

Flying Your Model

IMPORTANT: Always remember to check your balance point and ensure your C/G is forward of the specified C/G point.

IMPORTANT: Always follow the NAR Safety Code and remember that rockets are not toys and can be dangerous if not prepared and used properly. If you are a beginner, it is a good idea to fly with a club or other group of experienced rocketeers until you have gained some experience.

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IMPORTANT: Please contact us via phone or email if you have any questions about constructing or flying your model.

Bomarc

Specifications

Length: 27"

Weight: 10.5 oz.

Motor: 24mm

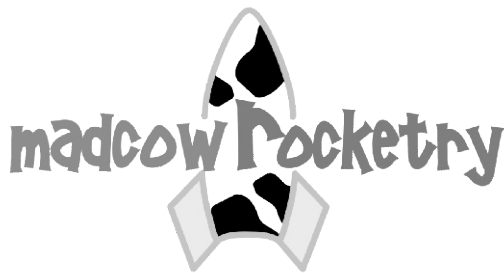
C/G: 13.25" from nose tip

Recommended Motors: D12-3, E9-4

Diameter: 1.6"

Recovery: 18" Chute

Fins: 1/8" Bass Wood

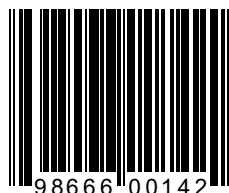


24338 El Toro Rd #3-134
Laguna Woods, CA 92637
949.547.8847

www.madcowrocketry.com
support@madcowrocketry.com

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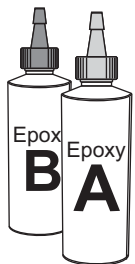
K-142



Parts List

- (1) Nose Cone
- (1) Body Tube (22" Long)
- (2) Ram Jet Nose Cones
- (2) Pod Tubes (6.5" Long)
- (1) Laser cut Bass Wood Sheet
- (2) Centering Rings
- (1) Motor Tube (3.75" Long)
- (1) Thrust Ring (1/4" Long)
- (1) Motor Clip
- (1) Motor Spacer (1" Long)
- (1) Nylon Shock Cord Section
- (1) Kevlar Shock Cord Section
- (2) Launch Lugs
- (1) Decal Sheet
- (1) 18" Nylon Chute
- (3) 1/8" x 1/4" x 24" Balsa Strips

You'll need these items to complete this kit



5 Minute Epoxy



Wood Filler and Paint



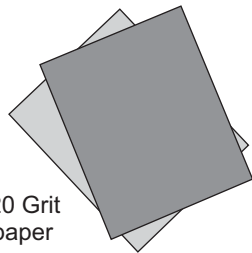
Lead Shot for balance



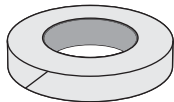
Wood Glue & Original Brown Gorilla Glue



Electrical Tape



120/220 Grit Sandpaper



Masking Tape



Hobby Knife and Pencil

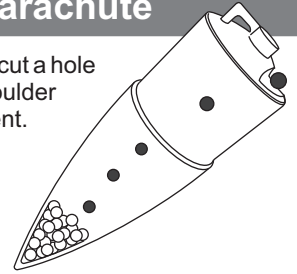
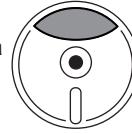
Please make sure you read all directions and understand how to assemble your model before you start construction. It is also a good idea to test fit each part before assembly - some manufacturing tolerances may require light sanding before final assembly.

Laser cut parts will exhibit varying amounts of charring on the edges depending on the density of the wood. The charred edges do not interfere with bonding and do not need to be cleaned before assembly. In most cases the charring will be cleaned up during sanding for finishing and painting.

