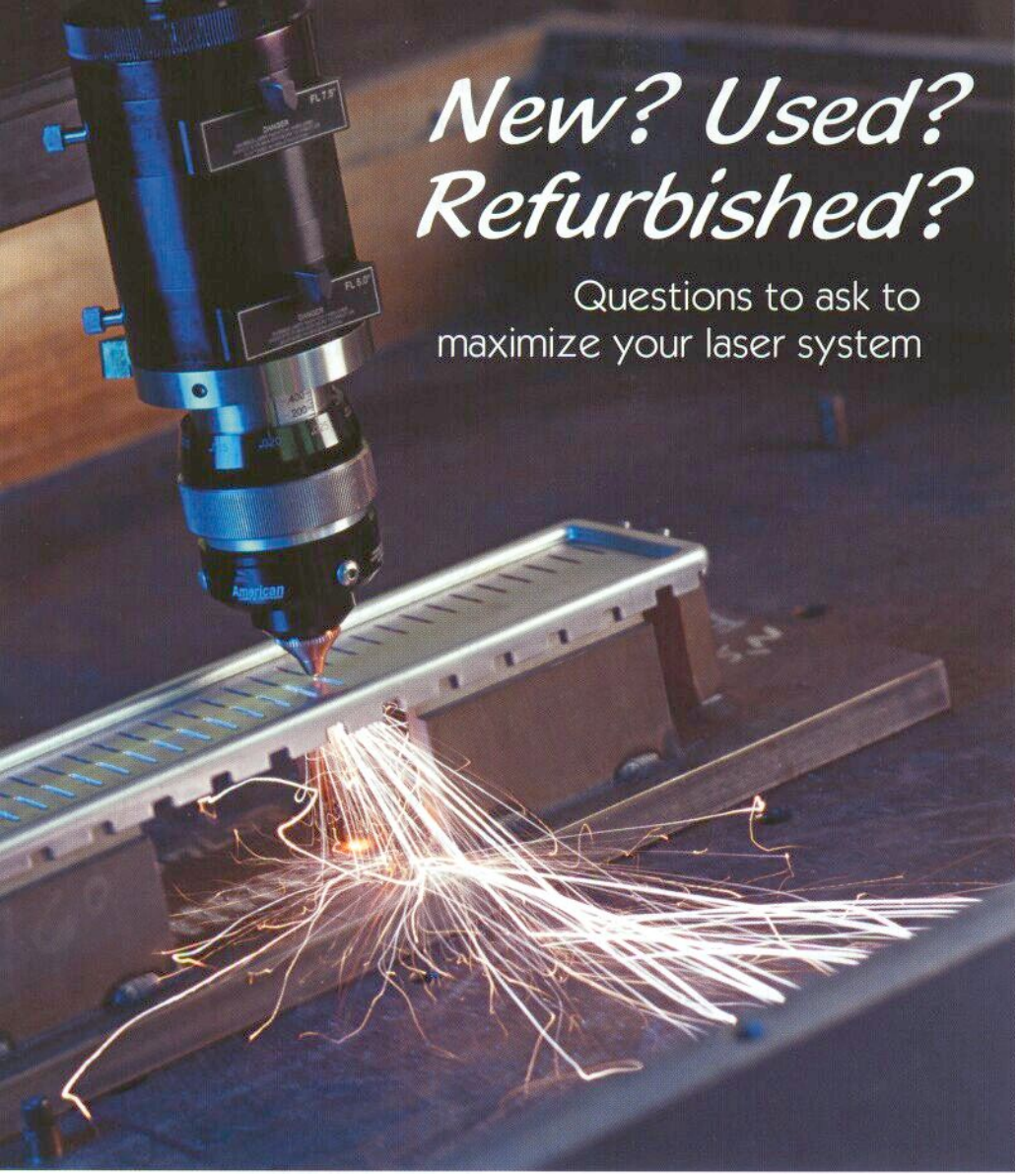

New? Used? Refurbished?

Questions to ask to maximize your laser system

A 2,500-W laser system cuts vents through a piece of aluminum sheet.

By Don Sprentall

You've come to reap the benefits of laser processing through the daily use of your system for operations such as cutting sheet metal fabricated parts; welding components and assemblies; drilling holes in a variety of materials; and for other applications such as marking, scribing, and surface treating.

You've become familiar with advantages of laser processing in terms of speed, quality, consistency, and reliability. You may be fabricating components that can be made only with your laser system and taking jobs that would have been unthinkable before you had this technology in-house.

And yet, chances are your laser system can do even more for you.

Right now it makes more sense than ever to maximize the efficiency of your operations. Smart business owners can use economic downturns as opportunities to upgrade and modernize, giving themselves both a competitive edge in the tightening markets and an ability to reposition themselves for an upturn or for new markets.

