



Maximizing Strength And Durability Material Sheet Metal Prototyping Services In Sheet Metal Fabrication

Our Product Introduction

Basic Information

- Place of Origin: China Shenzhen
- Brand Name: Aluminum,Copper,Brass,Steel,Stainless Steel
- Certification: SheetMetal Fabrication
- Model Number: Polishing,Anodizing,Painting,Chrome Plating, Silkscreen
- Minimum Order Quantity: 1 piece
- Price: USD 30 piece
- Packaging Details: Carton, Plywood Box
- Delivery Time: 3 - 5 Days
- Payment Terms: T/T, Paypal
- Supply Ability: 1 piece per day



Product Specification

- Material: Metal
- Lead Time: 2-4 Weeks
- Size: Customized
- Thickness: 0.5mm-10mm
- Application: Industrial
- Process: Cutting, Bending, Welding
- Surface Treatment: Powder Coating
- Type: SheetMetal Fabrication
- Highlight: **strength sheet metal fabrication , strength sheet metal prototyping services , durability sheet metal fabrication**



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Introduction of Sheet Metal Fabrication

Sheet metal fabrication is a comprehensive manufacturing process that shapes and forms sheet metal into specific parts and components. This process includes a range of techniques and procedures for cutting, bending, punching, welding, and assembling sheet metal to produce the final product. It is widely utilized in sectors like automotive, aerospace, construction, and electronics, among others. The following are some principal elements and procedures in sheet metal fabrication:

Material Selection: Sheet metal can be made from a variety of materials, including steel, aluminum, stainless steel, copper, brass, and more. The choice of material depends on factors such as desired strength, corrosion resistance, weight, cost, and specific application requirements.

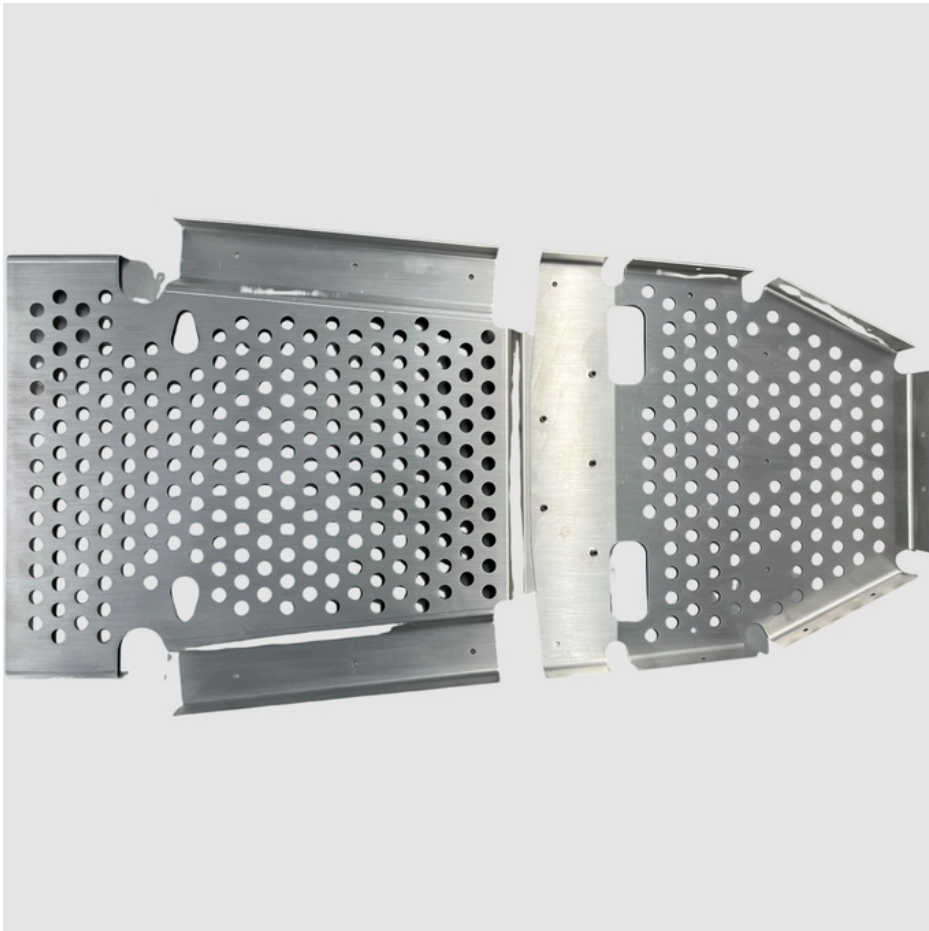




Cutting and Shearing: Sheet metal is typically cut into the desired shape and size using various methods. Common cutting techniques include laser cutting, plasma cutting, waterjet cutting, and mechanical shearing. These methods provide precise and clean cuts, ensuring accurate dimensions for subsequent forming processes.

