Tool Test: IN-LINE CIRCULAR SAWS

by Don Dunkley

West Coast framers put the latest worm-drives and hypoids through their paces

Production framing is based on the need to turn a huge amount of random length lumber into the semblance of a house in the shortest time possible. I've been framing on the West Coast for 28 years, and around here, production carpenters depend on powerful in-line circular saws like no other tool.

So what makes these saws so indispensable? In the hands of a skilled carpenter, a framing saw acts as an extension of the arm, rapidly chewing up lumber wherever you point your hand. Because of its linear design and clear line of sight to the blade, in-line circular saws (commonly called "worm drives") are ideal for handling every type of cutting task professional carpenters encounter.

On the other hand, saws are probably the most dangerous tool a carpenter will ever use. The danger lies not in the tool itself, but in the fact that it is used all day long, every day. It's used everywhere on the house, from cutting plates on the slab to cutting barge rafters at the top of the ridge. Used daily for years, in the most awkward of places and in the foulest of weather, even the most seasoned carpenter can be victim to a slip-up. This tool demands the utmost in respect.

Saws are also one of the most abused tools on site. They are pushed through miles of lumber; kicked, thrown, and dragged around the job site all day; used in hot, cold, and wet weather; dropped from rooftops; and run without oil. At day's end, they're slung into the back of a pickup to roll around till the next day of punishment.

The Skil77, which dominates job sites in this part of the country, is one tough worm-drive saw. It can easily take 10 years of hard field use — most of mine have lasted 15 to 20 years. I might replace a bent table now and then, go through a few triggers and brushes, and use duct tape to keep the handle together, but the gears and motor rarely give out. Because of its track record and my familiarity with the Skil77, I used it as the benchmark tool for this comparison test.

Figure 1. Because of its popularity with West Coast framers, the Skil77 served as the author's benchmark testing tool. Today's Skil77 is still as rugged and dependable as ever, although it's too early to tell whether the handles will crack like they have on the older saw shown here. Also, the guard on the Skil77, although okay, has not been improved over the years.

Figure 2. Skil's use of magnesium in the saw body and table shaved a few pounds off its Mag77 worm-drive saw. Although some of the author's crew thought the edges of the redesigned table were too sharp, overall this new worm-drive gained widespread approval.

Since Skil developed the first worm-drive saw 60 years ago, different companies have come up with in-line circular saws that use other gearing designs but provide the same power and feel — first Makita with its hypoid-gear saws and now DeWalt with its offset gearing. For this test, I gathered six of the professional in-line framing saws you'll see on the market these days and took them to the one place I could find out if they had they right stuff: the job site. After grinding it out on the job for a month, I took them home for a bench examination. All the saws tested were well-made tools — no weekend warrior stuff here.

The saws came with blades ranging from quality carbide tips to cheap stamped steel blades. To make all things equal, they were all tested with Magna Dimple carbide blades that were well up to framing work. Since carpenters use saws all day long, I paid particular attention to weight, balance, and ease of table adjustments. What got my closest attention, though, was the action of the guard. A guard that functions poorly can cause a great deal of frustration, and frustration drives carpenters to wedge the guard up and out of the way, turning the saw into a vicious flesh-eating monster.

All the saws had power to spare and excellent blade visibility (more a function of the in-line design than anything else) with well-machined and stout parts. All were built with quality, so it came down to questions of design and performance to tell them apart.

Skil HD77

The only difference between today's HD77 (often called the "Skil77") and the first one I got 30 years ago are the plastic handles. OSHA frowned on the earlier all-metal units. I am so used to using this saw that it was hard to judge it except in comparison with how the others measured up. One thing I can't judge about the others is their durability. But I can say that the Skil77 has long been the hardest working and longest-lasting tool a carpenter can buy.

The Skil77's bevel scale adjustment is easy to read and move. The depth adjustment is also smooth to use and comes with readable scales. The saw's weight, though not the lightest by any means, gives a solid steady feel for accurate cutting. The handles are comfortable enough for all-day use. After using the Makita, however, I think a redesign of the handle could improve comfort. Also, the Makita pistol-grip style would help to eliminate the constant cracking (see Figure 1) at the top and sides of the Skil handle on older models (what would we do without duct tape?).

My only major gripe with the Skil77 is its guard. Even though it works well enough, it is not keeping up with the competition. All the models we tested, except Milwaukee, had better-performing guards, especially when making trim cuts at the end of a board, or cutting fairly sharp angles. Because one of the main reasons for saw injuries is the carpenters' habit of wedging the guards up, high-performance guards are important.

