

# 10. PREPARE ROCKET FOR FLIGHT

**For Flights With Egg (or Medium to Heavy Payloads)**

**A.** Spike the 18" (46 cm) parachute and form loop with shroud lines.

**B.** Tie one end of the 18" (46 cm) shock cord to the loop in the 18" (46 cm) parachute.

**C.** Tie the other end of the shock cord to the eyelet on bottom of nose cone.

**D.** Spike the 12" (30 cm) parachute and form loop with shroud lines.

**E.** Tie shock cord from main body tube to the loop in the 12" (30 cm) parachute.

**DOUBLE KNOT**

**TIP:** If you will be switching 'chutes fairly often, you can use snap swivels to make this easier.

**For Flights Without Egg (or Very Light Payloads)**

**A.** Spike the 12" (30 cm) parachute and form loop with shroud lines.

**B.** Pass loop through eyelet on bottom of nose cone.

**C.** Pass 'chute through loop.

**D.** Pull Tight.

**E.** Tie shock cord from main body tube to nose cone using double knot.

**DOUBLE KNOT**

**For All Flights (with or without egg)**

**A.** Insert 3-4 squares of loosely crumpled recovery wadding into rocket.

**IMPORTANT:** Wadding must be in place and slide freely for rocket to work properly.

**NOTE:** Only Estes Wadding (302274) Recommended.

**B.** Spike parachute(s).

**C.** Fold.

**D.** Roll.

**For Flights With Egg (or Medium to Heavy Payloads)**

**NOTE:** If flying with an egg using both parachutes, insert the parachute attached to the main body first, then the parachute attached to the nose cone.

**A.** Wrap lines loosely around the 12" chute. Insert chute, and shock cord into body tube.

**B.** Insert payload. Wrap lines loosely around the 18" chute. Insert chute, shock cord, and nose cone into body tube.

**For Flights Without Egg (or Very Light Payloads)**

**IMPORTANT:** Parachute(s) should slide easily into body. If fit is too tight, unfold and repack again.

**A.** Wrap lines loosely around chute. Insert chute, shock cord and nose cone into body tube.

# 11. PREPARE ENGINE

**WARNING: FLAMMABLE**  
To avoid serious injury, read instructions & NAR Safety Code included with engines. **PREPARE ENGINE ONLY WHEN YOU ARE OUTSIDE AT THE LAUNCH SITE PREPARING TO LAUNCH!** If you do not use your prepared engine, remove the igniter before storing engine.

**A.** Separate igniter and plug.

**B.** Insert igniter.

**C.** Insert plug.

**D.** Push down.

**E.** Gently bend igniters to form leads as shown.

**E.** Insert engine into rocket.

**NOTE:** To fly with a **D** engine, insert orange E to D engine spacer before inserting D engine.  
To fly with a **B** or **C** engine, insert orange spacer, then insert standard engine mount adapter. Then insert B or C engine. If using a B or C engine with an egg, the egg should be 60 grams or less.  
To fly with an **E** engine, remove the adapter and spacer before inserting E engine.

# COUNTDOWN AND LAUNCH

**ESTES LAUNCH SUPPLIES**

- Estes Porta-Pad® E-Launch Pad (#2238) or Estes Porta-Pad® II Launch Pad (#302215)
- Electron Beam® Launch Controller (#302230) or E™ Launch Controller (#2230)
- 3/16" (5 mm) Maxi™ Launch Rod (#302244)
- Recovery Wadding (#302274)
- Igniters and Igniter Plugs (included with Estes engines)
- Estes Engines: (with egg) B6-2, C6-3, C11-3, D12-3, E9-4 (w/o egg) B4-2, B6-2, C6-3, C6-5, C11-5, D12-5, E9-4

**KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!**

**1...** MASKING TAPE

**2...**

**3...**

**4...**

**5...**

**IMPORTANT!** Before each launch, check that the launch rod is smooth and straight - especially at the joint. Use sandpaper or steel wool to smooth joint and remove engine residue from rod. Gently straighten rod if bent.

**IMPORTANT:** The Estes E™ Launch Controller (#2230) is recommended for E launches.

**15 FT. (5 M)**

**KEY**

**INSERT KEY. PUSH DOWN FIRMLY AND HOLD.**

**HOLD KEY DOWN AND PRESS LAUNCH BUTTON UNTIL LIFTOFF!**

# PRECAUTIONS

**NAR Safety Code**

**NO DRY GRASS OR WEEDS**

**PRE-LAUNCH CHECK**  
For safety, never launch a damaged rocket. Check the rocket's body, nose cone and fins. Also, check the engine mount, recovery system and launch lug(s). Repair any damage before launching the rocket.

**FLYING YOUR ROCKET**  
Choose a large field (500 ft. [152 m] square) free of dry weeds and brown grass. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great. Launch only with little or no wind and good visibility.  
Always follow the National Association of Rocketry (NAR) SAFETY CODE.

