

November 2017 - Jason Breach

This evening Jason gave us an extraordinary insight into his artistic design and woodturning skills by demonstrating, using the lathe and computer, the processes that he goes through to create his 'Orbital Arc' boxes. Each box takes of the order of 3 to 4 days to complete and therefore within 2 hours it was only possible to show us the thought processes, planning and execution of some of the steps. To fully appreciate the challenges and complexity of the finished items, view a Jason Breach profile in 'Woodturning' magazine number 271 available [on line](#) and also [Jason's website](#).

The main component of each box is a piece of 1" thick board (in this case Maple) which had been machined flat. The bonus of using 1" thick wood is that it seasons relatively quickly and is readily available. To mount this on the lathe a carrier board is required. This was made from 1" thick plywood with a spigot on the back to fit the chuck jaws and a slot cut out to enable callipers to be used to check measurements at a later stage. With a 6mm diameter hole through the centre, a bolt is used with a nut that is hammered into the back of the spigot ...



To check the profile of the shaping of the boxes, small round templates of appropriate 4mm thick wood are used.

Top Tip 1 - attach a **blue** cable tie through the middle of the template so that if it is dropped into the shavings beneath the lathe the template can be easily located!

With the board attached to the lathe a bowl gouge was used to hollow out the shape, constantly checking the profile using the template and ensuring 100% accuracy in not going over the marked circular lines. The inside is then sanded ensuring that the outer edge of indent is not rounded over. The front face was then carefully scraped flat.



Top Tip 2 - the bowl gouge is easier to control if the left hand grips under the tool rest and the right hand thumb carefully pushes the gouge.

The outside edge was then cleaned up square using the bowl gouge.

With the inside finished the board was turned around and material removed down the pre-determined board width and the outer thickness down to 4mm and then sanded as for the inside.



Top Tip 3 - When reducing the thickness do a bit at a time working inwards to prevent flexing.

Use a parting tool to make a cut around the bolt head and then shape the dome.



Note that in the time available the above are demonstration pieces only - even so the finish was superb!

The next step is to cut the board in half but, if decoration is required, this must be done and finished first. After much experimentation Jason has concluded that the best way to make the cut is slowly and carefully on a bandsaw following the marked half way line.

The two halves were now ready for assembling together and at this point Jason reverted to still images displayed from his computer to illustrate the points. Clamping was discussed and Jason has settled on using pony clamps for the main parts of the shape and nuts and bolts with metal and rubber washers for middle and ends to ensure perfect mating of the two halves whilst the glue sets.

The subject of which glue was discussed - PVA is fine for sycamore, maple etc but oily woods pose other problems and a cellulose thinners wash followed by epoxy resin or polyurethane have been used but there are many solutions according to the nature of the wood and the decoration finish that has been applied.

After gluing, the top edge is sanded flat and the top middle section removed using a combination of Japanese files, home made stick with abranet attached, multitool and sanding gloves.

The ring liners for the top boxes are made from blackwood tubes hollowed out using a cutter (slow the lathe speed down for all drilling activities). The box lids are ideally made from the same wood as the main board by using offcuts from when the boards were roughly cut to round.

To mount the particular half moon shape 'Orbital Arc' box being demonstrated a ring base was made with a thin cut through the ring as that the finished piece could be held securely at a pleasing angle rather than totally horizontal.

An amazing evening! - what was most impressive, apart from the artistic and woodturning skills demonstrated, was the thought and planning that had gone into the design and construction of the piece, as well as the ingenuity in overcoming obstacles and challenges along the way.

Thanks to Jason for an excellent demonstration on a bitterly cold night, particularly when he was apparently not fully recovered from a bout of food poisoning from a recent demonstration elsewhere!

David Langan