

# Set Up

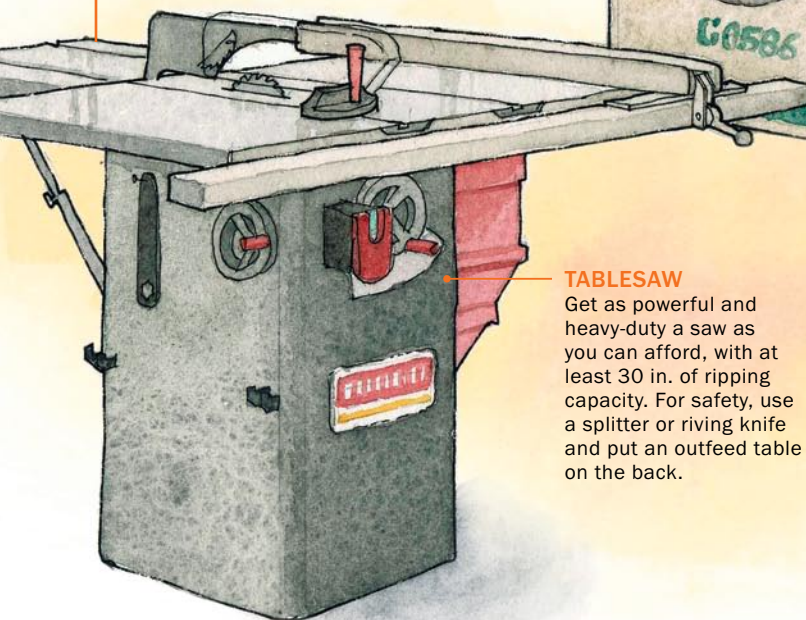


Choose wisely and your first set of tools could be your last

BY ASA CHRISTIANA

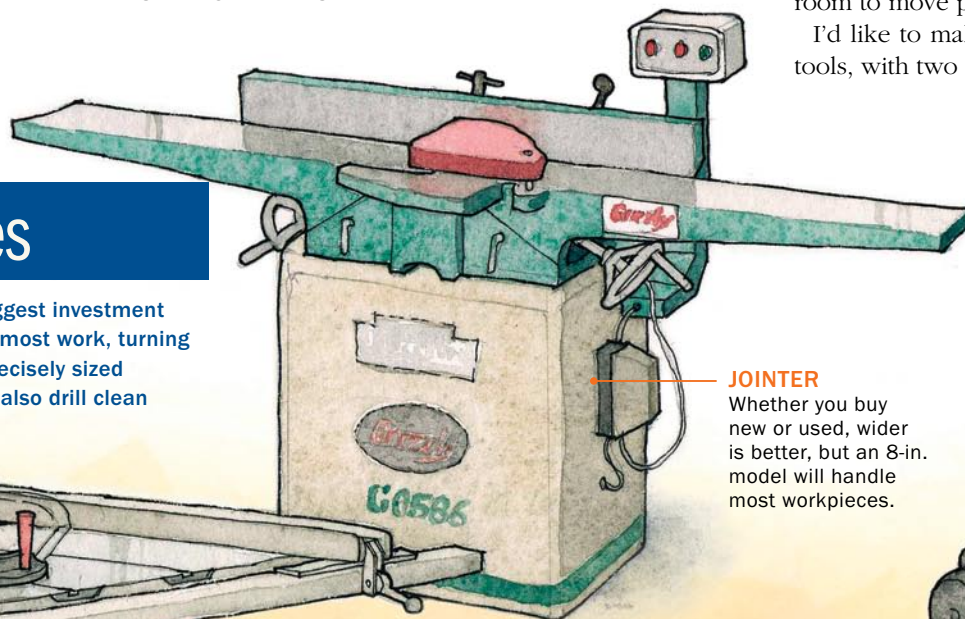
## Machines

These require the biggest investment because they do the most work, turning rough lumber into precisely sized furniture parts. They also drill clean holes and cut joints.



