



## 4" T-LOC

### PARTS LIST

- \* Polyethylene Nose Cone
- \* Slotted Booster
- \* Payload Section
- \* Coupler/Optional Bulkhead
- \* 1/8" Fin Sets
- \* 2 X Centering Rings/ZClipMR
- \* Nylon Shock Cord
- \* Ripstop Nylon Parachute
- \* 1000 Series Rail Guides
- \* Quick Link
- \* Vinyl Decal

**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.

#### STEP 1

Rough sand the motor tube to ensure proper adhesion OR remove the outer glassine wrap. Install T-Nut into ring labeled CR-390x114RET (AFT ring with retention). Press T-Nut into lasered hole in the AFT ring. The flange side of the T-Nut should be FWD. Slide ring onto the motor tube so the tube is .5" exposed from the ring. Install eye bolt into FWD ring and tighten. Slide FWD ring onto the motor tube and be sure to keep 1/8" tube exposed. Insert the fins between AFT and FWD rings to obtain proper alignment. Remove test fin. Ensure rings are perpendicular to the motor tubes and tack into place with epoxy. Once cured, make an epoxy fillet to the joint where the motor tubes meet the rings. Also dab epoxy on the FWD flange of T-Nut and eye bolt nut for added strength. Allow to cure.



#### STEP 2

Slather epoxy up the AFT of the booster (the end with fin slots) FWD of the fin slots. Insert motor mount assembly until AFT ring is 1/8" recessed. Stand airframe AFT down to cure. You may always add more epoxy to the FWD ring by drizzling epoxy onto the ring from the FWD end of the booster. **DO NOT** get any epoxy in the motor tube!

#### STEP 3

Flip airframe over so AFT is upright. Apply an epoxy fillet to the intersection where the AFT ring meets the airframe. **DO NOT** get any epoxy in the motor tube or the T-nut! Allow to cure.

#### STEP 4

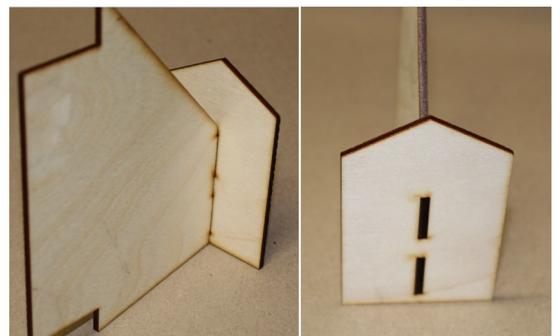
Reposition airframe laying down. Apply a generous bead of epoxy to the root edge of one fin and insert in the fin slot. Allow to cure before moving onto the next fin. When all fins are epoxied in place, apply an external fillet to each fin to airframe joint.

#### STEP 5

Install the T-Fins on the outer edge of each fin. Tack the fins onto the main fins with quick cure epoxy or CA. When all cured, epoxy fillet the fin/T-Fin intersections on both sides. Allow to cure.

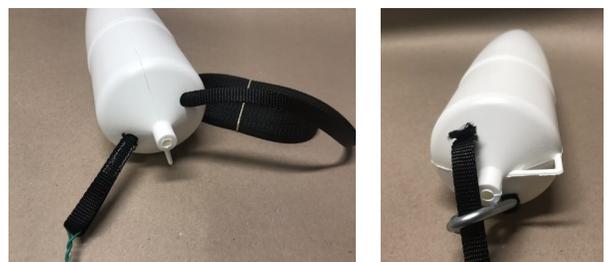
#### STEP 6

Optional bulkhead is included. If you want to fly longer motors or have more room for recovery, do not install bulkhead! Mark coupler in half, at the 4" mark. Slather epoxy 3" into the payload section, install coupler twisting as pushing up. Stop at the 4" mark. Allow to cure. IF NOT using the bulkhead, you can epoxy the booster and payload together so you'll pop the cone for recovery. If you'd like to proceed, slather epoxy in the FWD section of the booster 3" down. Install payload into FWD of booster, twisting as you push. Allow to cure. **DO NOT** get any epoxy in the motor tube!



