Sliding Dovetails

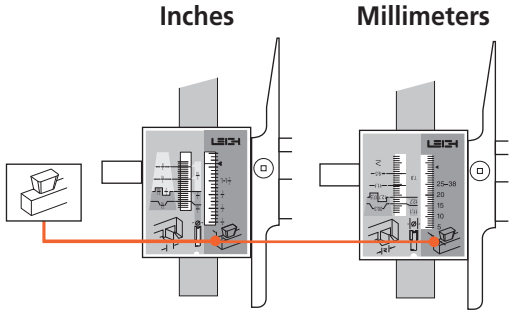
Routing sliding dovetail "slots" across the face grain of horizontal boards is very tough on dovetail bits. ***Always use the largest shank size available to you****; we recommend at least 8mm shanks, but ½" would be even better, with of course the appropriate guidebush.*

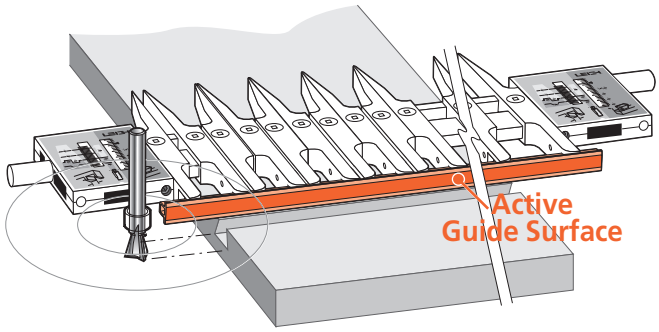
If you have to use ¼" shanks in hardwood, use a second router to rough out the slot center with a straight bit.

While we recommend ⅝"[15,9mm] as the ideal size guidebush for sliding dovetails, we appreciate that many users will have only a 7/16" bushing. These instructions cover both those guidebushes.

1 With the Finger Assembly in
HALF-BLIND DOVETAIL TAILS (HB TAILS) mode,
install the sliding dovetail fence (cross-cut fence)

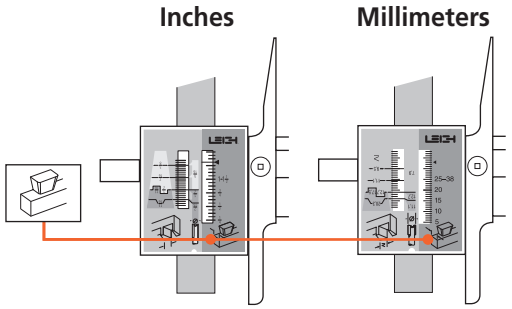
Sliding Dovetail Slots are cut across the board face.

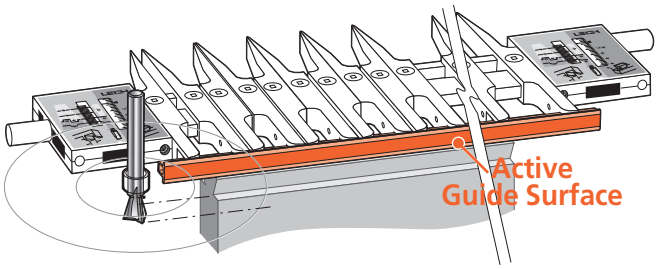


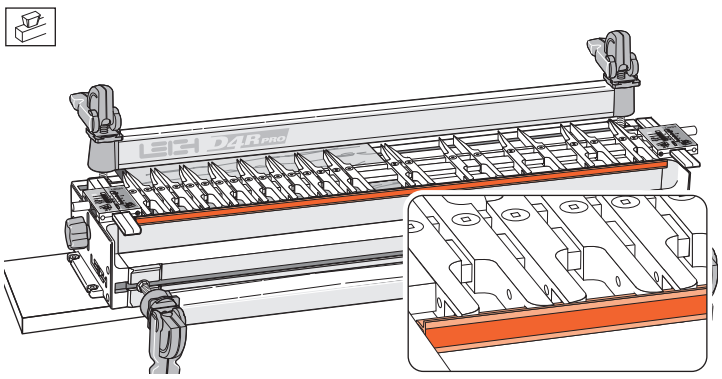


2 **KEEP** the finger assembly in the same mode

3 **Sliding Dovetail Tails**
are cut across the board end edge

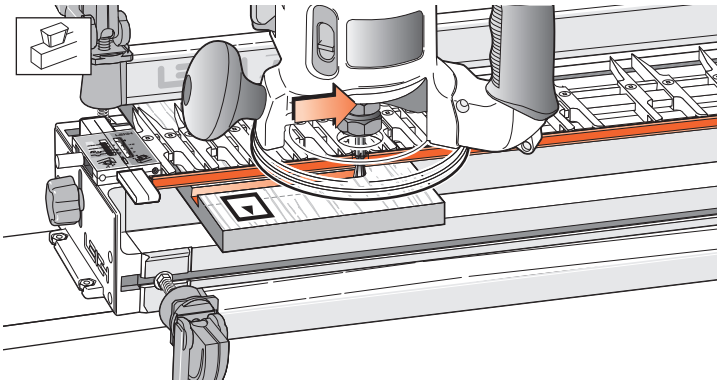




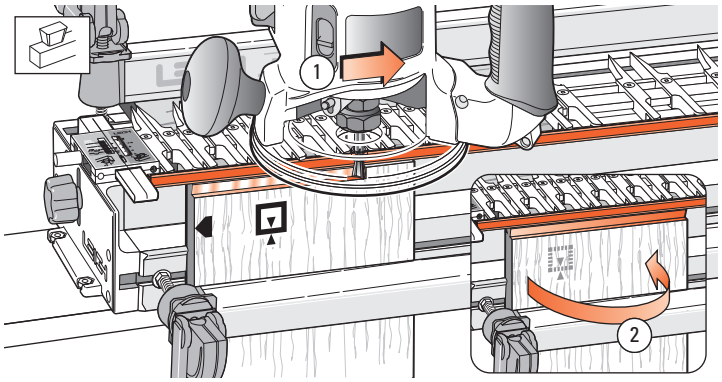


16-1 With the finger assembly in HB TAILS mode, the sliding dovetail fence fits into the recesses in the ends of the tail guides for routing sliding dovetails.

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

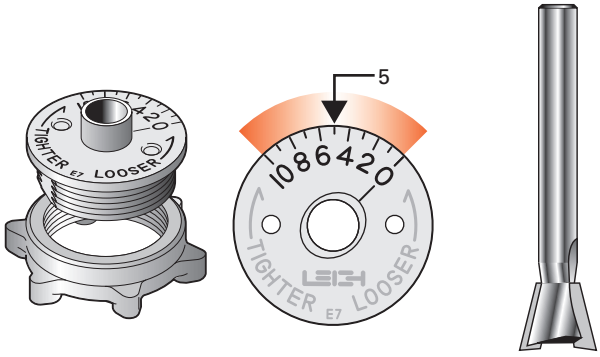


16-2 Using the sliding dovetail fence as a guide surface for the guidebush, you can make lateral router cuts across the faces of horizontal boards (we call these dovetail *slots*), and...

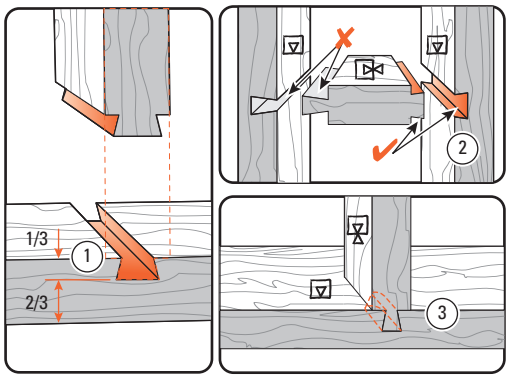


16-3 Across the top ends of vertical boards to cut the tail. First rout one side ①...

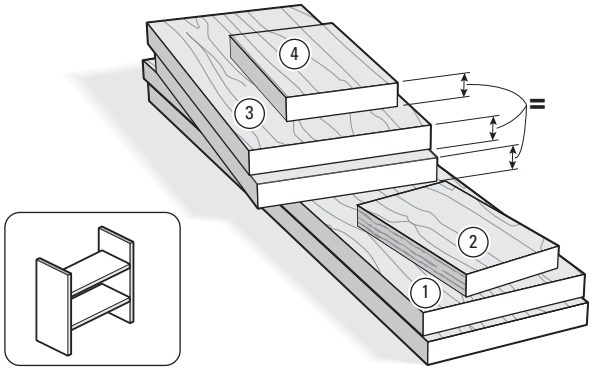
...then turn the board side-over-side ② to cut the other half of the tail.



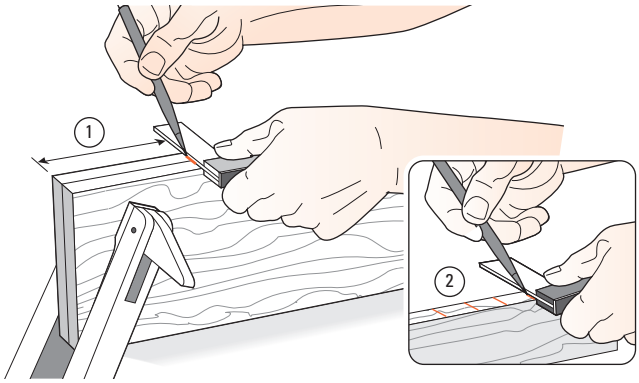
16-4 Turn the **e7-Bush** to "5" and use the No. 120-8, ½"x 14° bit for sliding dovetails. This **e7-Bush** setting will allow for fine fit adjustment of the tail later.
A standard 7/16"[11,1mm] guidebush (min. depth 1/4" [6,35mm] see page 69) can be used but without the fine adjustment provided by the **e7-Bush**.



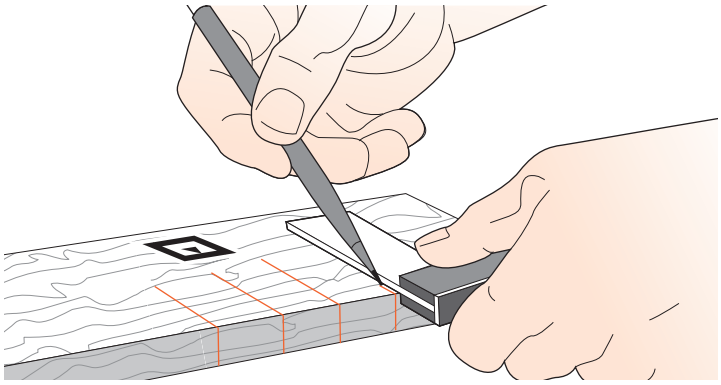
16-5 On a full width joint, *the slot depth-of-cut should be no more than 1/3 the board thickness* ①. If the tail board is a load-bearing horizontal member (e.g., bookshelf or step), make the tail fairly thick for good tail neck strength ②. Shorter sliding dovetails for less structural demand may be slightly deeper, with narrower profiles, especially if appearance is important ③ (e.g., where narrow rails join wider boards).



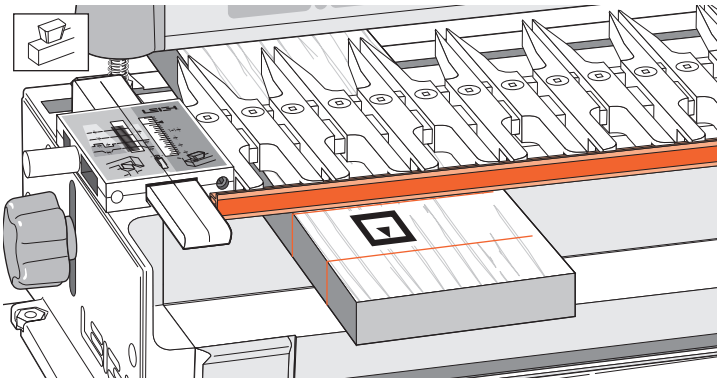
16-6 Use ¾"x 5½"[20x140mm] softwood to make two slot boards ①, plus one narrow test slot board ②, two tail boards ③ and one narrow test tail board ④. The tail boards ③ and test tail board ④ must be exactly the same thickness. This will make two uprights and two shelves.



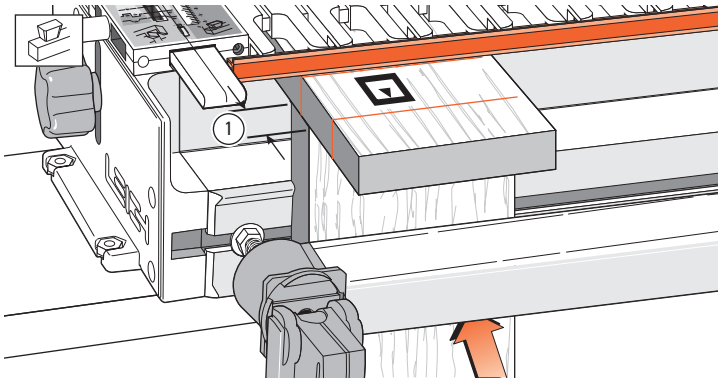
16-7 Marking Out: *Do not mark slot positions on board faces*; mark the edges ① of both slot boards together for perfectly level shelves. Mark the narrow test slot board in the same way at several closely spaced random spots ②. This board is used only for setup.



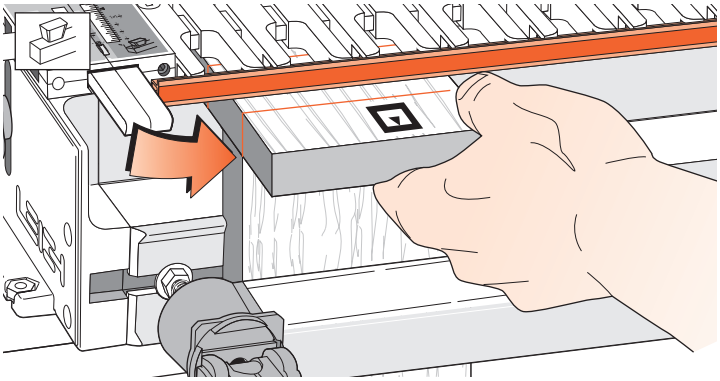
16-8 *On the test slot board only*, square the marks across the face.



