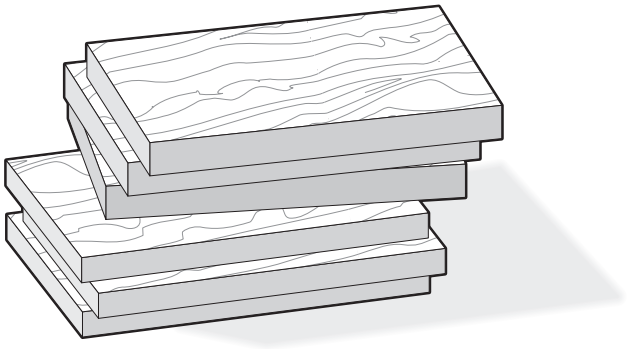
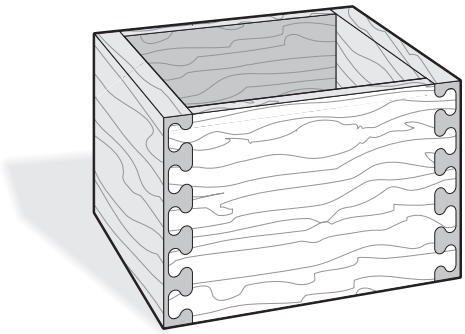
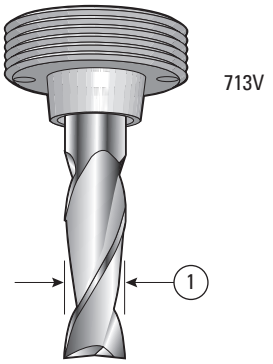
Half-Blind Isoloc Joint Procedures



6-1 Always use scrap boards to practice and test for fit. Rip the boards to width to suit the chosen template. The pin boards should not be less than ¾"[19mm] thick. For this test, make the socket boards ⅜"[10mm] to ½"[12mm] thick.
Joint specifications are in Appendix II.

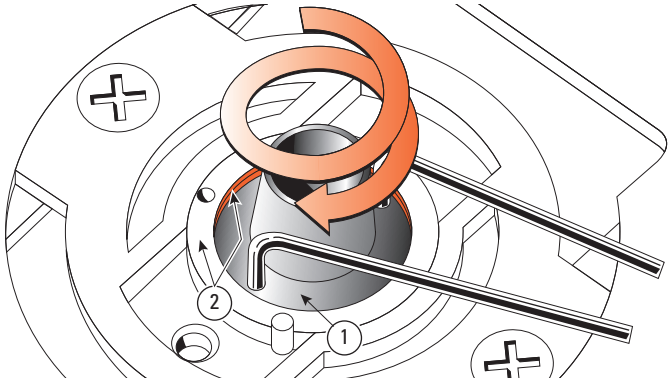


6-2 Let's rout a flush Isoloc joint. **These generic instructions are the same for any of the patterns.** The illustrations always show the left-hand side of the jig, which is where every Isoloc joint is started. Rout only single corners to adjust the joint fit.
Note: This chapter combines instruction for joint procedures and joint fit. It's a good idea to follow through step by step the first time, but there is also a "quick fit test" method in Chapter 11, Figs 11-11 to 11-15.

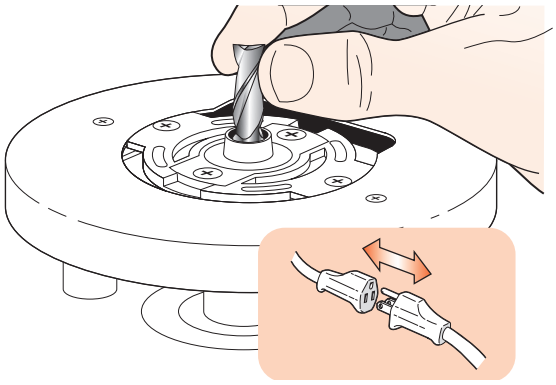


6-3 Guidebush and Bit Selection

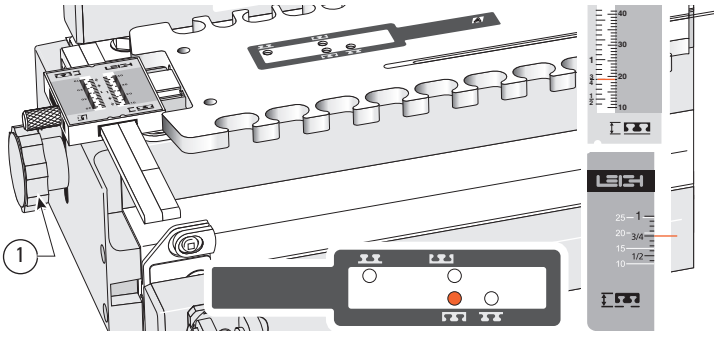
This is really easy!
Use only the 713V guidebush and either a Leigh No.170 or 170C (5/16"), or an 8mm diameter straight bit ①. **Spiral upcut bits** are much preferred for cleanly routed Isoloc joints. We also recommend solid carbide for stiffness and long life.



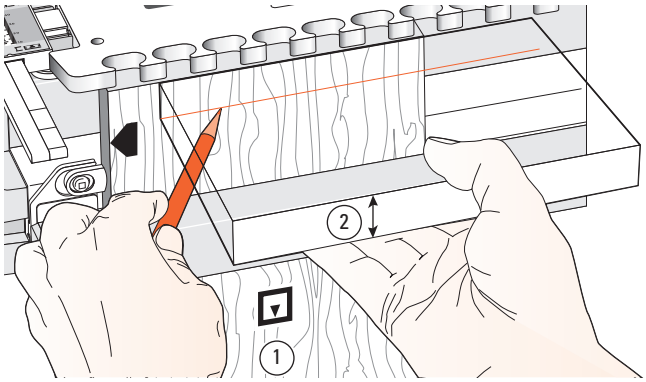
6-4 Always start test routing with the bush flange ① turned one to one-and-a-half turns farther into the holder flange ②.
Note: Some guide bush adaptors may already be set up into the router base. If so, the test could be started with the bush flange flush with the holder flange.