#### STEP 7

IF using bulkhead then the shock cord should go to the eye bolt. IF not using bulkhead...refer to the graphic to the right. Modify the nose cone as shown and attach shock cord. Measure out 2' from the shock cord coming out of the payload section. Attach parachute shroud lines by looping over shock cord and passing back through shroud lines making a knot. Some use a quick link or swivel, this is your choice, knot ours!



## STEP 8

Install the rail guides into the booster with provided screws. Try to aim for the aft and forward rings centered between the fins. Drill a hole smaller than the screw so the screw threads into it. 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.



## FINISH

Spray rocket with primer, sand and repeat until smooth finish is obtained. Spray rocket with paint of choice, let dry. Apply protective clear coat. Apply vinyl decals to your liking, repeat with clear coat.



## Sim!

This rocket is recommended for high power rocket motors E through H impulse. Depending on your flying field and finished weight, this is a very versatile kit. The Rocksim file is available on the 4" T-LOC 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.

Since Yank Aeronautics LLC dba LOC PRECISION cannot control the use of it's products once sold, the buyer assumes all risks and liabilities there from, and accepts and uses LOC Precision products on these conditions.

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## MODEL ROCKET SAFETY CODE

**Materials.** I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.

**Motors.** I will use only certified, commercially-made model rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer.

**Ignition System.** I will launch my rockets with an electrical launch system and electrical motor igniters. My launch system will have a safety interlock in series with the launch switch, and will use a launch switch that returns to the "off" position when released.

**Misfires.** If my rocket does not launch when I press the button of my electrical launch system, I will remove the launcher's safety interlock or disconnect its battery, and will wait 60 seconds after the last launch attempt before allowing anyone to approach the rocket.

**Launch Safety.** I will use a countdown before launch, and will ensure that everyone is paying attention and is a safe distance of at least 15 feet away when I launch rockets with D motors or smaller, and 30 feet when I launch larger rockets. If I am uncertain about the safety or stability of an untested rocket, I will check the stability before flight and will fly it only after warning spectators and clearing them away to a safe distance. When conducting a simultaneous launch of more than ten rockets I will observe a safe distance of 1.5 times the maximum expected altitude of any launched rocket.

**Launcher.** I will launch my rocket from a launch rod, tower, or rail that is pointed to within 30 degrees of the vertical to ensure that the rocket flies nearly straight up, and I will use a blast deflector to prevent the motor's exhaust from hitting the ground. To prevent accidental eye injury, I will place launchers so that the end of the launch rod is above eye level or will cap the end of the rod when it is not in use.

**Size.** My model rocket will not weigh more than 1,500 grams (53 ounces) at liftoff and will not contain more than 125 grams (4.4 ounces) of propellant or 320 N-sec (71.9 pound-seconds) of total impulse.

**Flight Safety.** I will not launch my rocket at targets, into clouds, or near airplanes, and will not put any flammable or explosive payload in my rocket.

**Launch Site.** I will launch my rocket outdoors, in an open area at least as large as shown in [the accompanying table](#), and in safe weather conditions with wind speeds no greater than 20 miles per hour. I will ensure that there is no dry grass close to the launch pad, and that the launch site does not present risk of grass fires.

**Recovery System.** I will use a recovery system such as a streamer or parachute in my rocket so that it returns safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.

<u>Installed Total Impulse (N-sec)</u>	<u>Equivalent Motor Type</u>	<u>Minimum Site Dimensions (ft.)</u>
0.00–1.25	1/4A, 1/2A	50
1.26–2.50	A	100
2.51–5.00	B	200
5.01–10.00	C	400
10.01–20.00	D	500
20.01–40.00	E	1,000
40.01–80.00	F	1,000
80.01–160.00	G	1,000
160.01–320.00	Two Gs	1,500

LAUNCH SITE DIMENSIONS