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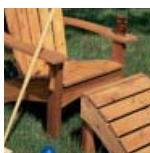
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*Workbench* Tool Test:

February 2003

# 12" Sliding Compound Miter Saws



## Seven Popular Models Square Off!

Compound miter saws can officially be considered a “must-have” tool for the home shop.

Having replaced the radial arm saw as the tool of choice for cross-cutting long boards and making angled cuts, these saws have gained huge popularity among DIY’ers.

Tool manufacturers took notice of this, and we now have a bumper crop of high-quality saws at affordable prices.

In particular, 12" sliding compound miter saws have become much more economical.

Beyond their massive cutting capacity, these saws offer a great deal of versatility with their wide range of bevel and miter settings. Some saws even have depth stops for cutting dados. And with motors as large as 15 amps, they have no trouble cutting stock at their maximum capacities. These saws do it all.

So we rounded up seven 12" sliders, including three that are just now showing up in stores, and tested, measured, and compared them down to their finest details.

We’ll share those results in the next several pages, but first, take a look at *Details That Make a Difference* to see how you can do some comparison shopping of your own. Then read through *How We Tested* to see what we expected of these saws.

# 5 Details That Make a Difference

## Controls & Adjustments

These tools are loaded with levers and knobs that let you rotate and tilt the saw and lock in the adjustment before making a cut. Since you'll be doing this all the time, it's important that the controls are conveniently located and easy to use.

So, as you shop for a miter saw, try to imagine every cut you might make and then set the saw up for that cut. You'll quickly discover which saws are the easiest to use.



## Fences & Tables

A flat table and parallel fences are crucial to the accuracy of a miter saw. If these surfaces aren't exact, it's virtually impossible to adjust the saw to make accurate cuts.

Checking the saw is a simple matter of placing a metal straightedge against the surfaces and looking for gaps (see Photos). You can even do this right in the store. You're in the tool aisle, so there's probably a straightedge somewhere nearby. Grab one and give the saws a look. The table should be dead flat. The two halves of the fence should either be aligned with each other or allow for adjustment.



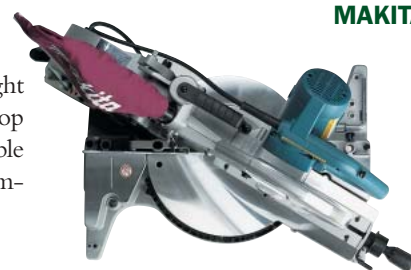
## Size & Portability

Although all of the saws in this test have similar cutting capacities, there's quite a difference in the size of the saws themselves.

The Ridgid and the Makita, pictured at right, demonstrate that point particularly well. The Ridgid's massive size means it might not be a good match for a small shop or for someone who needs a portable tool. By contrast, the Makita is compact and relatively easy to move.



RIDGID



MAKITA

## Left/Right Bevel

All seven of the saws we tested bevel to the left. Five of them bevel to the right, as well. We prefer the dual-bevel saws because they let you change the saw settings rather than having to flip and rotate the board around for certain cuts.

Another important consideration is the bevel gauge. Take a close look at this to make sure it's easy to read.



## Blades

Nothing can enhance the performance of a miter saw like a high-quality blade. Look for a stiff, carbide-tipped blade with a high tooth count (60 teeth is passable, 80 is good, 96 is ideal).



## HOW WE TESTED



### ▲ ACCURACY OF CUT

We checked the accuracy of 45° miters and bevels against a machined aluminum square and measured gaps with a feeler gauge.



### ▲ POWER

Crosscutting a 2"-thick block of hard-wood tested the raw power and capacity of these miter saws.



### ▲ USABILITY

Each saw was graded on how easy it was to set up and how accurately it maintained its settings.





## MAKITA LS1212



### At a Glance:

<b>Price:</b>	<b>\$650</b>
<b>Motor:</b>	<b>15 amp</b>
<b>Drive:</b>	<b>Direct</b>
<b>Blade:</b>	<b>96-tooth, carbide-tipped</b>
<b>Weight:</b>	<b>48.4 lbs</b>
<b>Max. Cut:</b> (in 3/4"-thick stock)	<b>12<sup>5</sup>/<sub>16</sub>"</b>
<b>Miter Range:</b>	<b>47°L/60°R</b>
<b>Bevel Range:</b>	<b>45°L/45°R</b>
<b>Miter Detents:</b>	<b>0°, 15°, 22.5°, 33.9°, 45°, 60°</b>
<b>Bevel Detents:</b>	<b>None</b>
<b>Warranty:</b>	<b>1 year</b>

**Virtues:** Accurate. Compact. Affordable. Excellent controls.

**Vices:** Mushy depth stop.

**Verdict:** The right saw in the right size at the right price.

Makita's LS 1212 proved to be the superior saw in this test on almost every count. It's compact, powerful, dead-on accurate, comes equipped with an outstanding 96-tooth carbide-tipped blade, and still has a moderate price tag.

