

BULL puppy

Assembly instructions

Please read and understand all instructions before continuing!

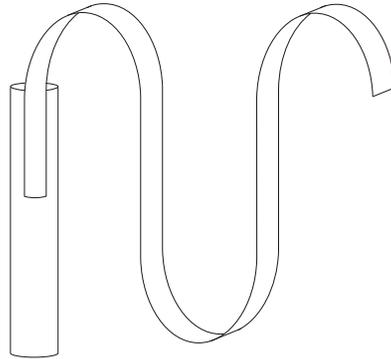
Stuff you will need:

One set of either 5 or 15 minute epoxy
 One sheet of each fine and medium sand paper
 Ruler and pencil
 12" x 12" piece of wax paper
 Masking tape

Step 1

NOTE: Be sure to scuff all parts to be bonded using medium sand paper.

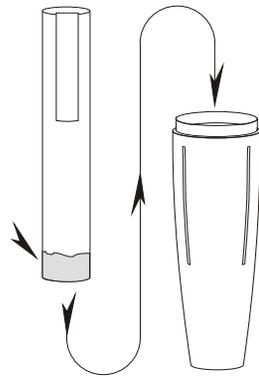
Epoxy one end (approx. 4-5") of the piston strap (the 3/4" wide one) to the outside of the motor mount tube. Use masking tape to hold the strap in place while the epoxy cures. Do not cut the strap. When the epoxy has cured, stuff the free end of the strap into the motor tube to keep it out of the way for the next few steps.



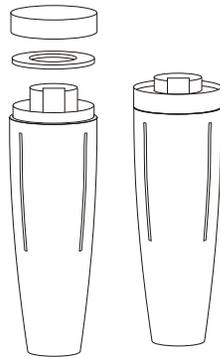
Step 2

NOTE: The following step *must* be completed without interruption. Please read and understand this procedure before continuing.

Stand the boat tail upright on a flat surface, preferably on a piece of wax paper. Spread a large bead of epoxy on the bottom end of the motor mount tube as illustrated. Place the motor mount tube into the boat tail and press down to make sure the tube is seated flush with the bottom. Align the strap between the slots so that it does not interfere with fin mounting.

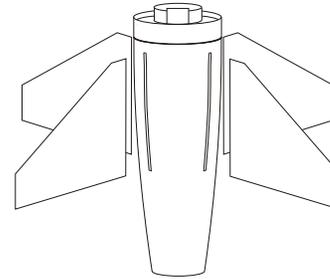


Without using any adhesive, immediately place the centering ring over the top of the motor mount tube and press down firmly until it is in contact with the top of the boat tail. Next slide the alignment ring over the centering ring, again without adhesive, and press until it is seated against the boat tail shoulder. Allow to cure. Keep the centering ring and alignment ring in position while mounting the fins.

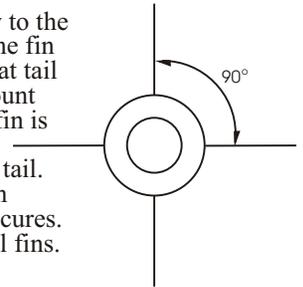


Step 3

NOTE: Be sure to scuff all parts to be bonded using medium sand paper.



1) Apply a bead of epoxy to the root edge of a fin. Push the fin through the slot in the boat tail and against the motor mount tube. Make sure that the fin is perpendicular to the boat tail. Use tape to hold the fin in position while the epoxy cures. Repeat this process for all fins.

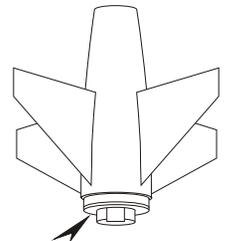
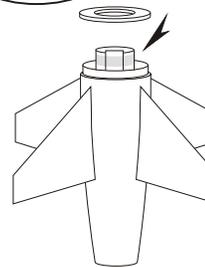


2) Apply an epoxy fillet to both sides of each fin. Carefully smooth the epoxy with your finger before it begins to gel. Allow the epoxy to set-up before rotating the rocket to do the next set of fins. Once the epoxy has fully cured, you should sand the fillet smooth with 180 grit sandpaper. Sanding will help the primer hold better to the epoxy.

3) Carefully remove the alignment ring and the centering ring from the top of the boat tail. Apply epoxy fillets to the fin attachment points within the boat tail. Discard the alignment ring.

Step 4

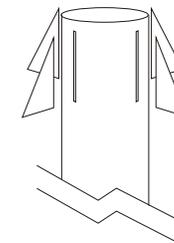
Apply a bead of epoxy near the top of the motor tube and slide the centering ring back into position over the motor tube. Turn the entire assembly upside-down so that the epoxy pools at the underside of the centering ring. Allow the epoxy to cure.



Step 5

NOTE: Be sure to scuff all parts to be bonded using medium sand paper.

