4 Bench Jigs for Handplanes

Accurate handwork is easier with these clever jigs

BY NORMAN PIROLLO

Like many woodworkers, I began with hand tools but quickly progressed to using machines for almost every aspect of my work. A few years ago, as I developed my woodworking business, I decided there must be a less dusty and more peaceful way to make furniture. I took courses at a woodworking school whose philosophy was all about hand tools. This experience opened my eyes; you might say I became a born-again woodworker. Safety was also a factor in my transformation. For example, it can be dangerous to machine small parts on a tablesaw or bandsaw.

Now, instead of hearing the drone and whine of machines and breathing dust all day, I listen to classical music and sweep up shavings at the end of the day.

While I do use machinery sparingly, productivity remains the key to any business, so I've had to make my handplaning efficient without sacrificing quality. I use a series of jigs for different planing situations. The jigs have ³/₄-in.-dia. dowels that fit into dog holes in my workbench. If your bench doesn't have dog holes already, you need to drill only two or three because all the jigs are interchangeable. The jigs and techniques I'll describe are by no means new—handplanes have been used for centuries—but I've added my own modifications. One of these is that I'm left-handed, so you'll need to flip the plans if you're a righty.

Norman Pirollo is the owner of Refined Edge Furniture Design in Ottawa, Ont., Canada. Planing stop

USE A STOP TO GO FASTER Aside from efficiency, you get a better feel for the work when the board is held against a single plane stop rather than being pinched between two dogs.

¾-in.-dia. wood dowel, wedged into the base /

Plywood base, ½ in. thick by 6 in. wide by 7 in. long

> Hardwood strip, $\frac{3}{16}$ in. thick by $\frac{1}{2}$ in. wide by $7\frac{1}{2}$ in. long

A shallow inward bevel prevents the workpiece from riding up.

Plywood cleat, 34 in. thick by 21/4 in. wide by 6 in. long, hooks against the edge of the benchtop.

F or face-planing boards at least ½ in. thick, I use a simple stop that is attached to the bench with a single dowel. To prevent the jig from pivoting in use, a cleat registers against the front edge of the bench.

After cutting out the two parts, clamp them together and place them on the workbench, centered over a dog hole. Insert a ¾-in.-dia. Forstner bit into the hole from the underside of the bench and use the spur to mark the location on the bottom of the jig base. Use the same bit to drill the hole on the drill press, and then use a ¾-in.-dia. brad-point bit to drill three holes for the dowels that will connect the cleat.

Dowel stock varies fractionally in diameter; a slightly loose fit is fine in the dog hole, but you need a tight fit into the base of the jig. To ensure a good fit, I saw a kerf into the top of the ¾-in. dowel. I apply glue and insert the dowel, then compress a hardwood wedge into the kerf using the jaws of a vise, which locks the dowel in place.

When the glue is dry, insert the base into the dog hole, clamp on the cleat, square the base to the edge of the bench, and extend the ¾-in.-dia. holes into the cleat. Glue in the dowels and, when dry, plane everything flush with the base.

On the working edge of the stop, I glue a strip of hardwood with a shallow inward bevel on its face to keep boards from slipping upward. I apply a single coat of oil finish to my jigs for looks and protection, but this is optional.



Locate the big dowel. Center the base over a dog hole. Use a ¾-in. Forstner bit to nick the underside of the base where you will drill.



Drill for the others. With a %-in. brad-point bit, drill three holes at the front of the base for dowels that connect the cleat.



Attach the cleat. Insert the big dowel, ensure the base is square to the bench, then clamp on the cleat and extend the 3/8-in. dowel holes.

2 Bird's-mouth stop



When edge-planing long boards, I employ a bird's-mouth stop. This attachment works remarkably well for holding a board on edge and is much faster than using a front vise, with or without a board jack.

Attached to the bench via two adjacent dog holes, this jig takes a bit more time to make than the last one, but the top two dowels give great rigidity and eliminate any tendency for rotation. Any board

up to about $1\frac{1}{2}$ in. thick can be inserted into the V-shaped slot in the jig and held in place with a small hardwood wedge on either side. The easiest way to make the wedges is to use the opening in the base as a template, cut the wedges on the bandsaw, and then clean them up with a handplane while holding them in a vise.



