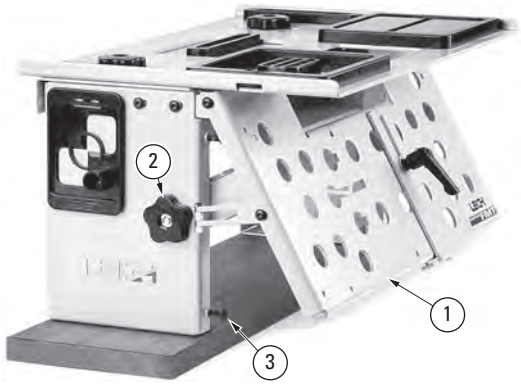
*SUPER FMT CHAPTER 3*

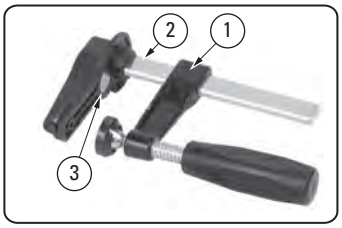
# The Super FMT Jig

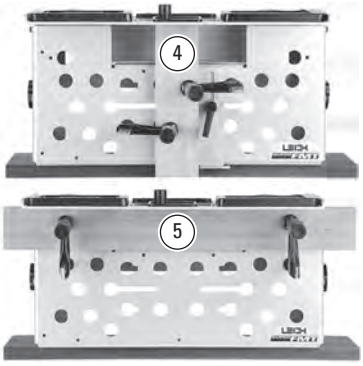
*The Clamp Plate and Clamping*
*The Table*
*Jig Operation Concept*
*Safety and Router Operation*
*Wood Preparation*

## *The Clamp Plate and Clamping*



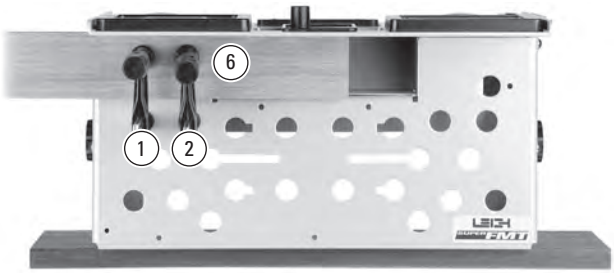

**3-1** The clamp plate ① is adjustable up to 30° from vertical and is held securely by two quadrant knobs ②. A set-screw ③ allows for positive return to 90°. **To ensure flush and in-plane joints, it may be necessary to adjust the clamp plate angle. See Appendix II, Jig Adjustments.**




**3-2** The two F-Clamps have a capacity from zero to 3"[76mm]. The threaded clamp arm ①, is removable and the clamp bar ② is inserted through the clamp plate hole from the rear. Each clamp 'foot' has a powerful rare earth magnet embedded in its plastic 'pad' ③ which maintains clamp position. Normally tenon workpieces will be clamped vertically ④ and mortise workpieces horizontally like this ⑤, or...

