



Comparing Medical Manufacturing Technology:

Fourslide vs Wire Form and Progressive Die

Overview

Fourslide machines are a type of manufacturing technology that bend and shape metal around a center form through the sequential actuation of cam-driven form tools. While fourslide technology has been around for decades, it continues to deliver value as a process that can reduce scrap and cost while increasing run speed.

When used in medical manufacturing, fourslide is often compared to similar technology such as wire form and progressive die, also known as power press technology. All three manufacturing methods can shape metal into its desired form, but each has advantages and disadvantages based on application.

Fourslide

Manufacturing technology with four or more cam-driven slides that bend or shape metal around a center form.

Wire Form

Manufacturing machines that uncoil wire from a spool before shaping it with dies and pins.

Progressive Die

A manufacturing method in which metal is stamped into a desired shape in one or more operations.

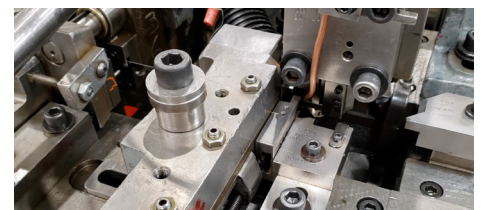
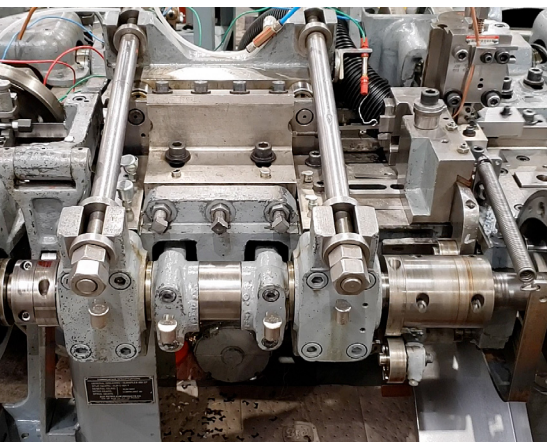
Fourslide vs Wire Form

In most cases, fourslide technology supports medical manufacturing that requires higher run speeds and more complex parts with tighter tolerances than wire form. However, fourslide machines also have higher tooling costs and lower flexibility to change designs in a development cycle because fourslides involve cutting steel, which increases lead time.

When determining whether fourslide technology or wire forming is optimal for your part, consider the volume. If the part volume is high, fourslide manufacturing is often the best choice because it supports higher run speeds. If the part volume is low, then evaluate the cost of a tool in a fourslide and the flexibility needed in a design phase. If that cost is significant relative to the cost of doing it on a wire form, then wire forming will likely be more cost and time effective.

Fourslide is also ideal for tight tolerances. Components with looser tolerance requirements lend themselves more toward wire form technology.

Attribute	Fourslide	Wire Form
Tolerances	Lower	Higher
Tooling Cost	Higher	Lower
Flexibility	Lower	Higher
Lead Time	Higher	Lower
Axes of Movement	Five	Many
Speed	Higher	Lower



Fourslide vs Progressive Die

Tool cost, scrap, and product cost are key drivers in choosing a fourslide over progressive die. In most cases, the tool cost on a fourslide is lower than on a progressive die and fourslide manufacturing produces less scrap, making it a more cost-effective option in many medical manufacturing projects. This is especially true if the part is made from a high-value alloy, where fourslide can improve material use efficiency and reduce expenses lost to scrap.

In progressive dies, work is done in parallel, allowing machines to interact and operate on multiple parts with each individual stroke. However, in a fourslide, the work is being done on a single piece at a time using sequentially driven cams. In some applications, the ability to operate on multiple parts at once can be an advantage that lends itself toward progressive die technology.

Attribute	Fourslide	Progressive Die
Tool Cost	Lower	Higher
Scrap	Low	High
Axes of Movement	Five	One
Speed	High	Medium/High
Piloted	Not Typically	Yes
Parts/Stroke	Five	Multiple possible



Manufacturing Technology Can Affect Your Project's Cost and Timeline

Medical device and component development require experts in both engineering design and manufacturing to create parts that meet key specifications. A best practice in designing a product or component is to visualize the tool that will manufacture it.

However, it's also not always necessary for OEMs to have manufacturing process experts in-house. The best manufacturing suppliers will partner with OEMs to review and optimize designs for manufacturability, providing recommendations on the technology and tools that can create the design more efficiently. Involve your manufacturing supplier early to receive the best design optimization advice and advanced information on manufacturing processes and technology.



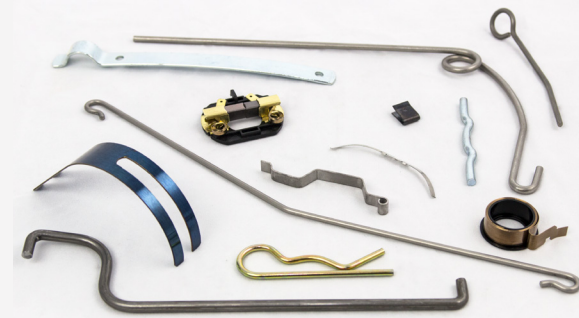
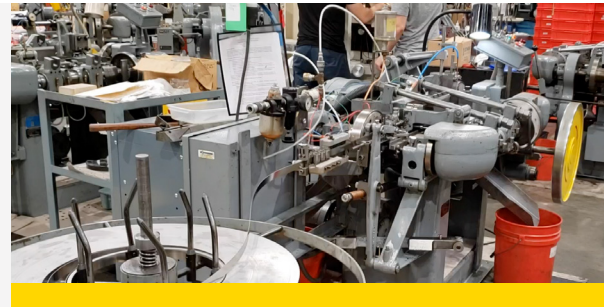
About Paragon Medical

We act as a **close partner throughout development** to optimize product designs with collaborative solutions that help you deliver the best patient care at the highest total value.

We have the **advanced manufacturing capabilities** needed for medical device component and product manufacturing. We have the ability to engineer and manufacture metal components and assemblies such as springs, stampings, ultra-high precision machined parts, bellows and laser technologies.

We deliver a level of innovation that reduces partner-customer risk and supplier-managed quality that **simplifies your supply chain**, allowing you to bring your products to market faster.

Finally, because we have over 100 years of experience as well as a **commitment to quality** and to **developing long-term partnerships** with our customers, you can be confident in Paragon Medical as your manufacturing partner.



Paragon Medical

To learn more visit ParagonMedical.com or contact us at 704.280.8875 | sales@paragonmedical.com