Turntable Build Instructions

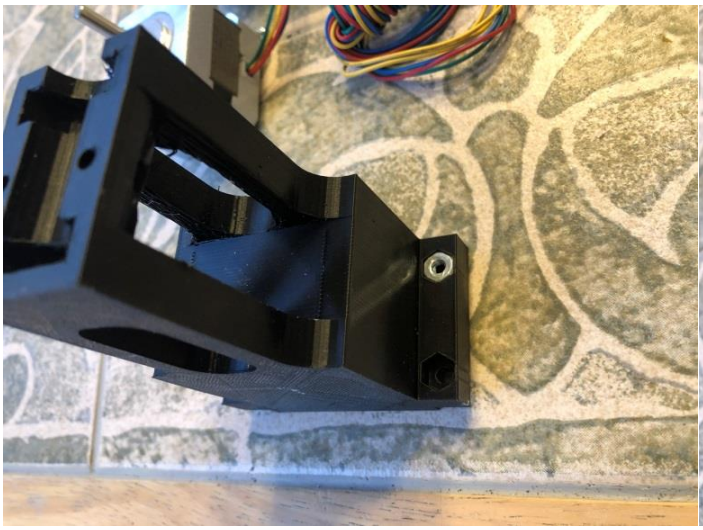
Printed Parts Required (Note: Two of each printed part is required):

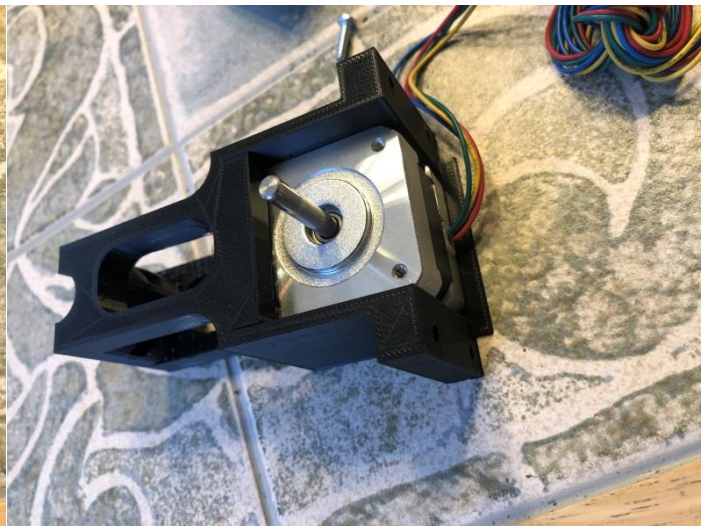
ITEM	**FILENAME**	**PRINTING NOTES**
Turntable Frame	TurnTableFrame.stl	No special requirements.
Bearings Cover	TurnTableBearingsCover.stl	The bearings are a tight fit in this part. File and sand as necessary.
Motor Cover	TurnTableMotorCover.stl	No special requirements.
Turntable Gear	TurnTableGear.stl	These should be printed to be strong with High Infill.
Turntable Table	TurnTableTable.stl	These should be printed to be strong with High Infill.
Turntable Shoe	TurnTableShoe.stl	No special requirements.

Purchased Parts Required:

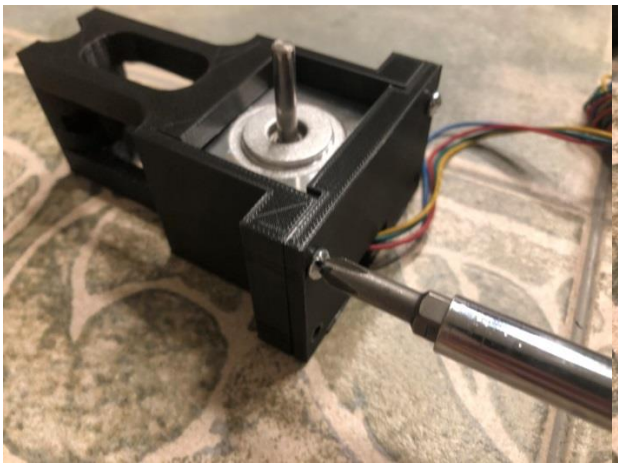
ITEM	QTY	NOTES
608ZZ Ball Bearings	4	
Rods – 8mm (0.315 inch) diameter, 15cm length (6 inches)	2	
#6 x ¾" Bolts with nuts.	4	
#6 x ½" Bolts with nuts.	6	
Nema17, 12v, 1.8 degrees/step, stepper motor	2	Bi Polar – 4-Wire – **Must have a D-Cut in shaft!**
Pre-Crimped Wires	8	Digikey 455-3241-ND (Get extras "in case")
4-Pin Housing	2	Digikey 455-2267-ND (Get extras "in case")
Small Wire Ties	Many	For holding wires together.