Nose Cone and Parachute

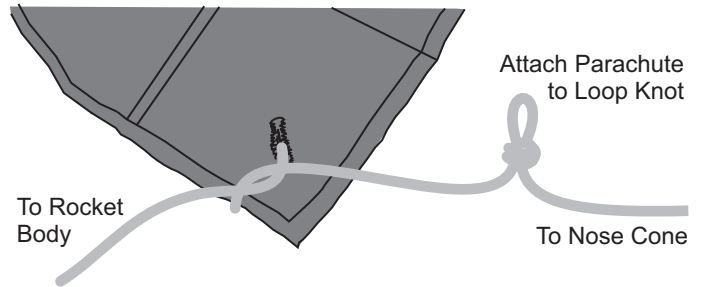
- Step 33 - Using a sharp knife, cut a hole in the bottom of the nose cone shoulder opposite the shock cord attachment.

Remove Grey Area



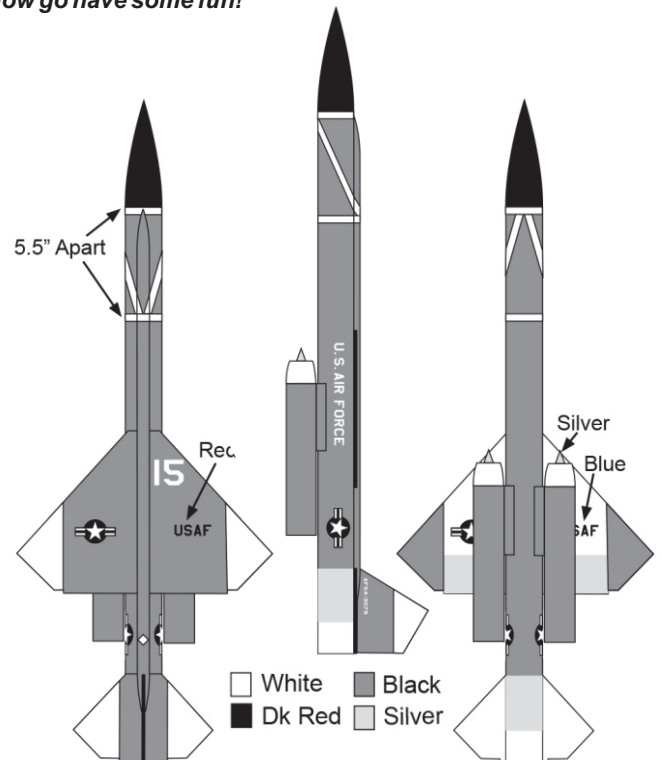
- Step 34 - Insert 4.75oz. of lead shot into the nose cone. Check the C/G point. When it is 13.2" from the nose cone tip, drip some Epoxy or Gorilla Glue over the lead shot to hold it in place. A few drops of water will activate the glue and cause it to expand. Let the nose cone weight dry with the tip down.

- Step 35 - Pull the shock cord out the front end of the body tube. Slide the eyelet on the parachute protector 1/3 the way down the shock cord. Tie a single overhand knot over the eyelet. Tie an overhand loop 2" above the chute protector. Attach the parachute to the loop knot.



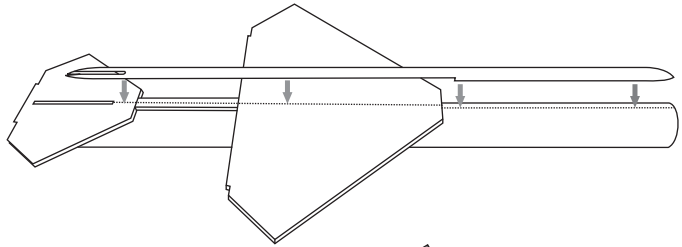
- Step 36 - Tie the nylon line to the base of the nose cone with a square knot.

Your model is now ready to paint and fly.
Now go have some fun!

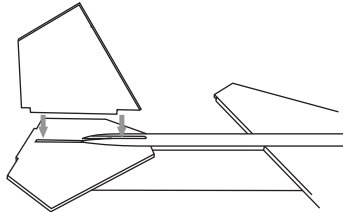


Mini Bomarc Assembly

- Step 24 - Glued the shaped conduit onto the body and wing assembly. The stacked front section should but up against the front of the wing. The back end should sit squarely on top of the spacer piece between the wing and stabilizer.