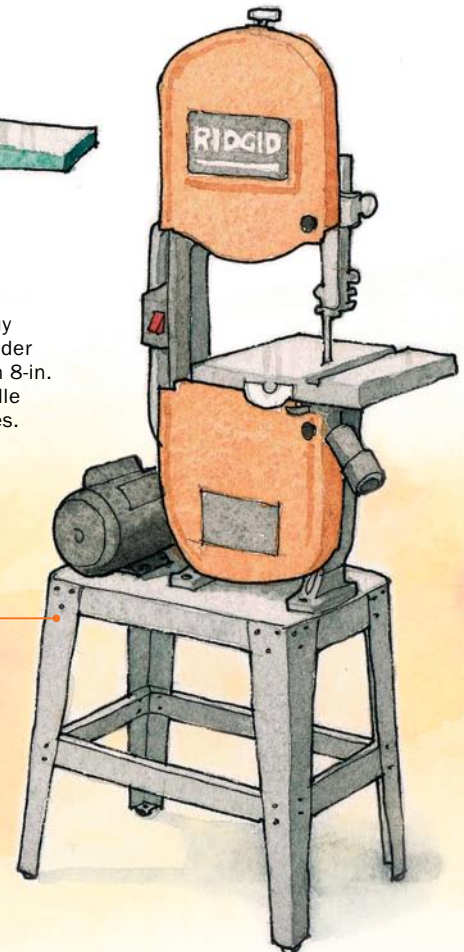
### TABLESAW

Get as powerful and heavy-duty a saw as you can afford, with at least 30 in. of ripping capacity. For safety, use a splitter or riving knife and put an outfeed table on the back.



### JOINTER

Whether you buy new or used, wider is better, but an 8-in. model will handle most workpieces.



### BANDSAW

A 14-in. or 15-in. bandsaw is enough, and a riser-block accessory is a good way to double the resaw capacity to 12 in. This tool is indispensable for ripping, resawing, and cutting curves.

Photo: Michael Pekovich; drawings: Jim Richey



# Shop for \$5,000

provide beginners with a shopping list for this lifelong hobby. Also, I hope to reassure more experienced woodworkers that they may already have what they need to make beautiful projects.

To arrive at a bottom line, I've assembled a list of specific brands and models, most of which have been winners in recent tool reviews in *Fine Woodworking*. I won't cover a few categories of tools that are truly necessary but vary too much to pin down: marking and measuring tools, sharpening gear, and clamps (they say even God needs more clamps).

The street price for all-new equipment is about \$5,000. Buy used equipment, and you can cut that in half. I consider this a reasonable investment for a lifelong hobby. Consider the cost of a bass boat (not to mention the truck and trailer). And you

can't fill your house with bass—unless they are stuffed or singing. I'll take furniture.

Of course, my own way of working has informed my list of essential tools. I am not a professional woodworker. Almost every piece I make is different. And I do a fair bit of woodworking to beautify my home, such as built-ins and trim. Join our Knots discussion at [www.FineWoodworking.com/toollist](http://www.FineWoodworking.com/toollist) to share your opinions about my tool choices.

## Machines do the heavy lifting

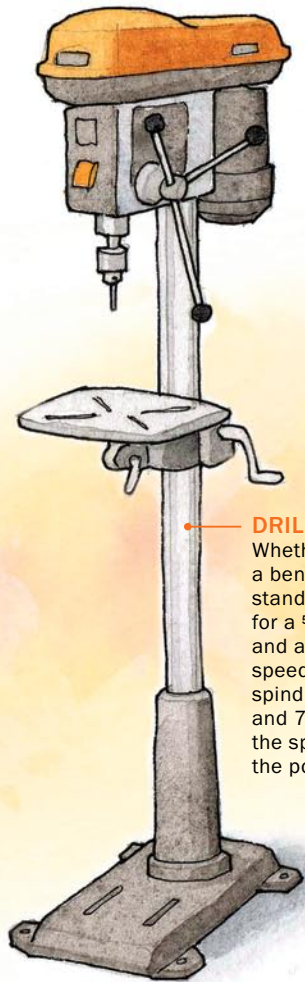
Hand-tool purists might argue, but machines are the backbone of an efficient shop. With a set of plans in hand and the rough lumber chosen, most woodworkers turn first to machines to straighten, flatten, square up, and cut off precise workpieces. Well-tuned machines and power tools also

will get curves, joints, and final surfaces very close to perfect before hand tools and sandpaper take over.

However, if your machines lack capacity, power, or accuracy, you'll find these preliminary stages frustrating. If the first surface of a board isn't flat and straight, the opposite one won't be either. If edges and ends aren't square, you'll chase those inaccuracies all the way through the project.

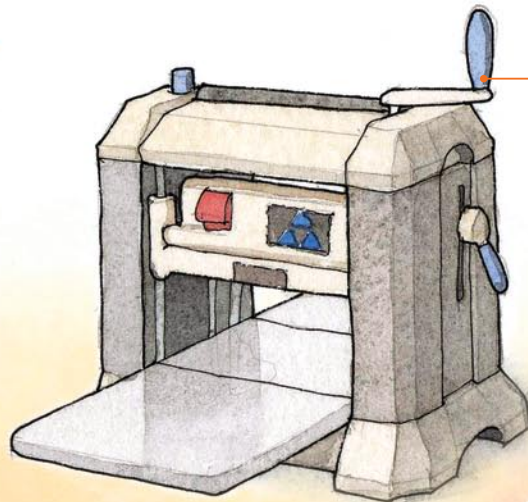
When it comes to setting up shop, a planer and jointer often mark

the moment when a woodworker gets serious about the hobby. These machines allow you to mill stock



