master class

Customize your carving tools

MODIFY THE GRIND AND REAP BIG REWARDS

BY ALLAN BREED

Economy of cuts. That was the only advice on carving that I ever got from my first boss, an Italian-trained cabinetmaker. I took it to mean that a rose carved with 15 cuts was better than one made with 35. After my boss died, I bought his carving tools, and I found some that were obviously ground for specific purposes—what purposes, I didn't know. But one by one they revealed themselves over the years. I discovered that a tool customized for a particular task is much better than a factory-ground tool, replacing many inefficient cuts with a single clean cut and producing a far better result. I now rely heavily on modified grinds in my carving. Some are extremely versatile, while others are specific to particular jobs and may see use for just a few cuts per project.

One of the most versatile and powerful of my custom-ground tools is the V-tool. Switching

Revved up V-tool. *Breed custom-grinds many of his carving tools to improve their performance. His modified V-tool cuts cleanly across the grain with minimal pressure.*

V-TOOL WITH FORWARD-RAKING WINGS

Lower is better. *On his V-tool—and many others—Breed grinds down the steep factory bevels to create a long, curving underside that allows him to use the tool at a lower angle, thus increasing control.*

Photos: Jonathan Binzen; drawings: John Tetreault

Transforming a V-tool

To customize this tool, I start by changing the angle at the tip so that the wings rake slightly forward. Then I grind back the steep factory-ground bevels. The grinding techniques I use on the V-tool also apply to many of the other custom grinds. I do the grinding on a fine grinding wheel. I take off quite a lot of steel with many of these grinds, so I always proceed slowly and with a light touch to avoid overheating the metal. It typically takes me between 30 and 45 minutes to modify a tool.

—A.B.

1 ***Tip first.*** *Holding the tool upside down against the side of the wheel and using a very light touch, Breed regrinds the angle at the tip of the tool from 90° to about 100°. He uses a slipstone to deburr the inside faces so he'll see the exact thickness of the wings as he grinds their bevels.*

2 ***A bit off the bottom.*** *Start flattening the bevel angles by removing metal along the keel of the tool. Replacing the steep angle there with a shallow curve produces an elongated diamond shape on the bottom (above).*

3 ***Lengthen the bevels.*** *Using a very light touch and a rocking motion against the side of the wheel, Breeds regrinds the side bevels, removing a lot of metal on the way to creating long, sweeping surfaces.*

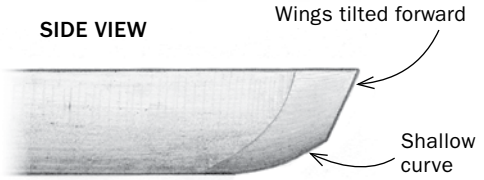
4 ***Finishing up.*** *Breed uses the edge of the wheel to bring the two elongated bevels to a sharp ridge along the keel. On a 1,000-grit bench stone, he hones the cutting edges, and, rocking the tool gently, smooths away a tiny triangle of metal left at the very tip of the keel after the grinding process.*

Custom-ground gouges

WINGS FORWARD

With the wings of the gouge tilted forward and the steep factory bevel ground to a shallow curve, this grind—like the one on the V-tool—creates a very versatile gouge that cuts smoothly and easily across the grain.

SIDE VIEW

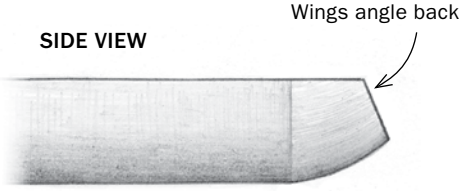


A go-to gouge. *Like the wings-forward V-tool, this gouge can be used at a low angle, making it easier to control.*

WINGS BACK

Breed grinds the wings on another gouge so that they angle back, creating a tool useful for cutting flutes that stop against an adjacent element. He also lengthens the factory bevel, as in the V-tool, for better control.

SIDE VIEW



Best for stopped cuts. *With its raked-back wings, this gouge can make clean stopped cuts, plus lozenge-shaped hollows with two quick cuts from opposite directions.*

Another specialist. *Breed uses a modified straight chisel to clean up the end of a stopped cut. He grinds this flat chisel to a curve at the tip and bevels it front and back.*

from a factory grind to this custom grind is like going from a VW Bug to a Ferrari. An off-the-shelf V-tool has bevels that are short and steep. To slice the wood with as little resistance as possible, I regrind them to a long, shallow bevel. This also allows me to hold the tool at a lower angle and rest my hand on the workpiece as I carve. I also regrind the tip so that the wings of the V angle forward. This way, the wings shear the grain in advance of the bottom of the V, giving me clean cuts both along and across the grain, and even in diagonal grain, where one wing of the tool is cutting with the grain and the other is cutting against it. I use this same "wings forward" grind on gouges and get the same revved-up performance.

