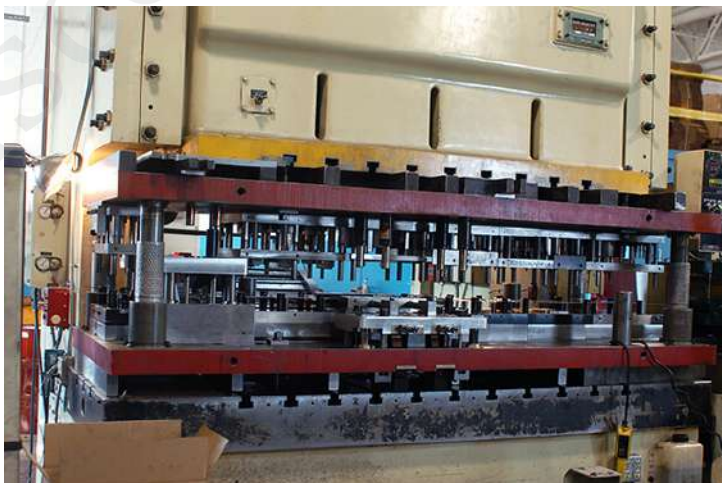
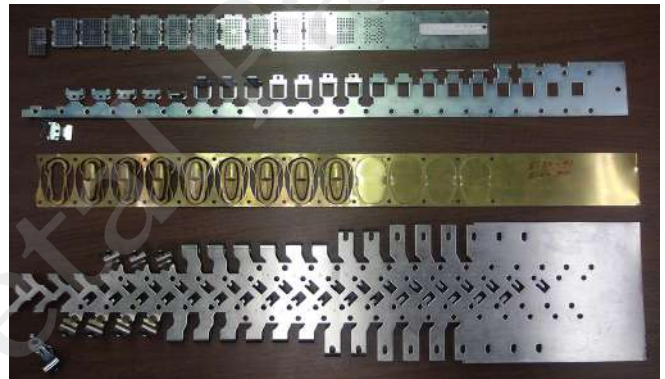


Stamping Die: A Cost-Effective Choice for Tight Tolerances and High Production Volumes

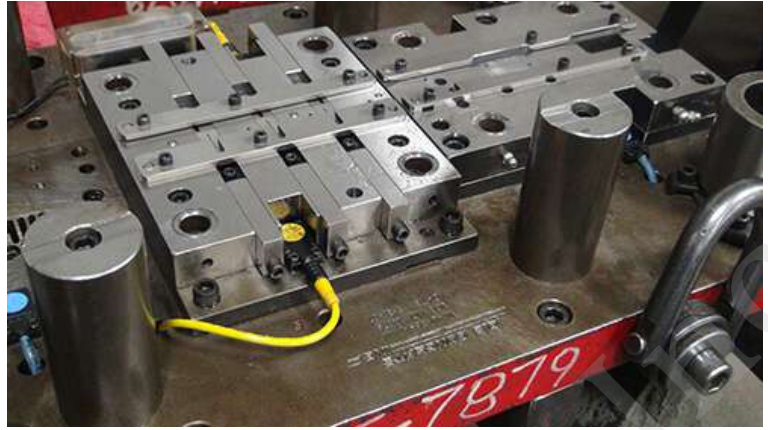
The manufacturing method you select impacts the design, quality, performance and cost of producing your metal parts. For years, stamping die has been the preferred process for unique designs and high-volume runs. To make an informed decision, it is important to understand the metal stamping (also known as hard tooling) process, and how it can affect your bottom line.

Metal stamping is being used all over the world to create precision parts. It includes multiple processes such as punching, blanking, embossing, bending, and coining. Proven to be cost-efficient for medium to high volume runs, production of metal parts via hard tooling can be a single or multi-stage operation. Here are the key advantages of choosing stamping die.

- **Reduced cost for high-volume production:** Precision stamping is an economical method of manufacturing large quantities because costs reduce significantly when production volume increases. For example, in the case of a progressive stamping die, once the initial strip is fed through the tool, it will produce a finished part every time the press cycles. With presses that can run at speeds upwards of 100-600 strokes per minute, the cost of high-volume runs is most competitive in this environment.
- **Supports unique designs and tight tolerances:** Sophisticated precision stampings produce innovative designs and complex products with ease. The benefits include, material flow or drawing, as well as close tolerances and repeatability that are not possible with fabrication techniques. Progressive tools can perform many different operations, including cutting, forming, extruding, coining, and can even have operations like in-die tapping or hardware insertion added right into the tool. Although these may seem expensive, when used correctly, they pay for themselves very quickly with a competitive piece part price. At Wisconsin Metal Parts, Inc. (WMPPI), we regularly run parts that have feature tolerances in the range of $\pm .0002$ ", profile tolerances of $.0005$ ", and positional tolerances of $.002$ ". In our experience, it is very difficult to economically hold tolerances as tight as these in sheet metal using any other manufacturing method.



- **Lower material costs:** Metal stampings generally allow for lower per piece material costs because of the ability to purchase in bulk (coil stock) rather than sheets. Material scrap is also minimal.
- **Automation adds to competitive pricing:** The addition of die protection and part monitoring sensors to progressive tools allows the press to run with minimal supervision. As a result, a single operator can attend to and inspect several presses. A cost-efficient balance of automation and operators helps ensure part quality while reducing production expenses.



Technological advances in metal fabrication offer manufacturers many more options today that did not exist a decade ago. An emerging trend is to use a combination of fiber laser cutting and stamping die. Laser cutting can serve as a bridge to production while hard tooling is being built, thus shortening your lead time to market. Lasers can also be an economical way to work through prototyping and testing. <https://www.wisconsinmetalparts.com/proj-clamp-prototype.html>

Wisconsin Metal Parts, Inc. offers production stamping up to 200 tons, a full-service tool room, metal fabrication, welding, fiber laser cutting, CNC punching, CNC machining and turning, prototyping, and assembly services. We have the experience and capabilities to advise you on the cost-effective use of either or both, stamping die and laser cutting. **Get us involved early and we will help you spend your money wisely.**