

Picture-Perfect Clamps

For all mitered joints and budgets, there are clamps to get the job done right

BY ANATOLE BURKIN



FOUR-CORNER CLAMPS

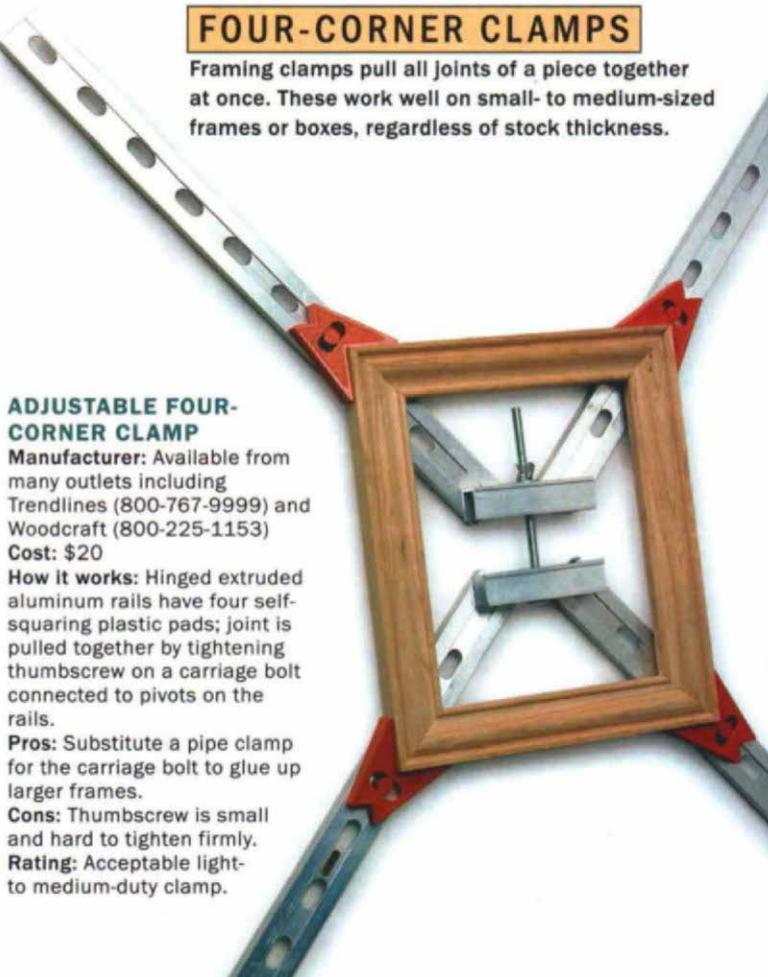
Framing clamps pull all joints of a piece together at once. These work well on small- to medium-sized frames or boxes, regardless of stock thickness.

A good miter joint begins with an accurate cut and ends with a precision clamp. Errors made along the way—a cut that's off a degree or a clamp that won't pull the joint tight—can get compounded. It's like using a checkbook: mess up one entry and the entire running balance turns to slop.

A clamp won't solve problems of bad geometry, but if the math adds up, a good clamp should accurately position stock and firmly close the joint. Nothing is more maddening than trying to get by with a clamp that won't bring a joint home or won't hold it securely while the glue sets.

There are a lot of ways to clamp miters, and readers of *Fine Woodworking* have come up with many ingenious solutions. Manufacturers have been prolific, too. I looked at more than 20 clamping devices currently on the market and included the best 16 in this survey. I evaluated the clamps on several criteria: ease and precision of alignment, ergonomics and pressure exerted on a joint. To measure the amount of pressure a clamp exerted, I slipped a 0.0015-in. feeler gauge into a joint and tightened the clamp.

If the feeler gauge slipped out with a gentle tug, I labeled the clamp light-duty. If a tight grip was required to remove the feeler gauge, I labeled the clamp moderate-duty. If I had trouble pulling out the gauge—or in some cases couldn't pull out the gauge without mangling it—I described the clamp as heavy-duty. Overall performance ratings are as follows: adequate, good and excellent. I didn't



ADJUSTABLE FOUR-CORNER CLAMP

Manufacturer: Available from many outlets including Trendlines (800-767-9999) and Woodcraft (800-225-1153)
Cost: \$20

How it works: Hinged extruded aluminum rails have four self-squaring plastic pads; joint is pulled together by tightening thumbscrew on a carriage bolt connected to pivots on the rails.

Pros: Substitute a pipe clamp for the carriage bolt to glue up larger frames.

Cons: Thumbscrew is small and hard to tighten firmly.

Rating: Acceptable light- to medium-duty clamp.