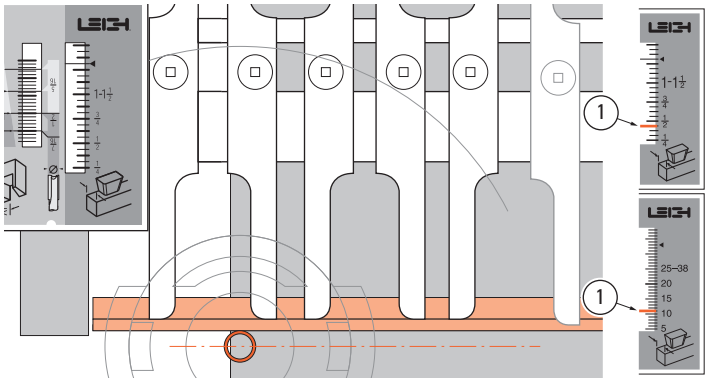
16-9 Mount the test slot board in the rear clamp, markings up. ⚠Dovetail slots are best routed from left to right because the bit's clockwise rotation pulls the guidebush against the fence. But when routing close to both ends of a board, you may need to rout slots from right to left. *See 16-30.*



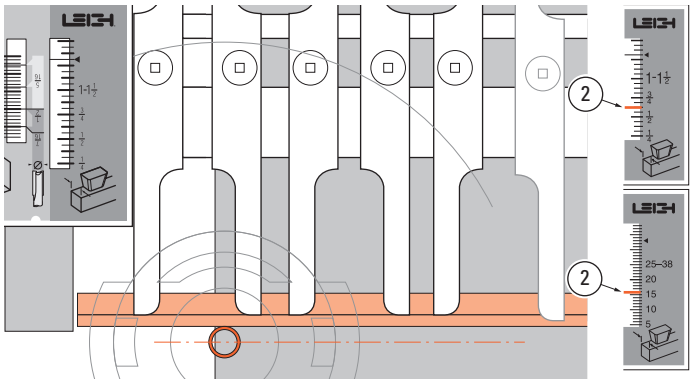
16-10 Mount a ¾"[20mm] thick ①*(yes, the ¾"[20mm] thickness is important)* square-ended board vertically in the front clamp against the side stop, with the top edge butting the underside of the test board.



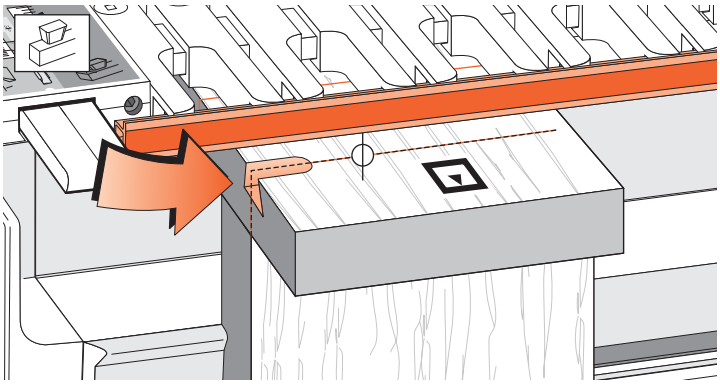
16-11 Position and clamp the test board so that one of the edge marks is in line with the *outside edge* of the vertical board.



16-12 With the finger assembly (including the sliding dovetail fence) on the support brackets in the HB TAILS mode, set the scale to 7/16"[11mm] ①. *Make sure the finger assembly is level and sitting flush on top of the board.* The HB TAILS scale was not designed for this operation, but with this setting the routed slot will be close to centered on the slot line.

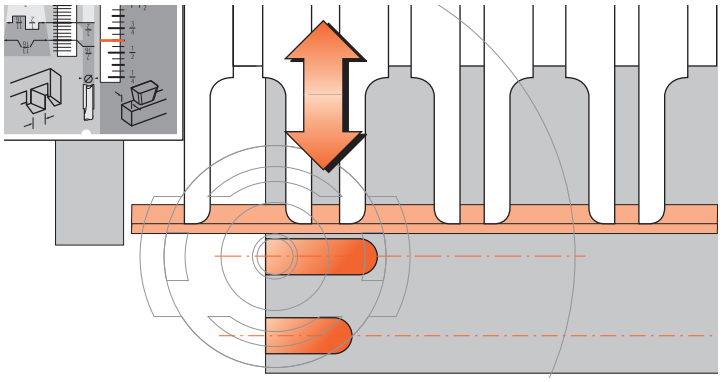


16-13 If you use a larger guidebush, for example ⅝"[15,9mm] rather than 7⁄16"[11,1mm], move the scale in by the difference of the two guidebush radii.
E.g., suggested scale reading for a ⅝"[15,9mm] guidebush would be 11⁄32"[9mm] ②.

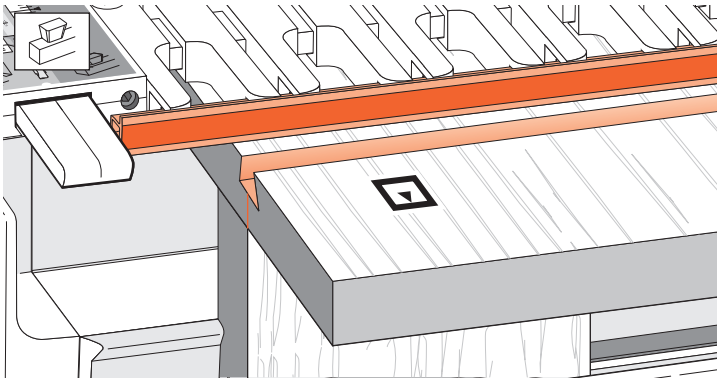


16-14 Adjust the bit so the cut depth is about 5⁄16"[8mm]. Rout from left to right maintaining light inward pressure of the guidebush on the fence. Rout in only about 1"[25mm] and back out again.

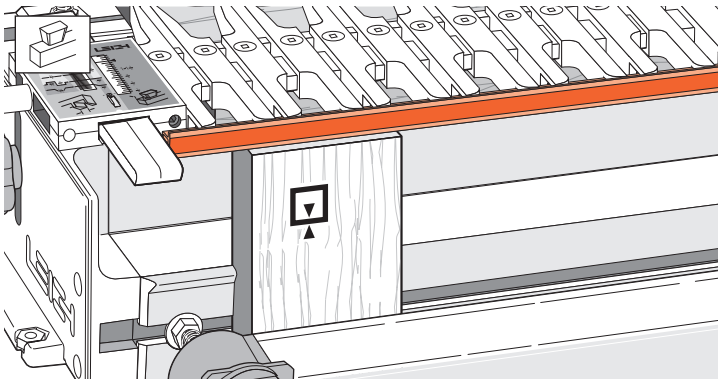
⚠ **Do not lift the router.**



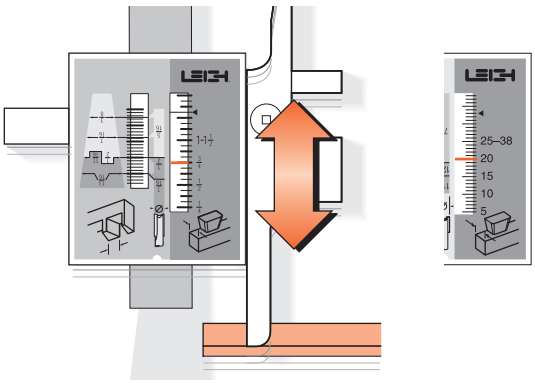
16-15 Check to see if this short slot is centered on the pencil line. If not, adjust the finger assembly in or out and retest on the other lines as necessary until the slot is centered. Lock the finger assembly in this position and record the setting for future reference.



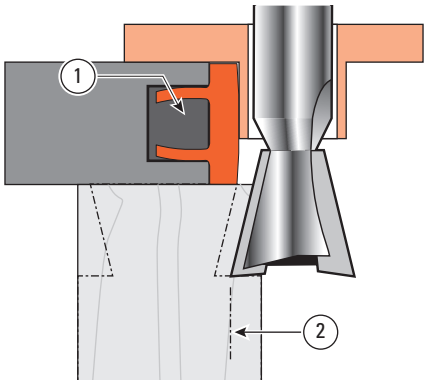
16-16 Now rout sliding dovetail slots in the two main slot boards with the boards in the horizontal position in the rear clamp, slot side, that is inside face ⊡ up.
The guidefingers must be flush on the board.



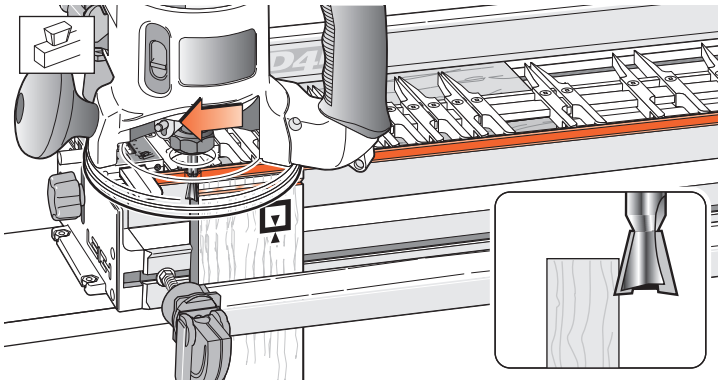
16-17 Replace the spacer board in the rear clamp, and with the finger assembly on the spacer board, mount a test tail board vertically in the front clamp, **flush under the guidefingers**. Either side can face out ⊡.



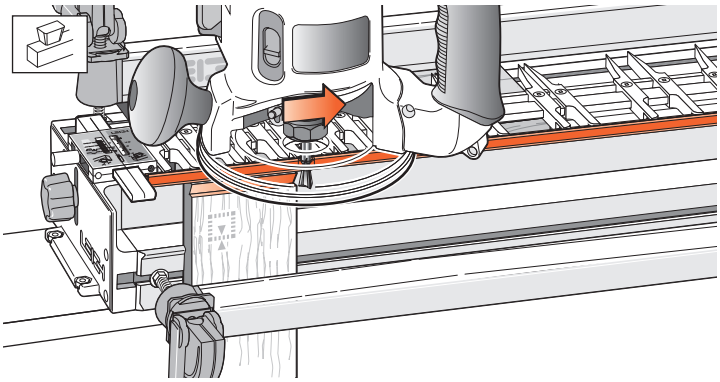
16-18 The HB TAILS scale is not designed specifically for this mode, but it does allow you to make precise adjustments for tail size and tightness of fit on sliding dovetails.



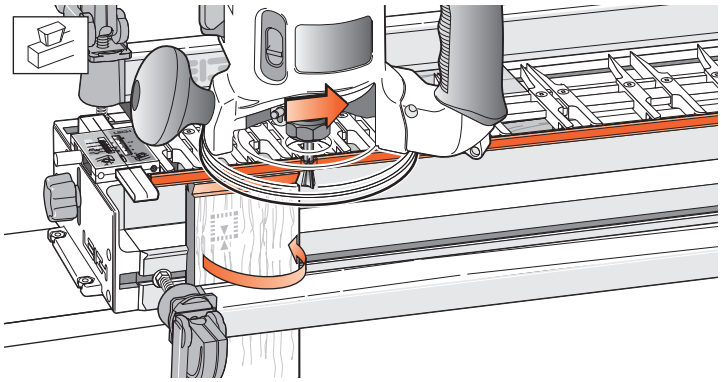
16-19 Adjust and set the finger assembly ① so it is clear that the routed tail ② will be too large for the slot.



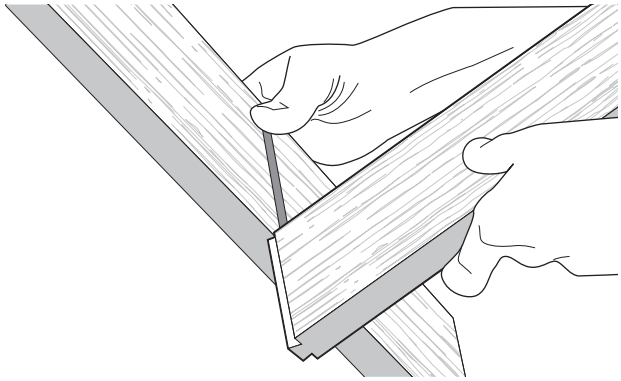
16-20 ⚠ Rout one side of the test tail board. **Make one light pass from right to left (climb routing). Make sure you control it firmly, because it is driven in this direction by the bit. Only the tip of the bit should be cutting on the first cut (see inset).** This *back* or *climb* routing leaves a very clean shoulder in side grain.



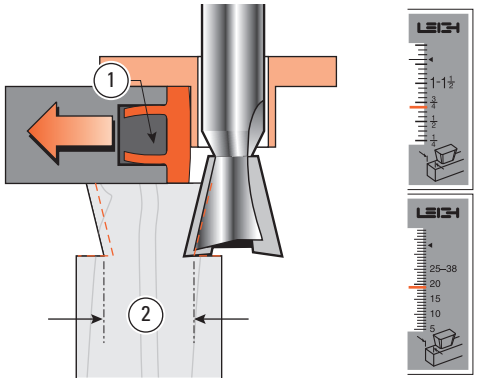
16-21 Finish left to right, with the guidebush touching the fence.



