

TOOL TEST

Oscillating Multi-Tools

These handy devices fill in where other tools fall short



by Andy Beasley

Although multi-tools have been around for years, one manufacturer — Fein — had the market pretty much to itself until recently. Over time, as builders and remodelers came to appreciate what these diminutive tools and their attachments could accomplish, demand surged — and now there are several companies producing them. For this review I tested four cordless models (powered by 12-volt lithium ion batteries) — the Bosch PS50, Dremel 8300, Milwaukee 2426-20, and Ridgid R82235 — and four corded models: the Bosch MX25E, Dremel 6300, Fein FMM250Q, and Rockwell RK5108K.

Attachments Are the Key

Considering its many capabilities, the multi-tool is a remarkably simple device. Its motor twists a short, perpendicular spindle back and forth through a seemingly insignificant 3-degree arc. But paired with an extensive array of specialized attachments, that tiny oscillation is able to carry out a surprising amount of work. Although some multi-tools are sold by themselves, they're most often packaged in a kit with various attachments. Fein, for example, gives buyers a choice of three different configurations; Rockwell offers kit sizes that range from 39 to 100 pieces.

Oscillating Multi-Tools



With most multi-tools, swapping attachments requires removing a machine screw with an Allen wrench (far left). Dremel's Quick Fit attachments have an open-ended mounting hole that lets you simply loosen the screw, but not remove it altogether (left). Swap-outs are easiest with the Fein: You just flip a lever on the top of the tool head to release the pin securing the attachment (below).

Attachment styles and cost. Besides the basic triangular sanding pad, popular attachments include saw blades for undercutting jambs and sawing through nails, scrapers for caulk and adhesive, carbide grout cutters, rasps for grinding thinset, and miniature coping saw blades. The list of available attachments — and the number of jobs they can tackle — is virtually endless. The same goes for the amount of money you can spend on them. The price of a segment (half-moon) saw blade ranges from \$8 for a light-duty Dremel to around \$27 for Bosch's bi-metal flush-cutting variety. You'll pay \$25 for a triangular carbide rasp from Rockwell, \$35 for one from Fein. Every manufacturer except Milwaukee offers its own line of attachments.

Catch and release. There are three different ways to secure an attachment to a tool's oscillating spindle. Most of the tools rely on a machine screw that's inserted through a hole in the attachment and fastened with an Allen wrench. This method is effective but cumbersome and can lead to dropped pieces, lost wrenches, and enormous frustration if you happen to be wearing gloves.



The Bosch PS50 shows its battery's charge level with the touch of a button.



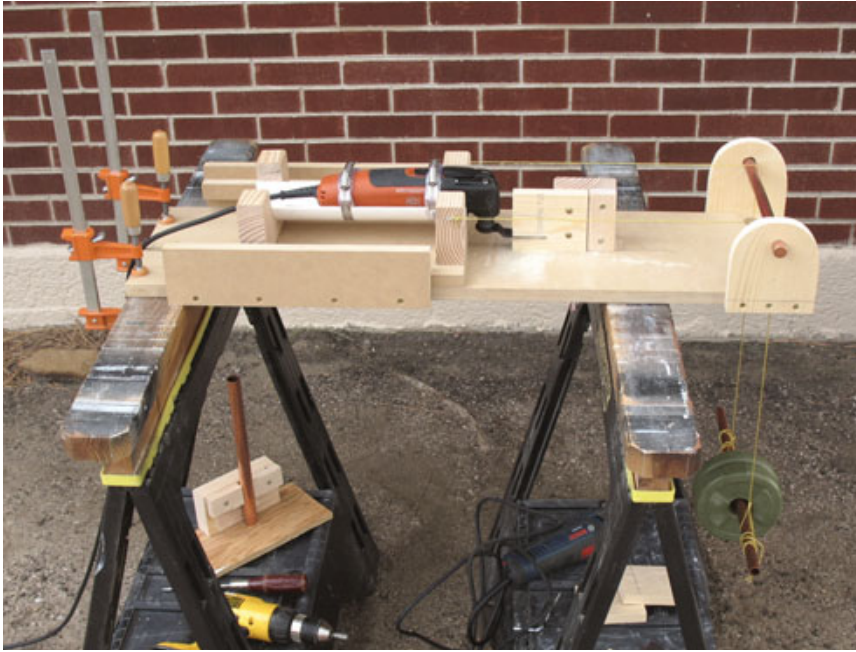
Dremel's "Quick Fit" feature makes changing attachments a little easier: Instead of a hole, its attachments have an open-ended slot that lets you swap them out without removing the screw.

