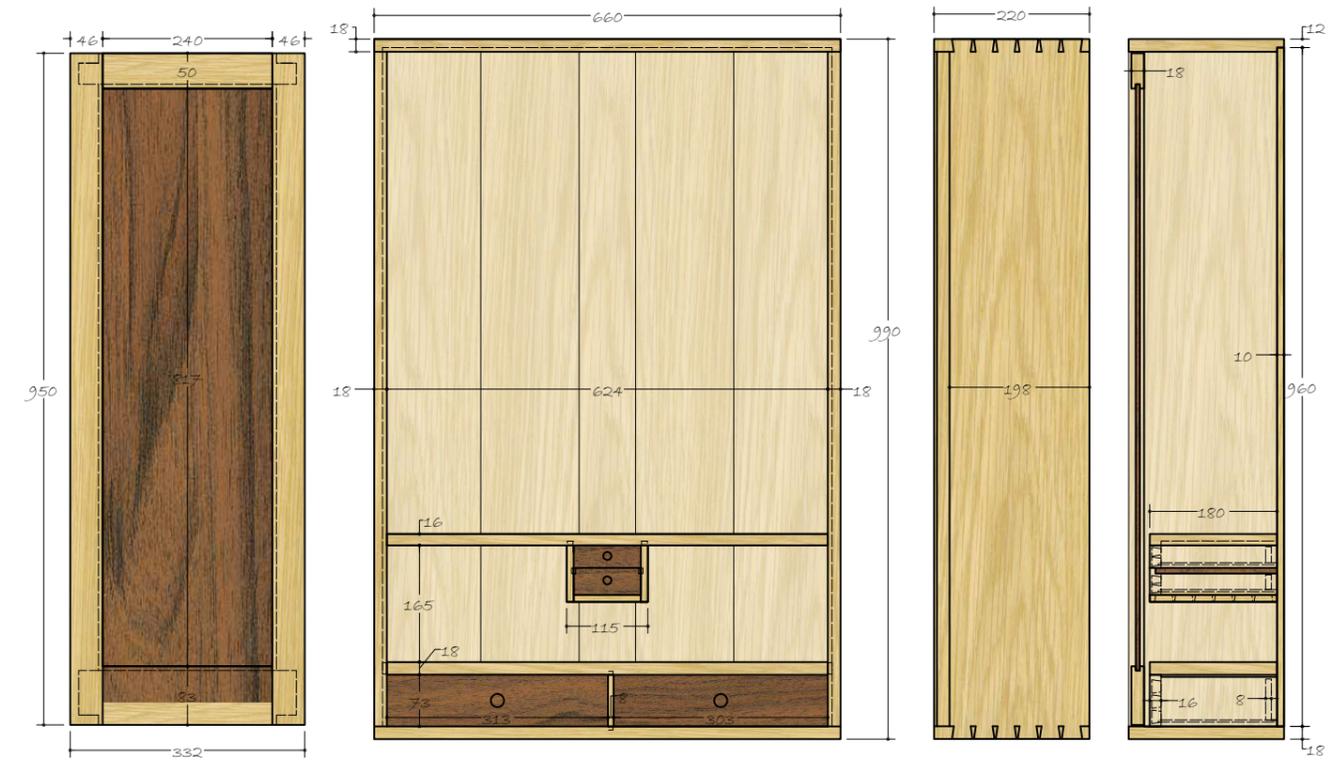


Making a wall-hanging tool cabinet

Israel Martin makes a tool cabinet for his hand-tools-only workshop



ELEVATIONS & SECTIONS
Scale 1 to 10

Door frame with haunched mortice and tenon joints top and bottom, panel grooved into frame all round. Hinges are fitted to top and bottom of stiles

Carcass back from 10mm thick tongue and groove chestnut boards fixed in rebate in sides and top

A pair of small drawers, lower drawer with stepped front section to hide drawer runners for top drawer which are let into drawer carcassing, which is also hung from shelf above using stopped sliding dovetail joints

Small cherry tray with quarter sawn red cedar bottom and triangular splines to strengthen corner mitre joints. Tray rests on ebony strips in drawers sides (not shown)

Drawers have 16mm thick walnut fronts with 8mm thick chestnut box lap dovetails at front and grooved into the sides at the back