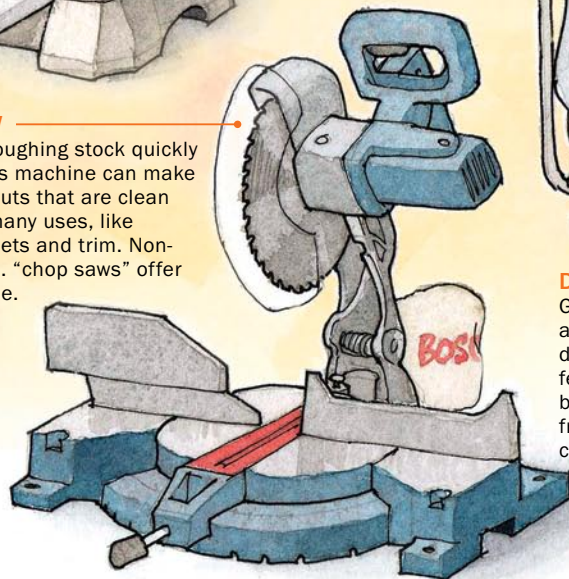
### DRILL PRESS

Whether you get a benchtop or floor-standing model, go for a 5/8-in. chuck and at least eight speeds, 3 in. of spindle travel, and 7 in. between the spindle and the post.



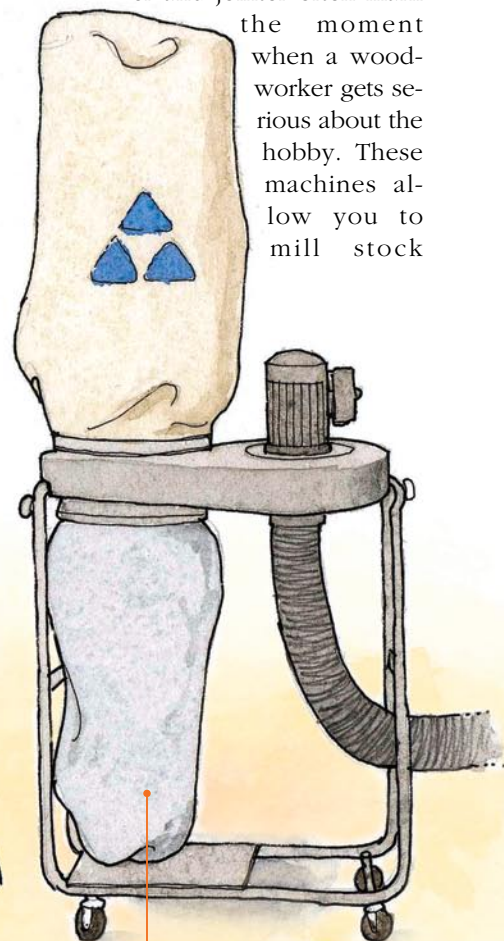
### PLANER

Today's small planers leave a great finish with minimal snipe on boards up to 13 in. wide. Get one with indexed knives for easy blade changes.



### MITER SAW

Aside from roughing stock quickly to length, this machine can make quick miter cuts that are clean enough for many uses, like built-in cabinets and trim. Non-sliding, 12-in. "chop saws" offer the best value.