BAND CLAMPS

Band clamps wrap around a workpiece; they can be used on boxes as well as frames. They're not affected by the thickness of stock, only the circumference.

VARIO-ANGLE STRAP CLAMP

Manufacturer: American Clamping Corp. (800-828-1004)

Cost: \$39; pack of six extra corner blocks: \$13

How it works: Hand-screw-style band clamp with take-up spool. Removable corner blocks are hinged to adjust to any angle.

Pros: Self-adjusting corner pads work well; comfortable hand screw puts lots of pressure on the joint.

Cons: Take-up reel action is a bit sticky. Short handle.

Rating: Good medium-duty band clamp.



PONY BAND CLAMP

Manufacturer: Adjustable Clamp Co. (312-666-0640)

Cost: \$9

How it works: Cloth band with ratcheting mechanism wraps around workpiece. Comes with four 90° corner blocks. Ratchet must be tightened with screwdriver or wrench.

Pros: Low cost. Clamps angled joints as well as circles.

Cons: Stamped-steel corner blocks (not pictured) are unstable.

Rating: Acceptable light- to medium-duty band clamp.

MERLE ADJUSTABLE CORNER CLAMP

Manufacturer: MLCS (800-533-9298)

Cost: \$25; 40-ft. band: \$7

How it works: Metal hand-screw-style band clamp with removable 90° aluminum corner blocks.

Pros: Smooth take-up reel and large handle let you crank a joint tight.

Cons: Heavy band and spool need to rest on a work surface for stability when clamping small parts.

Rating: Excellent heavy-duty band clamp at a competitive price. Works on frames or boxes.

QUICK-ADJUST BAND CLAMP

Manufacturer: Wolfcraft (630-773-4777)

Cost: \$33

How it works: Hand-screw-style band clamp with removable 90° corner blocks.

Pros: Corner blocks provide good stability when clamping a frame laid out on a workbench.

Cons: Handle is small. Take-up spool consists of rubber band strapped around thin plastic axle.

Rating: Acceptable light- to medium-duty band clamp.

PONY 4-CORNER FRAMING CLAMP

Manufacturer: Adjustable Clamp Co. (312-666-0640)

Cost: \$16.50

How it works: Threaded rods with thumbscrews and corner blocks wrap around workpiece.

Pros: Handles frames or boxes with 90° corners; plastic corner blocks provide good alignment. Comes with four extra extension rods. Thickness and width of frame are unlimited; will clamp stock from 2 in. by 2 in. to 48 in. by 48 in.

Cons: Long threaded rods require lots of workspace; thumbscrews are small and uncomfortable to turn.

Rating: Acceptable light- to medium-duty clamp. Simple yet gets the job done.



ULMIA SPRING CLAMP

Manufacturer: Ulmia. Sold by Woodcraft (800-225-1153) or Peck Tool Co. (800-454-8665)

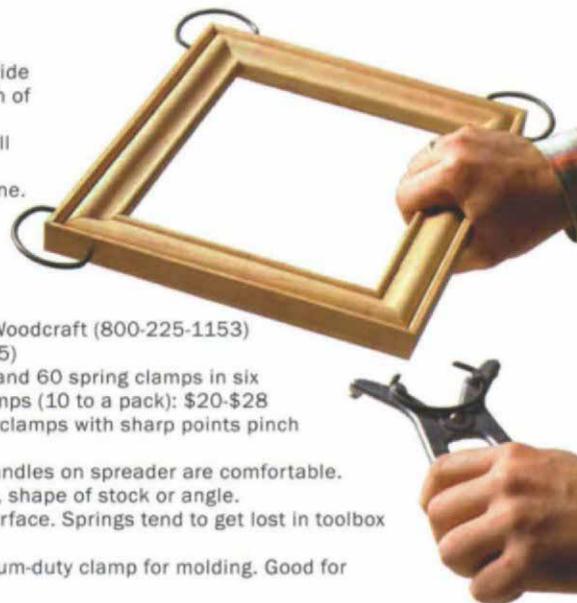
Cost: \$155 for a kit (spreader and 60 spring clamps in six sizes); spreader only: \$45; clamps (10 to a pack): \$20-\$28

How it works: U-shaped spring clamps with sharp points pinch the joint together.

Pros: Quick and easy to set. Handles on spreader are comfortable. Not limited by width, thickness, shape of stock or angle.

Cons: Leaves slight mark on surface. Springs tend to get lost in toolbox or sawdust pile.

Rating: Excellent light- to medium-duty clamp for molding. Good for furniture-grade work.



ONE-CORNER CLAMPS

These clamps won't mar the workpiece. One joint at a time can be carefully aligned.



