

Short Cuts



PHOTOGRAPHS BY MARC FISH

The Short Cuts guide to... **rapid tenons**

Tenons can be cut on
a milling machine

Marc Fish says tenons can be quickly cut using bandsaw, milling machine, router table, spindle moulder – and of course the mighty Domino

In a professional workshop efficiency cannot be over-emphasised. One has to be commercial to survive so areas where techniques can be substituted or improved to save time are welcomed, and this includes making tenons.

If you really want to speed up joint making then one word speaks volumes. Domino. Festool's introduction of the Domino machine a few years back has revolutionised furniture making and for many

makers made mortice & tenons completely redundant.

I am sure there are many purists out there who take great exception to this but there were many objections to the first automated weaving loom and I hope we have come a long way since then.

The downside to Dominos is the cost and if you are not lucky enough to own one then these machining tips should help to speed up your tenon cutting. ➤

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Bandsaw

Using a bandsaw for cutting joints is nothing new, but a couple of set-up tips will help with any technique requiring the use of one.

I have changed over to a tungsten carbide-tipped blade very similar to that on a circular saw blade. These are a lot more expensive but the finish is quite unbelievable. Check the tension on your bandsaw first. If you are reading from the scale on a machine fitted with a carbide-tipped blade it will be under-tensioned so have it checked properly – mine was only 1/10th the tension required. Set up the guides accurately. They need to

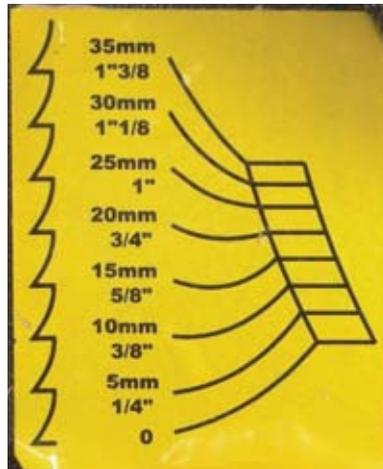
be very close to the side of the blade but must not be quite touching.

When machining your timber make a spare component and when setting up your bandsaw for cutting your tenons use it to check the fit in the mortice and the position of the tenon.

Cut one side of your tenon and then flip over, cutting the other. Remove the waste and check the fit. When this is satisfactory cut all the tenons on these settings. The key to success here is that the spare piece is identical to the other components and that this is checked carefully for fit before cutting the real thing.



The guides need to be as close as possible but not touching



Use of tungsten-carbide blade will affect the reading on the tensioning scale

Short Cuts series

- Dec 09 – Veneer jointing: including shooting edges by hand, planer, router
- Winter 09 – Wood edging: solid and veneered, trimming flush with chisel, block plane and router
- Jan 10 – Laminating: substrates, mould making with extruded polystyrene, MDF, laminate cutting and marking out
- Feb 10 – Making round lengths: turning, hand planing, spokeshaving and routing
- Mar 10 – Dovetails: top tips, marking out, alignment jig to ensure tight fitting
- **Apr 10 – Tenons: cutting options by bandsaw, spindle moulder, router and milling machine**
- May 10 – Hinge fitting: by hand and router jigs, hinge selection and prep, screw prep and fitting



With one side of your spare component cut, flip over to cut the other side



Check for accurate fit then cut the real thing

Milling machine

Now I know most makers will not have access to engineering tools but I would like to enlighten those who do and maybe inspire those who don't that it might be worth investing in them.

I use the milling machine 50/50 between wood and metal – tenons being the ideal process that a milling machine will undertake.

You will need to make a jig to hold

the workpiece to the bed. My jig is multipurpose as it is also used for router tables.

I mark up my spare tenon as per normal but can dial in any number of joints after the spare one has been machined and readings taken from the dials.

If you wish you can machine up to your scalpel lines on each joint as it is easy to see what you are doing

and micro adjustment is available, a feature that makes use of a milling machine preferable to a spindle moulder or router. It is slower than the spindle moulder but far less scary, and it achieves a better result.

Woodworking router cutters or milling cutters both work OK – but router cutters do operate better at a faster speed.

Thanks to micro adjustment you can machine up to your scalpel lines



This jig can be used in conjunction with router tables too



Router table & spindle moulder



Left: The spindle moulder should be your machine of choice for big tenons

Right: The jig is moved along the router's fence

These two machines are very similar in their application and techniques. I have used both for making tenons but must admit that the spindle moulder only gets set up if I have a few to do, otherwise the router table or milling machine does the job.

The spindle moulder is a much more powerful machine. If the tenon is large, requiring lots of waste removal, then it will be your best choice. Various cutters are available for both machines although a better range

is available for the spindle moulder. Twin-headed blocks allow both sides to be cut at once, and these work with either a spacer in between the two blocks, or an adjustable gap.

As for the bandsaw, always make a spare component to use as a set-up piece. On the router table you will need to make a jig to hold the workpiece firmly, with an extra piece of wood protecting the exit edge on your work.

This jig needs to be very accurate

so ensure that the fence for the workpiece is truly square to the router table's fence.

A cutout is made by hand to allow the cutter to protrude up to the work and the whole jig is moved along the router's fence.

The spindle moulder does not require a jig but will need either a mitre slot or sliding carriage to ensure square shoulders. I have the latter and again use a sacrificial piece at the exit point. *F&C*