

12. PREPARE PARACHUTE FOR FLIGHT

A. Insert 3-4 squares of loosely crumpled Estes® recovery wadding into rocket body.

B. Spike parachute.

C. Fold.

D. Roll.

E. Wrap lines loosely. Insert chute, shock cord and nose cone into body tube.

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

HINT: Pull shock cord taut when inserting wadding.

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

13. PREPARE ENGINE

WARNING: FLAMMABLE
Before proceeding read instructions & NAR Safety Code included with engines.

PREPARE YOUR 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 your engine.

A. Separate igniter & plug.

B. Insert igniter. TIP MUST TOUCH PROPELLANT!

C. Insert plug.

D. Push down.

E. Gently bend igniter wires to form leads.

F. Insert engine into rocket.

14. COUNTDOWN & LAUNCH

KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!

1... 8" (20.3 cm)

2...

3... 15 FT. (4.6 M)

4...

5... 4... 3... 2... 1...

INSERT KEY. PUSH DOWN FIRMLY AND HOLD. WHILE HOLDING KEY DOWN, PRESS BUTTON UNTIL LIFT OFF!

MASKING TAPE

ESTES® LAUNCH SUPPLIES

- (Sold Separately)
- Estes® Porta Pad® II Launch Pad (302215) and Electron Beam® Controller (302220)
 - Recovery Wadding (302274)
 - Igniters (included with Estes® Engines)
 - Igniter Plugs (included with Estes® Engines)

RECOMMENDED ESTES® ENGINES:

- With Payload: **B4-2, B6-2, C6-3**
- Without Payload: **A8-3, B4-4, B6-4, C6-5**

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 the 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 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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KEEP FOR FUTURE REFERENCE.

NOVA PAYLOADER™

FLYING MODEL ROCKET KIT INSTRUCTIONS



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.

- BT-50 12.7" (32.3 cm) Body Tube (1) (030366)
- 4" (10.2 cm) Clear Payload Tube (1) (030608)
- White Engine Mount Tube (1) (030408)
- Plastic Nose Cone Inserts (2) (072605)
- Launch Lug (1) (038175)
- Decal Sheet (1) (037285)
- Fin Assembly Template (1) (083832)
- Green Centering Rings (2) (030164-2)
- Plastic Nose Cone (1) (072604)
- Insert Sleeve (1) (030065)
- Parachute* (1) (035804)
- Engine Hook* (1) (035021)
- Shock Cord* (1) (038366)
- Masking Tape
- Laser-cut Balsa Sheet (1) (032914)

*Supplied as Set (PN 035804)
1 - 12" (30 cm) Parachute (035801)
1 - Engine Hook (035021)
1 - 18" (45.7 cm) x 1/8" (3 mm) Shock Cord (038366)

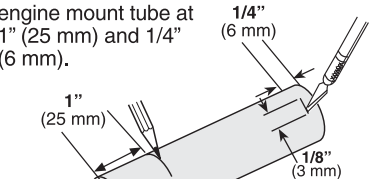
SUPPLIES

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

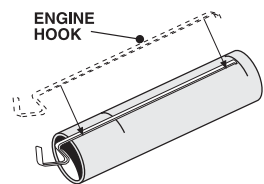
- SCISSORS
- PENCIL
- RULER
- FINE SAND PAPER (#400-600 GRIT)
- CARPENTER'S GLUE
- MODELING KNIFE
- PLASTIC CEMENT
- MASKING TAPE
- PRIMER (WHITE)
- SPRAY PAINT: (RED & WHITE)
- SPRAY CLEAR COAT
- WAX PAPER

1. ASSEMBLE ENGINE MOUNT

A. Measure and mark engine mount tube at 1" (25 mm) and 1/4" (6 mm).



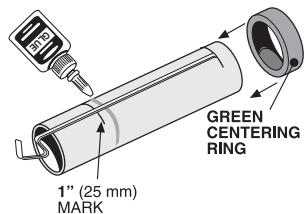
C. Position and insert engine hook into slit as shown.



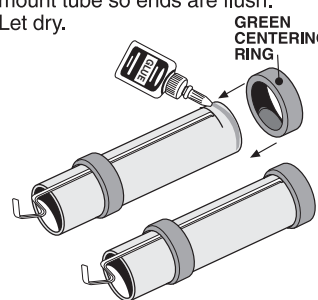
B. Cut a 1/8" (3 mm) slit at the 1/4" (6 mm) mark.



D. Apply glue around engine mount tube about 1/4" (6 mm) past the 1" (25 mm) mark. Slide one of the green centering rings onto the engine mount tube up to the 1" (25 mm) mark.