## Using Two Clamps

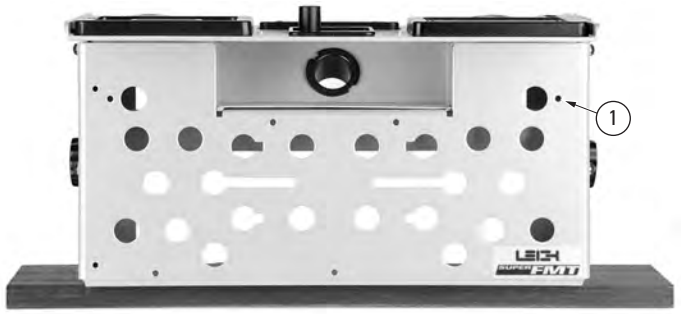



### Using Two Clamps on Top Left or Top Right Corner

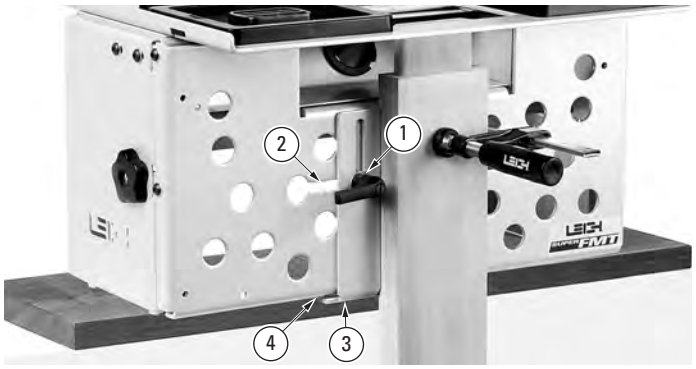
**3-3** ...like this ⑥. For clamping very small workpieces see Chapter 4, Small Joints. **Attention: When using two clamps as pictured, tilt the clamp plate fully upwards before inserting clamps. Insert the outermost clamp ① from below the horizontal bar on the inside of the clamp plate. Insert the inner clamp ② from above the horizontal bar on the inside of the clamp plate.**

**3-4** ⚠ **Do not over tighten the clamps;** excessive force may damage the workpiece. A few minutes of trial and error testing will soon give you the feel for the correct clamp tension.

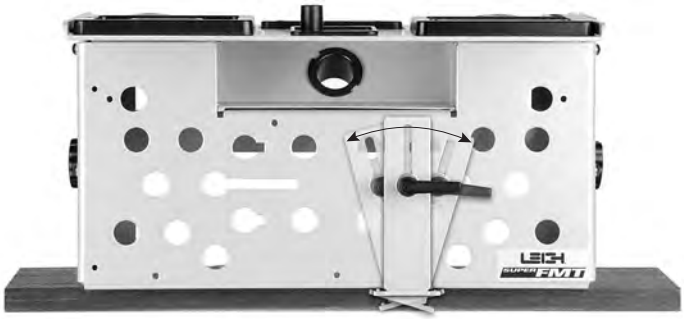

**3-5** The clamp plate holes allow for full clamping coverage. The two long keyholes ① are for the sidestop fence, but these holes (not the slots) may be used for clamping if required.



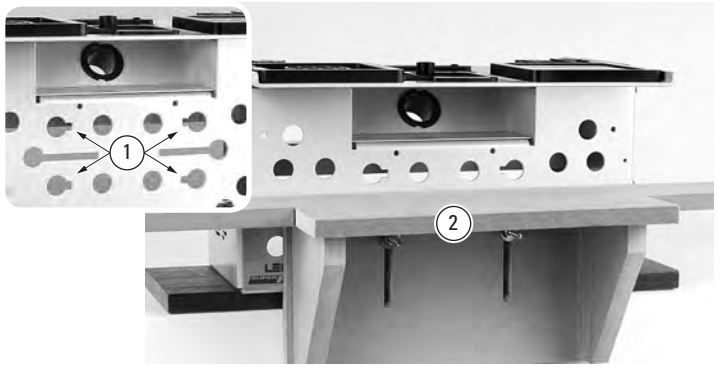

**3-6** The clamp plate is provided with seven small through-holes ①. If a facing board is required use No.8 or M4 wood screws (not supplied) from the rear. Alternatively the clamp plate holes could be marked onto a ply or MDF panel, bored through with a ¾" [20mm] Forstner bit and attached with a pair of optional Leigh F-Clamps.



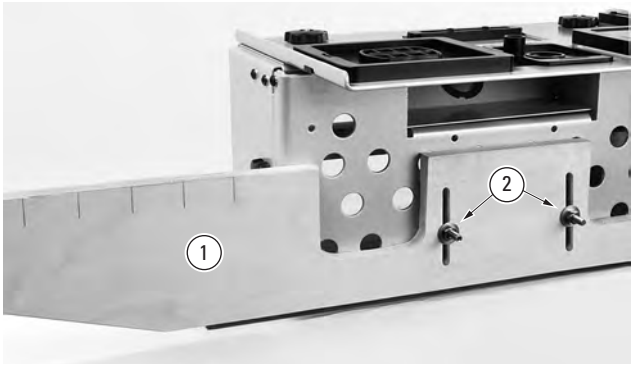

**3-7** The sidestop fence is attached by a single index lever ① and carriage bolt inserted through one of the two 'keyhole' slots ②. Most tenon pieces are routed vertically, and for that purpose the bottom of the fence ③ acts as a T-square against the bottom edge of the clamp plate ④. See Appendix II (A2-5), for sidestop squareness adjustment.



