TOOL TEST

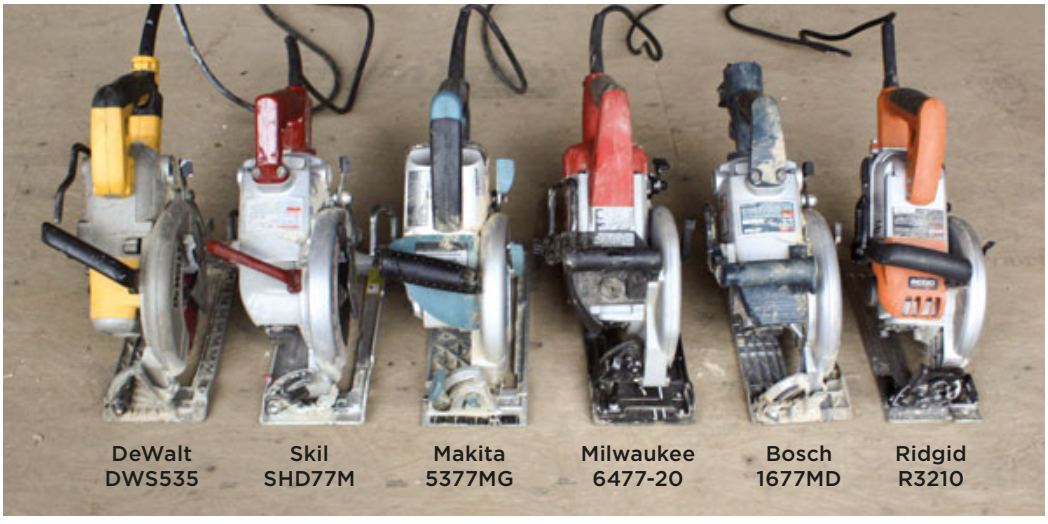
Inline Circular Saws

by Tim Uhler

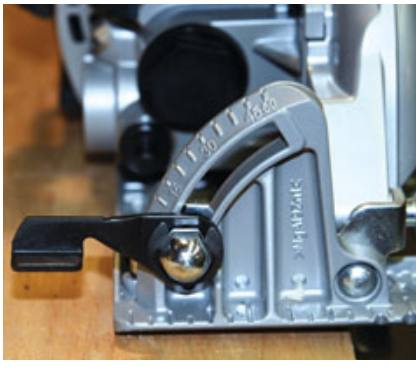
Look for a nonsnagging guard, a smooth-sliding depth mechanism, and a sturdy base plate

As a framer, I prefer inline saws to sidewinders because they're more durable and less likely to bog down in heavy cutting. What distinguishes an inline saw from a conventional model is the orientation of the motor — it's parallel to the base, so special gears must be used to transfer power to the blade. This gearing is responsible for the high amount of torque that inline saws can generate. It's also responsible for the name "worm-drive," the term most carpenters use for this saw; traditionally, inline saws have been driven by worm gears, though some now contain hypoid gears.

Fifteen years ago, when I started out as a framer, Skil was the only real choice for carpenters looking for an inline saw. Since then, a lot more companies have started making these tools, and now there are quite a few to choose from. For this article my crew and I tested six 7 1/4-inch inline models by using them on site in the



The author lined the tools up to get a sense of their relative sizes.



The numbers on Makita's bevel gauge (top) are to the right of the marks they correspond to, which makes it easy to set the wrong angle. There is less chance of error when the numbers are directly below the marks, as they are on other saws, including the DeWalt (above).

normal course of our framing work: the Bosch 1677MD, the DeWalt DWS535, the Makita 5377MG, the Milwaukee 6477-20, the Ridgid R3210, and the Skil SHD77M. We evaluated them based on a variety of criteria, including power, features, and ease of use.

Power

It's important that an inline saw be powerful enough to cut dense engineered lumber like PSL and LVL. Fortunately, all the saws we tested were able to cut these materials without straining. I attribute this to their 15-amp motors and the fact that they're geared to run about 1,000 rpm slower than sidewinders. It's like riding a bike up a steep hill — it's easier to do in a lower gear.