This saw came out of the box closer to perfect than any other tool we tested. A small adjustment which is relatively easy to make (to set the blade at 90°) was all the tuning up this saw required.

Once it was tuned up, this saw made perfect bevels, miters, and compound cuts using only the factory detents for setup.

Makita also did a nice job with the controls on this saw by placing the rail lock (which locks or unlocks the saw's sliding action) up front with the miter lock (Photo 1). This

makes it easy to change between chop mode and slide mode (see *Two Ways to Cut* below) without reaching around behind the saw.

Another convenient feature of the Makita is the subfence (Photo 2). This simply flips over to extend the fence or to move it out of the way so the saw can be set to its full left bevel.

A few other noteworthy features include the D-handle, safety switch, and trigger, which accommodate both right- and left-handed work equally well. We also appreciated the soft start and smooth-running motor.

The saw also ranked well for fit and finish thanks to its dead-flat table and fences, smooth sliding action, and overall solid construction.

Our only complaint is that the depth stop felt a bit mushy. Otherwise this saw is flawless.



▲ Makita made their saw user friendly with easy operating controls for the detent override (the lever) and rail lock (the thick collar).

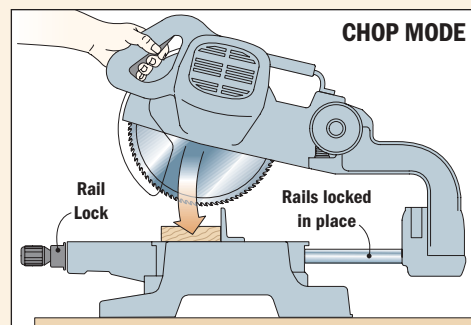
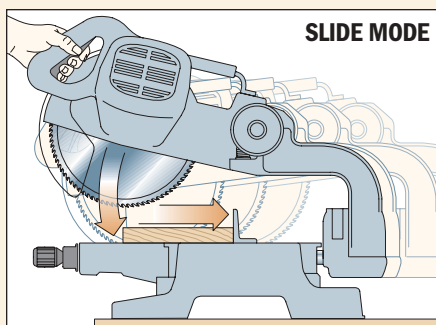


▲ Extending the subfence or moving it to allow the saw to bevel all the way to the left is a simple matter of flipping it out of the way.

## TWO WAYS TO CUT

In slide mode, the saw moves on rails to gain maximum cutting capacity. The correct procedure is: slide out, chop down, slide in.

When cutting narrower stock, the rails should be locked so the saw is in "chop" mode. This holds the head assembly in a fixed position, just like a conventional miter saw.



# BOSCH 4412



The Bosch 4412 is the most well thought-out, user-friendly miter saw in this group.

The best example of this is the bevel lock. With most saws, you have to reach behind the saw to change the bevel angle. Bosch located the bevel lock at the *front* of the saw, alongside the miter lock. This feature makes a lot of sense for both convenience and safety, since reaching behind a tool is not something you generally want to do.

The miter lock itself seems pretty ordinary except for a detent override that locks out. A typical detent override is only engaged for as long as you're holding on to it. As soon as it's released, the detents are active again. That can be problematic when trying to set the saw near one of the detents (46° for instance). More often than not, as soon as the override is released, the saw will slide into the detent at 45°. Bosch's system eliminates that inconvenience by letting you disen-

gage the detents completely. They will only take over again when you re-engage them.

The handle on this saw is another welcome innovation. Bosch pretty well ends the debate over vertical vs. horizontal handle position with a four-position articulating handle (*Photo 1*). You'll also notice that there's a safety switch on the left *and* right side of the handle, so the saw can be operated just as easily with either hand.

One less obvious feature that we really appreciated is the blade guard. Without getting too technical, the guard covers the blade almost entirely *at all times* (*Details a and b*). This differs from most saws where much of the blade is exposed while cutting.

Sliding support wings with a flip-up stop round out the list of helpful features on this saw (*Photo 2*).

