

Inside-Out Turning

An inside-out turning is a spindle turning with both ends left square, which is then cut or separated into four equal pieces lengthwise. The four outside corners are rotated inward, resulting in four “windows” or silhouettes. The turned shape of the spindle dictates the shape of the silhouette and will produce a symmetrical pattern. An asymmetrical silhouette requires two different, but matched turnings.

Any simple outline drawing can be turned inside-out. Draw a center line through the design. For an asymmetrical design, the left half will be your first turning, the right half will be your second turning.

For this rotation we will be turning an asymmetrical design.

Materials needed:

8 pieces of hardwood, 1 ½” square by 8” long

2 shop made wooden chucks that are recessed ¼” deep and 3” square. Mount one recessed chuck on a faceplate and use the other at the tailstock end. A four jaw chuck may be used in lieu of a wooden chuck on a faceplate. (use photo io1)

Steps in turning:

1. Arrange four of the eight pieces into a 3” square by 8” long block. Position the 4 pieces so the grain lines up the best it can. Do not glue.
2. Place the four pieces into the wooden chucks (or four jaw chuck and wooden chuck) on the lathe. A snug fit is best. In order for this process to be successful, the center of the recess in the chucks must be centered with the lathe spindle.
3. Mark the top and bottom limits of the profile on the center of the workpiece. Extend these marks with a square to enable you to see the pencil lines while the wood is rotating on the lathe.
4. Scribe the top and bottom marks of the profile with a skew chisel. This will protect the square corners that will be left on the work piece. (use photo io2)
5. Remove the corners with a gouge between the scribed marks, leaving an almost round cylinder. Leave small flats on each side of the turning. These small flats will be where we measure the depths of our cuts. (use photo io3)
6. Mark the first prominent point from the top. At this point use a narrow parting tool to locate the depth of this position. (use photo io4)
7. To measure the depth of the cut, place a ruler into the groove and always measure at the seam between two of the squares. Or hold a straight edge on the flat side of the turning, measuring into the cut from that reference point.

8. Shape the form between the located points with a gouge or other suitable tool. If you have trouble visualizing the shapes between prominent points you can locate a point say every $\frac{1}{4}$ " to $\frac{1}{2}$ " along the pattern.
9. Repeat steps 6 through 8 for each prominent point. (It may be better to execute some cuts with specifically shaped scrapers, depending on your design)
10. After all points have been found and shaped, take one of the four pieces of the turning and hold it against your drawing to determine whether or not you need to remove more wood.
11. When you are satisfied, hold one finished piece against one of the pieces to be used for the second turning and mark the top and bottom limits of the design.
12. Repeat steps 3 through 10 for the second turning of the design. (use photo io5)
13. When both turnings are finished rotate each piece in place 180deg. (That is the corners that are in the center are rotated to the outside corners.) (use photo io6 and photo io7)
14. Take two quarters of the first turning and two quarters of the second turning and glue them up. Be sure to stagger the four pieces. (use photo io8 and photo io9)
15. Now you can remount the glued up piece and turn the outside to compliment the inside-out design.

The possibilities of inside-out turning are endless. They can be as simple as a Christmas tree or snowman, to detailed, such as a facial profile or flower or bat. Inside-out turnings will stimulate your ability to see shapes for the wood lathe in a new way as well as be a challenge to your skill, techniques, and design practice.

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