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TOOLING, LLC.
a dsbj company

The background of the page is a large, high-angle photograph of a massive pile of stamped metal parts. The parts are arranged in a chaotic, overlapping manner. The top-left portion of the pile is silver-colored, while the bottom-right portion is a bright gold color. The parts themselves are various shapes, many with holes and flanges, typical of stamped metal components. The lighting creates strong highlights and shadows, emphasizing the metallic texture and the three-dimensional nature of the parts.

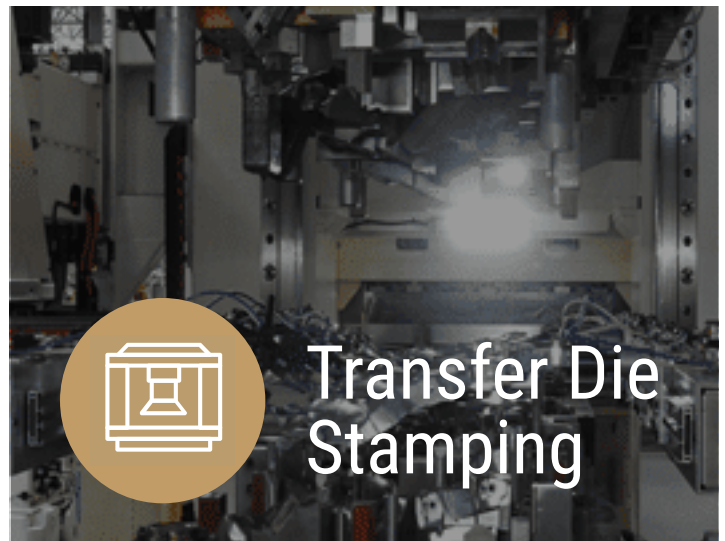
GUIDE TO **High-Volume Metal Stamping**

Metal stamping is the process of transforming flat metal workpieces, known as blanks, into a desired shape. This manufacturing technique is used throughout a multitude of industries that require large quantities of high-precision components. At Aranda Tooling, LLC, we perform three types of metal stamping processes: transfer tool, progressive tool, and stage tool. Each process works differently, depending on the project's requirements and materials.

Due to its speed, precision, and cost-effectiveness, high-volume metal stamping is an ideal production method for a range of applications. If you've been looking for the right solution for your next project, this guide will offer all the information you need to determine if metal stamping is right for your needs. We'll discuss how various stamping methods and tooling processes work and offer important considerations for optimizing your design.

Understanding High-Volume Metal Stamping

While the process of metal stamping itself is relatively simple, there are several stamping methods to choose from and each functions differently. Techniques like progressive die stamping and transfer die stamping are performed more quickly than other processes, making them a great solution for high-volume projects. However, each method has its own strengths and limitations. Below, we'll discuss how both of these techniques work and their advantages.



Progressive Die Stamping

Progressive die stamping involves feeding a continuous strip of metal through multiple stations, each of which performs a different operation. The metal strip moves from one station to the next and is stamped progressively until the full design has been completed. This method is ideal for producing components with multiple features, like washers, brackets, or clips.

Some of the most significant benefits of progressive die stamping include:



Fast Production Speeds



Minimal Waste Generation
(compared to other methods)



Greater Production Capacities



Low Production Costs



High Repeatability



Improved Design Flexibility

Compared to transfer die stamping, the biggest difference with this process is how the part is handled. In progressive die stamping, the stamped component remains on the metal strip until the full stamping operation is complete. In transfer die stamping, however, parts are fed individually from a blank and separated early in the process.

Transfer Die Stamping

In transfer die stamping, a transport system is used to move individual components from one workstation to the next throughout the stamping process. To prevent the production line from getting backed up, all of the workpieces are transferred simultaneously. This helps to reduce production delays and enables faster processing times.

