



Restore a Vintage Vise

Built to last and easy to refurbish, sturdy old vises are a great bargain

BY STEVE LATTA

I've acquired a lot of vises over the years—without buying new ones. Good old vises with plenty of life in them are easy to find and inexpensive, and refurbishing them is actually a pleasure. Bench vises aren't complicated—most come apart with the removal of a few pins or bolts. After that, cleanup consists of removing the rust, freeing stuck parts, and applying a fresh coat of paint. Depending on their condition, you might also replace the jaw pads, handle, and benchdog. Add a little wax to lubricate the moving parts, mount it to your bench, and your new old vise is ready for many more years of service.

Buyer's guide to vintage vises

There are a lot of solid vintage vises available, so don't compromise on features. I'd limit the search to vises that mount to the bottom of the bench with bolts. I prefer a vise with a quick-release screw, jaws that are 4 in. deep, and preferably a benchdog, too. You won't go wrong with brand names like Abernathy, Columbian, Wilton, Record, and Brodhed-Garrett. I'm pretty picky about the vises I buy, and I still usually get them for a steal. Deals can be had for as low as \$40.

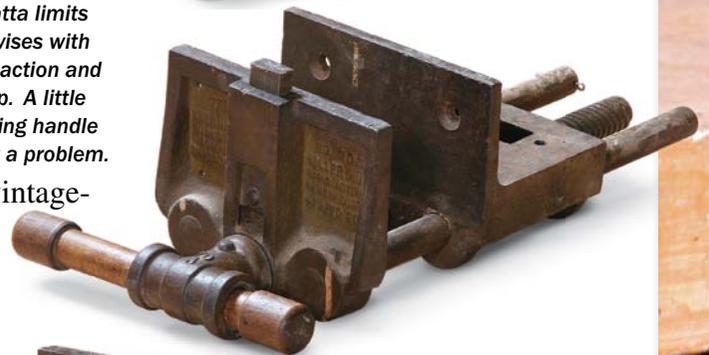
Find a workhorse to revive

Made in great numbers and virtually indestructible, old bench vises are easy to find. Many shops, flea markets, and websites that sell old tools will have a selection of them.

Some favorite vises.

Good options for an old vise are, from top, Wilton, Abernathy, and Columbian. Latta limits his search to vises with quick-release action and jaws 4 in. deep. A little rust or a missing handle or dog are not a problem.

011251062_restore-vintage-vise



Not worth the trouble. Pass on any vise with a broken casting, like this Columbian.

3-step rehab

1. TAKE IT APART



Remove the handle first. A hammer and punch will usually remove the pin holding the handle head to the main screw shaft (above). A more ornery pin can be drilled out on the drill press and replaced with a roll pin at reassembly. Then completely disassemble the vise, using penetrating oil if necessary. Document the disassembly with photos to make reassembly easier (right).



2. CLEAN AND PAINT



Brass brush for light rust. Latta uses degreaser and a brass-bristle brush to clean the threads of the quick-release mechanism.



Renew the guide rods. After knocking off most of the rust with sandpaper, Latta rubs the guide rods with a gray, medium-grade 3M abrasive pad. He finishes the job with 000 steel wool.



Wire wheel for deep cleaning. A wire wheel reaches into the threads of the main screw. If necessary, Latta also uses the wire wheel for heavier rust on the vise's main castings.

Quick coating. After applying primer, Latta sprays a topcoat of flat black paint onto the castings. A wrapping of cellophane protects the freshly cleaned guide rods from overspray.



I've paid up to \$80, which is still less than half the cost of a new vise of the same quality.

A little rust isn't usually a problem, but stay away from anything that's not fully functional. I don't mind a missing or worn-out handle or benchdog—they can easily be replaced—but other than that, the vise should have all its parts.

Look for solid main castings. The cost of repairing a vise with a cracked or broken body makes me steer clear. I'd also pass if the working components have too much play and the overall feel is sloppy. If I tighten the screw and it pops or slips under pressure, that vise won't find a home in my shop. Carefully inspect the threads and quick-release mechanism for worn, chipped, or broken threads.

