

Improving Small Chamfers

While the definition for this edge treatment is short and simple, the methods used to create end-grain chamfers are many and varied.

Sharp corners and edges on a project present a problem. A sharp edge is less likely to hold stain, it can catch your clothing as you walk by and it will undoubtedly be the first area that shows wear. This is why you should always “break” the edges of your work before moving on to the finishing stages.

Break the edges with sandpaper and you simply create a minute roundover profile. However, a more prominent edge treatment, and the method used on the tops of the legs on the “Gustav Stickley Plant Stand” (see page 10 in this issue), is a small chamfer.

A chamfer is a flat surface that connects two faces. Chamfers are generally cut at a 45° angle to those faces, but not always.

How a woodworker creates a chamfer is often a reflection of his or her style of woodworking. If you’re a hand-tool aficionado, you’re less likely to turn to a router or router table to cut a chamfer. On the other hand, if you are a power-tool builder, I doubt you would grab a chisel to do the work. While a chisel and a router are both valid methods for creating chamfers, rasps or a disc sander are also popular choices.

Hand-tool Chamfers

Small chamfers can be cut by hand with a few different tools. If you’re a hand-tool devotee, you might immediately think handplane. But for an end-grain chamfer this small, I would pass on attempting it with a plane. There just isn’t enough surface area on which the plane’s sole can ride and accurately cut.

If you have a well-developed eye and can follow lines on your project, a chisel might be your best solution for small chamfers. Some hand-tool woodworkers turn to a rasp (another option that

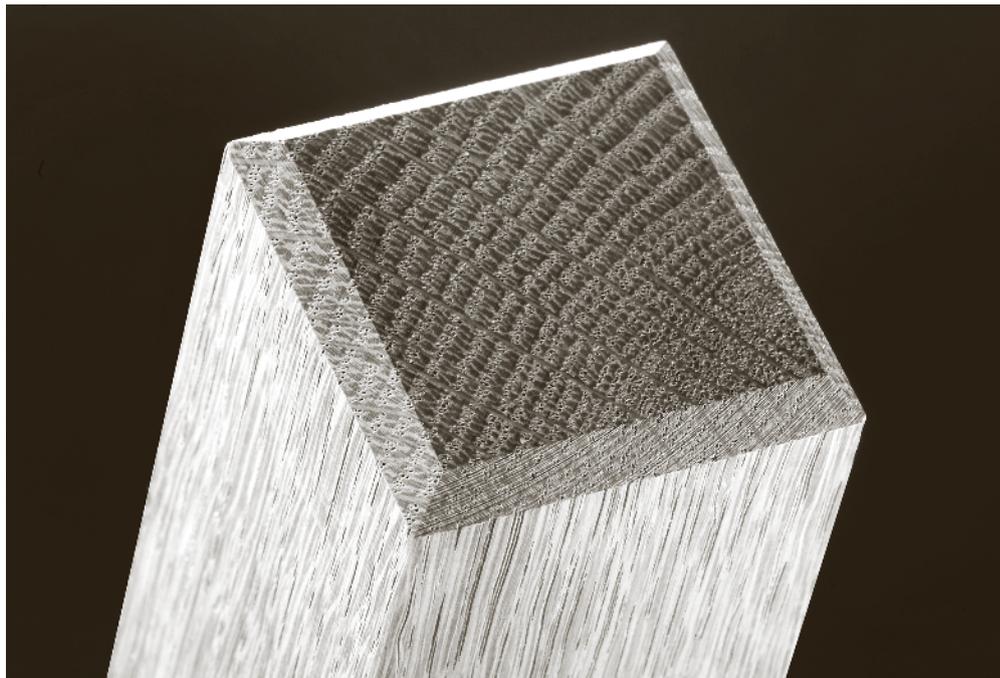


PHOTO BY AL PARRISH

Ideal small chamfers have a consistent profile on all edges – the corners align and the slopes match – and the appearance is “crisp.” Discover a better technique to create this simple, classic edge treatment.

requires a keen eye). Both of these methods have advantages and disadvantages.

