**This is how I made some Spinners.**

There are many different and creative designs for spinners. One of the original purposes for these was to help Attention Deficit Disorder students concentrate on school work. Other students began to adopt and adapt the spinners. Now it is an activity embraced by many students to the extent that it provides a distraction to learning.

I had to copy something this versatile! Here is how I did it:

1. For the bearings, I used some from Roller Blades. They are loosened up by prying off the dust shields, and cleaning out all grease. I tried a little WD 40 on the cleaned bearing to prevent corrosion. However the bearing performance was increased by removing all lubricant. This one step increased the spinning time from 30 seconds to 4 minutes.
2. The design was started from the middle of the spinner and working outwards. The hole for the bearing was first tried at exactly the same diameter as the bearing. This provided a slip fit. What worked for me, was to make the radius of the hole for the bearing .015” smaller. This produced a tight fit. Your results may vary depending on cutter accuracy and runout. Try a sample first.
3. My first attempt used three weights (odd numbers are more interesting than even). Each weight consisted of three nickels. The hole for the nickels was also made .015” smaller on the radius. This also provided a secure fit.
4. The two caps for the bearing had short posts that inserted into the center of the bearing. These posts fit well when cut .015” oversize on their radius.
5. .25” HDPE was used for the prototypes because it’s what I had available. I tried some UHMW, but it turned out fuzzy and needed lots of cleanup afterwards.
6. Double sided exterior carpet tape was used to secure the plastic to a spoil board. Be sure to use plenty (stomp on it) of pressure when applying the tape.
7. A .24” up spiral end mill was used for all cutting. Cutting depth and feeds were aggressive for the HDPE. This prevented melting, and yielded chips that carried away any heat produced. The bit temperature never exceeded 80 degrees. The prototype was cut in less than one minute. A similar spinner made on a 3D printer needed 1 hour to complete.
8. Tests of the completed spinner were made with the same bearing under different conditions. An unmodified bearing ran for about 5 seconds, a cleaned and lubed with WD 40 ran for 30 seconds, cleaned and no lubrication ran for 4 minutes. Note: Try to refrain from spinning these spinners using compressed air…Remember that you would be holding a spinner that’s running at a few thousand revolutions per minute. Imagine what it would be like to have a nickel, or several nickels flying through your shop at approximately the speed of death! Also remember how close the spinner will be to your hand.
9. After using your spinner a few times, you can start using it in ways that that are almost guaranteed to get you into trouble…The Hot Potato maneuver is just one example.
10. Files for these spinners will be found on our file sharing site.
11. Go out and have fun with your new spinner!