HUDSON DEEP DRAW

A PRECISION GROUP Company

Seamless Solutions: Deep Draw Manufacturing

Hudson Technologies is an industry-leading manufacturer of high-quality standard and custom deep drawn metal enclosures and stampings. Because of our 79 years of stamping experience, vast knowledge of stamping technologies, and broad manufacturing capabilities—including a variety of shapes, sizes, and metals—companies around the world turn to us for their metal enclosure and stamping needs.

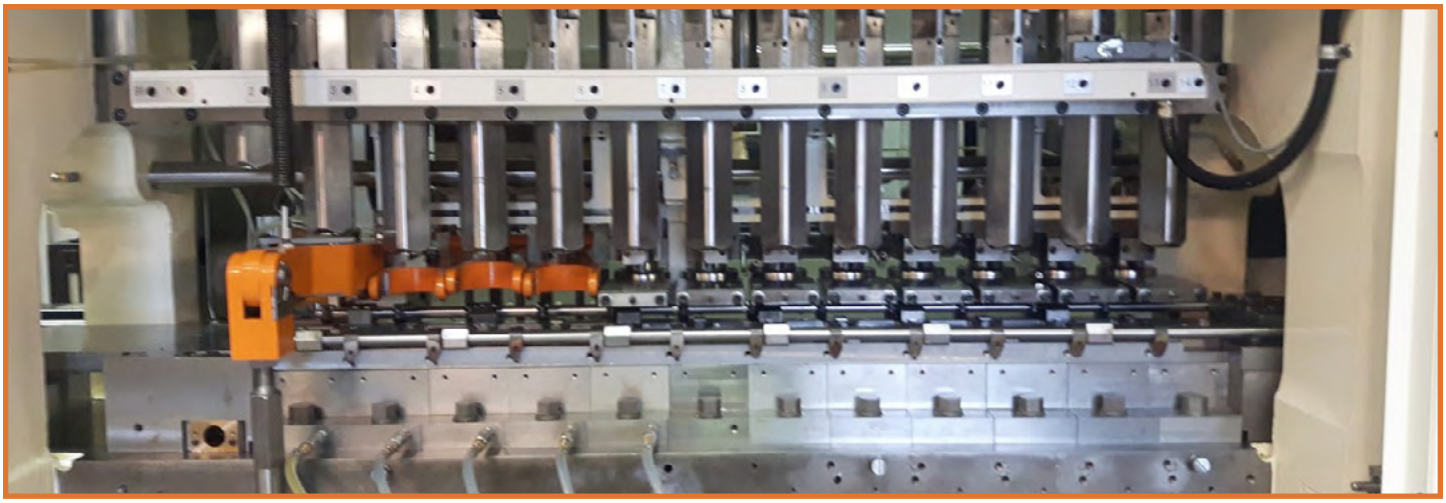
The following eBook outlines our manufacturing capabilities and highlights some of the additional benefits of partnering with us for your next project.

Tooling and Equipment

At Hudson Technologies, we employ a wide selection of tooling and equipment to ensure every product is a perfect fit for its application.

Our Tooling

For our deep drawn and stamped catalog products, we offer little or no tooling charges on over 15,000 standard shapes and sizes of enclosures. For more unique parts, our highly skilled team of toolmakers design and build all of our custom tooling in our in-house tool room that is fully equipped with state-of-the-art tool making equipment.



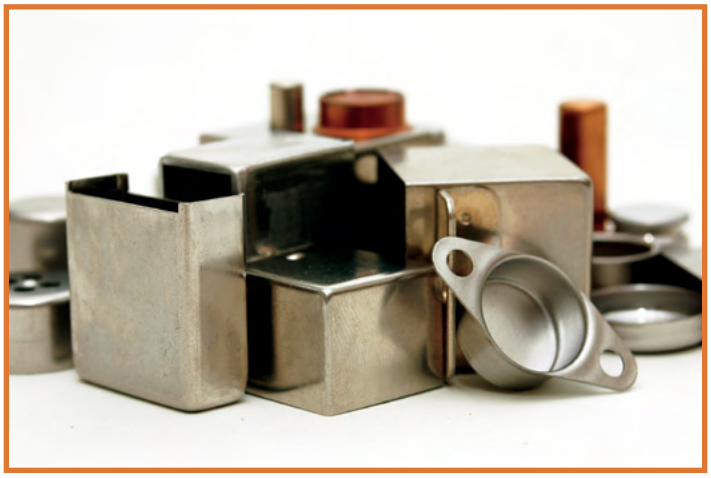
Our Equipment

In addition to our tool making equipment, our facility is equipped with a variety of manufacturing and finishing equipment, such as:

- **130 deep drawing presses.** We employ several types of presses—including hydraulic, pneumatic, servo, and double-action mechanical—that generate forces ranging from 1 to 500 tons. This large variety of presses gives us the flexibility to make sure out customer's parts are manufactured on the most efficient equipment.
- **Annealing and heat treating furnaces.** Our vacuum and hydrogen humpback furnaces allow us to perform in-house annealing and heat treating.
- **Green manufacturing.** None of our production processes use chlorinated lubricants or solvents, allowing us to manufacture safer, greener products. All lubricants used are water soluble, and we employ state-of-the-art aqueous cleaning equipment.

