

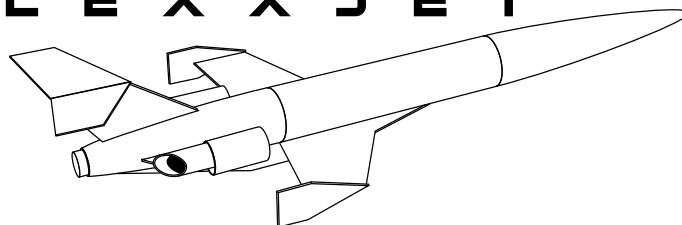
#### Skill Level 4 – Slightly Challenging

Imagine owning a business jet with an extra kick of rocket power in its rear. That is what the LexxJet is all about. It is luxury flying with extra speed and acceleration.

The DynaStar LexxJet is another cool-looking model designed by that famous rocket inventor, Shrox. But what will really get your kit noticed is that it doesn't have the usual shape of a model rocket. It doesn't look like it should fly straight, but it does!

This kit is slightly challenging to build. You will need to cut the body tubes at an angle, and attach fins to the curved section of a plastic boattail. Be sure to carefully follow the instructions and you should not have any problems. You'll end up with a great looking rocket that all your friends will envy.

# LEXXJET



#### LexxJet Parts List

P/N	Description	Qty
10091	Engine Mount Tube (AT-24/3.75)	3
10132	Airframe Tube (AT-33/2.25)	2
10166	Airframe Tube (AT-56/10)	1
13031	Centering Ring (CR18-24)	1
13035	Centering Ring (24-29)	2
13056	Launch Lug (1/4" X 3")	1
15015	Cardstock Ring Set CR24-41.6	1
15549	Laser-cut Basswood Wing Sheet A	1
15550	Laser-cut Basswood Strake Sheet B	1
15551	Laser-cut Basswood T-Tail Fin Sheet C	1
19470	Plastic Nose Cone PNC-56A	2
24043	Regular Crimped "D" Engine Hook	1
24044	Crimped "E" Engine Hook	1
29101	32"/24" Plastic Parachute Pack	1
29520	300# Kevlar® Shock Cord x 8ft	1
29602	Clay Nose Weight (23 grams)	1
31090	LexxJet Instruction Sheet A	1
31091	LexxJet Instruction Sheet B	1
31092	LexxJet Instruction Sheet C	1
39095	LexxJet Face Card	1
41034	LexxJet Printed Decal Sheet	1

#### Other Tools and Materials Needed

Scissors  
Hobby Knife  
Pencil  
Carpenter's Wood Glue (or White Glue)  
CyA Adhesive (thick viscosity, such as gap-filling variety)  
Razor Saw  
Masking Tape  
Sandpaper (200 and 400 grit) & Sanding Block  
Aluminum "Angle" to draw lines on the tube  
Ruler  
Wood filler or sanding sealer to smooth fins  
Paint Brush  
Spray Paint  
24mm Spent Engine casing to insert engine block.  
Long wood dowel to spread glue deep inside tubes.



**Mid-Power  
Model  
Rockets**

Colorado Springs, CO USA

web site: [www.DynaStar-Rockets.com](http://www.DynaStar-Rockets.com)

## LexxJet Rocket Assembly

☐ 1. Using 400 grit sandpaper, fine sand the wood sheets before removing the fins. Carefully remove all the pieces from the sheet by freeing the edges with a sharp hobby knife. Save the scrap wood for step 4.

☐ 2. Group the like fins together, and gently sand the edges as shown in the illustration.

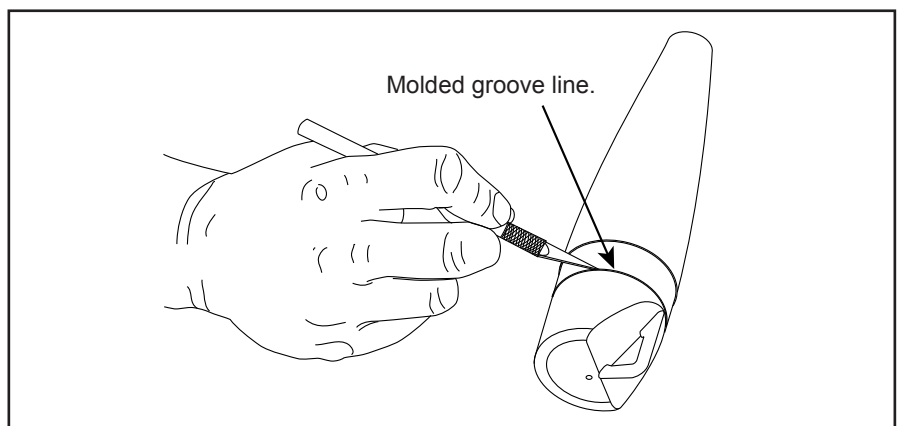
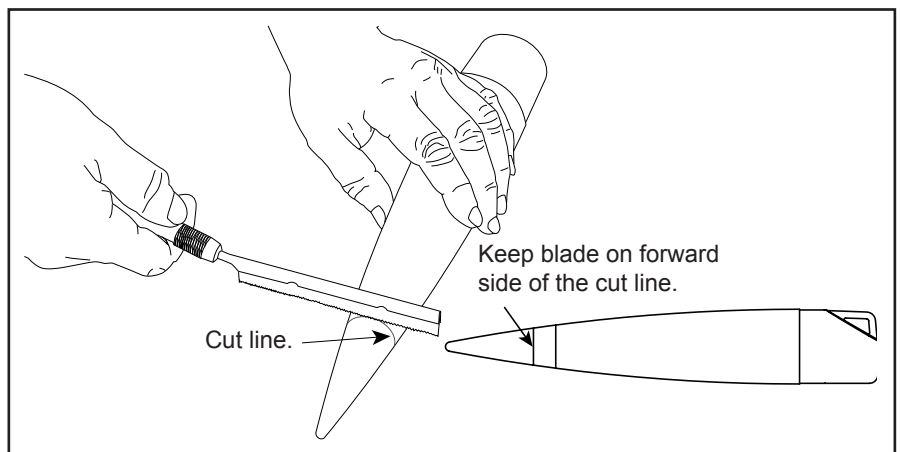
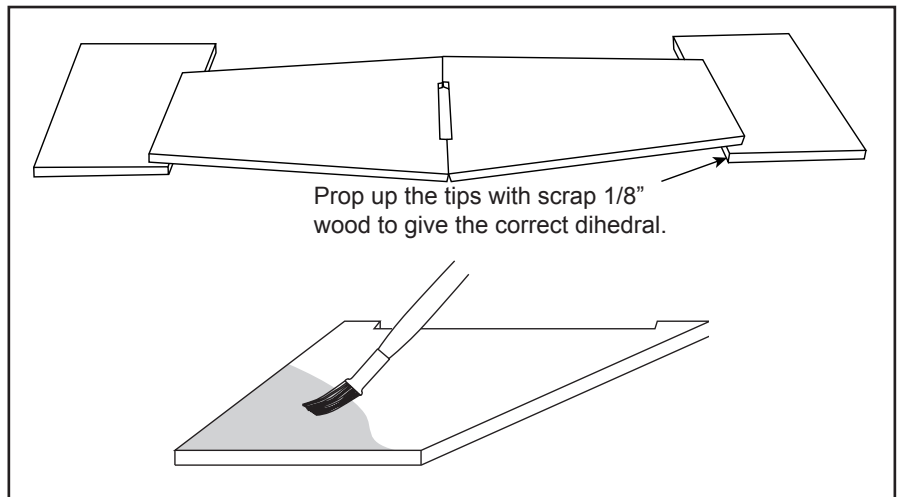
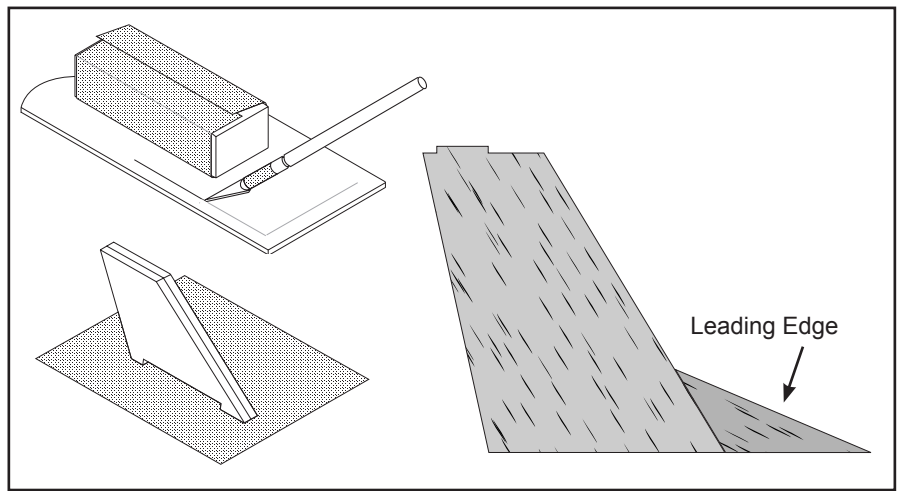
☐ 3. Glue the leading edge of the wing onto the main wing using wood glue.

