



Power carve a freeform bowl

BY DANNY KAMERATH

I carved my first bowl 15 years ago. I had cutoffs from making furniture that were too small for furniture yet too big to throw away. I decided to make them into something useful and perhaps learn a new skill. The tools at hand were a drill press, a bandsaw, a 4-in. grinder with a sanding disk, a 12-in. disk sander, a random-orbit sander, and a few files and rasps. The process was long and tedious but I was pleased with the result, and I started looking for better tools to make the carving go faster. Over time, I have tried many tools and brands, settling on a kit of tools and streamlined techniques that make power carving efficient and fun.

When I pull out a chunk of wood to carve, I have an idea in mind about how I want the bowl to look. If I make a sketch, it's just a suggestion; I let the wood's grain and any defects play a role in the final form. Except at the initial sawing stage, I don't often draw on the blank itself. I prefer to freehand the shape as I'm carving. But I'll stop from time to time and look at the shape as it is emerging, and if I see something I want to change I'll sometimes draw the new shape on the bowl with a pencil or piece of chalk and carve to it.

GEAR UP TO CARVE



Safety and stability. Carving outside whenever possible, Kamerath uses a portable bench/vise, the Triton Super Jaws XXL. He wears leather gloves and a Trend Airshield helmet, which provides filtered air as well as a face shield. He wears ear protectors with the band swung under his chin.

Rough out the shape



Preparing the blank. After chalking lines for the outer shape of the bowl and the inner rim onto the top of the blank, bandsaw away the excess on the outside. Then waste the interior wood by cutting a series of overlapping holes at the drill press.

