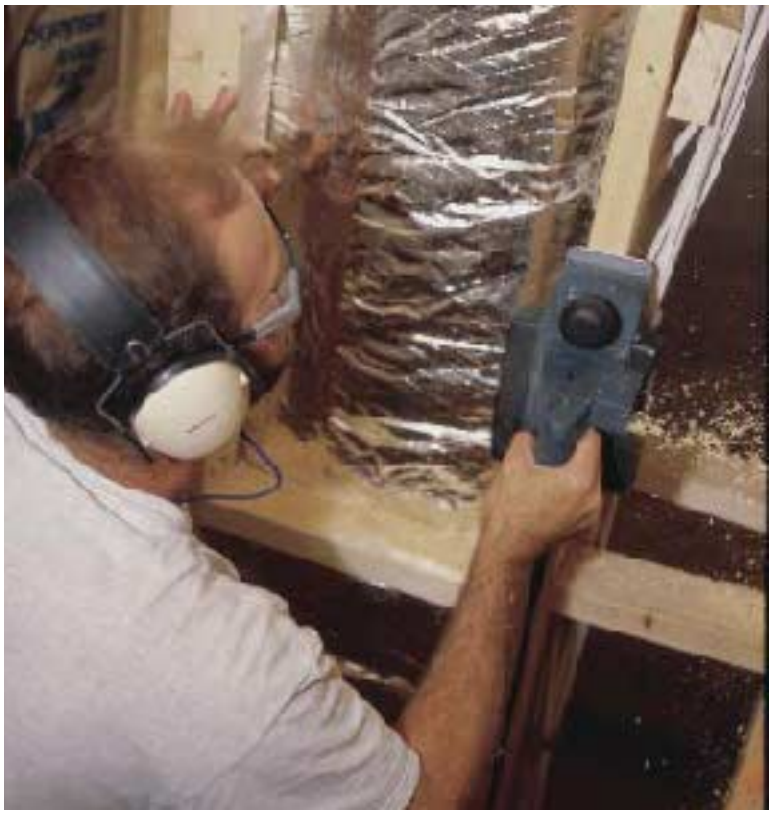
CHOOSING A Power Planer

by David Frane

I first used a hand-held power planer when I was learning how to build wooden boats. The job required a lot of planing, which was faster and easier with a power tool than by hand. Later, when I went back to doing carpentry, one of the first new tools I bought was a 3 1/4-inch power planer. It saved time and muscle power whenever I had to plane doors or scribe cabinets and casings to the wall. It was also handy for straightening bowed joists and studs before installing the drywall.

Power planers are a lot like the jointers found in woodworking shops. Both tools can be used with or without fences and have cutter heads that are mounted between an infeed and an outfeed bed. On a power planer, the beds are referred to as shoes or bases. The blades are fastened to the head and spin on a horizontal axis.

Power planers come in a number of sizes, but the most common professional models weigh 5 to 10 pounds and have blades that are 3 1/4 inches wide.



Depth of Cut

With a hand plane, depth of cut is controlled by raising and lowering the blade. But with a power plane, it's controlled by raising or lowering the front shoe. Raising the bed increases the depth of cut by exposing more of the cutter head. When the shoes are in the same plane, the depth of cut will be zero because the blades will spin just over the surface of the stock.

The maximum depth of cut on the models I tested was just over 1/8 inch, but many tools are limited to cuts as light as 1/16 or 1/32 inch. Shallow cuts are fine if you only want to remove a small amount of stock. But if you have to remove a lot of material, it's better to have a planer that can make deeper cuts.

Scales. On most planers, you change depth of cut by rotating a knob-like grip on the front of the tool. Some of the knobs spin freely, while others click through a series of detents. Most of the tools have markings that indicate the depth of cut. About half are marked in fractions of an inch; the rest are metric. I have a slight preference for the planers with detents because once you get used to a particular tool, you'll know that popping it over to the next setting will remove a hair, or half a hair, more stock.