Blade Guard and Other Features

Many tradespeople have developed the unsafe habit of pinning back the guards on their saws or completely removing them. They do this because they don't trust them to retract without snagging and stopping the saw. Guards are better than they were when I entered the trade, but some still snag — usually when you're cutting compound angles or trimming a small amount off the end of a piece.

We experienced more snagging with the Makita and Milwaukee than with other saws. It didn't happen often, but when it did, we found it very irritating. The guards on the DeWalt and Ridgid are the best of the bunch. They never hung up in use; we even tried to get them to snag and we couldn't make it happen.

Bevel and depth mechanisms. The bevel mechanism is an important feature for us because we frame a lot of roofs and are always cutting bevels. The gauge should be easy to read, and the base should pivot smoothly when we're adjusting it. It's nice when there are stops at commonly used angles like 22.5 and 45 degrees.

It should be easy to change the depth-of-cut — the base should pivot smoothly when we release the lock lever. It drives me crazy if the depth-setting bracket binds when I slide it up and down, as often happens after a saw has taken a few falls.

Rafter hook. When I put the saw down I want it to be within easy reach for the next time I need it, and the way to do that is by hanging it from a joist, rafter, or sawhorse. All of the saws have metal hooks that will fit over $1\frac{3}{4}$-inch LVL material; except for DeWalt's, these hooks are all very similar. The one on the DeWalt is longer than the others and wide enough at the opening to fit over $2\frac{1}{2}$-inch I-joists. It becomes nar-

If a saw takes a fall, the slide arm may bend and make it hard to change the depth-of-cut. Milwaukee (far left) stiffened the 6477-20's slide arm by rolling its edge; DeWalt (left) made the DWS535's arm stronger by building it from unusually thick metal.

Some blade guards, like the ones on the Milwaukee (above) and Makita, have a tendency to snag on compound angles and narrow trimming cuts. The guards on the Ridgid (above right and right) and DeWalt will retract by themselves no matter what kind of cut you make.

rower farther in so that it will also fit properly on thinner material.

Arbor. The hex head arbor bolts on the Makita, Milwaukee, and Ridgid saws can be tightened with an Allen wrench (which stores on the saw) or a standard hex wrench. The other models use hex wrenches only. It's a minor point, but I like having the Allen wrench there on the saw because it means I don't have to search for a wrench when it's time to change blades. Compared with a hex wrench, an Allen wrench is less likely to slip and cause skinned knuckles.

Durability

There was no way for us to determine the long-term durability of the motors and gears in these saws. In my experience, those parts of an inline saw almost never wear out or break. When I've had to replace inline saws in the past, it was because parts on the outside were damaged beyond repair.

Other than the slide arm on the depth-setting mechanism, the most frequently damaged component of the saw is the

Saw Specs

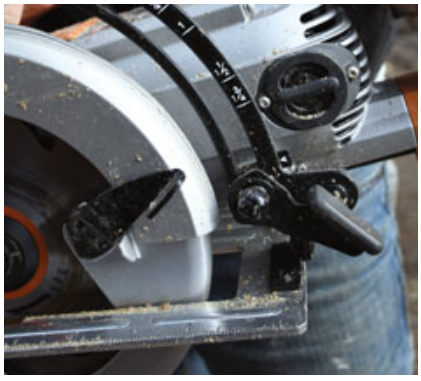
	Bosch 1677MD	DeWalt DWS535	Makita 5377MG
			
