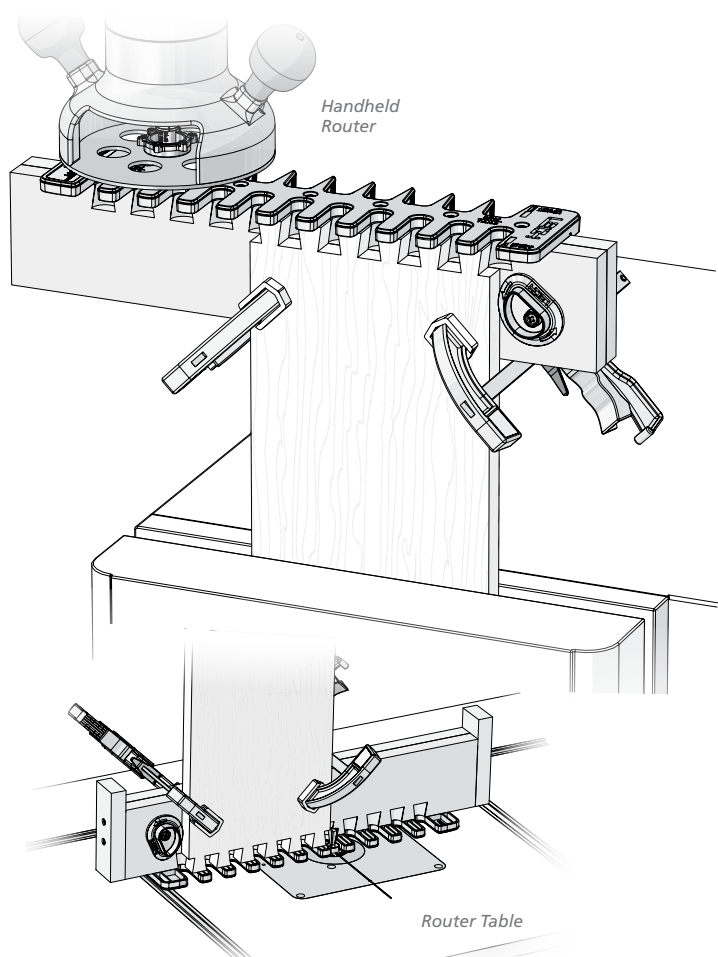


Leigh Through Dovetail Jig

Model TD330

User Guide

For Handheld Router or Router Table Use



See page 83 for customer support

1-800-267-8761

LEIGH Leightools.com

Watch the Online Instructional Videos
in the Support Section at leightools.com



Contents

Chapter 1	Introduction	5
	What's Included	5
	Jig Diagram	6
	Units of Measure	7
	Bit Specifications	7
	Clamping	8
	Marking the Boards	8
Chapter 2	Safety	9
Chapter 3	The Leigh eBush	13
Chapter 4	Mounting & Assembly	19
Chapter 5	Wood Preparation	31
Chapter 6	Through Dovetails with a Handheld Router	33
	Clamping Narrow Boards	55
Chapter 7	Through Dovetails on a Router Table	59
	Clamping Narrow Boards	80
Chapter 8	Guide Bushing Adaptor Selection	81
Chapter 9	Customer Support	83

Instructional Videos Available at leightools.com

Click on the Support tab and go to the Instructional Videos and User Guide page.

Your New Leigh Through Dovetail Jig, Model TD330

The Leigh Through Dovetail Jig, Model TD330, is a simple, easy to use tool for making through dovetails on boards up to 13/16" [21mm] thick, and from 1-1/4" [32mm] to 12-7/8" [327mm] wide.

Customer Support

If you have any questions that are not answered in this user guide, please call Leigh Customer Support: 1-800-267-8761 in North America or email: customerservice@leevalley.com. For support contacts in your country of purchase, see Customer Support at the end of this Guide.

Reminder: If at first you don't succeed, read the instructions!

Register your Leigh TD330

Here's Why!

- Industry leading 5 year warranty
- Save \$\$ with Special Deals
- Learn new ways to use your jig
- Learn about new woodworking innovations

Register Today – It's Easy



Go to leightools.com
Click on Support
Click on Register Your Product

PRIVACY POLICY

Leigh will NEVER rent, sell or distribute your information.

5 Year Warranty

Leigh stands behind its products with a 5 year limited warranty, the best in the business. See the complete warranty in Chapter 8, Customer Support.



Satisfaction Guarantee

Products purchased directly from Leigh carry a 90-day Customer Satisfaction Guarantee. Those purchased from an authorized Leigh dealer may also carry a Customer Satisfaction Guarantee; see your Leigh dealer for details. Proof of purchase is required.



Learn Faster with Instructional Videos!



Watching the online video in addition to reading this user guide will reduce your learning time dramatically. Stream or download the complete video or individual chapter videos to your smart phone or tablet and use in your shop as a visual reference. Visit leightools.com and find the video in the Support section.



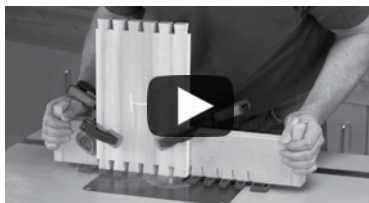
Introduction Video



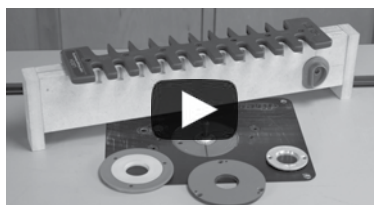
Through Dovetails with a Handheld Router Video



Router Requirements Video



Through Dovetails on a Router Table Video



Router Table Requirements Video

TD330 User Guide

CHAPTER 1 Introduction

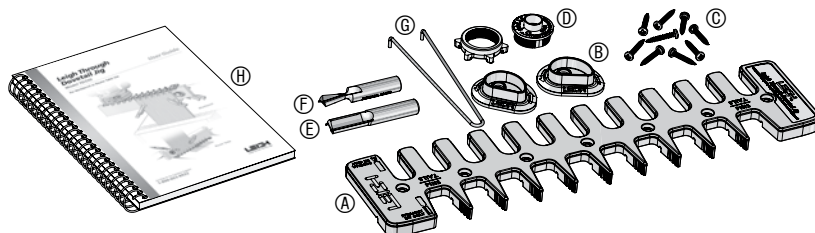


Watch the Online Instructional Video



Scan QR Code

Reduce your learning time dramatically! Stream to your smart phone or tablet to use in your workshop while you're working. See Instructional Videos section in Support menu at leightools.com or scan QR code for instant video.



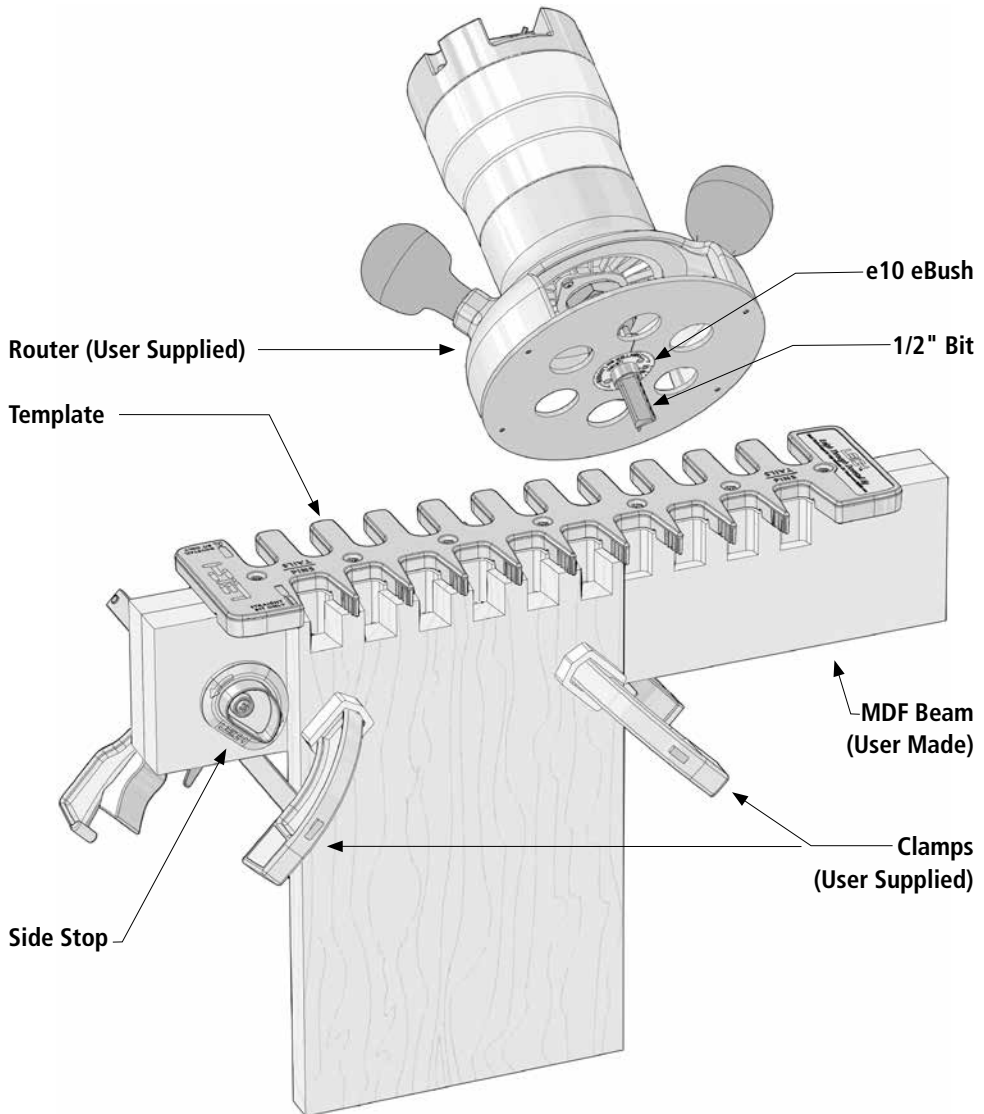
What's Included

	PART DESCRIPTION	PART NO.	QUANTITY
	(A) Jig Template with Decal	125128	1
Bag 1	(B) Side Stops	125110	2
Bag 2	(C) Phillips Pan Head Wood Screws, No.8 x 1"	313585	9
	(D) Guide Bushing, e10* eBush	e10	1
	(E) Straight Bit, Carbide Tipped, 1/2"	160	1
	(F) Dovetail Bit, Carbide Tipped, 1/2", 8°	80-500	1
	(G) Pin Wrench	730V	1
Bag 3	(H) Fully Illustrated User Guide	125115	1

If any parts are missing from your jig, please notify your supplier or Leigh immediately. See Chapter 9, Customer Support.

* Leigh e10 Elliptical Guide Bushing: U.S. Patent no.8,256,475 UK Patent no.GB2443974 Canada Patent no.2,611,232

Leigh Through Dovetail Jig Model TD330



Units of Measure

IMPORTANT! INCHES AND MILLIMETERS

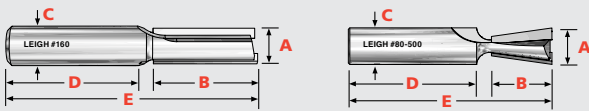
Text and illustrations in this English language user guide indicate dimensions in both inches and millimeters, where applicable, with “inches” first, followed by “millimeters” in square brackets, i.e. 1/2" x 2"[12,7mm x 51mm].

Don't be concerned that the inch/millimeter equivalents are not mathematically "correct".

Bit Specifications

There are two bits used with the TD330 Through Dovetail Jig. Your new jig is shipped with a 1/2" 2-flute, carbide tipped straight bit, and a 1/2" 8° carbide tipped 2-flute dovetail bit. You may also use a 1/2" spiral upcut bit in high speed steel or solid carbide.

Router requirements: The Leigh TD330 Through Dovetail Jig requires a router with a 1/2" collet.

Bit Specifications							
							
Leigh Bits	A Bit Diameter	B Max. Cutting Depth	C Shank Diameter	D Shank Length	E Overall Length	Use with Collet	Use with eBush
 160** Carbide Tipped	1/2"	1 1/4"	1/2"	1 3/4"	3 1/8"	1/2" Collet	e10
 80-500** Carbide Tipped	1/2"	13/16"	1/2"	1 3/4"	2 3/4"	1/2" Collet	e10
Optional Bits							
 180* High Speed Steel	1/2"	1 1/2"	1/2"	2"	3 1/2"	1/2" Collet	e10
 180C* Solid Carbide	1/2"	1 5/8"	1/2"	1 7/8"	3 1/2"	1/2" Collet	e10

* Optional spiral upcut bits rout cleaner and faster, leaving a smoother finish.

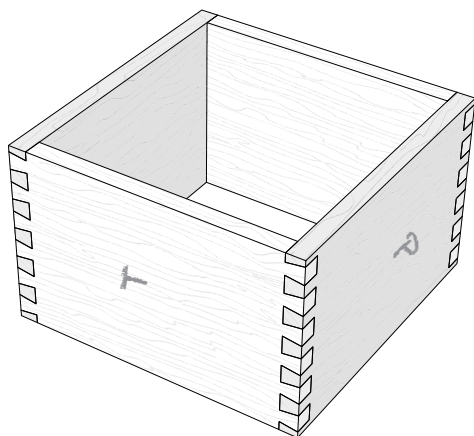
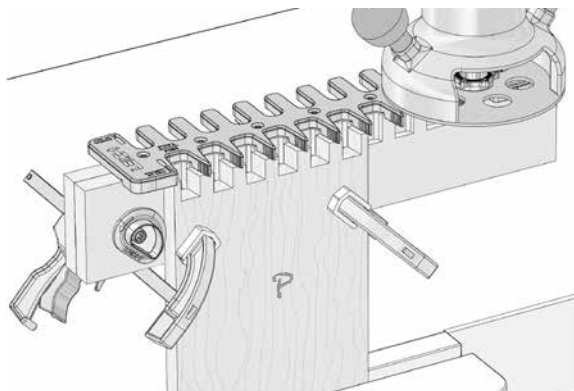
** The part number on the actual router bit is made up of the bit number and 3 letters, ie: Part no.160 XXX. These 3 letters are used for internal purposes only.

Clamping

The TD330 jig is clamped to the workpiece using two user supplied quick grip clamps, or similar.

Marking the Boards

Before mounting and routing the boards, mark them as follows. A “**P**” and a “**T**” are marked on the boards to indicate which is the pin board and which is the tail board. The marked face indicates it is an outside board and always faces away from the jig and outwards on the assembled box.



TD330 User Guide

CHAPTER 2 Safety



Watch the Online Instructional Video

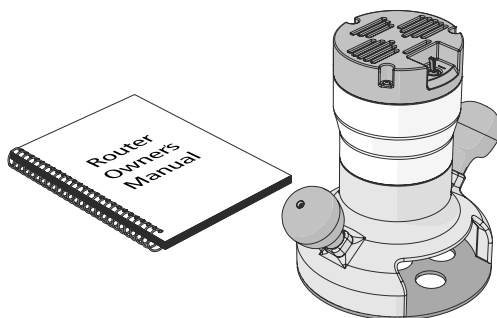


Scan QR Code

Reduce your learning time dramatically! Stream to your smart phone or tablet to use in your workshop while you're working. See Instructional Videos section in Support menu at leightools.com or **scan QR code for instant video.**

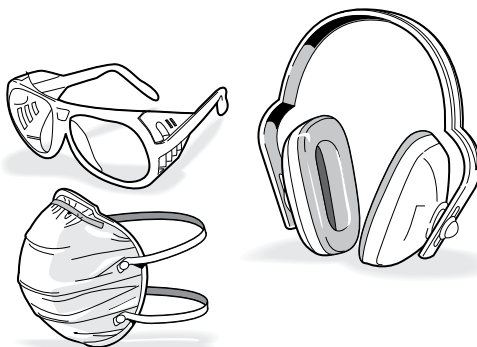
Safety is not optional. Read and follow the recommendations here.

Read the owner's manual that came with your router and router table. It is essential to understand all manufacturer's instructions completely.



⚠ Always wear:

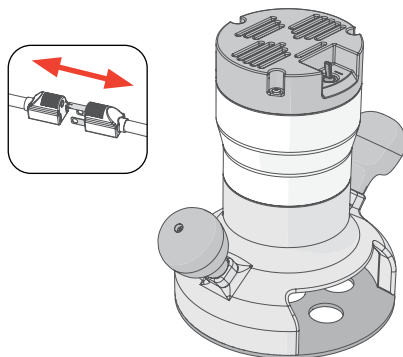
- Approved safety glasses;
- A face mask to protect yourself from harmful dust;
- Hearing protection.



⚠ Never drink alcohol or take medications that can cause drowsiness while operating a router.

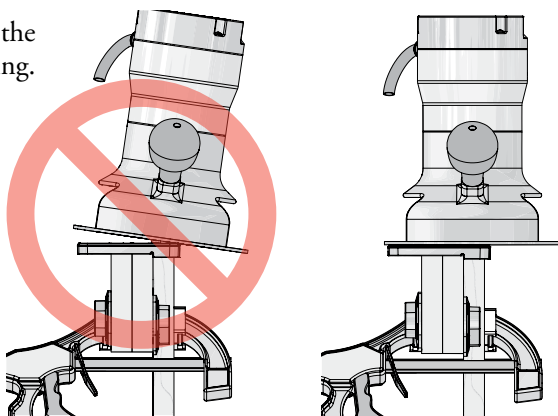


⚠ Always disconnect the power source before installing bits, guide bushings or making adjustments. Before reconnecting the router to the power source, make sure the bit and collet revolve freely with and without the guide bushing in place.



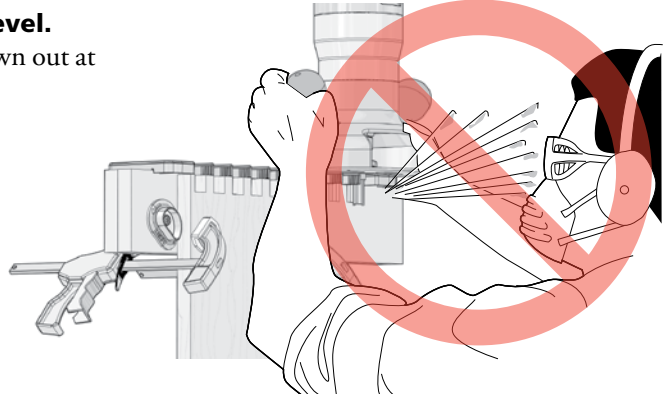
After routing, wait for the bit to come to a complete stop before removing the router from the jig.

⚠ Do not tilt the router. Keep the router flat on the jig during all routing.



⚠ Never rout at face level.

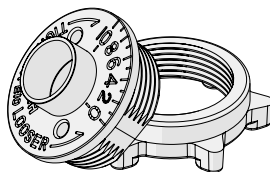
Chips and sawdust are thrown out at high speed. ■



This page is left blank intentionally.

TD330 User Guide

CHAPTER 3 The Leigh eBush



Note: The patented Leigh e10 elliptical guide bushing, fitted to your router, ensures a great fitting joint every time. This chapter describes how a simple turn of the e10 is all it takes to adjust joint fit.

Leigh e10 Elliptical Guide Bushing: U.S. Patent no. 8,256,475 UK Patent no. GB2443974 Canada Patent no. 2,611,232



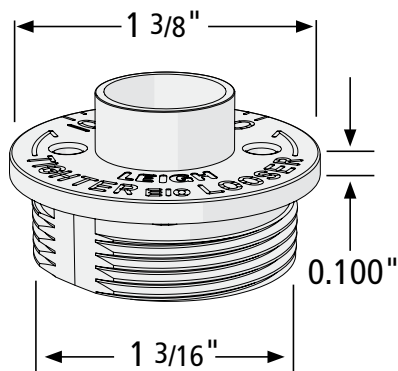
Watch the Online Instructional Video



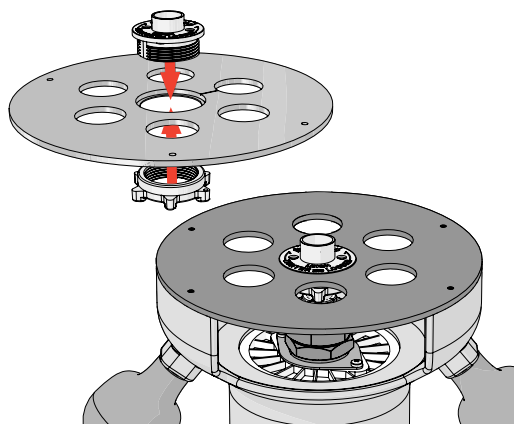
Scan QR Code

Reduce your learning time dramatically! Stream to your smart phone or tablet to use in your workshop while you're working. See Instructional Videos section in Support menu at leightools.com or scan QR code for instant video.

3-1 Watching the online video in addition to reading this user guide will reduce your learning time dramatically. The video can be streamed to your smart phone or tablet and used in your shop as a visual reference. Visit leightools.com and find the video in the Support section.

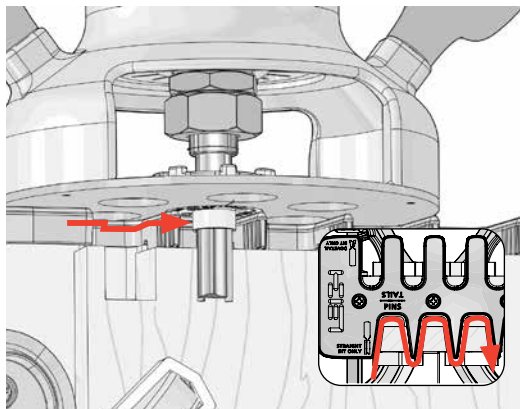


3-2 The Leigh eBush System is designed around the 1-3/8" industry standard. Some routers accept the Leigh eBush directly. Many routers require the use of a guide bushing adaptor. If your router requires an adaptor, please see Chapter 7, Guide Bushing Adaptor Selection, or visit leightools.com/guide-bushings-adaptors.

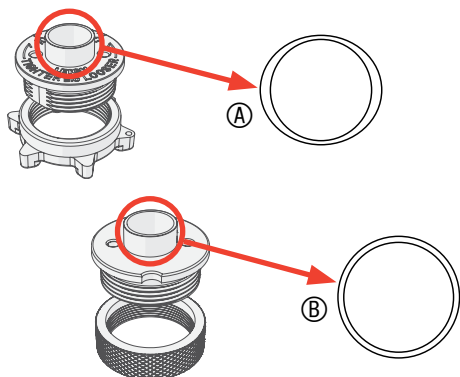


3-3 Routing on the TD330 requires a router fitted with the included e10 eBush.

The e10 is installed in the base of the router and the guide bushing retaining nut is screwed on from the inside of the router base. The lugs on the nut are placed away from the base as shown.