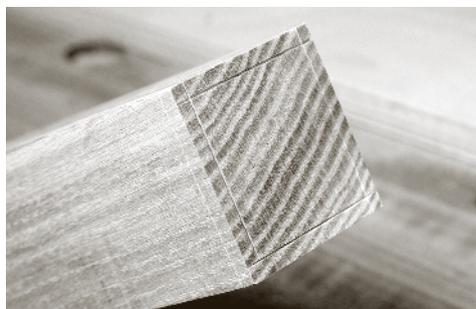
Each method begins with marking layout lines for the chamfered area. The tool of choice is a marking gauge. Set the gauge to the appropriate size, then mark the surfaces to define the chamfers. In the plant-stand article, the marking gauge is set to 1/8". Score the lines lightly around the faces of the leg and again on the top end of each

leg. You want enough of a mark to follow, but you don’t want it to show in the completed chamfer.

Chamfer by Hand – Chisel

To attempt this technique, the cutting edge of the chisel has to be sharp. A dull tool makes this task all that much harder. The aim is to take small cuts, working in from the corners to the middle.

Trim the waste from the corner toward the



How you mark out your chamfer lines depends on the type of work you plan to do. Add lines to the end grain only if you plan to chamfer with hand tools.



Dull tools waste your time and materials. These damaged corners and rough chamfers are the product of a dull router bit.



Slicing chamfers with a chisel requires you to work in from the ends and slightly uphill to create a crest at the center of the cut. Once the ends are at your lines, remove the center to complete the chamfer.



Be patient and diligent as you work the chisel. Gently peel away the waste until the chamfer is flat. Steady hands reduce sanding.



Flake-out at a corner is a result of an inadvertent slip of the hand or improper technique. If this happens, you should start over.

center of the leg and always try to maintain a slight upward slope on the cut. Try to form a molehill, not a mountain, as you work. Once you reach the layout lines at your corners, it's simply a matter of slicing away the center until the chamfer is flat and straight.

Take a good look at this technique and you'll find the "cons" outweigh the "pros" in big way. This technique is good because it's completed with a single tool – although you'll have to sand the chamfer after it's cut, unless you have incredible control with your chisel.

On the downside, not only do your tools have to start sharp, they have to stay sharp throughout the process. Also, different woods influence the work. It's tougher to chamfer oak with a chisel than white pine. And finally, if you do make a cut from edge to edge across the leg, you're all but sure to knock off the trailing corner. Once that's gone, there's no coming back. It's time for a new leg.

Chamfer by Hand – Rasp

Possibly the easiest method for creating small chamfers by hand is to use a rasp. While this too is a one-tool operation, this method requires a certain amount of skill as well.

How a rasp is used is not the issue. That's easy. Grab the handle and start moving the tool back and forth. But if that's all you think about while you work, you're going to create a shape that more resembles a roundover than a chamfer. Achieving a flat surface that terminates at both layout lines takes patience and a bit of self-control.

Use a less-aggressive rasp to cut your chamfer, work diligently across the entire width of your leg and take your time as you work. If you hurry you're liable to remove the tool from the edge during a backstroke. Then, as you re-engage the rasp with the wood, you're likely to dig into the side of the leg causing irreparable damage. (If you use a wide tool, you're less likely to have this happen.)

The trick to get accurate and crisp chamfers with a rasp is to work to both layout lines and remove the majority of the waste area. Then hold the tool at a 45° angle and take the last few strokes to create the desired flat surface. (Due to the coarseness of a rasp, you'll need to finish the chamfer with a very smooth file or sandpaper backed by a wood block.)

Power-tool Chamfers

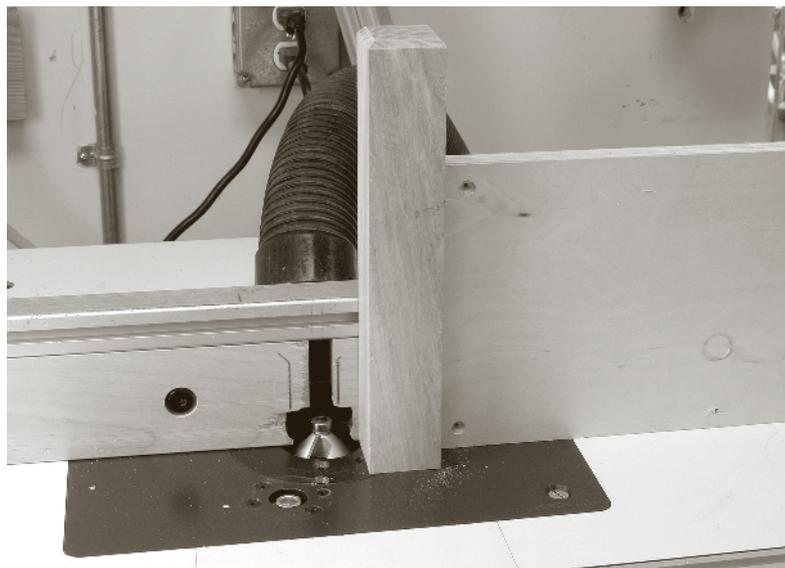
Turn to power tools and you'll find two easy-to-use techniques for cutting small chamfers: a router table and disc sander. The setup for these techniques is distinctly different, but the outcome with both is quick, accurate and repeatable. And with each, sharp cutting tools (be it a router bit or sandpaper particles) is paramount.

