Yarn Spindles for Woodturners

By Lee Bridge, South Coast Woodturners

Knitting, crocheting, and lace making are all needle arts which have been part of our cultures for thousands of years. Every ethnic group and culture has some form of these ancient arts. Every form of these arts has a need for tools which organize yarn, lace, or thread. Bowls, racks, and reels all help with this need, but the spindle has proven to be the easiest to use. Woodturners can be of great value to their friends, relatives, and customers by producing these handy devices. Besides making great gifts for knitters and other needle arts enthusiasts, woodturners can earn extra cash producing yarn spindles, as they range in price from about $25.00 to $200.00, depending on the degree of sophistication, rarity of the wood used, workmanship, and overall quality of finish. We'll look at three different methods for making yarn spindles, comparing the ease of each method, cost, and overall quality of the finished product.

The first method uses a device called a flange bearing to provide the smooth rotation of the upper spindle disk. Flange bearings offer a wide range of sizes which enables the artisan to create yarn spindles of almost any size. The downside of using flange bearings is the cost and relative instability of the final product. Flange bearings are more difficult to secure in a yarn spindle and may not feel as secure as other types of constructs. The final image or appearance of a yarn spindle made with a flange bearing may be identical to that of one made with lazy Susan hardware. Flange bearings are the most expensive bearing suitable for making yarn spindles.

Flange Bearing

The next type of yarn spindle is made using small lazy Susan turntable hardware. These units are made with numerous ball bearings and offer great strength and smooth operation with a very long life. The downside of this hardware is that it's usually large, starting at three inches and up. For the type of yarn spindles I make I use the three inch unit. Lazy Susan turntable bearing assemblies are normally available from almost any hardware store and offer the artisan a simple and durable solution for yarn spindle hardware. Mounting is often tricky, but I will explain these tricks. The lazy Susan turntable hardware is relatively inexpensive and very strong.

Lazy Susan Turntable

A third method of making these spindles is the cheapest and most difficult. It involves making the upper disk and spindle shaft first, drilling the spindle shaft for a hardened steel rod, and mounting this rod in the base disk. A single ball bearing is placed in the shaft to provide a point upon which the rod can rotate. I use ¼ inch drill rod for the shaft and place a ¼ inch bearing in the hole drilled in the upper disk and spindle. Since the hole is only ¼ inch in diameter the bearing is a tight fit. You may have to polish

the drill rod, reduce its diameter slightly, or enlarge the hole drilled in the shaft to get a smooth fit and easy spin. This method is tedious, but allows a yarn spindle of almost any size to be made. Often, spindles for lace or fingerling weights of yarn need to be only 2-3 inches in diameter to function well. I recommend you use this method only for those spindles which need to be smaller than the "standard" unit of approximately five inches in diameter. This method is the least expensive, but requires precision in manufacture to function properly. Not for the faint of heart!

Most knitters find the "standard" size of five inches appropriate for almost every knitting project they undertake. Most ball winders, the device which winds yarn from a loose skein into a ball, produce a ball approximately five in inches in diameter and rounded overall. With an average size of 5-5½ inches in diameter and having a shaft height of approximately six inches, a yarn spindle can be made from one board foot of hardwood. Softwoods are not a good choice since they usually have flowing sap which will ruin good yarn. Additionally, wood must be free of cracks, knotholes, and crevasses which might entangle yard. Yarn must be able to flow freely and easily. Finishes must be smooth (at least 400 grit) and hard when cured. For this "average" yarn spindle I recommend using the lazy Susan hardware. It's easy to mount, inexpensive to buy, and very strong.

To start a yarn spindle, select a nice hardwood board approximately one board foot in size, and layout two circles approximately five or more inches in diameter. Since you are working with a board foot you must be precise or use a larger piece of wood if your selection has flaws. Be sure to mark the center point of each disk to drill a mounting hole later. On the side of your board, mark out the spindle shaft, approximately six inches long. If you wish, you can make a second shaft for backup material (highly recommmended). Now take this board to your bandsaw and cut out all the shapes. Put the two shaft blanks aside, and drill a ¼ inch hole in the center of each disk.

