

trans-matic

SERVING THE GLOBAL MARKET
WITH DEEP DRAWN PARTS





INTRODUCTION

The deep draw stamping process allows manufacturers to quickly and accurately produce parts with large depths. Specifically, deep-drawn components are at least 1 ½ times as deep as they are wide, although they are often much deeper. Traditionally, this technique has been used to create cylindrical components, but advancements in stamping technology have made a wide range of cross-sections possible, including asymmetrical shapes.

The deep drawing process begins with a flat metal disk blanked from raw coiled stock. Trans-Matic works with blanks between 0.004" (0.100 mm) and 0.180" (4.5 mm) thick, depending on the application. Stamping proceeds in stages, forming the blank into its final shape.

Deep drawing has many key advantages over other forming techniques. The process is fast and efficient, producing minimal waste and requiring little to no secondary processing. Additionally, because the metal is work hardened, the final components are strong and durable.

Trans-Matic can apply deep-drawing methods to parts of all geometries with lengths reaching 9.5" (240mm). We use in-die stations to create features such as flanges, chamfers, cut outs, notches, and ribs. Together, these capabilities allow us to serve diverse industries with high-quality, custom components.

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AUTOMOTIVE INDUSTRY

Automotive parts must be strong and durable if they are to withstand frequent vibrations, impacts, and environmental exposures. Deep-drawn stamping is the ideal method for creating reliable automotive parts at high volumes. Sensor housings, solenoid housing, and braking components have the right geometries to be formed with deep-drawing, and the stamping process yields exactly the performance characteristics necessary for these applications.

Demand for deep-drawn automotive components has heightened with the rise of electric vehicles, which require many precision-stamped components.



Some of the most common deep-drawn automotive parts include:

Brake System Components

Sensors

Solenoids

ABS

Brake Booster

Emission Control Components



Solenoid

Sensors

Urea Injection

Mufflers

Electric Vehicle Components



Batteries

Sensors

Capacitors
& Relays

Wire Harness

Deep drawing is a fast and cost-efficient method for producing these parts at high volumes.

BENEFITS

OF DEEP DRAW STAMPING AUTOMOTIVE PARTS

The advantages of deep-drawing are especially relevant to automotive industry needs:

Versatility

Deep drawing allows manufacturers to create parts with varying geometries, all with tight tolerances and high precision. The same general process can create a tiny solenoid or a large casing for an EV battery, so manufacturers can easily meet the diverse needs of automotive clients.



Seamless Components

Deep drawing creates parts with solid diameters and no seams, making them highly resistant to leaks. Deep-drawn components can be waterproof and airtight, which are properties that lend themselves to gas tank and brake applications.

Strength

Deep-drawn components are cold-worked, which makes them stronger and harder than parts that undergo hot working processes.

These properties are important for automotive parts that undergo demanding operating conditions.



Efficiency

Stamping is fast and highly efficient, allowing manufacturers to create consistent components with minimal labor or material costs.

These benefits extend to high-volume production runs, for which the cost and time savings are substantial.

LAWN EQUIPMENT INDUSTRY

Components for lawn equipment are subject to many of the same rigors as automotive parts. They are exposed to vibration, impact, chemicals, and temperature fluctuations, and they must function in varied environmental conditions. Deep-drawn parts can easily meet these demands.

The lawn equipment industry includes weed trimmers, lawnmowers, irrigation systems, and even chainsaws. Demand for these pieces of equipment has risen in recent years, and the trend is expected to continue. Trans-Matic's stamped lawn industry components help manufacturers meet the demand for industrial-strength, high-performance parts. Some of the components that can be made using deep drawing include:



**Power tool engine
components**

**Weed trimmer and chainsaw
clutch assemblies**

Irrigation tubes

Solenoids

Irrigation sleeves

These parts can be designed following exact specifications for custom projects.

HARDWARE INDUSTRY

Every industrial sector has a range of hardware needs, including a range of locks, valves, and fittings. The lock and builder industry has grown substantially in the past five years, quickly reaching \$3.8 billion in revenue. Demand in this industry grows with demand for construction, home goods, and other manufactured parts, so the hardware industry is poised to continue growing.

Hardware and lock components must be crafted with extreme precision and consistency. These parts must hold tight tolerances if they are to attach and secure other components as intended. Deep draw stamping helps manufacturers achieve narrow tolerances for parts with complex geometries and maintain those tolerances across high-volume production runs.

Trans-Matic draws steel, brass, aluminum, bronze, and titanium hardware components such as:



Housings

Valves

Latch components

Drawer slides

Trim components

These parts are ideal for residential and commercial construction as well as for furniture, HVAC, and home goods applications.

PLUMBING INDUSTRY

Similar to the hardware industry, the plumbing industry continues to grow alongside those of residential and commercial construction. Plumbing components must also meet similar criteria as lock and builder hardware, including reliable strength, high corrosion resistance, and excellent precision. Plumbing components must offer a strong, leak-proof construction. Stainless steel and bronze, deep-drawn components readily achieve these goals.

Trans-Matic has been a global supplier of plumbing industry components for decades. Our strong, watertight durable components include:



PEX connectors

Tubes & housings for water heaters

Crimp connectors & collars

Sleeves, tubes, & housings for flow valves

These pipes, connectors, and housings are designed to clients' exact specifications to perform lasting performance across plumbing applications.

HVAC INDUSTRY

The HVAC industry serves residential buildings, industrial factories, research facilities, and vehicles with sophisticated heating, cooling, and ventilation solutions. HVAC systems are necessary not only to regulate air temperature but also to filter contaminants and maintain air quality. These functions combine to keep building occupants safe and comfortable, as well as to protect products from contamination.

