Tool Test

Rotary Hammers

A seasoned remodeler looks for the perfect concrete drill

BY MARK CLEMENT

As a home-improvement contractor, I use my 1-in. rotary hammer all the time. For starters, it's the perfect tool to drill holes for fastening all kinds of things to concrete and masonry—everything from bottom plates and 2x nailers to storage shelves and hose reels. I also use it for chain-drilling a ring of small holes when I need to make a really big hole, such as one for running a 4-in. duct through a stone or block wall for a dryer or bathroom vent.

Rotary hammers are also great for chipping. In fact, a rotary hammer equipped with a 1-in. chisel is the ideal setup for separating tile from a mud-bed or wood subfloor. It's also great for widening an existing hole in concrete, such as for a basement sump pit. And it is beyond handy for digging holes. I regularly use mine for breaking up and prying out stones for deck footings, and for breaking concrete and digging when I'm working on underslab plumbing.

I recently tested seven rotary hammers head-to-head. I chose the SDS-plus 1-in. size because for a remodeler, it's a perfect fit for most tasks. Although too small for major demolition, these tools will drill small-diameter holes and chip tile all day long. They are also surprisingly affordable. The models I tested range in price from about $170 to about $330.

This class of rotary hammer is sold in two styles: pistol grip and D-handle. I prefer the pistol-grip style because it's more compact and more comfortable to use one-handed. Bosch, DeWalt, Hilti, Makita, and Metabo submitted pistol-grip models for the test. Hitachi and Milwaukee don't offer a 1-in. pistol-grip model, so they sent their D-handle equivalents.

Fast concrete drilling

Once you use a rotary hammer for drilling small holes in concrete and masonry, you'll be hard-pressed to go back to the howling whine of a hammer drill (see "What's the Difference?" *FHB* #254). Although there are notable differences among the models in this test, there really isn't a bad tool in the bunch. All drill holes in concrete like they're supposed to. They are also nicely balanced and feel good when held in both typical and awkward positions. After drilling, my fellow testers and I drove concrete screws into the holes to see if there was any bit of wobble that might enlarge the holes and affect the screws' grip. Every screw held tight.

As a speed test, we weighted each tool with a 10-lb. sandbag, then used it to drill two 5⁄32-in. holes in a factory-made concrete paver. The Milwaukee stood out

Three classes of rotary hammer

By Patrick McCombe

Choosing a rotary hammer can be confusing. In addition to the three basic classes of the tool, there are several models within each class. Class is based on the size of bits and chisels. More specifically, it's the size of the shank that fits into the hammer's quick-release chuck. The smallest and most common size for residential work is SDS-plus. Made for chipping and drilling relatively small holes, SDS-plus tools are inexpensive.

The next class is SDS-max, which includes considerably larger tools that can drill holes more than 2 in. wide with a twist-style bit and up to several inches wide with a core bit (essentially a hole saw for concrete). In addition, SDS-max hammers can run larger chisels and other useful accessories ranging from ground-rod drivers to small tampers.

The largest class of rotary hammer is the spline style. Tools in this class are primarily used in commercial work and offer the largest hole sizes and chisels.

Within the three classes, there is an even greater breakdown in the size of tools and the size of holes they can drill. In the case of a 1-in. rotary hammer, *1-in.* refers to the maximum size hole the hammer can drill with a conventional twist-style bit. (Regularly using a rotary hammer at its maximum hole size will quickly wear it out.) Rotary hammers are also rated by their optimal hole size. In the case of the 1-in. tools tested here, most have an optimal hole size of 3⁄16 in. to 5⁄8 in. The Hilti, which is slightly smaller than the others, has an optimal size of 3⁄16 in. to ½ in. When you're considering a rotary hammer, choose a model that's rated for the holes you regularly drill. For light residential work, an SDS-plus model works fine for most things. If you'll be using a rotary hammer primarily for breaking concrete and drilling holes larger than 1 in., choose an SDS-max or spline model. Keep in mind that all types of rotary hammers can be found at rental yards. SDS-plus models run about $40 per day. SDS-max and spline models run about $65 per day.

Patrick McCombe is an associate editor.

with a nearly 2.5-second lead over the slowest tool, the DeWalt. However, I don't think a speed test is indicative of a rotary hammer's overall performance. The reality of residential work is that you drill a few holes at a time, then put the tool down; you're not building a stadium with a million holes to drill for seating. Our aim with the speed test was to see if there was an underperformer in the lineup. There was not.

