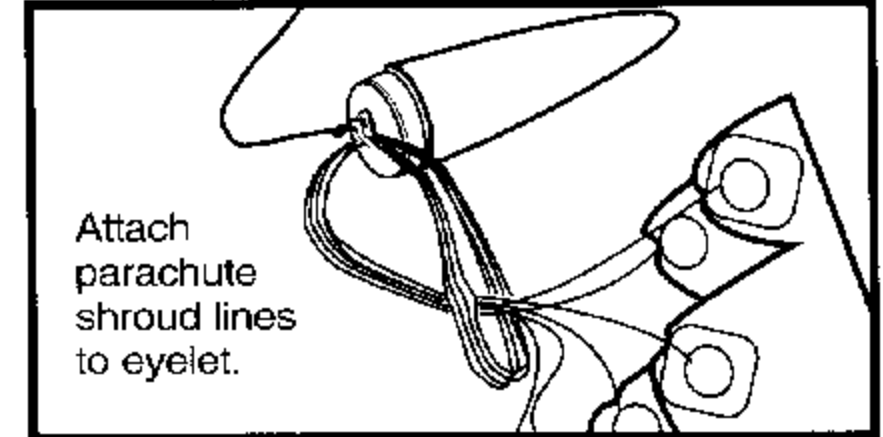
The shroud line is pre-cut into three equal lengths. Take one length of the shroud line, pass it through the hole in the GRIPPER and tie one end with two overhand knots. Tie the other end of the shroud line to the nearest GRIPPER. Repeat for remaining shroud lines.



STEP 4

Pass the shroud line loops through the eyelet on the nose cone. Pass parachute through loop ends and pull lines tightly against the eyelet.

Tip: If the nose cone fits too tight, stretch the forward end of the body tube slightly by inserting the nose cone into the tube and gently twisting it back and forth a few times until you achieve a snug, but not too tight a fit.



RECOVERY WADDING INSTRUCTIONS

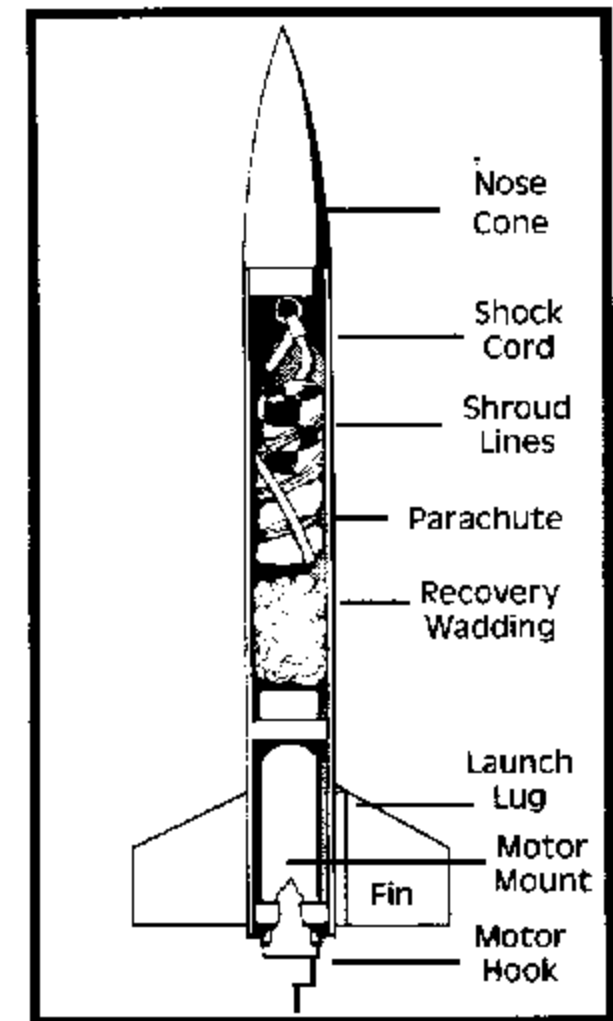
QUEST Parachute Recovery Wadding protects your plastic parachute from the rocket motor's ejection gases. It is completely flame retardant and biodegradable. It provides safe and dependable deployment of your recovery system every time.