Edge-planing made easy. A

bird's-mouth jig allows you to rest the whole length of a board on the bench while you edge-plane it. If held in a vise, only a part of the board is supported.





A flat surface. Even if your benchtop isn't flat, the plywood base of the planing board provides a flat surface to plane on.



Thin stock, no problem. When planing stock less than ¼ in. thick, add an auxiliary base of ¼-in.-thick Masonite so the plane will clear the stop.

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Planing board 12 00ard

Bird's-mouth stop, plywood, ½ in. thick by 4½ in. wide by 8½ in. long

reach for my planing board when working shorter or otherwise difficult workpieces. It combines a flat base with smaller versions of the first two jigs in this article.

The planing board has two advantages. It guarantees a flat surface to plane on, even if the benchtop isn't flat. Also, it allows me to plane thin, narrow stock. I add a base of ¹/₈-in.-thick Masonite to plane stock less than ¹/₄ in. thick instead of installing a thinner plane stop.

If I need to skew the plane slightly to lower the cutting angle and slice through difficult grain, I add a removable side stop that plugs into the planing board using two ½-in.-dia. dowels. This provides lateral support.

For jointing the edges of boards, I attach a smaller version of the bird's-mouth stop. In this way I can plane the face and the edge grain of a short workpiece without removing the planing board.

THE PLANING BOARD IS A MULTIFUNCTIONAL JIG

Once you build this planing board, it is likely to become a permanent part of your bench.

> Opening is $1\frac{1}{2}$ in. wide by $5\frac{3}{4}$ in. deep.

Wedged ¾-in.-dia. dowels spaced to fit alternate benchdog holes

> Wedged ½-in.-dia. dowels fit holes in the planing board.

Plywood base, ¾ in. thick by 9 in. wide by 36 in. long

Plane stop, ¼-in.-thick by 2¾-in.-wide by 9-in.long hardwood, glued to the base

Hardwood side stop, ¼ in. thick by 2 in. wide by 13 in. long

Side support.

When you need to skew the plane or plane across the board, use the side stop to support the workpiece laterally.





There's more. Once you've planed the face of the board, use the bird'smouth attachment to plane the board's edge.

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4 Shooting board Ing

When it comes to trimming the ends of boards, especially small ones, I turn to my shooting board. The jig, which hooks over the edge of the benchtop, consists of a base, a fence, and a runway for a handplane to glide along. The plane removes shavings in fine increments, leaving the board the correct length and the ends square and smooth, ready to be used in joinery.

The two-part fence, which supports the work and prevents tearout, must be exactly 90° to the runway and flush with the edge of the top base. The main fence is glued and screwed to the base, while the front face is screwed to the main fence so that it can be shimmed if needed. The best plane to use is a low-angle jack plane whose 37° cutting angle, long body, and large mass make it ideal for shaving end grain. Push the plane downward and toward the end of the workpiece with one hand, and use the other to secure the workpiece against the fence. This movement takes a little getting used to but soon becomes second nature.



Square and true. Place the board against the fence with the end fractionally beyond the end of the fence. Slide the plane past it, taking thin shavings until the end of the board is clean and perfectly square.





Make a runway for the plane. The 3-in.-wide runway is formed by screwing the upper base to the lower base.



A square fence is critical. If the front face of the fence isn't 90° to the runway, you can shim it.



Trim the end. Before use, trim the fence flush with the edge of the top base. Clamp a piece of scrap to the fence to prevent tearout.

TWO ACCESSORIES FOR PERFECT MITERS

I recommend two easily installed attachments for this shooting board. The first is a triangular-shaped piece of plywood used to tune a flat, or frame, miter; the second is a larger block of wood with a face angled at 45°, used to trim a standing, or carcase,



FRAME MITERS



miter. Both attachments are held to the base using threaded rod that is screwed into a T-nut embedded in the underside of the jig. This group of easily constructed jigs leaves joints that surpass those left by a machine, and does it quicker.



CARCASE MITERS A second auxiliary fence allows





Locate the hole from underneath. Hold the miter fence in position on the shooting board.



Check the angle. Make sure the fence is exactly 45° to the edge of the runway.



Laminated block. The large glue surface needs plenty of clamps to create enough pressure.



Quick change. The T-nut, threaded rod, and knob allow quick removal of both miter fences.

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