

Assembly Guide for Self-Centering Turntable

Parts Needed

Print:

BearingBase_3.stl

3 - **Slider_7_0mmPeg.stl**

3 - **Spacer_12_7mm_Hold.stl** (Optional for smaller diameter objects 1/2" to around 1")

3 - **Spacer_5mmODx25mm_Hold.stl** (Optional for really small diameter of 5mm or larger)

27mm-103mm diameter objects print these 2 parts:

DoveTail_Guide_Small.stl

TableTop_Small.stl

27mm-148mm diameter objects print these 2 parts:

DoveTail_Guide_Large.stl

TableTop_Large.stl

Print time should be less than 3.5 hours for the smaller size

Purchase these:

1 - **Nema17** motor (I am using a pancake size, but any size should work)

3 - **608-2RS** bearings

3 - **5/16"x1" Hex Bolts** (or 3 - **M8x25mm**)

3 - **5/16" Washers** (or 3 - **M8 Washers**) (I found 1/4" washers also work with 5/16" bolts)

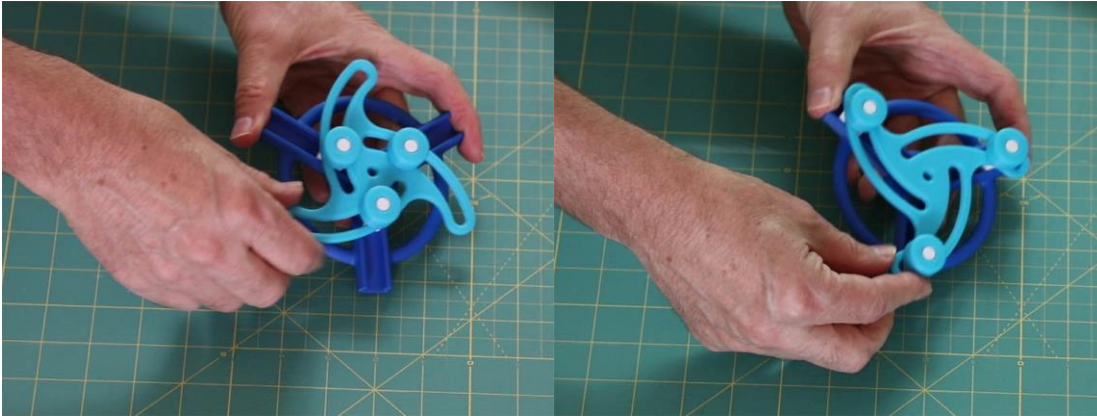
3 - **5/16" Locknuts** (or 3 - **M8 Locknuts**)

1 - **M3x10mm Screw** (to lock turntable to motor)

4 - **M3x8mm Screws** (attach plate to motor) (10mm seemed too long for pancake motor)



Before starting you might want to use a jeweler's file to smooth the diameter of the pegs & the curved slots in the top so they slide nicely between. Test the movement like pictures below.



Attach M3x10mm screw & locknut to Turntable, but do not tighten. It is easier to put this hardware on before attaching to base assembly.