Lower shelf fixed into carcass sides using stopped sliding dovetail joints

18mm chestnut carcass joined top and bottom with through dovetail joints

In order to keep my tools at hand, protected and well ordered, I decided to make a tool cabinet to hold most of my collection. Thinking about the design of the cabinet, I knew the tools would need to be accessible (at least the ones I use the most), and they would need to be arranged so that I could see where they were with just a quick glance. A tool cabinet is the best way to protect tools from dust, rust and disorder. Given that it will hold a great weight, the timber needed to be strong yet light weight, and also refined but not too expensive. I decided to use some chestnut that I cut and air-dried several years ago as the main wood, with some walnut to add a contrast. I used through dovetails for the carcass and sliding dovetails for the main shelves, thus making a 'bomb proof' cabinet. Because I needed a place for smaller items, such as my marking and measuring tools, I made four drawers. The big drawers are for less used items and the small ones for the smaller marking tools. I used the small drawers as a division for the two spaces on the main shelves. I think a tool cabinet should be dynamic and able to adapt to new tools and needs, so I used simple brass screws with rounded heads to hang some of the tools.



The cabinet keeps the tools accessible and orderly

Spanish chestnut

When working with hand tools only, the choice of timber is somewhat crucial, and a hand-tools-friendly wood is the best way of not getting frustrated. Spanish chestnut has a nice grain, is lightweight, is very easy to plane by hand and it is soft on the chisels, meaning it doesn't wear the tools so quickly and reduces the need for sharpening. It

also doesn't chip easily when working with chisels, and it is easy to get a mirror finish with the planes. It is like working with pine but it looks more refined. Chestnut was commonly used in the north of Spain for almost everything from beams for houses, to doors, windows and furniture.



The chestnut boards



The chestnut carcass



Close-up of the chestnut grain

Making the small hanging drawers

To store the small measuring tools that I do not use very often – a small combination square, dovetail markers, etc. – I decided to make two hanging drawers that will also make a division in the first shelf. I made this with through dovetails to join the two sides with the bottom and then sliding dovetails to join the sides to the upper shelf. I then made two walnut runners for the upper drawer that are joined to the

sides in a groove. The lower drawer has a rebate to fit the space of the runners. The drawer fronts were made in walnut to combine with the door panels and the other drawers. In small and narrow drawers like these ones I oriented the grain of the drawer bottoms parallel to the sides because it is much easier, the seasonal movement won't be too big and this way I can use scraps from other bigger drawers.



Detail of the hanging drawers



Pins in the carcass bottom



Gluing the hanging drawers in the carcass



Runner details



Lower drawer rebate detail



Bottom grain direction detail

Making drawers for the tools

I made four drawers for this cabinet, two small ones and two bigger ones. I always start by making the drawer fronts, adjusting their width and then cutting to length. Once they are made I prepare the drawer sides, normally with maple, and I try to use quartersawn wood as much as I can. I cut the tails, then mark and make the pins. Combining a dark wood for the front and a light wood for the sides makes any possible gap almost invisible. I use sliding dovetails instead of through dovetails for the backs, I find it easier to make

them just with chisels because they are usually very small and short. I also leave the sides a bit longer just to be able to pull the drawer all the way and see the inside and to allow for seasonal movement. Sliding dovetails help keep everything together and square even without glue. Most of my drawer bottoms are made of soft wood but since I had some thin boards of ash left over from another project, I decided to use them instead. I used holly for the pulls to add more contrast.



The walnut drawer fronts in their openings



The maple drawer sides being test fit



Making the tails on the drawer sides



Making the pins on the drawer fronts



The finished drawers

Making through dovetails

There are lots of ways of making dovetails. I've tried several methods and this is what I commonly do. Starting from the tails, I mark them with a knife and saw to the line from the outside of the board, trying to make the tails just a bit narrower to the inside, so when I mark the pins, I always mark them a bit narrower than the top of the tails. I then saw outside the pin lines and adjust them with chisels. This way I have enough wood to adjust the pins with no risk of gaps between pins and tails; this is also faster than adjusting the tails and pins.



