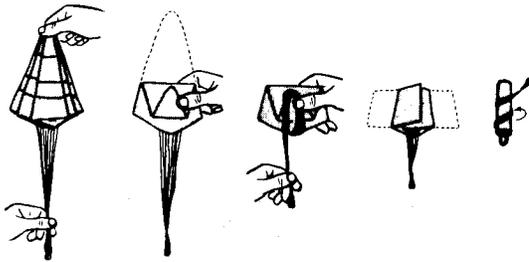
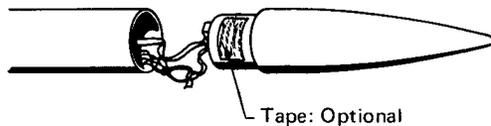


5. Roll chute tightly as shown, and insert.



6. Socket nose cone in place.

Cone fit: Snug, but not too tight. The cone should not be able to fall out of its own weight.

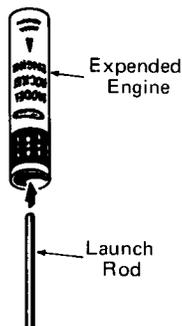


Carefully prepare and check all parts of your rocket before each flight.

Launch the TWISTER from any standard model rocket launcher having a 1/8" diameter x 36" steel launch rod.

Do not leave the rocket sitting in the sun for long periods as this may soften the adhesives.

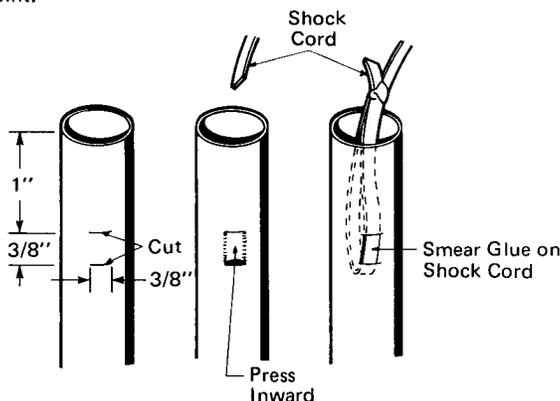
Referring to the specific instructions which accompany CENTURI launchers and firing panels, mount the rocket on the launcher and prepare for ignition. Avoid eye injury by capping the exposed tip of the launch rod when not actually launching! Follow instructions and the Safety Code, and have many happy hours with Model Rocketry.



#### SPECIAL TIP:

Shock cords and their fasteners sometimes blow out of small rockets. This can easily happen when they are not properly installed, or if the rocket sits in the warm sunlight too long. If this happens to you, do not attempt to reglue the fastener in place. After a few flights the inside of the body tube will be too gritty for a good glue bond. Instead, try this simple repair technique:

Cut two slits near the top of the body tube. Press the indicated area of the tube inward and drop the shock cord down thru the top and tie in a firm knot. Press the depressed portion of the body tube back into place and smear glue over the joint.

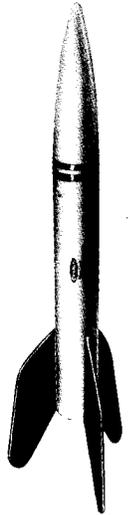


# TWISTER

Catalog No. KA-2

Centuri's Twister is a high flying sports model that actually spins as it streaks aloft. It returns gently by parachute to fly again.

This rocket is designed to be launched only from standard remote-controlled electrical launch systems. Always use the recommended engines and recovery wadding. Comply with all Federal, State and local laws.



## MODEL ROCKETEER'S SAFETY CODE

### CONSTRUCTION

My model rockets will be made of only lightweight materials such as paper, wood, plastic, and thin metallic foils, with the exception of payloads and engine holders made of wirelike material.

### ENGINES

I will use only pre-loaded factory made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.

### RECOVERY

I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.

### WEIGHT LIMITS

My model rocket will weigh no more than 453 grams (16 oz.) at liftoff, and the engines will contain no more than 113 (4 oz.) of propellant, as prescribed by Federal Regulations.

### STABILITY

I will check the stability of my model rockets before their first flight except when launching models of already proven stability.

### LAUNCHING SYSTEM

The system I use to launch my rockets will be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 10 feet away from any rocket that is being launched.

### LAUNCH SAFETY

I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.

