

A man with glasses and a dark shirt is working in a workshop. He is using a hand plane on a piece of wood that is held in place by a bench hook on a workbench. The workbench is cluttered with various tools and wood shavings. In the background, there are shelves with more tools and a wooden wall.

Make Short Work of Small Parts

With bench hooks
and hand tools,
fitting fine pieces
is as easy as 1-2-3

BY MATT KENNEY

After years of making small boxes with delicate trays and cabinets with small drawers, I've found that the safest, fastest, and most precise way to make and fit small parts is with a backsaw, a handplane, and three bench jigs. The jigs—a planing stop, a saw hook, and a shooting board—are easy to make, last a long time, and come in handy for a wide range of jobs.

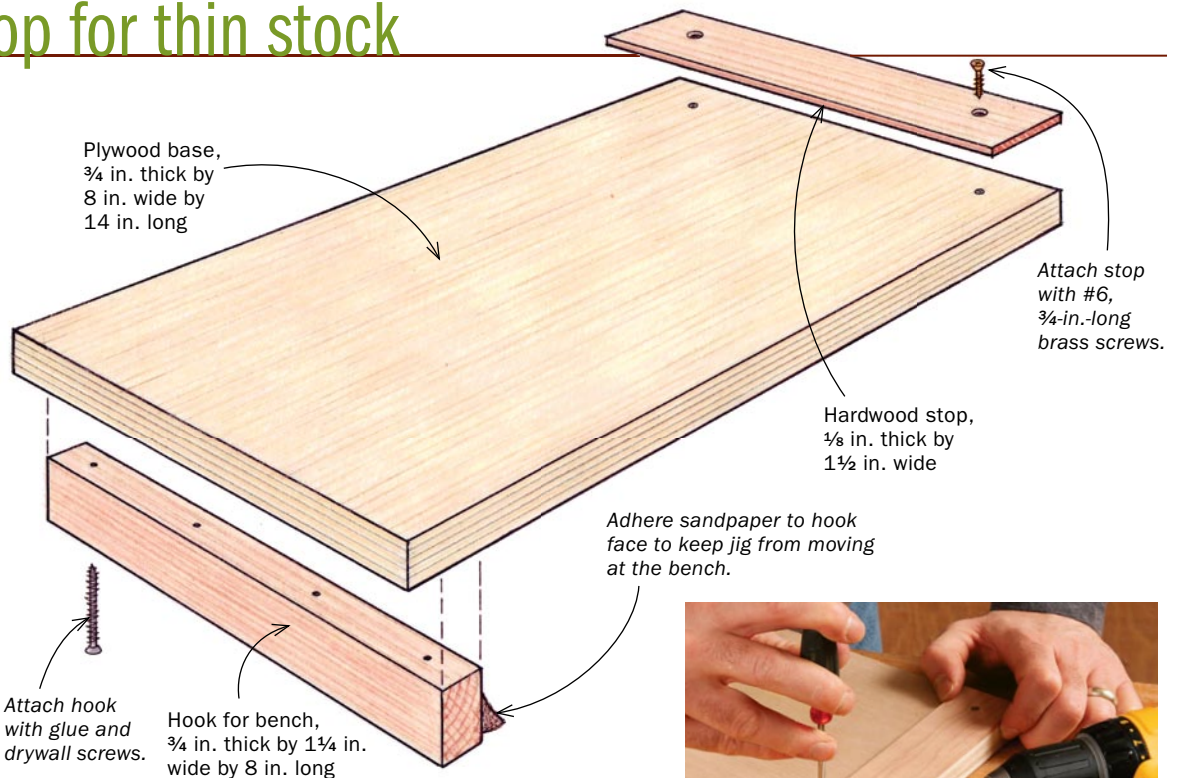
Each of these jigs is useful by itself, but they really shine when used together. I line them up on my bench and go quickly from one to the next. It makes for a quiet, safe, and efficient workstation. And the fit and finish of my small parts is better than ever.

I'll show you how to make the jigs—and then how to use them—as I make and fit the parts for a jewelry box.

Matt Kenney is an associate editor.

