New Breed of Bandsaws

New 14-in. models have serious resaw capacity, with more power to handle bigger boards

BY THOMAS McKENNA

AUTHOR'S CHOICE
BEST OVERALL

Smooth cutter with power to spare

The Laguna LT14SE is a quiet, powerful machine that makes the most demanding curve and resaw cuts with ease. It's the only saw of the bunch that came fully assembled. Fit and finish are excellent with large knobs to adjust tension and tracking, though the table could use a bit more width to the right of the blade. The machine does not have a tension scale, so you have to test the blade tension using a gauge or your finger. Ceramic guides offer support very close to the top of a workpiece. The insert plate is large, and its throat provides wide-open access to the guide adjusters below the table, all of which make blade changes easy as pie.

AUTHOR'S CHOICE
BEST VALUE

Lots of features for a good price

The Grizzly G0457 saw has plenty of resaw power and capacity. The fit and finish are great. The wheel covers are hinged, and they slide off easily so you have greater access to the interior and you don't hit your head on a corner (don't ask) when the door drifts closed. Dust collection works well, though installing a blade is tough. The tension is easy to set and adjust, with an intuitive quick-release mechanism. The tracking knobs are a good size. The tall fence included with the saw slides smoothly, locks surely, and is great for resawing. Curve cuts were no problem, and resaw cuts were of fine quality.

The bandsaw is one of the most versatile tools in a woodworking shop. It can resaw, cut curves, and rip lumber more safely than a tablesaw. It also can be used to cut joinery, such as tenons or even dovetails. The most common bandsaw *Fine Woodworking* editors see in our travels is the 14-in. model. It offers a great blend of price and performance for the small-shop woodworker.

The toughest task for these bandsaws is resawing, those slicing cuts into the edge of a board that turn one piece of thick lumber into thinner boards or sheets of veneer with minimal waste. Older 14-in. saws had a limited resaw capacity of only around 6 in. (although some did offer a riser-block accessory to increase capacity by 6 in. or so), and many had small ¾-hp or 1-hp motors, not ideal for heavy work.

A new generation of 14-in. saws offers more resaw capacity and power than their forerunners. I looked at eight machines with a minimum resaw capacity of 10 in. and with motors of at least 1¼ hp.

Some of the saws in this group, such as the Delta, General, Grizzly G0555X, Jet, and Powermatic, have the familiar cast-iron frames but with enclosed bases. Except for the General, all of the saws in this cast-iron family require the installation of a riser block to achieve the minimum resaw capacity for this review. The other saws—Grizzly G0457, Laguna, and Rikon—are European style, with welded steel frames.

Close inspection of key components

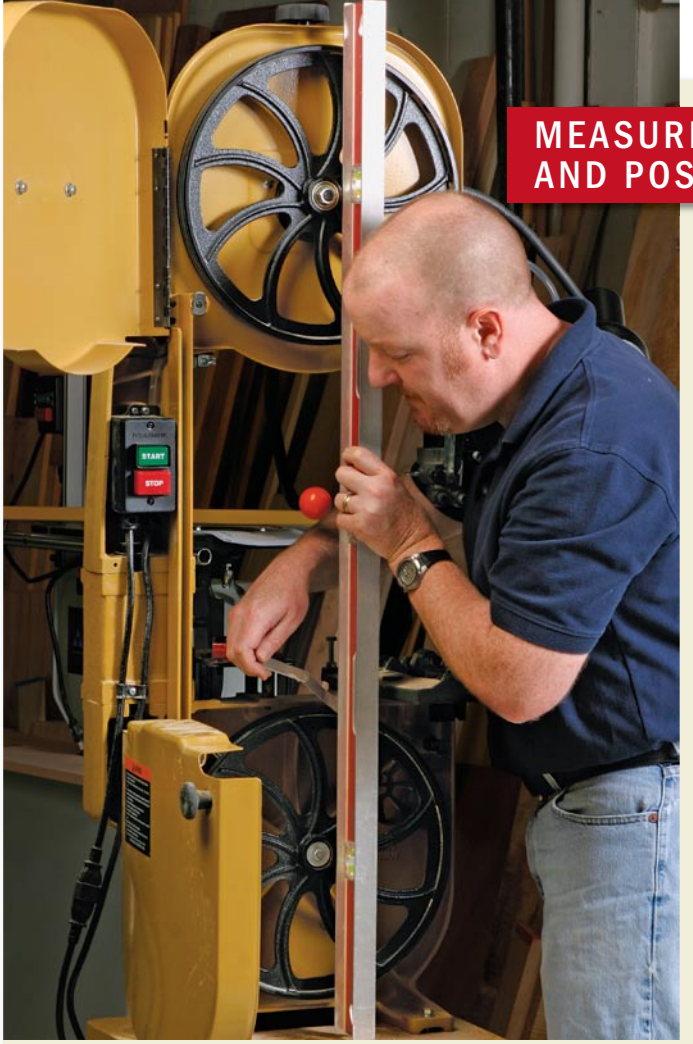
With the exception of the Laguna, which arrived ready to roll, each machine required assembly, which took anywhere from two to four hours per machine.

