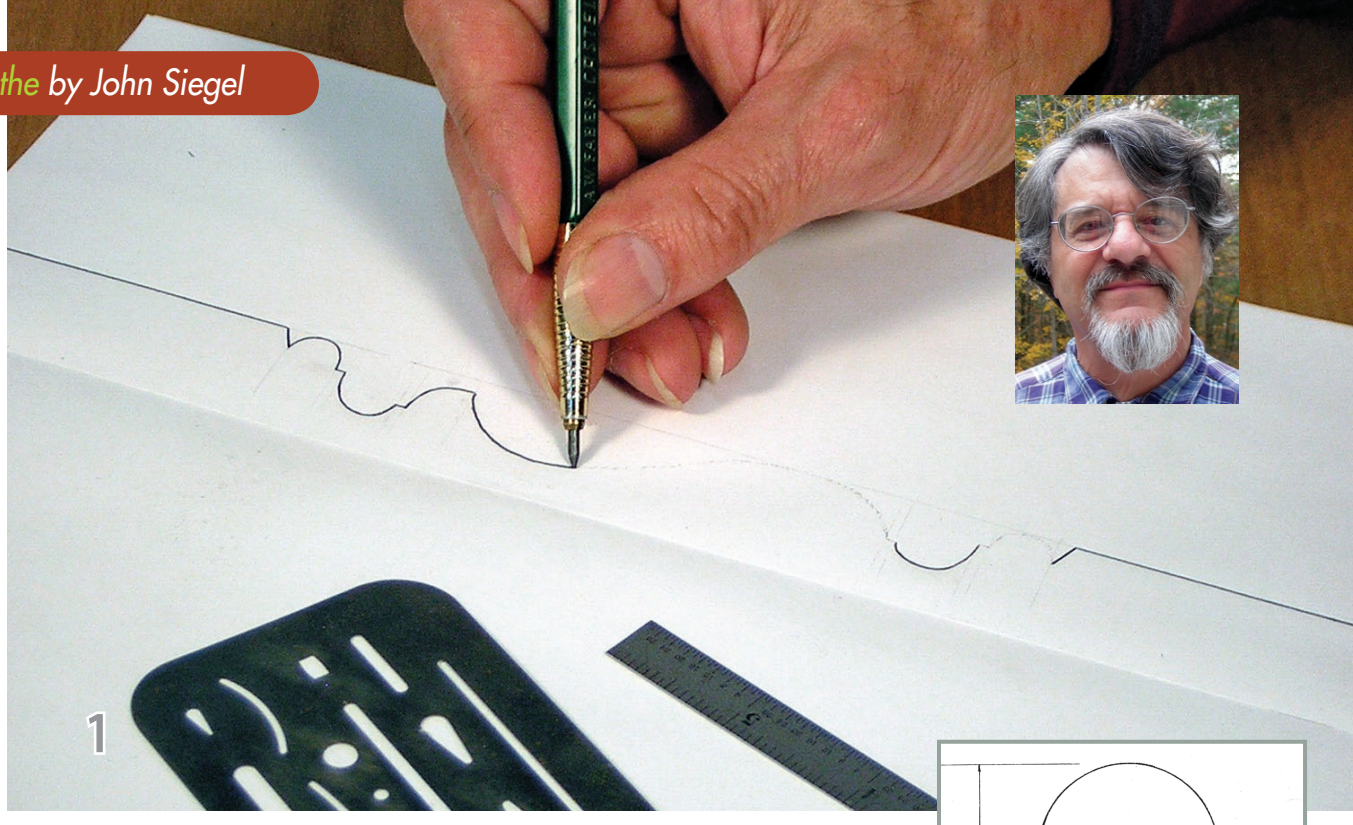


Draw the profile with a very soft lead pencil.

Drafting for Woodturning

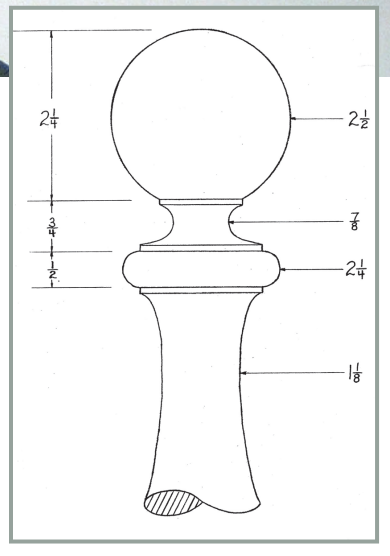
When I was growing up, I remember that after dinner almost every evening, my father would clean off the table so he could do his homework. This consisted of unrolling multipage blueprints of construction projects. From these prints, he would estimate the cost of every piece of lumber, window, door, and cabinet in the project, and it was his job to make working shop drawings of all the custom aspects. When I worked summers at the shop, he taught me how to make drawings of cabinets.