Put a #6 nut in the top two holes of the Turntable Frame. They should stay in and not fall out. Insert the Stepper motor with the wires coming out from the back.

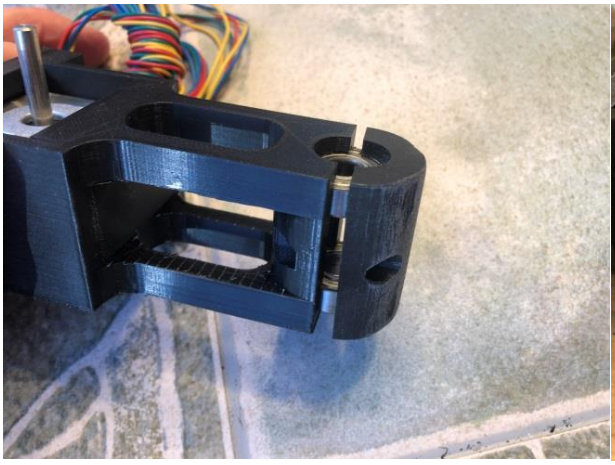
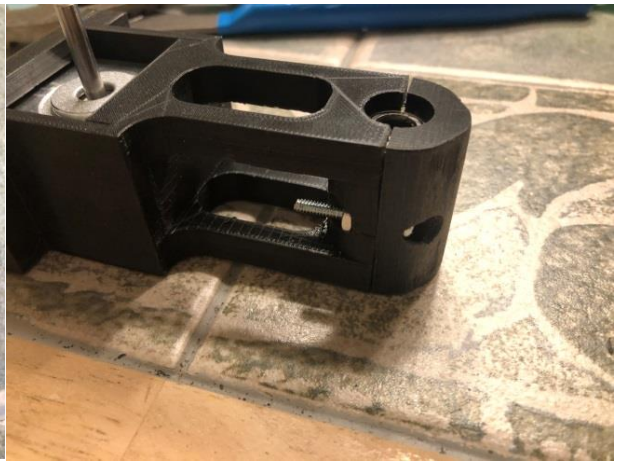




Install the Motor Cover with two 1/2”, #6 screws at the top. **Do not install the lower two screws on the Motor Cover.** Put a 608ZZ bearing in both sides of the Bearing Cover. It might be a little tight; sand or file a little to get them in.

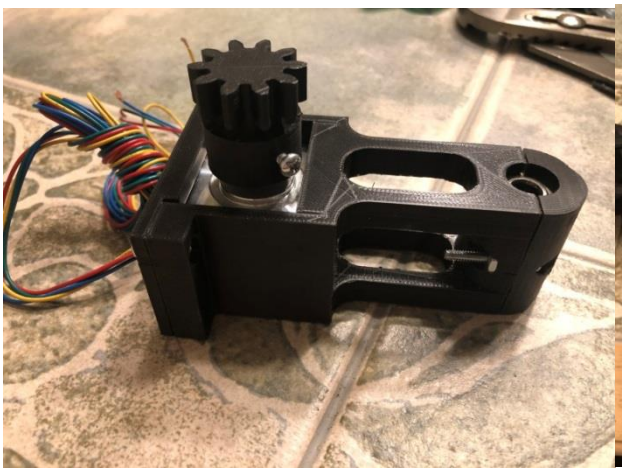



Attach the bearing cover to the Turntable Frame and secure with #6 X 3/4” screws and nuts. You might need to do some sanding of both sides to get this to fit properly.

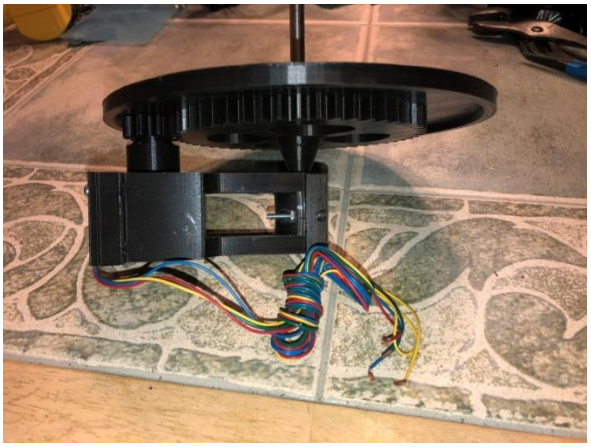



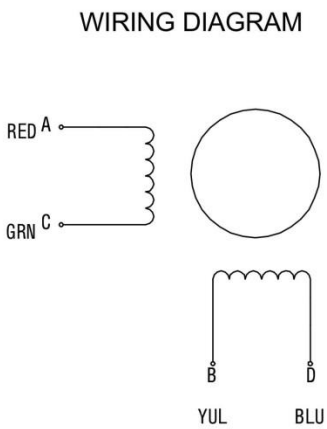
Push a #6 nut down into the crevice of the Turntable Gear. You might need to apply some force or use a screwdriver to push it all the way in. Install a ½” #6 screw with your screwdriver but do not drive it all the way in.