Features notwithstanding, accurate cuts are the real measure of a saw, and Bosch more than measures up. Miters with this saw were perfect, and bevels were only slightly less precise. We did find that replacing the factory, 80-tooth blade with a 96-tooth Freud blade eliminated the tiny flaw that we saw in bevel cuts.

Our only trouble with this saw came during the tune-up. Adjusting the bevel settings is a two-person job and more complicated than on other saws. Otherwise, this saw nears perfection and achieves it with a slightly better blade.



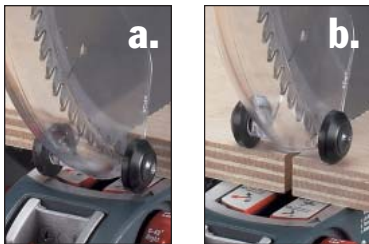
## At a Glance:

<b>Price:</b>	<b>\$700</b>
<b>Motor:</b>	<b>15 amp</b>
<b>Drive:</b>	<b>Belt</b>
<b>Blade:</b>	<b>80-tooth, carbide-tipped</b>
<b>Weight:</b>	<b>59 lbs</b>
<b>Max. Cut:</b>	<b>(in 3/4"-thick stock) 12<sup>9</sup>/16"</b>
<b>Miter Range:</b>	<b>52°L/60°R</b>
<b>Bevel Range:</b>	<b>47°L/47°R</b>
<b>Miter Detents:</b>	<b>0°, 15°, 22.5°, 31.6°, 45°, 60°</b>
<b>Bevel Detents:</b>	<b>0°, 33.9°, 45°</b>
<b>Warranty:</b>	<b>1 year</b>

**Virtues:** Great controls. Thoughtful features.

**Vices:** Bevel tune-up is awkward.

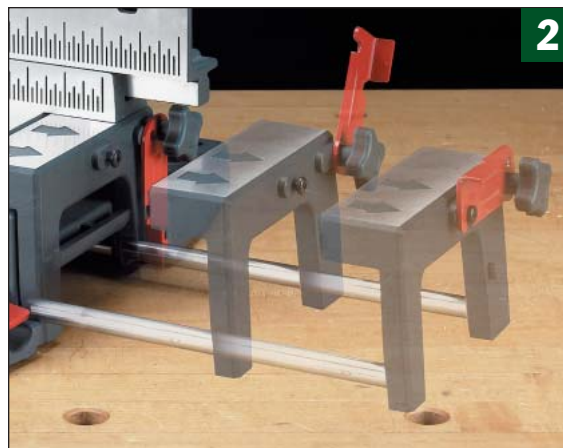
**Verdict:** Performance and features that justify the higher price.



▲ The guard covers the blade even when cutting. The wheels follow the shape of the board and raise the guard just enough to make the cut.



▲ No matter what angle the saw is set at, Bosch's articulating handle can be set to avoid awkward hand positions. Dual safety switches accommodate both hands.



◀ The Bosch 4412 has a sliding extension wing on each side of the saw. The orange flip-stop can be used on either side and can quickly be moved from one to the other.



## DEWALT DW708



### At a Glance:

<b>Price:</b>	<b>\$599</b>
<b>Motor:</b>	<b>15 amp</b>
<b>Drive:</b>	<b>Belt</b>
<b>Blade:</b>	<b>60-tooth, carbide-tipped</b>
<b>Weight:</b>	<b>57 lbs</b>
<b>Max. Cut:</b> (in 3/4"-thick stock)	<b>12<sup>3</sup>/<sub>8</sub>"</b>
<b>Miter Range:</b>	<b>50°L/60°R</b>
<b>Bevel Range:</b>	<b>48°L/48°R</b>
<b>Miter Detents:</b>	<b>0°, 15°, 22.5°, 31.6°, 45°, 60°</b>
<b>Bevel Detents:</b>	<b>0°, 45°</b>
<b>Warranty:</b>	<b>1 year</b>

**Virtues:** Accurate. Compact. Affordable. Friendly features.  
**Vices:** 60-tooth blade.  
**Verdict:** A great saw and a smart buy.

This saw made us wonder if DeWalt realizes how much other manufacturers charge for their tools. The outstanding quality and bargain price of this tool make it too good to pass up. So we gave it the *Top Value* award.

Big Yellow came through big time with ease of setup features. The saw did require a bit of tweaking from the factory to get it tuned up, but the adjustments were quick and easy to make, and they held true throughout our testing.

