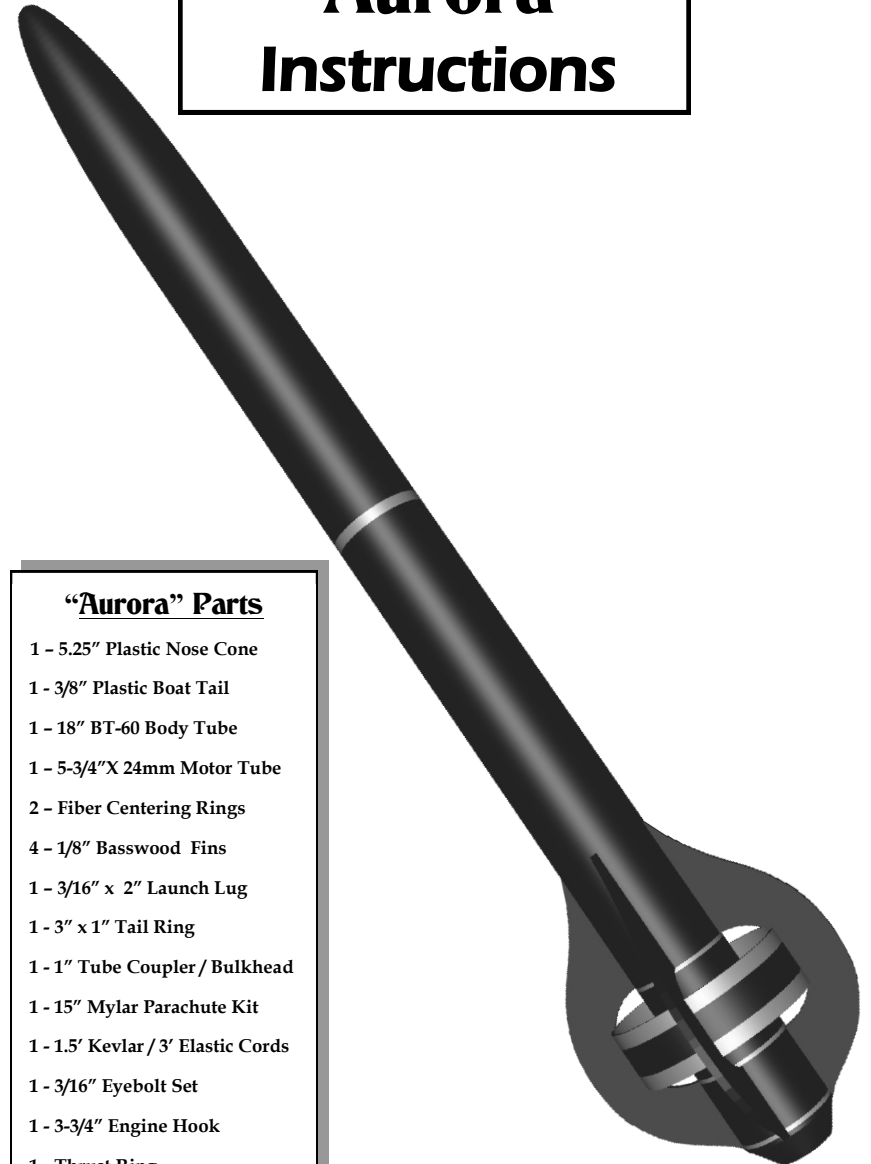


## Notes

# 3D ROCKETRY

## “Aurora” Instructions



### “Aurora” Parts

- 1 - 5.25" Plastic Nose Cone
- 1 - 3/8" Plastic Boat Tail
- 1 - 18" BT-60 Body Tube
- 1 - 5-3/4" X 24mm Motor Tube
- 2 - Fiber Centering Rings
- 4 - 1/8" Basswood Fins
- 1 - 3/16" x 2" Launch Lug
- 1 - 3" x 1" Tail Ring
- 1 - 1" Tube Coupler / Bulkhead
- 1 - 15" Mylar Parachute Kit
- 1 - 1.5' Kevlar / 3' Elastic Cords
- 1 - 3/16" Eyebolt Set
- 1 - 3-3/4" Engine Hook
- 1 - Thrust Ring
- 1 - 1" Engine Spacer

3D Rocketry, Statement of Limitation of Liability

Limitation of Liability: Model rockets are not toys. Model rockets are functional rockets constructed of lightweight materials and launched using pre-manufactured, NAR safety certified model rocket motors in accordance with the NAR Model Rocket Safety Code. Model rockets, if misused, can cause injury, property damage and even death. 3D Rocketry certifies that it has exercised reasonable care in the design and manufacture of its products. Once sold, we cannot assume any liability for product storage, transportation or usage. 3D Rocketry shall not be held responsible for any property damage or personal injury whatsoever arising from the handling, storage, use or misuse of our product. The buyer assumes all risks and liabilities there from and accepts and uses 3D Rocketry products on these conditions.

