

To make each platform we need:

- Rod Wheel V1
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- 2x Bouncy Bearings
- 1x Bearing Cover Encoder Mount
- (optional) 1x Bearing Cover No Encoder
- Load Cell (\*)

### **Rod Wheel V1 + Wheel Rod V1**

- \* Print Rod Wheel at 5-10% infill 5+ shells 5+ bottom and top layers.
- \* Print Wheel Rod at 100% infill and use ABS or PETG, do not use PLA.

This is a wheel with an 8 mm hole in the middle. You may need to scrape some out of the middle. But, the idea is that you insert either an 8mm metal rod or the included 8mm “Wheel Rod V1.”

Print both and scrape a bit in the middle of the wheel hole and the perimeter to roughen it up a bit. Then around the 12mm spacer bump of the rod, rough that up a bit with sand paper or a razor too. Insert the rod up to the spacer bump into the wheel (side doesn't matter) and glue these together with some super glue, or dental cement etc.





### **Bouncy Bearings**

There are two bearing holders that have countersunk holes appropriate for either 5mm or 1/4-20 screws. These are designed to have the stiffer end of the the spring oriented in the same plane so take care to print both as they are in the file and resist the urge to load one and mirror, as I did not ensue the mirroring would remain symmetric. Because these hold the wheel's support rod this would be an issue. Two 608 skate bearings (with an 8mm ID) are placed in and will support the rods.



This is a picture of the “outer” edge. Note the S shape will be overlapping when oriented left/right with both of these sides facing out. The bottom elbow is the plane that will be a bit stiffer.

Here they are in situ:



You may need to sand the rod to ensure it fits into the bearings, it will depend on your printer's tolerance etc. Regardless, the rod should fit tight, but you shouldn't need to force it.

Two features of the printed rod are a spacer on one side that the bearing and the wheel should bump against (to help orient one side. On the non-spacer side is a small 1/8" hole parallel to the rod and a 3 mm hole perpendicular to the rod. This allows for a 1/8" shaft US Digital encoder to fit in and have a 3mm screw to keep it snug.

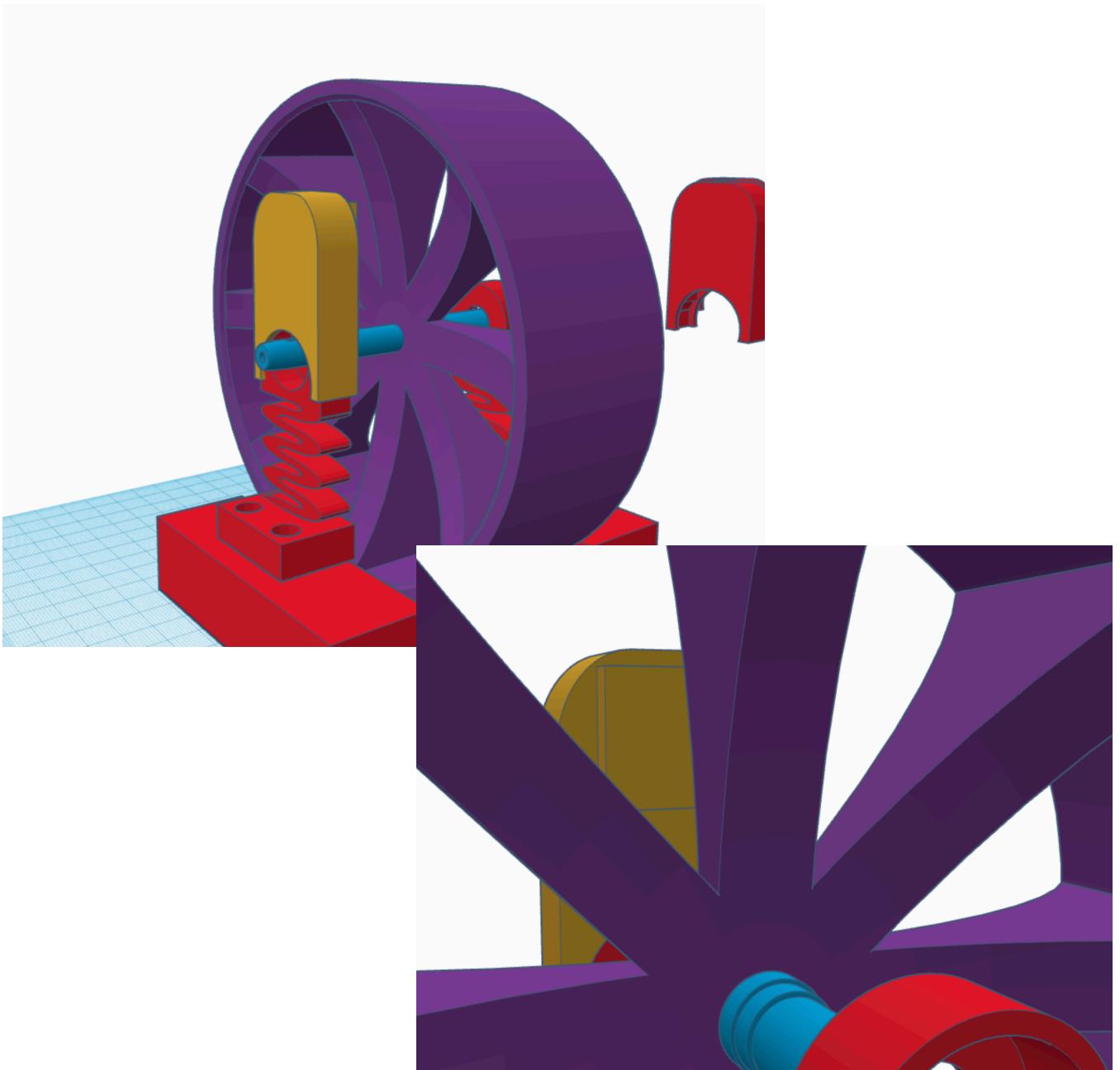


Neither of these holes are tapped. I recommend tapping the 3mm hole, but you may not need to.

### **Bearing Covers**

\*Print these at 10% infill and 4 shells.

These should be printed with supports. There are two options. One is to print a left and right without an encoder mount, or one with an encoder mount. For this section, encoder means an optical encoder. If you use an optical encoder with this mount, if a mount exists on the other side that is made of the same material (and/or color) this could interfere with the ir reflection. Nevertheless, if you use just one mount consider any potential weight difference between the sides and if it affects you. You can counter it in a number of ways, but I have not noticed an issue, especially if you mount the encoder on the side opposite of the rod's spacer bump.



Here are some pictures of the how the bearing covers slip over the “bouncy bearing” housings.