

Reciprocating-Saw

A close-up, high-contrast photograph of a person's hand operating a reciprocating saw. The hand is positioned on the handle of the saw, which is being used to cut through a wooden surface. The saw's blade is visible, extending from the handle. The background is a textured, light-colored surface, possibly a wall or ceiling. The overall tone of the image is professional and technical.

What about cordless models?

We asked folks at Bosch, DeWalt, and Milwaukee which were more popular: corded or cordless reciprocating saws? The unanimous answer was that corded models still are outselling their battery-powered counterparts across the industry. The common explanation was that the high power required by frequent users making cuts in dense material definitely gives corded-saw models the advantage.

But this doesn't diminish the convenience of having a cordless model, which has found a home in many toolboxes and is powerful enough to handle all but the most demanding jobs.

It's no wonder that close to half the folks who participated in an online reciprocating-saw discussion at www.finehomebuilding.com reported owning both cordless and corded models.

The newest corded saws cut more aggressively than their predecessors, and they're easier to adjust and handle

Showdown

BY RICK ARNOLD AND MIKE GUERTIN

Not many tools take as much abuse as a reciprocating saw. Right out of the box, your saw is likely to get dirty and stay that way.

Carpenters, remodelers, plumbers, and electricians all rely on this saw to perform tasks that other tools can't. Whether you have to hog through studs during demolition, perform surgery on a hardwood floor, or do anything in between, you'll be reaching for the tool that Milwaukee named Sawzall over 50 years ago.

Not your old reciprocating saw

For this review, we tested 14 different 9-amp to 13-amp saws priced from \$90 to \$270 on job sites and in the shop. This new group of reciprocating saws offers features you wouldn't have found on premium-priced models 15 years ago: toolless blade change and nosepiece adjustment, improved vibration control, and faster cutting speed, just for starters. Even the lowest-priced saws in this test are a major step up from the best 15-year-old saw in our collection. Because these tools have a broad price range and a wide range of performance priorities, we set out to take a closer look at the best new reciprocating saws.

Orbital action gives a cut above the rest

Cutting with a reciprocating saw is usually about speed, and cut speed is a function of SPM (strokes per minute), stroke length, and stroke geometry. All the tools in our test had a stroke of 1½ in. to 1¾ in., and SPM topped out in the 2800 to 2900 range.

The Milwaukee, Hilti, Makita, Porter-Cable, and Hitachi models feature orbital action (Hitachi calls it "swing action") designed to increase cutting speed. Typically selected with a switch or a rotating dial, this setting makes the cutting action more aggressive by adding an up-and-down motion to the blade's standard reciprocating motion (photos right). Orbital action isn't recommended when cutting steel or when precise cuts are desired.

We cut a variety of different materials to evaluate each saw's overall cutting performance. To test cutting speed, we made timed cuts through a 6-in. by 6-in. piece of lami-