A planing stop for thin stock

This planing jig provides rock-solid support for hand-planing small parts, from miter keys to box lids. The base hooks over the edge of the workbench while the 1/8-in.-thick stop prevents the workpiece from sliding. Its low profile won't interfere with thin stock, and it's secured with brass screws, which will do less damage if they contact the plane iron. A strip of P220-grit paper on the hardwood hook keeps the jig from sliding sideways. I use high-quality veneer-core plywood for all three jigs, because it stays flat over the long haul.



Online Extra

To watch a video of Kenney using his jigs in our series on box-making, go to FineWoodworking.com/extras.

Thin stop, tall hook. Screw on the two cleats and you're ready to go (right). The screws that secure the stop are countersunk so they won't hit the plane iron should it pass over them.

1 SURFACE SMALL PARTS EASILY

After bandsawing or tablesawing small stock to size, the first step is to remove the saw marks and plane them to thickness.



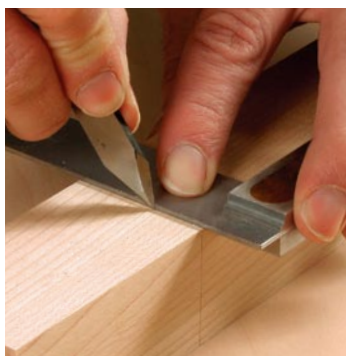
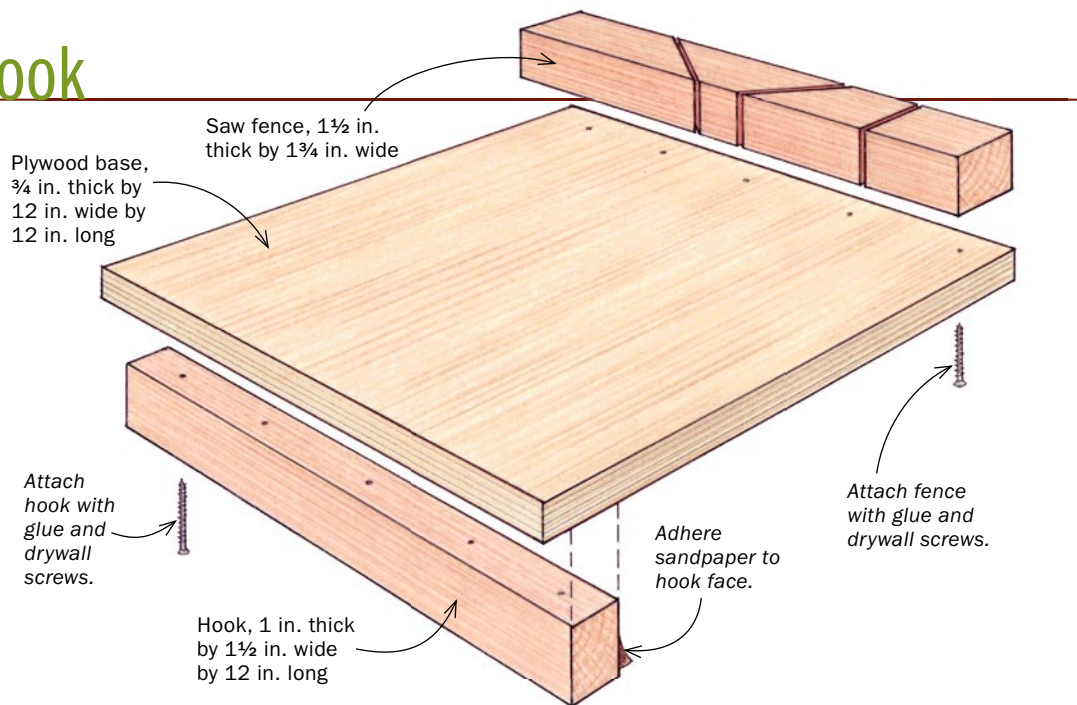
Plane to thickness. A great job for the planing stop is bringing corner keys to thickness (above). Handplaning is the ideal way to sneak up on a perfect fit (right).



Smooth thin panels and refine joinery. Box lids and other thin panels are easily surfaced at the planing stop (above). With the edge of the panel overhanging the jig, fine-tuning a rabbit is simple and accurate (left).