Skil HD77M

The "Mag77," as it is called, is a lightweight version of the old standby. By using a magnesium housing and table, Skil shaved off a couple of pounds to make a lean and mean workhorse. Except for the redesigned table, the Mag is identical to the old 77 design. The lighter weight translates to less arm fatigue and greater saw agility. Although less weight is welcome in the tool trade, too little weight in a high-torque tool will make it unstable and hard to control. This certainly isn't the case with the Mag77. A lot of framers used to purchase the 6 1/2-inch Skil to take advantage of its lower weight, but in doing so gave up some power. The Mag gives the lower weight and delivers the power.

The only thing that some on my crew complained about was the sharp edge of the new table (Figure 2). A lot of the crew preferred the older-style table with the turned up edge, which makes it easier to slide along a cutting guide. Other than that little nuisance, though, many

In-Line Saw Profiles

Skil HD77 & HD77M

Comments:
Time-proven durability. So-so guard. The HD77M's magnesium body makes for a lighter saw.

Weight: 16 5/16 lb. (HD77)
14 1/4 lb. (HD77M)
Street Price: $150 (HD77)
$170 (HD77M)

Milwaukee 6377

Comments:
Heaviest saw tested. Problematic guard. Rugged, "plumbers favorite."

Weight: 16 3/4 lb.
Street Price: $210

Makita 5177B & 5277B

Comments:
Sound ergonomics. Good guard. Both models are the same except that the 5177B has an anti-kick soft start. The 5177B was one of the crew's favorite saws.

Weight: 15 lb.
Street Price: $210

DeWalt 378G

Comments:
New design with offset spiral gearing. Best performing guard in testing. Test crew's favorite framing saw.

Weight: 13 lb.
Street Price: $170

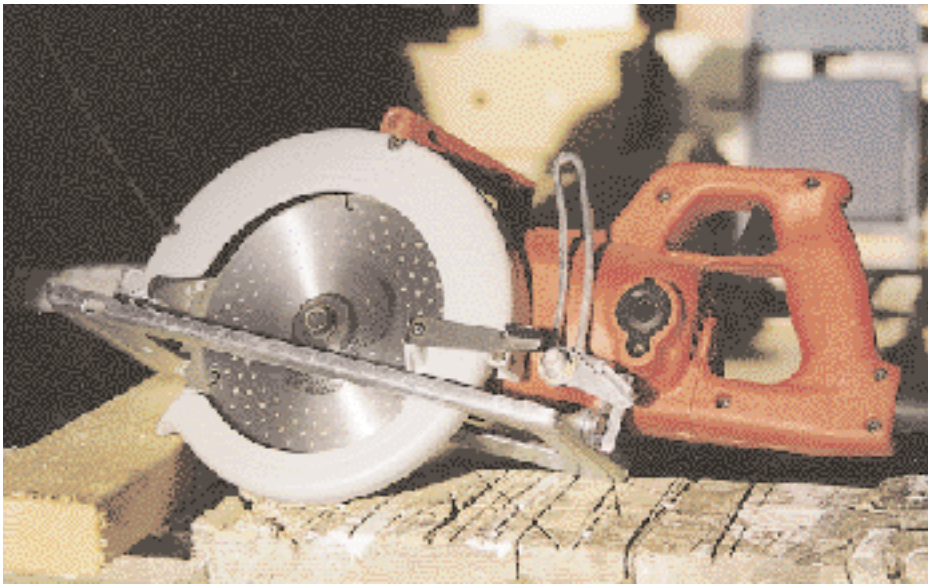

Figure 3. Milwaukee's worm-drive saw was the heaviest saw tested and probably would not be comfortable for all-day use. Undeniably powerful and rugged, the author found a few weaknesses, such as a poorly positioned depth-adjustment arm and a guard that did not retract well on thin end cuts and bevels.

Figure 4. Makita's in-line circular saws feature hypoid gears. The company has eliminated the start-up jump that made the older model so hard to work with. In fact, the author found the 5177B to be the smoothest-starting saw tested.

of the framers I know are turning in their worn-out 77s for new Mag77s.

