Anodizing Painting CNC Parts Machining Services High And Low Volume Manufacturing

Our Product Introduction

Basic Information

- Place of Origin: China Shenzhen
- Brand Name: Aluminum, Stainless Steel, Brass, Titanium, Plastic
- Certification: Low Volume CNC Machining
- Model Number: Polishing,Anodizing,Painting,Chrome Plating, Silkscreen
- Minimum Order Quantity: 1 piece
- Price: USD 30 piece
- Packaging Details: Carton, Plywood Box
- Payment Terms: T/T, Paypal
- Supply Ability: 1 piece per day

Product Specification

- Material: Aluminum, Stainless Steel, Brass, Titanium, Plastic
- Feature: Mechanical Metal Model
- Procoess: CNC Lathe, CNC Machining
- Payment: T/T
- Express Way: DHL/FEDEX/UPS And SF Express So On
- Technology: CNC
- Color: Black Color And Can Be Customized
- Inspection: CMM Equipment
- Highlight: **anodizing cnc machining parts**, **anodizing parts machining services**, **painting cnc machining parts**

Product Description

Low Volume CNC Machining The Cost Difference Between High and Low-Volume Manufacturing

What Is Low-Volume Manufacturing?

In terms of cost, low-volume manufacturing typically has higher per-unit costs compared to high-volume manufacturing. There are several factors that contribute to this cost difference:

Economies of Scale: High-volume manufacturing benefits from economies of scale, where the cost per unit decreases as the production volume increases. With larger production quantities, fixed costs such as tooling, setup, and equipment can be spread over a greater number of units, reducing the per-unit cost. Low-volume manufacturing, on the other hand, does not benefit from the same economies of scale, resulting in higher per-unit costs.

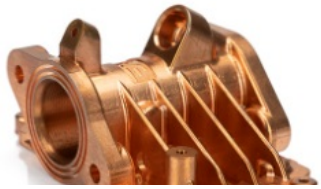
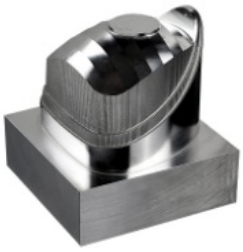
Tooling and Equipment Costs: High-volume manufacturing often involves the use of specialized tooling and equipment that may require significant upfront investment. These costs are distributed over a large production volume, reducing the cost per unit. In low-volume manufacturing, the cost of tooling and equipment is spread over a smaller quantity of units, leading to higher per-unit costs.

CNC Aluminum Machining

Tolerances

Our standard tolerances for CNC metal machining adhere to DIN-2768-1-fine, while for plastics, we follow DIN-2768-1-medium. The tolerances can significantly vary depending on the part geometry and the material used. Our project managers will collaborate closely with you throughout your project to ensure the utmost precision is achieved.

Materials for Custom CNC Machining Parts			
A wide range of materials is available for CNC machines, offering versatility for rapid prototyping and custom production of intricate parts. We offer instant quotes for over 150 metals and plastics to meet your manufacturing requirements, allowing you to compare costs across various processed materials.			
	ALuminum Aluminum is a highly ductile metal, making it easy to machining. The material has a good strength-to-weight ratio and is available in many types for a range of applications.	Aluminum	
		Machinable Material Types	AL6061-T6,AL6063-T6,AL6082 AL7075-T6,AL5052-H32
		Lead Time	3 days
		Tolerances	±0. 01mm
		Max part size	200 x 80 x 100 cm
	Copper Copper displays excellent thermal conductivity, electrical conductivity and plasticity. It is also highly ductile,	Copper	
		Wall Thickness	0. 75 mm
		Lead Time	3 days