Precision. One thing that bothered me about some of the planers I tested was that the front and rear shoes didn't stay parallel to each other in all settings. If the beds aren't in parallel planes, the tool removes more stock

For a general purpose tool, look for power and light weight

at the beginning and end of the cut than it does in the middle. As a result, edges that are supposed to be straight end up with a hump. You might not notice it if you're planing framing, but it's a serious problem if you're doing the edge of a door.

Rabbeting. Most power planers can be used to cut rabbets. I usually make this kind of cut with a router or on a table saw, but for some reason Europeans — who design and manufacture most power planers — are really big on doing this with planers. You might use this function if you wanted to make shiplap joints, rabbet frieze boards and exterior window aprons, or mill door and windowsills.

The way to make this cut is to plane only a portion of the surface. If the rabbet is narrower than 3 1/4 inches wide, a portion of the base hangs off the edge of the stock. Normally, you'd perform this operation with a fence so the cut comes out straight. The width of the rabbet is determined by how much of the base you allow to ride on the stock. There's no limit to the width of this cut, but depth is strictly limited by the design of the tool. There are bearings on either end of most cutter heads, so the housing overhangs the base and will bottom out when you get to a certain depth. The maximum depth of rabbet is typically somewhere between 1/4 and 1 inch deep, with the exception of Festo's planer, which has unlimited rabbet depth.

Indexed detents make it easy to keep track of how much material you're about to remove.

Most power planers can be used to cut rabbets on the edge of stock. The fence is used to set width of cut, and the rabbeting stop determines depth.

Many power planers come with something called a rabbeting stop. This adjustable bracket screws to the side of the housing and limits the depth of the rabbet by bottoming out on the stock.

Weight, Power, and Size

Except for one of the cordless models, which was tail-heavy, none of the planers felt noticeably out of balance. The tools all handled differently, mostly because they ranged in weight from 4 1/2 to 9 pounds — a huge variation. If you're a big, strong guy or spend a lot of time planing doors and horizontal surfaces, weight shouldn't be a big issue. But if you've got a lot of miles on you, or plan on using the tool to plane vertical surfaces and cut scribes, you'll be happier with a lighter machine.

You might assume that the heavier the tool, the deeper the cut it can make. But if you look at the chart on page 68, you'll see that some of the lighter planers can be set deeper than tools that weigh half again as much. The choice to limit the depth of cut is made by

Some manufacturers use bolts to fasten the blades directly to the head (above), while others use blade holders that fit into slots in the head and are secured with Allen screws (right).

manufacturers. In the absence of those limits, the amount of stock you could remove per pass would depend on the power of the motor, density of the wood, and width and depth of cut. A planer that has no trouble taking a deep cut off a narrow edge may bog down if you try to take the same bite across the entire width of the blade.

Length. Other things being equal, it's easier to make straight cuts with a long planer than with a short one. On the other hand, it's harder to plane to a crooked scribe line with a long tool. Porter-Cable's Porta-Plane is 16 inches long because it's designed for planing doors. Other planers are designed to perform a variety of tasks, which is why most of them are 11 or 12 inches long.

Blades

Planer blades used to be made from high-speed steel (HSS), but 10 or 15 years ago manufacturers began to make them from narrow strips of carbide. Most planers now accept the same standard inserts, or mini-blades. These inserts are 82 mm long, 5.5 mm wide, and 1.1 mm thick. Both edges are sharpened, so when one side gets dull you just flip them around in the machine. The blades cost $15 to $20 per set and are designed to be thrown away rather than resharpened.

Quality of cut. Most of the planers use two blades, so they make two cuts for each revolution of the head. A couple of planers use single blades. At 13,000 rpm, a two-blade machine would make 26,000 cuts per minute. In theory, the more cuts you make, the smoother the finish will be. But in reality, the type of blades and the speed at which you advance the tool have a greater impact on the finish cut. Equally important is how well the blades are aligned in the head.