☐ 4. Glue the horizontal tail fins together. The ends are propped up 1/8 inch to give the correct amount of dihedral. A piece of scrap wood under each tip can be used as a spacer.

☐ 5. When the glue is dry on the fins, you can apply sanding sealer to the surfaces of all the wood pieces to smooth out the grain. Coat both sides at the same time to minimize the chances of the fins warping. Do not allow the sanding sealer to get on the root edges of the fins. This could prevent the fins from bonding well to the body tube when they are glued on later. Set them aside to dry completely. When they are dry, sand the sealer smooth until you get a desirable surface finish. You may need to repeat this step several times depending on the level of quality you wish to achieve.

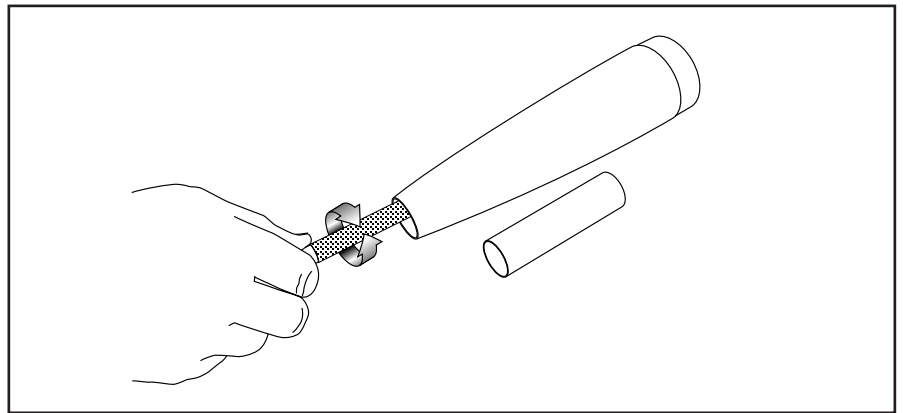
☐ 6. Using a razor saw, carefully cut off the tip on one of the nose cones. The location of the cut is on the forward side of the raised bead nearest the tip of the nose cone. You can discard the tip of the nose. Clean up the end with sandpaper to make the edge smooth and free of rough plastic.

☐ 7. Using a hobby knife, make a deep score in the plastic along the groove line on the shoulder of the piece trimmed in step 6. After going all the way around the perimeter with the knife, gently press on the score line you made. This will cause the plastic to crack and separate the back half. Discard the rear portion.



☐ 8. The inside edge of the small end of the tailcone may need to be sanded to allow the engine mount tube to slip through. To do this, wrap a rough-grit sandpaper around a wooden dowel or small rocket motor, and sand out the inside edge of the hole until the engine mount tube slips easily through it. Try to keep equal wall thickness all the way around the edge of the plastic.

If the tube is too loose in the plastic part, don't worry. This will be fixed at motor mount installation.

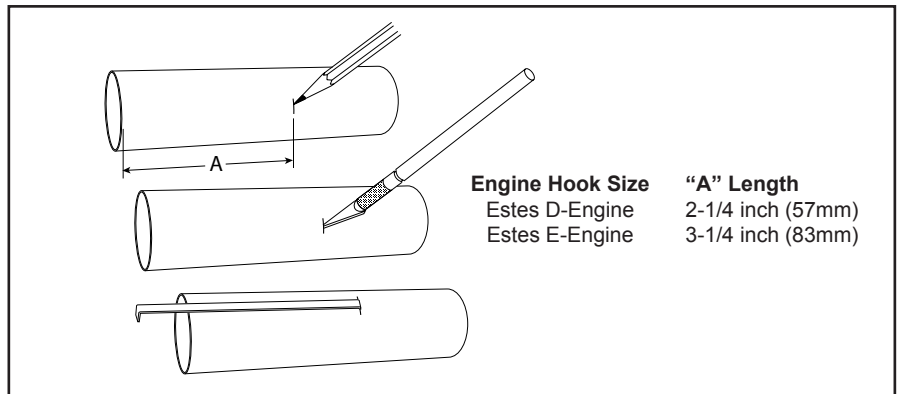


☐ 9. **Install your preferred engine hook:**

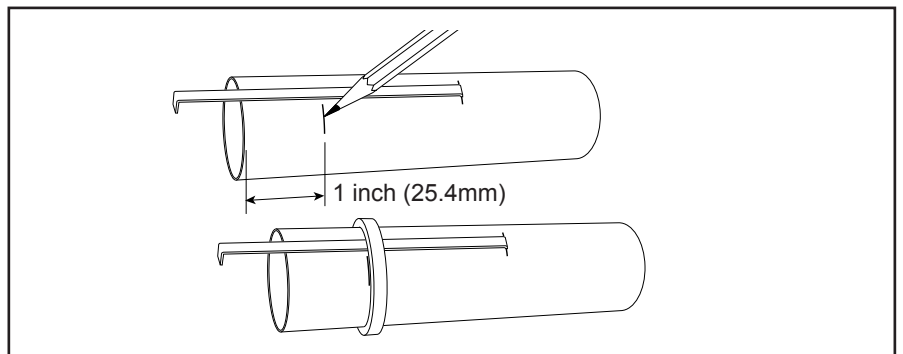
**Regular "D" Engine Hook:** Mark the body tube 2-1/4" (57mm) from one end as shown.

**E Engine Hook:** Mark the body tube 3-1/4" (83mm) from one end as shown.

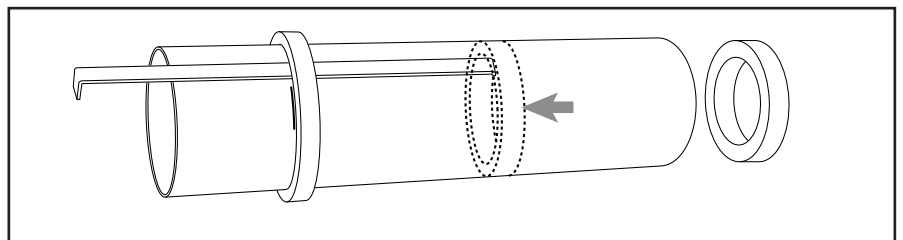
Using a hobby knife, make a 1/8" (3mm) long cut in the body tube at the (2-1/4" or 3-1/4") line you just drew.



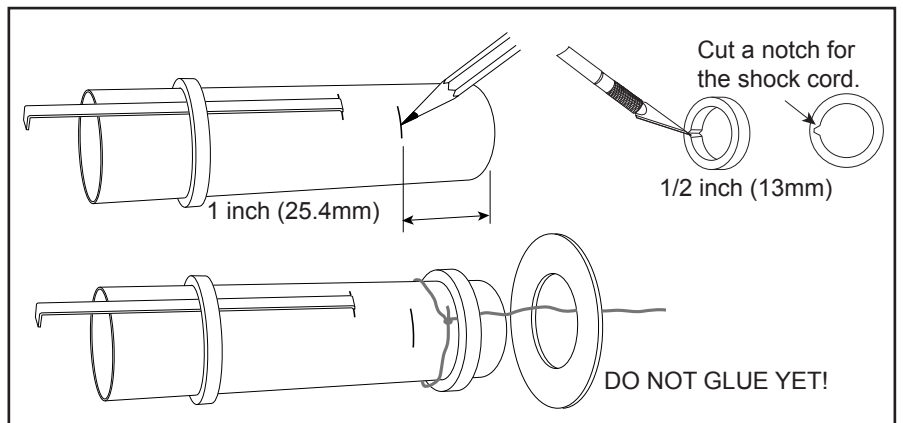
☐ 10. Make a mark 1" (25.4mm) from the aft of the engine tube. Find one of the large green rings that fits over the 24mm diameter engine mount tube. Put a thin layer of wood glue around the engine tube behind the mark you made. Take the green ring, slide it onto the engine hook, and then onto the engine tube until it is up against the mark. (Be sure that the engine hook remains perpendicular to the engine tube).



