

TOOL TEST

# Benchtop Planers

For small shops, these machines offer good value and performance

BY LON SCHLEINING



When benchtop thickness planers were introduced in the early 1980s, many woodworkers viewed them with suspicion, certain that such a compact, portable, low-cost machine offered little more than a collection of assembled parts destined for early retirement. Over the years, however, these lightweights have more than managed to prove their value.

Granted, portable thickness planers aren't industrial-strength cast-iron machines. They're not intended to run all day or hog off  $\frac{1}{4}$  in. of stock in a single pass. But for occasional use, as in a home shop or even a small commercial shop, a portable thickness planer can provide years of service. Plus, it produces remarkably smooth surfaces that few cast-iron machines can match.

A portable thickness planer has other advantages. Compared with bigger planers, it's a lot friendlier on the budget. And because it's relatively light, a portable planer can be picked up and stored out of the way when it's not in use.

Today's portable thickness planers vary in price from under \$300 to nearly \$500. That's a pretty wide range. In an effort to learn whether the price differences reflect

the quality and features of the machines, I recently put nine of them through a hands-on test: Central Machinery 6469-5VGA (sold by Harbor Freight), Delta 22-580, DeWalt DW733, Geetech CT-345 (sold by Sunhill), Grizzly G8794, Jet JWP-12DX, Makita 2012NB, Pro-Tech CS6005 and Ridgid TP1300LS (sold by The Home Depot).

### Portable thickness planers are not complex tools

As machines go, the portable thickness planer is relatively simple. Driven by a universal motor, the cutterhead spins a pair of long knives at some 8,000 rpm to 10,000 rpm, depending on the model. The cutterhead, which is located above the board to be planed, is attached to an adjustable carriage. To adjust the depth of cut, the carriage and cutterhead are moved up or down simply by turning a crank.

As a board travels through the planer, it is supported by a series of three surfaces—an infeed table, a bed and an outfeed table. The Central Machinery planer includes a pair of rollers in the bed, a feature commonly found only on larger planers.

When the cutterhead is lowered to make a planing cut, a pair of spring-loaded, rubber-coated feed rollers (one in front of the cutterhead and one behind) moves up and down along with the cutterhead and contact the top face of the board as it enters and exits the machine. Powered by the motor, the rollers slowly rotate to feed the board through the machine while holding it firmly against the bed.

### Tables must be aligned to ensure smooth cuts

It's important for the infeed and outfeed tables to be flush with the bed. If the infeed table is too low or the outfeed table too high, a board is likely to be hung up as it journeys through the planer. Table alignment also can affect the amount of snipe that shows up on the ends of the board.

All of these machines made it easy to adjust the infeed and outfeed tables up and down. It was just a matter of fiddling with a few bolts and nuts.

I used a long straightedge to check all of the tables for alignment. Except for the Geetech and the Central Machinery, all were dead-on. In just a few minutes, I had both of the Geetech tables perfectly flush. But the Central Machinery planer took some extra work. I not only had to adjust



## Central Machinery 6469-5VGA

Had the most snipe. Made the most noise. Manual had lots of poorly translated text. Was a chore to adjust the tables and bed rollers. Excellent carriage parallelism. Lightweight and compact. Company offers free shipping. Inexpensive.

|                                  |                |
|----------------------------------|----------------|
| TELEPHONE NUMBER                 | (800) 444-3353 |
| AVERAGE STREET PRICE             | \$290          |
| MAXIMUM PLANING THICKNESS, WIDTH | 6 in., 12 in.  |
| WEIGHT (NET)                     | 63 lbs.        |
| SPEED (NO LOAD)                  | 8,000 rpm      |
| KNIVES REVERSIBLE                | No             |
| EXTRA SET OF KNIVES INCLUDED     | No             |
| KNIVES CAN BE SHARPENED          | Yes            |
| PRICE FOR NEW SET OF KNIVES      | \$19           |
| DUST-COLLECTION HOOD             | Not available  |

the infeed and outfeed tables but also the two bed rollers.

### Convenient controls are a plus

After looking at the table alignment, I tried all of the important controls to see how easy they were to use.

**Crank**—Each of these portable planers uses a crank to raise and lower the cutter-

head. All of the cranks worked fine, but I especially liked the feel and action of the crank on the Ridgid planer. Its large hand-wheel moved smoothly, and I was able to raise or lower it a couple of inches without much effort.