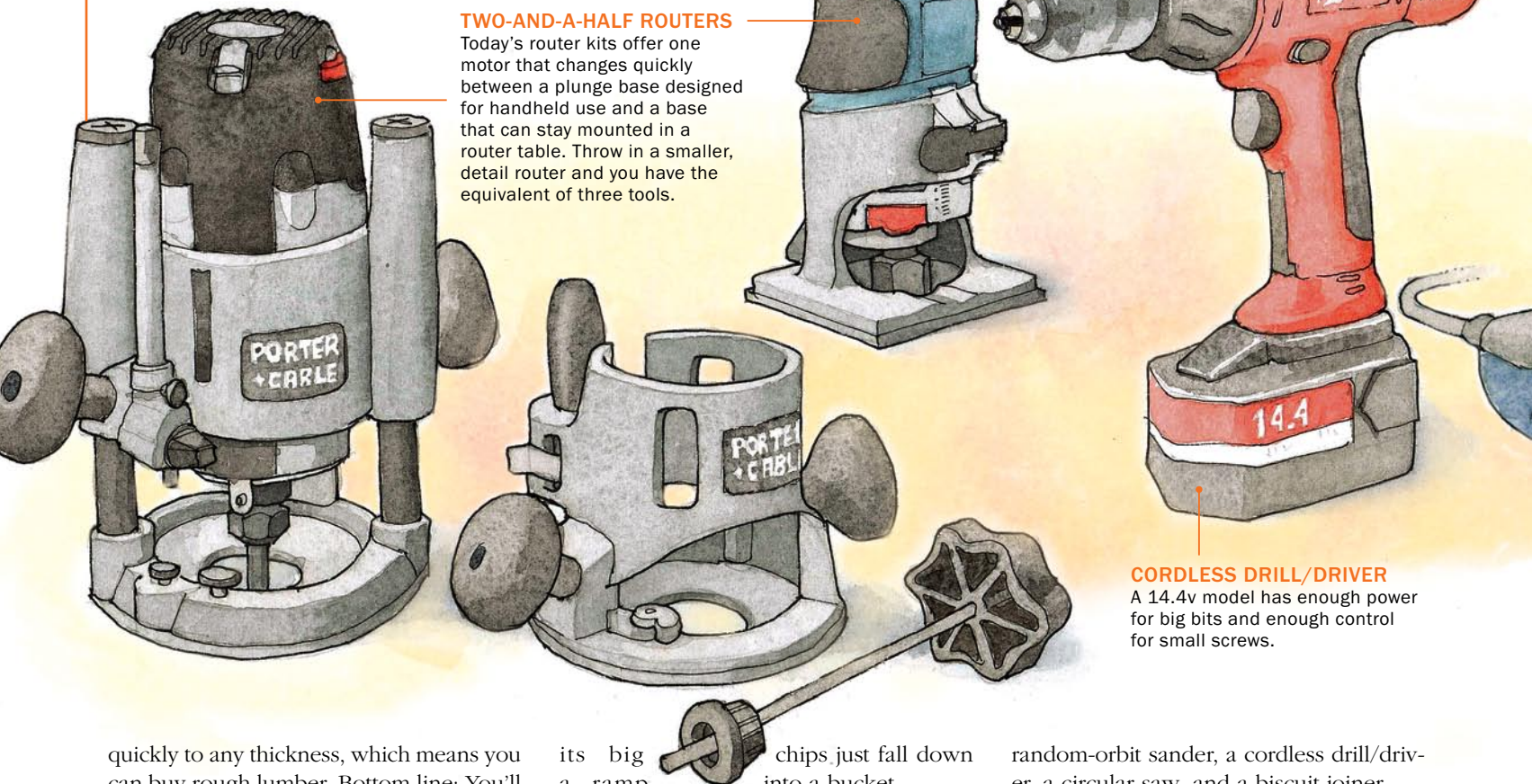
### DUST COLLECTOR

Get a 1½-hp, single-stage collector at a minimum. To collect the finest dust, opt for a cartridge filter or a felt bag. A 2-hp collector is better because it can be located farther from a tablesaw or planer and still can do its job.



# Power tools

Like machines, these speed up the more tedious woodworking tasks: drilling, sanding, sawing, molding, mortising, and some other joinery.



## TWO-AND-A-HALF ROUTERS

Today's router kits offer one motor that changes quickly between a plunge base designed for handheld use and a base that can stay mounted in a router table. Throw in a smaller, detail router and you have the equivalent of three tools.

## CORDLESS DRILL/DRIVER

A 14.4v model has enough power for big bits and enough control for small screws.

quickly to any thickness, which means you can buy rough lumber. Bottom line: You'll need a jointer and planer wide enough to handle most workpieces.

You'll also need a heavy-duty tablesaw that can make smooth cuts in thick hardwoods; a medium-size bandsaw that keeps its blade on track; a miter saw to rough-cut lumber to length and to cut moldings; and a drill press to cut clean and accurate holes with large and small bits.

**Machines need dust collection**—If only to keep machines running right, with less maintenance, you'll need dust collection. Tablesaws and planers work better when dust is being sucked away. Then there's the latest government data about fine wood dust causing nose and throat cancer. It takes very fine filtration to capture the smallest, most insidious stuff. Finally, it's just more pleasant to work in a clean shop.

I keep a tight cluster of the worst offenders (tablesaw, planer, bandsaw) permanently connected to my dust collector with a simple blast-gate system and flexible hoses. I don't bother with the jointer;

its big ramp chips just fall down into a bucket.

**Mortisers and lathes are optional**—I made a tough call on these tools. Whether hollow-chisel or horizontal, a mortiser makes the joinery process quicker and easier, but is essential for pros only. A router, in tandem with shopmade jigs, will make great mortises.