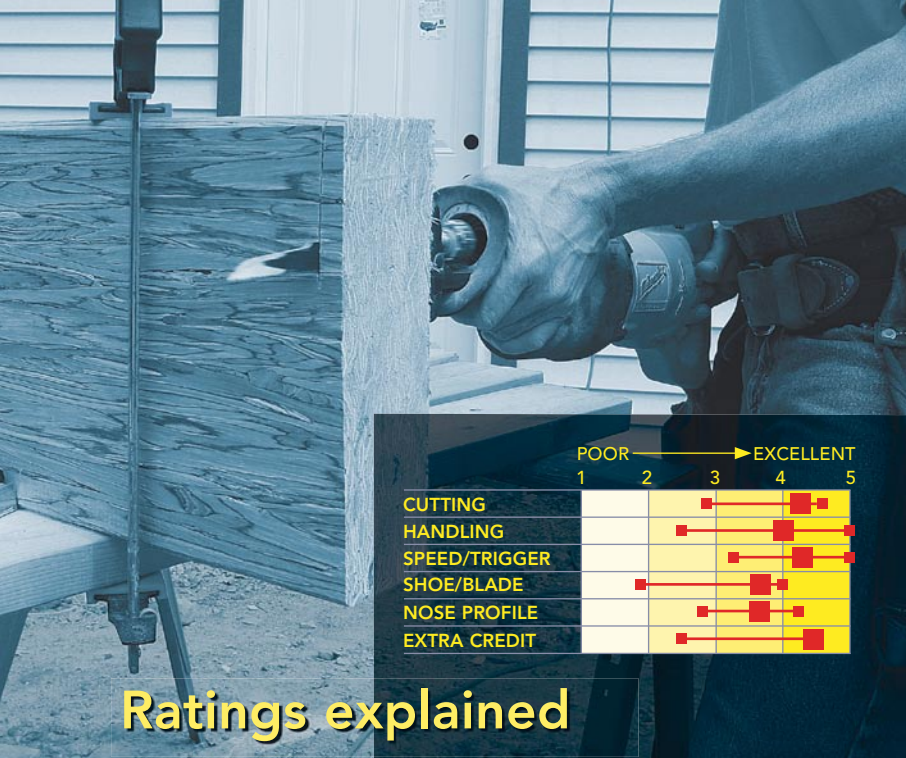


Normal stroke



Orbital stroke

Orbital action: A little light tells the story. To prove to ourselves that there's a difference between straight and orbital action, we bored a hole through a standard blade and threaded it with a fiber-optic light. The resulting blurred path in each photo demonstrates the difference between the two settings. The top photo illustrates a simple back-and-forth motion, but the bottom photo shows orbital action, which helps to pull sawdust out of the blade kerf through a lift-and-cut motion, exposing fresh stock for faster cutting.



Ratings explained

Saws were rated in six categories, described at right. The 1-to-5 ratings (5 being best) for each saw show individual scores (the large red squares) and also the range of scores for all saws (the line between the red squares). Some saws within a brand yielded similar results and thus were grouped together; others within a brand were subdivided to highlight the differences.



• CUTTING SPEED

Timed cuts through a 6-in. by 6-in. piece of laminated-veneer lumber (LVL).

• HANDLING

Overall comfort during a wide range of cutting tasks, factoring in vibration, handles, trigger access, and ease of use.

• SPEED CONTROL AND TRIGGER ACTION

How easy it was to maintain different speeds and change speeds as required when cutting a variety of materials.

• BLADE CHANGE AND SHOE ADJUSTMENT

How well the toolless blade changes and shoe adjustments operated, as well as the rigidity and stability of each. Higher scores were given to saws that allowed one-handed blade change, as well as saws that featured automatic blade ejection.

• SLIM NOSE/SIGHTLINES

How easily the tool fit into close quarters, like a wall or ceiling joint. Quality of the sightlines around the shoe and the nose of the saw is also a consideration.

• EXTRA CREDIT

Other features also can make a difference in overall performance. Examples include rotating rear handles, quiet operation, better or longer power cords, built-in work light, and articulating bodies.

nated-veneer lumber (LVL). To take the saw's weight out of the equation, we cut the LVL from top to bottom, then from bottom to top, recording total time.

Our test yielded some interesting results. Three of the tools with orbital action (Hilti, Milwaukee 6523-21, and Makita JR3070CT) cut twice as fast through the LVL than did tools without orbital action. Hitachi's "swing action" was about 10% slower than the other orbital tools. Porter-Cable's orbital action was largely ineffective, showing no appreciable difference in cutting speed compared to the straight-cut setting.

Most of the other saws, all straight-cut models, scored within a couple of seconds of each other. The Bosch RS20 was the anomaly, doing the job 25% faster than the competition. Cut speed had no apparent correlation to tool amperage, and showed only slight differences in terms of SPM and weight.

Good speed control is essential

Effective speed control gives a reciprocating saw the versatility to cut a variety of materials, and it impacts the overall handling of the tool when making plunge cuts or doing precise work. Wood, plastic, nonferrous metals, and stainless steel all require different cutting speeds to get clean results.

When it comes to varying speed, trigger size and sensitivity will affect the flexibility and performance of some of these tools. Others, such as the Hitachi, the DeWalt 309K, the Milwaukee 6523-21, and the Makita JR3070CT, take it a step farther and include a speed-control dial that adjusts the SPM limit. This feature, combined with a variable-speed trigger, gives the user a great deal of control.