One way to get less tear-out is to use spiral blades. Spiral cutting action is like slicing, whereas straight action is like chopping. Only two of the planers I tested use spiral cutters. The Porta-Plane has a two-blade spiral head that can be resharpened. Festo's planer uses a single disposable spiral carbide insert. Both tools make noticeably smoother cuts than the other machines.

Changing blades. On most planers, the blade holders fit in slots milled in the head and are secured with bolts or Allen screws. I have a slight preference for tools that use screws because there's not much room to get a wrench on a bolt when it's in a slot.

A few manufacturers bolt blades directly onto the head or hold them in place with surface-mounted clamps. The blades are easy to change because the fasteners are out where you can get at them.

Alignment. A planer won't cut straight or smooth if the blades aren't aligned. Luckily, most tools are now designed to be self-aligning. Mini-blades are usually slotted so they index to the head.

The way to tell if planer blades are aligned is to unplug the tool, hold a straightedge against the rear shoe, and rotate the blades by hand. The blades are aligned if they skim the straightedge at both ends of the head. Most of these tools have alignment screws that are adjusted in the factory. When I say aligned, I mean aligned to within thousandths of an inch, so don't mess with the settings unless you absolutely have to.

Chip Ejection

On early planers, chips were always ejected from the right side of the machine. That's fine if you're right-handed and always use the tool in the horizontal position. But if you're a leftie, it means being showered with sawdust every time you use the tool. Right-handers run into the same problem planing right to left on vertical surfaces. Chips are ejected upward, and what goes up must come down.

Most current models allow you to eject chips from whichever side of the machine you want. Changing sides is simply a matter of turning a knob, flipping a lever, or in the case of one tool, reinserting a removable chute. Many power planers can be connected to shop vacs for dust collection. Some tools come with the necessary adapter;

The Porta-Plane has a two-blade spiral cutter that can be removed for sharpening.

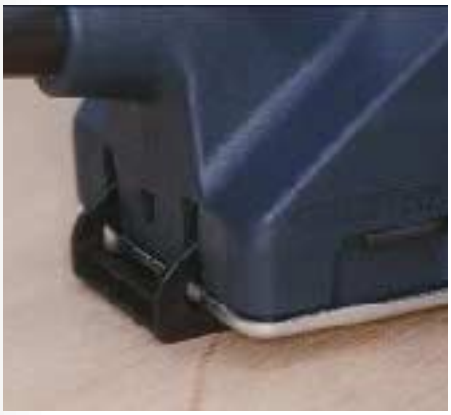
Festo's spiral cutter uses a single removable carbide blade.

others can be equipped with optional bags or hose connectors.

Some power planers tend to bite off more than they can chew. This happens when the chute is too small to eject all the chips that are generated during heavy cutting. Your only choice is to slow down or stop every now and then to clear the chips. Either way, productivity suffers, and that's not the point of using a power tool.

Cords. When it comes to cords, longer is better. There's nothing more frustrating than to have a plug get hung up on something part way through the cut. Except for two cordless models, the planers I tested had cords anywhere between 6-ft. 8-in. and 14 feet long. The cords also varied in quality. Most power planers have rubber-like cords that are flexible at all temperatures, but the Craftsman, Freud, and Virutex planers have cords that are stiff and plastic-like.

Parking feet. Many of the planers I tried had a parking foot that swings down from the back end of the base. The foot's there so you can put the planer down without waiting for the blades to stop turning. I'd appreciate this feature more if I was new to the trade, but I've been propping my planer on a scrap of wood for so long that it's impossible to break the habit. And I have my doubts about the durability of such an exposed piece of plastic, in fact, one of the tools arrived with a broken foot.



A parking foot, standard on many planers, allows you to set the tool down without waiting for the blades to stop turning.

