LEIGH R9PLUS

Router Table & Bench Dovetail Jig

User Guide

Bench Operation

See other side of book for Router Table Operation

Dedicated Customer Support

1-800-267-8761

Your New Leigh R9PLUS Dovetail Jig for Dovetails and Box Joints

Note: There are two user guides in this book. This user guide is for Bench Operation. Flip the book over for Router Table Operation.

The R9PLUS Dovetail Jig was designed to overcome the restrictions of fixed width jigs. Because of its unique "step over" feature, it is possible to rout Through Dovetails and Box Joints on boards of ***ANY*** width!

The R9PLUS can be used as a template jig with a hand-held router or as a router table template. In either mode, you will be able to rout multiple sizes of perfectly fitting through dovetails and box joints.

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 the Customer Support section of the Appendix.

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

Important! Inches and Millimeters

Text and illustrations in this English language user guide indicate dimensions in both inches and millimeters, with "inches" first, followed by "millimeters" in square brackets, i.e. ½"x 2"[12x50mm].

Do not be concerned that the inch/millimeter equivalents are not mathematically "correct." Just use the dimensions that apply to your guides and bits.

U.S. Patent No. 8,534,329

What's in the Box:

	PART NO.	QUANTITY	PART DESCRIPTION
	2000	1	R9PLUS Template
	2090	1	User Guide
BAG 1			
	2030	2	Latches
	2040	1	Glide for Router Table
	2080	1	Sidestop
BAG 2			
	2010	3	Pin Plates
BAG 3			
	2050	2	Beam Assembly Screws, ¼"-20 x 2¾"
	2055	2	Beam Assembly Wing Nuts, ¼"-20
	2060	2	Latch Screws, Phillips, 10-24 x ¾"
	2065	2	Latch Nuts, Nyloc
	2070	11	Wood Screws, Phillips Flat Head, No.8 x 1¼"
	2075	1	Sidestop Screw, Phillips Round Head, No.8 x 1¼"
BAG 4			
	e10	1	e10 eBush (Guide Bushing)
	80-8	1	Dovetail Bit, ½"- 8°
	160	1	Straight Bit, ½" Two Flute
	172-8	1	Collet Reducer, ½" to 8mm
	730V	1	Pin Wrench
BAG 5			
	2020	2	Clamp Locators
	9505	2	F-Clamps

2000

2090

Contents

Dedicated Customer Support
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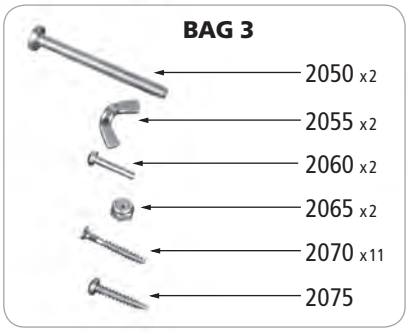
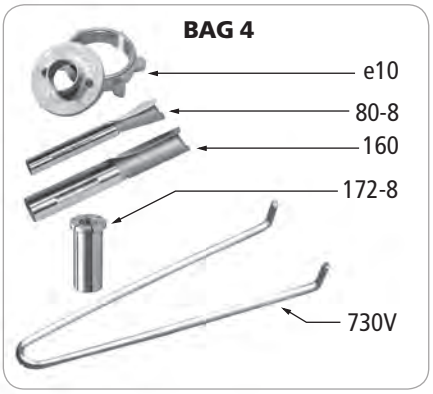




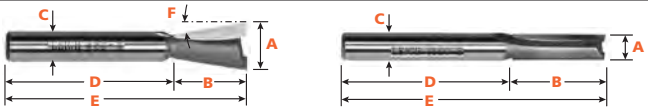
You will need:

- A wooden beam 1½" x 3½" x 30". See jig assembly for optional beam sizes.
- ⅝"[15mm] MDF for sacrificial backer boards and clamp face boards. See jig assembly for optional sizes.
- A No.2 Phillips screwdriver
- An electric drill, preferably bench or pedestal, but hand-held will work
- 3/32" drill bit for pilot holes. **Note:** use 1/8" or 9/64" for hardwood.
- ¾"[19mm] Forstner or similar bit for the clamp holes
- 5/16" drill bit for the back up board holes,
- A countersink bit
- A router with adaptor for the e10 guide bushing

R9PLUS Bit Selection

This chart shows all bits that can be used on the R9PLUS.

R9PLUS BIT SELECTION



Leigh Bits	A Bit Diameter	B* Max. Cutting Depth	C Shank Diameter	D Shank Length	E Overall Length	F Angle	Use with Straight Bit No.	Use with e-Bush	Use with Collet Reducer
Half-Pitch Through Dovetails									
70-8 Carbide Tipped	3/8"	1/4" to 1/2"	8mm	1 3/4"	2 1/4"	8°	140-8 170 170C	e7 & e10	172-8
75-8 Carbide Tipped	7/16"	3/8" to 5/8"	8mm	1 3/4"	2 3/8"	8°	140-8 170 170C	e7 & e10	172-8
Full Pitch Through Dovetails									
70-8 Carbide Tipped	3/8"	1/4" to 1/2"	8mm	1 3/4"	2 1/4"	8°	160 180 180C	e10	172-8
75-8 Carbide Tipped	7/16"	3/8" to 5/8"	8mm	1 3/4"	2 3/8"	8°	160 180 180C	e10	172-8
80-8* Carbide Tipped	1/2"	1/2" to 13/16"	8mm	1 3/4"	2 9/16"	8°	160 180 180C	e10	172-8
140-8 Carbide Tipped	5/16"	up to 1"	8mm	1 3/4"	2 3/4"	–	–	e7	172-8
170* High Speed Steel	5/16"	7/8"	8mm [5/16"]	1 3/4"	3"	–	–	e7	172-8
170C* Solid Carbide	5/16"	up to 1"	8mm [5/16"]	1 3/4"	2 3/4"	–	–	e7	172-8
160* Carbide Tipped	1/2"	up to 1 1/4"	1/2"	1 3/4"	3"	–	–	e10	1/2" collet required
180* High Speed Steel	1/2"	1 1/4"	1/2"	1 3/4"	3 1/2"	–	–	e10	1/2" collet required
180C* Solid Carbide	1/2"	up to 1 1/4"	1/2"	1 3/4"	3 1/2"	–	–	e10	1/2" collet required
Box Joints									
166* High Speed Steel	3/16"	5/8"	1/4"	1 3/4"	2 7/8"	–	–	e10	1/4" collet required
166C* Solid Carbide	3/16"	5/8"	1/4"	1 3/4"	2 1/2"	–	–	e10	1/4" collet required
173* High Speed Steel	For 3/8" & 3/4" Joints	1"	3/8"	1 3/4"	3"	–	–	e10	172-375
173C* Solid Carbide	For 3/8" & 3/4" Joints	1"	3/8"	1 3/4"	3"	–	–	e10	172-375

*Bits 80-8 and 160 included with the R9 Plus.
*Spiral upcut bits rout cleaner and faster, leaving a smoother finish.

172-8
1/2" to 8mm collet reducer
1 1/4" long. For 8mm shank bits.

172-375
1/2" to 3/8" collet reducer
1 1/4" long. For 3/8" shank bits.

R9PLUS Accessory Kit

This kit offers great savings over individual prices.

***Item ACR9* Includes:**

70-8 3/8" dovetail bit (for through dovetails)
75-8 7/16" dovetail bit (for through dovetails)
140-8 5/16" straight bit (for half-pitch through dovetails)
e7 eBush (for 70-8, 75-8 for half-pitch through dovetails)
166 3/16" spiral upcut bit (for box joints)
173 3/8" spiral upcut bit (for box joints)
172-375 1/2" to 3/8" collet reducer

R9PLUS Pin Plates

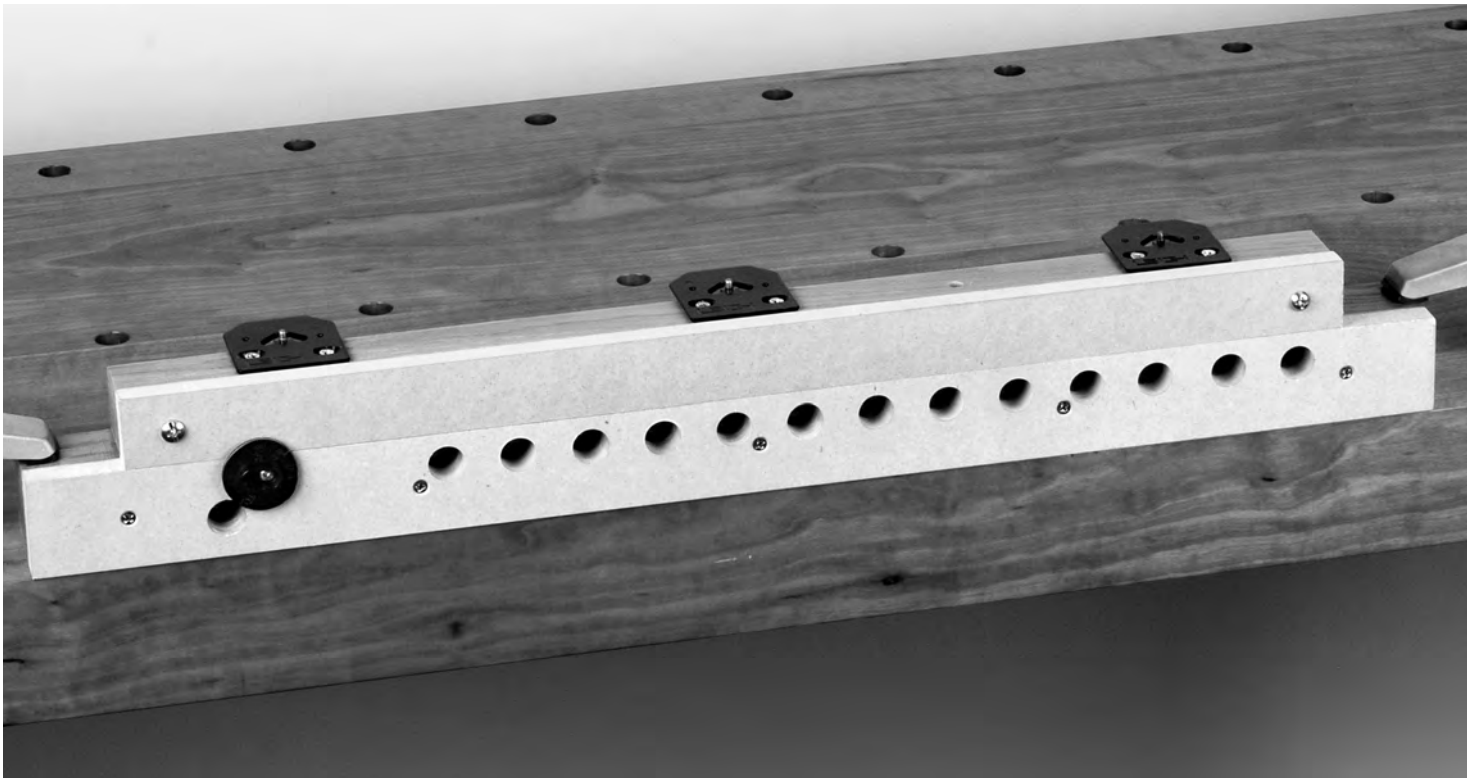
2010PR Package of 2

CHAPTER 1
Making the Beam

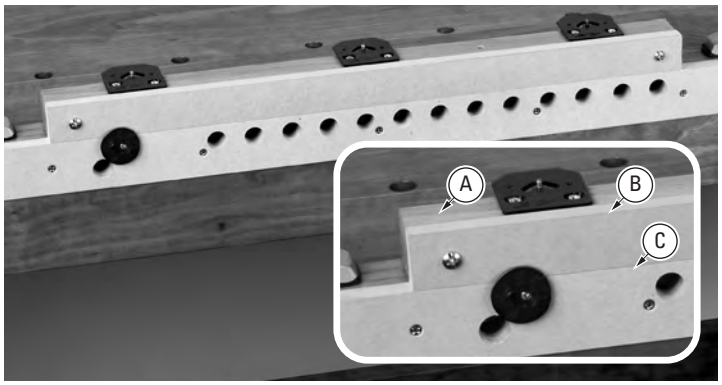
The heart of the R9PLUS Dovetail Jig is the beam. A typical beam, shown below, is 30"[762mm] long. A 30"[762mm] beam can accommodate board widths of up to 18"[457mm]. Beams can be made shorter (minimum 20"[508mm]) or longer, in 10"[254mm] increments. Because of the template's unique "step over" ability, beams can be made longer to suit any width project. The beam is equally suited to router table or bench operation.

The following instructions will guide you through the beam making process. Care in building the beam will ensure great joinery every time with the R9PLUS. In addition to these instructions, a two page drawing, complete with all dimension information, is provided at the end of the user guide.

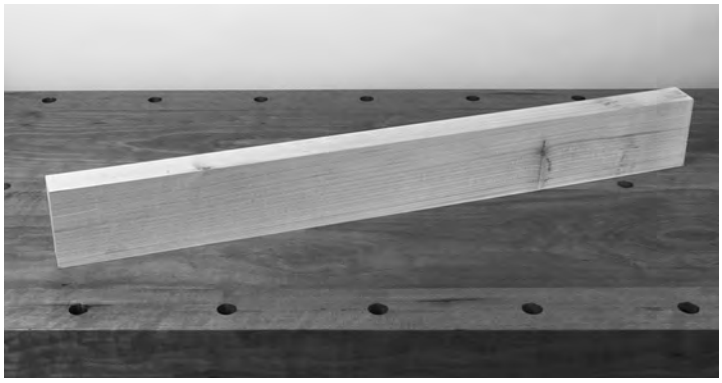
Important: Please use this chapter's step-by-step instructions in conjunction with the technical drawing on pages 38-39 of the Appendix.



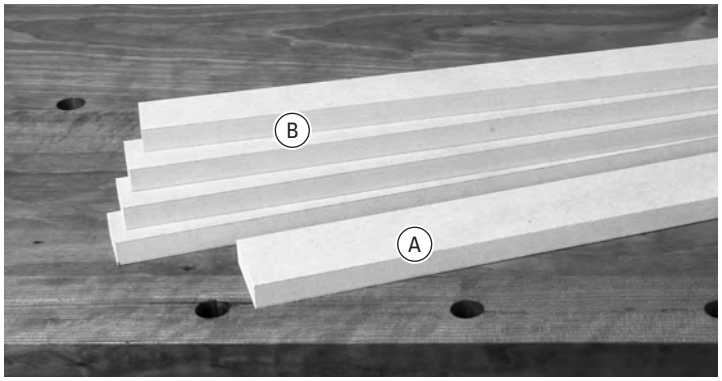
Important: Please use these step-by-step instructions in conjunction with the technical drawing in the Appendix, pages 38-39.



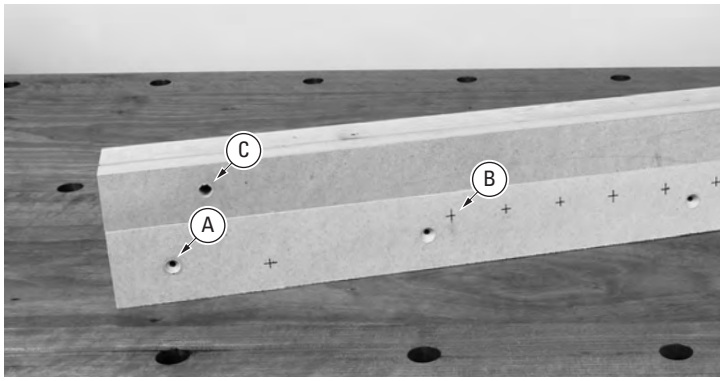
1-1 The beam assembly consists of the main beam Ⓐ, the sacrificial backer board Ⓑ and the clamping surface Ⓒ. We recommend making the clamping surface and sacrificial board from MDF, 1/2" to 3/4"[12,7 to 19mm] thick. Hardwood or softwood may also be used.



1-2 Start with a straight, flat and square 30"[762mm] length of wood, 1½" x 3½" x 30"[38mm x 89mm x 762mm]. **Note:** A 30" section of common 2 × 4 can be used if it is straight, flat and square.

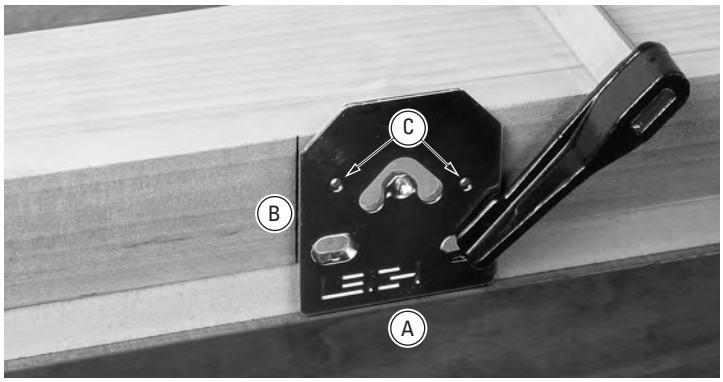


1-3 Cut a piece of MDF 30" long and 2⅛" wide [762mm x 54mm]. This will be your clamping surface Ⓐ. Then cut your sacrificial boards 1½" x 30"[38mm x 762mm]. You may want to cut a number of extra sacrificial boards now to use as replacements Ⓑ.