Choosing a lathe is complicated. If most of your woodworking is turning, my list of tools is not for you. But even if you dabble, and ever want to try big bowls and vessels, you'll need a large-capacity lathe with enough mass to control vibration, and speed that is variable on the fly. So you'll be out \$1,000 or more for a tool you'll use only once in a while. However, if all you turn is knobs and spindles for furniture, you can get by with a benchtop (mini or midi) lathe. Newer models are solid and offer bed extensions.

## Power tools give speed and precision

The next row in your arsenal is the power tools: two-and-a-half routers (you'll see), a

random-orbit sander, a cordless drill/driver, a circular saw, and a biscuit joiner.

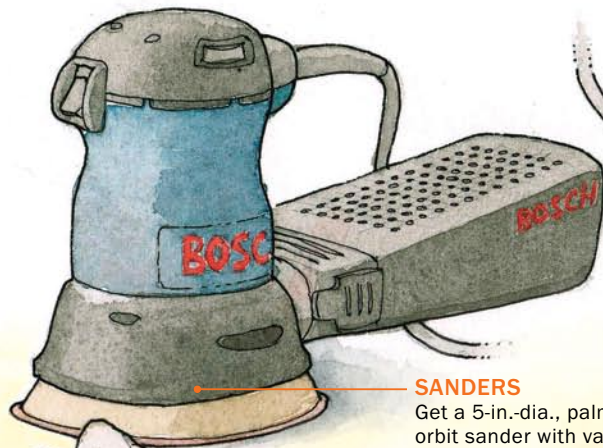
I can't imagine woodworking without a handheld router and a router mounted in a table. The good news on routers is that there are multi-base models that will allow you to keep a fixed base mounted in your router table and a plunge base free for handheld routing, such as mortising. You'll have to switch the 2-hp motor from one to the other, but that takes only seconds.

As for a router table, it can be as simple as a piece of plywood clamped to the end of a workbench, with a shopmade fence that has a dust port tacked on.

I also recommend a small fixed-base router (the "laminat trimmer" type) for detail work. They are easier to handle for inlay and light edge work, and there are times when it is nice to have a second router loaded and ready to go.

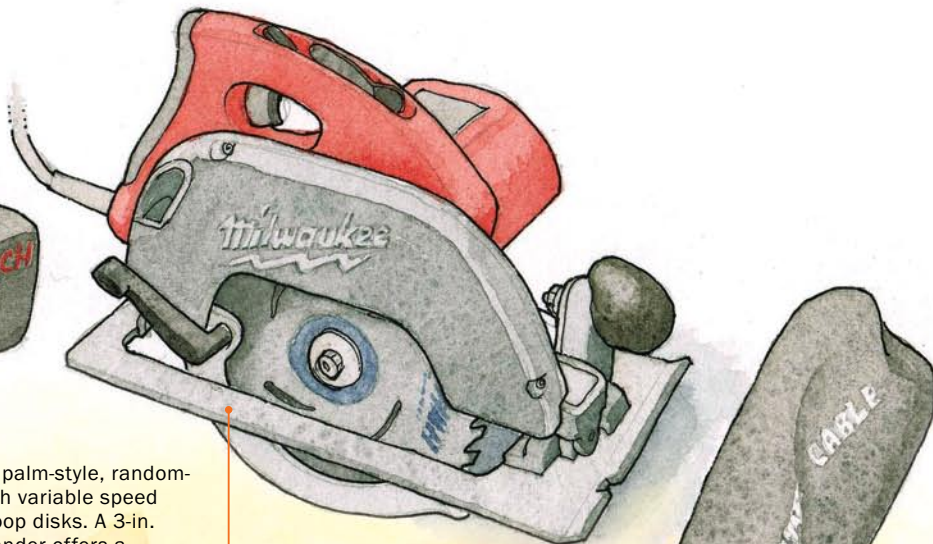
Though I'll make a case later for a smoothing plane, there are woods and situations for which a sander is simply the easiest way to go. A random-orbit palm sander is aggressive enough to remove