**Cutterhead lock**—Most of the machines offer a cutterhead lock, a mechanism designed to eliminate snipe—or at least re-



**Table alignment is critical.** The planers make it fairly easy to adjust the height of the infeed and outfeed tables so that they can be made flush with the bed.



### Delta 22-580

Expensive. Heaviest of the lot. Excellent carriage parallelism. Smallest amount of snipe (tie). One of the least noisy. Best dust collection. Has slotted knives and two cutting speeds.

|                                  |                 |
|----------------------------------|-----------------|
| TELEPHONE NUMBER                 | (800) 438-2486  |
| AVERAGE STREET PRICE             | \$430           |
| MAXIMUM PLANING THICKNESS, WIDTH | 6½ in., 13 in.  |
| WEIGHT (NET)                     | 97 lbs.         |
| SPEED (NO LOAD)                  | 10,000 rpm      |
| KNIVES REVERSIBLE                | Yes             |
| EXTRA SET OF KNIVES INCLUDED     | No              |
| KNIVES CAN BE SHARPENED          | Yes             |
| PRICE FOR NEW SET OF KNIVES      | \$39            |
| DUST-COLLECTION HOOD             | Optional (\$30) |



### DeWalt DW733

Cutterhead lock was a bit stiff. Smallest amount of snipe (tie). Excellent carriage parallelism. Moderately priced.

|                                  |                        |
|----------------------------------|------------------------|
| TELEPHONE NUMBER                 | (800) 433-9258         |
| AVERAGE STREET PRICE             | \$350                  |
| MAXIMUM PLANING THICKNESS, WIDTH | 6 in., 12½ in.         |
| WEIGHT (NET)                     | 80 lbs.                |
| SPEED (NO LOAD)                  | 10,000 rpm             |
| KNIVES REVERSIBLE                | No                     |
| EXTRA SET OF KNIVES INCLUDED     | Yes                    |
| KNIVES CAN BE SHARPENED          | Yes (up to five times) |
| PRICE FOR NEW SET OF KNIVES      | \$39                   |
| DUST-COLLECTION HOOD             | Included               |

duce it—by anchoring the cutterhead to the planer frame. Snipe, by the way, is the tendency for a thickness planer to dig slightly deeper during the first and last few inches of a cut.

The Delta and Ridgid planers use a lever to lock the cutterhead, a system I liked a lot. The levers engaged quickly and easily and offered a solid feel.

The cutterheads on the Jet and Pro-Tech machines are locked by turning two spring-loaded handles. But I thought the system was cumbersome because each of the handles had to be unlocked and then relocked every time the thickness setting needed to be changed.

To engage the cutterhead lock on the DeWalt model, you push down on a rod that extends across the top of the carriage. It was a bit stiff, though, so after using it all day my hand felt sore.

**Cutting-depth scale**—All of the machines had some sort of cutting-depth scale to indicate the thickness of a board. Once adjusted, each of the scales provided accurate readouts. I especially liked the scale on the Delta planer because its position made it easier for me to read the numbers.

**Depth-of-cut gauge**—Several of the machines include a depth-of-cut gauge. Although these gauges vary in design somewhat, all of them allowed me to determine quickly how much material would be removed by the next cut. I particularly liked the gauge on the Makita. To use it you simply lower the cutterhead until a steel pin gets pushed up. The amount the pin gets pushed represents the cutting depth. It couldn't be easier.

I also liked the “blade zero” gauge featured on the Delta planer. It has a spring-loaded preset gauge that snaps into position at the point the knives are going to just touch the board. From there you use the crank to lower the cutterhead to the desired depth of cut.

**Preset thickness stop**—Some of the machines have a gauge that lets you quickly preset the final planing cut to one of the commonly used thicknesses. For example, if you want to plane a board to ¾ in. thick, set the gauge to the preset ¾-in. mark. Once the board has been planed to ¾ in. thick, the preset stop will not allow the cutterhead to be lowered any farther.

The Delta and Makita planers don't use preset stops. Instead, they have stops that can be raised or lowered to establish a range of thicknesses.

### How well do these planers work?

Once I familiarized myself with the machines, it was time to run them and make some chips. I wanted to test how accurately and smoothly the planers cut. I also measured the noise level of the machines, checked to see how easy it was to change knives and gauged the effectiveness of the dust collection.