Instructions For Use:

Use enough Parachute Recovery Wadding to fill the inside of your rocket's body tube to a depth of approximately twice the diameter of the body tube. Crumble the wadding loosely to get maximum bulk and a good seal against the wall of the body tube. Use the following number of 4" x 4" sheets of Parachute Recovery Wadding for the rocket or diameter of body tube indicated:

| Body Tube Diameter | Sheets of Wadding |
|--------------------|-------------------|
| Whiplash | 3 |
| Cyclone | 3 |
| Skydive | 4 |
| Shockwave | 4 |
| Thunder | 4 |
| 0.75" to 1.00" | 2 |
| 1.00" to 1.25" | 3 |
| 1.25" to 1.50" | 4 |
| 1.50" to more | 5 or more |

Pack the parachute on top of the Recovery Wadding as shown in the illustration.



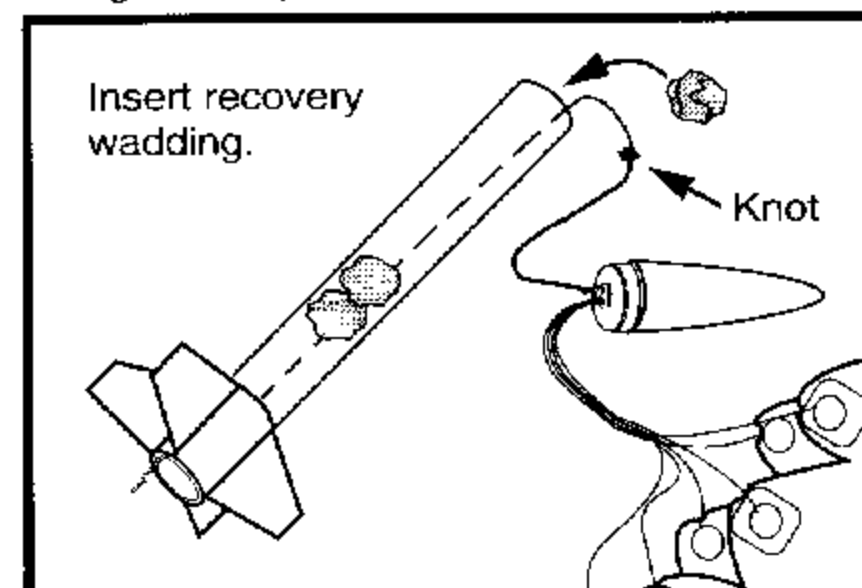
PREPPING YOUR ROCKET FOR FLIGHT

STEP 1

Pull the shock cord all the way out of the body tube. Crumple the suggested number of sheets of recovery wadding and insert one by one into the body tube making sure that the knot between the yellow Kelvar and white elastic shock cord is on the nose cone side of the wadding. Wadding should fit loosely into the tube, but tight enough to form a good seal against the wall of the body tube.

STEP 2

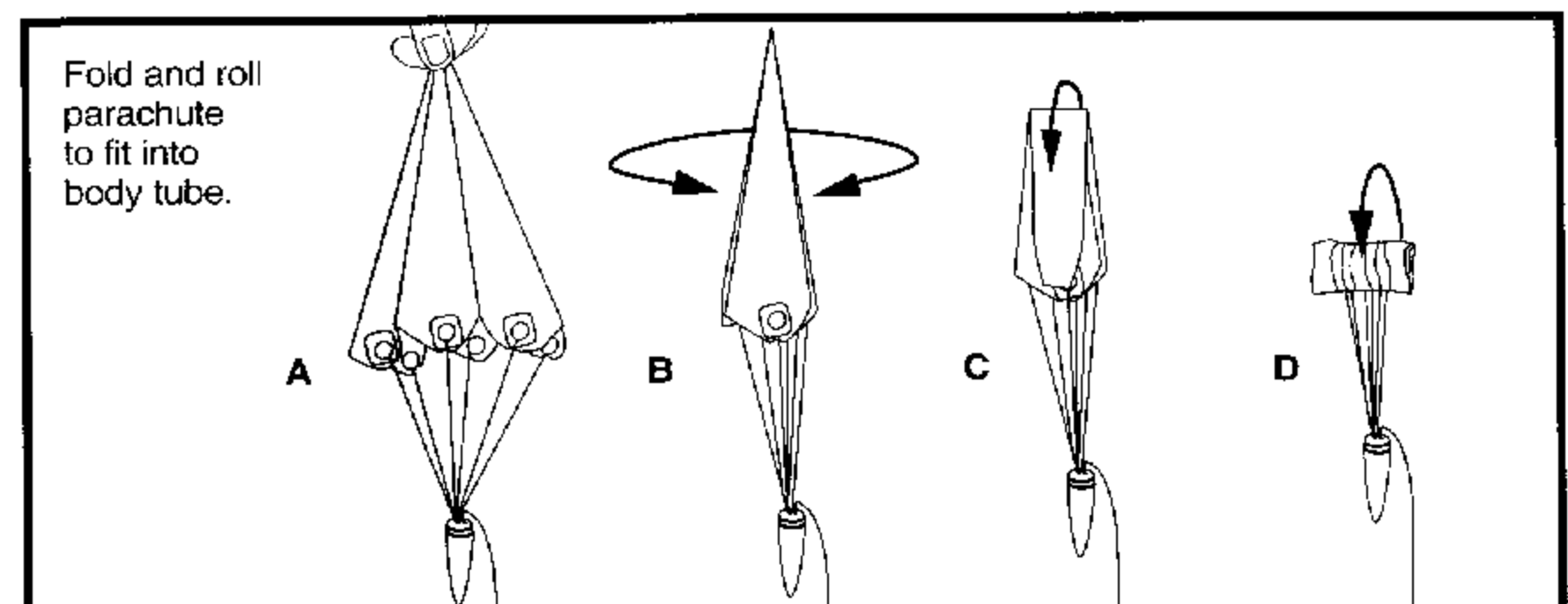
A. Grab the parachute at its center and allow the rocket to hang from it. The weight of the rocket will pull the parachute into several triangular shapes.



