Operations Procedures for Mortises

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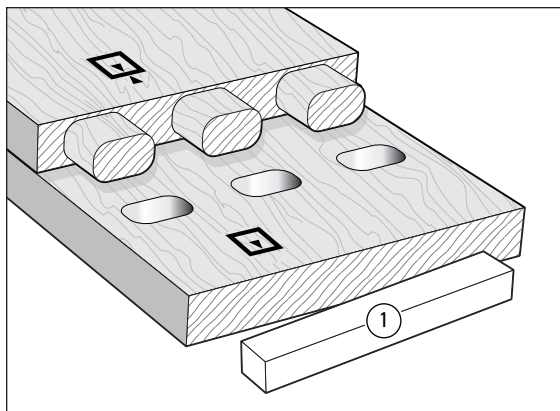
IMPORTANT: Before using this attachment on a project, thoroughly familiarize yourself with the following procedures and adjustments. Use low cost ¾"[20mm] solid wood and practice until proficient.

Note: Procedures for ⁵⁄₁₆"[7,9mm] cutter and ⁷⁄₁₆"[11,1mm] guidebush are identical, but see 8-21 regarding change of finger orientation.

8-1

Let's look at how to make a simple multiple mortise & tenon joint. Make a single matching row of mortises and tenons without regard for symmetry or alignment. Example: Using ½"[12,7mm] cutter and ⅝"[15,9mm] guidebush combination and ⅝"[15,9mm] high tenons in ¾"[20mm] stock.

For this procedure you will require the "mortise block"-①. See 1-7 for mortise block description.
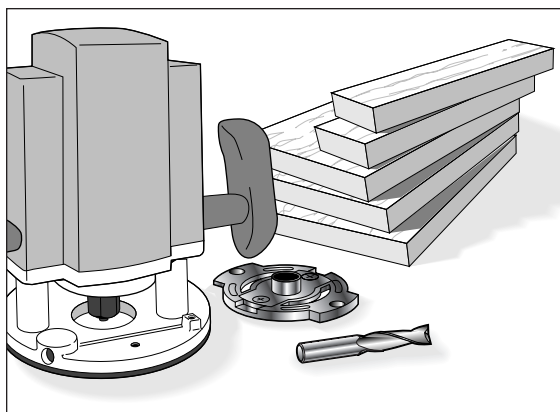
8-2

You will need some practise boards ¾"-x-5½"-x12"[20 x 140 x 305mm] or so long, plus two narrow boards **exactly the same thickness** for single test tenons. For this trial use a plunge router with ½"[12,7mm] collet, ⅝"[15,9mm] guidebush, and ½"[12,7mm] spiral upcut cutter (Leigh No.180).

8-3
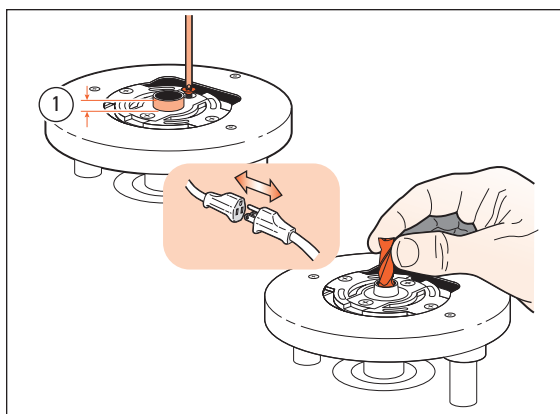
Fit the ⅝"[15,9mm] guidebush securely to the router. **Guidebush projection from the router base must be at least ⁷⁄₃₂"[5mm] and must not exceed ¼"[6,5mm]-①.**

  Fit the ½"[12,7mm] spiral upcut cutter to the router.