After assembly, I took a close look at the essential components, checking roundness and alignment of the wheels, table flatness, versatility and functionality of the fence, and guide-post alignment.

Wheels should be round and in line— Wheels that are severely out of round will cause significant vibration in the saw, making it difficult to cut to a line. All of the machines had round wheels.

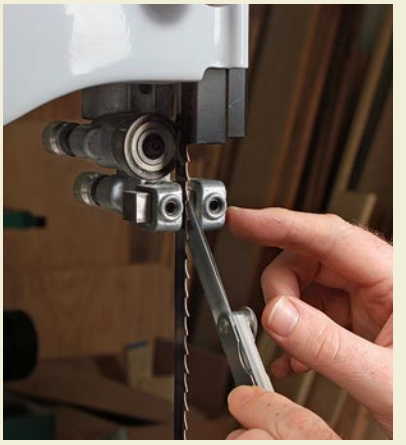
Alignment also is an issue. For the saw to work properly, the top and bottom wheels should lie in the same plane; otherwise, it will be tough to track a blade in the center of both wheels. Wheels on the Delta and the Grizzly G0555X aligned perfectly. The Jet and the Powermatic had the worst

MEASURING WHEEL AND POST ALIGNMENT



WHEEL ALIGNMENT AFFECTS TRACKING

Misaligned wheels will make it hard to track a blade in the center of the wheels. We checked alignment by laying a dead-flat straightedge across the wheels. Any discrepancies were measured with a feeler gauge. Wheels on the Delta and the Grizzly G0555X aligned perfectly; wheels on the Powermatic and the Jet were the most misaligned and could not be fixed with shims.



MISALIGNED GUIDE POST MEANS TROUBLE

Serious misalignment will require adjusting the guides whenever the post is moved. To measure for this, we lowered the post and snugged one guide against the side of the blade (left). Then we raised the post and measured any gap at the top (above). The sequence was repeated for the thrust bearing.

FEATURES THAT EASE BLADE CHANGES

QUICK RELEASE AND LOTS OF OPEN SPACE

A quick-release tension mechanism (right), like that on the Grizzly G0555X, allows you to release and retension a blade by flipping a lever. Having removable guards and open access around the wheels for your fingers also eases the pain of blade changes.

ERGONOMIC TRACKING ADJUSTMENTS

After installing and tensioning the blade, it needs to be centered over the tires, a process known as tracking. The Rikon makes it easy to see the blade as you track it and has a large, easy-to-grip adjustment knob.

misalignment. The problem may be fixed by shimming out the wheel that's behind. It's easier to do on the top than the bottom. However, the misalignment on the Jet and the Powermatic could not be fixed because their bearing shafts are too short.

Flat tables and effortless tilting are pluses—A bandsaw table doesn't have to be perfectly flat to get good cuts, but serious dips or imperfections could make squaring the table to the blade a frustrating task. All of the tables are made from cast iron, and all were very close to dead-flat.

The tilting tables are supported by cast-iron or die-cast trunnions. I saw no discernible differences in performance between the two materials, and all of the tilting mechanisms worked fine.

The best fences slide smoothly, lock soundly, and are adjustable—Ideally, you want a fence that slides without hiccups and locks down securely. And because a bandsaw blade tends to drift (run off square) as it wears, a fence that can be adjusted to compensate is handy.