This saw also demonstrated excellent accuracy in all our test cuts, producing miters and bevels that we'd be happy to have on our furniture and trim projects.

The controls on the saw are also better than most. What we don't care for are the bevel lock controls. These are a star knob and a sliding lever that are mounted at the back of the saw. They work well, but it's a pain reaching back there to use them.

The miter lock and detent override are simple to use and allow for quick and accurate positioning of the saw table. That is, provided you're not too close to a detent, in which case the saw tended to slip into the notch. That cost it a few points.

The horizontal handle of the saw and long trigger also makes this saw comfortable for "righties" and "lefties" (Photo 1). And a slotted blade

guard offers a good view of the layout line (Detail a).

Another plus for the DeWalt is that it's a relatively compact tool. That's nice for hauling the saw and makes it a welcome tool in small shops. And despite its compact size, it still boasts the second largest overall miter range (110°) and largest overall bevel range (96°).

The only improvements we'd make to this saw are replacing the factory blade with a 96-tooth blade and making the bevel controls more convenient.



▲ The handle and trigger are easy to use with either hand. Slots in the blade guard provide a clear view of the intended cut line (Detail a).

## SLIDING COMPOUND MITER SAWS

Model	TUNE-UP			ERGONOMICS									FIT & FINISH			CUTTING				
	Bevel	Miter	Blade Change	Fence Adjust	Miter Lock	Bevel Lock	Rail Lock	Depth Stop	Lock Down	Handle & Trigger	Detent Override	Scales	Table Flatness	Fence Flatness	Detent Quality	Quality		Accuracy		
																90°	45°	90°	45° Miter	45° Bevel
MAKITA	B+	B	B	A+	A+	B	A+	C	A	B	A	B	A	A+	A-	A-	B+	A	A	A
BOSCH	C	B	B	B+	A+	A+	B	A	A	A+	A+	B	C-	A+	A	A+	A-	A	B-	C+
DEWALT	A	B+	B	B	A+	B	B	B	A	A	B	A	A	C+	A-	A	A+	B+	A	A-
RIDGID	C	B	B	B	A	A	B	D	B	B	A+	B	A+	B	B+	A	A-	A	B+	A
HITACHI	B	B	A	B	A	B	B	A	A	B	n/a	B	A+	A+	B	A+	A+	A+	A-	B
CRAFTSMAN	D	B-	A	C	A	B	B	D	A	D	n/a	B	A+	A+	C-	B	B	A	C	C
GENERAL INTER.	D	B-	A	C	A	B	B	D	A	D	n/a	B	A+	C-	C	B	B	C	C-	B-



# RIDGID MS1290



Ridgid took the road less traveled with this saw and came up with a tool that delivers accuracy, easy use, and huge cutting capacity.

In terms of accuracy, this saw beveled as well as any and produced miters that were only scarcely less accurate than the top tools.

Where Ridgid differs with their competitors is in the controls. The miter lock, as an example, is a wide lever with a small wheel in the center of it. The wheel is the detent override. It's different, to be sure, but we like the way it works.

The bevel lock is also unique. This is a lever that's mounted along the left side of the saw. The size of the lever makes it easy to lock securely and it's positioned within easy reach.

Another interesting difference in the Ridgid is a one-piece table (*Tale of the Tables below*). The General and Craftsman also have one piece tables, the benefit of which is greater cutting capacity.

We also like the safety switch and power trigger combination. At first glance, the safety switch looks as though it's in a bad place for left-handed users. But it's actually perfectly placed to be activated by the heel of the left hand (*Photo 1*). Right handers can simply depress the safety with their thumb. One thing about this saw that could be improved is

how it's tuned up. Although adjusting the miter is easy enough — simply loosen the fence and adjust it 90° to the blade — the bevel setting was a bit difficult. This is done by loosening two bolts and adjusting the scale to match the angle of the blade. It's not a very sophisticated system and we found that the scale would move slightly as we tightened the bolts. Adding a lock washer to each bolt would likely remedy this problem.

If there's a knock against this tool, it's the size. This is one of the largest tools in the group. The tradeoff is that it also has the largest cutting capacity.

Overall, this is an excellent miter saw at a reasonable price.



