

■ **LASER CUT 4 Fin Design!**

■ **Two Motor Cluster Rocket**

■ **Over 22" / 56 cm tall**

■ **Flights to 1100' / 325m**

■ **Decal included!**

■ **Includes laser cut  
lite-ply mounting  
rings and 2 metal  
motor retaining clips.**

■ **Precision Nose Cone**

■ **Safe 18"/46cm  
Parachute Recovery.**  
clear with **red printing**  
for easy tracking

■ **Distinctive Inclined  
motors mounts for  
exciting cluster launch!**

■ **Diameter: 1.637" / 42mm**

■ **Fin Span: 9½" / 24cm**

■ **Recommended Motors:**  
**Requires Two (2)**  
**per flight:**  
**A8-3, A8-5, B4-4**  
**B6-4(first flight),**  
**B6-6, C6-5, C6-7**



**The Screamer!**

**The Screamer!**<sup>TM</sup>



# The Screamer!

1  
MADE IN USA 2

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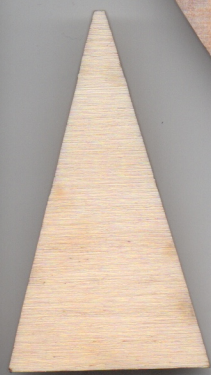
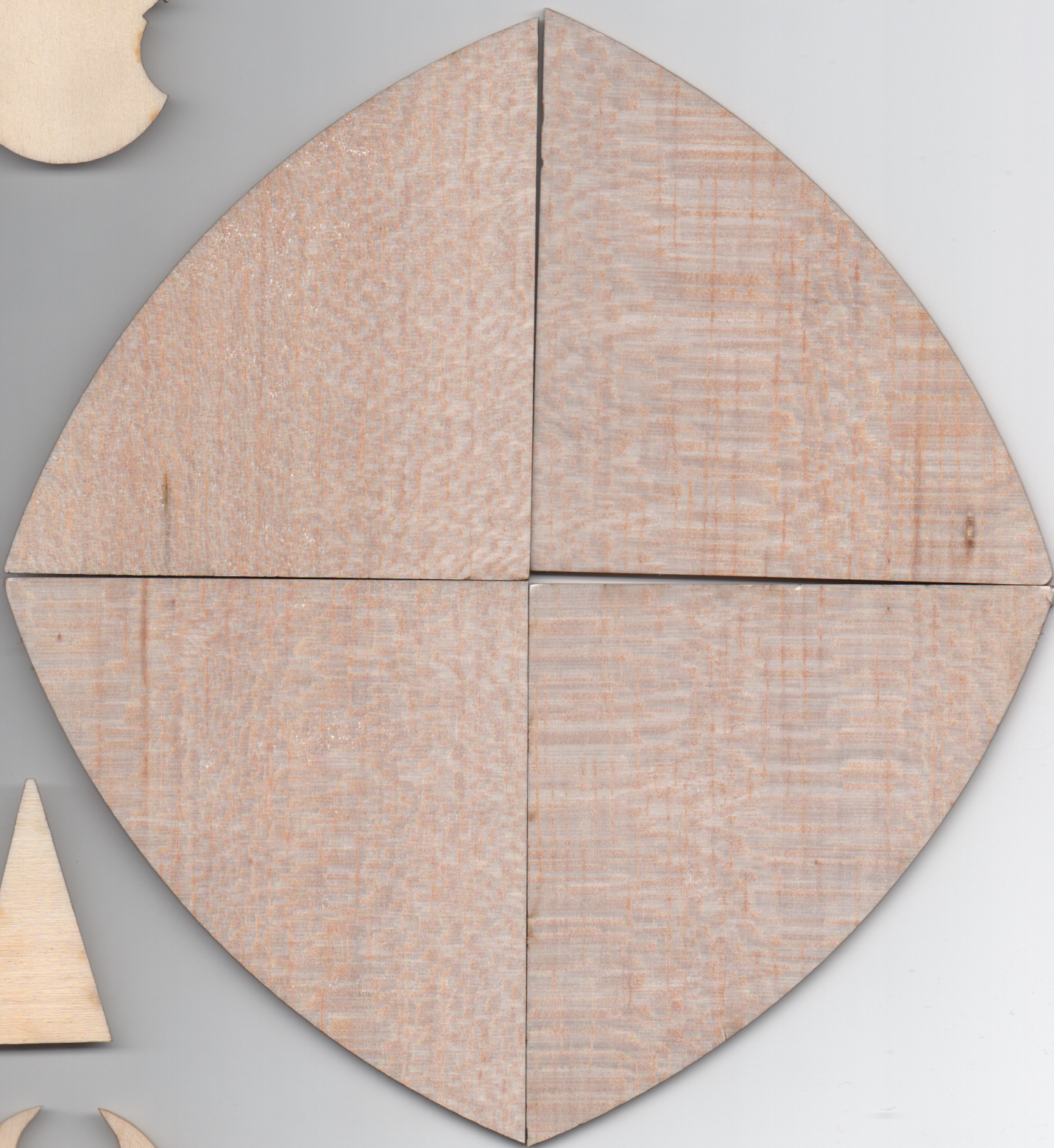
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# SUNWARD<sup>TM</sup> The Screamer!<sup>TM</sup> Model Flying Rocket