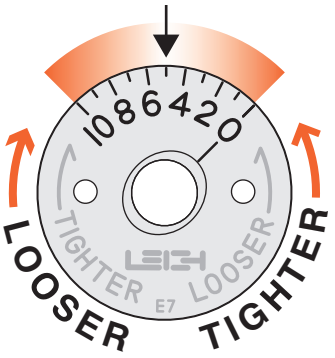
16-22 Turn the test tail board around in the jig and rout the other side as above.



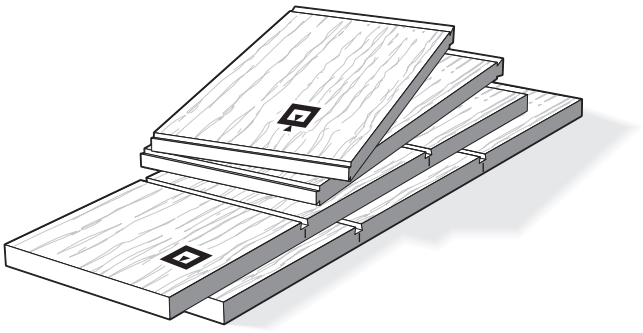
16-23 Test the joint for fit. The tail should be too big. If it is too small, adjust the finger assembly outward by at least half the difference and rout another test tail on the other end of this test board.



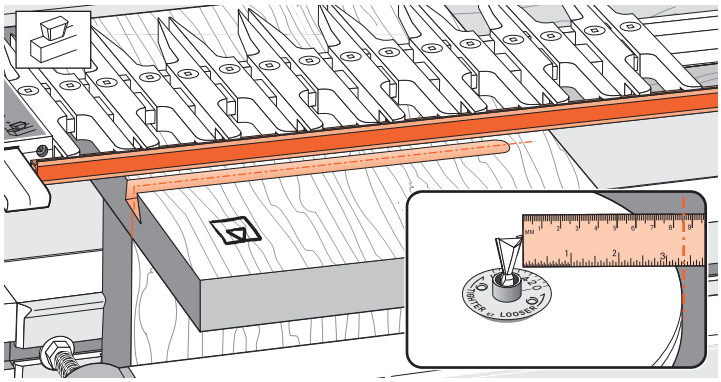
16-24 If the tail ② is too big, move the finger assembly ① toward the jig by half the amount the tail is too big. Rout the same test board again; keep adjusting and testing until a good fit. *Use trial and error each time. It doesn't take long, and you get a good fit. For fine fit adjustment with the e-Bush see 16-25.*



16-25 For fine fit adjustment we use the unique **eBush**. *Note: joint tightness is only adjusted with tail size, not the socket.* To increase the tail size (tighter joint) rotate the **eBush** to a lower number. Each increment will adjust the fit by .001" [0.025mm] on the glue line. To decrease the tail size (looser joint) rotate the **eBush** to a higher number. Remember to rout both sides of the tail board as in 16-21 & 22.

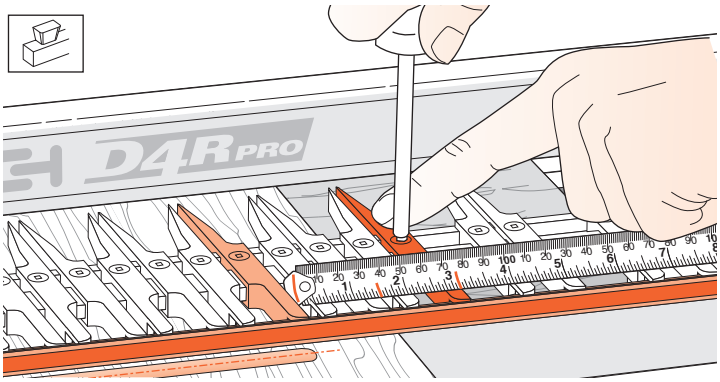


16-26 When the fit is satisfactory, rout one end of a project tail board and test again. If the fit is good, rout all the other ends. *Note: Variations in board thickness, guidebush diameter, bit depth, angle, diameter and concentricity, make it impractical to record sliding tail size settings.*

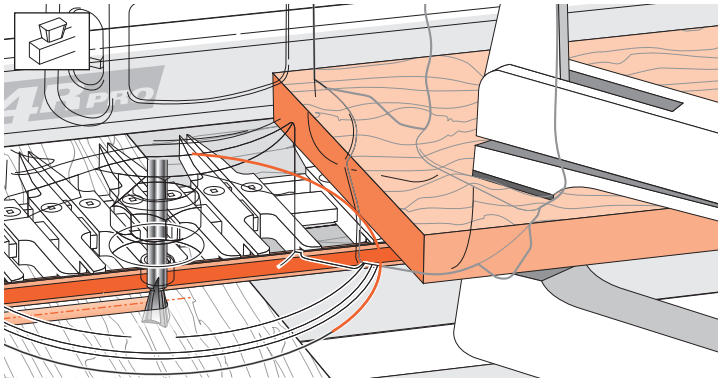


16-27 Stopped Sliding Dovetails
If a stopped sliding dovetail is called for...

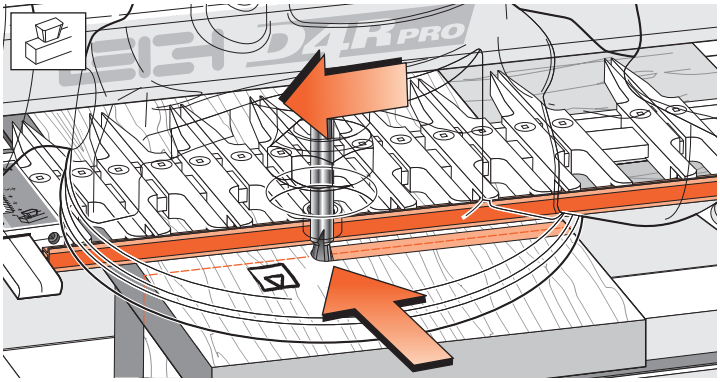
Measure from the outside tip of the dovetail bit to the edge of the router base.



16-28 Measure the same distance from where you want the slot stopped to a position on the finger assembly. Move a guidefinger to that point and mark the guidefinger with a felt pen as a visual router stop mark…



16-29 Or lightly clamp (**with a soft-jawed clamp**) a short board to the finger assembly to act as a router stop.

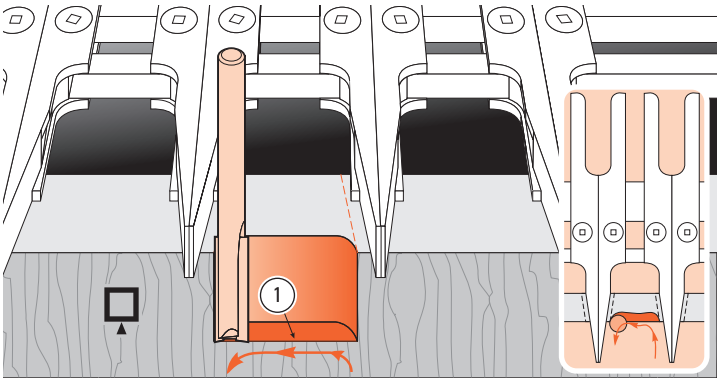


16-30 ⚠ Dovetail slots preferably are routed from left to right because the bit's clockwise rotation pulls the guidebush against the fence. However; as when routing close to both ends of a board, it may be necessary to rout slots from right to left. **Bit rotation will tend to pull the router away from the fence. Feed slower and maintain constant guidebush pressure against the fence.** ■

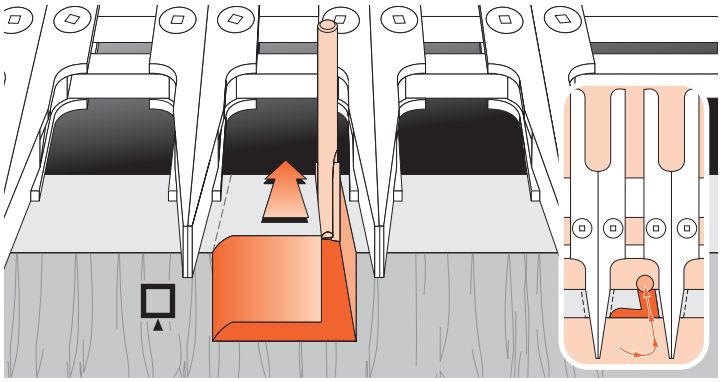
Hints and Tips

The following pages contain valuable information that will help you get the most from your new Leigh D4R Pro dovetail jig. Our website contains additional information and technical bulletins that further expand your jig's capabilities.

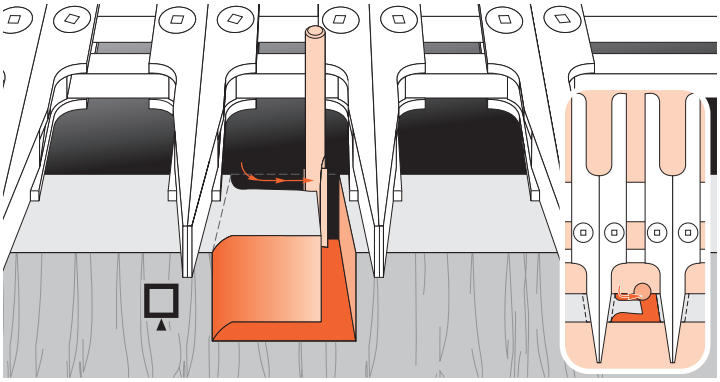
Go to: www.leighjigs.com and click on the "Support" tab.



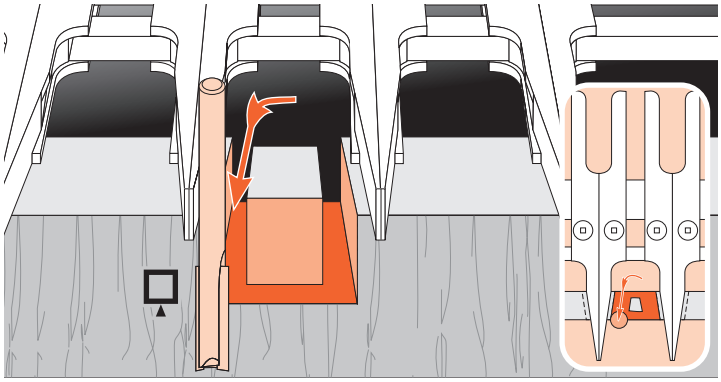
17-1 Through Dovetail Pins With the straight bit, **carefully climb-rout from right to left. Make sure you control the router firmly when climb routing.**
Climb routing produces a nice clean shoulder at ①.
Note: For clarity, the guidebush is not shown in this sequence.



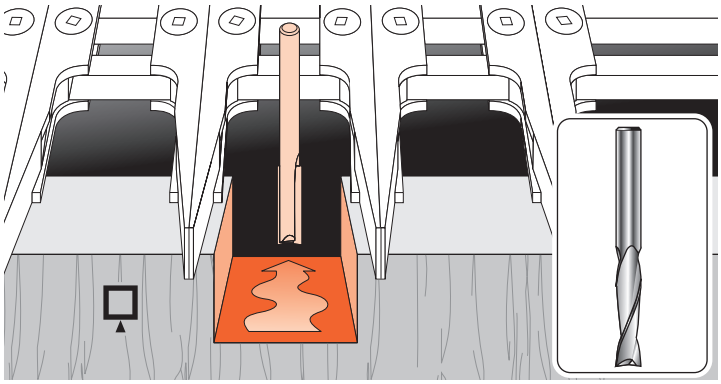
17-2 ⚠ Rout through on the right side.



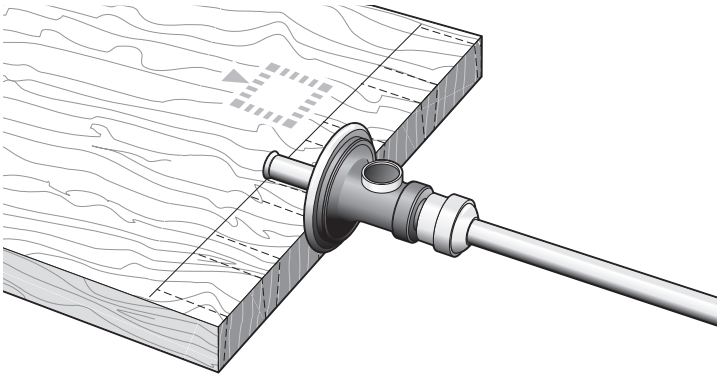
17-3 Climb rout from left to right from the rear of the cut. **Take care to control router.**



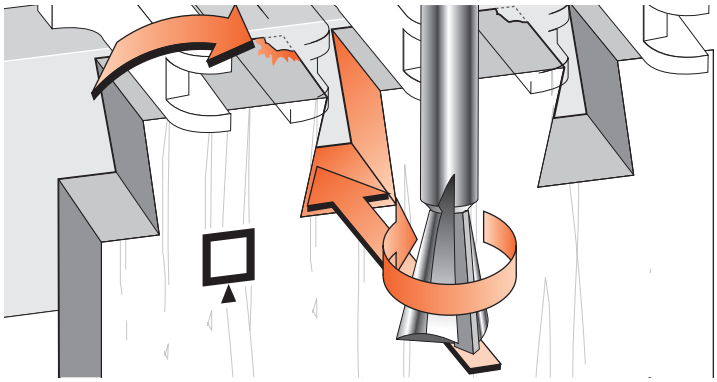
17-4 ⚠ Rout back through towards you on the left side.