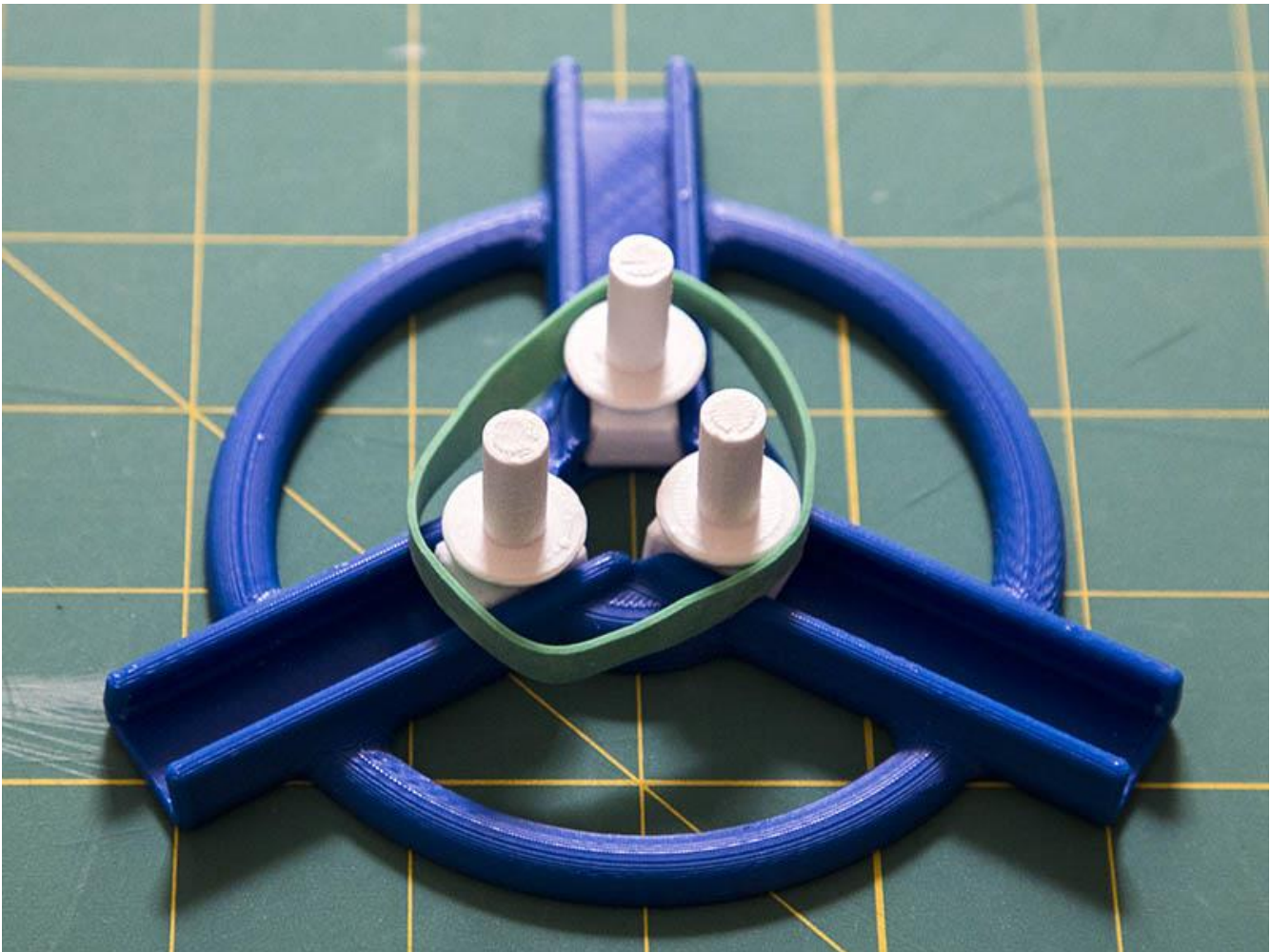
Attach Bolts through the base top holes with bearings on the other side, then a washer, a locknut & tighten. Make sure the bearings still turn but are not wobbly.



Attach motor with 4 - M3x8mm screws and tighten. M3x10mm screws will probably work with deeper motors.

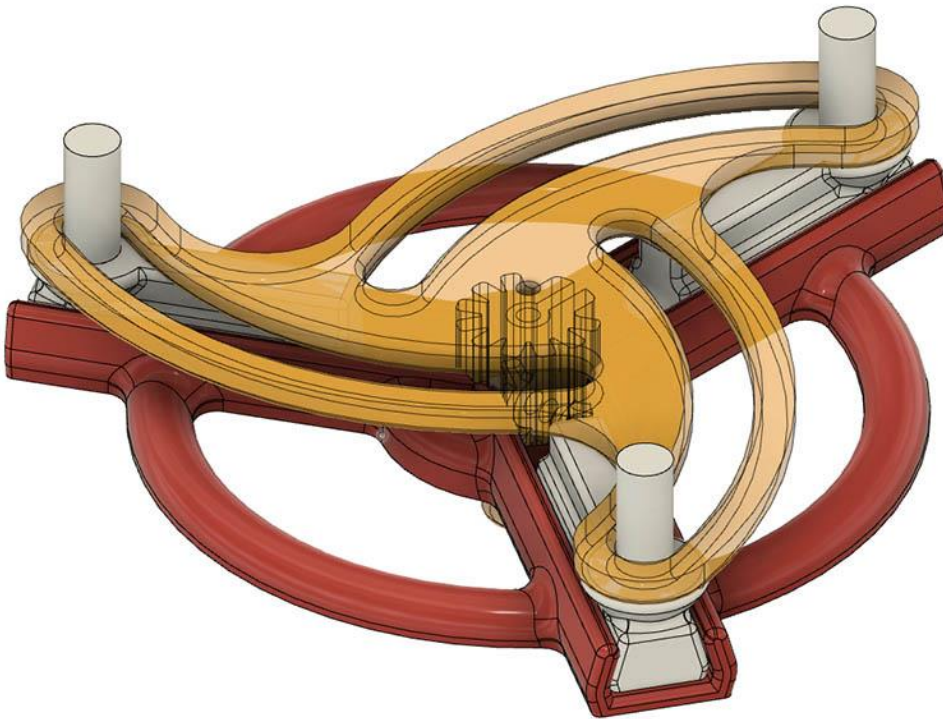


Add the 3 - **Slider_7_0mmPeg.stl** to the **DoveTail_Guide_34mm-110mm.stl** or **DoveTail_Guide_75mm-155mm.stl** & put an appropriate size rubber band around the 3 pegs. Depending on how well your rubber band stretches, you can probably add this later.