Milwaukee 6377

The Milwaukee was the heaviest of the saws tested. Although arm tiring, the extra weight adds a great deal of stability, which translates to accurate cutting, especially when ripping plywood. The bevel table adjustment on this saw moves smoothly, and the bevel or miter scale can be read easily. The table depth lever adjusts smoothly, but the sliding depth-adjustment arm sticks out a bit from the body where it could get bent easily (Figure 3). The arms on the other saws curved snug with the blade housing. The arm also lacks a depth scale, although it would rarely be used by framers anyway. The saw's handles are too sharp and severe for all-day use, but are made of the same rugged plastic Milwaukee tools are known for. The guard functioned well on most cuts, but hung up on thin end cuts and bevels. The Milwaukee comes with a very thick electric cord — I almost mistook it for a garden hose. Around my part of California, the Milwaukee is almost never found on a carpenter's job site, but it's a favorite among plumbers.

Makita 5177B and 5277B

Makita makes its saws with hypoid rather than worm gears, but the design still places the motor in line with the saw body. A few years ago, some framers on my crew used the older model 5077, but its sudden jump at startup kept most guys away. The saw also had the reputation of developing some bearing trouble after a year or two.

With the 5277B, I was surprised to find that the trademark start-up jump has been tamed way down. The body style also seemed to be redesigned for a more compact look (Figure 4). The bevel adjustment moved well enough, but I found that it can pinch your hand if you hold it in the wrong place. The table swings to a 50-degree bevel, a mixed blessing for those used to 45-degree swings, myself included. If you

blindly slam the table tight to the end of its movement to get a full 45 degrees, as I did a few times during the field test, you'll get more bevel than you bargained for. The well-fitting handle and light weight make the Makita comfortable to use all day.

The Makita table has a unique cutout alongside the leading edge of the blade for very precise blade alignment, a nice touch. The table-depth adjustment works smoothly and has easy-to-read depth scales. Makita's blade guard is excellent and hangs up only on the smallest of trim cuts (Figure 5).

Overall, the 5177B model is virtually identical to the 5277B, except for an even softer start action; in fact, the 5177B was the smoothest-starting saw of all. This is an amazing change for a brand that for years was known in the field for its wrist-wrenching torque. The Makita 5177B quickly became one of my crew's favorite saws in the test.

Figure 5. The new Makita in-line framing saws feature good blade guards and a special cut in the table that makes for easy blade alignment.

DeWalt DW378G

When I first pulled out this saw on the job site, the guys thought it came from the handyman's bin. Because of its new offset gearing, the DeWalt looks rather unconventional. The motor still runs back from the blade arbor as with other in-line saws, but it's angled slightly upward (Figure 6). This puts the D-shaped handle closer to the blade and balances the saw very well. This improvement in balance actually makes the saw feel much lighter than it really is.

The DeWalt saw has plenty of power, too. It never bogged down during heavy cutting. The bevel adjustment operated smoothly and had a 50-degree range. The depth gauge also moved easily, but the black-colored base made reading the scales on both the depth and bevel arms difficult. The black coloring is a result of a Teflon-type coating on the table that is supposed to make it glide easier. And it sure did — too easy for my taste. Fortunately, after several weeks of use the Teflon stuff wore off enough so

Figure 6. The motor on the new DeWalt 378G angles slightly upward, putting the handle closer to the blade. This unique design makes the saw feel lighter and more balanced than other in-line saws.

