

## Lidded Boxes with Stand and Finial – The rule of 3/8in

By Tony Haigh

### Introduction

This document has been written to explain how I turn a lidded box with stand & finial. Let me start by setting a few ground rules, and my definitions of the process.

### Tools required – apart from standard items

- Drawbar collet chuck. I value the skin on my knuckles, and turning small items that I have put into a standard chuck always needs a lot of respect, particularly when you put one hand over a finial to support it. As such I invested in a drawback collet chuck. There other types on the market, but they are almost the size of a normal chuck and rely on a No: 2 Morse taper. This way, there is virtually nothing that can get in the way of what you are trying to do.



The drawbar collet chuck can be purchased from Craft Supplies USA for US\$24.95. Shipping is approx... \$40

- An old live centre with a turned wood sleeve glued on to it. There are black nylon spacing washers, and then a single rubber washer that provides the drive. The spigot is turned down to exactly 3/8 to match the holes drilled in the ends of the box.
- Rubber washers – 3/8in internal diameter
- Cole Jaws
- Enough wood to work – I always leave about 20mm between the collet chuck face and the finial or stand to allow for undercutting.
- Paper towel – I might as well put this in here, you all know the perils of polishing with cloth on a lathe. These small items can have sharp edges that will catch on cloth. Results are not pretty.
- 1/4in skewchigouge (I didn't make this up, it is a recognised tool)

### The Box



Select your timber, rough down to a cylinder, and cut spigots on each end for a normal 100mm chuck. Depending on your design, mark where you will part, some boxes will have different sized lids.



I have parted the cylinder, and chucked the lid piece ready to be drilled out to the required depth with a forstner bit.



Drilled out, flange made, polished, the outside roughly turned, and parted off. The reason for only roughly turning the outside will be explained later.



Base mounted, drilled out, flange matched, and ready to polish inside



Testing the fit of the lid



Inside polished, ready to rough turn outside and part



Both pieces are now mounted in a cole jaw, ready to drill 3/8<sup>th</sup> hole



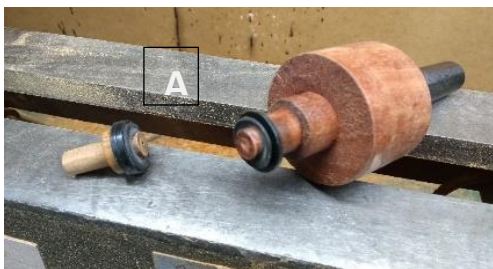
Hole drilled, depth approx. 5mm, depends on how close you have turned to the bottom of your pieces.



At this stage, fine turn the ends of both pieces and sand up to 600 minimum.



Here comes the drawbar collet chuck.



Now these are what makes it for me, the small piece (A) fits into the collet chuck, and the larger piece is an old live centre with a sleeve glued on to it. There are black nylon spacing washers, and then a single rubber washer that provides the drive.

The spigots are turned down to exactly  $\frac{3}{8}$  to match the holes drilled in the ends of the box.



Here they are set up ready to have the box mounted



OK, box mounted, now turn the outside and sand to match the ends



Shape finished, joint and body all sanded to 600 to match the ends that were previously done.



The finished body, sealed and polished.

## The Stand

Again I want to use the drawbar collet chuck, but first some points on preparation.

I start with the stand, and select a piece of suitable hardwood. Length is important. Whatever length your stand is going to be, you need to add about 30mm. This allows for 20mm going into the collet chuck, and 10mm working room between the base of the stand and the face of the collet chuck.



Mount your selected piece between centres and turn down to a cylinder. At this stage I make the diameter just larger than the size of the required base of my stand. This is a safety point for when you mount your piece into the collet chuck. The weakest point is where the timber goes into the collet chuck, it is only 3/8 in. If you have left the overall diameter at say 25mm, the turning the waste down to diameter you need will put a lot of lateral pressure on the weakest point. Obviously you will have the live centre up, but excess force can snap at the weakest point.



Next, at the live centre end turn down to 3/8 in for collet chuck. Note, if you don't have a drawbar collet chuck, and you are using pin jaws or long nose jaws, then you only need the size for your own jaws.



You can see the collar that stops the timber going too far into the collet. I also leave the end where the live centre touches larger than 3/8in. This stops the live centre splitting the 3/8in spigot. I cut this off before insertion into the collet chuck.





Now mounted in collet chuck, and live centre brought up. A 3/8in spigot is now recessed into the cup where the stand will go into the bottom of the box. This will be trimmed to fit later.



Now turn to your desired shape



Finish and sand



Sanded to 240 just for this demo, Spraylac. Cut off marked to go into base of box.



Base cut in at 15 degrees so it will stand on its rim



Parted.

This was only a piece of Camphor Laurel that was in my leftovers bin, it is really too soft to make crisp shapes.

The harder the timber the better, and obviously the shape is all in your mind.

## The Finial

The process is nearly the same, but I will repeat the steps



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Now mounted in collet chuck, and live centre brought up. Markings made for flanges



Finial shape starting, pedestal, ball and flanges roughed.



Shape nearly completed, tip to be thinned down, and ball and flanges made crisper with 1/4in skewchigouge



Nearly finished, just a little bit more off towards the tip, and the pedestal underside to be cut



Sanded and 1 coat of Spraylac. Note undercut of pedestal. This is done to match the curvature of the lid of the box. Stem is sized to 3/8in and cut off to fit

As they say, my tools, my method, and if you don't like it, you can reTURN it ☺

My final (not finial) words are, have a look at who inspired me to attempt to emulate her – Cindy Drozda

I have not seen better worldwide.



A finished example