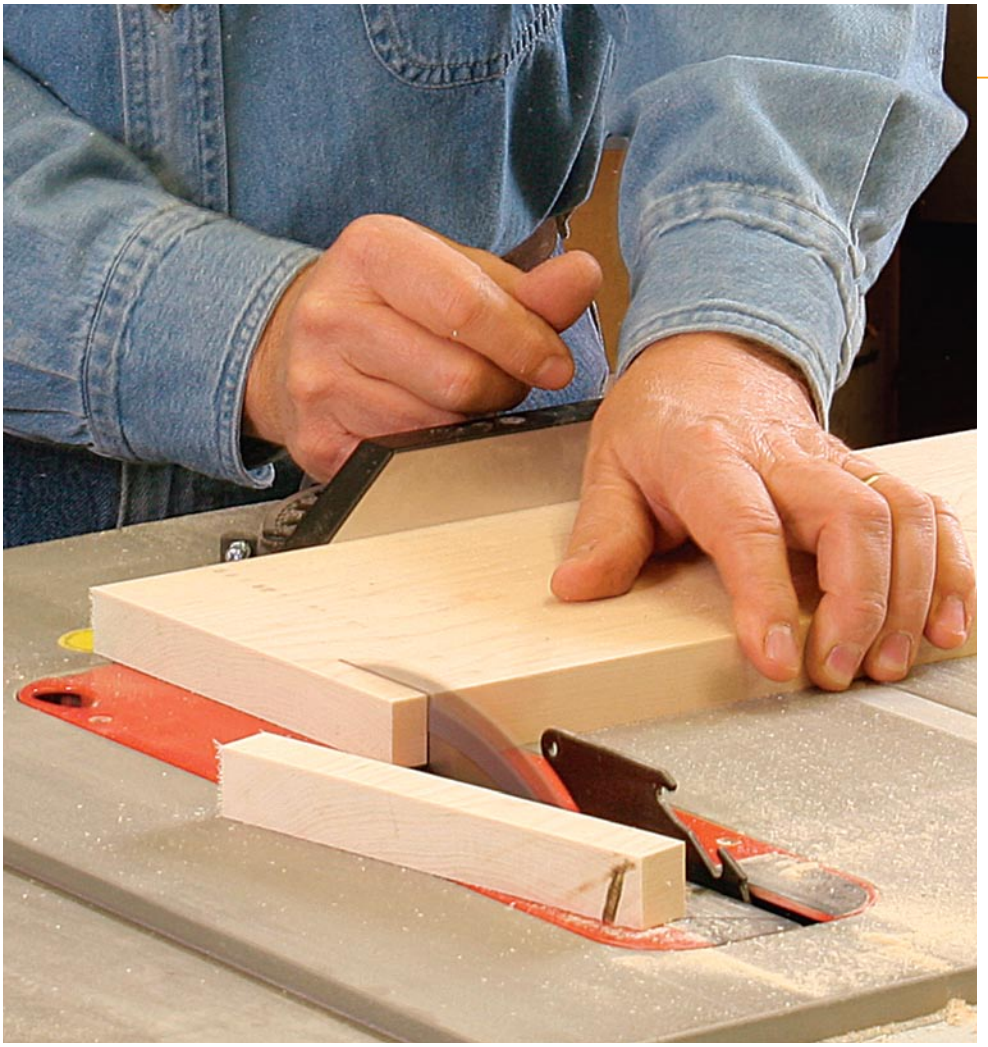
Thin-Kerf Blades Are for Everyone

Today's blades make cleaner cuts while saving motor life

BY ROLAND JOHNSON



Top-notch results. *Thin-kerf blades will make thick ripcuts (facing page) without bogging down your saw, yet they make critical crosscuts (above) just as well as standard blades, with no additional burning or chatter.*

CLEAN CUTS WITH LESS WASTE

In the past, thin-kerf blades didn't make smooth cuts, especially across the grain. But blade technology has come a long way, and all the thin-kerf blades tested cut just as well as their standard-kerf siblings.

No deflection on trim cuts. *Even when the thin-kerf blades weren't buried in the cut, they made smooth and square cuts. That's impressive, because an unsupported blade can deflect away from the board, causing a rough and out-of-square cut.*

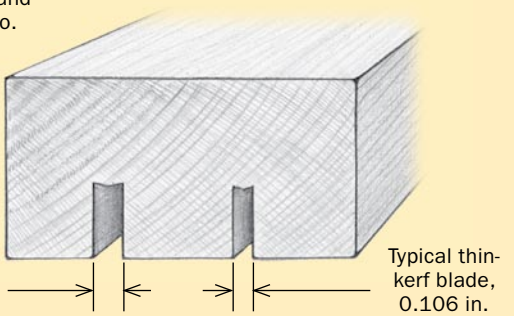
If you have anything short of a full-size cabinet saw, you know your tablesaw can get bogged down, or even stopped cold, when cutting hardwoods much thicker than 1½ in. And I'm sure you've heard that a thin-kerf blade will make it easier to cut thick stock. The thinner blade cuts less wood and so requires less power. At least that's the theory. The trade-off, some say, is that thinner blades are more prone to deflection and vibration, and so make a rougher cut, especially on shave cuts on the end of a board.

