

# Turning Bottle Stoppers

By Larry Brown & Charles Webb



## **SAFETY:**

Wood turning can be Hazardous so you should take precautions to minimize the risk of an accident.

- I always wear safety glasses when turning. On large objects I will also wear a face shield. This will protect your eyes and maybe you face if something happens.
- You should never wear gloves while turning and be careful of loose fitting clothing that may become tangled with the turning.
- Always rotate your wood at least one complete revolution to ensure that the wood won't hit the tool rest before turning on the lathe.
- Always start at a low RPM on newly installed wood. Balance the turning as you increase the speed.
- Support the back of the turning with the live center when possible.
- Always adjust the tool rest with the lathe stopped. Keep the tool rest as close as possible to the turning. Remove the tool rest and position the holder out of the way when sanding and finishing a project.
- Keep your cutting tools sharp. Never force the tool into the wood. The tool should do the cutting and not the force.
- Examine the wood carefully for voids, splits etc. before turning on the lathe. These may come loose when turning and become a projectile. If there is a problem, turn at slow speed to remove the bad portion before increasing speed.
- SPEED – At beginning levels always turn at a slow speed. If you think the piece is turning too fast turn it down. As your skill level increases so will your turning speed. As a general rule you would like to turn faster as it makes a better cut etc. For sanding and finishing the speed should be slow.

Turning bottle stoppers is a fun project to do and it will improve your skills in spindle turning. Bottle stoppers are divided into several groups, natural stoppers with cork, stoppers with silicon stoppers, and the stoppers with chrome cones. When I first started turning bottle stoppers everybody used natural corks, now it appears the trend is to use the chrome cone bottle stoppers. I turn both as most turners do. Bottle stoppers are good selling items at crafts shows. They sell for \$ 10 - \$20+ for corks stoppers, and \$15 – \$35+ for the chrome cone stoppers. If you have inlays or very exotic woods they can go even higher, special order stoppers in galleries sell for \$ 100 - \$ 300.

You ever wonder what to do with all those small pieces of wood that you never throw away, make bottle stoppers out of them. I also save the pieces of wood that I cut from making bowl blanks and saw them up for bottle stoppers.

Bottle stopper blanks are normally 1 ½” X 1 ½” X 2 ¼” to 2” X 2” X 2 ¼” or longer depending on your design. Your design will determine the size of the blank or the size of the blank will determine the design.

I started making bottle stoppers using corks, as they were cheap (cheap - the mark of an amateur woodturner). I made my first bottle stopper chuck using a piece of wood with a 3/8” hole drilled in the center and then I used a saw to cut a gap from the outside to the hole, and when it is inserted into my 4 jaw chuck and when tightened the gap would provide tension on the dowel. You learn very quickly that you have to take very light cuts when rounding the square block, as it will twist off the dowel.

The newer methods of holding the block are using screw type mandrels. There are several choices that can be used and they are inexpensive, between \$ 8 and \$ 15. You could make your own by getting a 3/8” bolt (with a small amount of threads – 1” or less), cut off the bolt head and install in your drill chuck.

Natural corks come in two qualities, standard and the premium Flor corks. Standard corks are about ~ \$ .35 each and the Flor corks are about ~ \$ .55 each, bought in packages of 10. I always buy the Flor corks as there is not much difference in cost and after spending time turning a stopper an extra \$ .20 is worth it.

Chrome cone bottle stoppers come in several varieties. They also come in different thread sizes so check to make sure the one you buy matches the thread on your mandrel. The most common is chrome with a large black sealer for the bottles and has a 3/8” threads. These are priced at ~ \$3. 50 - \$ 4.00 in single quantities over the Internet.

They are making the cones in gold and other materials now but the cost is 2 – 4 times the price of the chrome.

Berea Woodworking also has chrome bottle stoppers, these are similar to the other bottle stoppers but have a smaller thread and will require a different mandrel. The price of these are from \$ 4.50 - \$ 5.50 in single quantities, they can also be found in Gold etc. at a higher price.

## Equipment & Supplies:

Over the years I have tried lots of ways to mount wood to turn cork type bottle stoppers, now I have settled on one from Packard Woodworking item # 150124. The mandrel mounts in a drill chuck. I normally use this for turning stoppers using corks. You can use the threaded mandrels and after turning, drill out the hole using a 3/8" drill for the dowel.