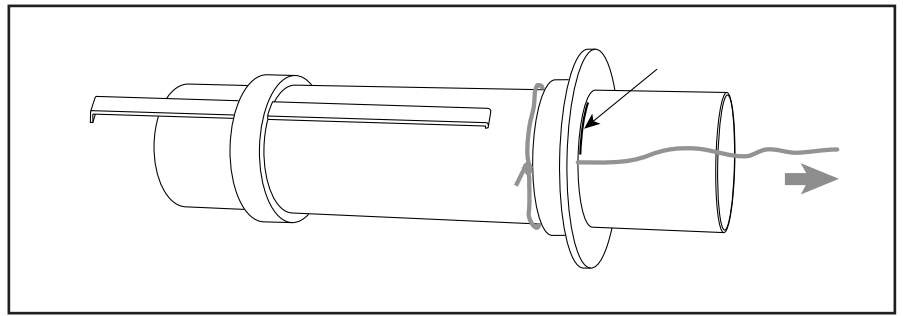
☐ 11. Glue the small green engine block ring inside the front end of the engine mount tube using wood glue. It should butt up against the metal engine hook that protrudes inside the tube.



☐ 12. **DO NOT USE ANY GLUE ON THIS STEP!** Make a mark 1.0" (25.4mm) from the front of the engine tube. Find the other large green ring that fits over the 24mm diameter engine mount tube. Cut a notch on the inside of the ring with a hobby knife. Tie the yellow Kevlar® shock cord around the front end of the engine mount tube. Now slide the green ring over the Kevlar and onto the tube (the cord should nest in the notch). Remove one of the large centering rings from the die-cut card sheet. Again, slide this ring over the front end of the engine mount tube.

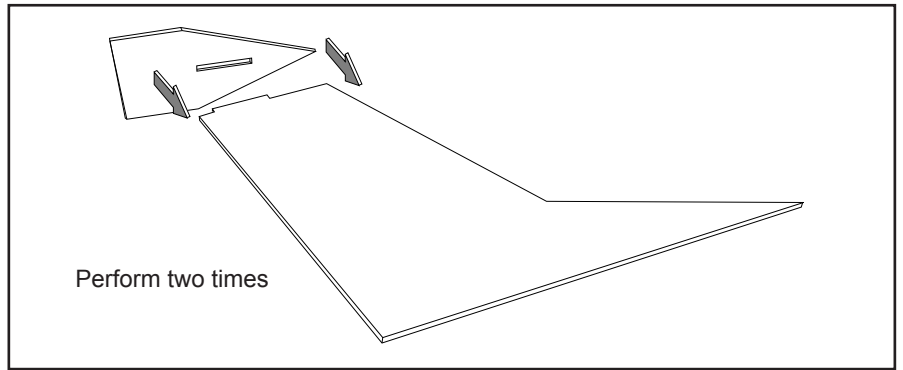


☐ 13. **USE ONLY WOOD GLUE FOR THIS STEP!** Glue the disk centering ring at the 1.0 inch (25.4mm) line on the engine tube. The large green ring is glued up against the disk ring. While the glue is still wet, pull the shock cord tight up against the green ring. Apply a bead of wood glue over the shock cord to hold it down against the engine tube.

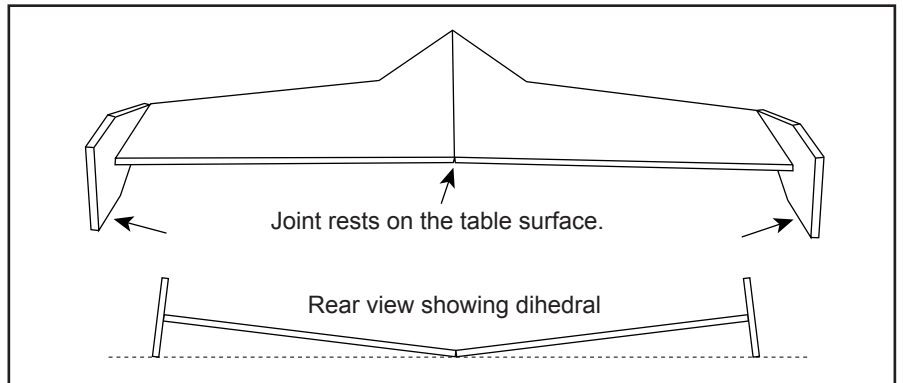


Allow the glue to completely dry. Once it is inside the plastic boattail, it will never dry because air cannot circulate around the glue. So it must be completely dry before continuing.

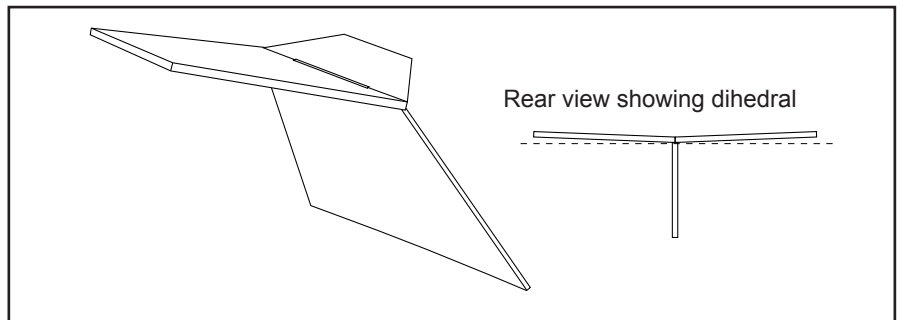
☐ 14. Glue the two winglets on the tips of the two wings using wood glue. Make sure they are perpendicular to the wing. Allow the glue time to dry.



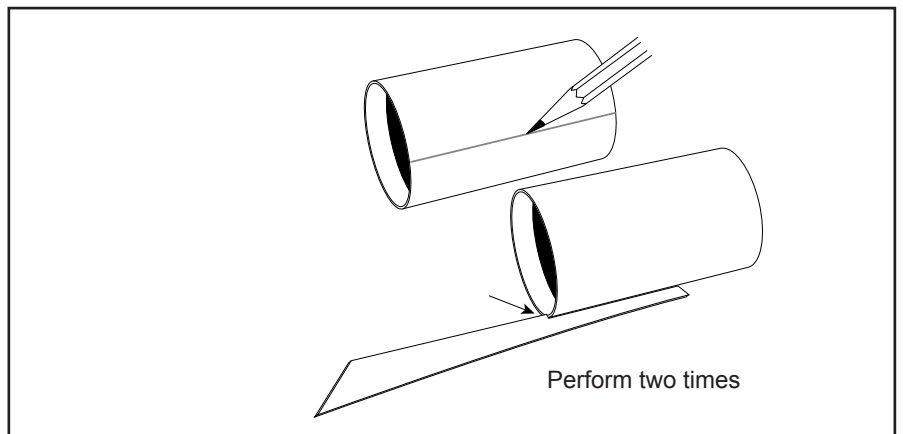
☐ 15. Cover work surface with a piece of plastic to keep the parts from sticking to it. Then glue the two wing halves together using wood glue. The root edge joint should lay flat on the table, and the winglets will lift up the tips to give the correct amount of dihedral. Allow the glue to completely dry, and then apply glue fillets to all the joints.



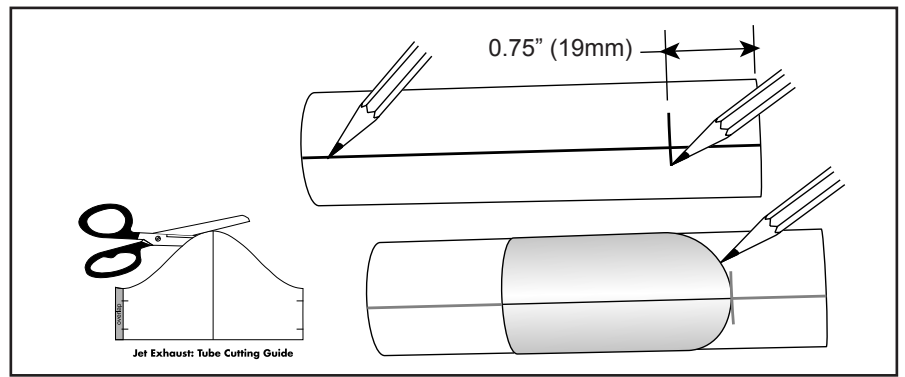
☐ 16. Glue the horizontal tail fins onto the top of the vertical tail using wood glue. Make sure that it is not skewed. Allow the glue to completely dry, and then apply glue fillets to all the joints.



