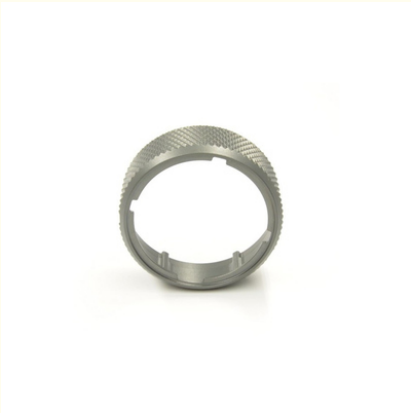
Advanced Machining Capabilities for Custom Aluminum CNC Parts for OEMs with Superior Surface Finishes and Scalable Production

Our Product Introduction

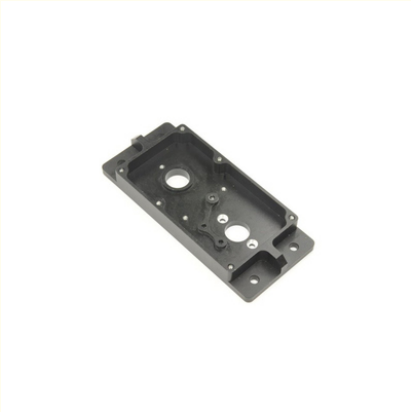
Basic Information

- Place of Origin: Shenzhen China
- Brand Name: Xianheng
- Certification: ISO9001:2015
- Model Number: AL-CNC-085
- Minimum Order Quantity: 1 pcs
- Price: USD $0.1-$1.99
- Packaging Details: Carton, As Customers'packaging requirements
- Delivery Time: Samples 7-10 days, Mass production 20-25 days
- Payment Terms: T/T, Western Union, MoneyGram
- Supply Ability: 10000 pcs per week



Product Specification

- Cnc Machining Or Not: CNC Machining
- Type: Milling, Turning, Machining
- Material Capabilities: Copper, Aluminum, Bronze, Stainless Steel, Brass
- Surface Treatment: Anodizing, Brush, Anodized, Painting/Powder Coating/Sandblast/Color Anodize/Polish/Oxidation
- Application: Machinery, Automotive, Laptop, Industrial Equipment, Engineering
- Keyword: Aluminum Enclosure Box
- Tolerance: 0.01mm, 0.05 Mm, +/-0.005, 0.003-0.05mm
- Service: Customized OEM
- Sample: Acceptable



More Images

Our Product Introduction

for more products please visit us on cnc-metalmachining.com

Product Description

What We Can Provide

Advanced Machining Capabilities for Custom Aluminum CNC Parts for OEMs with Superior Surface Finishes and Scalable Production

Description of Advanced Machining Capabilities for Custom Aluminum CNC Parts for OEMs with Superior Surface Finishes and Scalable Production

Advanced Machining Capabilities for Custom Aluminum CNC Parts for OEMs with Superior Surface Finishes and Scalable Production integrate cutting-edge CNC technology, multi-axis machining, and automated systems to deliver high-precision aluminum components tailored to OEM specifications.

Specification of Advanced Machining Capabilities for Custom Aluminum CNC Parts for OEMs with Superior Surface Finishes and Scalable Production

CNC Capacity				
CNC Machining Center	3 / 4 / 5 axis CNC Machining Centers		40+ CNC Machines	
CNC Turning	φ0.5 - φ300 * 750 mm		DIN-2768-Fine +/-0.005 mm	
CNC Machining	1270×508×635 mm(max)		DIN-2768-Fine +/-0.005 mm	
CNC Stamping	1000 * 1000 mm(max)		DIN-2768-Fine +/-0.005 mm	
Drawing Format	IGS,STP,X_T ,DXF,DWG , Pro/E, PDF			
Inspection Equipments	Measurement Instrument, Projector, CMM, Altimeter, Micrometer, Thread Gages, Calipers, Pin Gauge etc.			
Material Available				
Stainless Steel	SS201,SS301, SS303, SS304, SS316, SS416, 17-4PH, etc.			
Steel	Mild steel, Carbon Steel, 4140, 4340, Q235, Q345B, 20#, 45# etc.			
Brass	HPb63, HPb62, HPb61, HPb59, H59, H68, H80, H90 etc.			
Copper	C11000,C12000,C12000 C36000 etc.			
Aluminum	AL6061, Al6063, AL6082, AL7075, AL5052, A380 etc.			
Iron	A36, 45#, 1213, 12L14, 1215 etc.			
Plastic	ABS, PC, PE, POM, Delrin, Nylon, Teflon, PP,PEI, Peek etc.			
Surface Finishing				
Aluminum Parts	**Stainless Steel Parts**	**Steel Parts**	**Copper /Brass**	**Plastic Parts**
Clear Anodized	Polishing	Zinc plating	Polishing	Painting
Color Anodized	Passivating	Oxide black	Passivation	Chrome plating
Sandblast Anodized	Sandblasting	Nickel plating	Galvanized	polishing
Chemical Film	Laser engraving	Chrome plating	Nickel Plating	Sandblast
Brushing		Carburized	Chrome plating	Laser engraving
Polishing		Heat treatment		
Chroming		Powder Coated		