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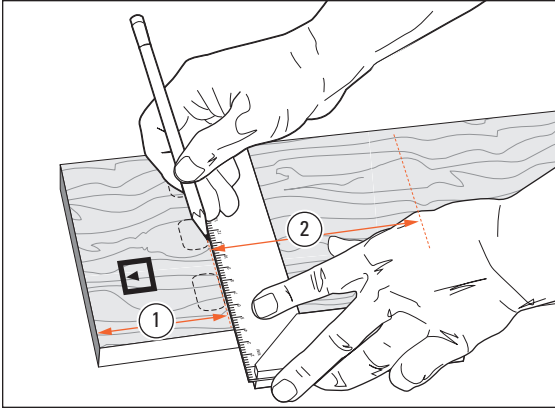
8-4 Joint Layout

Mark out the position of the top edge of the mortise row which will go towards the rear of the jig (the *mortise line*), about 4"[100mm] from the board end ①. Mark this line on the inside face ◲.
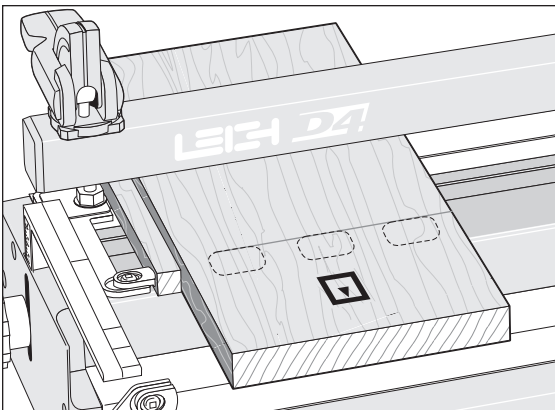
It is not necessary to outline the mortises, we have just illustrated them here for clarity.

*Note: the closest that a mortise line can be to the clamping end of a board is between 5½"[140mm] to 6½"[165mm]②.*
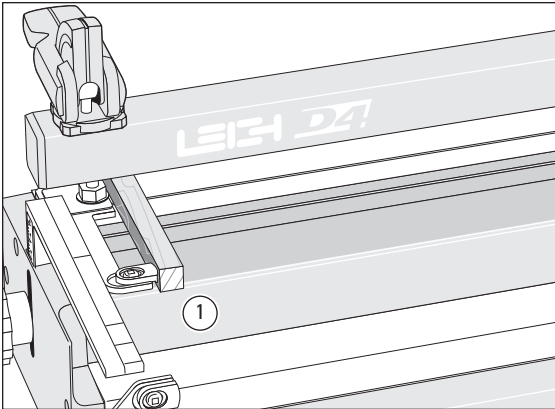
8-5

Place the mortise block against the top left hand side stop ①. Keep it there for all mortising procedures.


