

Woodworking tips

Get better cuts from any circular saw

Start with the right blade

Replace the 24-tooth blade that came with the saw with a 50- to 60-tooth blade for cleaner crosscuts in solid wood, veneered plywood, and other sheet goods. For general use when cut quality isn't critical, use a 40-tooth blade. If you're ripping solid wood, switch back to the 24-tooth blade.

Beat tear-out in 3 ways

Because a circular-saw blade cuts on an upward rotation, the bottom face, in which the teeth enter the cut, will almost always have a clean, tear-out-free surface. Meanwhile, the top face suffers tear-out so bad it cannot be used in a visible area on a project. (See the three photos *at right* for different



degrees of grain tear-out.) So whenever possible, put the best face down when cutting. When you must cut with the best face up, use one of these tips to make your workpiece edges look like the one in the best photo.



An unsupported cut incurs bad tear-out



Covering the top face with mas 1



Clean cuts like this make projects look best



Score the cutline first

Make a scoring pass about 1/8" deep by lowering your saw's footplate. When done raise the footplate and make the through cut. Make your cut in two passes instead of one. A shallow scoring pass cleanly shears the surface fibres rather than lifting them upwards.

Set clearance to zero

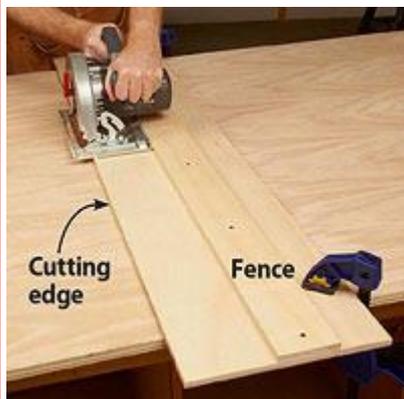
Attach a 1/4" thick hardboard or MDF auxiliary subplate to your saw's footplate with countersink machine screws. Plunge the blade through the blank for zero clearance.

To support the wood fibers, especially plywood's thin veneers, where the blade exits the workpiece, attach an auxiliary subplate to your saw's footplate (also called a base or shoe). When you plunge-cut through this extra layer, you'll create a zero-clearance opening around the blade to eliminate tear-out.

CAUTION: Be extra careful when using a saw this way because the blade guard cannot cover the blade below the auxiliary footplate.

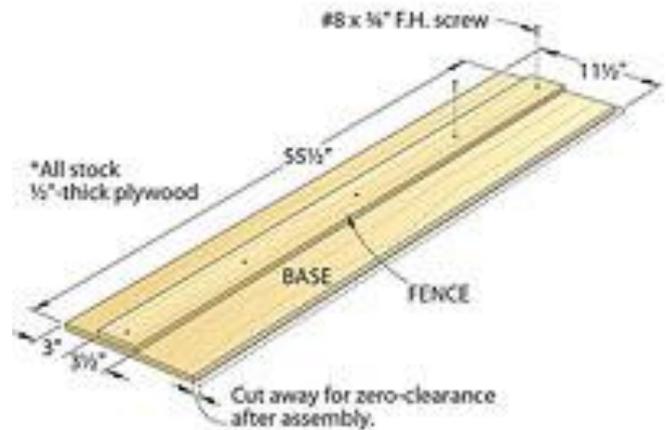


Make your own guide



After cutting the guide to match your saw, clamp that edge directly on your layout marks. Then cut while holding the saw against the fence.

A custom edge guide for your saw not only beats tear-out, but also makes it easy to align cuts. Start by building a jig based on the drawing *below right*, adjust the width as needed for your saw. We made ours long enough for crosscuts in 4'-wide sheet goods. Make the base's cutting side about 1/2" wider than the distance between your saw's blade and the footplate edge below the motor. Trim the guide to custom-fit your saw by running the footplate against the fence to create the zero-clearance support. Clamp the jig on the "keeper" piece when cutting because the jig does not provide zero-clearance for the cutoff.



Prevent splintered cutoffs



When crosscutting a board, place it on a pair of 2x4s. Then, with the blade set to cut slightly into the supports, cut your workpiece to length.

If you crosscut solid wood or plywood without supporting both the keeper piece and the cutoff, you'll frequently get a splintery tear-out along the far edge when the cutoff drops away before you've finished the cut. To avoid this, dedicate two inexpensive boards as "sacrificial" supports, set in place on sawhorses or your workbench top.