The Fein FMM250Q has the best locking design of all: an easily accessible tool-free flip lever that instantly locks or releases the bolt holding an attachment to the spindle. The entire process takes just seconds and doesn't require a wrench — a real asset if you change attachments often.

These mounting styles match a tool with its in-house brand of attachments, but most manufacturers also offer adapters that allow you to use tools and attachments from different companies (see "Adapters Offer Mix-and-Match Options," page 7).

Cordless Is Legit

On the whole, the cordless models were impressive performers. If you expect to operate a multi-tool for hours at a stretch, you probably need a plug-in model. But if you



The author's cutting jig provided an objective way to compare the power of the eight multi-tools in the test.

mainly use a multi-tool as a problem-solver, the convenience of cordless is hard to beat.

Runtime. Unless you've got a slew of replacement batteries, the amount of work you can accomplish on a single charge is probably the most important criterion for choosing a cordless tool. The second most important is the charger's ability to work quickly. (Three of the four cordless kits I tested included a spare battery, Ridgid being the exception).

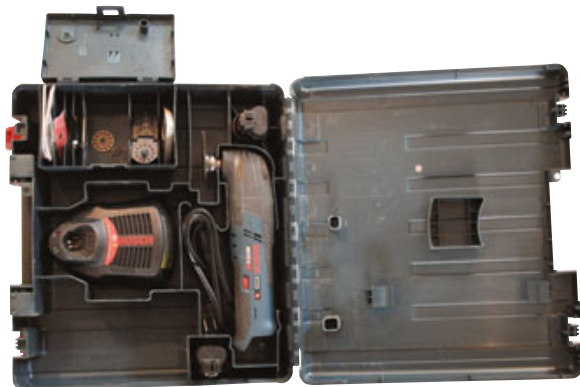
To test battery endurance and recharge time, I gave the four cordless competitors a typical multi-tool assignment: cutting $\frac{3}{4}$ -inch by $4\frac{9}{16}$ -inch pine jamb legs. The Bosch and Dremel made 19 complete cuts before the battery ran down, the Ridgid made 22, and the Milwaukee made 25.

Then I recharged the batteries. Ridgid won this trial: Its charger renewed a fully discharged battery pack in 27 minutes. Bosch and Milwaukee tied for second with about 30 minutes each. The Dremel charger required 51 minutes.

Battery fuel gauges. I've grown so dependent on cordless tools that display a battery's remaining charge that I find myself avoiding models without this convenience. In this test, only the Ridgid lacked a battery indicator light. I liked the Bosch's push-button display best; the Dremel and Milwaukee lights work only when the tools are switched on.

Multi-Tools on the Job

From a reviewer's perspective, the downside to evaluating such versatile tools is that you have to come up with a lot of different ways to test them. I used each model to saw wood,



Bosch's roomy case has storage compartments for various attachments, batteries, and a charger (above). Ridgid's skimpy bag has little room for extras (left).

Oscillating Multi-Tools

plunge-cut through plaster and drywall, slice off nails, sand moldings, scrape caulk, carve away grout, grind thinset — practically everything except polish toenails.

Power. Curious as to how the eight contenders would stack up in a head-to-head muscfeft, I built a cutting sled to secure each tool as it faced two cutting obstacles: a block of pine and a 3/4-inch copper pipe. I used identical Bosch blades on all eight tools and allowed a hanging weight to provide feed pressure. Not surprisingly, the

corded models fared best. The Fein and the Bosch MX25E tied for first place. Among the cordless crowd, the Bosch PS50 narrowly outperformed the Milwaukee. The Dremel 8300 came in last.

Case or bag? As with routers and drills, some sort of carrying package is essential to keep multi-tools and their attachments together. Fortunately, all the tools came with either a soft-sided bag or a hard plastic case. I liked all of the hard cases; they held a respectable number

Multi-Tools at a Glance



Bosch PS50-2B

\$185; boschtools.com

This Bosch finished a mere whisker behind the Milwaukee as the best cordless performer. Although it was the most powerful cordless tool, it had the shortest runtime. It features an outstanding grip with easily accessible controls, and a battery fuel gauge controlled by a push button on the tool body. Attachment changes require a bolt and wrench.



Dremel 8300-01

\$110; dremel.com

Although it ranked as the least powerful tool in the pack and tied for last place in cordless endurance, the Dremel was a pleasure to use. I found its grip exceptionally comfortable, and the control switches were the most convenient. The Quick Fit attachments made swap-outs fairly quick. The charge status lights are constantly illuminated when the tool is running, so it's easy to predict when the battery is about to be exhausted. This tool would not be my choice for demanding labor, but it is more than adequate for light-duty service.