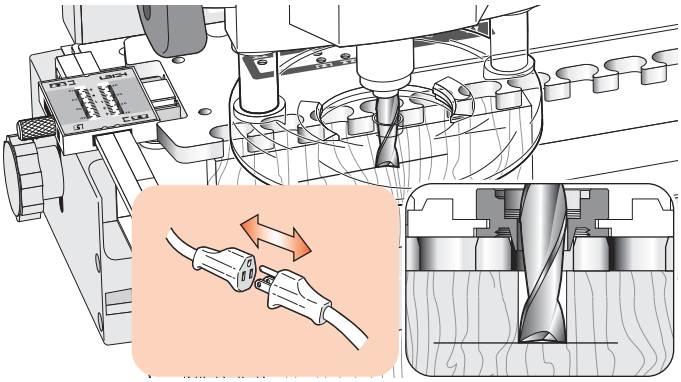
6-5 Fit the 5⁄16" or 8mm bit to the router and tighten securely. If you don't have an 8mm collet you will need an 8mm collet reducer (Leigh part No. 172-8) in your ½"[12.7mm] collet.



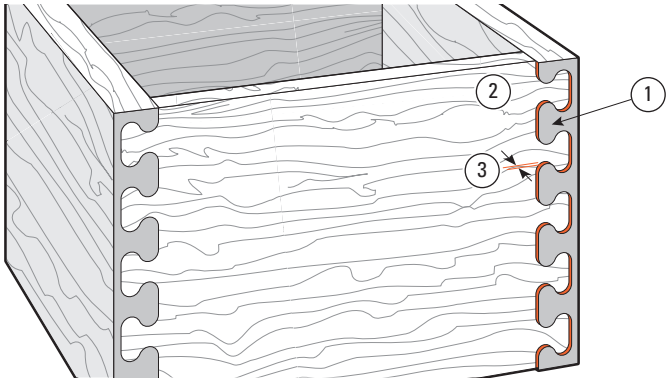
6-6 With the selected Isoloc pattern to the front, set the scales **to your vertical pin board thickness**. This is the only scale setting used. This example is shown on ¾"[19mm]. Your pin board and scale setting may be greater. Lower the template onto the spacer board and tighten the support bracket knobs ①. Position the template with the template pin in the ⊓ position at the right hand end of the template. *Remember, the template pin is always positioned at the right end of the template, except when routing the right side of wide boards.*



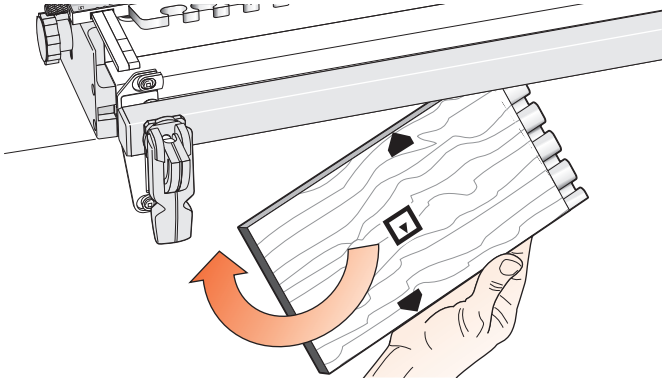
6-7 Clamp the pin board ① against the left side stop, with the end edge flush under the template. The board must be clamped with the inside face ⊡ away from the jig. Mark and adjust the depth of cut to suit the thickness of the socket board. Use the socket board ② to mark the depth of cut.



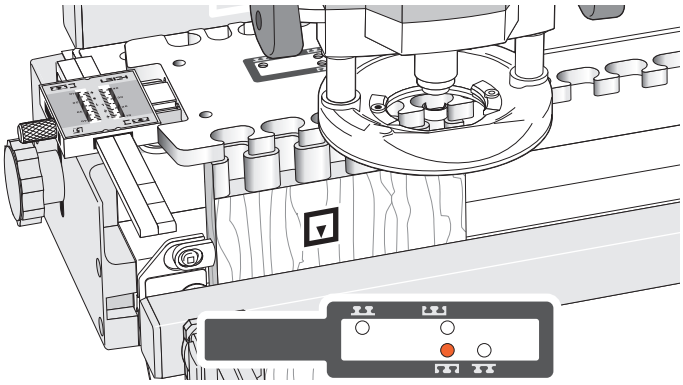
6-8 Adjust the bit to cut down to the centre of the pencil line. Make sure the collet will not rub on the guidebush.



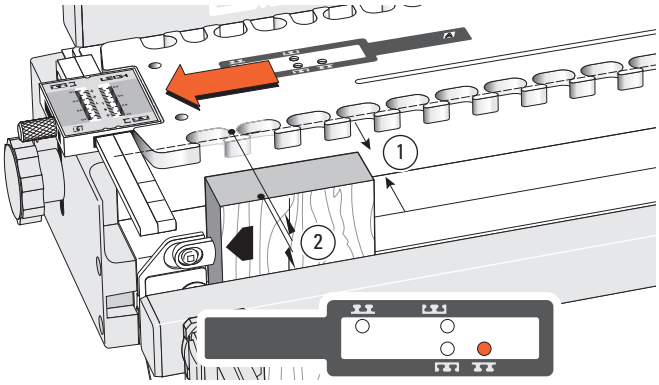
6-9 You want the pins ① to come through the socket board ② by a maximum of 1⁄64"[.40mm] ③ for cleanup later, just like half-blind dovetails. Setting the bit to the pencil centreline should ensure this.



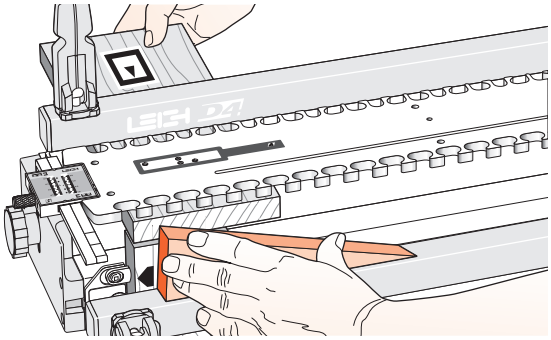
6-10 The inside surfaces of all boards used for making Isoloc corner joints always face away from the jig body ⊡ just like half-blind dovetail boards on the dovetail jig. So alternate side edges go against the side stop and **joining boards must all be exactly the same width.**



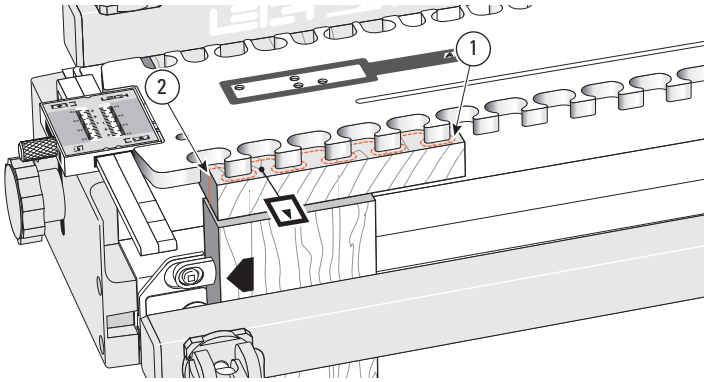
6-11 See Chapter 12 Routing Procedures Hints & Tips. Rout one end of a scrap pin board. Make sure to touch the guide-bush continuously on the sides of each template opening.



