

Goblin 5.5"

The Goblin 5.5" is a versatile high power rocket. The Goblin 5.5" will fly on motors ranging from G through K. The Goblin 5.5" can be used for L1 and L2 certifications. It has a 54mm motor mount and will support motors up to 5 grain K reloads.

The Goblin is a very tough and fun rocket designed with both the beginner and expert in mind.

This kit features:

- Through the wall fin mounting
- Fiberglass molded nose cone
- Pre-fiberglassed and laser slotted body tube
- Baltic Birch fins and centering rings
- 54mm motor mount
- Tubular nylon shock cords
- Shock cord mounting hardware

This kit is designed to fly on motors ranging from G through K impulse. You will need a 36" to 50" parachute, depending on motor selection and landing site conditions.

Polecat Aerospace
9547 Abbeywood Rd
Santee, CA 92071
(619) 258-2537 Voice (619) 374-2195 FAX
info@polecataerospace.com
WWW.POLECATAEROSPACE.COM



List of Materials:

- (1) Fiberglass nosecone
- (1) Nosecone bulkhead
- (1) Body tube - slotted
- (4) Fins
- (2) Centering rings
- (1) 54mm motor tube
- (2) U-bolts
- (2) U-bolt backing plates
- (8) 1/4" Nuts
- (4) 1/4" Washers
- (1) Shock cord
- (2) Rail Guides
- (2) 8-32 screws for Rail Guides

Construction

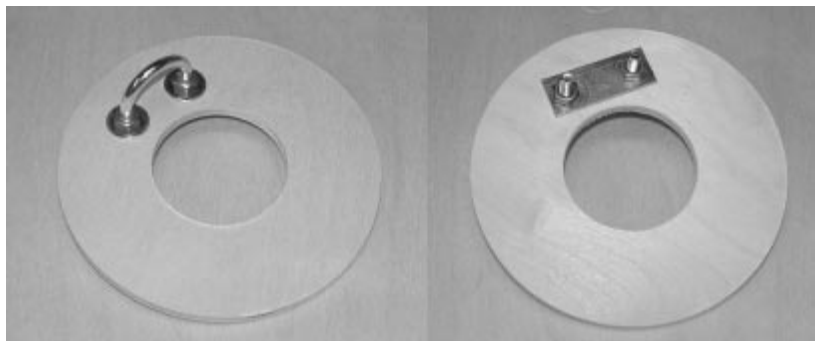
Please read and understand each step. The construction methods used in this kit differ from others in many ways. It is important to follow the instructions to ensure you get the most out of your kit.

Assembly

Epoxy the lower centering ring (the undrilled ring) onto the motor tube. Leave 1/4" of tube exposed for motor retention. If you use a motor retainer that needs a flush mount, make the motor tube flush. Allow to cure completely.



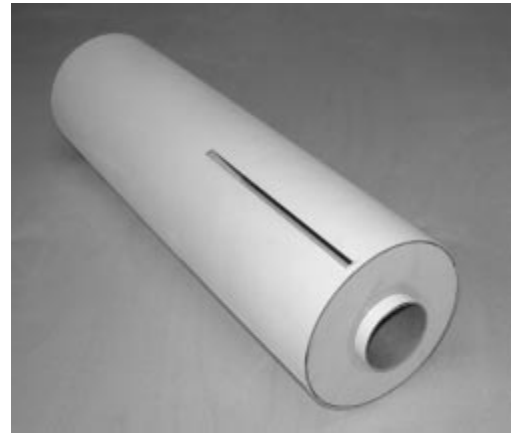
Install the U-Bolt and hardware into the forward centering ring as shown. Tighten the nuts with a 7/16" wrench. Secure the threads with thread lock or epoxy to prevent them from loosening up over time.



Epoxy the upper centering ring onto the motor tube. Use a fin as a guide and ensure you can slide a fin inbetween the two rings all the way around. The fin can fit loosely, but it must be able to slide between the rings. Allow to cure completely.



