

Small Clamps Everybody Needs



We put dozens to the test,
but only 7 emerged as
must-haves for woodworkers

BY TOM BEGNAL

A good collection of small clamps is invaluable in the workshop. As my 48-in.-long clamps collect dust, an array of small clamps make a seemingly endless number of visits to my bench.

The ideal small clamp, I suppose, would work perfectly in every imaginable application. That means it would open and close quickly, tighten just as easily, and provide adequate pressure. The jaws wouldn't dent or stain the workpieces. Clamping pressure wouldn't cause the workpieces to shift. It would clamp non-parallel surfaces. And it would release pressure easily.

I've yet to find that mythical clamp. Like most of you, I've used several different types to cover the common woodworking tasks. But there were many I hadn't tried. With that in mind, I recently took a close look at the growing array of small clamps on the market.

All told, I gathered about 40 models in the *Fine Woodworking* shop. Then I set about using each one in a variety of common woodworking applications. I tested several sizes and models in each clamp category. Once the glue had set and the dust had settled, I ended up with seven essential clamps.

By the way, a small clamp—at least according to my definition—has a maximum jaw opening of 6 in. Because I focused on the most common woodworking applications, this article doesn't cover lesser-used, specialty clamps such as toggle clamps, miter-joint clamps, deep-throat clamps, and the like.

Tom Begnal is an associate editor.

Spring clamps great in a pinch



Uses: Holding small parts; light-duty and temporary clamping

Clamping force: 48 lb.

Author's favorite: 2-in. spring clamp, \$1

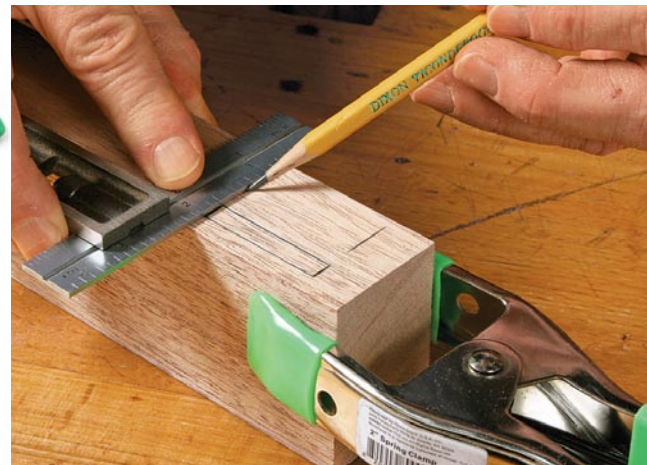
Source: The Home Depot

Others tested: Bessey spring clamp, Bessey VarioClippix, Pony hand clamp, molded grip (Woodworker's Supply), Irwin Handy-Clamp, Ratchet-Lock (GarrettWade)

You can't beat a spring clamp for ease of use. As the name suggests, a coiled spring creates the clamping force.

But spring clamps don't generate much pressure, so they aren't a good choice when gluing large parts. When gluing little parts, however, they often are your best choice. You can get a decent, midsize spring clamp for under a buck at home centers.

Because they are used one-handed, you can easily put one or two spring clamps to work holding a stop block in position. Or, when laying out joinery, you can butt the parts together face-to-face, hold them in position with one hand, and put a spring clamp on



Temporary hold. With a spring clamp marrying a pair of door stiles, it's simple to transfer the mortise location from one part to the other.

each end to keep the parts aligned as you transfer the lines from one to the other.

Traditionally, spring clamps were made from steel, but some are now plastic except for the spring. I looked at generic steel versions sold by The Home Depot and plastic versions by Quick-Grip. Both worked fine, but the generic brand fit my hand better, making them somewhat easier to squeeze.

Recently, a new type of spring clamp has come on the market. For lack of a better description, I call it a hybrid. It locks with ratcheting action. All the hybrids worked OK, but none worked as well as the classic steel spring clamp. Plus, the hybrids cost more.



Simple and fast. When attaching small parts like these glue blocks, spring clamps make the task quick and easy.



One-handedness is handy. It takes just one hand to use a spring clamp, leaving your other hand free to position something, like this stop block on a table saw miter fence, before adding a stronger clamp to lock the block in place.



Bar clamps are the workhorse

Uses: Tasks that require lots of clamp pressure

Clamping force: 760 lb.