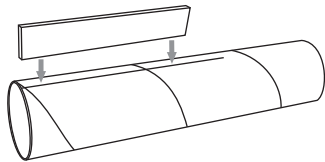


- Step 25 - Insert the vertical fin into the slot and secure with wood glue. Make sure the fin root is flush with the back and 90 degrees to the horizontal stabilizer. When the glue is dry, apply fillets to both sides of the vertical fin joint.



Ramjet Pod Assembly

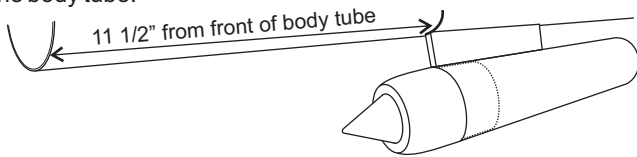
- Step 26 - Glue a pod fin to a pod tube along the alignment line drawn earlier. The pod fin should be flush with the front of the tube and 90 degrees from the tube.



- Step 27 - Apply fillets to both sides of the pod fin / pod tube joint. Repeat for the other pod.

- Step 28 - Make a mark 11 1/2" from the front of the main body tube on both pod alignment marks.

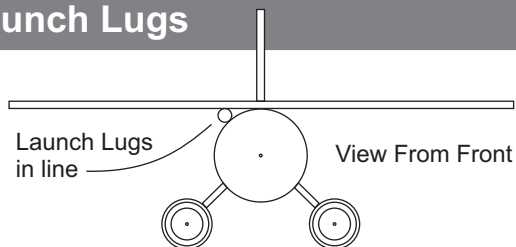
- Step 29 - Glue the pods along the alignment marks on the body tube with the front of the pod fin lined up with the 11 1/2" mark made in the previous step. Make sure the pods are 90 degrees to the body tube.



- Step 30 - Apply glue fillets to both sides of each pod fin / body tube joint.

- Step 31 - Glue the pod nose cones to the front of each pod.

Launch Lugs



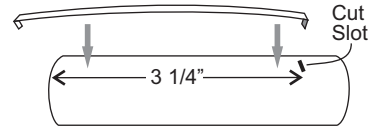
- Step 32 - Glue a launch lug near the aft end of the rocket in the corner between the body tube and below the horizontal stabilizer. Glue the other launch lug near the forward end of the wing in the corner between the body tube and under the wing.

Motor Mount Assembly

- Step 1 - Lightly sand the glassine coating on the motor tube. Glue will not stick very well to the glassine and roughing the tube will help the glue stick.

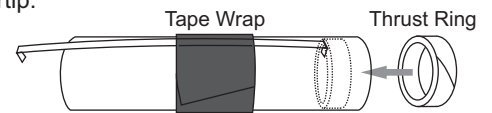
- Step 2 - Test fit the centering rings over the motor mount tube and sand if necessary. The ring should slide snug over the motor tube without deforming it. Also test fit the centering rings in the body tube and sand if necessary.

- Step 3 - Cut a 1/8" wide slot 3 1/4" from the aft end of the motor tube.



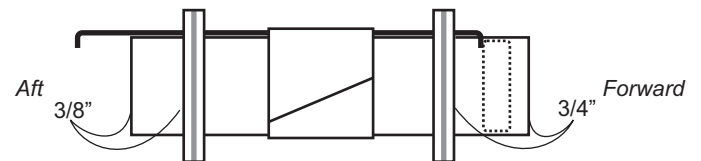
- Step 4 - Insert one end of the motor clip into the slot cut in the last step. Apply one full wrap of electrical tape around the motor clip.

- Step 5 - Slide the thrust ring into the top of the motor mount tube until it rests against the top bend of the motor clip. Apply a ring of glue at the thrust ring motor tube joint and smooth off the excess with a fingertip.