It is rare in remodeling jobs for me to drill much larger than a ¾-in. hole through a wall. But a 1-in. hole for a new gas pipe or conduit is necessary on occasion, so we chucked up 1-in. bits and went for broke. The Bosch and the Makita punched hard, delivering smooth operation with little torque transferred back to the user. They also had minimal vibration, which kept our hands from buzzing afterward. The Metabo seemed to labor during this test, and the Hilti, which admittedly is the smallest tool of the bunch, was a middle-of-the-road performer. The Hitachi and Milwaukee vibrated more than the others but also delivered fast, consistent drilling.

Chipping and breaking

Whether it's separating tile from whatever's underneath it or pounding off the edge of a rock that won't clear out of a post hole any other way, chipping is an important task for a rotary hammer. The Bosch and the Makita performed the smoothest, and we were able to take surprisingly large chunks off the edge of a sidewalk slab. The Milwaukee and the Hitachi exhibited the most vibration from the tool body right on through the side handle. The DeWalt seemed to vibrate only through the side handle, which was peculiar, but it otherwise was a good performer. The Hilti has no chipping function, so it sat out this test.

Controls and kit boxes

Except for the Hilti, all the tools have at least three settings: drill only, drill and hammer, hammer only. The Bosch, the Makita, and the Milwaukee also have a fourth setting that enables you to position the chipping iron. Pulling the trigger causes the iron to rotate slowly to whatever position you want. This lets you get the chisel in the right position without resorting to bumping the tool's trigger several times. Some of the hammers have a trigger lock. I prefer not to have one because it can be too easy to engage inadvertently.

I think a functional kit box for carrying all the bits and chisels is a key component

HOW WE TESTED

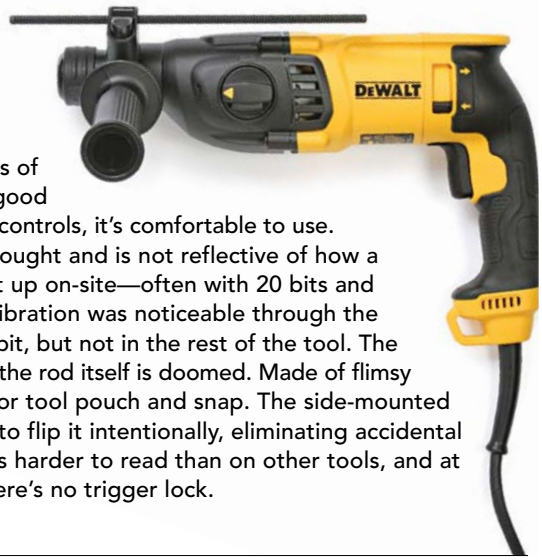
To test these rotary hammers, we drilled hundreds of holes into concrete—both straight down and out front, simulating what it's like to attach a deck ledger to a concrete wall. For consistency, we included a speed test using a 10-lb. weight instead of muscle power. And just to be mean, we installed a 1-in. bit and repeatedly buried it in 4 in. of concrete. We also spent hours chipping concrete at a low angle and then straight down like when you're enlarging a sump pit.

BOSCH 11253VSR

Seconds to drill a 5/32-in. hole in concrete: 5.6
Warranty: 1 year **Price:** $215

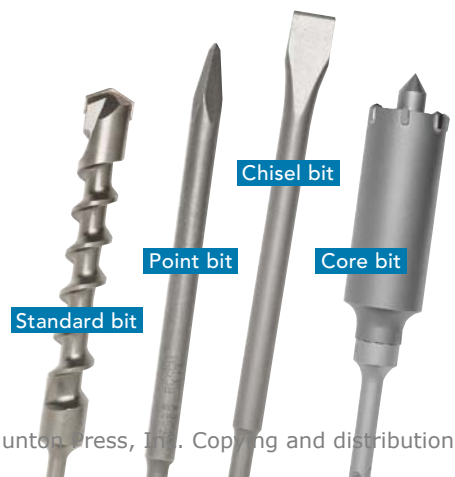
This tool is a sweet blend of all the things a rotary hammer needs to do in unforgiving places. It has minimal vibration and good balance. It excels at simple tasks such as drilling pilot holes for concrete screws, but it also can chip concrete and hog out large holes when necessary. Its well-designed kit box has compartments that keep the tool and bits separate. At 101 in., the cord allows a good deal of freedom of movement. It also coils easily, which makes closing and latching the box a simple task. The tool doesn't have a trigger lock, which is sometimes easy to engage by accident. The depth rod is steel, and the quick adjustment is easy to use. The chisel adjustment setting is a great feature, and the markings on the function dial are easy to read.

