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TOOLS

OF THE TRADE

Makita XGT 40-Volt Rear-Handle Saw

BY JOSH BLYE AND RYAN O'MALLEY

Our carpentry crew uses a variety of tools in Makita's LXT 18-volt and CXT 12-volt battery platforms. Recently, our company hired a new carpenter, who brought with him—along with a wide range of experience, talent, and knowledge—Makita's new XGT 40-volt 7¼-inch rear-handle circular saw. Since we are big fans of the older, LXT 36-volt (two 18-volt batteries) version of the saw, we were eager to see how new hire Ryan O'Malley's saw compared.

Similar design. The baseplates, bevel adjustments, blade housings, blade guards, and main handles on Makita's 40-volt (model GSR01Z) and 36-volt (model XSR01Z) rear-handle circular saws are nearly identical. With a 7¼-inch blade, the cutting capacity of both saws is 2⅞ inches, deep enough to gang-cut 2x3s on edge.

However, the single battery approach of the XGT 40-volt saw allowed Makita to redesign it, changing the ergonomics and balance enough to make it “feel better” during use—as well as slightly lighter—than the LXT with its two 18-volt batteries. The design of the 40-volt battery makes checking the charge level easy even when it's secured in the tool, and it can be easily swapped out with a single hand. In contrast, the level indicator lights on Makita's 18-volt batteries are difficult to see on many LXT tools, and removing the two batteries from the 36-volt saw is awkward and difficult—even more so with gloves. Also, the XGT saw comes with an on-board wrench for changing the blade; the LXT saw doesn't.

Performance. To compare power, we ran both saws through the same obstacle course of LVLs and ply rips, using fully charged 4-Ah batteries and 24-tooth framing blades. The saws performed similarly when cutting through a 14-inch LVL 10 times in rapid succession, but the 40-volt saw felt more comfortable with better balance.

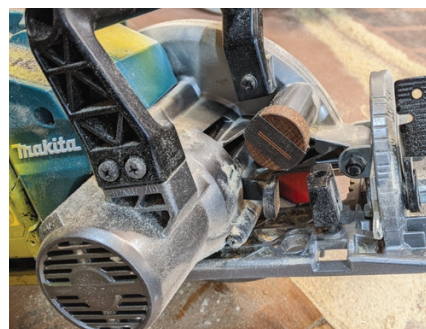
In our second test, we made five full rips through a three-layer stack of ⅝-inch Zip System sheathing, or 40 lineal feet of near-continuous cutting through almost 2 inches of OSB. Presumably because the battery's indicator lights are not visible, the 36-volt saw has a top-mounted LED battery-level indicator, a great feature that also shows when the motor is working too hard or being over-torqued, alerting the user to slow down. Both saws ripped through the sheathing at similar speeds and nearly drained their batteries by the end of the test.

To test the saws' potential under extreme (albeit somewhat unrealistic) conditions, we swapped the framing blades with Avanti 140-tooth plywood blades and attempted to rip the sheathing. Unloaded, the 40-volt saw can reach a blade speed of 6,400 rpm, roughly 25% faster than the 36-volt saw, at nearly the same decibel rating. In this test, the XGT saw outperformed the LXT—the latter bogged down after a foot of cutting, while the XGT cut about 4 to 5 feet before bogging down.

The only downside we could find to the XGT, aside from price (about \$400 vs. \$350 for the LXT), is the dust port. When not connected to a vacuum hose, though, the port is easily corked to prevent it from depositing dust directly onto the workpiece and obscuring any marks or lines or contributing to unsafe walking surfaces.

The 40V XGT saw is an upgrade from the older, two-battery 36V LXT saw, though it would mean investing in a completely new battery platform and set of cordless tools. makitatools.com

Josh Blye and Ryan O'Malley are carpenters with Kolbert Building in Portland, Maine.



To test the new Makita XGT 40-volt rear-handle saw against its 36-volt predecessor, the authors made multiple crosscuts in a 14-inch LVL (1) and rips in a triple layer of ⅝-inch OSB (2) and compared results. Corking the dust port when it's not connected to dust extraction keeps sawdust from being deposited in a pile on the work surface (3).

Photos by Josh Blye

DeWalt DCLE34030G 20V Max 3 x 360 Line Laser

BY JOHN CARROLL

DeWalt's 20-volt 3 x 360-degree line laser emits three laser beams that appear on solid surfaces as lines but are, in effect, laser planes because those lines radiate from the instrument in all directions (360 degrees). It shoots a horizontal level plane, a vertical plane that runs perpendicular to the level plane, and a second vertical plane that runs perpendicular to the first vertical plane and also runs perpendicular to the horizontal plane.

When I tested this instrument for accuracy, I found that it exceeded DeWalt's listed specification of $\frac{1}{8}$ inch over 30 feet for level. One particularly helpful feature is an adjustment knob that fine-tunes the position of the plumb plane, which is visible on the floor, up the wall, and back over the ceiling. It can be used for many tasks, among them setting a door jamb plumb, marking stud and ceiling joist locations for attaching drywall, and laying out tile on floors and walls.

