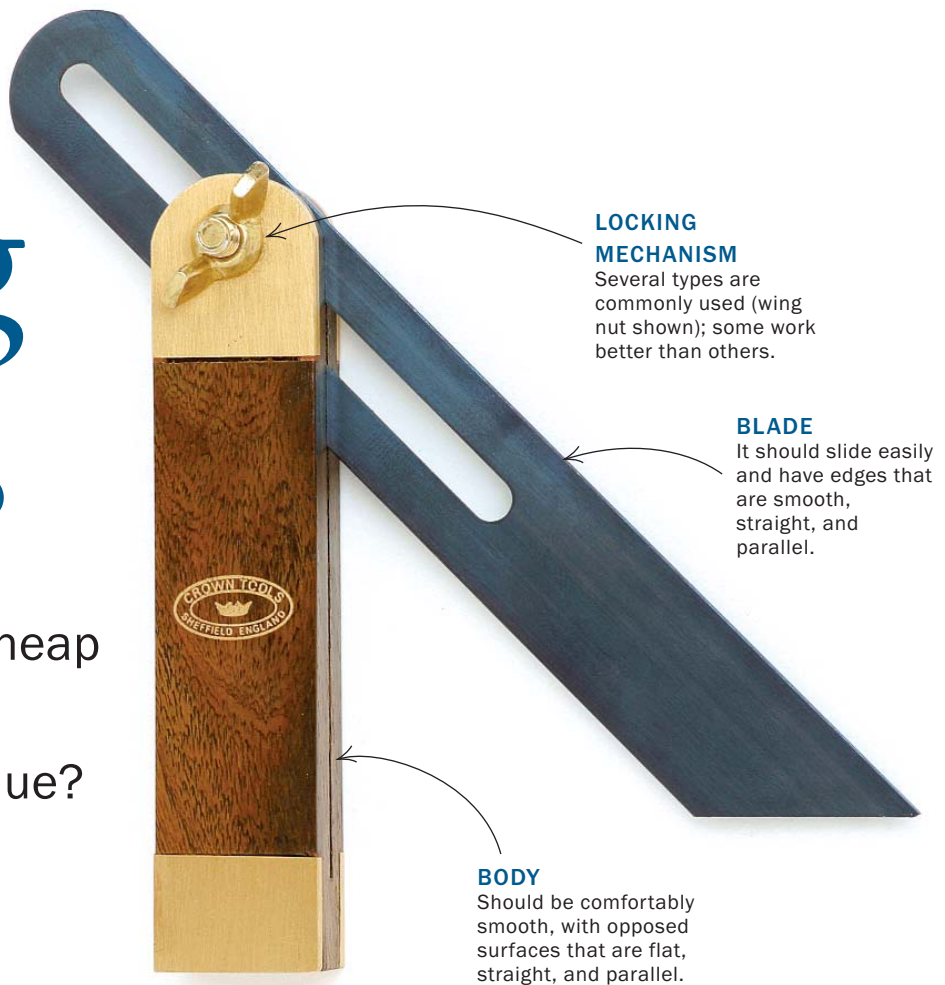


# Sliding Bevels

Prices range from dirt cheap to downright expensive, but does cost reflect value?

BY STEVE LATTA



**LOCKING MECHANISM**  
Several types are commonly used (wing nut shown); some work better than others.

**BLADE**  
It should slide easily and have edges that are smooth, straight, and parallel.

**BODY**  
Should be comfortably smooth, with opposed surfaces that are flat, straight, and parallel.

Laying out angles is a fundamental part of woodworking, and for most of us, the sliding bevel is the tool of choice for tackling this operation.

A sliding bevel consists of a body (sometimes called a stock) and a slotted blade that pivots on a machine screw or steel pin on one end of the body. A thin opening along much of the body accepts the blade. Manufacturers employ a variety of meth-

ods to lock the blade in place (see the photos on the facing page).

By pivoting the blade, you can adjust it to any inside or outside angle between 0° and 180°. And because it slides, you can control the distance the blade extends from each edge of the body, a feature that makes the tool easy to use in tight spots.

A search of mail-order and online woodworking catalogs quickly produces a list of

nearly a dozen companies that sell sliding bevels. Some of these companies carry just one size or style, others offer two or more, and the prices vary considerably, from as low as \$5 to as high as \$90. To find out how such similar tools can be priced so differently, I ordered several and put them to use in my shop.