**3-8** **Angled Joints:** Simply loosen the index lever, adjust the fence to the desired angle and re-tighten the lever.

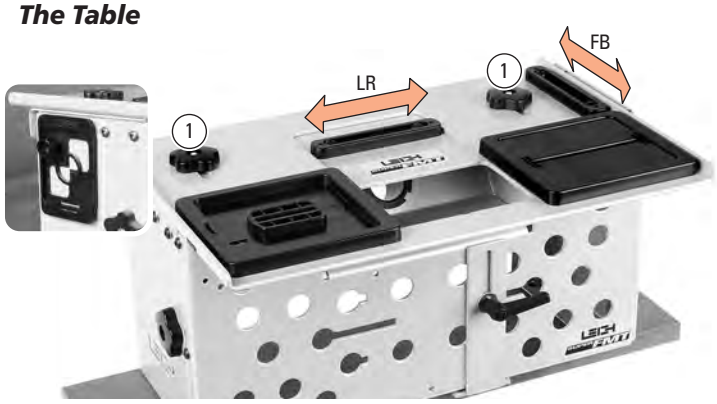



**3-9** The jig clamp plate has four clamp holes with notches ① to allow the mounting of a shop-made mortise beam ② or outrigger beam for handling large mortise pieces for efficient routing of multiple mortises. See Chapter 4, Production Procedures.

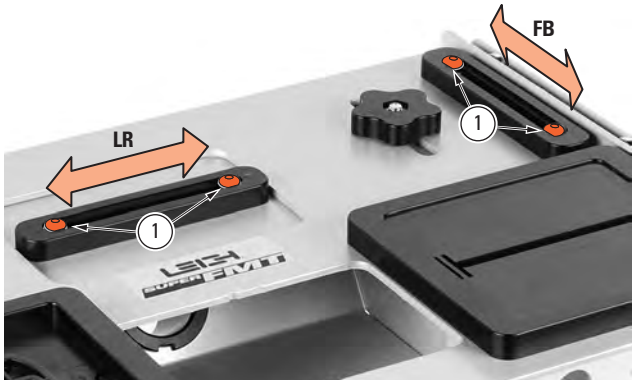



**3-10** The outrigger beam should be ⅜" to ½" [10-12mm] plywood, shaped as suggested to minimize weight. Drill and cut out as shown ① and attach using either ¼-20 [M6] carriage bolts and wing nuts (not supplied) ② or alternatively a pair of optional Leigh F-Clamps ■. See leighjigs.com/support.php#r22

## The Table



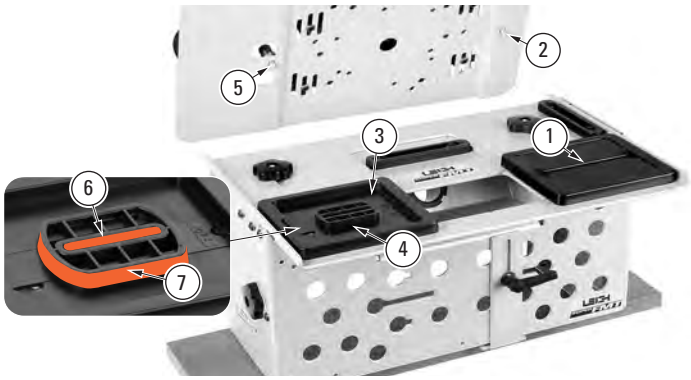

**3-11** The table is clamped in any desired position by the Table Clamp Knobs ①. Loosening the knobs slightly releases the table, which can then be moved in any direction to any position within its range.




**3-12** Adjustable Limit Stops ① are used to limit or prevent table movement left to right (X-axis) and front to back (Y-axis), and to precisely align double and quadruple mortises and tenons (see Chapter 5). Use Limit stops when you see these icons:

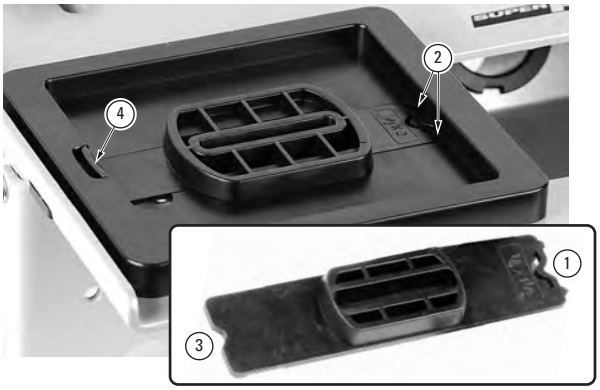
LR for left-to-right table movement
FB for front-to-back table movement.