Milwaukee 2426-20

\$150; milwaukeetool.com

The Milwaukee narrowly edged out the Bosch as my favorite cordless multi-tool. It ranked second in power but ran the longest on a single battery charge. This tool accepts Bosch attachments, and its well-designed adapter accommodates almost everyone else's attachments as well. The tool body is a no-frills cylinder that provides a very comfortable grip. The battery fuel gauge consists of a series of lights that briefly illuminate when the tool is first switched on; it's not as handy as the Dremel's but works well enough.



Ridgid JobMax R82235

\$100; ridgid.com

Hands down, the Ridgid was the most unique tool in this review. Its removable multi-tool head is part of a system of interchangeable heads that allow the tool to perform a wide variety of tasks (see "A Multi-Head Tool," page 50). Unfortunately, if you purchase these accessories, you'll have no place to store them in the tiny kit bag. The Ridgid was the only tool with an LED task light and was the sole cordless kit that did not supply two batteries. It was also the only tool with a variable-speed trigger. Overall, when outfitted as a multi-tool, the Ridgid is a light, capable performer that finished second in the battery endurance test.

continued on page 5

Oscillating Multi-Tools

of pieces and most could accommodate the tool with an attachment connected; the Fein fit even with its vacuum accessory still in place. My favorites cases were Bosch's — no frills, just plenty of room.

The soft-sided bags — which is what the Ridgid and Milwaukee arrived in — were a disappointment. Although each had enough room for the parts that were included in the kit, space for additional attachments or for sandpaper was limited.

Ergonomics. Every one of these tools felt comfortable in my hand. All of the on/off switches were easy to operate, though Rockwell's sliding mechanism was a little too easy to engage by mistake, especially when changing attachments. The tools were well-balanced and vibration was minimal.

Noise levels were acceptable, and the only times I felt I absolutely needed hearing protection were when I cut metal or worked in an enclosed space. Well-placed

continued from page 4



Bosch MX25E

**\$195 (MX25EK-33), \$155 (MX25EC-21);
boschtools.com**

I tested an early demonstration model of the MX25E. Bosch now offers this tool in two kit versions. The MX25EC-21 includes a carrying bag and 21 attachments (15 of them sheets of sandpaper); the MX25EK-33 has a hard-shell case and 33 attachments (25 of them sandpaper). Either way, this is an excellent machine. It matched the Fein as the most powerful and heavy-duty of the eight multi-tools I tested. It is comfortable to grip, though less so than its cordless sibling. A convenient rubber holder on the cord helps prevent the Allen wrench from getting lost. My sole complaint is that the variable-speed control wheel is inconveniently placed under the power cord at the rear of the tool body.



Dremel 6300-04

\$100; dremel.com

This model is very similar to its cordless brother. It ranked last in power among the corded tools but is undeniably comfortable and easy to use. Its controls are similar to those of the corded Dremel and it uses the Quick Fit attachment system. The stiff and kinked power cord was a minor annoyance because it never loosened up. Overall, this model is a good tool for less-demanding tasks.



Fein FMM250Q Top Plus

\$400; fein.us.com

The Fein is an excellent heavy-duty tool that tied for the top spot in overall power. The tool body is a bit chubby and could use more rubber on its belly to improve the grip, but these ergonomic shortcomings are more than outweighed by its outstanding tool-free attachment feature. If you change attachments frequently, you'll want this tool. I also really liked its sanding capabilities and extra-long (16-foot) power cord. Its tiny variable-speed control dial, however, was the worst of the bunch.



Rockwell SoniCrafter RK5108K

**\$220 (smaller kit sizes also available);
rockwelltools.com**

Although less well-known than its competitors in this test, the Rockwell is a solid no-nonsense model capable of tackling any multi-tool task. The tool body provides a good grip, and the variable-speed control is easy to adjust while cutting. I liked the reasonably long (10-foot) cord, but the wrench holder is located on the cord's strain-relief area, which means the wrench has to be removed and replaced for every attachment change. The 100-piece kit has many excellent attachments (though several — like the polishing pads — might see little use).

Oscillating Multi-Tools



“Best Accessory” awards go to Fein’s comprehensive assortment of sanding pads (above), Dremel’s flexible scraper blade (above right), and Rockwell’s rasps (right).



cooling vents ensured that none of the machines ever became too hot to handle.

All things considered, the two models from Dremel were the most user-friendly; they were light, maneuverable, and the grips felt “just right.” The Fein, with its chunkier body and hard plastic exterior, was the least maneuverable.

Variable-speed control. Multi-tools operate at varying speeds depending on the task. It’s good practice to begin a delicate cut at slow speed and then accelerate as the cut progresses. All but the Bosch MX25E and the Fein made this process easy. The Bosch concealed its speed controller beneath the power cord, and the Fein’s tiny black knob with black numbers was too small and too stiff for easy adjustment.