In terms of fence quality and versatility, both Grizzly saws win hands-down. Their fences are heavy-duty, tall for resawing, run smoothly, lock securely, and are adjustable for blade drift. The Laguna fence gets a nod because it is heavy duty and has a smart way to attach an auxiliary fence via a T-slot along one face.

A straight-running post means fewer guide adjustments—The guide post, the rod that holds the upper guides, is a diminutive part of the bandsaw. But if the post is significantly out of alignment (chart, p. 53), either front to back or side to side, you'll have to fiddle with the guides and thrust bearing every time you move the guide post to keep the guides close to the workpiece. That's a serious time-killer.

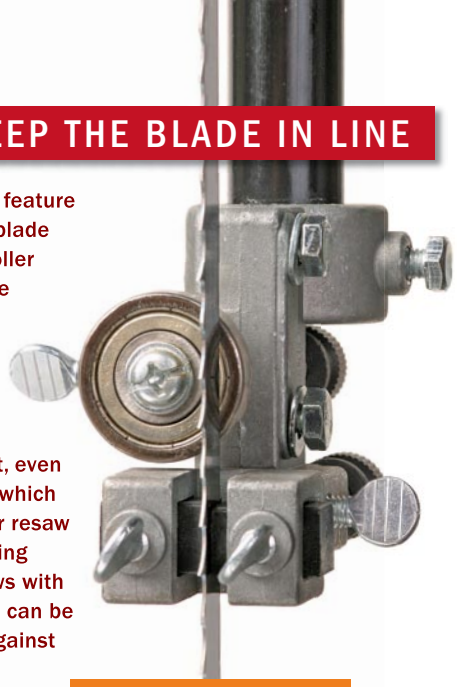
If the post is out of alignment on a cast-iron saw, there's no way to fix it. The Euro-style saws have mechanisms for correcting a misaligned post, but it's a fussy procedure and varies from machine to machine.

Blade changes should be bloodless

Regardless of how often you change the blade in your bandsaw, you want the process to be painless. Having changed blades on eight machines repeatedly during our

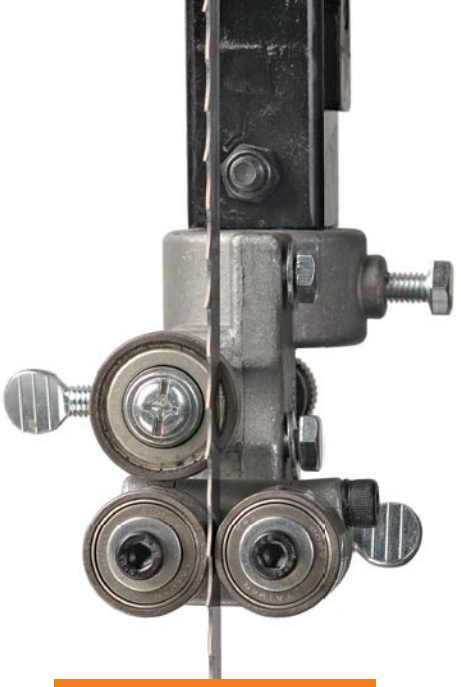
GUIDES KEEP THE BLADE IN LINE

Saws in this review feature two basic types of blade guides: blocks or roller bearings. Block-type guides, like those on the Jet and the Delta, work well. But Laguna's ceramic guides offer better support, even closer to the work, which was reflected in our resaw tests. Also performing better were the saws with roller guides, which can be snugged right up against the blade for very solid support.



CLASSIC BLOCKS

LAGUNA'S BLOCKS



ROLLER BEARINGS

tests, I've come to appreciate a saw that makes things easier, from blade tensioning and tracking to fine-tuning the guides.

Having the space to work makes blade changes less frustrating. Blade guards are the biggest obstacle, and on most machines you can remove at least the top guard. Another tricky area is space around the wheels to slide or wiggle a blade over the tire. The Laguna was tops in terms of wide-open access to the wheels and guides.

