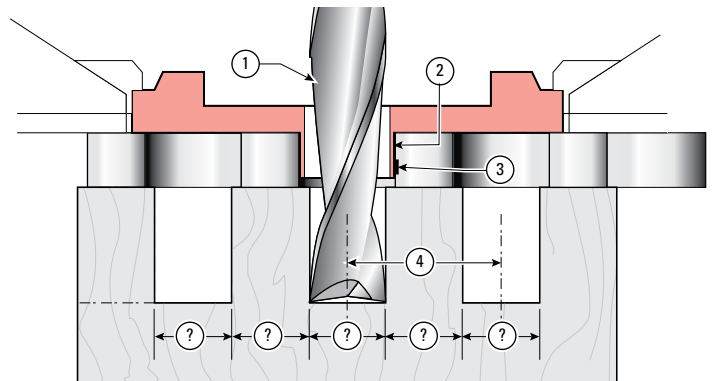
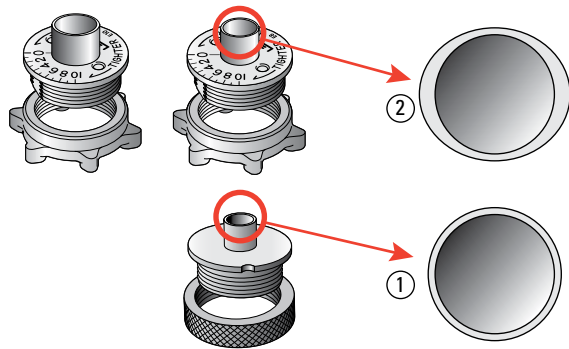


CHAPTER 4

# The Leigh e-Bush Guide Bushing

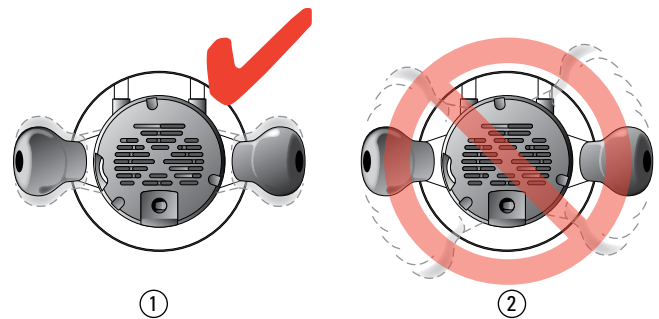
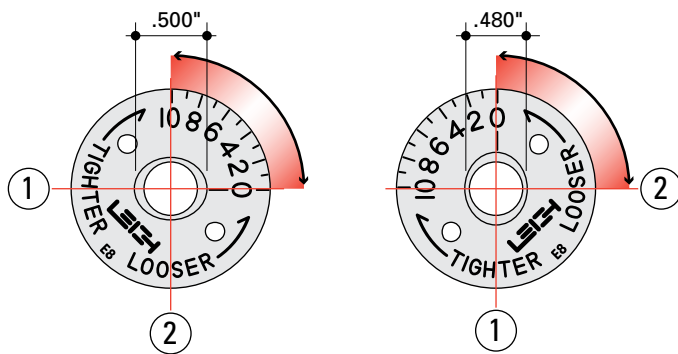
The guidebush is the vital link between router and jig. Leigh's innovative e-Bushes\* provide precise fit adjustment for your router when using F3, F18 and F24 Templates.

\*e7, e8, and e10 e-Bushes are supplied with the F3 Finger Joint Template. e8 and e10 e-Bushes are supplied with each F18 and F24 Finger Joint Template. U.S. Patent No. 8,256,475. UK Patent No. GB2443974. Patent Pending in Canada.



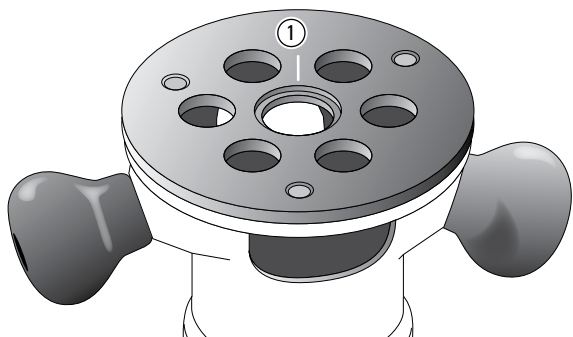
**4-1** Unlike plain circular template guidebushes ①, the e-Bush is elliptical ②. This innovation effectively changes the guidebush “active diameter” when it’s rotated, and provides benefits not possible with a plain round guidebush. The F18 and F24 Templates include two Leigh e-Bushes\*: e8 for 3/8" [10mm] combs, and e10 for 1/2" [12mm] comb; the F3 includes those plus the e7 for 5/16" [8mm] comb.

**4-2 Joint Fit and Joint Pitch** Box joints routed with standard sized straight bits ① and standard sized guidebushes ② against straight guide surfaces ③ on pitch centres exactly two times the bit diameter ④ will guarantee a loose fitting joint. Bits, guidebushes and templates are manufactured with necessary plus/minus tolerances and the router will have some degree of run-out, or “wobble”.

