New Portable Table Saws

Second-generation portables deliver wider rips and deeper cuts

Once the on-site standard for portable table saws, the original Makita 2708 has been upstaged by DeWalt and Hitachi, as well as by two new models from within its own ranks.

by David Frane

During my early years in the trade, bringing a table saw to work meant dragging around a bulky 225-pound machine with a cast-iron top. And because those big stationary saws were also expensive, there was just one on the site. On big jobs, guys had to haul material across the site and wait in line to use it. On small jobs, we often went without a table saw, especially when we worked alone.

All this began to change in 1984, the year Makita introduced its 8 1/4-inch model 2708 saw. At just 38 pounds, it was the first truly portable table saw, and it sold for about twice the price of a professional-grade circular saw. At that size and price, most carpenters could afford to put one on every site — even small jobs — and on large projects, it became common to see more than one table saw on site.

Since then, there hasn't been much innovation, despite the fact that many companies have been competing to sell portable table saws. For a long time, saw designs have been frozen at 8 1/4-inch blade sizes, 12- or 13-amp motors, and rip capacities of around 12 inches. In the last 18 months, however, DeWalt and Hitachi have shaken things up by introducing portable saws with 10-inch blades and wider-than-normal rip capacities. At the same time, Makita addressed some of the shortcomings of its original saw with two new models, one of which takes a 10-inch blade.

The way I see it, these new machines represent the second generation of portable table saws. The first generation made it possible for tradesmen to take table saws wherever they went. The second generation promises to make using portable saws more like using stationary machines. I tried out saws from all three companies to see if they lived up to this billing. Here's what I found.

DeWalt DW744

DeWalt Industrial Tool Corp.
P.O. Box 158
Hampstead, MD 21074
800/433-9258

Weight: 64 lbs. (without stand)
Table Size: 26x19 in.
Blade size: 10 in.
Maximum Rip Right: 24 1/2 in.
Cutting Depth at 90: 3 1/8 in.
Cutting Depth at 45: 2 1/4 in.
Amps: 13
No-load Speed: 3,650 rpm
Electric Brake: No
Dust Collection Port: Yes
Street Price: $500 (without stand)

Figure 1. The two extendible rails on the DeWalt table saw ride on rack and pinion gears. These gears provide smooth action and ensure parallel positioning when adjusting the width of a rip.

Figure 2. The rack-and-pinion action of the DeWalt fence is precise. The author found it reliable enough that he no longer needed to pull out a tape when repositioning the fence.

DeWalt DW744

Many carpenters use stationary saws because they can make a 24-inch rip, which is what you need to work with full sheets of plywood. To meet this need, DeWalt designed the DW744 with a 24 1/2-inch rip capacity. While it isn't the first portable table saw with this kind of capability, it's certainly the most compact. Makita introduced a portable saw (model 2711) with a similar ripping capacity in the mid-80s, but they did it by extending the fence rails well past the edge of the table. This resulted in a bulky saw that took up nearly as much truck space as a stationary model. DeWalt got around this problem by designing a fence that rides on a pair of telescoping rails. You position the fence outboard of the table for wide rips and right on top of the bed for narrow ones. When it's time to move the saw, you simply pull in the rails.

This design proved extremely easy to use. For example, you never have to worry about setting the fence out of parallel to the blade. That's because the rack-and-pinion gears that control the position of the back rail are connected to an identical set that controls the front (see Figure 1). By turning a knob on the infeed side of the saw, you can rotate the gears to fine-tune rip settings. Locking and unlocking the fence is a simple matter of flipping a lever on the left side of the housing front.

Other portable table saws have rip scales and hairline measuring devices, but the DeWalt is the first equipped with a fence precise enough to use without having to measure from blade to fence (Figure 2). This is the kind of feature I'm willing to pay extra for, because it increases productivity by allowing me to skip a step.