Although sliding bevels are not complicated tools, I learned that there are differ-

## A TOOL WITH MANY USES

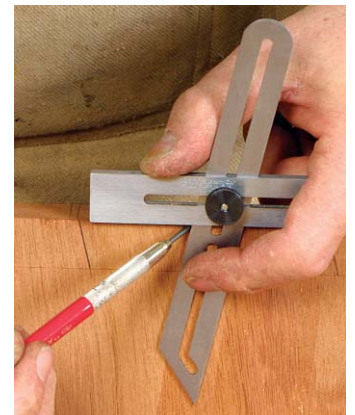
Use a sliding bevel to set, transfer, or mark any angle between 0° and 180°. Keep in mind, though, a sliding bevel doesn't have a built-in degree scale, so any angle that must be measured requires the help of a protractor.



**Get an angle from a drawing.** A block of wood aids in taking an angle directly from a drawing.



**Set an angle on the table saw.** With the tongue of a sliding bevel butted against a saw blade, it's easy to set the blade angle.



**Mark a dovetail angle.** A small sliding bevel is perfect for marking dovetails.

ences among them. Some of the differences are immediately obvious, others are more subtle, but all have an effect on the quality of the tool.

### Body and blade should be flat and straight

The body of a modern sliding bevel can be made of plastic, metal, or wood. Rosewood has been the traditional wood species of choice, but in recent years maple and mahogany have been substituted because they cost less and are commonly available. One company uses laminated wood to produce a body that's more dimensionally stable.

The large aluminum body on the Shinwa gives the tool a comfortable heft. Starrett, capitalizing on the properties of steel, went smaller rather than larger to design the most delicate, precise, and versatile body of the lot.

The brass body of the Kell sliding bevel consists of two parts: a rectangular plate and a smaller, tapered plate. The brass blade slides between them. Unfortunately, because of the tapered plate, you can't simply flip the tool to mark a reverse angle or to lay out a dovetail, two routine tasks most users expect from a sliding bevel.

The body on the Bridge City is somewhat of a hybrid: brass with a rosewood infill. The result is a beautiful-looking tool.

**Check it yourself**—No matter what it's made of, the body should have surfaces that are flat and straight, with opposite sides that are parallel. Check for flatness and straightness with a try square. A caliper can help you check for parallel.

How the body feels in your hand is important, too. Granted, you rarely hold this tool for long, but a comfortable fit is a plus.

Like the body of a sliding bevel, the blade should be smooth and straight with parallel edges. It also should slide easily. To check the blade for straightness, butt the edge of a try square against the blade edge. Also, lightly run a finger along the edges of the blade to detect any burrs or general roughness. To flatten or smooth an edge, place it on a flat sharpening stone and work the edge back and forth as needed. Check for parallel with a caliper.

### Locking mechanisms should be strong yet unobtrusive

A good sliding bevel will have a locking mechanism that holds the blade securely to

## LOCKING MECHANISMS VARY

**The locking mechanism should be easy to use and should hold the blade securely in place. Any lock that extends beyond the working edges of the body can interfere with the tool during use.**



**Wing nut.** The sliding bevel from Crown uses a wing nut to lock the blade.



**Knurled knob.** On several sliding bevels (Craftsman is shown), the blade is locked by tightening a knurled knob.



**Locking lever.** The Gladstone tool uses a lever that sits below the side of the body and is easy to use.



**End screw.** To allow the body to lie flat on both sides, Shinwa (shown) and Bridge City lock the blade from the end of the body.



**Cam lock.** Veritas builds a cam lock into the body, a system that holds the blade securely.



the body once positioned. That's not to say that you won't be able to move the blade once it's locked—all of the ones I looked at slipped a bit when enough force was applied—but you don't want a blade to move easily when accidentally given a bump. It's both frustrating and expensive when pieces are milled incorrectly because a blade has wandered.

On most sliding bevels, the blade lock is created by threading a wing nut or knurled knob onto the machine screw. As the wing nut or knob is tightened, it pinches the blade between the sides of the body to hold it in place. Wing nuts and knobs generally work okay, although the locking mechanism on the Kell proved to be an exception. The strongest student in my class, a burly 20-year-old, couldn't tighten the knob enough to lock the blade adequately.

Wing nuts and knobs have one potential drawback: Because the wing nut or knob extends from one side of the body, you can't use the tool easily when that side must butt against a flat surface.

Craftsman tackled this problem by using a large, disc-shaped knurled knob that is recessed into one side of the body. However, the relatively thin knob was somewhat difficult to grip, so I couldn't lock the blade as securely as I would have liked.

The wing nut on the Crown presented another problem. After tightening, the end of the wing nut sometimes extended past the edge of the body, preventing the tool from sitting flat against the workpiece.

Shinwa has attacked this shortcoming by using a mechanism that threads from the end of the body and allows either face of the tool to rest against a workpiece when registering an angle. Not only was this system more convenient than any other, but it also was best at locking the blade.