### LAUNCH AREA

My model rockets will always be launched from a cleared area, free of any easy-to-burn materials, and I will only use non-flammable recovery wadding in my rockets.

### BLAST DEFLECTOR

My launcher will have a blast deflector device to prevent the engine exhaust from hitting the ground directly.

### LAUNCH ROD

To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.

### POWER LINES

I will never attempt to recover my rocket from a power line or other dangerous places.

### LAUNCH TARGETS AND ANGLE

I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.

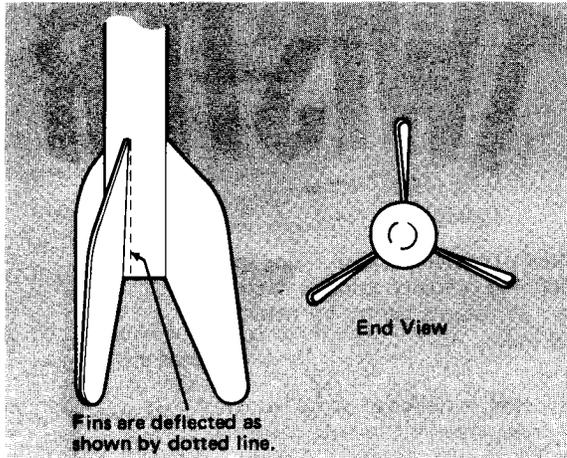
### PRE-LAUNCH TEST

When conducting research activities with unproven designs or methods, I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

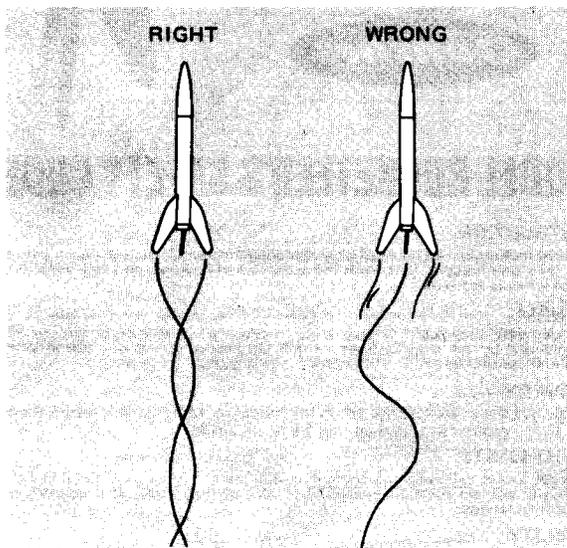
### FLYING CONDITIONS

I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low flying aircraft or under any conditions which might be dangerous to people or property.

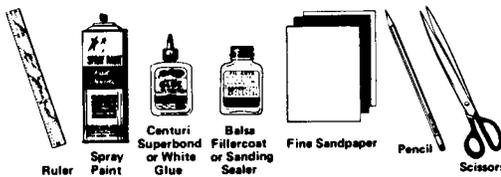
The Twister is spin-stabilized in flight by having each of its fins slightly tilted or canted.



The fins must each be glued on tilting the same way. If this is done neatly the rocket will spin on its axis as it climbs. If the fins are glued on sloppily the rocket will climb in an unpredictable spiral.

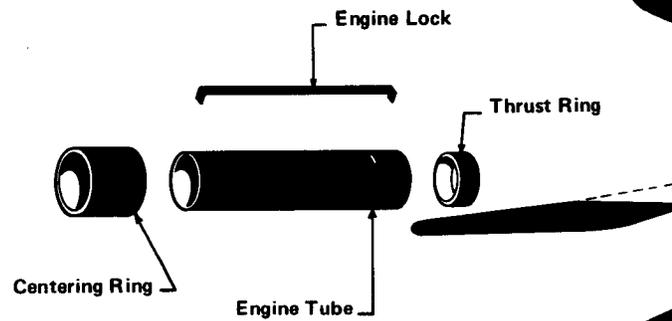
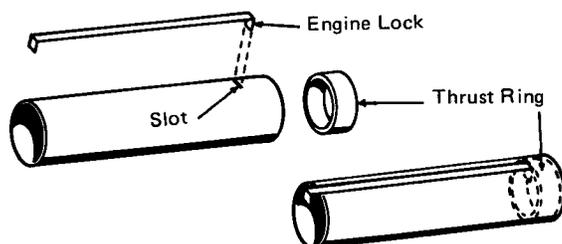


**TOOLS:** In addition to the parts supplied, you will need the following standard model rocket tools to assemble and finish this kit. **DO NOT** use model airplane glue for building flying model rockets.