A good-handling saw makes tough jobs a little easier

Tool manufacturers are paying a lot more attention to ergonomics these days, so it wasn't surprising to find contoured and padded handles on all the saws we tested. But you can't really assess handling until a tool is put to work on different cutting assignments, including prolonged cuts, when excessive vibration or an uncomfortable grip can cause hands and arms to become tired and numb. We found the Hilti, the Milwaukee 6523-21, and the Makita JR3070CT to be the best-handling saws, the models we'd reach for if we needed to do some sustained cutting.

Loose-fitting shoes lead to poor cutting control

Toolless shoe adjustment and blade changing have become standard on most reciprocating saws. But each manufacturer takes a different approach, with different degrees of success.

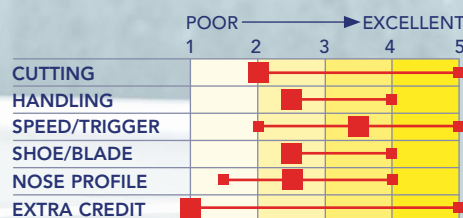
The shoe, an adjustable arm that extends out of the nose of the saw, offers a solid connection between the tool and the workpiece; it steadies the saw and transfers energy into the cutting action. The shoe prevents damage to the workpiece caused by penetrating too deeply and comes in handy when trying to make the most of each blade by varying the wear on the teeth.

Typically mounted on shafts or plates, most shoes can be adjusted and locked into three or four detent positions. Unfortunately, half of the shoes don't lock down tightly enough, in our opinion. This flaw can diminish cutting con-



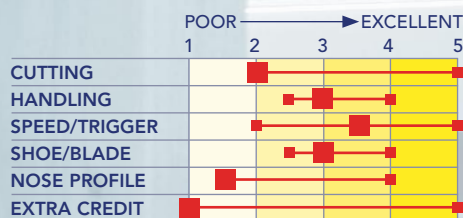
Ridgid R3000
Weight: 8.5 lb.
Cost: \$90

No bells and whistles on this saw, but it's lightweight, with decent speed/trigger control and a comfortable front handgrip. It has an easy-to-use cam lever for blade changes, but if you want to extend or remove the foot, you need the onboard wrench. Its price, its warranty, and its lifetime service agreement all put it in the running for best value. 800-474-3443; www.ridgid.com



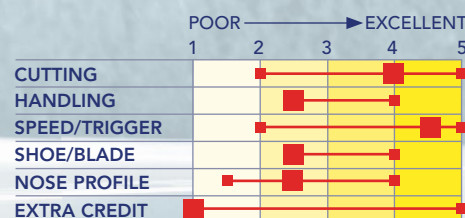
DeWalt 304PK
Weight: 7.5 lb.
Cost: \$100

Although we tested DeWalt's 304PK (shown here), 307MK, and 309K saws, they were separated by only a few differences. The 304PK stands out from its brothers because it gives you the choice of mounting the blade at 90° for flush-cut applications. As a group, they were among the quietest saws tested, they're not too heavy or bulky, and a cam lever makes changing blades a snap. One characteristic they all share: The area where you grip the front nosepiece gets too hot to handle after only a minute's worth of heavy use, so gloves are essential if you're using these saws for extended periods of time. 800-433-9258; www.dewalt.com



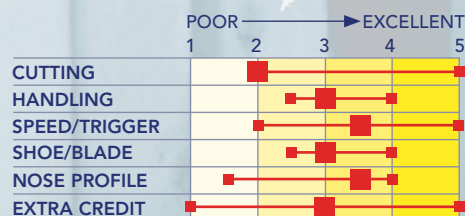
Hitachi CR13VA
Weight: 9.5 lb.
Cost: \$140

The combination of a thumbwheel speed selector and a variable-speed trigger gives the operator excellent blade-speed control. Add to that the "swing" blade action, Hitachi's version of orbital action, and this saw is decent when it comes to fast cutting. Unfortunately, we found the saw bulky and awkward to handle. 800-706-7337; www.hitachipowertools.com



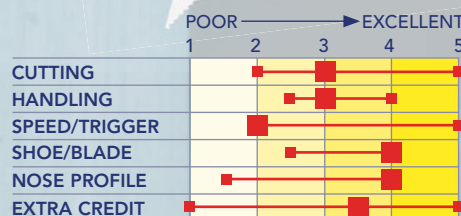
Porter-Cable 9747 TigerSaw
Weight: 9.5 lb.
Cost: \$125