This was the beginning of my education in drafting, but later I studied graphic science in college, which consisted mainly of descriptive geometry. Ten years later I found myself teaching "mechanical drawing" in high school, and as I always say, you never learn something so well as when you must teach it.

Drawing Turned Furniture Parts

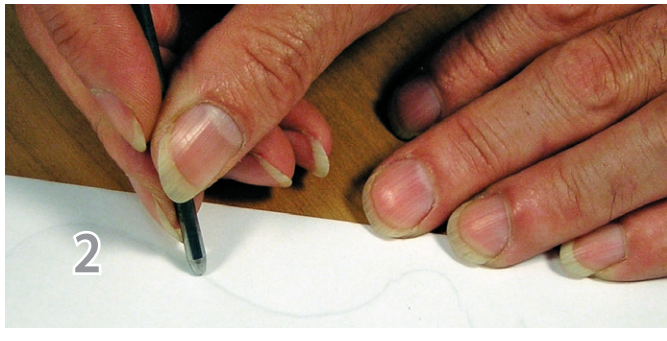
While some objects require the traditional "three views", and some only two, in general turnings require just one – the profile view. This consists of two outlines (object lines) placed symmetrically around the center line. In addition, sharp features are drawn as lines across the object. They represent the edge view of circles.

Drawing a woodturning such as a table leg, does not lend itself to conventional "mechanical drawing" methods, because designs for turning simply are not mechanical in nature. Rarely is there a straight line in a woodturning. And the proportions of a table leg, for example, which is eighteen times as long as it is wide, does not scale well on a normal rectangular sheet or screen. For these reasons, I have always done my drawing freehand with a pencil.



Here is my method:

1 Fold the paper in half on the long axis.
2 Open the paper like a book. The fold should still be visible, and this is your axis line.



Rub the back to transfer the line.

photos by Patrice Martin

3 Draw a very light guideline parallel to the axis which represents the Radius of the turning.
4 Draw the outline of the turning with a Very Soft Lead – Photo 1.
5 Fold the paper again so you are looking at the back of the drawing.
6 Rub over the lines with a stylus or any smooth hard object. This will transfer the line to the other side with perfect symmetry – Photo 2.
7 Go over the transferred line to darken it to appear the same as the first side – Photo 3.
8 Draw the lines across the turning at the feature points. Since I am not using a T-square, I use the sliding triangle method to create perfectly parallel lines square to the axis – Photo 4.

An excellent type of stylus for rubbing drawings can be made from a large nail, as shown in the photo. Grind or file the tip to a rounded shape, and then polish it with a buffing wheel until it shines.

Always draw full size. It is a waste of time to make a small scale drawing. The full size drawing provides a quick way to mark out the features along the axis by laying the drawing, folded now the opposite way, directly on the turning – Photo 5.

Set your calipers directly from the drawing – Photo 6.

Adding Dimensions

Because these drawings are full size, it is rarely necessary to add dimensional size numbers to the drawing, but you may want to do this if you prefer to take measurements from a graduated caliper or from a ruler, or transmit the drawing, possibly reduced, to another woodturner.

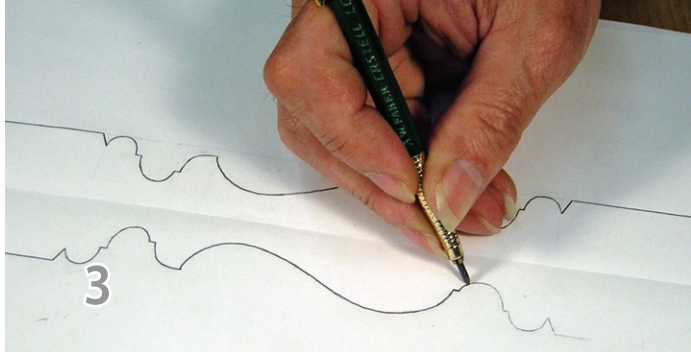
There are specific rules for adding dimensions to drawings, and whether you use a computer or a pencil to make your drawings, you still need to know these rules, just as a writer needs to know the language, whether he uses a pen or a word processor.

Woodturnings require special treatment when dimensioning because of their proportions and the multitude of diameters which often need to be specified. The most common error I see is the placement of dimension lines inside the object. This causes great visual confusion with the cross lines on the turning, which of course are object lines.