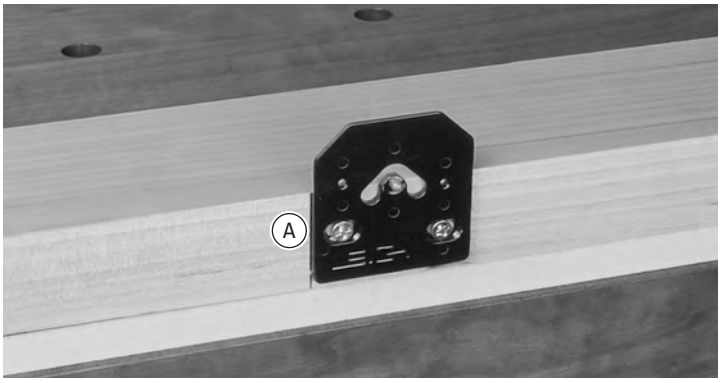


1-4 Lay out the mounting screw holes Ⓐ and clamp holes Ⓑ as per the drawing on pages 38-39. Drill and countersink the screw holes on the clamping surface. Drill the 5⁄16"[8mm] holes Ⓒ in the sacrificial board. This piece can be reversed and flipped four times to use up all four surfaces.

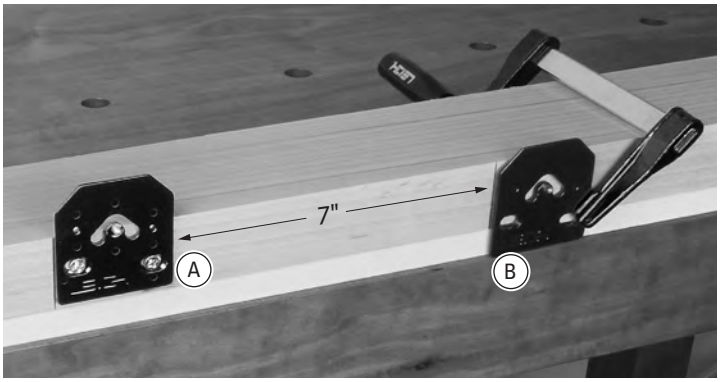
1-5 This procedure is critical to the accuracy of the jig. Before attaching the MDF boards to the beam, use each pin plate as a drill guide. First, mark a line 4½"[114mm] in from the left end of the **top of the beam** and square it across Ⓐ. Next, stack the clamping surface Ⓑ, sacrificial board Ⓒ and beam Ⓓ near the edge of the workbench and clamp in place Ⓔ.



1-6 Clamp a pin plate with its wide straight side flush to the flat bench surface Ⓐ and its side edge on the line Ⓑ. Using the 2 small holes Ⓒ in the pin plate as a drill guide, drill two 3⁄32"[2,5mm] pilot holes 1"[25,4mm] deep. These holes will correctly position the pin plate on the beam. **Note: If you are using hardwood, redrill these holes with a larger bit, 1/8" or 9/64", to avoid breaking screws.**

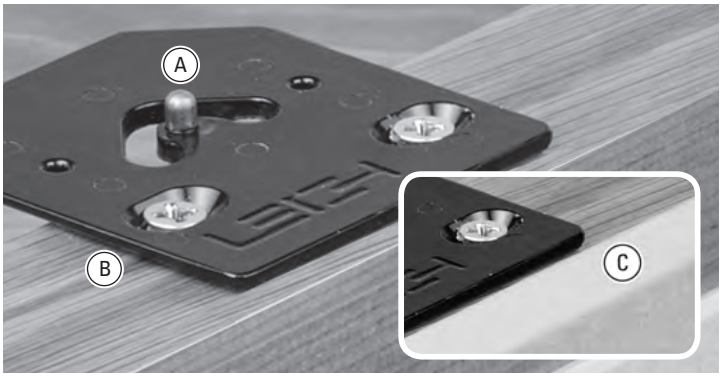


1-7 Use two No.8 x 1¼" [38mm] wood screws (included) to ***lightly*** attach the first pin plate with its left edge flush to the line on the top of the beam Ⓐ. **Note: The pin plate is moved up from the drilling position (see 1-6) to align the screw slots in the pin plate with the pre drilled holes**

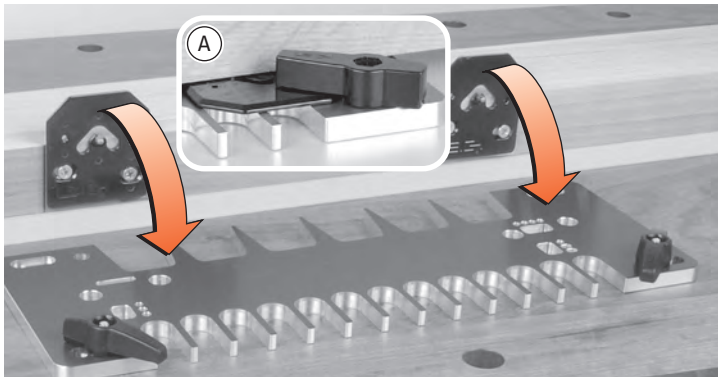


1-8 Square a second line across the beam board exactly 7" [178mm] from the right edge of the first pin plate Ⓐ. Clamp the second pin plate Ⓑ flat on the workbench and against the line. Repeat the drilling and attaching procedure as before. ***Repeat this procedure for each successive pin plate.***

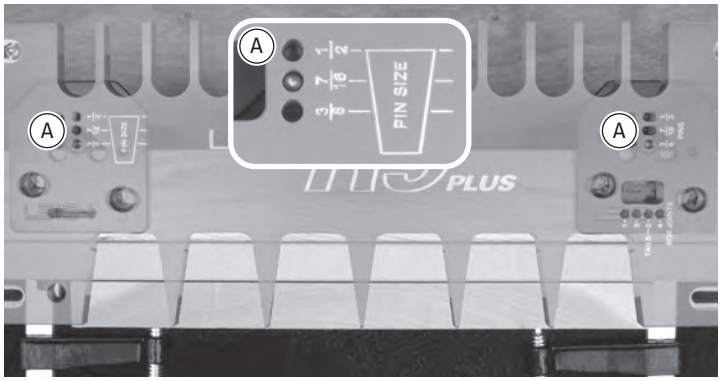
1-9 Assemble the Latches There are three parts to each latch assembly: the latch screw Ⓐ, the nyloc nut Ⓑ and the plastic latch Ⓒ. Press the nyloc nut into the hexagon opening in the top of the plastic latch with the white nylon insert facing up. Next, screw in the latch screw from the bottom of the latch. Do not tighten the screw at this time.



1-10 Pin Plate "Pin" The template has positioning holes that allow it to sit perfectly on top of the raised pin Ⓐ of each pin plate. The pin plate sits flat on the beam Ⓑ. **Note: When the sacrifical board Ⓒ is installed, the top of the pin plate will be level with the top of the sacrificial board.**

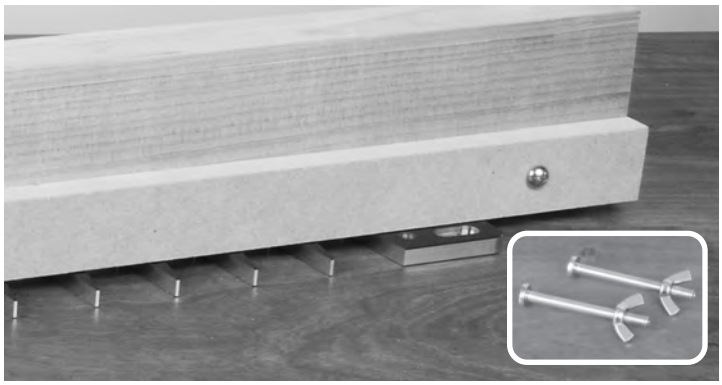


1-11 Attach the latches to the keyhole slots and turn to engage the pin plates Ⓐ. Adjust the latch screw tension so that the latches are stiff to turn onto the plates (seen from underside of the template).

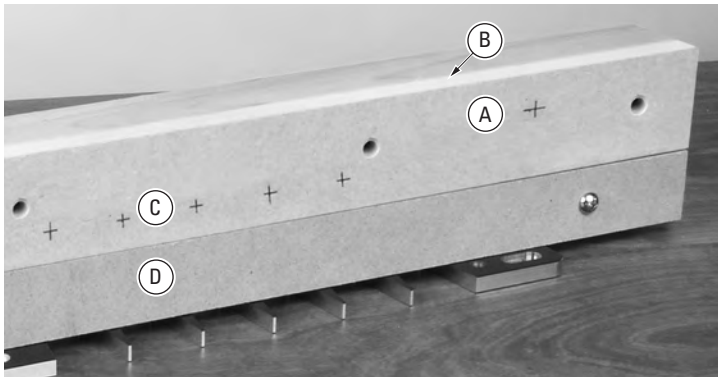


1-12 Mount the template on the left pair of pin plates using the 7/16"[11mm] pin position Ⓐ.

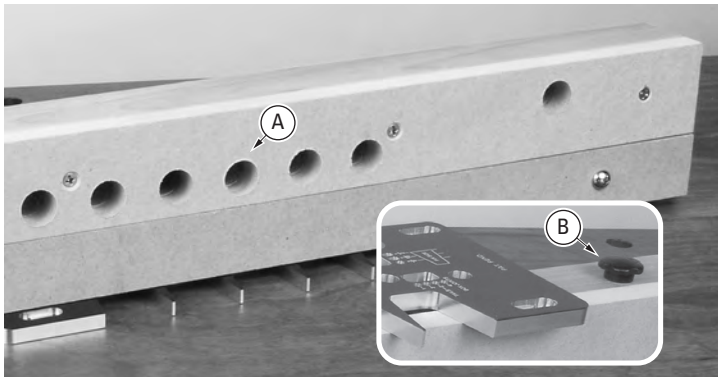
1-13 Turn the assembly upside down. Take a piece of the predrilled sacrificial board and lay it flush on the template.



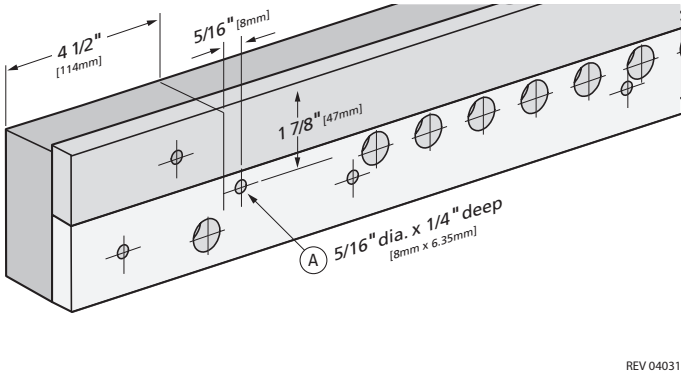
1-14 Using the two 5⁄16"[8mm] holes as drill guides, drill two 5⁄16"[8mm] holes through the beam. Attach the sacrificial board at the left end with a ¼-20 machine screw and wing nut. Then move the template to its second position and install the second screw.



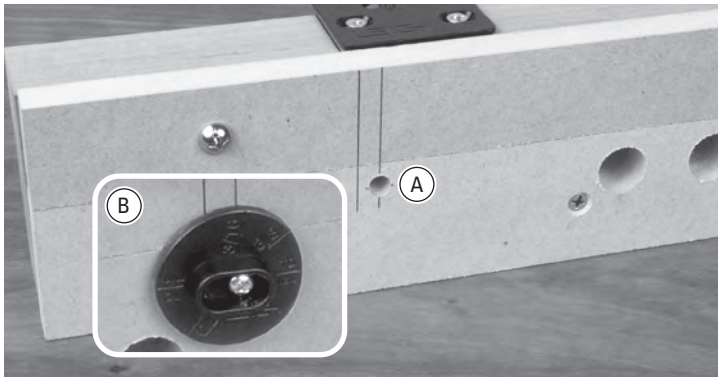
1-15 Place the clamping surface Ⓐ against the beam Ⓑ, flush against the sacrificial board. Be sure the clamp hole layout marks Ⓒ are next to the sacrificial board Ⓓ. Screw the clamping surface to the beam through the countersunk holes. If screwing into a hardwood beam, first drill pilot holes in the beam.



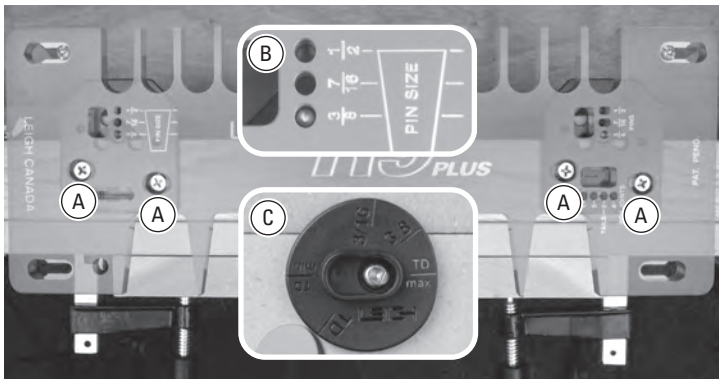
1-16 Clamp Holes Drill all ¾"[19mm] clamp holes Ⓐ square to the beam, through the clamping surface and beam. Next, drill two holes (as per beam drawing), 5⁄16"[8mm] diameter and 9⁄16"[14mm] deep, for the table glide Ⓑ (used for router table operation only).



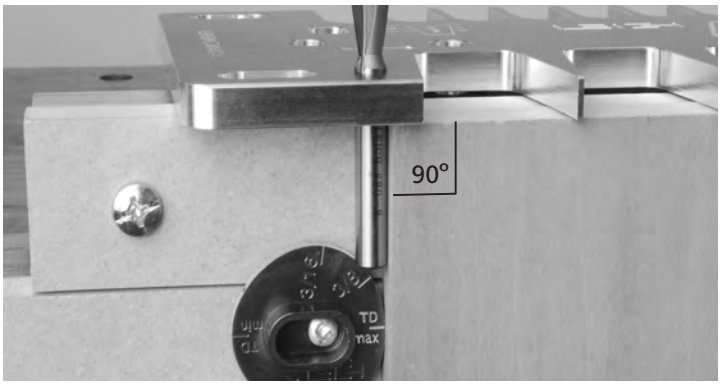
1-17 Sidestop Positioning Create layout lines as indicated above for the sidestop Ⓐ. **Note:** Be precise. Sidestop positioning is very important.



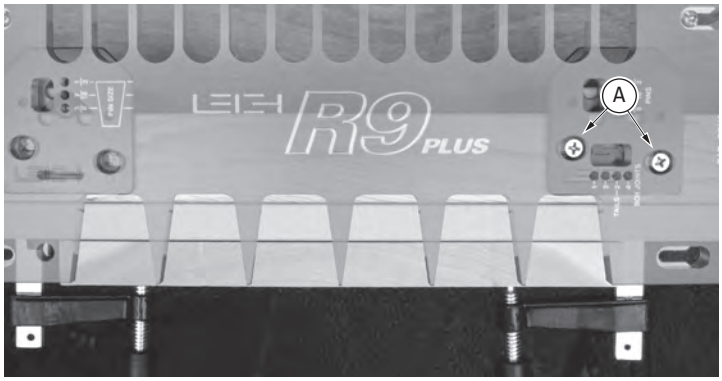
1-18 Using a Brad Point or Forstner bit, counter bore a 5⁄16"[8mm] hole Ⓐ, ¼"[6,35mm] deep for the sidestop hub. Then, using a 3⁄32"[2,5mm] bit, drill a pilot hole for the sidestop mounting screw. Attach the sidestop to the beam with the provided No.8 x 1¼"[30mm] round head screw Ⓑ.



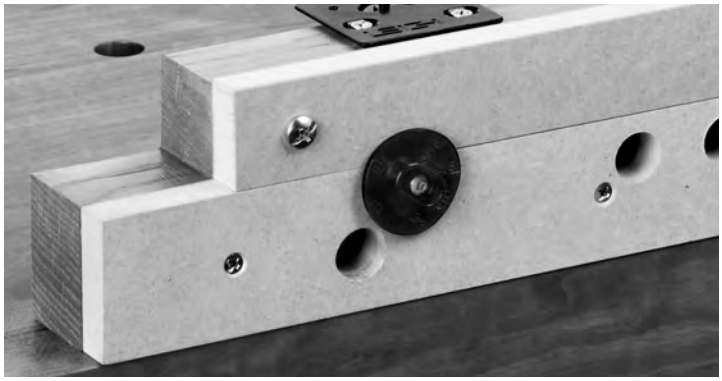
1-19 The template will now be used to precisely position the pin plates. Slightly loosen all pin plate screws Ⓐ just enough so that the pin plates can move side to side. Position the template on the pin plates in the ⅜"[9,5mm] position Ⓑ. Set the sidestop to the TD Max position Ⓒ.



