

An Option To Reduce Manufacturing Cost Without Reducing Quality

The age old challenge in manufacturing is finding ways to develop quality products while continually looking for ways to reduce cost. On every level of manufacturing from large components to the smallest spring, all variables in the equation need to be carefully evaluated, including raw materials, labor, shipping, and type of production methods.

Here at Elyria Spring & Stamping, our customers look to find vendors that can deliver the quality production of intricate springs, stampings, and wire forms. Reducing cost while maintaining quality continues to be the priority in their vendor selection process.

One of the ways to achieve this objective is the use of slide forming technology as an alternative to traditional stamping presses and die cut machinery. These tools are industry standard and deliver quality products. However in certain circumstances, the old standby in the industry, slide forming machinery, can help companies significantly reduce waste and lower the cost of manufacturing.

Slide forming machinery is a metal stamping technology that has been in use since the 1930s. The technology uses four or more different slides to carry tooling horizontally to a central position on the part. This accurate, repeatable, and powerful slide forming process can be used to produce precision quality parts at a much lower overall cost than those manufactured with power press tools. Frequently referred to as fourslide, slide forming machinery actually comes in several varieties, fourslide, multislide and vertislide tools. All of which offer different ways to manufacture various types of parts.

Types of products that are commonly manufactured on slide forming machines include spring clips, clamps, fasteners, brackets, wire forms, and specialty hardware.

Slide forming machines can be an extremely competitive method for manufacturing specific parts, particularly intricate springs, stampings, and wire forms used across a variety of industries. The slide forming machines produce a significantly reduced amounts of material scrap because they do not require a carrying web like that needed by progressive tools. When the cost of materials is high, minimizing waste is essential to manufacturing the part cost-effectively. The advantage of a slide forming machine is particularly pronounced for parts made of higher cost stock and a high quantities.

Up front tooling is generally less expensive on slide forming technology, since complex forming operations that add cost to progressive tooling can be formed easily on these machines. However it's the overall production cost of high volume jobs that makes this technology such an important economic option.

We recently had an example where a client in the automotive industry was producing a release wire that cost .18 cents built on a standard CNC tooling machine. To produce this part on slide forming technology, there was a \$2,000 tooling cost, but the overall per part cost was lowered to .03 cents due to the increase in production speed, with no reduction in overall quality. On the first 100,000 pieces the cost was reduced from \$18,000 to \$5,000.

In a second example a client in the consumer products industry was manufacturing phosphorus bronze stamping clips on a punch press. In working with their engineering department, it was determined that the phosphorus bronze could be replaced with stainless steel round wire. Making this raw material changes allowed for the use of slide forming technology, cutting the material scrap from 50% to 0%, leading to significant cost savings.

Clearly the ability to manufacture at lower costs on slide forming technology is a great advantage in today's market. While certain parts can only be made with a traditional die cast tooling, there is opportunity where parts can be produced with either machine. In those instances that lend themselves to production with slide forming machinery, it is important for OEMs to investigate the feasibility of using the lower cost process, especially where material costs are high. As part of their vendor selection process, OEMs should seek out a vendor capable of manufacturing a part with either progressive stamping or slide forming machinery, and obtain the vendor's recommended approach with the appropriate quote.

Elyria Spring & Stamping combines 67 years of field experience, with the latest equipment, a modern facility, and ongoing training for our people, to manufacture quality custom designed metal stampings, fourslide products, springs, and wire forms.