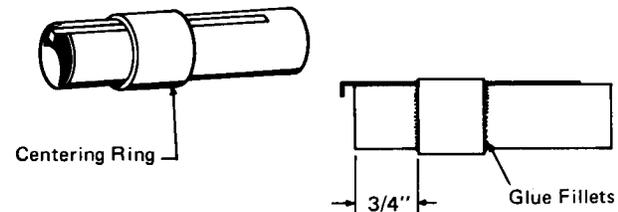


## ASSEMBLY INSTRUCTIONS

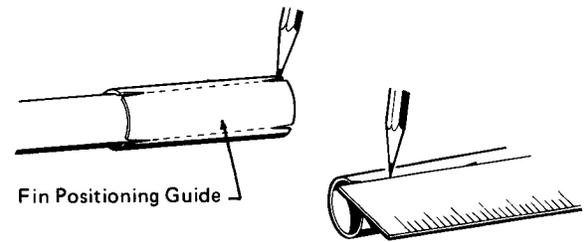
- Place one end of the engine lock in the pre-cut slot of the 3" engine tube. Apply a bead of glue around the inside of that end. Insert the thrust ring until it butts against the engine lock.



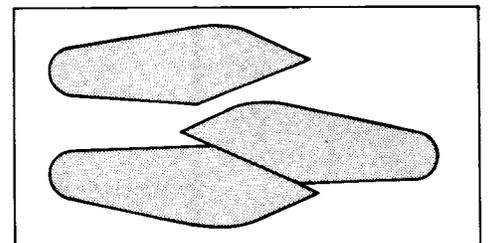
- Position the centering ring exactly as shown. Apply generous beads of glue around each end of the ring and smooth into "fillets" with your finger. Be sure engine lock is parallel with tube.

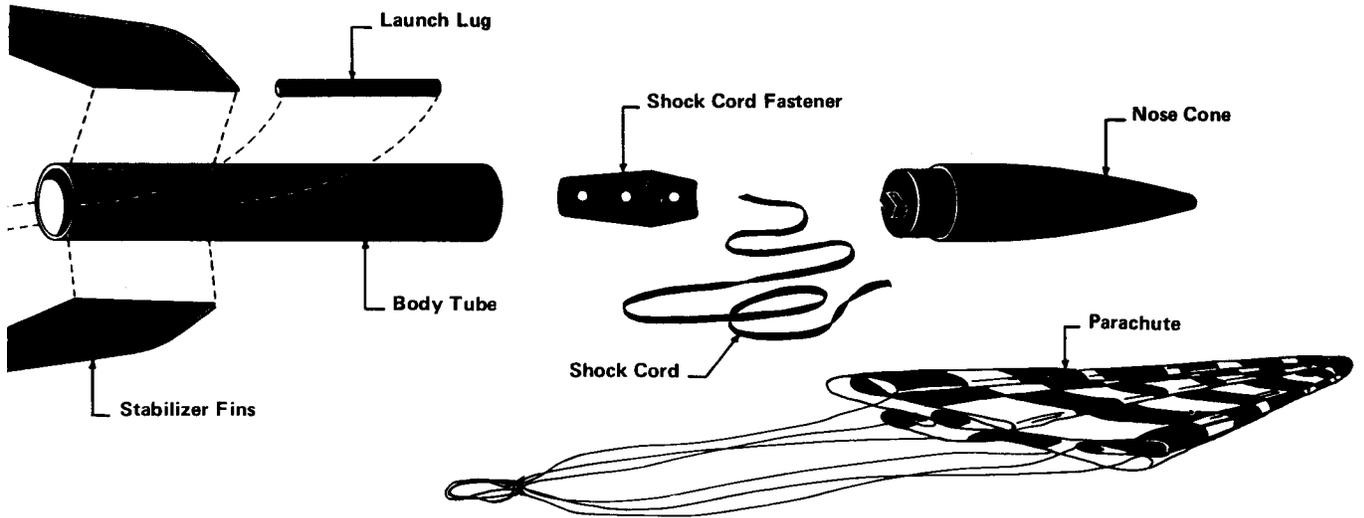


- While the engine mount is drying, cut out the fin positioning guide and wrap it around the body tube. Mark the fin locations. Using a straight edge, draw lines along the body connecting the marks. You will note the fin markings call for a small deflection. The canted fins will cause the Twister to spin in flight.