Fences

The fence is the most important attachment on a power planer. If you want to produce consistently square edges, you need to use a 90-degree fence. Most power planers come with this attachment, but a few have fences that can be adjusted to any angle you want. An adjustable fence is very handy for planing a bevel onto the strike edge of a door. If you do it without a fence, you end up with a crooked door or a bevel that's all over the place.

The best fences are simple, rigid, and long. Simplicity is good because it's a drag to have to search for lost parts or use a clunky contraption. Rigidity is important because it allows you to be precise. And length matters because short fences often run off the end of the stock before the blades do, and this makes it easier to botch the end of the cut.

The Porter-Cable Porta-Plane has the best standard fence. It's adjustable and runs the full length of the base. But it's not removable because the tool is specialized for planing doors. The 90-degree fences that come with the Freud, Hitachi, Makita, and the DeWalt DW680K are very simple and rigid. They're short, but you can extend them by screwing on a strip of wood. If you want, you can put a 3- to 5-degree bevel on the strip for planing doors. The 90-degree fences that come with the Festo, Metabo, Bosch 3365, and the DeWalt DW678K aren't quite as simple, but they're rigid and long enough to extend onto the rear shoe. Craftsman's planer has the simplest fence of all. It's a flat piece of steel formed to a 5-degree angle that screws to the side of the housing. It doesn't look like much, but it works. Bosch's model 3296 and Porter-Cable's model 125 come with fences that adjust to any angle. They both work, but they're not up to the level of what's on the Porta-Plane.

Favorites

If I were in the market for a general purpose planer my first choice would be DeWalt's DW680. It's light, powerful, and will make a 3/32-inch-deep cut. I also liked the Bosch 3365. It's extremely light and maneuverable, and it has an adjustable exhaust port. Another tool worth looking at is Metabo's model 0882. It's very well-made and is bigger and more powerful than many other planers.

If the only reason you want a planer is to hang doors, then the choice is a no-brainer. Buy Porter-Cable's model 126 Porta-Plane. It doesn't cut rabbets and it won't plane studs, but it's the ultimate door-planing machine.

If you need to perform specialized functions, the Festo and Virutex tools are worth a look. Festo's planer is beautifully made and has the unique ability to cut rabbets of unlimited depth. It comes with a smooth-cutting spiral head. Optional cutters allow you to produce a variety of rustic surface effects. The Virutex power compass planer is another one-of-a-kind tool. The vast majority of the world's carpenters will never need a tool like this. But if you're one of the select few who builds curved stairs or does a lot of other curved work, this planer could be just what you're looking for.

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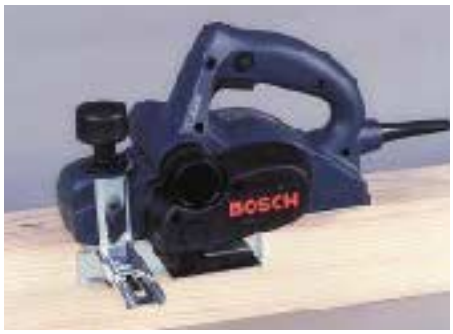
Bosch 3296K

This is an accurate, well-made machine. The front shoe rides up and down on sloped ways, and the depth-of-cut settings are especially easy to gauge. The 3296K comes with one of the nicest adjustable fences I've ever used. Chips can be ejected from either side of the planer, though the mechanism for changing sides was sticky on the particular tool I tested. This tool is powerful enough to make a 3/32-inch cut, but the exhaust chute tends to clog when you do it. The 3296K is comfortable for right-hand use, but the trigger safety makes it awkward for left-hand use.