Make cleaner jigsaw cuts

The road from Splinterville starts at the blade

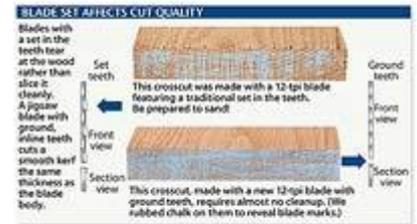


Choose the right tooth count for the cuts you make. Blades with aggressive 6-tooth-per-inch (tpi) designs work great for sawing construction lumber, but cut too coarsely for woodworking project parts. Instead, select a 10- to 12-tpi blade for larger, gradual curves, or a 20-tpi blade for tight curves (1" radius or less) in solid wood and all cuts in plywood or melamine-coated particleboard.

Beyond tooth count, also consider the blade design. For decades, jigsaw blade teeth were "set," alternately leaning left and right, as shown in chart *left*. This makes them cut coolly and quickly, but at the expense of cut quality.

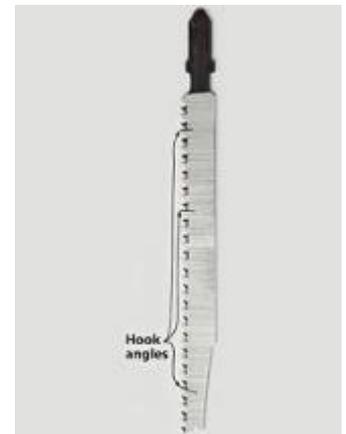
To remedy this, several manufacturers now make blades with ground, inline teeth, as shown chart, *far right*, that slice the wood like a surgical scalpel rather than bluntly tear at it. This produces much cleaner cuts. For this reason, in the *WOOD®* magazine shop we use Bosch Clean-For-Wood and Xtra-Clean-For-Wood blades. Just be aware that these blades can burn your wood if you set the jigsaw's speed too fast or feed the saw through the wood too slowly. Our best advice: Practice on scrap of the same species to find the best combination of speed and feed rate.

Finally, remember that jigsaw blades cost a fraction of the material you're cutting. So know when to call it quits on a blade. If a blade begins to burn the wood or tear out surface fibers where it didn't used to, or if it requires greater effort to push through a cut, chuck it and get a new one.



U-shank blades tend to wobble, flex more, and produce more tear-out than T-shank blades. If you own a jigsaw that uses these blades, unfortunately, you have fewer options in blade choices. Opt for higher tooth counts as much as possible to reduce tear-out.

Progressive-tooth blades have a greater hook angle near the tip, putting those aggressive teeth where they're needed for fast cutting in materials thicker than 1". Less-aggressive teeth close to the shank end help the blade cleanly exit the top surface of the workpiece.



Standard 6-tpi blades use steep hook angles on the teeth and large gullets between them for quick waste removal. These blades work best when speed is more important than cut quality, such as working with construction lumber

Reverse-tooth blades cut on the downstroke, minimizing chip-out on the face side of a workpiece when you must put the best face up during cuts. Making a sink cutout in a countertop calls for one of these blades

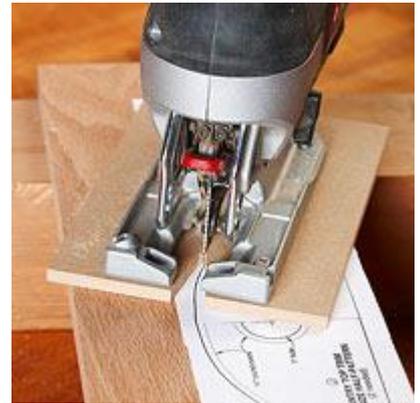


Now set up the jigsaw

Cut a V-notch in the shoe to just in front of the blade. This opens your sight lines while maintaining anti-chip-out protection.

For softwoods, softer hardwoods (poplar, mahogany, alder, etc.), and sheet goods, run your jigsaw at its highest speed for most cuts. If you encounter resistance, back off the speed slightly. Dense hardwoods, such as cherry, maple, oak, and walnut, call for a slower blade speed to avoid burning. Use the slowest speed setting for cutting plastics and metals.

If your jigsaw has an orbital setting -- an internal action that rocks the blade in a pendulum-like motion while simultaneously stroking up and down -- set it to the greatest orbit for fast, but rough, cutting. Turn off the orbital action for cutting curves with less than a 3" radius. But if you're cutting large, sweeping curves, a little orbital action helps. You also can reduce top-face workpiece tear-out by adding a zero-clearance shoe, such as the one shown at right, to your jigsaw. Make it from 1/4" hardboard and secure it to the saw's foot with machine screws or double-faced tape. Ease the corners and edges with sandpaper to prevent making any scratches on your workpieces.



Handheld Helpers

Not every woodworking task calls for a tool with a plug or a battery. Sometimes, the best tool for a job is powered by your own two hands.

Peek inside the WOOD® magazine workshop and you'll see nearly every stationary and hand-held power tool imaginable. But open the drawers nearest our workbenches, and you'll find them filled with well-used hand tools ranging from utility knives to block planes. That's because even the greatest assortment of the best power equipment can't handle every woodworking task.