1-20 Clamp a square board against the sidestop and flush under the template. Insert the shank of the No.80-8 bit into the 5⁄16"[8mm] hole in the template. Move the template and pin plates laterally until the shank of the bit just touches the edge of the board. Now tighten the first pin plate.



1-21 Gradually tighten the second pin plate screws Ⓐ making sure the template is not binding on the pins. Move the template to the second position and repeat the procedure with the third pin plate.



1-22 Optional Hold-down for Bench Use Notch out the ends of the beam in order to clamp beam assembly to a bench and use in hand-held router mode. ■

Important: ***The beam may expand or contract with humidity changes. Use the ⅜"[9,5mm] holes to adjust the pin plates as required.***

CHAPTER 2
Glossary of Symbols

Which Way Around Should the Board Go?

The following symbols/icons are used throughout this user guide. They indicate which side of a board faces out (toward you, the operator, when clamped in jig), which faces are in or out when assembled, and which edge goes against the sidestop. Dashed line icons indicate the other side of the board.

- **"Outside" of board**
- **"Inside" of board**
- **"Either side" of board**
- **"Outside" of board** (on other side of board)
- **"Inside" of board** (on other side of board)
- **"Either side" of board** (on other side of board)
- **"This edge" against side stop**
- **"This edge" against side stop**
- **"This edge" against side stop** (on other side of board)
- **"This edge" against side stop** (on other side of board)

2-1 Icons such as the one above indicate which side of the board faces out (toward you, the operator) when clamped in jig, and which faces are in or out when assembled.

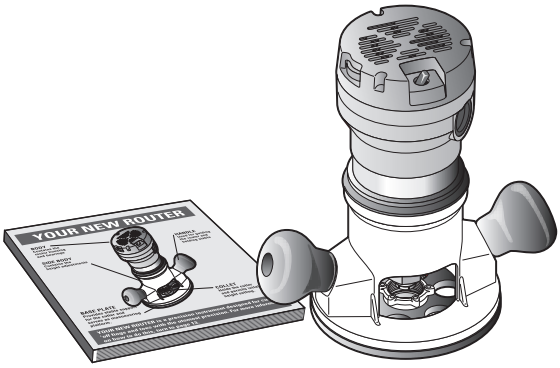
2-2 Box joint boards are clamped against the beam both "face in" and "face out" for alternate end cuts. With box joints, the same side edge always goes against the sidestop.

2-3 **Note:** Because through dovetail pin and tail boards face only one way, both side edges are (alternately) used against the sidestop. ■

CHAPTER 3
Using Your Jig Safely

Safety is not optional.

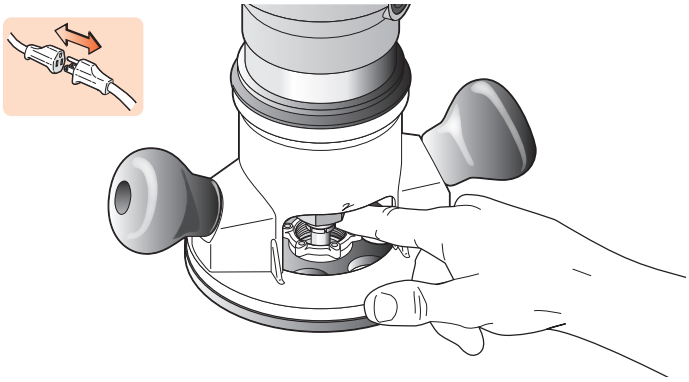
Read and follow the recommendations in this chapter.



3-1 Read the owner's manual that came with your router. It is essential to understand the router manufacturer's instructions completely.

3-2 Always wear:
- approved safety glasses;
- a face mask to protect yourself from harmful dust;
- hearing protection.

3-3 ⚠ Never drink alcohol or take medications that can cause drowsiness while operating a router.

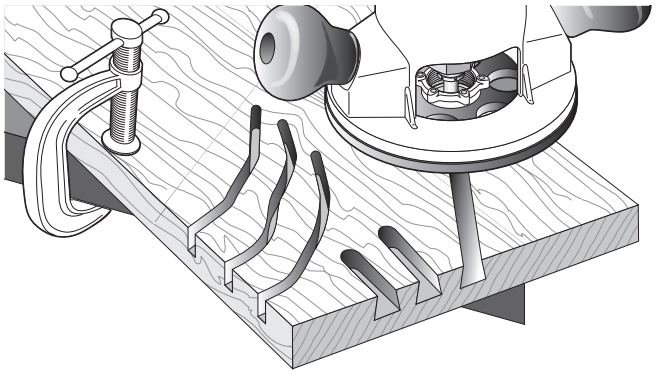


3-4 Always disconnect the power source from the router when fitting bits or guide bushings, or making adjustments. Before connecting the router to the power source, make sure the bit and collet revolve freely in all the areas you plan to rout, not touching the guidebush or jig.

3-5 Do not tilt the router on the jig. Keep the router flat on the jig assembly.

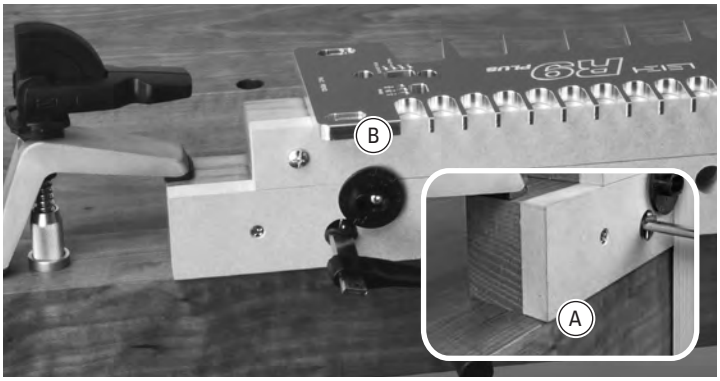
3-6 If you insist on removing the router from the jig while it is still revolving, always pull it straight off the jig horizontally, and do not raise or lower the router until it is completely clear of the jig.

3-7 Do not rout at face level.



3-8 If you haven't used a router before, be sure to follow the router manufacturer's instructions. Make plenty of simple open-face practice cuts without a guide bushing before trying to rout with an eBush on the R9PLUS. ***You must always use an eBush with the R9PLUS.*** ■

CHAPTER 4
Basic Jig Functions

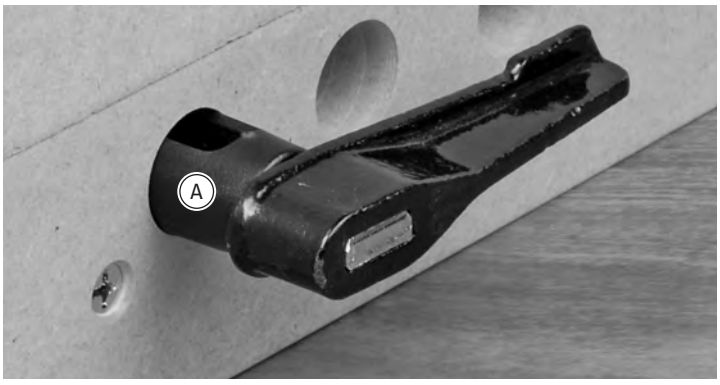


Beam Positioning

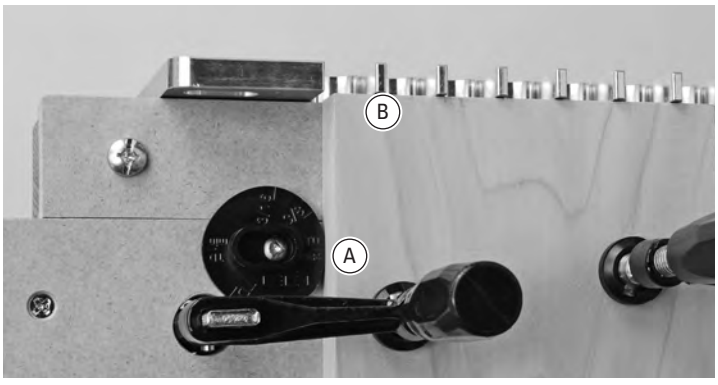
4-1 The beam assembly is clamped in position with the front edge Ⓐ slightly overhanging the bench front and the active comb of the template Ⓑ facing the operator.

Clamping Procedure

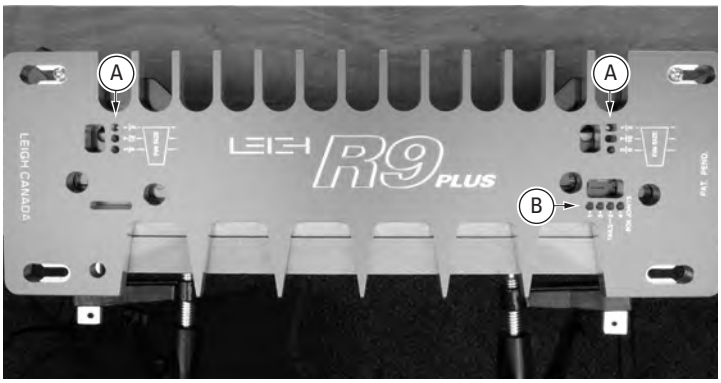
4-2 Each of the F-Clamps included with the R9PLUS is fitted with a clamp locator Ⓐ. The clamp locators are pressed onto the clamp arm and should not be removed.

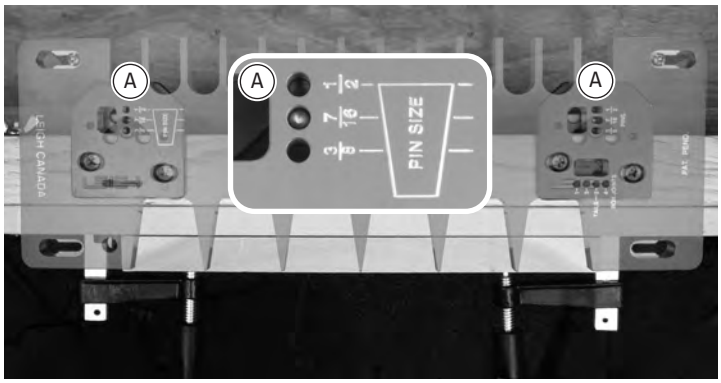


4-3 Squeeze the tips of the clamp locator Ⓐ and insert through a clamp hole in the beam. Clamp locators hold the clamp arm firmly in place while the clamp's screw arm is attached from the opposite side of the beam.



4-4 Boards are always clamped against the sidestopⒶ and flush under the template Ⓑ.





Template Positioning

4-5 The engraved side of the template is always up. Template holes Ⓐ are for through dovetail pins. Template holes Ⓑ are for through dovetail tails and box joints.

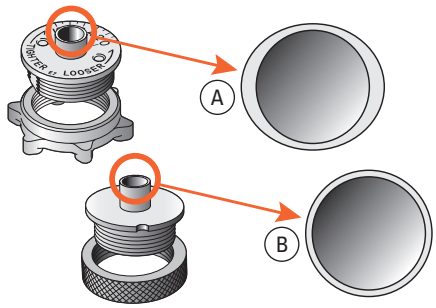
4-6 The template holes are for positioning the template on the pin plates Ⓐ. Most illustrations have an inset showing the correct pin position for the procedure. ■

CHAPTER 5
The Leigh eBush

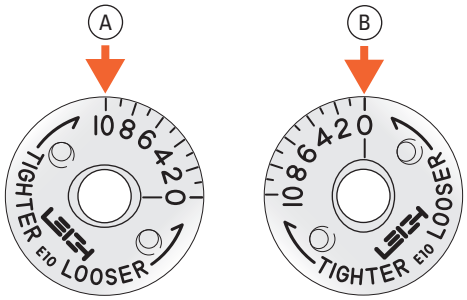
Note: Normal tolerances with bits, guide bushings and router runout will generally produce poor fitting joints. Leigh elliptical guide bushings (e7 and e10) solve this problem.

Patents for all Leigh elliptical guide bushings: U.S. 8,256,475 UK GB2443974

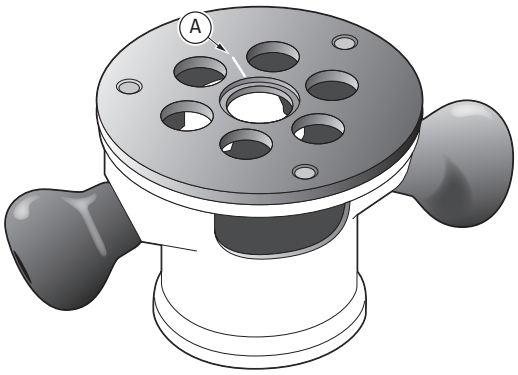
Joint Fit Adjustment



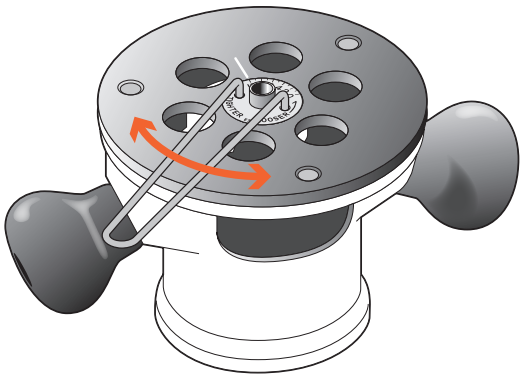
5-1 The Leigh eBush barrel is elliptical Ⓐ, unlike plain circular template guidebushes Ⓑ. When rotated, the effective diameter of the barrel changes, allowing fit adjustments as small as .001"[0.025mm]. The e10 eBush is included with the R9PLUS.



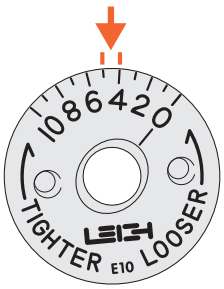
5-2 With the eBush turned to "10" Ⓐ in the base the active "diameter" is increased, allowing less side-to-side movement, resulting in smaller sockets and larger pins. Turning the eBush to "0" Ⓑ allows more side-to-side router/bit movement and more wood removal, producing larger sockets and smaller pins, and thus a looser fit.



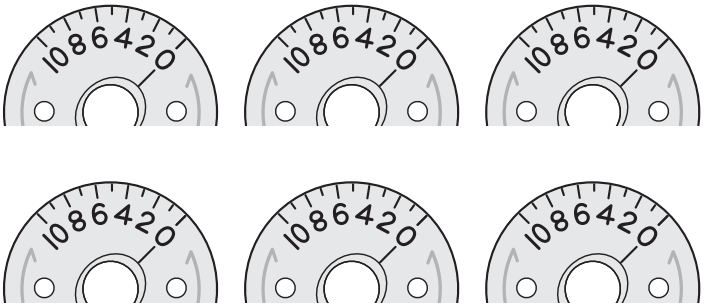
5-3 Make a small scratch line or permanent ink mark on the router baseplate Ⓐ or guidebush adaptor at the 12 o'clock position.



5-4 All settings for the eBush will be aligned to the scratch or ink marks on the router. The eBush will always be set on index mark 5 as a starting point for dovetails and box joints.



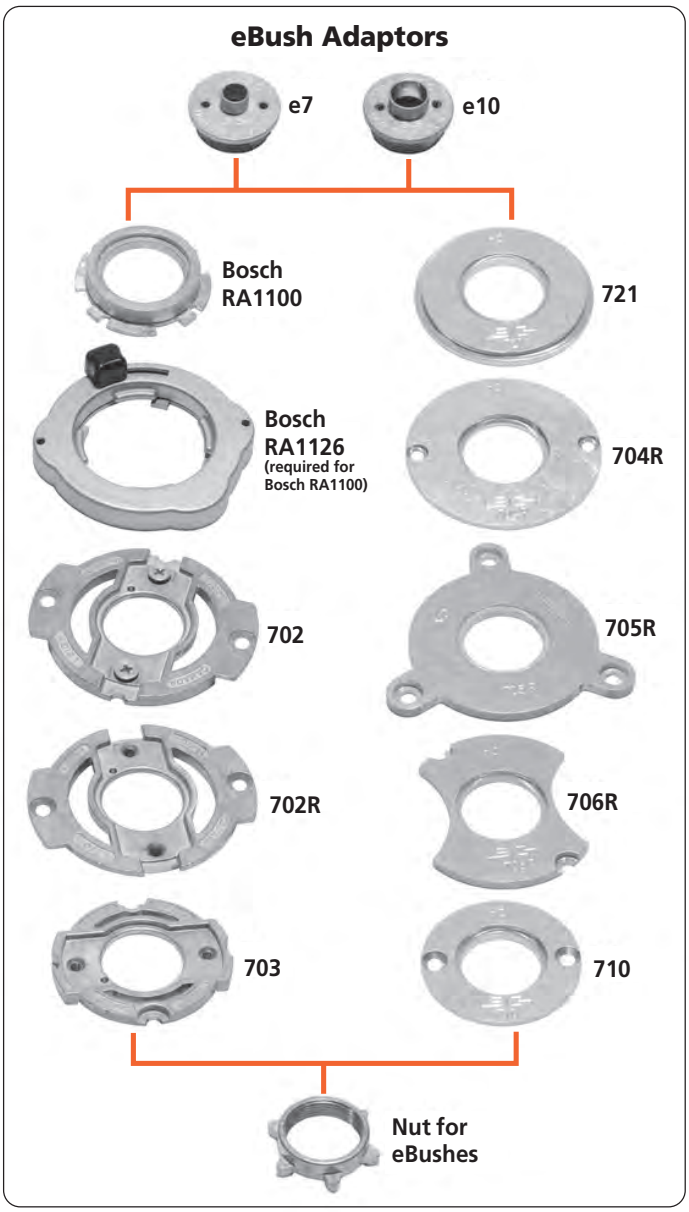
5-5 One division of the eBush changes the joint glue line by 0.002" [0.050mm]. A perfect fit will be established with one or two test cuts.