8-6

Fit the mortise board horizontally under the rear clamp bar, inside face ◲ up, against the mortise block/side stop, and lightly clamp. The board position is not critical at this time.
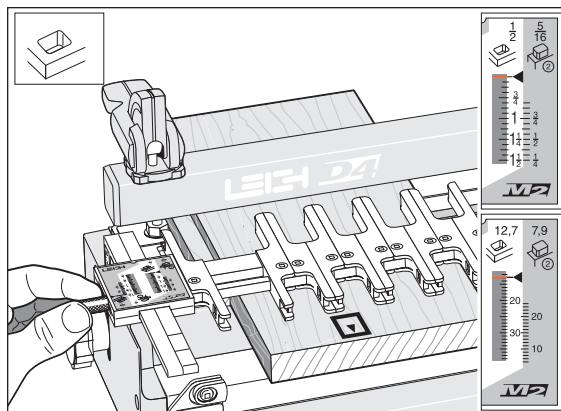
8-7
Place the finger assembly on the support brackets in ½"[12,7mm] mortise mode and exactly on the ½"[12,7mm] setting indicated on the scale with a black triangle pointer. The position is illustrated here in red. Tighten thumb screws.
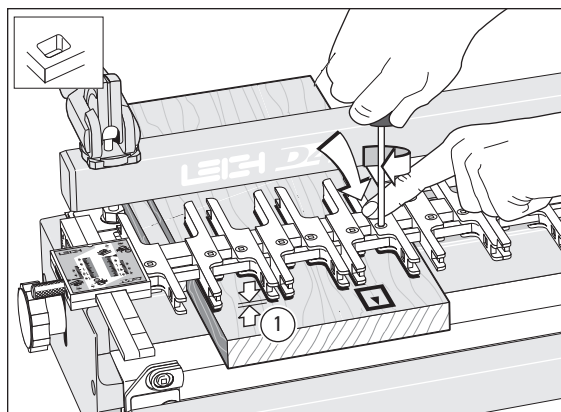
8-8
Lower finger assembly to within ¹⁄₁₆"[2mm] of mortise board ①. Loosen and adjust fingers to the desired layout of mortises, and retighten. Do not overtighten the finger lock screws. The special screwdriver provided will give more torque than is necessary for adequate lock-up. **Always apply (hand) finger pressure to the guidefinger above the large ¾"[19mm] guide rail when tightening up the finger screws.**
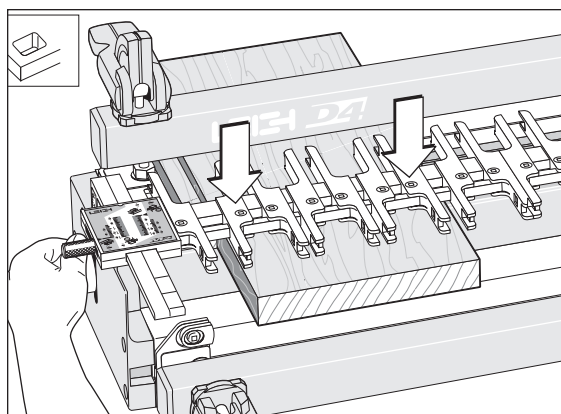
8-9
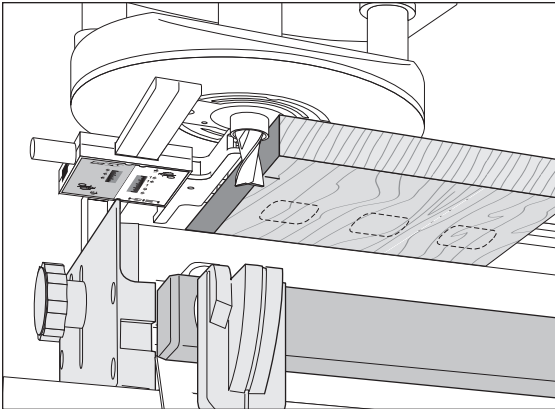Lower finger assembly flush onto the mortise board and tighten end bracket knobs. *Ignore mortise line for now!*
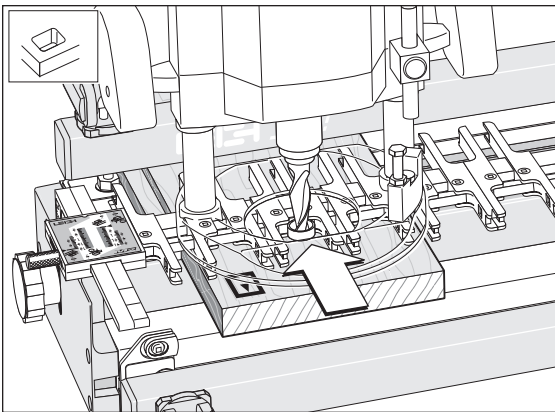
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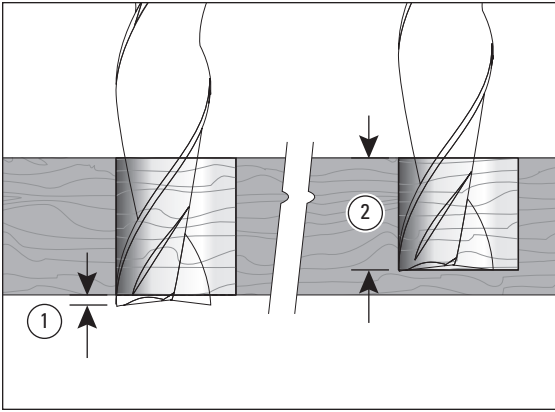
8-10

Always adjust and check for correct depth of cut.
Through mortises should be cut with the cutter clearly through the board ①.
Blind mortises should be cut to your desired depth ②.

8-11

For these sample through mortises, adjust the plunge router depth stop to allow for a maximum cut depth of, say, ⅛"[3mm] more than the mortise board thickness.