The components powering HVAC systems must be durable enough to withstand varied operating conditions, including fluctuation in temperature and humidity, as well as exposure to harsh chemicals. Deep draw stamping with corrosion-resistant metals is one of the most efficient means of crafting these components, which include:



Pressure devices

Compressor housings and fittings

Solenoids

Thermostat terminals, caps, and sleeves

Sensors

Sleeves, tubes, and housings for flow valves

Sockets

Trans-Matic uses durable metals and advanced stamping techniques to create complex custom components to facilitate HVAC applications.



HOW TRANS-MATIC SERVES THE GLOBAL MARKET

At Trans-Matic, we are experts in deep draw stamping with an international presence. Headquartered in Holland, Michigan, we also have well-equipped facilities in Monterrey, Mexico and Suzhou, China.

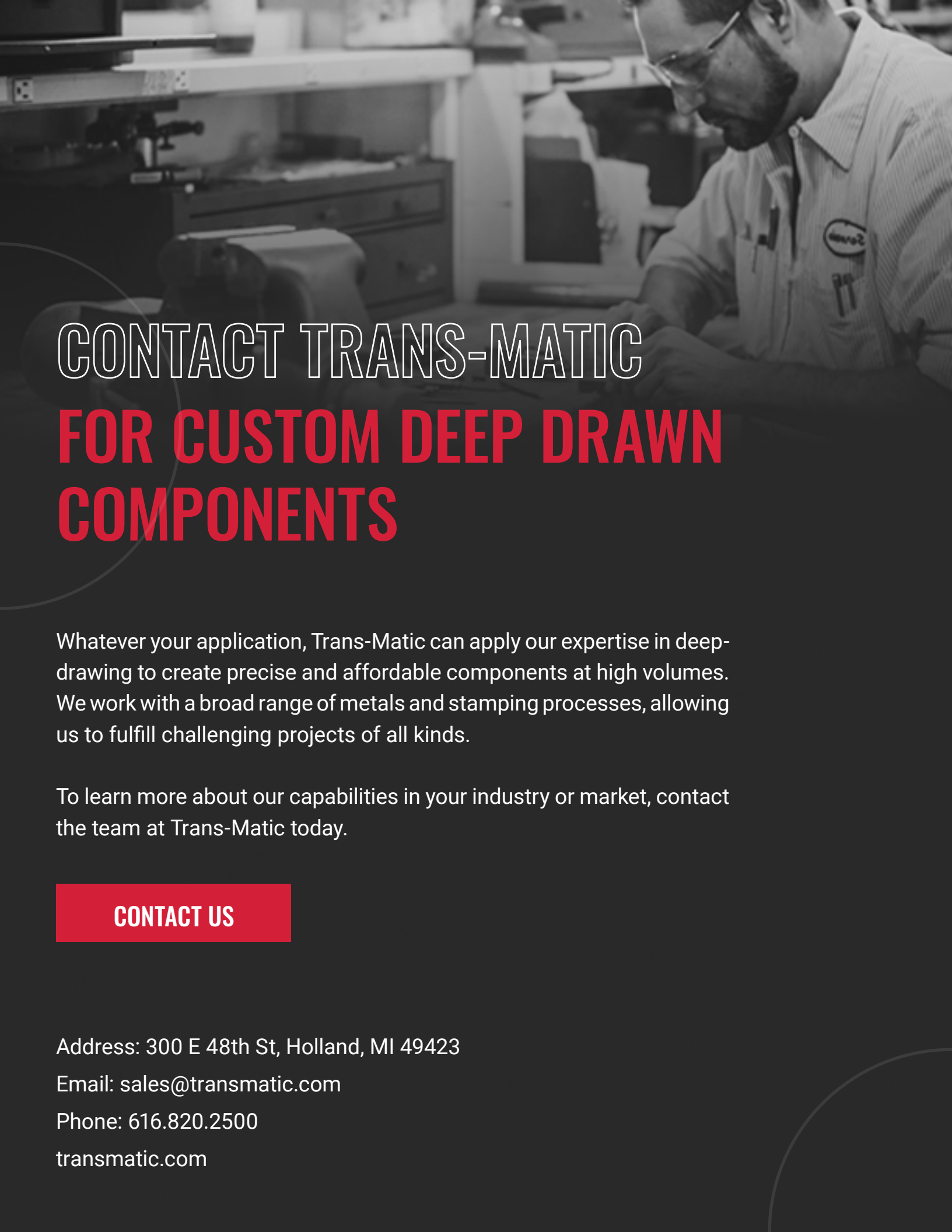
We maintain a presence at each of these locations, with fully-staffed manufacturing, tool development, and customer service departments at each. This approach allows us to better serve the needs of customers across the globe, with an emphasis on the North American, South American, and Asian markets.

Our global team of toolmakers, engineers, suppliers, and support staff is fully committed to client success. We work with each client to identify the materials, processes, and finishing treatments that best suit their applications. Then, we execute each client's individualized plan at one of our state-of-the-art facilities, all of which feature modern, high-speed presses and highly skilled staff.

We can adapt this process to meet complex client needs, leveraging in-press tooling stations to eliminate time-consuming secondary processes. The results speak for themselves. Trans-Matic parts have earned an international reputation for technical sophistication and reliable performance.

With decades of expertise in deep draw stamping, Trans-Matic develops innovative solutions for design challenges in the automotive, hardware, plumbing, and HVAC industries, among others.

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CONTACT TRANS-MATIC FOR CUSTOM DEEP DRAWN COMPONENTS

Whatever your application, Trans-Matic can apply our expertise in deep-drawing to create precise and affordable components at high volumes. We work with a broad range of metals and stamping processes, allowing us to fulfill challenging projects of all kinds.

To learn more about our capabilities in your industry or market, contact the team at Trans-Matic today.

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