These are the silicon stoppers. The dowels and stoppers come together and usually are sold in a package of 10. Some people like them better than the natural corks. The dowel is 3/8" so you can turn a stopper like a normal cork stopper or use one of the mandrels and then when it is finished drill out the hole to 3/8".



The PSI mandrel (silver color) mounts directly on you lathe headstock. They come in two sizes to fit most mini lathes. You can get them from PSI or Packard Woodworking. The mandrel comes with a drill bit for making the correct size hole for your block. These are for the chrome cone bottle stoppers. This mandrel provides a positive holding of the wood. You can use this mandrel for turning cork type stoppers also by drilling out the hole to 3/8" after the stopper is finished. The black mandrel is for mounting in a drill chuck and also provides a positive holding for the blank. You can get this mandrel from Arizona Silhouette.



This is the Berea type bottle stoppers. They require a different mandrel that mounts in a drill chuck and it uses a 6 mm drill bit for the hole. You can purchase the mandrel and cones from Arizona Silhouette.



This e-book illustrates how to turn a chrome cone bottle stopper. Using similar techniques you can turn natural cork, silicon, or Berea type bottle stoppers. Drill a hole approximately 1" deep in the block using the supplied drill bit.



I use a 3/8 X 16 tap to tap the hole (this is for the chrome cone bottle stopper). On hardwood the threads made by the mandrel might not be long enough and it will leave a gap between the cone and the wood. It is almost impossible to get the cone up to the wood if the threads are not long enough so I use a tap to ensure that the threads are deep enough.



The block is mounted on the mandrel. The tail stock is brought up (using a small piece of wood so the indentation from the center is not in the stopper) to prevent it from turning in the mandrel if you get a catch. With a good catch it will come off the mandrel. You can remove the tail stock after the blank is round.



The rounded blank



I start with a taper down to the mandrel. The diameter of the mandrel is the size of the chrome cone stoppers. This taper provides a transition from the cone to the wood.



Shape your bottle stopper. This is a special stopper design so a good grip can be made. This stopper is more for utility than looks. At the end of this book are some suggested designs for bottle stoppers that can also be used.



After the stopper is shaped, slow down the lathe speed to sand your stopper. I use 100, 150, 220, and 400 grit sandpaper.



I use EEE-Ultra-Shine to finish the sanding process. This product is a wax base with fine grit that provides a fine smooth surface ready for finish.



Apply your favorite finish. You can use a French Polish or some other finish. Here I used two coats of lacquer sanding sealer and one coat of Mylands Friction Polish. I sand with 400 grit between the coats of sanding sealer.



I then apply a coat of PPP wax. You apply the wax and then spin it at a high speed and polish it with a cloth.



Here is the finished stopper.





Remove the stopper from the mandrel. Remember to finish the bottom.



Screw the chrome cone stopper into the blank. The Bottle Stopper is Finished!



Here is the completed stopper on a display stand. The display stand can be purchased from Arizona Silhouette.



## Silicon Bottle Stopper

Remove the stopper from the mandrel. Finish the bottom of the stopper. Mount a drill chuck with a 3/8" drill in the drive end of the lathe. Holding the stopper with your hands slowly drill out the hole to 3/8" diameter. The hole should be about 3/4" deep.



Apply yellow wood glue or CA glue on the dowel and press into the stopper.



Apply a small amount of glue on the silicon stopper and mount on the wooden dowel. Let the glue dry and the stopper is finished.



## Inlays

You can dress up your bottle stoppers by inlaying different materials in the top. Common items are Quarters (with the state showing), buttons, and cabochons. Inlaying requires that you cut a flat indentation into the top of the stopper. The indentation should be exactly the same diameter as your object. Plastic, or stone cabochons should be glued in with flexible glue. This glue can be purchased from Craft Supply. If the plastic/stone cabochons are glue with CA glue they can crack with changes in temperature and humidity causing the wood to change at a different rate than the cabochons. Metal buttons and quarters don't have that problem, as they are tougher than the stone and plastic.

Using a parting tool carefully cut a square shouldered hole a little smaller than you inlay (in this case it will be a quarter). This is very tedious work and you will need to make small cuts and measure often. The inlay material should fit exactly with no excess gap. The first inlay will require lots of work etc. After you have done several of these it will get easier and faster.