	corrosion resistant and can be easily welded.	Tolerances	±0. 01mm
		Max part size	200 x 80 x 100 cm
	Brass Brass has desirable properties for a number of applications. It is low friction, has excellent electrical conductivity and has a golden (brass) appearance.	Brass	
		Wall Thickness	0. 75 mm
		Lead Time	3 days
		Tolerances	±0. 01mm
		Max part size	200 x 80 x 100 cm
	Stainless Steel Stainless steel is the low carbon steel that offers many properties that are sought after for industrial applications. Stainless steel typically contains a minimum of 10% chromium by weight.	Stainless Steel	
		Machinable Material Types	304 SS, 303 SS, 316 SS, SS 430F, 301 SS etc.
		Lead Time	3 days
		Tolerances	±0. 01mm
		Max part size	200 x 80 x 100 cm
	Titanium Titanium has a number of material properties that make it the ideal metal for demanding applications. These properties include excellent resistance to corrosion, chemicals and extreme temperatures. The metal also has an excellent strength-to-weight ratio.	Titanium	
		Wall Thickness	0. 75 mm
		Lead Time	3 days
		Tolerances	±0. 01mm
		Max part size	200 x 80 x 100 cm
	Plastics Plastics are also a very popular option for CNC machining because of its wide choices, relatively lower price, and significantly faster machining time needed. We provide all common plastics for CNC machining services.	Plastics	
		Machinable Material Types	Buff ABS, Black ABS, Clear ABS, 94V0 flame retarding ABS, ABS+PC, Black Polycarbonate, Transparent Polycarbonate, Acrylic, NYLON 6, NYLON 66, PA6+30%GF , HDPE, POM, PP, PP+20%GF, PE, TEFLON,PPS, PEEK, PPO, PPE, PEI
		Lead Time	3 days
		Tolerances	±0. 01mm
		Max part size	200 x 80 x 100 cm

How To Choose The Right Rapid Prototyping Technique

Material Costs: Material costs can also differ between low-volume and high-volume manufacturing. In high-volume production, manufacturers may have the advantage of bulk purchasing, negotiating better material prices, and taking advantage of long-term contracts with suppliers. These factors can help reduce material costs per unit compared to low-volume manufacturing.

Efficiency and Automation: High-volume manufacturing often involves greater automation and optimized production processes, leading to higher efficiency and reduced labor costs per unit. Low-volume manufacturing may require more manual labor, setup time, and customization, leading to higher labor costs per unit.

Metal	Aluminum 1050	AL 1050
Metal	Aluminum 1060	AL 1060
Metal	Aluminum 2024	AL 2024
Metal	Aluminum 5052-H11	AL 5052-H11
Metal	Aluminum 5083	AL 5083
Metal	Aluminum 6061	AL 6061
Metal	Aluminum 6082	AL 6082
Metal	Aluminum Bronze	AL + Br
Metal	Aluminum QC 10	AL QC 10
Metal	Brass	Cu + Zn
Metal	Copper	Cu
Metal	Copper Beryllium	Cu + Be
Metal	Copper Chrome	Cu + Cr
Metal	Magnesium	Mg
Metal	Magnesium Alloy	
Metal	Steel Stainless 303	SS303
Metal	Steel Stainless 304	SS 304
Metal	Steel Stainless 316	SS 316
Metal	Steel Stainless 410	SS 410
Metal	Steel Stainless 431	SS 431
Metal	Steel Stainless 440	SS 440
Metal	Steel Stainless 630	SS 630
Metal	Steel 1040	SS 1040
Metal	Steel 45	SS 45
Metal	Steel D2	SS D2
Metal	Titanium	Ti
Metal	Titanium Alloy	

How To Process Low-Volume Manufacturing

Success in low volume manufacturing hinges on the strategic production of small product batches, which may vary from a handful to tens of thousands. The main objective is to reduce expenses associated with tooling, labor, and materials, while not sacrificing the speed of production or the quality of the product. Achieving this balance involves optimizing processes and choosing cost-effective resources. Low volume manufacturing is ideal for specialized or custom products, as it allows for quick market introduction and design adaptability, all while cutting down on overhead costs.

In terms of raw materials, low volume manufacturing does present differences. Metals such as steel, aluminum, brass, and copper are favored for their robustness and wear resistance, whereas plastics like ABS, nylon, and polycarbonate are preferred for their lightness, versatility, and cost efficiency.

Regarding processing methods, technologies like additive manufacturing (3D printing), CNC machining, and rapid tooling are beneficial for low-volume production due to their lower costs and quicker turnaround times. Additionally, low-volume manufacturing guarantees the quality of the final product by producing high-quality parts cost-effectively, while also allowing for a high level of customization to meet specific client requirements.