To put the machines through their paces, I gathered a number of red-oak test boards, each one measuring 1 3/8 in. thick by 10 in. wide by 36 in. long. The oak was kiln-dried and presurfaced on both sides of the board at the lumberyard.

**Planing accuracy**—The first test was to determine whether the cutterhead was parallel to the bed table. If those parts aren't parallel, the top and bottom faces of the board won't be parallel, which means the



### Geetech CT-345

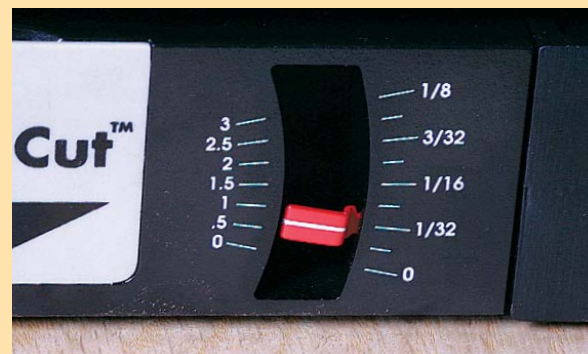
Had worst score on carriage-parallelism test, but results were acceptable. Cutterhead lock was cumbersome. Smallest amount of snipe (tie). Changing knives was fast and easy. Inexpensive.

|                                  |                   |
|----------------------------------|-------------------|
| TELEPHONE NUMBER                 | (800) 929-4321    |
| AVERAGE STREET PRICE             | \$290             |
| MAXIMUM PLANING THICKNESS, WIDTH | 6 in., 12 1/2 in. |
| WEIGHT (NET)                     | 70 lbs.           |
| SPEED (NO LOAD)                  | 8,000 rpm         |
| KNIVES REVERSIBLE                | Yes               |
| EXTRA SET OF KNIVES INCLUDED     | No                |
| KNIVES CAN BE SHARPENED          | Yes               |
| PRICE FOR NEW SET OF KNIVES      | \$29              |
| DUST-COLLECTION HOOD             | Optional (\$22)   |

## SMART FEATURES IMPROVE PERFORMANCE



**Cutterhead lock helps reduce snipe.** In general, the planers with cutterhead locks produce less snipe than those without the mechanism.



**Gauge shows depth of cut.** Some of the planers feature a gadget that quickly lets you see how much stock the next cut is going to remove.



**Preset thickness stop.** A few of the machines include a thickness stop. Once set, the cutterhead automatically stops when the stock has reached the preset thickness.



## Grizzly G8794

Had more snipe than all but one machine. No cutterhead lock. Very good carriage parallelism. One of the least noisy. Inexpensive. Free stand.

|                                  |                        |
|----------------------------------|------------------------|
| TELEPHONE NUMBER                 | (800) 523-4777         |
| AVERAGE STREET PRICE             | \$290 (includes stand) |
| MAXIMUM PLANING THICKNESS, WIDTH | 6 in., 12½ in.         |
| WEIGHT (NET)                     | 75 lbs.                |
| SPEED (NO LOAD)                  | 8,540 rpm              |
| KNIVES REVERSIBLE                | Yes                    |
| EXTRA SET OF KNIVES INCLUDED     | No                     |
| KNIVES CAN BE SHARPENED          | No                     |
| PRICE FOR NEW SET OF KNIVES      | \$35                   |
| DUST-COLLECTION HOOD             | Optional (\$30)        |

board ends up with a slight edge-to-edge taper when viewed from the end.

After making several passes with the test board, enough to make sure the machine was warmed up and working properly, I used a dial caliper to measure the 10-in.-wide board in several places along each edge. The numbers in the chart on p. 81 represent, on average, how much one edge differed in thickness from the opposite edge. The lower the number, the closer the cutterhead was to parallel. All of the machines did pretty well in this test, with the numbers ranging from less than 0.001 in. to 0.007 in.

I also checked each test board for snipe after it had been planed. Sniped areas cause problems in most furniture construction because they create parts of different thicknesses. And it's almost impossible to achieve flush surfaces between mating parts that have different thicknesses. In most cases, though, snipe is not a problem if it measures no more than a few thousandths of an inch. Such a small amount of snipe can usually be handplaned or sanded out quickly.