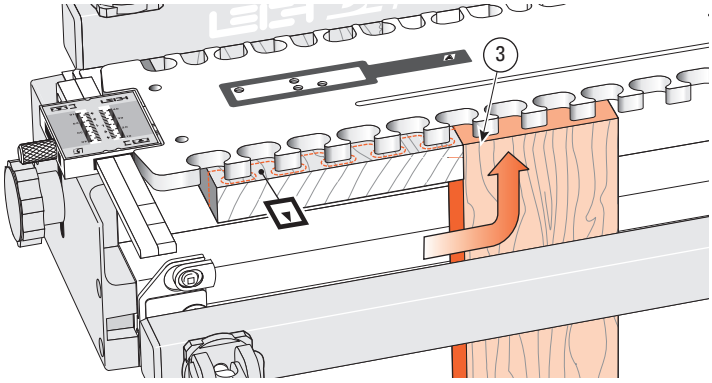
6-12 Remove the test pin board and insert the template pin in the hole. Do not change any other setting. Clamp a scrap board of **exactly the same thickness as the pin board** ① in the front clamp, with the top end edge slightly below the top surface of the jig body ②. **Leave the scale setting the same as for pin boards.**



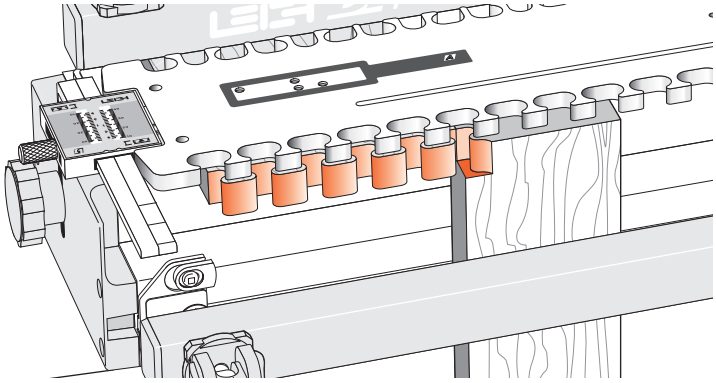
6-13 Remove the spacer board and clamp a test socket board horizontally in the rear clamp, inside face ▽ of the board facing away from the jig body and the **end edge flush with the outer edge of the vertical scrap board.** Lower the template flush and level onto the socket board.
⚠**Tear-out Warning! Don't rout this board before reading the next two paragraphs** and 11-5 through 11-10, Routing Technique for Sockets.



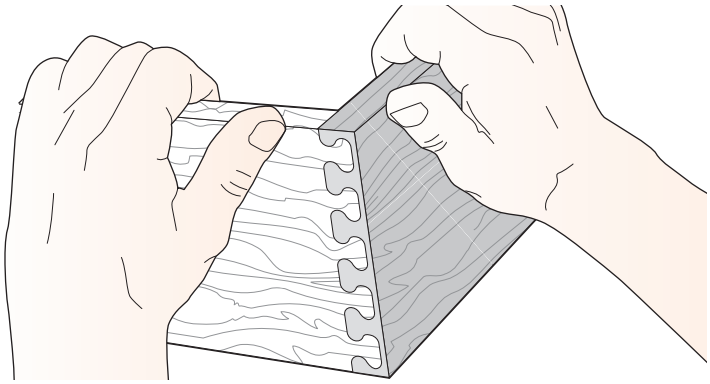
6-14 If you rout this horizontal socket board in the conventional way you may tear away the right hand board edge ①, although some woods will rout quite cleanly.
The edge at ② may cause the router to pull itself quickly into the template comb, **so good router control is important**.



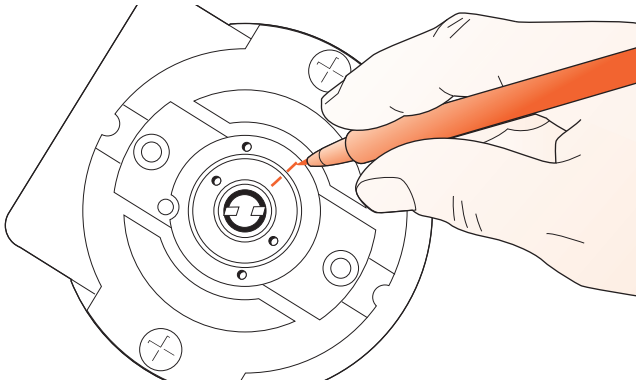
6-15 If necessary, the best way to avoid the right-edge tearout problem is to clamp the front scrap ③ against the right side edge of the board. Simply clamp it under the front clamp bar, making sure it's firmly against the right edge of the socket board. By rotating and flipping its position, one scrap will be good for 4 cuts.



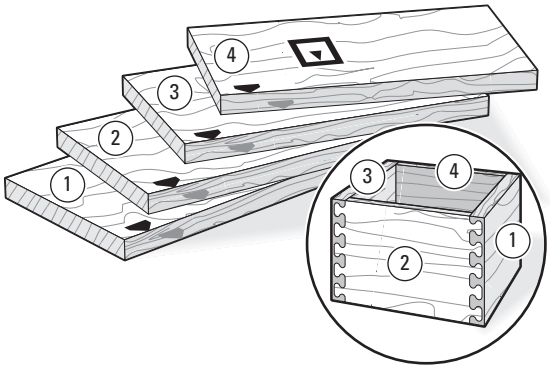
6-16 Rout one end of the socket board, with the inside face ▽ away from the jig body.
See Chapter 11, Routing Procedures Hints and Tips.



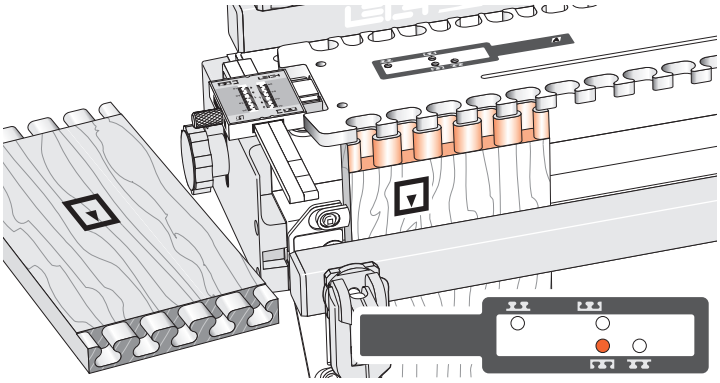
6-17 Test the two boards for fit. Adjust the height of the variable guide-bush by trial and error and rout more pairs of test boards to achieve the desired fit. **Remember, lower the variable bush (out of the base) for a tighter joint and raise the variable bush (into the base) for a looser joint.** The fit should be a firm sliding fit, just like dovetails and box joints.
Note: For a "quick-fit test" method, see Chapter 11, Figs 11-11 to 11-14 .



