Custom CNC Metal Machining Parts Advanced Multi-Axis Machining Centers with Real-Time Monitoring and Performance Optimization

Our Product Introduction

Basic Information

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

- Application: Automotive, Aerospace, Medical, Etc.
- Drawing Format: CAD, PDF, JPG, Etc.
- Inspection: 100% Inspection Before Shipment
- Lead Time: 7-15 Days
- MOQ: 1 Piece
- Material: Metal
- Package: Carton Box, Wooden Box, Etc.
- Payment Term: T/T, L/C, PayPal, Etc.
- Process: CNC Machining
- Size: Customized
- Surface Treatment: Polishing, Sandblasting, Anodizing, Etc.
- Tolerance: ±0.005mm
- Transport: By Air, By Sea, By Express, Etc.

More Images

Our Product Introduction

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

Product Description

What We Can Provide

Custom CNC Metal Machining Parts Advanced Multi-Axis Machining Centers with Real-Time Monitoring and Performance Optimization

Description Of Custom CNC Metal Machining Parts Advanced Multi-Axis Machining Centers with Real-Time Monitoring and Performance Optimization

Advanced multi-axis machining centers represent the forefront of precision CNC metal machining, integrating multi-axis motion control (4-axis, 5-axis, or more), real-time monitoring systems, and AI-driven performance optimization to produce complex metal components with unparalleled accuracy, efficiency, and reliability. These systems are designed to handle the most demanding applications in aerospace, medical, automotive, and industrial sectors, where tight tolerances, intricate geometries, and high-speed production are critical.

Material Of Custom CNC Metal Machining Parts Advanced Multi-Axis Machining Centers with Real-Time Monitoring and Performance Optimization

Processing	CNC Turning, CNC Milling, Laser Cutting, Bending, Spinning, Wire Cutting, Stamping, Electric Discharge Machining (EDM), Injection Molding
Materials	Aluminum: 2000 series, 6000 series, 7075, 5052, etc.
	Stainless steel: SUS303, SUS304, SS316, SS316L, 17-4PH, etc.
	Steel: 1214L/1215/1045/4140/SCM440/40CrMo, etc.
	Brass: 260, C360, H59, H60, H62, H63, H65, H68, H70, Bronze, Copper
	Titanium: Grade F1-F5
	Plastic: Acetal/POM/PA/Nylon/PC/PMMA/PVC/PU/Acrylic/ABS/PTFE/PEEK etc.
Surface Treatment	Anodized, Bead Blasted, Silk Screen, PVD Plating, Zinc/Nickel/Chrome/Titanium Plating, Brushing, Painting, Powder Coated, Passivation, Electrophoresis, Electro Polishing, Knurl, Laser/Etch/Engrave etc.
Tolerance	±0.002 ~ ±0.005mm
Surface Roughness	Min Ra 0.1~3.2

Application Of Custom CNC Metal Machining Parts Advanced Multi-Axis Machining Centers with Real-Time Monitoring and Performance Optimization

1. Computers and Laptops: Skived heatsinks are widely used in computer processors, graphics cards, and other internal components to dissipate heat generated during intense computing tasks. They help prevent overheating and maintain optimal performance.

2. LED Lighting: LED lights generate heat, and efficient cooling is essential to maintain their longevity and brightness. Skived heatsinks are used in various LED lighting applications, including residential, commercial, and automotive lighting systems.

3. Audio Amplifiers: High-power audio amplifiers generate significant heat during operation. Skived heatsinks are employed to cool down the amplifier circuitry, ensuring stable performance and minimizing distortion.

Features Of Custom CNC Metal Machining Parts Advanced Multi-Axis Machining Centers with Real-Time Monitoring and Performance Optimization

1. Efficient Heat Dissipation: Aluminum is a highly efficient conductor of heat, and skived heatsinks are designed to maximize the surface area for heat dissipation. The skived fin structure enhances the heatsink's ability to transfer heat away from the electronic components.

2. Thin and Lightweight: Skived heatsinks are manufactured using a precision machining process that allows for the creation of thin and lightweight fins. This design makes them suitable for applications where space and weight are critical considerations.