After confirming that the level and plumb planes were dead on, I used a bit of geometry that I learned in the 1970s to confirm that these planes ran at true right angles to one another (see sidebar, right).

Seeing the lines. Lasers don't operate much better than your average vampire when subjected to direct sunlight. Even with the best green lasers, the visibility of the line fades rapidly in sunlight. When I tested the DeWalt 3 x 360 for level inside my house, the green laser line was crisp and bright 50 feet from the instrument. Even when I tested it at 130 feet inside, I could clearly see the line, though admittedly the day was gray and overcast with little sun coming through the

windows, and the interior lighting was fairly low. At that distance, the line measured about $\frac{7}{16}$ inch wide, but it was easy to see.

When I tested the laser outside, though, the beam faded quickly. In direct sunlight, I could barely see the beam 6 feet from the instrument. By shading the area where the laser line struck, I could make out the line 35 feet away, but it was very faint. In a tree-shaded area, with additional shade over the surface where the laser line struck, I could discern an extremely pale line at 85 feet. At that distance, the laser line was not only faint; it was also only about $\frac{5}{16}$ inch thick.

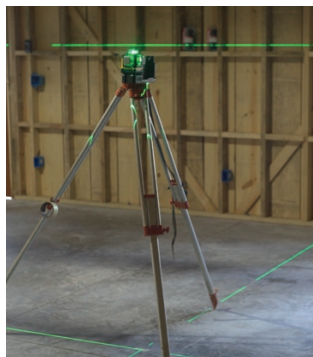
There is a solution if you need to use this instrument outdoors. DeWalt offers a Laser Line Detector (DW0892G) that detects the laser

TESTING A LASER FOR ACCURACY

To test for level, I used a time-tested method of checking the accuracy of any leveling instrument. I began by setting the laser on a side table in my living room. I marked at the laser line a few feet away on the front wall of my house, then I walked down the hall and through the door to my bedroom and marked at the laser line on the back wall of my house, which is 56 feet from the front wall. Then, I switched the location of the laser to the top of a dresser in my bedroom, which is a few feet away from the back wall. When I switched the laser on, the horizontal line was exactly $\frac{7}{8}$ inch above the marks on the walls in both the living room and the bedroom, indicating that the level planes were exactly parallel and right on the money over 50 feet. This test exceeded DeWalt's specification for accuracy, which is $\frac{1}{8}$ inch over 30 feet.

To test for plumb, I set up a 32-ounce brass plumb bob in my basement and waited until it was completely still. In this position, the string holding the plumb bob was, as they say, dead plumb. I set the laser on a short wall about 8 feet away and rotated the instrument until the vertical laser plane hit the string of the plumb bob. The string line lit up like a green neon sign from top to bottom, indicating that the plane projected by the laser was perfectly plumb.

To check for square, remember that the hypotenuse of an isosceles right triangle—a right triangle with two equal sides—is always 1.4142 times the length of the sides. To check the intersecting lines on the floor for true perpendicularity, I simply measured and marked 100 inches out from the point of intersection on each line. Then I multiplied 1.4142 by 100 in my head by moving the decimal point over two places. The result, of course, was 141.42. I converted the .42 decimal to $\frac{7}{16}$ (again, in my head). Then, I measured that amount, 141 $\frac{7}{16}$ inches, diagonally from mark to mark to see if the laser lines were perpendicular to each other. This measurement was, indeed,



Under normal interior lighting conditions, the green horizontal line and two vertical lines of DeWalt's 20V Max 3 x 360 green beam laser are clearly visible for up to 50 feet.

Photos by Matthew Navey

165 feet from the instrument. It's easy to use and very accurate. This detector, which costs \$118, must be purchased separately.

The bottom line. This laser has it all. It's self-leveling. It can be set up on a tripod, but it works fine when set on any flat surface that's roughly level. It's very accurate in level, plumb, and the horizontal and vertical right angles it makes. It has a long run time of up to 10 hours; it's debris and water resistant; and its fine-adjustment knob is handy. The DCLE34030G kit comes with a 20-volt battery, a charger, a bracket for attaching the laser just below ceiling height (for running ceiling grid for commercial work), and a nice hard plastic case with compartments that hold all the components snugly in place. It's well worth the price of \$580. If you do a lot of outdoor work, plan on investing another \$118 for the detector. dewalt.com

John Carroll, author of Working Alone, is a builder who lives and works in Durham, N.C.

141 ⁷/₁₆ inches, proving that the two vertical laser lines were perfectly square to one another.

To check the intersecting lines on the walls, I didn't have the same luxury of space as on the floor. I had to use a smaller triangle to measure for perpendicularity, so I decided on 100 cm sides. After measuring and marking out 100 cm from the point of intersection on both lines, I measured across from point to point. Finding that distance to be 141.4 cm, I knew the laser lines of the DeWalt once again agreed with the geometry of Pythagoras. —J.C.



To test that the laser lines were perpendicular to each other, the author measured the diagonals between two equal sides, both on a floor (above) and on a wall (left).