Recommended for Ages 10 and up  
Ages 10-16 with adult supervision  
Intermediate skill level recommended

**For support:**

[www.sunward1.com](http://www.sunward1.com)<sup>TM</sup>

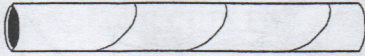
[Info@sunward1.com](mailto:Info@sunward1.com)<sup>TM</sup>

Use only single stage engines in this model

Recommended engines: TWO OF:

A8-3, A8-5, B4-4, B6-4(First Flight), B6-6, C6-5, C6-7  
Launch Pad, Ignition System, Engines, Igniters  
and Recovery wadding not included

1 MAIN BODY TUBE 18" (45cm) LONG



1 NOSE CONE

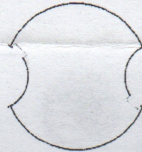


2 ENGINE CENTERING RINGS

upper



lower



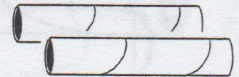
2 ENGINE  
THRUST RING



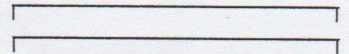
Mounting ring  
support



2 ENGINE TUBES



2 METAL ENGINE HOOKS

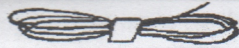


1 ELASTIC SHOCK CORD



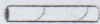
1 PARACHUTE SHEET

1 PARACHUTE  
ASSEMBLY STRING



Screw-eye

1 LAUNCH LUG



4 LASER CUT BALSA WOOD FIN



NOTE: Balsa fins must be removed only by cutting them out with a hobby knife. If you try to "punch" them out by hand, they may be seriously damaged

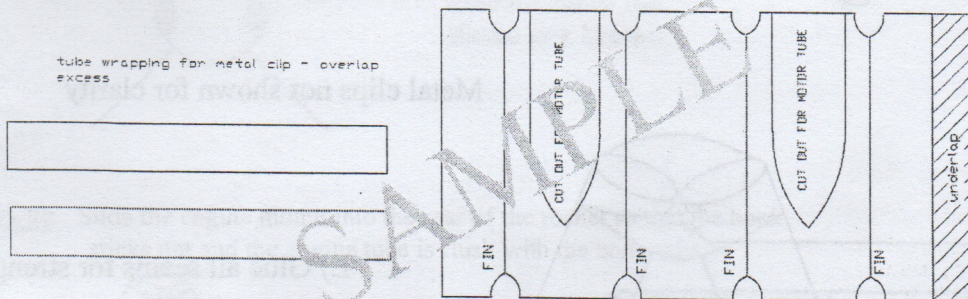
You will also need:

A ruler, 3/4" (2cm) thick book, white glue, scissors, hobby knife, cellophane tape, pencil, fine sandpaper, spray paint.

To install and ignite rocket engine, follow the instructions that are included with the engines or launch pad

This model is built to work with igniters, engines, recovery wadding and launch pads built by the leading manufacturers