Next, mount the two disks together on a pen mandrel, fitting them tightly together. Most pen mandrels can be adjusted to increase or decrease the shaft length, so ensure you have tightened the shortened shaft very well. Now you can mount the pen mandrel on the lathe and shape the profile of the two disks. Keep the diameters of the disks over five inches, but otherwise create the profile you like best. I sometimes taper the two disks so that there is a smooth profile from bottom to top. Other times I turn beads, coves, or other embellishments if the wood is plain. After completing the profiling, you can finish the outside of the two disks. Since a smooth finish is critical to the smooth flow of yarn, use a finish which dries hard. The best finish is hard and slick.; most pen finishes are excellent for knitting accessories. Next, measure the height of the lazy Susan hardware. You want about 1/16 inch of space between the upper and lower disks in the finished unit, so you usually need to recess the hardware in each disk. Normally, a recess of ⅛ inch enables mounting the lazy Susan hardware so it cannot be easily seen, and preventing entanglement of the yarn. This gets us to the next stage.

Now we need to create the recess in each disk. Here we need to use a Longworth chuck or Cole jaws on your scroll chuck to mount the lower disk first. Now, using a gouge, Bedan, or parting tool, create a recess four inches in diameter. Why four inches you may ask? The three-inch lazy Susan turntable gets its name from the rotating part of its hub which is three inches; not its overall diameter. It really takes a four-inch recess to accommodate the lazy Susan's frame! Be sure to get the sides straight and the floor

of the recess even. Fit the lazy Susan hardware into the recess to ensure a perfect fit. With the hardware resting in the recess, mark the four screw holes. Then, without moving the hardware, rotate the mounting plate between the mounting holes, and mark the spot under the screw hole. In this spot, drill a $\frac{3}{8}$ inch hole in the bottom disk only. This hole allows mounting the upper disk to the top mounting flange of the turntable hardware. Next, mount the top disk and perform the same task, ensuring you achieve just the right depth. If you go too deep, you can always use shims to achieve the proper depth and clearance, but why bother? ***Measure twice, cut once!*** When finished, reverse the top disk so you are now addressing the top. Here you want to create a shallow bowl or depression on the top to cradle the yarn ball. This slight depression supports the round shape of the yarn ball and prevents sagging and poor feeding of the yarn. You can use a gouge or scraper for this task. Just be sure you have a smoothly curved bowl shape on top. When you have the shape you want, sand it to at least 400 grit, then finish it! Next, using an arbor mounted in the tailstock, drill a ½ inch hole for the shaft. Simply drill the mounting hole about ½ inch deep. You will turn a tenon on the shaft when you profile it.

Now you can see the unit starting to take shape. All we need to do now is to turn the shaft, put finish on the entire assembly, and mount the hardware.

Taking one of the shaft blanks, mount it between centers. Round it, and then create the shape you want for the shaft. I recommend flaring the base so it blends with the depression in the top of the upper disk. You want to include a knot or bump at the top of the shaft to prevent the ball of yarn from slipping off, but otherwise create the shaft in any form you wish. I usually do not get too fancy as the yarn covers the shaft . Again, sand to at least 400 grit and finish as you have the other parts. If you plan to buff the unit, now is the time to do so. After the shaft is glued in, buffing is much more difficult. Using CA, glue in the shaft, ensuring it is vertical.

The last step in the manufacture of a yarn spindle is to glue a nonskid bottom on the bottom disk. I use nonskid rubber shelf lining, which works just fine. A spray-on adhesive works best for this step.

If you are making a spindle for knitters who primarily use heavy yarns, an eight inch unit works best. You can use a four inch lazy Susan turntable for this, but the three inch unit is plenty strong enough for an eight inch unit. Most knitters and other needle arts enthusiasts will prefer the five inch model for most of their work. My own experience has taught me that once a knitter has a spindle they are not likely to ever again knit without one. Double and triple spindle units are also desired, with spaces, slots, and holes in the base for tools. You should consult with your client before customizing the base. your client will have his/her own requirements. Be prepared for grateful customers and a great potential source of revenue

Tools Needed:

Turning tools
Chuck with Cole jaws & pen jaws
Screwdriver for installing hardware
½ " drill bit
$\frac{3}{8}$" drill bit
Pre-drill bit for #6 screws
Sandpaper through 400 grit
Adhesive for nonskid bottom material

Recommended Sources

Lazy Susan Hardware:

Lee Valley Tools, Ltd
P.O. Bo0x 1780
Ogdensburg, NY 13669-6780
www.leevalley.com
Phone: 1-800-871-8158