This tool's rotating handle is convenient, especially when cutting upward. The shoe adjustment works well and holds tight at any of the five detent positions. However, the small dial-type lever for straight-to-orbital blade action is difficult to use and didn't cut any faster in orbital mode than it did in straight mode. The rest of the saw's features are pretty basic. 800-321-9443; www.porter-cable.com



Bosch RS20
Weight: 8.5 lb.
Cost: \$150

Cutting is a little easier with this saw because of two standout features: LED lights shining out of the nose help to illuminate cutlines in dark, confined spaces; and a twist collar ejects the blade and remains locked open and ready to accept a new one. The tool also has Bosch's familiar rafter hook and Direct Connect plug (allowing any extension cord to plug directly into the body of the tool). 877-267-2499; www.boschtools.com



Craftsman 28640

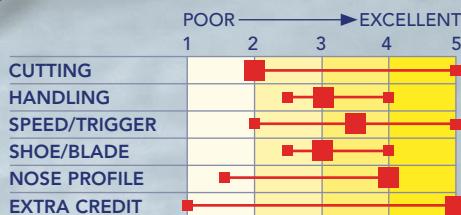
Weight: 9.5 lb.

Cost: \$210

Porter-Cable 9750 TigerClaw

Weight: 9 lb.

Cost: \$200



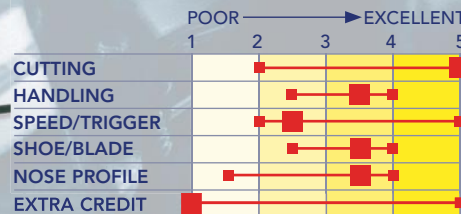
Nearly identical, these two saws stand out from the rest of the pack because they can articulate, helping you to make cuts in confined, hard-to-reach places that are roadblocks for other saws. No high marks for cutting speed or handling, but the barrel-shaped end of each saw can spin 360°—positioning the blade at any angle to the body of the saw—and the elbow in the middle of the body hinges 90° in either direction. The Craftsman (800-377-7414; www.craftsman.com) goes one step farther than the Porter-Cable with the addition of a rear handle that rotates 360°. As a bonus, the small nose on both models makes it easy to get a firm grasp on the business end of the saw.

Hilti WSR 1250-PE

Weight: 11 lb.

Cost: \$270

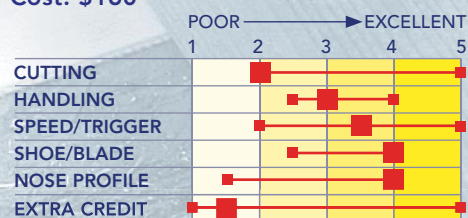
This saw easily won our speed-control and trigger-action test. It has a large dial mounted on top of the saw that quickly changes the cutting action between straight and orbital. The twist collar used to lock the blade takes more effort to turn than others, but the result is a tight fit with no slop. The engineering for the adjustable shoe on this Hilti should be a model for all other saws. This is the only saw tested that has a safety on the trigger, which we found annoying. 800-879-8000; www.us.hilti.com



Milwaukee 6519-22

Weight: 7.5 lb.

Cost: \$160



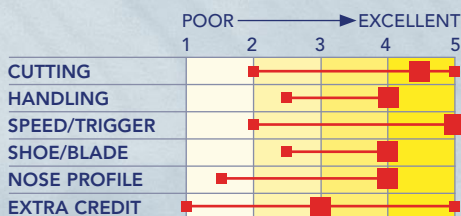
This is a good, basic, no-frills saw. It has a lot more vibration than its bigger brother, but it still performs well. This saw has a few nice features, including twist blade-change collar, good sightlines along the nose, easy-to-operate foot adjustment, and a Quik-Lok replaceable/removable cord. 800-729-3878; www.milwaukeekeetool.com

Milwaukee 6523-21

Weight: 10 lb.