DEWALT D25133K



Seconds to drill a 5/32-in. hole in concrete: 5.9
Warranty: 3 years **Price:** $175

This tool performed well in all aspects of drilling and chipping. Because of its good balance and the sensible layout of its controls, it's comfortable to use. Its box, however, feels like an afterthought and is not reflective of how a rotary hammer is transported and set up on-site—often with 20 bits and some grease rattling around. Some vibration was noticeable through the side handle while drilling with a 1-in. bit, but not in the rest of the tool. The depth-rod adjustment works fine, but the rod itself is doomed. Made of flimsy plastic, it's sure to catch on a ladder or tool pouch and snap. The side-mounted forward-reverse button requires you to flip it intentionally, eliminating accidental direction changes. The function dial is harder to read than on other tools, and at 93 in., the cord is relatively short. There's no trigger lock.



A BIT ABOUT BITS

The many sizes and styles of bits and chisels give a rotary hammer its versatility. Point bits are meant for starting holes in concrete or creating spots for a larger chisel to get a good bite. Chisel bits are used for breaking up concrete and masonry and for removing tile. Core bits can drill the largest holes.

Bottom photos, this page: Scott Phillips

MAKITA HR2611F

Seconds to drill a 5⁄32-in. hole in concrete: 4.7 seconds
Warranty: 1 year **Price:** $180

The Makita is sufficiently balanced and agile to hold out front for mounting everything from a TV bracket to deck ledgers, but it still has enough mass for effective chipping straight down and at low angles. It also has plenty of power for drilling larger holes. Its cord is 160 in. long, and its function dial is easy to adjust and to read. The forward-reverse switch requires you to manipulate it intentionally, making an accidental direction switch nearly impossible. The solidly built kit box has sensible compartments that separate the bits from the tool, making it easy to coil the cord and latch the lid. The trigger lock doesn't engage accidentally, and it works easily when needed. The chisel adjustment setting is a valuable addition to the tool.

AUTHOR'S BEST OVERALL CHOICE

Smooth power delivery, good balance, and intelligent controls make the Makita our favorite.

HITACHI DH24PF3

Seconds to drill a 5⁄32-in. hole in concrete: 5.1
Warranty: 1 year **Price:** $169

This D-handle tool with a 156-in. cord worked hard in all our tests. It bored 1-in. holes and chipped with the best of them. It vibrated more than the best-performing pistol-grip tools, but it's also the most affordable tool in the lot. The forward-reverse switch is located near the trigger and is easy to use, but not so easy that you're likely to change direction accidentally. Although its plastic depth rod (like the DeWalt's) is sure to break, the handle where it attaches is sturdy and easily adjusted. The hard-sided plastic box is sensibly designed for tool and bit storage. However, the clasps are less rugged than others in the group. The function dial, which is mounted underneath the housing, has black-on-black markings that made it the hardest to read. The trigger lock caused no problems or accidental turn-ons.

AUTHOR'S BEST VALUE CHOICE

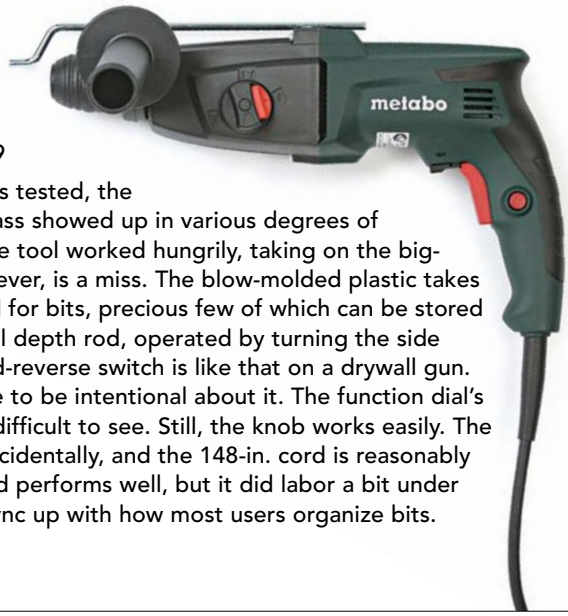
The Hitachi is a workhorse that did everything we wanted it to do quite well.

HILTI TE2

Seconds to drill a 5⁄32-in. hole in concrete: 4.5
Warranty: Lifetime **Price:** $326

If all you do is drill and hammer, this is a comfortable, low-vibration tool. But it doesn't chip. For a premium cost, it's hard to justify losing an important function. While the tool drilled well with small and large bits and is well balanced for driving holes laterally or straight down, its performance isn't as good as its price tag is high. The function icons are easy to read, and the side-mounted function dial makes it easy to change settings. The depth rod is steel and adjusts with a twist of the side handle. The trigger lock is easy to engage but is still flush with the pistol handle, so it's hard to activate accidentally. The forward-reverse switch requires you to change it intentionally. At 152 in., the Hilti's cord is among the longest. The tool itself drills great, but at $100 more than its nearest competitor and without a chipping function, it's overpriced.

