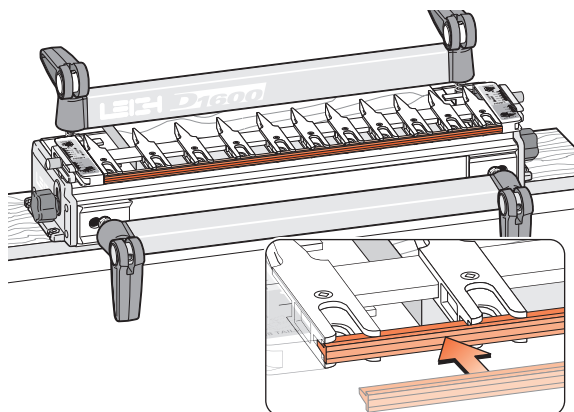# Sliding Dovetails

⚠ *Routing sliding dovetail "slots" across the face grain of horizontal boards is very tough on dovetail cutters.* **Always use the largest shank size available to you.** *We recommend using 8mm shanks with the $^7/_{16}$" [11,1mm] guidebush on the D1600.*

If you have to use $^1/_4$" shanks in hardwood, first use a straight cutter to rough out the slot centre .

12-1

With the finger assembly in the ⬦ HB TAILS mode, the cross cut fence fits into the recesses in the ends of the tail guides to allow routing of sliding dovetails.

⚠ **Space the guides fairly evenly across the jig and firmly seat the fence into end of each guidefinger to ensure a straight cut.**
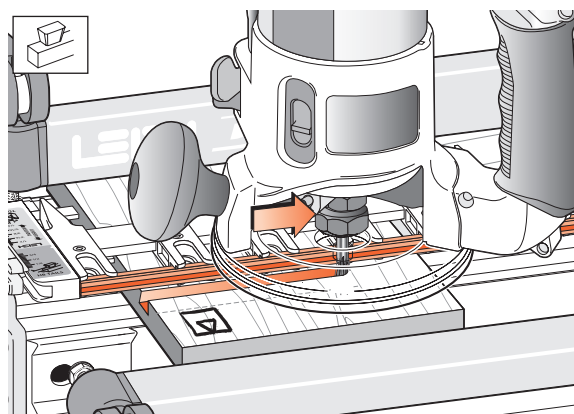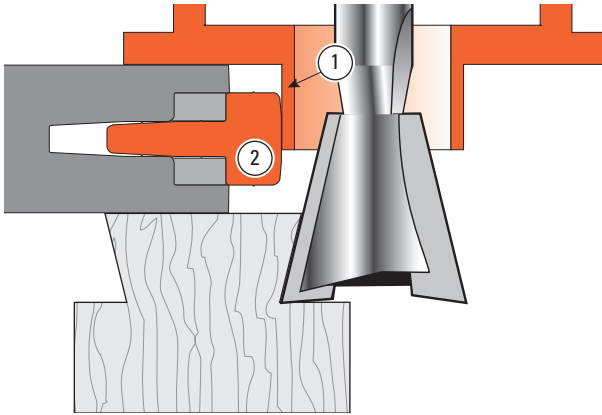

12-2

Using the cross cut fence as a guide surface for the guidebush, you can make lateral router cuts across the faces of horizontal boards (dovetail *slots*), and...
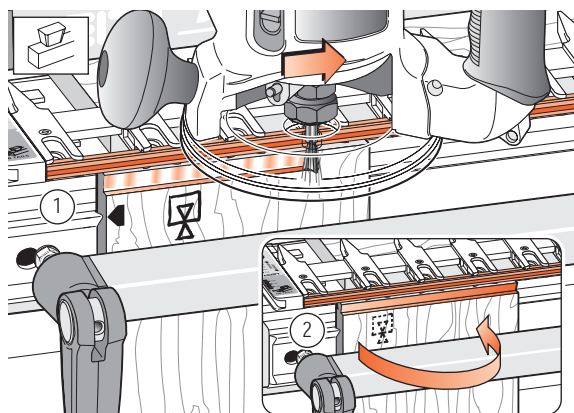

12-3

Across the top ends of vertical boards to cut the tails. First rout one side ①...

Then turn the board side-over-side to cut the other half of the tail ②.