Application Of Advanced Machining Capabilities for Custom Aluminum CNC Parts for OEMs with Superior Surface Finishes and Scalable Production

1. Auto Components Hardware Parts Auto Parts
2. Communication Equipment
3. Industrial Equipment
4. Medical EquipmentsMechanical Parts
5. Ship Accessories
6. Electrical Equipment
7. Mechanical Equipment

Feature Of Advanced Machining Capabilities for Custom Aluminum CNC Parts for OEMs with Superior Surface Finishes and Scalable Production

1. Good corrosion resistance
2. High strength and hardness
3. High thermal conductivity
4. Good finishing characteristics

Why Choose Us

Our advantages

1. Multi-Axis Machining for Complex Geometries
Advanced 5-axis CNC milling enables the production of intricate shapes with undercuts, deep pockets, and contoured surfaces that are impossible with traditional 3-axis machines. For example, a custom aluminum housing for aerospace sensors can incorporate embedded cooling channels and precision-aligned mounting holes in a single setup, reducing assembly errors and improving thermal management. This capability supports OEMs in developing lightweight, high-performance components for industries like robotics and medical devices, where space constraints and functional integration are critical.

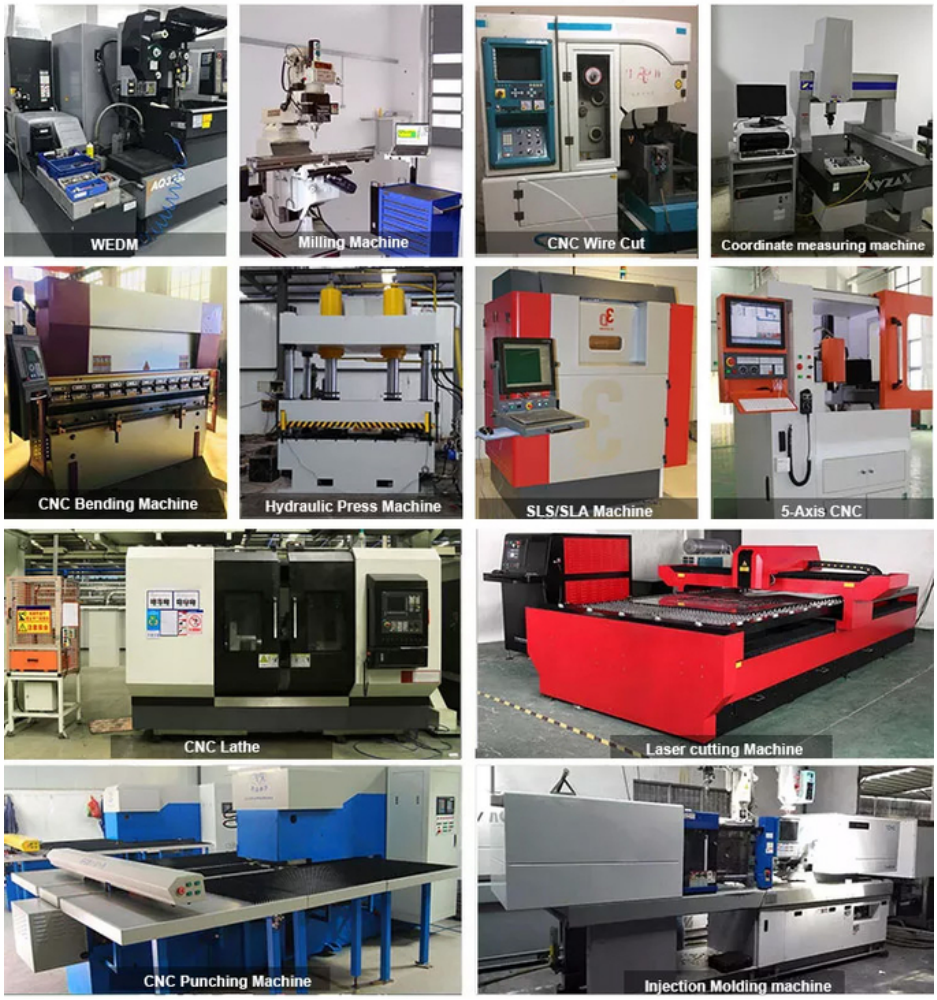
2. Automated Scalability from Prototyping to Mass Production
Flexible manufacturing systems (FMS) equipped with robotic loading, automatic tool changers, and real-time quality monitoring allow seamless transitions between low-volume prototyping (1–50 units) and high-volume production (10,000+ units). For instance, an OEM launching a new electric vehicle (EV) battery enclosure can test 10 prototypes with ±0.002 mm tolerances in 2 weeks, then scale to 5,000 units/month with consistent surface finishes (Ra ≤ 0.8 μm) and 99.9% first-pass yield rates. This reduces lead times by up to 60% compared to traditional batch processing.