Before gluing on the centering rings, study the engine mount cross section below:

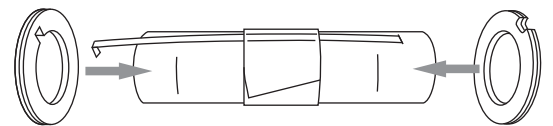
The aft centering ring is glued with 3/8" of the motor mount tube exposed. This is important so the fin tabs will fit into their slots.



The forward centering ring is glued with 3/4" of the motor mount tube exposed.

With a pencil, mark the tube 3/8" from the rear and 3/4" from the forward end.

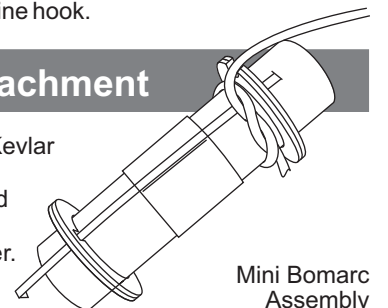
- Step 6 - Line up the lower centering ring (slot on the inside edge) over the motor clip. Slide the centering ring over the aft end of the motor tube until there is 3/8" exposed. Apply wood glue around the centering ring to hold it in place. Wipe off the excess glue with a fingertip. Let glue dry.



- Step 7 - Glue the remaining upper centering ring (notch on the outside edge) with 3/4" of the motor tube exposed. The ring will go over the upper end of the engine hook.

Shock Cord Attachment

- Step 8 - Wrap the yellow Kevlar around the motor tube and tie an overhand knot. Apply wood glue over the knot to secure it so it doesn't come loose later.

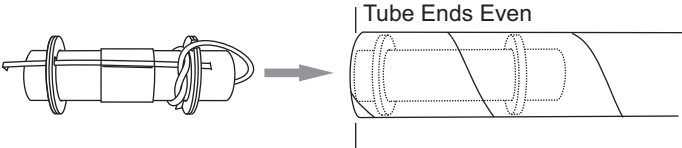


□ Step 9 - The shock cord in this kit consists of a shorter section of yellow Kevlar and a longer section of white nylon cording. The two sections should be tied together using a single overhand, ring bend or double fisherman's knot. The yellow Kevlar section is attached to the motor mount and the yellow nylon section will be attached to the nose cone.



Insert Motor Tube Assembly into the Body Tube

□ Step 10 - Wrap the shock cord in a small bundle and stuff it inside the motor tube for the next step. Test fit the motor tube assembly in the aft end of the body tube to insure a snug fit. Sand the centering rings if necessary.

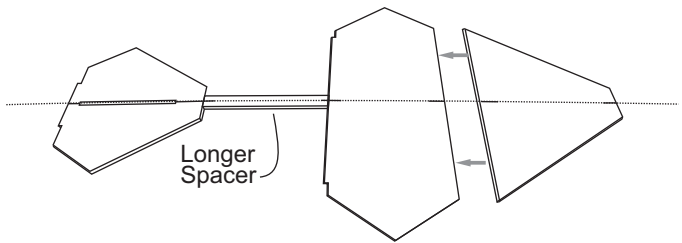


□ Step 11 - When you are satisfied with the fit, spread some wood glue inside the body tube about 2 1/2" from the aft end. Make sure you have the motor assembly facing the right way - The centering ring with the Kevlar tie should slide in first. Slide the forward centering ring of the motor mount assembly into the body tube. **IMPORTANT:** Make sure the shock cord passes through the notch between the centering ring and body tube. Spread more glue on the inside of the body tube near the aft edge before sliding the rear centering ring into the body tube. Continue sliding the assembly into the body tube until the aft end of the motor tube is even and lined up with the aft end of the body tube.

Fin Assembly

It's up to the builder - The wing, horizontal stabilizer and rudder edges can be left square or rounded. Don't round any edges that will be glued.