- B. Gather the triangles together into one flat triangle.
- C. Fold the top of the parachute down over itself once.
- D. Now continue to roll the parachute over itself and roll the shroud lines around it.

STEP 3

A. Pack the parachute into the body tube. THE PARACHUTE MUST SLIDE EASILY INTO THE TUBE. If it is a tight fit, remove and re-fold the parachute.



TIP: LIGHTLY DUST YOUR PARACHUTE WITH TALCUM OR BABY POWDER TO KEEP IT FROM DEVELOPING A SET SHAPE. THIS TECHNIQUE IS ESPECIALLY EFFECTIVE IF THE WEATHER IS HOT AND HUMID OR VERY COLD.

B. Push the shock cord into the tube and re-fit the nose cone onto the rocket.

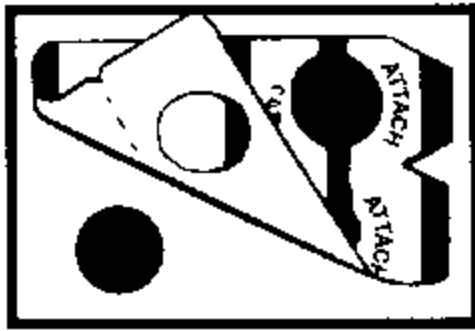
BE CAREFUL NOT TO CATCH ANY OF THE SHOCK CORD BETWEEN THE SHOULDER OF THE NOSE AND THE BODY TUBE.

IGNITER INSTALLATION INSTRUCTIONS

Launch your model rockets by electrical means only. Use a Quest Launch Controller and Tiger Tail II igniters. Install Tiger Tail II Igniter carefully, following these instructions.

STEP 1

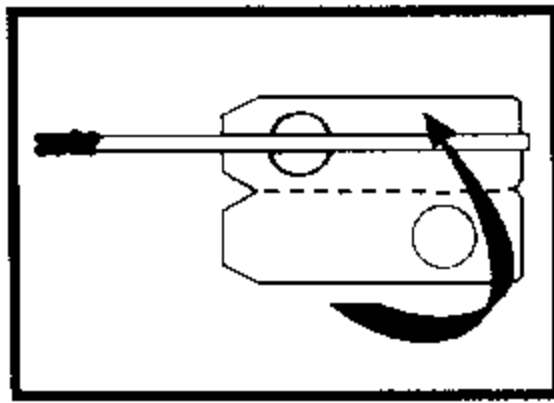
Remove Tiger Tail sticker from backing sheet.



Leave "dots" behind on sheet.

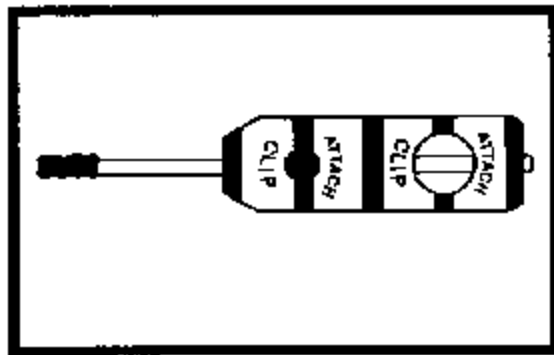
STEP 2

Center the copper igniter wire over the hole.