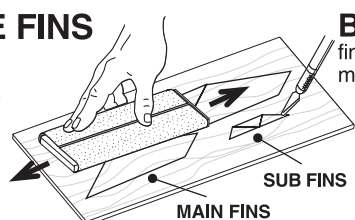


E. Apply glue around tube near the end of the tube (by the 1/4" (6 mm) mark). Slide the second green centering ring onto the engine mount tube so ends are flush. Let dry.

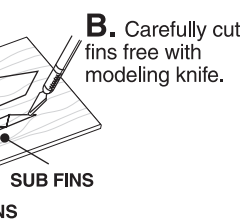


2. PREPARE FINS

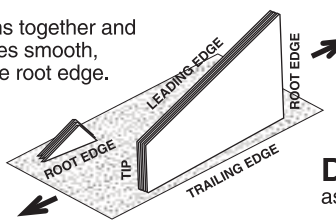
A. Sand both sides of laser cut balsa sheet with fine sandpaper.



B. Carefully cut fins free with modeling knife.



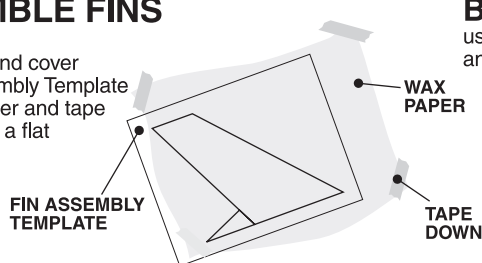
C. Stack fins together and sand all edges smooth, especially the root edge.



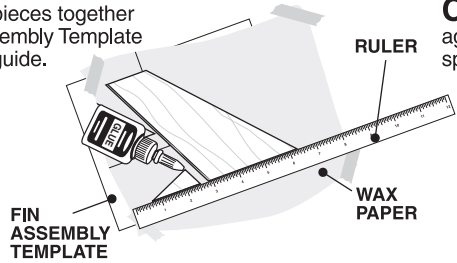
D. Save scrap balsa to use as a glue applicator.

3. ASSEMBLE FINS

A. Locate and cover the Fin Assembly Template with wax paper and tape both down to a flat surface.



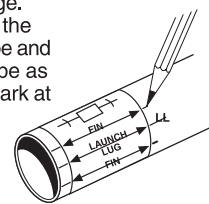
B. Glue the fin pieces together using the Fin Assembly Template and a ruler as a guide.



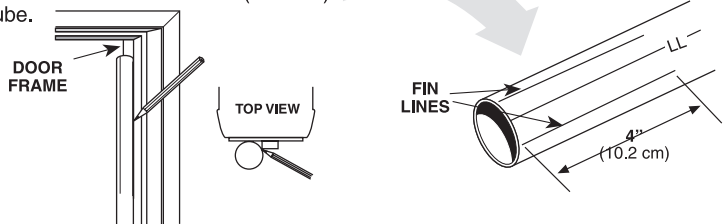
C. After glue dries, sand again to remove any high spots of glue.

4. MARK MAIN BODY TUBE

A. Cut out the tube marking guide from the front page. Wrap the guide around the end of the main body tube and secure with masking tape as shown. Make a pencil mark at each arrowhead. Label the launch lug line "LL".

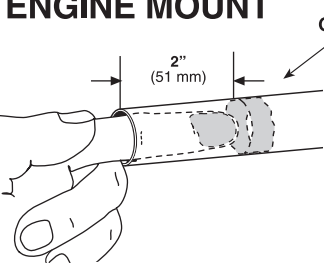


B. Using a door frame, extend the launch lug line the entire length of the body tube. Connect the fin lines and extend them about 4" (10.2 cm) down the tube.

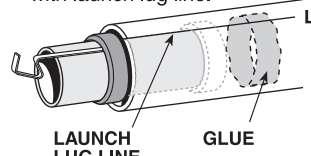


5. INSTALL ENGINE MOUNT

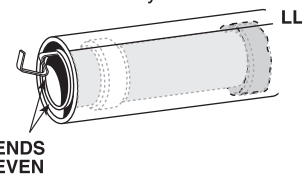
A. Use your finger or a scrap piece of balsa to apply glue about 2" (51 mm) inside the marked end of main body tube.