The fence itself is easy to remove. It's held in place by what look like a pair of giant suitcase latches. It's impossible to install the fence in the wrong position because it fits over a pair of index pins. While the rails are designed so you can move the fence to the left of the blade, the blade tilts to the left for bevel cuts, so there's no need to switch sides to avoid capturing an offcut.

Smaller features on the saw also made it clear to me that someone sweated the details when designing this machine. The throat plate is a beefy casting that pops in and out without tools, similar to what you'd see on a stationary saw. A couple of screw heads are visible on the plate, but these are set screws used to bring the plate flush to the table. To lock in bevel settings, you turn a large lever on the front of the saw.

There's nothing unusual about this configuration, except that the lever activates two locking mechanisms — one at the front and one at the back of the bracket the motor is hung from. Most portable saws only lock at the front.

Hitachi C10RA

A number of things stand out about Hitachi's new portable table saw, the C10RA. First of all, it has an unusually large table with a rip capacity of 15 3/4 inches to the right of the blade. It also comes standard with a steel stand which, considering the low price of this machine, is a pretty generous addition. (Stands are optional with all the other saws.)

The C10RA's 15-amp motor had no trouble ripping hemlock 2-bys, so to further test its power, I cranked the blade to full height and resawed some 2x6s. It wasn't a particularly scientific test, but the saw handled it well. I performed similar tests on the other saws and decided that the Hitachi was about as powerful as Makita's new saw, and more powerful than the DeWalt. The Hitachi motor also has an electric brake, which I liked because the sooner the blade stops, the sooner you can set up the next rip. And unlike many saws that stand on legs, the C10RA didn't tip backwards when I pushed framing stock into the blade, probably because it's relatively heavy for a portable saw. The top is mounted to a steel housing, not a plastic one, so by the time you bolt it to the stand, you've got a saw that weighs 70 pounds.

The C10RA has a gear-activated mechanism for fine-tuning bevel settings. To engage the gears, you push the height-adjusting wheel toward the housing, then turn the wheel to change the setting (Figure 3). Though well-designed, this is not a feature I typically need. Almost all of the rips I make are either square or at 45 degrees, and for those settings all you need are properly set bevel stops. The Hitachi's 45-degree bevel stop worked okay, but the 90-degree stop was off by about a degree. To fix it, I followed the instructions in the manual and turned the set screw on the top of the saw, but the screw didn't have quite enough throw to bring the blade to a perfect 90.

Compared to the bevel locks on the other saws, the lever on the C10RA was small and uncomfortable to grip. Plus, I couldn't spin it all the way around without hitting the height adjuster wheel or running into the bottom of the table on 45-degree bevels. The lever is designed so you can change its purchase, but I never found a position where it didn't sometimes get in the way.

Makita 2702/2703

In the summer of 1997, Makita announced the introduction of two new table saws. Due to a delay in their release, however, they're just now hitting the market. The two saws — models 2702 and 2703 — are practically identical. The 2702 takes a 8 1/4-inch blade and the 2703 accepts a 10-inch blade, so the only real difference is in the throat plate and blade guard.

At first glance, the 2702 appears to be an updated version of the original 2708, but a closer look shows

Hitachi C10RA

Hitachi Koki USA
3950 Steve Reynolds Blvd.
Norcross, GA 30093
770/925-1774

Weight: 56 lbs. (without stand)
Table Size: 34x22 in.
Blade size: 10 in.
Maximum Rip Right: 15 3/4 in.
Cutting Depth at 90: 3 in.
Cutting Depth at 45: 2 1/2 in.
Amps: 15
No-load Speed: 5,000 rpm
Electric Brake: Yes
Dust Collection Port: Yes
Street Price: $320 (with stand)