Power Trac PT425 Articulated Compact Tractor

BY MARK CLEMENT

The first powered machine I ever operated was a skid steer I found on a jobsite with the key left in it. This was 1980-something, and I was 13 years old. Over the years since, I've operated a variety of subcompact loaders, skid steers, and mini-excavators on my jobsites, and while I'm hardly an expert operator, these experiences dosed my plasma with at least a little hydraulic fluid. These days, deck building comprises the majority of my remodeling business' work, and with the demands of moving material, digging holes, and landscaping associated with it, I decided that owning a machine was an investment in my future. In my search for the unit that would serve me best, I discovered the Power Trac PT425. It turns out that a "tool" I bought to dig holes has opened up heretofore closed business doors for me.

I bought my PT425 used and cheap with 1,700 hours on it. My rental company said its units in the same category, mainly Toro Dingo's—in daily use—had in excess of 3,000 hours. For something that I thought I might use a few hours out of a few days each month, the hours were worth the risk, so I bit down hard and forked over a bunch of cash to a guy behind his garage.

With 4-wheel hydrostatic drive and independent wheel-motors, not to mention some seriously fat "turf tires," this 1,327-pound unit with a 25-hp Kohler gasoline engine has zero—zero—impact on my customer's yards. This is not the case with other units in the subcompact loader category. Tracks and zero-turn equipment are murder on a landscape.

All the Power Trac's wheels move to make wide, sweeping turns—which I can take at full speed over and over again—and its articulating center-pivot frame is fantastic to operate. It's also nimble. I can snug that puppy in tight places and move around. It takes practice because when you turn the wheel, the whole machine moves in opposing directions, but getting the hang of it isn't learning how to paint the *Mona Lisa* either.

Output. One of the 40-plus attachments available from Power Trac is an 18-inch auger, which I use to dig my post holes. Where I build, in metro Philadelphia, the clay might as well already be brick (laced with tree roots and schist), so the ability to penetrate that layer is impressive.

Power Trac lists the lift capacity at 800 pounds, which seems a bit high. Nine bags of concrete and a pallet was a no-fly with the forks I purchased for it, but it handles 600 pounds with no problem. I tossed a few bags off the pallet and moved those bad boys from lumber drop to backyard in no time. I also use it to move lumber, paver stones, and small boulders.

Versatility. While my sweet spot is decks, my insurance agent calls me when trees are down after a storm. The last downed tree I cut up and hauled away was larger in diameter at the butt than

Tools of the Trade



The Power Trac PT425 can be equipped with more than 40 different accessories, including a bucket loader (1), various sized augers (2), and forks (3). The author finds that his Power Trac is ideal for snow removal in driveways and parking lots (4).

my chain saw bar is long, but with the Power Trac fitted with a dirt bucket, I was able to easily lift the cut-up logs into my dump trailer. With its 5-foot-high lift (make sure to tip the bucket forward a little as you near the top of the lift arc to keep the opening 100% pointed away from you with an unstable load like logs), the Power Trac can lay its bucket flat on the back of the tailgate. While I'm not dumping the logs out, rolling them out of the bucket and into a trailer is easy.

The bucket is ideal for hauling ¾-inch clean stone from my dump trailer to a backyard, where I put it over landscape fabric under some of my decks to retain or de-mud. It's great for spreading mulch, too.

Snow. Last year was a big snow season in my area, and I discovered that the Power Trac was the perfect companion to the dump truck and 9-foot blade I use to plow commercially. It's hard to overstate the power, capacity, and efficiency of clearing driveways with this thing. First, I work during the storm with the plow, but after it stops snowing, the calls come for driveway work. I leave the heavy iron at home and take the digger and bucket. Scoop-run-dump. Scoop-run-dump. The treadle pedal for forward/reverse is in constant motion for hours and awesome to operate in rapid, repetitive work.

The Power Trac gobbles up town-plow snowbanks and moves them aside, and can clear mailboxes with 4 feet of packed snow in front of them in minutes. The bucket is too wide, at about 48 inches, for some sidewalks and walks, but it is perfectly sized for driveways big and small, which otherwise would require detail work with a

shovel and snow thrower after plowing. With a plow, I have to worry about damaging driveway cobbles or edging, or getting stuck by driving onto the lawn, or damaging the plow itself (I bent two rams in one storm) ... no wonder a large number of my driveway clients told me their plow guy quit.

Downsides? There is a portion of the steel frame between the seat and the controls that seems to be a weak point. I had to have mine plated and welded twice. I caught it in time, and it is a design element that's easy to reinforce before there's a real problem.

The machine doesn't have fancy ergonomics, but it's too good in too many other aspects of the work I do to complain about a lever or switch. Clean it off with a blower or hose after serious work. Grease the Zerk's every 10 hours. Make sure the oil isn't black. Use a fuel treatment. Power Trac doesn't have a nationwide maintenance fleet, so unless you're ASE certified, you need a good mechanic. That said, when you call Power Trac maintenance, you get Power Trac maintenance.

Bottom of the hole. The thing I bought to only dig holes has found itself at the center of my business. List price for a new PT425 is \$15,900 without attachments. power-trac.com

Mark Clement is a member of the JLC Live Demonstration team, author of The Carpenter's Notebook, A Novel, and a deck builder/remodeler in Ambler, Pa.

Photos by Mark Clement