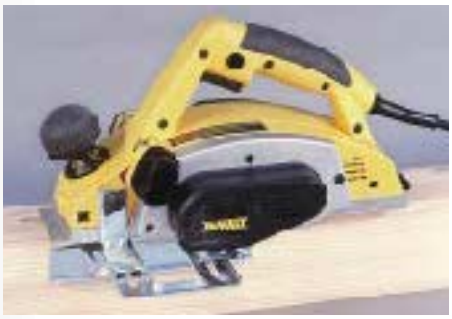


Bosch 3365

This planer is small, light, and very maneuverable. Chips can be ejected from either side of the tool. The 3365 runs at a slightly higher rpm than other planers and uses a single blade. According to the manufacturer, this cuts your blade costs because when you hit a nail, you only ruin half a set. This tool runs so smoothly that I couldn't tell from use that it has only one blade. This model has a 10-foot cord and comes with a simple 90-degree fence. Chips can be ejected from either side, but the chute will clog if you cut too quickly. The blades are held in place by a single pair of set screws, so changes are quick and nearly idiot-proof.

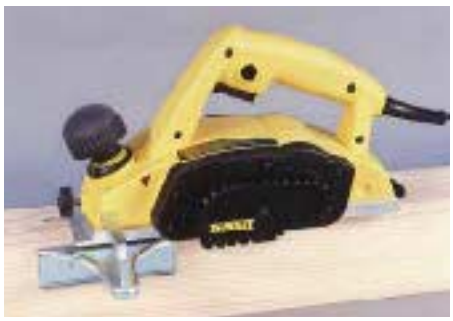
Craftsman 27716

This retro-looking tool has indexed depth settings and easy-to-change bolt-on carbide blades. Chips are ejected to the right through an adjustable nozzle that can be aimed away from the user. This Craftsman planer comes with a single-piece 5-degree door beveling fence that screws to the side of the housing. The fence may not look like much, but it does the job. Unfortunately, this tool is under-powered for its size. The motor labored and the exhaust chute frequently clogged during full-depth cuts on 1 1/2-inch-wide joists.



DeWalt DW678K

The DW678K is big and powerful, though somewhat heavy. With a cutting capacity of 5/32-inch, it's tied with Festo for maximum listed depth of cut. However, this tool tends to clog during full-depth cuts, even on 1 1/2-inch stock. On the plus side, a removable sleeve in the chip chute makes it safer and easier to clear blockages. And the sleeve is reversible, so chips can be ejected from either side of the machine. This tool has a very comfortable grip, but if you're a left-hander, you need to be careful not to accidentally engage the trigger lock with the palm of your hand. I like the indexed depth settings and the way the parking foot locks up out of the way for cuts that start in the middle of a board.



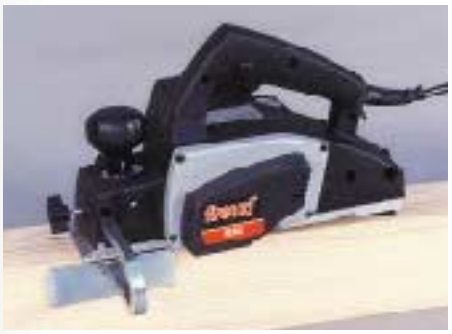
DeWalt DW680K

The DW680K doesn't have every feature you can get on a power planer, but the ones it has work just fine. It's light and easy to handle, and the motor shows no strain during full-depth (1/16-inch) cuts. Although the chip chute only ejects to the right, it rarely gets clogged. This tool has a long cord, indexed depth-of-cut settings, and a parking foot that can be locked out of the way. It comes with a simple 90-degree fence and a sturdy metal case. The only thing I don't like about this tool is the trigger lock, because it's located in such a way that a left-hander could accidentally activate it.

