

## More Notes

## 3D ROCKETRY

# NAUTILUS III INSTRUCTIONS



### Nautilus III Parts List

- 1- 9.5" Plastic Nose Cone
- 1- 17" X 2.26" Body Tube
- 1- 5.25" X 29MM Motor Tube
- 2- Plywood Centering Rings
- 6- 1/8" x 1/8" Basswood Strips
- 3- 1/8" Upper Plywood Fins
- 3- 1/8" Lower Plywood Fins
- 1- 1/4" x 3" Launch Lug

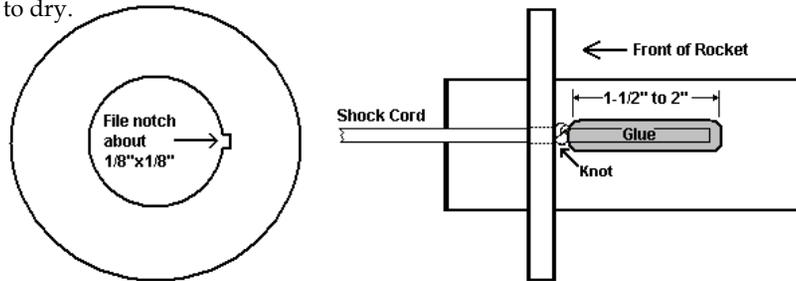
#### 3D Rocketry, Statement of Limitation of Liability

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.

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## Step 1

File a 1/8 in. x 1/8 in. notch in one of the centering rings. Place the centering ring in position. (See step 2) **Do not glue ring to motor tube yet.** This allows the shock cord to go through notch when gluing ring. Next tie a knot about 2-1/4 in. from the end of the shock cord. The knot should be larger than the notch to keep cord from pulling through. Rough up area on motor tube to be glued to with coarse sand paper. Glue 1-1/2 in. to 2 in. of the cord end to the motor tube as shown. (**Tip: Epoxy works best.**) Set aside to dry.

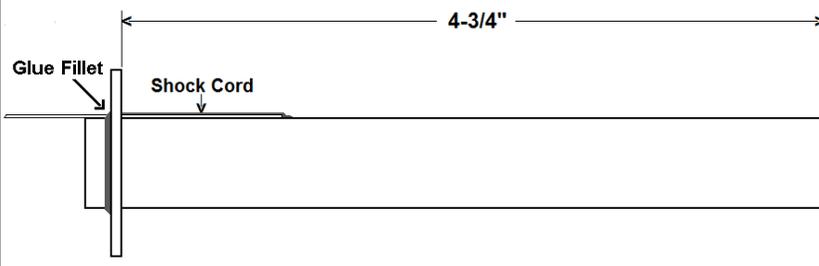


Notes:

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## Step 2

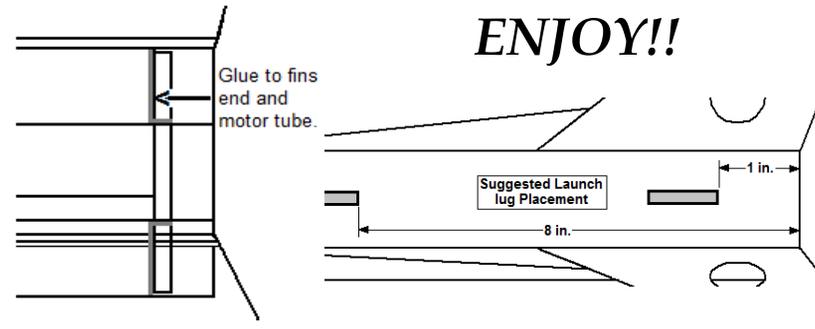
Glue forward centering ring to motor tube 4 -3/4\" from bottom of tube as shown. Be sure to pull shock cord through forward centering ring notch before gluing. Apply a few layers of fillet glue at the top of forward ring. Let each fillet layer of glue dry before applying next layer. **Go not glue rear centering in place at this time.** Allow this assembly to dry thoroughly before gluing in main tube!



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## Step 9

Glue in the rear ring to the rear edge of the fins and motor tube. Attach the launch lugs at your desired locations. I suggest 1in and 8in from rear of body tube. Attach a retainer, parachute and most importantly



### Recommended 29MM Motors for first flight :

<u>Aerotech Single Use</u>	<u>Aerotech Reloads</u>	<u>CTI Reloads</u>
F27-4	F37-6	F36-5
F20-7	F62-6	F29-6
	F26-6	F59-7
	F50-7	
	F25-6	

24MM Reloadables will work also! With adapter.

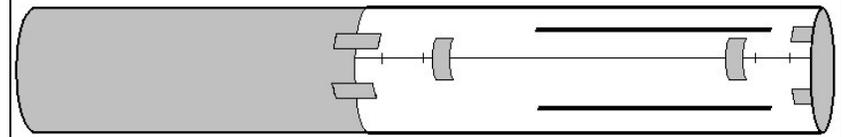
Can be flown on an Estes D12-4 to over 400 ft.

also!! With adapter.