**Step #1:** CUT OUT THE MARKING TEMPLATES FROM THE SHEET SUPPLIED. CUT ALONG THE OUTSIDE EDGE. Set aside.



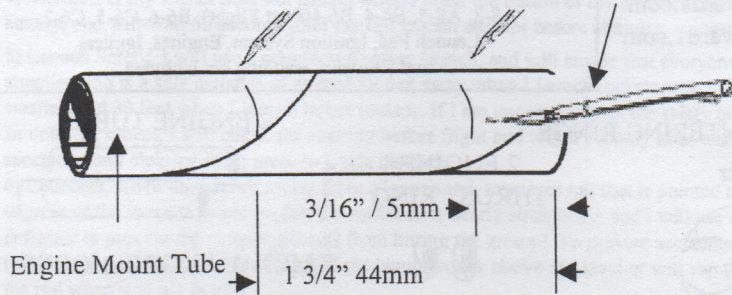


## Step 2: Motor Tube Assembly

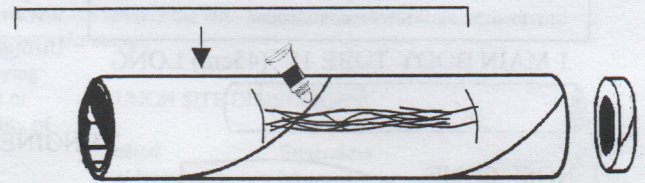
FOR EACH OF THE TWO ENGINE TUBES:

A) On the engine tube, mark two lines at  $3/16"$  / 5mm and at  $1\ 3/4"$  / 44mm

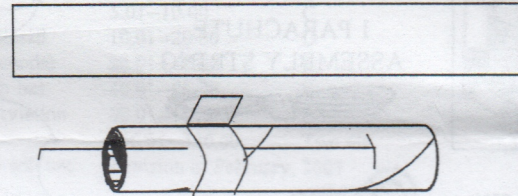
B) Cut  $3/16"$  5mm slit



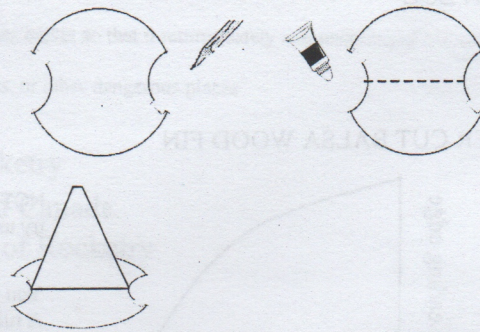
C) Place glue as shown. Position hook. Hook may not be exactly as shown.



D) Glue smallest ring (thrust ring) inside engine tube, making it even with the end of the engine tube



E) With the two Tube Wrapping guide cut in Step 1: Glue around the tube as shown on the mark made at  $1\ 3/4"$  / 44mm. You should now have 2 as shown. Set Aside to dry.

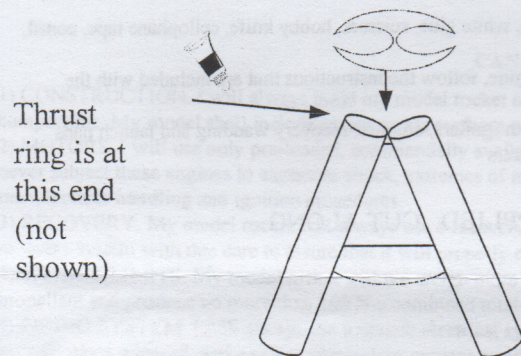


## Step 3: Motor Mount

**THIS IS A TEDIOUS TASK. TAKE YOUR TIME TO MAKE SURE ALL PARTS FIT BEFORE GLUING.**

A) With the Lower Mounting Ring, draw a line along the centre as shown.

B) Glue the Mounting Ring Support on this line (The triangle shaped piece.) Let dry.



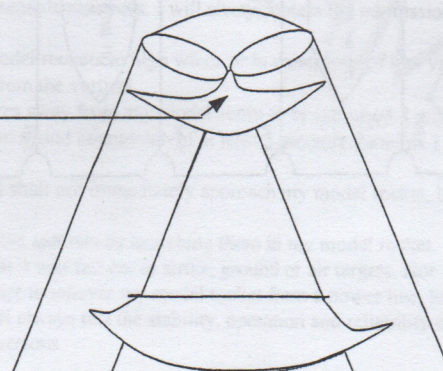
Thrust ring is at this end (not shown)

C) The two motor tubes assembled in Step # 2 and the upper Mounting Plate now need to be glued to this mount. Place glue along the Mounting Ring Support where it touches the motor tubes.

THE TWO METAL MOTOR RETAINING HOOKS NEED TO BE IN THE SLOTS IN THE LOWER MOUNTING PLATE PROVIDED.

Metal clips not shown for clarity

D) Glue the two motor tubes so the the top edges in the middle are just above the upper Mounting Plate. Set aside to dry



E) Glue all seams for strength.