Sawing the dovetails



Checking the dovetails



Marking the pins



The dry fit

RIGHT: Assembly



Making a removable chisel rack

One thing I don't usually like about tool cabinets is that every tool has its own place. I consider my chisel set as one tool, so I need to be able to get to all the chisels at one time. I made two chisel racks by sawing one walnut board in two, making the grooves for the chisels and then gluing the two halves together again. I then added a half dovetail on the back of the rack and the other half dovetail on the cabinet doors. This way I can put the entire chisel set on the bench and work with it – easy and effective.



Two racks for two types of chisel



Gluing the two parts of the rack together



A dovetail shaped cleat holds the rack in place



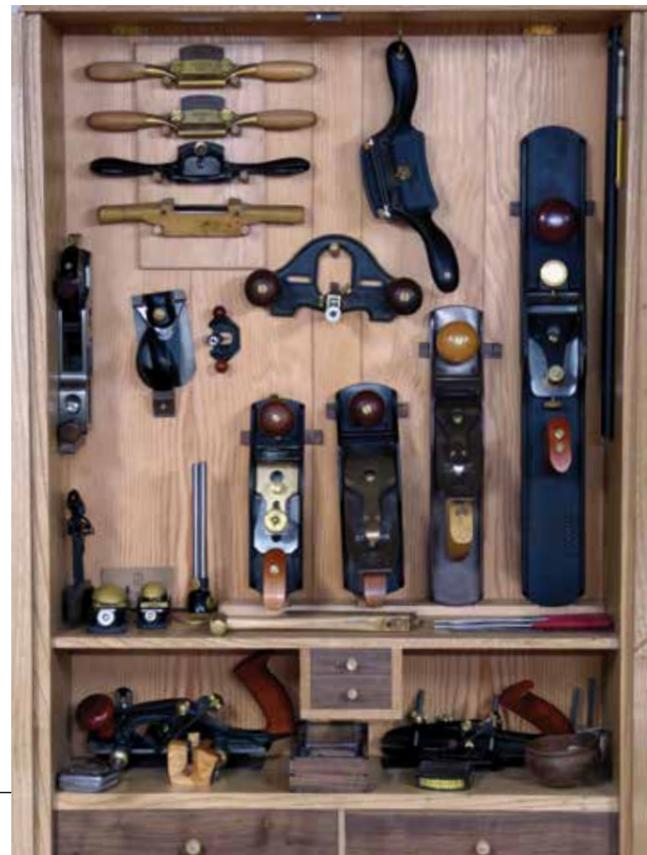
The racks also prevent the chisels from rolling around the bench

Organising the tool cabinet



Tools that are used most often are stored on the lower shelves RIGHT: Rare earth magnets keep the planes in place

There needed to be enough space between the cabinet and the workbench underneath it. However, this meant that most parts of the cabinet would be too high to reach comfortably. So I placed the most-used tools in the more reachable zone and in the top of the drawers, making small trays for the inside of the drawers. I did the same with the doors. As you can see, the plane handles are just reachable on the upper shelf. I used rare earth magnets to keep the planes in place.



Making small trays for tools

One way of getting your tools in better order in the drawers is to make small trays that lie on ebony strips inside the drawer. I made this one with some scrap cherry. The fastest way was by making mitres, gluing them and then adding some splines to add strength to the set. Making the bottom couldn't be more easy; as I was looking at an old tools catalogue, I noticed that small boxes for measuring tools used to have thin quartersawn wood bottoms just glued at the box bottom, so I tried this with quartersawn red cedar. It couldn't have worked better.



Marking and layout tools share the same drawer



Splines are cut into the corners of the tray after the initial assembly



Splines add strength as well as a little detail



Small trays are a great way of organising smaller tools

Installing the door hinges

Probably the biggest challenge of making the cabinet, at least for me, was that I needed to make the doors and add the hinges to the carcass before the carcass was glued up. This meant it was going to be difficult to make further adjustments on these big doors in

order to fit them perfectly. I marked the hinges in place on the dry fit, placing the doors to test their places, and then made the mortises for them. I then assembled the carcass again and marked on the doors. I tested them before gluing everything together. *F&C*



Checking the doors for size before fitting the hinges



Use a small router plane to let the hinge into the ends



Set the hinge parts flush with the surface of the door



Just the knuckle is exposed at the side of the cabinet