



## BT-50 Rocket Kit

Please read all instructions before assembling any parts of this rocket kit. For each step, dry-fit pieces before gluing them together, to fully understand the assembly process.

### 1. Motor Mount Assembly

Find the bag containing the Motor mount Parts (RK-75018) and follow the assembly instructions found inside.

### 2. Cutting the tube

If you decide to have shorter rocket, cut the tube at this time to get the desired tube length.

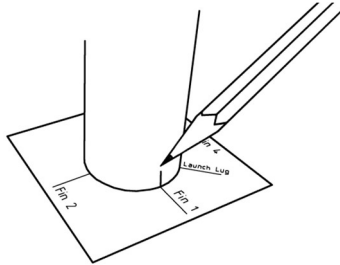
**IMPORTANT:** If you make the tube shorter, you may need to add weight to the nose cone. See step 11.

### 3. Marking the Tube

Decide whether you want to build this rocket in 3 or 4 fin configuration and whether you want to position the launch lug on fin line between the fins, or next to the fin.

Mark one end of the tube as "aft" (opposite of forward).

Place the aft end of the tube on the fin guide. Hold the tube in place so that it evenly covers the circle.

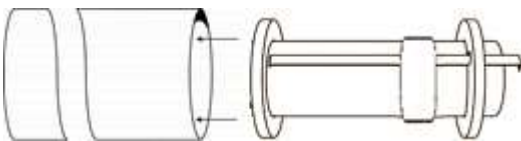


Mark the tube with a pencil for all fin locations and lug line if placing lug between fins. Choose the right pattern for your fin configuration. (3 or 4 fins). Draw and use your own template if you want to have more than 4 fins.

Use a straight edge (such as an aluminum angle) to draw lines along the length of the tube on the marks for fin locations.

### 4. Motor Mount Installation

Place a ring of glue approximately 2 1/2" inside the aft end of the tube and then insert the motor mount assembly halfway in. Place a second ring of glue inside the end of the tube.



Finish inserting the motor mount assembly into the tube.

The aft end of the motor tube (not the engine clip) should be flush with the end of the tube. Set aside and allow the glue to dry fully.

### 5. Cutting Fins

Lightly sand both sides of balsa sheet with fine sandpaper (300-400 grit).

Use piece of included card stock paper to draw the fin. Cut out the fin template with a sharp hobby knife. A metal ruler can help to ensure the cuts are straight. Put the fin template on a piece of paper and cut around the templates. Cut as many plain paper templates as there are fins to be cut. Position these paper templates on the fin stock to find the correct layout before making cuts in the balsa sheet. Orient the grain on the balsa wood with the leading edge of the fin.

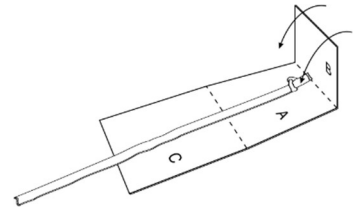
Before cutting the balsa fins from the balsa sheet, make sure you understand how to position the template. If this is done incorrectly, there may not be enough balsa stock to cut all fins. Once the correct layout is found, cut the fins from the balsa piece using the card stock fin template and hobby knife.

### 6. Shock Cord Attachment

Cut out the shock cord mount with a sharp hobby knife or scissors. Cut only on the solid black lines, do not cut the dashed lines.

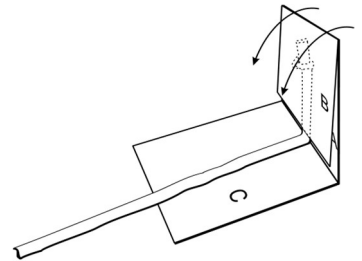
Tie a knot in the end of the shock cord.

Apply a generous amount of glue to panel A of the shock cord mount and lay the knot on top of it. Fold panel B on the dashed line, onto the knot and panel A. Hold closed until the glue grabs.

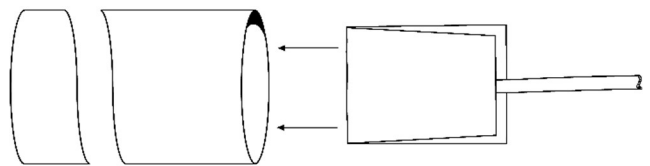


Spread more glue on the panel C. Fold panel B on the dashed line and down on the panel with the glue on it.

