TOOL TEST

Block Planes

We tested them all, but low-angle is your best bet

BY MARIO RODRIGUEZ

WHAT A BLOCK PLANE CAN (AND SHOULD) DO FOR YOU

A block plane is the go-to tool for a bunch of jobs. Rodriguez put every plane through its paces, testing it on the following tasks.

Chamfers *A good block plane will cut precise bevels on both long grain and end grain.*

End grain *The best models planed end-grain oak cleanly, meaning they'll trim your dovetails, too.*

Cornering *A block plane should be able to level corner joints, where grain changes direction.*

Face grain *With a tight mouth and sharp blade, you should be able to handle a curly hardwood.*

Edges *This versatile tool should also be able to smooth both straight and curved edges.*

I'd be lost without my block plane. Though small, this tool has a big place in my woodworking, and I use it at least a dozen times each day when I'm in the shop. I trust it to bestow the critical finishing touches on a project, like carefully fitting a drawer into a carcase. The plane's small size makes it easy to control on an assembled piece, say for chamfering a table edge, and well-suited for jobs like removing machine marks from the edges and ends of a board, planing curved edges, and trimming joinery flush.

Because a block plane gets so much use, it's important that you get a very good one, one that fits your hand, cuts well, and adjusts easily. Choose wisely and you'll have a trusted friend for life. Choose poorly, and you'll kick yourself many times over.

I gathered 23 of the most popular block planes on the market (both standard- and low-angle models), ranging in price from $30 to $285, and compared their performance and quality head to head, running each one through a gauntlet of common shop tasks. In the end I discovered that a low-angle block plane is really all you need (see "The argument for a higher angle," p. 41), and also which ones are the best.

What's important in any block plane

You want the tool to be comfortable to hold, well-machined, and free of defects, such as burrs and rough spots. When it comes to weight and mass, it's a tough balancing act. A heavier block plane will work better when using the full width of the blade, or planing end grain, because the weight and mass help increase inertia and lessen the force needed to keep the tool moving. But for most jobs a block plane is meant to perform, like chamfering, weight is less of an issue. I recommend a two-handed grip when possible, but for those other times, a compact, well-balanced model will be easier to control.

Because these tools lack a chipbreaker, a thicker blade is paramount, as it will dampen vibration and chatter, providing a smoother cut. The blade also should be well-prepped from the factory, with a flat back and a square tip, ground to the proper bevel. You'll need to hone the edge for true sharpness, but you shouldn't have to do a whole lot more than that.

Blade adjustments also should be easy and smooth, and they must hold during use. You'll also want the blade to be relatively easy to remove and replace for sharpening.

Though not necessary, an adjustable mouth is a helpful feature, allowing you to increase the opening (to about 1/16 in.) for coarse work or close it (from about 1/64 in. to 1/32 in.) to eliminate tearout on tricky grain.

Versatility and agility, put to the test

I wanted to work with the planes as they came from the box, as a novice woodworker would likely do. So before the test I did nothing more than hone the blade. I put all of the planes through a woodworking

Highlights and low points

BLADE ADJUSTMENTS

It should be easy to remove and replace a blade for sharpening. And once the blade is in, adjustments should be smooth.

Depth but not lateral *Most planes featured a threaded depth adjuster but required manual side-to-side adjustments.*

Separate affairs *On some models, blade adjustments are made with two different adjusters: A lever handles lateral moves, while depth adjustments are done via a threaded knob.*

obstacle course, using poplar, soft maple, and oak. The tasks assigned to each plane were fairly typical of those performed in a shop. First I used the planes to remove machine marks from a freshly jointed and planed face.

To evaluate how the planes handled narrow surfaces and tricky situations, I planed edges and end grain. I also used each plane to smooth a 9-in. radius convex curve and to cut a ¼-in. chamfer on an edge. I often use a block plane where I have swirling grain because it's easy to navigate the tool around the tough patch to smooth it. So I challenged the planes by using them to smooth a curly ash board. Finally, I used the planes to flush a corner joint (like that on a door frame) and to flush hardwood edging to a veneered plywood panel.

I rated each tool's performance on how easy it was to set up and adjust before and during the task, how long it took to perform the work, how much physical force was required, and the quality of the completed sample. During the test, I also evaluated the comfort of each plane: its weight, grip, and whether there were any sharp or rough machinings that made the tool tough to hold.

The best of the best

It was a long test, and it was difficult to choose a single winner among the top performers. In the end I chose multiple champions: the Lie-Nielsen 60½ and 102, and the Veritas DX60 and Low-Angle Block Plane (the best standard-angle planes are Lie-Nielsen's 103 and 9½). The winners all proved exceptional not only in the performance arena but also in the areas of comfort, fit and finish, and ease of adjustments. Yes, you'll spend a bit more on these models, but considering how much use they'll get, it's money well spent. □

Online Extra

For a video on how to get the most from your block plane, and the test results for standard-angle planes, go to **FineWoodworking.com/extras.**

Mario Rodriguez helps run the Philadelphia Furniture Workshop (philadelphiafurnitureworkshop.com).