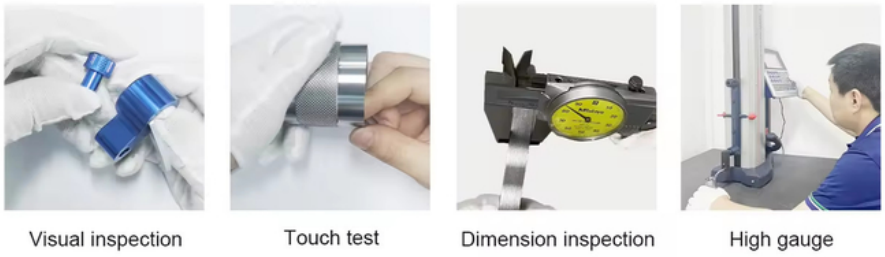
Our clients often express concern that low-volume manufacturing might compromise quality or precision in comparison to full-scale production. However, we assure you that our lower volume orders are processed with the same materials, equipment, and stringent quality control measures.
How is this achieved? We specialize in high-mix, low-volume production, with systems designed for scalability, from a single unit to millions. Our robust supply chain ensures a steady flow of raw materials, eliminating minimum order volume constraints. Additionally, our digital manufacturing platform integrates all equipment into a unified network, enabling swift and efficient resource allocation across work centers, ensuring even complex orders are processed rapidly.

CNC Machining Tolerances and Standards		
Barana Rapid offers precision CNC machining services, making it your perfect partner for creating precise machined prototypes and parts. Our standard CNC machining tolerances are ISO 2768-f for metals and ISO 2768-m for plastics. Additionally, we can meet specific tolerances provided they are clearly stated in your drawings.		
Standards	CNC Milling	CNC Turning
Maximum Part Size	2000x1500x600 mm	200x500 mm
Minimum Part Size	4x4 mm 0.1*0.4 in	2x2 mm 0.079x0.079 in
Minimum Feature Size	Φ 0. 50 mm Φ 0. 00197 in	Φ 0. 50 mm Φ 0. 00197 in
Standar Tolerances	Metals: ISO 2768-f Plastics: ISO 2768-m	Metals: ISO 2768-f Plastics: ISO 2768-m
Hole Diameters	+/- 0. 025 mm +/- 0. 001 in.	+/- 0. 025 mm +/- 0. 001 in.
Linear Dimension	+/- 0. 025 mm +/- 0. 001 in	+/- 0. 025 mm +/- 0. 001 in
Edge Condition	Sharp corner will be removed in the form of a chamfer or radius. The size of the chamfer, or resulting radii, must be indicated on the drawing.	
Shaft Diameters	+/- 0. 025 mm +/- 0. 001 in.	+/- 0. 025 mm +/- 0. 001 in.
Threads and Tapped Holes	Diameter: Φ 1. 5-5 mm, depth: 3×diameter Diameter: Φ 5 mm or more, depth: 4-6×diameter	Diameter: Φ 1. 5-5 mm, depth: 3×diameter Diameter: Φ 5 mm or more, depth: 4-6×diameter
Types of Thread	Barana Rapid can produce threads of any specification and size required by our customers.	
Text	Minimum width of 0. 5 mm, depth of 0. 1 mm	Barana Rapid can use laser marking to create standard text for CNC turned parts.
Lead Time	3 business days	3 business days

What Separates Barana Rapid’s Inspection Processes from the Rest?

Careful measurement, inspection and testing are necessary to ensure the conformance of your parts. We perform multiple inspections at every step of the product development journey, from incoming material verification to final 3D scanning. You will receive complete digital files and Certificates of Compliance so you can meet your own regulatory and performance goals.

Inspections and Review for Every Stage of Production
To ensure quality from start to finish, Star Rapid provides the following inspection and review services:
Extensive incoming materials verification
Design for manufacturing reviews for all quotes provided
Contract reviews upon receipt of POs
First article and in-process inspections
Final inspections and testing with reports and certifications as required



Visual inspection | Touch test | Dimension inspection | High gauge

2D image measuring equipment | Hardness tester | Tensile tester | Salt-spray testing machine

佰瑞纳 BETTER PROTOTYPE **Barana Rapid Technology Limited**

86 137 2889 6282 baranarm@baranarm.com cncmachining-prototype.com

RM502 Block B Floor 5th LiTong Semiconductor industrial park ShaPuWei Community SongGang Street Baoan District Shenzhen, Guangdong, China, ZipCode 518105