

Consider the 80-20 Rule

How to choose the right thermal cutting machine for your application.

Purchasing a new thermal cutting machine can seem complicated. It calls for striking a balance between price, productivity and the machine's capabilities. Following are some simple questions to consider to help narrow down the choices and choose the right equipment for your needs:

■ **Is the machine control easy to operate?** Look for a machine that is user-friendly. Touch-screen controls, such as Messer's Global Control Plus, make it easy for new operators to learn how to run the cutting equipment.

■ **How advanced is the software?** Software used on a cutting machine is the most critical component of the

system. Software performs two distinct functions: designing the piece to be cut and controlling the cutting equipment. The best software will maximize the characteristics of the cutting machine on which it's running. Messer machines use OmniWin software for thermal cutting with oxyfuel, plasma and laser CNC machines. OmniWin offers a wide range of functions, including easy export and import of drawings and plans, and nesting for special appli-

cations. It is effective and economical for small production runs, as well as for just-in-time manufacturing with changing quantities and custom cutting.

■ **What are the material-handling and storage options?** Sometimes companies make a large investment in automated plasma and oxyfuel cutting machinery only to find they do not see the expected savings in the true cost per part. What many fail to consider is the importance of material handling. The time it takes to move plate on and parts off the cutting table can have a significant effect on productivity and

After-sale service and ready availability of parts are other important considerations when selecting a cutting equipment vendor.



(Photo courtesy Messer)

■ **What is the thickness of the material most frequently cut?** There are several methods to cut mild steel, aluminum and stainless steel using plasma, oxyfuel or laser. Yet it's cost-prohibitive for most shops to invest in all the various cutting options. For most, it's about the 80-20 rule. If 80 percent of the jobs involve cutting mild steel in gauges of 2 inches or less, then a plasma process is probably the best choice. The other 20 percent of heavier parts, best cut using an oxyfuel process, could be outsourced to a local fab shop. If 80 percent of the work is gauge to half-inch, then it becomes a choice between plasma or laser. Plasma is generally more economical than laser. However, if tight tolerances are required, laser may be the best solution. If you're still not sure what process will work best, ask suppliers to cut samples for comparison.

Messer Cutting Systems, Inc., Menomonee Falls, Wis., offers a wide range of CNC cutting equipment and accessories. For more information, call 262-255-5520 or visit www.messer-cs.com.

Editor's note: This article was contributed by the experts at Messer Cutting Systems.

return on investment. The latest plasma and laser technology offer impressive cut speeds, but that gain is often lost when removing the parts and moving the next plate into cutting position. It takes two to three times longer to unload cut parts than it does to load a full plate onto the cutting table, assuming the crane is well positioned and available.

Material storage is another troublesome area. Some companies lack the floor space and are forced to stack different sized pieces of plate on top of one another. To get to the plate that needs to be cut, all those on top have to be moved. As an alternative, plate should be stacked vertically whenever possible so each piece is accessible. Consider installing a large magnet that can be used to move an entire plate of cut

parts to a sorting table, then load the next plate into position for cutting, before sorting the parts. Shuttle tables or pass-through conveyor systems also can be used to move plate in and out. Storage towers allow plate to be stacked in a vertical retrieval system until the system calls for a particular piece. Smart cranes allow plate to be moved from storage towers to cutting tables with no crane operator. Robotic pick-and-place systems can be used to remove cut parts from the cutting table. Use of a self-cleaning cutting table to remove slag can help to minimize downtime.

On a bigger scale, review the true material flow of the plant. Consider where material comes in, goes out, and how material handling could be used to expedite it. ■