

Deep draw is commonly used as housings for electronic & mechanical components. The kind of items produced using the deep drawing production method range from very small eyelets to large enclosures, the type of boxes one might find on industrial production equipment. These enclosures are used in a variety of applications, including relays, solenoids, RF shields and assembly housings. The outcome is seamless parts at an economical price.



The Process

The deep drawing process combines many benefits of **metal spinning** and **stamping** with several other advantages. Both spinning and drawing result in the production of **seamless parts**, and depending on quantities, either process is cost effective. One similarity that deep drawing shares with spinning metal is the ability to manufacture circular cases. Additionally, deep drawing enables the production of parts such as rectangles, squares, and cylinders. And like metal spinning, deep drawing produces parts from blanks. Utilizing single piece blanks, common in the deep drawn process, enables the drawing process to create parts with deeper shapes.

Typically, the deep drawing press pushes material from a reel, or single blanks, through multiple positions. At each position the shape is changed by pressing or "drawing" the material further down into a progressively changing set of geometric dies until the final shape is acquired. Whether the process requires a single draw operation, or multiple drawn operations to create the desired resulting form, largely depends on the metal being used and the requirements of the finished product.

The part configuration is limited by the required force to produce the shape, which is dependent on the size of the drawing press, the material's malleable characteristics and its ability to be drawn.

In another similar process, single blanks are held in place and pressed into the cavity of the custom shaped die to produce the item.

Deep drawing is different from stamping. **Stamping** often requires that the material used be transported along on a strip called a carrier, through completion until the last operation is performed on the piece. It does not leave the machine until the process is complete. Deep drawing utilizes single piece blanks to permit deeper drawn shape parts. Deep drawing does utilize strip feed material when draw depths are limited to the part diameter. The blank is simultaneously cut from the strip while the draw plug forms the part profile.

There are many metals suitable for deep drawing including **stainless steel, aluminum, brass, copper** and **cold rolled steel**. The only real requirement is that the metals must be malleable, allowing the part to be forced into a shape without suffering from excessive stress damage; resulting in cracks during the deep drawn process.

Products & Services

Our deep drawn enclosure department specializes in fabricated / prototype cans, deep drawn cans and covers made from various metals and alloys (Ferrous and Non-Ferrous). In addition to drawing your cans, we can Hot Tin Dip (RoHS Compliant) and Hot Solder Dip (60/40 Sn/Pb) your cases and covers.

Capabilities include:

- quality high and low volume stampings (miniature to medium part size)
- temporary and permanent tooling
- precision forming
- draw
- deep draw
- progressive, compound, and transfer dies

Our value-added secondary operations include:

- plating
- laser marking
- insulation feet installation
- studs
- threaded inserts and pem nuts
- soldering
- terminal populating
- hole piercing
- glass feed through terminals

Deep drawn cans are an attractive alternative for prototype development. Once your prototype design is fixed, our tooling experts will design, machine and assemble the tooling for your low or high volume components.