We decided to test whether thin-kerf blades can handle the rigors of everyday use. I didn't compare across the brands—this wasn't a head-to-head test—but within brands to see how well a thin-kerf combination blade did in comparison to its standard-kerf sibling, looking at blades from CMT, Freud, Forrest, Irwin, and Oldham. The blades I chose are widely available and run the price gamut from low to high.

I ran thick lumber past the blades and used an amp meter to read the power needed to make the cuts. But I also looked at how well the thin-kerf blades cut in a variety of situations. Sure, you might be able to rip 8/4 stock on a benchtop saw, but how much burning, chatter, and deflection will you have to live with? I discovered that thin-kerf blades do save power, allowing a small

THIN KERF SAVES WOOD

A typical standard-kerf blade is 28% thicker than a thin-kerf one. That adds up when you're cutting a lot of parts from a single board. It could mean the difference between getting them all from one board and having to use two.



WORK YOUR MOTOR LESS

Thin-kerf blades, it turns out, really do use less power than standard-kerf ones. An amp meter showed how hard the saw motors were working when ripping 6/4, 8/4, and 10/4 hard maple with both types of blade. The thin-kerf blades pulled fewer amps, which means they worked the motor less.

***Controlled feed.** To test all the blades under the same conditions, Johnson used a power feeder, set at 10 ft. per minute, to push the stock.*

saw to cut big timbers, and saving motor life on tablesaws large and small. But I also found that thin-kerf blades cut just as good an edge as standard-kerf blades.

Putting a tale to the test

To see if thin-kerf blades really save power, I did two ripping tests, one using a power feeder and the other using human power. I checked the quality of cut after the ripcuts, but to really test the cut quality, I made several kinds of crosscuts.

I used three common saws: a contractor's saw, a high-end portable saw, and a midrange portable saw from a home center. These types of saw are popular because you only need 120 volts to run them and they're less expensive than a cabinet saw. But their motors aren't strong enough to rip and crosscut thick hardwoods without slowing the feed rate considerably.

Ripcuts test versatility—For the first ripping test, I powered 4/4, 6/4, 8/4, and 10/4 hardwood past all of the blades, using a power feeder to standardize the feed rate, and a clamp-on amp meter to read how much power each blade was using. I set the speed to approximate a careful hand-feed rate (10 ft. per minute). That's slow enough to avoid overloading the saw but fast enough to challenge both saw and blade, and to avoid excess heat buildup.

For the second test, I hand-fed 10/4 hard maple past the standard-kerf and thin-kerf blades with the lowest and highest amp draw to see if I could keep a reasonable feed rate and not bog down the motor. I never tripped the circuit breaker. But being a hot-rodder, I tried a couple of fast passes. As you might expect, I was able to trip the breaker when I did that.

***Amp meter tells how hard the motor is working.** Johnson clamped an amp meter between the saw's power cord and an extension cord (above). The meter provided a consistent reading of how much power each blade needed to rip through a given thickness (right).*