**3-13** The table has a bit opening ① and a Joint Aligning Sight ②. The sight and opening have matching locating notches and allow precise table positioning over joint cross marks ③. Because the human eye excels at comparisons, we can perceive differences as small as .004 in the space between the edges of the line and the triangles ④. That's .002 off center! You can readily center the sight using slight table movements until the spaces appear the same. The sight magnet allows for convenient storage on the end of the jig body.

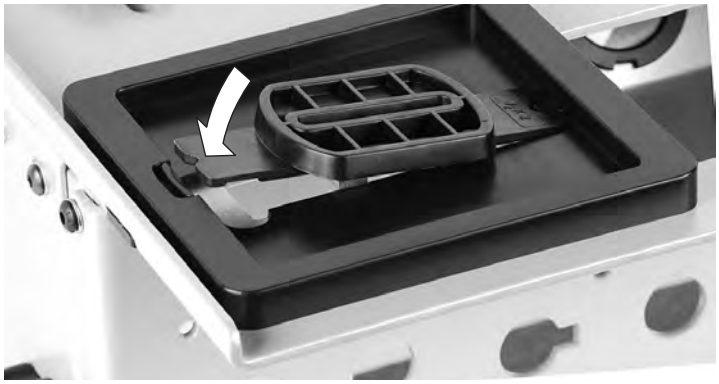



**3-14** To the right front is the right hand "Guide Pin Track" ①. The right hand router sub-base Guide Pin ② runs in this track in all routing operations. To the left front is the Guide Recess ③, in which all Joint Guides ④ are placed. The left hand router sub-base Guide Pin ⑤ runs in the guide slot ⑥ for routing mortises, or around the outside of the Guide ⑦, for routing tenons.

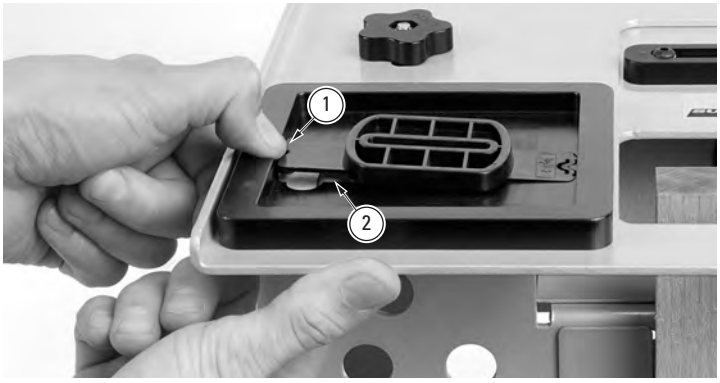

**3-15** The Guide Pin cannot move horizontally outside the recess ①, and prevents the bit from touching the sides of the bit opening ②.



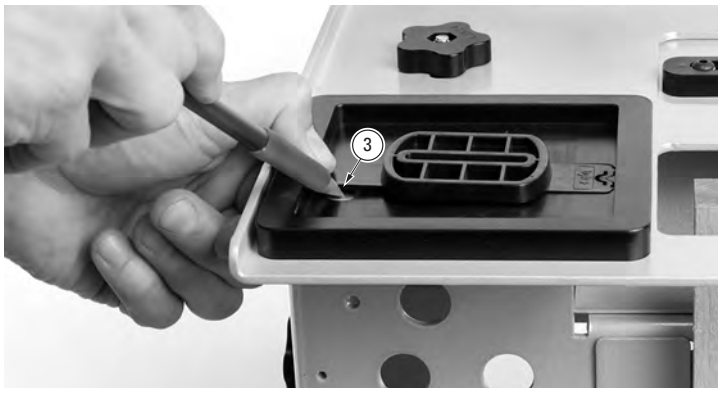

**3-16** Two small projections on the Guide ① fit into undercuts on the right side of the guide recess ②. The left end of the Guide ③ is pushed down and retained by the spring-loaded Guide Latch ④. ⚠ Note: the guide end shapes are not identical. Guides can only be installed one way as shown here.



