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

Our Product Introduction

Basic Information

- Place of Origin: Shenzhen China
- Brand Name: Xianheng
- Certification: ISO9001:2015
- Model Number: AL-CNC-086
- 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

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

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

For OEMs requiring high-precision aluminum components with exceptional surface finishes and scalable production capabilities, advanced CNC machining offers a transformative solution. By leveraging cutting-edge technology, these parts achieve superior aesthetics, functionality, and cost-efficiency across industries such as aerospace, automotive, medical devices, and consumer electronics.

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

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

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

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

Why Choose Us

Our advantages

1. Ultra-High Precision and Surface Finish Quality
Advanced CNC machining enables tolerances as tight as ±0.001mm, ensuring parts meet exacting specifications. The use of multi-axis milling and turning centers allows for complex geometries with minimal tool marks, while diamond-coated cutting tools and high-speed machining (HSM) reduce surface roughness to Ra < 0.2μm.
Surface Treatment Compatibility: Parts can be finished with anodizing (hard or decorative), electroless nickel plating, or PVD coatings without compromising dimensional accuracy, enhancing corrosion resistance and aesthetic appeal.
Example: Aerospace components requiring tight mating surfaces benefit from CNC's ability to maintain flatness and parallelism within microns.

2. Scalable Production with Minimal Setup Time
Modern CNC systems integrate automated tool changers, pallet changers, and robotic loading, enabling 24/7 unmanned operation and reducing cycle times by up to 50%.
Flexible Batch Sizes: From prototyping to mass production (1–100,000+ units), CNC machining adapts seamlessly via program adjustments, eliminating the need for costly hard tooling.
Case Study: A medical device OEM reduced lead times by 70% by switching to CNC from traditional die-casting for aluminum housing components, achieving 99.8% first-pass yield.

3. Complex Geometries and Lightweighting Capabilities
CNC excels at machining intricate internal features, thin walls (<0.5mm), and lightweight lattice structures that are impossible with casting or forging.
Material Efficiency: 5-axis machining minimizes waste by optimizing tool paths, reducing material costs by up to 30% compared to subtractive methods.
Industry Impact: Automotive OEMs leverage CNC to produce aluminum engine blocks with integrated cooling channels, improving thermal efficiency while reducing weight by 40% vs. iron counterparts.

4. Cost-Effective Customization and Rapid Iteration
Digital workflows (CAD/CAM integration) allow on-the-fly design modifications without retooling, accelerating product development cycles.
Economies of Scale: While unit costs for low-volume CNC parts are higher than injection molding, they decrease linearly with volume, making it viable for mid-batch production (1,000–50,000 units).
Data-Driven Optimization: Advanced CNC controllers use real-time force feedback to adjust cutting parameters, extending tool life by 200% and lowering per-part costs.

Factory Show

Factory Equipment


WEDM


Milling Machine


CNC Wire Cut

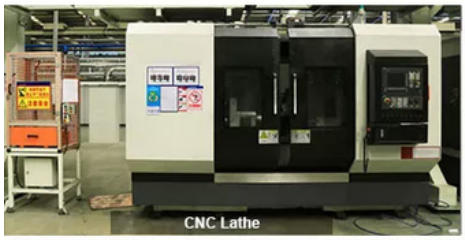

Coordinate measuring machine


CNC Bending Machine


Hydraulic Press Machine


SLS/SLA Machine


5-Axis CNC


CNC Lathe


Laser cutting Machine


CNC Punching Machine


Injection Molding machine

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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