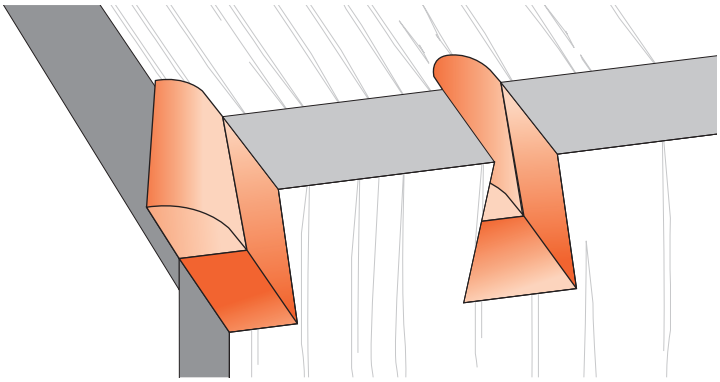
17-5 Rout away the rest of the waste.
Note: Spiral up-cut straight bits (inset) generally rout more smoothly than the two-flute carbide-tipped bits. Leigh recommends solid carbide bits.



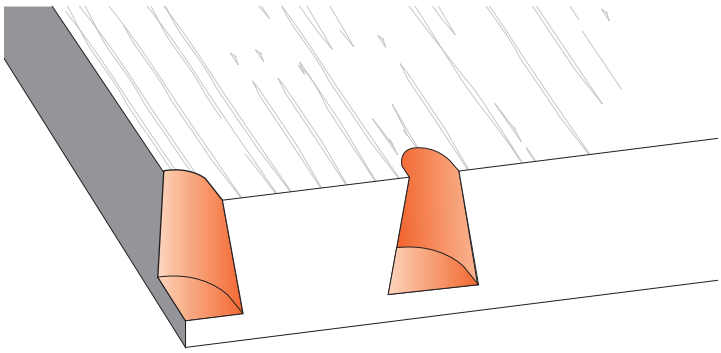
17-6 Through Dovetail Pins Tearout
To prevent tearout at the back bottom part of a straight cut, scribe a line with your marking gauge across the back of the pin board at exactly the depth of cut.



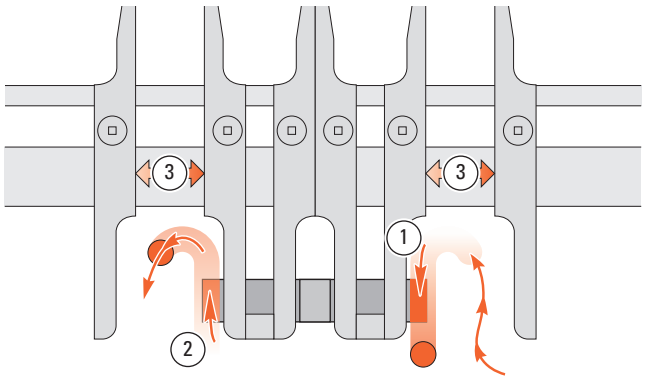
17-7 Dovetail Tails Tearout With the dovetail bit, most tearout occurs at the top left exit of the cut.



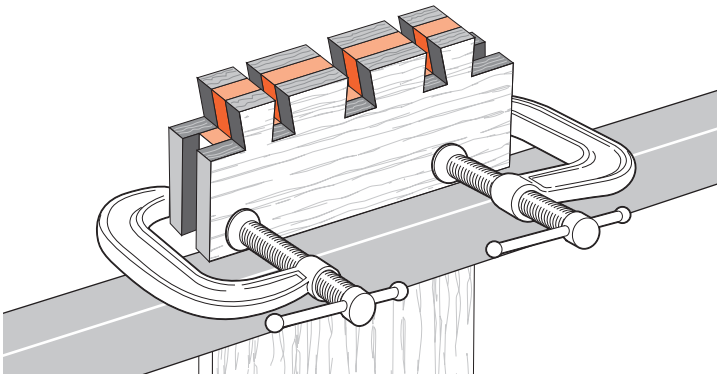
17-8 To help prevent this, back up the cut with the end-grain of a horizontal board pushed against the back of the workpiece and held in the rear clamp. This board replaces the spacer board.



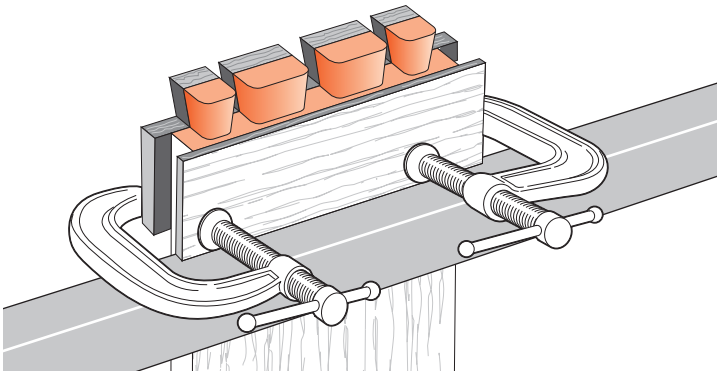
17-9 This same scrap piece can remain in place for successive cuts.



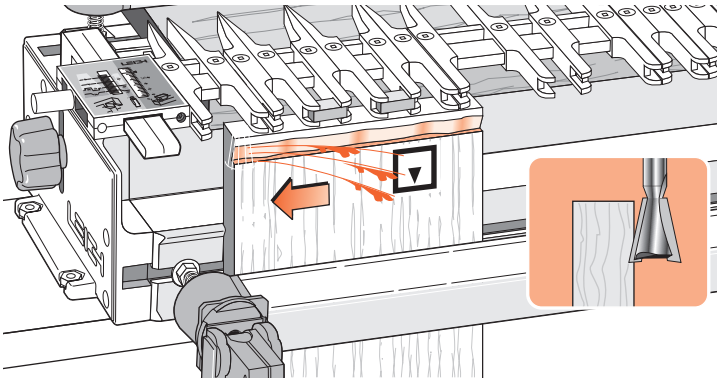
17-10 Always rout the right hand half pin socket starting from behind the board and moving the router outwards ①, and rout the left hand half pin socket from the outer face, moving the router inwards ②. Position the non-active guide fingers both sides so that they do not impede this process ③.



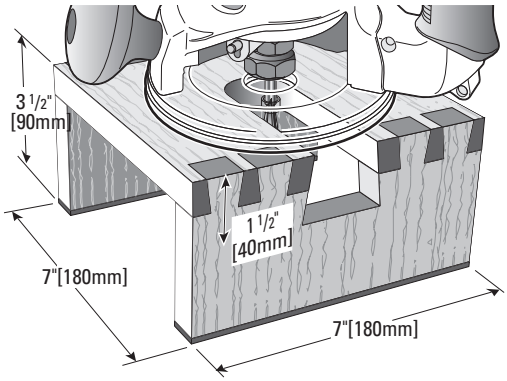
17-11 For particularly vulnerable pieces or that last piece of exotic wood, the best solution is to clamp horizontal scrap pieces to front and back of the work piece. **Make sure the clamps are below the bit depth.** ⚠ PLYWOOD material is **not** suitable for routing; laminates are very prone to tearout. Figures 17-10 or 17-11 are essential for plywood but do not guarantee success.



17-12 A single scrap piece can be C-clamped on the back of half-blind tails, *but make sure you protect the workpiece from the clamp pads.* Note: There is no 100% solution to tearout. It's not the jig's fault, just something that happens when machining, sawing and even chiseling wood. Important pieces fall off from where you least want them to.

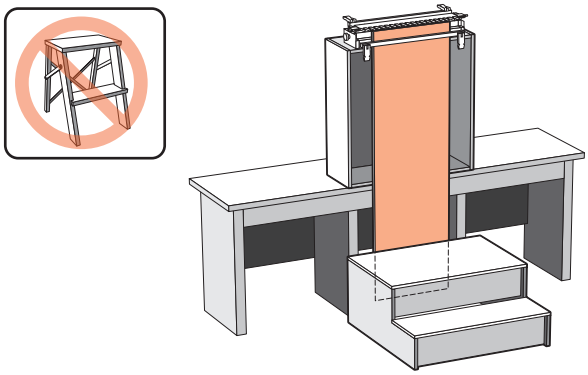


17-13 ⚠ On face cuts, whether using a straight bit or a dovetail bit, climb routing or back routing will leave a clean edge; **but great caution must be exercised in controlling the router's movement from right to left, as the bit rotation pulls the router in that direction anyway**

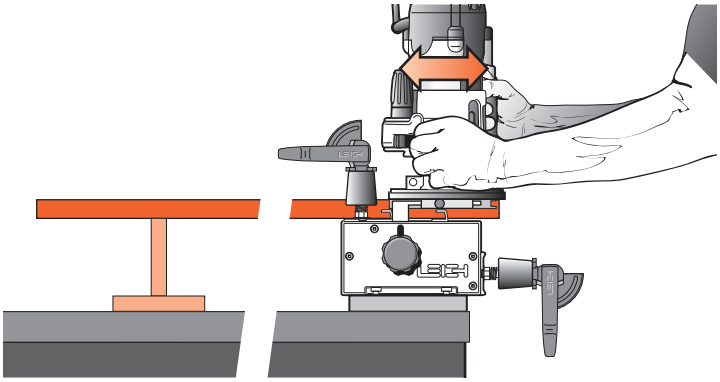


17-14 General Hints

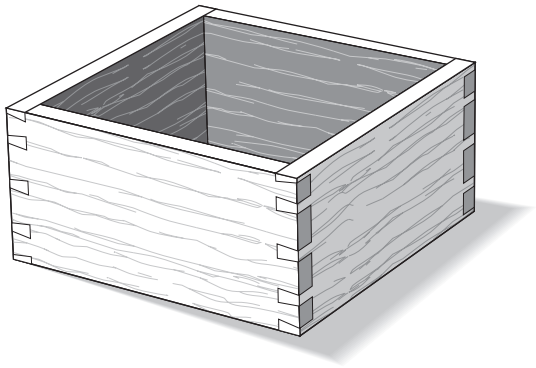
Router Stand: Make up a small router stand as illustrated, to mount the router securely on the bench when not in use.



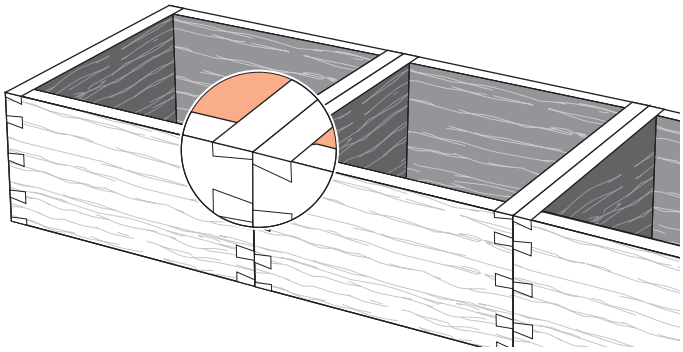
17-15 For routing long vertical boards it may be necessary to build a jig stand to mount securely on your bench. Make the stand and bench height combination sufficient to accept the board length you have in mind. *The jig stand should be bolted securely to the bench.* Make up a stable platform to stand on as in the illustration. **Do not use a set of steps. Steps are not stable enough.**



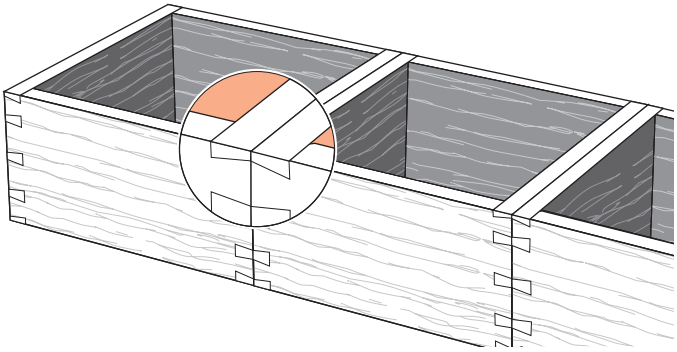
17-16 When placing long horizontal boards in the rear clamp, make sure the rear end of the board is supported to prevent unnecessary racking of the jig.



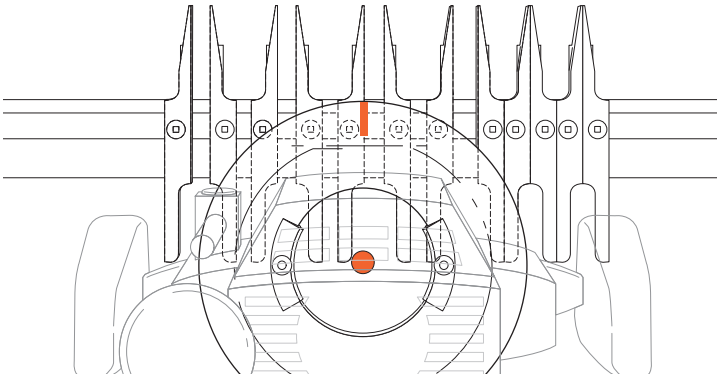
17-17 More On Symmetry
It doesn't matter if symmetrical-looking joints on a single box do not precisely mirror the adjacent corners. No one will ever know the difference. These joints look perfectly symmetrical on their own, but...



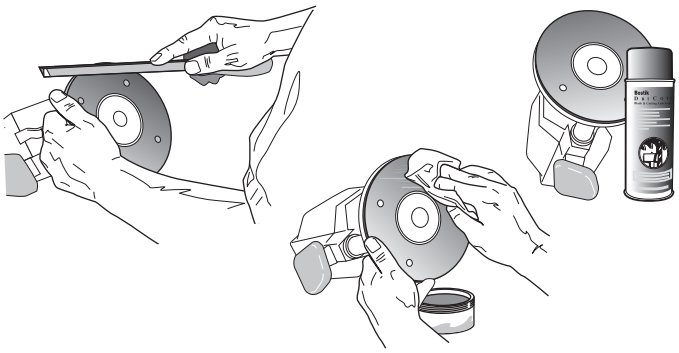
17-18 If a number of these boxes end up side-by- side, e.g. spice caddys on a kitchen shelf, the slight misalignments of the joints could be unattractive. So when making boxes or through dovetail drawers that will be lined up beside each other with the joints showing...