THE NUMBERS DON'T LIE

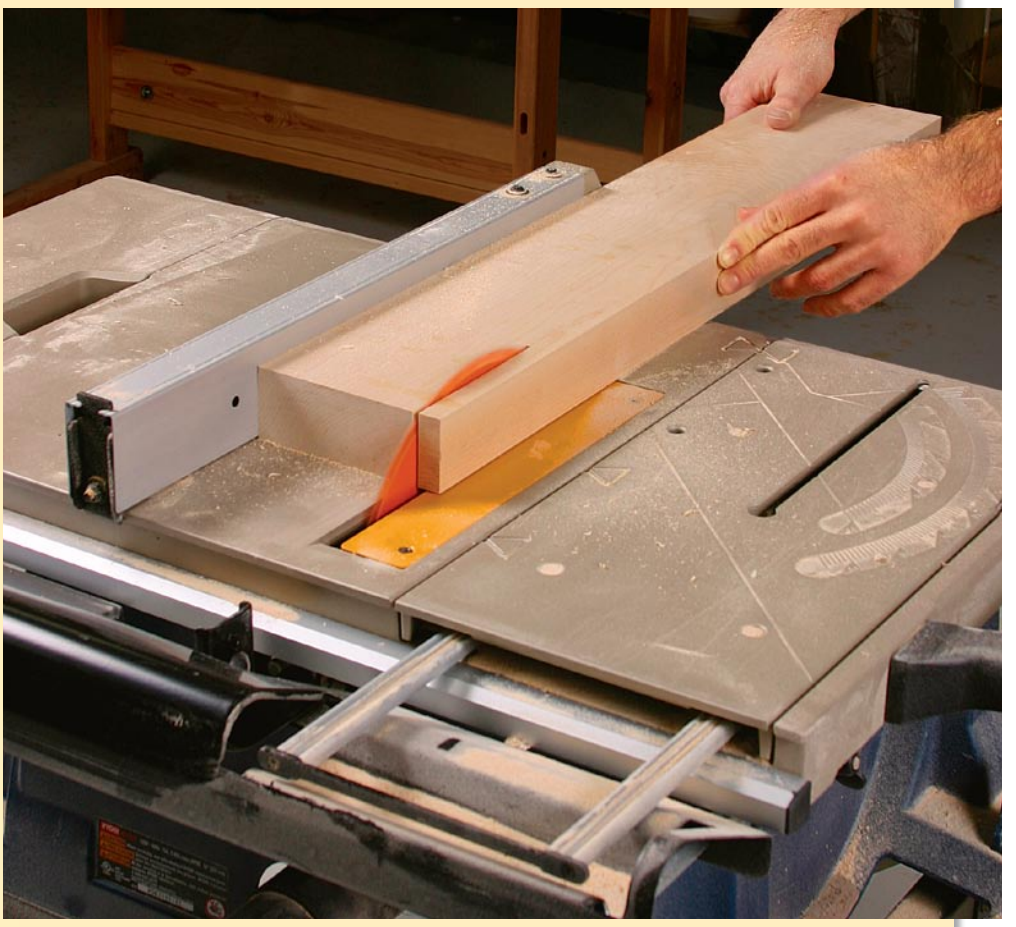
After testing all of the blades, it became clear that thin-kerf blades really do work the motor less. The power savings went up as the wood got thicker.

STOCK THICKNESS	AVG. POWER DRAW (AMPS)	
	THIN	STANDARD
6/4	11.05 amps	12.4 amps
8/4	14.4 amps	15.1 amps
10/4	16.7 amps	18.4 amps

Photos: Matt Kenney; drawings: John Tetreault

GET MORE FROM AN UNDERPOWERED SAW

On any tablesaw, ripping with a thin-kerf blade is quicker than ripping with a standard-kerf one. It's also quieter, because the motor isn't working as hard. But the biggest benefit of thin-kerf blades is that they increase a small or midsize saw's height capacity. Resawing 3-in.-thick stock with a standard-kerf blade will just about kill the motor of many saws, but a thin-kerf blade makes the job manageable.



Improve your small saw. *With a thin-kerf blade, this portable tablesaw, bought at a local home center for $250, was able to cut 2-in.-thick maple at a reasonable feed rate without bogging down or burning, something it couldn't do with a standard blade installed.*

After running more than 1,100 ft. of hardwood past all the blades, I've come to a few conclusions. Thin-kerf blades are capable of optimizing the power of your tablesaw and ripping stock as thick as 2½ in. with little trouble. The quality of the cut was also quite good. The thin-kerf blades left only minor marks that were easily cleaned off with a light pass over the jointer.

Crosscuts test quality of cut—Although I knew the thin-kerf blades made good-quality ripcuts, I wanted to up the ante a bit by crosscutting some boards. With both standard and thin-kerf blades, I cut both white oak and hard maple boards in the middle and took shave cuts (when the blade isn't buried in the wood) off the ends. Although there were differences between brands, there was no real difference between blades of the same brand. All of the thin-kerf blades did a fine job of crosscutting with negligible saw marks and no burning. Surprisingly, I also found that none of the thin-kerf blades deflected on shave cuts.

The power myth is true; the quality myth isn't

On the whole, the thin-kerf blades required less power than standard-kerf blades to make the same cut. All of them ripped through 10/4 hard maple with relative ease. So if you use one, you can expect that thick hardwoods won't slow your motor as much.

But I was surprised to learn that on both ripcuts and crosscuts, these thin-kerf blades cut a very good edge. I chalk that up to improvements in blade technology since carbide became the material of choice for teeth. Today's thin-kerf blades are balanced better, their rake angels and top bevels have been optimized, and laser cuts in the blade body reduce vibration.

Here's something else I learned. The smaller the saw, the more important it is to use a thin-kerf blade. On the smallest tablesaw, it was difficult to cut 8/4 hard maple with a standard-kerf blade. The motor bogged down terribly and screamed loudly, and the saw vibrated wildly. But with a thin-kerf blade, the saw cut the same wood more quickly and with far less protest.

So if you have an underpowered saw, buy thin-kerf blades. But even if you have a big cabinet saw, there's no reason not to use one. You'll get clean cuts, put less stress on your motor, save some lumber, and have an easier time feeding stock. I have a 3-hp cabinet saw that can easily power a standard-kerf blade through any plank, but I'm switching to thin-kerf blades from here on out. □

Roland Johnson is a contributing editor.