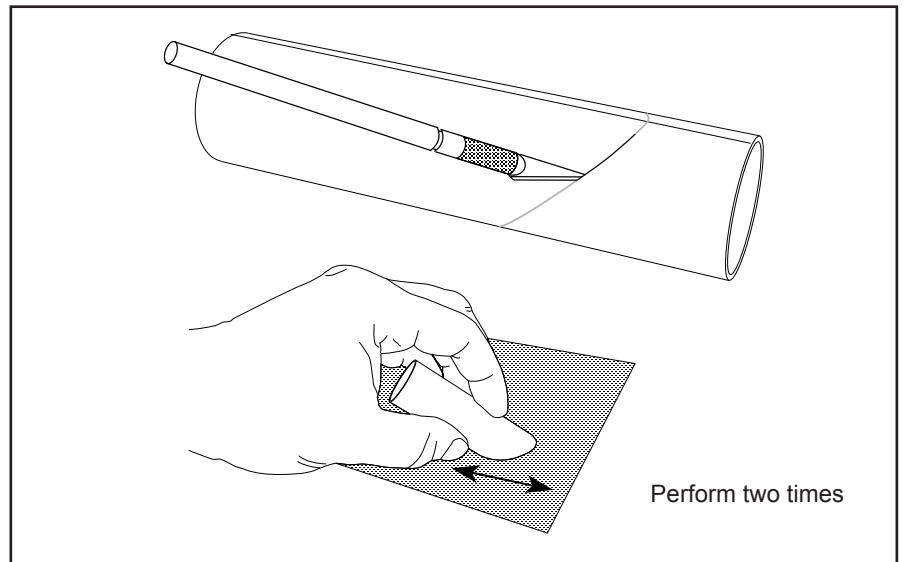
☐ 17. Draw a line down the length of each of the two jet engine nacelles [the tubes that are 1.325 inch (33mm) diameter by 2.25 inches (57 mm) long]. Glue the nacelle tubes to the wood stand-off pieces with wood glue. Use the line on the tubes to make sure the tubes are aligned straight along the tube.



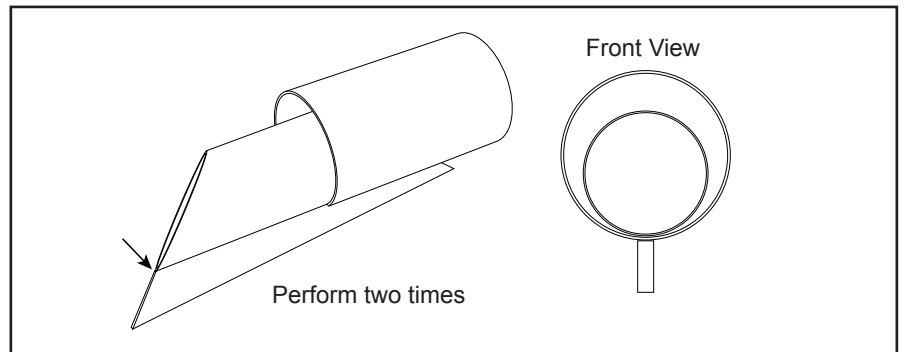
□ 18. Locate the two remaining 24mm diameter tubes. Draw a single line down the length of each tube. Measure and mark a line 0.75 inch (19mm) from one end of the tubes. Cut out the Jet Exhaust tube cutting guide from page 11. Wrap the guide around one of the tubes and tape the ends together. Slide the guide so the rounded edge is at the 0.75 inch (19mm) line and so that the line on the cutting guide is positioned over the line drawn down the length of the tube. Tape it down so it can't move. Draw a line around the perimeter of the tube along the curved edge of the cutting guide. Remove the marking guide. Repeat this process on the other tube.



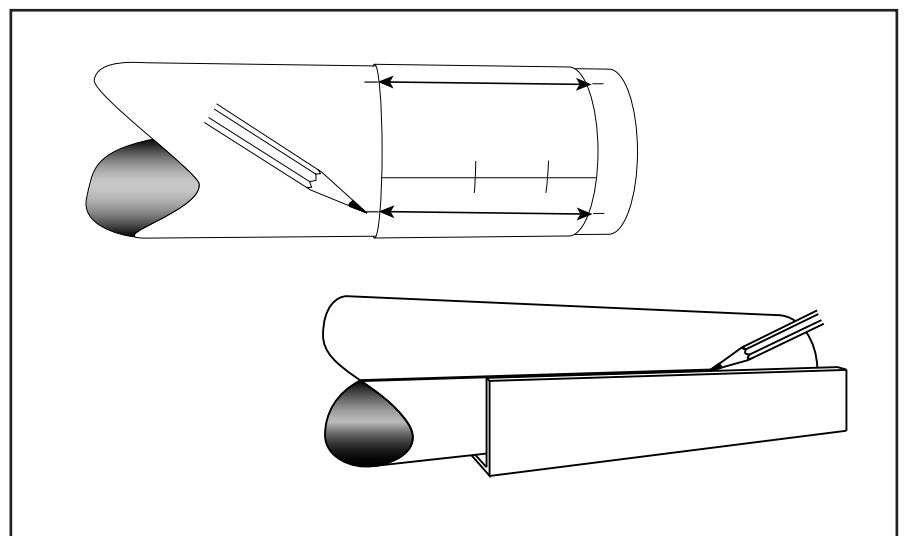
□ 19. Carefully cut along the curved pencil line drawn on the tube in the previous step to make the diagonal end-cut. Sand the edge on a piece of sandpaper laid on a flat surface to make the edge perfectly flat. Repeat for the other tube.



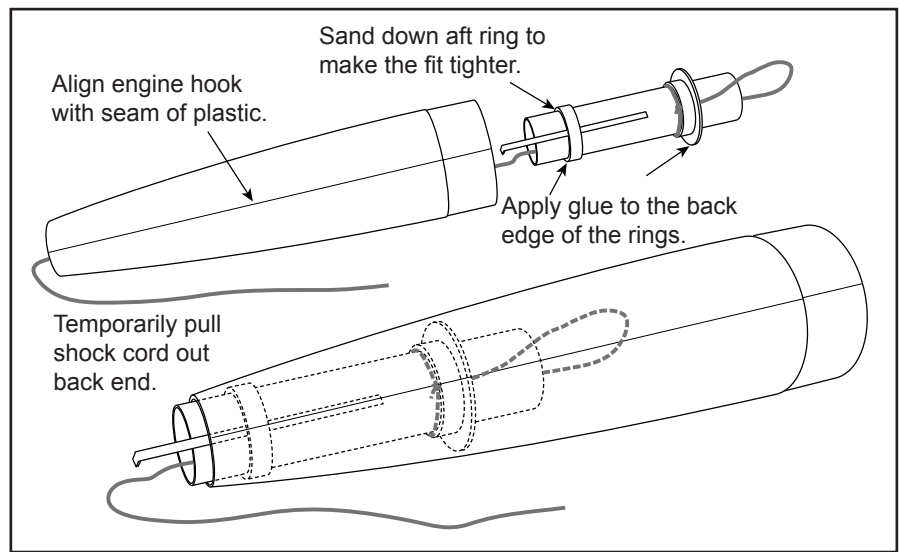
□ 20. Glue the diagonal cut tube from the previous step onto the jet engine wood stand-off using wood glue. The tip of the diagonal edge is aligned with the diagonal edge of the stand-off piece. Make sure the tube is straight inside the forward nacelle tube. Repeat with the other diagonal cut tube. Allow the glue to dry.