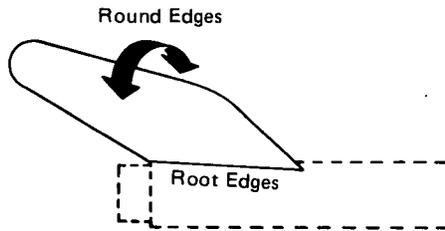


- Carefully push the die-cut fins from their sheet. Start at one point on each fin and work gently around. Use a modeling knife, if necessary, to separate the parts cleanly.

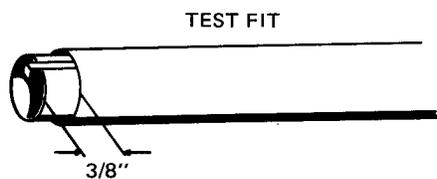




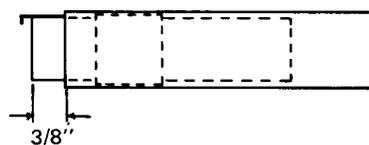
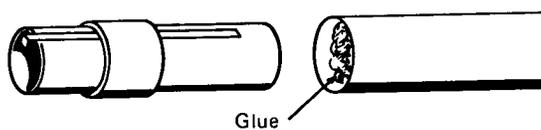
- 5** With fine sandpaper round all edges except the root edge, which will glue to the body tube.



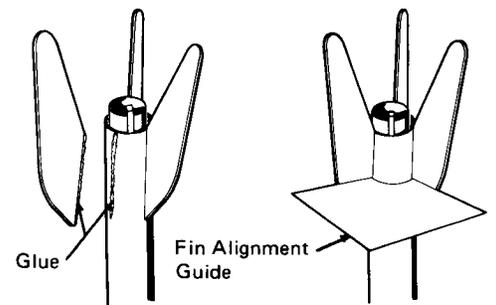
- 6** When the engine tube assembly is dry, test-fit it into the body tube. (Smooth inside edge of body tube, if necessary.) The engine tube should protrude 3/8".



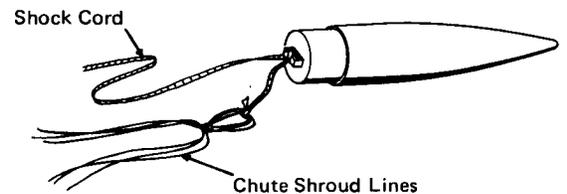
- 7** Remove the engine tube assembly, and run a generous bead of glue around the inside of the body tube. Push assembly back in place with a firm, even motion. Position the mount so that its metal lock does NOT line up with any of the drawn lines on the body tube.



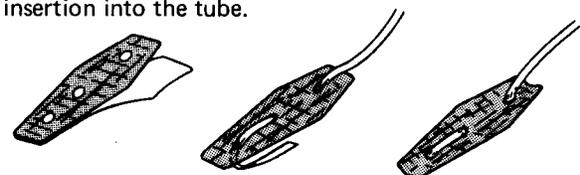
- 8** Apply glue to the root edges of the fins. Press the fins onto the tube making sure they line up with the slightly angled positioning marks. Remove the fins. Allow glue to become tacky, and reposition. Check the vertical alignment with the fin alignment guide and set the completed assembly aside to dry. Standing upright.



- 9** Pass one end of the shock cord thru the nose cone eyelet and tie with a firm knot. Tie the shorter free end of shock cord thru the loop in the assembled parachutes shroud lines.

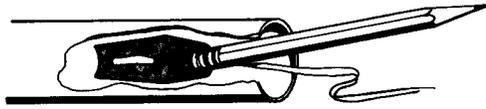


- 10** Peel the backing from the shock cord fastener. Thread the other end of the elastic shock cord through the fastener as shown. Take care not to touch the adhesive backing any more than absolutely necessary. Slightly crease the fastener lengthwise to allow easy insertion into the tube.