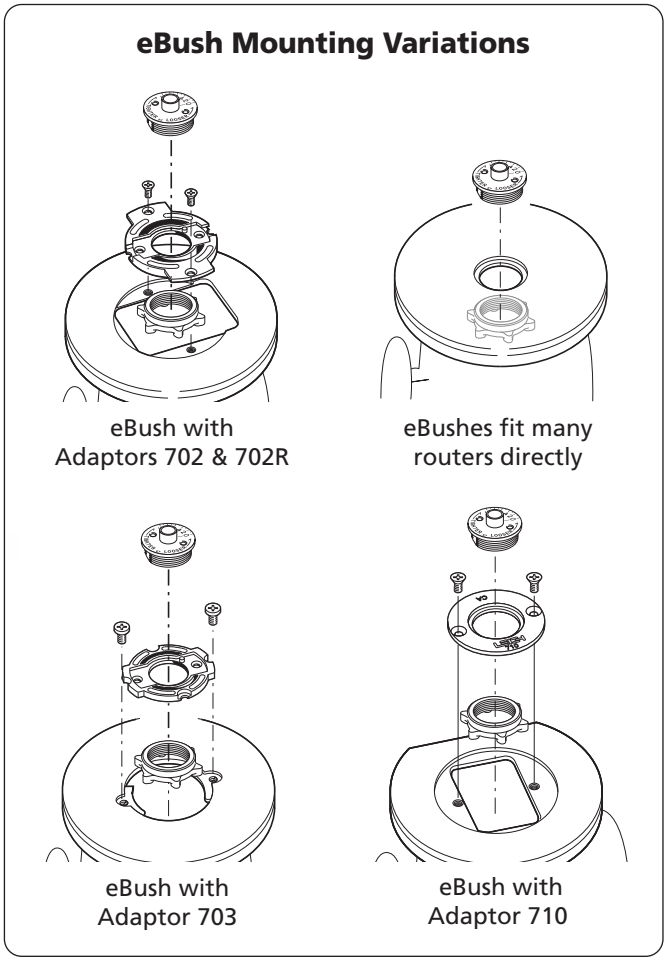


5-6 Record the eBush setting here for a quick setup the next time you use this bit/guide bushing combination. ■

eBushes and Adaptors

The Leigh eBush guide bushing fits directly to most popular router models such as Porter Cable, Black & Decker and Dewalt. Many other makes, e.g., Bosch, Fein, Festool, Milwaukee, etc. either offer or come complete with base adaptors that accept the eBush. In addition Leigh offers the nine adaptors below to allow the use of over one hundred other router models, new and old. For the complete list of routers, see the eBush Adaptor Selection chart on the next page.





eBush Adaptor Selection

In order to fit your Leigh eBush to your router, you may need an adaptor. Find out in the chart below.
See www.leighjigs.com for the complete list of routers.

DIRECTIONS

A. Locate name of router maker in Column 1.
B. Locate router model in Column 2. If your router is not listed visit leighjigs.com for a complete, up-to-date list of routers.
C. 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 in Column 3 from the router manufacturer's dealer.

■ MAFELL – Rework adaptor slightly.

Router not listed?

If your router is not listed in this chart, you may be able to fit a "universal baseplate" to your router. Please contact Leigh for assistance.

Adaptor Mounting Screws

Screws are included with router.

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.

Guide Bushings

All 8mm shank through dovetail bits listed in this chart work with either the e7 bushing (7⁄16" OD) supplied with your Leigh jig, or with any 7⁄16" OD guidebush. The optional Leigh e10 bushing or standard 5⁄8" OD guidebush is used with 1⁄2" shank bits. No other guidebush sizes can be used for through dovetails.

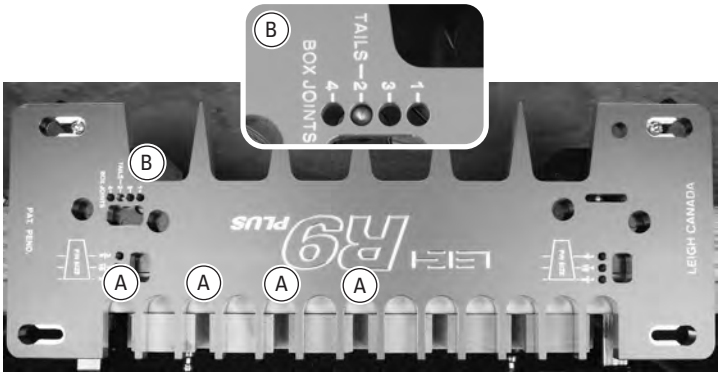
1 ROUTER MAKER	2 ROUTER MODEL	3 ROUTER ADAPTOR
BLACK & DECKER	All Professional, HD1250, RP400K,7614	Not Required
	6200	720673-00
	SR100, 7AEE, KW780 series, KW 800, KW850	710
BOSCH	1600, 90085, 90088, 90098, 90140, 90150, 90300, 90303, 90305, 91264	Aftermarket base plate required
	1601, 1602, 1603, 1604, 1606, B1350	RA1110
	North American ROUTERS PRODUCED AFTER mid-2010: 1613EVS, 1613AEVS, 1617, 1617EVS, 1618, 1618EVS, 1619EVS, MR23EVS, MRC23EVS, MRF23EVS, MRP23EVS	RA1126 quick change adaptor and RA1100 bushing adaptor required
	North American ROUTERS PRODUCED BEFORE mid-2010 and others available worldwide that include the RA1126 adaptor: 1613, 1613EVS, 1613AEVS, 1614, 1614EVS, 1617EVS, 1618EVS, 1619EVS, B1450, GOF900, GOF900CE, GOF900ACE, GOF1200, GOF1300CE, GOF1300ACE, GOF1600CE, GOF2000CE, GMF1400, GMF1600CE, POF800ACE, POF1100AE, POF1200AE, POF1400ACE	RA1100
	1611, 1611EVS, 1615, 1615EVS, B1550, GOF1600, GOF1700ACE	702
CMT	1E	702R
CRAFTSMAN (SEARS)	All non-plunge models	Aftermarket base plate required
	135275070 Plunge	See Skil 1823 or 1835
	Other plunge models	702
	MD11 Plunge & Fixed Base. MD9.5 Fixed Base	Not Required
DEWALT	DW610, DW616, DW618	Not Required
	DW613, DW615(UK)	710
	DW614, DW615, DW621, DW624, DW625, DW626	N. America Only, Supplied w/router
	DW621K & DW626 outside N. America	706R
	DW625 Type 1,2,3,5 outside N. America	702
	DW624 & DW625 Type 4 outside N.America, DW625EK	702R
ELU	OF15, OF15E, OF97, OF97E	706R
	MOF68, MOF69, MOF96, MOF96E	710
	MOF131, MOF177 Type 1,2, & 3	702
	MOF177 Type 4, MOF177EK	702R
	2720, 2721, 3328	Not Required
	3303, 3304	E09600 or 761 270-00
	3337, 3338, 3339	702
FEIN	RT1800	Supplied w/router
FESTOOL	OF1E , OF2E, OF650, OF900E ,OF1000, OF1010E	704R
	OF2000, OF2000E	705R
	OF1400 and OF2200 North America Only	Supplied w/router
	OF1400 Outside North America	493566
	OF2200 Outside North America	494627 O-Ring may be required to keep bushing centered
FREUD	FT700(2), FT2000, FT2200, FT3000	721
HITACHI	TR8, TR12, FM8, M8, M12 Series	325211 OR 703
	M12VC, KM12SC, KM12VC	Not Required
	M12SA2, M12V2	325224
MAFELL	LO65E	702 ■
MAKITA	RP1801, RP2301, 3612C Europe Qk Fit Base	721
	3600, 3606, 3608, 3612, 3612B, 3612BR, 3612C N. America, 3620, 3621, RP900K	703
	3601B	321 493-1
	RP0910, RP1110C	706R
	RF1100, RF1101, RD1100, RD1101, RP1101	Not Required
MASTERCRAFT	Please contact Leigh for assistance	
METABO	OF1612, OFE1812 (for all others, please contact Leigh for assistance)	704R
MILWAUKEE	5615, 5616, 5619	49-54-1040
	5625	49-54-1026
	5670	Not Required
PERLES	OF808 Series, OFE6990	710
PORTER CABLE (ROCKWELL)	All	Not Required or Supplied w/router
RIDGID	R2930 (for all others, please contact Leigh for assistance)	704R
RYOBI	R30, R50, R150, R151, RE155, R500, R501, R502	703
	R600, R601, RE600, RE601	702
	R160, R161, R162, R163K, R165, R170, R175, RE175, R180, R180PL, R181, R185, ERT1150	706R
SKIL	1823 or 1835	91803
	SK1810, 1815, 1820, 1825	RAS140
	All others	Aftermarket base plate required
TREND	T3, T4, T5, T9, T10, T11–UniBase required	710
TRITON	TRC001	TGA006 or 704R
	JOF001, MOF001, TRA001	Accessory Kit (includes adaptor) TGA001 or TGA150
WEGOMA	OF850 Series	710

CHAPTER 6
Through Dovetail Joint Procedures

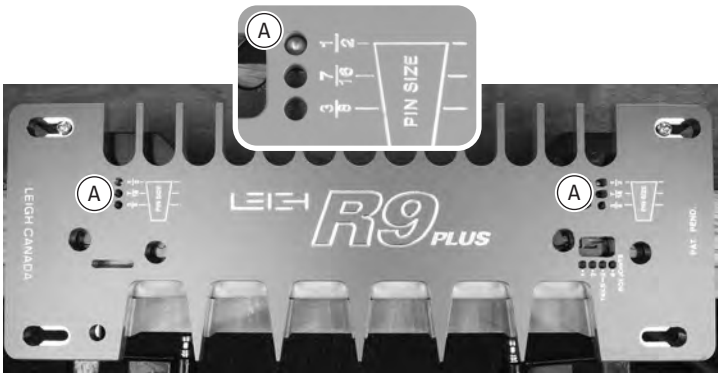
IMPORTANT SAFETY NOTE
Before using your Leigh R9PLUS you must have completed the preparatory steps listed in the previous pages, including reading the jig safety recommendations in Chapter 3.

Note: These instructions show a No.80-8 dovetail bit and 3/4"[19mm] thick boards. Instructions for No.70-8 and 75-8 bits and 3/8"[9,5mm] to 5/8"[15mm] thick boards are identical with the exception of depths of cut and template positions for pins.

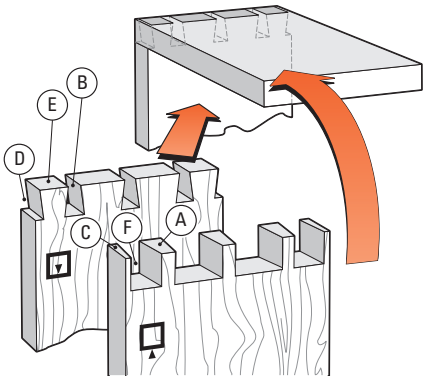
Concept of Operation



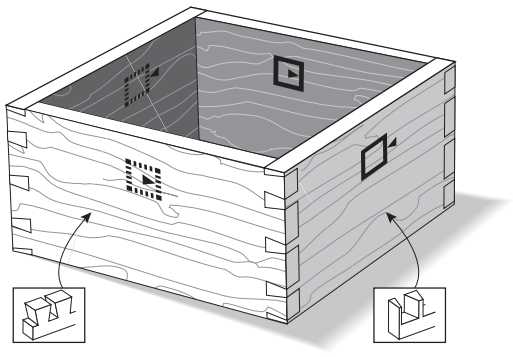
6-1 Dovetail tails are routed with the dovetail bit in the first comb opening and then every other opening Ⓐ. The template is always set in pin plate position 2, Tails Ⓑ.



6-2 Dovetail pins are routed with a ½"[12,5mm] straight bit. The template is set on the pair of pin holes matching the dovetail bit diameter used to rout the tails Ⓐ.



6-3 Terminology This diagram shows the Pins Ⓐ, Pin sockets Ⓑ, Half-pins Ⓒ, Half-pin sockets Ⓓ, Tails Ⓔ and Tail sockets Ⓕ. The pins fit in the pin sockets, and each side always ends with a half-pin.



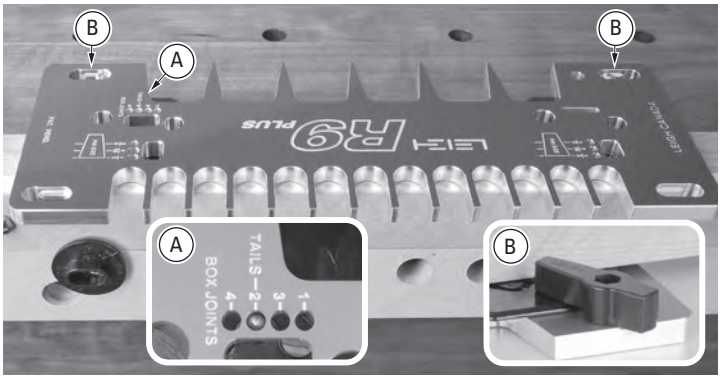
6-4 When you assemble the finished pieces with the faces properly oriented, any one of the pin ends will fit any one of the tail ends. Note the symbols indicating the inside or outside of the pin and tail boards. ■

Board Width Selection

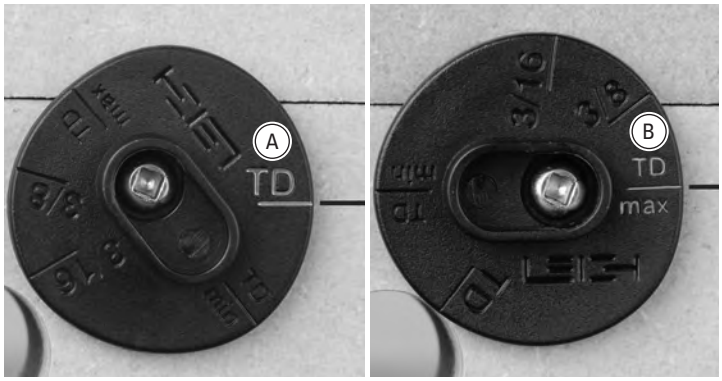
6-5 Board widths are determined by the number of full tails in your design. This chart makes it easy to determine board widths up to 27"[686mm] for the R9PLUS. See leighjigs.com for board widths greater than 27"[686mm].

Through Dovetail Joints

6-6 For this test you will need two identical boards ¾"x 4⅝" x about 8"[19mm x 116mm x 203mm] long. Mark the inside face of the tail board and outside face of the pin board. Fit the e10 eBush to the router, set on index mark 5, and insert the No.80-8 bit.



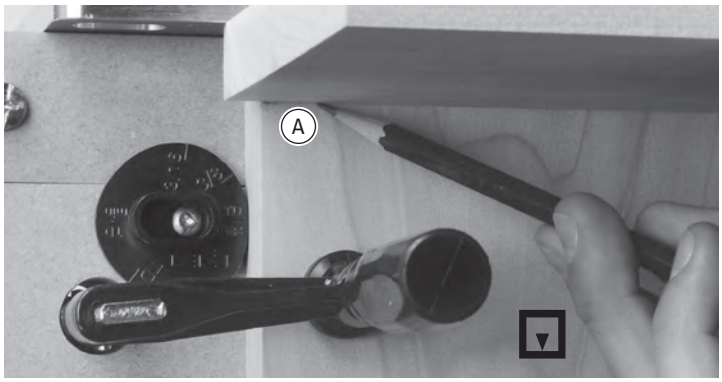
6-7 Position the template at the left hand (sidestop) end of the beam in pin position 2 Tails Ⓐ. **CAUTION: Always secure the template latches under the pin plates Ⓑ after relocating the template.**



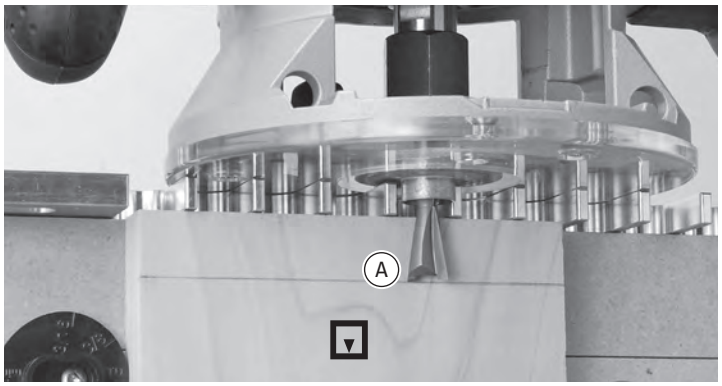
6-8 If your board width matches the dimension in the board width chart exactly, set the sidestop to the TD position Ⓐ place the board against the sidestop, flush under the template and clamp in place. If the board **does not** match the chart width, set the sidestop to the TD Max Ⓑ position and proceed to **6-9**.