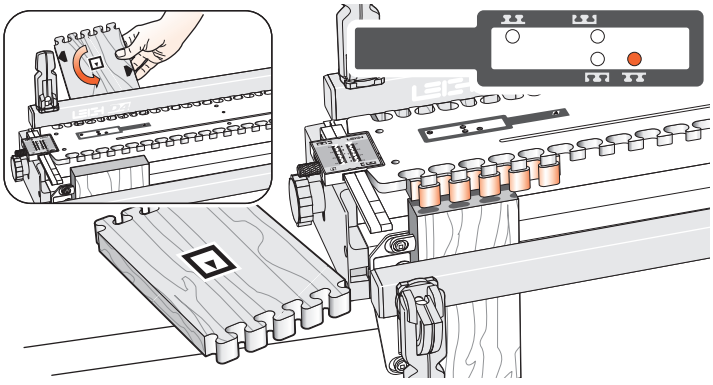
6-18 When the fit is just right, mark the bush and holder with permanent ink for future reference.



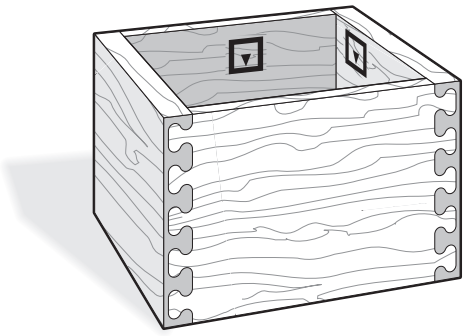
6-19 Let's make a box.
Prepare four boards and mark the selected inside faces. The opposite sides of the box must of course be equal lengths.



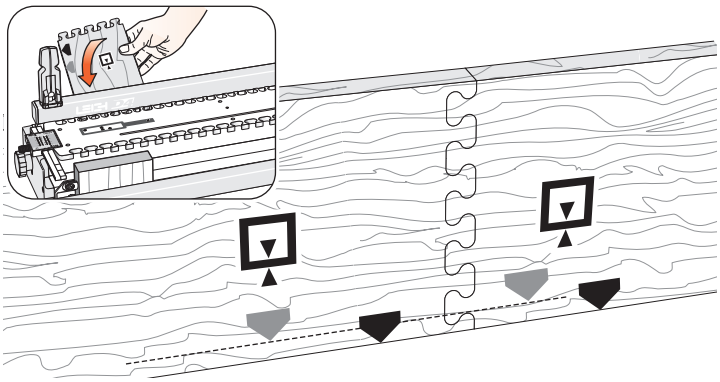
6-20 Rout both ends of pin boards 1 and 3 in template position .

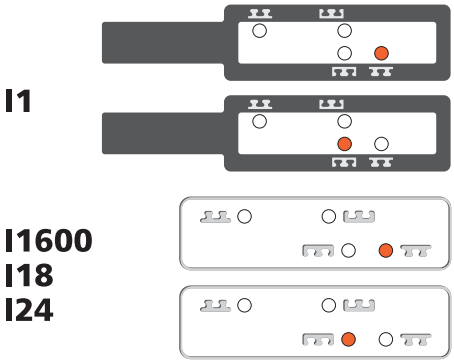


6-21 Rout both ends of socket boards 2 and 4 in position .



6-22 Assemble in the usual way. You may need to clamp in both directions when gluing up. Check for squareness and correct as necessary when clamping.



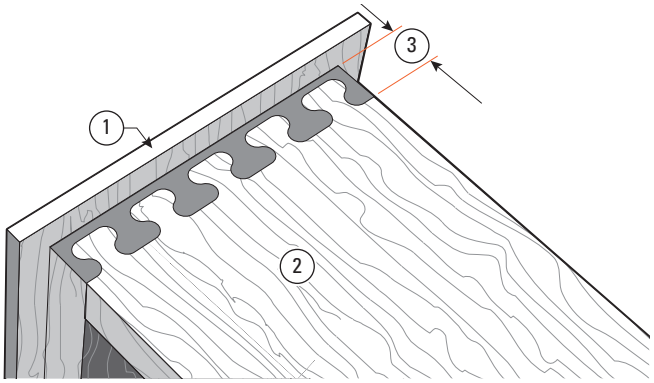


6–23 End-on-End Isoloc Joints

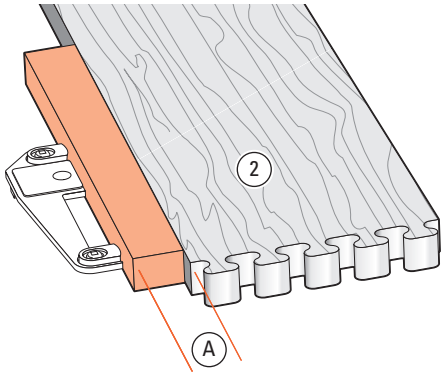
These are routed exactly the same way as the socket boards in the previous instruction, **except that you must keep the same side edges against the side stop and alternate face side up/face side down**.

6–24 Rout half the end-on-end boards at the setting and the other half at the setting. ■

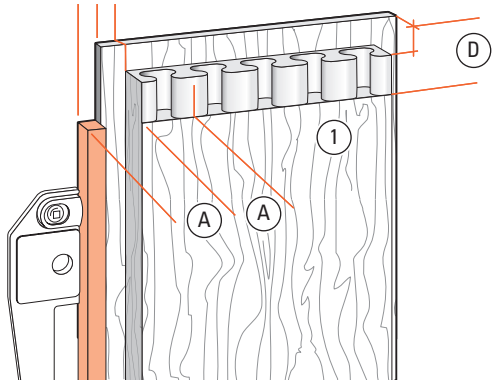
Rabbeted Half-Blind Isoloc Joint Procedures



7-1 Rabbeted drawer fronts ① and the mating sides ② have to be blocked away from the side stops. Dimension ③ must be minimum 11⁄16"[17,5mm].
Note: The 16" Leigh jig's thickness capacity is 1" maximum.



7-2 Block drawer sides ② away from the side stops by one complete pattern pitch A.