To test for snipe, I planed between ½ in. and ¼ in. during each pass, a typical cut. After each pass, I turned over the board to

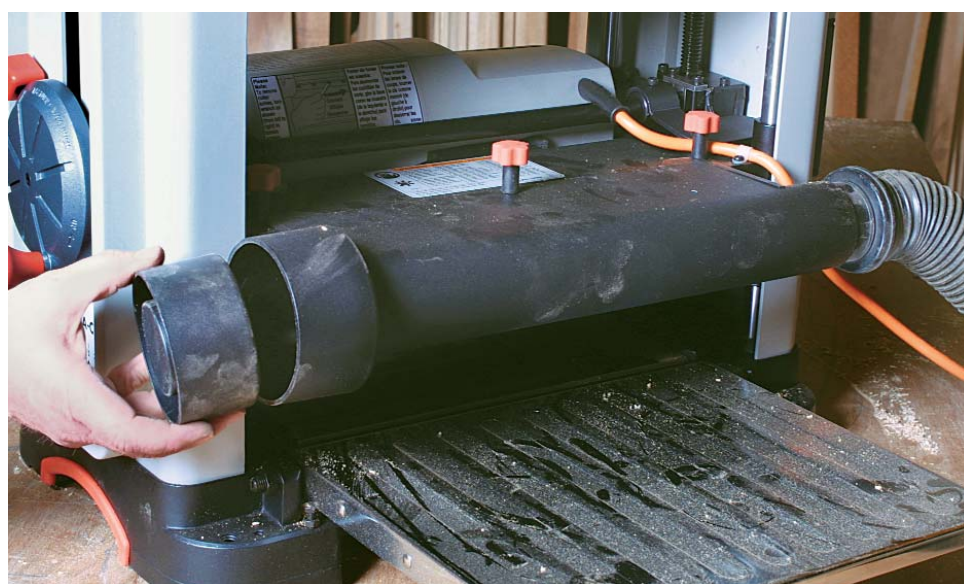
maintain the same orientation of the leading and trailing ends and ran it through the planer again. That made it easier to detect snipe, because any amount I measured with the dial calipers was equivalent to adding the snipe on the top side to the snipe on the bottom side. The results can be found in the chart on p. 81.

One last point regarding snipe: For as long as I've been woodworking, snipe has been a fact of life. Though some of these machines reduce snipe to nearly zero, none of them eliminates it. Rather than waste time trying to create a snipeless cut, I take another approach. Any board destined for the planer is rough-cut a few inches longer than needed. Then, after planing, I simply cut off the sniped ends. Granted, at the end of the day I use a bit more material. But all of the boards end up with zero snipe.

**Surface smoothness**—Portable thickness planers, as a group, are regarded as machines that create wonderfully smooth surfaces. After looking closely at this delegation, the reputation is well earned. All of the machines produced amazingly smooth surfaces. The planer cuts were nearly imperceptible, needing only some slight sanding or scraping to achieve a perfect surface.

**Noise**—Portable thickness planers are inherently noisy, so ear protection is always a must. Still, all else being equal, I prefer to use relatively quiet planers.

To measure noise levels among this collection, I used a decibel meter mounted on a tripod, taking care to place the meter the same distance from each machine, with the position of the meter representing the location of my ears when I run a planer (see the chart on p. 81 for the final results).



**Dust-collection hood helps gather chips.** DeWalt and Ridgid provide a hood with their machines. Central Machinery doesn't offer one. The other manufacturers make the hood available as an accessory.

The Grizzly and Ridgid machines did well in this category.

**Knives**—As with any cutting tool, planer knives eventually wear to the point that they no longer cut smoothly, or they get badly nicked. When that happens, you'll need to provide the machine with fresh, sharp, cutting edges.

Some portable planers have single-edge knives that are sent out to be sharpened when they become dull.

Other manufacturers use reversible knives, which have a cutting edge on both sides. When one edge dulls, turn around the knife to expose a new, sharp edge. Although the manufacturers say some reversible knives can be sharpened, typically you just toss them after the second edge has dulled. I prefer reversible knives because their affordability eliminates the hassle of getting them sharpened.

The Delta and Geetech planers use steel pins to help position the knives on the cutterheads, a nice little feature. Elongated holes in the knives allow them to be moved laterally on the pins as they're mounted to the cutterhead. If the knives get nicked, the resulting ridge in the board often can be eliminated simply by shifting one of the knives over a little.