6-9 Through dovetail board widths may be ⅛"[3mm] less or ⅜"[9,5mm] greater than the chart width. If the workpiece is greater or less than the chart width, first center the board under the template, with equal spacing on both edges of the board Ⓐ, then clamp the board in place.

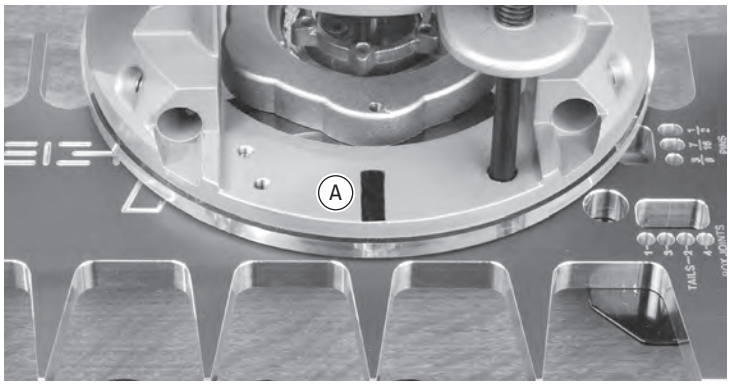
6-10 Next, rotate the sidestop counter clockwise until it touches the workpiece. All boards of the same width will be routed at this sidestop position.



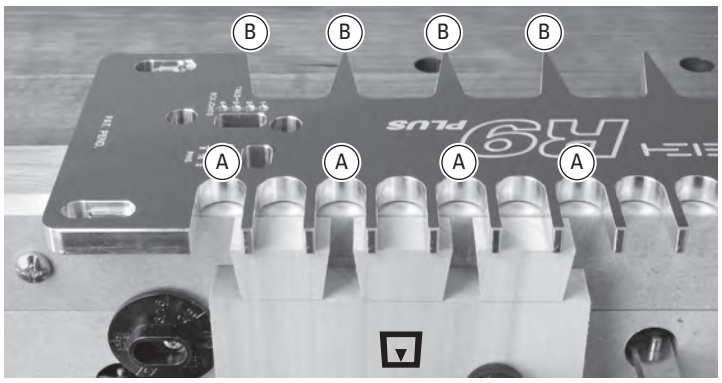
6-11 Place the edge of the pin board under the template and pencil a line on the workpiece Ⓐ.



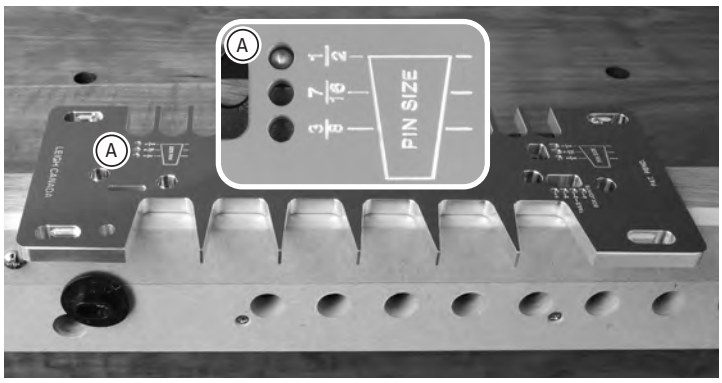
6-12 Place the router onto the template and lower the dovetail bit until the bit tip touches the center of the line Ⓐ.



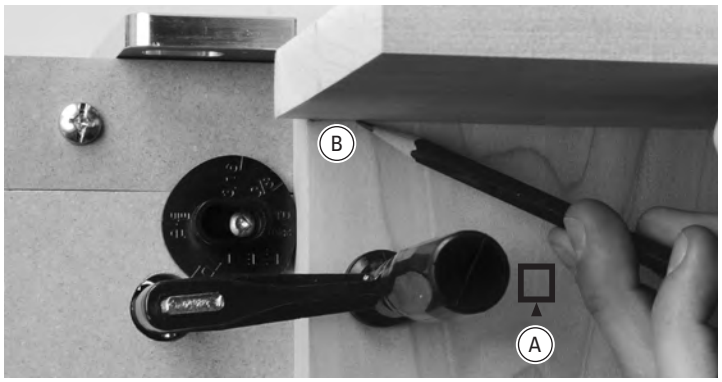
6-13 ⚠ You will be routing into "every other" opening. **Hint:** Mark a bold line at the 12 o'clock position on the router base Ⓐ, to help you with steering and alignment when looking over top of the router as you rout.



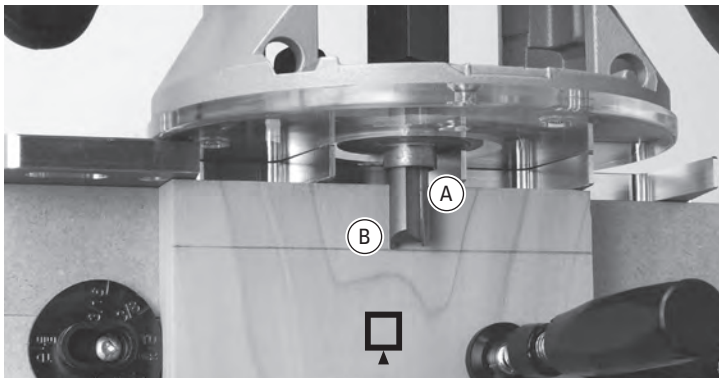
6-14 Rout in the first and every other opening (first, third, fifth openings and so on Ⓐ. **Hint:** When steering the router, it helps to visually align the bold line you marked on the router base with each of the TD pin guide "points" Ⓑ. Then remove the tail board.



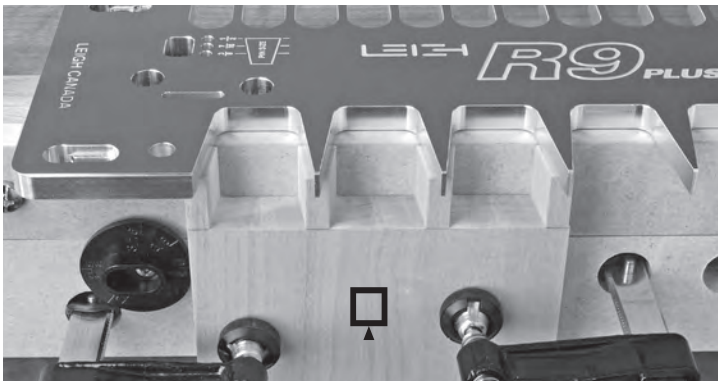
6-15 Turn the template to the TD pin mode and position the template in the ½"[12,7mm] pin position Ⓐ. The ½"[12,7mm] holes match the diameter of the No.80-8 bit that was used to rout the tails. If you had used the No.75-8 bit you would position the template on the 7⁄16"[11mm] holes. For the No.70-8 bit you would use the ⅜" holes.



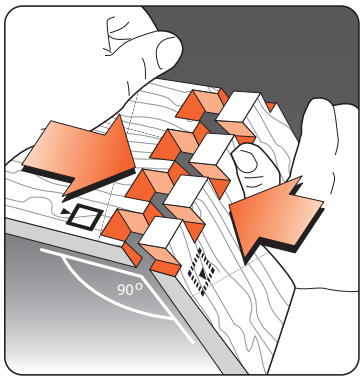
6-16 Clamp a pin board against the stop, marked outside face out Ⓐ. Place the edge of the tail board under the template and pencil a line on the pin board Ⓑ.



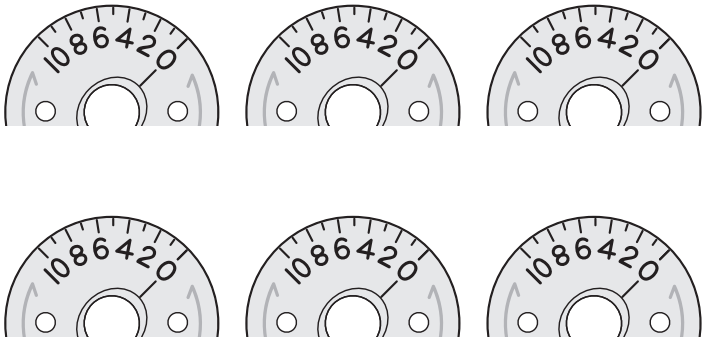
6-17 Replace the dovetail bit with the included ½"[12,7mm] Leigh 160 straight bit Ⓐ and leave the e10 eBush set to index mark 5. Place the router onto the template and lower the straight bit down until the bit tip is touching the center of the line Ⓑ.



6-18 Rout out the waste between the pins. Check to make sure no parts have been missed.



6-19 Remove the pin board and test it for fit in the tail board sockets. Make sure the outside faces face outward on both pieces. A firm push fit is perfect. Having to use a mallet means the joint is too tight for gluing.

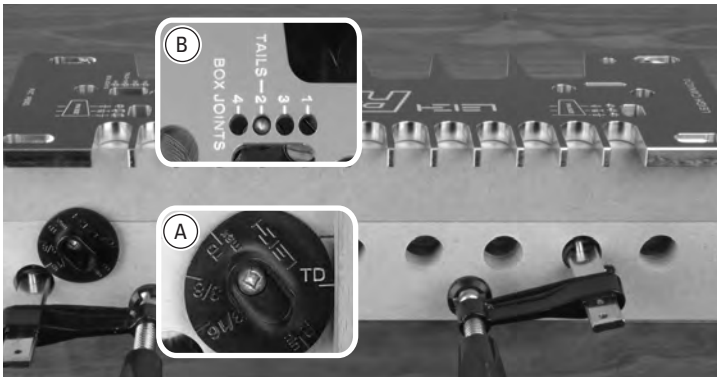


6-20 If necessary, adjust the eBush as required for a looser or tighter fit and rout a new pin board and a new tail board. Record the eBush setting for future use. ■

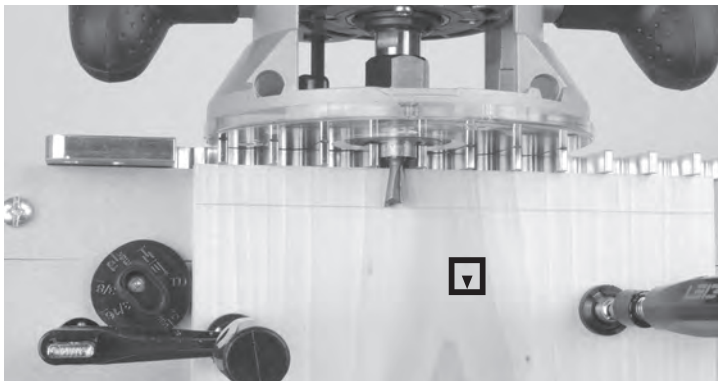
Half-pitch Through Dovetail Joints

6-21 The pitch of the R9PLUS Template (distance between the pin centers) is 1½"[38mm] (1.555 to be precise [39,5mm]). Some projects may benefit from closer pin centers. The following procedure details how to use the R9PLUS to rout through dovetails with ¾"[19mm] pin centers. ***Note: This procedure is only possible with the 7/16"[11,1mm] (75-8) and 3/8"[9,5mm] (70-8) router bits. An e7 eBush and 5/16"[8mm] straight bit are also required. A shop made spacer, 0.777"[19,685mm] wide, is used to offset the pin board. See page 4 for bit and guide bushing options.***

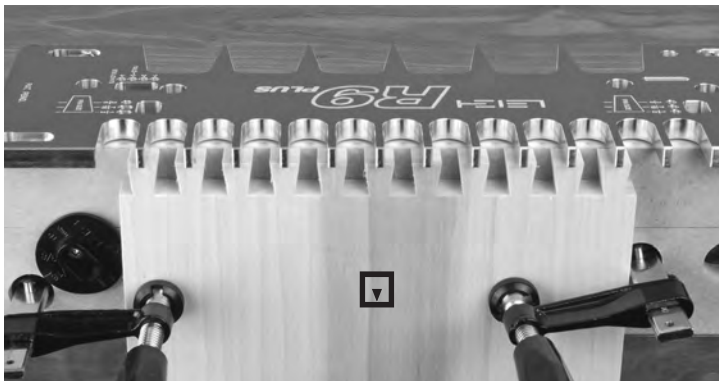
This example uses a 7/16"[11mm] (75-8) Dovetail Bit and the 5/16"[8mm] (140-8) straight bit with 5/8"[15mm] thick stock.



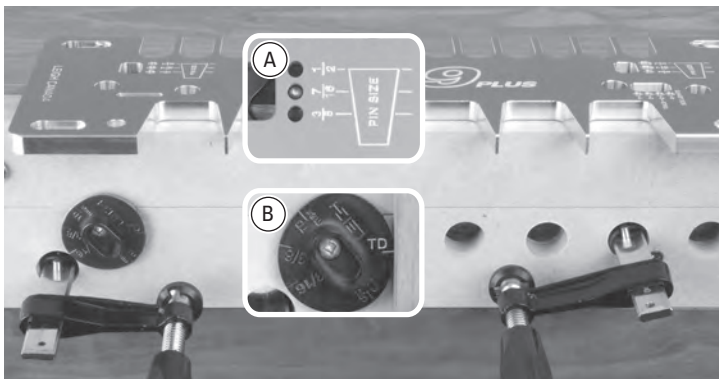
6-22 Set the sidestop to the TD position Ⓐ and place the template in pin position 2 Tails Ⓑ. Secure the pin plate latches.



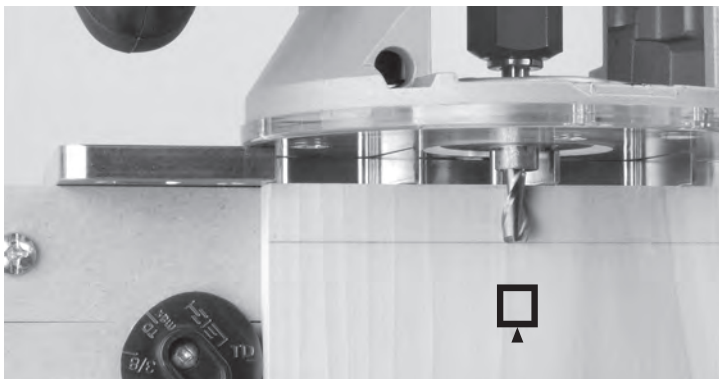
6-23 Clamp a tail board flush under the template and against the sidestop. Mark the depth of cut and set the router bit.



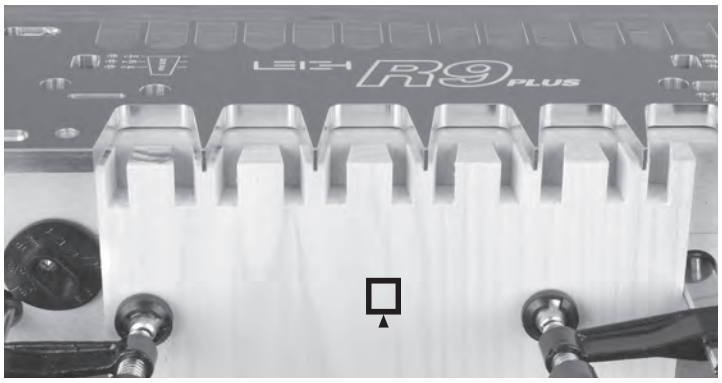
6-24 Rout the tails, being sure to rout in every template opening.



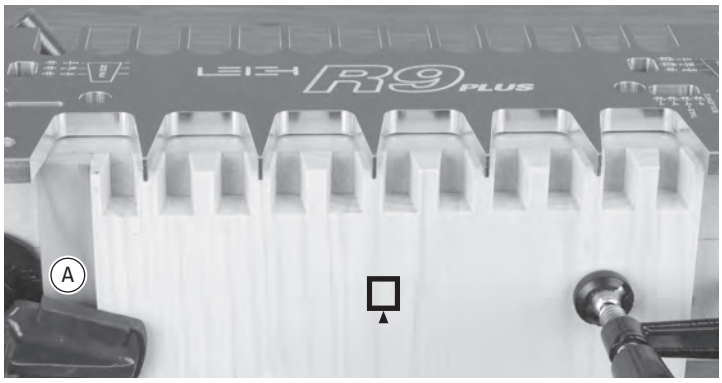
6-25 Place the template in the 7⁄16"[11mm] pin plate position Ⓐ and secure the latches. Leave the sidestop set on the TD position Ⓑ. Remove the 75-8 dovetail bit and e10 guide bushing and install the e7 bushing and a 5⁄16"[8mm] straight bit.



