

After calculating the toolpath, the VCarve software, which is used with the Shark, displays the result.



The software directs the CNC Shark's router-powered cutter. The Shark performs much more like a full-sized standard CNC router.

end mills and ball-nose end mills; these are better known to woodworkers as straight bits and core box or round-nose bits. You can add bits to the database, so almost any groove-forming bit with a 1/4" shank that you have can be used in the Shark.

The toolpath features of VCarve put you in command of what cutter to use for a selected vector, as well as the feed direction, speed and depth of a cut. You can see an animation of the cut being made and examine the result in 3D. If you are creating a project part that must be

worked by more than one cutter, you simply create more than one toolpath. You name and save each toolpath.

The CD that comes with the VCarve program also has a PDF of the 130-page manual, as well as PDFs and videos of tutorials.

VCarve doesn't actually run the Shark. The toolpath files you create with it drive the Shark, and to run those files, you need a CNC Shark Control program, which you download from the Next Wave Automation website. And before you can actually run the Shark, you

need to assemble it.

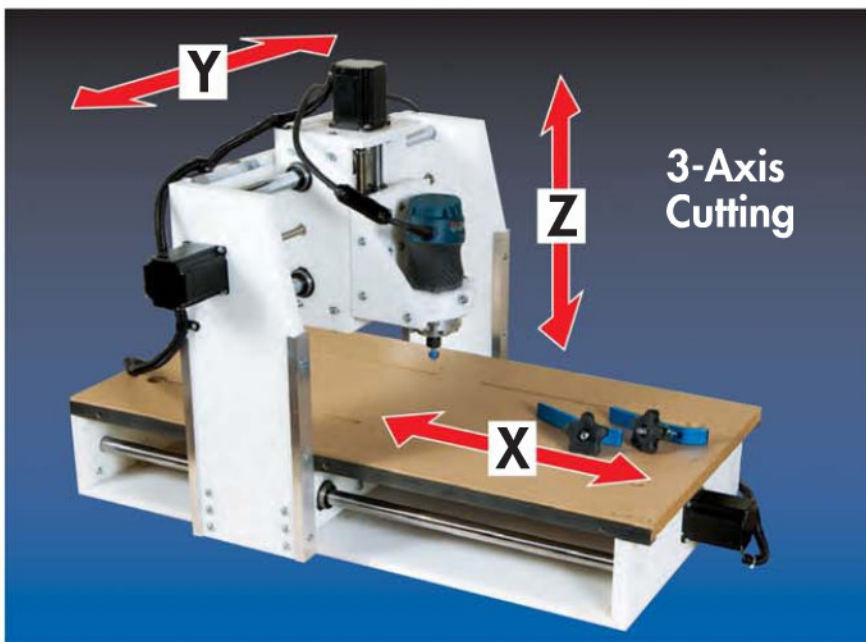
The Shark is shipped in two pieces — the base and the gantry — both in one box. Six bolts are all it takes to join the two parts.

Because it's easy to zap a stepper by miswiring the components, the Shark is delivered with all but one of the circuits connected. When you lift the gantry from the shipping carton, both the controller and the power supply are tethered to it by the wiring between them and the X-axis stepper and the Z-axis stepper. The Y-axis stepper is mounted on the machine bed, and the input end of its power cable is unconnected. The plastic connector on the cable's end is labeled with a "Y." The only real wiring you do is to plug that connector into the free connector— also labeled "Y" — at the back of the controller.

After bolting the gantry to the bed and connecting the wiring, fit the router motor in the mount. You do have to connect your computer to the Shark's controller. This may prove to be inconvenient, especially if your only computer is a desktop model. A cable is provided with the Shark to link the computer and the controller.

When the hardware is set up and the software loaded, you're about ready to make the noise and dirt. Mark the starting point on your workpiece and clamp or screw it to the worktable. Install the cutter in the router. Load the Shark control program, and use it to "jog" the bit to align with the marked start point.

Switch to the G-Code screen, load the appropriate G-code (toolpath) file, and click on "Run the G-Code." You'll get a dialog box telling you to turn on the router, and then the Shark starts to work.



CNC routers cut in what are called three axes or directions. Up and down is the Z coordinate or axis. Think of left and right as the Y-axis. Forward and back could be called the X-axis. With a variety of bits and a computer program working in those three directions, the sky's the limit.

“Either of these units can cut small parts (drawer fronts or door panels) complete with joinery cuts, profiling and decorative carving. Either will mill a rough board smooth or texture a smooth board to make it rough.”

The Money Question

If you are at all interested in this technology, I'm sure the question you have now is: "Well, buddy. Which one should I buy?"

As evasive as it may seem, I'll reply that it depends on what you expect to make with it.

If your interest is simply making signs, carving and/or cutting small parts in 4/4 stock, I'd consider the CW. The software is less daunting to learn, and the machine more or less "talks" you through project setup. The manufacturer has tons of carving patterns and projects on CDs.

On the other hand, if your interest is in the realm of furniture mak-

ing, I think the Shark is your machine. It certainly has more appeal to me.

Work I currently do using templates could be done more quickly and accurately (and safely) with CNC. If I want to contour the bottom edge of a table's apron, I first use CAD to draw the contour. Then I try to duplicate that line on a piece of MDF, saw the line, sand it and, if it looks right, trace along its edge on each workpiece. I saw the work close to the line, attach the template to the workpiece and carefully rout.

With CNC, I could draw the line in CAD, calculate the toolpath in CAM, and cut the workpieces with

the CNC. No sawing and sanding and sawing again. And if I wanted to save the template to use again in the future, it's on my computer's hard drive. No clutter of dust-collecting templates in the shop.

Moreover, the techniques and tricks I learn using the Shark will apply should I move up to a larger machine. I can use the VCarve software with most any CNC router. I have to send both these tools back, but if I could keep just one, it'd be the Shark.



Bill Hylton is a frequent contributor to Woodworker's Journal.

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