Custom CNC Metal Machining Parts with Advanced Multi-Axis Motion Control and Real-Time Monitoring for High-Speed Production

Our Product Introduction

Basic Information

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

- 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 with Advanced Multi-Axis Motion Control and Real-Time Monitoring for High-Speed Production

Description Of Custom CNC Metal Machining Parts with Advanced Multi-Axis Motion Control and Real-Time Monitoring for High-Speed Production

Custom CNC Metal Machining Parts with Advanced Multi-Axis Motion Control and Real-Time Monitoring for High-Speed Production leverage cutting-edge multi-axis machining centers (e.g., 4-axis, 5-axis, or 9-axis systems) integrated with real-time monitoring and AI-driven performance optimization. These systems enable simultaneous cutting from multiple angles, eliminating the need for repositioning workpieces and reducing setup times by up to 70% compared to conventional methods. For example, a complex automotive transmission housing with internal channels and external flanges can be fully machined in a single cycle, slashing lead times from weeks to days. Real-time monitoring minimizes downtime by predicting tool failures before they occur, avoiding costly machine stops and rework.

Material Of Custom CNC Metal Machining Parts with Advanced Multi-Axis Motion Control and Real-Time Monitoring for High-Speed Production

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 with Advanced Multi-Axis Motion Control and Real-Time Monitoring for High-Speed Production

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 with Advanced Multi-Axis Motion Control and Real-Time Monitoring for High-Speed Production

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

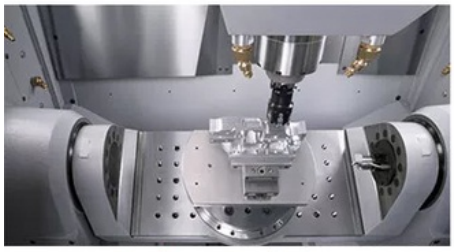
Advantages

Unparalleled Precision and Complexity
Multi-axis motion control allows cutting tools to approach workpieces from virtually any angle, enabling the production of intricate geometries with tight tolerances (e.g., ±0.002–±0.005 mm). This capability is critical for aerospace, medical, and automotive components where dimensional accuracy is non-negotiable.

Dramatically Reduced Production Time
By eliminating manual repositioning and reducing setup times, multi-axis systems accelerate high-speed production. For instance, 5-axis CNC lathes can machine slender shaft parts or complex rotating bodies in a single operation, enhancing overall efficiency. Real-time monitoring further optimizes cycle times by adjusting parameters dynamically.

Enhanced Cost Efficiency
The automation inherent in multi-axis CNC machining reduces labor costs and material waste. High-speed machining techniques, coupled with AI-driven analytics, minimize energy consumption and tool wear, lowering operational expenses. Additionally, the ability to produce small batches cost-effectively makes prototyping and low-volume production more economical.

Superior Quality Control and Reliability
Real-time monitoring systems track critical metrics like spindle speed, feed rate, and tool temperature, ensuring consistent quality across batches. IoT-enabled sensors and closed-loop feedback controls detect deviations instantly, enabling immediate corrections. This level of oversight is invaluable for industries demanding zero-defect performance, such as medical implants or aerospace 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

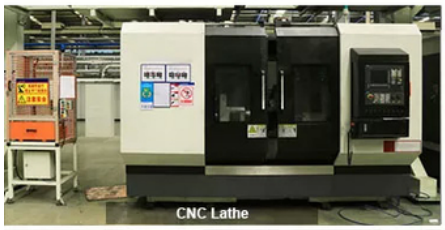
We will protect the customers'design and the customer can request a confidentiality agreement

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.

Shenzhen Xianheng Technology Co.,Ltd

0086-13682614486 shawn@xianheng-tech.com cnc-metalmachining.com

Room 8-1409, Xingji jiayuan building 8-9#, HongXing community, Songgang street, Bao'an District, Shenzhen City China