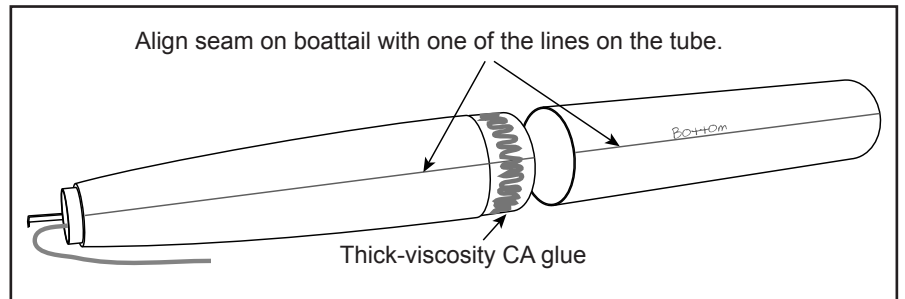
□ 21. Cut out the tube marking guide from page 11. Wrap the guide around the big tube and tape the ends together. Using a pencil, make a tick-mark on the tube at the end of each arrow point on the guide. Remove the guide. Using an angle-channel as a guide, draw straight lines along the entire length of the tube at each tick mark.



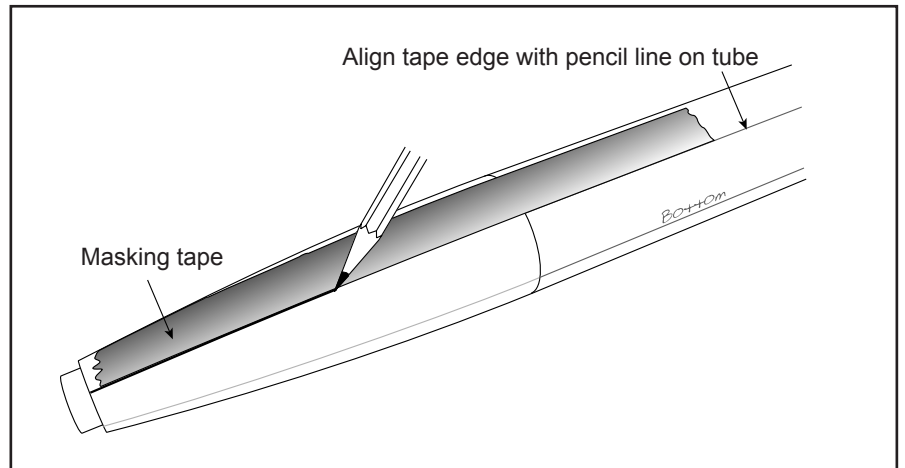
□ 22. Temporarily loop the shock cord out the back end of the motor mount to keep glue from getting on it. **IMPORTANT: BE SURE TO TEST-FIT EVERYTHING BEFORE APPLYING GLUE.** Slide the engine mount into the tailcone. Push it in tight so that both centering rings touch the inside edge of the plastic. If the forward ring does not touch the plastic all the way around the perimeter, pull out the engine mount, and sand the aft centering ring down. When the fit is correct, apply a bead of “thick-viscosity” CA glue to the edges of the centering rings and reinsert it into the tailcone. While the glue is still wet, rotate the engine mount around so that the engine hook lines up with one of the seams in the plastic tailcone.



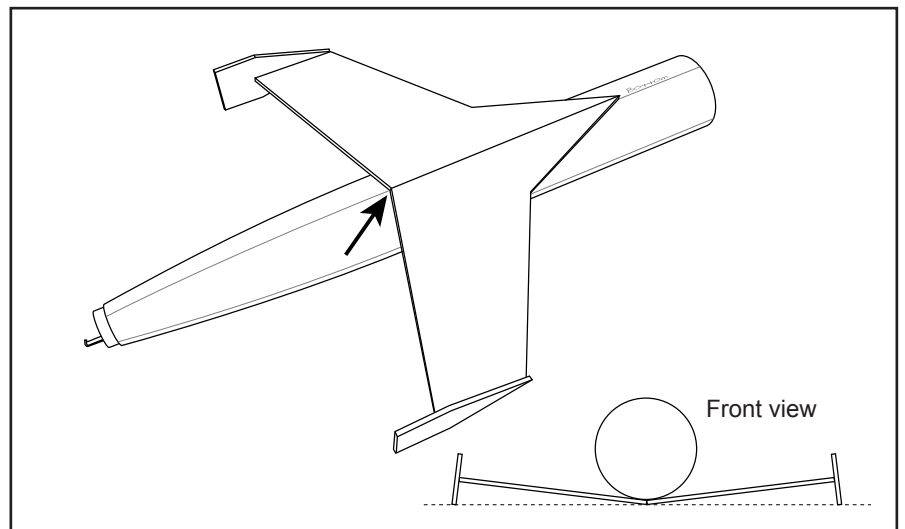
□ 23. Using thick-viscosity CA glue, attach the boattail to the body tube. Align the seam on the boattail with one of the lines on the tube. Mark the tube on the opposite side of the engine hook as the bottom of the rocket.



□ 24. The easiest way to extend the lines from the tube to the boattail is to use a piece of masking tape. Sight along the tube to make sure the tape is straight before you draw the pencil line. The line should go from end-to-end on the boattail. Repeat for the other side, where there is not a seam line from the plastic.

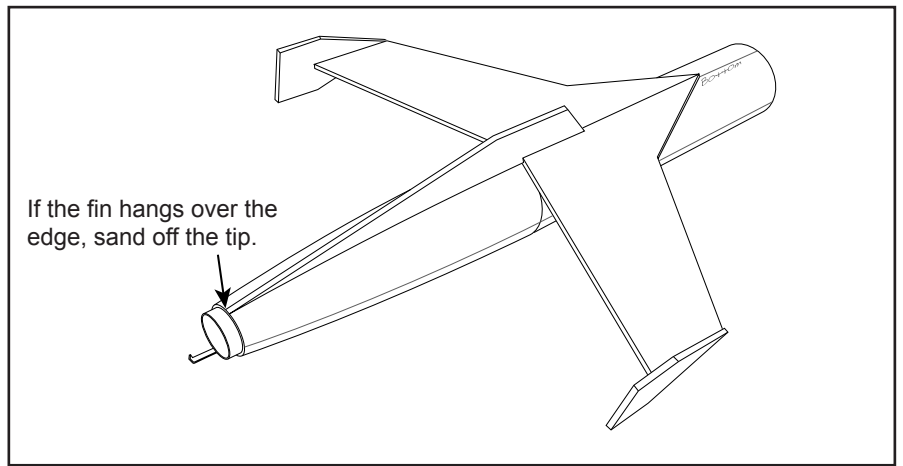


□ 25. Apply a bead of wood glue on the top surface of the wing where the two wings join. Glue the wing on the bottom of the the body tube. The back edge of the wing is positioned where the boattail meets the tube. Make sure the wing is straight on the tube. Hold it in this position until the glue sets, and then allow it to fully dry.

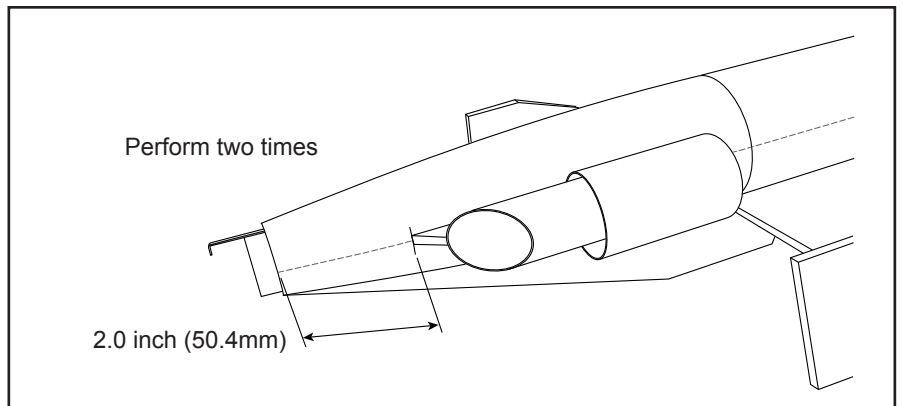




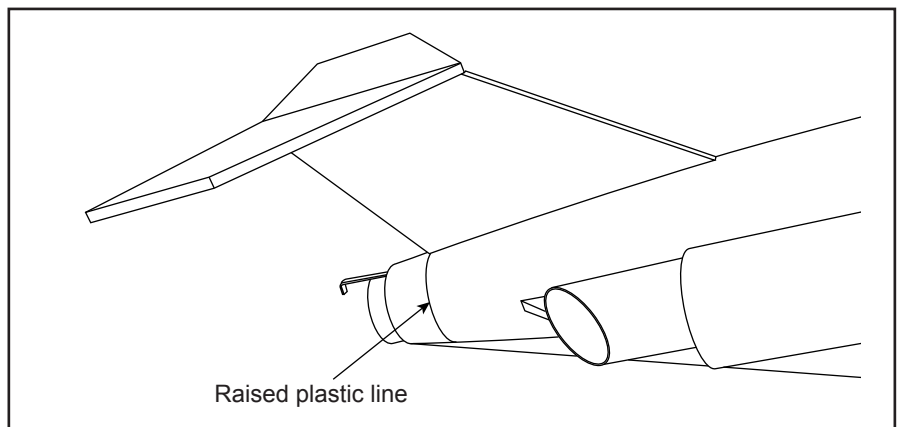
- ☐ 26. Attach the ventral fin to the bottom of the rocket using “thick-viscosity” CA glue. Make sure the fin is straight along the tube.