Best of both worlds *A Norris-style adjuster combines both lateral and depth adjustments and adds precision to both.*

Nice feature. *Unique to the Veritas planes are set screws in the body that help prevent the blade from shifting sideways as you adjust the depth or use the plane.*

Photos: Thomas McKenna

MOVING MOUTHS

Most of the block planes have adjustable mouths, which can be opened for better action on heavier cuts or tightened for tricky grain.

Twist and lever

On the most convenient models, you loosen the lock knob on top and pivot a lever at the front.

Twist and slide

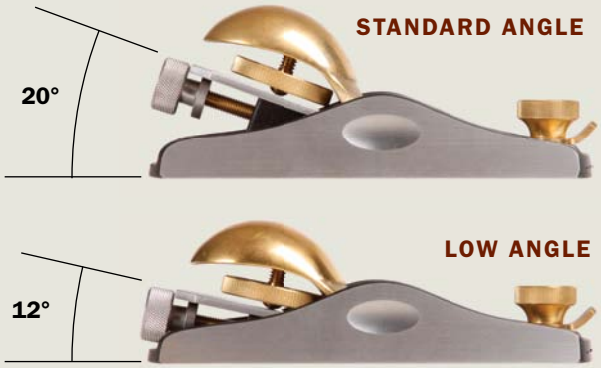
To adjust the mouth on other planes, you loosen the lock knob and slide the plate fore or aft. It's not as precise as a lever, but it works fine.

IS BIGGER BETTER? NOT USUALLY

Most of the time, a block plane is used on small, narrow surfaces, such as when you're trimming dovetails flush or chamfering, where a small, agile tool has an advantage. Occasionally, when using the entire blade, as when planing a broad edge, you will be helped by the additional width and increased weight of a bigger model.

The large and small of it. *The Stanley Sweetheart (left) is the largest in the low-angle group with a 1⅝-in. blade and weighing over 2 lb. The Lie-Nielsen 102 (right) is the smallest, with a 1³⁄₁₆-in. blade and weighing just over 1 lb.*

The argument for a higher angle



Standard-angle planes are taller. *This makes the grip less comfortable for small hands.*

There's been a long-running debate about whether you need both a standard-angle block plane and a low-angle model. Standard-angle planes, which generally have the blade bedded around 20° for a 45° cutting angle, should be better at planing boards with difficult or changing grain. Low-angle planes, on the other hand, have the blade bedded around 12°, resulting in a cutting angle of 37°. They're supposed to better handle end grain, where the lower angle will slice the vertical wood fibers more easily, leaving a smooth and clean surface with less effort and less wear on the blade's edge.

But my tests revealed no significant difference in performance between the two.

If you are buying your first block plane, or have the budget for only one, I recommend a low-angle model. I think the blade is better supported, more stable, and less prone to chatter or balking. This model will handle almost any job you throw its way, and if you encounter trouble, say if you're planing some tricky long grain, you can resharpen the blade, take a lighter cut with a tighter mouth, and get great results.

LIE-NIELSEN 9½
$165 lie-nielsen.com

LIE-NIELSEN 103
$115 lie-nielsen.com

Best of the standards. *If you'd like a higher-angle block plane for tricky grain, your best bets are Lie-Nielsen's 9½ and 103 models. You can see the test results for all the standard-angle planes at FineWoodworking.com/extras.*

And the winners are ...

Four planes earned top marks in our tests. Read closely to uncover the subtle differences between them.

LIE-NIELSEN 102

$115 lie-nielsen.com

The 102 is small and spare but very nicely crafted. The compact size will fit any hand, and the simple design makes it easy to set up and adjust. The 102 will deftly handle any job a block plane is meant to perform, although its narrow blade will require more passes to handle wider surfaces. It doesn't have any bells and whistles, but there's not a better block plane available for the money.

LIE-NIELSEN 60½

$165 lie-nielsen.com

The 60½ is a step up from its cousin, the 102 (left). It's bigger, which means more weight and a bigger blade, making the plane more efficient at tackling wider surfaces. An adjustable mouth allows you to dial in the opening for different situations (wider for coarse work; narrow for tricky grain). All adjustments were smooth and precise, and the tool is very well-balanced and comfortable to hold.

VERITAS DX60

$185 leevalley.com

With the DX60 (and its pricier nickel counterpart below), Veritas tossed aside traditional lines and engineering. Both are extremely well made and very comfortable to hold and use. Both feature adjustable mouths, smooth-operating Norris-style adjusters, and set screws on the side of the body to help hold the settings. But these are a bit narrower than the other Veritas model (right), giving them a slightly more comfortable grip. The NX60's high pricetag took it out of contention for best overall, but you might opt for its high style and corrosion-resistance.

VERITAS LOW-ANGLE

$140 leevalley.com

This is the largest and heaviest plane among the winners, making it the best for broad surfaces. Despite its size, the plane is comfortable to hold, with detents in the body that put your fingers in the right spots. The plane has a smooth-operating Norris-style adjuster, which handles depth and lateral adjustments, and set screws in the body to hold the lateral settings. Mouth adjustments are smooth and responsive.