When it's time to change knives, any planer that makes the job easier has my vote. So I wanted to see how tough it is to change the knives on these machines. To get a sense of this, I kept track of how long it took to get the job done, carefully following the knife-changing directions in the owner's manual. Check the chart on p. 81 to find the results.

**Dust collection**—Thickness planers spit out chips by the bushel. Absent a dust collector, those chips not only pile up quickly on the shop floor, but they also can eventually clog up a planer to the point that boards don't run through the machine as smoothly. I think dust collection is more than a convenience. It's a necessity.

DeWalt and Ridgid are the only manufacturers that include a dust-collection hood with their machines; the others, except for Central Machinery, make the hood available as an accessory.

I hooked up each machine with a hood to my 1,200-cu.-ft.-per-minute (cfm) dust collector. Two machines were not tested: Central Machinery doesn't offer a hood, and the



## Jet JWP-12DX

New knives and optional dust-collection hood are the most expensive. Two separate cutterhead-locking handles slowed the locking process. Minimal snipe. Moderately priced.

|                                  |                 |
|----------------------------------|-----------------|
| TELEPHONE NUMBER                 | (800) 274-6848  |
| AVERAGE STREET PRICE             | \$350           |
| MAXIMUM PLANING THICKNESS, WIDTH | 6 in., 12½ in.  |
| WEIGHT (NET)                     | 69 lbs.         |
| SPEED (NO LOAD)                  | 8,000 rpm       |
| KNIVES REVERSIBLE                | Yes             |
| EXTRA SET OF KNIVES INCLUDED     | No              |
| KNIVES CAN BE SHARPENED          | Yes             |
| PRICE FOR NEW SET OF KNIVES      | \$50            |
| DUST-COLLECTION HOOD             | Optional (\$40) |



## Makita 2012NB

Had more snipe than most other planers. Odd-sized (3-in.-dia.) dust port. Expensive. Very good carriage parallelism. Light-weight. Compact. Changing knives was faster and easier than on most others in the test.

|                                  |                 |
|----------------------------------|-----------------|
| TELEPHONE NUMBER                 | (800) 462-5482  |
| AVERAGE STREET PRICE             | \$480           |
| MAXIMUM PLANING THICKNESS, WIDTH | 6¾ in., 12 in.  |
| WEIGHT (NET)                     | 61 lbs.         |
| SPEED (NO LOAD)                  | 8,500 rpm       |
| KNIVES REVERSIBLE                | Yes             |
| EXTRA SET OF KNIVES INCLUDED     | No              |
| KNIVES CAN BE SHARPENED          | No              |
| PRICE FOR NEW SET OF KNIVES      | \$39            |
| DUST-COLLECTION HOOD             | Optional (\$25) |



## Pro-Tech CS6005

A long cutterhead-locking lever took a lot of effort to engage. Tied for longest time to change knives. Minimal snipe. Very good carriage parallelism. Moderately priced.

|                                  |                 |
|----------------------------------|-----------------|
| TELEPHONE NUMBER                 | (800) 888-6603  |
| AVERAGE STREET PRICE             | \$330           |
| MAXIMUM PLANING THICKNESS, WIDTH | 6 in., 13 in.   |
| WEIGHT (NET)                     | 74 lbs.         |
| SPEED (NO LOAD)                  | 9,900 rpm       |
| KNIVES REVERSIBLE                | Yes             |
| EXTRA SET OF KNIVES INCLUDED     | Yes             |
| KNIVES CAN BE SHARPENED          | Yes             |
| PRICE FOR NEW SET OF KNIVES      | \$30            |
| DUST-COLLECTION HOOD             | Optional (\$20) |



## Ridgid TP1300LS

Heavy. Smallest amount of snipe (tie). Fastest and easiest knife changing. Least noisy. Easy-to-use cutterhead lock. Moderately priced.

|                                  |                        |
|----------------------------------|------------------------|
| TELEPHONE NUMBER                 | (800) 474-3443         |
| AVERAGE STREET PRICE             | \$397 (includes stand) |
| MAXIMUM PLANING THICKNESS, WIDTH | 6 in., 13 in.          |
| WEIGHT (NET)                     | 84 lbs.                |
| SPEED (NO LOAD)                  | 9,500 rpm              |
| KNIVES REVERSIBLE                | Yes                    |
| EXTRA SET OF KNIVES INCLUDED     | Yes                    |
| KNIVES CAN BE SHARPENED          | No                     |
| PRICE FOR NEW SET OF KNIVES      | \$30                   |
| DUST-COLLECTION HOOD             | Included               |

To create a better overall picture of the planers in this review, Schleinig included several hands-on measurements, such as checks of snipe and blade-changing time. The chart at right has the results.