**#Step 4A):** Wrap template around body (larger) tube. Fasten it together with tape so that the shaded area is over lapped by the “underlap” marking. TAPE TEMPLATE IN PLACE AT THE EDGE OF THE TUBE AS INDICATED ON THE TEMPLATE.

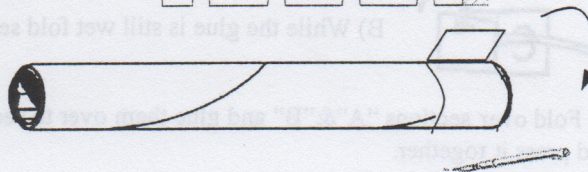
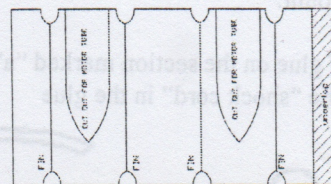
B) Mark the body tube on either side of the template where indicated for the fins.

**TAKE YOUR TIME IN THE FOLLOWING STEP. USE SMALL CONTROLLER CUTS FOR A BETTER FINISH.**

C) With the template, cut out the two area from the body tube marked “CUT OUT FOR MOTOR TUBES.” Use small and straight cuts. There are 2 areas to cut out.

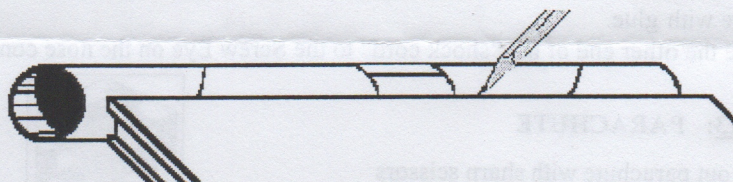
D) Test fit the motor mount to ensure a proper fit. The motor mount is designed to extend from the end of the body tube about 1/2” / 12mm

ALIGN THIS END WITH EDGE OF TUBE AT MOTOR END

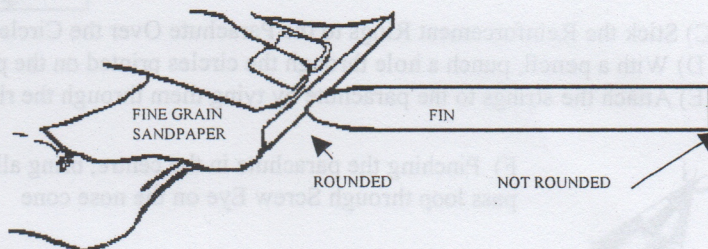


**Step 5A)** After cutting the two areas for the tube, remove the template.

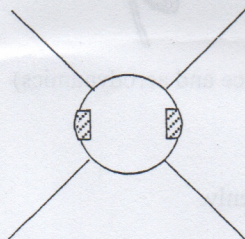
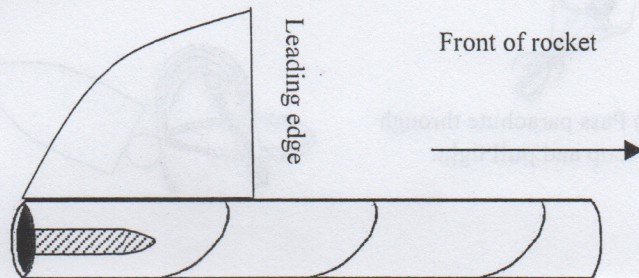
B) Using a hard cover book as a straight edge, draw lines about 4” / 10cm in length from the end of the body tube using the marks made in Step 4B. Be careful to make them as straight as possible!



**Step 6:** Carefully cut out all the fins from balsa sheet with a hobby knife. Do not attempt to “punch” them out by hand as this will severely damage the fins. Sand the leading edge for better performance.

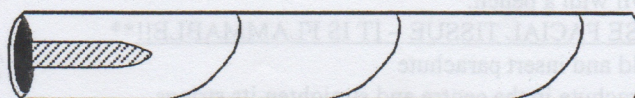
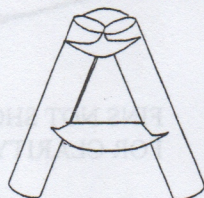


**Step 7:** Test fit each balsa fins. Sand if needed for a proper fit. Glue one fin to each of the marks made in Step 4. Keep work clean. Allow enough time for glue to dry. NOTE DIRECTION OF FIN PLACEMENT.