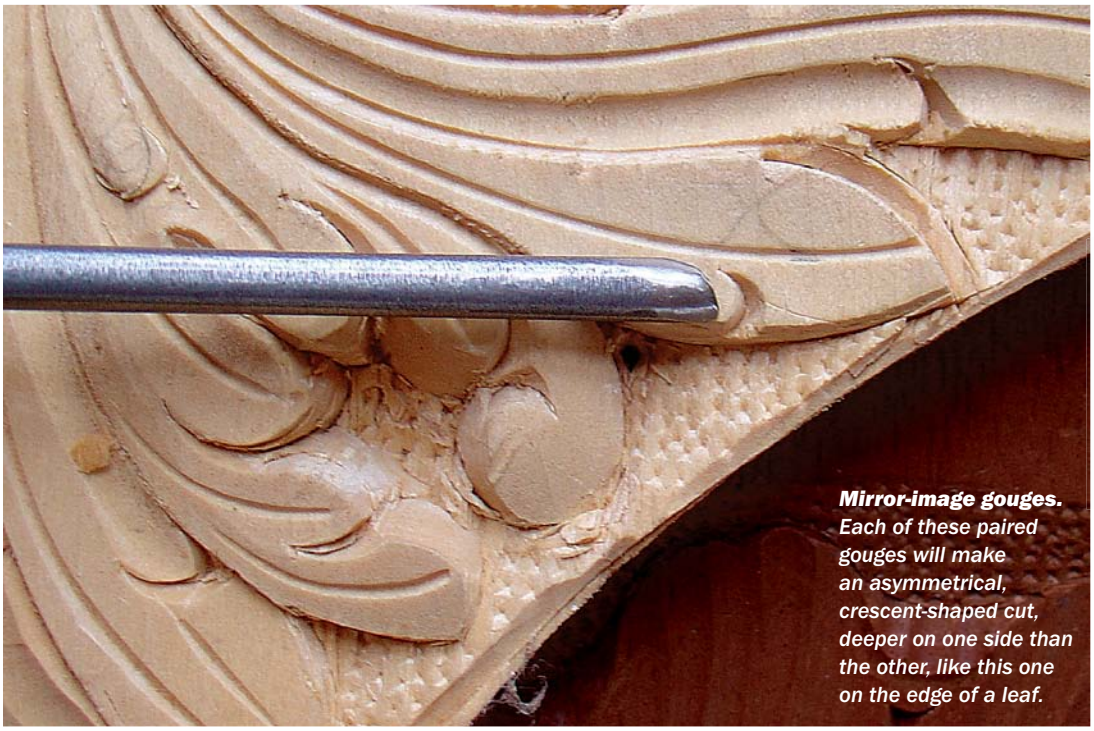
I use a related "wings back" grind on other gouges. This is useful for stopped cuts. With the bottom of the tool cutting first and the wings following, I can cut right up to another element in the carving without damaging it.

When to modify a tool? For me it's strictly a matter of necessity. I use plenty of tools with their original grinds, and I don't modify tools until I need them. After you try a few of my grinds, you may invent some of your own. □

Allan Breed builds 18th-century furniture and teaches at the Breed School in Rollinsford, N.H.

LEFT AND RIGHT FLARED GOUGES WORK AS A PAIR

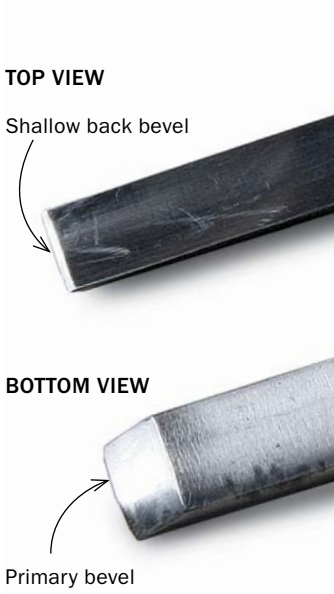
Breed made these gouges, used for left and right flaring cuts, by grinding the tip and then the bevel. He made one from a standard gouge and the other from a fishtail gouge. Both work well.



Mirror-image gouges. *Each of these paired gouges will make an asymmetrical, crescent-shaped cut, deeper on one side than the other, like this one on the edge of a leaf.*

BACK BEVEL BETTER FOR CONVEX DETAILS

Breed grinds a very small bevel on the concave side of a shallow-sweep, standard-ground gouge. This grind permits him to quickly convert a standard gouge of any sweep for use as an in-cannel gouge. He uses the edge of a Tormek grinding wheel to do the grinding and then hones the mini bevel on the rounded-over edge of a bench stone.



Big help from a small bevel. *You can cut shallow convex shapes, as in the ribs of this shell, with the gouge hollow-side down, riding on the tiny inside bevel.*