handwork

Make your own spokeshave

BY DAVID WELTER

Part of the reward of working with wood and hand tools is the satisfaction of being directly involved in the interaction of tool and material. That satisfaction grows when you're using a tool that you have made. I learned to make a spokeshave from John Gunterman some years ago. A sensitively tuned spokeshave may not be on the list of tools you thought you'd need, but once its utility becomes apparent, you will look for excuses to use it. The name spokeshave suggests its usefulness in making spindles, but it is indispensable in cleaning up bandsawn curves and quickly creating bullnoses and chamfers.

You can make a functioning shave very quickly; the majority of the effort is in the shaping. Given how easy it is to make a spokeshave, you can make a collection of shaves with different cutting characteristics. I like to have one that is bedded for

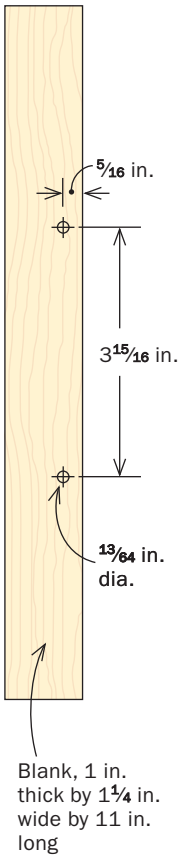
First you need a blade. *Welter uses the 4½-in., high-carbon-steel spokeshave blade from hocktools.com (#SP062, $40).*

Setting up the blade. *Welter uses a red diamond stone to get rid of the mill marks, and finishes up with 4,000- and 6,000-grit waterstones. The posts straddle all but the widest stones. The bevel is wide and easy to keep in contact with the surface of the stone.*

Photos: Anissa Kapsales; drawings: Michael Pekovich

Set the blade in place

Use the blade as a layout reference as you drill for the posts, and then cut a recess to mortise the blade flush into the stock.



Start with the posts. *Use the blade to mark the post locations on the stock. Then drill holes for the posts. Insert the blade and trace its profile on the stock.*

Mortise on the drill press. *Make a series of cuts with a Forstner or brad-point bit, and then clean up with a chisel. A backer block supports the thin stock at the edge of the mortise (far right).*

fine work and one suited for general-purpose jobs. A roughing shave will quickly get your work to the point where only a fine cleanup is necessary. I also have a narrow shave with a blade ground to a slight radius at the back for tighter curves.

Most commonly made of beech, spokeshaves can be made with any stout wood; maple is the most readily available. The stock should be 7/8 in. to 1 in. thick by 1 1/4 in. wide by 11 in. long. I use a 4 1/2-in. blade made by Ron Hock (see photo, p. 76).

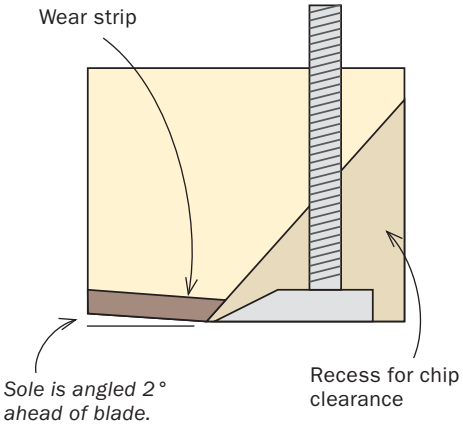
Drill holes for the posts

When I make a spokeshave I use the blade as a layout reference, and I begin by drilling the holes for the blade posts. After centering the length of the blade on the length of the handle stock, determine the center point of the post holes using the posts themselves as a measuring device (see photos, above).

Then drill the holes. Place the posts in the holes and push the blade to the surface of the handle. If there is resistance to the movement of the posts, drill one of the post holes slightly oversize to allow free motion.

Ramp it up

To allow shavings to pass from the cutter through the handle, relieve the area below the blade with a bevel.



Cut a recess for the blade

With the blade in the handle, trace the shape of the blade onto the handle. Now create a mortise to seat the blade into the handle. First define the radiused ends of the mortise using a ⅜-in. Forstner or brad-point bit for a flat bottom. Drill to ⅛ in., the thickness of the blade. Be careful here as the center of the radius will be close to the center of the post holes. Then drill a series of holes to establish the remainder of the mortise, cleaning up with a chisel and a handheld router. Creating the throat will remove the central portion of the mortise, so focus your efforts on the ends.

Of course, this mortise and the impending ramp could also be entirely

A shoe-in. *The section of the sole directly in front of the cutter is called the shoe. Use a handplane to slightly angle the shoe, 2° maximum, to expose the blade.*

Layout lines. *The bevel angle for the throat runs from the cutting edge of the blade to a line ¾ in. up from the bottom of the handle.*

Kerf and chop. *A series of hand-cut kerfs that go from one layout line to the other establish the angle. Once the sawcuts are made, use a chisel to cut out the waste and clean up the ramp.*

Take 'er for a test run. *Even without shaping the handle, you can use this tool. Place the blade into the handle and try it. Get a sense of how you want to hold it. You can use Welter's template to shape your tool (p. 82), or decide on your own shape.*

Wear strip extends the life of the tool

Rather than use brass, which may dampen the tool's sensitivity, Welter chooses lignum vitae (a very hard wood) to maintain the ability to feel the tool on the wood.

Mortise for the wear strip. *Set a marking gauge to the thickness of the wear strip, and then mark the stock. Make a series of sawkerfs to that depth, and then clean out the mortise with a chisel. Welter creates a dovetail keyed mortise by undercutting at each end.*

Mark, cut, and glue. *Use the mortise itself to mark the wear strip. Creep up on the fit at the ends with a block plane. Once you get a good fit, glue and clamp the wear strip in place.*

cut with a router, but I don't bother with all that.