**Step 8):** The rocket, from the engine end, should look like this:

**Step 9):** Slide the engine mount into the rear of the rocket so that the hook sticks out and the engine tube is flush with the body tube.



B) Glue the launch lug on the tube next to any fin as shown.





**Step 10:** Screw the screw eye into the base of the nose cone.

**Step 11:** Cut Out the Following

Shock Cord Mount:

- A) Put a blob of glue on the section marked "a"  
lay the end of the "shock cord" in the glue



- B) While the glue is still wet fold section "A" over on the dotted line and press it together with section "B"

- C) Fold over sections "A" & "B" and glue them over to section "C"  
and press it together.

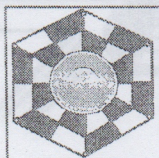
**Step 12:** A) Glue the "shock cord mount about 1 1/2" (4.5cm) down inside  
the top of the body tube

- B) In the centre of the base of the nose cone, insert by screwing the screw eye.  
Secure with glue.

- C) Tie the other end of the "shock cord" to the Screw Eye on the nose cone

### Step# 13: PARACHUTE

- A) Cut out parachute with sharp scissors

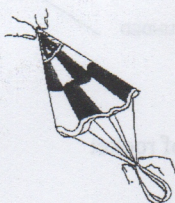


- C) Stick the Reinforcement Rings to the Parachute Over the Circles Printed on the Parachute

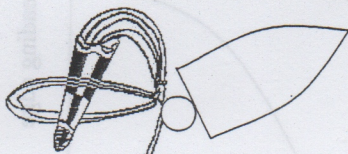
- D) With a pencil, punch a hole through the circles printed on the parachute

- E) Attach the strings to the parachute by tying them through the rings and holes

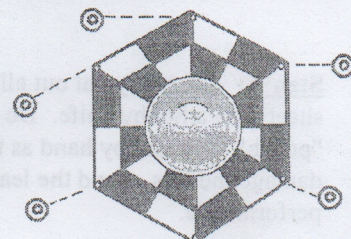
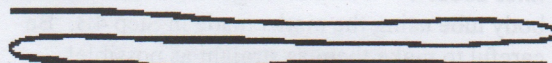
- F) Pinching the parachute in the centre, bring all strings to form one loop,  
pass loop through Screw Eye on the nose cone



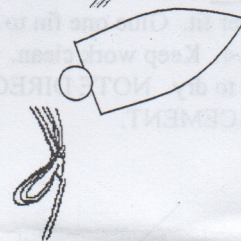
- G) Pass parachute through  
loop and pull tight.



- 13 B) Cut parachute string into  
3 equal lengths



- H) The parachute is now  
attached, fold and tuck it  
inside the body tube



**Step 14:** Painting your model:

- A. Sand fin until they are smooth. (Rounding fin edges by careful sanding will improve appearance and aerodynamics)  
B) Sand nose cone if needed.

**Step 15:** A) Spray paint entire model. Use light coats. Use only enough paint to cover model evenly.

- B) Remove nose cone

### Step 16: PREPARING ROCKET FOR LAUNCH

- A) Stuff 4 loosely crumpled squares of rocket recovery wadding (available  
from your local hobby retailer) into the top of rocket body tube

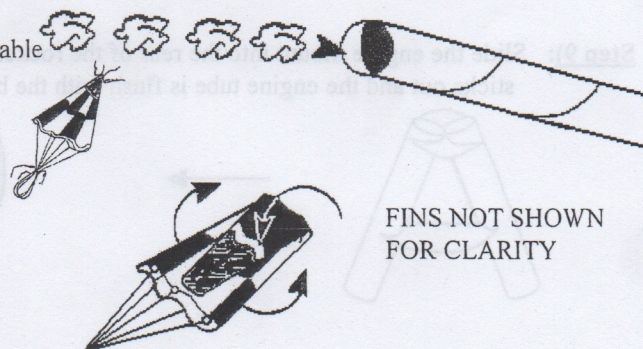
- B) Push down with a pencil.