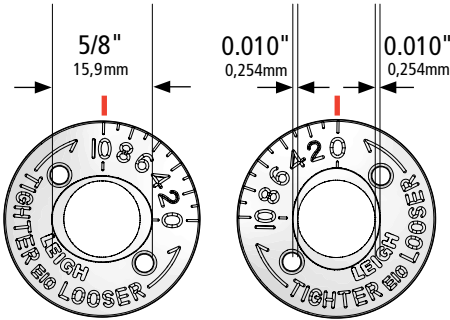


3-4 How a Guide Bushing Works The barrel of the guide bushing steers the router and the bits in and around the openings of the template.

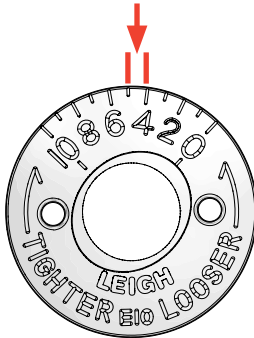


3-5 Joint Fit Adjustment The Leigh eBush barrel (A) is elliptical, unlike plain circular template guide bushings (B). When the e10 is rotated, the effective diameter of the barrel changes, allowing fit adjustments as small as 0.001" [0,025mm]. The e10 eBush is included with the jig.

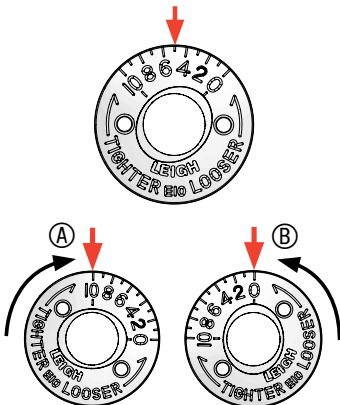
Note: The elliptical barrel of the e10 shown in these and the following diagrams is exaggerated for clarity.



3-6 The effective diameter of the e10 is 5/8" [15,9mm] at the 10 position. Rotating the eBush to the 0 position reduces the effective diameter by 0.020" [0,5mm].



3-7 One increment of the eBush changes the joint glue line by 0.002" [0,05mm]. Half an increment changes the fit by an incredible 0.001" [0,025mm]. A proper fit will be established with one or two test cuts.



3-8 Test routing always starts with the eBush set at 5 This allows adjustment for a tighter or looser fit. Turning the eBush toward the 10 position **A** results in a tighter fit. Turning the eBush toward the 0 position **B** results in a looser fit. **Be sure to retighten the eBush nut after each adjustment.**



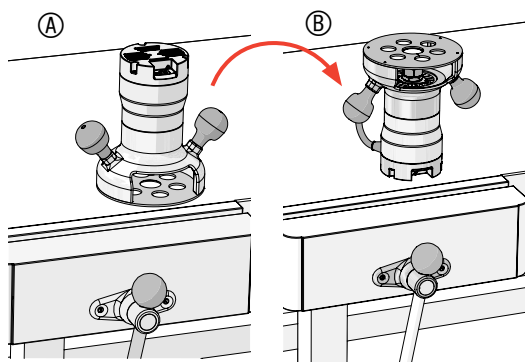
Feb 27, Maple
160 bit



May 5, Poplar
160 bit

EXAMPLE ONLY

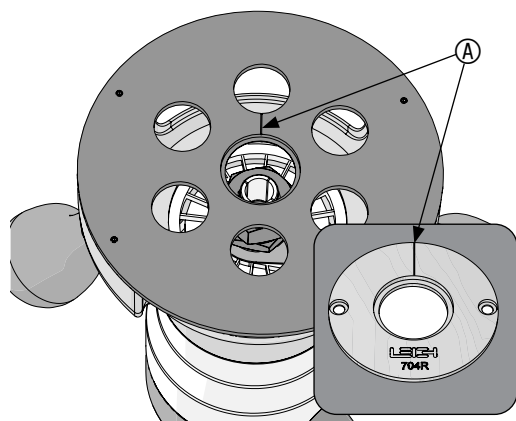
3-9 Each chapter provides a place to mark your established eBush setting, for easy repeatability the next time.



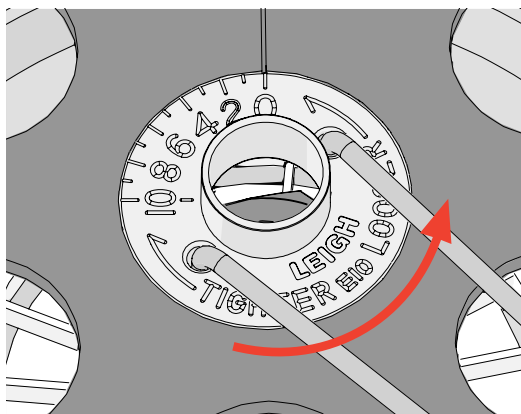
3-10 Fitting the eBush to the Router

Place the router on the workbench with the handles positioned the way you would normally hold them **A**.

Then turn the router upside down and place it on the workbench **B**, keeping the same face of the router toward you.



3-11 Make a small scratch line on the router base or eBush adaptor, at the 12 o'clock position. This will be a reference line for all eBush settings **A**.



3-12 Install the **e10-Bush** in the router base and use the pin wrench to align the 0 to the reference line. The 0 setting is only used for beam preparation in Chapter 4, Mounting & Assembly.

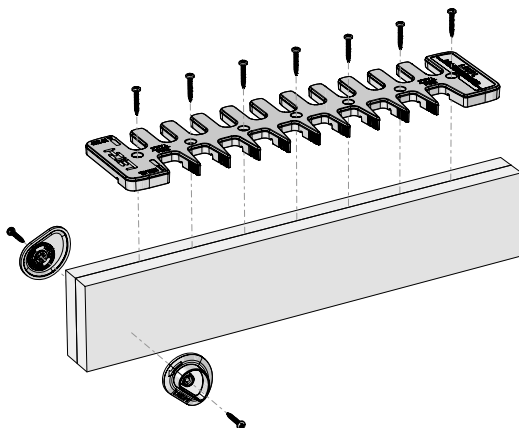
Be sure to retighten the eBush nut after each adjustment. ■

This page is left blank intentionally.

TD330 User Guide

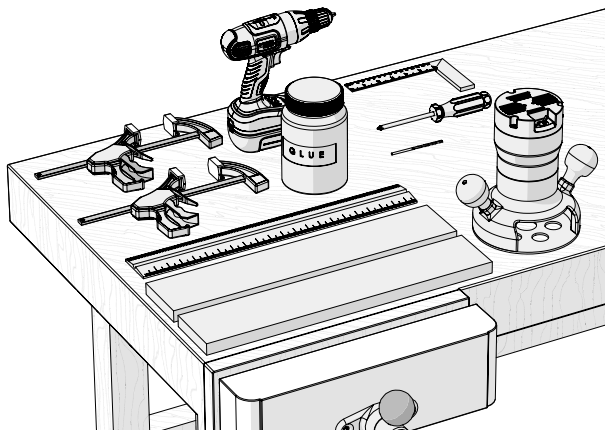
CHAPTER 4 Mounting & Assembly

The following steps will show you how to prepare the beam and assemble your Leigh TD330 Through Dovetail Jig.



You will need:

- A workbench with vice or a portable workbench
- 2 pieces of 3/4" [19mm] MDF to make a beam 1-1/2" x 3-1/2" x 19" [38mm x 90mm x 483mm]
- Router with 1/2" collet
- Electric drill, preferably bench or pedestal, but handheld will work
- 3/32" drill bit
- Two Quick-Grip clamps
- Square
- Ruler or tape measure
- No.2 Phillips screwdriver
- Wood glue



Note: The finished beam must be 1-1/2" [38mm] thick.



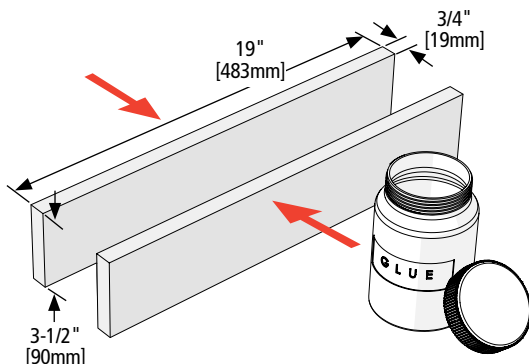
Watch the Online Instructional Video



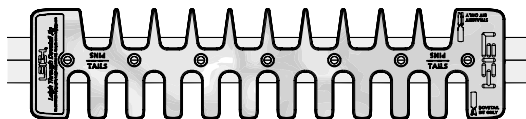
Scan QR Code

Reduce your learning time dramatically! Stream to your smart phone or tablet to use in your workshop while you're working. See Instructional Videos section in Support menu at leightools.com or scan QR code for instant video.

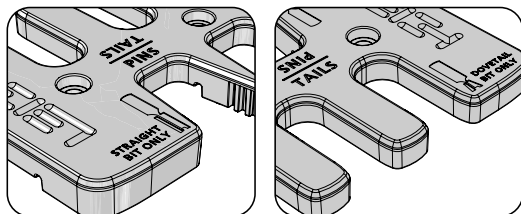
4-1 Watching the online video in addition to reading this user guide will reduce your learning time dramatically. The video can be streamed to your smart phone or tablet and used in your shop as a visual reference. Visit leightools.com and find the video in the Support section.



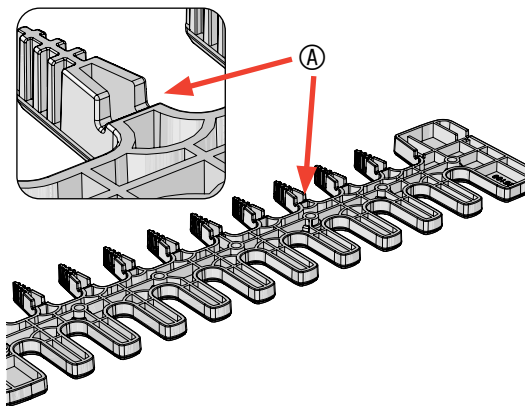
4-2 Making the Beam We recommend laminating two pieces of MDF: 3/4" [19mm] x 3-1/2" [90mm] x 19" [483mm]. Clamp the glued pieces together and set aside to dry. Be sure the top edges are flush and free of glue residue. Alternate materials may be used, eg, a common 2x4 in North America, however the finished thickness must be 1-1/2" [38mm]. See Step 4-14 for special instructions. If you are making dovetails using narrow boards, see Step 6-66.



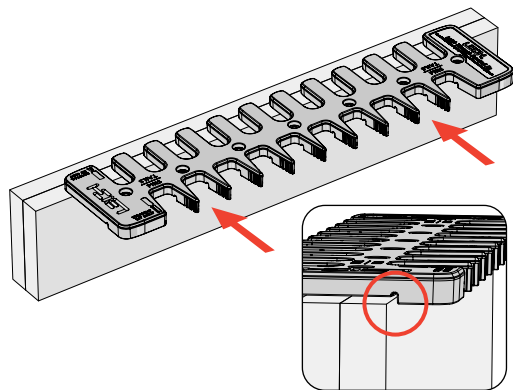
4-3 One side of the template is used for routing pins, and the other side for routing tails.



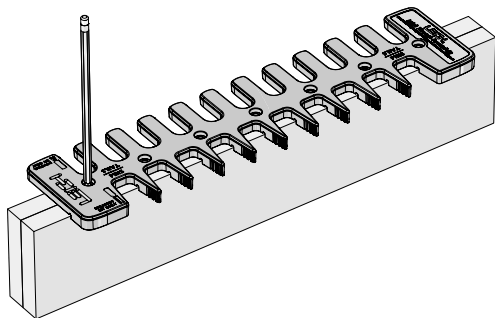
PINS and **TAILS** is clearly marked on the template, as well as which bit to use.



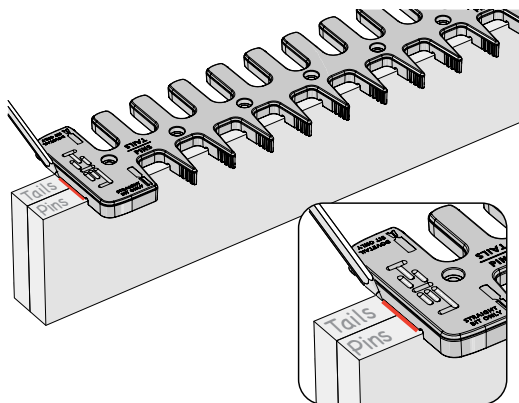
4-4 The **PINS** side of the template has positioning ridges (A) molded into the underside.



4-5 With the **PINS** side of the template facing you, lay it flat on the top of the beam and slide it backwards until the positioning ridges contact the edge of the beam. Center the template left to right. The template is now positioned correctly.

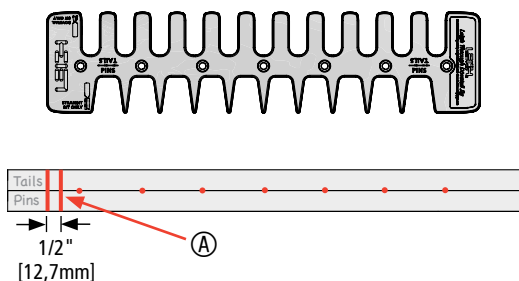


4-6 Use a pencil and mark the location of all screw holes on the top of the template. Hold the template in place and proceed to the next step.

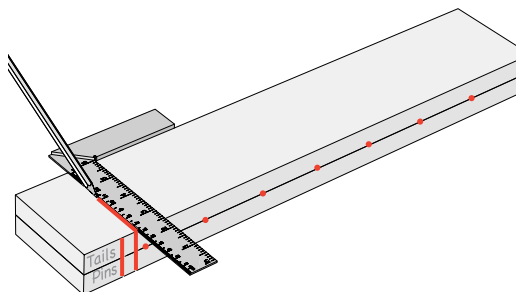


4-7 Use the left edge of the template as a guide and draw a pencil line completely across the top of the beam.

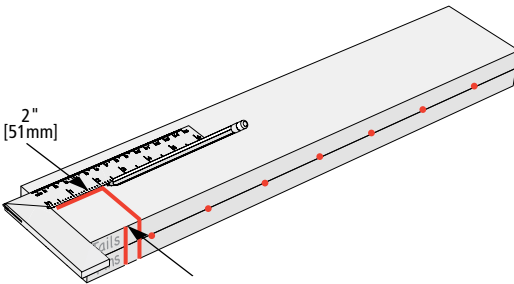
Mark **PINS** and **TAILS** on the top left side of the beam as indicated.



4-8 Remove the template and place a mark 1/2" [12,7mm] to the right of the line on the top of the beam. Use a square and draw a second line (A) completely across the top of the beam at the 1/2" [12,7mm] mark. This line will be used to position the side stops.

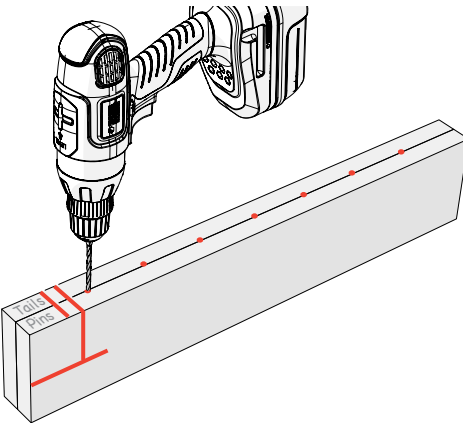


4-9 Mark layout lines for the side stops. Place the beam flat on the workbench with the **TAILS** side up. Use a square and draw a line perpendicular from the side stop positioning mark on the top of the beam.

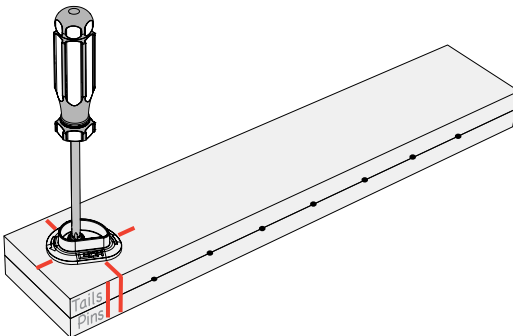


4-10 Next, draw a horizontal line, 2" [51 mm] down from the top of the beam. Make sure the horizontal line intersects the vertical line. This is the mounting point for the side stops.

Rotate the beam and repeat for the **PINS** side, **at the same end of the beam**.

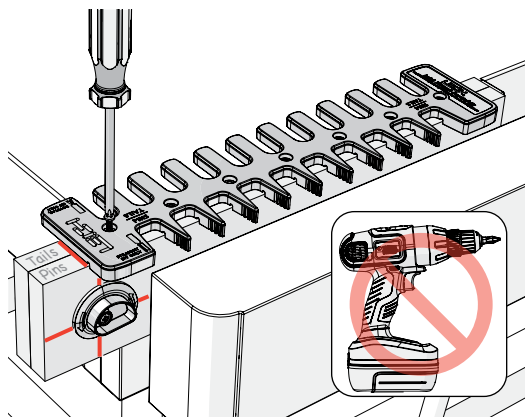


4-11 Use a drill press or hand drill with a 3/32" bit to drill pilot holes at all screw hole locations on the top of the beam and at the side stop positioning marks.



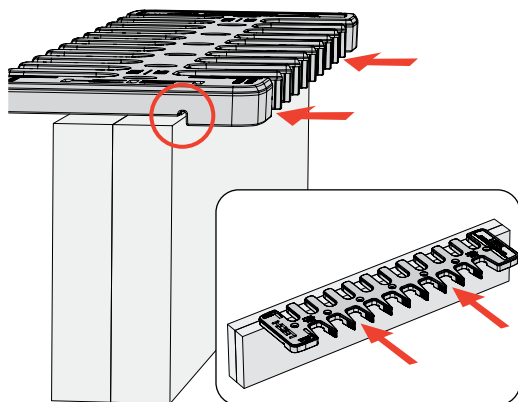
4-12 Place the beam on the workbench with the **TAILS** side facing up. Align the center of a side stop with the pilot hole and attach it using an included screw. Use a screwdriver, not a power drill, to attach the side stop.

Repeat the process on the **PINS** side of the beam.

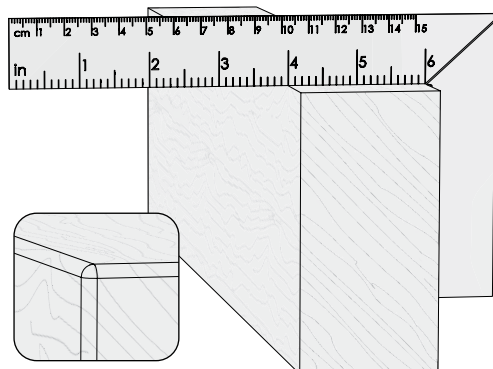


4-13 Clamp the beam in the vice with the PINS side facing you. With the PINS side of the template toward you, place it on the beam and align it with the pre-drilled holes. Use a screwdriver to attach the template with the included screws. Do not tighten the screws yet! See next step.

⚠ Do not use a power drill, as it may overstress the template.



4-14 Make sure the positioning ridges (see Step 4-5) are held against the beam while tightening the screws.



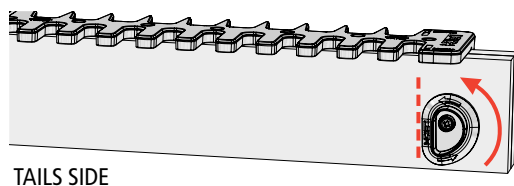
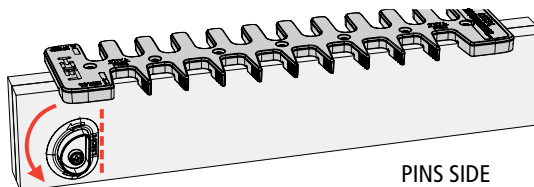
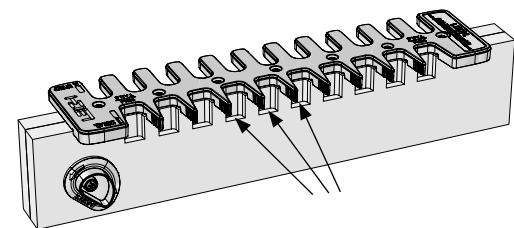
4-15 As a last resort, you can use a straight, flat 19"[483mm] piece of common 2x4. However this may generate a lot of tearout on the beam. Since a 2x4 has rounded corners, preparation is required. **Note:** the finished thickness must be 1-1/2"[38mm].

Use a table saw, router table or jointer to skim off the top surface of the 2x4. Now go back to Step 4-4 for the rest of the beam preparation.

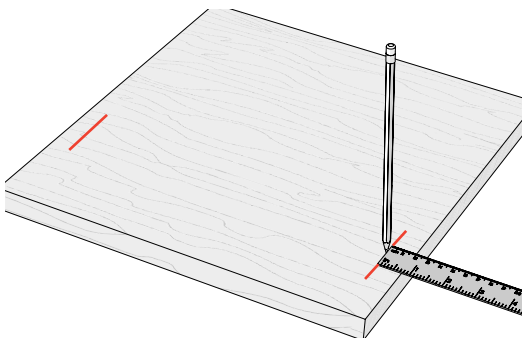
4-16 Prepare the Beam

To prevent tear-out of your good material, grooves must be routed in all template openings, on both sides of the beam, as shown in the following steps.

Preparing the beam is particularly important when using a common 2x4 because its side grain will tear out badly.

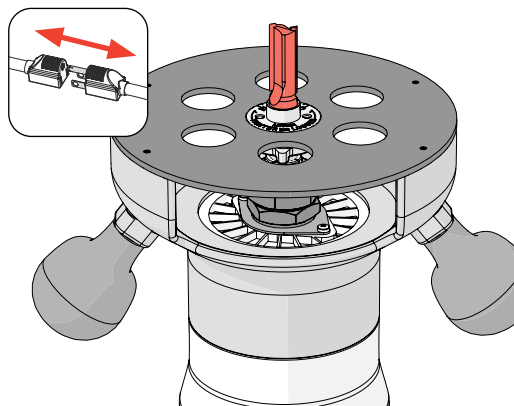


4-17 Turn both side stops until the straight edge is vertical and facing toward the middle of the beam.



4-18 Depth of Cut Select a board at least 13-1/4" [330mm] wide and 1/2" [12,7mm] to 3/4" [19mm] thick. Length is not important as long as it can be clamped safely in the vice.

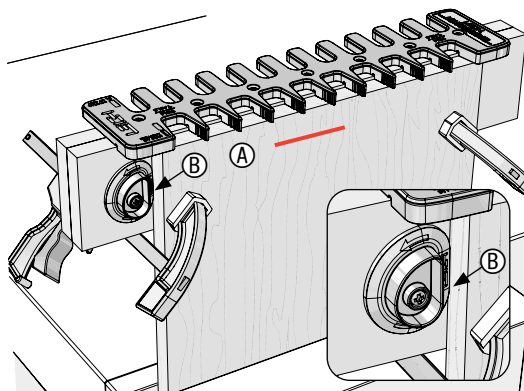
Mark a depth of cut line 3/4" from the top and bottom ends of the board. Clamp the board in the vice with the depth of cut line facing you.