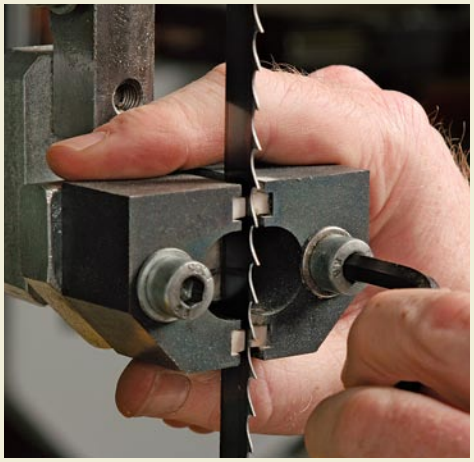
Tension and tracking are important—Once you have the blade in place, you need to tension and then track it for proper performance. The tension mechanism lifts the top wheel to bring the blade taut. Tracking angles the upper wheel to keep the blade centered across the width of the slightly rounded upper tire.

One notable difference among these new 14-in. saws is the inclusion of a quick-release tension device (except for the General and Laguna). Many manufacturers claim that removing tension from the saw when it's not in use prolongs the life of both blade and tires. In any case, the quick release makes blade changes faster.

Most machines track the blade from the back of the saw via a knob or thumbscrew. Small knobs on the Jet and the Powermatic and a small thumbscrew on the Delta were difficult to turn.

Easy-to-adjust guides save time—A bandsaw's top and bottom guide systems use a thrust bearing to counteract front-to-back deflection as you push the work through the blade. Side guides prevent the blade from twisting as you cut curves. Guides on the Grizzly G0555X, Jet, Laguna, and Powermatic were the easiest to adjust.

TOOL VS. TOOLLESS ADJUSTMENT



Ceramics 101. *Laguna's ceramic guides are easy to adjust once you get used to them. The nontraditional design requires you to steady the guides with your fingers as you tighten them in place.*

Dial M for microadjust. *To move guides forward and backward, threaded, microadjustable mechanisms work well and are precise. Except for the General and the Laguna, all the saws have microadjustable guide systems.*

Cutting tests gauge capacity and power

I did a series of cutting tests in hard maple, both curve cuts and resaw cuts. For consistency, I used the same brand of ½-in., 3-tpi, hook-tooth blade in each machine for the gradual curves and resawing. For the tight curves, I used a ¼-in., 6-tpi, hook-tooth blade. I set the tension as suggested on the saw's built-in gauge for the blade width in question and tested the tension with finger pressure to be sure deflection was no more than ¼ in.

First, I made gradual curve cuts along the length of a ¾-in.-thick board; then I made tighter, more demanding cuts, 2 in. and 1¼ in. dia. All of the saws did OK or better in the curve-cutting tests, with the Grizzly G0457, Laguna, and Powermatic the smoothest cutters.

Moment of truth—To gauge the resaw ability of each saw, I resawed ½-in.-thick boards as well as ⅛-in.-thick slices from a 10-in.-wide, 12-in.-long hard maple blank. My goal was quality resaw cuts, with edges

READY, SET, RESAW!

To gauge the resaw performance of each machine, I ran two tests on hard-maple blanks, 10 in. wide by 12 in. long. I equipped each machine with the same brand ½-in., 3-tpi, hook-tooth blade and set the tension according to the blade width. First, I made ½-in.- and ⅛-in.-thick resaw cuts, feeding the stock by hand. Then, to test the speed and power of each machine, I used a resaw sled that employed weights to pull the workpiece through the blade (below).

MODEL	STREET PRICE	MOTOR	FENCE HEIGHT	WHEEL ALIGNMENT
Delta 28-475X www.deltamachinery.com	$1,230, with optional riser-block kit and fence	1½ hp, 115v	2½ in.	Perfect
General 690-1 www.general.ca	$2,609, includes fence	1½ hp, 230v	2 in.	0.090 in., top forward of bottom
BEST VALUE Grizzly G0457 www.grizzly.com	$795, includes fence	2 hp, 110v	6 in.	0.040 in., top behind
Grizzly G0555X www.grizzly.com	$635, includes fence and optional riser-block kit	1½ hp, 110v	6 in.	Perfect
Jet JWBS-14DX www.jettools.com	$743, with optional riser-block kit and fence	1¼ hp, 115v	2⅜ in.	0.22 in., top forward
BEST OVERALL Laguna LT14SE www.lagunatools.com	$1,500, includes fence	2 hp, 220v	3¼ in.	0.050 in., top forward
Powermatic PWBS-14CS www.powermatic.com	$975, includes fence and optional riser-block kit	1½ hp, 110v	2⅜ in.	0.150 in., top forward
Rikon 10-325 www.rikontools.com	$750, includes fence	1½ hp, 115v	3 3/16 in.	0.080 in., top behind

that were parallel and consistent from one end of the workpiece to the other. The General, Grizzly G0457, and Laguna sliced through hard maple the fastest and with excellent results.