Festo HL850E

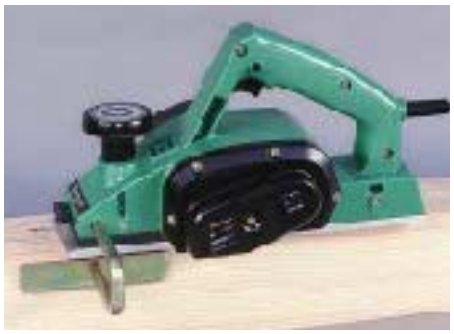
If power planers were cars, Festo's would be a Rolls-Royce. It uses a single disposable spiral-cutting carbide blade. The head is removable and can be swapped out for optional heads that produce a variety of textured surface finishes. For example, I tried one that uses a convex blade to plane adze-like cuts in the surface of beams — something a timber-framer might like. The blade comes flush to the right side of the motor housing, so there's no limit to the depth of rabbet cuts. This means that the HL850E can plane all the way into an inside corner, like the joint between the baseboard and flooring. This tool is exceptionally quiet because it runs at a constant speed of 10,000 rpm. The standard dust bag actually works, and you can get an optional angle fence. This is easily the most versatile planer I tested, but at a cost of over $400, it's more planer than most carpenters can afford.

PLANER PROFILES



Freud FE82

The FE82 is a well-made tool with simple solid features. Cuts come out straight because the front and rear shoes remain parallel at all depth settings. It comes with a rigid 90-degree fence and a vacuum adapter. Blades are easy to change, but I didn't like the short cord or the way the parking foot gets in the way when you start cuts in the middle of the board. Except for the low price, there's nothing very special about this tool.



Hitachi P20SB

This tool is light, simple, and inexpensive. In terms of usage, it's a good general-purpose planer. But in terms of features, it's a throwback to the sort of planer I was using 15 years ago. It doesn't matter that the tool doesn't have a parking foot, and it's not a deal breaker that the chips only eject to the right. But the P20SB doesn't use the disposable carbide mini-blades that are now standard on nearly every planer; instead, you have to use a clunky knife-setting jig, so changing blades is more of a hassle than it should be.

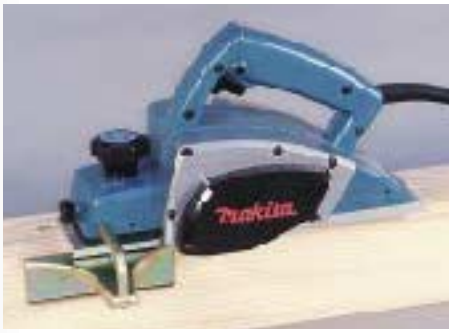
Hitachi P20DA

This is a very interesting new tool, a 12-volt cordless planer. The P20DA is about the same size and weight as Hitachi's corded model, though the location of the battery makes it noticeably tail-heavy. As you would expect, it's significantly less powerful than a corded tool, which is why the maximum depth of cut is only 1/64 inch. The tool does a good job making light finish cuts, but isn't up to planing framing stock. The manufacturer claims that it will plane 100 feet of 1 3/4-inch stock on a single charge. That seems about right: I tested it on the edge of a 2x12, and it cut 112 feet before the battery gave out. Unlike Hitachi's corded model, this one uses disposable carbide mini-blades.

