Superior Surface Finishes and Scalable Production for Custom Aluminum CNC Parts for OEMs with High Precision Machining

Our Product Introduction

Basic Information

- Place of Origin: Shenzhen China
- Brand Name: Xianheng
- Certification: ISO9001:2015
- Model Number: AL-CNC-084
- 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

Superior Surface Finishes and Scalable Production for Custom Aluminum CNC Parts for OEMs with High Precision Machining

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

Superior Surface Finishes and Scalable Production for Custom Aluminum CNC Parts for OEMs with High Precision Machining combine advanced machining capabilities with flexible manufacturing systems to deliver high-quality, custom-engineered aluminum components tailored to OEM requirements.

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

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 Superior Surface Finishes and Scalable Production for Custom Aluminum CNC Parts for OEMs with High Precision Machining

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 Superior Surface Finishes and Scalable Production for Custom Aluminum CNC Parts for OEMs with High Precision Machining

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

Why Choose Us

Our advantages

1. Exceptional Surface Quality Meeting Industrial Standards
High-precision CNC machining ensures aluminum parts achieve smooth, defect-free surfaces with tolerances as tight as ±0.001 mm. Advanced cutting tools and multi-axis milling/turning processes eliminate burrs, scratches, and tool marks, reducing post-machining finishing needs. This is critical for applications like aerospace, automotive, and medical devices, where surface integrity directly impacts performance and durability. For example, aluminum CNC parts for optical systems require mirror-like finishes to minimize light reflection errors, achievable only through ultra-precise machining.

2. Scalable Production Without Compromising Quality
Flexible manufacturing systems enable seamless transitions from low-volume prototyping (1–100 units) to high-volume production (1,000+ units). Automated tool changers, robotic loading, and real-time quality monitoring ensure consistent part geometry and surface finish across batches. For OEMs, this means reduced lead times (e.g., 2-week delivery for 500 parts vs. 6 weeks with traditional methods) and lower per-unit costs due to economies of scale. Scalability also supports just-in-time (JIT) inventory models, minimizing storage costs and waste.

3. Material Efficiency and Cost Optimization
Aluminum's low density (2.7 g/cm³) and high strength-to-weight ratio make it ideal for lightweighting applications. CNC machining achieves near-net-shape parts, reducing material waste by up to 70% compared to casting or forging. Additionally, aluminum's recyclability (over 75% of all aluminum ever produced is still in use) aligns with OEM sustainability goals. For example, a custom CNC aluminum bracket for electric vehicles (EVs) can weigh 40% less than a steel equivalent while maintaining structural integrity, directly improving battery efficiency and range.

4. Customization Flexibility for Complex Designs
High-precision CNC machines can produce intricate geometries (e.g., thin walls, deep pockets, undercuts) that are impossible with traditional methods. This enables OEMs to innovate without design constraints. For instance, a custom aluminum heat sink for 5G infrastructure can incorporate micro-finned structures to maximize thermal dissipation, while a CNC-machined aluminum housing for robotics can integrate embedded cooling channels and wire routing slots in a single piece. Such designs reduce assembly complexity and improve product reliability.

Factory Show

Factory Equipment


WEDM


Milling Machine


CNC Wire Cut

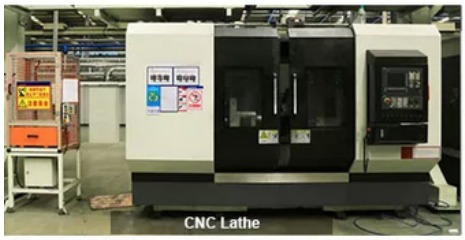

Coordinate measuring machine


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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