The Bridge City also has a system for locking the blade from the end of the body: You simply turn a knurled knob that is attached to a threaded rod. But the locking knob was uncomfortable to use because it was somewhat small and didn't turn smoothly. This shortcoming is uncharacteristic of Bridge City, as its other products I've used, while expensive, were well thought out and beautifully made.

The lock on the Gladstone bevel is a lever positioned below the side of the body. It worked okay, but to tighten the blade, the lever had to be rotated to the point where it extended past the edge of the body.

## SLIDING BEVELS

### CRAFTSMAN 39582 ▶

Price: \$4.50  
Contact: 800-697-3277  
Body: 5 $\frac{5}{8}$  in.  
Blade: 9 in.

Least expensive of the lot; locking knob was fairly difficult to grip and tighten securely.

### BRIDGE CITY TB-6 ▶

Price: \$89  
Contact: 800-253-3332  
Body: 4 $\frac{1}{2}$  in.  
Blade: 6 $\frac{3}{4}$  in.

Won "most handsome" award as well as most expensive; smallish locking knob didn't tighten smoothly, making it uncomfortable to lock and unlock.

### ▼ CROWN TOOLS

Price: \$20  
Contact: 800-509-0081  
Body: 5 in.; Blade: 7 $\frac{1}{2}$  in.

Blade locked securely; brass wear plates fit unevenly; wing nut extends past blade, making for awkward machine setups, and allows only one side to lie against a flat surface; Crown also offers a model with a 3 $\frac{7}{8}$ -in.-long blade that sells for about \$12.

Veritas solved that problem by revamping a side-mounted cam method originally used in the early 1900s. When locked, the device is flush with the tool's side. This mechanism worked well and held the blade quite securely.

### It's easy to find a tool that fits your budget

In the \$5 to \$20 range, the sliding bevel made by Crown Tools would be suitable

for most applications, but I was disappointed by its overall fit and finish. The Craftsman, meanwhile, made my fingers work too hard to tighten the locking knob.

In the same price range, the Shinwa stood out. It felt good in my hand and had the best locking mechanism.

In the \$20 to \$30 range, the Gladstone tool would have been serviceable if the



**RICHARD KELL** ▶

Price: \$50  
Contact: 800-221-2942  
Body: 3 $\frac{3}{8}$  in.  
Blade: 3 $\frac{3}{8}$  in.

Easily fits into apron pocket; very good blade lock; because of tapered design, it can't be flipped to mark reverse angle.



◀ **GLADSTONE 10 $\frac{1}{2}$**

Price: \$22  
Contact: 800-243-0713  
Body: 7 $\frac{3}{8}$  in.  
Blade: 10 $\frac{1}{2}$  in.

Easy-to-use blade lock, but lever extends past body when locked; Gladstone also offers a model with a 7 $\frac{1}{2}$ -in.-long blade that sells for about \$16.



**SHINWA 780** ▶

Price: \$21  
Contact: 800-426-4613  
Body: 6 in.  
Blade: 10 in.

Heavy-duty tool appropriate for larger applications; good fit and finish; very good blade lock; Shinwa also offers a model with an 8-in.-long blade that sells for about \$19.



▲ **STARRETT 47**

Price: \$70  
Contact: 978-249-3551  
Body: 3 $\frac{1}{2}$  in.; Blade: 6 in.

Expensive; easily fits into apron pocket but is large enough for most applications; blade slides and pivots along body, making for easy joinery layout; very good blade lock.



▲ **VERITAS 05N44.01**

Price: \$32  
Contact: 800-871-8158  
Body: 6 $\frac{1}{2}$  in.; Blade: 10 in.

Smooth working and attractive; cam-style locking mechanism worked well; Veritas also offers a model with a 4-in.-long blade that sells for about \$28.

locking mechanism didn't extend past the body. The Veritas model, though, was both aesthetically pleasing and efficient in use. I'd welcome one in my toolbox.

Among the tools in the higher price range, the Starrett sliding bevel stood out. Its compact size made it exceptional for any task, ranging from setting machine angles to laying out cuffs on card-table legs. Also, unlike any of the other models, the Starrett's blade can pivot and slide along

the length of the body, a feature that makes it ideal for marking dovetails.

The Kell sliding bevel, which was not cheap at \$50, was a disappointment. Although this brass tool is beautiful to look at, it's less than practical because the tapered plate limits its use to only one side. Plus, the locking knob didn't secure the blade adequately.

All that considered, if I could have only one sliding bevel out of all the models I

looked at, it would be the one made by Starrett, which was, by far, the most versatile and satisfying to use. Plus, it's small enough to fit in one of my apron pockets, so it's always within easy reach. Were I to need a sliding bevel for working with larger workpieces, I'd go with the Veritas model. □

*Steve Latta teaches woodworking at Thaddeus Stevens College of Technology in Lancaster, Pa.*