A versatile saw hook

Like the planing jig, the saw hook is designed to sit on a workbench, providing a stable platform for rough-cutting small parts to length—more quickly and safely than a power tool. Instead of a shallow stop, it has a taller fence that holds the workpiece steady. The fence has 90° and 45° kerfs that guide the sawblade. When making the jig, don't worry too much about getting the sawkerfs perfect. This jig is only meant to get parts close to the right length and angle. For a perfect fit, use a low-angle plane and a shooting board (see next page).



Fence gets three cuts. After attaching the fence and hook, lay out the 90° and 45° cuts in the fence with a marking knife and square (left). Then make a shallow groove with a chisel (center) to guide the backsaw. Cut the kerfs with the same saw you'll use to cut stock (right).

2 THEN CUT THEM TO LENGTH

With the parts smooth and straight, rough them quickly to length on the saw hook.



Mark and cut. For the sides of this jewelry tray, Kenney measured directly from the workpiece (left), then cut the parts at the saw hook (right). Generally, it's best to leave the pieces a little long and then square the ends and fine-tune the fit at the shooting board (see next page).

45° too. The same goes for miters. Here, Kenney trims the waste off the corner keys he planed on the previous page.

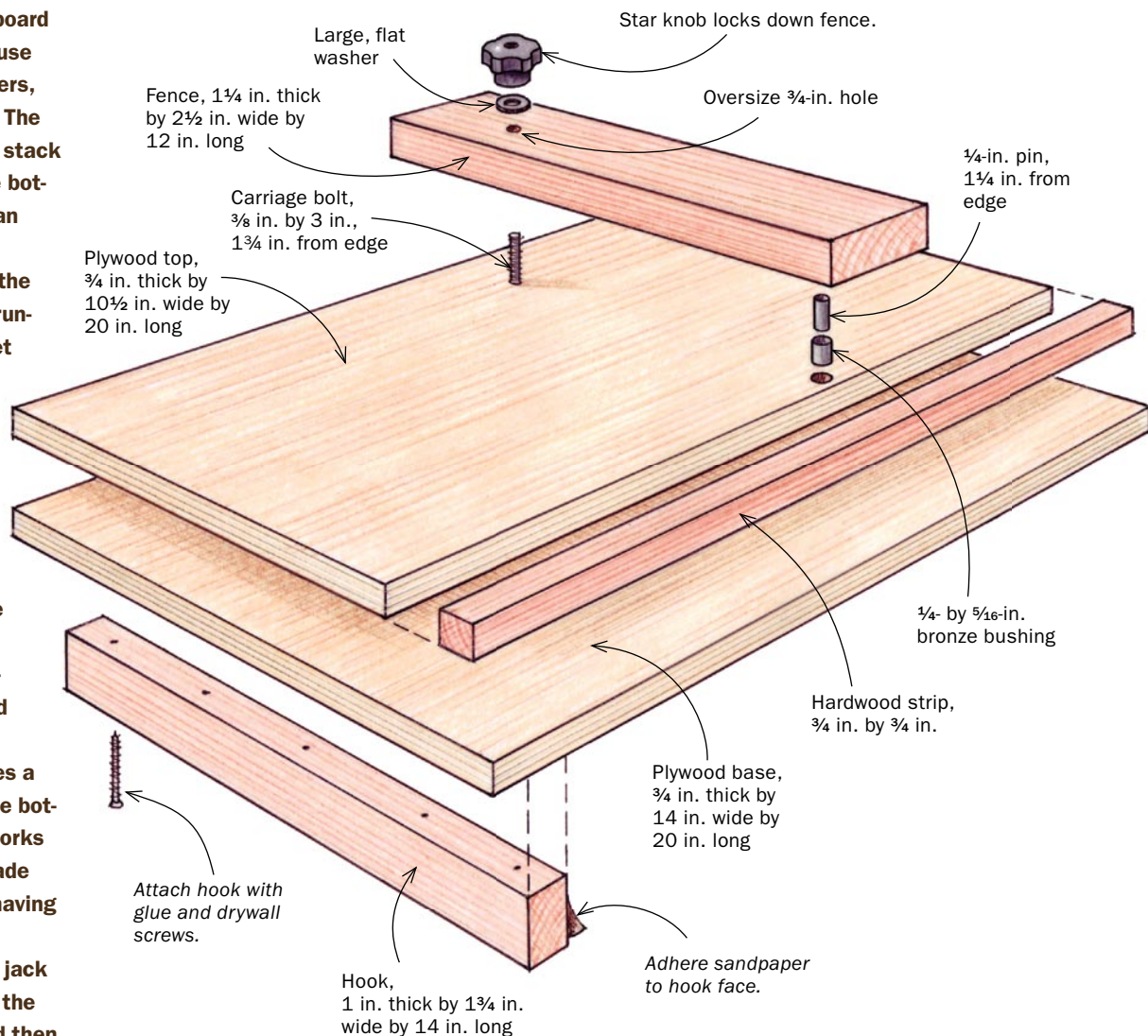
Shooting board is the most valuable jig

Of all these jigs, the shooting board is the most versatile. You can use it to square up ends, plane miters, and trim parts for a perfect fit. The base is made from a two-piece stack of $\frac{3}{4}$ -in.-thick plywood with the bottom piece about 3 in. wider than the top piece.

With the left sides aligned, the resulting rabbet becomes the runway for the plane. A 3-in. rabbet works for the Veritas low-angle jack plane shown here, but it should be adjusted so it's about 1 in. wider than the height of the plane you'll be using.