Apply thin CA glue around the outside. Do not put it in the middle. When the quarter is seated it will force the glue to the middle. You do not want any excess glue on the outside to ruin you finish. Let the CA glue dry for a few minutes and remove the stopper and install the chrome stopper.

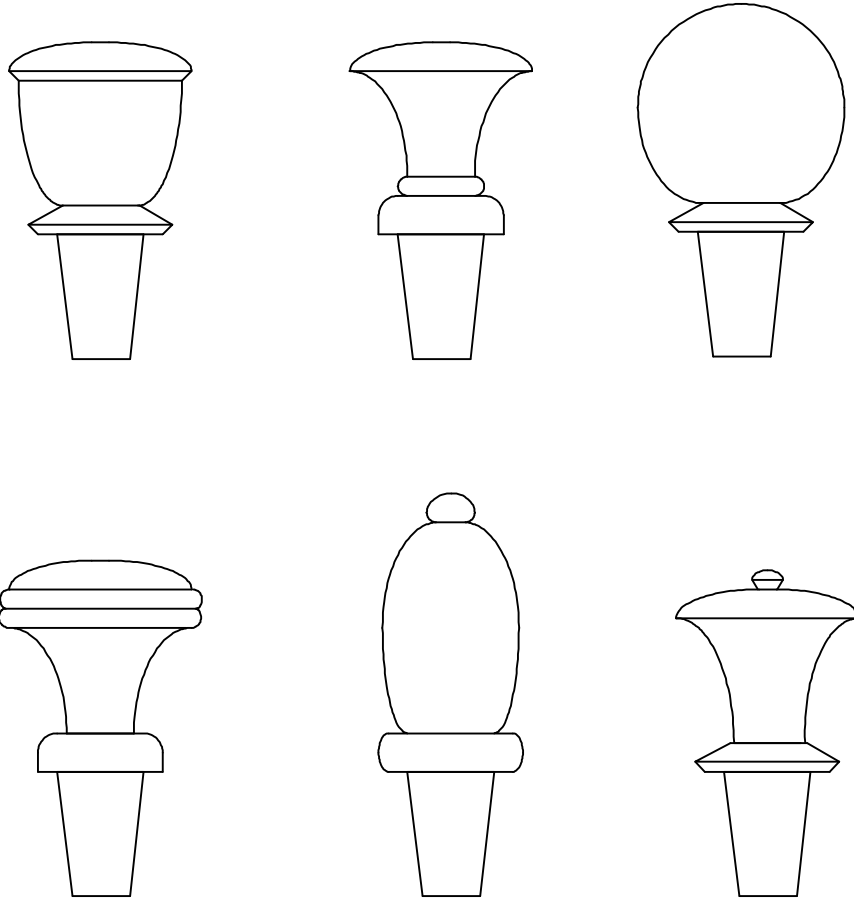


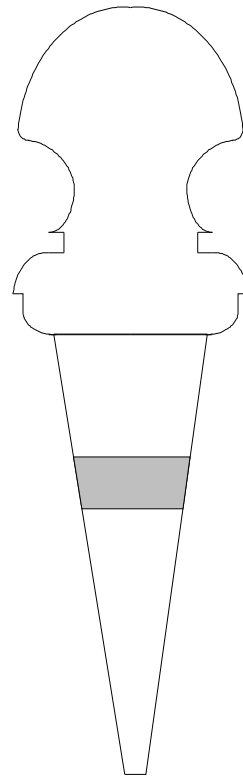
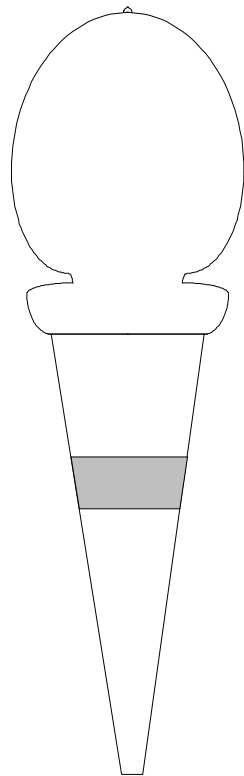
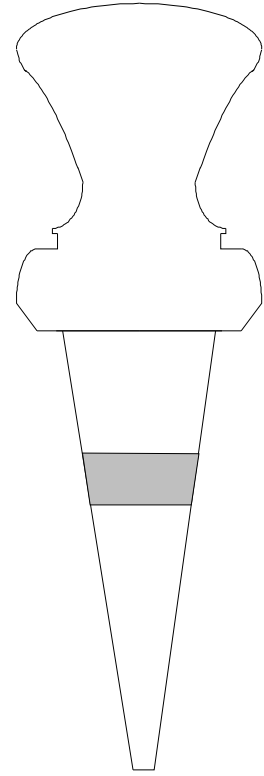
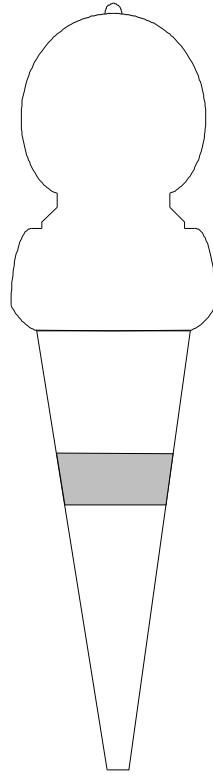
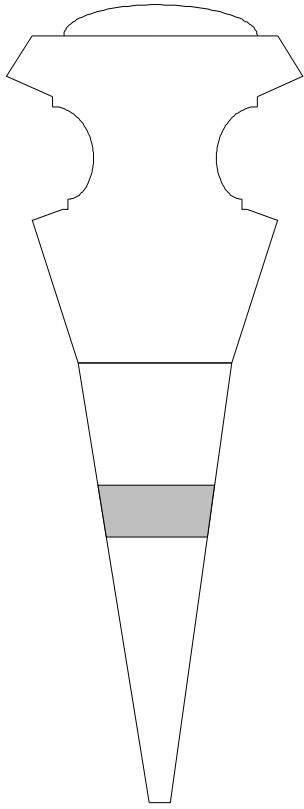
You might consider joining the Yahoo Bottle Stopper Group. This group is a group of wood turners who turn bottle stoppers. The group has an excellent photo gallery of member's bottle stoppers. As a member you can read the posts, comment on the posts, or you can post your own questions and get it answered by the other members. This is all free and a wonderful way to see designs by other wood turners and learn new skills. You will be asked to join the group to view the posts etc. You will need to make a Yahoo account if you don't already have one, if you have one already all you do is join the group.

**yahoo bottle stopper group**

<http://groups.yahoo.com/group/stopper>

*Possible Bottle Stopper Designs*





## Bottle Stopper Appendix

### **Bottle Stopper Corks – Standard and Flor**

Craft Supply [www.woodturnerscatalog.com](http://www.woodturnerscatalog.com)