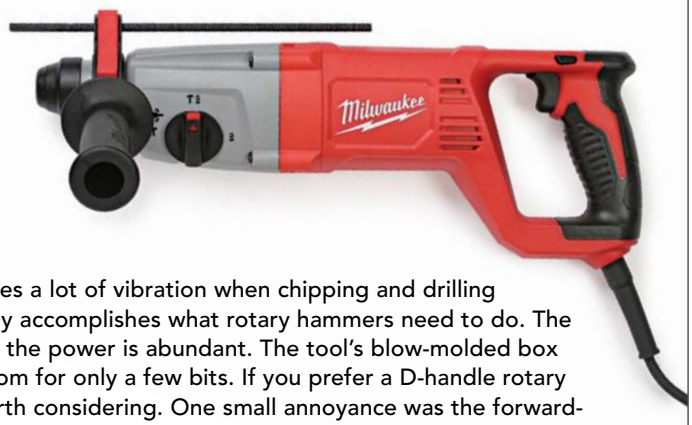
METABO KHE 2444



Seconds to drill a 5⁄32-in. hole in concrete: 5.5 seconds
Warranty: 3 years **Price:** $199

The most compact of all the tools tested, the Metabo's comparative lack of mass showed up in various degrees of vibration across all tasks. Still, the tool worked hungrily, taking on the big-bit test serviceably. Its box, however, is a miss. The blow-molded plastic takes up room that should be reserved for bits, precious few of which can be stored with the tool. The hammer's steel depth rod, operated by turning the side handle, works easily. The forward-reverse switch is like that on a drywall gun. It's easy to engage, but you have to be intentional about it. The function dial's black-on-black markings can be difficult to see. Still, the knob works easily. The trigger lock can't be engaged accidentally, and the 148-in. cord is reasonably long. The Metabo is compact and performs well, but it did labor a bit under duress, and its kit box doesn't sync up with how most users organize bits.

MILWAUKEE 5262-21



Seconds to drill a 5⁄32-in. hole in concrete: 3.6 seconds
Warranty: 5 years
Price: $179

This D-handle unit produces a lot of vibration when chipping and drilling with large bits, but it easily accomplishes what rotary hammers need to do. The fit and finish are nice, and the power is abundant. The tool's blow-molded box has robust buckles but room for only a few bits. If you prefer a D-handle rotary hammer, this model is worth considering. One small annoyance was the forward-reverse switch, which is mounted on the trigger handle. I found that it's a little too easy to knock the tool into reverse inadvertently. Also, at 91 in., the cord is the shortest of the bunch. On the plus side, there is no trigger lock, the chisel adjustment setting is great, and the depth rod is much better than that on any of the other tools.

of a rotary hammer. Metabo's and DeWalt's blow-molded boxes land in the "What were they thinking?" department. Neither has a dedicated space for bit storage, and the recessed areas that are included are too small for bits.

The other boxes all had decent bit storage. Bosch's and Makita's were the best, with channels to drop the bits in that keep them separate from the tool. Hilti's bit storage was nice also, but the kit box itself seems flimsy and is too easy to open upside-down (spilling the contents) because the latches are hinged at the top. Hitachi's bit storage is good, but the case's plastic latches feel like they won't last long. Milwaukee's box is tough, and the bit storage is sensible.

The bottom line

For some tasks—such as working directly over a hole or for repeated straight-down drilling—the longer body of the D-handle Hitachi and Milwaukee hammers is an advantage. Generally speaking, though, the pistol-grip tools ran smoother and were more comfortable to use. They're also more compact, which comes in handy when you're working in tight spaces.

The pistol arrangement also worked better at a low angle, which is the way you would use a rotary hammer for chipping up tile. I found that I could keep my trigger arm farther in front of me, causing noticeably less fatigue than when I used the longer D-handle tools, which forced me to spread out my grip.

Its well-designed box, smooth power delivery in all functions, good balance, intelligent controls, and long cord make the Makita my favorite. Bosch is a close second for all the same reasons.

Hand-buzzing vibration and minimal kit box aside, the Hitachi, with its surprisingly long cord, is a workhorse that did everything we wanted it to do quite well. Because it's the most affordable tool in the group, it gets my pick for best value. □

Home-improvement contractor Mark Clement is co-host of the *MyFixitUpLife* show. Andy Doyle, Matthias Lowjewski, and Derek Schroeder of the Bucks Mont chapter of the National Association of the Remodeling Industry (NARI) contributed to this article. Irwin provided new bits for testing. Photos by Rodney Diaz, except where noted.