B. Insert engine mount into main body tube and align engine hook with launch lug line.

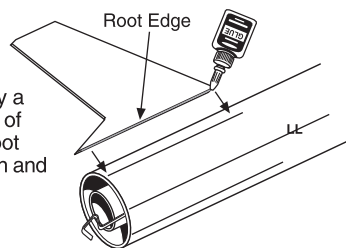


C. Make sure the ends of both tubes are even. Let dry.

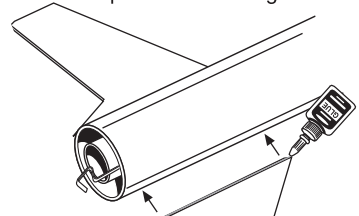


6. ATTACH FINS

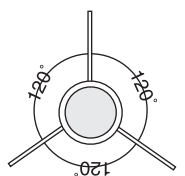
A. Apply a thin layer of glue to root edge of fin and wait one minute.



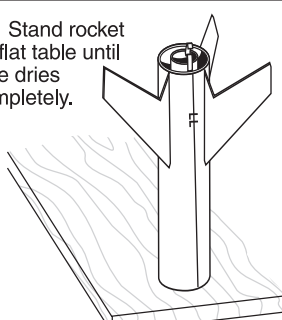
B. Apply a second thin layer and attach fin to body tube noting correct fin position. Attach fin so it is centered on fin line, flush with end of tube. Repeat for remaining fins.



C. Check alignment of fins as shown.

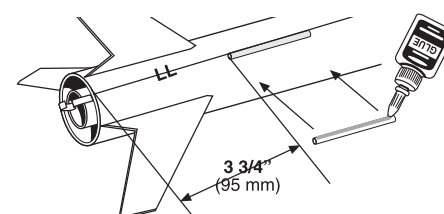


D. Stand rocket on flat table until glue dries completely.

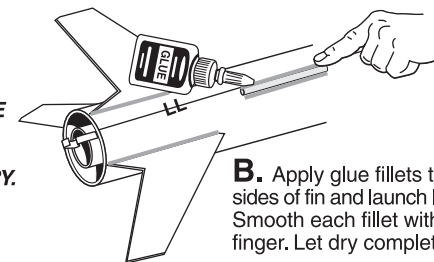


7. ATTACH LAUNCH LUG AND APPLY FILLETS

A. Apply glue to launch lug and center on launch lug line 3 3/4" (95 mm) from the end of the tube as shown. Let dry.



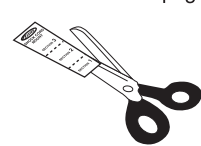
PROCEED WITH STEP B ONLY AFTER THE GLUE ON FINS AND LAUNCH LUG IS THOROUGHLY DRY.



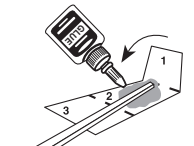
B. Apply glue fillets to both sides of fin and launch lug joints. Smooth each fillet with your finger. Let dry completely.

8. INSTALL SHOCK CORD MOUNT

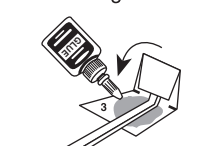
A. Cut out shock cord mount from front page.



B. Apply glue. Fold forward.



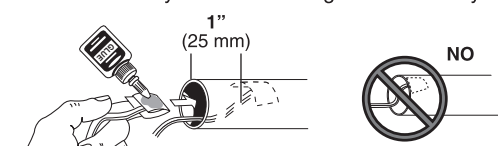
C. Apply glue. Fold forward again.



D. Squeeze tightly and hold for one minute.

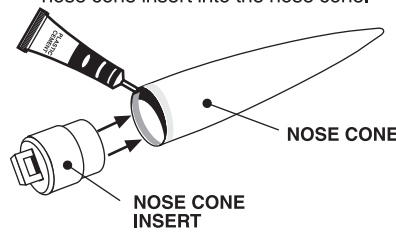


E. Glue mount 1" (25 mm) inside top of body tube. Hold until glue sets. Let dry.

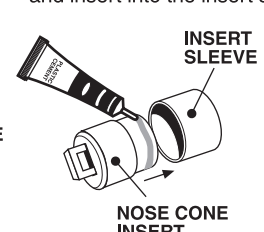


9. ASSEMBLE NOSE CONE AND PAYLOAD

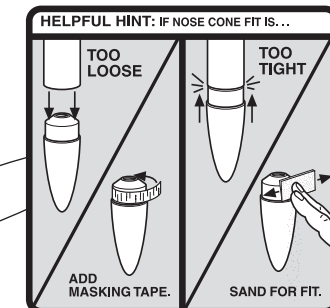
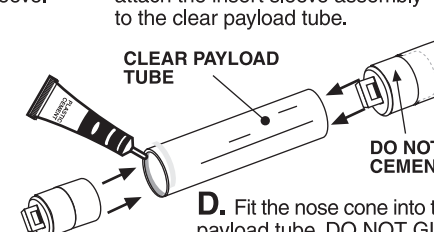
A. Apply plastic cement inside the end of the nose cone and cement a nose cone insert into the nose cone.