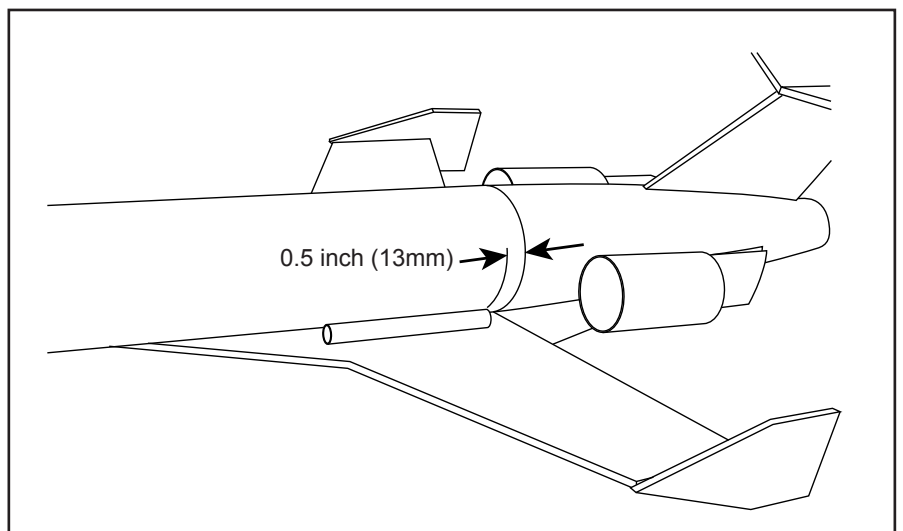
- ☐ 27. Mark the boattail 2.0 inches (50.8mm) from the rear end as shown. Apply “thick-viscosity” CA glue to the wood standoff and attach the jet engine pods to the boattail at this location. Perform the same step for the second jet engine on the other side of the rocket.



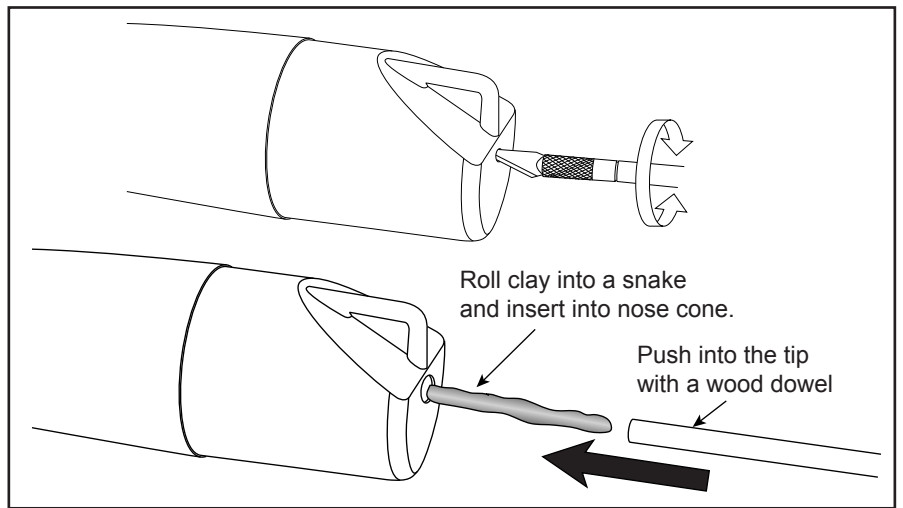
- ☐ 28. The vertical tail is glued to the top of the boattail using “thick-viscosity” CA glue. The rear edge butts against the little raised plastic line on the boattail. Make sure the fin is perpendicular to the boattail and also straight along the plastic seam line on the top of the rocket.



- ☐ 29. Using wood glue, attach the launch lug to the tube. It is wedged between the top of left wing and the tube. Position it so that its rear edge is 0.5” (13mm) from the rear edge of the body tube. Allow the glue to dry. Apply a bead of wood glue to both sides of each launch-lug/body tube joint. Pull your finger along the joint to smooth out and remove the excess glue. Lay the tube horizontally while the glue dries.

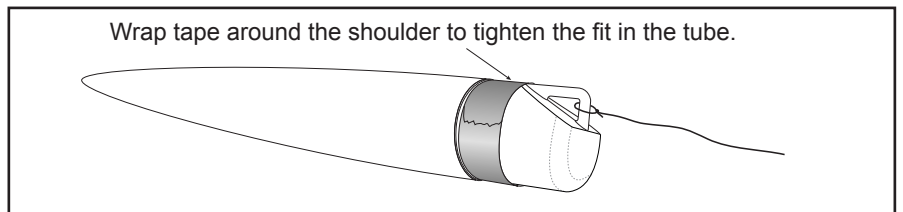


☐ 30. Using the point of a hobby knife, open up the hole in the base of the nose cone so that you can easily insert a long wood dowel (1/4" diameter [6.3mm] will work fine). Roll all the clay into a long snake and insert into the nose cone. Press it firmly into the tip using the wood dowel.



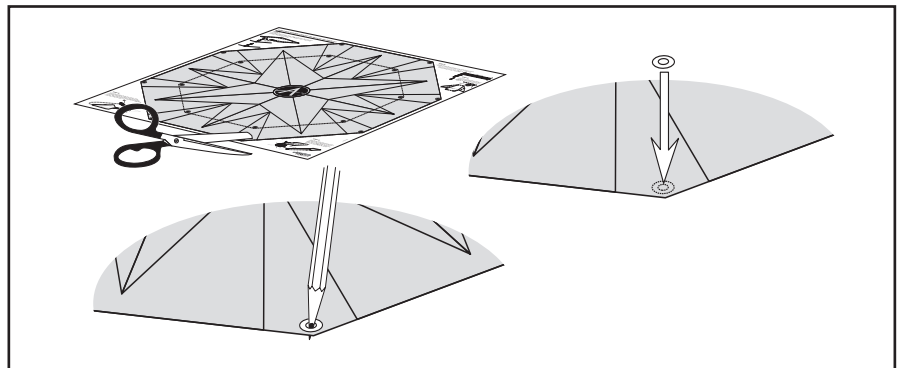
☐ 31. Test fit the nose cone onto the front end of the rocket. You may need to apply 2 or 3 layers of masking tape to make the fit snug. When applying the masking tape, leave a slight gap between the edge of the nose portion and the edge of the tape.

☐ 32. Tie the loose end of the shock cord to the loop on the base of the nose cone using two overhand knots. Apply a little bit of the wood glue onto the knot to keep it from coming untied.



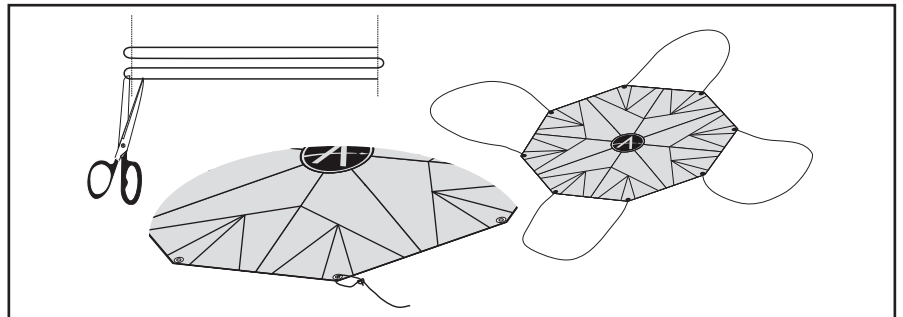
### Parachute Assembly

☐ 33. Carefully cut out the parachute canopy along the 32" dashed lines. Place one reinforcement ring on each of the marked corners. Take a sharp pencil or knife and poke a hole through the plastic in the center of each ring.