12-4

⚠ While virtually any guidebush/dovetail cutter combination can be used for sliding dovetails, the cutter angle should be not less than 12°. We do recommend 8mm shanks over ¼" for greater stiffness routing sliding dovetails. Use your regular ⁷⁄₁₆" guidebush with the D1600. Make sure the cutter can rotate without touching either the guidebush ① or the jig ②.
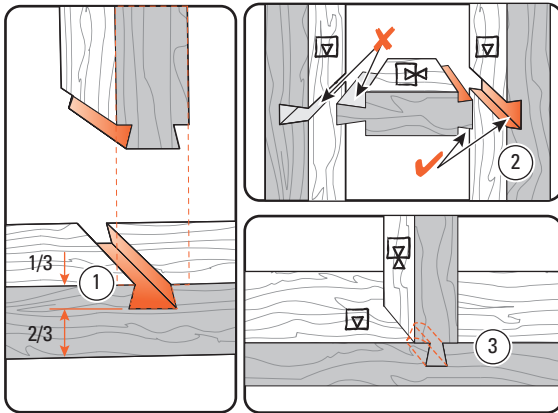
12-5

On a full width joint, *the slot depth-of-cut should be no more than ⅓ of the board thickness* ①. If the tail board is to be a load-bearing horizontal member (e.g., bookshelf or step), then make the tail fairly thick to ensure that the tail neck will be strong ②. Shorter sliding dovetails with fewer structural demands on them may be slightly deeper, with narrower profiles, especially if appearance is important ③ (e.g., where narrow rails join wider boards).


12-6
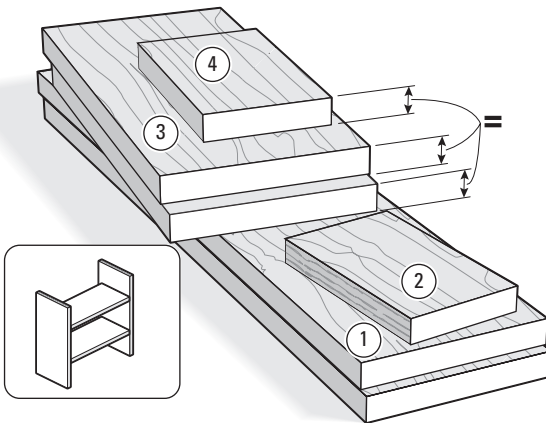
Use ¾"x5½"[20x140mm] softwood to make two slot boards ①, plus one narrow test slot board ②, two tail boards ③ and one narrow test tail board ④. The tail boards ③ and test tail board ④ must be exactly the same thickness. This will make two uprights and two shelves.
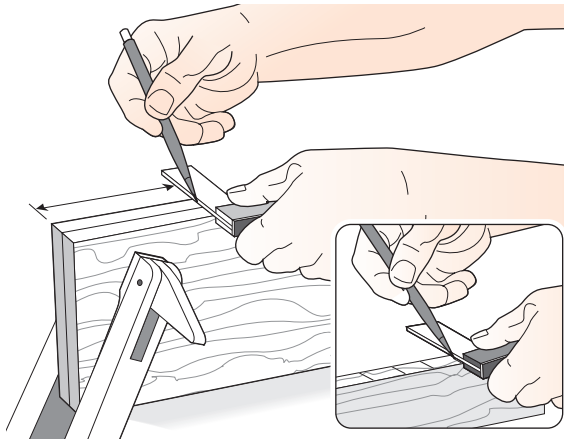
12-7

Marking Out: *Do not mark the slot positions on the board faces,* but mark the edges of both slot boards together for perfectly level shelves. Stay at least 7"[180mm] in from the ends to allow for clamping on this test project. (Instruction 12-25 describes how to rout close to both ends.)

Mark the narrow test slot board in the same way at several closely spaced random spots. This board is used only for setup.
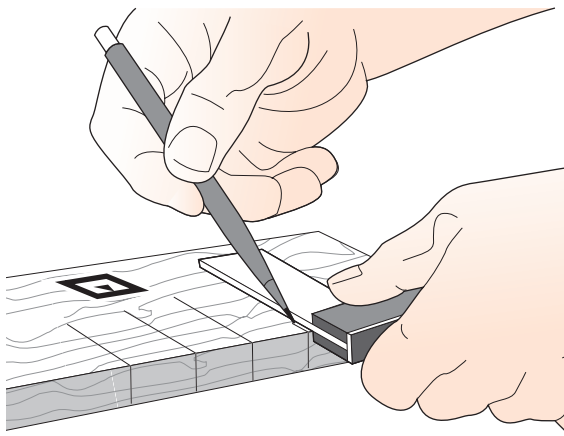
12-8

