

# Choose the Right Table Saw Blades

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*We cut through the confusion to show you the ones you really need.*



Ever wonder if your table saw blade does what it's supposed to? Sure, it "cuts," but is it costing you needless aggravation and added machining? Are you becoming a master at fixing poorly fitting joints and cleaning up rough, burned cuts and tear-out? If so, you're developing the wrong kind of woodworking habits and wasting valuable shop time. The problem may well be that you're using the wrong blade.

There's an enormous selection of saw blades out there, and picking the right ones for your particular needs can be confusing. But don't worry, the choices aren't as difficult as you might think, and you won't have to cut back on groceries to get the blades you need.

## BASIC BLADE TYPES

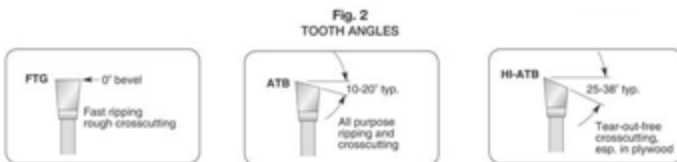


Basic choices for your blade arsenal include (from left) a 24-tooth FTG, a 40-tooth ATB, a 50-tooth ATBR, and an 80-tooth TCG.

There are four basic blade types, determined by the shape, or grind, of their teeth. They are flat top grind (FTG), alternate top bevel (ATB), combination (ATBR), and triple-chip grind (TCG) [Figure 1 and Photo A].

FTG blades have teeth whose top edges are square to the saw plate. Also called rakers, these teeth attack the wood much like a chisel chopping out the ends of a mortise. They're fast cutting and durable, but don't produce a clean surface. They're designed to rip, sawing perpendicular to the grain.

The teeth on ATB blades are angled across the top edge, with every other tooth "leaning" in the opposite direction. The shape of the tooth causes it to shear the wood fibers cleanly using a slicing motion. The steeper the bevel angle, the cleaner the teeth cut, but the quicker they dull (Figure 2). Most 40-tooth ATB blades are marketed as "all-purpose" blades.



Combination blades consist of 50 teeth arranged in sets of five, with four ATB teeth followed by a raker tooth (thus the ATBR designation.) The ATB teeth are designed to crosscut cleanly while the raker teeth aid in ripping. Combination blades are also considered "all-purpose" blades.

The teeth on a TCG blade alternate between a raker tooth and a chamfered tooth. The chamfered tooth roughs out the cut, while the following FTG tooth cleans it up. This tooth configuration is

meant for sawing dense materials: plastic laminate, solid surface materials like Corian, and non-ferrous metals like brass and aluminum. Pointy ATB teeth would blunt quickly from this stuff.

## THE BEST BLADE FOR THE JOB

TIP ALERT

In general, blades with fewer teeth cut more quickly, but more coarsely. Conversely, the more teeth a blade has, the slower and smoother it cuts.

In addition to lumber, your woodworking projects may also call for plywood, particleboard, MDF, hardboard, plastic laminate and other materials. Let's take a look at your blade choices, based on the type of job you're performing and the material you're cutting.

## BLADES FOR RIPPING

When rough-ripping to break down a board into slightly oversized project parts, a 24 tooth FTG blade is a good bet because it cuts through even thick hardwoods quickly. It doesn't cut very smoothly, but because the pieces will be sawn to final dimensions later, it doesn't matter.



The surface at left, cut with a premium-quality 40-tooth ATB blade, is glue-ready and needs little cleanup to serve as a finished surface. The center piece—sawn with a good quality 24-tooth FTG blade is a bit rough, but good enough to glue up as is. The cut at right, made with a cheaper 24-tooth FTG blade, needs a pass over the jointer first.

Here a 40 or 50 tooth all-purpose or combination blade will also do the trick, yielding a cleaner cut than a 24-tooth blade (**Photo B**). In fact, the cut from a premium quality blade will be clean enough to serve as a finished surface after just a bit of fine sanding. However, it won't rip as quickly as a 24-tooth blade, and you'll have to feed thick hardwoods more slowly. When I'm sawing thick, dense lumber to finished width, I often use a 24-tooth blade, ripping the piece 1/32" oversized then trimming it to finished width by taking a single pass over the jointer.

Some blades incorporate "anti-kickback" shoulders, which help prevent overfeeding that can invite kickback. If you work without a splitter on your saw (which you definitely shouldn't), this kind of blade is a safer choice.

## BLADES FOR CROSSCUTTING



Sawing wood across the grain invites exit tear-out. To minimize this, crosscutting blades employ ATB teeth for their shearing action.

The more teeth that are on the blade the cleaner the cut which is why most crosscutting blades have 60 to 100 ATB teeth. A blade like this excels at getting the cleanest crosscuts and miters.