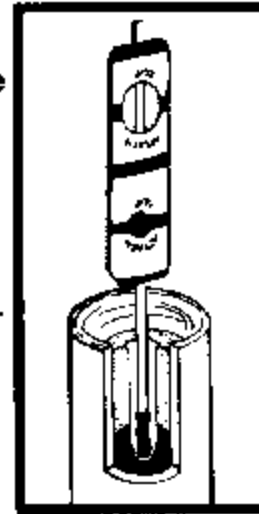
Fold Tiger Tail sticker over the igniter wire.

Be sure igniter wire is centered and visible through both holes.



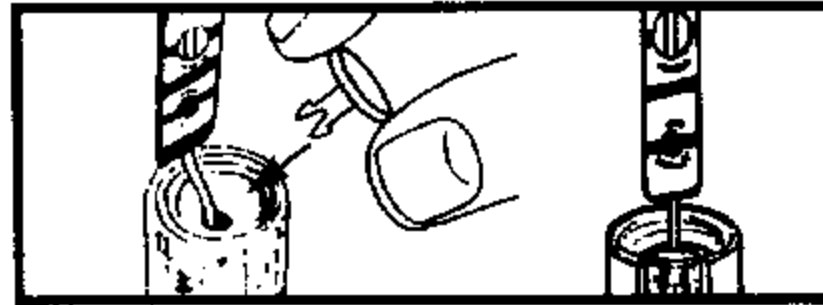
STEP 3

Place black coated end of the igniter wire into the motor nozzle as far as it will go. Black igniter tip **MUST TOUCH** the bottom of the nozzle or motor will not ignite.



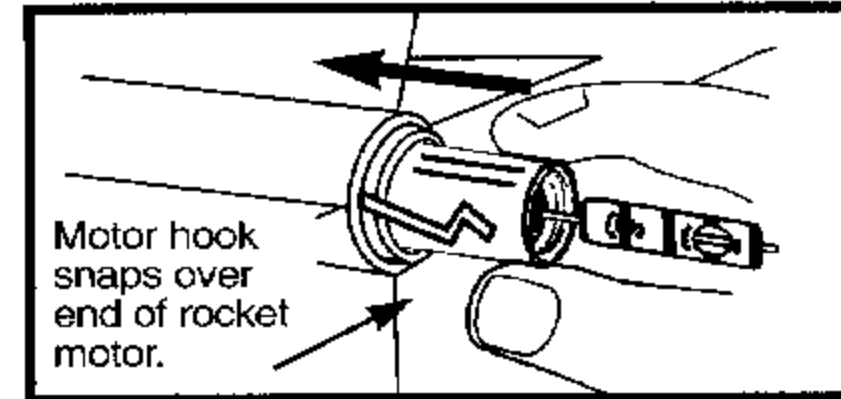
STEP 4

Push the plastic Tiger Tac into nozzle as far as it will go.



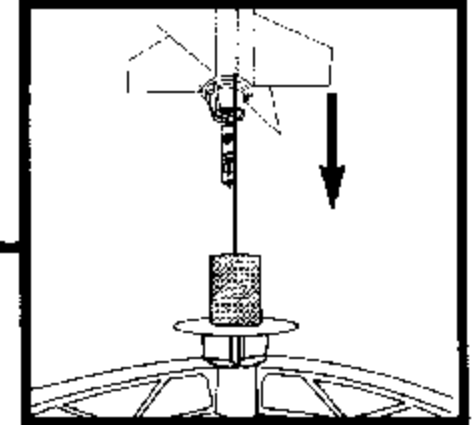
STEP 5

Insert rocket motor into rocket's motor mount.



STEP 6

Slide rocket onto launch rod and position on launch pad.



