

# Carpentry Level One



Hand and Power Tools 27103-13





# Objectives

Identify the power tools commonly used by carpenters.

- a. Describe the general safe use and maintenance of power tools.
- b. Describe the safe use of power saws.



# Performance Task

2. Demonstrate or describe the safe and proper use of five of the following power tools:

- Circular saw trimmer
- Portable table saw
- Compound miter saw
- Drill press nailer/stapler
- Router/laminate
- Portable power plane
- Power metal shears
- Pneumatic

## Kickoff Activity

- Review *OSHA Safety and Health Standards for the Construction Industry (29 CFR, Part 1926), Subpart I—Hand and Power Tools*. As time allows, browse the OSHA website ([www.osha.gov](http://www.osha.gov)) for additional resources on tool safety. Present your findings to the group.



## Section 2.1.1

- There are many general safety rules to follow when working with power tools, many of which are outlined in your Trainee Guide. How many can you name?





## Section 2.1.2

- Caring for power tools
  - Keep tools and machined surfaces clean.
  - Follow the manufacturer's maintenance procedures.
  - Protect cutting edges.
  - Keep tool accessories sharp.
  - Use appropriate blades.
  - Report any unusual noises or vibrations to your instructor/supervisor.
  - Regularly inspect tools and accessories.
  - Keep tools in the proper place when not in use.



## Section 2.1.2

- Extension cords
  - The smaller the AWG number, the larger the wattage the cord can power.
  - As the cord gets longer, the current carrying capacity gets lower.
  - If the power requirement of a device is listed in watts rather than amps, use the following formula to convert the rating to amps:
    - Amps = watts/110



## Section 2.2.1

- Circular saws are versatile and portable and are used to perform a variety of tasks:
  - Ripping (rip cut)
  - Crosscutting (crosscut)
  - Mitering
  - Pocket (plunge) cuts
  - Bevel cuts





## Section 2.2.1

- Identify the parts of the circular saw pictured below. Then identify the safety precautions and requirements associated with each part.



## Section 2.2.2

- Portable table saws are used to do the following tasks:
  - Ripping
  - Crosscutting
  - Mitering
  - Rabbeting (making rabbet cuts)
  - Dadoing (making dados)
  - Cutting molding



## Section 2.2.3

- Power miter saws and compound miter saws combine with a miter box or table with a circular saw to make accurate 90-degree and miter cuts.
  - The difference between the two is that the blade on a compound miter saw can be tilted vertically to make a compound cut.



## Section 2.2.4

- Abrasive saws
  - Use a special wheel that can slice through either metal or masonry.
  - Most common types
    - Demolition saw—not mounted on a base
    - Chop saw—mounted on a base

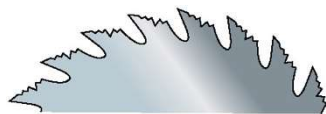


## Section 2.2.5

- For each pair of circular saw blades, identify the differing characteristics between the two and how these characteristics relate to their corresponding uses.



CHISEL-TOOTH  
COMBINATION



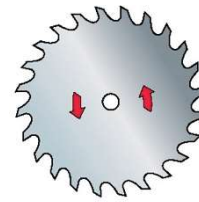
MASTER  
COMBINATION



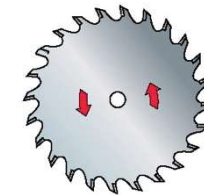
CROSSCUT



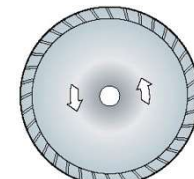
RIP CUT



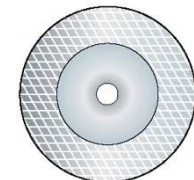
STEEL



CARBIDE-TIPPED



MASONRY



ABRASIVE

## Wrap Up

Closely inspect the saws in your classroom to identify any safety hazards. If safety hazards are found, work with your instructor to take the saw out of service.

Next Lesson: Power Tools, Part Two  
Review Sections 2.3.0–2.7.0