You can also use a 40 tooth ATB or 50 tooth combination blade for crosscutting. It might not slice quite as cleanly as an 80 or 100 tooth blade, but almost (**Photo D**).

And it saves you the trouble of constantly switching from a rip blade to a crosscut blade. Truth is, I do most of my crosscutting on the table saw with a 40-tooth ATB blade. I use my 80-tooth ATB blade only when I need to do concerted crosscutting, mitering, or sawing of delicate sheet goods.

## BLADES FOR SHEET GOODS

**TIP ALERT**

To best scrutinize cut quality on a workpiece, hold it up to a strong sweeping sidelight in a darkened shop and look for tooth marks and splintering.

Sheet goods include plywood, particleboard, melamine, MDF, hardboard, and plastic laminate. Here, the best blade for the job depends on the material.

Because of its thin veneers, plywood is prone to tear-out, particularly when sawing across face veneer. It is best cut with an ATB blade and the more teeth the better. However, a good quality all-purpose blade will do fine in most cases. I switch over to an 80 tooth blade when cutting particularly delicate face veneers.

Particleboard, melamine, MDF, and hardboard are all fairly dense materials that can be hard on saw teeth. Cutting this stuff with an ATB blade will wear down its pointy tips quicker than most solid wood will. However, the shearing action of ATB teeth provides clean cuts in these chip-prone materials, so it's a fair trade-off.

Plastic laminate is very dense and tough on the tips of ATB teeth. If you work with it a lot, it's worth investing in a TCG blade for the purpose. Otherwise, your ATB blades may take sooner-than-desired trips to the sharpeners.

## THE RIGHT BLADE FOR THE JOB

Job	Blade Choices	Comments
Ripping solid wood	24-tooth FTG	This "rip" blade cuts fast but coarse. It's good for initial rough-sizing of pieces.
	40-tooth ATB or 50-tooth ATBR combination blade	Cuts slower but cleaner. Premium-quality blades require little or no cleanup.
Crosscutting solid wood and general plywood sawing	40-tooth to 80-tooth ATB or 50-tooth ATBR combination blade	Blades with more teeth generally cut cleaner, but a top-quality 40-tooth blade may cut better than a mediocre 80-tooth blade.
Joinery	40-tooth ATB or 50-tooth ATBR combination blade	A premium-quality blade will create glue-ready joints cutting across or with the grain.
Sawing MDF, melamine, and particleboard	40-tooth to 80-tooth ATB or TCG	ATB blades tend to cut cleaner but dull faster than TCG blades.
Sawing plastic laminate, nonferrous metal, and plastics	80-tooth TCG	ATB blades can be used instead but may blunt quickly in these dense materials.

FTG, flat-top grind; ATB, alternate-top bevel; ATBR, alternate-top bevel with raker; TCG, triple-chip grind.

## RECOMMENDATIONS

So what do you really need for general woodworking? Here are four primary blades to consider:

### TIP ALERT

When dull, a blade cuts poorly, requires more feed pressure, and can burn even when clean. The best way to gauge sharpness is to compare a current cut against a sample cut made when the blade was new or freshly sharpened.

### TIP ALERT

If you cut aluminum, brass, and other nonferrous metals for making jigs and such, a TCG blade is the tool for the job. These metals can really beat up ATB teeth.

### TIP ALERT

Even a premium quality blade won't saw as it should if your saw isn't tuned up. For the best cuts, make sure your rip fence and miter gauge slots are aligned perfectly parallel to your blade.

1. For 90% of your table saw chores, pick up a good quality “all purpose” or combination blade. But keep in mind that excellent woodworking requires an excellent blade. This is not the time to succumb to your frugal nature. It's false economy to save a few bucks by buying a mediocre blade that's going to cost you lots of cleanup work over the years. Expect to pay between \$80 and \$110 for a 40 or 50 tooth blade that rips and crosscuts smoothly with very little tear-out.
  2. If you saw a lot of hardwoods, it's worth investing in a 24 tooth rip blade to speed up your work and to save wear on your premium all-purpose blade. I don't pay top dollar because a dedicated rip blade is going to cut somewhat roughly anyway. You can get a good rip blade for about \$50.
  3. As for crosscutting lumber and most plywood, you'll probably be happy with a premium quality 40 tooth all purpose blade. However, if you can afford it, get a quality 80 tooth blade for your chop saw and switch it over to your table saw when you need to make the best crosscuts or panel cuts possible.
4. If you saw a lot of plastic laminate or work with nonferrous metals, bite the bullet and buy a TCG blade. Your ATB blades will thank you for not brutalizing them.