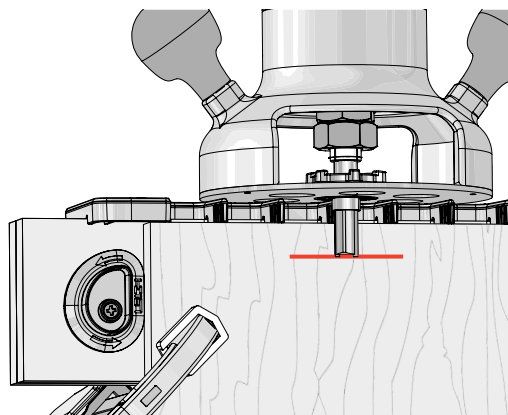
4-19 Install the Straight Bit

With the router unplugged, install the included 1/2" straight bit. The bit goes through the guide bushing and fits in the router collet. Tighten the collet.

The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely.

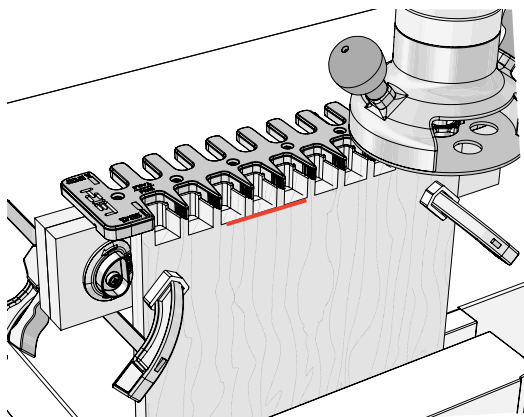


4-20 With the **PINS** side of the jig facing you, place the jig on the board **A**. Slide the jig to the right until the side stop touches the left edge of the board **B** and clamp the jig in place.



4-21 Place the router on the jig and adjust the tip of the bit up or down until it's at the center of the line.

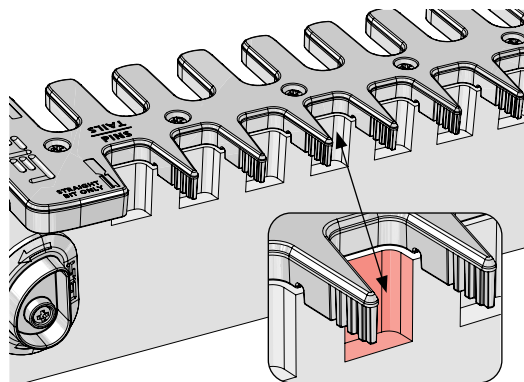
Rotate the collet to ensure it spins freely.



4-22 Hold the router firmly and rout through the board and into the beam, in each template opening.

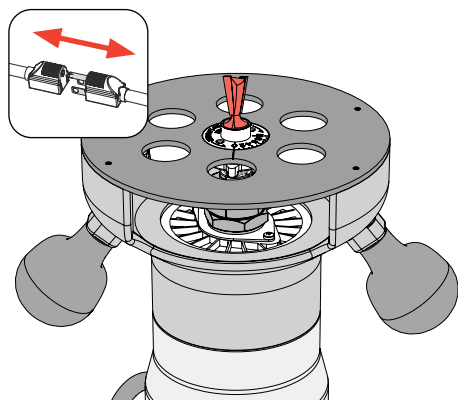
Be sure the guide bushing touches the left side of each template opening on the way in and the right side on the way out.

Check to make sure all the grooves are cleanly routed before removing the jig.



4-23 Remove the jig from the board.

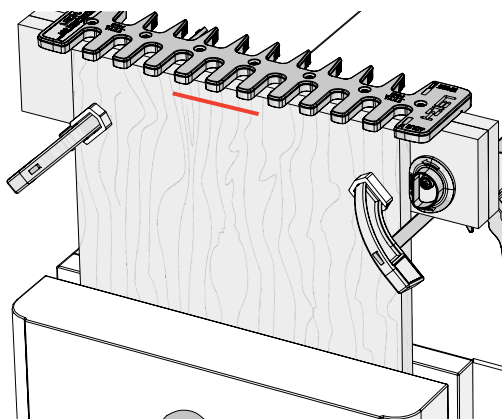
There will now be a clean groove in each template opening on the **PINS** side of the beam.



4-24 Install the Dovetail Bit

Unplug the router and install the included 1/2" 8° dovetail bit. The bit goes through the guide bushing and fits in the router collet. Tighten the collet.

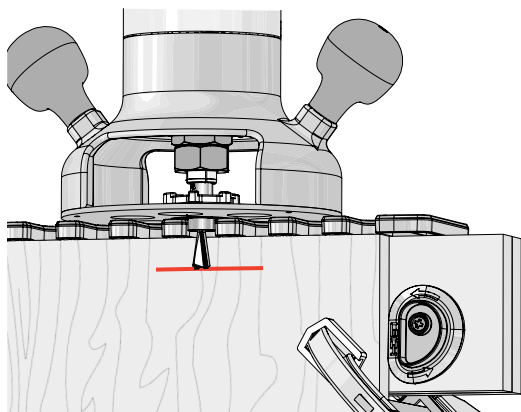
The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely.



4-25 Unclamp the board, flip it end for end, keeping the depth of cut lines facing you and reclamp it in the vice.

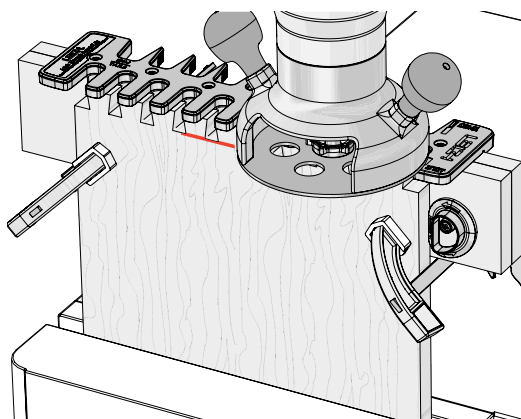
Place the jig on the board with the **TAILS** side toward you and slide it to the left until the side stop touches the board edge.

Clamp the jig in place.



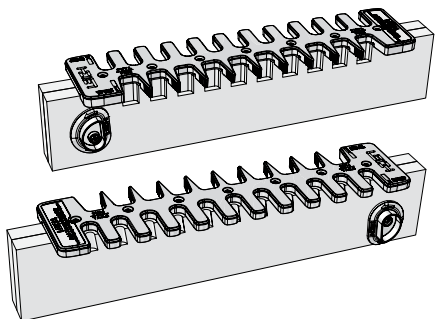
4-26 Place the router on the jig and adjust the bit until the tip is at the depth of cut line.

Rotate the collet to ensure it spins freely.



4-27 Hold the router firmly and rout through the board and into the beam, in each template opening.

Be sure the guide bushing touches both sides of the template opening.



4-28 The beam and jig are now ready to use. ■

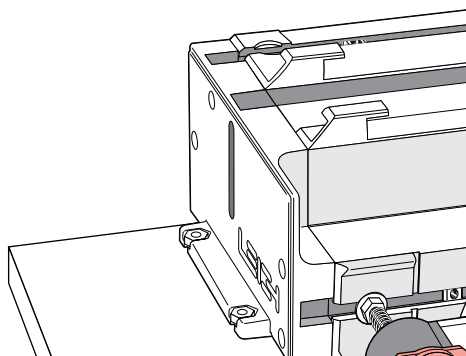
This page is left blank intentionally.

CHAPTER 5

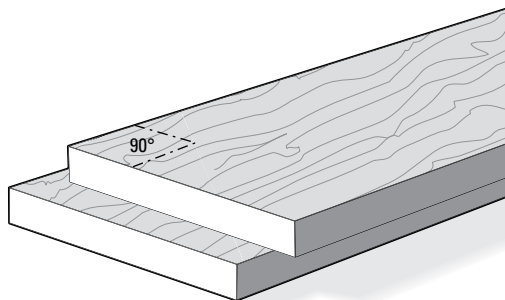
Wood Preparation

Garbage In – Garbage Out

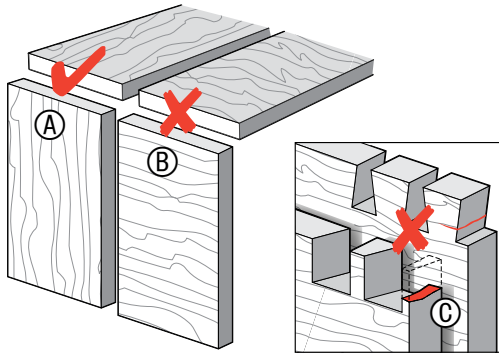
This computing phrase is equally true for the wood you choose to rout with a dovetail jig.



5-1 It is vital for accurately aligned joints that wood used on the Leigh jig be prepared straight, flat, of even thickness, of equal widths, and with square ends and edges. Plywood is generally unsuitable for routing because of tearout problems.



5-2 You'll want to test the jig. Prepare some 3/4" x 5-1/2" [20x140mm] boards by cutting them to length for jig tests. Use them for practice with the jig's various joint modes so you can see how the different modes work. Also note that two boards of different thicknesses are easy to join together.



5-3  Dovetails should be joined “end” grain to “end” grain (A). Routing them in “side” grain (B) doesn’t work because:

1 The wood will tear out badly when routing.

2 Even if you could rout them, the pins and tails would easily break off across the short grain (C), either during or soon after the assembly when the boards start expanding or contracting at different rates. ■

TD330 User Guide

CHAPTER 6

Through Dovetails with a Handheld Router

Note: The instructions in this chapter are based on using 3/4" [19mm] thick boards. Different board thickness may also be joined together.

IMPORTANT SAFETY NOTE

Before using your Leigh TD330, you must have completed the preparatory steps listed in the previous pages, including reading the jig safety recommendations in Chapter 2.

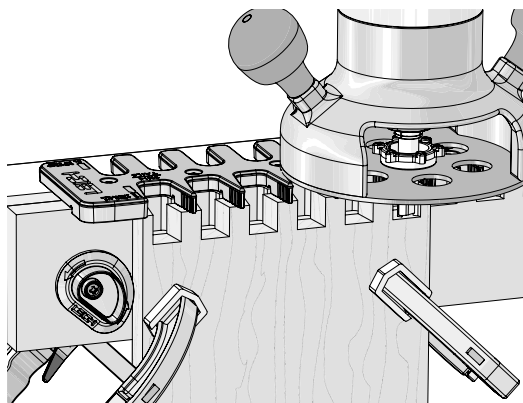


Watch the Online Instructional Video


Scan QR Code

Reduce your learning time dramatically! Stream to your smart phone or tablet to use in your workshop while you're working. See Instructional Videos section in Support menu at leightools.com or scan QR code for instant video.

6-1 Watching the online video in addition to reading this user guide will reduce your learning time dramatically. Stream to your smart phone or tablet to use in your workshop. Visit leightools.com and find the video in the Support section.



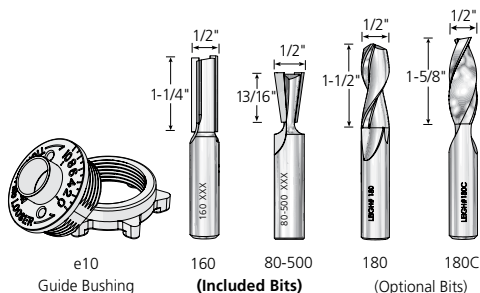
6-2 Getting Started The steps in this chapter show the jig used on a workbench. For router table operation, see Chapter 7.

6-3 Parts Required All through dovetails are routed with the included Leigh 160 1/2" straight bit, Leigh 80-500 1/2" 8° dovetail bit and the Leigh e10 guide bushing (eBush).

No other bit diameters, angles and guide bushing combinations may be used.

Maximum board thickness for through dovetail pin and tail boards is 13/16" [20,6mm]. Pin and Tail boards of different thicknesses may also be joined, up to a maximum of 13/16".

Note: Optional 1/2" diameter spiral upcut bits may also be used.



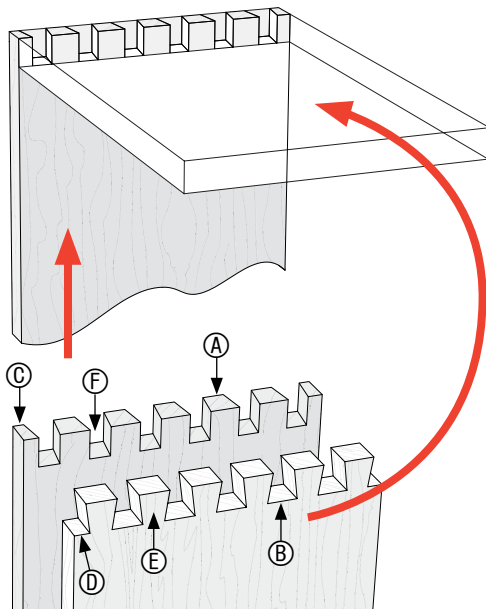
Bit Cutting Depth

Bit Diameter	1/2"
Item No. Carbide Tipped	160
Item No. Carbide Tipped	80-500
Item No. Spiral HSS (Optional)	180
Item No. Spiral Solid Carbide (Optional)	180C
Depth of Cut	
0"	
1/4"	
1/2"	
3/4"	
13/16"	
1"	

6-4 Through Dovetail Terminology

- Ⓐ Pin
- Ⓑ Pin socket
- Ⓒ Half-pin
- Ⓓ Half-pin socket
- Ⓔ Tail
- Ⓕ Tail socket

The pins fit in the pin sockets. Joints should almost always have a half-pin at each side of the joint.



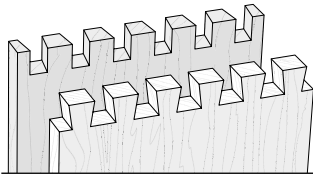
6-5 Board Width Selection Board widths are determined by the total number of full tails in the joint design. Use this chart to determine board widths up to 12-7/8" [327mm].

Board Width Selection for TD330											
No. of Tails		1	2	3	4	5	6	7	8	9	10
inches	Min	1 1/8	2 3/8	3 5/8	4 7/8	6 1/8	7 3/8	8 5/8	9 7/8	11 1/8	12 3/8
	Exact	1 1/4	2 1/2	3 3/4	5	6 1/4	7 1/2	8 3/4	10	11 1/4	12 1/2
	Max	1 5/8	2 7/8	4 1/8	5 3/8	6 5/8	7 7/8	9 1/8	10 3/8	11 5/8	12 7/8
No. of Tails		1	2	3	4	5	6	7	8	9	10
mm	Min	29	60	92	124	156	187	219	251	283	314
	Exact	32	64	95	127	159	191	222	254	286	318
	Max	41	73	105	137	168	200	232	264	295	327

6-6 Board Width Selection Board widths indicated in the EXACT column of the chart will produce **half-pins** at each board edge. Board widths may be increased by 3/8" [9,5mm] resulting in larger, but equally sized pins at each board edge. Similarly, board widths may be reduced by a maximum of 1/8" [3,2mm], resulting in smaller but equally sized pins at each board edge. Narrower widths may result in very small and weak pins at the edges of the pin board.

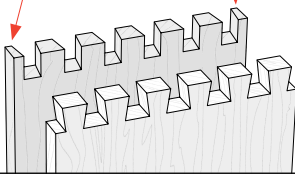
Symmetrical

Full size pins and sockets



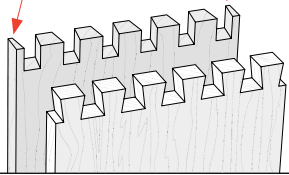
Width specified in the board width chart results in half size pins and sockets at each edge of the board.

Reduced size pins and sockets



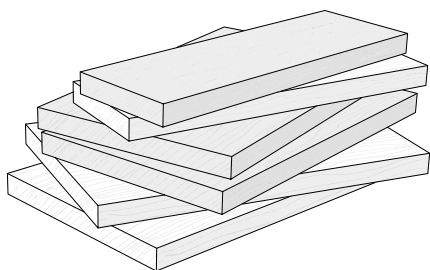
When a symmetrical board width is reduced, the joint will have smaller, but equal sized pins and sockets at each edge of the board.

Small pins can break easily



When the board width is reduced further, the result is very narrow and fragile pins at each edge of the board.

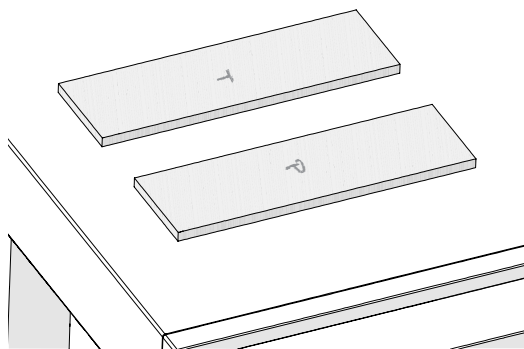
⚠ IMPORTANT: *Read this chapter before routing any boards.*



6-7 Making a Box

Prepare four similar boards $\frac{3}{4}$ " thick $\times$ 7-1/2" wide by 12" long [19mm $\times$ 191mm $\times$ 305mm], and two test boards, 3-3/4" [100mm] wide and the same thickness.

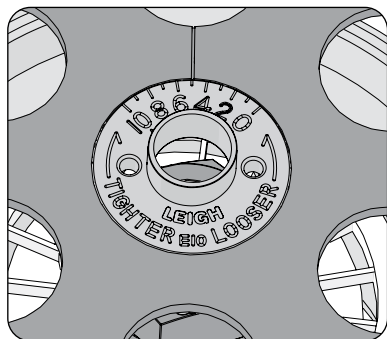
Note: Boards of different thicknesses may also be joined.



6-8 Routing a Test Fit Joint

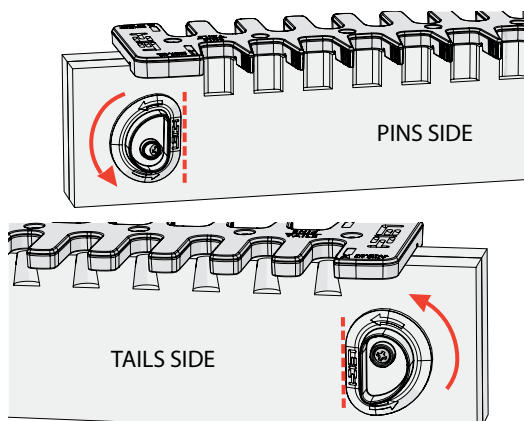
The two test boards are used to establish joint fit before making the box.

Mark the outside face of one test board with a “**T**” (tail board) and the other one with a “**P**” (pin board).

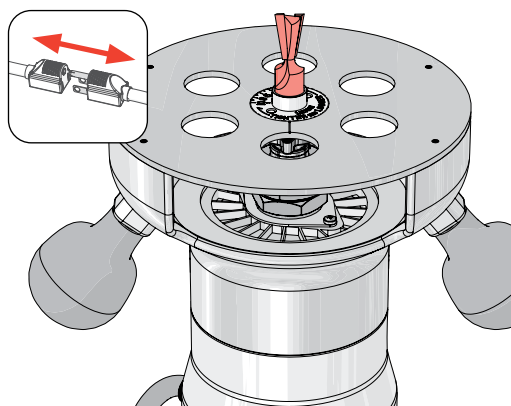


6-9 If you haven't already done so, install the e10 guide bushing in the router. See Steps 3-2 and 3-10 to 3-12. Test joints are always started with the eBush set at the 5 position.

Retighten the eBush nut after each guide bushing adjustment.

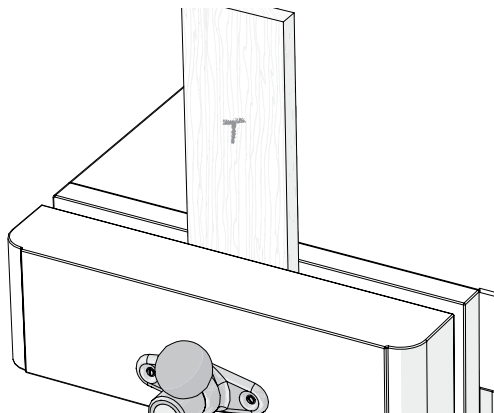


6-10 Turn both side stops until the straight edge is vertical and facing the middle of the jig.

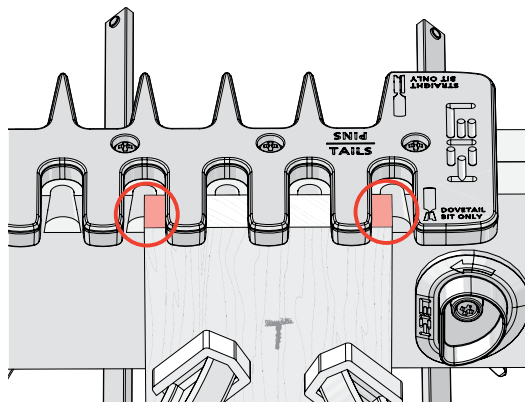


6-11 Tail boards are always routed first Unplug the router and install the 1/2" 8° dovetail bit. The bit goes through the guide bushing and fits in the router collet. Tighten the collet.

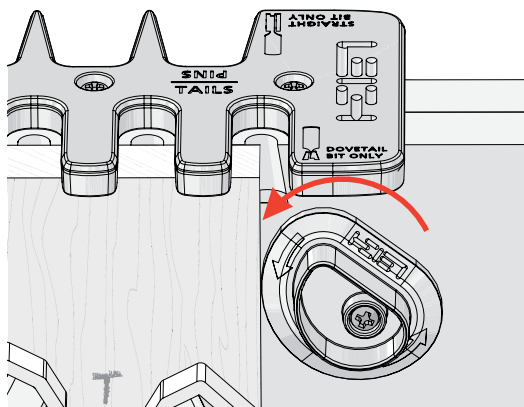
The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely.



6-12 Clamp the test tail board in the vice with the "T" facing you.

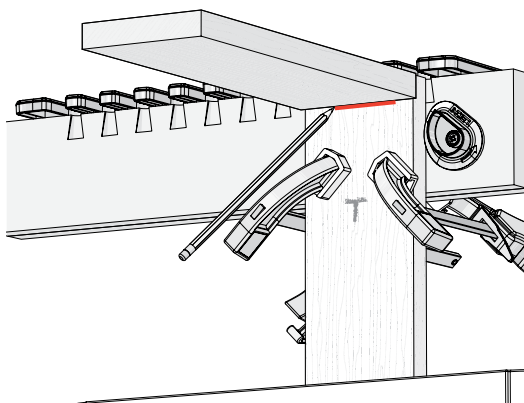


6-13 With the **TAILS** side of the jig toward you, position the right end of the jig over the test tail board, leaving equal amounts of the board showing at each edge, and clamp it in place.

