Persian meels

Chris Grace makes these Persian swing exercise clubs

Out of the blue I received a call from a man called Harry asking me to make some Persian meels. I had no idea what these were, so following the conversation, a research session was required. They turned out to be a Persian version of swinging exercise clubs. With some jobs, like this one, it can be difficult to determine the subtle features that differentiate one type of club from another, but help was at hand as a few days later Harry brought his existing clubs for me to see. He had some 5kg and 10kg clubs – that is each – as they are used in pairs! The reason he wanted some 7kg clubs is that he was struggling using his 10kg set and wanted a size in-between to help build up to them. He also wanted a 3kg set for different exercises.

I showed him the designs I thought would work and agreed to do the 3kg set first. I learned a lot from doing them and here I will show you how I created the 7kg set, which were a bit more of a challenge.

First, I had to design the shape, calculate the density of the wood and finally alter the scale until the calculations said they would come out at 7kg each. There was a problem, however. Harry had offered to source the wood and kindly supplied me with 2 × 4m lengths of nice 150mm x 50mm mahogany coloured wood – probably sapele (*Entandrophragma cylindricum*). That was great, but – and it was a big but – they were clearly different densities! That meant that I had to arrange the blocks in a pre-determined pattern so that they would both be the same size when I turned them down to the required weight,

PHOTOGRAPHS BY JEAN GRACE

and that they would be balanced around their central axis. Oh, and I ran out of wood and had to buy some more 50mm square, which was yet another colour and density!

While I use CAD I don't use 3D, so I calculated the volume as if the clubs were a stack of bowl blanks – averaging each slice – then I multiplied the result by the density of the wood to arrive at the design weight. I simply weighed and measured the planks and divided the weight by the volume to get the density. Density of wood varies enormously, walnut (*Juglans regia*) can be as low as 0.5 tonnes/m^3, while ebony (*Diospyros spp.*) can be as much as 1.3. Even within a species there can be considerable variation – with mahogany *(Khaya ivorensis)* being between 0.5 and 0.85. So, it is essential to determine the density of your timber for applications such as this.

CHRIS GRACE

Chris has been turning wood for about six years. He has enjoyed making things with wood and metal on and off all his life alongside his work commitments, but the discovery of the lathe rekindled his enthusiasm for working in wood. Chris sells his work by commission, demonstrates and provides instruction.

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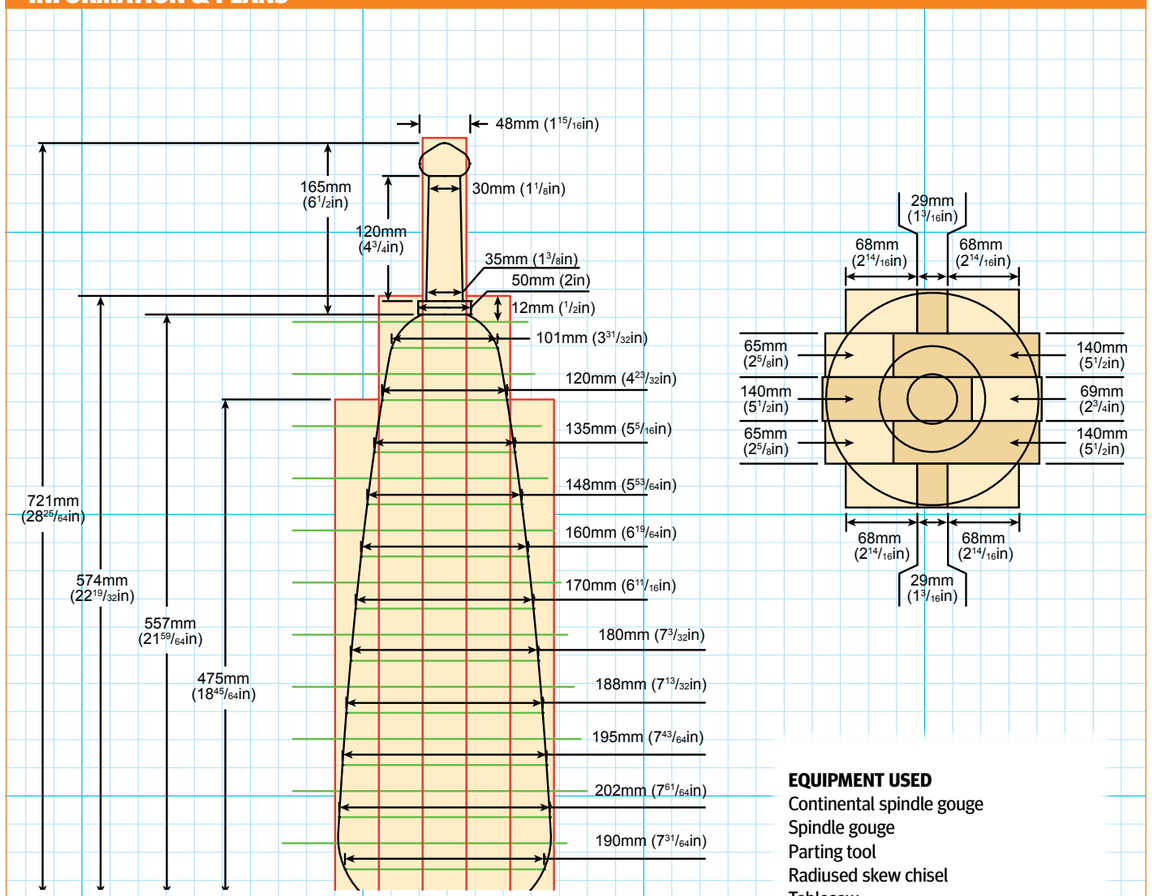
INFORMATION & PLANS