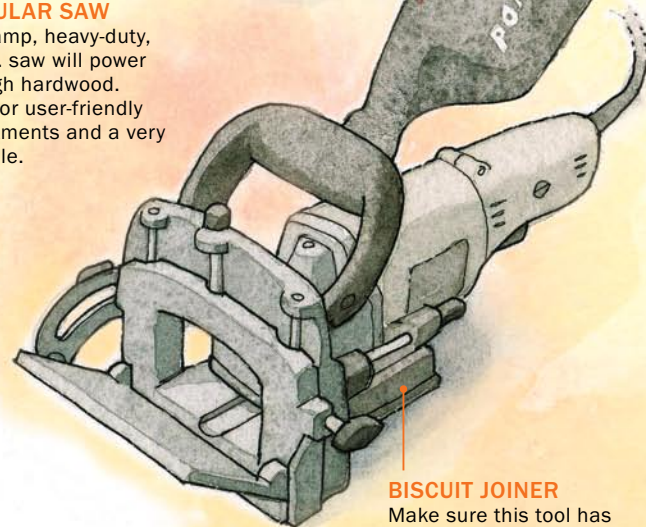
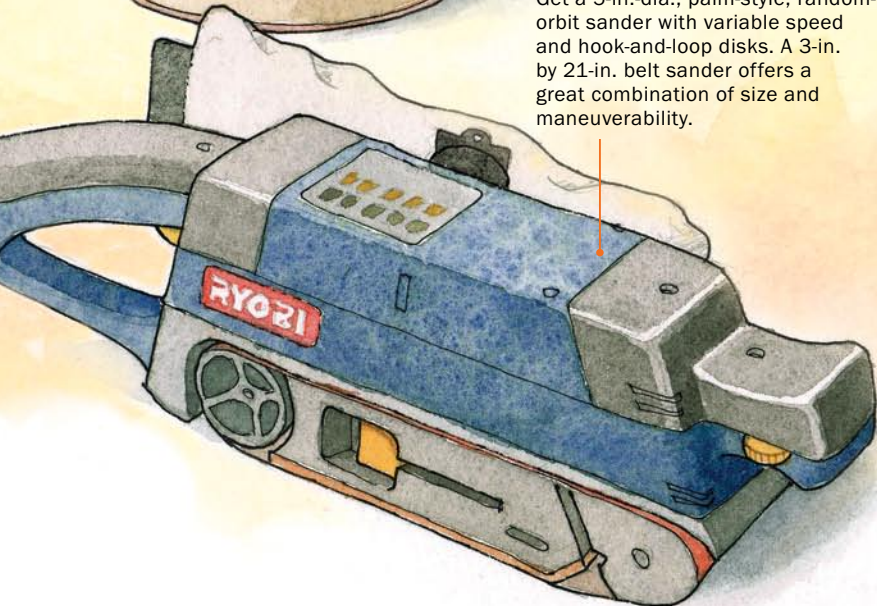
### SANDERS

Get a 5-in.-dia., palm-style, random-orbit sander with variable speed and hook-and-loop disks. A 3-in. by 21-in. belt sander offers a great combination of size and maneuverability.



### CIRCULAR SAW

A 15-amp, heavy-duty, 7¼-in. saw will power through hardwood. Look for user-friendly adjustments and a very flat sole.



### BISCUIT JOINER

Make sure this tool has good reference surfaces—base, face, and fence—you'll use them all.

machine marks and tearout, yet it is pretty easy to control. If used properly, it won't leave dips in the surface and it won't sand through veneers or the first coat of finish.

A cordless drill/driver is a fixture in every shop. Woodworkers don't need as much power and endurance as homebuilding contractors, yet we inevitably do jobs around the house. A 14.4v drill offers the right combination of power and fine control.

The last three power tools on my list are sometimes sneered at. A belt sander seems like a long shot but has a host of uses in a woodshop. It can surface slabs that are too wide for the planer or jointer. It is also great when scribing and fitting the frames and moldings of built-ins to walls and ceilings.

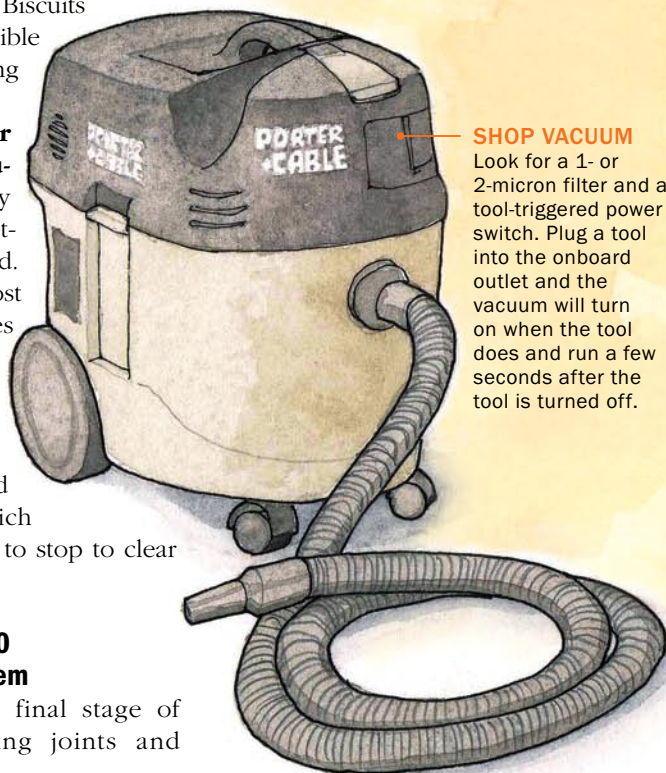
A circular saw is essential anytime it is easier to bring the saw to the work rather than the work to the tablesaw, such as when roughing out plywood parts. Guided by a straightedge and armed with a good blade, a heavy-duty saw also will make clean, accurate cuts on the end of a wide panel.