**3-17** Snap the Guides in like this. Use firm pressure just next to the guide latch. Note: The guides are injection molded acetyl and the guide bases may vary slightly in tolerance. **Some may require more pressure to insert.** The tighter guides will become easier after a few insertions.

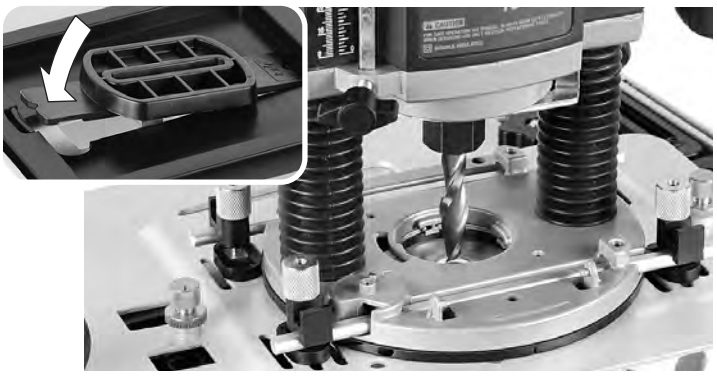



**3-18** To remove a Guide, pull back the latch ① and push through the hole from below with your fingertip ②.

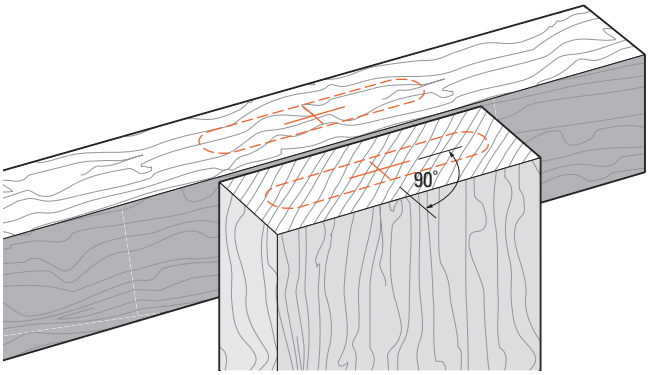



**3-19** If the finger hole is not accessible from below, use your fingernail or a small **non-metallic pry** to lift the Guide up ③. ■