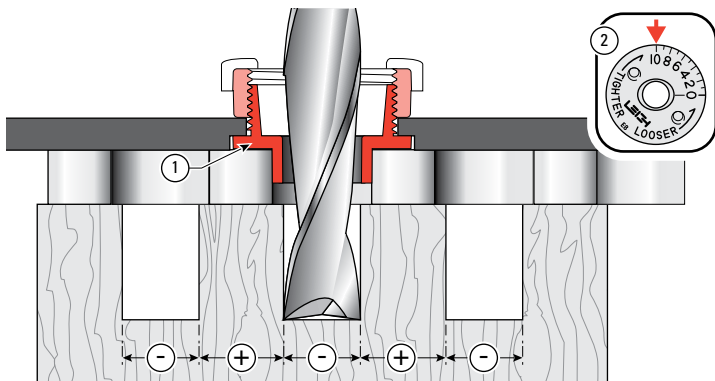


**4-3** The e-Bush (e8 illustrated) fits to the router base or to a guidebush adaptor in the base. See Appendix I. The ellipse or oval shape major axis ① is ~.500", and minor axis ② ~.480" [12,7 x 12,2mm]. Turning the e-Bush 90 degrees in the router base changes the active guide size by .020" [.50mm] providing infinite adjustment and recordable settings for perfectly fitting box joints.

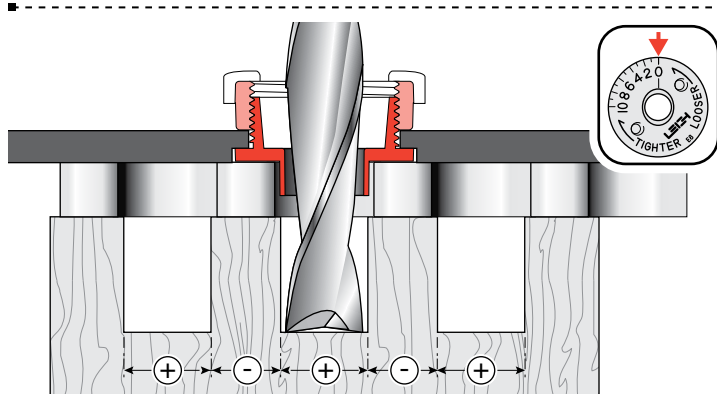
**4-4** Here’s how it works. In normal use, the operator does not rotate the router more than a few degrees either way ①. In fact, because of potential bit-to-bush eccentricity problems it is advisable to minimize router rotation on jigs ②.



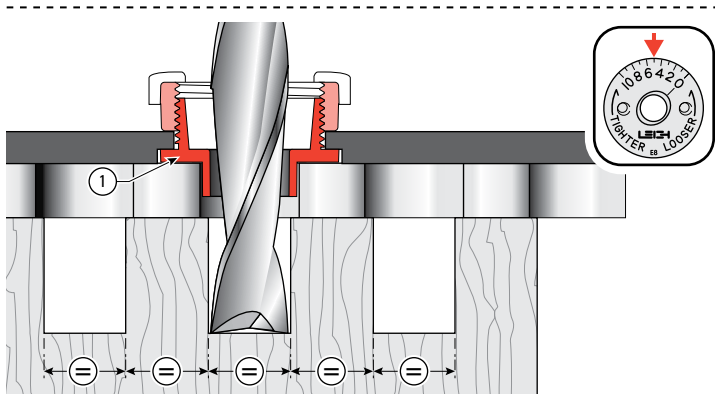
**4-5** Establish the orientation in which you normally hold and operate the router on the jig. Now, up-end the router in the same orientation. Make a small scratch line or permanent ink mark on the router base or e-Bush adaptor at the 12 o'clock position ①.



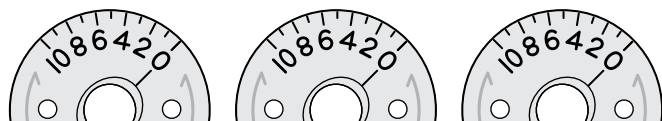
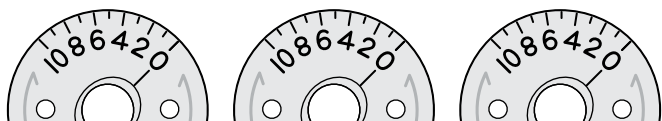
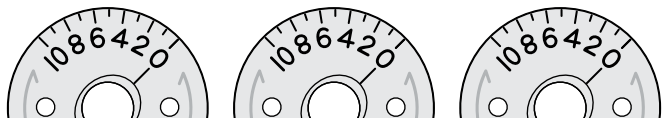
**4-6** With the e-Bush ① turned to “10” in the base ② the active “diameter” is increased, allowing less side-to-side movement, and resulting in smaller sockets and larger pins. A tight fit! *Scale and movement are exaggerated in this sequence of illustrations.*



**4-7** Turning the e-Bush to zero allows more side-to-side router/bit movement, and more wood removal, producing larger sockets and smaller pins, and thus a loose fit.



**4-8** A few trial-and-error test cuts and e-Bush adjustments will allow you to establish the correct pin and socket sizes for a perfect fit. **Note:** One division of the e-Bush changes the joint glue-line interface by two thousandths of an inch, that is, 0.002" or 0,050mm.



**4-9** When you have the best joint fit, mark the setting in pencil here. Different wood hardness may require slightly different settings, so also note the wood species. Use the same bit next time. ■