17-19 Use the asymmetrical *mirror image* aligning techniques 14-4 to 14-11 for perfectly aligned *neighbour* joints.



17-20 Using The Router Mark the router base top edge at the 12 o'clock position with a felt marker pen. Without wood or bits, try some **dry runs** in each jig mode. This will soon get you used to positioning the guidebush against the correct guide surface without looking under the router.
⚠ **Do not rout at face level.**



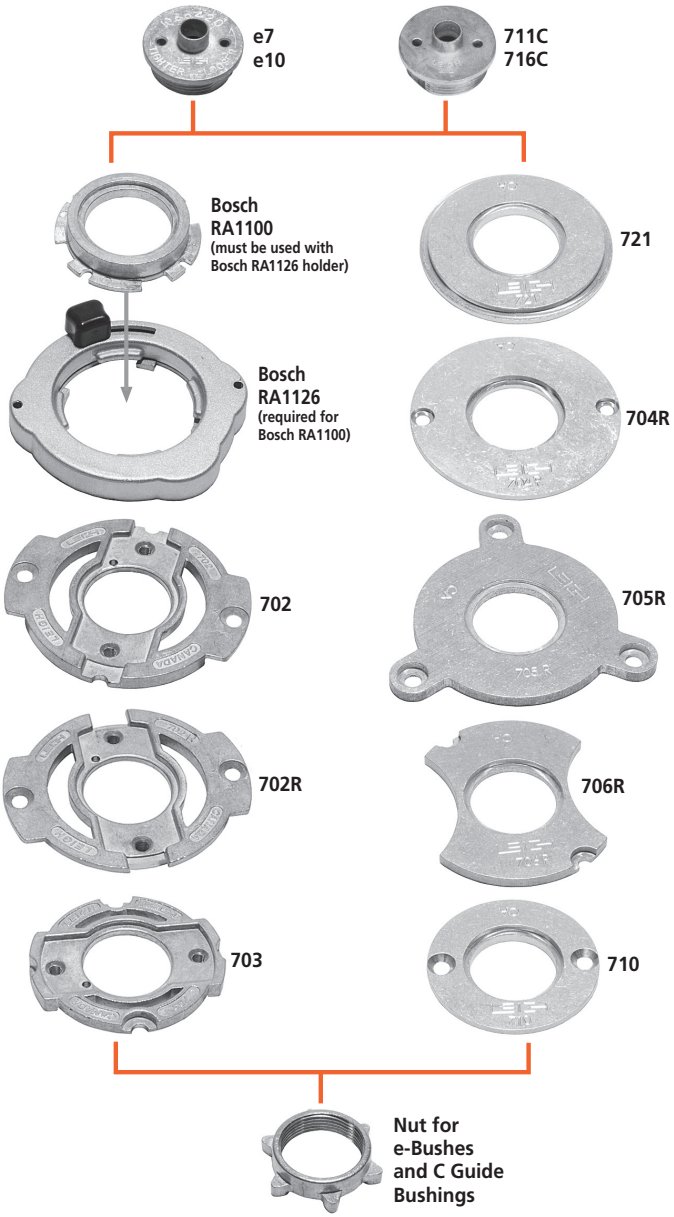
17-21 Some router bases have sharp edges on the outside and inside corners. A slight chamfer of the edges with a fine file or sandpaper block will ease router movement on the jig.
An occasional light spray of "Top Cote®" application of soft wax to the router base makes for smooth, easy router movement on the jig. ■

Attaching the Leigh e-Bush to the Router

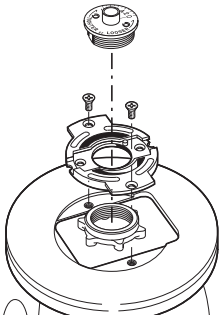
The correct guidebush is the vital link between the router and your Leigh Jig. It precisely steers the router. Where possible, always use the Leigh system to ***ensure correct bush length and precise diameter for accurate results.***

Leigh offers the adaptors below to fit guidebushes to over one hundred router models new and old, including Porter Cable, Black & Decker, and DeWalt. Many other makes e.g. Bosch, Fein, Festool, Milwaukee etc., either offer or include base adaptors. See list of routers in the Template Guide Bushing and Adaptor Selection chart on the next page.

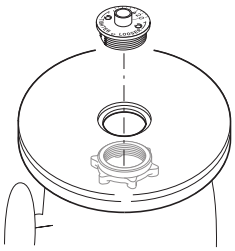
Leigh Template Guide Bushing and Adaptor System



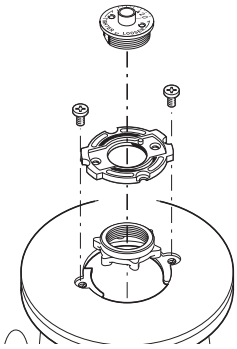
e-Bush Mounting Variations



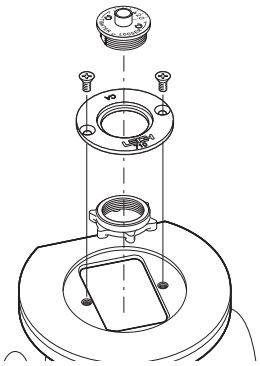
e-Bush with
Adaptors 702 & 702R



e-Bushes fit many
routers directly



e-Bush with
Adaptor 703



e-Bush with
Adaptor 710

Template Guide Bushing and Adaptor Selection

Leigh dovetail jigs require a router fitted with a guide bushing. An adaptor may be required to fit the bushing to the router. *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.

Note: Adaptor mounting screws are included with router.

■ MAFELL – Rework adaptor slightly.

D. Guide bushings in Columns 4 and 5 fit all adaptors listed and may be ordered if required. Note:
◆ A 7/16"[11,1mm] e7 eBush (guide bushing) is supplied with all Leigh dovetail jigs. Order only if you require a replacement.
▲ An optional 5/8"[15,9mm] 716C guide bushing is used with 1/2"[12,7mm] shank router bits on D4R Pro, D4R, D4, D3, D1258R, D1258, jigs. Order only if using 1/2"[12,7mm] shanks.

All 8mm shank bits work with the e7-Bush supplied with your Leigh jig, or with any 7/16"OD[11,1mm] guide bushing that has a min. barrel length of 1/4" [6,35mm]. No other guide bushing sizes can be used.

Note:

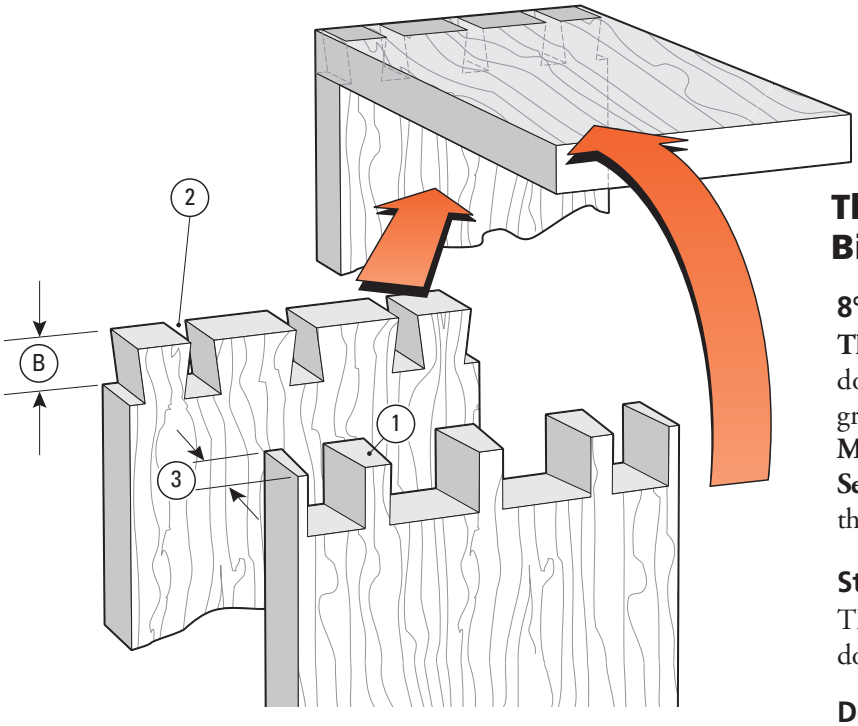
The 711C has replaced the 711TP (7/16"OD [11,1mm] guide bushing)

The 716C has replaced the 716TP (5/8"OD [15,9mm] guide bushing.

1 ROUTER MAKER	2 ROUTER MODEL	3 ROUTER ADAPTOR	4 7/16" OD BUSHING ◆	5 5/8" OD BUSHING ▲
AEG	OFE 710 in plunge base	Not Required	e7 or 711C	716C
	OFSE 2000	703	e7 or 711C	716C
	RT1350E	706R	e7 or 711C	716C
BLACK & DECKER	All Professional, HD1250, RP400K,7614	Not Required	e7 or 711C	716C
	6200	720673-00	e7 or 711C	716C
	SR100, 7AEE, KW780 series, KW 800, KW850	710	e7 or 711C	716C
BOSCH	1600, 90085, 90088, 90098, 90140, 90150, 90300, 90303, 90305, 91264	Aftermarket base plate required	e7 or 711C	716C
	1601, 1602, 1603, 1604, 1606, B1350	RA1110	e7 or 711C	716C
	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 req'd	e7 or 711C	716C
	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	e7 or 711C	716C
	1611, 1611EVS, 1615, 1615EVS, B1550, GOF1600, GOF1700ACE	702	e7 or 711C	716C
CRAFTSMAN (SEARS)	All non-plunge models	Aftermarket base plate required	e7 or 711C	716C
	135275070 Plunge	See Skil 1823 or 1835		
	Other plunge models	702	e7 or 711C	716C
	MD11 Plunge & Fixed Base. MD9.5 Fixed Base	Not Required	e7 or 711C	716C
DEWALT	DW610, DW616, DW618	Not Required	e7 or 711C	716C
	DW613, DW615(UK)	710	e7 or 711C	716C
	DW614, DW615, DW621, DW624, DW625, DW626	N. America Only, Supplied w/router	e7 or 711C	716C
	DW621K & DW626 outside N. America	706R	e7 or 711C	716C
	DW625 Type 1,2,3,5 outside N. America	702	e7 or 711C	716C
	DW624 & DW625 Type 4 outside N.America, DW625EK	702R	e7 or 711C	716C
ELU	OF15, OF15E, OF97, OF97E	706R	e7 or 711C	716C
	MOF68, MOF69, MOF96, MOF96E	710	e7 or 711C	716C
	MOF131, MOF177 Type 1,2, & 3	702	e7 or 711C	716C
	MOF177 Type 4, MOF177EK	702R	e7 or 711C	716C
	2720, 2721, 3328	Not Required	e7 or 711C	716C
	3303, 3304	EO9600 or 761 270-00	e7 or 711C	716C
	3337, 3338, 3339	702	e7 or 711C	716C
FEIN	RT1800	Supplied w/router	e7 or 711C	716C
FESTOOL	OF1E , OF2E, OF650, OF900E ,OF1000, OF1010E	704R	e7 or 711C	716C
	OF2000, OF2000E	705R	e7 or 711C	716C
	OF1400 and OF2200 North America Only	Supplied w/router	e7 or 711C	716C
	OF1400 Outside North America	493566	e7 or 711C	716C
	OF2200 Outside North America	494627 O-Ring may be required to keep bushing centered	e7 or 711C	716C
FREUD	FT700(2), FT2000, FT2200, FT3000	721	e7 or 711C	716C
HITACHI	TR8, TR12, FM8, M8, M12 Series	325211 OR 703	e7 or 711C	716C
	M12VC, KM12SC, KM12VC	Not Required	e7 or 711C	716C
	M12SA2, M12V2	325224	e7 or 711C	716C
MAFELL	LO65E	702 ■	e7 or 711C	716C
MAKITA	M363, MRP090, RP1800, RP1801, RP2301, RP2301FC, 3612C Europe Qk Fit Base	721	e7 or 711C	716C
	3600, 3606, 3608, 3612, 3612B, 3612BR, 3612C N. America, 3620, 3621, RP0900, RP900K	703	e7 or 711C	716C
	3601B	321 493-1	e7 or 711C	716C
	RP0910, RP1110C	706R	e7 or 711C	716C
	RF1100, RF1101, RD1100, RD1101, RP1101	Not Required	e7 or 711C	716C
MASTERCRAFT	Please contact Leigh for assistance			
METABO	OF1612, OFE1812 (for all others, please contact Leigh for assistance)	704R	e7 or 711C	716C
MILWAUKEE	5615, 5616, 5619	49-54-1040 (replacement base)	e7 or 711C	716C
	5625	49-54-1026 (replacement base)	e7 or 711C	716C
	5670	Not Required	e7 or 711C	716C
PERLES	OF808 Series, OFE6990	710	e7 or 711C	716C
PORTER CABLE (ROCKWELL)	All	Not Required or Supplied w/router	e7 or 711C	716C
RIDGID	R2930 (for all others, please contact Leigh for assistance)	704R	e7 or 711C	716C
RYOBI	R30, R50, R150, R151, RE155, R500, R501, R502	703	e7 or 711C	716C
	R600, R601, RE600, RE601	702	e7 or 711C	716C
	R160, R161, R162, R163K, R165, R170, R175, RE175, R180, R180PL, R181, R185, ERT1150	706R	e7 or 711C	716C
SKIL	1823 or 1835	91803	e7 or 711C	716C
	SK1810, 1815, 1820, 1825	RAS140	e7 or 711C	716C
	All others	Aftermarket base plate required	e7 or 711C	716C
TREND	T3, T4, T5, T9, T10, T11–UniBase required	710	e7 or 711C	716C
TRITON	TRC001	TGA006 or 704R	e7 or 711C	716C
	JOF001, MOF001, TRA001	Accessory Kit (includes adaptor) TGA001 or TGA150	e7 or 711C	716C
WEGOMA	OF850 Series	710	e7 or 711C	716C

Bit Selection

Optional router bits for variably spaced through and half-blind dovetails.