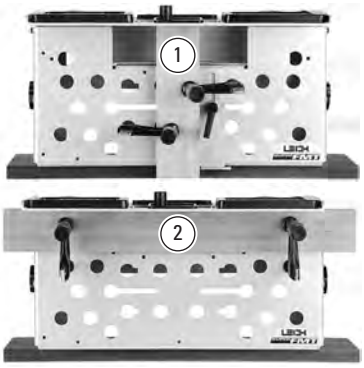
## *Jig Operation Concept*



**3-20** Select a guide and bit. Snap the guide into the guide recess and install the bit in the router.

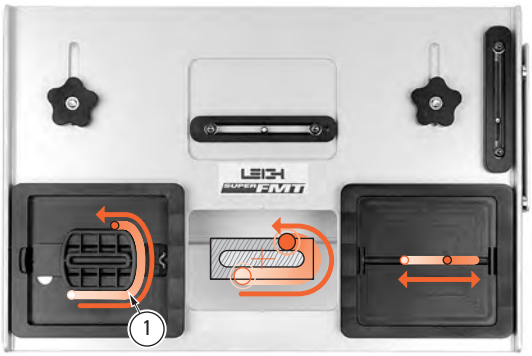



**3-21** The centers of a mortise and a tenon are marked with a cross.

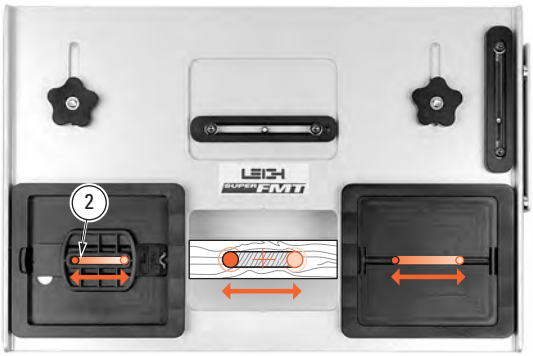



**3-22** Tenon workpieces are usually clamped vertically ①. Mortise workpieces are always clamped horizontally ②.


**3-23** The jig table is centered over the marked workpiece with the sight ①.

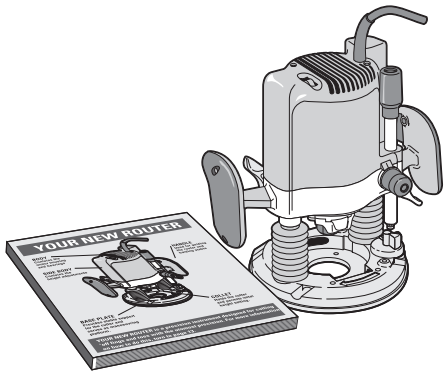



**3-24** Tenons are routed with the guide pin running around the outside (tenon) part of the guide ①. See Chapter 4 for routing techniques.




**3-25** Mortises are routed with the guide pin running in the inside mortise slot of the guide ②. Always rout the mortise slightly deeper than the tenon length. **Note: In most constructions, only one tenon and perhaps two mortises need to be cross marked and sighted. Please read all of the procedural chapters to gain the utmost efficiency from your Super FMT.** ■

## *Safety and Router Operation*

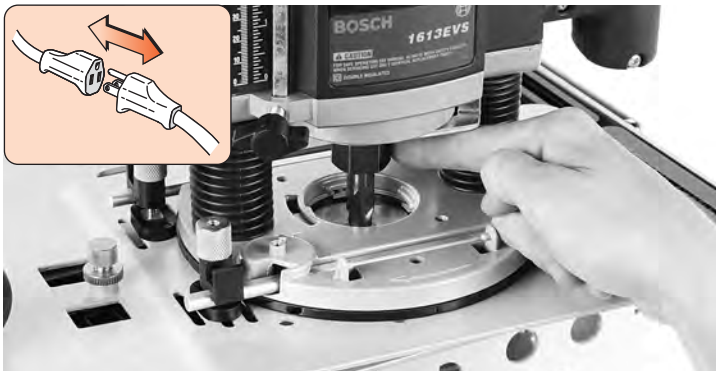



**3-26** ⚠ **Read the owner's user guide that came with your router. It is essential to understand the router manufacturer's instructions completely.**

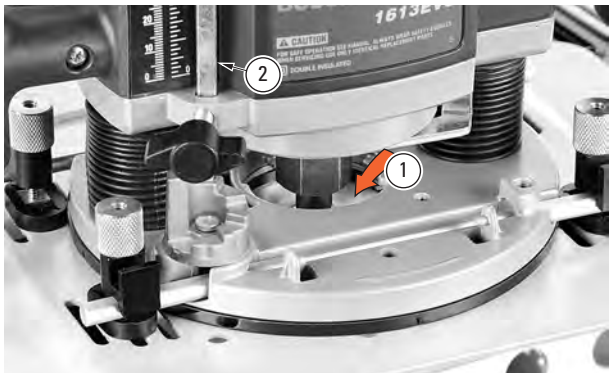
**3-27** Always wear approved safety glasses and hearing protection. Protect yourself from harmful dust by wearing a face mask. We highly recommend you acquire and use the optional Leigh Super FMT Vacuum Attachment. Connect your shop vacuum or dust collection system directly to the vacuum box.

**3-28** The optional Vacuum Attachment consists of the metal box with adaptor, two additional adaptors to suit multiple hose sizes and two hex nuts used to attach the box.


