

### STEP 5

Knot shock cord through the loop in the nose cone approximately 3' from the end. Attach quick link to the sewn shock cord loop and parachute to the quick link. Make a knot in the paracord. Refer to the pictures below. A good practice is also to add a swivel to minimize spin on decent.



### STEP 6

Install the rail guides into the booster with provided screws. Drill a hole smaller than the screw so the screw threads into it 1/2" forward of aft ring centered between fin set. Drop a small amount of epoxy in drilled hole, thread the rail guide and screw in the hole, rotate rocket 180 degrees & let cure. Repeat for the forward rail guide 1/2" aft of the forward ring. Some choose to use a wood screw & drill/tighten into the aft & forward rings. Your choice!

### STEP 7

Assemble the 29mm and 38mm adaptors. Epoxy the aft ring for each adaptor size onto its motor tube. Epoxy each adaptor ring onto each tube, one against the aft thrust adaptor ring, the other at least 1" short of the end of the motor tube. Use as shown here ->



### FINISH

Spray rocket with primer, sand and repeat until smooth finish is obtained. Spray rocket with paint of choice, let dry. Apply vinyl decals by cutting around the decal leaving enough room to use transfer paper when applying. Apply protective clear coat.

### Sim!

This rocket is recommended for mid to high power rocket motors F through J impulse. Depending on your flying field and finished weight, this is a very versatile kit. The Rocksim file is available on the Goblin product page on our website. Always check stability to ensure stable flight; the Center of Gravity (CG) must be forward of the Center of Pressure (CP) in flight ready condition.



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FLYING MODEL ROCKET KIT

# GOBLIN™



4,000'

350'

## F-J

Capable Impulse

DIAMETER 4.0"

HEIGHT 40.5"

WEIGHT 42oz

### Featuring:

- 4" Pre-Slotted Airframe
- Polypropylene Nose Cone
- 36" Rip-Stop Nylon Parachute
- 15' Nylon Shock Cord
- 54/38/29mm LOC-N-Mount
- Motor Retention
- Fin Lock Rings
- Rail Guides
- Hardware
- Decals Included!



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DECOR BASED ON ORIGINAL ESTES GOBLIN



# LOC Goblin

- 27.5" Slotted Airframe
- 36" Parachute
- 14" x 54mm Motor Tube
- 1/4" Goblin Fin Set
- 1x54mm FWD CR
- Z Clip Motor Retention
- 2 Each CR29mm to 54mm / CR38mm to 54mm Adaptor Rings
- Hardware — 6 T Nuts, 4 8x32x.75" & 2 8x32x.375" Screws, 3/16" Quick Link, .25x20 Eye Bolt
- Complete Goblin Vinyl Decal Set
- Polypropylene Nose Cone
- 15' Nylon Shock Cord
- 29mm & 38mm Motor Adaptor Tubes
- 2 54mm LOC-N-Fin 1/4" Centering Rings
- 1 Each 29mm & 38mm Aft Adaptor Ring
- 2-1000 Series Rail Guide

**Due to the high thrust motors that can be flown in this rocket, epoxy is recommended!**

**Before beginning construction, read over instructions to become familiar with the proper construction steps. TEST FIT ALL PARTS!** Light sanding may be necessary to obtain proper fit.



*This kit may be constructed one of two ways. Inserting the built motor assembly, then epoxying the fins in the slots. OR building the fin can outside the airframe, cutting the airframe fin slots to the aft and sliding the fin can up into the airframe. Please decide which flavor you prefer before proceeding with construction.*

## STEP 1

Hammer or press the T Nuts in the AFT, 38mm and 29mm rings 1/4" lasered holes. Epoxy fillet the aft outer diameter of the T Nuts to ensure they remain in place.



## STEP 2

Rough sand the motor tube to ensure proper adhesion. Slide the FWD ring onto the 54mm motor tube so the tube is 1/8" exposed from the ring. From the other end take the MID ring and slide up the motor tube 5.5". Slide the AFT ring on leaving 1/8" of the motor tube exposed (if using an aluminum motor retainer, you would need to adjust the length of the motor tube exposed). Insert the fins into the AFT and MID ring slots to obtain proper alignment. Install the eye bolt in the forward ring and tighten. Epoxy each ring into place and fillet the intersection where the rings meet the motor tube. Epoxy the nut of the eye bolt.

**STEP 3 Your choice!** Lightly sand airframe/fill spirals if desired.

**IF** constructing by inserting the assembled motor tube assembly into the airframe THEN epoxying the fins in place...cool. Apply nominal bead of epoxy forward of the slots inside the airframe. Push the assembly forward until the MID and AFT ring slots are visible and aligned properly through the slot. Check your alignment by inserting the fins in the slots before it cures!! Set upright to cure. At this point you may drizzle epoxy from the forward end of the booster onto the forward ring to adhere the ring to the airframe; being careful not to get epoxy in the motor tube. Next turn the booster upside down so the AFT section is up. Apply a nice epoxy fillet to the aft ring where the ring meets the airframe. DO NOT get any epoxy in the T Nuts!!! Allow to cure. Reposition airframe laying down. Finally apply a generous bead of epoxy to the root edge of one fin and insert in the fin slot. Allow to cure before moving onto the next fin. When all fins are epoxied in place, apply an external fillet to each fin to airframe joint.

**IF** constructing by building the fin can outside the airframe to obtain MAXIMUM strength...let's do it! Insert a fin into the ring slot, slather epoxy to adhere the joints from the motor tube to the rings. Allow to cure and move onto the next. When all fins are secured, use a hobby knife to cut the slots, cut the width of the slot, all the way to the aft of the airframe. Test fit the fin can separating/expanding the aft of the airframe to allow room for the fins to meet and nest in the slots. Sand the rings as needed. When satisfied with the fit, remove the fin can. Apply nominal bead of epoxy forward of the slots inside the airframe. Slide fin can up the airframe until the fins meet the forward end of the slots and nests properly. Leave upright to cure. Feel free to drizzle epoxy from the forward end of the booster onto the forward ring to adhere the ring to the airframe; being careful not to get epoxy in the motor tube. Next turn the booster upside down so the AFT section is up. Apply a nice epoxy fillet to the aft ring where the ring meets the airframe, squeezing the airframe to bring back together. DO NOT get any epoxy in the T Nuts!!! Allow to cure. Next epoxy fillet each fin joint externally to the airframe.



## STEP 4

Attach shock cord to forward ring eye bolt. Pass loop through eye bolt, then pass shock cord through it's own loop as shown. This can be done prior to mounting motor tube assembly or fin can into airframe. Don't get any epoxy on the shock cord!