The Ridgid was the only model with a variable-speed trigger instead of separate controls for power and speed. I found that this arrangement made it hard to precisely control the speed during some cutting applications, and I grew tired of pressing the trigger during long periods of sanding.

Dust control. Unlike circular saws or belt sanders, a multi-tool does not create much dust. In most cases the debris simply falls straight down.

To make life even easier, three of the tools — the Bosch MX25E, the Fein, and the Rockwell — offer dust-collection shrouds that snap onto the tool body and accept a

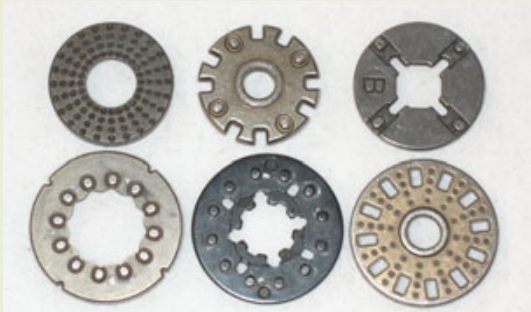
A Multi-Head Tool

A typical multi-tool may be able to swap out a variety of attachments, but the mechanics of the tool itself don’t change. The Ridgid JobMax R82235 is an exception. It has a four-position rotating tool head that can be removed and replaced with three other interchangeable heads to create a whole different tool. Each tool head costs about \$50. Shown below from left to right are the heads for an impact driver, a socket wrench, the multi-tool, and an auto-hammer.



Adapters Offer Mix-and-Match Options

Buying a multi-tool from one manufacturer doesn't mean that your attachment choices are limited to that company's offer-



Shown clockwise from top left are adapters from Rockwell, Milwaukee, Ridgid, Bosch (fits non-Bosch attachments on Bosch tool), Bosch (fits Bosch attachments on non-Bosch tool), and Dremel. Most manufacturers include an adapter in the tool kit. If purchased separately, prices range from \$4 to \$8.

ings. Except for Fein, the makers of all the tools in this review offer some type of adapter that allows competing tools and attachments to be used together.

But keeping track of which adapters work for which company's attachments can be tricky. If you own a Milwaukee multi-tool, for example, you don't need an adapter to use a Bosch attachment, but you do need one for any other brand. And if you have the Dremel multi-tool and want to use a Bosch attachment, you'll need Bosch's OIS adapter, not the one supplied by Dremel. The Dremel adapter is actually designed to mount Dremel's attachments on competing multi-tools.

All you really need to know, though, is that you can purchase any tool you want and still be able to use a wide variety of attachments. You just might have to do a little homework ahead of time.

vacuum hose. Primarily designed for sanding applications, these attachments proved quite effective at capturing dust before it made it to the ground.

Choosing Attachments

Cutting devices make up the lion's share of the attachment market. I found that all the designs performed reasonably well, but I especially liked the sturdy, long-lasting blades from Bosch. I used their bi-metal plunge cutting and segment blades for my standardized testing because of their stiffness and long reach.

My favorite sanding gizmos came from Fein. In addition to the triangular hook-and-loop pad that's a staple of all the brands, the Fein tool comes with a surprisingly effective 4⁷/₁₆-inch round pad and a useful collection of rubber profiles.

Most manufacturers offer both rigid and flexible scraping attachments. The rigid scrapers are best-suited for tasks like peeling up a vinyl floor or removing old adhesives, while flexible ones are ideal for stripping caulk. The Dremel flexible scraper was my weapon of choice for exacting work near sensitive surfaces.

Grinding attachments are popular too. Typically these

are triangular metal rasps with a carbide grit coating. Among the kits I tested, Rockwell's two different profiles offered the most flexibility for accessing tight spots, and Dremel's hook-and-loop diamond paper was a low-cost alternative for light-duty jobs.

How the Tools Stack Up

If I were allowed to keep one of these multi-tools for myself, I'd grab the Fein in a heartbeat. It's a superb performer and its wrench-free feature for swapping attachments makes this task a breeze. But it's expensive. If you're looking for a less-costly plug-in alternative, I'd recommend the Bosch MX25E. It's solidly built, has plenty of power, and is a natural fit for Bosch's extensive line of attachments.

Among the cordless tools, it's a toss-up between the Bosch PS50 and the Milwaukee. In testing, the Bosch demonstrated slightly more power, but the Milwaukee squeezed a bit more runtime out of its battery. If you already own 12-volt li-ion products from either Bosch or Milwaukee, your choice is made.

Andy Beasley is a woodworker in Colorado Springs, Colo.