6-26 Insert the pin board and set the bit depth.

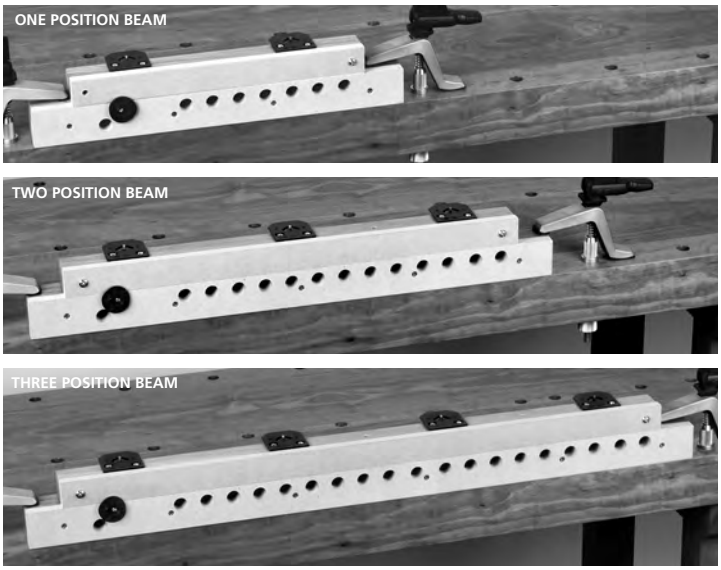


6-27 Rout the first pass of the pins. ⚠ ***Half-pitch pins are routed in two passes. When routing the first pass, the guide bushing must remain in contact with the guide pin at all times. DO NOT rout away the waste between the pins.***



6-28 Now, remove the pin board, add the shop made spacer Ⓐ against the sidestop. Reinstall the pin board against the spacer and flush against the template above. Rout the second pass again being careful to keep the guide bushing against the guide pins at all times. ■

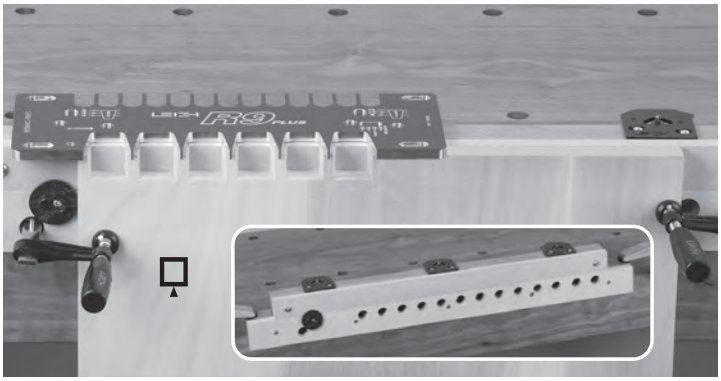
Wide Boards



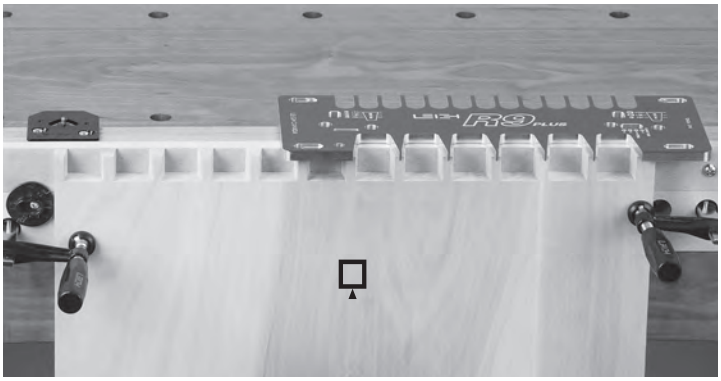
6-29 ***Routing boards of any width is simple with the R9PLUS.*** The unique pin plate positioning holes on the template, and the pin plates mounted on the beam, accurately index the template each time it is "stepped over".

Each template position will allow 9"[229mm] of joint pattern, therefore, on a one position beam (1 template) the maximum board width will be 9"[229mm]. A two position beam (2 templates) will accommodate boards up to 18"[457mm]. Increasing the beam length to three template positions will allow dovetails or box joints on boards up to 27"[686mm]. There is no limit to the length of a beam.

A one position beam is 20"[508mm] in length. Each additional template position requires 10"[254mm] of beam length.



6-30 This beam has two template positions. Position the template on the sidestop end of the beam (operator's left side), secure the pin plate latches and clamp the board against the sidestop. Rout the first half of the joint.



6-31 Leave the board clamped on the beam, release the pin plate latches and shift the beam to the next position. Secure the pin plate latches. Now rout the second half of the joint. ■

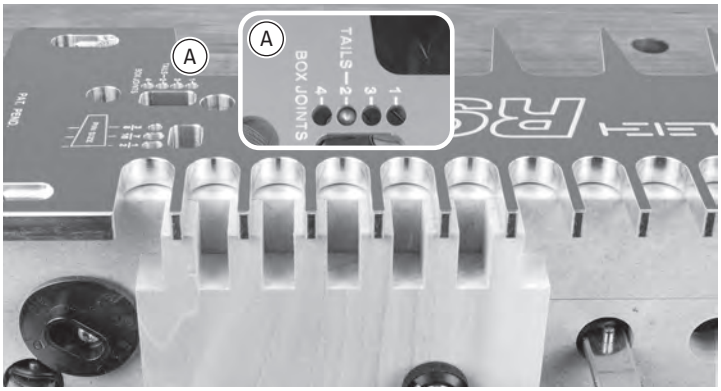
CHAPTER 7
Box Joint Procedures

IMPORTANT SAFETY NOTE
Before using your Leigh R9PLUS you must have completed the preparatory steps listed in the previous pages, including reading the jig safety recommendations in Chapter 3.

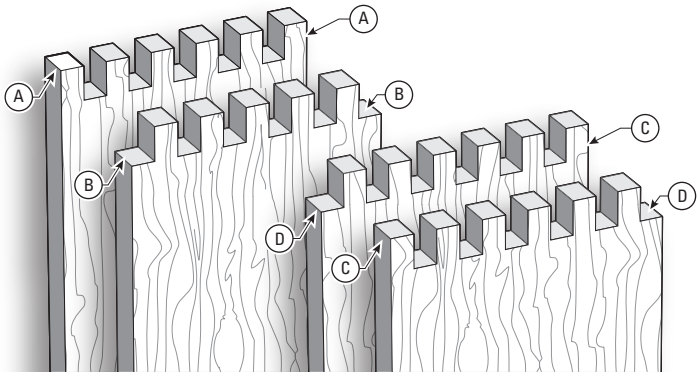
Note: These instructions show a 3/8"[9,5mm] straight router bit and 3/4"[19mm] thick boards. Any board thickness up to 1"[25,4mm] may be used for 3/8"[9,5mm] joints.

Concept of Operation

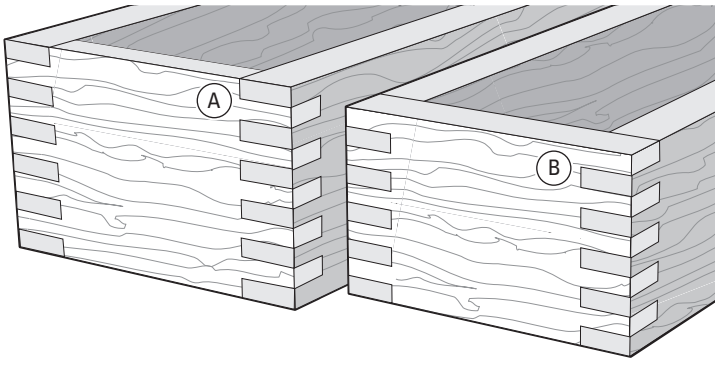
7-1 The template has positioning holes 1, 2, 3 or 4 Ⓐ that fit on the raised pin of the pin plates. Box joints are routed in two steps: the pin board, as shown, and...



7-2 ...the socket board. The pin positioning hole used depends on the part of the joint being routed.



7-3 Terminology This diagram shows the pins Ⓐ and mating pin sockets Ⓑ. Symmetrical joints have pins Ⓐ on both edges of one board and sockets Ⓑ on both edges of the mating board. Asymmetrical joints have a pin Ⓒ on one edge and a socket Ⓓ on the other edge of each board.



7-4 Any one of the pin ends will fit any one of the tail ends. Most joints will be symmetrical Ⓐ but may be asymmetrical Ⓑ to fit a specific board width. ■

Board Width Selection

7-5 Board widths are determined by the total number of pins and sockets in your design and whether the joint is symmetrical or asymmetrical. This chart makes it easy to determine board widths up to 27" for ⅜" and ¾" joints [686mm for 9,5mm and 19mm joints], and up to 9" for 3⁄16" joints [229mm for 4,75mm joints]. See leighjigs.com for board widths greater than 27"[686mm].

BOARD WIDTH (inches)

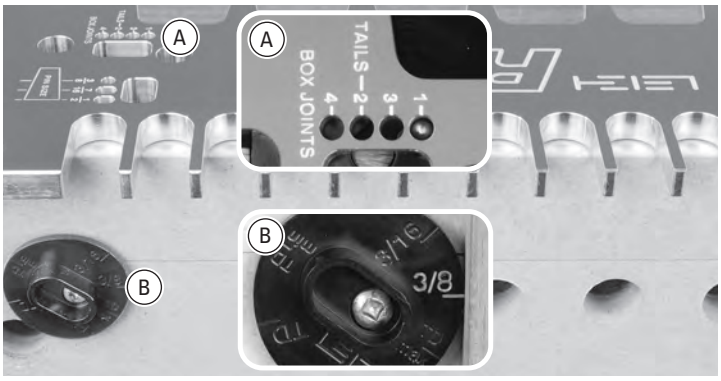
No. of Pins and Sockets	3/16" Symmetrical	3/16" Asymmetrical	3/8" Symmetrical	3/8" Asymmetrical	3/4" Symmetrical	3/4" Asymmetrical
1						
2						
3	9/16		1 5/32			
4		25/32		1 9/16		
5	31/32		1 15/16		2 5/16	
6		1 5/32		2 5/16		3 3/32
7	1 11/32		2 23/32		3 5/32	
8		1 9/16		3 3/32		
9	1 3/4		3 1/2		3 7/8	
10		1 15/16		3 7/8		4 21/32
11	2 1/8		4 9/32		4 21/32	
12		2 5/16		4 21/32		
13	2 17/32		5 1/16		5 7/16	
14		2 23/32		5 7/16		6 7/32
15	2 29/32		5 13/16		6 7/32	
16		3 3/32		6 7/32		
17	3 5/16		6 19/32		7	
18		3 1/2		7		7 25/32
19	3 11/16		7 3/8		7 25/32	
20		3 7/8		7 25/32		
21	4 1/16		8 5/32		8 9/16	
22		4 9/32		8 9/16		9 5/16
23	4 15/32		8 15/16		9 5/16	
24		4 21/32		9 5/16		
25	4 27/32		9 23/32		9 5/16	One Template Position
26		5 1/16		10 3/32		
27	5 1/4		10 1/2		10 7/8	
28		5 7/16		10 7/8		
29	5 5/8		11 9/32		11 21/32	
30		5 13/16		11 21/32		12 7/16
31	6 1/32		12 1/16		12 7/16	
32		6 7/32		12 7/16		13 7/32
33	6 13/32		12 27/32		13 7/32	
34		6 19/32		13 7/32		14
35	6 13/16		13 19/32		14	
36		7		14		14 25/32
37	7 3/16		14 3/8		14 25/32	
38		7 3/8		14 25/32		15 9/16
39	7 9/16		15 5/32		15 9/16	
40		7 25/32		15 9/16		16 11/32
41	7 31/32		15 15/16		16 11/32	
42		8 5/32		16 11/32		17 3/32
43	8 11/32		16 23/32		17 3/32	
44		8 9/16		17 3/32		
45	8 3/4		17 1/2		17 7/8	
46		8 15/16		17 7/8		18 21/32
47	9 1/8		18 9/32		18 21/32	
48		9 5/16		18 21/32		Two Template Positions
49	9 17/32		19 1/16		19 7/16	
50		9 23/32		19 7/16		20 7/32
51	9 29/32		19 27/32		20 7/32	
52				20 7/32		
53			20 19/32		21	
54				21		21 25/32
55			21 3/8		21 25/32	
56				21 25/32		22 9/16
57			22 5/32		22 9/16	
58				22 9/16		23 11/32
59			22 15/16		23 11/32	
60				23 11/32		24 1/8
61			23 23/32		24 1/8	
62				24 1/8		24 7/8
63			24 1/2		24 7/8	
64				24 7/8		25 21/32
65			25 9/32		25 21/32	
66				25 21/32		26 7/16
67			26 1/16		26 7/16	
68				26 7/16		27 7/32
69			26 27/32		27 7/32	
70				27 7/32		28
71			27 5/8		28	
72				28		

BOARD WIDTH (millimeters)

No. of Pins and Sockets	4,75mm Symmetrical	4,75mm Asymmetrical	9,5mm Symmetrical	9,5mm Asymmetrical	19mm Symmetrical	19mm Asymmetrical
1						
2						
3	14,5		29,5		59	
4		19,5		39,5		79
5	24,5		49		99	
6		29,5		59		118
7	34,5		69		138	
8		39,25		79		158
9	44,25		88,5		178	
10		49,25		98,5		197
11	54,25		108,5		217	
12		59		118,5		237
13	64		128		257	
14		69		138		276
15	74		148		296	
16		78,75		158		316
17	83,75		168		336	
18		88,75		177,5		355
19	93,75		187,5		375	
20		98,5		197,5		395
21	103,5		207,5		415	
22		108,5		217		435
23	113,5		227		454	
24		118,25		237		474
25	123,25		247		494	
26		128,25		256,5		514
27	133,25		266,5		533	
28		138,25		276,5		553
29	143		286,5		573	
30		148		296		593
31	153		306		612	
32		158		316		632
33	162,75		326		652	
34		167,75		335,5		672
35	172,75		345,5		691	
36		177,75		355,5		711
37	182,5		365,5			
38		187,5		375,5		
39	192,5		385			
40		197,5		395		
41	202,25		405			
42		207,25		415		
43	212,25		424			
44		217,25		434,5		
45	222		444,5			
46		227		454,5		
47	232		464			
48		237		474		
49	241,75		484			
50		246		494		
51			503,5			
52				513,5		
53			523,5			
54				533,5		
55			543			
56				553		
57			563			
58				573		
59			583			
60				592,5		
61			602,5			
62				612,5		
63			622,5			
64				632		
65			642			
66				652		
67			662			
68				671,5		
69			681,5			
70				691,5		
71			701,5			
72				711		

3/8"[9,5mm] Box Joints

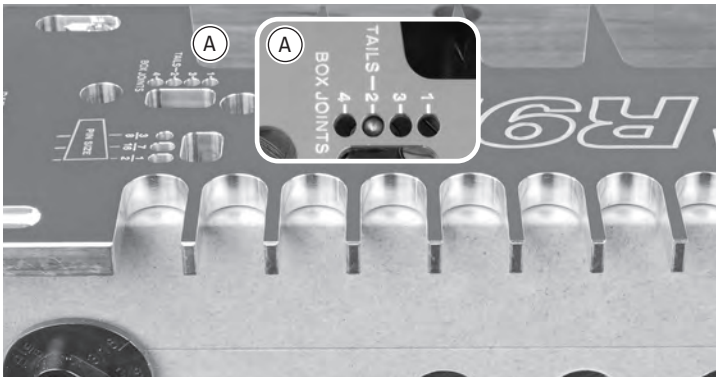
7-6 Use the e10 eBush (guide bushing) and a ⅜"[9,5mm] straight router bit. For 3/16"[4.75mm] and ¾"[19mm] box joints, see following sections. For straight bit options see page 4.



7-7 Position the template at the left hand (sidestop) end of the beam, in pin position 1 Ⓐ, with the box joint comb on the sidestop side of the beam. **Secure the template latches on the pin plates** and set the sidestop to ⅜"[9,5mm] Ⓑ.

7-8 Clamp a pin board with the marked edge against the sidestop and flush under the template. Either face can be out. Set the depth of cut.

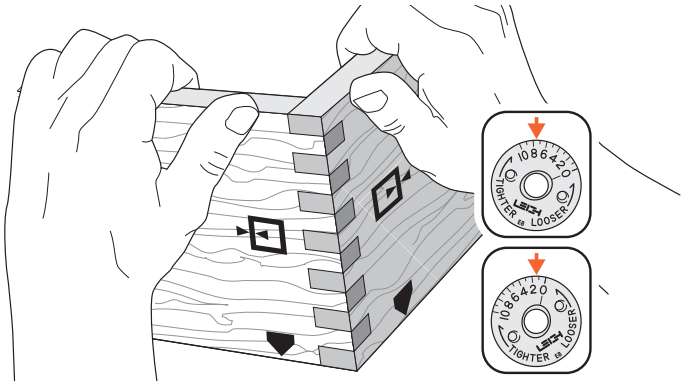
7-9 Rout in all of the openings of the pin board, making sure the eBush contacts all guide surfaces, then remove the board.