PLANER SPECS

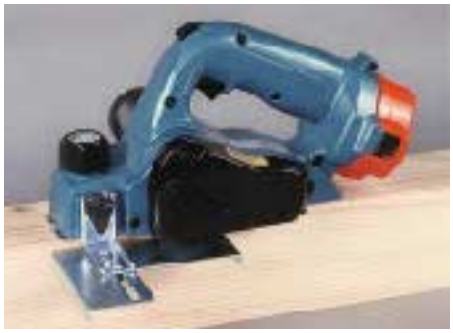
Manufacturer	Model	Street Price	Weight (lbs.)	Cord Length	Motor Rating	Max. Depth of Cut	Width of Cut	Length (front to back along the base)	Max. Rabbet Depth
Bosch	**3296K**	$179	6.4	6′ 8″	6.5 amps	3/32″	3 1/4″	11 1/2″	15/16″
Bosch	**3365**	$109	5	10′	5.0 amps	1/16″	3 1/4″	9 7/8″	5/16″
Craftsman	**27716**	$139	7.8	10′	5.5 amps	1/16″	3 5/8″	10 3/4″	3/16″
DeWalt	**DW678K**	$249	9.2	9′ 4″	7.8 amps	5/32″	3 1/4″	12 1/2″	1″
DeWalt	**DW680K**	$161	5.5	9′ 4″	5.2 amps	1/16″	3 1/4″	11 3/8″	1/2″
Festo	**HL850E**	$436	8.6	12′ 8″	7 amps	5/32″	3 1/4″	13 5/8″	unlimited
Freud	**FE82**	$109	6.5	7′ 6″	6.2 amps	3/32″	3 1/4″	11 1/4″	1/8″
Hitachi	**P20SB**	$114	6.1	8′	3.4 amps	1/32″	3 1/4″	11 5/8″	15/64″
Hitachi	**P20DA**	around $250	6.4	n/a	cordless 12-volt	1/64″	3 1/4″	11 5/8″	15/64″
Makita	**N1900B**	$139	5.5	8′ 9″	4.0 amps	1/32″	3 1/4″	11 1/2″	11/32″
Makita	**1050DWA**	$290	4.6	n/a	cordless 12-volt	1/64″	2″	9″	9/16″
Metabo	**0882**	$225	9	14′	6.5 amps	1/8″	3 1/4″	11 1/2″	7/8″
Porter-Cable	**125**	$149	5.5	9′	6 amps	1/8″	3 1/4″	11 1/4″	7/8″
Porter-Cable	**126**	$399	9	10′	7 amps	3/32″	2 1/4″	16″	n/a
Virutex	**CE96H**	$325	7	7′ 8″	6.7 amps	1/8″	3 3/16″	9 1/2″	n/a

Specs continued on next page ▶



Makita N1900B

This tool is nearly indistinguishable from the planers Makita was making 15 years ago. It's a simple, straightforward machine without a lot of bells and whistles. Like its predecessors, the N1900B clears chips well and comes with a short 90-degree fence. Unlike the original model, this one takes standard carbide mini-blades. It's reasonably powerful for a 5 1/2-pound tool, but in its factory configuration it is limited to a 1/32-inch cut.



Makita 1050DWA

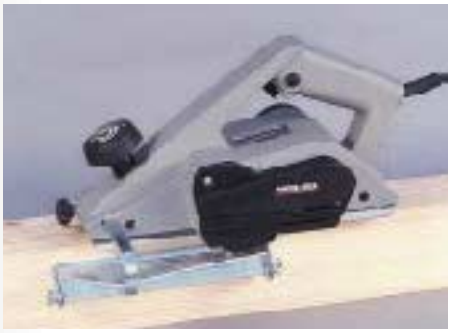
This planer proves how deceiving looks can be. When I opened the box, I thought it was a toy, but once I started using it, I was impressed by how well it worked. I was especially impressed by the amount of work it can do on a single charge. According to the manufacturer, it can plane 140 feet on a single charge, but I managed to get 232 feet planing the edge of a 2x12. The 1050DWA is smaller and lighter than Hitachi's cordless model but is limited to making 2-inch-wide cuts. The narrow cutting width is a reasonable compromise, given that no cordless planer is really up to making 3 1/4-inch cuts. I wouldn't use the 1050DWA to straighten framing, but I could see buying one to scribe cabinets or plane the occasional door. At $290, it's definitely a luxury item, one that's easier to justify if you're already using Makita's 12-volt system.

Metabo 0882

This tool exhibits the same European sensibility that Festo's and Bosch's planers do. It has precise indexed depth settings and a front shoe that's always parallel to the rear shoe. The chip chute ejects from either side and can be switched by flipping a baffle. The spring-loaded parking foot is better than most in that it's heavy enough to stand up to abuse but doesn't get in the way because it retracts when you push down on it. This tool has plenty of power, even at the full 1/8-inch depth of cut. The 0882 has an exceptionally long cord and comes with a 90-degree fence. My only complaint about this planer is that it doesn't come with a case.