PROFESSIONAL MITER VISE

Manufacturer: Similar vises available

through many outlets including Trendlines (800-767-9999), Woodcraft (800-225-1153) and Garrett Wade (800-221-2942)

Cost: \$40-\$45

How it works: Two threaded spindles move a pair of jaws.

Pros: Sturdy. Head rotates and swivels. Can be bolted to bench. Vise body is slotted to allow for sawing through stock with a handsaw to mate surfaces.

Cons: You need to position parts carefully to get good clamping pressure. Clamp pads are shallow. **Rating:** Good for medium-duty clamping pressure. Cast-iron vise is solid and can withstand shock of nailing a joint together.



MITER CLAMP GS11

Manufacturer: American Clamping Corp. (800-828-1004)

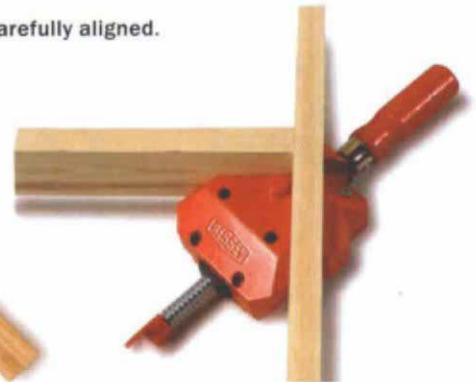
Cost: \$125

How it works: One-corner clamp with hand screw.

Pros: Adjustable for joints of 75°, 90° and 120°. Swiveling clamping jaws with non-slip pads pull the joint together tightly.

Cons: Limited to 4-in.-wide stock.

Rating: Good medium-duty clamp.



BESSEY ANGLE CLAMP WS3

Manufacturer: American Clamping Corp. (800-828-1004)

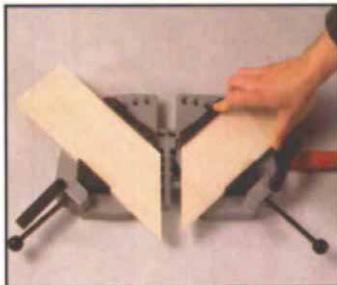
Cost: \$21; larger WS6 model: \$54

How it works: Single-corner 90° clamp with hand screw.

Pros: Automatically adjusts for two different thicknesses. Will align stock for butt joints, too.

Cons: Limited to stock of 1¾ in. (WS6 model will handle stock nearly 4 in. wide). Small surface area of clamp pads.

Rating: Good medium-duty clamp for oddball jobs, including frames or boxes. Also good for fixing a shelf butt-joined inside a case side.



MULTI-ANGLE CLAMP MGS100

Manufacturer: Gross Stabil (800-671-0838)

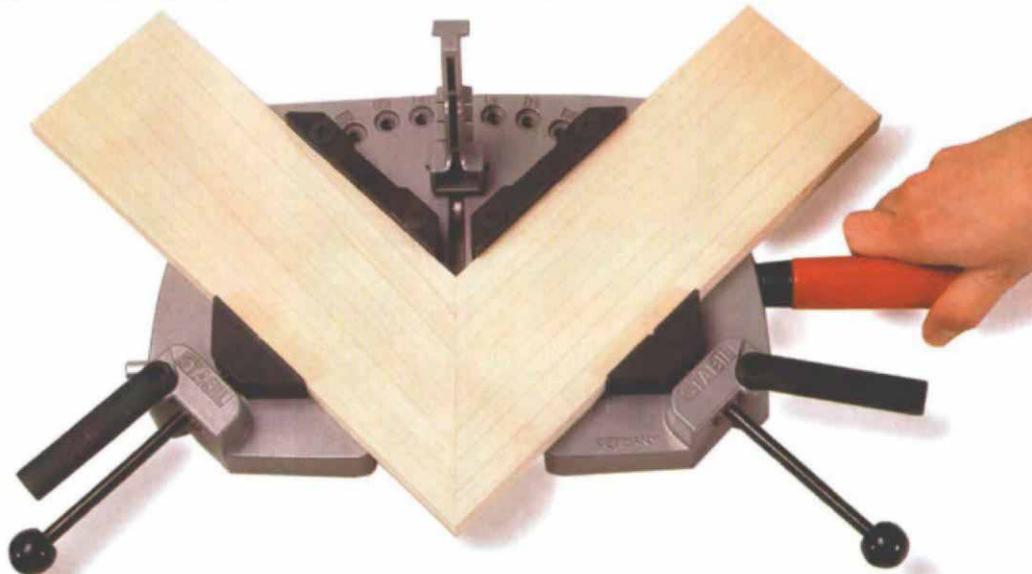
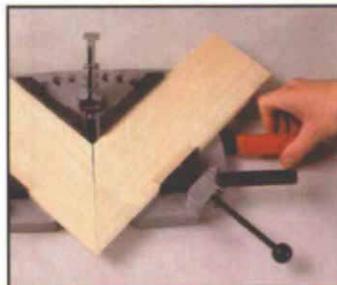
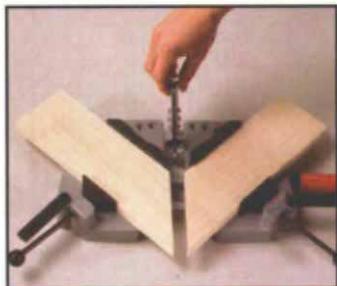
Cost: \$105