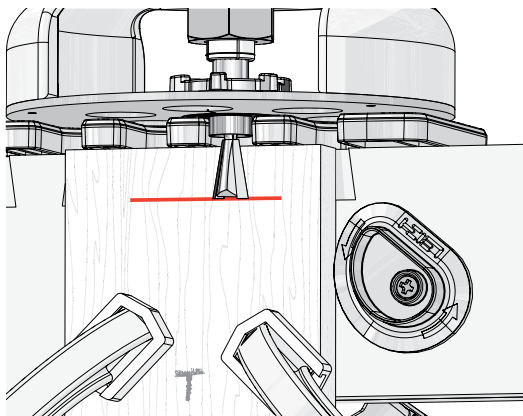


6-14 Set the TAILS Side Stop

Rotate the side stop counter clockwise until it touches the edge of the board.

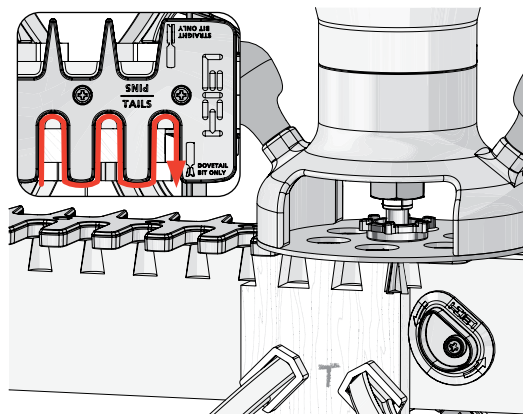


6-15 Pin and tail boards may differ in thickness. Always use the mating board to determine depth of cut. Hold the mating pin board flush under the template and mark a line on the tail board, indicating depth of cut.



6-16 Place the router on the jig and adjust the dovetail bit until the tip is at the depth of cut line.

Rotate the collet to ensure it spins freely.

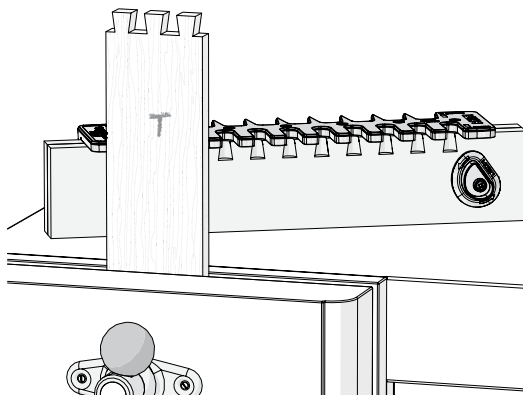


6-17 Rout the Test Tail Board

Hold the router firmly as you rout straight in and out of each template opening.

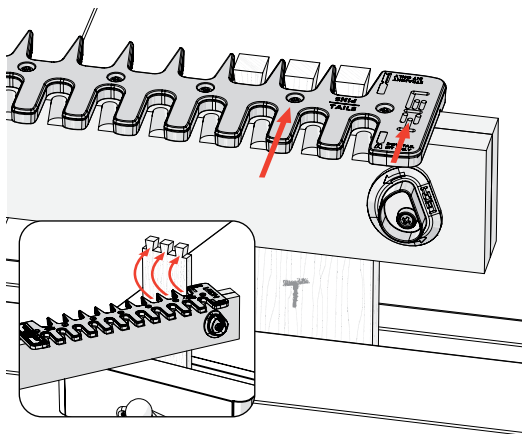
The diameter of the guide bush is slightly smaller than the openings in the template, so be sure the guide bushing touches both sides of the template opening.

Do not rotate the router.



6-18 Remove the jig. There will now be a half-pin socket at each edge of the board.

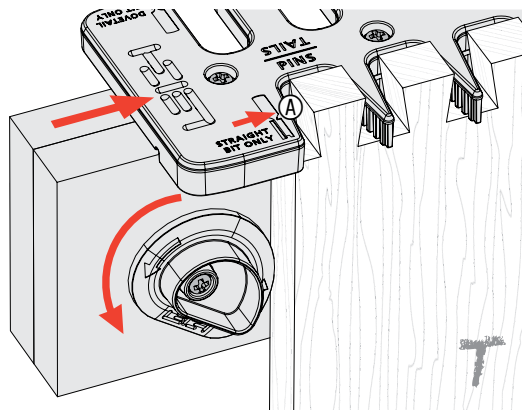
Leave the tail board clamped in the vice as it used to set the **PINS** side stop.



6-19 Set the PINS Side Stop

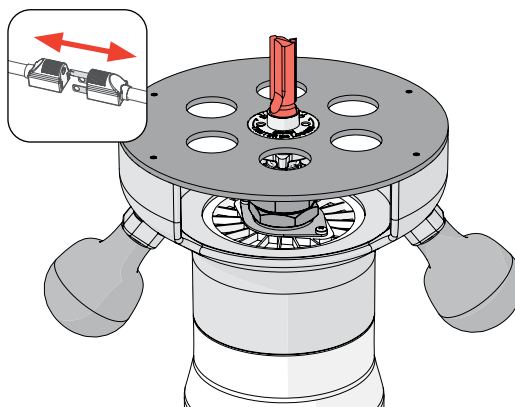
Leaving the tail board in the vice, insert the pin side of the template into the routed pin sockets. The rightmost tail should be in the first template opening closest to the side stop.

See next step which shows it from the back side.



6-20 There may be slight play between the template pins and tail board pin sockets. Hold jig firmly against tail board and move jig to the right (as arrows indicate) until the play is eliminated Ⓐ.

While holding jig firmly against tail board, turn the side stop counter clockwise until it touches the board edge. Side stop is now set to rout pin board. Remove jig and tail board.



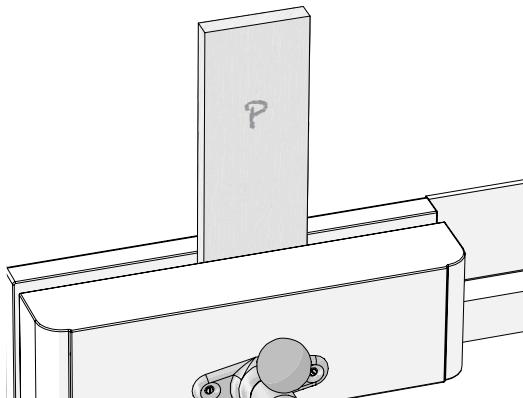
6-21 Rout the Test Pin Board

With the router unplugged, install the 1/2" straight bit. The bit goes through the guide bushing and fits in the router collet.

Tighten the collet.

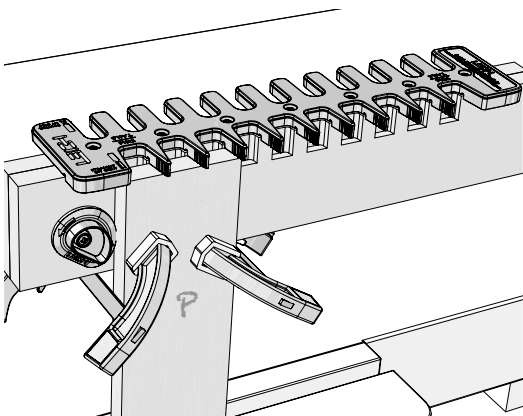
The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely.

6-22 Clamp the test pin board in the vice with the outside (marked) face toward you.

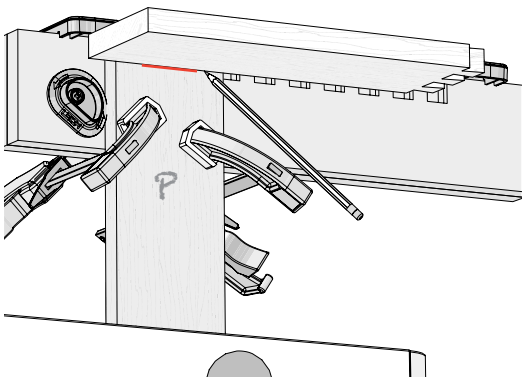


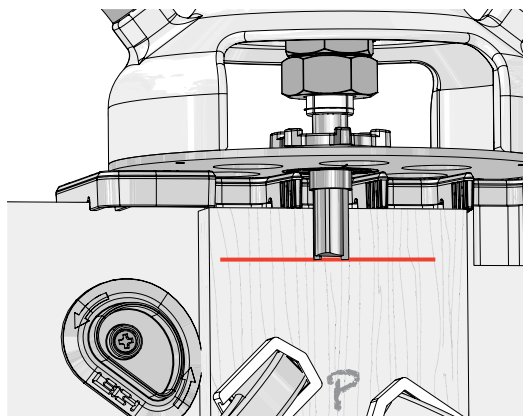
6-23 With the **PINS** side of the jig facing you, place it on the pin board and move it to the right until the side stop touches the board edge.

Clamp the jig in place.



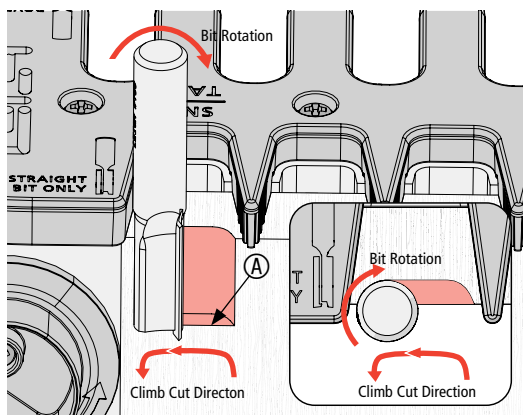
6-24 Always use the mating board to determine depth of cut. Hold the mating tail board flush under the template and mark a depth of cut line on the pin board.





6-25 Place the router on the jig and adjust the bit until the tip is at the depth of cut line.

Rotate the collet to ensure it spins freely.

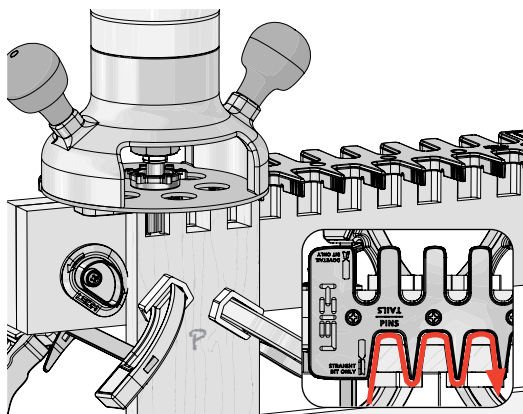


6-26 How to Make a Climb Cut

When routing pins, you should always start with a shallow climb cut, as this will create a clean shoulder ①.

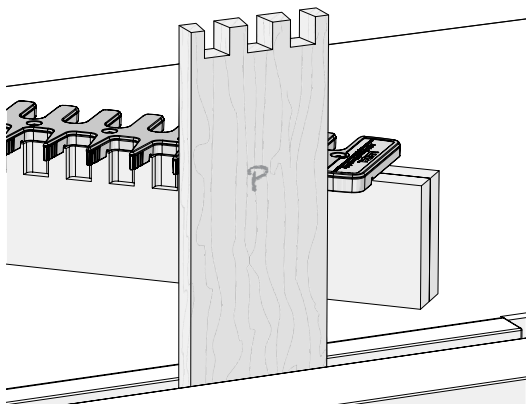
A climb cut may pull the router to the left, so be sure to hold it firmly as you carefully make a shallow cut from right to left.

Note: For clarity the guide bushing is not shown.



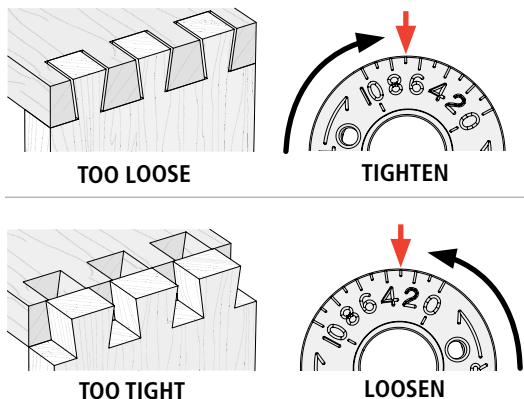
6-27 After making the climb cut, rout out the rest of the wood between the pins, in all template openings along the width of the board.

Be sure the $\epsilon 10$ guide bushing touches the left side of the template opening on the way in, and the right side on the way out. **Do not rotate the router.**



6-28 You will now have a half-pin on each edge of the board.

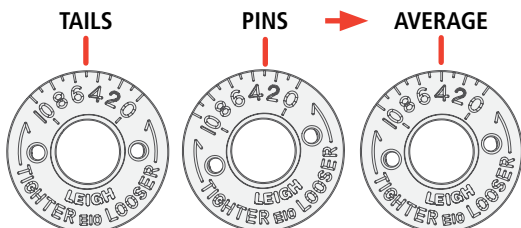
Do not adjust the side stops.



6-29 Joint Fit Adjustment

With the marked sides facing out, assemble the test boards. If the joint is too loose, use the pin wrench and turn the eBush to a higher number **and rout a new pin board.**

If the joint is too tight, turn the eBush to a lower number **and rout a new pin board.** One or two test cuts should produce the proper fit.



$$\text{Tails} + \text{Pins} = \text{Divided by } 2 =$$

$$5 + 3 = 8 \div 2 = 4$$

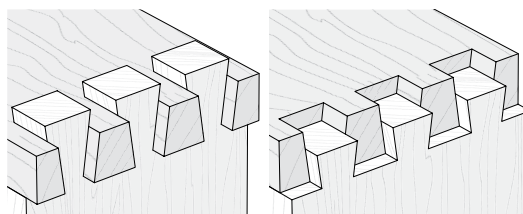
6-30 If the joint is still too tight at 0, or too loose at 10, then you must also adjust the eBush with the dovetail bit. Once the fit is correct, calculate the average. Add the two eBush settings together and divide by two, as shown. Record setting “4” on an eBush diagram in the next step. This will be the new eBush setting for **pins and tails** in all subsequent joints. **Re-tighten the eBush nut after each guide bushing adjustment.**

SAMPLE

June 7, Maple



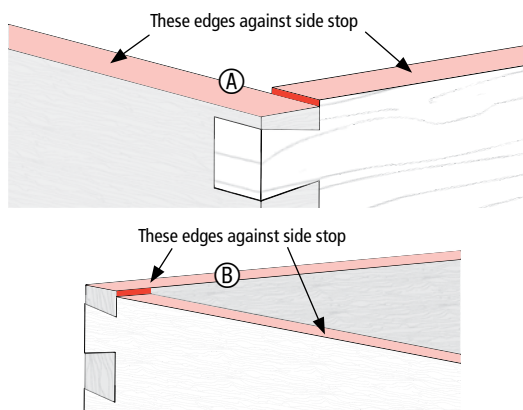
6-31 Use these eBush diagrams to record the settings you used to achieve a proper joint fit. The first eBush is simply an example of how to record your setting.

**OVER FLUSH****UNDER FLUSH**

6-32 Joint flushness is determined by the depth of cut.

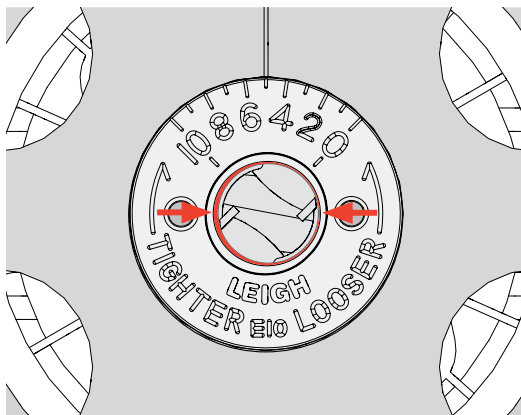
If the joint is over flush, raise the bit to decrease the depth of cut.

If the joint is under flush, lower the bit to make a deeper cut.

**6-33 Joint Edge Flushness**

If the edges of your joints are not flush, this could be due to bit concentricity issues.

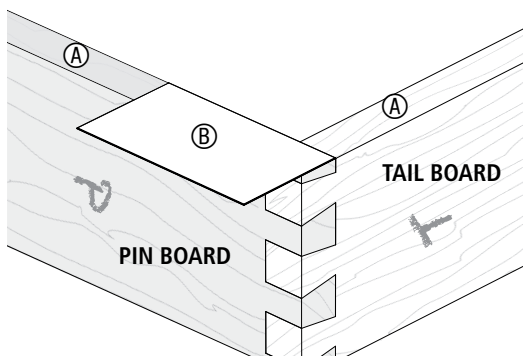
The pin board edge that goes against the side stop might need to be raised **A** or lowered **B** slightly.



6-34 If each router bit is not centered in the guide bushing, the board edges may not be flush.

Some routers allow minor shifting of the router base plate to correct concentricity issues.

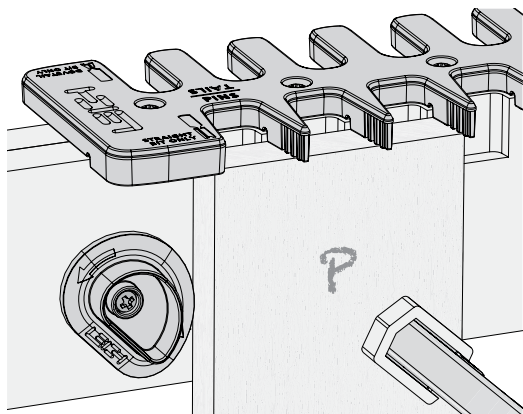
Otherwise, a slight adjustment to the **PINS** side stop can solve this problem.



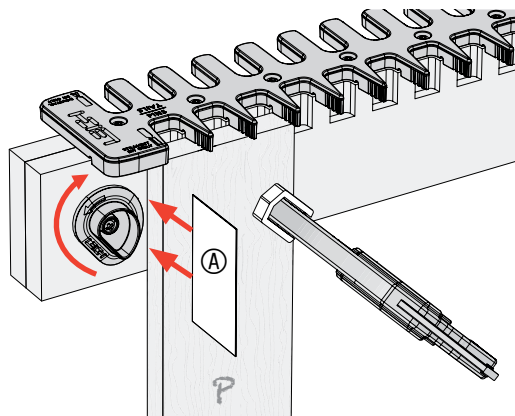
6-35 With the board edges that were against the side stops facing up **A**, use a feeler gauge, or something as simple as a business card **B** or two, to determine the amount of adjustment that is needed.

To raise the pin board edge, see Steps 6-36 to 6-40.

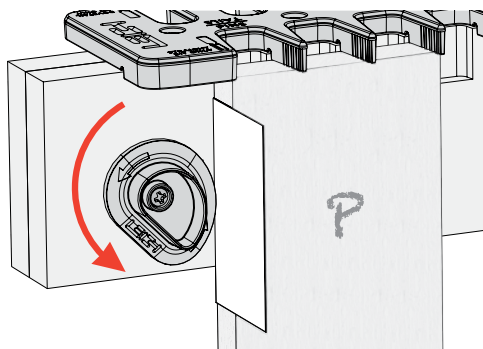
To lower the pin board edge, see Steps 6-41 to 6-44.



6-36 To raise the pin board edge clamp the jig to a new test pin board end with the edge against the side stop.

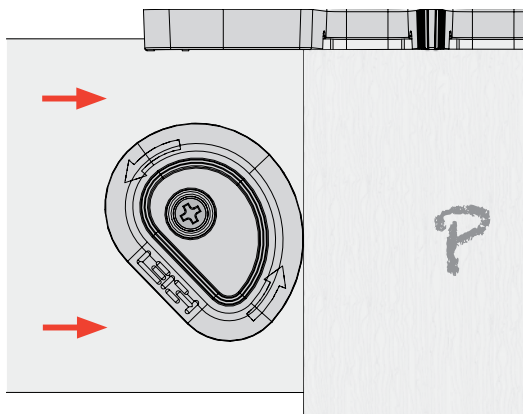


6-37 Rotate the side stop slightly clockwise and place the spacer **A** between the board edge and the side stop.

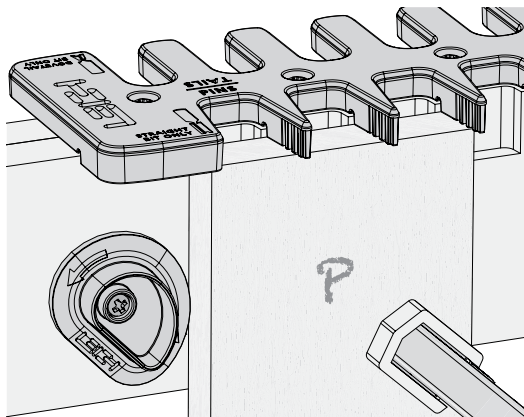


6-38 Then rotate the side stop counter-clockwise until it touches the spacer.

Remove the spacer and clamp.

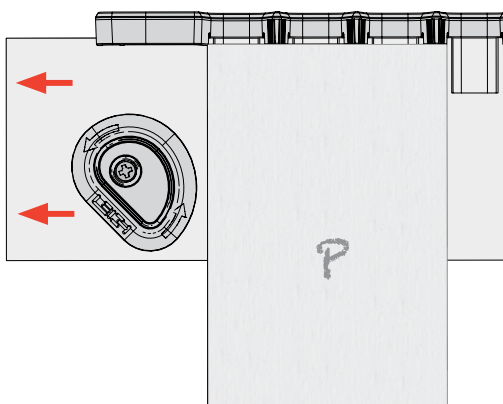


6-39 Shift the jig over until the side stop touches the board edge.



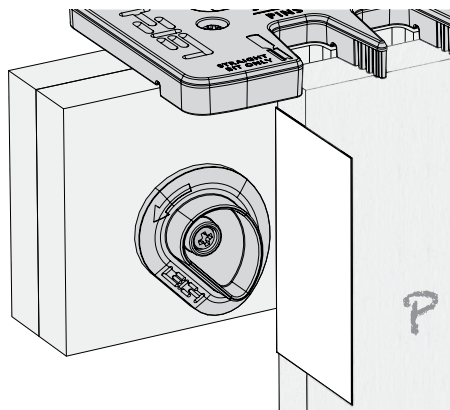
6-40 Clamp the jig in place.

Rout only a new test pin board end to fit in the test tail board. Test the edge flushness again and repeat the process until the edge flushness is correct.

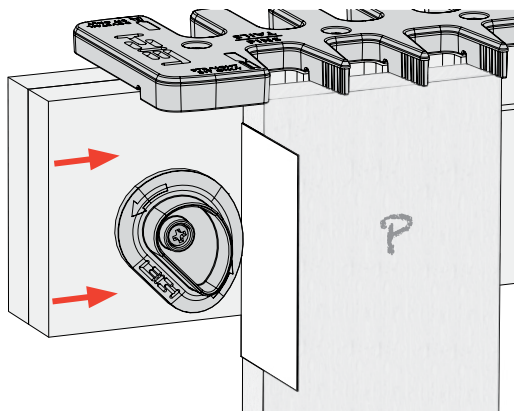


6-41 To lower the pin board edge, clamp a new test pin board end in the vice. Without adjusting the side stop, place the jig on top with a slight gap between the side stop and board edge.