*On the test slot board only,* square the marks across the face.
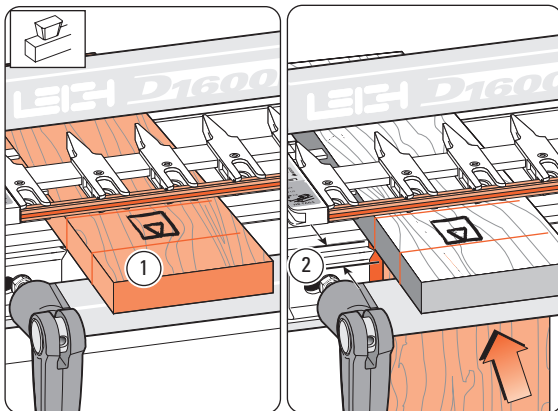
12-9

Mount the test slot board in the rear clamp, markings up ①. Mount a ¾"[20mm] thick ② square-ended board vertically in the front clamp against the side stop, with the top edge butting the underside of the test board *(yes, the ¾"[20mm] thickness is important).*
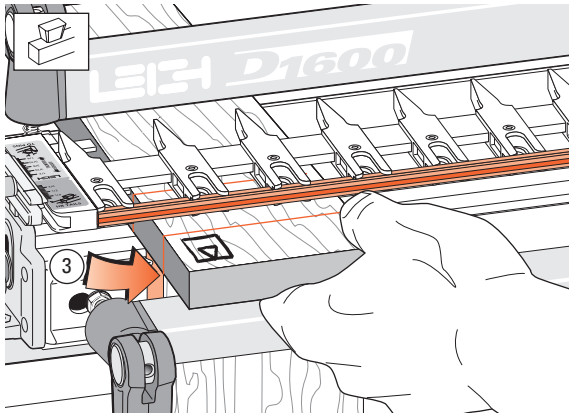
12-10

Position and clamp the test board so that one of the edge marks is in line with the *outside edge* of the vertical board ③.
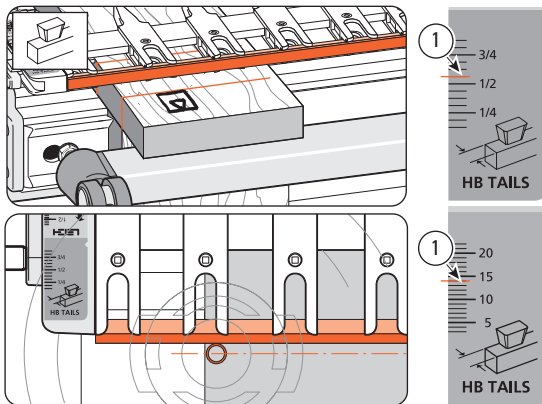
12-11

With the finger assembly (including the cross cut fence) on the support brackets in the ✎ HB TAILS mode, set the scale to $9/16$"[14mm] ①. The routed slot will be close to centred on the slot line. *Make sure the finger assembly is level and sitting flush on top of the board.*
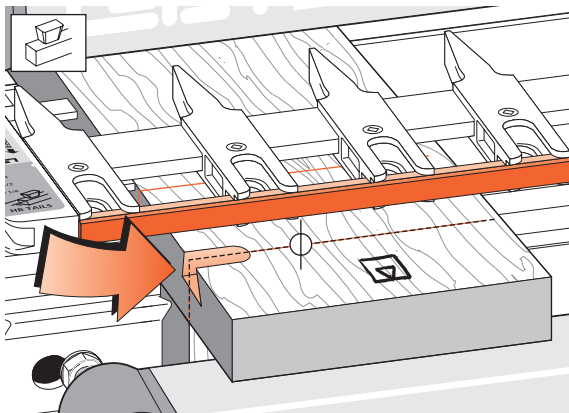
12-12

Adjust the cutter so the cut depth is about $5/16$"[8mm]. Rout from left to right maintaining light inward pressure of the guidebush on the fence. Rout in only about 1"[25mm] and back out again.