Hold this assembly between your fingers and gently apply pressure while the glue begins to set.



Apply glue to the outside of the shock cord assembly and glue it into the airframe.



Glue it at least 2" inside the tube, with the shock cord sticking out of the tube. If the shock cord assembly is not glued in far enough, the nose cone will no longer fit correctly. Allow the glue to dry.

Use the knife to clear the plastic from the nose cone eyelet. Make sure you do not cut into the eyelet post or nose cone. Sand the eyelet posts if necessary, to make sure there are no sharp edges to cut into the cord.

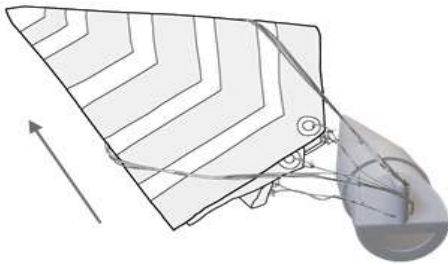
## 7. Fin Attachment

Position the fins on the fin lines at the desired position and glue each fin in place, allowing the glue to dry before attaching the next fin.

Run a bead of glue along each fin-tube joint. Smooth out the glue with your finger and set aside to dry. Another bead can be added for larger glue fillets.

## 8. Parachute assembly

Feed the parachute shroud lines through the nose cone loop and then insert the parachute through the string loop, then pull the parachute to tie it to the nose cone.



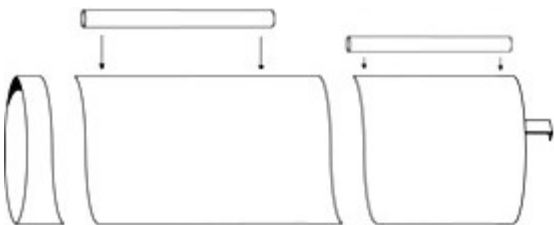
Securely, tie the open end of the shock cord to the nose cone loop.

## 9. Launch Lugs

Pack the parachute inside the rocket, insert the nose cone and at the same time insert the largest rocket engine or similar weight you plan to use in your rocket. (Estes engine approximate weight: A-16g, B-20g, C-25g)

With rocket motor inserted, balance the rocket on your finger to locate the center of gravity (CG). Mark CG with a pencil.

Glue the first launch lug flush with the aft end of the tube on the lug line, or next to one of the fins.



Glue another lug on the center of gravity mark you just made at the same radial position as the first lug.

**Make sure launch lugs are aligned.**

## 10. Painting (optional)

Apply primer to entire rocket. Let dry. Paint your rocket and the nose cone. Let dry.

## 11. Rocket Stability

To help ensure safe/stable flights, it is important to check the stability of the finished rocket.

We recommend using the free OpenRocket software, which can be found at: <http://openrocket.info/>  
The OpenRocket file for this rocket is available at: <https://www.rocketarium.com/docs/custom50.zip>

This file is for reference only, since the shape of the fins or any other change to the kit will affect the rocket stability. We included Basic Rocket stability flyer with the rocket pack where you can find other methods of finding the CP and ensuring that your rocket is stable.

The CG should be at least 1.1" (or more) in front of the CP. To move CG forward – add more weight to the nose cone.

## Recommended Motors & Launch Preparation

This rocket must be launched from the standard 1/8" launch rod.

The following motors are recommended for this rocket:  
Estes® A8-3, B4-4, B6-4, C6-5

Put 2 sheets of wadding into the rocket and push it down as far as possible. Pack the parachute and feed the lower portion of the shock cord into the airframe. Insert the folded parachute. Parachute should not be packed too tightly, or it may not eject.

Insert the nose cone into the airframe. Make sure it is not too tight or loose. Insert rocket motor into the motor mount, making sure it is locked securely in place. Your rocket is now ready for launch.

## Model Rocket Safety

Model rocketry is a hobby that is not without risk.

By using this rocketry product, you agree not to hold Rocketarium.com and/or Denau Hobby Supplies and its employees liable for any damages, or injuries, caused by (directly or indirectly) use of this product.

Always follow the National Rocketry Association (NAR, [www.nar.org](http://www.nar.org)), Tripoli Rocketry Association (TRA, [www.tripoli.org](http://www.tripoli.org)) or Canadian Rocketry Association (CAR) safety rules.