A simple card scraper, for example, has no speed adjustment, no accessories or attachments, and barely even an instruction manual. But it can peel off an old finish faster and cleaner than a random-orbit sander, and leaves an almost-burnished smooth surface when used on bare wood.

Some of these hand tools (see **Sources**, *last slide*) require a bit of skill and practice, but most produce excellent results right off the bat. All of them deserve drawer space near your workbench



Bench chisels

Chisels flatten the walls and square the rounded corners on this drilled mortise. A guide clamped to the workpiece keeps the chisel at a 90 degree angle.

Like a trusty pocket knife, you'll reach for a sharp chisel to help with a host of odd jobs. Ours get a regular workout smoothing the walls of mortises roughed out on a drill press. For this task, you'll want a chisel at least 1" wide to pare the walls, as shown at right, and a 1/4" or 3/8" chisel (or the nearest metric equivalent) for the ends. We prefer chisels with beveled edges, which can reach into tight corners or between hand-cut dovetails.

Other uses: Keep a set handy to tweak the fit of all kinds of joints, not just mortise-and-tenons. We also use bench chisels for everything from trimming off tiny bits of glue squeeze-out, to squaring router-rabbeted corners on the backs of frames, to shaving finish flaws from flat faces.



Success secret: Tougher steel generally costs more money. So buy the best quality you can afford, even if that means settling for the smallest available set or buying individual chisels as needed. Then learn how to hone a razor's edge on them.

Contour sanding grips

Foam sanding pads work well on broad curves, but contour sanding grips reach into and around tight curves and V-grooves.

Look around your shop long enough, and you may eventually find some object the right size and shape to use as a temporary backer for sanding a profile. Instead, skip the search, and get a set of these pliable grips. Their varied contours sand everything from crown molding contours to 1/8" round-overs without altering the profile. A full set includes angled, concave, and rounded shapes.

Other uses: Use the narrow handle to reach deep into grooves. Or flex the handle against a gentle concave profile in place of a foam sanding pad.

Success secret: The small sanding surface area wears quickly, so frequently rewrap the grip with fresh abrasive. Small sanding tools have a way of disappearing; keep them organized in a kerfed scrap block, as shown at right.



Card Scrapers

Because it takes off so little wood, card scrapers smooth wildly figured woods without tear-out. On straight-grained wood, they also can eliminate at least one of the coarser sandpaper grits needed to remove tool marks. Use curved or goose-neck scrapers to shear tool marks off gently rounded profiles.

Other uses: Try removing a defective or damaged clear finish by sanding it away, and you'll quickly discover "cornering." That's when finish turns into hard globs that clog sandpaper and mar a surface. A card scraper quickly peels off film finishes -- including polyurethane, which resists abrasion, as shown opposite top. If necessary, follow up by finish-sanding at 180 or 220 grit, and you're ready to refinish the surface.

Success secret: Card scrapers work by planing off wisps of wood (or finish) using a tiny hook along the edge. To get a hook that's just right, see a free video at woodmagazine.com/card-scrapers



Low-angle block plane

With the blade set to remove shavings less than paper thin, a basic block plane peels away burn marks in a couple strokes.

You'd need a stack of sandpaper to produce the smooth surfaces left by a few strokes from a well-honed block plane. Keep a sharpened one handy to perfect mating faces before edge-gluing joints.

Other uses: Try a low-angle block plane to cleanly trim proud end grain from a butted corner joint or through-dovetail joint. Unlike sandpaper, a block plane removes an even amount of wood when chamfering a sharp edge.

Success secret: Tune up any new plane by first flattening the sole using 180-, 220-, 320-, and 600-grit wet/dry abrasive sheets lubricated with WD-40 on a piece of plate glass. Rub the sole back and forth, rotating it end for end periodically, until it's uniformly shiny.

Then hone the blade using tips from the sharpening video mentioned earlier. Keep it sharp by storing the plane immediately after use



Flush-trim/dovetail saw

A disc placed abrasive-side down around the plug prevents minor saw tooth scratches should you accidentally pivot the blade.

With no tooth set, these saws help you trim plugs or dowels flush without scarring the surrounding wood. As an added precaution in soft woods, such as pine, first push the exposed plug through a hole in a worn-out sanding disc, as shown at right. Then sand flat the remaining nub.

Other uses: At least one saw (see **Sources**, *below*) includes two interchangeable blades -- one for flush-trimming, and the other with a rigid back for making super-thin kerfs for hand-cut joints, such as dovetails.

Success secret: For flush-cutting, flex the saw body to keep it pressed firmly against the wood surface, and cut on the pull stroke. Don't rotate the saw handle in a way that angles the teeth enough to dig into the surface.



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