Though a biscuit joint is not as strong as traditional joinery, it is lightning-fast

and plenty strong for many applications. A biscuit joiner is the ideal tool to build plywood cabinetry. Biscuits also make quick and invisible splines for aligning mating parts.

### Team up your power tools with a shop vacuum

Like machines, many power tools run much better with a vacuum attached. Palm sanders can be almost dust-free, which increases their efficiency. Router-table procedures are easier without a lot of chips in the way. Some routers are well-designed for dust collection, which means you'll never have to stop to clear chips when mortising.



### SHOP VACUUM

Look for a 1- or 2-micron filter and a tool-triggered power switch. Plug a tool into the onboard outlet and the vacuum will turn on when the tool does and run a few seconds after the tool is turned off.

### Hand tools: Get these 10 and learn to sharpen them

Hand tools handle the final stage of construction: fine-tuning joints and



# Hand tools

For final fitting and final surfaces, when precision is critical, turn to high-quality hand tools. The following are essential.

surfaces. Every woodworker should learn to use a smoothing plane. It is simply the fastest way to prep a board for finishing after it leaves the planer. Handplanes are also the best tool for leveling one surface to another without creating dips or hollows. Put in a thick aftermarket blade to dampen vibration, and sharpen it to 8,000-grit. For most woods, this is all you will need to create an almost-final surface, followed by a quick pass with fine sandpaper on a sanding block.

For figured woods and other tough planing situations, I use a cabinet scraper to create a smooth surface with no tearout. (When all else fails, I turn to my power sanders.)

Two other essential planes are a shoulder plane and a block plane. The block plane is the handplane I use most often—for chamfers, roundovers, trimming cuts, narrow edges, or just for breaking sharp corners. I prefer the versatility of a low-angle version, though a standard-angle plane would be fine, too. The former does better on straight grain and end grain; the latter on grain that wants to tear out.

The shoulder plane is ignored by some woodworkers, but is unequaled at trimming tenons and rabbets to fit. It is great

## THREE HANDPLANES

You'll need a block plane (right) for detail work, a No. 4 smoothing plane (above) for removing machine marks and prepping final faces and edges, and a shoulder plane (below) for trimming joinery. All should have thick blades to reduce chatter.

## SCRAPER

For difficult woods, a sharp cabinet scraper will prep final surfaces with no tearout. A wide base is helpful. Add a card scraper for a few dollars.

## DOVETAIL SAW

Christiana prefers a Japanese-style handsaw (called a dozuki), which has very fine teeth and a thin blade, and cuts on the pull stroke. However, many woodworkers prefer a Western-style dovetail saw.



any time you need to plane right up to a square shoulder.

Even if you make dovetails with a router jig, tablesaw, or bandsaw, you'll still need a good dovetail saw for those small, precise cuts. Western or Japanese, push or pull, take your pick. Just get a good one. I prefer a pullsaw; its thin blade and fine teeth make it easier to start and control.

