

SKILLS

Crafts

Stationary Power Tools



PURPOSE

To provide mature Cadets with valuable skills and safety consciousness in a field they will be able to use throughout their lives.

COUNSELOR GUIDELINES

While it is possible to injure yourself on any power tool, these power tools are much more likely to cause very serious injury. Fingers can easily be amputated and lost.

1. Get permission from parent or legal guardian for a Cadet to do this badge.
2. A Cadet's maturity must be evaluated by his counselor before he is allowed to use this equipment.
3. Before using any of these power tools, they *must* know and understand the general safety rules, as well as the tool specific rules.

The rule should be — *if the counselor is in doubt, the counselor should not proceed.*

This badge is intended to teach Cadets some basic skills with woodworking power tools. However, it is not intended that Cadets *use* power tools unless there is one-to-one supervision by a qualified counselor.

Additional Guidelines:

1. Cadets should complete the other tool badges first.
2. Your club should have appropriate and sufficient insurance.
3. Be sure your Cadets are of an appropriate size for using each of the tools. They should not stand on stools, boxes, etc. to use the tool.
4. Instruction should be given for each tool and Cadets should individually demonstrate both safety and proper usage for each tool before being allowed to use it.
5. Tape a safety zone around the tools so that only the operator is in it.
6. You or an experienced woodworker should share stories about things that have gone wrong and the need for having and following safety rules.
7. Before beginning this badge with a Cadet, be sure that his parent/guardian has signed the permission box on the boy's badge paperwork.

LEARNING

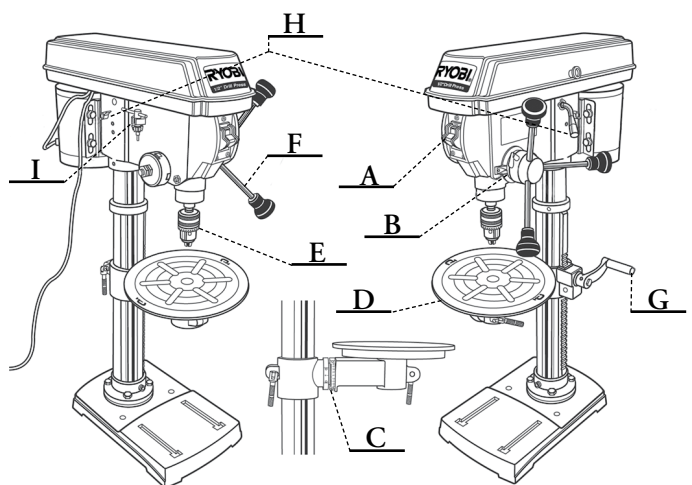
1. The counselor should be sure that a Cadet has learned each of the general safety rules and be able to demonstrate that knowledge.

2. Cadets are to complete the learning for three of these four stationary power tools.

a. Drill Press

1) See drawing

- a) on/off switch — be sure your drill is off before making any adjustments to it
- b) depth gauge — shows depth of hole to be drilled
- c) miter gauge — shows the angle of the hole to be drilled
- d) worktable — can be raised or lowered to contact depth of hole being drilled
- e) chuck — used to tighten drill bit
- f) feed handles — used to push the drill bit into the item being drilled
- g) table adjustment — use to raise or lower the table on the column and to lock into place.
- h) speed adjustment — belt tension can be adjusted with outside screws (according to a chart under the top cover on this model) to change the speed of the drill bit for different materials or needs (others may use a lever or dial)
- i) chuck key — used to tighten drill bit in chuck (always remove before using the drill)

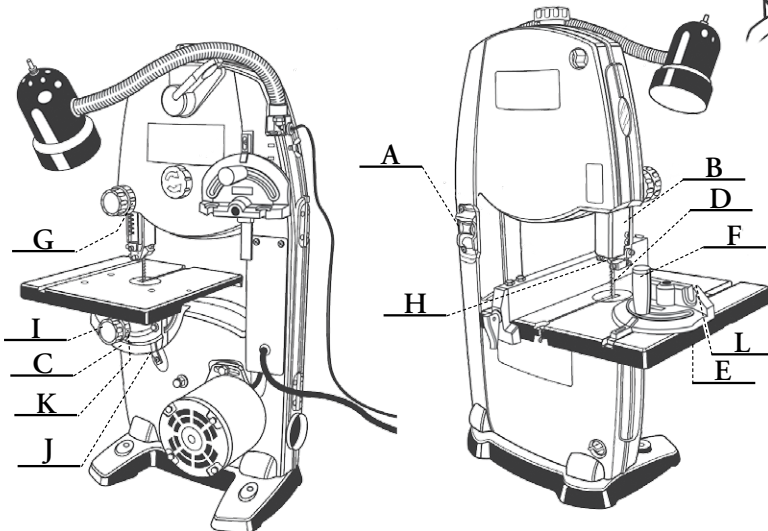


- 2) Listen to your Cadet tell you the safety rules. Be sure he understands them.
- 3) To drill holes in various materials to exacting dimensions.
- 4) A drill press will drill holes straight and true.

