HUDSON DEEP DRAW

A PRECISION GROUP Company

Turnkey Solutions to Save Time and Money on Metal Enclosures

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When sourcing metal enclosures, it's important to seek out opportunities for both time and cost savings; companies must meet strict production deadlines while staying on budget, and delays can be extremely costly.

But it's also crucial to ensure that quality isn't sacrificed; substandard parts will end up costing much more in the long run, especially when used in deep drawn metal enclosures. Working with an experienced, knowledgeable turnkey manufacturer will ensure optimal quality at fair prices.

The first step in the process — choosing the right material for your application — is one of the most important.

Enclosure Materials

Stronger enclosure materials are not always better, and less expensive materials are not always lesser quality. What material is right for your project will depend on a range of factors. For example, using a metal with very high tensile strength for an application that will not be subjected to tensile stress does nothing to improve the reliability and quality of your enclosure, and will only end up costing you extra money.

Virtually every metal, regardless of cost or strength values, has an application for which it is best suited. An experienced turnkey manufacturer should be able to help you navigate the material selection process, starting with specific recommendations to suit your needs.

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At Hudson Technologies, we work with a wide range of metals, including:

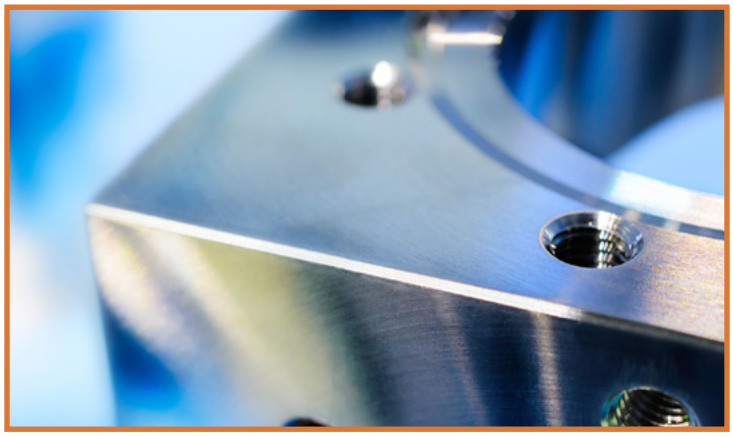
- **17-7 PH** — A highly specialized steel alloy, with good formability and corrosion resistance, as well as excellent strength values
- **Aluminum alloys** — Easily formed, highly corrosion-resistant, and cost-effective
- **Brass alloys** — Easy to form and solder
- **Cold-rolled steel 1008-1010** — Economical steel varieties with good drawability and strength, making them very versatile
- **Cupronickel** — Good drawability and very good resistance to corrosion; used often in aerospace electronics applications
- **Hastelloy®** — A nickel-molybdenum "superalloy" with strong properties across the board, notably resistance to chemicals like halide and acid catalysts
- **Haynes® 242®** — A nickel-molybdenum-chromium alloy with strong drawing properties and heat resistance
- **HyMu 80®** — An alloy of nickel and iron; frequently used for electromagnetic impulse (EMI) shielding
- **Inconel** — A nickel-based alloy featuring fair corrosion resistance and excellent high-temperature resistance; works well with deep drawing processes
- **Monel** — This family of nickel-cobalt alloys is strong, tough, and corrosion-resistant; suitable for many harsh chemical and oil and gas applications
- **Nickel silver alloy 2** — Easy to draw and solder; used heavily in relay cases and other electronic applications
- **Stainless steel** — A good standard material, suitable for highly corrosive, high-temperature, and low-temperature applications
- **Titanium** — A high-strength, low-density material that is biologically inert, suitable for everything from medical to aerospace applications

Custom Finishing Services

Unlike standard manufacturers, turnkey providers can offer a number of services outside of their core manufacturing capabilities.

Partnering with a turnkey manufacturer like Hudson allows all of these functions to be performed under one roof, streamlining operations and eliminating the stress of coordination and communication between multiple vendors. This also allows for substantial cost savings and expedited processes without risking the quality of the final part.