## At a Glance:

<b>Price:</b>	<b>\$597</b>
<b>Motor:</b>	<b>15 amp</b>
<b>Drive:</b>	<b>Belt</b>
<b>Blade:</b>	<b>60-tooth, carbide-tipped</b>
<b>Weight:</b>	<b>60 lbs.</b>
<b>Max. Cut:</b> (in 3/4"-thick stock)	<b>13<sup>5</sup>/<sub>8</sub>"</b>
<b>Miter Range:</b>	<b>60°L/60°R</b>
<b>Bevel Range:</b>	<b>47°L/47°R</b>
<b>Miter Detents:</b>	<b>0°, 15°, 22.5°, 33.9°, 45°, 60°</b>
<b>Bevel Detents:</b>	<b>0°, 33.9°, 45°</b>
<b>Warranty:</b>	<b>Lifetime</b>

**Virtues:** Accurate. Convenient controls. Large capacity.

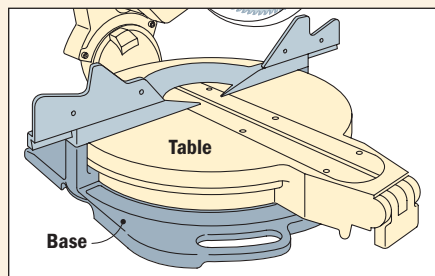
**Vices:** Poor bevel tuning. Large.

**Verdict:** A good tool at a competitive price.



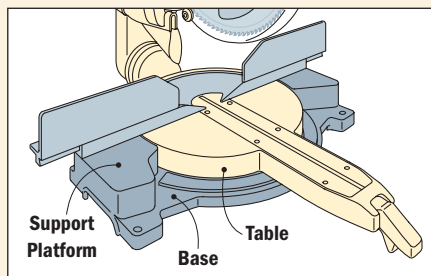
▲ The safety switch on the Ridgid appears to favor right-handed operation, but it's easily depressed with the heel of the left hand.

## TALE OF THE TABLES: ONE PIECE OR TWO?



### ▲ ONE-PIECE TABLE

Ridgid, General International, and Craftsman have one-piece turntables rather than a turntable with support platforms.



### ▲ TWO-PIECE TABLE

This is an example of a two-piece table, which has a small turntable flanked by platforms that are part of the base.

# HITACHI C12FSA



## At a Glance:

<b>Price:</b>	<b>\$770</b>
<b>Motor:</b>	<b>12 amp</b>
<b>Drive:</b>	<b>Belt</b>
<b>Blade:</b>	<b>80-tooth, carbide-tipped</b>
<b>Weight:</b>	<b>55 lbs.</b>
<b>Max. Cut:</b> (in 3/4"-thick stock)	<b>12<sup>9</sup>/<sub>16</sub>"</b>
<b>Miter Range:</b>	<b>57°L/57°R</b>
<b>Bevel Range:</b>	<b>45°L/45°R</b>
<b>Miter Detents:</b>	<b>0°, 15°, 22.5°, 31.6°, 35.3°, 45°</b>
<b>Bevel Detents:</b>	<b>None</b>
<b>Warranty:</b>	<b>1 year</b>

**Virtues:** Excellent accuracy. Easy tune up. Alignment "guard."

**Vices:** Open fence. High price.

**Verdict:** A premium quality saw at a premium price.

Nevermind that the Hitachi is listed fifth in this test. Because, quite honestly, the first five saws in this test performed so well that you could just about choose from among them based on your favorite color and never be disappointed.

This saw, in particular, has some outstanding features that could justify the higher price for certain users.

For instance, tuning it up is a breeze. Bevel adjustments are made with bolts that act as stops. These are threaded in or out until the saw is at the correct angle.

Truing up the miter angle is done by adjusting the fence. Or actually, the *fences*. This saw has a unique two-piece fence. In other words, the fence on the right of the blade is separate from the fence on the left side.

Most fences are one piece, so adjusting the one side also moves the

other side. This is good in theory, but if the faces aren't perfectly parallel, there's nothing you can do about it.

With the Hitachi, however, each side can be adjusted independently and brought into perfect parallel (*Photo 2*). This is made even easier by the fact that both fences on the Hitachi were dead flat. The drawback to the Hitachi fence is that it's wide open toward the center, providing no support for cutting small pieces.

Aligning cuts, on the other hand, is incredibly accurate on the Hitachi. That's thanks to a unique piece that the instruction manual refers to simply as a "guard" (*Photo 1*).

This "guard" is an adjustable rail with a plastic cap on it. By cutting a kerf in this cap, you create an alignment guide that's extremely precise.

In terms of performance, the Hitachi is quite impressive. The quality and accuracy of cuts throughout our testing was excellent. The motor is powerful and smooth-running. The controls are effective and simple to operate. The saw comes equipped with an 80-tooth carbide-tipped blade that you *won't* need to replace to make clean accurate cuts. Though should you ever want to use a different blade, installing a new one is a snap (*Photo 3*).

