

Maker's Guide: Cardboard T-Rex Puzzle

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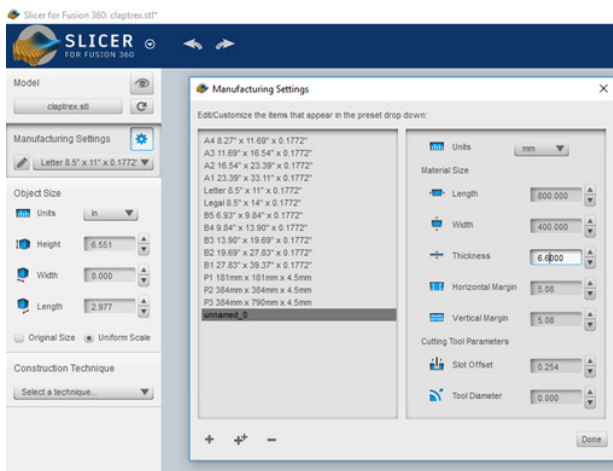


Step 1: Find your model

1. Find a model on www.Thingiverse.com that is both simple and recognisable. I picked a sad dinosaur

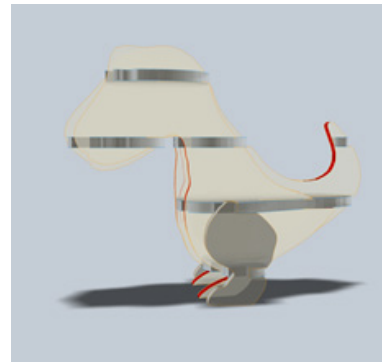
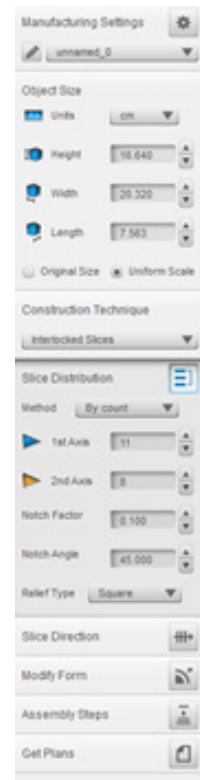


Step 2: Slicer for Fusion

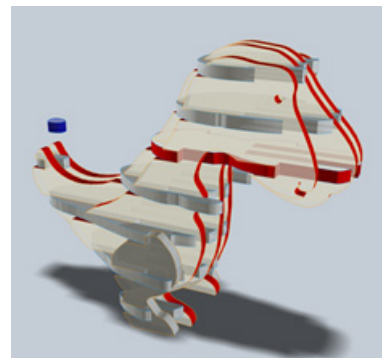


The material setup menu in SlicerforFusion

1. Open the Dinosaur file in SlicerforFusion360 and manipulate it. (SlicerforFusion360 is only installed on the right most CAD station at this point)
2. Import your file into Slicer
3. Create a new manufacturing setting for Cardboard
4. Length and Width should be the size of the cardboard sheets you're using, and under 810x500 so it will fit in the laser cutter
5. Thickness is important!! Measure the thickness of your cardboard using callipers and add 0.1mm so the pieces are easier to slide together
6. Add margins of 5 to 10mm so the corners don't burn when cutting
7. Pick your newly made setting and select "Interlocked slices" for construction Technique
8. Set the height of your object, and select Uniform Scale

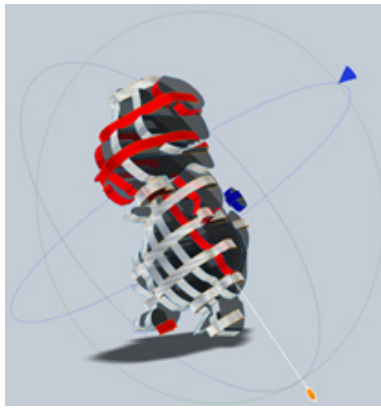


Model 1: This model has a low 1st axis slice count, leaving large gaps in the model and a lack of detail.

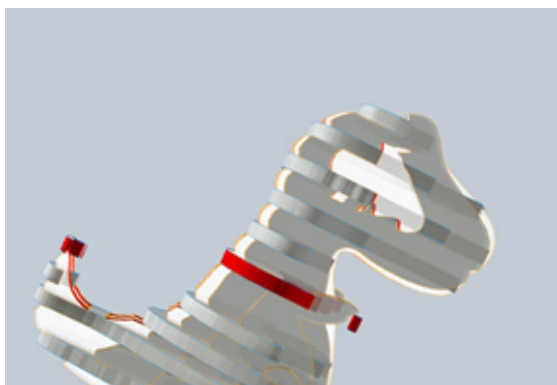


Model 2: This model has an even number of 2nd axis slices, giving more face detail, but compromising with a short tail.



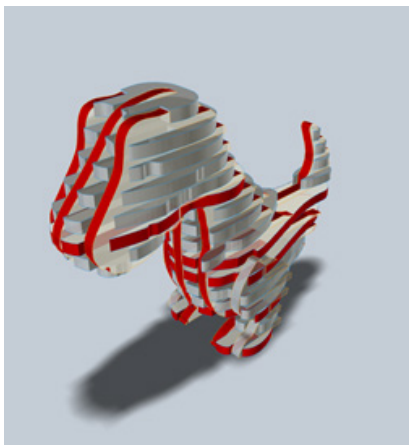


Model 3: This model has a diagonal slice direction, which gives a unique effect. Play around and see if you can discover a unique direction.



More Notes:

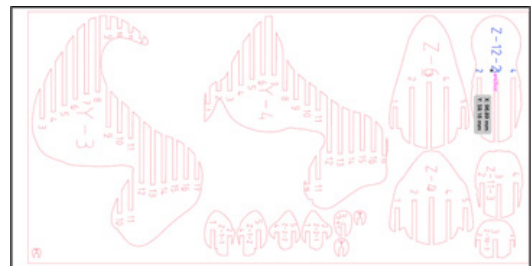
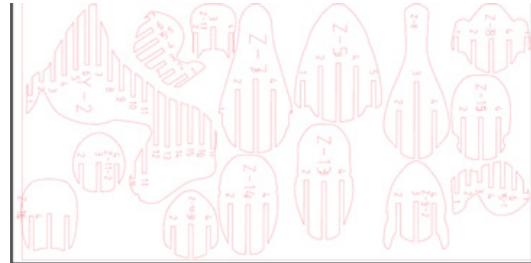
- Under "Slice Distribution", if you select manual, you can click then delete or move some layers to add more detail or delete conflicts
- "Notch Factor" and "Notch Angle" adds small notches to aid in assembly



Final Model: This is the model we went with, as it has good detail on the arms, tail and better than average facial detail. It has 5 vertical and 17 horizontal slices.

Step 3: Adobe Illustrator

1. Once the model is designed to your liking, click 'Get plans' then save to computer, as an .eps format.
2. Because the .eps generates lines only, first we need to drag it onto a new template that is landscape, the size of the material we defined in SlicerforFusion360 and in the RGB colour palette



3. Now, we need to change the colours so they are appropriate for the laser Cutter (RGB red and 0.001 stroke width)
4. Delete the rectangle on the outside of the box if you are planning on assembling in house
5. Finally, cut your card in Trotec

Step 4: Assembly

- Assembling the model can be done in one of two ways, either as a Puzzle by yourself, or using the instructions and slider in SlicerforFusion360.
- Use glue to hold any loose bits together
- Nothing should require force to use. It is only cardboard, be gentle

Enjoy your finished model!