Author's favorite: 6-in. Bessey Tradesman, medium-duty, \$10

Source: www.woodcraft.com

Others tested: Irwin, Jorgensen, Lee Valley, Rockler, Shop Fox, Steelex Plus (Grizzly), Woodtek

Small bar clamps get their name from the sturdy steel bar that runs the length of the clamp. They have two jaws: a fixed one at the end of the bar, and a sliding one that includes a threaded rod (typically an Acme thread) with a handle on one end.

Among all the various types of small clamps, the bar clamp has several advantages. It adjusts quickly and easily. Plus, it provides plenty of clamping force, around 760 lb. in our test.

For those reasons, I reach for a short bar clamp more than any other small clamp. It is ideal for applying side pressure to open mortise-and-tenon joints (also called slip joints or bridle joints). For bigger edge-gluing jobs, like making a tabletop, I'll use short bar clamps to squeeze the ends of clamping cauls and the ends of boards at the glue line. When gluing bent laminations, woodworkers take advantage of the bar clamp's wide capacity, quick adjustment, and substantial clamping force. And I could easily list a few dozen more places where a short bar clamp gets good use.

Clamp manufacturers typically offer bar clamps in three strengths: light duty, medium (sometimes called standard) duty, and heavy duty.

My favorite bar clamp is the Bessey medium-duty Tradesman. It was easy to handle, produced lots of pressure, and didn't discolor the wood. I liked the heavy-duty Jorgensen, but when the clamp remained overnight on a workpiece, the plastic clamp pads sometimes left the wood slightly discolored. It took some light sanding to remove the oily smudge.



Great for glue-ups. A good bar clamp can produce a lot of clamping force and is easy to use, making it a good choice for applying side pressure to a half-lap joint.



Alignment control. When edge-gluing, keep the surfaces of boards from slipping out of alignment by placing short bar clamps on the ends of clamping cauls and also at each joint at the ends of the boards.



Wood bender. Michael Fortune finds that bar clamps are a good choice for bent laminations—the clamps are quick to adjust. But you'll need more than a few.



'Quick Grips' do just that

Uses: One-hand clamping when spring clamp is too small; dent-free clamping of stock to workbench; spreading parts

Clamping force: 225 lb.

Author's favorite: Irwin 6-in. Quick-Grip, \$18

Source: www.rockler.com

Others tested: Bessey DuoKlamp, Midi Bar-Man, Shop Fox

Of all my small clamps, I use these least of all. I find them bulky and a bit awkward to use, especially for glue-ups, where they tend to shift the parts.

But I do find them useful for some tasks. When one hand is already occupied positioning a workpiece and a spring clamp can't open wide enough, I'll use a one-hander to temporarily clamp the parts together until I can get a bar clamp in play. I also use them as hold-downs and spreaders.

All the one-handers I looked at would work just fine for my needs. Forced to pick one, I'd favor the Irwin Quick-Grip. It has a big handle and trigger, and oversize clamp pads.



Spreading option. Some squeeze clamps convert into spreaders, an advantage when you want to spring apart the legs of a stool so a loose rung can be reglued.



One-hand holder. Using these clamps, you can quickly clamp a workpiece to the bench and rout halfway around it. The thick, soft pads won't mar your work. The clamps can be removed quickly and re-clamped to reposition the workpiece.

New cam clamp is quick, strong, and light

Uses: Small repairs, clamping small parts, light-duty tasks

Clamping force: 240 lb.

Author's favorite: 4-in. Bessey KliKlamp, \$19

Source: Hartville Tool (www.hartvilletool.com)

Others tested: Klemmsia (wood), Shop Fox (wood)



A cam clamp is especially quick to adjust, tighten, and release. And it's light in your hands. Then, too, thanks to its clamping action, workpieces are less likely to slide or twist as pressure is applied. So, a cam clamp is perfect for those tasks where you don't need a mountain of clamp force, such as gluing small parts, doing repairs, and holding a template in place for routing or layout.

The classic cam clamp has wood jaws, but my favorite turned out to be a metal one by Bessey called the KliKlamp. Considering how nicely this small clamp works, I'm putting it on my list of keepers. Be aware that you won't always have the room you need to swing the lever.



Easy repair. A small repair generally requires only moderate clamping force, so it's a perfect spot for a convenient cam clamp.



Fast and light. The KliKlamp is lightweight, easy to adjust, and simple to tighten, so it's convenient for temporarily holding a template in place as you scribe a cut line.