3. Customizable Fin Geometry: The skiving process allows for the creation of intricate and customizable fin geometries, which can be tailored to specific thermal requirements and airflow conditions. This flexibility ensures optimal performance for various applications.

Why Choose Us

Advantages

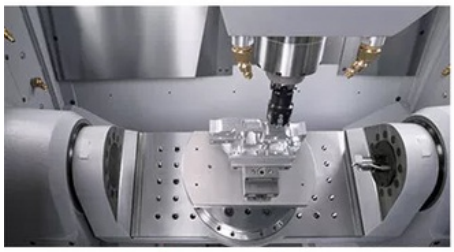
1. Unmatched Precision for Complex Geometries
Why it matters: Traditional 3-axis machines struggle with undercuts, deep cavities, and compound angles, requiring multiple

setups and increasing error risks.
How it works: Multi-axis systems rotate the workpiece or tool, enabling single-setup machining of complex parts with micron-level accuracy.
Example: A 5-axis machine can mill a turbine blade's twisted profile in one pass, avoiding errors from repositioning.
Outcome: Tighter tolerances (±0.005 mm) and zero-defect assembly for high-performance components.

2. Real-Time Monitoring Reduces Downtime & Waste
Why it matters: Unplanned downtime due to tool failure or thermal drift can cost thousands per hour.
How it works: Sensors detect excessive vibration, tool wear, or spindle overload, triggering alerts or automatic adjustments.
Example: A vibration sensor identifies chatter during high-speed milling, prompting an automatic feed rate reduction to prevent tool breakage.
Outcome: 30–50% reduction in scrap rates and 20–40% longer tool life, lowering per-part costs.

3. Faster Cycle Times & Higher Throughput
Why it matters: High-volume production demands minimal setup time and maximum spindle uptime.
How it works: High-speed machining (HSM) and optimized tool paths slash cycle times by 50–70% compared to 3-axis systems.
Example: A 5-axis machine can rough and finish a mold cavity in 4 hours, vs. 12 hours on a 3-axis system.
Outcome: Higher productivity and faster delivery for time-sensitive projects.

4. Cost Savings Through Automation & Flexibility
Why it matters: Labor costs and material waste are major drivers of manufacturing expenses.
How it works: Automated tool changing, pallet systems, and real-time monitoring minimize manual intervention and rework.
Example: A multi-axis center with a 120-tool magazine can run unattended for 24+ hours, reducing labor costs by 40%.
Outcome: Lower per-part costs and improved ROI for high-value components.



High Precision

5-Axis CNC & Imported machines with accuracy ±0.02-0.10mm

Fast Lead Time

Multipe CNC machines, skillful workers, guarantee fast lead time

Strictly Confidential

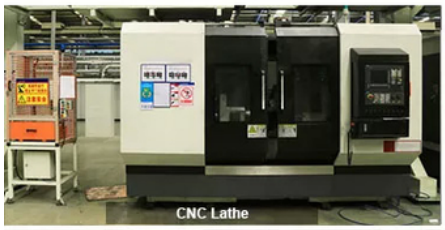
We will protect the customers'design and the customer can request a confidentiality agreement

Quality Inspection

We have a strict quality inspection process to ensure the quality of our products

Factory Show

Factory Equipment



FAQ

Q1: Where can I get product & price information?
A1:Send us inquiry e-mail, we will contact you as we receive your mail.

Q2: How long can I get the sample?
A2:Depends on your specific items, within 3-7 days is required generally.

Q3: What kinds of information you need for quote?
A3:Kindly please provide the product drawing in PDF, and will be better you can provide in STEP or IGS.

Q4: What are the payment terms?
A4: We accept 50% as payment deposit, when the goods is done, we take photos for your check and you then pay the balance.

Q5: Are you a trading company or factory?
A5:We are direct factory with 10 experienced engineers and more than 650 employees as well approximate 2,000 square ft. workshop area.

Q6: What shall we do if we do not have drawings?
A6: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, Hight, Width), CAD or 3D file will be made for you if placed order.

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