As a whole, this is an expensive saw that lacks some of the bells and whistles of the other tools in this test. But based on pure performance, you'd never regret spending the extra money for this one.



▲ Hitachi's saw features a "guard" that serves as an accurate alignment device. The kerf in the guard is cut during the initial setup.



▲ Hitachi's two-piece fence lets you adjust both faces independently and make them perfectly parallel to

each other. Other saws have one-piece fences that can only be adjusted for angle, not parallel.



▲ Blade changing on the Hitachi is easy thanks to a cover that offers quick access to the arbor.



## CRAFTSMAN 21292



### At a Glance:

<b>Price:</b>	<b>\$590</b>
<b>Motor:</b>	<b>15 amp</b>
<b>Drive:</b>	<b>Direct</b>
<b>Blade:</b>	<b>40-tooth, carbide-tipped</b>
<b>Weight:</b>	<b>57.8 lbs</b>
<b>Max. Cut:</b> (in 3/4"-thick stock)	<b>13<sup>5</sup>/<sub>8</sub>"</b>
<b>Miter Range:</b>	<b>47°L/47°R</b>
<b>Bevel Range:</b>	<b>45°L</b>
<b>Miter Detents:</b>	<b>0°, 15°, 22.5°, 31.6°, 45°</b>
<b>Bevel Detents:</b>	<b>0°, 33.9°, 45°</b>
<b>Warranty:</b>	<b>1 year</b>

**Virtues:** Affordable. Easy blade changing. User-friendly controls.

**Vices:** Imperfect miters & bevels.

**Verdict:** Affordable and viable if precision isn't crucial.

The strong suits for Craftsman's saw are fit and finish and ergonomics. The fence and table of this saw were dead flat, and most of the controls were easy to reach and use.

Another high point for this saw is the blade changing. This is one of the few saws that don't require you to nearly remove the entire blade guard to get at the arbor bolt.

In terms of performance, this saw made excellent straight cuts (in chop and slide modes), but wasn't entirely accurate when mitering or beveling.

This is also a single-bevel saw. That limits its versatility somewhat, but also keeps the cost down. The low price may be worth considering if perfect cuts aren't crucial.



## GENERAL INTERNATIONAL 50-700



### At a Glance:

<b>Price:</b>	<b>\$590</b>
<b>Motor:</b>	<b>15 amp</b>
<b>Drive:</b>	<b>Belt</b>
<b>Blade:</b>	<b>60-tooth, carbide-tipped</b>
<b>Weight:</b>	<b>57.8 lbs</b>
<b>Max. Cut:</b> (in 3/4"-thick stock)	<b>13<sup>5</sup>/<sub>8</sub>"</b>
<b>Miter Range:</b>	<b>47°L/47°R</b>
<b>Bevel Range:</b>	<b>45°L</b>
<b>Miter Detents:</b>	<b>0°, 15°, 22.5°, 31.6°, 45°</b>
<b>Bevel Detents:</b>	<b>0°, 33.9°, 45°</b>
<b>Warranty:</b>	<b>1 year</b>

**Virtues:** Low price.

**Vices:** Flimsy blade. Poor fit and finish. Inaccurate miters & bevels.

**Verdict:** We can't recommend this saw based on our results.

The General International has a great deal in common with the Craftsman, including being a single-bevel saw. The highlights of this tool are its low price and large cutting capacity.

Beyond that, we found several shortcomings on this saw. Of particular concern was the amount of vibration in the saw. This seemed to be caused by the blade, because as soon as we swapped it with a Freud blade, the vibration stopped almost entirely.

Nonetheless, this saw was the least accurate in the test group when cutting bevels and miters. If you go for the low price, you'll need to lower your expectations.



## Final Recommendations

Makita packed a lot of performance into their compact saw, then followed it up with an equally low price. We've got nothing but good stuff to say about this one, so we named it *Editor's Choice*.

Running a close second is the Bosch. A few teeth (on the Makita blade) and a few dollars are all that

separate the 4412 from the top spot.

DeWalt's reputation is built on quality, not price. So it's a treat when they deliver both in the same outstanding tool, as they did with the DW708. It's a natural for *Top Value*.

Ridgid also gets a tip of the *Workbench* cap for their unique design and exceptional quality.



MAKITA LS1212



DEWALT DW708