Outwater Plastics
4720 West Van Buren
Phoenix, AZ 85043
www.outwater.com

Woodcraft Supply, LLC
P.O. Box 1686
Parkersburg, WV 26102-1686
www.woodcraft.com

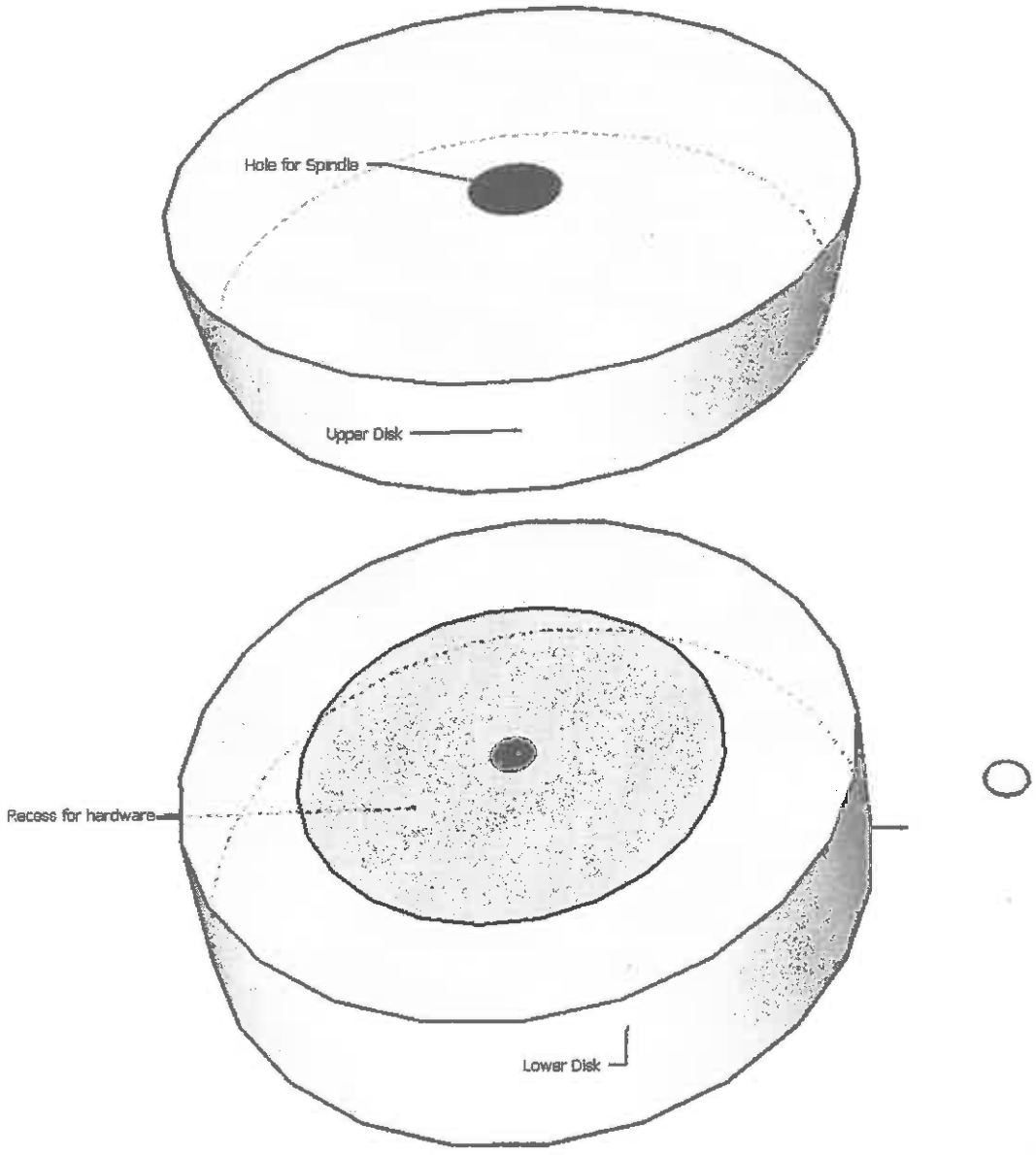
Rockler
4365 Willow Drive
Medina, MN 55340
www.rockler.com

You may be able to find lazy Susan turntables at general hardware stores, but they are generally more expensive than the sources listed above. Most of the turntable hardware requires #6 flathead screws, which you will need as well.

Wood:

Hardwoods only should be used for yarn spindles. Any wood used for needle arts must be smooth, free of saps and oils, and finished so that body oils cannot contaminate the yarn. Exotic woods, like the dalbergias (i.e., Cocobolo, Bocote, rosewood, etc.) must be completely sealed to prevent contamination of the yarn.

A highly buffed coat of carnauba wax is recommended for all wooden items made for knitters and crocheters. Wax imparts both a luster and a certain tactile feel to the wood which most people appreciate.


Hole for Spindle
Upper Disk
Recess in upper disk
Recess for hardware
Lower Disk