# 3D ROCKETRY

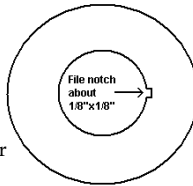
## Step 1

Glue forward centering ring to motor tube 5-1/2 in. from bottom of tube as shown. Cut a motor hook slit in the motor tube 3-5/8 in. from rear of motor tube leaving 1/8 in. of engine hook overhanging. Apply a strong tape over the motor hook to hold in place as shown.

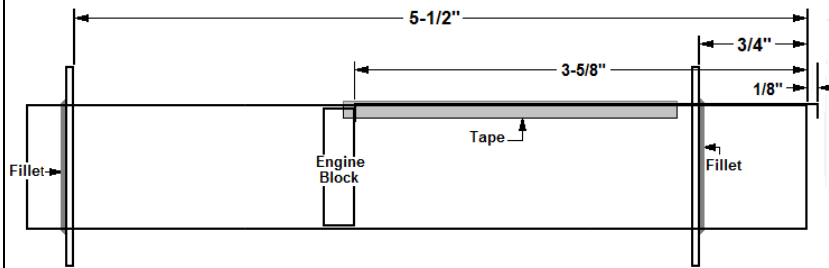
(Tip: Duct or Gorilla tape works great for engine hook attachment.)

Glue engine block into motor tube up to the engine hook as shown. Cut a 1/8 x 1/8 in. notch in the rear centering ring as shown. Glue rear centering ring to motor tube 3/4 in. from bottom of tube as shown.

Apply a few layers of fillet glue at the top of forward ring and bottom of rear ring as shown. Set assembly aside to dry.



Notch for engine hook

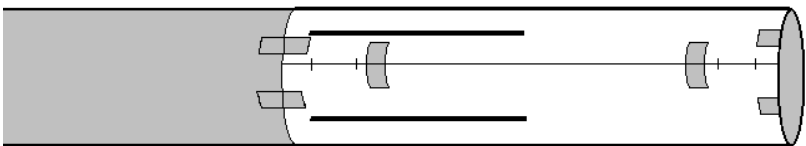


## Step 2

Cut out the fin slot template guide. Tape slot guide around body tube lining it up with the small guide lines and end of body tube. Next tape fin guide at end of tube and at top of fin guide. The slots can be cut out a couple of different ways.

- 1) Cut out slots with a sharp hobby knife freehand or with a straight edge.
- 2) Poke holes at each corner point and carefully cut out slots with a hobby knife freehand or with a straight edge.
- 3) trace slots and cut slots using a dremel type tool.

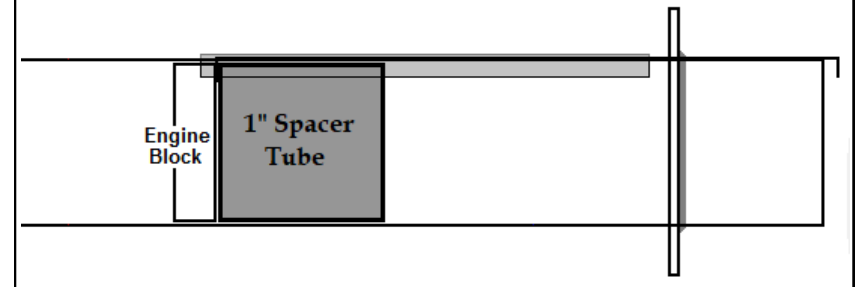
After cutting slots sand or trim slots so fins slide through easily but snugly.