⚠️ **Do not lift the router.**
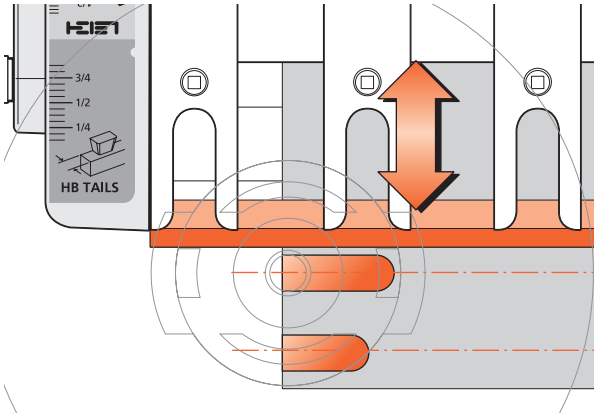
12-13

Check to see if this short slot is centred on the pencil line. If not, adjust the finger assembly in or out and retest on the other lines as necessary until the slot is centred. Lock the finger assembly in this position and record the setting for future reference.
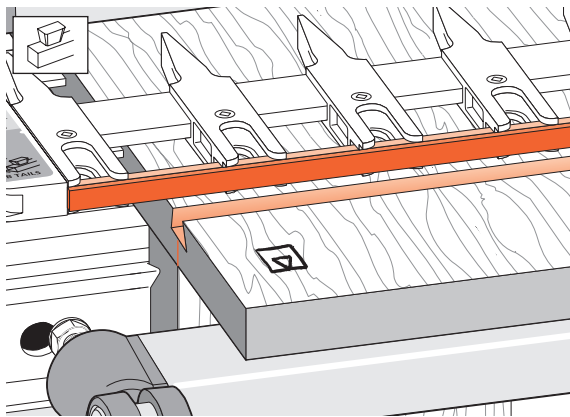

12-14

Now rout sliding dovetail slots in the two main slot boards with the boards in the horizontal position in the rear clamp, slot side, that is inside face ▣ up.
**The guidefingers must be flush on the board.**
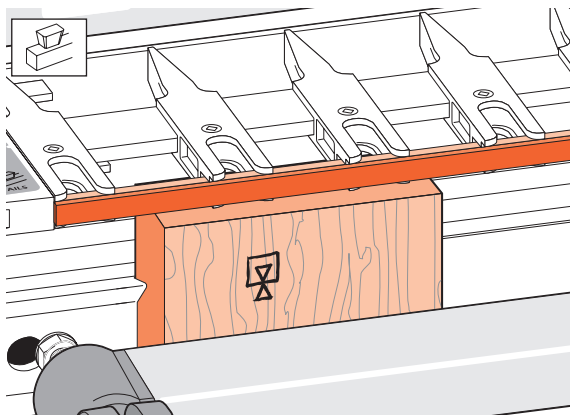
12-15

Replace the spacer board in the rear clamp, and with the finger assembly on the spacer board, mount a test tail board vertically in the front clamp, **flush under the guidefingers**. Either side can face out ▣.
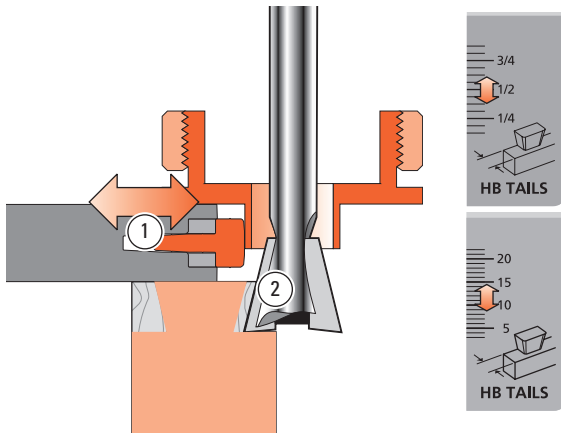
12-16

The 🪵 HB TAILS scale is not designed specifically for this mode, but it does allow you to make precise adjustments for tail size and tightness of fit on sliding dovetails.