Test fit the motor mount tube assembly into the body tube. **MAKE SURE YOU DO NOT BLOCK ANY OF THE FIN SLOTS WITH THE U-BOLT HARDWARE.** The lower centering ring should be flush with the bottom of the tube. Do not epoxy the motor tube in at this time.



Remove the motor mount assembly from the body tube and apply epoxy to the inside of the body tube at the position of the upper and lower rings, then slide the motor mount assembly into place. **MAKE SURE YOU DO NOT BLOCK ANY OF THE FIN SLOTS WITH THE U-BOLT HARDWARE.** Ensure you have a good glue joint at the upper bulkhead as shown.



Test fit all four fins, make sure all the fins touch the motor tube.

Apply epoxy to the root edge of a fin, and along each side where the fin will contact the body tube. Slide the fin into position, ensuring it is perpendicular to the tube, and allow to cure.

Repeat for the remaining fins.



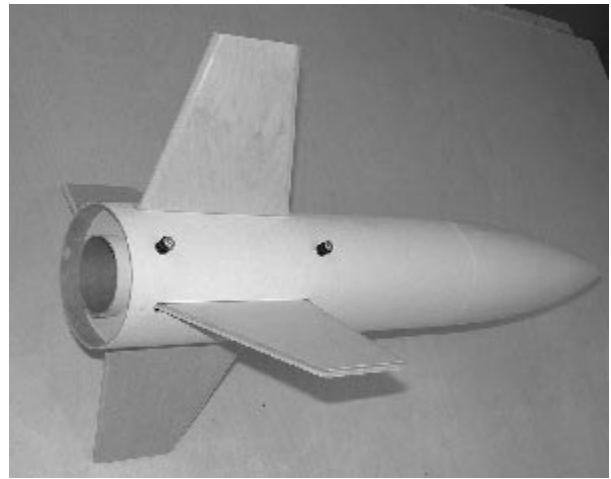
Mount the hardware into the nose cone bulkhead in the same manner as the rings. Secure the threads with thread lock or epoxy to make sure they do not loosen up over time.

Epoxy the nose cone bulkhead into the nose cone. **TAKE CARE NOT TO PUSH THE BULKHEAD IN TOO HARD, YOU WILL DEFORM THE NOSE CONE.**

Once the epoxy has cured, apply a fillet of thickened epoxy around the joint to reinforce it.



After the fins have cured completely, drill a 1/8" hole for the upper and lower rail guides. The holes should go into the centering rings. You can use a dowel to measure the distance from the upper end of the body tube to the upper centering ring. The rail guides are secured with 8-32 screws. When mounting the rail guides, do not overtighten them. They should spin on their screws.



Attach the shock cord to the U-bolts. Tie a secure knot and apply epoxy or CA to the knot to prevent it from coming loose. The parachute will attach to the shock cord about 24" back from the nose cone.

Drill a pressure hole in the body tube approx. half way between the upper rail guide and the top of the body tube. The hole should be a 3/16" hole.

The rocket will not need any nose weight.

The best method for finishing is to start sanding the airframe using 60 grit sandpaper and a soft sanding block. Sand at a 45 degree angle to the airframe, this helps prevent flat spots. Do not over sand with the 60 grit, just smooth the glass joint. Do not sand the fins with 60 grit, just the airframe and the nose cone. Move to 120 grit on the airframe and nose, continuing with the soft sanding block. You can also sand the fins with the 120 grit, smoothing the leading edge if desired.

Next lightly sand the entire rocket with 220 grit, using the soft sanding block.

Prime with a good filling primer, like an automotive primer. If you are using spray cans, select a filling primer.

Sand and prime until you are happy with the finish. Paint as desired.

We hope you enjoy your Goblin and appreciate any comments you have.

Polecat Aerospace
9547 Abbeywood Rd
Santee, CA 92071
(619) 258-2537 Voice (619) 374-2195 FAX
info@polecataerospace.com
WWW.POLECATAEROSPACE.COM