Amps	15	15	15
Rpm	4,400	4,800	4,500
Weight* (pounds)	14.2	14.2	13.6
Bevel angles	0–50	0–53	0–51.5
Maximum depth cut at 90° and 45° (inches)	$2\frac{3}{8}, 1\frac{15}{16}$	$2\frac{7}{16}, 1\frac{7}{8}$	$2\frac{3}{8}, 1\frac{3}{4}$
Gear type	worm	worm	hypoid
Cord length (feet)	n/a	9	10
Base-plate material	magnesium	magnesium	magnesium
Base-plate shape	heavily ribbed	heavily ribbed	heavily ribbed
Street price	$199	$199	$159
Country of origin	China	Taiwan	China
Comments	There are two versions of Bosch's saw, the standard model (1677M) and this one, which doesn't have a cord. Instead, you plug an extension cord directly into the base of the handle and loop it through a retainer piece to keep it from coming off. You can use any length cord and replace it at will. I liked this feature because it allowed me to lift by the cord without damaging the tool. You do need to use a very pliable extension cord, though. Some of our 12-gauge cords are rather stiff, so instead of flopping out of the way, they stuck straight out and rested uncomfortably against my forearm. The saw has a powerful motor that won't bog down — even when cutting LVL material. The base is stiff and heavily ribbed, though we did notice a tendency for the depth-of-cut mechanism to bind after the tool took a fall.	The DWS535 was the newest model we tested and my personal favorite. The blade guard is exceptional; we couldn't get it to snag even when cutting 45-degree miters at a 53-degree bevel. I liked the design of the rafter hook: It's wide enough at the opening for 3-by material and then steps down to fit 2-by stock. The bevel gauge can be read from either side, in 5-degree increments from the front or 1-degree increments from behind. I don't normally use depth scales, but the one on this saw is so clearly marked (it's etched into the upper blade housing) that I found myself referring to it. The cord is heavily reinforced, and attached in such a way that you can hang the tool from it without causing damage. Part of the reason I liked this saw so much was the rip guide (DWS5100), an excellent accessory that is well worth its $39 price. This guide is nothing like the cheap little versions that come with some other saws: It has a 14½-inch rip capacity, two connection arms, and a 19-inch fence. It's the kind of accessory a pro carpenter would want to use — we used ours all the time.	The 5377MG is lighter and more compact than other models, and the hypoid gears run exceptionally smoothly. For me, this was a very comfortable saw to use; I really liked the way the grip fit my hand. It has some shortcomings, however. First, the arbor is round instead of diamond-shaped, so the blade sometimes slips during very heavy cutting. Also, the marks on the bevel gauge can be confusing. On most gauges, the numbers are below the indicator marks; on this one, they are to the right of the marks so we occasionally set the saw to the wrong bevel. The most serious problem involved the guard: Although it worked fine for the majority of cuts, it tended to snag on compound miters. This may not be an issue for the average carpenter, but it was a problem for us because we stick-frame roofs and need to cut jack rafters. It's too bad the 5377MG has this glitch, because with a better guard, it would have been one of my favorite saws. Makita also makes another inline model, the 5477N, which is about a pound heavier and $30 cheaper than the 5377MG.
	877/267-2499 boschtools.com	**800/433-9258 dewalt.com**	**800/462-5482 makita.com**

*by author; weighed with blade in place but cord removed

Saw Specs (continued)