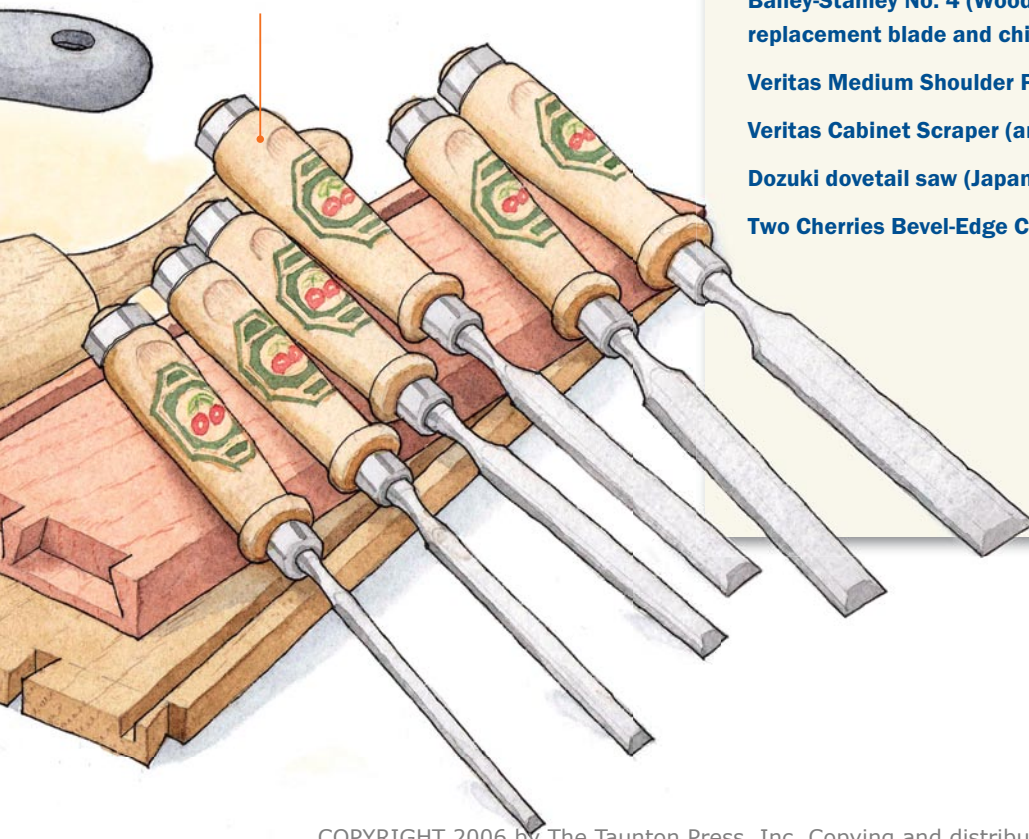
The last hand tools you'll need are chisels and a mallet. I cut deep mortises with a router, so I don't need mortising chisels to chop them by hand. You'll be quite happy with a basic set of five or six bench chisels, ranging from 1/4 in. through 1 in. Look for those designed for both paring and light pounding. Down the road, look for a few flea-market chisels—an extrawide one and a couple of narrow ones to grind to a right- and left-hand skew angle for cleaning out the bottoms of dovetails.

That's the basic equipment. You'll need clamps, a few marking and measuring tools, sharpening gear, and a heavy bench with a woodworking vise. Then you'll be able to build almost anything. □

*Asa Christiana is the editor and a hobbyist furniture maker.*

#### CHISELS

Many bevel-edge chisels are good for both paring and light pounding. These five sizes are essential, though others can be helpful: 1/4, 3/8, 1/2, 3/4, 1 in.



## And the actual retail price is...



In order to arrive at a bottom-line street price for new equipment, I had to choose actual products. To be fair to manufacturers, I checked our recent tool reviews and used authors' picks for Best Value. When reviews were somewhat outdated, I chose tools that got favorable reviews in our Tools & Materials column. When that didn't work, I went with features I deem essential. Anyway, the point is the class and type of each tool, not the exact brand and model.

Craftsman Professional 10-in. Tablesaw (OR35504)	\$1,000
Delta 22-580 13-in. Two-Speed Finishing Planer	\$ 380
Grizzly G0586 8-in. Jointer	\$ 655
Ridgid BS-1400 14-in. bandsaw (riser block available)	\$ 350
Bosch 3912B 12-in. Compound Miter Saw	\$ 310
Ridgid DP1550 15-in. Drill Press	\$ 270
Delta 50-760 1½-hp dust collector with 1-micron bag	\$ 300
Porter-Cable 7812 10-Gal. Tool-Triggered Vacuum	\$ 260
Porter-Cable 895PK Router (with two bases)	\$ 270
Bosch PR10E Colt Palm-Grip Router	\$ 90
Bosch 1295DVS 5-in. Random-Orbit Sander	\$ 80
Milwaukee 0612-22 14.4v ½-in. driver/drill	\$ 160
Ryobi Variable-Speed Belt Sander, BE321VS	\$ 100
Milwaukee 6390-21 7¼-in. Circular Saw	\$ 140
Porter-Cable 557K Deluxe Plate (biscuit) Joiner	\$ 180
Veritas Low-Angle Block Plane	\$ 120
Bailey-Stanley No. 4 (Woodcraft) Smooth Plane (\$62) plus replacement blade and chipbreaker (Lie-Nielsen: \$55)	\$ 117
Veritas Medium Shoulder Plane	\$ 160
Veritas Cabinet Scraper (and card scraper)	\$ 50
Dozuki dovetail saw (Japan Woodworker), 8¼ in.	\$ 35
Two Cherries Bevel-Edge Chisels, set of 6	\$ 140

**\$5,167**

### WIN THIS SET OF TOOLS

Go to [FineWoodworking.com/ToolShop](http://FineWoodworking.com/ToolShop) to tell us "Why I Deserve a New Shop." Send in the best essay and you'll win every tool on the list, delivered to your shop space, along with a visit by our tool expert to help you set everything up! Runners-up will receive the Porter-Cable 895PK Router Kit.