Press end of shock cord against adhesive back of fastener

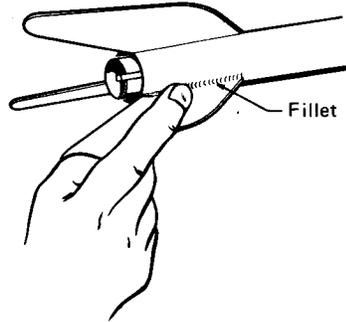
- 11** Insert the fastener 1" past the top of the body tube. Press firmly against the inside wall of the tube with a finger or eraser end of a pencil. **NOTE:** All edges of the fastener must be firmly contacted to the tube to insure a permanent bond.



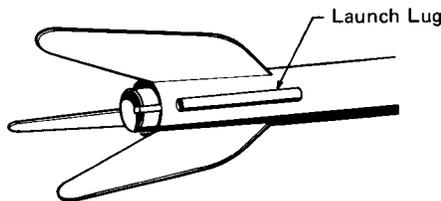
Press fastener firmly into place.

- 12** Tuck the recovery system into the body tube and socket nose cone in place.

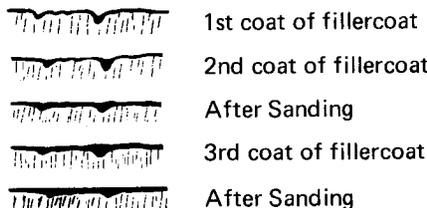
- 13** After the fin assembly has dried completely, run a bead of glue along both sides of each fin-body joint. Using your forefinger smooth the glue into even fillets.



- 14** Run a glue bead along the launch lug and attach it to the body tube. Make sure it is parallel with the body and centered laterally between two of the fins.



- 15** To provide a smooth, realistic fin surface, coat all balsa surfaces with balsa fillercoat. Work it in. Allow to dry thoroughly, and sand lightly. Repeat the filling and sanding steps until a smooth surface, completely free of grainline, is obtained.



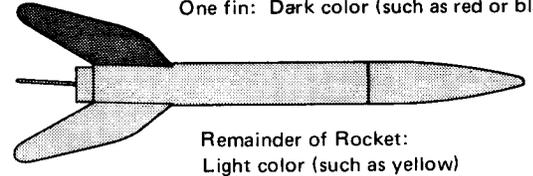
- 16** Spray painting your finished model with a fast-drying enamel will produce the best results. . . **IF IT IS DONE PROPERLY!!!** Most important is the number of coats of paint. **DO NOT** try to paint your model with one heavy coat! Instead, give it a couple of quick, light coats first and **THEN** a finish coat. Let each coat dry before applying the next.

- 17** When painting plastic parts, never use dope or lacquer! First, spray with an enamel primer. The plastic cone may then be spray painted in place, or removed for painting a separate color. Be sure to choose colors that the decals will show up well against.

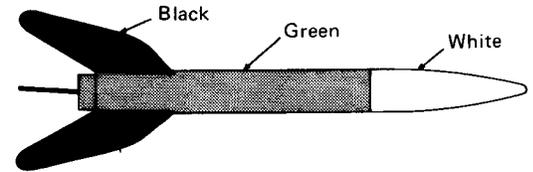
#### RECOMMENDED PAINT SCHEME

##### EASY

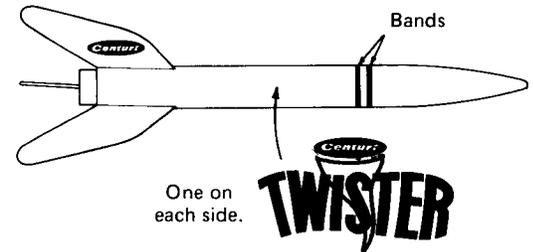
One fin: Dark color (such as red or black)



##### CHALLENGING



- 18** Allow the paint to dry. Apply the decals, one at a time, according to the instructions printed on the decal backing paper.