Through Dovetail Bit Selection

8° Dovetail Bit for Tails

The pins ① must fit into the pin sockets ②. Therefore the dovetail bit's depth of cut Ⓑ must be equal to or a little greater than the pin board thickness ③.
Measure the pin board thickness ③
Select the dovetail bit with the correct depth of cut Ⓑ from the following pages (bits must be 8° for through dovetails).

Straight Bit for Pins

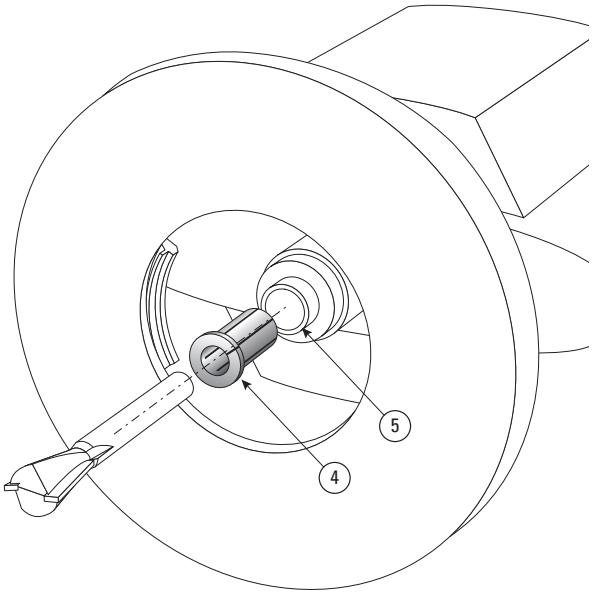
The matching straight bit is listed on the charts with the dovetail bit.

Dovetail Bit Angle

All through dovetail bits must be 8°. This angle matches the D4R Pro guide finger pin angle. If you try to use a different angle of dovetail bit, there will be a mismatch between the pins routed at 8°.

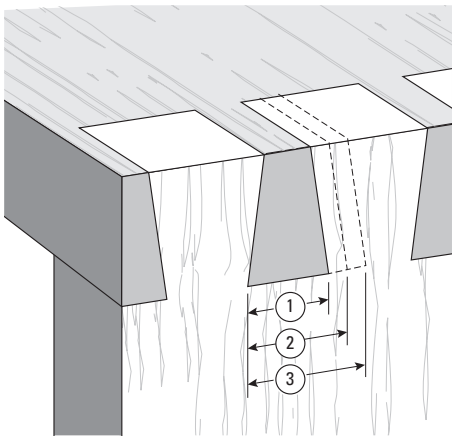
Guidebush

All 8mm shank through dovetail bits listed in this appendix work with the e7-Bush (7⁄16" OD [11,1mm]) supplied with your Leigh jig, or any 7⁄16" OD [11,1mm] guidebush. The optional Leigh 716C guidebush or standard 5⁄8" OD [15,9mm] guidebush is used with 1⁄2" [12,7mm] shank bits. No other guidebush sizes can be used for through dovetails. *See page 70.*



Shank Selection

The Leigh D4R Pro comes with one through dovetail bit and one straight bit, with 8mm shanks, plus a 1⁄2" [12,7mm] to 8mm collet reducer. The reducer ④ simply slides into the 1⁄2" [12,7mm] collet ⑤ of your router and the 8mm shank bit is inserted into the collet reducer. The collet is tightened as normal. The collet reducer is not required with 1⁄2" [12,7mm] shank bits.
Note: ④ is a collet reducer, not a collet ⑤. The reducer does not replace the collet, it slides directly into your collet.



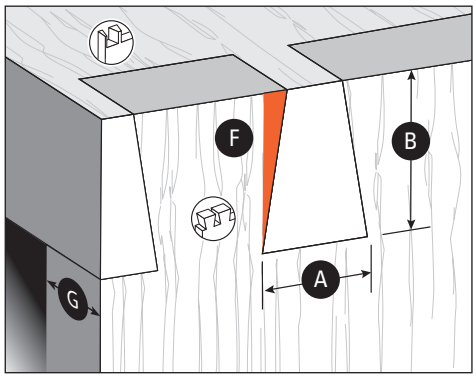
Note that some of the dovetail bits' depths of cut overlap. For example:
No.70-8 bit Ⓑ : ¼"–½" [6 - 13mm]
No.75-8 bit Ⓑ : ⅜"–⅝" [9,5 - 16mm]
No.80-8 bit Ⓑ : ½"–$^{13}/_{16}$" [12 - 20mm]

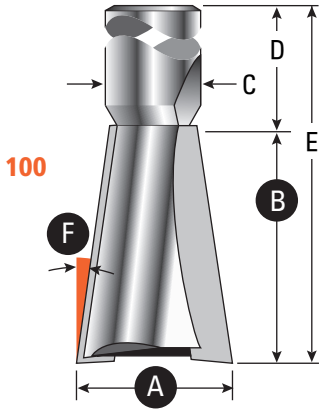
This means all three bits are capable of routing boards ½" [12,7mm] thick using one of the following combinations: No.80-8 and 140-8, No.75-8 and 140-8, or No.70-8 and 140-8.
The three bit combinations will produce slightly different-looking joints because each dovetail bit produces a different size diameter of pin:
No.70-8 ① : ⅜"
No.75-8 ② : $^{7}/_{16}$"
No.80-8 ③ : ½"

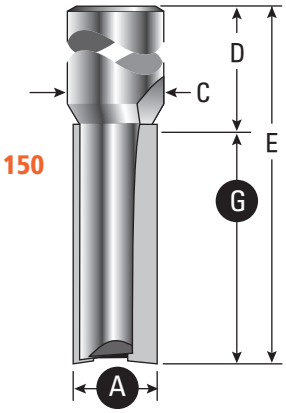
Do not attempt to rout dovetails at less than the minimum depth of cut specified, as the bit can hit the guide fingers or guide bushing.

Leigh Through Dovetail Bits

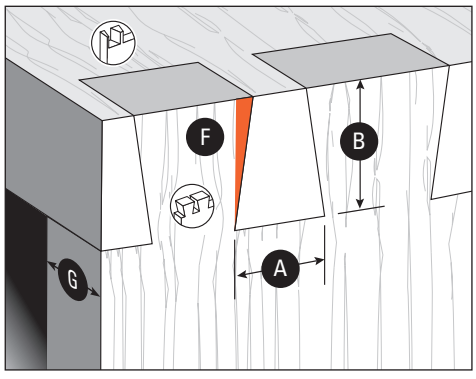
Note: Bit and joint drawings are about actual size.

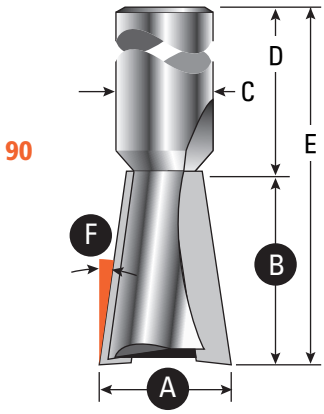


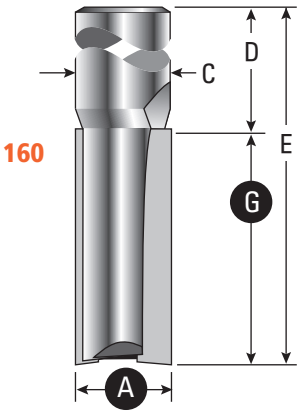




BITS	A Overall Diameter	B / G Cutting Depth Range	C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
No. 100	13/16" [20,6]	**B** 1" to 1-1/4"* [26,0-32,0*]	1/2" [12,7]	1-3/4" [45,0]	3" [76,0]	8°	716C or 5/8" [15,9]
No. 150	7/16" [11,1]	**G** 1/8" to 1-1/4"* [3,0-32,0*]	1/2" [12,7]	1-3/4" [45,0]	3" [76,0]	–	716C or 5/8" [15,9]



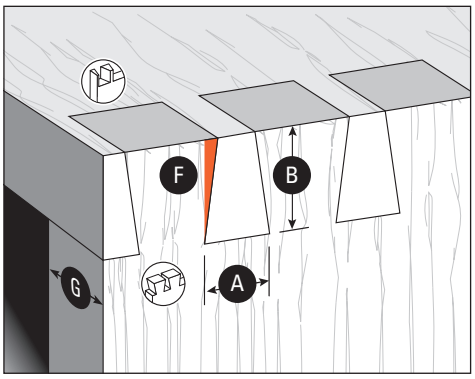


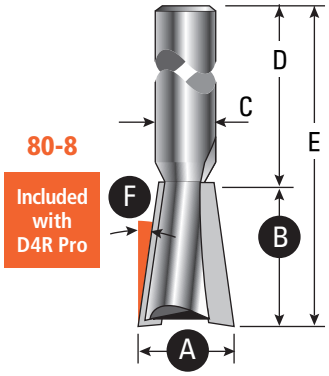


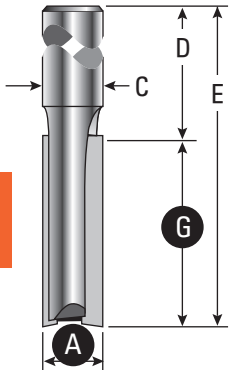
Bits	A Overall Diameter	B / G Cutting Depth Range	C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
No. 90	11/16" [17,5]	**B** 5/8" to 1" [16,0-26,0]	1/2" [12,7]	1-3/4" [45,0]	2-3/4" [70,0]	8°	716C or 5/8"[15,9]
No. 160	1/2" [12,7]	**G** 1/8" to 1-1/4"* [3,0-32,0*]	1/2" [12,7]	1-3/4" [45,0]	3" [76,0]	–	716C or 5/8"[15,9]

Numbers in brackets are millimeters *An extra step is required to rout joints with a cutting depth greater than 1"[26,0]

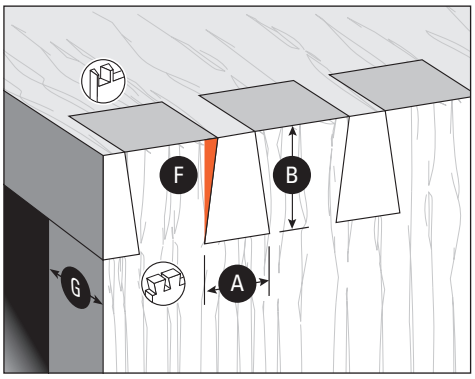
Note: Bit and joint drawings are about actual size.

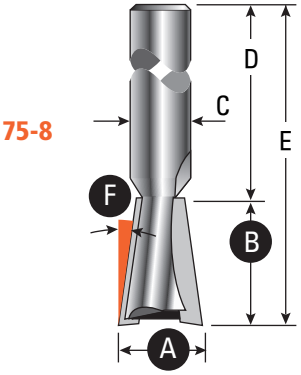


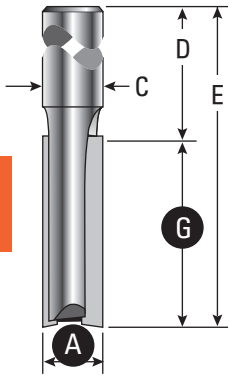




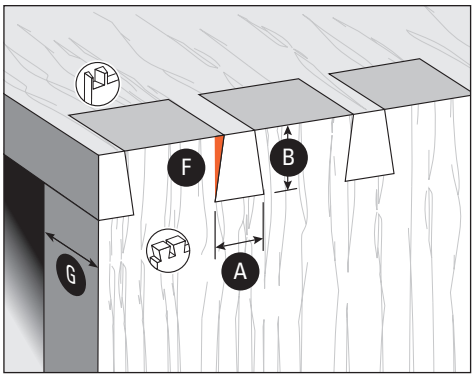
BITS	A Overall Diameter	B / G Cutting Depth Range	C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
No. 80-8*	1/2" [12,7]	**B** 1/2" to 13/16" [13,0-20,6]	8mm (or 1/4")	1-3/4" [45,0]	2-9/16" [65,0]	8°	e7 or 7/16"[11,1]
No. 140-8*	5/16" [7,9]	**G** 1/8" to 1" [3,0-26,0]	8mm (or 1/4")	1-3/4" [45,0]	2-3/4" [70,0]	–	e7 or 7/16"[11,1]

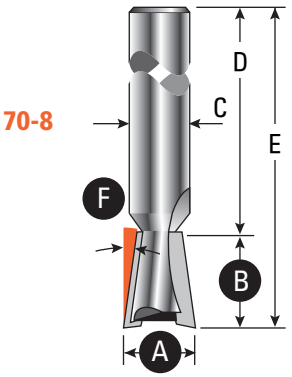


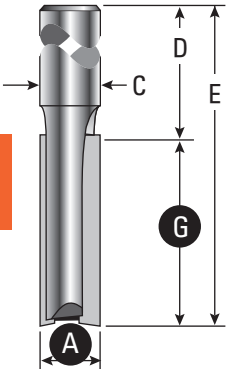




BITS	A Overall Diameter	B / G Cutting Depth Range	C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
No. 75-8	7/16" [11,1]	**B** 3/8" to 5/8" [9,5-16,0]	8mm (or 1/4")	1-3/4" [45,0]	2-3/8" [60,0]	8°	e7 or 7/16"[11,1]
No. 140-8*	5/16" [7,9]	**G** 1/8" to 1" [3,0-26,0]	8mm (or 1/4")	1-3/4" [45,0]	2-3/4" [70,0]	–	e7 or 7/16"[11,1]