# 3D ROCKETRY

## Step 11

The 1" long spacer tube is provided to use 70MM long motors. ("D" single use motors and reloadable case motors.) **The spacer tube must move freely inside the 24mm motor tube when it is being used!!**



## Recommended Engines

(Estes) C11-3, D12-5, E12-8, E9-8

(Aerotech) D9-5, D15-4, E20-7, E15-7

## Predicted Altitudes

300 Feet to 2,000 Feet

# ENJOY!!!

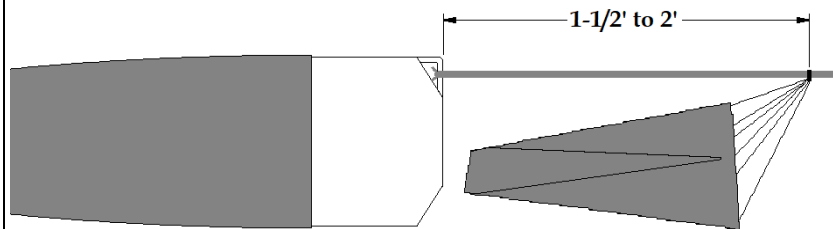
# 3D ROCKETRY

## Step 9

**THE NOSE CONE WEIGHT HAS BEEN ADJUSTED TO STABILIZE THE ROCKET IN FLIGHT. DO NOT REMOVE THE NOSE WEIGHT.**

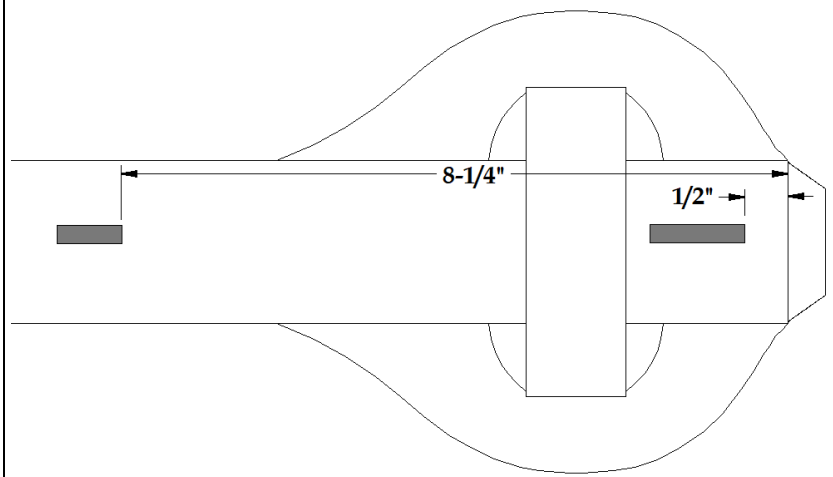
Tie parachute and nose cone as shown. Snap swivels can be used instead of tying directly to nose cone and parachute, this method makes removal much easier and chute can be used in another rocket. The nose cone and parachute connecting positions can be reversed per your preference.

(TIP: A #5 snap swivel works nicely.)



## Step 10

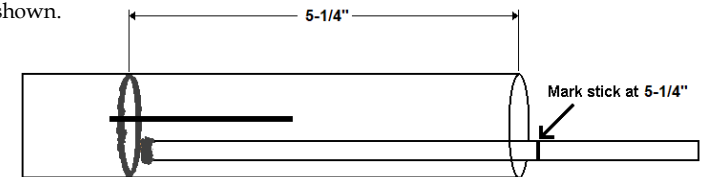
Suggested launch lug placement.



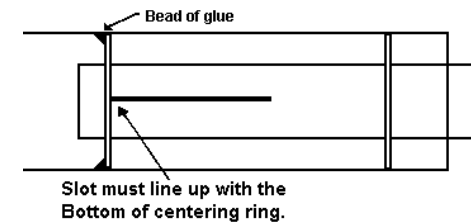
# 3D ROCKETRY

## Step 3

Find a scrap piece of stick that's about 7 - 8in. long and mark the scrap piece at 5-1/4" in. Apply a generous ring of glue inside the main body tube at the 5-1/4" mark as shown.



Insert the motor tube assembly into the main tube till the centering ring is at the top of the fin slot. Look into top of body tube with flash light and check to make sure you have a good bead of glue around the centering rings. Set assembly aside to dry.

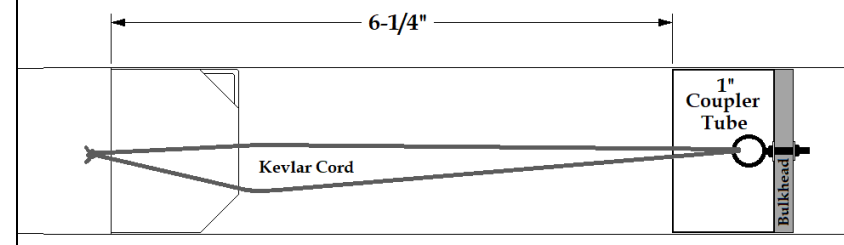
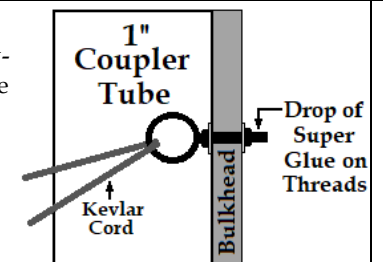


## Step 4

Glue bulkhead flush to 1" coupler tube. Assemble eyebolt set to bulkhead to allow bolt to spin. Place a drop of super glue to threads to keep nut from loosening.

