

Tip #27 Everything You Want To Know About Sawing

Practically without exception, every project a woodworker builds begins by cutting your component workpieces to size. If your project is comprised entirely of straight-edged stock, your cuts can usually be performed most efficiently with a table saw. However, if you're planning to crosscut a small amount (1" to 6" or so) off the end of a long (8-foot or longer), narrow board, a hand-held circular saw, power miter box or radial arm saw may be a more practical solution. Although you can perform this crosscutting operation with a table saw, the optional saws mentioned above are more ideally suited for crosscutting long boards since cumbersome workpieces can remain stationary while the saw blade is moved across their surfaces.

Step-by-step tips for safer, more efficient table sawing

Select the right blade for the job.

There are thousands of blades available for your table saw...primarily, in one of the following four configurations:



- **(A) Combination Blades** will perform both crosscutting and ripping operations on hardwoods, softwoods, plywood and composite boards. Although they're not the **best** blade for all jobs, they are the most economical alternative, providing you're willing to compromise a bit on performance.
- **(B) Rip Blades** have fewer teeth than a Crosscut Blade with deeper gullets. They are designed for making the smoothest cuts when ripping boards **with** the grain of the wood. They should **NOT** be used for making crosscuts **across** the grain of the wood.
- **(C) Crosscut Blades** have a lot of teeth and are designed for making the smoothest cuts when crosscutting straight or diagonally **across** the grain of the wood. They should **NOT** be used for making rip cuts **with** the grain of the wood.
- **(D) Thin Kerf All-Purpose Blades** are recommended for use when you want to maximize the lumber you have or are cutting thick or tough woods. These blades will take a thinner saw kerf (usually about 3/32"), which saves your wood and reduces the strain on your table saw's motor.
- **Hollow Ground Blades** (not shown) are often referred to as "Planer Blades". They're made to be thinner near their centers than at the outer edges to provide more clearance while making the cut. As a result, they will make super-smooth cuts when crosscutting or ripping small amounts of stock off a board. They should be reserved for finish cuts only and **not** be used for making heavy sizing cuts.
- **Plywood Blades** (not shown) are made for sawing plywoods, paneling and veneers. They offer lots of very fine teeth (often, up to 200) to minimize splintering and fraying when cutting thin or

layered woods and can be used with equal results when crosscutting or ripping these thin materials.

NOTE: For more in-depth information about Table Saw Blades and their uses, visit our July/August, 2001 issue of *Hands-On*, Shopsmith's on-line woodworking magazine. You'll find it in the "Archives" section under *Hands-On* at Shopsmith's website — www.shopsmith.com

Setting-Up The Table Saw To Make Your Cuts.

- **Unplug your saw.** Always disconnect your Table Saw from the power while installing blades or making adjustments where your hands might be in harm's way. Once all settings have been made, you can plug your saw back in before proceeding with your cuts.
- **Check all alignments.** Be sure your saw is aligned properly. Is the table adjusted so the miter gauge slots are perpendicular to the face of your saw blade? Is the rip fence parallel to the saw blade face? If either of these are not set properly, your results will be inaccurate. There are some excellent tools available to help you make these settings precisely. A Steel Engineer's Square or set of Aluminum Triangles are great for setting your Miter Gauge at an exact 90-degree angle to your saw blade.

If you're making a miter cut, you'll need to use a Protractor/Bevel, special Angle Setter or similar device to verify that you've made these miter settings properly.

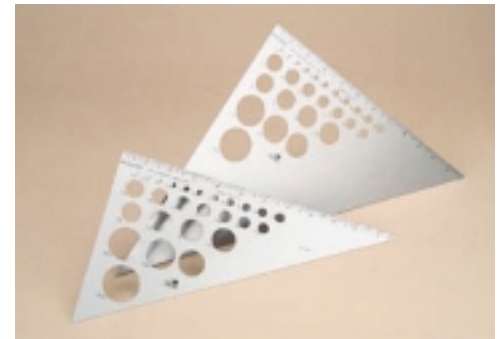
Follow the guidelines in your saw's Owner's Manual for the proper procedures and remember that you can't make an accurate cut unless your tool is set-up correctly.

- **Adjust your work-guiding/holding devices.** Set your Miter Gauge, Rip Fence or other work-guiding/holding device to make your cut.

WARNING ! NEVER attempt to make any kind of a "freehand" cut on a Table Saw. **ALWAYS** use a Miter Gauge, Rip Fence or special fixture to hold and guide your workpiece through the cut. Failure to use these devices will cause your workpiece to bind and kick-back at you, causing personal injury!



Engineer's Square



Aluminum Triangles

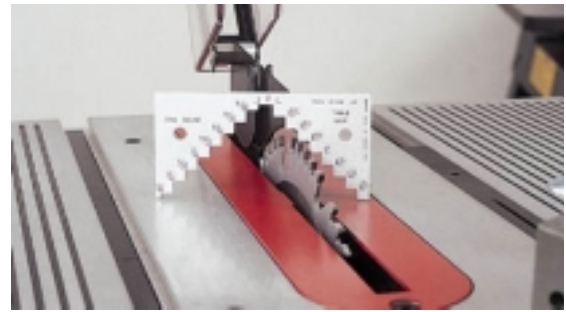


Protractor/Bevel



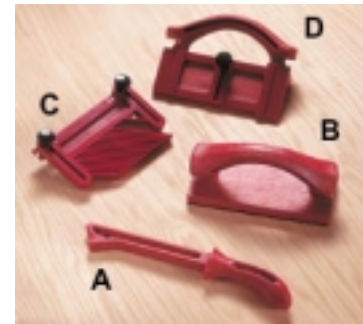
Angle Setter

- **Adjust your blade's depth-of-cut.** Set your depth-of-cut so the blade protrudes no more than 1/4" to 3/8" above the top surface of your stock. This will help minimize splintering – and more importantly – the blade will do a lot less damage to you personally, in the event you do have an accident while working with your saw. You can make this setting by laying the edge of your stock against the blade – or by using a special Stepped Gauge designed specifically for this job.



Stepped Gauge

- **Install and use all safety devices.** Always use upper and lower saw guards, Push Sticks (A) , Push Blocks (B) Featherboards (C), or Fence Straddlers (D) and any other safety devices that may be applicable to the operation you're performing. Don't forget to wear eye protection.



Safety Devices

Crosscutting

Crosscutting is the act of cutting your workpiece **across** the grain of the wood – or “cutting to length”. Usually, it's best to crosscut your stock to length before ripping it to width. Why? Because it's easier to rip short pieces of stock than to rip long ones.

- When making crosscuts, use a crosscut or combination saw blade and **ALWAYS** guide your stock through the cut with a Miter Gauge or similar work-holding device.
- Mark your cut line clearly with a SHARP pencil. Use a square to draw your line across the surface and down the edge of the stock nearest the saw blade.
- Place your stock firmly against the face of your Miter Gauge and hold it in position by squeezing the Gauge's Safety Grip.
- Before turning-on your saw, move the stock forward until the tooth of your blade touches the cut line you drew down the edge of your wood. Be sure the width of your blade's teeth are on the **SCRAP SIDE** of your drawn line. Loosen your grip on the Safety Grip to make this adjustment...then grasp your stock firmly by squeezing the Grip.
- Pull everything back away from the blade again before turning on your saw and be sure both ends of your stock will be adequately supported by your saw's table or other auxiliary support device...both before and after you make your cut.
- Position your body on the same side of the machine as the Miter Gauge and **NOT** in alignment with the blade or the scrap portion of the stock.