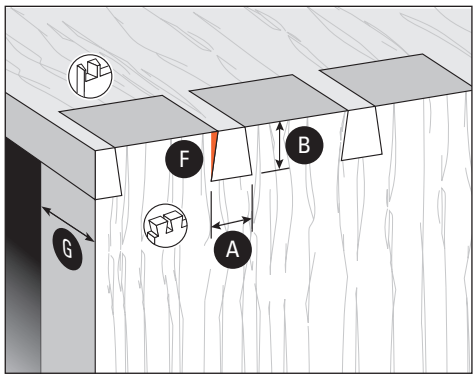


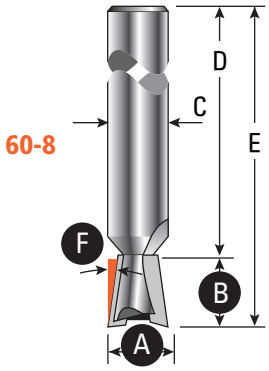


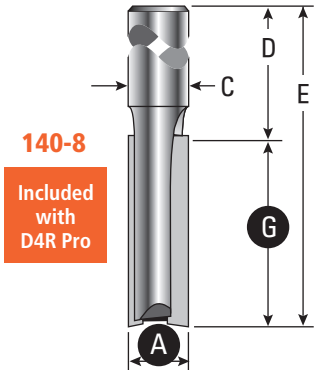
BITS	A Overall Diameter	B / G Cutting Depth Range	C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
No. 70-8	3/8" [9,5]	**B** 1/4" to 1/2" [6,0-13,0]	8mm (or 1/4")	1-3/4" [45,0]	2-1/4" [57,0]	8°	e7 or 7/16"[11,1]
No. 140-8*	5/16" [7,9]	**G** 1/8" to 1" [3,0-26,0]	8mm (or 1/4")	1-3/4" [45,0]	2-3/4" [70,0]	–	e7 or 7/16"[11,1]

Numbers in brackets are millimeters

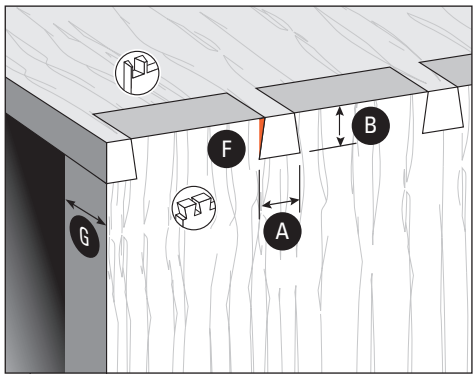
*** Bits 80-8, 120-8, and 140-8 come standard with the Leigh D4R Pro**

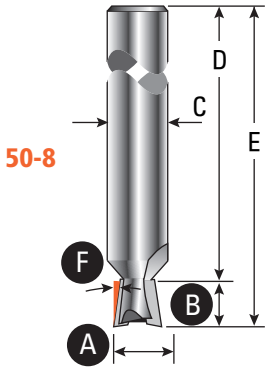


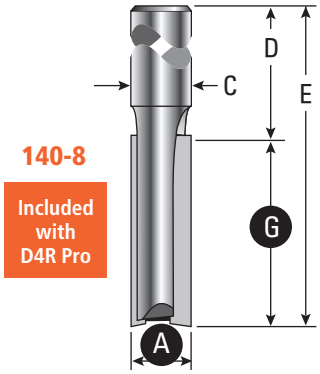




Bits	A Overall Diameter	B / G Cutting Depth Range	C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
No. 60-8	5/16" [7,9]	**B** 1/8" to 3/8" [3,0-9,5]	8mm (or 1/4")	1-3/4" [45,0]	2-1/8" [54,0]	8°	e7 or 7/16"[11,1]
No. 140-8*	5/16" [7,9]	**G** 1/8" to 1" [3,0-26,0]	8mm (or 1/4")	1-3/4" [45,0]	2-3/4" [70,0]	–	e7 or 7/16"[11,1]





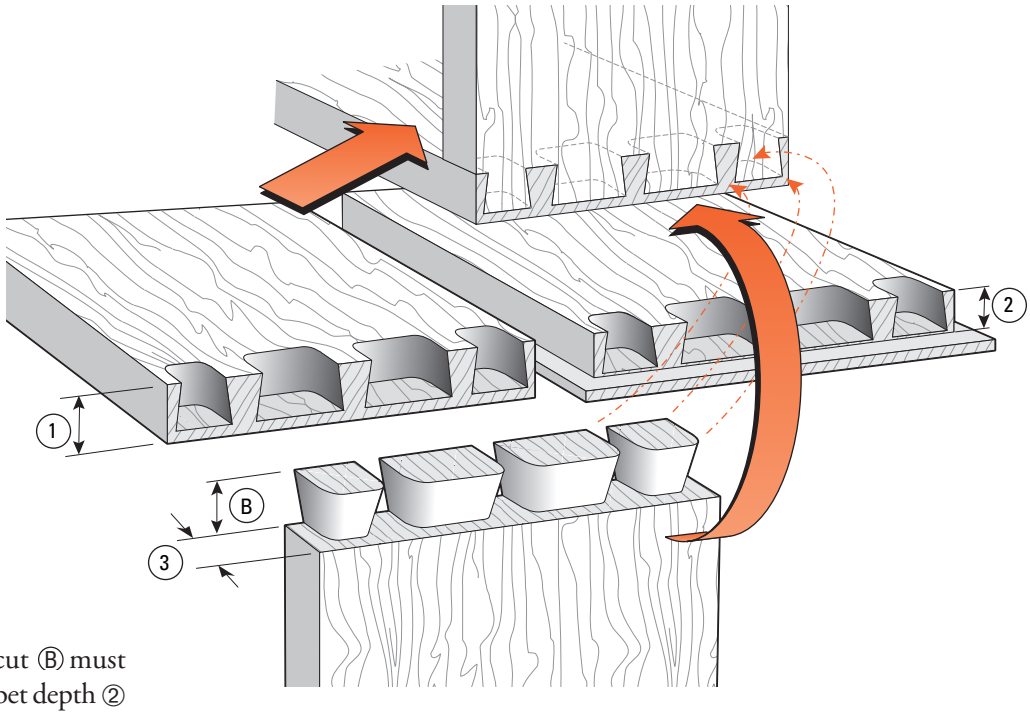


Bits	A Overall Diameter	B / G Cutting Depth Range	C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
No. 50-8	1/4" [6,35]	**B** 1/8" to 1/4" [3,0-6,35]	8mm (or 1/4")	1-3/4" [45,0]	2" [50,0]	8°	e7 or 7/16"[11,1]
No. 140-8*	5/16" [7,9]	**G** 1/8" to 1" [3,0-26,0]	8mm (or 1/4")	1-3/4" [45,0]	2-3/4" [70,0]	–	e7 or 7/16"[11,1]

Numbers in brackets are millimeters

*** Bits 80-8, 120-8, and 140-8 come standard with the Leigh D4R Pro**

Half-Blind Dovetail Bit Selection



Bits:
The same dovetail bit routs both parts of a half-blind dovetail.

Flush Drawers:
The dovetail bit's working depth of cut Ⓑ must be less than the pin board thickness ① for flush drawers by at least ⅛"[2mm].

Rabbeted Drawers:
The dovetail bit's working depth of cut Ⓑ must be about 1/16"[1mm] less than the rabbet depth ② for rabbeted drawer fronts.

Drawer Sides (Tail Board):
Minimum thickness is ¼"[6mm]. Drawer side thickness ③ does not affect bit selection.

Note: Ⓑ is the nominal working depth for half-blind dovetails, not the maximum depth. Ⓑ must not be varied, except for minor adjustments for joint fit. *See page 37.*

Selecting the Bit

Measure the drawer front thickness (minimum ½"[12mm]) ① or rabbet depth (minimum ~ 7/16"[11mm]) ②.

Select a bit with the appropriate depth of cut Ⓑ from the following pages. ***Can I use any dovetail bit?*** No, all half-blind bits must be ½" [12,7mm] diameter. As the angle changes, so does the depth of cut. Using bits that are a different angle and diameter will result in joints that don't fit, and could damage the jig.

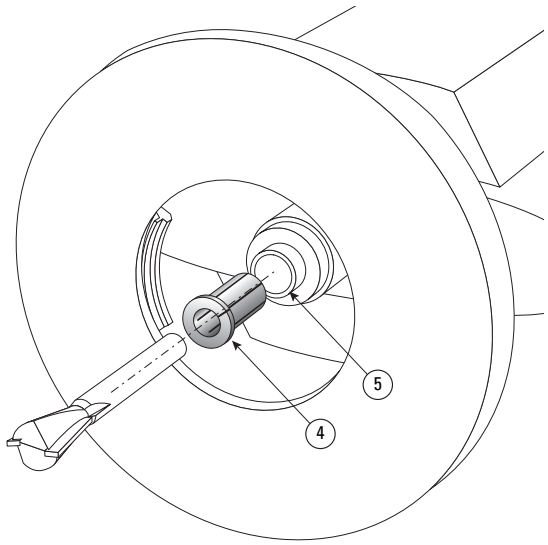
Guidebush

All 8mm shank half-blind dovetail bits listed in this appendix work with the e7-Bush (7/16" OD [11,1mm]) supplied with your Leigh jig, or any 7/16" OD [11,1mm] guidebush. No other guidebush sizes can be used for half-blind dovetails. *See page 70.*

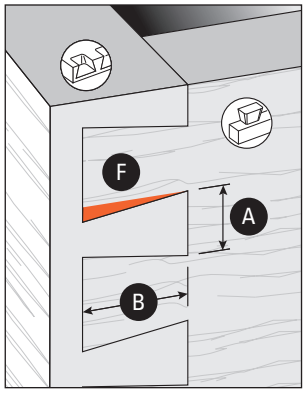
Shank Selection

The Leigh D4R Pro comes with two half-blind bits with 8mm shanks, plus a ½"[12,7mm] to 8mm collet reducer. The reducer ④ simply slides into the ½"[12,7mm] collet ⑤ of your router, and the 8mm shank bit is inserted into the collet reducer. The collet is tightened as normal. The collet reducer is not required with ½"[12,7mm] shank bits. **For a ½"[12,7mm] collet you will require the included ½"[12,7mm] to 8mm collet reducer, No. 172-8.**

Note: ④ is a collet reducer, not a collet ⑤. The reducer does not replace the collet, it slides directly into your collet.

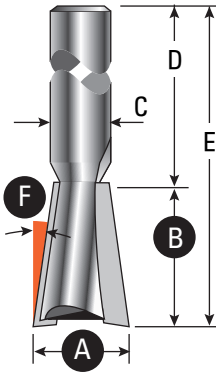


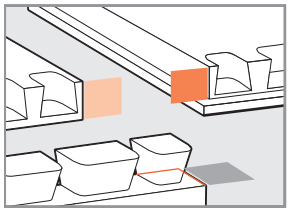
Leigh Half-Blind Dovetail Bits



80-8

Included with D4R Pro



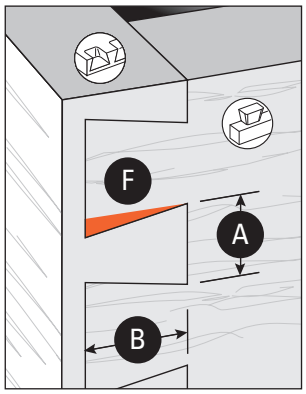


Pin board Flush Drawer Front
Min Thickness
HB Variable: 7/8"[22mm]
HB Single Pass: 35/64"[14mm]

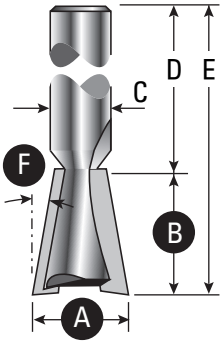
Pin board Rabbeted Drawer Front
Min Rabbet Depth
13/16"[20,5mm]

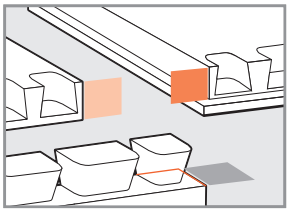
Tail board Drawer Side
Min Thickness
1/4"[6,5mm]

Bits	A Overall Diameter	B Working Depth		C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
		HB Variable	HB Single Pass					
No. 80-8*	1/2" [12,7]	~3/4" [19]	~27/64" [11]	8mm (or 1/4")	1-3/4" [44,0]	2-9/16" [65,0]	8°	e7 or 7/16"[11,1]



101-8



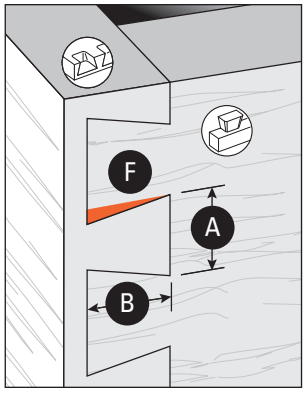


Pin board Flush Drawer Front
Min Thickness
HB Variable: 3/4"[19mm]
HB Single Pass: 31/64"[12,3mm]

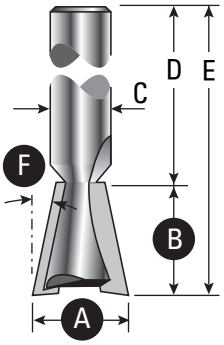
Pin board Rabbeted Drawer Front
Min Rabbet Depth
11/16"[17,5mm]