**(Be Sure to tie Kevlar cord to eyebolt before gluing in main tube.)**

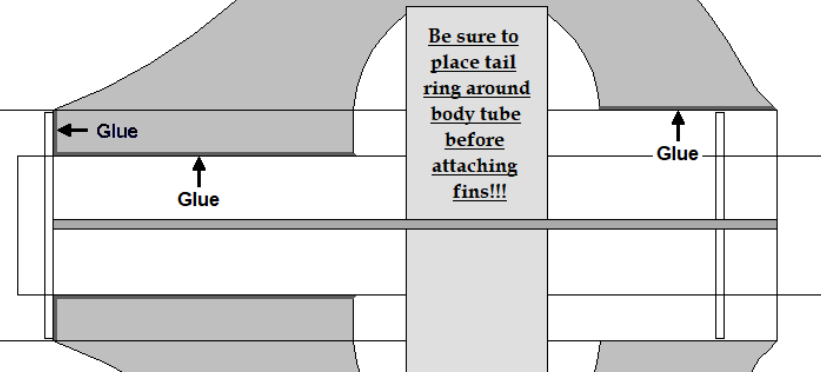
Glue coupler tube assembly 6-1/4" into main body tube as shown.



# 3D ROCKETRY

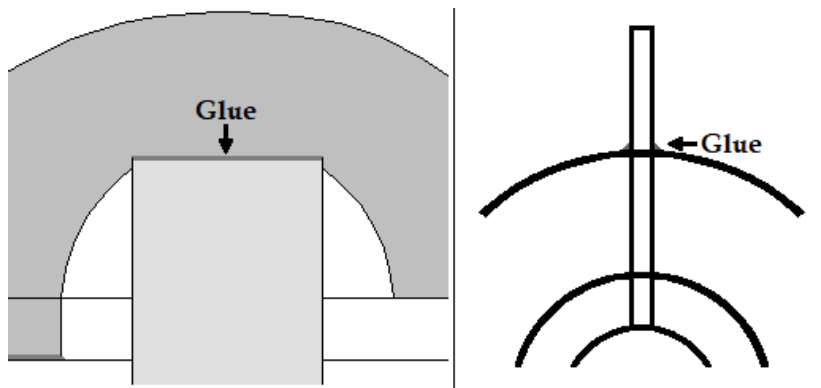
## Step 5

DRY FIT ALL PARTS BEFORE GLUING TOGETHER. TAKE EXTRA CARE ADJUSTING RING NOTCH DEPTH. BE SURE TO PLACE TAIL RING AROUND BODY TUBE BEFORE ATTACHING FINS!!



## Step 6

Adjust fin ring notch as necessary to get a good fit. Super glue along the fin ring connection. After glue sets add another layer of glue to get a very good bond. Add glue fillets if needed.

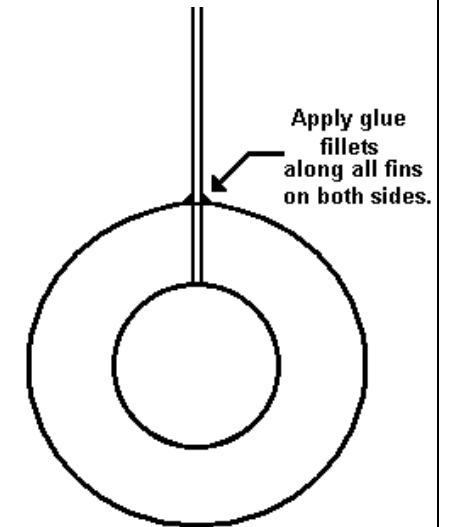


# 3D ROCKETRY

## Step 7

After all four sets of fins are dry, apply a few layers of fillets along the base of all of the fin sets as shown. Allow each layer of fillet to dry before reapplying. You can use your finger or a rounded tip stick to smooth out the fillets. Fillets greatly strengthen bonding of the fins to the main body tube.

After completely dry lightly sand fillets to smooth out imperfections.



## Step 8

Glue tail cone to rear of main body tube as shown. Align notch in tail cone to the engine hook.

Sand the bottom edge of fins, body tube and tail cone flush to get a smooth transition.