The only method used to cut chamfers where infinite angles are not easily possible is when working at a router table using a chamfer router bit. The choice is limited by the availability of

router bits – unless you manipulate the router table surface or have a specially designed carriage built into your router table. In all, I'm aware of five additional angles, over and above the traditional 45° angles, that are possible with standard router bit designs. This method also eliminates the need for layout lines because once the router table is set and the bit positioned, all cuts are created equal.

Install a chamfer bit into your router, then position the bit and fence for the cut. To match the chamfer on the sample leg, raise the bit 1/8" above the tabletop and position the fence to just capture the bit's bearing.

Because the edges of the leg's top are short, there are two acceptable approaches to make these router cuts – both require the use of a push stick (a proper push block or backer block makes this task safe). The leg can either be vertical when fed over the bit, or it can be laid flat with the end facing the fence.



With leg stock vertical, there is little table support under the leg. A push block is a necessity to accomplish your task.



Stock support increases when the leg is laid flat on the tabletop, but even in this position the operation requires a push block.



Profiles of chamfers made using router bit angles other than 45° differ depending on whether the leg stock is run vertical or flat to the table. Here you can see the different chamfers that were cut with a 30° chamfer bit.

Which approach you select is your decision – except when you’re not using a 45°-chamfer angle. At that time you need to decide which approach produces the chamfer angle you’re looking for. (See the photo at top right.)

The jury is out on which approach to use if you’re working with a 45°-chamfer bit. Regardless of how you position the stock, vertical or laid flat, the resulting chamfers match. Some woodworkers find feeding vertical leg stock over a bit is awkward. Others don’t. Try the two approaches to determine which you’re most comfortable using.

A chamfer cut at a router table is very crisp (the result of a sharp bit) and is easily repeated on any number of legs. One issue that may arise is machining marks caused by well-worn router bits. These marks tend to be magnified when stained, so check the chamfer and make sure to sand the flat surfaces carefully.

Disc-sander Chamfers

Because the chamfers are small, a disc sander, whether a stationary tool or simply an accessory on your table saw, is a viable option. I would steer you away from this technique if the chamfers are

large, long (wider than a sanding disc) or oriented to long grain instead of end grain. But for our project, this method is a good one.

Begin by marking layout lines around the faces of the leg. Next, set a miter gauge at an appropriate angle – here again you have infinite angles available. Position the gauge at the sander so the end of the leg makes contact on the downward cutting portion of the spinning disc.

This technique requires you to do two things at once (similar to rubbing your head while patting your stomach). If you simply move the leg stock against the disc, the chamfer is cut, but the charred-from-burning color is not pleasing. To cut a clean chamfer, push the leg in toward the

sanding disc as you move the workpiece across the disc.

Work to your layout lines, then rotate the stock and cut the next chamfer. This is a quick technique and your chamfer is crisp, clean and ready for finish. The downside is that you control the depth of cut. It’s easy to overfeed the leg and there is no easy way to set stops.

I’m a power-tool woodworker – so you can guess which methods I like best. Maybe it would be best to combine the repeatable results from a router table with the perfectly sanded outcome from a disc sander to create the ultimate small chamfer. Is that being too particular? **WM**

— Glen D. Huey

“I will not give away my hard-earned skills to a machine. It’s a bit like robbery with violence, for (machines are) not only intended to diminish my bank balance, but also to steal my power.”

— John Brown (1932-2008)
Welsh stick chairmaker



The rotation of your disc sander plays a big part in the setup. It’s vital that you introduce the leg stock on the downward portion of the disc. Move across the disc as the chamfer is being cut to reduce burning the surface. A light touch is needed.