**Snooping for snipe.** Snipe was measured with a dial indicator.



**Changing knives shouldn't be a chore.** Depending on the machine, the job can take anywhere from five to 25 minutes.

Grizzly dust-collection hood wasn't available at the time of the test, but it is now.

Although all of the planers did an acceptable job collecting dust, the Delta machine won the test hands-down. After planing a board, I was hard-pressed to find even a thimbleful of chips around the machine.

### In search of a favorite

The planers in this group fall into three general price ranges: low cost, midrange cost and high cost. For anyone with a tight budget, the Central Machinery, Geetech and Grizzly machines all retail for under \$300. The midrange machines, which include the DeWalt, Jet, Pro-Tech and Ridgid, cost between \$300 and \$400. At the high end are the Delta and Makita planers, which both sell for more than \$400.

## HOW THE PLANERS PERFORMED

| BRAND                       | AVERAGE SNIPE PER SIDE | OUT OF PARALLEL     | NOISE (LOAD) | TIME NEEDED TO CHANGE KNIVES |
|-----------------------------|------------------------|---------------------|--------------|------------------------------|
| CENTRAL MACHINERY 6469-5VGA | 0.0075 in.             | Less than 0.001 in. | 105 dB       | 25 minutes                   |
| DELTA 22-580                | Less than 0.001 in.    | Less than 0.001 in. | 95 dB        | 17 minutes                   |
| DEWALT DW733                | Less than 0.001 in.    | Less than 0.001 in. | 98 dB        | 17 minutes                   |
| GEETECH CT-345              | Less than 0.001 in.    | 0.007 in.           | 98 dB        | 12 minutes                   |
| GRIZZLY G8794               | 0.0055 in.             | 0.002 in.           | 95 dB        | 18 minutes                   |
| JET JWP-12DX                | 0.0025 in.             | 0.006 in.           | 101 dB       | 20 minutes                   |
| MAKITA 2012NB               | 0.0035 in.             | 0.002 in.           | 99 dB        | 15 minutes                   |
| PRO-TECH CS6005             | 0.0020 in.             | 0.002 in.           | 98 dB        | 25 minutes                   |
| RIDGID TP1300LS             | Less than 0.001 in.    | 0.004 in.           | 94 dB        | 5 minutes                    |

Each one of these nine machines produced impressively smooth surfaces on the test boards. So when it came to the all-important category of surface smoothness, I gave all of them the same grade: excellent.

Among the low-cost planers, the Grizzly and the GeeTech got high marks in some other categories. The GeeTech had the least amount of snipe. Plus, its slotted knives can be changed quickly. The Grizzly was one of the quietest machines.

Among the midrange-cost machines, I liked the DeWalt and Ridgid a lot. The Ridgid comes with a stand. Also, the DeWalt and Ridgid planers include an extra set of knives and a dust-collection hood. Both hoods have a full 4-in.-dia. outlet, ideal for most dust collectors, and a smaller outlet that fits most shop-vacuum hoses. On

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For tips on buying a planer,  
go to [www.finewoodworking.com](http://www.finewoodworking.com).

both machines the cutterhead locks reduced snipe to nearly zero.

It took only five minutes to change the knives on the Ridgid planer—best of the bunch. And it was the least noisy machine in all price ranges.

The high-cost category, as you might expect, offers more benefits and features than the lower-cost models. The Delta planer had the most effective dust collection of any machine I tested. Its repeating thickness feature worked flawlessly to within a couple thousandths of an inch. Also, it's the only portable thickness planer to offer two

feed speeds, although I couldn't detect any appreciable difference in surface quality between fast and slow feed rates.

The Makita is the lightest and most compact of the lot, features especially important for someone who moves the planer frequently. It has a simple, effective depth gauge. The knife-holding system made changing knives a pleasure. My only gripes were that the dust hood is 3 in. dia. instead of the standard 4 in. dia., and that there was more than average snipe. The Makita, although the most expensive of the planers tested, is the one I would most want in my shop. □

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