Push the Turntable gear onto the shaft of the stepper motor being sure to align the screw on the flat side of the shaft where the screw will make contact. Tighten the screw. Insert the 8mm X 150mm (6”) rod into the Turntable table. Push it through the hole from the top to the bottom as shown. There should be about 36mm (1 3/8”) of rod exposed on the bottom.

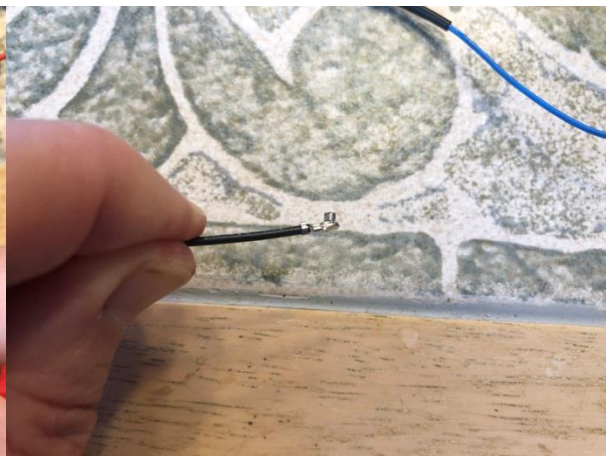


Insert the Rod into the bearings and press down until the gears interconnect. The motor has two windings internally and the datasheet for your motors should show you what two wires go to each winding. In our case, the [Green and Red] and the [Blue and Yellow] are how they are assigned.

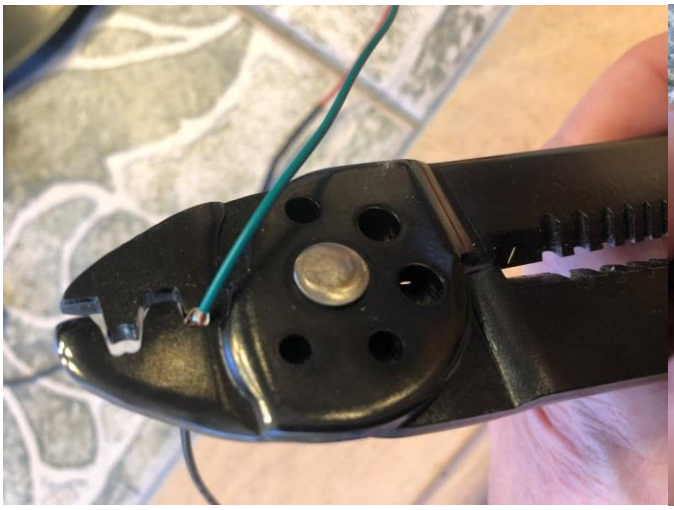




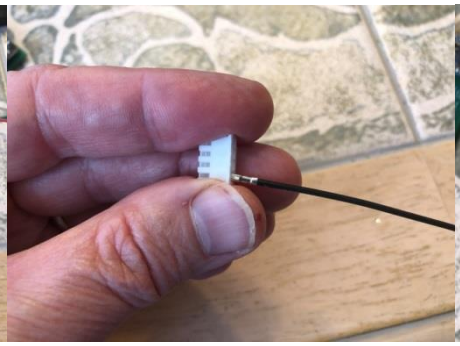
This method for connecting to the connector to the motor is not the only way to do this so consider this an optional method. The end result is to be able to plug the motors into the control PCB. Separate the individual colored wires from each other. Prepare one end of a Pre-Crimped wire by opening up the pin by using angle cutters as shown.



Insert the stripped wire into the opened connector and crimp. Solder the whole connection.




Cover with shrink tubing and using a heat gun, shrink the tubing over the connection. Repeat for all 4 wires. Finally, push the other end of each pre-crimped wires into the connector, one at a time keeping the sets together. For example, we put [Red and Green] into pins 1 and 2 and [Blue and Yellow] in pins 3 and 4.


Use Wire Ties to keep the wires together. Warning: Resist the urge to twist or braid the wires together. This can cause interference issues. Insert the assembly into the Turntable Shoe and you're done. Repeat for the other turntable.