

Latest Trend in Circular Saws

by Clayton DeKorne



Porter-Cable recently introduced a new circular saw that weighs in at 10¹/₄ pounds — a couple of pounds less than many other circular saws. The new Model 347 (Porter-Cable, P.O. Box 2468, Jackson, TN 38302; 901/668-8600) has been slimmed down by substituting a magnesium-alloy gear case (instead of an aluminum or plastic one) and shoe (instead of the typical stamped steel plate).

A lighter tool means it's easy to maneuver and it wears you out less, right? Or does it mean the tool is flimsier and won't last as long? While most contractors like the idea of lightweight tools, there's always a question of whether a lighter tool will hold up as well. So in addition to testing the performance of Porter-Cable's new circular saw, I sent it down to Island Equipment — a rental yard and service center in the British Virgin Islands, where George Smith and his crew tore the saw down. While their evaluation isn't a substitute for years of hard use on site, I thought it might give us an idea of how well the saw was put together. Here's what we found.

The Guts of the Tool

Overall, Smith was impressed by the construction of the tool. The armature shaft and gears ride on ball and needle bearings — a clear sign of quality. (Cheaper saws use sleeve bearings.) The baffle and fan inside are plastic, which Smith says some folks will think is cheap. But, he contends, there's no way these parts can get worn or broken, and making them plastic helps to reduce the weight.

One innovation Smith noticed was the addition of a small rubber plug and a wave washer inserted between the armature shaft and the housing. These small parts actually do a big job. The plug acts as a shock absorber to reduce vibration and prevents any side-to-side motion of the armature. The wave washer "preloads" the gears.

That is, the play in the saw's helical gears is taken up by the washer, so when the tool starts, there's more metal-to-metal contact and the gears don't jerk before they mesh.

The magnesium gear casing also has an effect on the long-term durability of the saw. Compared with a plastic housing, the cast-metal gear case dissipates heat better if the saw is worked hard ripping plywood or wet lumber.



Porter-Cable recently introduced the Model 347 circular saw, which features a gear housing and shoe made from cast magnesium. This material makes the saw lighter (10¹/₄ pounds) and stronger than other models.

The cast metal is a bit more expensive to produce, because the manufacturer must machine the metal after it comes out of the mold. But this means it can be machined to closer tolerances than a molded plastic housing. If the housing is machined properly, the armature and gearing fit inside tighter, run smoother, and last longer.

From a repairman's perspective, Smith noted that the field is well designed and would be easy to change. On the down side, he said the saw was difficult to take apart, making small repairs difficult. For example, to replace the spring that retracts the blade guard, you have to take off all the snap rings around the blade shaft.

Also, the shoe wasn't perfectly flat, but it's better than most, Smith claims.

Gorilla Testing

At first, I assumed the magnesium-alloy shoe and gear housing would be brittle, like other cast metals. We speculated that the shoe or gear box would crack, rather than bend, if the saw took a tumble off a joist.

But according to Leslie Banduch, product manager at Porter-Cable, the magnesium alloy is more resilient and durable than typical stamped-steel or extruded-aluminum plates. In fact, Banduch claimed the saw can withstand a fall from 6 feet onto concrete. So of course, we had to hold him to his word.

Chris Russell Smith of Island Equipment not only dropped the saw repeatedly from 6 feet onto slab, but he also dropped it from 10 feet on the concrete — simulating a likely fall from the second-floor framing deck. The saw survived the 6-foot falls without incident. From 10 feet, the lever on the blade guard broke and the paint chipped, but otherwise the saw was unharmed. The plate stayed intact and square to the blade, and the saw performed perfectly afterwards, true to Banduch's word.

Friendly Features

In addition to being able to withstand impact, the shoe is intelligently designed. The magnesium extrusion has a nicely designed thumb-rest on one corner, grooves that slide easily over the work, and is extra wide — measuring 1¹/₂ inches to the right of the blade and even 5 inches to the left. The bevel gauge is also cast-magnesium and slides smoothly. You can backcut a few degrees in both directions (93 degrees and 48 degrees).

I particularly appreciated the saw's retractable blade guard. It actually works. The end that contacts the wood is formed so it's deflected away from the wood. On a 45-degree bevel cut, it doesn't seem to jam between the blade and the shoe.

Other features include a built-in dust nozzle that allows you to attach a vacuum hose. The spindle lock is in easy reach of the handle and the stud wrench stores in the handle. The Model 347 comes with a good carbide

blade, and an optional steel carrying case (sold with the saw as Model 9347). The Model 447 includes an electric brake.

For Framers

The 347 would make an excellent saw for anyone. Because of the dust nozzle, it's especially suited for remodelers. Porter-Cable calls the 347 a "framer's saw," presumably because it has plenty of power with a big 15-amp motor. Unfortunately, because it's a side-winder, many framers wouldn't even consider using it.

For the diehard wormdrive lovers (like myself), however, Skil has revamped the famous Model 77 with a magnesium housing (Skil Corp., 4300 W. Peterson Ave., Chicago, IL 60646; 312/286-7330). This improvement has shaved two pounds off the original 77.



Skil's new Mag 77 wormdrive saw is two pounds lighter than its former incarnation. This reduction in weight is due to a cast magnesium housing and heavy-duty aluminum shoeplate.

The new Mag 77 also has a nice aluminum shoe that glides much better than the old steel version. The new shoe also has numbers marked out along the front edge. One word of warning, however. The edges of the extruded aluminum are sharp and I sliced my finger changing the blade. It's worth filing them down first. The new 77 is still heavy (about 14 pounds), but then, that's what most framers want. ■

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