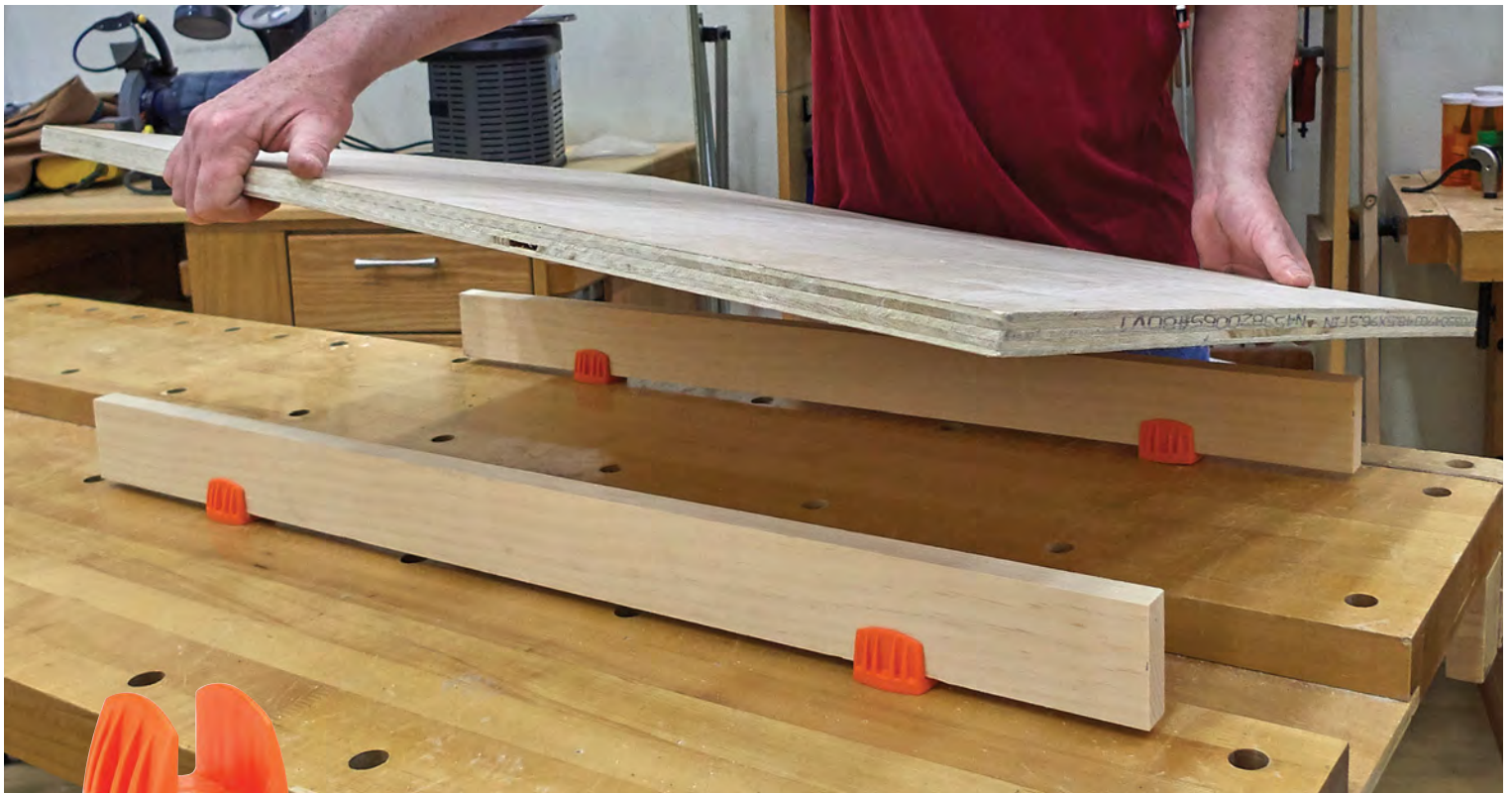


Get to the grinding. For the aggressive first shaping of the outside, Kamerath uses a 4-in. grinder with an Arbortech Turbo Plane attachment. He begins carving with the blank upright (see photo, p. 20), then turns it on its side to round the bottom (right), rotating it as he goes.



Coarse tool, smooth contours. A coarse carbide Saburrtooth carving wheel refines the shapes roughed out by the Turbo Plane. When you finish smoothing the sides, invert the bowl and create a shallow dish area at the center on the bottom; this helps the bowl sit stably on a flat surface.





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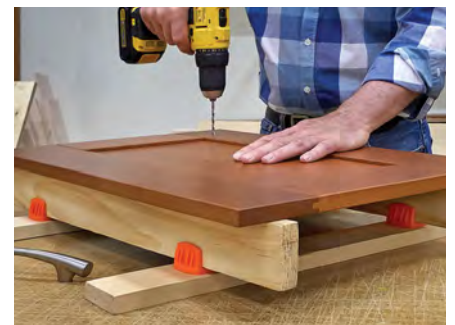


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Begin shaping



Powerful tool for the inside. Kamerath uses an Arbortech Mini Carver with a carbide cutting wheel to rough out the inside of the bowl. The tool removes wood quickly and aggressively and leaves a deeply fluted surface. He works cautiously with it, as it is easy to grind too much.



Rough shape the bowl blank

On the top of the blank (in this case a piece of kiln-dried mesquite) I draw freehand lines showing the outside shape of the bowl and the inside lip of the hollow. I cut the outside shape at the bandsaw and then use a drill press to remove waste from the inside. I use any drill bit that will efficiently remove wood. In this case, because mesquite drills easily, I used a large Forstner bit and the hollowing went very quickly. On harder, denser woods or when drilling into end grain, I'll use smaller brad-point bits. I overlap the drill holes but sometimes there is a pinnacle left which is too small to drill. In that case I either grind it away or just break it off. I'm not concerned with making a smooth, flat bottom, since it will



Medium smoother. A ball gouge in a 4-in. grinder fairs the ribbed surface left by the Mini-Carver. The ball gouge, which leaves a somewhat scalloped texture itself, is particularly handy for working undercut portions of the rim.



Final grinding inside and out. Using a Merlin mini grinder with a coarse carbide wheel, Kamerath fairs and smooths the surfaces left by the larger, more aggressive carving tools.



be carved and rounded later. Don't get too close to the inside lip or drill too deep into the blank; leave plenty of wood to carve.

Coarse carving

Whenever the weather permits, I do all the heavy shaping outdoors. And out there I use a handy device from Triton called Super Jaws XXL to hold the work. A clamp combined with a sawhorse, it's three-legged, which makes it very stable, and the powerful vise is foot-activated. It has hard rubber jaws that hold the wood securely but don't crush the grain.