Deep Drawing Capabilities

Our deep drawn products are available in a wide range of sizes, materials, tolerances, and shapes.



Size

Regarding size, we offer manufacturing capabilities for:

- 1/8 to 12 inches (3.1 mm to 305 mm) in diameter
- Up to 12 inches (305 mm) in length
- .002 to .187 inches (.05 to 6.35 mm) in thickness

Material

We can source and work with a variety of metals and metal alloys to create finished deep drawn parts. Some of the materials we typically employ include:

- Aluminum
- Brass
- Copper
- Titanium
- Nickel and nickel alloys (e.g., Kovar®, Mu METAL®, nickel silver, cupro-nickel, and other nickel alloys)
- Steel and steel alloys, including aluminized steel, cold rolled steel, and stainless steel

Precision/Tolerance

The tolerances we achieve on deep drawn parts are largely dependent on the part's material and other design specifications. For example:

- For custom cases: tolerances are as low as ±0.002 inches (0.05 mm)
- For precision headers: tolerances are as low as ±0.0005 inches (0.0127 mm)
- For drawn corner radii: tolerances are as small as 0.005 inches (0.127 mm)

Shape

We offer deep drawing capabilities for standard and custom shapes, such as:

- Rounds
- Squares
- Rectangles
- Asymmetrical forms
- Flanges

Value-Added Services

To support our manufacturing operations, we offer additional services to ensure the delivery of a complete, high-quality deep drawn part. Our value-added services include:

Modification, Finishing, and Assembly

- Surface treating and finishing, such as aqueous degreasing, anodizing, bead blasting, deburring, heat treating, painting, passivation, plating, polishing, and powder coating
- Part modification, such as bulging, coining, extruding, machining, piercing, and tapping
- Component assembly
- PEM®, stud, and standoff insertion
- Welding, including brazing to MIL specs and laser, resistance spot, and TIG welding

Assistance With Manufacturing and Reliability

- Engineering design assistance
- Finite element analysis (FEA)
- Lean and Six Sigma compliance
- Program management
- Product design and metal forming simulations prior to manufacturing
- Smart Scope and metallurgical analysis services
- Trade compliance

Stocking Programs and Supply Chain Management

Our stocking and supply chain management services include Kanban, logistics support, and LTL truckload and export services.

High-Quality Service

At Hudson Technologies, we strive for excellence in everything we do. Some of the key factors that contribute to us consistently delivering high-quality products and services include:

Highly Skilled Staff of Engineers and Tool & Die Makers

Our expert team has the skills and knowledge to serve customers in a wide range of industries, such as:

- Aerospace and Aviation
- Automotive
- Commercial Battery
- Electrical
- Industrial
- Irrigation
- Medical
- Semiconductors

With years of experience producing deep drawn products for both prototype and high volume production runs, they can handle projects of any size.

Finite Element Analysis (FEA)

Before the actual manufacturing process, our team of engineers can prepare a Finite Element Analysis (FEA). This simulation uses the Finite Element Method (FEM) to simulate and test designs before they move forward in production. By using this technique, our team reduces the number of physical prototype stages required, streamlining the product creation process.

Green Manufacturing

We take pride in operating as environmentally friendly as possible. We replaced traditional chlorinated lubricants with biodegradable lubricants and employed an aqueous cleaning system that uses agitation and ultrasonics instead of chemicals to clean parts. Additionally, all cleaned parts are dried in a HEPA-filtered recirculating dryer for complete product control.

These changes allowed us to minimize our environmental footprint by eliminating the production of hazardous waste.

AS9100 Rev-D QMS Certification

Our facility is AS9100 Rev-D QMS certified, which means we regularly produce high-quality products and services that meet both our customers' requirements and industry standards.

Cost Efficiency with Hudson

By partnering with Hudson Technologies, you get cost-effective solutions without sacrificing product or service quality. Maintaining the quality of our products and services relies on the following:

- **Process repeatability.** The deep drawing process is highly repeatable, which minimizes the need to run additional production operations to resolve delivery or quality issues.
- **Our extensive product catalog.** While we do accommodate custom orders, we maintain an extensive catalog of tooling for over 15,000 standard shapes and sizes. If a custom part is required, there will be a one-time tooling charge assessed. The tooling then will be maintained by Hudson for the life of the product at no additional charge.
- **Material conservation.** Our deep drawing operations produce minimal material waste.
- **Faster production.** The deep drawing produces finished parts in fewer steps than some other manufacturing processes, which increases production efficiency.

To learn more about our standard and custom product and service offerings, contact us or request a quote today.