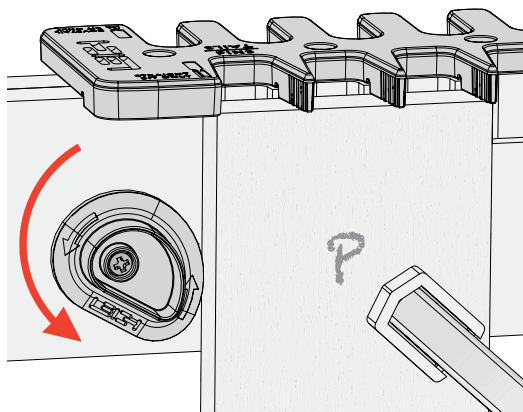
Do not adjust the side stop yet.



6-42 Place and hold the spacer between the side stop and board edge.

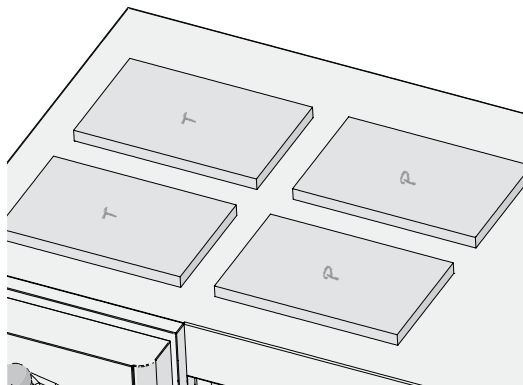


6-43 Shift the jig over until the side stop touches the spacer.



6-44 Clamp the jig in place, then remove the spacer and rotate the side stop counter clockwise until it touches the board edge.

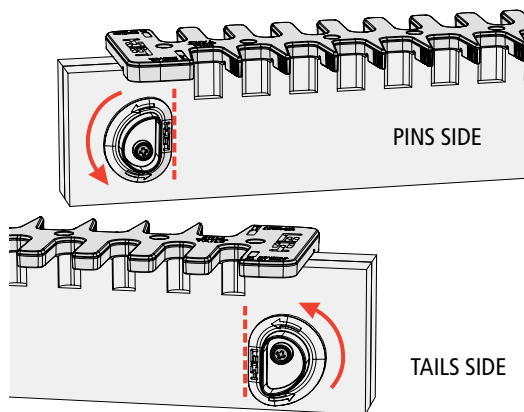
Rout only a new test pin board end to fit in the test tail board. Test the edge flushness again and repeat the process until the edge flushness is correct.



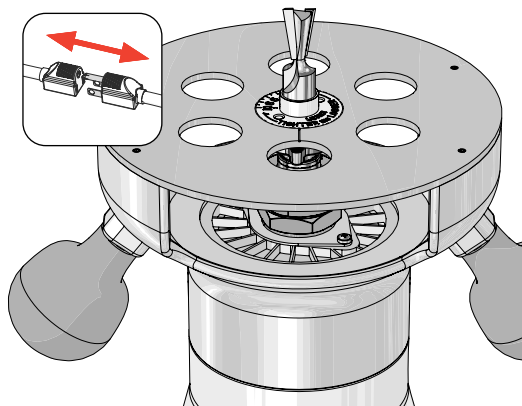
6-45 Let's Make a Box

First establish the outside faces.

Lay out the four boards and mark the outside faces of two of the boards with a “**T**” (tail board) and the other two boards with a “**P**” (pin board).



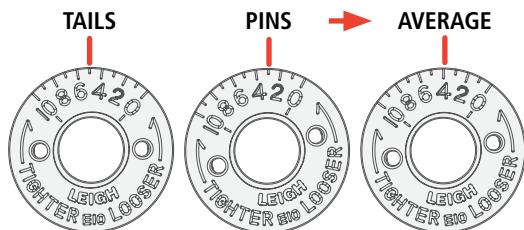
6-46 Turn both side stops until the straight edge is vertical and facing the middle of the jig.



6-47 Routing the Tail Boards

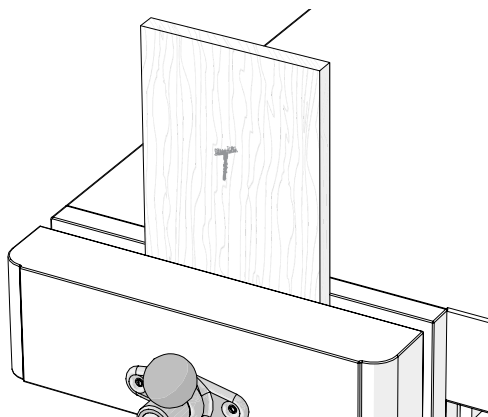
With the router unplugged, install the 1/2" 8° dovetail bit.

The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely.

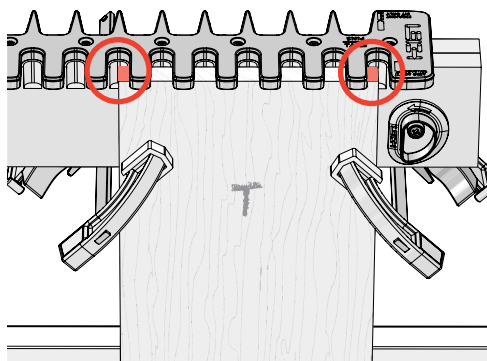


6-48 Set the eBush at the setting determined in **Step 6-30**. (Example shown.)

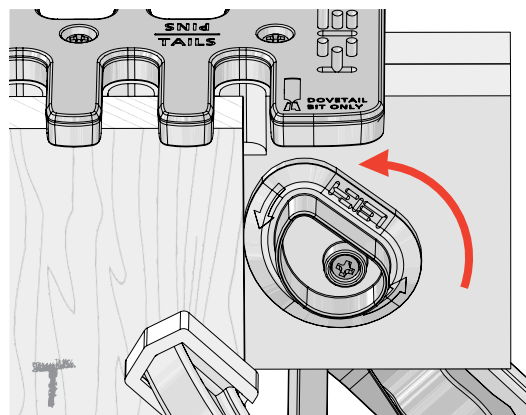
$$\text{Tails} + \text{Pins} = \text{Divided by } 2 = 5 + 3 = 8 \div 2 = 4$$



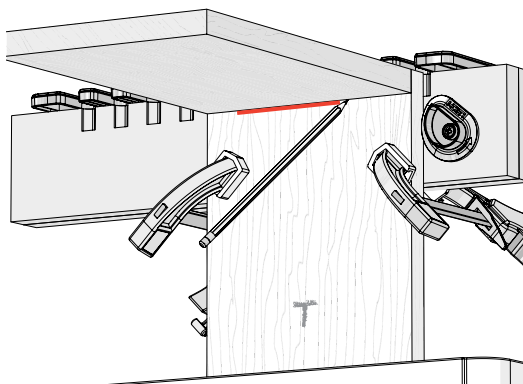
6-49 Clamp the first tail board in the vice with the marked face toward you.



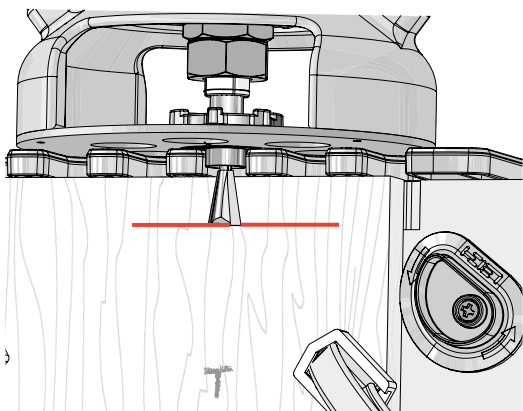
6-50 With the **TAILS** side of the jig facing you, position the right end of the jig over the tail board, leaving equal amounts of the board showing at each edge, and clamp it in place.



6-51 Rotate the side stop counter clockwise until it touches the edge of the board. The side stop is now set for all tail board routing.

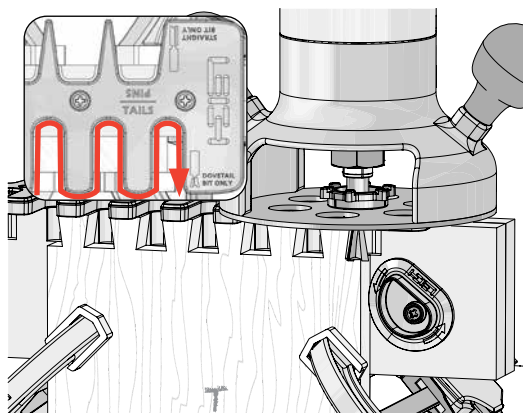


6-52 Place a pin board horizontally flush under the template and draw a depth of cut line on the tail board.



6-53 Place the router on the jig and adjust the bit until the tip is at the depth of cut line.

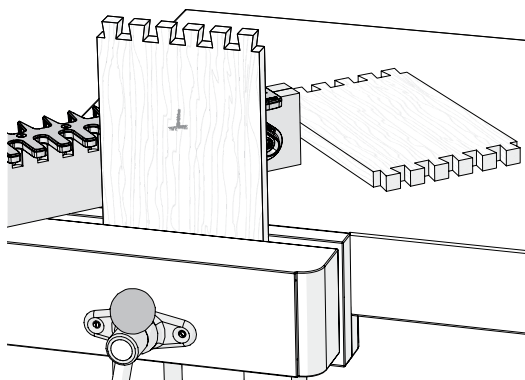
Rotate the collet to ensure it spins freely.



6-54 Hold the router firmly as you rout straight in and out of each template opening. The diameter of the guide bushing is slightly smaller than the openings in the template, so be sure the guide bushing touches both sides of the template opening.

Do not rotate the router.

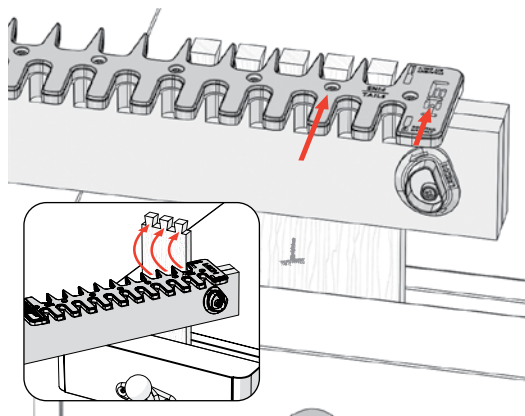
There will now be a half-pin socket at each edge of the board.



6-55 Unclamp the tail board, and keeping the same face toward you, rotate it end for end, and re-clamp in vice. Place jig on board with side stop against board edge. Clamp in place.

Rout the other end of the tail board and repeat the procedure on both ends of the second tail board.

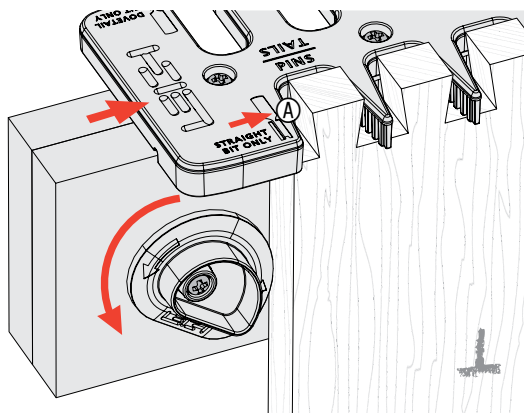
Remove the jig, but leave the tail board in the vice, as it is used to set the **PINS** side stop.



6-56 Set the PINS Side Stop

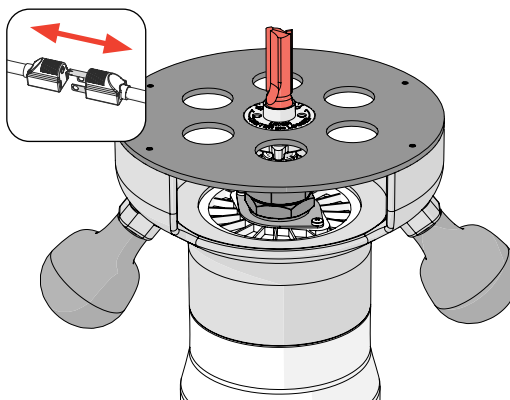
Leaving the tail board in the vice, insert the pin side of the template into the routed pin sockets. The rightmost tail should be in the first template opening closest to the side stop.

See next drawing which shows it from the back side.



6-57 There may be slight play between the template pins and tail board pin sockets. Hold jig firmly against tail board and move jig to the right (as arrows indicate) until the play is eliminated ①.

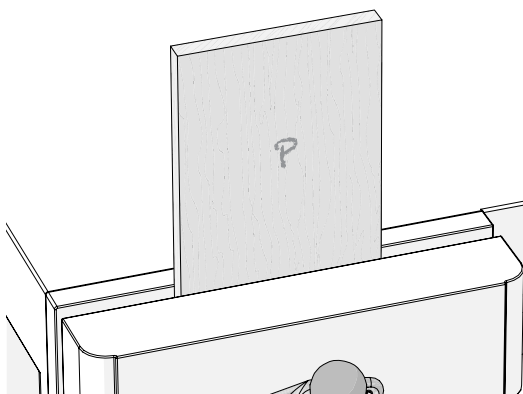
While holding jig firmly against tail board, turn the side stop counter clockwise until it touches the board edge. Side stop is now set to rout pin board. Remove jig and tail board.

**6-58 Routing the Pin Boards**

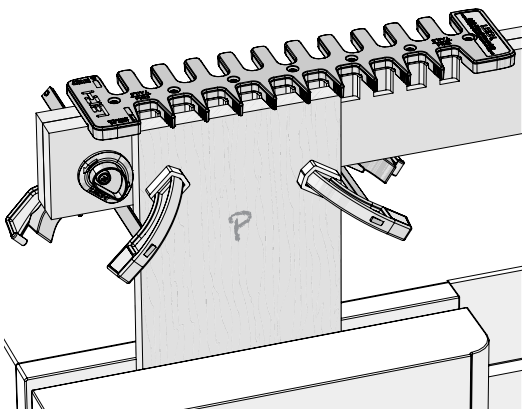
Unplug the router and install the 1/2" straight bit. The bit goes through the guide bushing and fits in the router collet. Tighten the collet.

The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely.

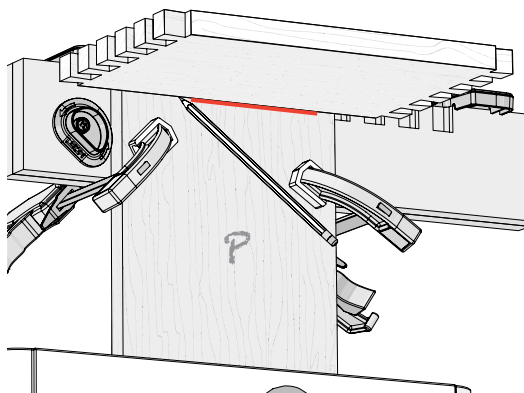
Do not change the eBush setting.



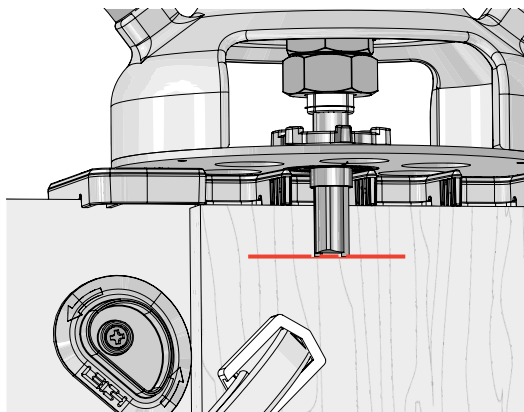
6-59 Clamp a pin board in the vice with the outside face toward you.



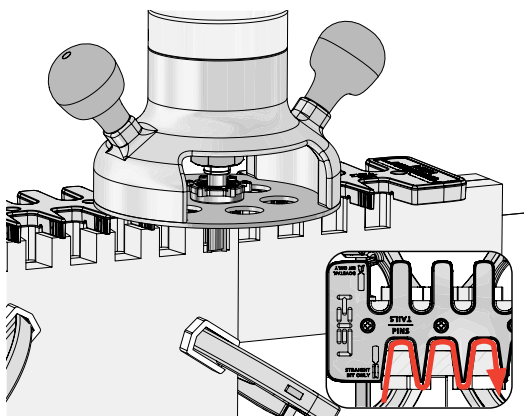
6-60 With the **PINS** side facing you, lower the jig on the board and move it to the right until the side stop touches the left edge of the board. Clamp the jig in place.



6-61 Place a tail board horizontally flush under the template and draw a depth of cut line on the pin board.



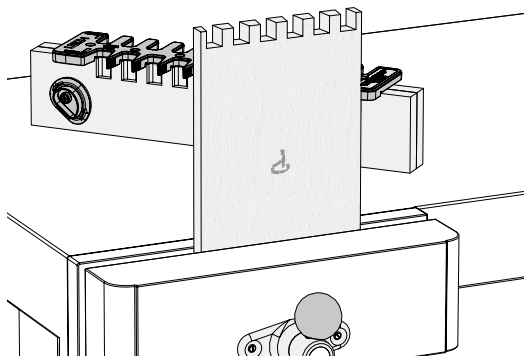
6-62 Place the router on the jig and adjust the bit until the tip is at the depth of cut line. Rotate the collet to ensure it spins freely.



6-63 Hold the router firmly and make a shallow climb cut from right to left between the pins. (See Step 5-26).

Then rout out the remaining wood between the pins. Be sure the e10 guide bushing touches the left side of the template opening on the way in, and the right side on the way out.

Do not rotate the router.

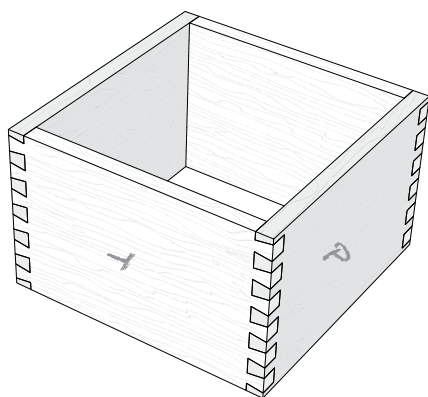


6-64 Unclamp the pin board, and keeping the same face toward you, rotate it end for end, and re-clamp it in the vice.

Rout the second end.

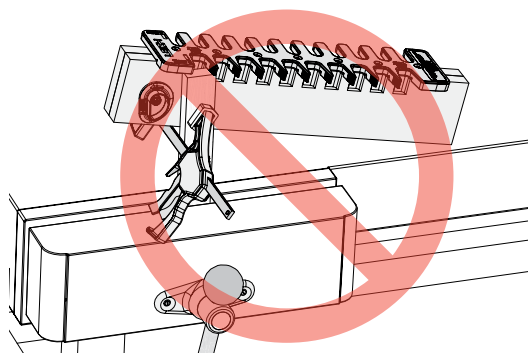
Repeat the procedure on the second pin board.

All four boards are now complete.



6-65 Assemble the box keeping all marked board faces outward.

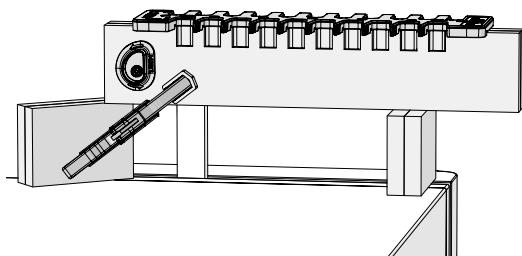
Note: Any pin board end will fit any tail board end.



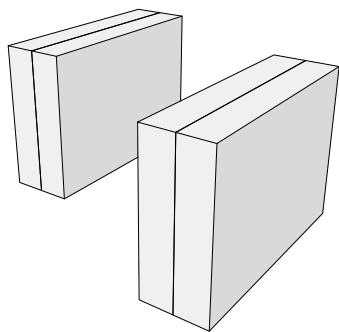
Clamping Narrow Boards

6-66 When working with narrow boards it may only be possible to use one clamp, meaning the jig cannot be held securely in place.

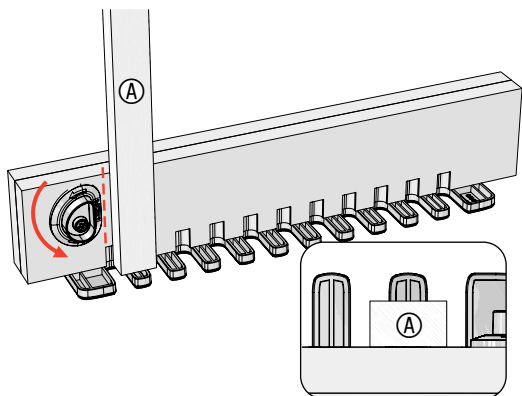
6-67 It may be necessary to support the beam to ensure secure clamping.



6-68 The jig can be supported using two wood blocks of the same height. The purpose of the blocks is to provide room for the clamp and to keep the jig level.

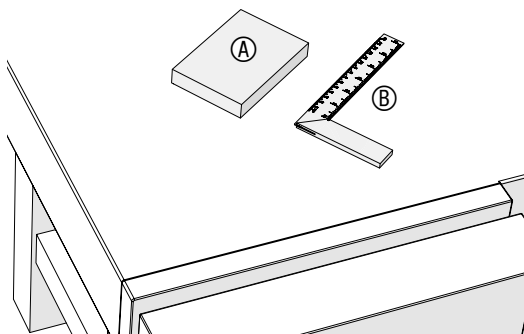


6-69 Place the jig upside down and rotate both side stops until the straight edge is vertical and facing the middle of the jig.



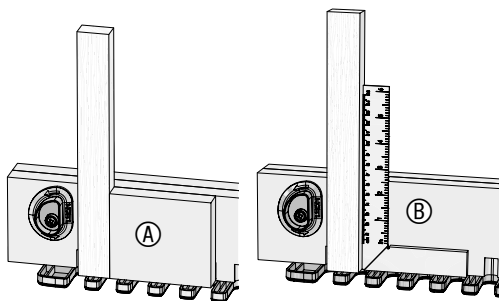
Place the narrow board **A** on the **TAILS** side of the jig and center it on the first template finger, closest to the side stop.

6-70 The narrow workpiece must be perpendicular to the jig.



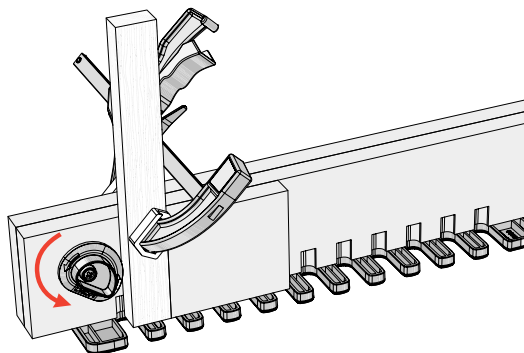
Use a square MDF block **A** or square **B** to align the tail board with the jig template.

6-71 While holding the tail board over the first finger, use the MDF block **A** or Square **B** on the template and against the tail board.

