



Bench-vise secrets

YOU'RE PROBABLY NOT GETTING THE MOST FROM THIS WORKSHOP WORKHORSE

BY STEVE LATTA

The bench vise is one of woodworking's most necessary and fundamental tools, vital for holding work while you saw, chop, pare, plane, scrape, and perform any number of other tasks on your projects. Despite the vise being used so often, it is commonly misused. In my class or at workshops, I routinely see beginning students clamping stock the wrong way in the vise, sawing or paring in the wrong direction, and risking injury when the work slips and the tool jumps.

Work in the right direction

Brace the work from behind. Applying force in line with the jaws can make the workpiece slip (right). Instead, orient the stock so that you're sawing perpendicular to the jaws (below).

BAD



BAD



Even wide stock can slip. It's natural to place the broadest faces against the jaws (left), but clamping on the edges still provides enough pressure to hold the work securely (below). Now the piece is braced against the force of the cut and won't slip.

GOOD



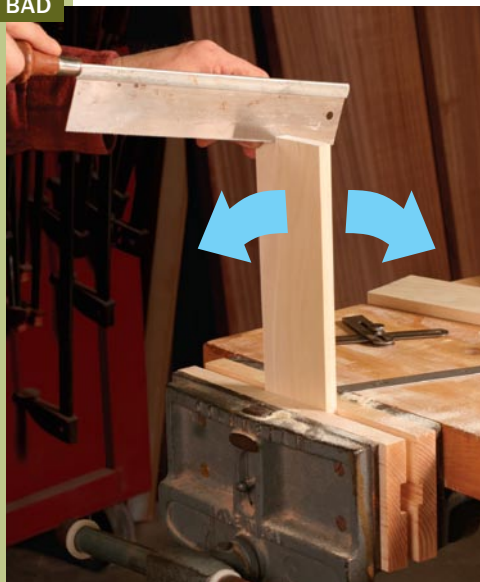
GOOD



Work at the right height

Too tall. It's tempting to place the stock high in the vise so you can work without stooping. But this lets the workpiece flex (right), making the task more difficult and the results less accurate. For the best support, keep the stock low in the vise (below left) or brace it with a backing block of thick scrap stock (below right).

BAD



BAD



This is dangerous. With no support underneath, the workpiece and chisel can slip under downward pressure (left). Place a support block in the vise underneath the work (below).

GOOD



You can avoid mishaps like that by adopting a few basic techniques to hold your work securely and prevent it from slipping. And with a few simple shopmade fixtures, you can use your vise to tackle an even wider variety of tasks safely.

Many ways to use the vise alone

I typically use my bench vise in one of three ways: by itself, with benchdogs, or with other clamping fixtures. Let's look at all three.

On its own, the vise is great for holding smaller workpieces during sawing, chisel work, edge-planing, or other tasks. But for best results—and safety—it's important to orient the work properly in the vise.

For vertical work, consider your task and orient the workpiece so that you'll be working across the jaws and not in line with them. You want the back jaw to brace against the thrust of the saw or chisel. Also, to reduce the likelihood of slipping

GOOD



A safe setup. Resting on the vise's bars, Latta's support block is about $\frac{5}{8}$ in. lower than the vise jaws. With the block in place, the workpiece doesn't slip.

Tips for flat surfaces

Secure longer stock for surface planing. Butt the workpiece against a thin batten laid across the benchtop. Hold the batten in the vise with an attached cleat, and brace it with a benchdog. This simple setup gives all the support you need, and lets you change out boards quickly.



How a drawer fits in a vise. Clamp the drawer front lightly in the vise to avoid racking, and use a short piece of stock as a bridge between the benchtop and the top of the vise. This bridge braces the drawer side against downward pressure.



and racking the vise, position the stock between the vise screw and a guide bar, as low in the jaw as possible. The farther up from the jaws the operation gets, the greater the potential for losing control.

