

Recent Developments In Folding Technology

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In today's manufacturing environment, companies can no longer rely on past strategies to guarantee a successful future. New competitive pressures are forcing companies to bring in new and different technologies to make their operations more cost competitive, more reliable, and better equipped to not just compete in today's economy, but to flourish in it.

A case in point is forming technology. The advantage lasers have over turrets for flat blank production is very similar to the advantages that folders have over press brakes for forming parts. Lasers have proven themselves to be more cost-effective and flexible, with a much higher utilization. Lasers turn out more accurate product with less effort and lower manufacturing costs, while simultaneously increasing profitability. Folders offer similar advantages and additional benefits like faster setups, more accurate parts both dimensionally and angularly, better ergonomics, mar-free bending, improved operational safety, less operator skill, and first part good part reliability. With the bi-directional models you can even eliminate flipping the part. These advantages add up to forming parts faster and more accurately, in lesser quantities, with improved quality, less effort, and at lower costs with higher profitability.

This is not to suggest that the press brake is no longer viable. There will always be a need for press brakes. As with lasers, some parts are better suited to turrets, and some parts are better suited to a press brake. However, as requirements change, so must the tools employed to carry out the day's tasks.

As with other processes, folding has evolved to a new level of technological effectiveness. Here are just a few of the more interesting developments:

Multi-axis direct drive servo systems have created a new fleet of folders which are faster, more agile, and able to compete head on with press brakes in high production applications. Numerous machines form at 120 degrees per second and clamp at 250 IPM. This will give the fastest press brake a run for its money, while maintaining all the benefits of the folding process.

Rotational clamping beams offer even more flexibility by providing two tooling sets on the clamping beam, with radius and sharp bends in one handling and one set up, and multiple radius forms in one handling and one set up. Long sides are formed on one set, while the gap for the narrow side is made on the other. The possibilities are endless. Documented savings have shown paybacks in less than a year solely due to the rotational beam and what it can offer.

Bi-directional folders can completely eliminate flipping the part. In the time saved by eliminating the flip, an additional 2 - 5 bends can be made. The production gains and cost reduction are phenomenal. Currently this technology is offered in sizes up to ½" x 10'.

Auto tool changing can reduce total set up time to less than a minute. There are multiple options available, from simple re-gapping of the tools, to complete removal and replacement. With the ability to handle tools as tall as 13", just about any application can take advantage of these savings.

Auto part manipulation can take parts as large as 125" x 60" x .196" thick and automatically manipulate them through the forming process. With auto tool changing and robotic load/unload, unattended operation for a huge part envelope is now possible.

As with all things, folders do have limitations. Typically, a folder requires a minimum flange length of six times the material thickness, and an inside bend radii of a minimum 1¼ to 1½ times the material thickness. Closed hemming is also often better suited to press brakes. Although folders can offer clamping tonnages up to 190 tons, this is often not enough to close hems in thicker metals or stainless.

Overall, the biggest advantage folding offers is to substantially reduce the cost of your forming operation, compounding that savings at every subsequent operation the formed part hits. Second only to the flat blank creation, it touches more downstream operations than any other process in your shop. A better formed part saves money wherever it goes. Companies now more than ever must focus on producing product in the most cost-effective way possible. Folders are the easiest way to lean out a forming department, and the rest of your operation. If you have a goal of eliminating cost from your fabricating process (and, frankly, who doesn't), take a hard look at the forming department. Forming is hard and forming is very complex, but against this folders can offer huge benefits. At times like these, can anyone afford to be so confident in their current methods that new ones are assumedly disregarded?

Call **Icon Machine Tool** today at 1-877-221-9830 to find out how a folding machine can benefit your operation.

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Recent Developments In Folding Technology - Continued

Folding. Take a closer look:

Take a moment and put a check at each item which could be a benefit to your shop.

- Faster Setup**
More time making more parts, lower costs, and higher profits.
- More Precise Dimensional Part Accuracy**
Folders gauge the part, not the flange. Finished part dimension is spot on, and square.
- Outstanding Angular Part Accuracy**
Material variation has NO AFFECT on angular accuracy.
- Superior Ergonomics**
Back gauge supports the part, the operator does not. Less fatigue, more parts.
- No Whip Up**
What do you get when you put a 6" bend on a 6' blank? You get 5'-6" of metal swinging through the air. Not on a folder. Part lays flat while the flange swings.
- Mar-Free Bending**
The material does not slide against the tool during the forming process; perfect for finished or pre-painted materials.
- Folding Is a Gentle Process**
No tool wear. The initial set of tooling will last years and years.
- Single Man Operation**
The machine supports the part so only one operator is needed.
- Far Less Operator Skill**
Folding is incredibly simple when compared to press brake complexities. It is easier to run, makes better parts with less effort, and is more productive.
- Secondary Operations Smoothed Out**
Better part accuracies, better fit up, less welding, less grinding, easier assembly. It brings lean to every operation the formed part touches.
- Safety**
The operator does not hold the part during the forming process. Whip up is gone, and the part is fully supported for enhanced ergonomics.
- First Part, Good Part**
Once programmed, part repeatability is guaranteed.
- 'Skip the Flip'**
Eliminate ever having to flip a sheet. Get an extra 2 – 5 bends per flip.