How it works: Two halves of a miter are clamped into the jig; hand screw pulls joint together.

Pros: Tool aligns stock perfectly. Clamps miters of 15° to 120° in 15° increments. Will also clamp small (up to 4 in. dia.) round or oval workpieces. Excellent ergonomics.

Cons: Cost. Limited to 4-in.-wide stock.

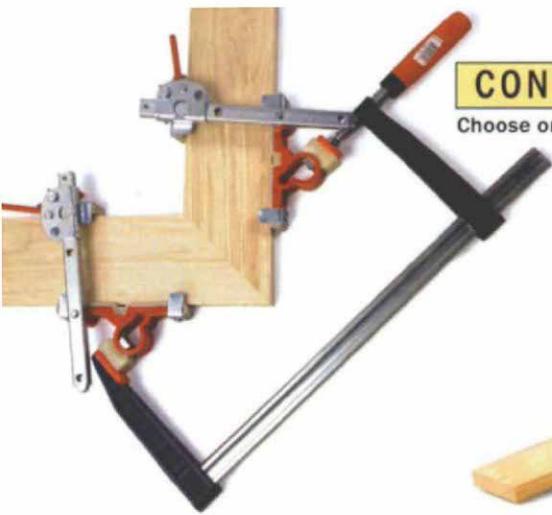
Rating: Excellent heavy-duty clamp. Best of the one-corner clamps.



Three steps to a perfect miter. With Gross Stabil's Multi-Angle Clamp, stock is butted up against an alignment bar (top photo) in the center of the jig. After clamping the workpieces in position, the bar is swung out of the way (center). Turning a screw clamp closes the joint (bottom). The outside corner meets first; additional pressure closes the joint.

CONSTRUCTION-GRADE CLAMPS

Choose one of these heavy-duty clamps when you need to glue up large pieces.



MAXI MITER JIG MG 1000

Manufacturer: Gross Stabil (800-671-0838)

Cost: \$129

How it works: Hinged clamp pad with rubber feet, which grips both edges of the stock, is attached to each piece. A bar clamp pulls clamp pads together to cinch the joint.

Pros: Large-capacity clamp (8-in.-wide stock) that clamps miters from 30° to 120°. Works on beams, rafters, large casework.

Cons: At first, all the heavy moving parts feel unwieldy; with use, it gets easier.

Rating: Excellent heavy-duty clamp for big jobs.



GROSS STABIL MITRE CLAMP GSP8

Manufacturer: Gross Stabil (800-671-0838)

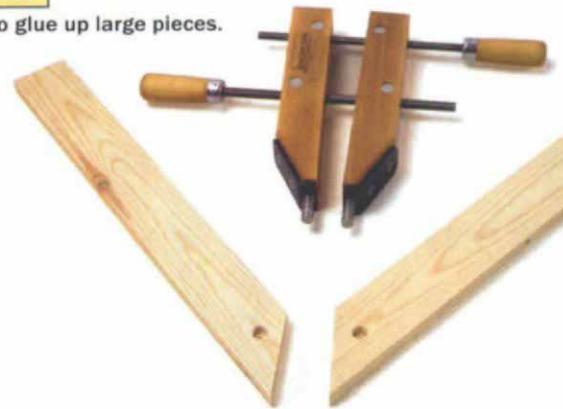
Cost: \$44

How it works: Padded screw clamp is attached to both halves of a workpiece using two bar clamps. To close the joint, the screw clamp is tightened.

Pros: Any angle can be joined. The plastic pads won't mar the surface. Tool pulls the joint tight, but may slip if overtightened.

Cons: Clamp pads won't work on molded surfaces. Screw clamp handle is small.

Rating: Good medium-duty clamp for mid- to large-sized jobs and odd angles.



JORGENSEN HAND SCREW CLAMP ADAPTERS

Manufacturer: Adjustable Clamp Co.