For horizontal work, you may need support under the workpiece if the task calls mainly for downward force. So I keep a piece of $\frac{3}{4}$ -in. stock handy that is as long as my vise and comes to about $\frac{5}{8}$ in. below the top of the jaws when resting on the guide bars. Resting a workpiece on top of this board provides additional support and enhances safety.

For edge-planing short pieces, simply clamp them in the vise. For longer pieces, I add a support block with a piece of sandpaper glued to both faces.

The sandpaper bites into both jaw and workpiece, keeping it from slipping when I get to the ends of the board.

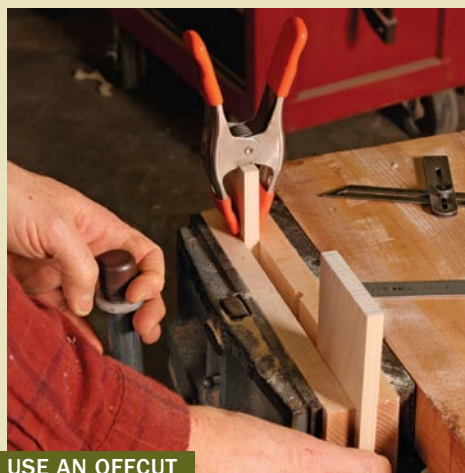
A vise and dogs hold work on the bench

For surface planing and some other tasks, the workpiece needs to be held flat on the benchtop. You can do this using the sliding stop on top of the vise and a row of dogholes bored into the bench surface.

Many vises come with a metal stop that slides up out of the front jaw. If yours doesn't have one, you can create one by boring a hole in the front auxiliary jaw to fit a commercially available or shopmade dog. For best support underneath the work, don't open the vise wide to

Two cures for racking

When a workpiece is placed near the end of the jaws, all front jaws rack (deflect) to some degree, compromising the grip. Here are two great solutions.



USE AN OFFCUT

Match its thickness to your workpiece to prevent the front jaw from pivoting. A spring clamp keeps the scrap from falling before the vise is closed.



A DOVETAILED WEDGE

Latta's anti-racking wedge won't fall out because it slides on a dovetailed key routed into the inner jaw. Slide the wedge farther in to accommodate thicker stock.



Use clamping blocks for long and tall stock

LONG



Fixture helps hold wide or long boards. The block is as thick as the vise's rear jaw. Leave the crosspiece long to accommodate a clamp.



Just add clamps. To hold the free end of a long board for edge-planing, secure the crosspiece to the bench and the workpiece to the block. The setup also works for wide boards.



TALL



A fixture for legs. Latta uses a panel with an L-shaped bracket to support long work vertically (above). The fixture's top provides a bearing surface for the router when cutting dovetail mortises in the top of a table leg (right). The bottom of the L provides an index for clamping into the vise.



accommodate the workpiece. Instead, use the most distant doghole you can, and keep the vise opening narrow. This puts the bulk of the stock over the bench surface, making planing easier and more stable.

Also, make sure the dog is below the board's surface. Nicking a steel or brass dog can damage a plane iron.

Add a few simple helpers

There are several accessories and attachments that work well with a vise. The simplest is just a cutoff scrap that matches the thickness of the workpiece. Inserting this scrap in the opposite end of the vise helps prevent the vise from racking (pivoting and losing its grip) when work is clamped on the other side of the vise. Taking this further to prevent racking with any thickness of stock, I made an angled block that slides in a dovetail key cut along the length of the vise (see photos, p. 24). Also in the very simple category, just about any bench hook or shooting board that typically braces against the edge of the bench can be made more stable by clamping it into the vise—a practice I recommend.

Other accessories help with larger stock or specialized tasks. For instance, when edge-planing longer stock or working the end grain of wider boards, you need a way to hold the free end of the workpiece. I do this with a clamping block made from two pieces of scrap joined at a right angle. This block gives me a surface against which I can clamp the work, and a plate that lets me secure the block to the workbench. A different fixture helps when dovetailing the top of a table leg. To hold the work and support the router, I use an L-shaped block (see photos, left) that clamps securely in the vise. The fixture anchors the leg, letting me remove much of the socket with a router and do final cleanup with a chisel. □

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