**MISFIRES**  
TAKE THE KEY OUT OF THE CONTROLLER. WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET! Disconnect the igniter clips and remove the engine. Take the plug and igniter out of the engine. If the igniter has burned, it worked but did not ignite the engine because it was not touching the propellant inside the engine. Put a new igniter all the way inside the engine without bending it. Push the plug in place. Repeat the steps under Countdown and Launch.



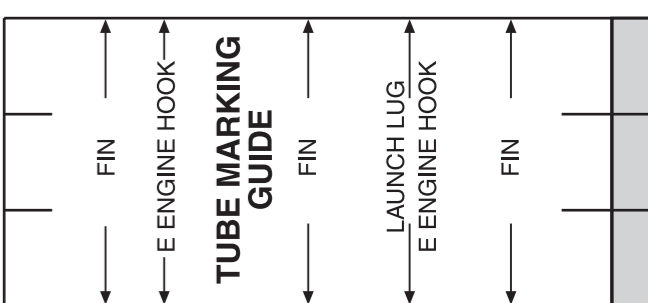
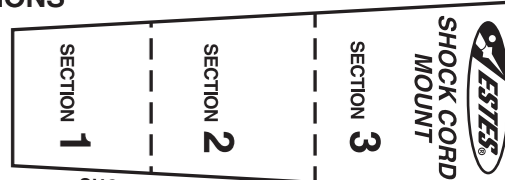
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# EGGSCALIBER™ #2123

**FLYING MODEL ROCKET KIT INSTRUCTIONS**  
KEEP FOR FUTURE REFERENCE

**ASSEMBLY TIP:** Read all instructions before beginning work on your model. Make sure you have all parts and supplies.

**TEST FIT ALL PARTS TOGETHER BEFORE APPLYING ANY GLUE!**  
If any parts don't fit properly, sand as required for precision assembly.



**PARTS** Locate the parts shown below and lay them out on the table in front of you. DO NOT USE THIS DRAWING TO ASSEMBLE YOUR ROCKET.

**HELPFUL HINT: IF NOSE CONE/COUPLER FIT IS...**

- TOO LOOSE: ADD MASKING TAPE.
- TOO TIGHT: SAND FOR FIT.

**NOSE CONE BOTTOM** 61343 (1)

**EGG CUSHION BOTTOM** 61345 (1)

**EGG CUSHION TOP** 61344 (1)

**NOSE CONE TOP** 61342 (1)

**E ENGINE HOOK** 35022 (2)

**ENGINE HOOK STANDARD** 35021 (1)

**YELLOW ENGINE SPACER TUBE** 34997 (1)

**CENTERING RING AR-2050L NOTCHED** 80426 (1)

**ENGINE HOOK RETAINER HR-20 (MYLAR)** 30168 (1)

**CENTERING RING AR-2050** 30164-2 (2)

**ADAPTER RING AR-520 BRIGHT GREEN** 30162-2 (1)

**ENGINE MOUNT TUBE BT-20 2.75" (7.0 cm)** 30408(1)

**HOOK RETAINER HR-1000 BLACK 1" (25 mm)** 30160 (1)

**SPACER E TO D ENGINE (ORANGE)** 35005 (1)

**MAIN BODY TUBE BT-1000 15.0" (38.1 cm)** 30485 (1)

**LAUNCH LUG** 38166 (1)

**DECAL SHEET** 61347 (1)

**SHOCK CORD 1/4" X 18"** 38368 (1)

**SHOCK CORD 1/4" X 30"** 38369 (1)

**ASSEMBLED PARACHUTE RTF 12"** 35801 (1)

**ASSEMBLED PARACHUTE RTF 18"** 35802 (1)

**LASER CUT BALSA SHEET** 61346 (1)

**SUPPLIES** In addition to the parts included in the kit you will also need:

- SCISSORS
- PENCIL
- RULER
- FINE SANDPAPER (#400-600 GRIT)
- CARPENTER'S GLUE
- MODELING KNIFE
- MASKING TAPE
- WAX PAPER
- SPRAY PRIMER (WHITE)
- SPRAY PAINT (BLACK, YELLOW)
- CLEAR SPRAY PRIMER (OPTIONAL)



### 1. PREPARE FINS

**A.** Sand both sides of laser cut balsa sheet with fine sandpaper.

**B.** Carefully cut fins free with modeling knife.

**C.** Stack fins together and sand edges smooth, especially the root edge.

**D.** Glue two launch lug standoff pieces together as shown. Let dry.

**E.** Save scrap balsa to use as a glue applicator.

### 2. ASSEMBLE STANDARD ENGINE MOUNT ADAPTER (To fly with standard engines)

**A.** Measure and mark engine mount tube at 1" (25 mm) and 2-1/2" (6.4 cm).

**B.** Cut a 1/8" (3 mm) slit at the 2-1/2" (6.4 cm) mark.

**C.** Apply glue just past the 2-1/2" (6.4 cm) mark inside the engine mount tube (near the end of the tube).

**D.** Insert the adapter ring into end of engine mount tube so that both ends are flush.

**E.** Apply glue around tube just past the 1" (25 mm) mark. Position and insert standard engine hook (smallest of the three hooks) into slit as shown.