8-12

Position plunge router (unplugged) with plunge raised on the finger assembly, guide-bush touching the front finger rail.
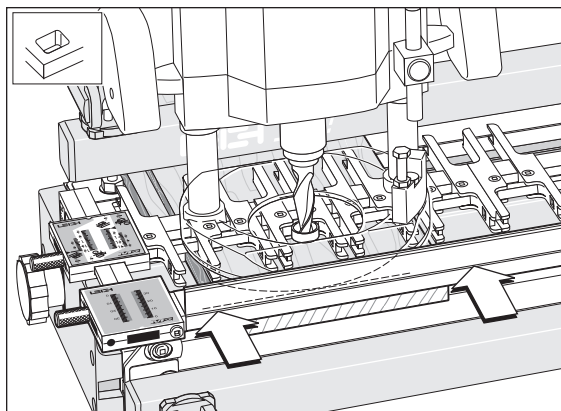
8-13

Place mortise fence on support brackets, fence up, until the fence touches the router base. With some small router bases, the fence may touch the fingers before reaching the router base. If so, See Figs. 8-14 and 15 below, otherwise, go directly to Figure 8-16.
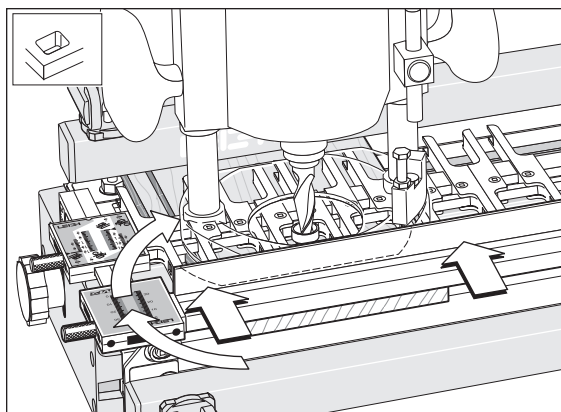
8-14

With some smaller router bases it may be necessary to turn the fence end for end, replace on brackets and use back of fence as a guide.
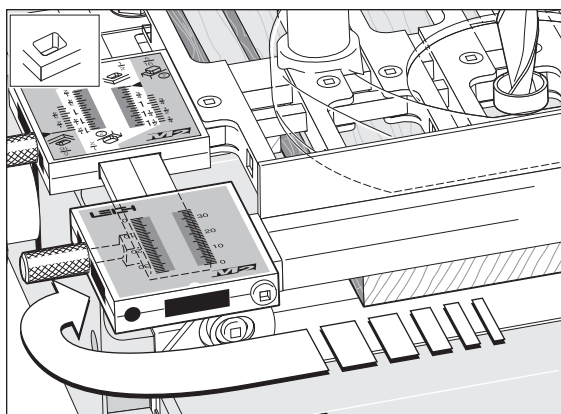
8-15

In some cases it may even be necessary to reverse the scales end for end on the fence to ensure the scale thumb screws are far enough in to engage the support brackets.
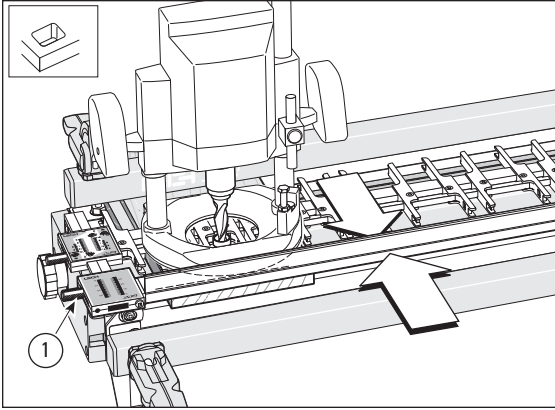
8-16

With **light inward pressure** on the fence, equalize the fence scale reading at each end of the jig on the most convenient pair of support bracket lines and tighten the fence scale thumb screws ①. This will parallel the fence with the finger assembly. **Check for free left-right router movement at both sides of the mortise board.**

Remove router from jig.