7-3 Block the drawer front ① away from the side stop by B which is pattern pitch A minus rabbet width C. Adjust bit depth to D (rabbet plus drawer side thickness). ■

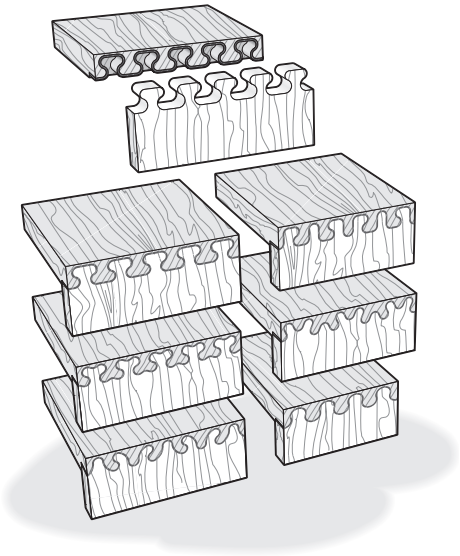
ISOLOC - CHAPTER 8

Inlaid Half-Blind Isoloc Joint Procedures

It's hard to describe Isoloc joints as plain, but all plain Isoloc joints are routed with a single bit; either 5/16" or 8mm diameter, as described in the previous chapters.

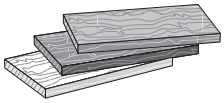
However, by using two different sized bits (1/4" and 3/8", or 6mm and 10mm), an even more unique effect can be produced: inlaid Isoloc joints.

Isoloc Patterns

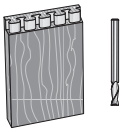


Cutting Inlaid Isoloc Joints

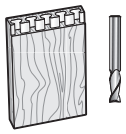
Use 2 bits and
1 guidebush



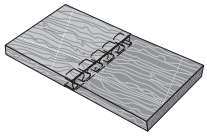
1 Pin board
1 Inlay board
1 Socket board



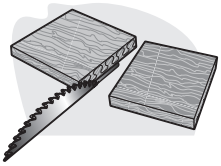
Rout Inlay board vertically with small cutter.



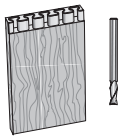
Rout Pin board vertically with large cutter.



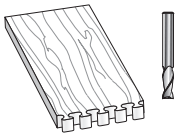
Glue Pin and Inlay boards end-to-end.



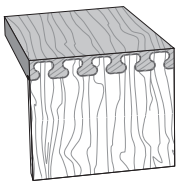
Saw Inlay board off flush with Pin Board.



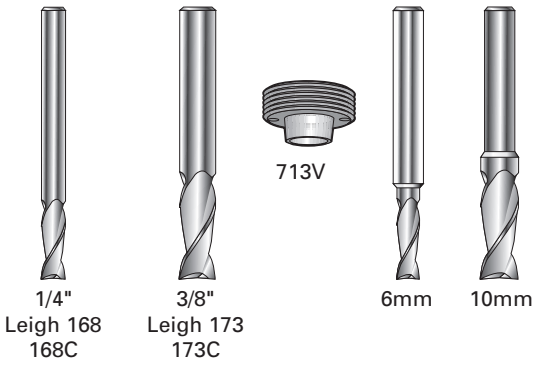
Re-rout inlaid Pin board in original position with small cutter.



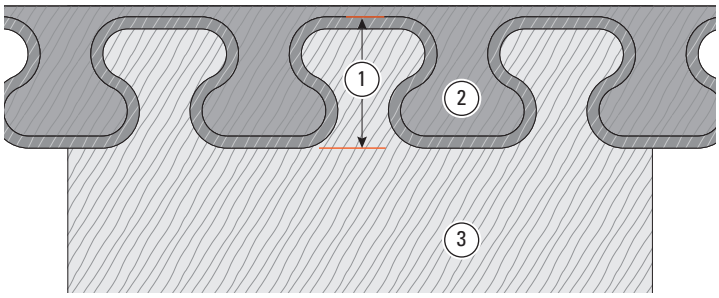
Rout Socket board horizontally with large cutter.



Glue and assemble in usual way.



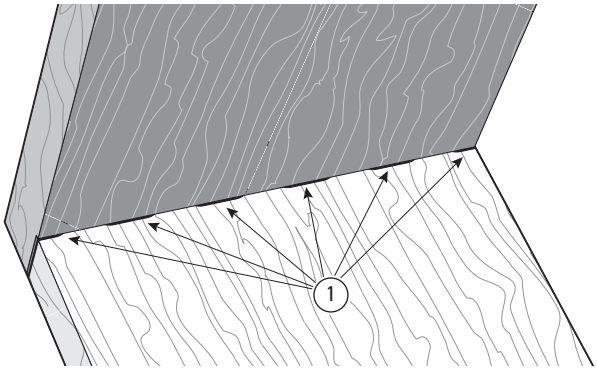
8-1 Inlaid Isoloc joints require two bits, either a ¼" with ⅜", or 6mm with 10mm. Only one variable bush (713V) is used.



8-2 The dark inlay boards should be ¾"[19mm] thick ①. Any thinner may leave flat spots; any thicker wastes wood. *(exceptions see 8-19 and 8-20)*

However, scale settings will be set on 1/32"[1mm] less than inlay board thickness (see 8-5).

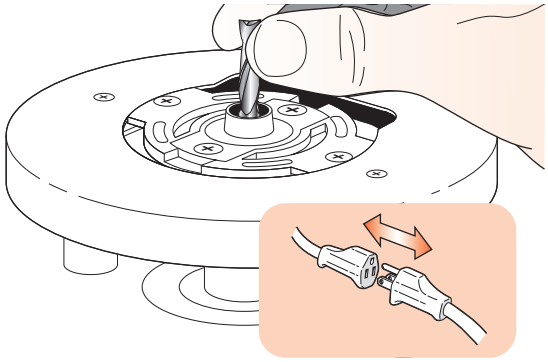
② is the Pin Board. ③ is the Socket Board.



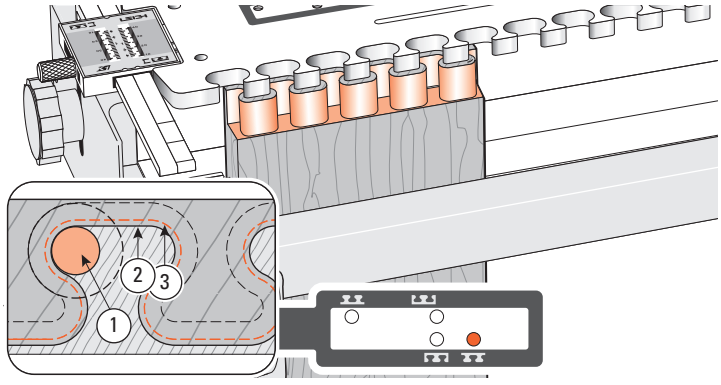
8-3 Inside Corner Exposed

Pin board material must be at least 13/16"[21mm] thick to ensure the inlay does not show inside the finished corner, as it does in this illustration ①.

