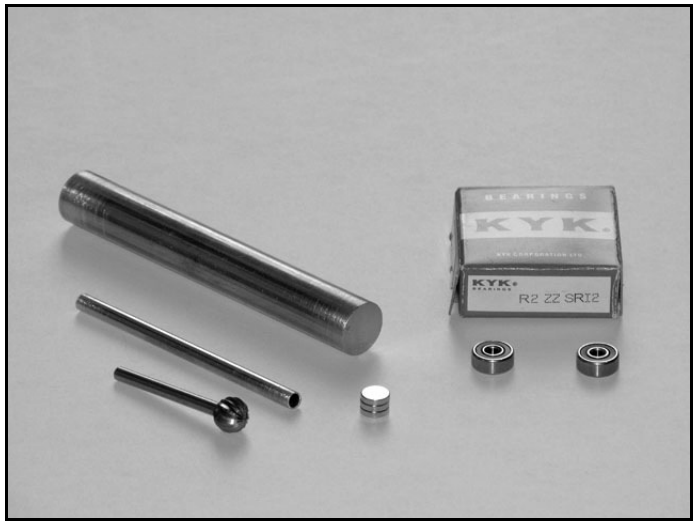
Decorating Tool

Not to long ago, I saw and ad for Henry Taylor's new Decorating Elf in a woodturning magazine, and being a tool junkie, I just had to have one. I looked at Craft Supplies and Packard's websites, but was discouraged when I found out it was more than $60, and the 2 optional cutters would add another $10 each. Add shipping in and the total would be nearly $90. Of course after that I looked at it some more, trying to justify the purchase, and I watched the videos the manufacturer put on YouTube when I had an epiphany: I could probably make this myself for a lot less. It didn't look too hard to make – just some brass and bearings, so I decided to price the parts out. I was pleasantly surprised when I came up with just $20 for the basic kit, and another $10 for the two optional cutters. I couldn't go wrong!

You will find the material and tool list below and the steps I took to make one on the next page. If I could make this, then I believe anyone can as well. Good luck!

Materials Needed:

- ½" diameter by 3½" to 4" long #360 free machining brass rod ($4 from Metal Supermarket)
- 5/32" O.D. (1/8" I.D.) thin wall brass tube for spacers ($1.20 + tax from Niagara Hobby)
- H.S.S. dremel cutting bits w/ 1/8" shank ($5.25 to $6 on ebay or $6.50 from Home Depot)
  - 5/16" ball cutter #114
  - 5/16" egg cutter #144
  - 5/16" cylinder cutter #115
- 3 – ¼" x 1/16" thick rare-earth magnets (less than $1.00 on ebay)
- 1/8" shaft diameter x 3/8" O.D. sealed or shielded ball bearings ($3.90 each + tax from Buffalo Bearing)
- 2" natural bristle chip brush or some other brush to burnish ($0.69 from Harbor Freight)
- Medium CA glue and accelerator (2-part epoxy may also be used)



Tools Needed:

- Lathe and 4-jaw chuck with pin jaws
- Jacobs chuck with 3/8" and ¼" diameter drill bits (and ½" bit for wood handle)
- Wet / dry sandpaper up to 1500 or 2000 grit
- 5/16" diameter push stick, with one end sharpened down to 3/16"
- Carbide tipped tool for shaping
- Normal spindle turning tools for wood handle, if desired
- Dremel tool with cut-off wheel
- Metal hacksaw if needed
- Rubber or dead blow mallet

Procedure:

1. Mount the brass rod into the chuck, with most of the length in the chuck. Only let ½" or so hang out, so it will run as true as possible.
2. Set up the Jacobs chuck in the tailstock with the 3/8" drill bit mounted in it.
3. You will want to drill the hole approximately 7/8" deep, but it is prudent to measure the cutting bits that will be used with the tool. Also, note that the overall length of the 3 cutters is the same, but the cutting heads are not. The bottom of the largest cutting head should stick-out no more than ¼" past the end of the brass rod. The cutting bit should not bottom out in the hole, either, but be up a fraction of an inch.
4. Once you determine a drilling depth, mark the drill bit and set the lathe speed to 500 RPM.
5. Drill slowly, backing out, if necessary, to clear chips.
6. Once that hole is drilled, change to the ¼" drill bit for the magnet hole.
7. You should drill an additional 3/16" past the bottom of the 3/8" hole for the 3 magnets.
8. Now you can smooth and shape the end of the brass a little. I used a carbide tipped tool, but regular lathe tools should work on the soft brass.
9. Once that is done, loosen the 4-jaw chuck and pull all but ½" or so of the brass rod out and re-tighten. Now you can sand the brass up to 1500 or 2000 grit and clean it up.
10. Remove the brass from the lathe and prepare to assemble and glue the components together.
11. Using the narrow end of the push stick, insert the 3 magnets into the smaller bottom hole. If it is a loose fit, use CA glue to hold them in place.
12. Next, scuff up the outside of the bearings with 220-grit sandpaper, so that the glue has something to bite into.
13. Using a toothpick spread a thin ring of medium CA glue near the bottom of the 3/8" hole. Then use the blunt end of the push stick to insert one bearing to the glue line. Spray the hole with accelerator to speed up the glue cure time.
14. Once the excess accelerator has flashed off, repeat the process and glue the other bearing into the top of the hole.
15. Next make a spacer for the HSS cutter from the brass tube by clamping it securely and cutting it off at the appropriate length. To determine the length, insert the cutter into the tool and let it bottom out. Measure from the top of the bearing to the bottom of the cutter head and add 1/16". That will be the length for that particular cutter, and each cutter will be different.
16. Glue the spacer to the shaft of the cutter with medium CA glue.
17. The "business" part of the tool is now ready to go. All that remains is to make a handle to fit, or you can use a manufactured handle with set screws. Be aware that if you use a ready made handle, the set screws can mar the surface of the brass, so it is advisable to use brass or bronze tipped screws.

Sources:

Google "decorating elf woodturning" will bring up all sorts of photos and descriptions from turning retailers, as well as the Henry Taylor website here: www.henrytaylortools.co.uk/decorating_elf.html. On that website there are 4 videos by Nick Agar demonstrating the use of the tool. You can also find these videos on YouTube.