Also, check the alignment of the jaws: They should be parallel across their full width, but they should meet at the top before



3. BRING IT BACK TOGETHER



Reattach the head. Add grease to the end of the main screw's shaft before reinstalling the handle head. Nylon washers can be used as spacers to take up any play in the shaft (left). You can replace the original pin with a roll pin (above).

the bottom. You'll often find jaws that are racked out of parallel. If the difference is $\frac{1}{16}$ in. or less, you can correct it by adding wooden jaw pads and tapering them to compensate—I always add pads anyway. Anything much more than $\frac{1}{16}$ in., though, is a major misalignment that's not worth trying to correct.

Give it a good cleaning

Once you have the vise, the refurbishing process is quite simple. It begins with a complete disassembly and thorough cleaning. As I disassemble I always take photos so it's easy to ensure that all the parts go back together in the right order and orientation. Parts that are bolted together can be stubborn, but penetrating oil, patience, and a big wrench should get them loose. If the spindle head casting is pinned to the screw, knock out the pin with a hammer and punch. A pin that won't budge can be drilled out and replaced. In cases where the head casting is pressed on, it's probably better left attached.

Clean the main screw on a wire wheel to remove any rust or grime, and do the same to the guide rods and any other unpainted parts. Clean the mating threads on the quick-release mechanism too. They are often made of a softer material, so instead of using the wire wheel, I go with hand power, using a small brass-bristle brush with a little degreaser. Once all the threads are clean, wipe them down with paste wax to keep them from rusting again.

The condition of the main cast-iron parts determines their treatment. Usually all that's needed prior to painting is a good scrubbing with degreaser and a brush or rag. If the castings have moderate rust, use a wire brush to clean it off. For really rough, rusty parts, use a wire wheel in a power drill or on a bench grinder. I don't aim for cosmetically flawless surfaces—to me, this is a tool that's made for tough work, and it doesn't need to look perfect.



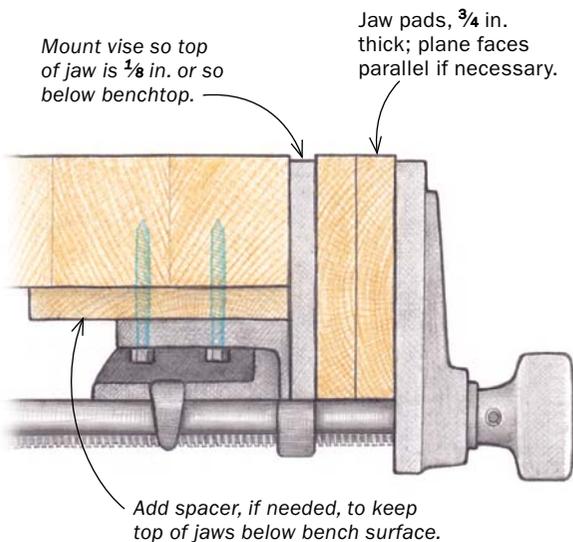
Wax away. Coat any exposed metal with paste wax to promote smooth sliding and inhibit rust.



Careful assembly. With the parts painted and prepped, follow your photo trail for an error-free assembly.

Easy install

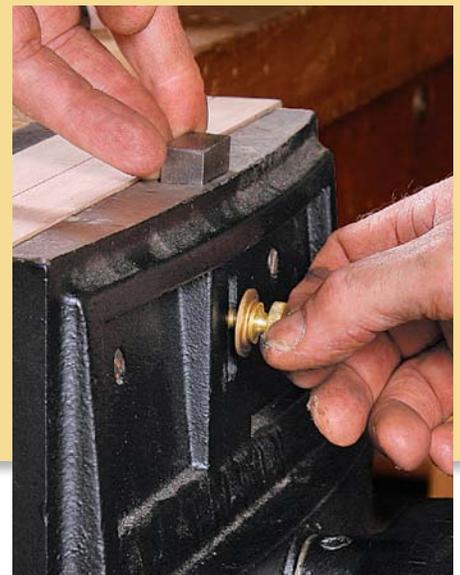
Back on a bench. After bolting the vise to the benchtop, Latta checks the jaws to see that they are parallel as they close. If they aren't, he adjusts the fit by unscrewing the front jaw face and handplaning it to a taper.



TIP

NO DOG, NO PROBLEM

If the dog on your vise is missing its lifter, you can drill and tap the dog and install a knurled knob. If the dog itself is missing or badly worn, you can make a replacement in hard maple.