Forming and Bending: Forming and bending are crucial processes in sheet metal fabrication to create three-dimensional shapes from flat sheets. Press brakes are commonly used to bend and shape the metal, allowing for the creation of angles, curves, flanges, and other structural features. Roll forming and stamping processes may also be employed for specific applications.

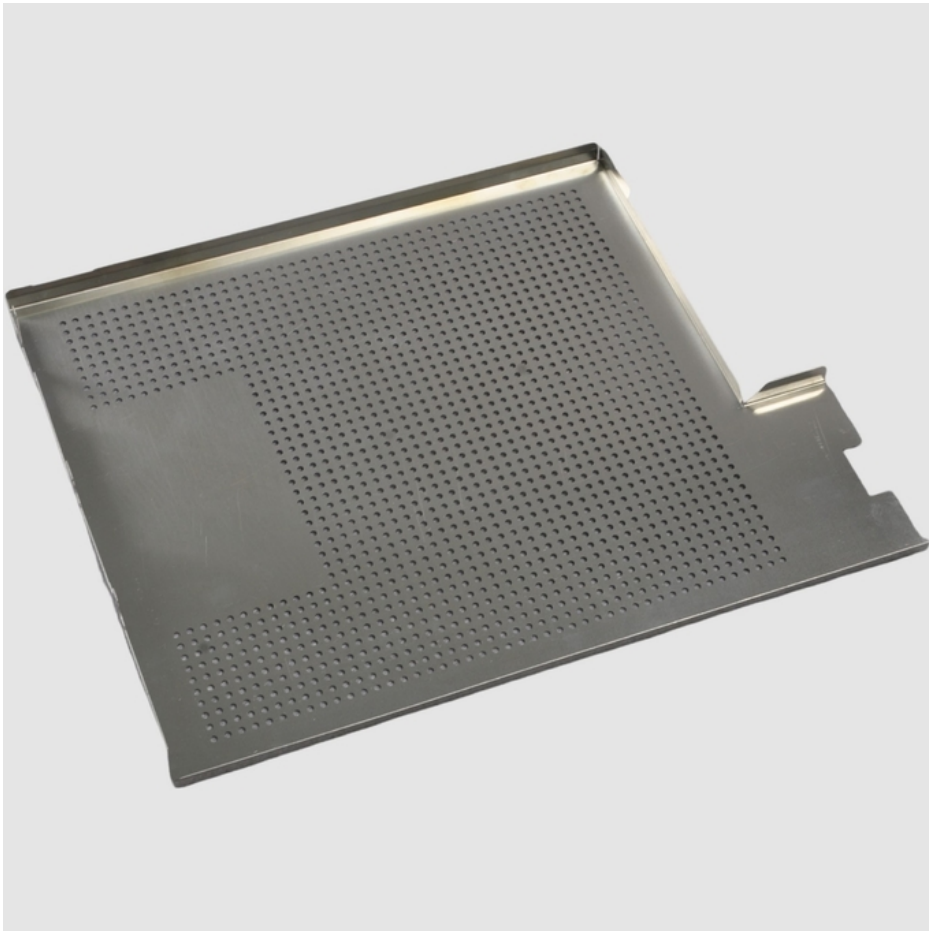
Punching and Perforating: Punching involves creating holes, slots, or other patterns in the sheet metal. Punching machines use specialized tooling to cut through the material, enabling the incorporation of fasteners, ventilation, or aesthetic features. Perforating is a similar process that creates a pattern of regularly spaced holes in the sheet metal for specific functional or decorative purposes.



Welding and Joining: Welding is employed to join multiple sheet metal components together to create a larger assembly or structure. Common welding techniques used in sheet metal fabrication include MIG (Metal Inert Gas) welding, TIG (Tungsten Inert Gas) welding, and spot welding. These methods ensure strong and durable connections between the metal parts.

Sheet Metal Fabrication Standards		
To ensure part maneuverability and precision of fabricated prototypes and parts, our custom sheet metal fabrication services are in compliance with the ISO 2768-m.		
Dimension Detail	Metric Units	Imperial Units
Edge to edge, single surface	±0.127 mm	± 0.005 in.
Edge to hole, single surface	±0.127 mm	± 0.005 in.
Hole to hole, single surface	±0.127 mm	± 0.005 in.
Bend to edge / hole, single surface	±0.254 mm	± 0.010 in.
Edge to feature, multiple surface	±0.762 mm	± 0.010 in.
Over formed part, multiple surface	±0.762 mm	± 0.030 in.
Bend angle	± 1°	
By default, sharp edges will be broken and deburred. For any critical edges that must be left sharp, please note and specify them in your drawing.		

Finishing and Surface Treatment: After the fabrication processes, sheet metal parts may undergo finishing treatments to improve their appearance and enhance their performance. Surface treatments can include cleaning, deburring, grinding, polishing, painting, powder coating, or applying protective coatings to increase resistance to corrosion or wear.





