Gerber Sabre™ Router

Q: I want to get a Router and I have been looking at other systems. Why should I get a Gerber Sabre router?

A: **It is one of the Fastest Machines Available**

The Sabre router can cut up to 600 IPM and when the bit is out of the material, the Sabre moves at up to 1400 IPM to the next plunge point. Additionally, for applications which have a lot of up and down moves in softer materials, the Z axis can move at up to 300 IPM. What this means to your customers is that the throughput (the amount of work that is done in a given amount of time) is much higher on the Sabre.

A. **Leadscrew Driven, Not Rack and Pinion**

Most systems are being driven with a rack and pinion for each axis. However, we have discovered that rack systems are not the most effective drive system for our industry. Because chips are produced with a router, the racks will tend to collect debris in the gear track which prevents the pinion from engaging the rack successfully. This in turn causes excessive vibration, premature wearing of components, and a decrease in accuracy and cut quality.

The Sabre series uses a Teflon coated leadscrew drive system, with custom designed anti-backlash leadscrew nuts, which are protected under the table and gantry. Because of the combination of the Teflon coating, the tight leadscrew nut tolerances, and the locations of the screws that are continually turning, chip build up is virtually eliminated. Therefore, the Sabre systems will operate much more smoothly, and will maintain the accuracy for years of trouble free service.

A. **Servo Motor, Not Stepper Motor**

Without getting into technical discussion about motor characteristics, a stepper motor moves increments called steps. These same steps can sometimes translate as choppy cuts when routing small shapes. They also “sync-out” easily when something interferes with its movement and basic designs don’t have position control.

Unlike steppers, Servo motors have absolute position control and maintain their rated torque at low and high speeds. The Servos used on the Sabre have an encoder mounted to the back of the motor to track position.

A. **Aluminum Construction**

Pound for pound aluminum is stronger and more rigid than steel. Our aluminum extrusions are also engineered to absorb vibrations, where as steel is prone to resonate. Mechanical resonance has detrimental effects on mechanical components reducing wear life and increases the chances of failure. Steel can also transfer these harmful vibrations to the routing bit and effect edge quality. This translates to a high quality robust lightweight design.

A. **Matched Technology System**

Gerber manufactures the Hardware, (Sabre) and the software, (ARTPath/OMEGA) to drive it. This has advantages to the customer because it ensures that he will be getting a complete system. Because of this, the customer has access to “Single Call Support”, allowing the customer to get the answers to his questions without having to chase down different manufacturers. ARTPath is also included with the price of the system so you have all the tools you need to start using your router to its fullest potential right away.

A. **ARTPath Software**

ARTPath is open architecture to allow it to import designs from other design program. EPS, DXF, AI or HPGL files can be imported into ARTPath in order to program the various toolpaths for the router. It also allows the operator to program many different toolpaths, (i.e. Cleanouts, male, female, carving, etc.) with many different tools and depths within the same job. The Router will automatically sequence the toolpaths, and pause to prompt the operator to change to the next tool in the job.

A. **“Cut to mask”**

Because of the Sabre’s accuracy, the system will cut out graphics or shapes from a sheet of material by cutting to the mask but not through it. This way all of the shapes are prevented from shifting while being cut, and it allows you to remove whole sheets of material without having to pick-out individual shapes. No spray adhesives, sacrificial sheets and double-sided tapes are needed to hold the material down to the table.

A. **Perfect Inlays**

For pushthroughs, with the Sabre and ARTPath, it is an automatic process to have a shoulder cut around the male shapes that are being pushed through the female, or the stencil cut face, which make the overall fabrication easier and much faster. This saves time and money by eliminating a “backer sheet” of material and tapes to hold letters or shapes securely. Other router driver programs allow a shoulder to be cut only on the female portion of the face, which can cause an unsightly shadow in backlit applications.

A. **Prismatic letters**

Gerber has a patent pending on our process of making prismatic letters with the Sabre. Our unique capability allows prismatic carving to work with any shape or graphic. Some other systems, which claim this, can only do it with 60 and/or 90 degree bits or with only specific fonts or letter sizes.

A. **AutoCarve 3D**

With Autocarve software option, the designer can choose anything from a 60 degree bit, to a 150 degree bit. This is very important when duplicating the traditional handcarved look. Other programs will allow only a 60 degree, and/or and 90 degree bit. The problem with this is that if the shapes stroke width exceeds the bit diameter, the software makes the bit go much deeper than necessary to obtain the width. This makes larger carved work aesthetically incorrect.