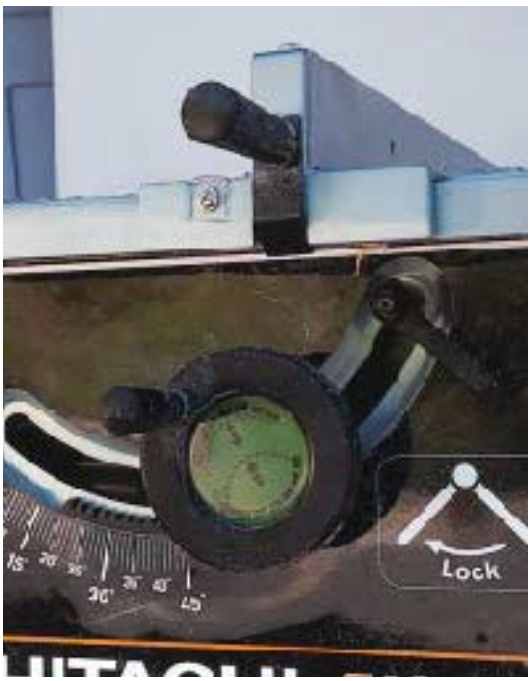

Figure 3. By pushing the height-adjustment wheel toward the housing, the Hitachi saw allows you to micro-tune the bevel setting.

Makita 2702/2703

Makita USA
14930 Northam Street
La Mirada, CA 90638
714/522-8088

Weight: 40 lbs. (without stand)
Table Size: 27x22 in.
Blade size: 8 1/4 in. / 10 in.
Maximum Rip Right: 12 1/2 in.
Cutting Depth at 90: 2 11/16 in. / 3 9/16 in.
Cutting Depth at 45: 1 3/4 in. / 2 1/2 in.
Amps: 15
No-load Speed: 4,600 rpm
Electric Brake: Yes
Dust Collection Port: Yes
Street Price: Expected to sell for between $325 and $350 (without stand)

that it's a completely new machine. For example, the new saw has a solid top and a lever-activated fence. Now, you set blade height by turning a crank instead of the infuriatingly small, hard-to-turn knob on the earlier model. The motor is bigger, too — 15 amps instead of 12 — and it now has an electronic brake.

If you flip the saw upside down, you can see that it's also completely different inside. The blade is now enclosed in a die-cast housing, so you can hook the saw up to a shop vac or dust collection system (Figure 4). The DeWalt and Hitachi saws have similar dust housings. All of these work about the same, picking up about 80% of the dust.

Both saws have a new safety switch that's easier to turn on and off than the old one (Figure 5). It's an improvement because you don't have to put your thumb on one side and your index finger on the other. There's only one cutout left in the table, and it's there so you can see the switch. The throat plate is still held on with screws, but instead of being a thin sheet of aluminum, it's now a more substantial piece of die-cast zinc.

The fence on these new saws has a lever-style locking mechanism to hold rip settings. It's faster and easier to use than the twist-lock knobs on the old 2708 and the Hitachi, but it's not even in the same league as the fence mechanism on the DeWalt.

One of the main reasons Makita designed the 2702/2703 was to increase rip capacity, although it's not immediately evident when you first look at the saws. The 2708 had a listed capacity of 10 1/2 inches, but you could get it up to 11 3/4 inches if you set the fence flush to the edge of the table. The new saws have a listed rip capacity of 12 1/2 inches. Makita gained the extra capacity by shifting the blade 1/2 inch to the left, then telling carpenters to (you guessed it) set the fence flush to the edge of the table — which is what most of us had been doing all along.

This change doesn't provide much extra rip capacity, but I'm not complaining. I once finished a set of stairs with an 11-inch run and 1 1/4-inch nosings. Because the portable saw I was using wouldn't rip treads 12 1/4 inches wide, I had to endure the nerve-wracking procedure of ripping 1/8 inch off the back of each tread. Just a little extra rip capacity would have made a big difference. Besides, 12 1/2 inches of rip capacity is perfectly adequate for most of the cuts carpenters make. After all, a 1x12 is the widest piece of dimensional stock, and it's only 11 1/4 inches wide. Unless you plan to do a lot of on-site ripping of plywood, MDF, or melamine, you're unlikely to need a bigger saw.