	Milwaukee 6477-20	Ridgid R3210	Skil SHD77M
			
Amps	15	15	15
Rpm	4,400	4,400	4,600
Weight* (pounds)	14.8	14.9	14.3
Bevel angles	0–51.5	0–51.5	0–51
Maximum depth cut at 90° and 45° (inches)	$2\frac{3}{8}, 1\frac{3}{4}$	$2\frac{3}{8}, 1\frac{3}{4}$	$2\frac{3}{8}, 1\frac{15}{16}$
Gear type	worm	worm	worm
Cord length (feet)	12	12	8
Base-plate material	plastic composite	aluminum	aluminum
Base-plate shape	heavily ribbed	lightly contoured	rolled edges
Street price	$179	$159	$189
Country of origin	China	China	China
Comments	There's a lot to like about this saw. It's powerful, the bevel settings are easy to read and adjust, and it feels well-made. The shoe is made from a composite material that seems tougher than the aluminum or magnesium typically used for that part. The saw we tested took several falls without any damage to the shoe or the depth-setting mechanism. Unfortunately, I did have some problems with it. I'm right-handed, and the guard tended to snag when I made short trimming cuts — that is, when the stock was to the left and the waste piece fell to the right. Also, the saw is bigger and heavier than most models and was awkward to handle. I attribute this to the base plate, which sticks out further than is typical in front. I used this saw for a while and was never able to get used to it.	The R3210 handles and operates exactly the way an inline saw is supposed to. The motor is smooth and powerful, the bevel gauge is easy to read and adjust, and the depth mechanism operates smoothly. I particularly liked that the guard never snagged — not even when I was shaving a sliver-sized piece off the end of a jack rafter. I also appreciated the lit plug, which glows when there is power to the saw. It's a small detail — but we get a lot of rain in winter, so the power trips a lot on our job sites and the plug always let us know instantly if the power was still on. All in all, I liked everything about this tool except the base plate. The plates on most other saws are thick and heavily ribbed; this one is thin and only lightly contoured, making it more likely to bend in a fall. In fact, we've used this model before and the plate did indeed bend. And it wasn't a fluke: For this review we dropped all of the saws several times from a 4-foot height and the Ridgid's base plate is the only one that bent.	Like most West Coast carpenters my age or older, I learned on a Skil inline saw. Those old saws were real workhorses, but about a decade ago they began to be outclassed by the new models entering the market, which had a lot more features. In recent years, Skil has updated its saws — and it shows. The SHD77M is as smooth and powerful as its competitors and has better features than its predecessors. It will bevel to 51 degrees and has an upgraded guard that retracts without snagging. Also, the base plate has been stiffened by the addition of a rolled edge. There are a couple of things I wish the company had changed, though: The grip is still made from hard plastic (it's not rubberized), and the forward handle is skinny and less comfortable to grasp than the more substantial handles on other models. The SHD77M is one of several inline saws from Skil. When Bosch bought Skil, most of the product line was reoriented toward DIYers, but the wormdrives were so popular Skil continued to make them for the pro market. The company still produces some older designs, too, including a 13-amp model (HD5860) with an $8\frac{1}{4}$-inch blade.
	800/729-3878 milwaukeetool.com	**800/474-3443 ridgid.com**	**877/754-5999 skiltools.com**

*by author; weighed with blade in place but cord removed



The base plate on the Ridgid (above) is more likely to bend in falls because it is essentially a flat piece of metal. Makita (above right) and other manufacturers stiffen their saw bases with thickening ribs. Skil reinforces its base by rolling its edges (right).

The Bosch is sold in two versions: One has a standard cord, and the other — the Direct Connect model — connects directly to an extension cord (far left). Replacing the cord is easy, and you can use any length you like. The lit plug on the Ridgid cord (left) lets you see at a glance if there is power to the saw.

DeWalt's DWS5100 is the best and most accurate rip guide around. With two arms and a 19-inch fence, it can make rips up to 14 1/2 inches wide.

base plate, which may bend if the tool falls. The best base plates are thick and heavily ribbed, like the ones on the Bosch, the DeWalt, the Makita, and the Milwaukee. The worst base plates are flat or nearly flat, like the one on the Ridgid. Skil's plate, with its rolled edges, falls somewhere in between.

Rip Guide

All of the saws can be used with an optional rip guide. In most cases, this is the same scrawny guide carpenters used 20 years back — essentially a bar that connects a 3- to 5-inch fence to the base. It works okay, but I don't know anyone who uses it on a regular basis. The device is really more of a gauge than a guide; if you push too hard on the saw, it will pivot off the fence and the rip won't be straight.

DeWalt developed a rip guide (DWS5100) that I actually like using. The fence, which will make up to a 14½-inch rip, is about 19 inches long and connects to the saw with a pair of arms. It's big enough that you can push the saw hard and cut quickly and still produce a very accurate rip. This is a fantastic accessory.

Favorite Models

Nearly all of these saws are well-made and functional, but as someone who frames for a living I liked the DeWalt best. It's powerful and rugged, and it has well-thought-out features, including an optional rip guide that actually works.

My second choice — despite its somewhat weak base plate — is the Ridgid. This saw is smooth-running, powerful, and equipped with a very nice guard. My third choice is the Skil. Compared with other models, it seems stripped down, but its upgraded guard and venerable reputation make it hard not to like.

Tim Uhler *is a lead framer for Pioneer Builders in Port Orchard, Wash. This article first appeared in* Tools of the Trade *magazine.*