Sculpt the outside first. With the blank in the Super Jaws, or in a bench vise, I



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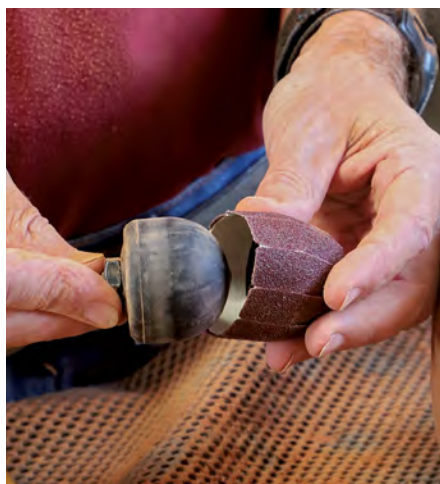
use a planer attachment (an Arbortech Turbo Plane) on a 4-in. grinder to roughly shape the top of the bowl. The Turbo Plane is an aggressive cutting tool. I use it to remove material quickly and get a rough shape. I hold the grinder with both hands and keep at least one elbow firmly against my body to steady it. And I always keep the safety guard on the grinder. (Alternately, a coarse carbide carving wheel can be used for this step, but it takes a bit more time.) Turn the blank on its side and sculpt the sides and bottom of the bowl, rotating the blank as you go until the sides are shaped.

Attach a coarse carbide carving wheel (this one is from Saburrtooth) to the 4-in. grinder and refine the outside shape. I use the coarsest wheel available for this step. Finer wheels have a tendency to clog, especially when carving green

Refine the form



Cylindrical sanding. Moving indoors to a bench with a rubber mat, Kamerath uses a flex-shaft rotary tool with a pneumatic sanding cylinder and a 60-grit sleeve to erase the facets and divots left by the carving tools. Then he goes up through the grits to 320.



Sanding ball tames the hollows. Switching to a pneumatic sanding ball with a 60-grit sleeve, Kamerath refines the whole interior of the bowl and any hollows on the outside. He follows up with finer and finer grits. The ball also defines the final curves of the lip.



wood. And they sometimes burn the wood. The coarse wheel sometimes clogs too. If it does, use a stiff wire brush to clear it. Before moving on to the next tool, carve an indentation in the bottom of the bowl. This will make it easier to level the bowl later.

Shaping the inside of the bowl is more difficult than the outside due to the tight confines. I use an Arbortech Mini Grinder with a carbide cutting wheel to rough

out the inside. It is another aggressive cutting tool and a face shield and gloves should be worn. I use the Mini Grinder to remove about 70% of the inside waste.

Then I switch to an Arbortech Ball Gouge attached to the 4-in. grinder to refine and shape the inside and carve the undercuts around the lip. The ball gouge is long enough to reach deeply into the bowl but leaves a scalloped texture. Be careful not to carve away too much material.

Refining the form inside and out

I use a 2-in. Merlin mini grinder with a coarse carbide wheel to further refine the outside shape and smooth the deep scratches left from the big grinder. Then I use it to further refine the inside and carve to the thickness desired. I make bowl walls thin at the top and thicker as they progress toward the bottom.

A pneumatic cylinder with a 60-grit sanding sleeve attached to a Guinevere

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Sand and apply a finish



Handwork at the finish. After using a random-orbit sander with 320-grit paper to smooth scratches on the outside, Kamerath follows up by hand sanding with a foam block. A rounded foam form helps sand the lip. Last, he applies an oil finish.



flex shaft smooths the outside and finesses the final shape. Replace the 60-grit sleeve with 120-, 220-, and 320-grit sleeves to smooth the outside.

To finish the inside, I first use the flex shaft with the cylinder and a 60-grit sleeve to smooth the roughness left by the grinders. Once the roughness is gone, attach a pneumatic ball with a 60-grit sleeve to smooth and refine the inside shape. Use 120-, 220-, and 320-grit sanding sleeves on the ball to finesse the inside shape. I also use it to thickness the lip inside and out. I use a polyurethane foam block with 220-, 320-, and 400-grit sandpapers to finish sanding inside.

With all else complete, I use a random-orbit sander with 320-grit paper to smooth any scratches on the outside. I use a palm sander with 320-grit and a light touch to smooth around the thin lip. Then I hand sand with 220-, 320-, and 400-grit using a foam sanding block.

I usually use wipe-on polyurethane to finish bowls. But it won't always stick to mesquite, so in this case I used oil instead. Burnishing between coats with 6,000-grit sanding cloth brings the wood to a beautiful color and luster. □

Danny Kamerath is a carver, furniture maker, and sculptor in Llano, Texas.

Filling cracks



You can fix defects with epoxy. After blowing out dust, apply strong and sticky Gorilla duct tape to the outside of the bowl. Epoxy heats as it cures, and could melt the adhesive, so add an extra layer of tape. Mix medium setup time epoxy with a drop of black dye and fill the void from inside. The next day, use the 2-in. grinder to remove excess epoxy and reshape the area inside and out. If any small voids remain, fill them with five-minute epoxy with a drop of black dye.