The advantage of using 10-inch blades is they cut thicker stock. On the job site, you're unlikely to rip anything thicker than 2-by material, which both versions of the new Makita saw can rip square and at a 45-degree bevel. The only time you're likely to need more blade height is if you're ripping 4-bys for decks and porches, which the 10-inch 2703 can do in a single pass, unlike the other saws in this test. I wouldn't recommend it, however, because it would strain the motor. The 8 1/4-inch 2702 also has exceptional thickness cutting capacity. It can rip 2 11/16-inch stock, which is only 5/16 inch less than the Hitachi with a 10-inch blade.

According to the manufacturer, the 2702 and 2703 have exactly the same amount of power, but I noticed that an 8 1/4-inch blade ripped faster than a 10-inch blade. In theory, there's probably some difference in torque, but I think the real reason had to do with blade thickness. All the saws in this test come with thin-kerf blades, but the 8 1/4-inch blade that came with the Makita saw was thinner than the 10-inch blades that came with the DeWalt and Hitachi.

One thing Makita seems to have done to these saws while they held them off the market was add fine adjustment gears to the bevel-setting mechanism, similar to Hitachi's. I happen to like Makita's version of the rack-and-pinion mechanism better, but that's neither here nor there because I think either saw

would work fine without one. There's no fine adjustment mechanism on the DeWalt, but I had no trouble setting bevels on it.

Line of Cut

Something that's easy to overlook when you're buying a portable table saw, but hard to ignore when you're using it, is its line of cut. This is one of the finer points of saw design and refers to the distance between the blade and fence at different bevel angles. Ideally, you should be able to make a 3-inch rip at 90 degrees, tilt the blade to 45 degrees, and without moving the fence, rip a beveled piece that is exactly 3 inches wide at the short point. When the line of cut is the same, you can set the width of bevel cuts with the blade square to the table. Since the width won't change when you tilt the blade, you can make the rip without doing test cuts.

Only the Makita saws have a line of cut that's the same for all bevel angles. On the other saws, when I tilted the blade from 90 degrees to 45 degrees, the width changed between 1/16 inch (DeWalt) and 1/8 inch (Hitachi).

Cutting Power

After using all three saws, it seemed the Makita 2702 (with the 8 1/4-inch blade) cut faster than all the 10-inch saws. This needed testing. Using a stopwatch, I timed how long it took to rip twelve 8-foot fir studs with each saw. It took about three minutes to do it with the Makita 2702 (I didn't retest the 2703), and four minutes with the DeWalt. It also took four minutes with the Hitachi, but that doesn't include the time it took to reset the breaker on the saw twice.

The Bottom Line

If I had to buy a portable table saw tomorrow, I'd be tempted to get DeWalt's DW744. It's like a 4-wheel drive pickup truck with fog lights and an extended cab that screams "buy me" every time you pass the dealership. And how can you argue with a portable saw that has greater rip capacity, more features, and is more fun to use than any of its competitors? Depending on your point of view, however, there are two potential problems with this saw. First, it costs $500 — $600 if you get a stand — and that's a lot more than you'll pay for the competing models. Second, at 64 pounds, it's pushing the limit of what many carpenters would consider to be a portable tool. That said, if you want big saw performance in a machine that's small enough to haul around the job site, the DeWalt is the saw for you.

The other saw I'd look at would be Makita's 2702. It's like a 4-cylinder mini-pickup that gets 20 miles to the gallon and never goes to the shop. The Makita saw is not as flashy as DeWalt's rig, but it's the kind of tool you can toss in the back of your truck, throw a ladder on top, and not worry about it if it starts to rain while you're on the way home. The 2702 is affordable (about $325), and at 40 pounds, even an old worn-out carpenter like me doesn't have to think twice about lifting it. If the guy working next to me was using a DeWalt, part of me might be jealous of him, but it wouldn't be my wallet or my lower back.

Figure 4. Like the other new portables, the latest Makita table saws have an enclosed blade housing inside the cabinet for improved dust collection.

Figure 5. Well known for its strong motors, Makita lives up to its reputation with its new table saws. Added improvements include a redesigned safety switch and beefy bevel lock.

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