

Inside out Turning or Turning with Diamonds

In this process you take 3, 4 or 6 pieces and glue or clamp them together and turn a design (a silhouette) into the part that will become the inside of the piece. Then this is taken apart, the pieces rotated and glued back together to turn the outside.

If using 4 pieces, stock should be square and uniform. For 3 and 6 pieces, cut into diamond shapes with 30 and 60 degree points.

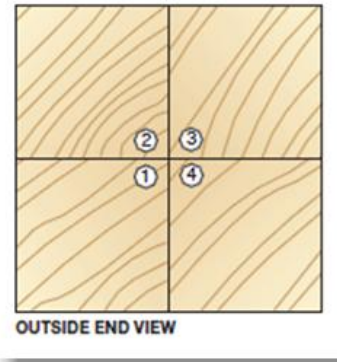
I use hose clamps to hold the pieces together for the first turning, others use paper glue joints.

Centering is very important. You can take a scant bit off the edges of the stock at the ends before they are clamped or glued together, and this will help to align the center of your drive & tailstock centers. But only do this at the ends or you'll have a hole down the center of your piece when you're finished. A cup center is best for the tailstock as it is less likely you will split the piece than with a spur center, especially if you have a catch.

When starting the silhouette, allow enough waste at one end to cut off easily. It is important to label at least one end of each block so you know how to reassemble them later and don't stack one backward as the design may not be centered. (Experience based comment.)

When you have finished turning the silhouette, you want to apply your finish at this time as this is the inside of the piece and difficult to get to later. I also like to sign them on the inside. When ready, rotate each piece 180 degrees and glue them back together. Don't get any more glue than necessary on the edges near the silhouette.

Turning the outside is fairly straightforward. Stop the lathe frequently and check for wall thickness around the silhouette.



4 Piece Square Stock



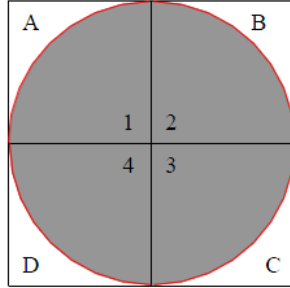
6 Piece Diamond Stock



3 Piece Diamond Stock

AN ATTEMPT TO HELP VISUALIZE
INSIDE-OUT TURNING WINDOW SIZE

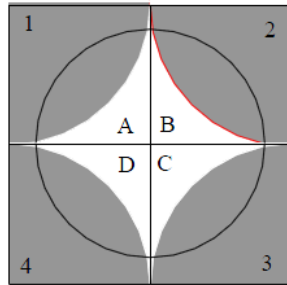
First, in the region (lengthwise) where to “windows” are to appear, turn to “round” with radius = width of side of billets. The cross-section of remaining wood will be as shown shaded in the drawing to the right. The squares are the ends of the billets.



If the billets are perfectly square and perfectly aligned and are now rotated 180° about their longitudinal axes so that the letters are in the center of the piece, the cross-section of the turned region will look like the second drawing where the shaded region is wood and the white region is where the original wood was turned away.

As can be seen there will be no “windows” in the flat outside surfaces.

The circle shows that, if the piece is turned to that radius, there will be very small windows on each side of the piece.

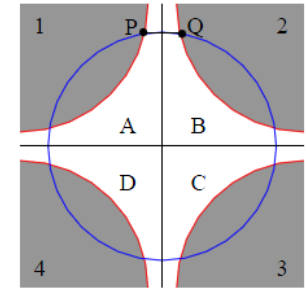
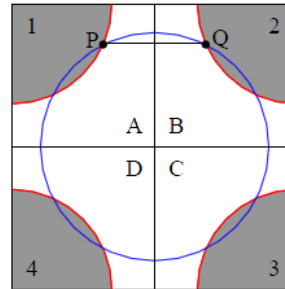
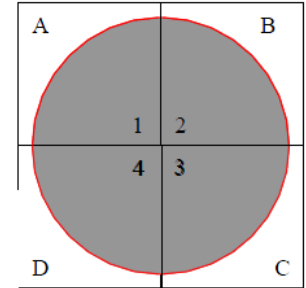
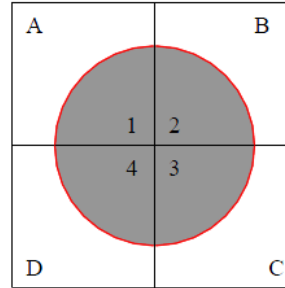


The drawings in the next page attempt to show the results on the window sizes from the first (“inside”) turning to two different radii.

The two upper drawings below show an end view of two different radius cross sections made while turning the “inside” of the piece.

“Inside” turning removes much wood.

“Inside” turning removes little wood.
Shaded sections are the remaining wood.



The two lower drawings are an end view of the cross sections after the billets have been rotated 180° about their longitudinal axes. The shaded sections show where there is wood, white sections are empty space. The circle shows the turned diameter of the “outside” turning. The “window” width is the part of the circle between the solid sections, i.e., the line PQ. The circles are the same diameter in both drawings.

Some Examples

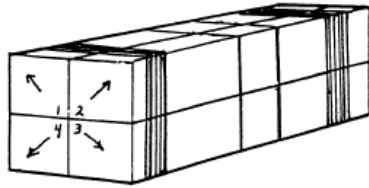


Fig. 1

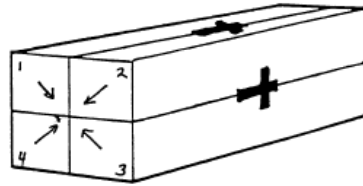


Fig. 5

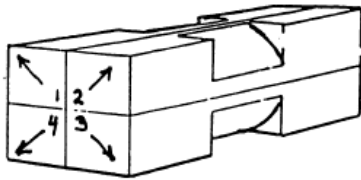


Fig. 2

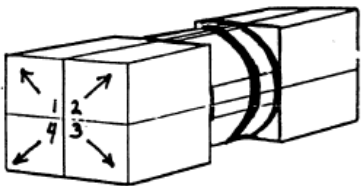


Fig. 3

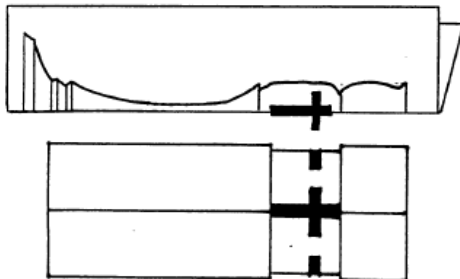


Fig. 4

Inside-Out Turning Resources

Better Homes @ Gardens
Wood-Turning techniques
Pg.62 Split Turned Vase

Woodturning Magazine
Vol. No. 45 Pg. 52
Inside-out vase

Woodturning Methods
Mike Darlow
Pg.118 Inside-out turning

The best from Woodturning Magazine
Faceplate Turning
Pg.66 Turning inside-out platters

The best from Woodturning Magazine
Spindle Turning
Pg. 85 Inside-out Christmas ornament

The best from Woodturning Magazine
Useful techniques for woodturning
Pg. 94 Involute Turning-90 degree turning

American Woodturner
AAW Project Book
Pg 52 Inside-out Christmas Ornament

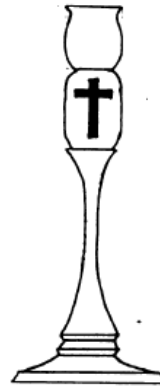


Fig. 6

Base of Candlestick
is turned separately

