

Starting with a cube



Demo piece finished as a simple bowl, Sapele with one coat of Osmo oil

Introduction

We have covered this topic previously, I think it was before the first lockdown in 2020, but Arthur wanted to see it again, so thank him if you wanted to see it again as well, or blame him if you didn't.

I thought this would be an easy one, just find my old notes, tweak them a bit and job's a good 'un. But I can't find my notes which is weird as I always write some notes to work out what I want to say and make sure I cover everything, then I rehearse the whole thing at home to check timings. I still have the item that I made as a test, but no notes.

So I've had to start again from scratch.

This technique can be used to make various items, a tea light holder, candle stick, potpourri bowl, as the base of a lidded box or a straightforward bowl and the cube could be of any size that your lathe can take.

Demo's

Before we get into the demo, a word or two about demo's in general. I had this thought a while ago and I think it may be interesting to pass it on. It occurred to me that there are at least three distinct types of woodturning demo's.

1. **The 'Name' doing their thing.** This is where a well known turner does the thing for which they are known e.g. Andrew Hall making a hat, Stuart Mortimer doing a twist, Stuart Furini doing colouring etc. You have no intention of ever trying their thing but their skills are amazing and it's interesting to see them show them off.
2. **Hints and tips.** The demonstrator makes an item which you have no interest in making but uses a technique, or gives a hint or tip which you realise you could apply to things that you DO want to make.
3. **I'll make that.** The demonstrator makes an item, and you think – Yes, that's good, I'll make that.

Which category any particular demo falls into is very much a personal view, depending on your interests, experience and skills. This applies to this demo as well so what you get out of tonight is up to you.

Preparation

If you want the finished item to look balanced and symmetrical then it is vital that you start off with as near a perfect cube as you can manage. This is where those of you that have a planer/thicknesser have a big advantage as you can easily plane the wood to thickness, rotate it 90 degrees and plane it square. Cut off a slightly over length piece and pass it through the thicknesser to produce a perfect cube.

If you only have hand tools it may help if you can start with a bought spindle blank which may be square. Then if you have woodworking skills you can produce a cube.

If your woodworking is a bit rusty, these notes may help.

1. your 'cube' will have 4 sides with long grain and two sides with end grain. Select one of the long grain sides, check it is flat in all directions, mark as Face Side.
2. decide how big the cube will be, measure all edges, smallest = max cube possible.
3. select one of the sides at right angles to the Face Side. plane this flat and at right angles to the Face Side. This is now Face Edge.
4. mark the cube size by measuring from the Face Side across the Face Edge and marking a line. Repeat for the other side. Use a marking gauge if you have one. Plane to your lines.
5. Working from the Face Edge this time, measure and mark the cube size on both sides and plane to the lines.
6. Trim one end grain square to Face Side and Face Edge.
7. Measure and mark the length of the cube, trim the remaining end grain square.
8. You should now have a cube !

Mounting

This is the unusual bit. The cube is mounted by means of two opposite corners so examine the grain direction and select the corners you are going to use. As you turn and the shape develops you will get long wings so avoid short grain in the wings as much as possible. The area of the cube nearest the headstock will become the top of the finished piece.

As usual there are a couple of ways to mount this project. The most direct is simply to insert one corner into the spindle taper and support the other corner with a hollow revolving centre, as used for long hole boring. Both of these corners will be turned away so any damage will be removed. The drive is simply by friction from the spindle.

If you don't have a hollow revolving centre, or don't like the idea of a friction drive, then you can trim off the mounting corners so that the flat surface produced is at right angles to the lathe bed when the cube is mounted in the lathe. Find the centres of the flats by drawing from each point to midway along the opposite edge in turn. You can then mount the cube using standard drive and revolving centres.

In either case it is vital that the cube is mounted symmetrically. Move the tool rest out of the way and turn on the lathe – note that the corners appear as two rows, one behind the other along the bed. Stop the lathe.

Stick a bit of masking tape on the tool rest and make a pencil mark at right angles to the lathe bed. Line up the mark with one of the corners of the cube nearest the headstock then slowly rotate the cube and check that each of the three corners aligns exactly with the mark. Adjust the cube inside the spindle taper/hollow revolving centre or drive centre/revolving centre until they line up.

Turning

When you start turning the cube, you will be mainly turning air. To reduce the risk of the tool falling into the gaps, and to give a smoother cut, projects such as this **MUST** be turned at high speed i.e. a 4inch cube at 1,000 rpm. I have observed that many members tend to turn at too slow a speed, so if you don't like turning at speed, this project may not be for you.

Using a sharp 3/8" bowl gouge, start by taking light cuts at the tailstock end, cutting from headstock to tailstock. Start each cut slightly to the left of the previous cut. Eventually you will be removing the corners nearest the tailstock but do **NOT** remove the corners nearest the headstock.

Before you get carried away, mark and cut a spigot to fit suitable sized chuck jaws. Complete the shaping of the underside from the wings to the foot. Abrade as usual through the grits taking care not to round over the corners. You can abrade the lower area with the lathe running, but you will need to abrade the underside of the wings by hand, working with the grain. Depending on your chosen finish, you may wish to apply it to the underside now.

Part most of the way through the waste wood below the spigot then stop the lathe, and use a small saw to complete the cut.

Mount your chuck and reverse the piece into the chuck. Tighten the chuck so that the piece is just gripped then check that it is symmetrical as before. Tighten fully but not excessively.

Complete the turning of the wings first to your desired thickness. If the project is intended as a usable object e.g. a candle stick then thin wings would be easily damaged. If the object is intended as purely decorative then delicate wings would show that this is intended.

Then complete the turning of the top of the project, abrade and finish.

Reverse and remove or re-shape the spigot. How this is done will depend on the shape of the top surface i.e. if the item is a tea light holder you may be able to expand pin jaws into the recess. If the item has been turned as a bowl you may need to turn some scrap wood to the inside shape to drive the bowl as you can't use Cole jaws or a Longworth chuck.

Any questions ?. What category of demo was this for you ?

Phil Howard for Galloway Woodturners
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