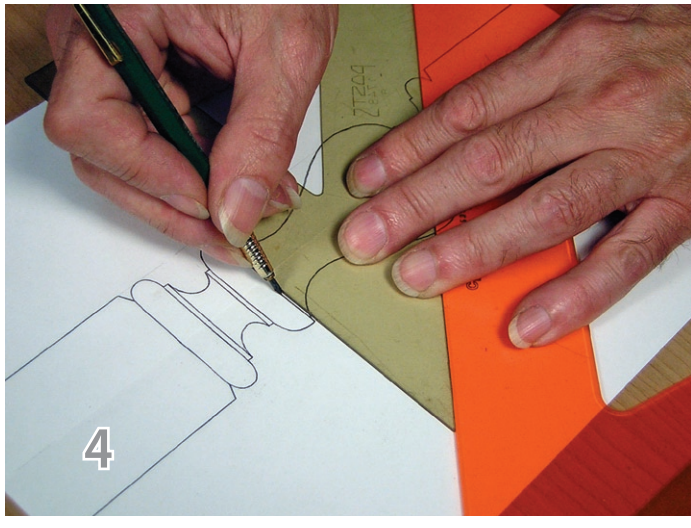
To place dimensions on a spindle turning, diameters are given off to the side of the object, and are connected by a horizontal leader with an arrow which touches the object where the diameter is to be measured.

The illustration of the bedpost finial on the next page shows many of the mistakes often made when placing dimensions on drawings of spindle turnings:

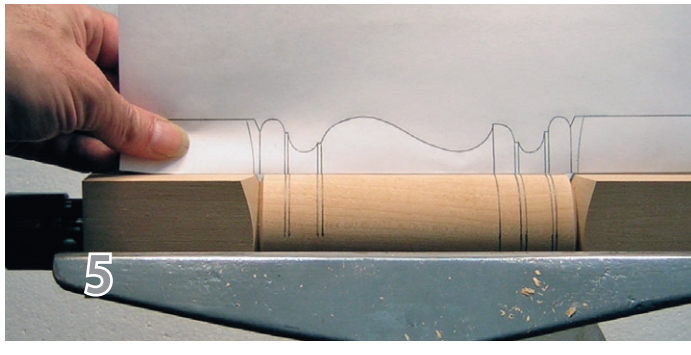
1 Dimension lines should not be inside the object.
2 Extension lines should not touch the object.
3 Dimension lines on length should align in a single row.
4 Fractions should be drawn with a horizontal division line.
5 Dimension numbers should all be drawn the same size.
6 Dimension numbers should be placed inside a break in the dimension line.
7 Dimension and extension lines should be lighter than object lines.
8 Arrowheads should be of correct size and weight.
9 Overall length should be given for reference.



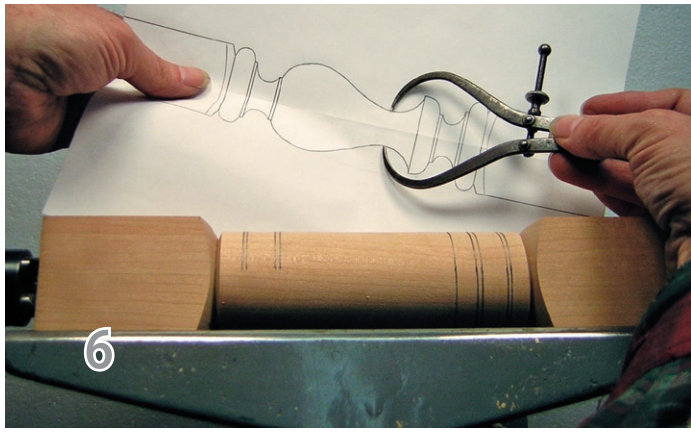
Darken the line to match the first side.



Draw the lines across.



Transfer lines directly from the drawing to the turning.