Assembly and Integration: Sheet metal components are often assembled and integrated with other parts to create a final product or system. This may involve fastening with screws, rivets, or adhesives, as well as incorporating additional components such as hinges, handles, brackets, or electrical connectors.

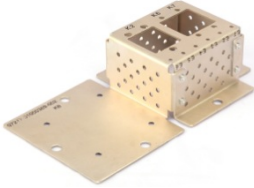
Sheet metal fabrication offers several advantages, including high strength-to-weight ratio, versatility in design, cost-effectiveness for large-scale production, and suitability for both functional and decorative applications. It enables the creation of a wide range of products, from simple brackets and enclosures to complex structural components and machinery.



That sounds like a comprehensive range of materials for your sheet metal fabrication services. Each material you mentioned has its own unique properties and advantages. Here's a brief overview of the materials you listed:

Sheet Metal Fabrication Materials		
Whatever the application and requirements of your sheet metal fabrication part, trust Barana Rapid to find the right sheet metal fabrication material. Some popular materials available for custom metal fabrication are outlined below.		
	<p>Aluminum</p> <p>Commercially, aluminum is the most sought-after material for sheet metal manufacturing. Its popularity is due to its adaptive qualities and its high thermal conductivity and low resistance rates. Compared to steel—another common sheet metal material—aluminum is more cost-effective and has a higher rate of production. The material also generates the least amount of waste and can easily be reused.</p>	<p>Features</p> <p>Info</p> <hr/> <p>Subtypes</p> <p>6061-T6, 7075-T6, 7050, 2024, 5052, 6063, etc</p> <hr/> <p>Processes</p> <p>CNC machining, injection molding, sheet metal fabrication</p> <hr/> <p>Tolerances</p> <p>With drawing: as low as ± 0.005 mm No drawing: ISO 2768 medium</p>

		<p>A p p l i c a t i o n s</p> <p>Light & economic, used from prototyping to production</p>
		<p>F i n i s h i n g O p t i o n s</p> <p>Alodine, Anodizing Types 2, 3, 3 + PTFE, ENP, Media Blasting, Nickel Plating, Powder Coating, Tumble Polishing.</p>
	<p>Copper</p> <p>Copper is a broadly used sheet metal fabrication material in many industries as it offers good malleability and ductility. Copper is also well suited for sheet metal fabrication because of its excellent heat conduction properties and electrical conductivity.</p>	<p>F e a t u r e s</p> <p>Info</p> <p>S u b t y p e s</p> <p>101,110</p> <p>P r o c e s s</p> <p>CNC machining, sheet metal fabrication</p> <p>T o l e r a n c e</p> <p>ISO 2768</p> <p>A p p i c a t i o n s</p> <p>Bus bars, gaskets, wire connectors, and other electrical applications</p> <p>F i n i s h i n g O p t i o n s</p> <p>Available as-machined,media blasted, or hand-polished</p>

	<p>Brass</p> <p>Brass has desirable properties for a number of applications. It is low friction, has excellent electrical conductivity and has a golden (brass) appearance.</p>	<p>Features Info</p> <p>Subtypes 101,110</p> <p>Processes CNC machining, sheet metal fabrication</p> <p>Tolerances ISO 2768</p> <p>Applications Bus bars, gaskets, wire connectors, and other electrical applications</p> <p>Finishing Options Available as-machined, media blasted, or hand-polished</p>
	<p>Steel</p> <p>Steel offers a number of beneficial properties for industrial applications, including rigidity, longevity, heat</p>	<p>Features Info</p> <p>Subtypes 4140, 4130, A514, 4340</p> <p>Processes CNC machining, sheet metal fabrication</p>



resistance and corrosion resistance. Steel sheet metal is ideal for producing complex designs and parts that require extreme precision. Steel is also cost-efficient to work with and has excellent polishing properties.

Tolerance
With drawing: as low as ± 0.005 mm No drawing: ISO 2768 medium

Applications
Fixtures and mounting plates; draft shafts, axles, torsion bars

Finishing Options
Black Oxide, ENP, Electropolishing, Media Blasting, Nickel Plating, Powder Coating, Tumble Polishing, Zinc Plating

Features
Info

Subtypes
303, 304L, 316L, 410, 416, 440C, etc

Processes
CNC machining, sheet metal fabrication

Tolerance
With drawing: as low as ± 0.005 mm No drawing: ISO 2768 medium



Stainless Steel
Stainless steel is the low carbon steel that contains a minimum of 10% chromium by weight. The material properties associated with stainless steel have made it a popular metal within a broad range of industries, including construction, automotive, aerospace and more. Within these industries, Stainless steel is versatile and is an effective choice for many applications.

Applications
Industrial applications, fittings, fasteners, cookware, medical devices

Finishing Options

Black Oxide, Electropolishing, ENP, Media Blasting, Nickel Plating, Passivation, Powder Coating, Tumble Polishing, Zinc Plating



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BETTER PROTOTYPE

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