8-17
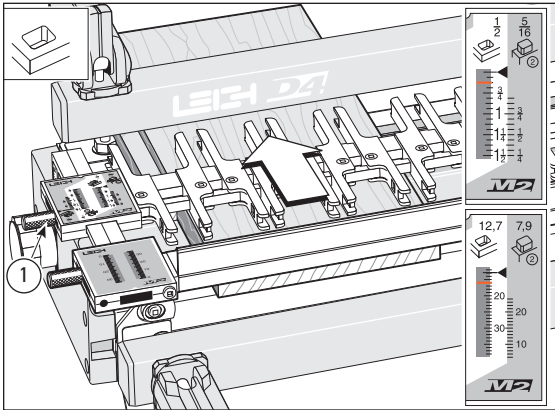
At the ½"[12,7mm] setting, and the router trapped between the finger rail and fence, the router can only cut ½"[12,7mm] high mortises, i.e. the cutter diameter. Move the finger assembly toward the rear of the jig so the scales read the required mortise height, ⅝"[16mm] in this instance. Tighten the thumb screws ①.
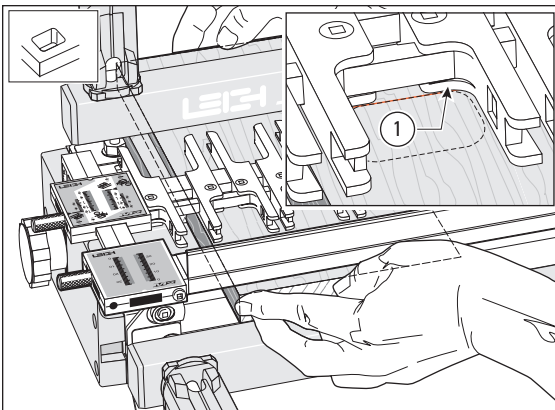

8-18

Loosen the rear clamp and align the first *mortise line* just in front of the small projections on each guide finger ①, i.e. full line thickness showing in front of projection, and the edge of the board against the mortise block/side stop. Firmly clamp in place.
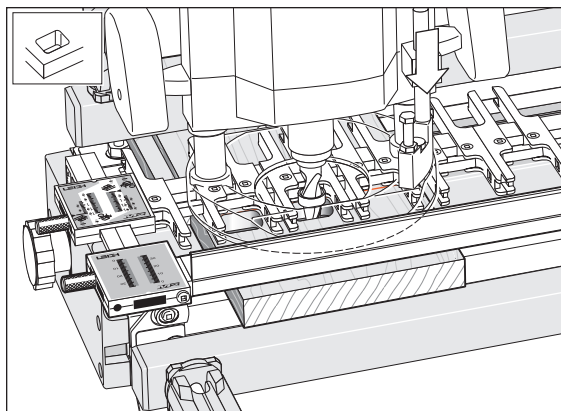
8-19
Rout out all mortise positions on this row and on all similar rows. Plunge and rout about one third of the board thickness at a time.
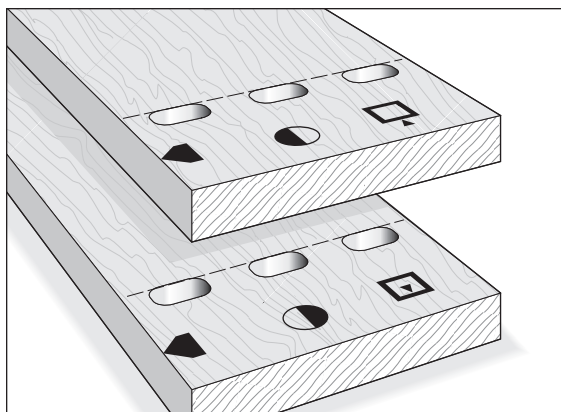
8-20
If you are routing through mortises in opposite cabinet sides, use the same reference edge (cabinet front or rear) against the same side stop each time. One side of the cabinet would be routed outside face ⊡ up; the other side, inside face ⊡ up.
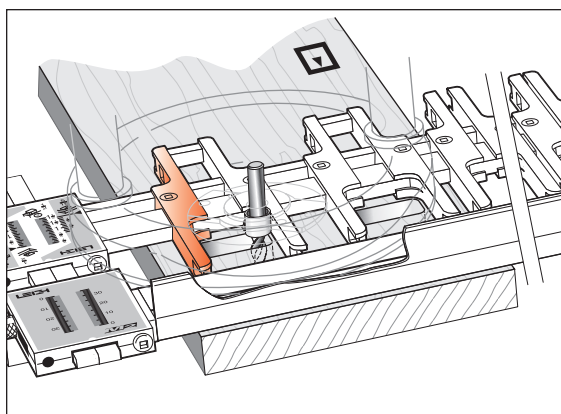
8-21
When routing with a ⁵⁄₁₆"[7,9mm] cutter, the outer finger (highlighted in red) is used as a guidefinger.

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