During the stamping process, individual metal components are separated from a larger metal strip so that more intricate operations can be performed. This results in detailed, complex parts like frames, shells, and structural components. Some of the biggest advantages of transfer die stamping include:



Faster Parts Production
(compared to manual transfer operations)



Eliminates the Need for Post-Stamping Operations



Suitable for More Complex and Intricate Components

Tooling Processes

At Aranda Tooling, LLC, we use progressive, transfer, and stage tooling to meet the demands of high-volume production projects. Our state-of-the-art facility specializes in manufacturing complex components that meet rigorous quality standards. Below, you can learn more about the tooling processes for high-volume metal stamping and the advantages they offer.

Progressive Tooling for Progressive Die Stamping

Progressive die tooling creates intricate metal components by stamping a strip of metal in a rapid, continuous process. Each operation needed to produce the finished part is laid out sequentially in a single die set.

After each stroke of the press, the strip advances through the tool until it has passed through all stations and is fully formed. The biggest advantage of this technique is that production is rapid and continuous. New parts are started and completed with every press stroke. Progressive tooling is ideal for high-volume production runs due to its high precision and efficiency.

Transfer Tooling for Transfer Die Stamping

Transfer die tooling involves using individual tools at each stage to perform specific operations. A component is moved from one station to the next using a transfer system that improves production efficiency. This tooling method can rely on either one large bed tooling area or multiple presses that are joined together.

Transfer tooling is a great option for producing complex components. Since parts are separated from the metal strip early on in the process, there is more flexibility to perform highly detailed operations.




Stage Tooling

Stage tooling is often used in low-volume jobs; however, it can also be suitable for certain high-volume projects. This method shapes sheet metal into the desired form using a singular stage rather than multiple. As such, it is a good choice for creating more complicated shapes.

Considerations for Optimizing High-Volume Metal Stamping

For any metal stamping project to be a success, it's essential to understand fundamental information on each forming process. Adhering to key principles and best practices can not only help you avoid costly errors but also improve the quality of your components and develop better expectations for costs and lead times. Closely collaborating with your manufacturing partner can help you improve your design for manufacturability.

Some of the most important factors to discuss with your metal stamping manufacturer include:

-  Changes in your part requirements
-  Design factors that are still under engineering review
-  Potential design modifications that could impact production

Design Considerations

Your design needs to be tailored to any limitations of the metal stamping dies, assembly lines, and other equipment. Tooling experts can provide you with an accurate prediction of how long your project will take, allowing you to adjust your project timelines as needed.

In addition, it's important to optimize your design for manufacturability based on the capabilities of your manufacturer's equipment. Our team uses advanced software to test new design iterations quickly, catching defects early on.

Cost

There are many strategies for adjusting the cost of your project. Finding ways to reduce the number of touches or processes in your project, or using more economical materials are both effective methods. In some cases, using economical materials combined with additional steps is more cost-effective than using an expensive material and fewer steps.

At Aranda Tooling, LLC, we can help you adapt your design for improved cost-effectiveness without sacrificing product safety or performance. We also implement thorough quality controls throughout every stage to not only achieve higher product quality but reduced lead times as well.

Working with Aranda Tooling for Your High-Volume Stamping Needs

With over five decades of experience, Aranda Tooling, LLC is an industry leader in high-volume metal stamping. Each week, our team produces over 1,000,000 precision components for clients around the world. Our high-volume stamping capabilities serve the needs of numerous industries, including:



Appliances



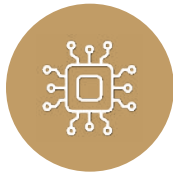
Automotive
& Electric
Vehicles



Construction



Consumer
Goods



Electronics



Industrial
Equipment



Medical

For more information about our services, or to work with us for your next high-volume metal stamping project, [contact us](#) today.



About Aranda Tooling

From humble beginnings in 1975, Aranda Tooling, LLC, an ISO 9001:2015 registered company, has grown to become a premier metal stamping, laser cutting, and metal fabrication enterprise.

We employ over 300 skilled workers and highly trained management personnel worldwide. Our engineering and tooling departments work closely with our quality department to produce complex parts that meet the most rigid specifications of our customers, and we know how to maintain these specifications through high volume production runs.

Aranda Tooling, LLC. has established solid business relationships with numerous national and international companies. Our many satisfied customers rely on us for a variety of components and we produce over 1,000,000 precision parts per week.

[Contact Us](#)



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