**F.** Slide mylar engine hook retainer onto engine mount tube up to the 1" (25 mm) mark.

**G.** Apply glue just past the 2-1/2" (6.4 cm) mark (near the end of the tube). Slide one of the green centering rings onto the engine mount tube so that both ends are flush.

**H.** Apply glue around tube near the other end of the tube.

**J.** Slide the notched centering ring onto the engine mount tube so that the notch is aligned with the engine hook and both ends are flush. Let dry.

### 3. MARK MAIN BODY TUBE

**A.** Cut out the tube marking guide from front page. Wrap the guide around the main body tube and secure with masking tape as shown. Make a pencil mark at each arrowhead. Label the launch lug line "LL". Label the E engine hook line "EH". (Note: the launch lug line will also serve as a line for the second E engine hook.)

**B.** Using a door frame, extend the launch lug line the entire length of the body tube. Extend the fin and engine hook lines about 5" (12.7 cm) down the tube.

**C.** Measure and mark tube as shown on the LL line, EH line, and one of the fin lines.

### 4. ASSEMBLE ENGINE MOUNT

**A.** Cut a 1/8" (3 mm) slit at both 3-7/16" (8.7 cm) marks. Mark the yellow engine spacer tube 1/4" (6 mm) from end.

**B.** Apply glue inside the main body tube just short of the slits at the 3-7/16" (8.7 cm) marks.

**C.** Push the remaining green centering ring into the body tube with yellow engine spacer tube up to the 1/4" (6 mm) mark (so the ring just clears the slits). **Remove yellow spacer tube immediately!** Let dry.

**D.** Apply glue around main body tube just past the 1" (25 mm) mark.

**E.** Insert engine hooks into slits as shown.

**F.** Slide black hook retainer onto main body tube down to the 1" (25 mm) mark. Let dry.

### 5. ATTACH FINS

**A.** Apply a thin layer of glue to root edge of fin and wait one minute. Apply a second layer and attach fin to body tube noting correct fin position. Align edge of fin with fin line, flush with end of tube. Repeat for remaining fins.

**B.** Glue launch lug standoff at 9" (22.9 cm) mark on "LL" line.

**C.** Check alignment of fins as shown. **NOTE:** Fins must be attached correctly for stable flight!

**D.** Stand rocket on flat table until glue dries completely.

### 6. ATTACH LAUNCH LUG & APPLY FILLETS

**A.** Apply glue to launch lug and center on launch lug standoff as shown. Let dry.

**B.** Apply glue fillets to both sides of fin and launch lug joints. Smooth each fillet with your finger. Let dry completely.

### 7. INSTALL SHOCK CORD MOUNT

**NOTE:** The 30" (76.2 cm) shock cord is used in this step.

**A.** Cut out shock cord mount from page 1.

**B.** Fold.

**C.** Apply glue. Fold forward.

**D.** Apply glue. Fold forward.

**E.** Squeeze tightly and hold for one minute.

**F.** Glue mount 1-1/4" (3.2 cm) inside upper body tube. Hold until glue sets. Let dry.

**YES** (Correct placement)

**NO** (Incorrect placement)

### 8. ASSEMBLE NOSE CONE

**A.** Insert egg cushion top into nose cone top so that the open capsule area is centered in the largest space between tabs. Note that the little support ribs of the cushion are centered on the locking tabs of the nose cone top.

**B.** Insert egg cushion bottom into nose cone bottom so that the three full consecutive tabs are centered in the largest space between tabs as shown. Again, note that the little support ribs of the cushion are centered on the locking tabs of the nose cone bottom.

**C.** With cushions properly in place, line up lock marks on nose cone top and bottom section as shown. Twist the nose cone top onto the nose cone bottom until the lock marks are aligned as shown.

### 9. FINISHING YOUR ROCKET

**A.** First spray rocket with white primer. Let dry and sand. Repeat until rocket is smooth. Paint gloss black or choose your own paint scheme.

**B.** You can leave the nose cone section clear, or you can paint the inside or the outside of capsule. If painting, mask off the capsule opening before painting (again, either the inside or the outside of capsule).

**C.** When paint is dry, peel decals one at a time from backing sheet and apply to rocket. Rub down to remove bubbles.

**D. OPTIONAL:** Spray a clear coat on entire rocket after paint dries and after decal placement.

**E.** Additional decals are provided to decorate a number of different eggs any way you want.