Perhaps you've thought about increasing your capacity or improving your technological capabilities, and you've felt that the best way to do this is by buying a new laser system. However, you may be holding off because that investment of hundreds of thousands of dollars is difficult to justify or afford.

However, other ways to increase capacity or improve technological capabilities exist but may not be so obvious. Some of the most cost-effective ways include refurbishing, redesigning, retrofitting, or revamping your existing equipment.

These can take many forms, including changing the design of a lens or a gas nozzle; adding accessories such as performance monitors; upgrading components such as optics, motion systems, and controllers; adding a second laser or workstation; or installing a new system comprising used equipment.

These options can be used to enhance laser performance, increase product quality, improve efficiency and uptime, increase throughput, reduce waste, boost employee morale, and lead to more (and more satisfied) customers for your products and services.

Focusing on the Product

Lasers are inherently flexible and robust. Thousands of lasers with service records approaching, and even exceeding, 20 years still are in operation today. While in some cases replacing the laser resonator itself can yield benefits, more often upgrading the system components, such as beam delivery or control units, can breathe new life into your workhorse laser, and may even enable it to perform applications you hadn't dreamed of.

At the very least, a system upgrade or reconfiguration will enhance your laser's performance, improving the quality of your products, increasing throughput, and reducing downtime.

Laser system operators are highly skilled, and many, if not most, have found clever ways to adapt their original equipment to perform at higher efficiency. Often out of necessity because of system design flaws or the

system manufacturer's inability to service the equipment or address special modifications, operators and department managers have resorted to their own solutions, sometimes with simple, crude, but effective use of other handy materials. To their credit, they get the job done.

But still, you make money working *with* your machines, not working *on* them. Your primary business is to look after your own products and services. In tougher times your resources could be focused on your products and services rather than on redesigning your capital equipment or suffering with less-than-optimal performance from the equipment.

Ask the Right Questions

Even if you believe you are currently getting all you can out of your laser system, a real bonus would be to find out that you can get a lot more from it with a minimal investment and little or no disruption of your daily operations. The key to identifying which options will provide the most benefit to you is having the right information.

And you get the right information by asking the right questions. Asking some key questions to gather information will help you determine how to get the most from your laser operations:

- ❑ Do I want to buy a new laser system?
- ❑ Who will write my system specifications?
- ❑ Am I interested in achieving more from my current laser with minimal investment and minimal distraction to my daily operations?
- ❑ If I could change anything about my current laser system, what would that be?
- ❑ Are there jobs that I would like to take on that I presently cannot do with my laser system?
- ❑ Do I have training issues or employee turnover?
- ❑ How frequent is my downtime?
- ❑ Do we perform preventive maintenance?
- ❑ How often do I require a factory or field service technician?
- ❑ Do I purchase industrial-grade gases or high-purity gases?
- ❑ Would I like my laser system to cut faster or with better cut quality?
- ❑ Would I like to begin processing new materials?
- ❑ Would I like my cutting system also to perform welding?
- ❑ Would I like to increase throughput by sharing my laser source among multiple workstations?
- ❑ Do I go through many lenses?
- ❑ Would I like to improve the lifetime of lenses and other consumable components?
- ❑ How often do I change nozzles or gas jet tips?
- ❑ Would a redesigned gas nozzle improve the appearance of my weld?
- ❑ Would I like to reduce the duty cycle of my laser while increasing productivity?
- ❑ Would I like to better automate my processes?
- ❑ Would I like to integrate a laser with an underused conventional machine tool?
- ❑ Would I like to drill more holes, weld with deeper penetration, or improve the quality of my scribes and cuts?
- ❑ Would a reduced kerf size enhance my laser's cutting speed and provide material savings?
- ❑ Would a new focusing head allow me to cut and drill shaped holes that are motion system-prohibited?
- ❑ Would a beam splitter allow me to manufacture twice as many parts in the same amount of time?
- ❑ Would a different focal length lens make it possible to access tight spots or accommodate new tooling?
- ❑ Would a dual-spot lens introduce the capability to take on new projects and prospects?
- ❑ Would an improved rotary table increase my system's accuracy and repeatability?
- ❑ Would a part follower, seam tracker, or height sensor relieve inconsistency problems in material?
- ❑ Would a remote tuning device enhance the system's flexibility or reliability?
- ❑ Would a combination of technologies give my machine the best of all worlds?

These are but a few of the questions you should ask to get more out of your laser system. Creative thinking during economic downtimes can help you find cost-effective, workable ideas to make your business better and prepare for the upturn and potential new markets. ■

Don Sprentall is president of American Laser Enterprises, P.O. Box 103, Northville, MI 48167, phone 248-449-3714, e-mail dsprentall@a-l-e.net, Web site www. americanlaserenterprises.com. American Laser Enterprises is a supplier of OEM-quality components for the laser cutting and welding industry.