(312-666-0640)

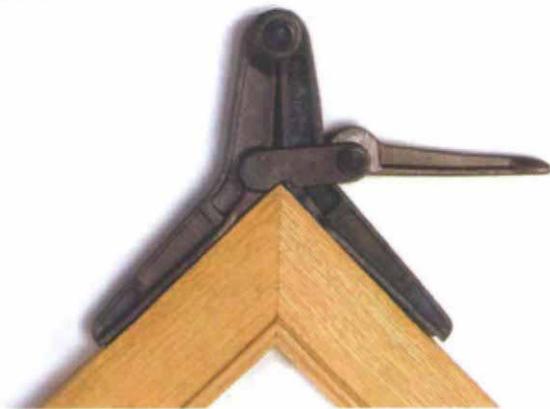
Cost: \$8 for an adapter; 10-in. wooden hand screw: \$14

How it works: Pins attached to tips of clamps engage in holes drilled on each side of a miter.

Pros: Large comfortable handles make it easy to put lots of pressure across a joint of any angle.

Cons: Must drill 1/2-in.-dia. holes partway through stock.

Rating: Good heavy-duty clamp for the price.



CAM-ACTION MITER CLAMP

Manufacturer: Hartford Clamp Co. (860-528-1708)

Cost: \$41.90

How it works: Cam-action, one-corner clamp with serrated jaws.

Pros: Fast-acting, industrial-strength miter clamp good for 90° joints. No limit to width or thickness of stock.

Cons: Jaws mark workpiece. Glue or damp conditions will cause cast-iron body to rust. Handle awkward to reach when working on a flat surface.

Rating: Good heavy-duty clamp for paint-grade joints or trim work.

CLAM CLAMP

Manufacturer: Chestnut Tool Co. (800-966-4837)

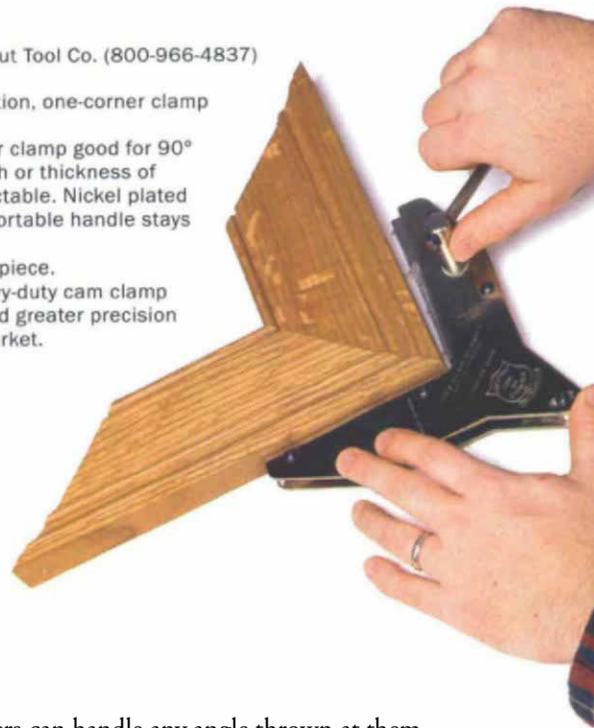
Cost: \$45

How it works: Cam-action, one-corner clamp with serrated jaws.

Pros: Fast-acting miter clamp good for 90° joints. No limit to width or thickness of stock. Teeth are retractable. Nickel plated to ward off rust. Comfortable handle stays out of your way.

Cons: Jaws mark workpiece.

Rating: Excellent heavy-duty cam clamp with more features and greater precision than others on the market.



include any of our 20 test clamps whose performance was poor.

Miter clamps come in many varieties. Some wrap around the entire workpiece. Others grip one corner at a time. There are clamps more suited for trim carpentry or paint-grade work because they leave small teeth marks, which can be filled. Other clamps are geared for large jobs, and won't perform well on small projects.

Band clamps can be used for frames, mitered cases or other projects where you need to encircle the entire workpiece. For superior clamping pressure, choose a clamp designed to tackle one corner at a time. Some one-corner clamps have several preset

angle settings; others can handle any angle thrown at them.

Prices range from less than \$10 for a very basic band clamp to about \$150 for a top-of-the line miter clamp. There are plenty of good clamps priced somewhere in the middle. For mar-free, furniture-grade work, however, the pricey ones did pay off in extra precision, ease of use and brute power.

Just remember, even the best clamp in the world won't make up for an inaccurately cut joint.

Anatole Burkin is an associate editor of *Fine Woodworking* magazine.