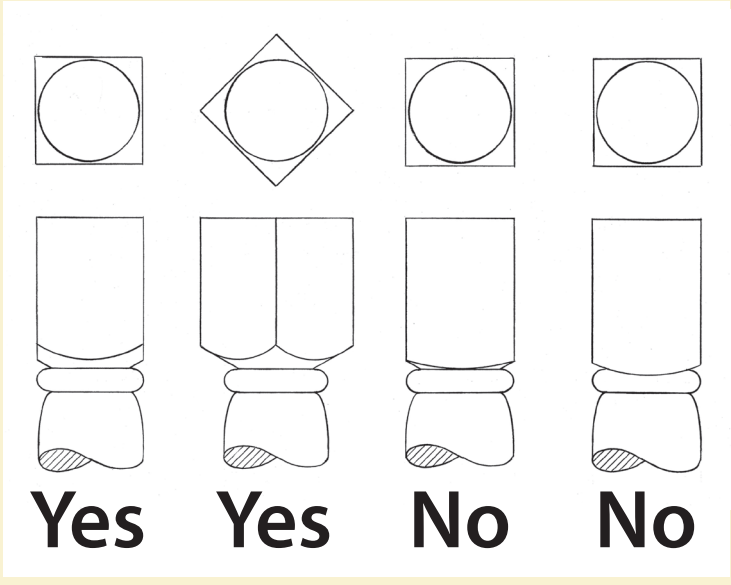


Take caliper measurements directly off the drawing

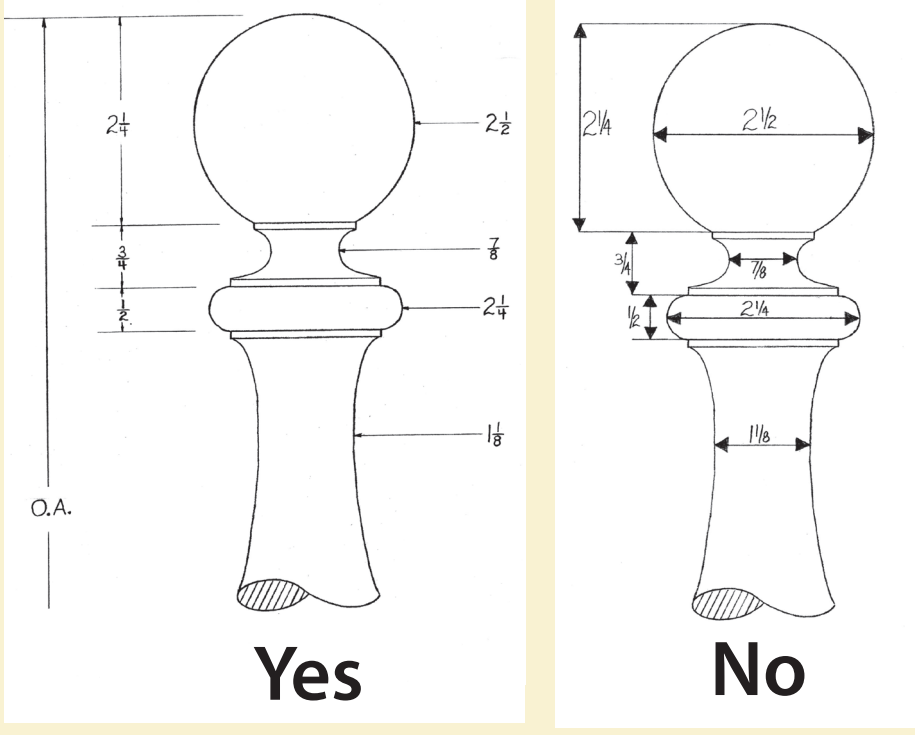
Draw the Transition

With the exception of the Windsor style, most furniture turnings require one or more parts of the turning to remain square. The square part is sometimes called the "pommel". The angle of the transition can be anything from 0° (square transition) to 40° or more, or it can even be curved or decorated. In the illustration I am using a 30° straight cut, which is the way I usually make them. Note that the intersection line is a hyperbola, but for drafting purposes it is usually drawn as a circular arc.

The illustration shows two correct and two incorrect ways to draw the transition. ■



The Transition – Right and wrong ways to draw the transition.



The right and wrong way to place dimensions on a drawing. Note that extension, dimension & leader lines should be lighter (thinner) than object lines.

Ask This Old Saw! – *continued*

very slightly on the return stroke so that the blade does not drag on the work. This dragging will quickly burnish over the edge and dull it. Take long strokes, starting at the end of the board and working back towards you. Put pressure on the front of the plane at the beginning of the stroke and on the back at the handle as you finish.

Most Importantly – The plane will never work out of the box no matter how much you paid for it. Blades always need to be sharpened and trued up and their corners rounded unless it's a rabbet plane.

Q Shellac Shelf Life – Mixed shellac has a shelf life. Do shellac flakes have a shelf life? – *Anon*

Marty Milkovitz replies: Shellac flakes if kept in a sealed air tight container will keep indefinitely although I would be leary of using them if they were five-plus years old.

Q Oil or Water Base Finish – When should you use oil base vs water base finish? *Syd Lorandeau*

Guy Senneville replies: In theory there is really no difference. It is a matter of personal preference. There could be for a number of reasons like but not limited to ease of use, environmental or durability and maintenance of the finish.

Q Gluing Panels – What glue would one use to laminate two layers of ½" baltic birch approximately 2' x 3'. – *Bill Newbold*

Marty Milkovitz replies: Basically any glue that is suited for wood use. Of more concern is choosing the right glue for how these panels will be used and keep an adequate even pressure while clamping. ■