Adjust and set the finger assembly ① so it is clear that the routed tail ② will be too large for the slot.
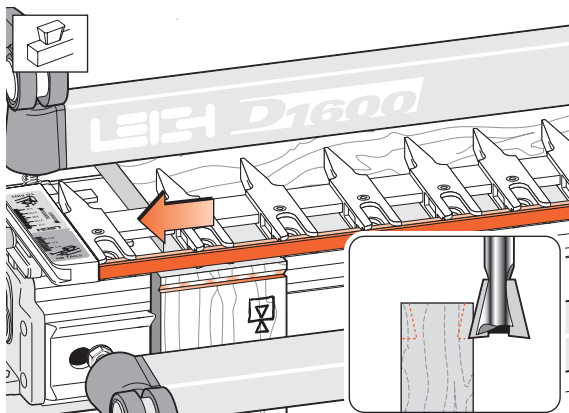
12-17

⚠ Rout one side of the test tail board. **Make one light pass from right to left (climb routing). Make sure you control it firmly, because it is driven in this direction by the cutter. Only the tip of the cutter should be cutting on the first cut (see inset).** This *back* or *climb* routing leaves a very clean shoulder in side grain.
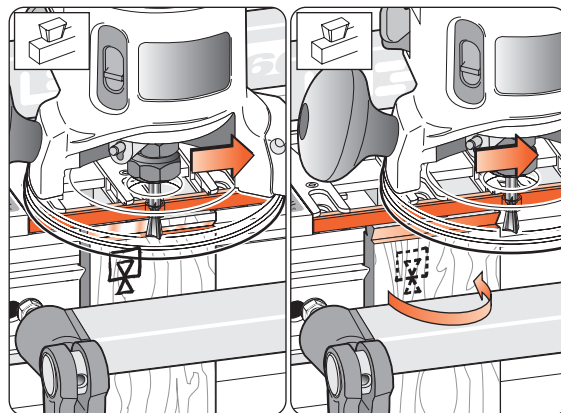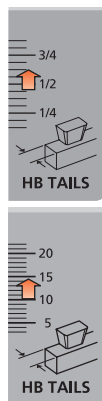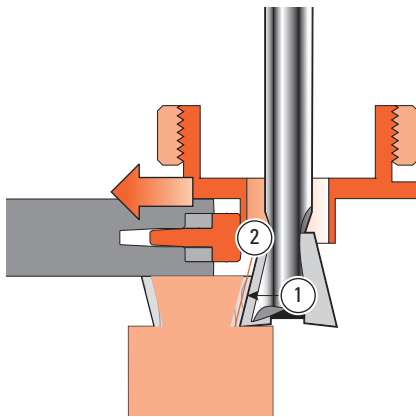
12-18

Finish left to right, with the guidebush touching the fence. Turn the test tail board around in the jig and rout the other side in the same manner.
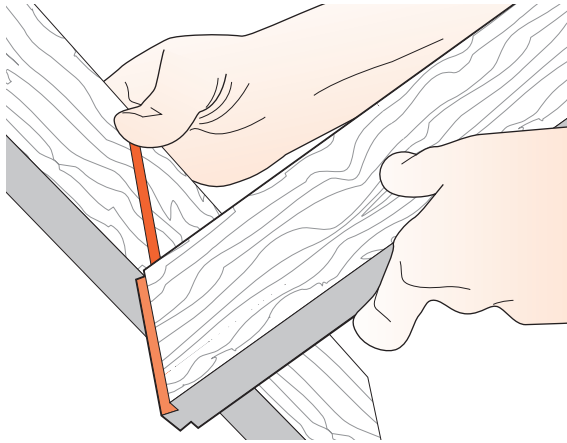
12-19

Test the joint for fit. The tail should be too big. If it is too small, adjust the finger assembly outward by at least half the difference and rout another test tail on the other end of this test board.

