

How to... Cut dovetails

SHORTCUTS

PHOTOGRAPHS BY MARC FISH

If you are really set on using dovetails Marc Fish offers some hot tips for perfection

Dovetails: are they the Holy Grail of cabinetmaking, the epitome of good craftsmanship or an overly used technique that continues to lead furniture designer/makers down into the design abyss?

Now don't get me wrong. I use dovetails in my furniture and teach students how to execute them. I pride myself on meticulous making, whether it is dovetails or any other aspect of furniture making. I do, however, also pride myself on helping students learn about good design, and hopefully this will lead them into designing the furniture first

and then addressing its construction.

Furniture should not be designed solely around construction, and if we are to look back at our time and expect to be revered for what we have achieved – like latter-day Chippendales – then furniture has to be visually exciting and innovative. It has to be about the design.

Here I share some of the techniques I use and teach at my workshop, but before over-indulging in your new-found skills do question if you are designing the piece around dovetails and how appropriate they are to your design.

Preparation

The key to perfect dovetails is preparation, accurate marking and a little hand and eye coordination. Prepare your wood to be joined accurately, check and double check dimensions and squareness. If the wood has not been cut or shot squarely at the ends then your job is not going to be easy.

Mark very clearly what each component is, which way is up or down and which way round it goes – having seen somebody make an 'S' shape instead of a drawer, this makes a lot of sense.

Be particularly careful not to plane off your identification marks just before glue-up. I use masking tape at this stage to ensure against this.

Marking out the Alan Peters way



1 Use your dividers to mark the half pins in from each end, decide how many tails you want and set the dividers to the width of the tail and one pin

This article contains a few tips to help those who have already had a go at dovetails and want to improve, but some elements are skipped so do not use it as a step-by-step guide to making this joint.

When I was at college we were taught when marking out the tails to divide the width using a ruler at an angle across the face. What we were not taught was

a trick Alan Peters used with a pair of dividers. Short of seeing my little boy being born this has to top the list of amazing things.

On the end grain mark with your dividers the half pins in from each end, photo 1, then, as a starting point, decide how many tails you want and set your dividers to approximately the width of the

tail and one pin.

Without making any marks, put one pin of the dividers in either half pin mark and 'walk' across the end grain, counting each time you touch the divider down to the timber.

When you get to the other side the dividers should over-hang the half pin mark and you should have counted



2 Put one pin of the dividers in one of your half pin marks and 'walk' them across the end grain...



3 ...counting each time the divider touches down



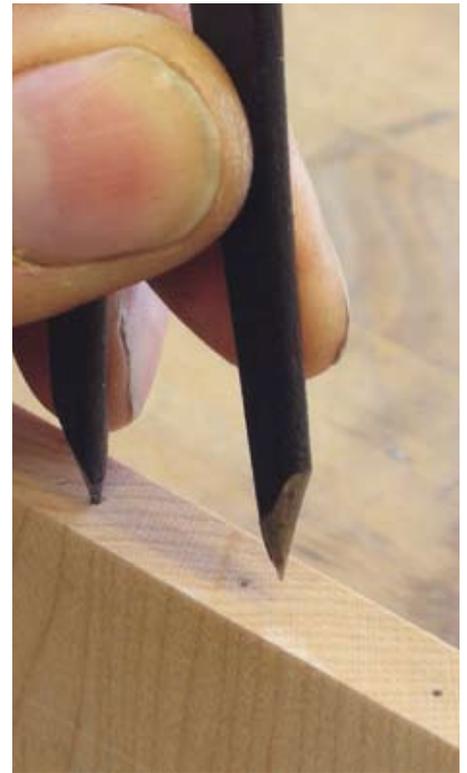
4 When you get to the other side the dividers should overhang the half-pin mark



5 The amount by which the divider overhangs the half-pin mark is the width of one pin



6 Place the dividers in the half-pin mark...



7 ... 'walk' back...

the right amount of tails as you walked across, photos 2-4.

The amount by which the divider overhangs the half pin mark is the width of one pin, photo 5. If this looks right then rework this, making a mark each time the divider lands.

When you get to the end and the divider is overhanging the half pin mark,

take the dividers off and place them in that half pin mark, photo 6, then work back the way you came, photo 7, and you will have all your tail and pin spacings marked out for you, photo 8.