Light parallel clamps stay square



Uses: Applications where you don't want parts to slide out of position

Clamping force: 325 lb.

Author's favorite: 6-in. UniKlamp, \$22

Source: www.highlandwoodworking.com

Others tested: N/A (none similar)

Parallel clamps, which have been around for about 15 years, were first introduced by Bessey and called the K-Body Clamp. The Bessey K-Body was an immediate hit because the jaws remained parallel no matter how much clamp pressure was applied. That meant workpieces



Light assembly. Begnal uses four UniKlamps to glue the sides of a box with rabbeted ends. The clamps keep the sides square and apply force to the full length of the glue joints.

were much less likely to slide out of position before the glue dried.

The shortest available K-Body clamp is 12 in., too long to be considered a small clamp. However, a few years ago, Bessey began making a light-duty parallel clamp called the UniKlamp in a 6-in. length.

The UniKlamp generated a respectable force of about 325 lb. in my test, yet it's relatively light and the sliding jaw moves



Slip-free hold. To attach a fence to the base of a jig, Begnal uses a UniKlamp to hold the pieces square, without shifting them, until screws can be added.

without much fuss. It's great when you need moderate pressure and the workpiece would likely slip or twist if squeezed by any other clamp. I've use UniKlamps when clamping a fence to the base of a jig, relying on them to keep the fence in perfect position until screws are driven. When gluing a box with rabbeted ends, the parallel jaws allow you to apply even pressure all along the glue joints.



C-clamps pack the biggest punch

Uses: When maximum pressure is needed

Clamping force: 1,100 lb.

Author's favorite: 6-in. Adjustable brand, \$8

Source: www.coastaltool.com

Others tested: Claw Clamp (Shop Fox), Pony Deep Reach

Compared size-for-size to other small clamps, the C-clamp is unmatched when it comes to clamping pressure. For those occasions when you need all the clamping muscle you can get, the C-clamp is hard to beat. Small C-clamps are handy in tight spots, such as clamping a fence to a router base.

The main drawback to a C-clamp is that it's slow to adjust. Also, C-clamps don't come with clamp pads. You'll need to add them to avoid denting the workpieces.

A medium-duty Adjustable brand is a good choice. I found it produced about 1,100 lb. of clamp pressure. If that's not enough, a heavy-duty Adjustable brand will get you even more.



Clamping-force king.

When you need a lot of clamping force, like when face-gluing stock to make a single leg (above), there's no better small clamp than a good C-clamp. A pair of small C-clamps is perfect for clamping a wooden edge guide to a router base (left).



Hand screws still unrivaled

- Uses:** Deep reach applications, angled parts
- Clamping force:** 1,000 lb.
- Author's favorite:** No. 1 Jorgensen, \$23
- Source:** www.woodworker.com
- Others tested:** Rockler, Woodcraft

The woodworking hand screw has been around for hundreds of years. Hand screws have long jaws, so they offer a deeper reach than other small clamps. Also, the jaws can be angled, so it's easier to clamp odd-shaped parts or apply targeted pressure just at the tips. Last, the jaws are square, allowing a wide array of clever uses (see "Using Hand Screws," FWW #194).

The jaws crank out some pretty serious clamping force—about 1,000 lb. in my test. And they open and close pretty quickly; just grab a handle in each hand and start pedaling. I find that the No. 1 Jorgensen hand screw is a good size. Its jaws open to a full 6 in. Rockler's clamps worked almost as well, and sell for just \$13.



Surprising uses. Clamped to the baseline of a dovetail layout, the jaw of a hand screw ensures that the chisel stays square to the face of the workpiece as you cut.



Long reach. The hand screw has a relatively long reach. Here, Chris Becksvoort uses it to press home and clamp a knob to a wide drawer front. Note the leather pad that protects the knob from denting.

Small-clamp starter set

For new woodworkers, I've put together a list of my favorite small clamps, along with suggested quantities for each. Later, as you spend more time in the shop, buy a few more of the clamps you find yourself using most often.



Four 6-in. Bessey UniKlamp parallel clamps

Two 6-in. Irwin Quick-Grip clamps

Two No. 1 Jorgensen hand screws

Four 6-in. Adjustable C-clamps

Two 6-in. Bessey KliKlamp cam clamps

Four 6-in. Bessey bar clamps

Four 2-in. spring clamps