b. Bandsaw

1) See drawing

- a) on/off switch — self-explanatory; it should always be turned off when adjustments are made, and the saw should be unplugged when making adjustments to the table, blade guard or guide, tension, or blade
- b) blade guard — protects user from contact with the blade
- c) scale — shows the angle or degree the table is tilted for bevel cutting
- d) saw blade — long, narrow, flexible, metal band with teeth for cutting
- e) bandsaw table — table with tilt control and a throat plate which allows for blade clearance.
- f) lock knob/lever — locks the blade guide assembly in place; be sure the blade is locked before turning on bandsaw
- g) blade guide knob — adjusts the blade guide assembly to keep the blade from twisting or breaking
- h) blade guide assembly — helps keep saw blade from twisting during operation
- i) table lock knob — when loosened, table can be tilted to different angles; tightening the knob locks the table into place
- j) scale indicator — shows the angle or degree the saw table is tilted for bevel cutting
- k) angle adjustment knob — tilts the saw table for bevel cutting
- l) miter gauge — aligns the wood for a cross-cut; shows angle for miter cuts

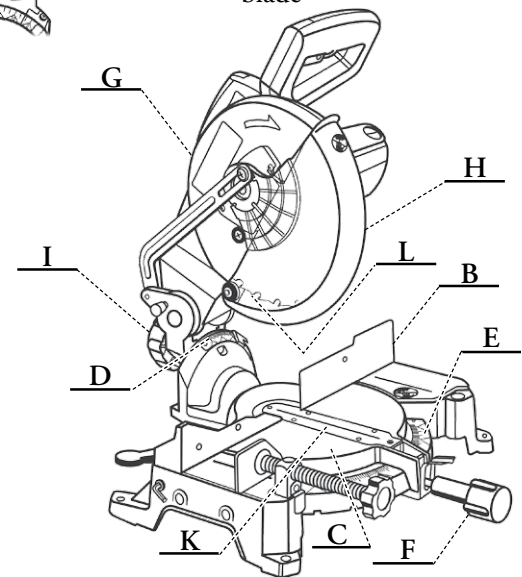
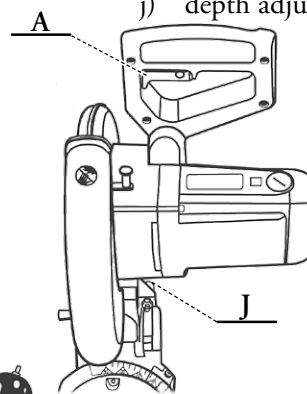


2) Listen to your Cadet explain to you the safety rules. Be sure he understands them.

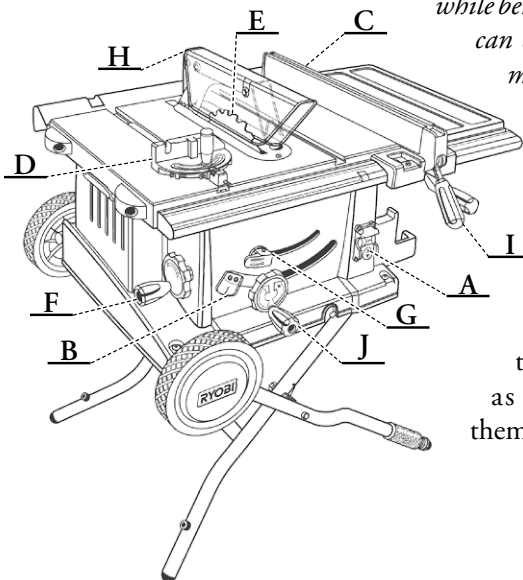
c. Compound Miter Saw

1) See drawing

- a) on/off switch — trigger style can be locked off with a padlock to make switch inoperable
- b) fence — fence holds the workpiece securely
- c) miter table — surface where the workpiece rests
- d) bevel scale — shows bevel angles; saw arm is tilted to desired bevel angle
- e) miter scale — pointer aligns with desired angle on the miter scale; miter table is rotated to the angle desired
- f) miter lock handle — securely locks the saw at desired miter angles
- g) upper blade guard — provides protection from sawblade for the user
- h) lower blade guard — made of shock-resistant, see-through plastic that provides protection from the blade; retracts over upper blade guard as the saw is lowered into the workpiece
- i) bevel lock handle — securely locks the saw at desired bevel angles
- j) depth adjustment — limits the blade's downward travel
- k) throat plate — reinforced area of table where the blade is lowered through the workpiece and the table, allowing full cutting capabilities
- l) blade — circular saw blade