EQUIPMENT USED

Continental spindle gouge
Spindle gouge
Parting tool
Radiused skew chisel
Tablesaw
Planer/thicknesser
Lots of clamps
Callipers & measuring/marking tools
Abrasives – Abranet
Centres
Scales
PPE: protective gloves, facemask,

1 The first step is to cut all the wood to pre-determined sizes on the tablesaw and then prepare two adjacent edges on the planer/thicknesser, so that they were square

"Number the blanks on one end to maintain grain orientation"

2 Ensure the glue is spread relatively thinly, but evenly and without any voids. You can use something such as an old plastic membership card as a spreader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3 The glue-up may take some time as I suggest you glue no more than four pieces together at once; this ensures that you can carefully control the glue joints. Make sure you have sufficient clamping pressure in all directions to keep the glue joints tight

4 It is easiest to plane the first part of the glued blank before adding additional pieces, as it gives you better control over the joints. Trying to glue too many pieces at the same time is a recipe for disaster

5 Shape the blocks as best you can at the glue-up stage. My resulting blanks weighed in at over 15kg each at this point


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6 The next problem is mounting the heavy blanks on the carefully marked centres, so I suggest chocking the heavy end up with wooden blocks and wedges...

"Shape the blocks as best you can at the glue-up stage"

7 ... and use a toolrest at the other end. This way you can carefully align heavy blanks while tightening up the tailstock


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8 You then have the blank mounted ready for rough turning...

9 Personally, I find a heavy Continental pattern spindle gouge best for roughing out large blanks. An air-fed mask is essential when using any of these types of woods. Gloves are also useful as there will be too many hot shavings to be comfortable

10 Measuring at every stage is crucial to ensure you are on-track according to the drawing

11 The Continental pattern spindle gouge makes short work of initial shaping...


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12 ... and is also capable of more accurate shaping and producing a good finish when used at a skewed angle

13 It is important to remember to always wear a dust mask when brushing down and cleaning up

14 Initial shaping complete, the blanks still weigh over 9kg, but we're on track

15 Get as far as you can with the spindle gouge and start to refine the shape with a large radiused skew as you should be closer to the final shape now and we want the best finish

16 One small momentary lapse in concentration resulted in this massive splintery gash in my blank

17 It was a mistake on my part, but on examination I also found that the wood had dulled my skew and it needed sharpening

18 I weighed the club and continued to turn as much of the gash away as possible without compromising the overall shape. This is what remained, so a design change was in order. I had intended some decorative detail, so now it would be here

19 Having become a bit nervous about using my skew chisel, I opted to use a scraper for this critical stage, initially with a plunge cut...

20 ... and then to shape the beads. For me it worked remarkably well, with little tear-out

HANDY HINTS

1. If the placement of blocks is critical, as in this case, mark them on a piece that will be turned away so that you can keep track of which piece should go where later
2. Use cling-film to help keep the glue off of your clamps


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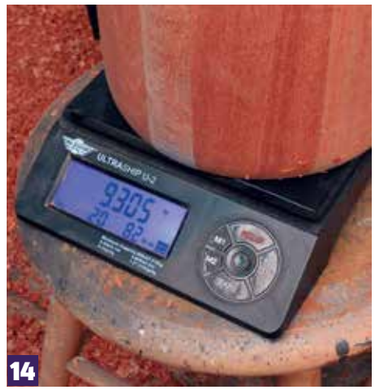

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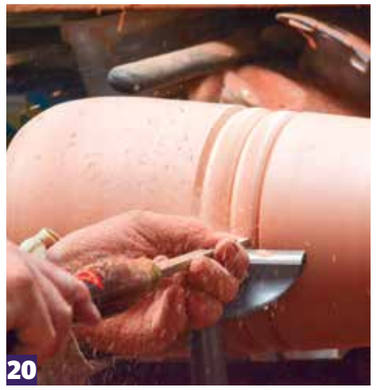
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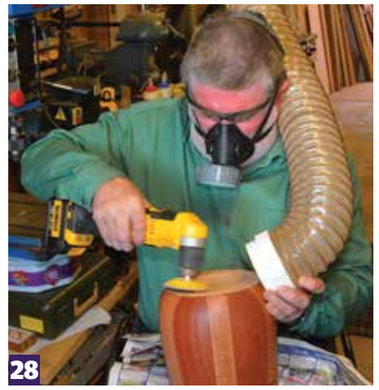
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21 Now there is no evidence of my mistake, as long as my client doesn't read *Woodturning*!

22 I had been given very specific requirements for the handle size and shape, so more measuring was required

23 Shaping with a bull-nosed Continental spindle gouge is quick, easy and accurate

24 However, I suggest using an acutely ground traditional spindle gouge for finer detail

25 Sanding on a beast like this produces alarming amounts of dust, so close extraction is essential. Hold it by hand so you can move it along with your sanding hand

26 The club should now almost be at its design weight. Now, start applying the oil finish. It really helps the colours of the woods come out

27 The last step is to remove the bulk nib of wood required by the centres using a structured carbide burr, together with extraction and a mask

28 Finally, sand through the grits again to match the rest of the clubs

29 My finished Persian Meels came out within ½% of the design weight and within a few grams of each other, well within the 10% tolerance specified by my client ●


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