\*\*\*DOT USE FACIAL TISSUE - IT IS FLAMMABLE!\*\*\*

**Step 17:** Fold and insert parachute

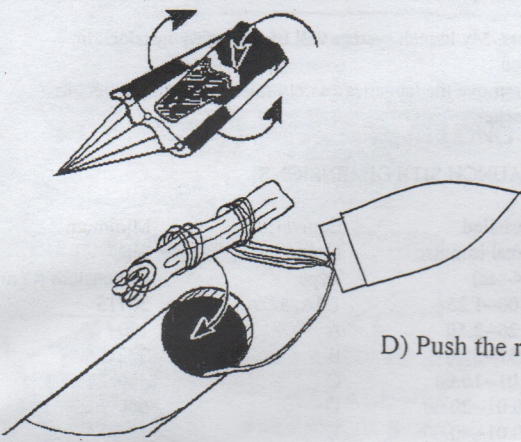
- A) Pinch parachute in the centre and straighten its strings

- B) Loosely fold over and roll outside edges inward



FINS NOT SHOWN  
FOR CLARITY





C) Loosely wrap parachute strings around parachute and drop the parachute into the body tube

D) Push the rest of the string and "shock cord" into the body tube and then insert nose cone.

TO INSTALL AND IGNITE ROCKET ENGINE, FOLLOW THE INSTRUCTIONS THAT ARE INCLUDED WITH THE ENGINES OR LAUNCH PAD  
THIS MODEL IS BUILT TO WORK WITH IGNITERS, ENGINES, RECOVERY WADDING AND LAUNCH PADS BUILT BY THE LEADING MANUFACTURERS

RECOMMENDED ENGINES: SEE FIRST PAGE TWO REQUIRED

**\*\*USE ONLY SINGLE STAGE ENGINES!!!\*\***

PREPARING THE ROCKET FOR LAUNCH: **\*\*IMPORTANT\*\***

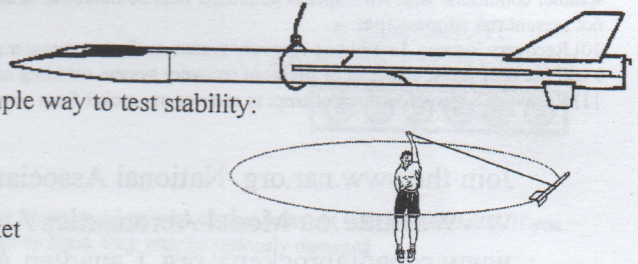
FLIGHT TEST: Every rocket must be tested for stability, here is a simple way to test stability:

A) With engine, wadding, and parachute installed and painting done, tie a 10' (3m) string around the rocket on its balancing point (the spot where it will hang level) tape string in place

B) "Fly" the rocket by twirling the string over your head so that the rocket "orbits" you at high speed

C) If the rocket flies straight, nose first, it is stable. If it does not, add weight to the nose cone. This can be done by dropping small balls of plasticine into the nose cone and pressing them into the point with the flat end of a pencil. Keep on testing, and if necessary, adding more weight to the nose cone until the rocket is stable. Then the rocket is stable, it may be launched.

**\*\*\*Never launch an untested rocket.\*\*\***



## ROCKET COMPONENTS WARRANTY

Sunward Model Aerospace guarantees that the components of this kit will reach you in good condition. If the kit does not reach you in good condition, simply return it\* to the address below and we will send you a replacement as soon as possible. Since building and launching skills vary from one hobbyist to another, Sunward Model Aerospace will not take responsibility for a rocket's performance, altitude loss or damage to property or injury to persons resulting from the use or misuse of any of our products. The buyer assumes all risks and liabilities therefrom and accepts and uses our products on these conditions. Your purchases from Sunward Model Aerospace affirms your agreement to these conditions.

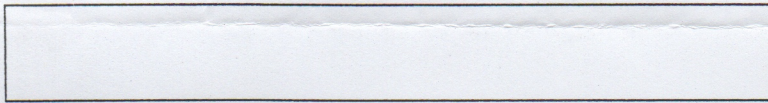
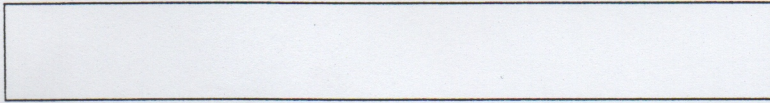
Sunward Aerospace Group Limited, 9 Rooksgrove Place, Toronto, ON, Canada, M6M 2W3

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Sunward Aerospace Group Limited  
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Item: 00 040 The Screamer! Model Rocket Kit  
Cutting Templates and Fin Templates

tube wrapping for metal  
clip - overlap excess



ALIGN THIS END WITH  
EDGE OF TUBE AT MOTOR  
END

Tube Slotting Template  
Fin Marking Template