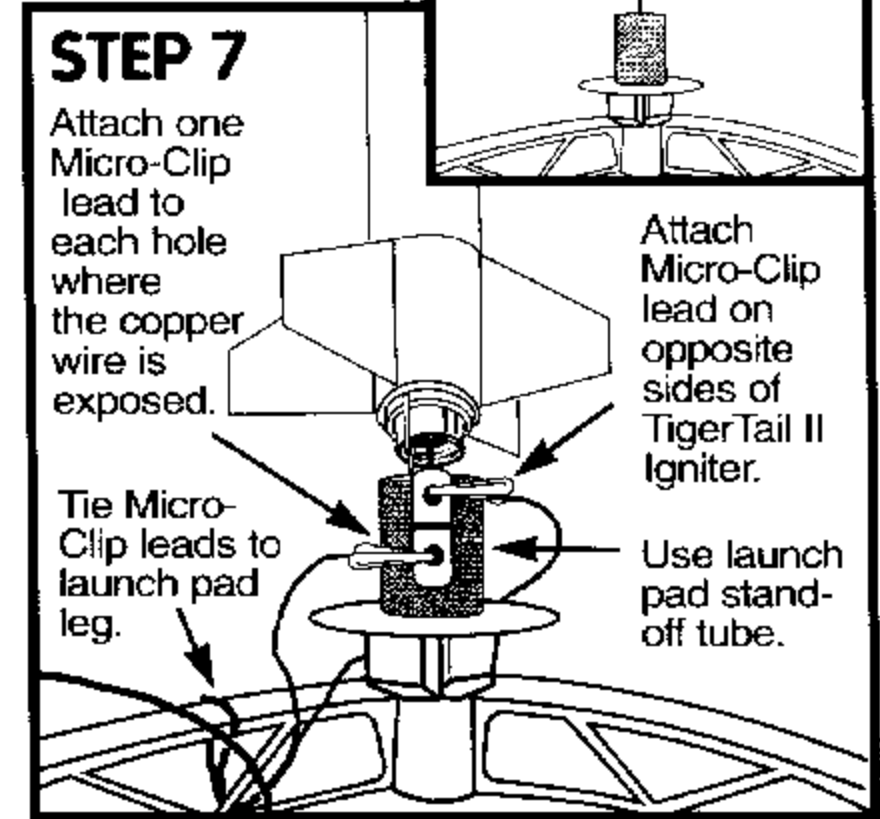
STEP 7

Attach one Micro-Clip lead to each hole where the copper wire is exposed.

Tie Micro-Clip leads to launch pad leg.

Attach Micro-Clip lead on opposite sides of TigerTail II Igniter.

Use launch pad stand-off tube.



IMPORTANT: To avoid a potential short circuit and/or Misfire **DO NOT** clamp Micro-Clips too tightly to the Tigertail II Igniter.

NOTE: If you are using a different brand rocket motor and the Tiger-Tac does not fit into the nozzle, substitute the Tiger-Tac with a 1" x 1" square of recovery wadding crumpled into a small ball and pushed into the motor nozzle with a pen or pencil tip to hold igniter wire in place.

LAUNCH PROCEDURES

LAUNCH SITE SELECTION

Select a large area away from tall trees, power lines and low flying aircraft. Parks, playgrounds, soccer and football fields make great launch sites.

DO NOT LAUNCH ROCKETS IN AREAS WITH BROWN GRASS, DRY WEEDS, OBSTRUCTIONS OR ANY HIGHLY FLAMMABLE MATERIALS.

The larger the launch site the easier it will be to recover your rocket. See the N.A.R. Safety Code for additional information.

NOTE: (for circular area, site dimension is the diameter in feet, for a rectangle area, it is the shortest side in feet.)

| Motor Type | Installed Total Impulse (Newton-Seconds) | Minimum Site Dimensions (feet) |
|------------|--|--------------------------------|
| A | 1.26-2.50 | 100 |
| B | 2.51-5.00 | 200 |
| C | 5.01-10.00 | 400 |

COUNT DOWN PROCEDURE

1. When your rocket is ready to launch be sure you and all spectators are standing at least 15 feet away from the launch pad.

2. Make sure the sky is clear of low flying aircraft. Wind conditions should be gentle. Be sure you have the attention of all individuals in the launching and recovery areas.

3. Arm your Launch Controller with the Safety Key. The arming light should go on. If arming light does not go on check battery power, electrical connections and igniter installation. Clean the Micro-Clips with sandpaper if necessary.

4. With rocket armed announce to the spectators in a loud voice, "the rocket is armed and counting ...5...4...3...2...1...Lift-Off!"

5. Push the launch button down momentarily until the rocket motor begins thrusting, then release it. The rocket should lift off from the launch pad almost instantly.

6. BE SURE AND REMOVE THE SAFETY KEY FROM THE LAUNCH CONTROLLER AS SOON AS THE ROCKET LIFTS OFF.

KEEP THE SAFETY KEY WITH YOU AT ALL TIMES.

7. REPLACE THE LAUNCH ROD SAFETY CAP IN BETWEEN LAUNCHINGS.

MISFIRE PROCEDURE

1. Occasionally, at the end of the countdown the rocket will fail to lift-off because the motor did not ignite. This usually occurs because the igniter was not making proper contact with the surface of the rocket motor's propellant..

2. Disarm the launch controller, wait one minute, then remove the model from the launch pad.

3. Remove the TigerTail II igniter from the motor nozzle, clean the micro-clips and install a new TigerTail igniter.

4. Repeat the countdown procedure again.

5. If arming light glows, but motor does not ignite, try repositioning the micro-clips on the Tiger Tail II igniter and repeat the countdown procedure.