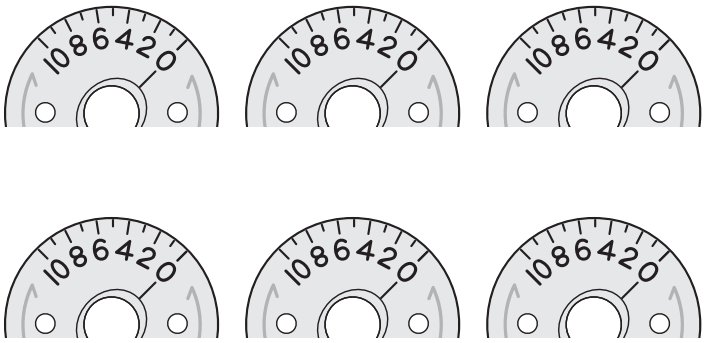
7-10 Unlock and move the template to pin position 2 Ⓐ and secure the template latches.

7-11 Clamp the socket board with the marked edge against the sidestop. Mark the depth of cut and set the router bit.

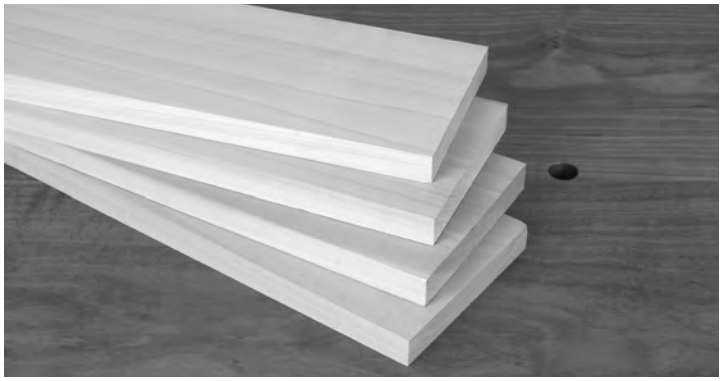
7-12 Rout all of the sockets. Remove socket board.



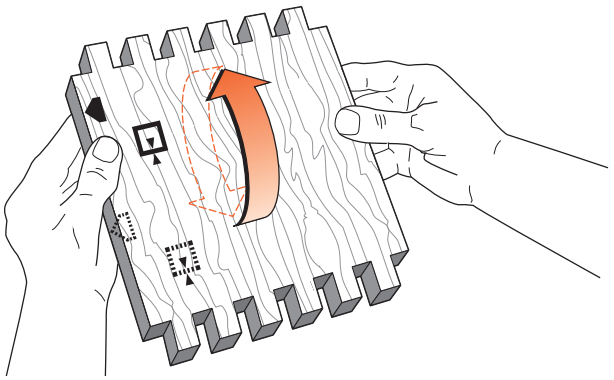
7-13 Test for fit, keeping the marked edges together. If required, adjust the eBush for a looser or tighter fit, and rout a new pin board and a new socket board.



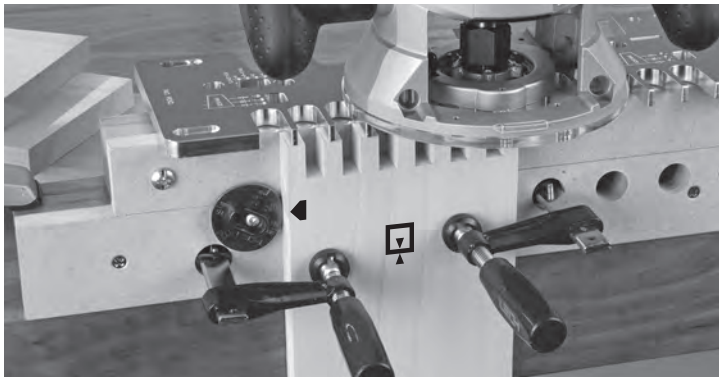
7-14 Record the eBush setting here for a quick setup the next time you use this bit/guide bushing combination.



7-15 Let's make a box. Prepare four boards and mark them 1, 2, 3, and 4. Then select the grain alignment and mark the common top (or bottom) edge. Don't worry about face side selection — this can be done after routing.

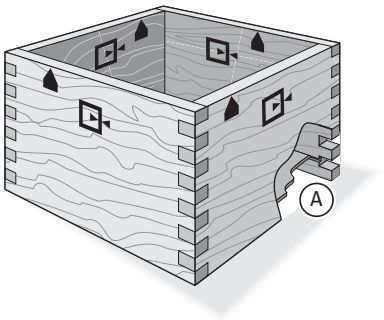


7-16 All square box joint boards (for boxes) are clamped alternately face in and face out, always with the same side edge against the sidestop.



7-17 Rout both ends of Boards 1 and 3 in pin position 1. Be sure to keep the same edges to the sidestop.

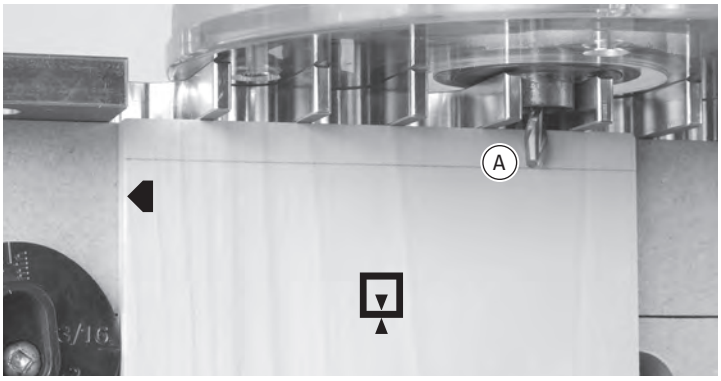
7-18 Rout both ends of Boards 2 and 4 in pin position 2. Keep the same edges to the sidestop.



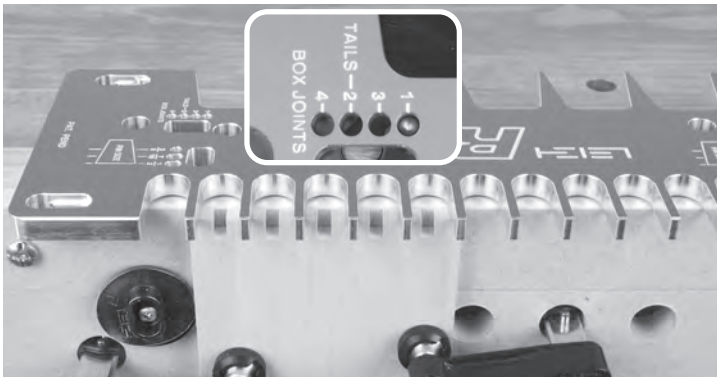
7-19 Keeping the marked sidestop edges of all boards toward the top (or bottom) of the box, select the preferred outside faces before marking and routing the grooves Ⓐ for the box bottom. Box joint corners need clamping from both directions, or use strap clamps and blocks.

3/16"[4,75mm] Box Joints

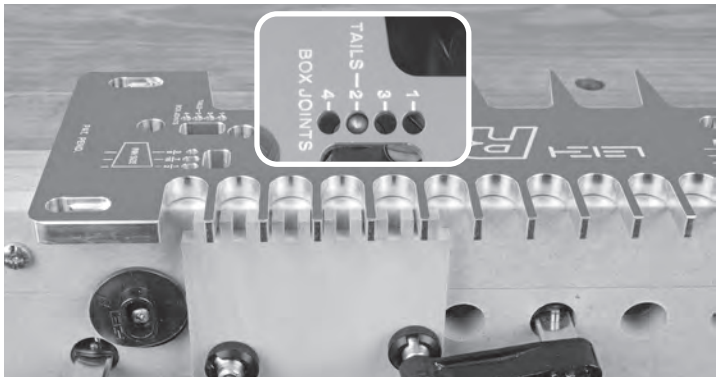
7-20 ***You should be thoroughly familiar with the 3/8"[9,5mm] joint procedure before routing 3/16"[4,75mm] joints.*** Set the sidestop on the 3/16"[4,75mm] mark.



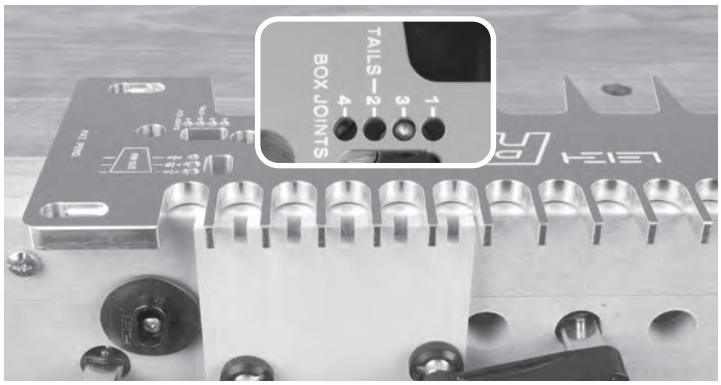
7-21 Clamp the socket board against the sidestop and flush under the template. Install a 3/16"[4,75mm] router bit and set the router bit depth to suit the mating board as before Ⓐ.



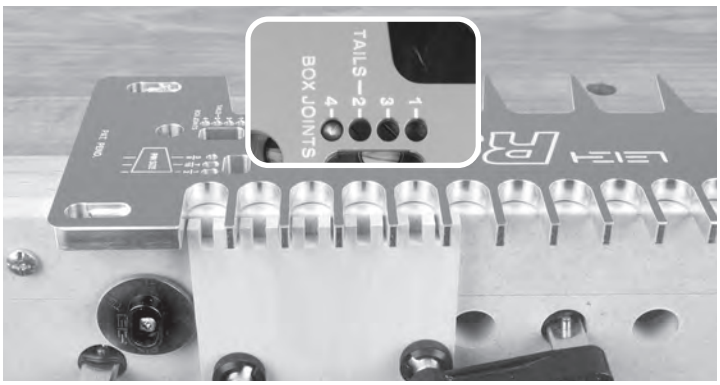
7-22 Set the template in pin position 1, lock it and rout in all openings — but don't remove the board. Note: Nothing will be routed in the first socket of the template.



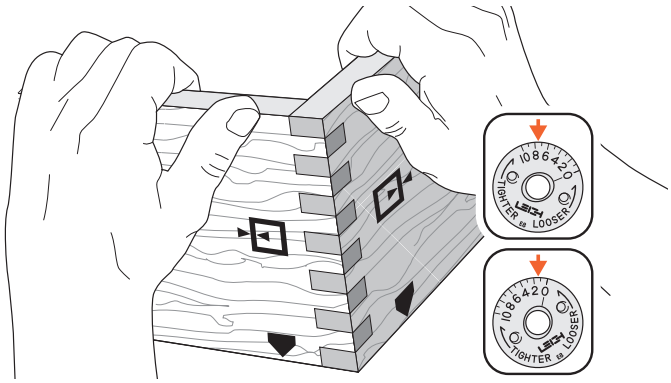
7-23 Move the template across to pin position 2 and lock. Rout the rest of the sockets.



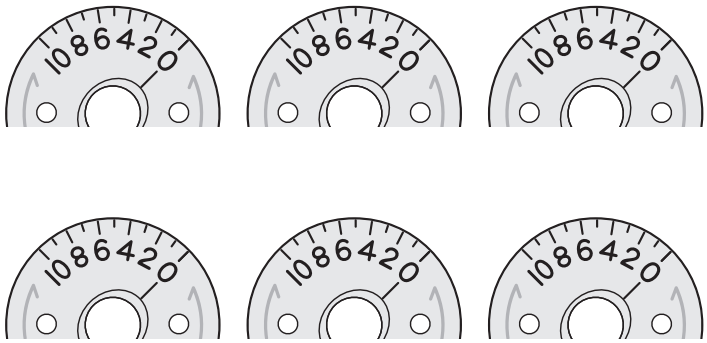
7-24 Remove the socket board and clamp in the pin board. Move template to pin position 3 and rout in all of the openings — but don't remove the board.



7-25 Move the template across to pin position 4 and lock. Rout all the rest of the pins.



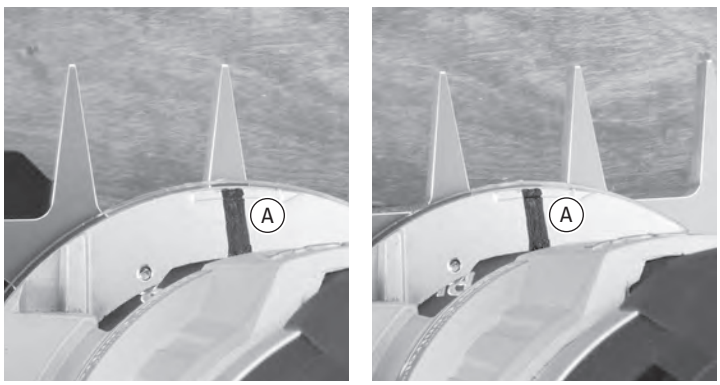
7-26 Test for fit, keeping the marked edges together. If required, adjust the eBush for a looser or tighter fit and rout a new pin board and a new socket board.



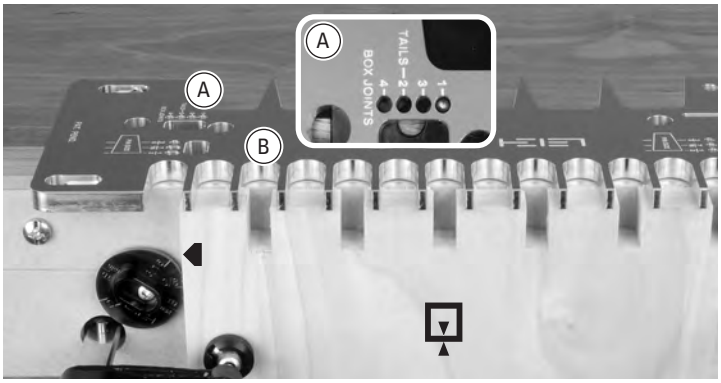
7-27 Record the eBush setting here for a quick setup the next time you use this bit/eBush combination. ■

3/4"[19mm] Box Joints

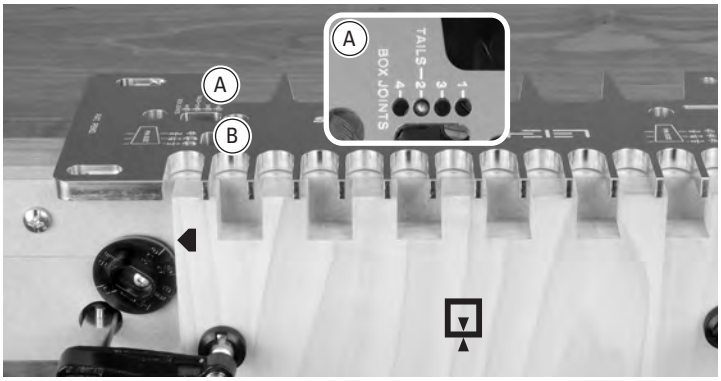
7-28 ***You should be thoroughly familiar with the 3/8"[9,5mm] joint procedure before routing 3/4"[19mm] joints.*** Set the sidestop on the 3/8"[9,5mm] mark and use the same 3/8"[9,5mm] bit and e10 eBush setting used for your successful 3/8"[9,5mm] joint fit.



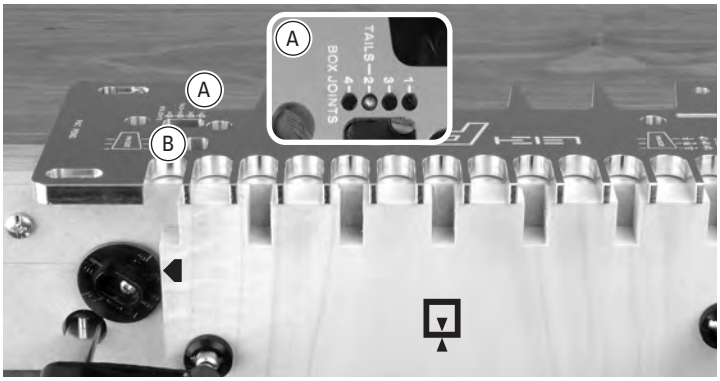
7-29 ⚠ For 3/4"[19mm] box joints you will be routing into alternating sockets. **Hint:** Mark a bold line at the 12 o'clock position on the router base Ⓐ. This will help to "steer" the router.



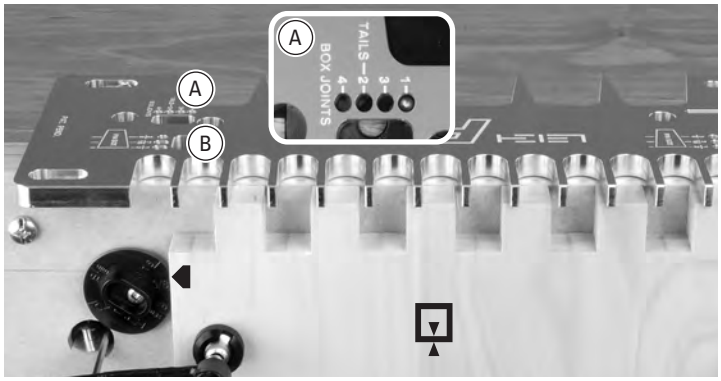
7-30 Set the template in pin position 1 Ⓐ and secure the pin plate latches. Clamp the pin board and rout in the third template opening Ⓑ and every other opening. Leave the board in place.