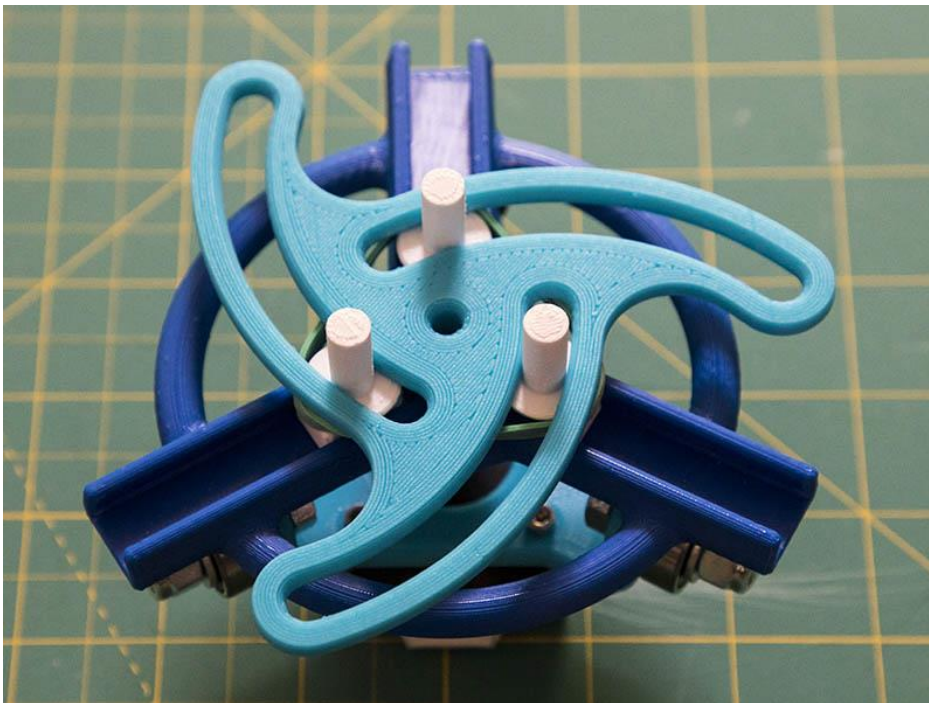


If you have a heavy & wider object that needs more support, there are some extended length sliders 40mm, 50mm & 60mm length that can be turned inward for better support as shown in below image.

Slider_40mmLong.stl, Slider_50mmLong.stl, Slider_60mmLong.stl



Attach the Top thru the **DoveTail_Guide** & onto the motor shaft & push down until bottom of table touches bearings. Then tighten the M3 screw to the locknut. Test to make sure turntable does not pull loose from shaft.



Add spacers if you want them or they can be added when you need them. There are 2 sizes, **Spacer_12_7mm_Hold.stl** for 1/2" and larger diameter & **Spacer_5mmODx25mm_Hold.stl** for really skinny objects down to 5mm in diameter. Need something smaller, you can probably make an adapter for it.

I added an image showing a test burn with a 3/8" Birch Dowel using this turntable.



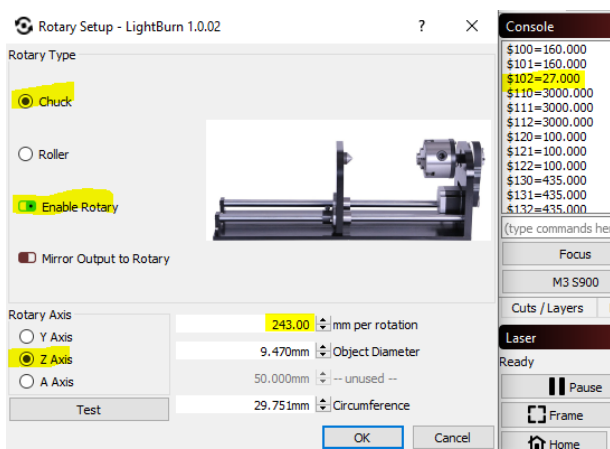
Rotary setup in LightBurn for Rotary Axis

I am using the Z-axis for the rotary axis and the X-axis is the scanning axis. If you are using the horizontal/Vertical Cantilever laser engraver, the cantilever arm will have to be the X-axis. LightBurn currently does not have an option to use the Y-axis for the scanning axis. Also note that Z-axis is not commonly used for the rotary axis, but has worked for me so far.

After trial & error testing rotary setup, these are what worked for me. This gives me one full rotation of the axis & also 100mm movement along scanning axis (X-axis) & 100mm movement along rotary turning axis (Z-axis) they take the same amount of time.

\$102 = 27.0 ;Z-axis steps per millimeter

In LightBurn Rotary Setup, set to Chuck type, Enable Rotary, 243.00 mm per rotation & set the Rotary axis to what you are using. Yellow highlights in below image are what I used.



Attach the Motor wires & you are done.