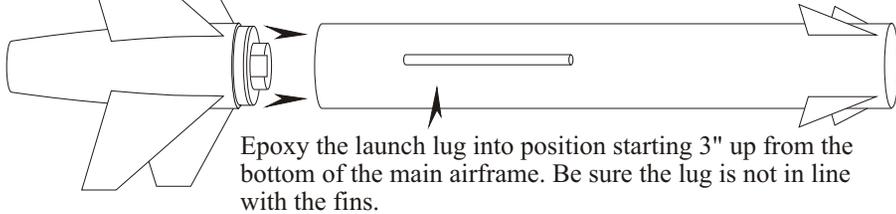
1) Apply a bead of epoxy to the root edge of a fin. Push the fin through the dado groove in the airframe. Make sure that the fin is perpendicular to the airframe. Use tape to hold the fin in position while the epoxy cures. Repeat this process for all fins.



2) Apply an epoxy fillet to both sides of each fin. Carefully smooth the epoxy with your finger before it begins to gel. Allow the epoxy to set-up before rotating the rocket to do the next set of fins. Once the epoxy has fully cured, you should sand the fillet smooth with 180 grit sandpaper. Sanding will help the primer hold better to the epoxy.

Step 6

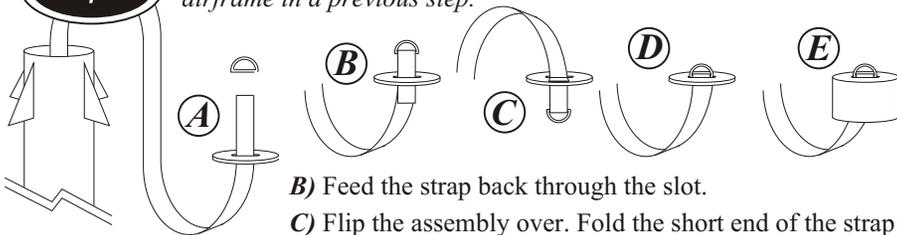
Apply a heavy layer of epoxy to the inside circumference of the main airframe at the bottom end. Push the tail section into the main airframe as shown. Align the upper and lower fins. Stand the assembly upright and allow to cure.



Epoxy the launch lug into position starting 3" up from the bottom of the main airframe. Be sure the lug is not in line with the fins.

Step 7

The strap referred to in this step is the strap you installed in the airframe in a previous step.



A) Pull the free end of the strap through the slot in the piston bulk plate. Slip the metal "D" ring over the strap.

B) Feed the strap back through the slot.

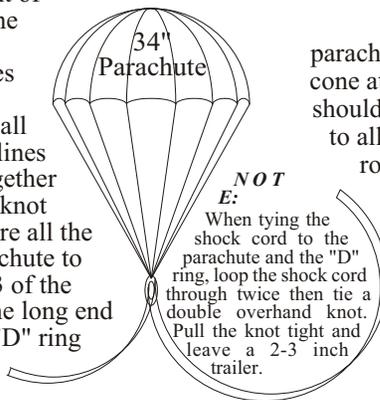
C) Flip the assembly over. Fold the short end of the strap flat against the bulkplate and epoxy in place.

D) When the epoxy has cured, pull the strap until the "D" ring is wedged at the slot. Apply epoxy to the strap at the "D" ring.

E) Epoxy the bulkplate to the piston body 1/8" from the top. Apply an epoxy fillet to both sides of the bulkplate.

Step 8

Measure off the mid point of each parachute shroud line and mark it with a pen. Gather all the shroud lines making sure they are not twisted or tangled. Keep all the marks on the shroud lines together. Tie the lines together using a simple overhand knot leaving a small loop where all the marks meet. Tie the parachute to the elastic shock cord 1/3 of the way from one end. Tie the long end of the shock cord to the "D" ring on the piston. Tie the short end of the shock cord to the eyelet on the nose cone.



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Step 9

Slide the piston into the rocket followed by the shock cord and parachute. Place the nose cone atop the rocket. It should fit just tight enough to allow you to lift the rocket by the nose cone without it slipping off. Wrap masking tape around the shoulder of the nose cone for a tighter fit if necessary. Now install the motor and go fly your rocket!

NOT E: When tying the shock cord to the parachute and the "D" ring, loop the shock cord through twice then tie a double overhand knot. Pull the knot tight and leave a 2-3 inch trailer.

BULL puppy

The **BULL puppy** kit contains all the parts necessary* to build a flying high power rocket:

- 1) Pre-slotted main airframe
- 1) Pre-slotted boat tail
- 1) Nose cone
- 4) Main fins
- 4) Canard fins
- 1) Piston ejection kit including:
 - 1) Piston body
 - 1) Piston strap
 - 1) Slotted bulk plate
 - 1) Metal "D" ring
- 1) Parachute
- 1) Motor mount tube (38mm)
- 1) Notched centering ring
- 1) Elastic shock cord
- 1) 1/4" launch lug
- 1) Alignment ring
- 1) Military Decal sheet
- 1) Instruction sheet (this one!)

*Epoxy, paint, and motor not included.

The center of pressure (CP) of this rocket is 28 inches from nose tip. After finishing your rocket, permanently mark the center of pressure on the airframe. Calculations made using RockSim 4.0 program for subsonic flights. After loading the rocket with a motor, make sure that the center of gravity (balancing point) is 3" forward of the center of pressure mark. The center of gravity can be moved forward by adding weight to the nose cone. It is impossible to test every rocket with every motor configuration therefore, if you are unsure about motor selection for any rocket consult the motor manufacturer.

Public Missiles Ltd.