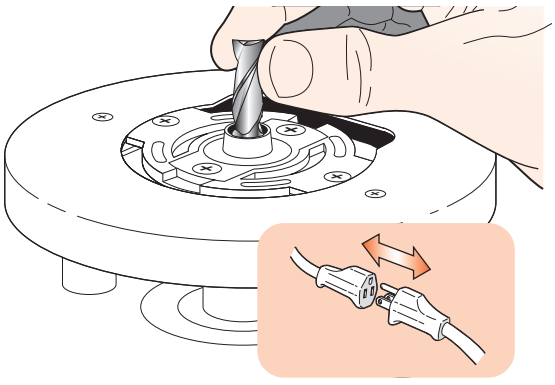
However, scale settings will be set on 1/16"[2mm] less than pin board thickness (see 8-7).



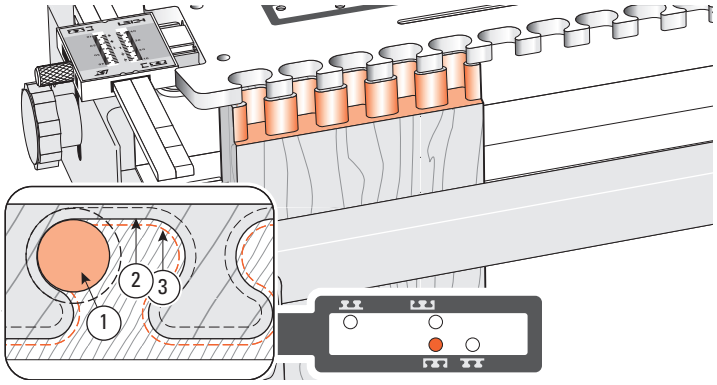
8-4 Set Up for Joint Fit This joint fit test is similar to the quick-fit test at 11-11 to 11-14, except two sizes of bit are used and test cuts are made on **two** vertical boards to join end-to-end. Depth of cut is not critical for testing. Best use the same wood species as the final project. For instructional clarity, we show a *medium* coloured pin board, *dark* inlay board, and *white* socket board. Start with the smaller bit in the router.



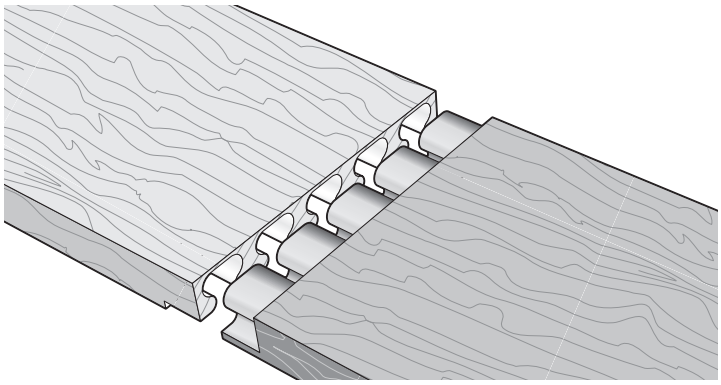
8-5 Move the template to the socket position . Set the scale on 1/32"[1mm] **less than the inlay board thickness.**
Rout the inlay board using the smaller bit ①. You will be removing 1/32"[1mm] ② **less** wood than with a "plain" ③ Isoloc joint.



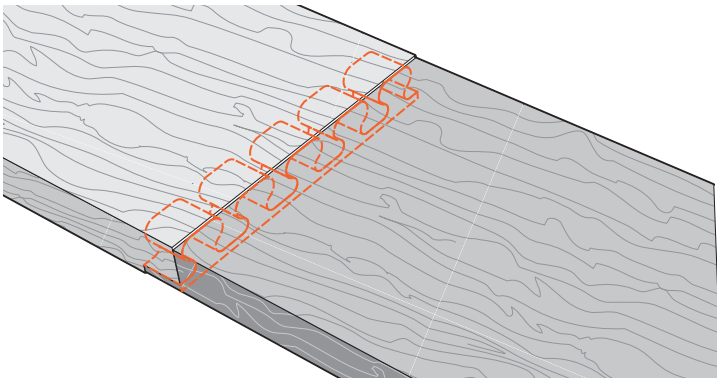
8-6 Fit the larger bit to the router.



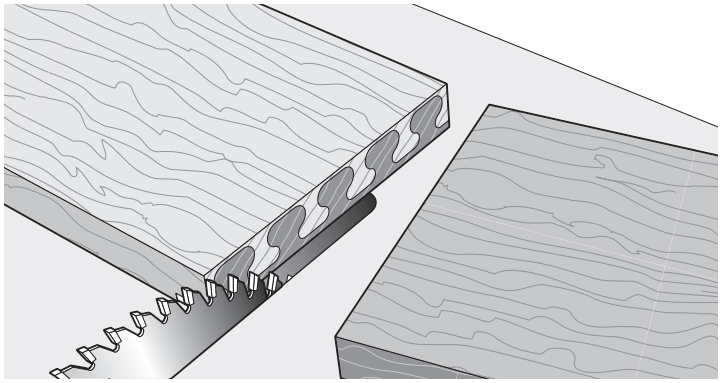
8-7 Move the template to the pin position . Set the scale on 1/16"[2mm] **less than the pin board thickness**. See step 8-2.
⚠**Do not change the scale setting on any of the following steps. This will ensure an even inlay band thickness on the finished joint.**
Rout the pin board using the larger bit ①. You will be removing 1/32"[1mm] ② **more** wood than with a "plain" ③ Isoloc joint.



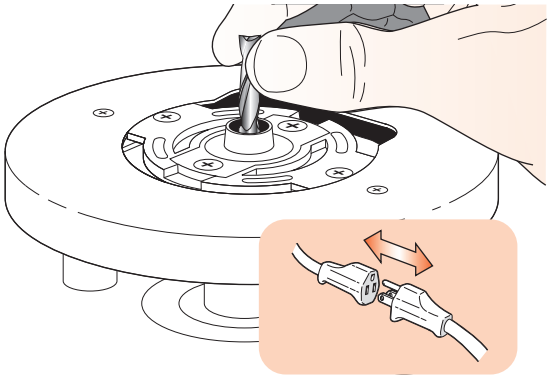
8-8 Test the fit end-on-end between the pin board and inlay board. Make any necessary VGS adjustments to achieve the desired fit (*See Chapter 4*) and if necessary, repeat steps 8-4 through 8-7.