Packard Wood Working [www.packardwoodworks.com](http://www.packardwoodworks.com)

### **Chrome Bottle Stoppers**

Penn State Industries [www.pennstateind.com](http://www.pennstateind.com)

Craft Supply [www.woodturnerscatalog.com](http://www.woodturnerscatalog.com)

Packard Wood Working [www.packardwoodworks.com](http://www.packardwoodworks.com)

Arizona Silhouette [www.arizonasilhouette.com/Bottle\\_Stoppers.htm](http://www.arizonasilhouette.com/Bottle_Stoppers.htm)

### **Bottle Stoppers Mandrels**

Penn State Industries [www.pennstateind.com](http://www.pennstateind.com)

Packard Wood Working [www.packardwoodworks.com](http://www.packardwoodworks.com)

Arizona Silhouette [www.arizonasilhouette.com/Bottle\\_Stoppers.htm](http://www.arizonasilhouette.com/Bottle_Stoppers.htm)

### **Chrome, Black, & Gold Titanium Bottle Stoppers**

Arizona Silhouette [www.arizonasilhouette.com/Bottle\\_Stoppers.htm](http://www.arizonasilhouette.com/Bottle_Stoppers.htm)

### **Bottle Stopper Blanks**

Penn State Industries [www.pennstateind.com](http://www.pennstateind.com)

Packard Wood Working [www.packardwoodworks.com](http://www.packardwoodworks.com)

Arizona Silhouette [www.arizonasilhouette.com/Bottle\\_Stoppers.htm](http://www.arizonasilhouette.com/Bottle_Stoppers.htm)

Craft Supply [www.woodturnerscatalog.com](http://www.woodturnerscatalog.com)

