



DAVID PROKOP

## In the fold

**David Prokop, vice president of International Technologies Inc., talks about folding equipment**

**FFJournal: What is the current opinion regarding folding machines?**

**Prokop:** At one time there was a sacred ground of parts considered only viable on press brakes, but this is simply not the case anymore. The technology in folding has reduced this press-brake-only market by a substantial amount.

**Q: What instigated this shift?**

Folding technology has changed over the years, which directly coincides with where the manufacturing sector is headed. The old torsional drive systems are being replaced with multi-axis, direct-drive servo systems. This change has created a new fleet of folders that are faster, more agile and able to compete head-on with press brakes in almost all sectors of manufacturing. We have numerous machines that form at 120 degrees per second and clamp at 250 ipm. This equipment will give the fastest press brake a run for its money at lot sizes from one to hundreds and with substantially reduced operator expertise.

Quicker setup times and greater flexibility are available through options like rotational clamping beams that provide 20 ft. of tooling on a 10-ft. machine and bi-directional folders that can completely eliminate flipping the part. These features allow a machine to produce more product with less cost and effort than ever before.

**Q: Are there limitations with folders?**

Typically a folder is limited to six times the material thickness for its minimum flange length, and inside bend radii is a minimum of  $1\frac{1}{4}$  to  $1\frac{1}{2}$  times the material thickness. Also, hemming is often better suited to press brakes. The high tonnage available on press brakes gives the ability to squeeze the metal into smaller tools. Folders simply don't form in this fashion.

**Q: What material can folders handle?**

Folders can handle from very thin sheet metal up through  $\frac{5}{8}$ -in.-thick steel plate. A folder advantage is that it can handle this range of parts with no tool change.

**Q: What about automation for folders?**

You can easily add robotics for material handling and part movement. Robots on folders, however, are very different than on a press brake. If you look at how a part is being formed on a folder, it never leaves the horizontal plane. You're moving the flange, not the part. The robot only has to position the part against the stop and move it to the next position after the machine cycles.

On a press brake, the part sweeps through the air and slides down into the die. The robot must be in perfect synchronization with the forming motion and speed. You can understand how much simpler the process is on a folder. The simplicity allows end users to integrate the robot themselves rather than purchase a pre-packaged solution.

**Q: Are there any other advantages?**

The biggest advantage folding offers is substantially reducing the overall cost of a forming operation. Lot sizes are being driven down while costs of operations are being driven up; companies must seek more cost-effective methods to maintain competitiveness. Folders allow lot sizes of one to be efficiently formed. In addition, due to the way a folder operates, better dimensional part accuracies and angular accuracies can be had with much less effort. Most parts are produced with a single operator, overall tooling investment is much less, cosmetic parts are formed with no extra effort, setup time can be substantially reduced and folders are much safer than traditional forming methods. This all adds up to a process that can produce what you want, in the quantities you want, with better part control at much lower costs.

Now more than ever before, companies must focus on producing product in the most cost-effective way possible. Folders are probably the easiest way to lean out a forming department. Looking with an open mind at the goal of a more cost-effective method to form parts, many would be surprised at what they find. Buying what has always been bought is easy. But forming is hard; forming is complex. As an alternative, folders can offer huge benefits.

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