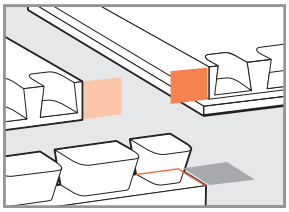
Tail board Drawer Side
Min Thickness
1/4"[6,5mm]

Bits	A Overall Diameter	B Working Depth		C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
		HB Variable	HB Single Pass					
No. 101-8	1/2" [12,7]	~5/8" [15,9]	~23/64" [9]	8mm (or 1/4")	1-3/4" [44,0]	2-3/8" [60,0]	10°	e7 or 7/16"[11,1]



112-8





Pin board Flush Drawer Front
Min Thickness
HB Variable: 5/8"[15,9mm]
HB Single Pass: 27/64"[10,7mm]

Pin board Rabbeted Drawer Front
Min Rabbet Depth
9/16"[14,5mm]

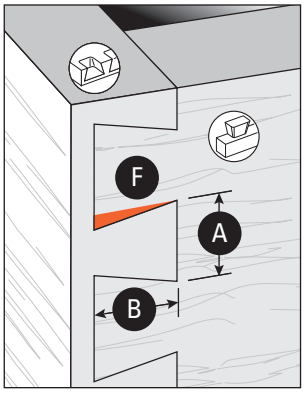
Tail board Drawer Side
Min Thickness
1/4"[6,5mm]

Bits	A Overall Diameter	B Working Depth		C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
		HB Variable	HB Single Pass					
No. 112-8	1/2" [12,7]	~1/2" [12,7]	~19/64" [7,5]	8mm (or 1/4")	1-3/4" [44,0]	2-21/64" [59,0]	12°	e7 or 7/16"[11,1]

Numbers in brackets are millimeters

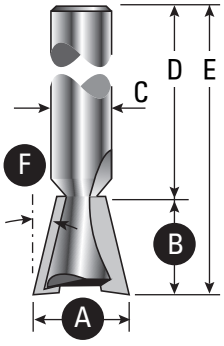
*** Bits 80-8, 120-8, and 140-8 come standard with the Leigh D4R Pro**

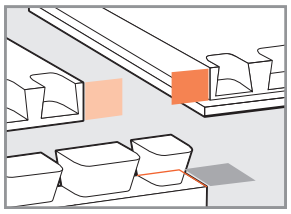
Note: Bit and joint drawings are about actual size.



120-8

Included with D4R Pro



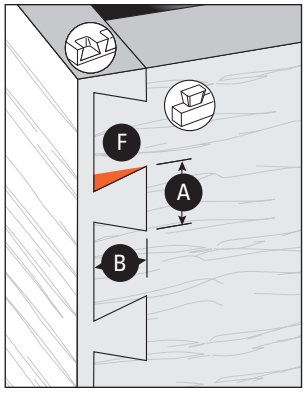


Pin board Flush Drawer Front
Min Thickness
HB Variable: 9/16"[14,5mm]
HB Single Pass: 3/8"[10,3mm]

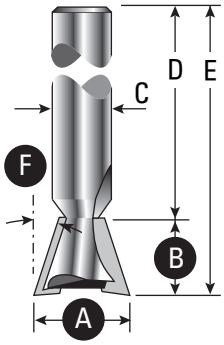
Pin board Rabbeted Drawer Front
Min Rabbet Depth
1/2"[12,7mm]

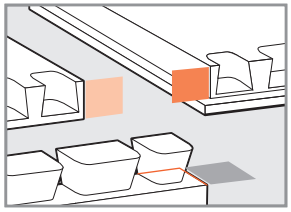
Tail board Drawer Side
Min Thickness
1/4"[6,5mm]

Bits	A Overall Diameter	B Working Depth		C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
		HB Variable	HB Single Pass					
No. 120-8*	1/2" [12,7]	~7/16" [11,0]	~1/4" [6,35]	8mm (or 1/4")	1-3/4" [44,0]	2-1/4" [57,0]	14°	e7 or 7/16"[11,1]



128-8





Pin board Flush Drawer Front
Min Thickness
HB Variable: 1/2"[12,7mm]
HB Single Pass: 5/16"[8mm]

Pin board Rabbeted Drawer Front
Min Rabbet Depth
7/16"[11mm]

Tail board Drawer Side
Min Thickness
1/4"[6,5mm]

Bits	A Overall Diameter	B Working Depth		C Shank Diameters	D Shank Length	E Overall Length	F Angle	Guidebush Diameter
		HB Variable	HB Single Pass					
No. 128-8	1/2" [12,7]	~3/8" [9,5]	~3/16" [5]	8mm (or 1/4")	1-3/4" [44,0]	2-1/8" [54,0]	18°	e7 or 7/16"[11,1]

Numbers in brackets are millimeters

*** Bits 80-8, 120-8, and 140-8 come standard with the Leigh D4R Pro**

Jig Parts

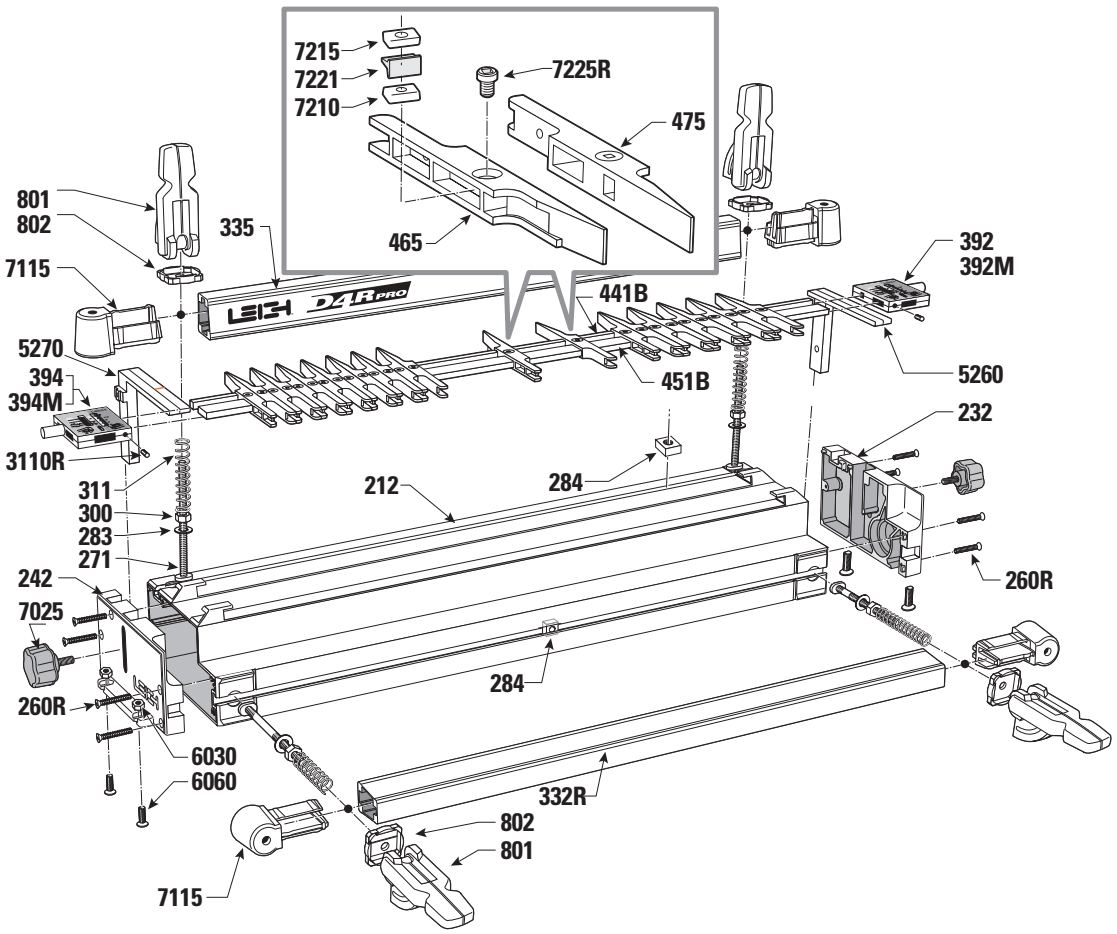
See parts list and drawing on the following pages.

Order parts directly from Leigh by calling toll-free 800-663-8932 — but first have your jig information ready. Please quote the jig model, serial number, part number, part description and quantity required.

How to Order Parts

Order directly from Leigh by calling toll free 800-663-8932 — but first have your jig information ready. You'll need the jig model, serial number, part number, part description and quantity required. **Note:** Place the finger assembly in half-blind mode to determine left hand and right hand scales.

PART DESCRIPTION	PART No.	QUANTITY
User Guide D4R Pro, English–Inch/Metric	560	1
Instructional DVD, English–Inch only	26	1
1/2" [12,7mm] 8° Dovetail Bit, 8mm Shank	80-8	1
1/2" [12,7mm] 14° Dovetail Bit, 8mm Shank	120-8	1
5/16" [7,9mm] Straight Bit, 8mm Shank	140-8	1
1/2" [12,7mm] to 8mm Collet Reducer	172-8	1
Body Extrusion	212	1
R.H. End Housing	232	1
L.H. End Housing	242	1
8 x 1-1/2" End Housing Screws	260R	8
5/16"-18 x 4" Clamp Bar T-Bolts	271	4
Flat Washers for Clamp Bolts	283	4
1/4"-20 Square Nuts (Accessory Attachment)	284	2
1/4"-20 x 3/4" FH Machine Screw (Accessory Attachment)	287	1
5/16"-18 Clamp Bar Hex Bolt Nuts	300	4
Clamp Bar Springs	311	4
Front Clamp Bar (complete with End Plugs 7115)	332R	1
Rear Clamp Bar (complete with End Plugs 7115 and Leigh Decal)	335	1
R.H. **Inch** Scale Assembly, Complete (R.H. in H.B. Tail Mode)	392	1
or R.H. Metric Scale Assembly, Complete (R.H. in H.B. Tail Mode)	392M	1
L.H. **Inch** Scale Assembly, Complete (L.H. in H.B. Tail Mode)	394	1
or L.H. **Metric** Scale Assembly, Complete (L.H. in H.B. Tail Mode)	394M	1
Sliding Dovetail Fence (Cross Cut Fence)	432	1
Plastic Bridge Piece Extrusions	433	2
H.B. Pin Guide Rail, 1/4" x 1/4"	441B	1
Finger Guide Rail, 1/4" x 3/4"	451B	1
R.H. Fingers (complete with Wedges, Nuts, Washers and Screws)	465	13
L.H. Fingers (complete with Wedges, Nuts, Washers and Screws)	475	13
Finger Wedges	7221	26
8-32 Threaded Finger Nuts	7210	26
Finger Washers	7215	26
8-32 x 0.259" PH Machine Screws (Finger Lock)	7225R	26
Leigh Assembly Wrench/Gauge	540	1
Leigh Finger Adjusting, No.2 Robertson Screwdriver	550	1
R.H Support Bracket	5260	1
L.H. Support Bracket	5270	1
Cam-Action Speed Clamps (complete with Step Washers 802)	801	4
Cam-Action Speed Clamp Step Washers	802	4
8-32 x 1/2" Hex Socket, Flat Point Set Screws (Scale Lock)	3110R	2
5/64" Hex Key (2mm may also work)	3156	1
1/4"-20 Hex Nuts (Jig Hold-Down)	6030	4
1/4"-20 x 1" FH Machine Screws (Jig Hold-Down)	6060	4
Support Bracket Knobs	7025	2
Clamp Bar End Plug	7115	4
e7 eBush (Guide Bushing) and Nut	e7-Bush	1
Pin Wrench	730V	1
Nylon Stop Rod	8624	1
D4R Pro Dovetail Spacer	570	1
D4R Pro Box Joint Spacer	580	1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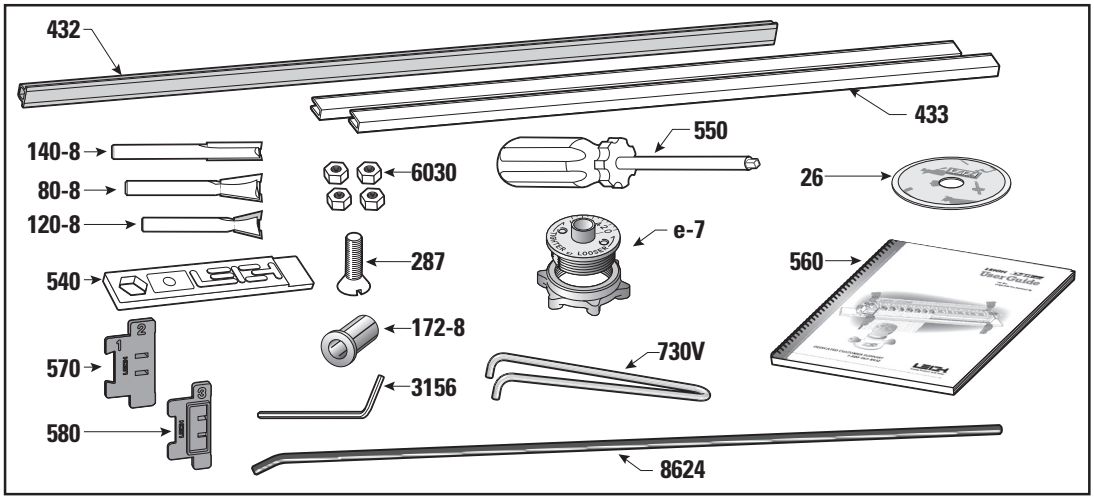
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D4R Pro - Appendix IV

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
800-663-8932 (Canada/USA)
604-464-2700 (Tel.)
604 464-7404 (Fax.)

EMAIL/WEB

Customer Service
leigh@leighjigs.com

Technical Support
help@leighjigs.com

Website
www.leighjigs.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 Leigh (toll free in N. America) or to your national distributor. ***–Thanks!***

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