Cost: \$200

If you're going to be cutting through thick material for extended periods of time, this is the saw to choose. With little vibration, this is the smoothest-running saw we tested. It is also one of the most aggressive cutters of the bunch. The combination thumbwheel speed control and variable-speed trigger let us cut at any desired speed, and the shoe adjustment is easy to use and locks in nice and tight. The ability to rotate the handle 360° is also a useful feature for certain applications. 800-729-3878; www.milwaukeekeetool.com



trol when precision is desired. Our tests placed the Hilti 1250 at the top of the pack in the shoe-adjustment category.

Quick, easy blade changes

Luckily, pulling out a wrench to change a reciprocating-saw blade is a thing of the past. Now blades can be changed simply by twisting a collar or lifting a lever.

On the Bosch RS20 and both Makita models, the blade changes can be done with only one hand. Turning the twist collar automatically ejects the worn blade and locks the collar in the open position, ready to accept a fresh blade. The DeWalt and Ridgid saws use an external cam lever to disengage the blade, a nice feature when the shaft becomes hot during extreme-use periods.

Reversible blade insertion wasn't available on tools 20 years ago, but all the tools in our test accepted blades inserted upside down, which helps in some situations.

Shoe slop and blade wiggle room in the shaft clamp affect cutting precision and performance during delicate tasks. But for demolition work and rough-cutting—the bread-and-butter functions of reciprocating saws—neither was an issue.

Slim noses and good sightlines make close-quarter work a breeze

Oversize shoes and broad-ended tools make it hard to follow a line on an inside corner or when reaching between studs or joists at an angle. Even if a tool can fit into a tight spot, poor sightlines reduce cutting accuracy. The Porter-Cable Tiger-Claw, Craftsman, Bosch, Milwaukee's, and Makitas are all good at nosing into tight quarters, even though some of them have large tool bodies.

Extra features earn extra credit

Loads of other features and functions on reciprocating saws are worth considering. These heavy-duty saws last a long time, but the brushes won't, so externally accessible brush caps like those on the Makita saws make replacements easy and let you avoid a trip to the shop. Some power cords are soft and supple in cold temperatures while others harden up. Rotating rear handles are available on a few tools, which makes it easy to change hand position when the operator angle and cutline directions don't match. Plus, there are things you won't see, like the Milwaukee's shock-absorbing system and the Makita's clutch, that reduce the chance for internal damage when the blade locks in a workpiece.

Overall, the Porter-Cable TigerClaw and Craftsman tools stand out in the extra-feature category. These tools are almost identical and are both contortionists. A hinged midsection and a rotating-barrel nose let them reach where other tools can't. And even though they didn't perform at the highest levels in most categories, either of these tools would be a good choice for users who frequently encounter tight spaces. □

Rick Arnold and Mike Guertin are builders, remodelers, and contributing editors to *Fine Homebuilding* from Wickford and East Greenwich, R.I., respectively. Photos by Joseph Kugielsky, except where noted.

Makita JR3050T

Weight: 7.5 lb.

Cost: \$100

A lightweight compact unit with plenty of power, this tool fared as well as any nonorbital saw in the cutting test but couldn't compete with the orbital models. Like its big brother the JR3070CT, this saw has the best blade-changing system, great trigger-speed control to handle a wide range of cutting assignments, and easy access to the brushes via screw plugs.

These features combined with the low price make this saw the best value of the bunch.

800-462-5482; www.makitatools.com



	POOR	1	2	3	4	5	EXCELLENT
CUTTING							
HANDLING							
SPEED/TRIGGER							
SHOE/BLADE							
NOSE PROFILE							
EXTRA CREDIT							

Makita JR3070CT

Weight: 10.5 lb.

Cost: \$175



Second in smoothness only to the Milwaukee 6523-21, this saw has the nice thumbwheel speed selector and variable-speed trigger combination. The four-

position orbital-selector lever lets you choose a range from straight to orbital blade action, and the shoe-adjustment lever is easy to use. With auto-ejecting blade change (like the Bosch) and a user-friendly rubber grip around the blade holder, this saw has the best blade change that you can buy. It earns our choice for best overall. 800-462-5482; www.makitatools.com

	POOR	1	2	3	4	5	EXCELLENT
CUTTING							
HANDLING							
SPEED/TRIGGER							
SHOE/BLADE							
NOSE PROFILE							
EXTRA CREDIT							