**3-29** ⚠ **Never drink alcohol or take medications that may cause drowsiness when you will be operating a router.**



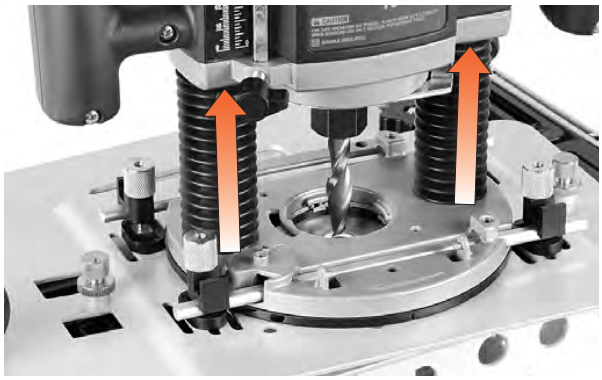

**3-30** Always disconnect the power source from the router when fitting bits, or making adjustments. Before connecting the router to the power source, make sure the bit revolves freely through the sub-base bit hole, and table and clamp plate bit openings in all extreme guide pin positions and preset bit depths.




**3-31** Make sure the router collet does not contact the Super FMT sub-base at full plunge cuts ①. Set the router plunge stop rod as necessary to prevent this ②.

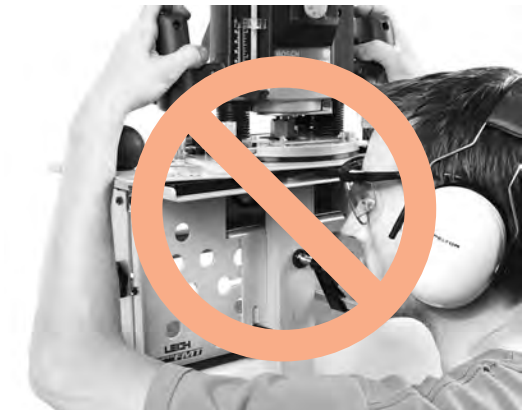
**3-32 Do not tilt the router on the jig.**

**3-33** Keep the router flat on the jig table.

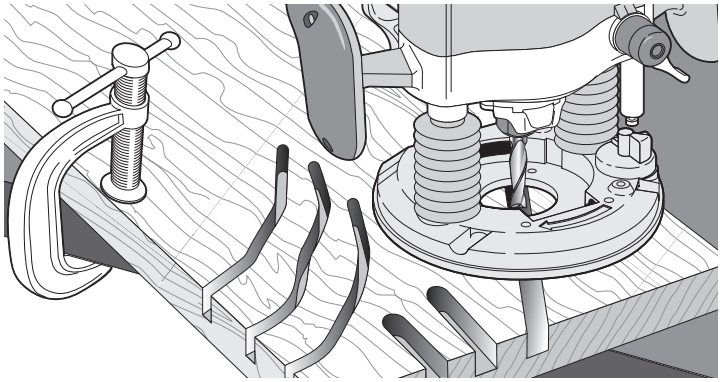


**3-34** Always raise the plunge router mechanism before removing the router assembly from the jig.

**3-35** The Super FMT must only be used with a plunge router. Never, ever use a fixed base router!

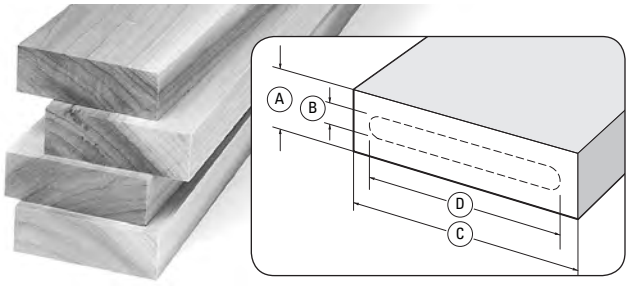


**3-36** Do not rout at face level.



**3-37** If you have never used your router before, be sure to follow the router manufacturer's instructions for its use. Make plenty of simple open-face practice cuts before you try to use the router on the Super FMT. ■

## *Wood Preparation*




**3-38** You will want to test the jig, so prepare some stock with a thickness **A** about 2.5 to 3 times the bit diameter **B**.
For example: ¼" [6mm] bit ⅝" to ¾"[15-19mm]
5⁄16"[8mm] bit ¾" to 15⁄16"[20-24mm]
⅜"[10mm] bit 15⁄16" to 1⅛"[25-30mm]
½"[12mm] bit 1¼" to 1½"[30-36mm]
and a stock width **C** of say, one and a half bit diameters greater than the selected guide length **D**. ■