Manufacturer	RPM	Blade Type	Standard Accessories	Place of Manufacture
Bosch	13,000	standard inserts	steel case, angle fence, rabbeting depth stop	Switzerland
Bosch	18,000	standard inserts	90-degree fence, vacuum adapter	Switzerland
Craftsman	16,000	Craftsman-brand blades	5-degree door beveling fence	USA
DeWalt	12,000	standard inserts	metal case, rabbeting depth stop, 90-degree fence	England
DeWalt	15,000	standard inserts	metal case, 90-degree fence	England
Festo	10,000	Festo spiral inserts	plastic case, dust bag, rabbet depth stop, and 90-degree angle fence	Germany
Freud	14,000	standard inserts	case, dust collection nozzle, 90-degree fence, rabbeting depth stop	Spain
Hitachi	15,000	Hitachi-brand blades	case, straight guide, blade-setting gauge	China
Hitachi	13,000	standard inserts	battery, charger, plastic case, 90-degree fence, 2-amp hour battery	Japan
Makita	15,000	standard inserts	plastic case, 90-degree fence	USA
Makita	9,000	Makita inserts	plastic case, 90-degree fence, battery, charger, dust bag, 2-amp hour battery	Japan
Metabo	12,000	standard inserts	rabbet depth stop, 90-degree fence, dust collection nozzle	Germany
Porter-Cable	14,000	standard inserts	plastic case, bevel fence, rabbeting guide	Italy
Porter-Cable	23,000	removable spiral head	metal case, permanent fence –15 degrees to +45 degrees	USA
Virutex	16,500	standard inserts	fence	Spain

PLANER PROFILES



Porter-Cable 125

The best thing about this tool is that it's powerful and capable of making nice deep cuts. It's also a plus that it comes with an adjustable bevel fence. The shoes on the planer I tested, however, went out of parallel at maximum depth of cut. As a result, deep cuts tended to be bowed cuts. You have to rotate the control knob multiple times to move between minimum and maximum depth settings, and the numbers on the depth scale overlap, so it's easy to lose track of exactly where you are. This tool is light and well balanced, but a safety makes it awkward for left-hand use. Exhaust is to the right side only. It's a minor point, but the fence fit so tightly in the molded plastic case that I had to pry it out with a screwdriver.

Porter-Cable 126 (Porta-Plane)

After having been around for years, the Porta-Plane was discontinued a couple of years ago. However, there was such an outcry that the manufacturer brought it back as the model 126. Unlike most of the planers I tested, this tool is designed to plane long narrow pieces of stock — in particular, the edges of doors. It has a 16-inch base and a long, nonremovable fence that tilts from minus 15 degrees to plus 45 degrees. An adjustable stop allows you to preserve preset angle settings. The front shoe moves smoothly up and down by moving a lever on the front of the housing. The base is only $2\frac{1}{4}$ inches wide, but that's plenty for most doors. The Porta-Plane takes a spiral-cutting head that is easily removed for sharpening. Except for the cap on the end of the motor housing, this is an all-metal machine.

Virutex CE96H

When I was in boat-building school, I once joked that someday I'd throw away my old-fashioned compass plane and replace it with a power-driven model. That got a good laugh, because at the time there was no such thing as a power compass plane. But several years ago, Virutex introduced the model CE96H. It's just like any other power planer except that the base is made from a thin, flexible sheet of metal. As a result, the base can be adjusted to follow inside and outside curves. The minimum concave radius it can do is $17\frac{3}{4}$ inches; the maximum convex radius is $15\frac{3}{4}$ inches. Although it's power driven, it still takes finesse to use this tool. That said, if you're one of those rare carpenters who planes a lot of curves, this might be the planer of your dreams.

PLANER MANUFACTURERS

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