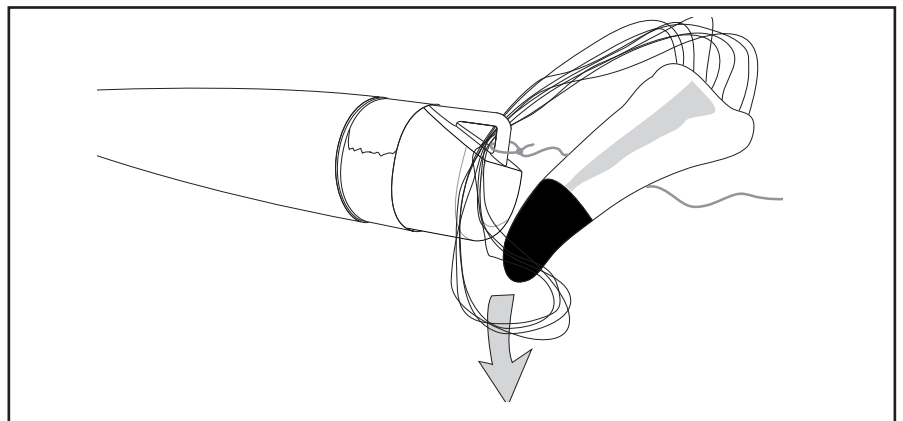


☐ 34. Fold the shroud line in half, and cut at the fold to make equal lengths; cut each piece in half again to make a total of four lines of equal length.

☐ 35. Pull each parachute line end through a parachute reinforcement ring and tie using two overhand knots. Repeat for all the corners as shown.



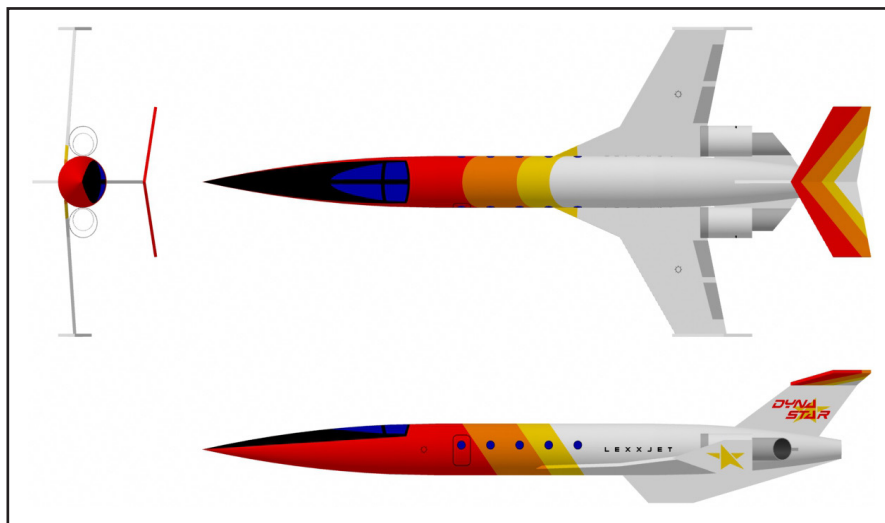
☐ 36. Holding the parachute at the center of its top, pull the lines together to even up the ends. Thread the four looped lines through the loop at the base of the nose cone. Take the top of the parachute and pull it through all four string loops at the same time and then pull to tighten the knot. This securely attaches the parachute to the rocket.



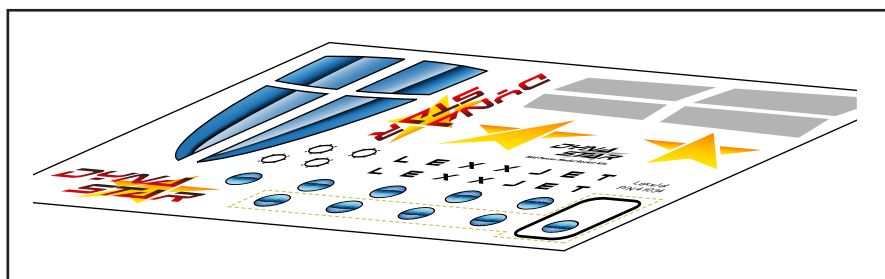


## Painting Instructions

☐ 37. After all the glue has completely dried, you may now paint your LexxJet model rocket. Roll a piece of paper and insert it into the aft end of the body tube so you can hold the model while painting it. For best results, paint the model with primer before using the undercoat paint color, which is white. Follow the directions on the paint can, and always paint outdoors with the wind against your back. Let the paint harden at least 24 hours before proceeding. When the white is dry, you can paint the model as shown on the face card, or using your own favorite colors. There is a diagonal marking guide in the pattern sheet 11.



☐ 38. The decals are somewhat stretchy, so be careful applying them. We recommend removing each one from the paper backing and then dipping them in soapy water to lubricate them so they will slide around and can be repositioned easily. Keep them wet by occasionally dripping some soapy water on them if they start to grab the rocket too quickly. When the decal is in the right location, press down firmly, and squeegee out any water underneath. When the decal dries, it will be permanently fixed. The soapy water will not affect the adhesion of the glue on the back of the vinyl decal. Use the picture on page 1 for decal placement.



## Launching the LexxJet

The motor matrix shown here was developed using the RockSim software. Initial conditions: slightly breezy (3-7mph wind), straight up launch angle and a 48 inch (121.9 cm) long launch rod. You can use RockSim to find other motor combinations that will work well in the DynaStar LexxJet rocket kit.

\*Go to our website for a broader motor selection for this kit at <https://www.apogeerockets.com/Rocket-Kits/Skill-Level-4-Model-Rocket-Kits/LexxJet#motors>

**Motor Matrix: How High Will The LexxJet Fly?**

Motor Type	Produced by:	Estimated Altitude (feet)	Estimated Altitude (meters)
D12-3	Estes	255.5 ft	77.9 m
D22-4	Quest	351.2 ft	107.0 m
E12-4	Estes	569.6 ft	173.6 m
E20-4	Aerotech	793.5 ft	241.9 m
E26-4	Quest	598.3 ft	182.4 m
E30-4	Aerotech	915.6 ft	279.1 m
F32-6	Aerotech	1385.9 ft	422.4 m
F30-6	Aerotech	1117.7 ft	340.7 m
F39-6 RMS	Aerotech	1214.4 ft	370.1 m
F51-6 RMS	Aerotech	1247.2 ft	380.1 m

## Launch Supplies Needed

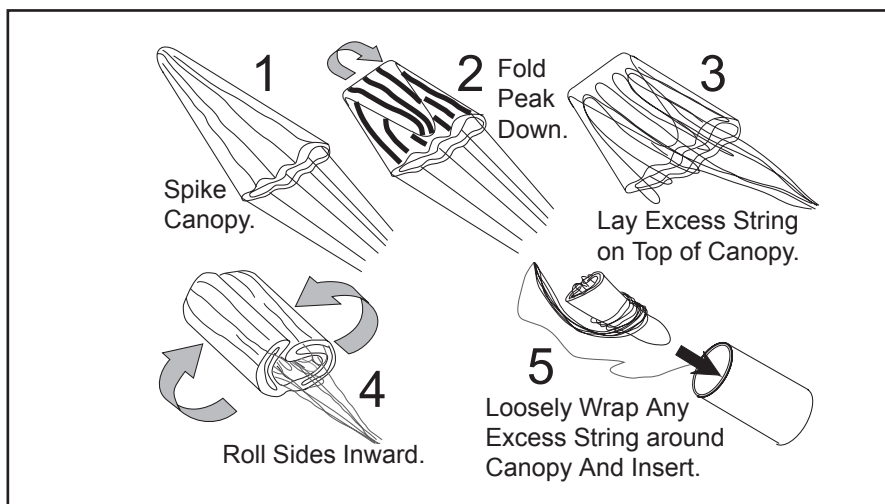
To launch your rocket you will need the following supplies:

- ◆ A model rocket launching system.
- ◆ Recovery wadding (8 sheets).
- ◆ Recommended 24mm Diameter Rocket Engines — see the motor matrix.

## Rocket Preflight

☐ A. Loosely crumple and insert 8 sheets of recovery wadding into the body tube.

