

# Router Safety

Few will argue that the router is one of the handiest, most versatile power tools in the wood-working shop. With it, you can edge, shape, dado, groove, mortise, cut or “drill” all types of project components with speed, precision and super-smooth results.

However, because of its high operating speeds and horsepower (most routers run at between 18,000 and 25,000 rpm’s and offer between 1hp and 3hp of brute power), failure to follow proper safety procedures can make the router one of the most dangerous tools in the shop. By following these rules for router safety, you should have no problems:

## Getting Started

- Always unplug the router before installing or changing router bits.
- Inspect all bits carefully prior to installation:
  - If it is a carbide-tipped it, be sure all tips are firmly secured to the bit shank. A loose tip can fly off, causing serious injury.
  - If the bit has a bearing pilot, be certain the bearing screw is tight.
  - Be certain your bit is sharp (and **clean**) prior to use. Dull or pitch-covered bits require excessive cutting effort, which could result in injury. Pitch can be removed with sawblade cleaner, but be sure to remove or cover bearing pilots prior to cleaning as these cleaners can ruin bearings.
- When installing a bit, drop it all the way into the router’s collet, then back it out about 1/16” to 1/8” to avoid transferring the heat generated by the bit directly to your router’s motor armature. Be sure the collet is tightened adequately.
- Rotate the installed bit by hand to be certain it doesn’t hit tables, fences, guards, holding fixtures, workpieces or other items when the power is initially turned on.
- Be certain the router motor switch is turned to the “**OFF**” position before plugging the router into an electrical outlet.
- Have a firm grip on the router before turning it on. Remember, you’re holding between 1hp and 3hp of power in your hands. When you turn on the power, the torque of the motor will try to pull the router out of your hands. Be aware of this and be prepared.
- If you’re using a router table, be certain the table is securely clamped to the benchtop or its support legs before starting work.

## The Shop Environment

- Have adequate lighting in the shop. Due to its potential for personal injury, the router is one tool you don’t want to be using “in the dark”.
- Be sure your shop is clean. Excessive sawdust on the floor, for example, can jeopardize your footing, which can lead to injury.
- Use adequate dust collection. The router is, by far, one of the messiest tools in the shop. Its high operating speeds will throw chips and sawdust far and wide.
- **NEVER** operate routers (or other power tools) while standing on a wet floor.

## Use Safety Devices

- When working with a router table set-up, always use a push stick or push block to move the workpiece past the cutter.
- Always wear proper ear and eye protection when working with a router. Routers create an extremely loud, high-pitched noise during operation that could permanently damage your hearing.

And, since they're notorious for *throwing* chips and dust, eye protection is also a **MUST**. If you're planning to do a lot of routing...or will be working with potentially toxic woods such as certain exotics or treated lumbers...a respirator is also highly recommended.

- When routing an irregular-shaped workpiece with a piloted bit on a router table, always use a *Starter Pin* to help you ease your workpiece into the rotating bit without *snagging*.

### **Holding The Workpiece**

- Whenever possible, always clamp your workpiece firmly to a benchtop or other surface before working on it with a hand-held router.
- If you're using a hand-held router on a workpiece that's too small to grip in a vise or with a clamp, use a non-slip router mat to hold it while you make your cuts.
- If you're using a router table and your workpiece is too small to grip safely during an operation, use double-stick tape or a dollop of hot-melt glue to mount it to a larger piece of scrap stock, giving you added control.
- When working with a router table, use a featherboard to hold your workpiece firmly against the router fence during operation.

### **Making the cut**

- Never take too much of a cut in a single pass. For maximum safety (and smoother cuts) take multiple light passes, instead.
- Whenever possible, feed your router into the workpiece, **against** the rotation of the cutter. In those instances when this is not possible and you must make a *climb-cut* (**with** the rotation of the cutter), it is more important than ever that you take multiple light passes instead of a single heavy one.
- Feed the router (or workpiece, in the case of a router table operation) at a slow, steady pace:
  - o Feeding too slowly or dwelling during the cut will overheat the bit, causing it to lose its temper...and burn the workpiece, as well.
  - o Feeding too rapidly will produce a rough cut.

By following these simple precautions, your work with this highly versatile tool will be safer...and your results will surely be improved.