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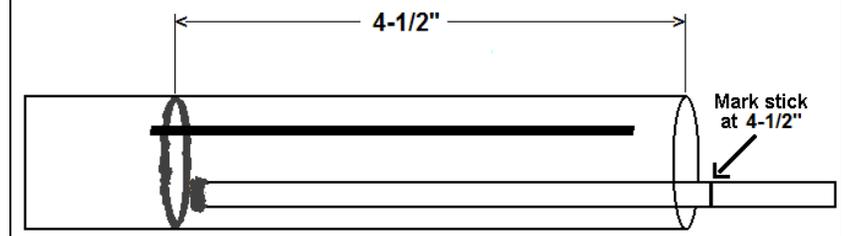
## Step 3

Cut out 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 down fin guide at the end of body tube and at top of fin guide. **Make sure template can not move while cutting or marking tube.** The slots can be cut out a couple of different ways. 1) Cut out paper slots and trace slots on to body tube with pencil or poke holes at each corner point, connect pin dots with straight edge and carefully cut out slots with a hobby knife freehand or with a straight edge. 2) Cut slots out using a dremel type tool. After cutting slots sand or trim slots so fins slide through easily but snugly.



## Step 4

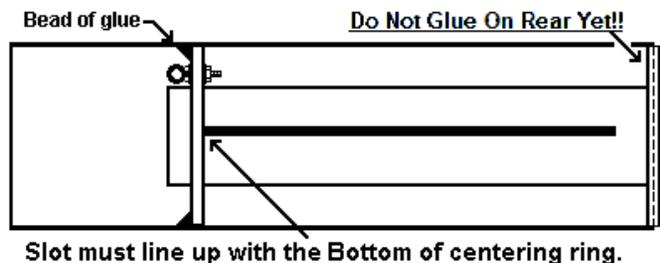
(Tip: Sanding the slot on the inside of the tube keeps the centering rings from binding when inserting motor tube assembly.) Find a scrap piece of stick that's about 10 in. to 12 in. long and mark the scrap piece at 4-1/2 in. Apply a generous ring of glue inside the main body tube at the 4-1/2 in. mark as shown.



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## Step 5

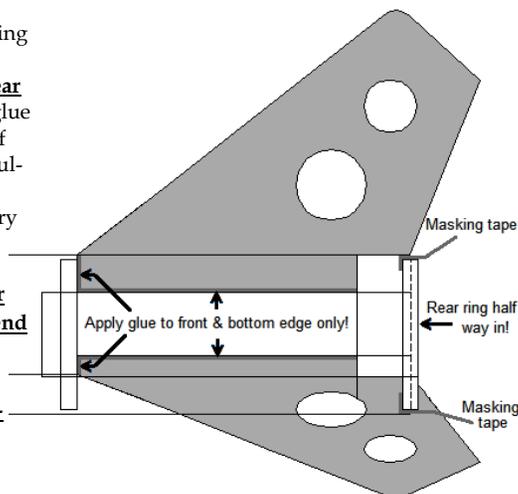
Insert the motor tube assembly into the main tube till the top centering ring is at the top of the fin slot. Place lower centering ring partially on motor tube to align motor tube but do not glue ring to motor tube yet. Stand up the completed assembly with the motor tube end down until the glue dries. Look down into the top of the body tube with flash light and check to make sure you have a good bead of glue around the edge of the centering ring. **(TIP: Placing pieces of masking tape on lower ring helps to pull it out after assembly is dry. See step 6)**



## Step 6

Apply masking tape to the rear centering ring so you can pull ring out and apply optional internal fillets after gluing fins. **Insert rear ring in half way only!** Apply glue to the front and bottom edges of the fin only as shown and carefully slide in slot until fin touches motor tube. Allow each fin to dry before gluing next one.

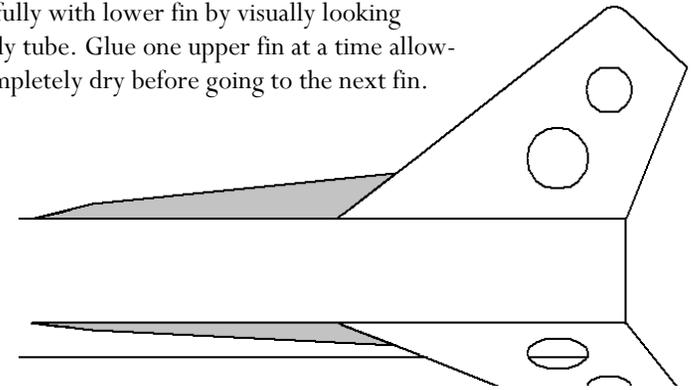
**(FILLET TIP: Use wood glue or thinned epoxy dripped at the end of the internal fin/motor tube connection and allow glue to flow all the way down the connection. This method greatly increases the connection.)**



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## Step 7

Draw parallel lines along the edge of the lower fin set up the body tube as long as the upper fin. Glue upper fin set to lower fin set and body tube staying on the parallel lines. Be sure to check upper fin alignment very carefully with lower fin by visually looking down body tube. Glue one upper fin at a time allowing to completely dry before going to the next fin.



## Step 8

Apply a thin fillet of glue to the outer fin/body tube connection to fill in the gaps and to reinforce the fins. Be sure to clean off all the excess glue so the trim will lay flat. Using your little finger works well removing glue. Let dry before adding trim. Lay basswood trim along fin and body tube and mark length and angle to cut on trim. I found that it is easier to rough cutting trim at front, glue on trim and then sand to correct angle. Use a light bead of glue when attaching trim because the glue will flow out and make a mess.