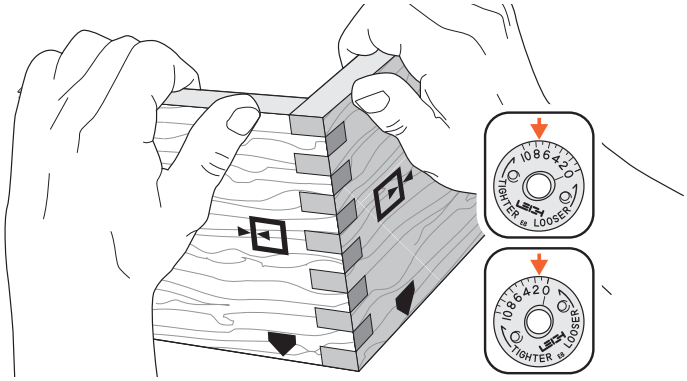
7-31 Move the template to pin position 2 Ⓐ and secure the pin plate latches. Rout in the second opening Ⓑ and in every other opening. Remove the board but leave the template in pin position 2 .



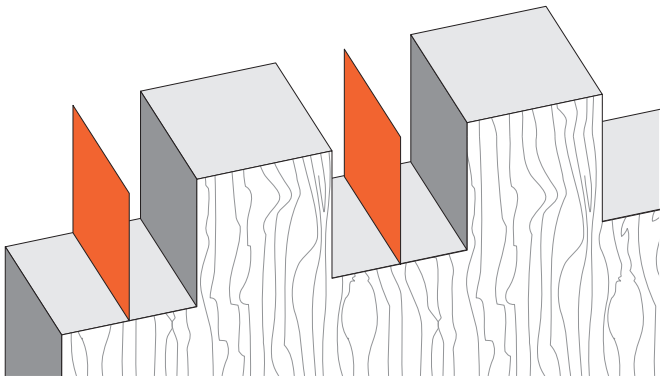
7-32 Clamp the socket board and rout in the first opening Ⓑ and every other opening.



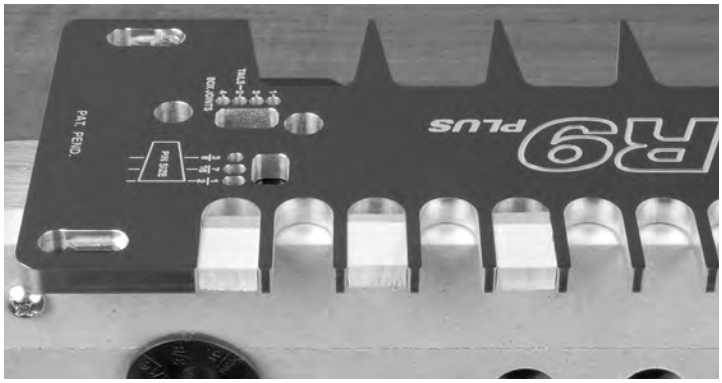
7-33 Move the template to pin position 1 Ⓐ and rout in the second and every other opening Ⓑ.



7-34 Test for fit, keeping the marked edges together. If required, adjust the eBush for a looser or tighter fit and rout a new pin board and a new socket board.

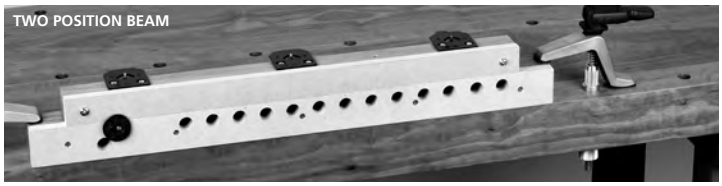


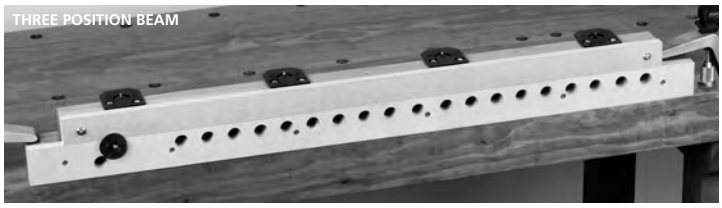
7-35 Theoretically, there will be nothing left in the sockets where the bit has passed by twice. However, routing tolerances can leave a very thin "wall". This can be quickly removed with a chisel and/or sandpaper.



7-36 Hint: Here is a foolproof way to avoid routing in the "wrong" template openings. Cut some ¼"[6mm] thick wood strips, slightly narrower than the comb openings. Wrap with sufficient masking tape to create a snug friction-fit in the template openings you don't want to rout Ⓐ. ■

Wide Boards

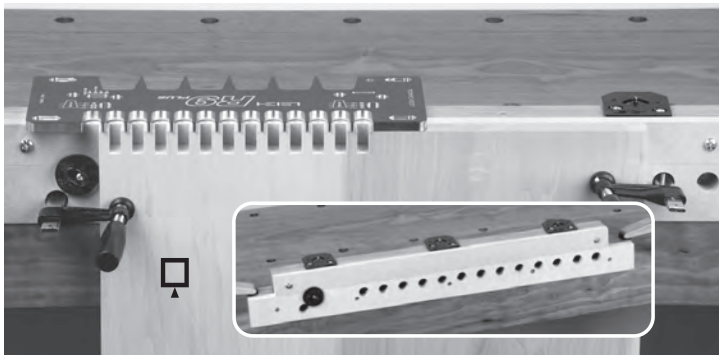




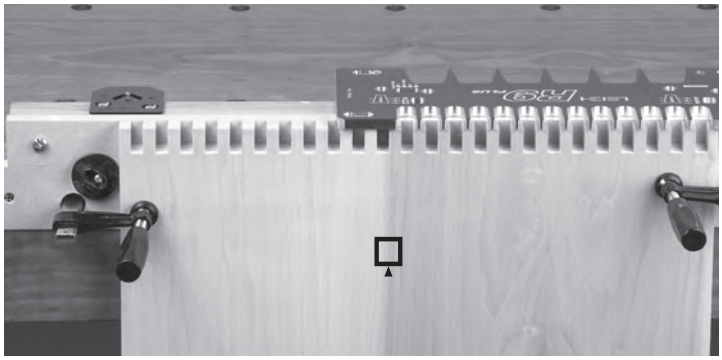
7-37 ***Routing boards of any width is simple with the R9PLUS.*** The unique pin plate positioning holes on the template, and the pin plates mounted on the beam, accurately index the template each time it is "stepped over".

Each template position will allow 9"[229mm] of joint pattern, therefore, on a one position beam (1 template) the maximum board width will be 9"[229mm]. A two position beam (2 templates) will accommodate boards up to 18"[457mm]. Increasing the beam length to three template positions will allow dovetails or box joints on boards up to 27"[688mm]. There is no limit to the length of a beam.

A one position beam is 20"[508mm] in length. Each additional template position requires 10"[254mm] of beam length.



7-38 This beam has two template positions. Position the template on the sidestop end of the beam (operator's left side), secure the pin plate latches and clamp the board against the sidestop. Rout the first half of the joint.



7-39 Leave the board clamped on the beam, release the pin plate latches and shift the beam to the next position. Secure the pin plate latches. Now rout the second half of the joint. ■

Appendix

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

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Web: carbatec.com.au

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Fax: 39 02 335 005 27
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Gyeonggi Republic of Korea ,
16972 South-Korea
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Fax: +82-0504-192-0629
Email: maengha@leighkorea.com
Web: www.leighkorea.com

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CNR. Malibongwe & Rocky ST.
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South Africa
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Fax: +27 011 791-0850
Email: info@hardwarecentre.co.za
Web: www.hardwarecentre.co.za

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Sweden
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Fax: 46 120 854 69
Email: info@toolbox.se
Web: www.toolbox.se

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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

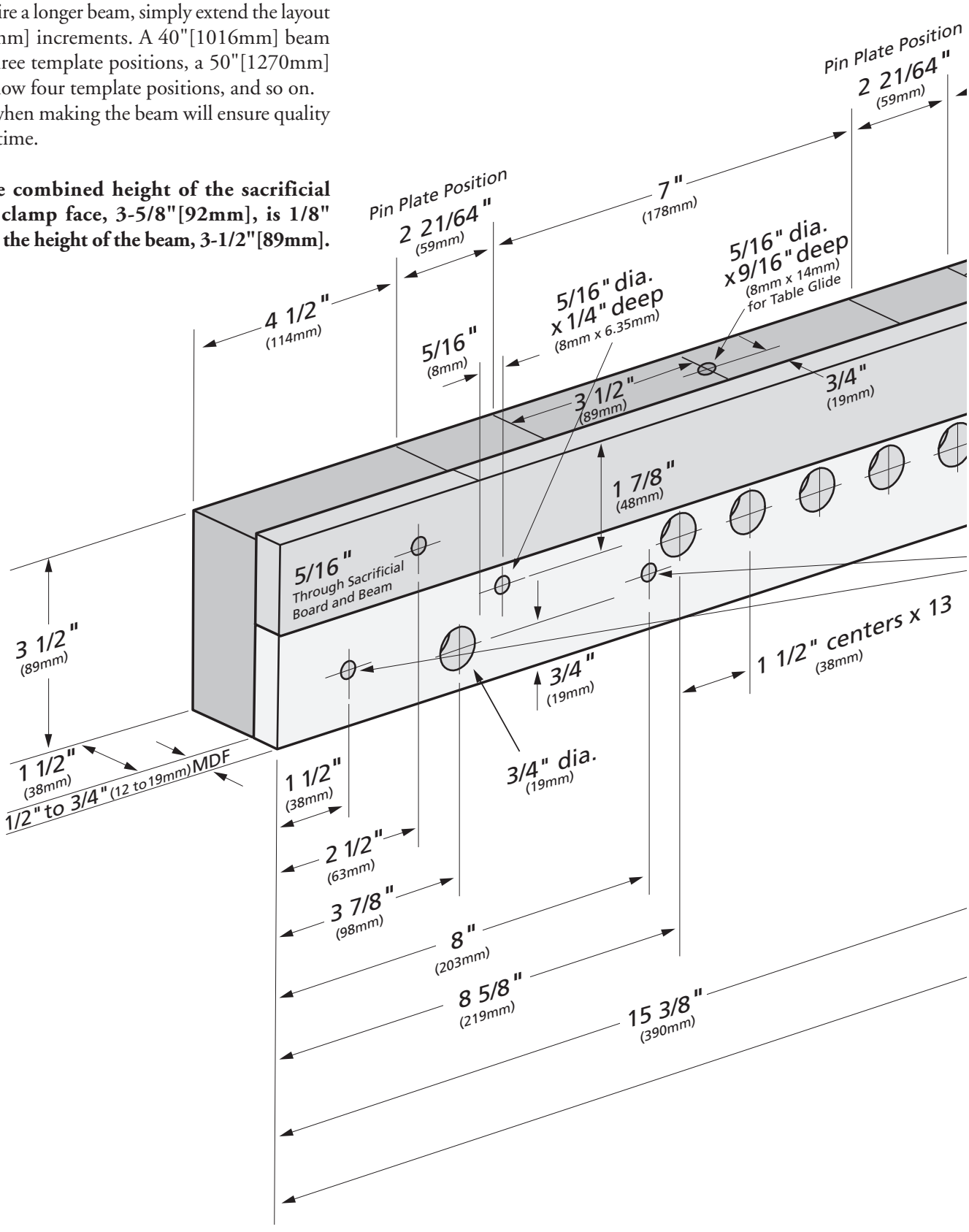
R9PLUS Beam Drawing

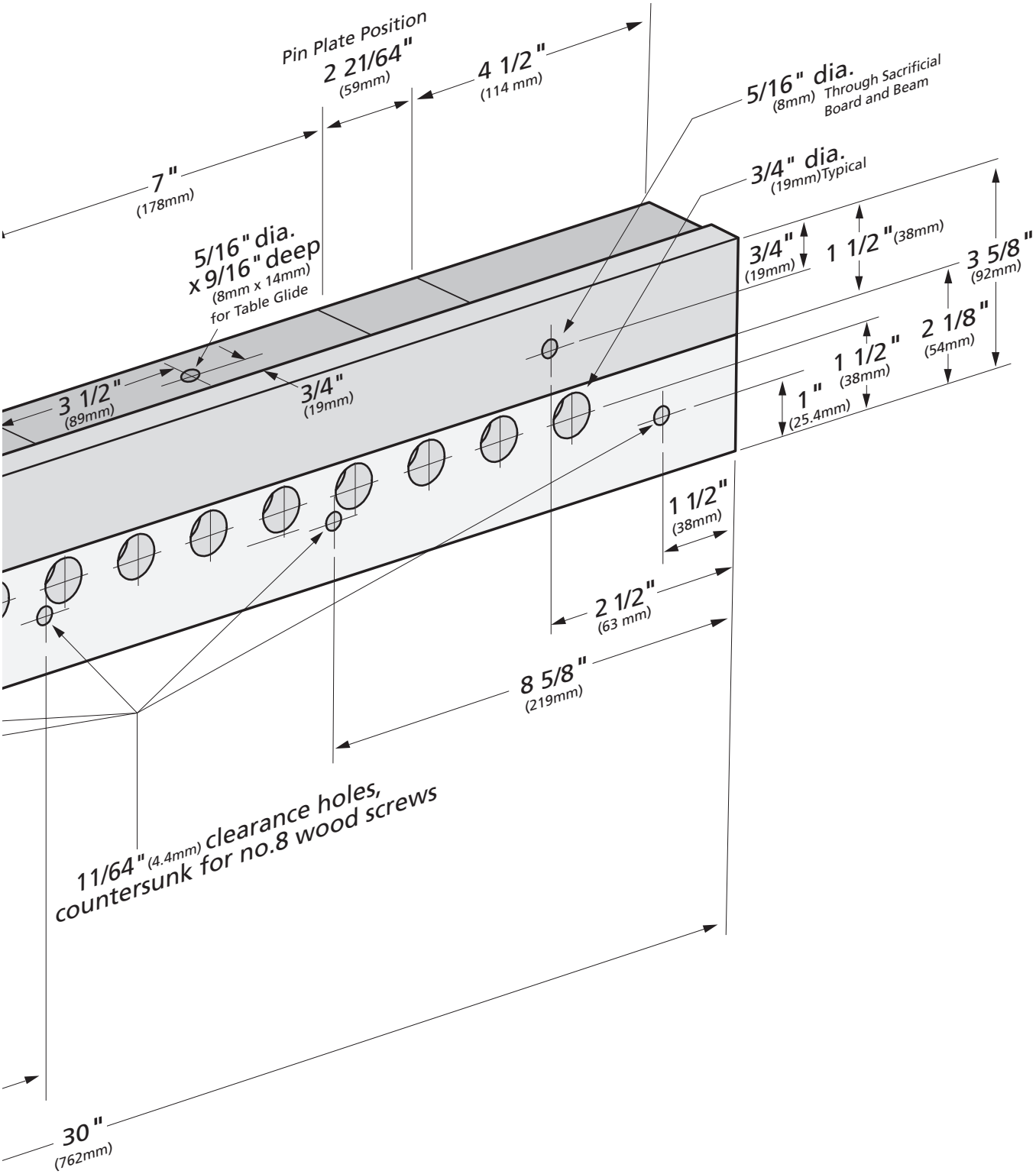
This drawing includes all dimensional and layout information required to make a two template position 30"[762mm] beam. Please use this drawing along with the detailed instructions in Chapter 1. **Note:** The top of the beam must be 90° to the face of the beam.

If you require a longer beam, simply extend the layout in 10"[254mm] increments. A 40"[1016mm] beam will allow three template positions, a 50"[1270mm] beam will allow four template positions, and so on.

Accuracy when making the beam will ensure quality joints every time.

Note: The combined height of the sacrificial board and clamp face, 3-5/8"[92mm], is 1/8" greater than the height of the beam, 3-1/2"[89mm].




Pin Plate Position
2 21/64"
(59mm)
4 1/2"
(114 mm)
7"
(178mm)
5/16" dia.
(8mm) Through Sacrificial Board and Beam
3/4" dia.
(19mm)Typical
5/16" dia.
x 9/16" deep
(8mm x 14mm)
for Table Glide
3/4"
(19mm)
1 1/2" (38mm)
3 5/8"
(92mm)
2 1/8"
(54mm)
1 1/2"
(38mm)
1"
(25.4mm)
3 1/2"
(89mm)
3/4"
(19mm)
1 1/2"
(38mm)
2 1/2"
(63 mm)
8 5/8"
(219mm)
11/64" (4.4mm) clearance holes,
countersunk for no.8 wood screws
30"
(762mm)