12-20

If the tail is too big ①, move the finger assembly in toward the jig by half the amount the tail is too big ②. Rout the same test board again and keep adjusting and testing until you have a good fit. Note: Variations in board thickness, guidebush diameter, cutter depth, angle, diameter and concentricity, make it impractical to record or chart scale settings for sliding tail size. Use trial and error each time. It doesn't take long, and you get a good fit.
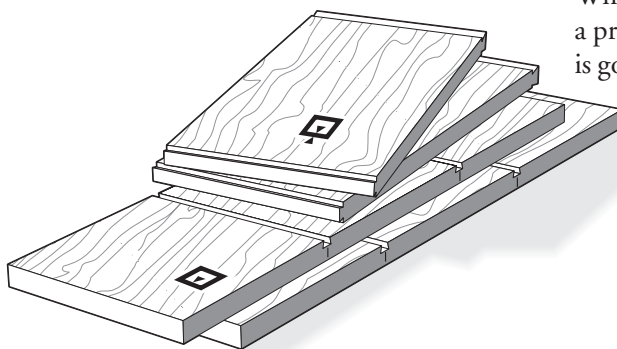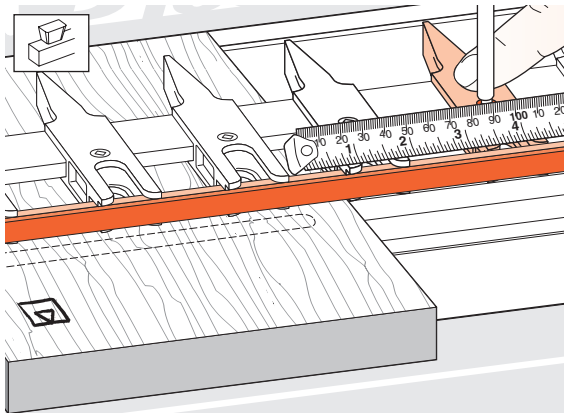

12-21

When the fit is satisfactory, rout one end of a project tail board and test again. If the fit is good, rout all the other ends.
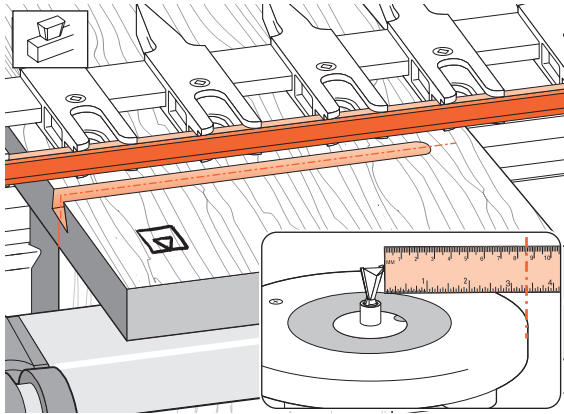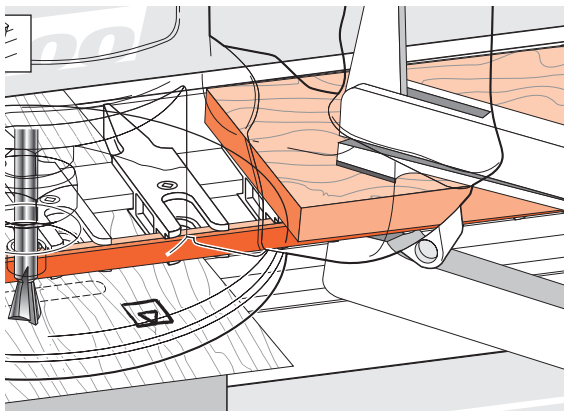
12-22

Stopped Sliding Dovetails
If a stopped sliding dovetail is called for...

Measure from the outside tip of the dovetail cutter to the edge of the router base.

12-23

Measure the same distance from where you want the slot stopped to a position on the finger assembly. Move a guidefinger to that point and mark the guidefinger with a felt pen as a visual router stop mark…

12-24

Or lightly clamp (**with a soft-jawed clamp**) a short board to the finger assembly to act as a router stop.
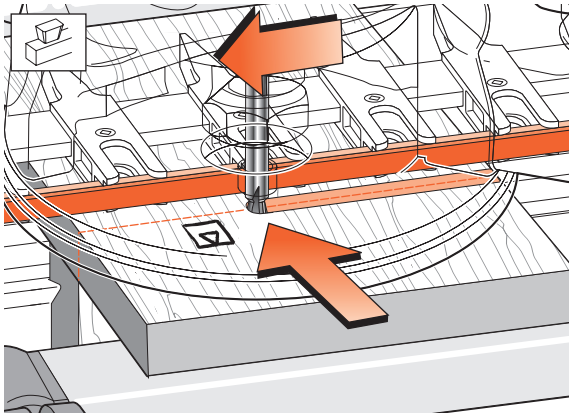
12-25

⚠ Dovetail slots are preferably routed from left to right because the cutters clockwise rotation pulls the guidebush against the fence. However; as when routing close to both ends of a board, it is sometimes necessary to rout slots from right to left. If so, **use a slower feed rate and maintain constant pressure of the guidebush on the fence, because now the cutter rotation will tend to pull the router away from the fence**. ∎