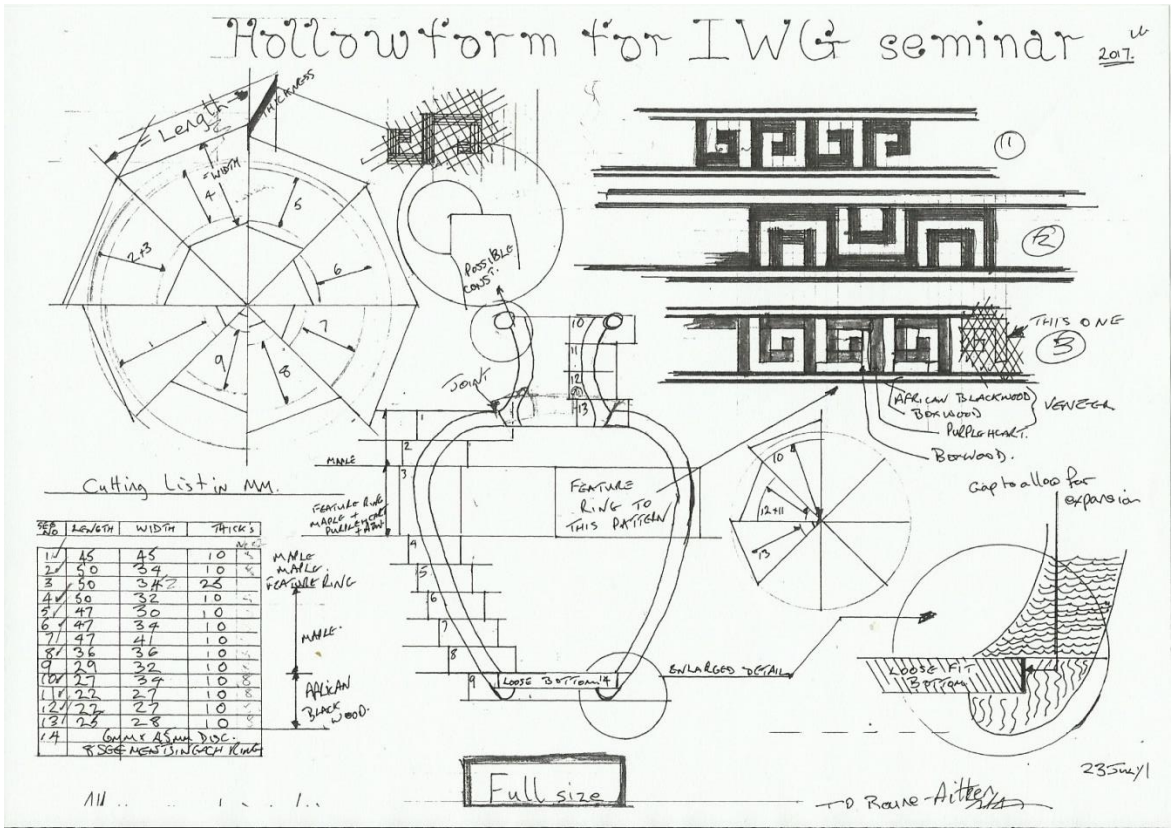
Notes on my method for a simple segmented turning

By J Boyne-Aitken

There are many books that will teach you how to do segmented woodturning. Some of the methodology can be quite complicated and difficult to follow so I would like to share my method with you that I feel most turners could do.

The first thing I do is decide on a design, closed, open or lidded. I usually produce a drawing full size that shows the outline, this allows me to work out the thickness of each ring, the number of segments in each ring and the sizes of each segment. This picture will demonstrate the type of drawing I make.



I have pre-set templates which I have taken great care to produce as accurately as possible and I treat them carefully as a result. I use these to set a cutting angle on my band saw. Making rings with an even number of segments is easiest.

Taking dimensions from the cutting sheet, which is taken directly from the drawing, I bring the timber that I intend to use to the correct measurements. I prefer to use wood that has been planed up on all four sides as that allows for accurate working but it is possible to use sawn timber but it needs to be a uniform size. I always try to keep the grain of different layers going in the same direction, sometimes, for instance using a burr, you might not have a choice or may choose not to segment that particular ring, with modern day adhesives it should not matter too much but I still keep opposing grain to a minimum.

With a box full of segments I move to the guillotine. Using a shop made fine adjuster and my pre-set templates I carefully set the angle, usually within three attempts at making a ring the cuts are accurate enough that you cannot see daylight through the joints when held together by rubber bands, this is the accuracy that you are aiming for.

You have a choice when it comes to glueing up, if you are happy that your segments make a truly accurate ring glue each segment together and clamp with a rubber band or hose clamp. If however, you feel that there may be some discrepancy glue up either in pairs and then when dry pairs again and so on until you have a half ring or just glue a half ring straight off. Using this method you will need to be inventive with your clamping skills which may be experimental at the best of times. If you do not have a guillotine a disc sander would do the job equally well and if you do not have one of those then it would not take a lot to turn your lathe into one. Whichever system you choose to reduce your segment to the final shape and size always mark each segment with “T”s and “A”s on the joints. This will indicate which side goes to or away from the bed or fence and will take up any variation in cut squareness on the machine. Ensuring meeting faces of timbers that are not 90 degrees will still have a tight joint.

Once all of the rings have been glued up they have to be brought to the correct thickness, I use a drum sander for this but before getting the drum sander I quite easily used the lathe with a faceplate or Cole jaws. A strip of abrasive fixed to a 2” timber and held against the face of a rotating ring will soon ensure a flat surface ready for laminating together which is the next step.

Here you may be tempted to glue more than one ring at a time but I have found to my bitter disappointment that better results come from glueing them into pairs and then glueing the pairs again until the required size is reached. I pick a point where each half is easy to turn the insides out so that I can finish them off before joining the two halves together. I also cut down in a couple of places on the outside to give me a guide to final wall thickness. When laminating the rings make sure to keep them all centred, so that when you come to turn the outside it rotates with minimum run out on the lathe.

The samples taken to the IWG seminar do not have an applied finish, they are just burnished. Normally I would wait a couple of weeks before applying any finish so as to allow the timber to settle. The wood will shrink away from the adhesive lines slightly and then they can be sanded again and a polish used to finish them off.

The best advice I can give for making segmented turnings is work methodically and as cleanly as possible and be patient and take your time, doing this will yield the best results.