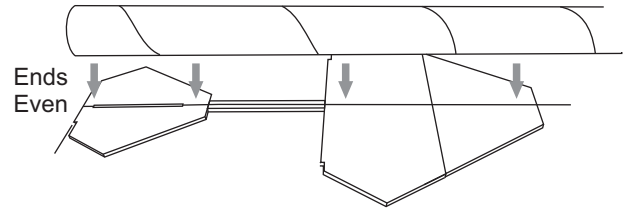
□ Step 12 - Mark the center of the front and rear of the two wing pieces, the horizontal stabilizer and the spacer. Note that the spacer is the longer of the 3 bass wood rectangle. The shorter rectangles are used on the pod fins later in Step 27.



□ Step 13 - Using a flat surface and straight edge, apply wood glue to join the four basswood pieces as shown in the drawing. Make sure the drawn center lines are lined up with each other. Use a straight edge to check the alignment.

□ Step 14 - Apply a line of wood glue down the centerline of the fin assembly shown in the drawing below. Make sure you don't allow any glue to get into the slot in the horizontal stabilizer because it will be difficult to clear later. With the engine mount assembly to the rear, press the body tube into the glue ensuring the tube is aligned on the center marks drawn earlier. **IMPORTANT:** Make sure the end of the body tube is even with the end of the horizontal stabilizer.

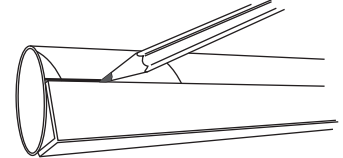
See illustration on next page . . .



□ Step 15 - Apply wood glue fillets between the body tube, wing and horizontal stabilizer. Smooth and remove excess glue with a fingertip.

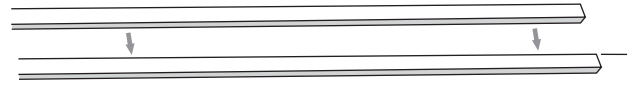
□ Step 16 - Cut out the fin pod alignment template. Wrap it around the body tube in front of the wing. Align the center line mark on the template with the center line of the wing. Mark the two pod fin locations on the body tube.

□ Step 17 - Using a door jamb or section of angle stock, pencil a line down the body tube on the pod fin alignment marks.



□ Step 18 - Similarly pencil a single line on each of the pod body tubes that extends from the front to the middle of the tube length. This is used later to align the pod fins.

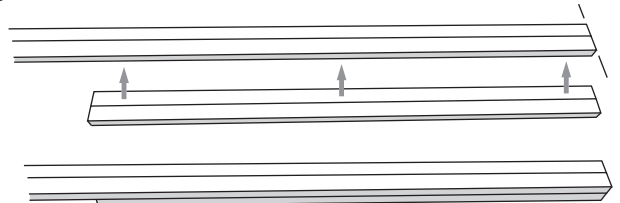
□ Step 19 - Glue two of the 1/8" x 1/4" pieces side by side forming a long 1/8" x 1/2" section. Let dry. Cut the assembly to 19 3/4" long.



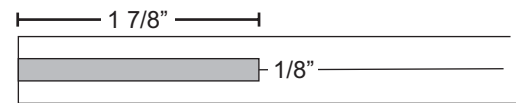
□ Step 20 - Cut two 7 1/2" long pieces from the remaining 1/8" x 1/4" balsa stock and glue these side by side to form a 1/8" x 1/2" section.



□ Step 21 - Glue the 7 1/2" section under the front end of the longer section. Be sure the front and sides are even and smooth.



□ Step 22 - Mark the back end for the stabilizer slot as shown. Using a sharp knife cut out the slot.



□ Step 23 - Mark the two layer front end 1 1/2" from the front. From this 1 1/2" mark, round and taper the end. Cut the sides profile first, then round over the top. Do the same with the back end. The front end is double height, the notched back end is a single thickness.