At Hudson, we offer a variety of secondary operations and finishing services, including:



- **Hole drilling**
- **Bracket and slot cutting**
- **Cutting and threading standoffs** — For when parts require separation in the final product
- **Forming inserts**
- **Brazing**
- **Subassembly** — Assembling two or more parts into a component for later assembly into the finished product
- **Painting** — An ideal surface-finishing method when aesthetics are a concern; for example, parts that are customer-facing and require no particular strong protection or additional properties
- **Plating** — An effective way to add corrosion resistance and other properties to a deep drawn metal part
- **Powder coating** — A surface-finishing method using electrically charged powder to coat a part and protect it from physical damage, chemicals, extreme weather, moisture, and other stressors
- **Anodizing** — A process by which the surface of a material, often aluminum, is essentially oxidized; ideal for ensuring sleek aesthetics, corrosion resistance, and durability

In addition to offering a range of finishing services, a trustworthy turnkey manufacturer should also possess relevant certifications to assure clients of their commitment to quality and continuous improvement. Hudson Technologies is proud to be AS9100C certified; ISO 13485:2003, and ISO 14001:2004 compliant.

Hudson's Turnkey Successes

The team at Hudson Technologies works with clients across all types of industries. To better illustrate our capabilities, we've highlighted a few recent case studies below.

Deep Drawn Aerospace Cans

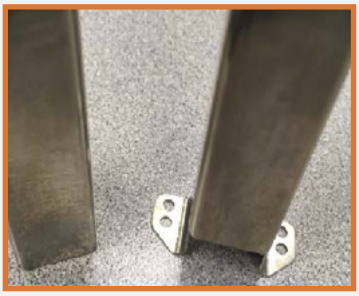
An aerospace company was ordering cans to be deep drawn and delivered to them before shipping batches of the cans to various finishing providers for further processing. However, one of the company's staff buyers did a cost-benefit analysis and discovered that they were spending $250 per shipment just to create purchase orders. They needed a most cost-efficient solution.

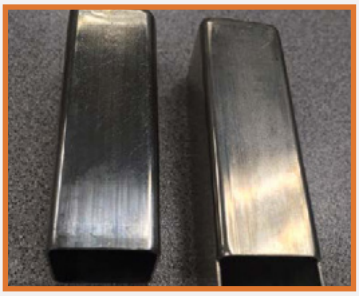
Looking for an alternative that would better accommodate their budget, the company partnered with Hudson. We designed a stocking program to manage the various parts and processes required, including the deep drawn stamping of the raw cans themselves and all requisite value-added services.

Now the company receives fully finished parts direct from Hudson, instead of having to send and receive multiple shipments from different providers. Not only did costs and lead times decrease, but both part quality and yield also improved as well.

Sensor Cans

A sensor manufacturer, who was a longtime Hudson customer, had a standing order with us for manufacturing long, square cans. After receiving the cans, the customer would braze brackets to the bottom of each enclosure in-house to prepare them for future assembly.





Our team noticed that the customer's operations could be streamlined, so we discussed our turnkey capabilities with them to illustrate how we could expedite their processes and save them money during production. Now, we manufacture their cans complete with brackets and screw holes. We've also diversified their materials to include cupronickel, stainless steel, and HyMu 80®. Now that they no longer have to finish the parts themselves, the client has more time to pursue new leads in new markets.

Extensive Enclosure Modifications

Another client of ours had an enclosure that required extensive modifications post-drawing. We planned on deep drawing the raw enclosure and performing some of the modifications before sending the enclosures back to the client, who would complete them.

But when we added a five-axis laser cutter to our inventory, we realized it could be of great use to this customer. We tested it and learned that the cutter could, in fact, perform all of the modifications this enclosure required — those that we performed as well as those that the customer performed — in less than 40 seconds per part.

We proposed this new process to the customer and they accepted; their parts are now higher quality, and lead times have reduced by 85%.