To gauge the speed and power of each machine in a more scientific way, I employed a resaw sled that uses weights to draw the blank through the blade. I started with a 5-lb. weight on the sled, working up to a 7½-lb. weight. When I tried a 10-lb. weight, only one saw was able to handle the load (the Rikon), so the results are not shown. Again, the General, Grizzly G0457, and Laguna were the faster cutters.

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Watch us use the resaw sled to push each saw to its limit.

During all of the cutting tests, I also kept a close eye on dust collection, which was good or better on most machines when hooked up to an appropriate dust collector.

And the winner is...

Picking one of these saws as best overall was not easy. In the end, I chose the Laguna LT14SE, which is the perfect combination of performance, capacity, fit, and finish. The downside? As equipped, the model I reviewed retails for $1,500.

For best value, I chose the Grizzly G0457. It's a very solid package for $795. □

Thomas McKenna is an associate editor. Fine Woodworking *shop manager John White made valuable contributions to this article.*

DELTA 28-475X

The Delta has plenty of capacity and a large tilting table, but it's loud and vibration prone and made unsatisfactory resaw cuts. For the most part, fit and finish are poor, and dust collection is subpar.

GENERAL 690-1

The General has a massive frame and no-frills adjustments, and it performed well in the cutting tests. But dust collection wasn't great, the table is small, and the fence is clunky and short.

POST MISALIGNMENT	RESAW CAPACITY	GUIDES/ THRUST	GUIDE ADJUSTMENTS	BLADE CHANGES	QUALITY OF RESAW CUTS	TIMED RESAW TEST	
						5 LB.	7½ LB.
Side, 0.012 in.; back, 0.010 in.	11¾ in.	Steel blocks/ bearing	Upper: easy Lower: difficult	Very difficult	Poor	5 min. 36 sec.	3 min. 37 sec.
Side, 0.012 in.; back, 0.050 in.	12⅛ in.	Double bearing/ bearing	Upper: easy Lower: difficult	Very easy	Excellent	57 sec.	23 sec.
Side, 0.005 in.; back, 0.001 in.	10⅛ in.	Double bearing/ bearing	Upper: very easy Lower: difficult	Difficult	Good	59 sec.	24 sec.
Side, 0.010 in.; back, 0.018 in.	12⅛ in.	Bearing/bearing	Upper: very easy Lower: easy	Easy	Good	3 min. 23 sec.	1 min. 25 sec.
Side, 0.035 in.; back, 0.015 in.	12⅛ in.	Graphite-impregnated blocks/bearing	Upper: very easy Lower: easy	Easy	Good	57 sec.	Stalled
Side, 0.000 in.; back, 0.017 in.	12 in.	Ceramic blocks/ ceramic block	Upper: easy Lower: easy	Very easy	Excellent	60 sec.	25 sec.
Side, 0.007 in.; back, 0.000 in.	12 in.	Double bearing/ bearing	Upper: very easy Lower: easy	Easy	Very good	2 min. 50 sec.	1 min. 4 sec.
Side, 0.000 in.; back, 0.040 in.	13⅛ in.	Bearing/bearing	Upper: difficult Lower: difficult	Very difficult	Good	3 min. 12 sec.	1 min. 33 sec.

GRIZZLY G0555X

This bear is a sound performer at a bargain price. Fit and finish overall are good, blade changes are easy, and the fence is high quality. The saw did fine in all of the cutting tests.

JET JWBS-14DX

Wheel misalignment and lack of power are the big issues with the Jet. It performed well in all the curve-cutting tests, but if you plan to do a lot of resawing, this machine is not your best bet.

POWERMATIC PWBS-14CS

The Powermatic comes loaded with accessories and has plenty of mass and power. It ranked high for performance among its cast-iron brethren, but the wheels were misaligned by more than ⅛ in.

RIKON 10-325

The Rikon has plenty of cutting capacity and power and some great features. But it dropped in the rankings because of its overly complicated and poorly machined guide mechanisms.