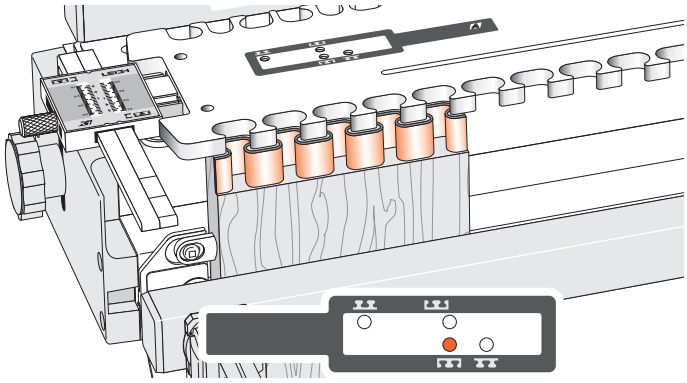
8-9 Having tested with scrap boards, now rout the working boards.
⚠**The depth of cut must be set to match the final socket board thickness.**
Leave the scale setting exactly where it is.
Glue each inlay board to its pin board end-to-end.



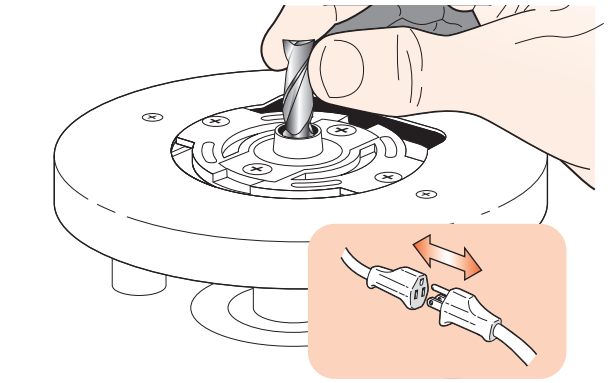
8-10 When the glue is set, saw off the inlay boards flush with the end of the pin boards. ⚠You will be using two or more species of wood with differing grains and moisture contents. Do not delay the second routing of the inlaid pin boards. Any delay here could allow shrinkage and cause uneven inlay "strip" thickness in the final assembly. *See 8-17.*



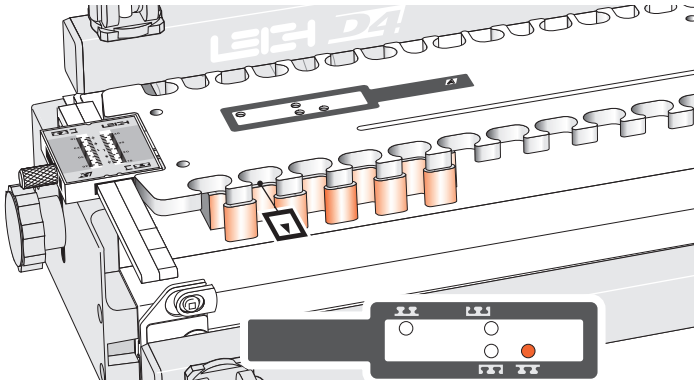
8-11 Re-fit the smaller bit to the router.
Note: For half-thickness inlays see 8-15.



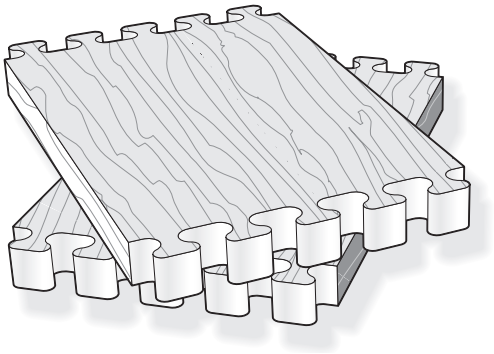
8-12 Move the template to the pin position . Reset the pin boards back in the jig, touching the side stop. Make sure the smaller bit is in the router. **The scale settings and cutting depth must be exactly as they were for the original pinboard cuts. Now rout all the pin ends using the smaller bit.**
This leaves the 1/16"[2mm] inlay attached to the pins.



8-13 Re-fit the larger bit to the router.



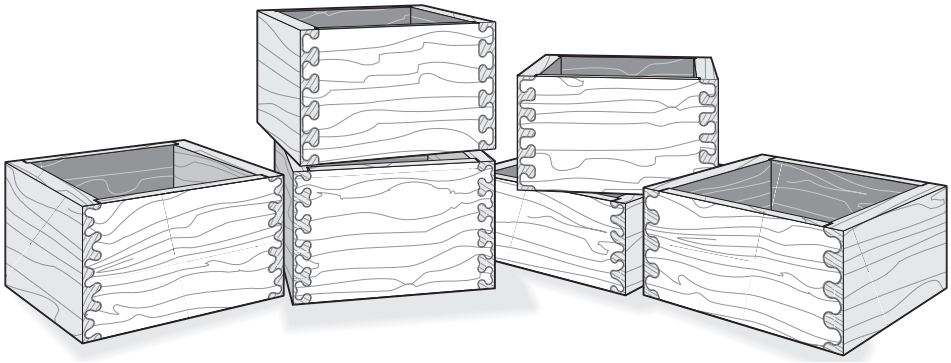
8-14 Move the template to socket position .
Wood routed horizontally may behave differently from vertical grain, so rout a test socket board using the larger bit. Use the same wood species as the final project board. Test and adjust the final fit if necessary. If any VGS adjustment is needed, it will be very small.



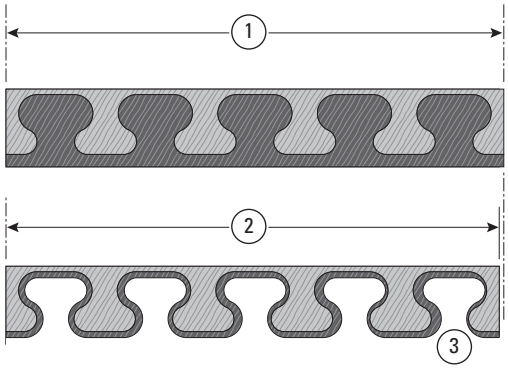
8-15 When the fit is satisfactory, rout all socket boards with the larger bit.