#### ENGINES:

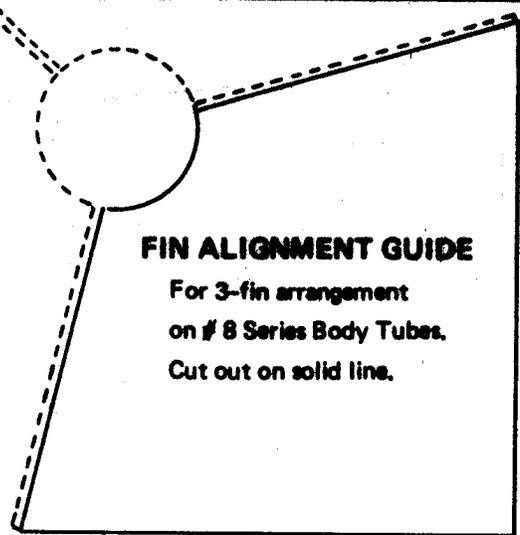
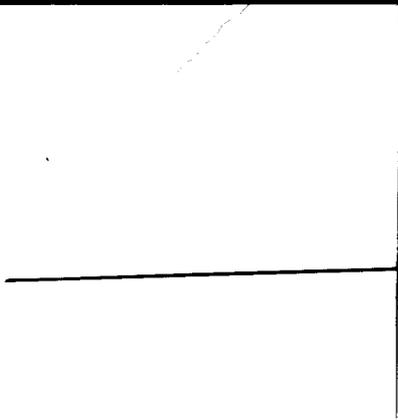
Igniters and complete engine installation instructions are included in "Engine Operating Instructions" which accompany all Centuri engines.

Engine	Approximate Altitude in ft.	Purpose
1/4A6-4 A5-4	150-250 300-400	Low Altitude - for first test flights and small launch areas.
B4-6 B6-6 B14-6	600-900 550-850 500-800	Medium Altitude - for general flying and medium size launch areas.
C6-7	1100-1700	High Altitude - for extremely high flights and large launch areas.

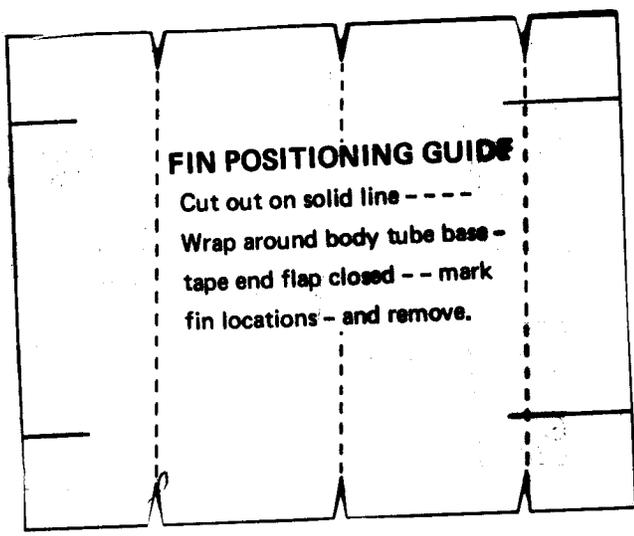
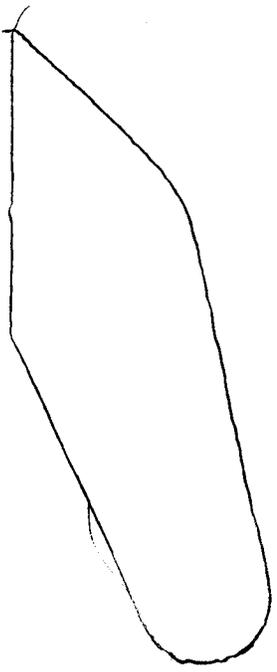
#### FLIGHT PREPPING:

1. Prep a recommended engine with igniter, and insert it, securing with engine lock.
2. Inspect shock cord fastener for firm bond.
3. Insert Flameproof Parachute Wadding according to its directions.
4. Tuck in shock cord.

(Continued)



**Centur**  
IP-300



# TWISTER

## FLYING MODEL ROCKET

- Spins As It Climbs
- Easy-To-Build
- Parachute Recovery
- Custom Decals



### RECOMMENDED ENGINES

Not included  
A6-3 A3-4 B4-4  
B6-6 B14-7 C6-7

### SPECIFICATIONS

Length 11"  
Body Dia. 0.91"  
Net Wt. 0.3 oz.

**Centuri**

#5002  
(KA-2)