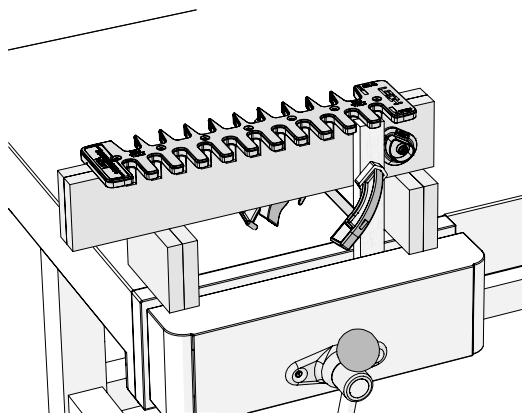


The tail board will now be perpendicular to the template.

6-72 Clamp the tail board to the jig.



Turn the side stop counter clockwise until it touches the board edge.



6-73 Remove the square or block and place the tail board in the vice with the beam resting on the blocks. Tighten the vice.

The jig is now held securely in place.

Use the square or block to align the other end of the tail board and the pin boards. ■

TD330 User Guide

CHAPTER 7 Through Dovetails on a Router Table

This chapter assumes you have set up your jig following the Mounting & Assembly instructions in Chapter 4, Steps 4-16 to 4-28. You should also be familiar with all procedures in this user guide.

IMPORTANT SAFETY NOTE

Before using your Leigh TD330, you must have completed the preparatory steps listed in the previous pages, including reading the jig safety recommendations in Chapter 2.

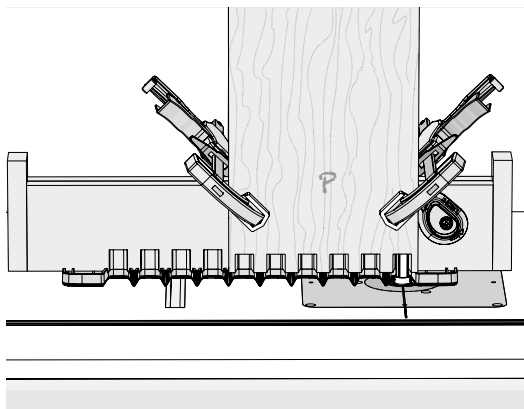


Watch the Online Instructional Video


Scan QR Code

Reduce your learning time dramatically! Stream to your smart phone or tablet to use in your workshop while you're working. See Instructional Videos section in Support menu at leightools.com or scan QR code for instant video.

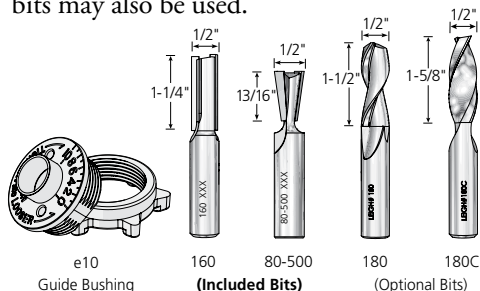
7-1 Watching the online video in addition to reading this user guide will reduce your learning time dramatically. The video can be streamed to your smart phone or tablet and used in your shop as a visual reference. Visit leightools.com and find the video in the Support section.



7-2 Getting Started The TD330 can be used to rout dovetail joints on a router table, on boards up to a maximum width of 12-7/8" [327mm] and up to 13/16" [20,6mm] thick. This example uses 3/4" [19mm] thick boards. Different board thicknesses may be joined.

7-3 Parts Required All through dovetails are routed with the included Leigh 160 1/2" straight bit, Leigh 80-500 1/2" 8° dovetail bit and Leigh e10 guide bushing (eBush). **No other bit diameters, angles and guide bushing combinations may be used.** Maximum board thickness for through dovetail tails is 13/16" [20,6mm]. Pin and Tail boards of different thicknesses may also be joined, up to a maximum of 13/16".

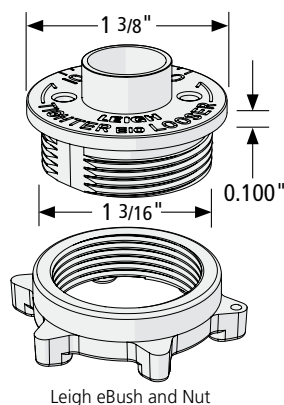
Note: Optional 1/2" diameter spiral upcut bits may also be used.



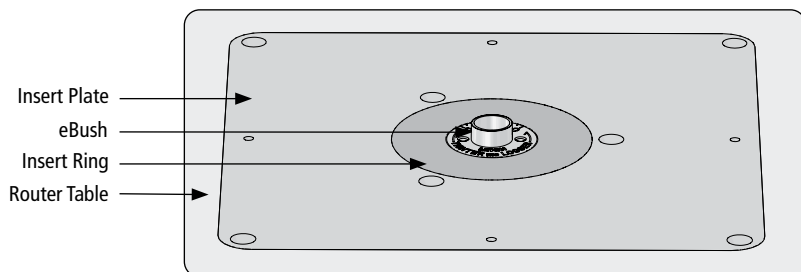
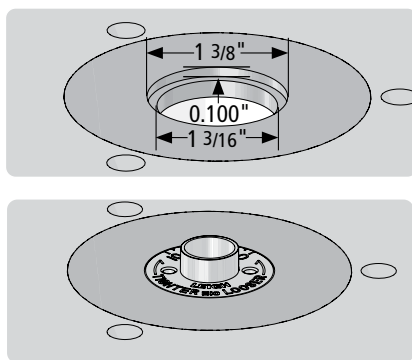
Bit Cutting Depth	
Bit Diameter	1/2"
Item No. Carbide Tipped	160
Item No. Carbide Tipped	80-500
Item No. Spiral HSS (Optional)	180
Item No. Spiral Solid Carbide (Optional)	180C

Depth of Cut	
0"	
1/4"	
1/2"	
3/4"	
13/16"	
1"	

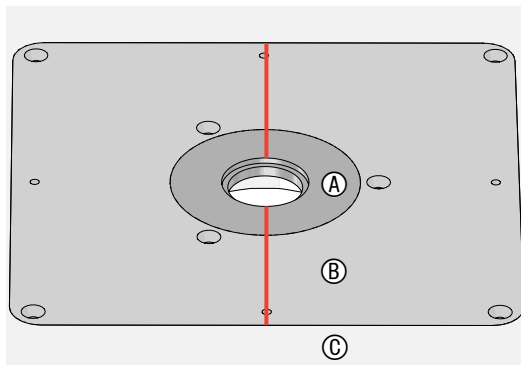
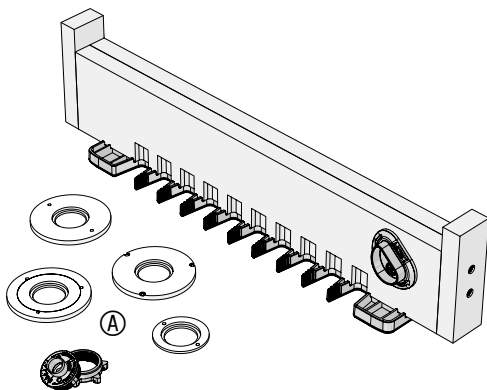
7-4 Router Table Requirements Router tables are typically used with a bearing bit or fence, however, the Leigh TD330 is guided around a guide bushing mounted in the router table. Leigh eBushes (guide bushings) are designed around the 1-3/8" diameter industry standard. See specifications below.



Leigh eBush and Nut

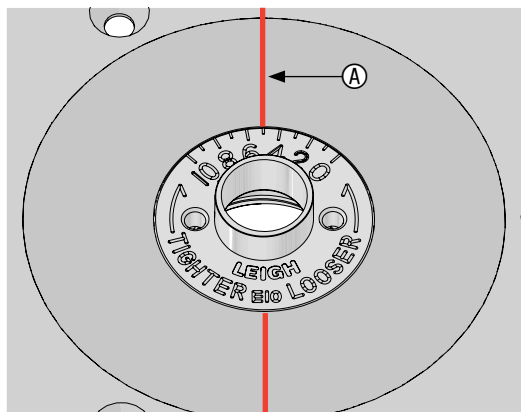


7-5 Insert Ring To install the eBush in your router table insert plate, you may need a 1-3/8" diameter counter bore insert ring (A). See previous step for specifications. Insert rings are not standard. You will need to check with your router table or insert plate (router lift) manufacturer, as to what adaptation, if any, is required.



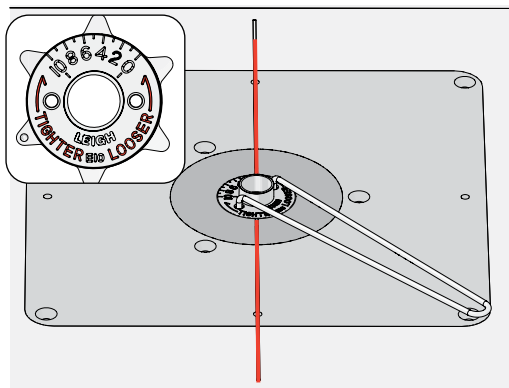
7-6 Draw a reference line with a permanent marker on the router table, from the 12 o'clock position to the 6 o'clock position, centered on the guide bushing opening. (shown in red for clarity only).

This will ensure correct orientation of the eBush to the insert ring (A), the insert plate (B), and the router table (C).



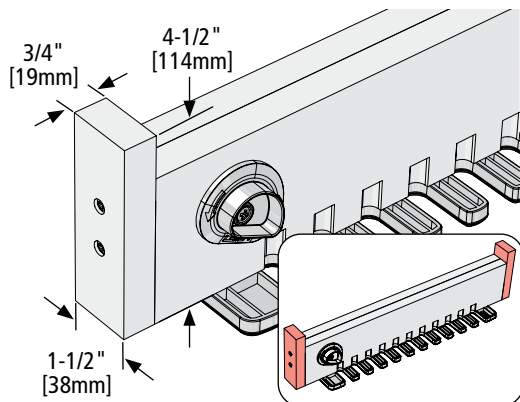
7-7 Install the e10 guide bushing in the router table. Set the eBush to the 5 position to start.

All settings for the eBush will be aligned to the line (A) you've drawn on the router table. The line will also help guide the TD330 when routing.



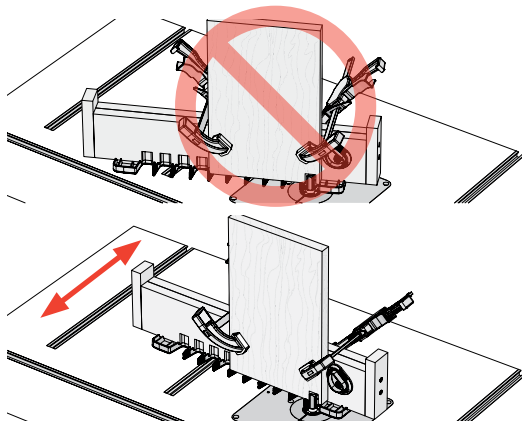
7-8 eBush adjustments are made with the included pin wrench. Markings on the eBush indicate which way to turn it for a looser or tighter fit. See Chapter 3.

Remember, every time you adjust the eBush you must re-tighten the eBush nut.



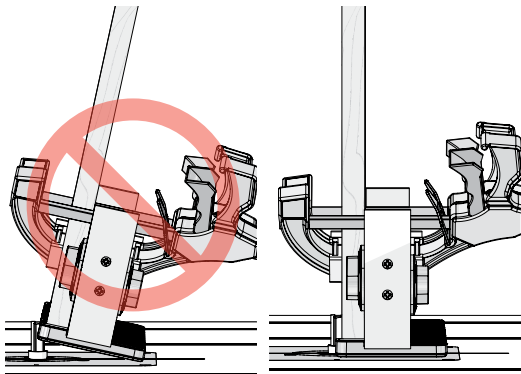
7-9 Safety Before using the jig on a router table, handles must be attached to the ends of the beam. Handles should be $\frac{3}{4}$ " x $1\frac{1}{2}$ " x $4\frac{1}{2}$ " [19mm x 38mm x 114mm].

The handles will help keep your fingers away from the bit and help control the jig during routing.

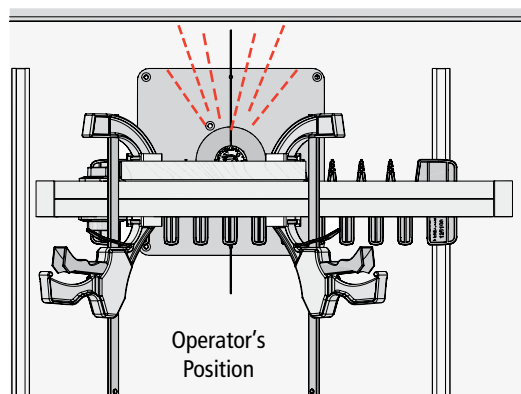


7-10 Remember the barrel of the eBush is elliptical, so changing the angle of the jig affects the diameter of the guide bushing, resulting in inconsistent pins and tails.

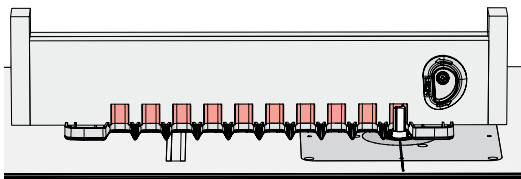
Always keep the jig parallel to the router table.



7-11 Never tilt the jig. Keep the jig flat on the router table at all times.

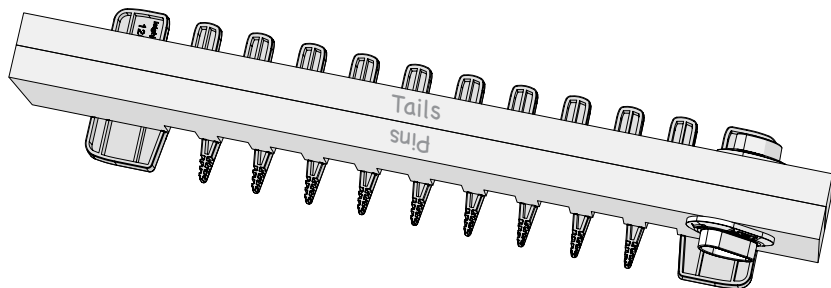


7-12 Chips and sawdust are thrown out at high speed. Always stand and use the jig away from chip and sawdust ejection.



7-13 Reminder If you haven't already done so, you must rout grooves on each side of the beam (see Chapter 4, Steps 4-16 to 4-28).

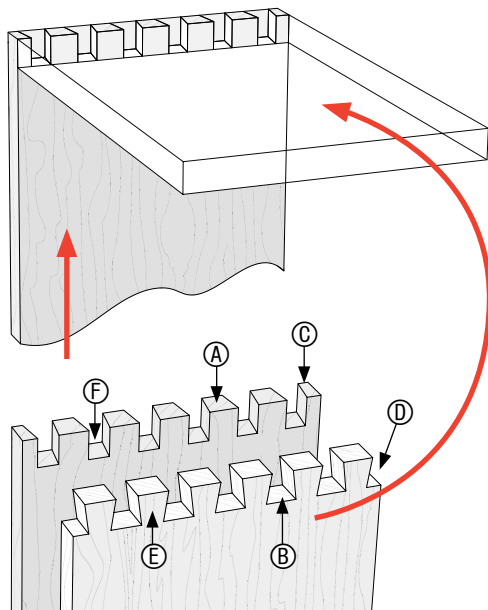
7-14 Identify the **PINS** and **TAILS** sides of the jig on the beam.



7-15 Through Dovetail Terminology

- Ⓐ Pin
- Ⓑ Pin socket
- Ⓒ Half-pin
- Ⓓ Half-pin socket
- Ⓔ Tail
- Ⓕ Tail socket

The pins fit in the pin sockets. Joints should almost always end each side with half-pins.

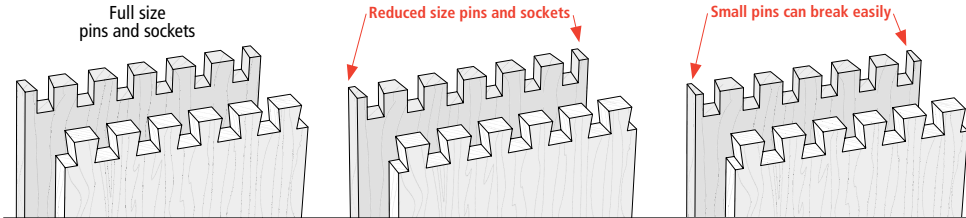


7-16 Board Width Selection Board widths are determined by total number of pins and sockets in joint design. Use this chart to determine board widths up to 12-7/8"[327mm].

Board Width Selection for TD330											
No. of Tails		1	2	3	4	5	6	7	8	9	10
inches	Min	1 1/8	2 3/8	3 5/8	4 7/8	6 1/8	7 3/8	8 5/8	9 7/8	11 1/8	12 3/8
	Exact	1 1/4	2 1/2	3 3/4	5	6 1/4	7 1/2	8 3/4	10	11 1/4	12 1/2
	Max	1 5/8	2 7/8	4 1/8	5 3/8	6 5/8	7 7/8	9 1/8	10 3/8	11 5/8	12 7/8
No. of Tails		1	2	3	4	5	6	7	8	9	10
mm	Min	29	60	92	124	156	187	219	251	283	314
	Exact	32	64	95	127	159	191	222	254	286	318
	Max	41	73	105	137	168	200	232	264	295	327

7-17 Board Width Selection Board widths indicated in the **exact** column of the chart will produce **half-pins** at each board edge. Board widths may be increased by 3/8" [9,5mm] resulting in larger, but equally sized pins at each board edge. Similarly board widths may be reduced by a maximum of 1/8"[3,2mm], resulting in smaller but equally sized pins at each board edge. Narrower widths may result in very small and weak pins at the edges of the pin board.

Symmetrical

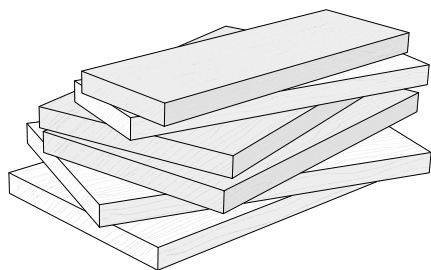


The EXACT width specified in the board width chart results in half-pins and sockets at each edge of the board.

When board width is reduced, the joint will have smaller, but equal sized pins and sockets at each edge of the board.

When the board width is reduced further, the result is very narrow and fragile pins at each edge of the board.

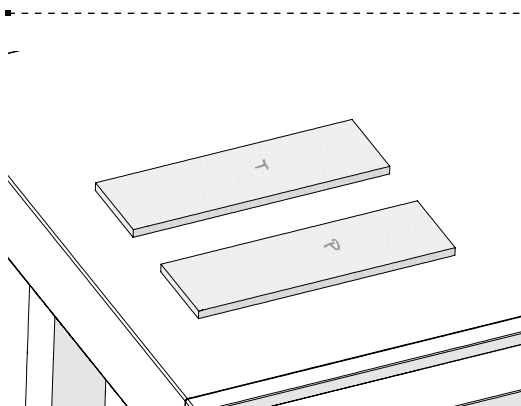
! IMPORTANT: *Read the whole chapter before routing any boards.*



7-18 Making a Box

Prepare four similar boards $\frac{3}{4}$ " thick $\times$ $7\frac{1}{2}$ " wide by about 12" long [19mm $\times$ 191mm $\times$ 305mm], and two test boards, $\frac{3}{4}$ " [19mm] thick by about 4" [100mm] wide.

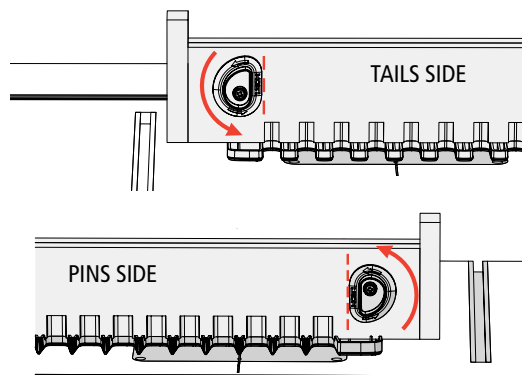
Note: Boards of different thicknesses may also be joined.



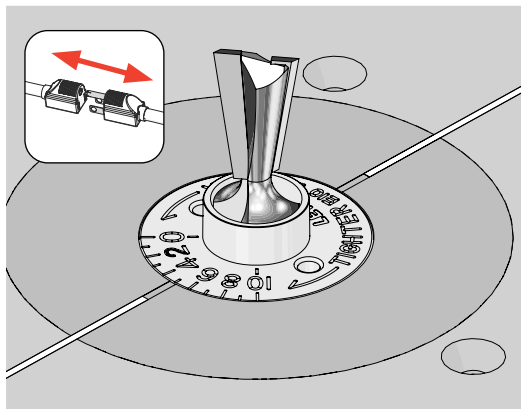
7-19 Routing a Test Fit Joint

The two test boards are used to establish joint fit before making the box.

Mark the outside face of one of the test boards with a "**T**" (tail board) and one with a "**P**" (pin board).



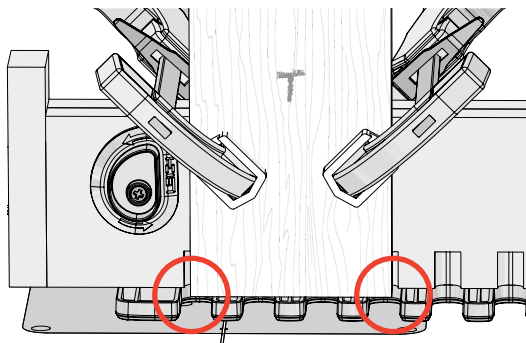
7-20 Turn both side stops until the straight edge is vertical and facing the middle of the jig.

**7-21 Rout the Test Tail Board**

With the router unplugged, install the included 1/2" 8° dovetail bit and tighten the collet nut.

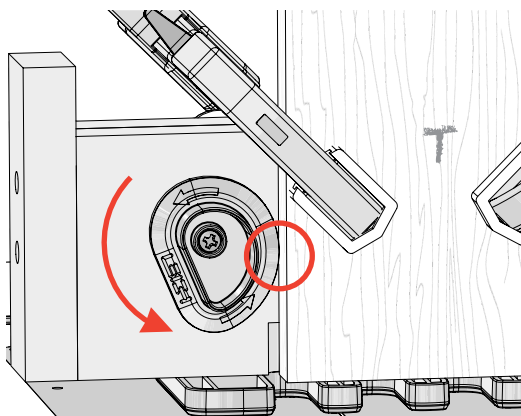
 The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely before reconnecting the power.

Ensure the eBush is set to 5.