Half -Thickness Inlays

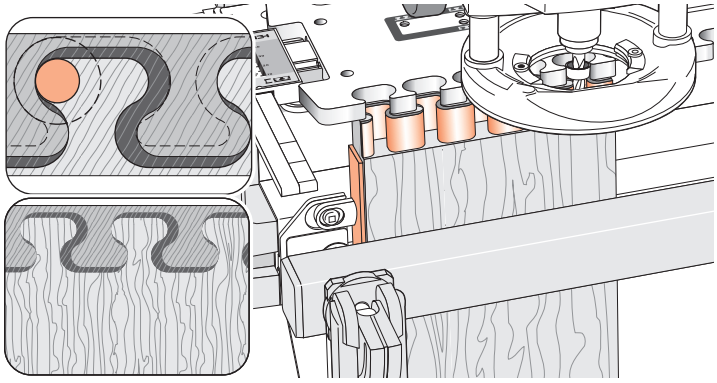
It's just as easy to make inlays half the thickness. *If you use a 5⁄16"[8mm] bit through steps 8-11 to 8-14 the inlay strip would be only half as thick i.e. 1⁄32"[1mm].*



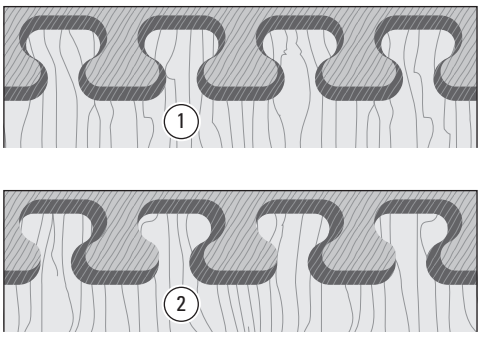
8-16 Glue, assemble, and finish in the usual way.
⚠To avoid shrinkage problems noted earlier, do not delay between routing parts and gluing up, particularly on wide boards. See below.



8-17 This is how the shrinkage of an inlaid board can cause uneven inlay thickness. The original pin board and inlay wood ① glued together and put aside may contract across the grain ②. The template does not change size, so the difference to inlay thickness is progressively greater as the router moves to the right ③.

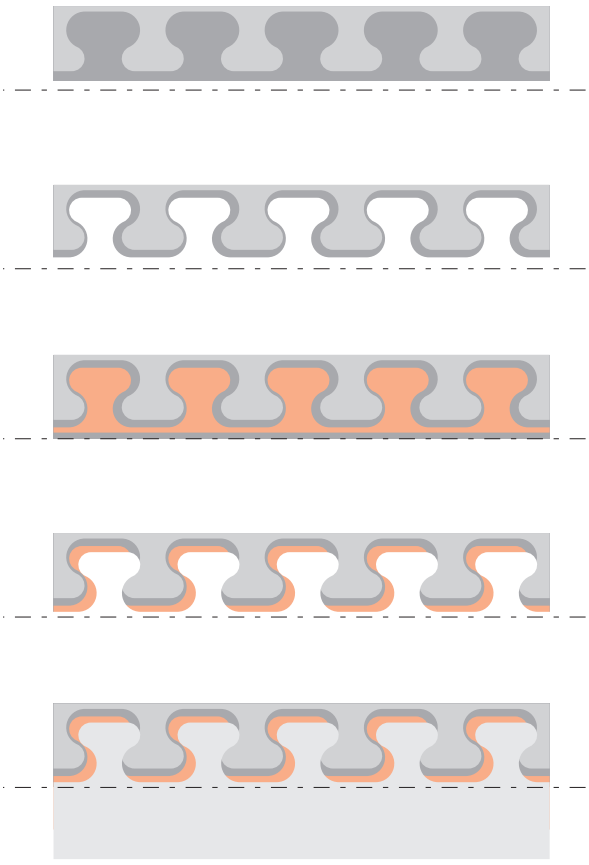


8-18 "Shadow" Inlaid Joints
Imagine you deliberately offset the inlaid pin board in the jig; for example, you blocked it away from the side stop by 1⁄16"[2mm], as shown here. This will produce spectacular shadow effects.
Make sure you also block the socket board away by the same distance to ensure board alignment



8-19 You can also use a different scale setting for a shadow effect. Example ① shows the result of a 1/16"[2mm] higher scale setting.

Combining blocking and offset scale settings results in effects similar to ②.
Make sure your inlay and pin boards have sufficient thickness for this, as indicated by the dotted lines on illustration 8-20.



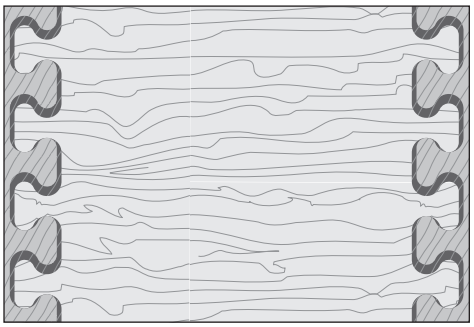
8-20 For even more spectacular "double inlay" effects, try this: After gluing the first inlay material...

...offset and re-rout the inlaid pin board with the small bit.

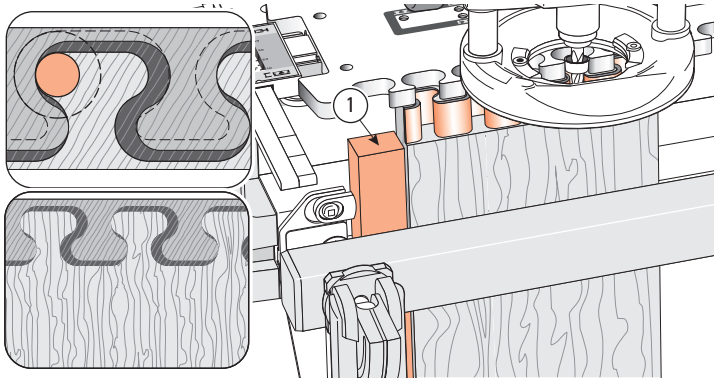
Now rout a second, contrasting inlay board, **but with the large bit.** Glue this into the inlaid pin board and saw off as before.

Offset and re-rout this double-inlaid pin board with the small bit.

Rout the final socket board with the large bit, glue and assemble.
The potential range of effects is limitless.
Have fun!



8-21 "Shadow" Joint Symmetry
Here's how to make the shadow joint on the other end of the socket board match.



8-22 You cannot move pieces to the left of the side stop, so use a spacer block ① equal to one whole joint pattern pitch, **minus** the desired offset. In our example, we made the spacer block one pitch minus 1/16"[2mm]. This will give the matching side to side result shown in 8-18 and 8-21.
Note: Also see Chapter 10 on joint symmetry and asymmetry. ■