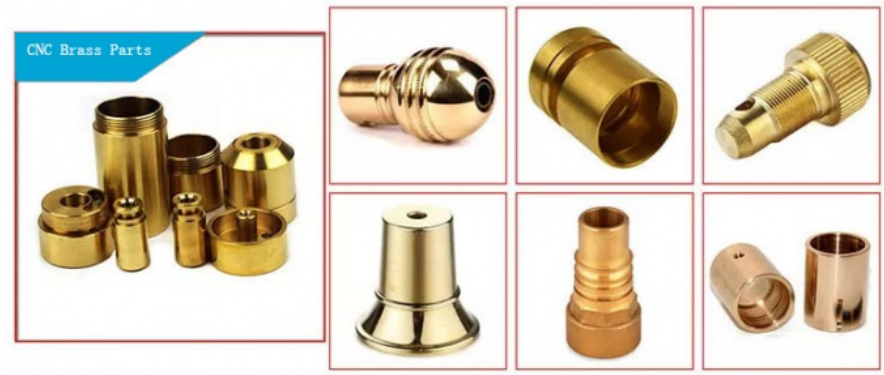
3. Precision Surface Finishing for Functional and Aesthetic Requirements
Advanced CNC machines paired with diamond-coated tools and in-process error-proofing achieve mirror-like surface finishes (Ra ≤ 0.4 μm) without secondary polishing. For medical implants, such as titanium-aluminum alloy knee joints, this eliminates microbial adhesion risks while meeting FDA biocompatibility standards. In consumer electronics, aluminum CNC parts for smartphones achieve brushed or anodized finishes directly from the machine, reducing post-processing costs by 30–50%.

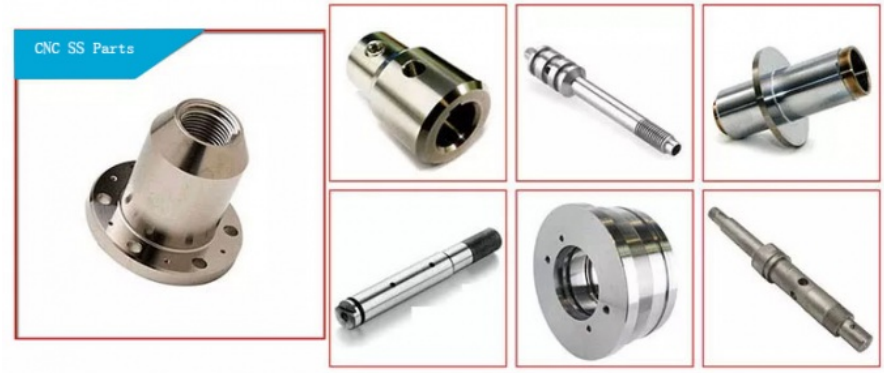
4. Material-Specific Optimization for Cost and Performance
By selecting aluminum alloys like 6061-T6 (high strength) or 6063-T5 (excellent machinability), OEMs can balance weight, durability, and cost. For example, a drone manufacturer using 6063-T5 for frame components reduces material waste by 40% via near-net-shape machining, while achieving a 30% weight reduction compared to steel. Additionally, aluminum's 100% recyclability aligns with sustainability goals, with recycled aluminum requiring 95% less energy to produce than virgin material.

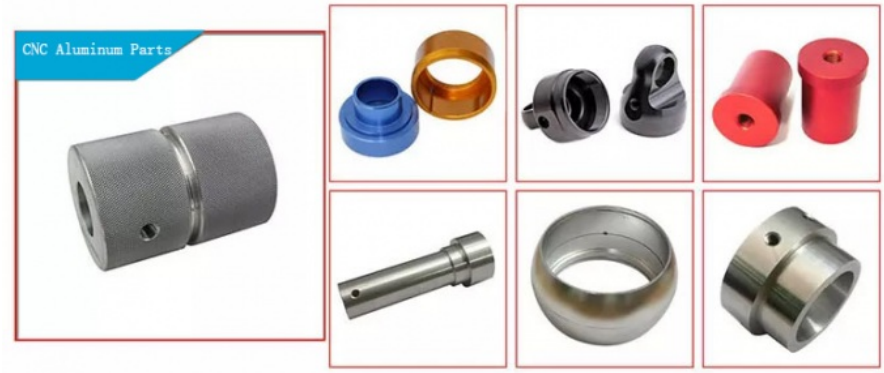
Factory Show

Factory Equipment









FAQ

Q: How can I customize my products ?
A: Please describe your project. Include the following information so that we can provide an accurate quote: Part Name, 3D CAD Drawing, Quantity, Material, Color, Finishing.

Q: How can I know my products going on ?
A: We will offer a detailed production schedule and send weekly reports with digital pictures and videos which show the production process.

Q: Can You sign a confidentiality greement ?
A: We can sign a confidentiality agreement according to your needs.

Q: What is your terms of payment ?
A: 30% in advance ,70% balance before shipment. Other terms negotiable.

Q: Are you a trading company or factory?
A: We are direct factory with 20 experienced engineers and more than 80 employees as well approximate 3,000 square meters workshop area.

Q: What shall we do if we do not have drawings?
A: Please send your sample to our factory,then we can copy or provide you better solutions. Please send us pictures or drafts with dimensions(Length, Height, Width), CAD or 3D file will be made for you if placed order.

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