B. Apply plastic cement to the shoulder of the other nose cone insert and insert into the insert sleeve.



C. Apply plastic cement inside one end of the clear payload tube and attach the insert sleeve assembly to the clear payload tube.

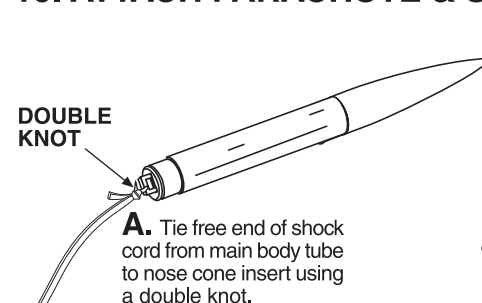


D. Fit the nose cone into the clear payload tube. DO NOT GLUE.

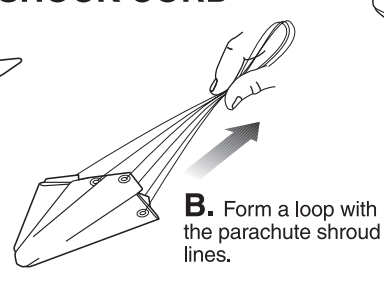
10. ATTACH PARACHUTE & SHOCK CORD

DOUBLE KNOT

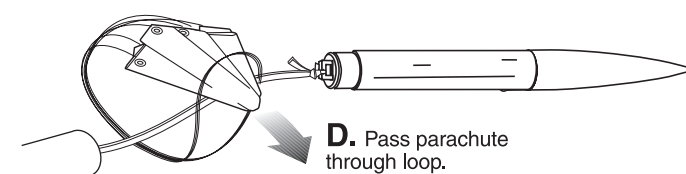
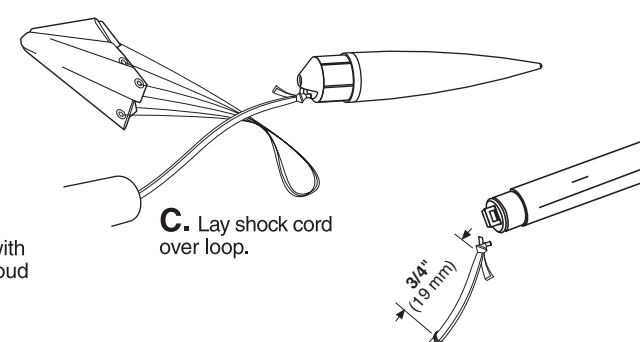
A. Tie free end of shock cord from main body tube to nose cone insert using a double knot.



B. Form a loop with the parachute shroud lines.



C. Lay shock cord over loop.

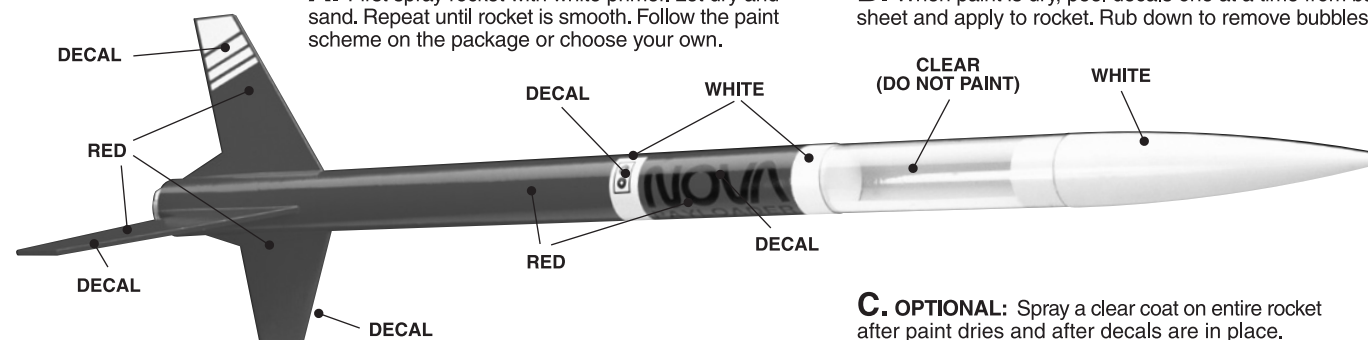


D. Pass parachute through loop.

E. Pull tight so parachute is attached about 3/4" (19 mm) from nose cone.

FINISHING YOUR ROCKET

A. First spray rocket with white primer. Let dry and sand. Repeat until rocket is smooth. Follow the paint scheme on the package or choose your own.



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

C. OPTIONAL: Spray a clear coat on entire rocket after paint dries and after decals are in place.