☐ B. Carefully fold the parachute and insert it



☐ C. Insert the motor into the motor tube until the motor hook holds it in place.

☐ D. Insert and secure the engine igniter as directed on the package the engines came with.

### Countdown and Launch Procedure

Fly your rocket on a large field that isn't near any power lines, trees, or low flying aircraft. The larger the field, the greater your chances of recovering your rocket. The launch area around the pad must be free of dry weeds and brown grass. Launch only during calm weather with very little or no wind and good visibility. Always use a launch pad that includes a blast deflector.

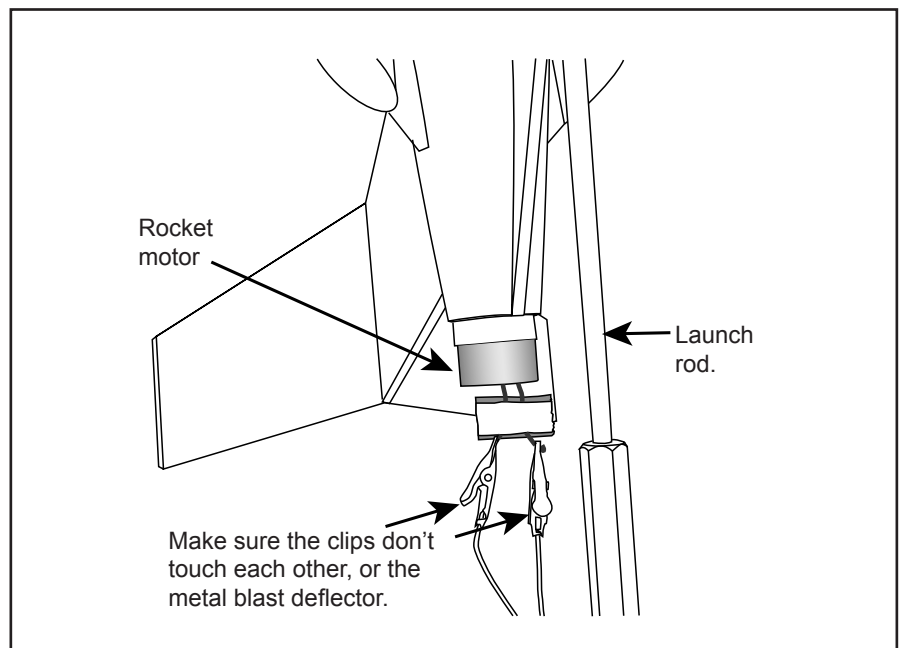
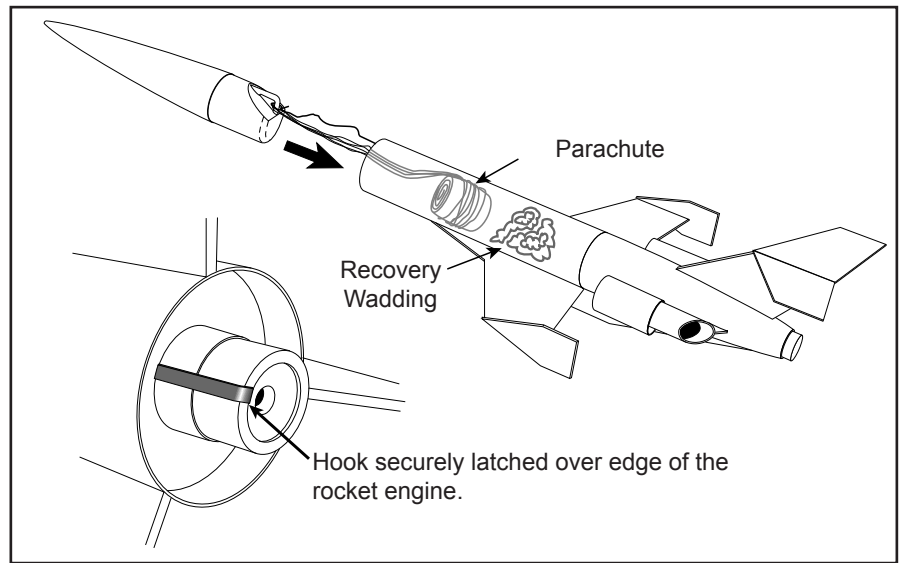
10. Remove the safety key from the launch controller
9. Slide the launch lugs over the launch rod to place the rocket on the pad. The rocket should slide freely over the rod.
8. Attach the micro-clips to the igniter. The clips must not touch the other or the metal blast deflector.
7. Stand back from your rocket as far as the launch wire allows (at least 5 meters - 15 feet).
6. Insert the safety key to arm the launch system. The light (or buzzer) on the controller should come on.

Give a loud countdown 5 ... 4 ... 3 ... 2 ... 1 ... LAUNCH!

Push and hold the button until the engine ignites. Then remove the safety key and place the safety cap on the launch rod.

### Misfire Procedure

Occasionally the igniter will burn, but the motor will fail to ignite. If this happens, the cause is that the pyrogen on the igniter was not in contact with the engines propellant. When an ignition failure occurs, remove the safety key from the launch controller and wait 60 seconds before approaching the rocket. Remove the



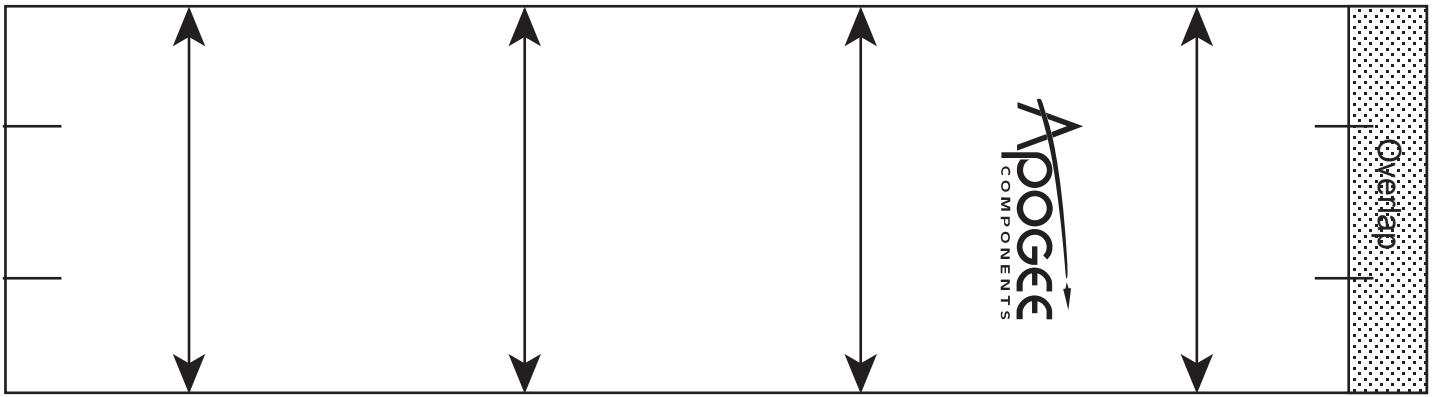
old igniter from the engine and install a new one. Make sure that the igniter is insert fully into the engine and touches the propellant. Secure the igniter as directed on the engine package and repeat the countdown and launch procedure.

Always follow the NAR\* Model Rocket Safety Code when launching model rockets.

\*National Association of Rocketry

\*\*Kevlar® is a brand name of E.I. DuPont for their selection of aramid fibers. Only DuPont makes Kevlar®

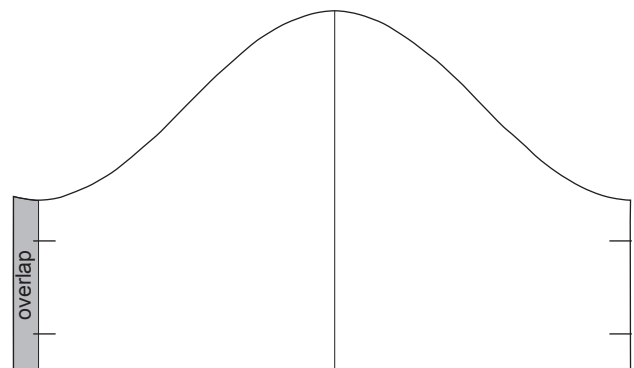
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Tube Marking Guide for the LexxJet kit

# **LEXXJET**

Pattern Sheet



Jet Exhaust: Tube Cutting Guide

