

Worksite: \_\_\_\_\_ Instructor: \_\_\_\_\_ Date/Time: \_\_\_\_\_

## Topic C186: Portable Routers

**Introduction:** Routers are powerful, high speed, precision tools that use sharp steel bits. Routers are used primarily by finish carpenters and cabinet makers and are an important asset to any wood smith's power tool collection. They come in different sizes (the larger versions generate a lot of torque), generally run at over 12,000 RPM, and use a wide assortment of carbide tipped or carbon steel bits and cutters.

**Most injuries that** occur when using routers are to the eyes, face, and hands. Long-term ailments that may be induced by extended, sustained routing operations include hearing impairment (due to high levels of sonic/acoustic disturbance without hearing protection) and possible respiratory problems (caused by breathing various airborne wood molds while not wearing breathing protection) created during tooling operations.

### Follow these guidelines for safe routing operations:

- Do not allow inexperienced persons to operate a router without initial instruction and supervision.
- It is important to always wear your Personal Protective Equipment for eye, face, breathing, and hearing protection. Avoid loose clothing on your arms and keep your hair tied safely out of the way so it won't get sucked into the motor.
- Set up your work station in a clear, unobstructed location with good lighting, proper electrical circuits, and away from busy foot traffic areas that would cause distractions. Assure that your work station is stable and clear of trip hazards. Be sure the work piece is securely clamped to the work bench before beginning work.
- Helpers must also wear their Personal Protective Equipment and avoid allowing unprotected observers to get too close to the tooling operations.
- Before use, carefully inspect the machine for obvious defects that could cause malfunctions; ensure the power cord is secure and intact, the trigger switch functions properly, and that all fasteners and attachments are tight and correctly fitted. Always operate the tool using both hands and follow the manufacturer's operating instructions.
- Avoid using dull or flawed bits or cutters; sharp bits allow proper tool operation. Some cutter bits have a roller bearing on the guide shaft that should be cleaned and lubed as needed. When changing bits, always disconnect the tool from the power source and handle sharp bits carefully. Make sure the changed bit is properly seated and tightened in the chuck, that the shaft lock is released (if so equipped), and that the chuck wrench is removed.
- Prior to beginning routing operations, carefully inspect each work piece for nails, knots, or any flaws that could cause the tool to buck or jump, or shoot off dangerous flying debris.
- In order for the router to make clean cuts, it must be allowed to maintain high RPMs. When making cuts for contours or grooves that remove a substantial amount of material, make a couple of light, smooth cutting passes (especially in hardwoods; not so much in softwoods) instead of attempting one deep cutting pass. Work down to your finish profile in graduated steps with the tool moving in the right direction (against the rotation; going with the rotation causes the tool to run away and causes bit-chatter). Overloading a cut will cause a rough finish, make the tool harder to control, can lead to bit-burning, and/or wrench the tool from your grasp.
- When using rail guides or templates, be sure they are properly secured to the work piece.

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**Conclusion:** Routers are a fine tool for applying attractive edge treatments to wood, for cutting grooves and notches in joinery processes, and for trimming laminates. The nature of their high speed/high torque motors and razor sharp cutters create serious risk potential if carelessly or improperly operated. Follow these common sense guidelines for safe routing operations.

**Employee Attendance:** (Names or signatures of personnel who are attending this meeting)

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*These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.*