

Woodturning: Designing a Project

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You have just picked up some wood from one of your various sources. Now, what are you going to do with it? After some thought you have decided on a project that will take advantage of the features that you can see. How will you design this project? It is a question that we often do not think much about. Whether we learned to design a specific way in a class, or we received specifications from some source, or have been influenced by someone or something in the past, we normally do it without much thought. It has become comfortable.

Let's think about the various ways that designing a project can be accomplished. The different ways that I will discuss are as follows:

1. Using a Computer-Aided Design (CAD) program on your computer
2. Draw or sketch a basic design.
3. Design the project in your mind
4. Replicate from a picture or an actual piece
5. Determine project and design as you go
6. Specifications and/or drawing provided

The woodturner's affinity for design, ability to draw, ability to use a computer, visual and/or hand-eye coordination, or a combination of these factors may determine how projects are designed. It may simply come down to past learning or influences. However, the way a woodturner approaches design can affect the piece's final appearance and acceptance by others. The following paragraphs will look at the different ways to design as listed above.

CAD drawings utilize a computer with specific software created for drawing and/or drafting function. The software can run a wide range of price points and functionality or sophistication. They can also be made for a specific purpose. For example, MDR Software has designed a CAD program for woodturners called Creative Woodturner (www.creative-woodturner.com). This software provides a three dimensional, printable rendering that uses either US or Metric measurements and allows for quick designs from scratch or from templates at a relatively low cost. The benefits of using CAD software is the quickness of completing the design stage while providing precise measurements and details that can be transferred to your project. This is also a fast way to visualize the finished project before committing to the design or removing any wood. In some projects, you may need to do multiple turnings (i.e. spindles for an hourglass) and this allows you to create a template from the drawing to either lay against the piece as you turn or to use with a copying jig. If there are variations in the wood that you want to incorporate into the piece, you can go back to the computer to make the change quickly and recalculate all of your measurements as necessary.

The question that may be asked when it comes to drawing: Do you have to be able to render a precise drawing for a turning project? I believe the answer is no, for no other reason than a very simple drawing will allow for more deviations or creativity from your original con-

cept. Whether the design changes are consciously made or created by a catch or other type of error, the overall design can be changed relatively quickly. A sketch will have approximate or specific dimensions, depending on how precise you make them. Once you have determined the measurements, you can transfer them to the project, and solidify them once you turn the blank into its widest diameter. You can make your changes, just like you can with CAD, but it will take longer to calculate any variations to other dimensions.

The next method of designing the piece - in your head - happens to be one of my favorites. This method allows you to immediately alter the design when you see what the wood has to offer based on grain, balance, voids, etc. As you go through the various stages in the creation of the project, you are not changing the basic design but it allows you to make adjustments as you are removing wood and make small changes that will enhance your original concept. You may think that measurements are not important for this type of designing. You would be correct that during the initial roughing out phase there are no real dimensions. But as wood is removed and a shape is forming, the dimensions for symmetry and good/functional design must be considered. However, there is a drawback to this method. If time is not taken to visualize how the change will affect the piece, you may end up with a project that loses its symmetry or becomes too thin or something else that cannot be corrected. Ultimately you should not make a major design change. For

example, you decide to make a bowl with a curved base (no foot) but as you go to take out of the chuck and reverse it you see that a footed base would enhance the appearance. As a result of making a footed base for the piece the bottom becomes too thin. It is important to remember that once the wood is removed you cannot put it back on.

Replicating from a picture or from an actual piece requires the woodturner to determine how exacting you will be in creating your reproduction. A picture can come from many sources, including books, television, DVD, the Internet, etc. When reproducing from a picture, the woodturner has to be able to determine what the measurements should be based on what you are seeing. It helps if there is something in the picture that can be used as a reference. For instance, if there is a man holding the piece it is possible to create the piece based on your hand dimensions. Of course, that is making an assumption that the pictured hand is the same size as yours. The referenced item should be validated if possible. If you have an actual piece that you want to replicate, then it is far easier because you can measure the current piece and transfer the measurements to the new project. For instance, the picture (Figure 1) shows a piece that was inspired by a pulley and the wood blank dictated the size. Of course, you can deviate from the actual piece as you turn and see the various features hidden in the wood. You may feel that your deviations improve on the piece that you are replicating.

Design as you go is the simplest but also the most unpredictable. Oftentimes, I will use this when I have a piece of wood (i.e. burl or a crotch)



Figure 1. Piece inspired by a pulley.

that I have no idea what I will find until I start revealing what's inside by turning away the layers. It basically entails you selecting a piece of wood, looking it over, deciding to make something (i.e. bowl, goblet, whatever), mounting it onto your lathe, and starting to turn. Why is this so unpredictable? Since you do not have any sketch or dimensions or idea of a shape, each cut should be evaluated before the next cut is made. With this method you have to have a good eye for form and balance in order for the final project shape to be both appealing and have the proper dimensions. It takes practice and may even require years of training.

The final scenario is someone commissions you to create a project to their specifications. Depending on the client, your options range from creating the piece to very exacting specifications to working from a broad concept. You should define what the client is looking for

before the project is started. Even if the client is leaving the design up to you there will be some item or detail that the client will dictate. These may include basic shape, size, finish, cost, or some other defining factor. A client may also dictate the way you design. They may require a CAD drawing for exact specifications or a simple drawing to help them visualize what the final piece will look like. How you work with a client is strictly based on each particular client's personality, goals, and objectives.

So these are the various methods you may use to design your next project. Will you use all of them? Probably not. It depends on your skill level, not necessarily as a woodturner, but having the ability to use a computer or being able to draw, to visualize the piece through various phases, or even being able to accurately transfer measurements to your project or some other skill that you need to learn. It may be that you like the results that you get from your method of designing. Ultimately, the end results are what counts. Are you satisfied with the results? Do you get compliments from others? If you want to sell your work, does it sell? As a woodturner, you must first answer those questions, and then determine if your design style needs to be changed or modified or if you need to learn other styles. Happy Turning!

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