ANANT 60½

GROZ

RIDER 60½

STANLEY 60½

STANLEY SWEET HEART 60½

VERITAS NX60

WOOD RIVER

MODEL/SOURCE
Anant 60½ rlarson.com
Groz Low-angle Block Plane amazon.com
BEST OVERALL **Lie-Nielsen 60½** lie-nielsen.com
BEST OVERALL BEST VALUE **Lie-Nielsen 102** lie-nielsen.com
Rider 60½ traditional-woodworker.com
Stanley 60½ woodcraft.com
Stanley Sweet Heart 60½ woodcraft.com
BEST OVERALL **Veritas DX60** leevalley.com
Veritas NX60 leevalley.com
BEST OVERALL **Veritas Low-Angle Block Plane** leevalley.com
Wood River woodcraft.com

STREET PRICE	SIZE/WEIGHT	BLADE	PERFORMANCE	EASE OF ADJUSTMENTS	FIT AND FINISH	COMMENTS
$42	1 13/16 in. wide by 6 1/8 in. long; 1 lb. 8.3 oz.	5/64 in. thick by 1 3/8 in. wide	Fair	Depth: poor Lateral: poor Mouth: good	Poor	Though it has a low silhouette that should make it comfortable to hold, sharp edges and rough machining interfere with the grip; blade deflection caused lots of chatter; sole was flat.
$37	1 3/4 in. wide by 6 1/4 in. long; 1 lb. 7.3 oz.	5/64 in. thick by 1 3/8 in. wide	Fair	Depth: poor Lateral: poor Mouth: good	Poor	Blade is not adequately supported, causing chatter, and is difficult to adjust; edge of blade was not square and had to be reground to work; adjustments didn't hold; sole was flat.
$165	1 3/4 in. wide by 6 1/4 in. long; 1 lb. 9.8 oz.	1/8 in. thick by 1 3/8 in. wide	Excellent	Depth: excellent Lateral: excellent Mouth: excellent	Excellent	Top-notch tool; well-made and well-balanced, comfortable to hold; sole was flat.
$115	1 5/8 in. wide by 5 1/4 in. long; 1 lb. 0.07 oz.	1/8 in. thick by 1 3/16 in. wide	Excellent	Depth: excellent Lateral: excellent Mouth: none	Excellent	A pleasure to use; very comfortable and well-balanced; compact design; simple to set up; lack of adjustable mouth did not hinder performance; sole was flat.
$80	1 3/4 in. wide by 6 1/8 in. long; 1 lb. 12.3 oz.	3/32 in. thick by 1 3/8 in. wide	Very good	Depth: good Lateral: good Mouth: good	Good	A good-value plane; low profile is a little hard to grip but overall balance is good; responsive to blade adjustments; sole was flat.
$47	2 in. wide by 6 3/8 in. long; 1 lb. 13 oz.	3/32 in. thick by 1 5/8 in. wide	Good	Depth: fair Lateral: fair Mouth: good	Fair	Was fairly comfortable to hold; well-balanced; blade adjustments were stiff; fit and finish was fair, with chipping paint and mill marks; sole was flat.
$105	2 1/8 in. wide by 6 3/8 in. long; 2 lb. 0.06 oz.	1/8 in. thick by 1 5/8 in. wide	Excellent	Depth: good Lateral: good Mouth: good	Fair	Problems with fit and finish held this plane back; aluminum lever cap is difficult to engage and you must be careful not to overtighten; hard corners left scratches in wide stock; sharp edges needed work; paint showed signs of wear; sole was flat.
$185	1 13/16 in. wide by 6 9/16 in. long; 1 lb. 11.6 oz.	9/64 in. thick by 1 3/8 in. wide	Excellent	Depth: excellent Lateral: excellent Mouth: excellent	Excellent	Innovative styling; impeccable manufacturing; very comfortable to hold; well balanced; adjustments are very responsive; set screws near mouth help hold lateral adjustments; sole was flat.
$295	1 13/16 in. wide by 6 9/16 in. long; 1 lb. 11.6 oz.	9/64 in. thick by 1 3/8 in. wide	Excellent	Depth: excellent Lateral: excellent Mouth: excellent	Excellent	Same basic design as DX60, but made from corrosion-resistant nickel instead of ductile iron. This is where the retro tool styling really shines, but you'll pay a premium for it.
$140	2 1/16 in. wide by 6 1/2 in. long; 1 lb. 13.1 oz.	1/8 in. thick by 1 5/8 in. wide	Excellent	Depth: excellent Lateral: good Mouth: excellent	Excellent	Plane is a bit heavier than the other winners, but it's well-balanced and comfortable to hold; very responsive to adjustments and held its settings; set screws near mouth help hold lateral adjustments; indents in the plane body are perfectly placed; excellent value; sole was flat.
$95	2 in. wide by 7 in. long; 1 lb. 14 oz.	1/8 in. thick by 1 5/8 in. wide	Excellent	Depth: difficult Lateral: good Mouth: good	Good	A big tool, but well-balanced and easy to control; sole was flat, but blade adjustments were extremely stiff.