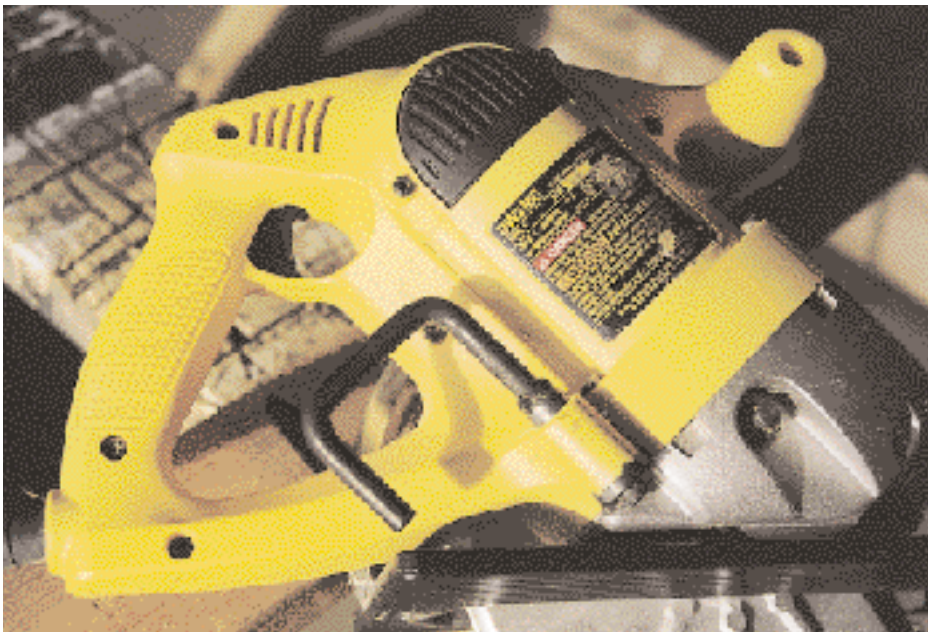

Figure 7. A retractable hanging hook is built into the body of the new DeWalt. Also visible here is the coated table, which the author found to be too slippery until the finish wore down.

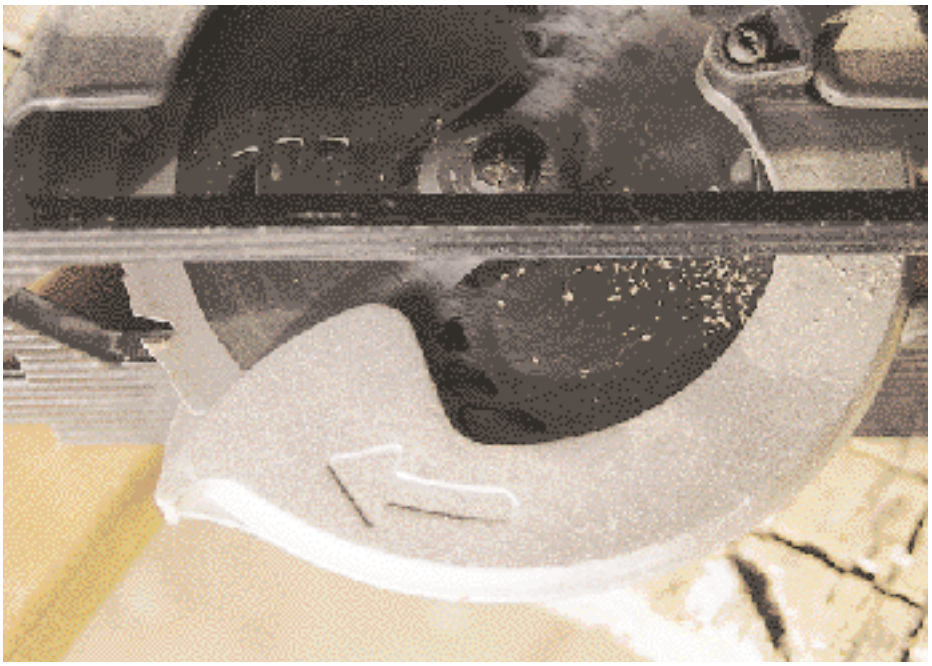

Figure 8. The DeWalt had the best performing blade guard of all the saws tested. This feature will likely improve safety, since carpenters won't be tempted to wedge the guard out of the way.

that the saw took on a much more secure feel.

Another excellent feature of the DeWalt DW378G saw is a built-in hanging hook (Figure 7) that folds out when needed, and easily locks back in and out of the way. When using the DeWalt, we noticed right off that the top handle is different from the others in a way that makes it a little awkward for carrying. But I discovered its merit when ripping plywood — a task where it stood out as a very comfortable guide handle. After getting used to the shape, I ended up simply carrying the saw by its trigger handle.

What makes the DeWalt really stand out, besides its excellent balance, is a guard that functions head and shoulders above the rest (Figure 8). Even though I tried every cut that should hang it up, it kept on surprising me by handling everything but the most radical angle cuts. I could make sliver-thin end cuts that no other guard would come close to. Too bad this saw wasn't around years ago — it probably would have saved a finger or two.

Top Gun

After letting the crew put the saws to work for a month, we came up with our favorites. Just observing over time which saw kept getting used the most on the job site made identifying the top choice easy. Best of the bunch goes to the DeWalt. After everyone got over its unusual shape, it soon became apparent that its superior balance, light weight, and outstanding guard put it at the top. The second favorite was the soft-start Makita. In fact, it's more of a precision cutting instrument than a rough framer's tool: tough enough to take jobsite punishment but refined enough for a cabinet shop. The Mag77 comes in next for its time-tested worthiness. Last but not least, the Milwaukee is built like a tank but is just too heavy and uncomfortable for everyday framing.

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