Profitably Ramping Up New Part Production

Del Williams, Technical Writer

Manufacturers are slashing part tooling and revision cost while flexibly improving quality and lead-time with an integrated stamping and forming operation.

 When a manufacturer launches a new product or enters a new market, it often finds itself between a rock and a hard place, production-wise. On one hand, it must keep manufacturing costs as low as possible upfront, since market demand can be uncertain and volatile, and overspending on weak demand is a sure way to run a new product into the ground. On the other hand, it must be fully capable of profitably ramping up production as demand increases. Into this delicate balance, manufacturers must also allow for the possibility of necessary design or process changes, while never skimping on quality.

Traditionally, many manufacturers in this situation have found themselves choosing between labor-intensive manual manufacturing methods for low-volume parts production or costly progressive die stamping for high-volume parts production. In many cases, neither of these choices is truly a good fit for new products.

“We were looking to take a new part’s costs way down with an automated manufacturing process, but when you’re blazing new trails in the market it’s easy to end up with an obsolete part immediately,” says Shannon Near, CEO of Deco Technologies, a Grand Rapids, Mich.-based manufacturer of architectural products, laminates, and wall systems.

“We asked ourselves, ‘Is this going to be our final design? What if we build $20,000-25,000 of progressive die tooling, then find out the part can be improved?’ Once you’ve built a progressive die set, it’s difficult to modify. In a lot of cases, it’s easier to start over and build another one. That can be a big upfront cost.”

Cutting Cost, Boosting Quality

To more profitably innovate in its market, Deco Technologies recently found itself considering how to best manufacture a complicated little clip that chisels into

drywall. The clip, which plays a role in allowing their demountable wall panels to be individually mounted or removed without disrupting the panels next to them, was initially laser cut and manually bent in presses.

Deco Technologies, which sought to cut the cost of the clip while improving its quality, wasn't satisfied with the typical manufacturing choices. The initial laser cut method was too labor intensive and costly to use in higher production. Traditional progressive die stamping, however, was too high in up front cost and not sufficiently flexible to accommodate possible design or process changes.

Near turned to Fourslide Spring and Stamping, Inc., a Bristol, Conn.-based parts supplier specializing in the integrated stamping and forming parts operation called fourslide. The supplier has already worked with Deco Technologies to make a couple of minor tooling revisions.

"The fourslide process is good way to refine and ramp up a new product as you feel out its market," says Near. "Our per piece cost with fourslide is many times less expensive than our previous laser cut pieces. By choosing it over progressive die stamping, we saved about $13,000 in tooling and 4 weeks in tooling lead-time. The process also minimizes the risk of ending up with costly obsolete die tooling, which can save thousands more."

The fourslide part-making process was previously used mostly for complex work such as that with involved forming, multiple bends, or elements beyond 90-degrees on parts less than 2" wide and less than 0.075" thick. Now more manufacturers are choosing the process to profitably ramp up new part production, slash part tooling and revision cost, and flexibly improve quality and lead-time.

What makes the fourslide part-making process capable of cutting typical tooling costs to as little as $3,000, halving tooling lead times, and eliminating after-production adjustment to meet specifications is its unique integration of stamping and forming operations. The process begins with the raw material in flat strip form off a coil, which is stamped or blanked in the progressive die section of the fourslide machine, which is a fully functional but lighter version of the progressive die found in most power presses.

Where high-speed power presses can cost hundreds of thousands of dollars, fourslide machinery typically costs just a fraction of that, enabling greatly reduced shop rates. Fourslide production at up to 15,000 pieces per hour can be achieved depending on part size and complexity.

According to Near, Deco Technologies is satisfied with how the fourslide process has enhanced the quality of its wall system clip.

"Fourslide hit every one of our critical dimension tolerances, and produced the part completely to our print," says Near. "The quality of the process is every bit as good as a progressive die, and many times better than that of a manually manufactured part."

Near also appreciates the flexibility of fourslide in adapting to needed changes of design, process or tooling, compared to more inflexible progressive dies.

“Unlike prog dies, fourslide technology can easily accept what you feed into it,” says Near. “It’s a matter of wrench adjustments, not die adjustments. We can try different gauges, coatings, tempers of steel, and even pre and post treatments such as oils or platings without having to worry about die modifications and its costs.”

Saving from Start Up to Ramp Up

To cost effectively launch a new product, Eagle Comtronics, a Liverpool, N.Y.-based manufacturer of specialty radio frequency (RF) applications, found itself considering how to best manufacture a 4-sided, 4-pin electrical ground/RF shield. When the company considered both progressive die and fourslide manufacturing processes, they went with fourslide to good effect.

“When you launch a product or enter a new market, you don’t necessarily know what the demand will be,” says Ted Jewett, Eagle Comtronics’ Materials Manager. “You need to keep product costs low until you figure out demand. For us, that meant minimizing tooling and revision costs until we figured out the market and matched our product to it.”

“We looked at a progressive die, but the tooling costs were about five times that of fourslide’s, and the cost of revision was a consideration,” says Jewett. The company chose the fourslide process for their electrical ground/RF shield and has been happy with the result for years.

On another project, Eagle Comtronics developed a new electrical ground clip. Since the earlier fourslide project was a success, they chose it and their vendor, Fourslide Spring and Stamping, once again over progressive die stamping. “We saved about $20,000 in tooling alone, in choosing fourslide over a prog die,” says Jewett. The part has been consistently to spec, and done well in the market.

Even after Eagle Comtronics has sold almost 5 million of its electrical ground clips in products over 8 years, the company remains committed to the fourslide process over high-speed progressive die stamping.

“Why stay with fourslide after we’ve gone into full production?” asks Jewett. “For lower start up and revision cost; low cost per piece, roughly equivalent to a prog die; and more flexibility in process to handle market changes and volatility. We figured these would be long-term projects, and they turned out that way, but there are no guarantees in the market. For anyone launching a new product, ramping it up, or adjusting to market changes, the fourslide process can give you a better chance of ROI when you’re not sure how the market will react.”

Fourslide Spring and Stamping, Inc. is an ISO 9001:2000 certified manufacturer of spring and wire products including precision flat springs, metal stampings, contacts, wire forms, and more for a wide range of medical, electrical, automotive, aerospace, military, consumer and industrial applications.

To view an animated demonstration of the fourslide manufacturing process visit www.fourslide.com/fourslide-reference.htm [1]. For more info, call 800-832-6405 toll free; fax 860-584-5960; visit www.fourslide.com [2]; email info@fourslide.com [3]; or write to Fourslide Spring and Stamping Inc., 87 Cross Street, Bristol, CT 06011.

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Links:
[1] http://www.fourslide.com/fourslide-reference.htm
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