Once all of the cast parts have been cleaned, prime and topcoat them with a basic rust-inhibiting aerosol spray paint like Rustoleum or Krylon. I typically use flat black to avoid glare when the vise is in use.

Put it all back together—better than before

With the paint dry, it's on to reassembly. If you removed the spindle head from the main screw and you find that it's loose on the shaft, you can remedy the problem by wrapping the screw shaft with Teflon tape. If there is play between the spindle head and the front jaw casting, you can add nylon washers to tighten the action—they'll reduce friction, too, so the handle will spin

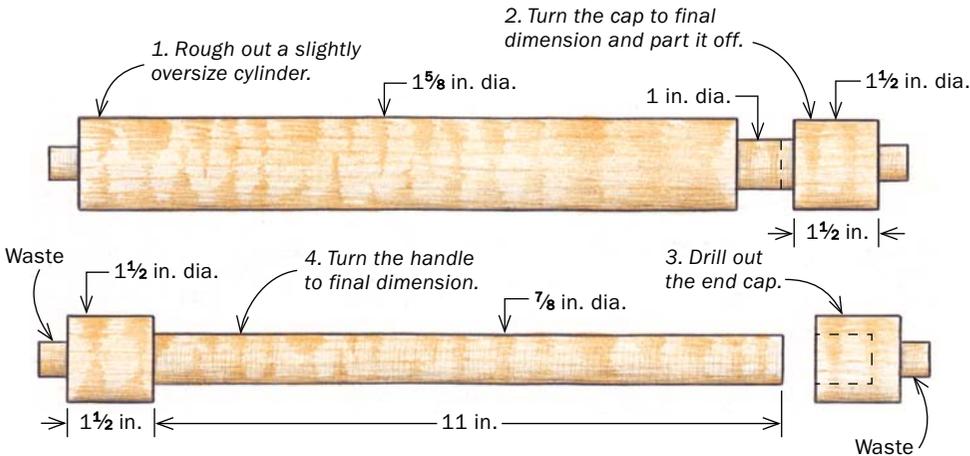
more smoothly. Some vises have a plate at the back that ties the guide rods to the center screw. Adding a washer here can help reduce slop in the screw as well.

Wipe down all the bare steel parts with a little paste wax. It helps them slide, prevents rust, and keeps dust and dirt from sticking. If you don't have wax handy, a light film of 3-in-1 oil will suffice.

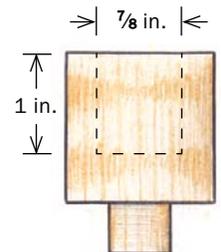
Next, make hardwood pads for the jaws. I usually make them about $\frac{3}{4}$ in. thick. I don't think you need them any thicker than that, and the thicker they are the more you reduce the capacity of the jaws. If the jaws don't close evenly, taper one pad with a handplane until the two top edges are parallel when they meet. If you'd like a benchdog but your vise has no dog slot in the casting,

YOU CAN HANDLE IT

Turning a new handle is a great way to personalize a vintage vise. Latta turns his in two steps, first creating and parting off one end cap, then remounting the workpiece to turn the shaft and the other end cap.



Start with the cap. After roughing the whole blank to a cylinder, turn the cap portion to final size, part it off, and drill the mortise (above). Then turn the rest of the handle, stopping to check the fit to the end cap as you approach final size (left).



you can make the front jaw pad 1 in. or so thick and drill it for a round-shank dog.

If the handle of your vise is damaged or missing, make a new one out of hardwood, like maple. For me, turning the handle is a nice little ritual for bringing the process to an end. I find that around 13 in. is a good length.

I turn the whole blank to a slightly oversized cylinder, then bring one end cap to final size and part it off. Cut a 1-in.-deep recess in the cap at the drill press with a Forstner bit. Remount the blank and turn the rest of the handle, carefully bringing the shaft down to diameter so the cap fits snugly. Finish the handle with wiping varnish and a coat of paste wax and install it. Now mount your finished vise and appreciate the fruits of your labor—you should be doing so for quite a long time! □



Cap it off. Rubber O-rings serve as shock absorbers. Slide them onto the handle shaft, one on each side of the head casting, then glue on the end cap.