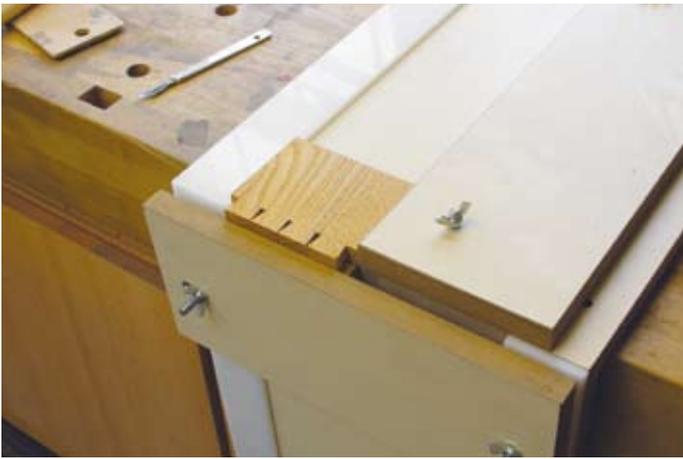
To mark with a dovetail gauge place a pencil or pen in the divider mark, slide the gauge up to it and mark away, photos 9 & 10. >



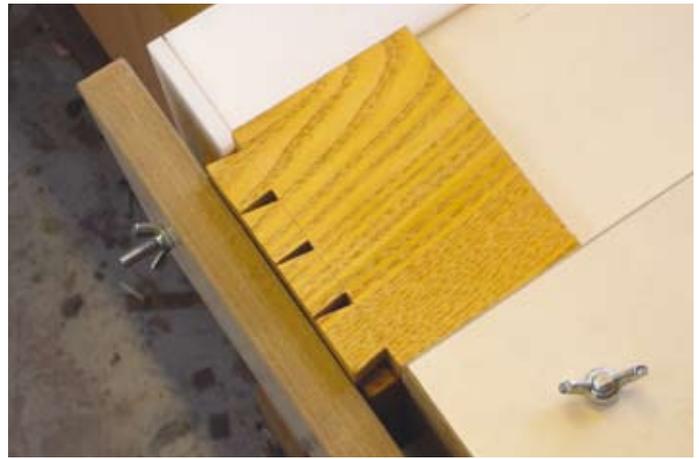
8 ... and all the spacings will be marked



9-10 Using a dovetail gauge and pencil or pen, mark out the dovetails



11 Use of a transfer jig allows timber up to 1000mm long to be marked up



12 Move the tail board forward by enough to offset the scalpel line by its own thickness so the pins are marked on the outside rather than the inside

Cutting tails

Cut out your tails, removing the waste with a piercing saw.

When chiselling any remaining waste always creep up to the knife line; do not be tempted to put the chisel in the line and pop because the chisel will act as a wedge and go past your line, demonstrating one of the main problem areas for those learning to make dovetails.

It is tempting to try to tidy up any poor sawing with a chisel, but please restrain yourself. If the angle is wrong then leave

it alone as it will probably not show when assembled and you could make the situation much worse.

Marking pins from tails

Accurate marking of pins from tails is a bit hit and miss. You may have seen or have been taught to put the pin board in the vice and place your tail board on top, resting on your bench plane at the other end.

One hand is used to hold the board down, the other keeps the board from sliding sideways, then we need a third hand to mark the pins with a scalpel.

Robert Ingham's book, *Cutting-edge Cabinetmaking*, has an excellent transfer jig and we use a variation of this. My jig fits on the bench but slots into the end vice to keep it secure. It also allows me to mark timber up to 1000mm long, photo 11.

Some makers mark the pins with a scalpel and then cut inside the lines, leaving the scalpel line in place. This is OK until you need to chisel any waste where your saw did not go. It is all too easy to slip with your chisel into the scalpel line and end up with a joint that is too big by a scalpel's width.

I prefer to move the tail board forward before marking out the pins; edging the board forward, then marking the pins, allows you to saw on the scalpel line.

This works by moving the tail board forward by enough to offset the scalpel line by its own thickness and therefore marking the pins on their outsides instead of their insides, photo 12.

Working out how much you need to move them forward by is a matter of trial and error. The jig pictured has the setting machined into the stop that the tails but up to. A different stop allows lapped dovetails to be marked in the same way.

With this method you will find that your

marks do not go all the way back so these need to be extended with scalpel and rule.

Cutting pins

Always mark the waste clearly before cutting – on dark wood use a white pencil. As mentioned above, chisel any remaining waste by creeping up to the line. Some students have found using a block to rest the chisel up against is helpful in ensuring square shoulders.

If you have to pare the pins down to the scalpel line always work across the grain or the chisel may follow the grain with disastrous results. Use a backing board if doing through dovetails.

If I am doing lapped dovetails then I remove most of the waste with my Makita trimmer fitted with a straight cutter. For more stability I attach MDF to either side of the timber.

Glue up

Smear a small amount of glue on the pins and not on the end-grain surface because this offers little if any benefit and can hinder assembly.

Tap home the tails with a ball-peen hammer and a little block of wood small enough to get between the pins. Clamping is unnecessary and should be avoided.

Check all is square and then put the kettle on. F&C

Reference

Robert Ingham's *Cutting-edge Cabinetmaking*, ISBN 978-1-86108-518-4, is available in paperback at £19.99 from GMC Publications, tel 01273 488005 or online at www.gmcpublications.com

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