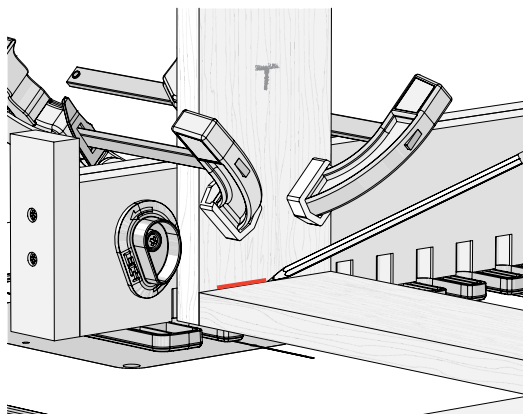


7-22 Place the test tail board on the jig leaving equal amounts of overhang on each board edge. Always position the board edge in the first template opening nearest the side stop.

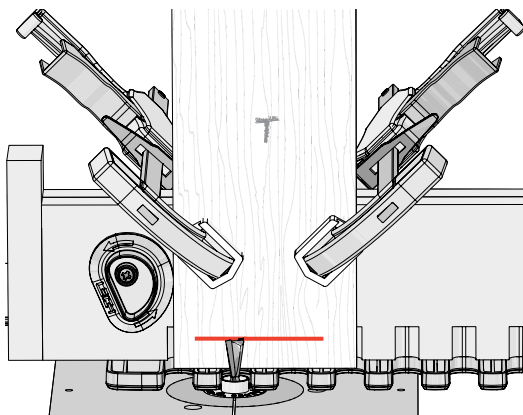
Clamp the board in place.



7-23 Rotate the side stop counter-clockwise until it touches the edge of the board. The side stop is now set to rout the test tail board.

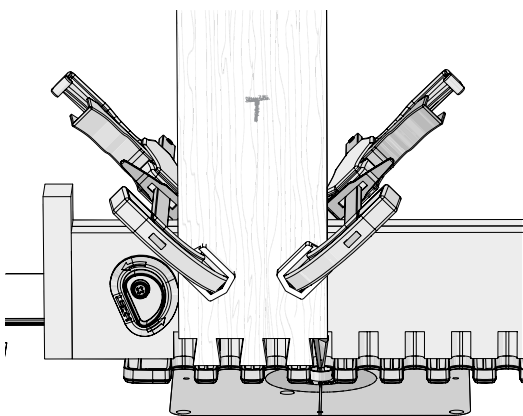


7-24 Pin and tail boards may differ in thickness. Always use the mating board to determine the depth of cut. Hold the test pin board flush against the template and draw a line on the tail board, indicating depth of cut.



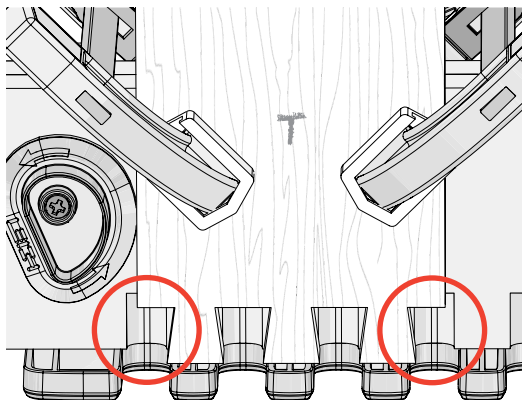
7-25 Adjust the tip of the bit until it's at the depth of cut line.

Rotate the collet to ensure it spins freely.



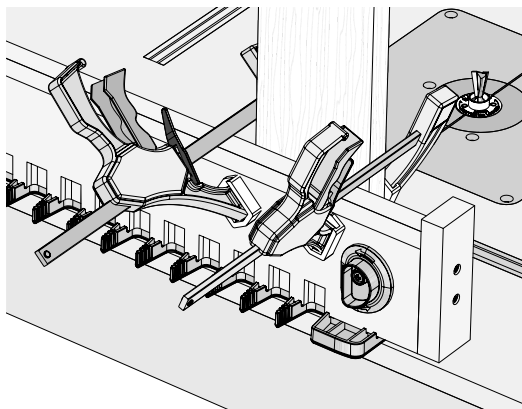
7-26 Hold the jig firmly and rout straight in and out of each template opening. Be sure the e10 guide bushing touches the left side of each template opening on the way in, and the right side on the way out. **Do not rotate the jig.**

Chips and sawdust can accumulate between the template openings. Check each routed slot to ensure it has been routed completely.

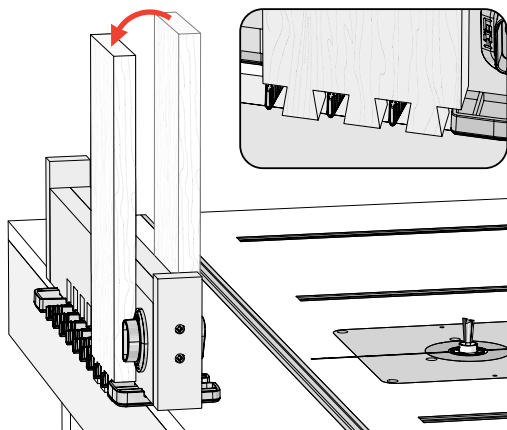


7-27 You will now have a half-pin socket at each board edge.

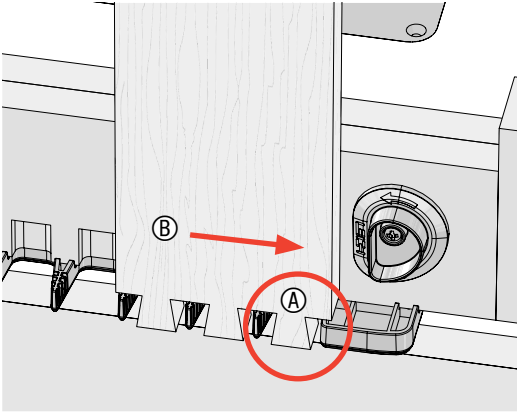
Do not remove the tail board as it is used to set the **PINS** side stop.



7-28 Position the jig so that the pin fingers overhang the edge of the router table.

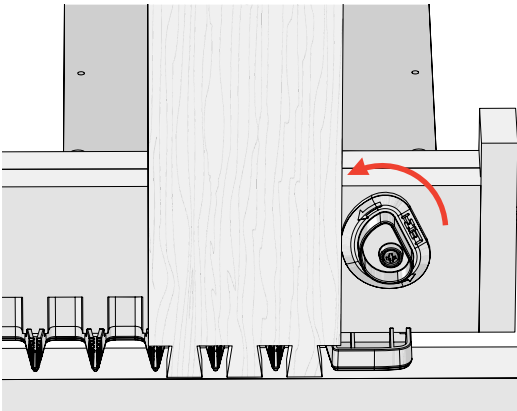


7-29 Unclamp the tail board. Keeping the same face toward you, move the tail board to the **PINS** side of the jig and fit the pin sockets over the pin fingers of the template.



7-30 The leftmost tail should be in the first template opening closest to the side stop **A**.

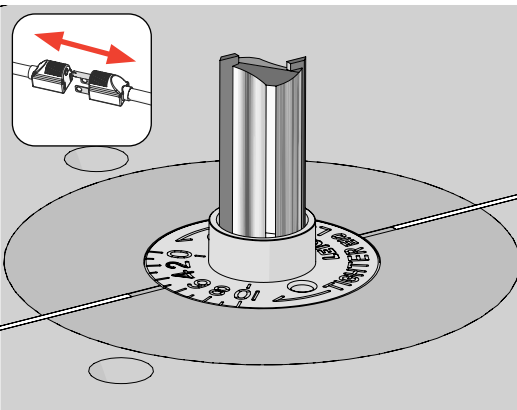
There will be some slight play in the tail board. Hold the tail board firmly against the **PINS** side of the beam and the template, and move the board toward the side stop **B**.



7-31 While holding the tail board firmly in place, rotate the side stop counter clockwise until it touches the edge of the board.

The side stop is now set to rout the test pin board.

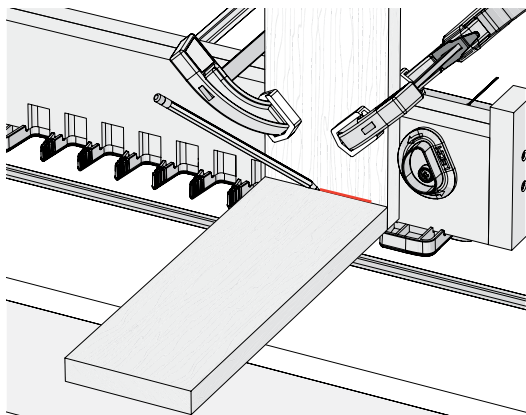
Remove the tail board.



7-32 Rout the Test Pin Board

With the router unplugged, install the included 1/2" straight bit and tighten the collet nut.

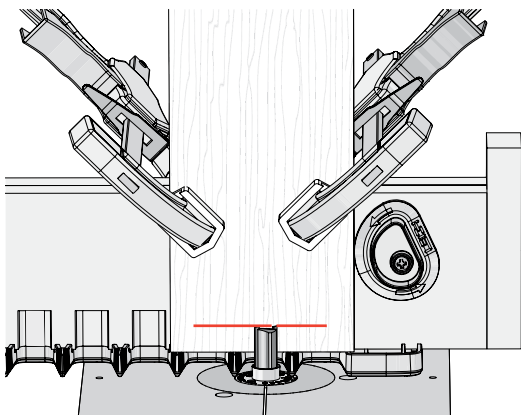
⚠ The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely before reconnecting the power.



7-33 With the **PINS** side of the jig facing you, set the test pin board flush on the template with the edge against the side stop.

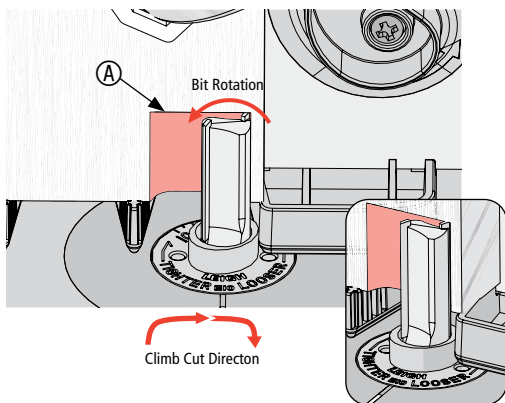
Clamp it in place.

Use the mating tail board to mark the depth of cut.



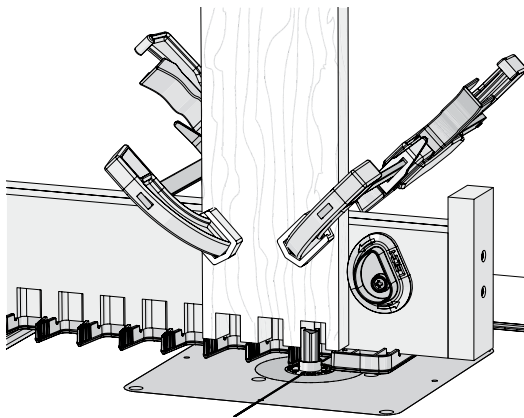
7-34 Adjust the bit until the tip is at the depth of cut line.

Rotate the collet to ensure it spins freely.



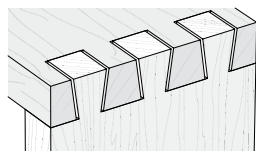
7-35 Make a Climb Cut When routing pins, you should always start with a shallow climb cut as this will produce a clean shoulder (A).

A climb cut may pull the jig to the right, so be sure to hold it firmly. Start on the right of the template opening and make a shallow cut as you move the jig to the right.

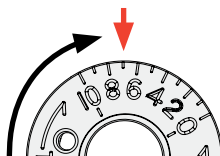


7-36 After making the climb cut, rout out the rest of the wood between the pins, in all template openings, along the width of the board.

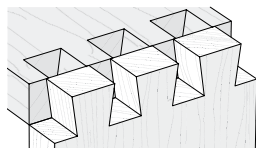
Be sure the guide bushing touches both sides of the template opening.



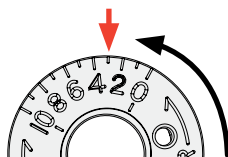
TOO LOOSE



TIGHTEN



TOO TIGHT



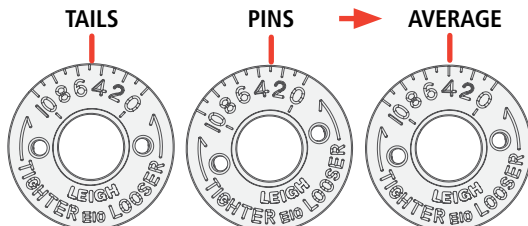
LOOSEN

7-37 Joint Fit Adjustment

With the marked sides facing out, assemble the test boards. If the joint is too loose, use the pin wrench and turn the eBush to a higher number **and rout a new pin board.**

If the joint is too tight, turn the eBush to a lower number **and rout a new pin board.** One or two test cuts should produce the proper fit.

Re-tighten the eBush nut after each guide bushing adjustment.



$$\text{Tails} + \text{Pins} = \text{Divided by } 2 =$$

$$5 + 3 = 8 \div 2 = 4$$

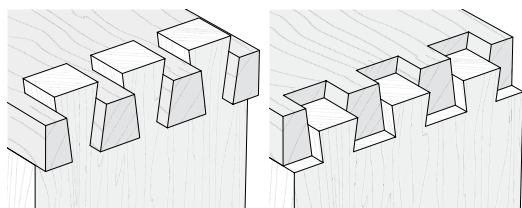
7-38 Once the fit is correct, add the two eBush settings together and divide by two. **Example:** 5 for tails, 3 for pins ($5 + 3 = 8$) ($8 \div 2 = 4$). Record setting “4” on an eBush diagram in the next step.

SAMPLE

June 7, Maple



7-39 Use these eBush diagrams to record the settings you used to achieve perfect joint fit. The first eBush is an example of how to record your setting.

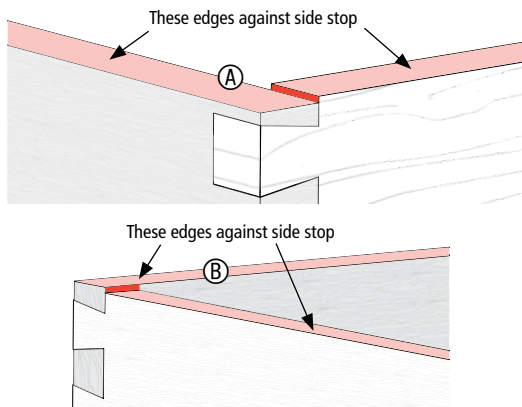
**OVER FLUSH****UNDER FLUSH**

7-40 Joint flushness is determined by the depth of cut.

If the joint is over flush, lower the bit to make a shallower cut.

If the joint is under flush, raise the bit to make a deeper cut.

Rout new test joints until fit and flushness are perfect before routing the final boards.

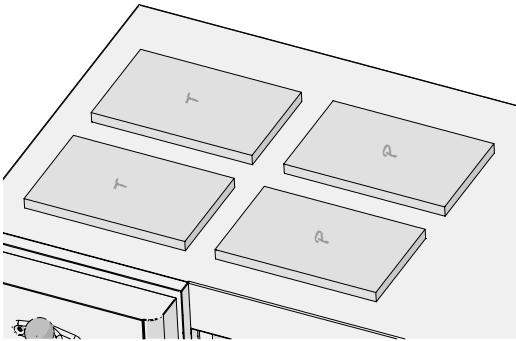
**7-41 Joint Edge Flushness**

If the edges of your joints are not flush, this could be due to bit concentricity issues.

The pin board edge that goes against the side stop might need to be raised (A) or lowered (B) slightly.

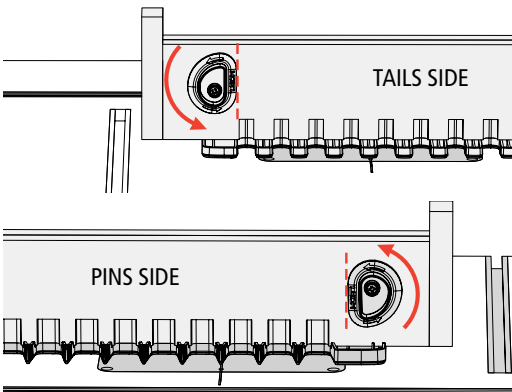
For instructions on bit concentricity adjustments, see Steps 6-33 to 6-44.

Note: The steps are the same, but the jig will be upside down.

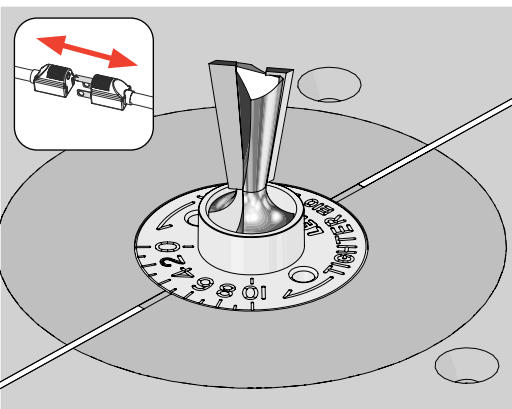


7-42 Making a Box

First establish the outside faces. Then lay out the four boards and mark the outside faces of two of the boards with a “**T**” (tail board) and two of the boards with a “**P**” (pin board).



7-43 Turn both side stops until the straight edge is vertical and facing the middle of the jig.

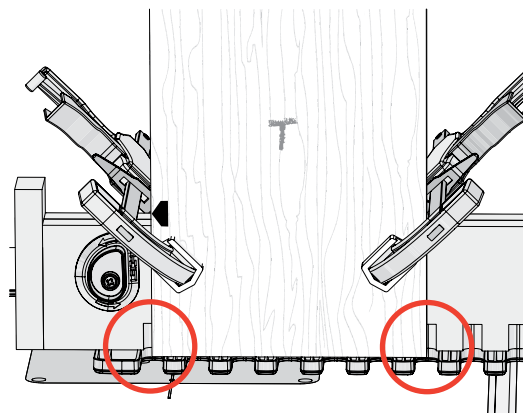


7-44 Routing the Tail Boards

Turn the eBush to the setting determined in the test joint.

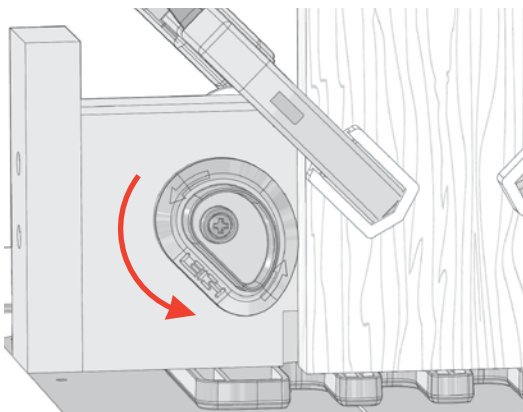
With the router unplugged, install the 1/2" 8° dovetail bit and tighten the collet nut.

The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely before reconnecting the power.



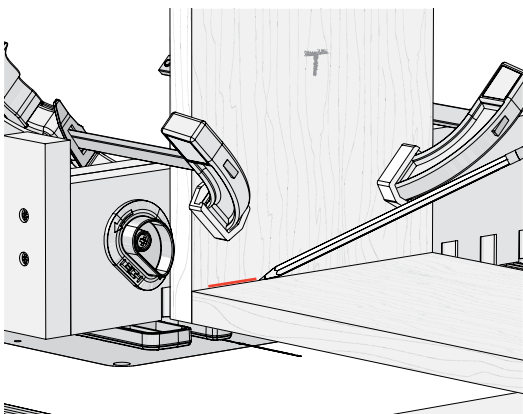
7-45 With the **TAILS** side of the jig facing toward you, position the tail board on the right side of the template, leaving equal amounts of overhang on each board edge.

Clamp the board in place.

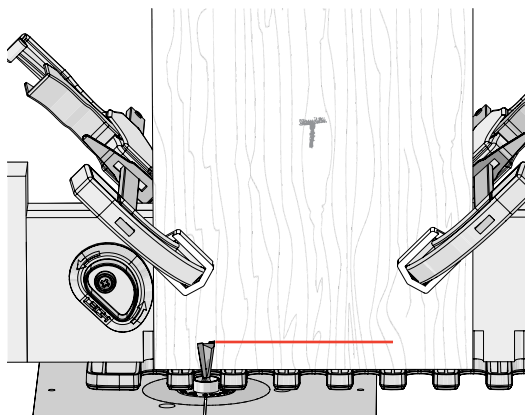


7-46 Rotate the side stop counter clockwise until it touches the edge of the board.

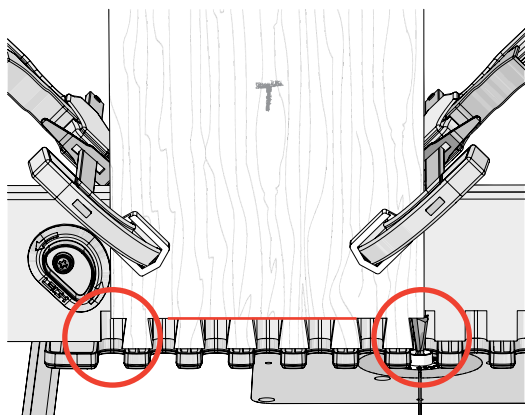
The side stop remains in place for all tail board routing.



7-47 Hold a pin board flush against the template and draw a line on the tail board, indicating depth of cut.



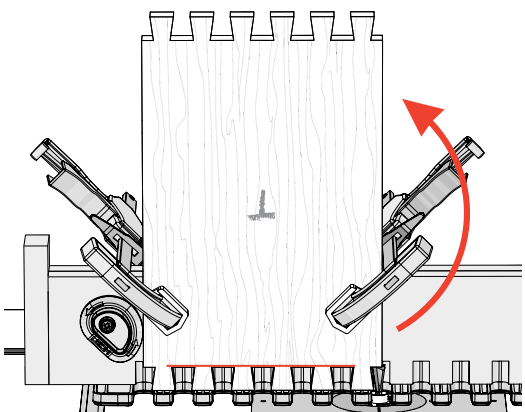
7-48 Adjust the bit until the tip is at the depth of cut line.



7-49 Hold the router firmly as you rout straight in and out of each template opening. The diameter of the guide bush is slightly smaller than the openings in the template, so be sure the guide bushing touches both sides of the template opening.

Do not rotate the jig.

There will now be a half-pin socket at each edge of the tail board.

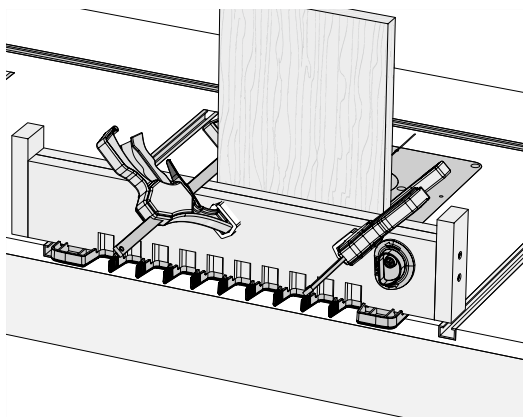


7-50 Unclamp the tail board. Keeping the same face toward you, rotate the board 180° and set it down flush on the template with the edge against the side stop.