Establish a ramp for the throat opening

Next, you'll cut the throat, which allows shavings to pass from the cutting edge through the handle. Establish the throat's angle with a series of sawkerfs defining the length of the blade. Remove the waste with a chisel. Then clean up the ramp with a sharp, wide chisel or file.

Seat the blade in the mortise. You'll want it flush with the bottom of the handle stock. If your mortise is too deep, plane the bottom until the depth is correct. Sight through the handle from the back of the tool along the throat; an opening should reveal itself as a narrow, even line of light.

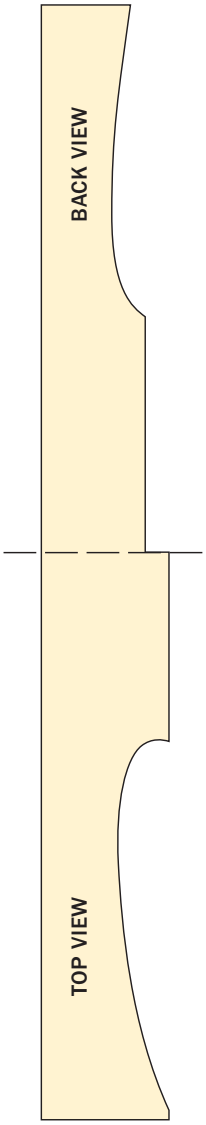
If necessary, file more on the throat to increase shaving clearance. There is ample room to make adjustments. If the clearance between the blade and throat is too large, deepen the blade mortise. However, that will make it necessary to plane the bottom of the handle flush to the thickness of the blade.

Dialing in the cut

The area in front of the cutting edge is referred to as the shoe. This is the surface that makes contact with the stock being cut. To expose the blade, the shoe needs to be slightly beveled away from the original surface. Planing an angle

Saw the profile

There is no set shape for spokeshave handles, though usually they are straight along the top and back sides.



Trace and saw. *Use a template to draw out the profile on two faces. One side of the template shows the top view, and the other side is the back view. After using the drill press to waste out the radius at the inner end, Welter makes the first set of cuts on the bandsaw.*

Profile the second face. *Welter tapes the offcuts back on to turn the stock and make the second set of cuts.*

of 2°, at most, is all that is necessary. Cautious work here will yield a fine shaving. Shade the area to be removed with a pencil so that there is evidence of where work has been done. When the shaded area has been reduced nearly to the cutting edge of the blade, try the tool on a scrap of wood, referencing the shoe on the scrap to find out if the tool will cut. Shave the shoe only as much as needed to allow cutting to begin.

If, in shaping the shoe, the angle was taken past the cutting edge and the shavings are too heavy, deepen the mortise for the blade and you'll regain the ability to cut a fine shaving. The spokeshave could be used in this state, but a few refinements will make it more pleasing, durable, and responsive.

Cutting-depth adjustments

The blade in your grandfather's spokeshave was held in place by the tension of the tangs sprung into the handle. To adjust the cutting depth, the user slapped the handle of the tool in one hand. This arrangement also allowed the blade to be cocked in the handle, making for a lighter shaving at one end of the blade and a more aggressive cut at the other.

Blades that are held in the handle by means of thumbscrews can't be adjusted as quickly. One way around this is to drive wood screws into the blade mortise so their heads are flush, or nearly so, to regulate cutting depth. However, this method deadens the feel of the tool cutting the wood. I create the angled cutting effect by sloping the shoe across the width of the blade to expose more blade on one end, thus varying the depth of cut from one end to the other.

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Shape to fit your grip

Most of the shaping is underneath and at the front of the tool. Much like a wooden handplane, the user can shape the tool to fit their own grip.

Refine the shape. *Once you cut the curves out on the bandsaw, pencil the shape you want on the end of the handles.*

Rasp and file away. *These hand tools quickly waste away the excess wood.*

Sand and finish. *After getting the shape he wants, Welter sands up to 120 grit, and applies at least three coats of shellac.*

Because the tool is often used to round corners, the narrow area in contact with the stock will quickly wear away. A wear strip on the shoe will help remedy that. I inlay a piece of very hard wood, such as lignum vitae (see photos, p. 80).

Shaping the handles

Shaping the handles of the tool can consume as much time as all of the preceding steps and the results can be as individualistic as the toolmaker. Generally, spokeshave handles are left straight along the top and back, with most of the shaping done underneath and at the front of the tool. Bandsaw the rough shape and refine it by any means at hand: another spokeshave, a knife, files, and sanding. I finished my spokeshave with three or four coats of shellac.

Use your new spokeshave

A great deal of the pleasure of using the spokeshave is the feeling of control and responsiveness. Fine manipulation is possible if the tool is held at its body between the thumb and forefingers. With this grip, the handles rest across the palms of the hands rather than being grasped like a post-hole digger.

The tool is traditionally used by pushing the cutting edge away from the body, though cutting in the opposite direction doesn't seem to reduce the tool's effectiveness. Throughout the stroke, you will make subtle adjustments. Your arms are making a radius, and you have to compensate with fine finger adjustments to keep the tool engaged.

The most significant danger in using this tool is that the pleasure of using it can cause you to lose sight of the goal of arriving at a specific dimension. Plan to have extra stock on hand, and enjoy! □

Having worked for The Krenov School for more than 30 years, David Welter is now retired and busy with his own projects.