A strip of $\frac{1}{2}$ -in.-thick hardwood glued to the left side of the rabbet keeps the plane blade from cutting into the plywood (which would dull it). And since the plane blade is not as wide as the plane body, it leaves a narrow ridge of hardwood at the bottom of the runway. The ridge works as a depth stop to keep the blade from reaching and endlessly shaving away the hardwood strip.

Whenever you sharpen your jack plane, you'll need to trim away the ridge with a shoulder plane and then re-establish a new ridge with the newly sharpened jack plane.



Adjustable fence will always be true. A $\frac{1}{4}$ -in. (I.D.) bronze bushing (left) and a tight-fitting steel pin serve as the pivot point for the fixed end of the fence. The adjustable end has an oversize hole that fits over a carriage bolt (center). Once squared, the fence is locked down with a threaded knob (right).

3 NOW FINE-TUNE THE FIT

After you've planed your pieces smooth and sawn them to rough length, the shooting board does the really important work.

PLANE ENDS AND EDGES SQUARE



Shoot in pairs. After aligning the opposite ends, squaring pairs of parts at the same time ensures they're exactly the same length.



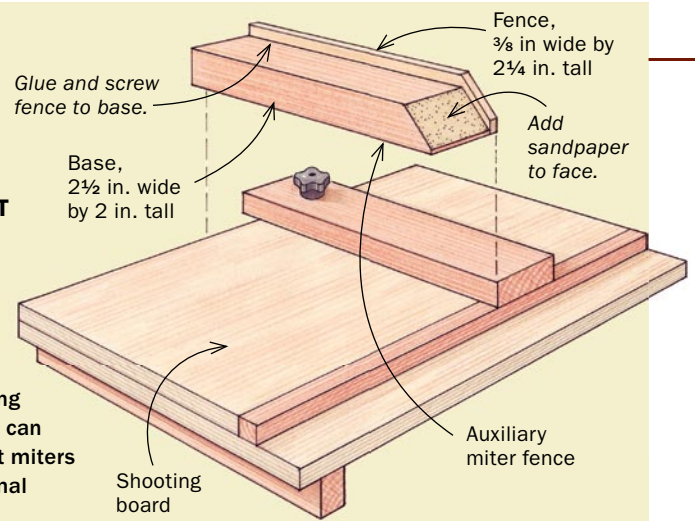
Joint edges safely. You can joint the long sides of small parts at the shooting board, too. And it's safer than a jointer.



The perfect fit. With the workpiece slightly oversize, plane one end square and then take a pass or two on the opposite end. Continue planing and test-fitting until you get a snug fit (left).

MAKE PERFECT MITERS

By adding a 45° auxiliary fence to the shooting board, you can make tight miters with minimal fuss.



Simple jig makes miters too. Clamp the miter jig to the shooting board's fence, so it doesn't shift sideways.



Plane the miter. A firm grip and P220-grit sandpaper glued to the jig prevent the stock from moving as the miter is planed perfectly true.