- 2) As your Cadet explains to you the safety rules for this tool, be sure he understands them.
- d. Table Saw
- 1) See drawing
 - a) on/off switch — may come with removable switch key to help prevent unauthorized use
 - b) bevel indicator — indicates the angle of the blade
 - c) rip fence — guide that is parallel to the blade that's used to position work that will be cut lengthwise
 - d) miter gauge — used to guide workpieces through the blade for angled crosscuts
 - e) saw blade — circular blade, usually 10–12" (25.4–30.5 cm) diameter; use only blades recommended for use with your saw that are clean and sharp; never use dull blades
 - f) bevel handle — tilts the blade for bevel cuts
 - g) bevel locking lever — locks in the blade angle
 - h) blade guard — protects user from saw blade; do not use saw without guard in place or in proper working condition
 - i) rip fence locking lever — secures the fence as positioned
 - j) blade adjusting handle — sets depth of cut
 - k) push tool (not shown) — device used to feed the workpiece through the saw to help keep the operator's hands well away from the blade. *Note: There is no picture of a push tool. It is designed to "push" wood while being cut. This tool can be purchased or made (see manuals for table saws). This is a vital safety tool!*



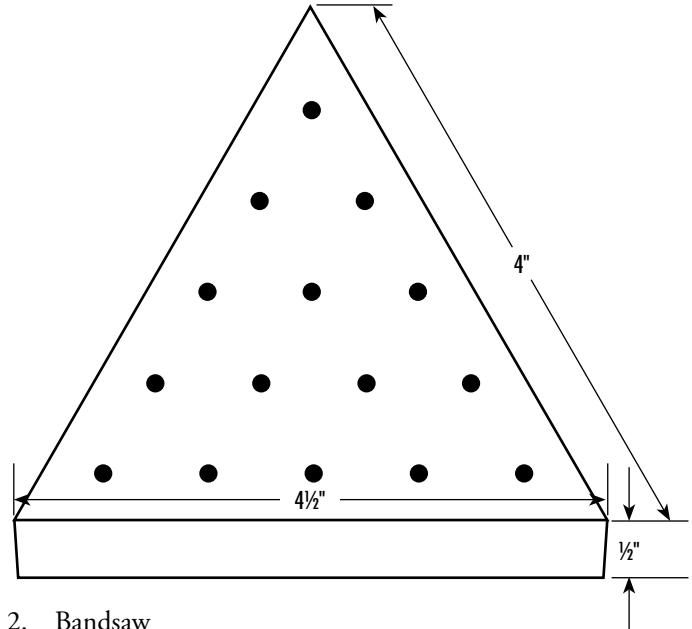
while being cut. This tool can be purchased or made (see manuals for table saws). This is a vital safety tool!

2) Be sure your Cadet understands the safety rules as he explains them to you.

DOING

Fulfill the requirements for the same three tools that you selected in the "Learning" section.

1. Drill Press
 - a. Self-explanatory.
 - b. Self-explanatory.
 - c. With the help of your counselor, drill the necessary holes in a small board to make a peg-solitaire jumping game (using golf tees for pegs).



2. Bandsaw
 - a. Self-explanatory.
 - b. Demonstrate cutting the following letters in a 1/2" (1.2 cm) pine board.
E F H M N
 - c. Observe your Cadet as he cuts the same letters. Be sure he observes the 3" (7.6 cm) rule.
3. Compound Miter Saw
 - a. Self-explanatory. *Note: Machine should be turned off and unplugged before each adjustment!*
 - b. Be sure your Cadet follows all the safety rules as he makes the same cuts you demonstrated, especially the 3" and 12" rule.
 - c. Self-explanatory.
4. Table Saw
 - a. Self-explanatory.
 - b. After you demonstrate making the cuts, be sure your Cadet follows the safety rules as he duplicates the same cuts.