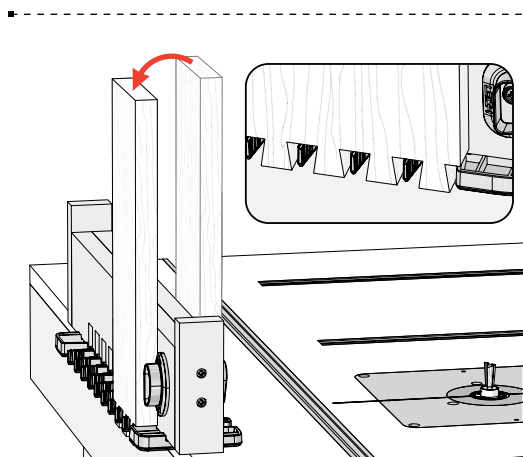
Clamp it in place.

Rout the other end of the tail board and repeat for the second tail board.

Do not remove the tail board as it is used to set the **PINS** side stop.

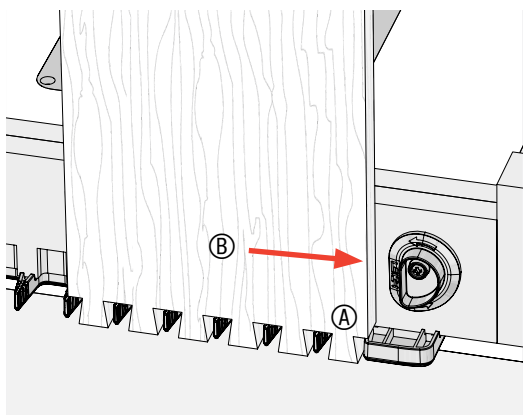


7-51 Position the jig so that the pin fingers overhang the edge of the router table.



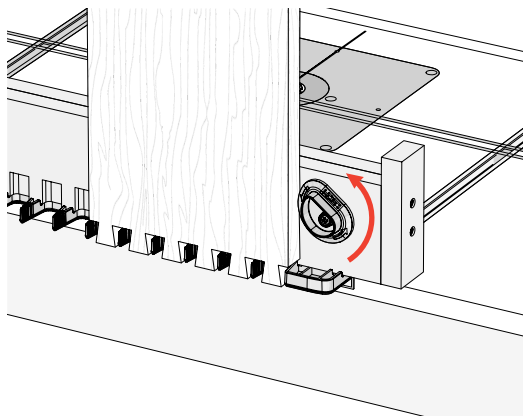
7-52 Unclamp the tail board.

Keeping the same face toward you, move the tail board to the **PINS** side of the jig and fit the pin sockets over the pin fingers on the template.



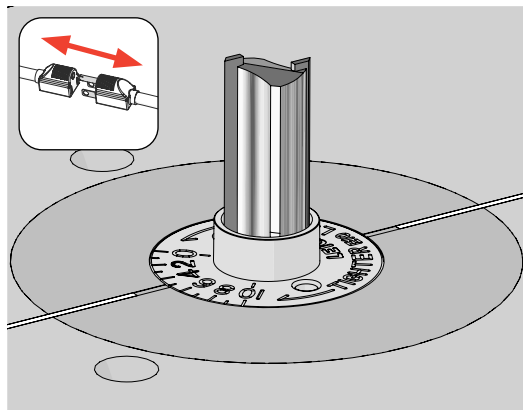
7-53 The leftmost tail should be in the first template opening closest to the side stop (A).

There will be some slight play in the tail board. Move the board toward the side stop (B).



7-54 Hold the tail board firmly against the beam and rotate the side stop counter clockwise until it touches the edge of the board. The side stop is now set to rout the pin boards.

Remove the tail board.

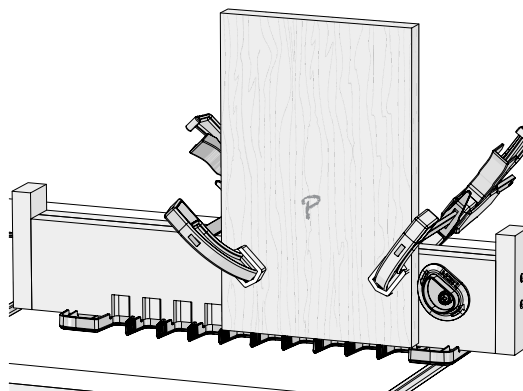


7-55 Routing the Pin Boards

Do not change the eBush setting.

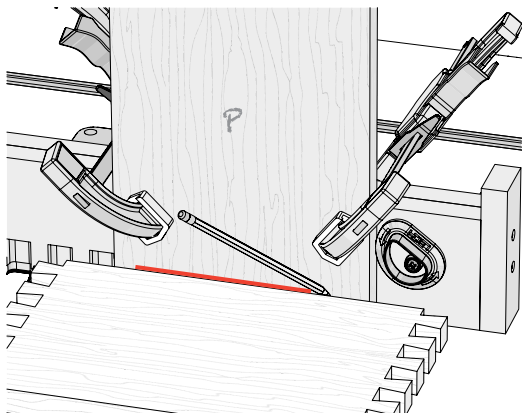
With the router unplugged, install the included 1/2" straight bit and tighten the collet nut.

⚠ The collet and bit must not touch the eBush or eBush nut. Rotate the collet to ensure both spin freely before reconnecting the power.

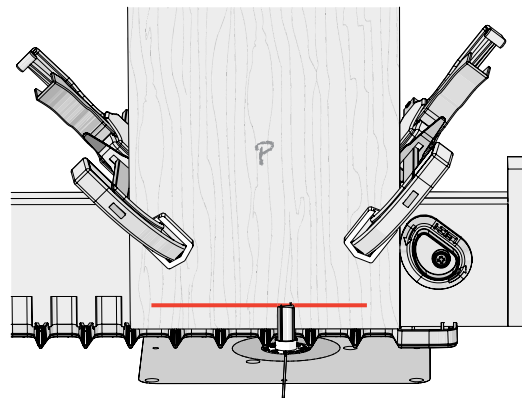


7-56 With the **PINS** side of the jig facing toward you, set the first pin board flush on the template with the edge against the side stop.

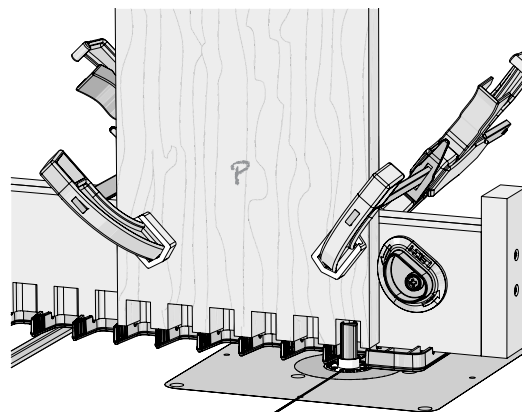
Clamp it in place.



7-57 Hold a mating tail board flush on the template and draw a line indicating the depth of cut.



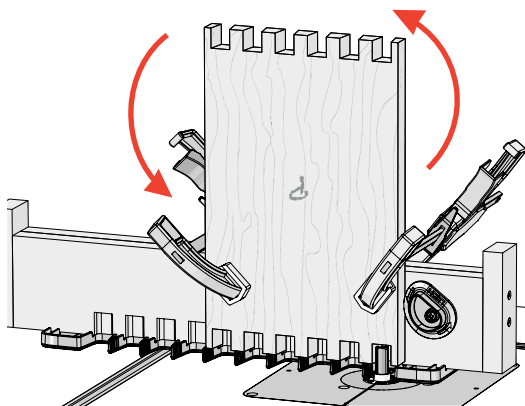
7-58 Adjust the bit until the tip is at the depth of cut line.



7-59 Hold the jig firmly and make a light climb cut (See Step 7-35).

Then rout out the rest of the wood between the pins, along the full width of the board.

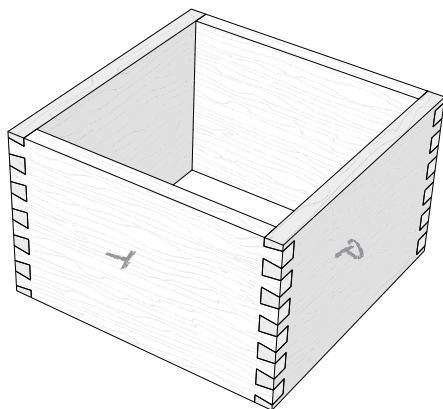
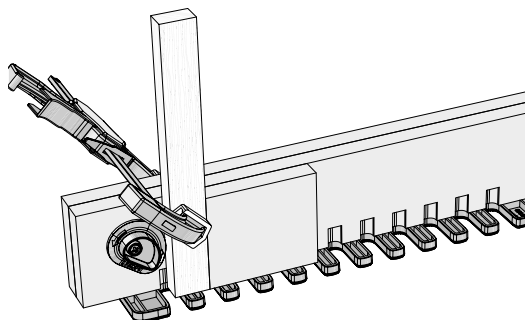
Be sure the guide bushing touches both sides of the template opening.

**7-60** Unclamp the pin board.

Keeping the same face toward you, rotate the board 180° and set it down flush on the template with the edge against the side stop.

Clamp it in place.

Rout the other end of the pin board and repeat for the second pin board.

**7-61** Assemble the box keeping all marked board faces outward.**7-62 Clamping Narrow Boards**

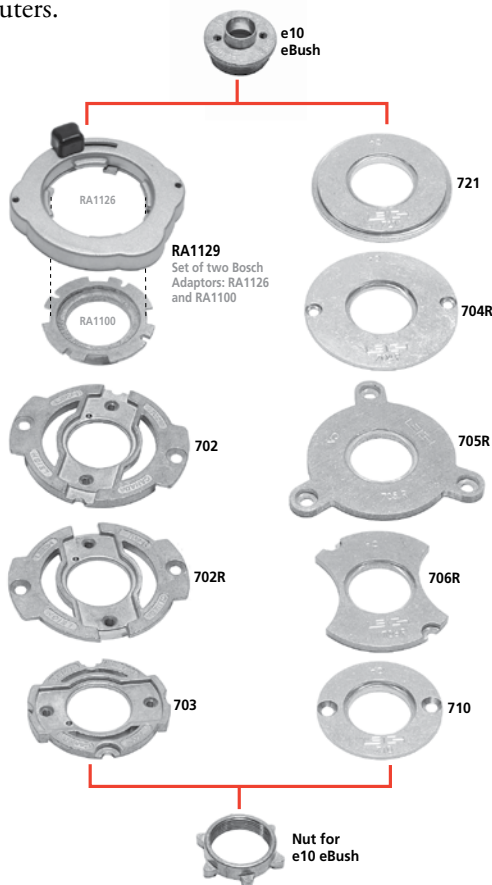
See Steps 6-66 to 6-73 for narrow board clamping. ■

CHAPTER 8

Guide Bushing Adaptor Selection

FOR HANDHELD ROUTERS ONLY

The TD330 requires a router fitted with the e10 guide bushing, and possibly an adaptor to fit the bushing to the router. Leigh offers a variety of adaptors, as shown below. They fit most common routers.



See the list of routers in the chart on the next page. **For a complete list of routers see www.leightools.com.**

DIRECTIONS

- A.** Locate router maker and router model in Columns 1 and 2.
- B.** Locate adaptor required for your router in Column 3.
- Order Leigh adaptors (**part no's in red**) in Column 3 from Leigh.
 - Order Bosch adaptors RA1100 and RA1126 in Column 3 from Leigh or your Bosch dealer.
 - Order all other adaptors from the router manufacturer's dealer.

Note: Adaptor mounting screws are included with router.

C. Note: ♦ The e10 elliptical guide bushing (5/8" [15.8mm]) shown in column 4 is supplied with the TD330 jig. Order only if you require a replacement.

Adaptors for Router Tables

Leigh guide bushings and eBushes are based on the industry standard 1-3/8" 2-piece design. Most router tables have adaptors that accept these standard guide bushings. If your router table does not have a suitable adaptor, please check with the router table manufacturer.

1 BRAND	2 ROUTER MODEL	3 ROUTER ADAPTOR	4 e10 ♦
BLACK & DECKER	All Professional, HD1250, RP400K, 7614	Not Required	e10
	6200	720673-00	e10
	SR100, 7AEE, KW780 series, KW800, KW850	710	e10
BOSCH	90085, 90088, 90098, 90140, 90150, 90300, 90303, 90305, 91264	Aftermarket base plate required	e10
	1600, 1601, 1602, 1603, 1604, 1606, B1350	RA1110 required	e10
	North American ROUTERS PRODUCED AFTER mid-2010: 1613EVS, 1613AEVS, 1617, 1617EVS, 1618, 1618EVS, 1619EVS, MR23EVS, MRC23EVS, MRF23EVS, MRP23EVS	RA1100 & RA1126 req'd. Sold only as Set RA1129. Includes both.	e10
	North American ROUTERS PRODUCED BEFORE mid-2010 and others available worldwide that include the RA1126 adaptor: 1613(EVS)(AEVS), 1614(EVS), 1617EVS, 1618EVS, 1619EVS, B1450, GOF900(C)(ACE), GOF1200, GOF1250(C)(LCE), GOF1300(C)(ACE), GOF1600CE, GOF2000CE, GMF1400, GMF1600CE, POF800ACE, POF1100AE, POF1200AE, POF1400ACE	RA1100 required Sold only as Set RA1129 (Set includes RA1100 and RA1126)	e10
	16111, 1611EVS, 1615, 1615EVS, B1550, GOF1600, GOF1700ACE	702	e10
CRAFTSMAN (SEARS)	All non-plunge models	Aftermarket base plate required	e10
	135275070 Plunge	See Skil 1823 or 1835	
	Other plunge models	702	e10
	MD11 Plunge & Fixed Base. MD9.5 Fixed Base	Not Required	e10
DEWALT	DW610, DW616, DW618	Not Required	e10
	DW613, DW615(UK)	710	e10
	DW614, DW615, DW621, DW624, DW625, DW626	N. America Only, Supplied w/router	e10
	DW621K, DW622 and DW626 outside N. America	706R	e10
	DW625 Type 1,2,3,5 outside N. America	702	e10
	DW624 & DW625 Type 4 outside N.America, DW625EK	702R	e10
FEIN	RT1800	Supplied w/router	e10
FESTOOL	OF1E, OF2E, OF650, OF900E, OF1000, OF1010E	704R	e10
	OF2000, OF2000E	705R	e10
	OF1400 and OF2200 North America Only	Supplied w/router	e10
	OF1400 Outside North America	493566	e10
	OF2200 Outside North America	494627 O-ring may be required to keep bushing centered	e10
FREUD	FT1700(2), FT2000, FT2200, FT3000	721	e10
	FT1700VCEK	702R	e10
HITACHI	TR8, TR12, FM8, M8, M12 Series	325211 OR 703	e10
	M12VC, KM125C, KM12VC	Not Required	e10
	M12SA2, M12V2	325224	e10
MAKITA	M363, MRP090, RP1800(F), RP1801(F), RP2300(FC), RP2301(FC), 3612C Europe Qk Fit Base	721	e10
	3600, 3606, 3608, 3612, 3612B, 3612BR, 3612C N. America, 3620, 3621, RP0900, RP900K	703	e10
	3601B	321 493-1	e10
	RP0910, RP1110C	706R	e10
	RF1100, RF1101, RD1100, RD1101, RP1101	Not Required	e10
MASTERCRAFT	Please contact Leigh for assistance		
MILWAUKEE	5615, 5616, 5619	49-54-1040 (replacement base)	e10
	5625	49-54-1026 (replacement base)	e10
	5670	Not Required	e10
PORTER CABLE (ROCKWELL)	All	Not Required or Supplied w/router	e10
RIDGID	R2930 (for all others, please contact Leigh for assistance)	704R	e10
RYOBI	R30, R50, R150, R151, RE155, R500, R501, R502	703	e10
	R600, R601, RE600, RE601	702	e10
	R160, R161, R162, R163K, R165, R170, R175, RE175, R180, R180PL, R181, R185, ERT1150	706R	e10
	1823 or 1835	91803	e10
SKIL	SK1810, 1815, 1820, 1825	RAS140	e10
	All others	Aftermarket base plate required	e10
TREND	T3, T4, T5, T9, T10, T11—UniBase required	710	e10
TRITON	TRC001	TGA006 or 704R	e10
	JOF001, MOF001, TRA001	Accessory Kit (includes adaptor) TGA001 or TGA250	e10

CHAPTER 9

Customer Support

Our Commitment to You Leigh Industries takes pride in its commitment to providing excellence in customer service and support. This user guide is designed to provide you with the answers to any questions you have. However, if you require assistance, please feel free to contact our technical support staff or a distributor listed below.

Manufacturer: Canada/USA

TEL/FAX

**Customer Service
and Technical Support**

1-800-267-8761 (Canada)

1-800-267-8735 (USA)

EMAIL/WEB

Customer Service

customerservice@leevalley.com

NOTE: Email can be useful, but technical queries usually raise queries from us. A phone call is the quickest and most convenient way to get queries answered, either directly to Lee Valley (toll free in N. America) or to your national distributor. –Thanks!

MAILING ADDRESS

Lee Valley Tools Ltd.
P.O. Box 6295, Station J
Ottawa, ON
K2A 1T4

LOCATION

Lee Valley Tools Ltd.
1090 Morrison Dr,
Ottawa, ON
K2H 1C2

Distributors

AUSTRALIA & NEW ZEALAND

Carbatec - The Home of Woodworking
Unit 2, 364 New Cleveland Road
Tingalpa, QLD 4173 Australia
Tel: 07 3569 3205
Tel (Int.): +61 7 3292 0392
Email: Purchasing@carbatec.com.au
Web: carbatec.com.au

CHINA

Nanjing Haiwei Machinery Co., Ltd.
Harvey Woodworking Technology(Nanjing) Co., Ltd.
68-10 Suyuan Avenue, Jiangning District,
Nanjing, 211100 China
Tel: 86-(0)25-8666-8172 / 5792 8021
Fax: 86-(0)25-5792-8826
Email: cassie@harvey.cn
Web: www.harveymachinery.com
Web: www.harveyworks.cn

FRANCE

Ets Bordet
98 Rue Louis Ampère,
Neuilly Sur Marne, 93330 France
Tel: 01 41 53 40 40
Email: info@bordet.fr
Web: www.bordet.fr

GERMANY

Hacker GmbH
Holzbearbeitungsmaschinen
Traberhofstraße 103 D-83026 Rosenheim,
Deutschland
Tel: 08031/68171
Fax: 08031 68221
Email: hacker.rosenheim@t-online.de
Web: www.hacker-rosenheim.de

ITALY

Ferrari Macchine Legno SRL
Via Gallarate 76 Settimo,
20019 Settimo M.se (MI) Italy
Tel: 39 02 335 010 95
Fax: 39 02 335 005 27
Email: info@ferrarimacchine.com
Web: www.ferrarimacchine.com

JAPAN

Off Corporation Inc.
785-1 Hirose, Shimizu-ku, Shizuoka-shi
Shizuoka Ken, 424-0102 Japan
Tel: 81-50-3816-0115
Fax: 81-54-367-6515
Email: info@off.co.jp
Web: www.off.co.jp/category/LEIGH/

KOREA

Leigh Korea
604, 13-1, Gugal-Ro 72beon-gil,
Giheung[1]Youngin-si,
Gyeonggi Republic of Korea ,
16972 South-Korea
Tel: +82-(0)31-281-1141
Fax: +82-0504-192-0629
Email: maengha@leighkorea.com
Web: www.leighkorea.com

SOUTH AFRICA

Hardware Centre, Handico PTY Ltd/A Hardware
Centre
Shop 8 Homeworld Centre
CNR. Malibongwe & Rocky ST.
Randburg, Ferndale
South Africa
Tel: +27 011 791-0844/46
Fax: +27 011 791-0850
Email: info@hardwarecentre.co.za
Web: www.hardwarecentre.co.za

SWEDEN

Toolbox Sweden AB
Facetten Kaj 9
Atvidaberg, 59730
Sweden
Tel: 46 120 854 50
Fax: 46 120 854 69
Email: info@toolbox.se
Web: www.toolbox.se

UNITED KINGDOM & IRELAND

Axminster Tools & Machinery
Headquarters, Unit 10. Weycroft Ave.
Millwey Rise Industrial Estate
Axminster, EX13 5PH, United Kingdom
Tel: 011 44-927-630-007
Tel: 01297 630813
Fax: 011 44-870 432-7622
Fax: 01-297-631-224
Email: procurement@axminstertools.com
Web: www.axminster.co.uk/leigh

USA

Rockler
Woodcraft
Infinity Cutting Tools
Highland Hardware

5 Year Warranty

Leigh stands behind its products with a 5 year limited warranty. Contact Leigh for warranty service. Proof of purchase may be required. Postage is to be prepaid and insured to Leigh Industries Ltd. Return shipping is by means chosen by Leigh Industries Ltd.



Leigh Industries Ltd. warrants that this product is free of defects in factory workmanship and materials during normal use. If this product fails during normal use because of such a defect, Leigh Industries Ltd. will, at its option, repair or replace, free of charge, any part or parts shown to be so defective. This warranty applies to the original owner, who purchases for use and not for resale, for a period of five years from the date of purchase. Failure resulting from alteration, modification, misuse, abuse or neglect or after repairs have been attempted or made by others will result in no coverage. The scope of this warranty is limited. This warranty constitutes the sole and exclusive remedy of the purchaser against Leigh Industries Ltd. from whatever cause, including without limitation, any cause relating to a breach of condition, representation or warranty, express or implied, whether by statute, common law or otherwise, or for damages for negligence or for any other claim for death, personal injury, property damage or economic loss of any kind, direct or consequential, arising out of the purchase, installation or use of this product. This warranty shall be governed by and construed in accordance with the laws in the Province of British Columbia, Canada which shall be deemed to be the proper law hereof.

Satisfaction Guarantee

Products purchased directly from Leigh carry a 90-day Customer Satisfaction Guarantee. Those purchased from an authorized Leigh dealer may also carry a Customer Satisfaction Guarantee; see your Leigh dealer for details. Proof of purchase is required.

Quick Reference

Board Width Selection for TD330											
No. of Tails		1	2	3	4	5	6	7	8	9	10
inches	Min	1 ⅛	2 ⅜	3 ⅝	4 ⅞	6 ⅛	7 ⅜	8 ⅝	9 ⅞	11 ⅛	12 ⅜
	Exact	1 ¼	2 ½	3 ¾	5	6 ¼	7 ½	8 ¾	10	11 ¼	12 ½
	Max	1 ⅝	2 ⅞	4 ⅞	5 ¾	6 ⅝	7 ⅞	9 ⅞	10 ¾	11 ⅝	12 ⅞
No. of Tails		1	2	3	4	5	6	7	8	9	10
mm	Min	29	60	92	124	156	187	219	251	283	314
	Exact	32	64	95	127	159	191	222	254	286	318
	Max	41	73	105	137	168	200	232	264	295	327