



Precision CNC Metal Machining Parts with Tight Tolerances and Fast Lead Times in Various Materials

Our Product Introduction

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

Basic Information

- Place of Origin: Shenzhen China
- Brand Name: Xianheng
- Certification: ISO9001:2015
- Model Number: CNC-XG-082
- 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: $\pm 0.005\text{mm}$
- Transport: By Air, By Sea, By Express, Etc.



More Images



Product Description

What We Can Provide

Precision CNC Metal Machining Parts with Tight Tolerances and Fast Lead Times in Various Materials

Description Of Precision CNC Metal Machining Parts with Tight Tolerances and Fast Lead Times in Various Materials

Precision CNC metal machining is a manufacturing process that leverages computer-controlled machinery to produce metal components with extreme accuracy, tight dimensional tolerances, and rapid production cycles. This technology enables the fabrication of parts from diverse materials—including aluminum alloys (e.g., 6061, 7075), stainless steel, titanium, brass, and engineering plastics—while adhering to tolerances as stringent as ± 0.00025 inches (± 0.006 mm) for ultra-high-precision applications, or standard tolerances of ± 0.005 inches (± 0.127 mm) for general-purpose parts. By integrating advanced multi-axis machining centers, high-speed cutting tools, and real-time quality monitoring systems, manufacturers can deliver complex geometries, intricate features, and consistent quality across prototypes to high-volume production runs, often within 3–5 business days for standard orders.

Material Of Precision CNC Metal Machining Parts with Tight Tolerances and Fast Lead Times in Various Materials

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	$\pm 0.002 \sim \pm 0.005$ mm		
Surface Roughness	Min Ra 0.1~3.2		

Application Of Precision CNC Metal Machining Parts with Tight Tolerances and Fast Lead Times in Various Materials

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 Precision CNC Metal Machining Parts with Tight Tolerances and Fast Lead Times in Various Materials

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

Unmatched Precision and Tight Tolerances

CNC machines eliminate human error through automated toolpaths and closed-loop feedback systems, ensuring parts meet exact specifications. For example, aerospace components like turbine blades or medical implants (e.g., orthopedic screws) require tolerances as tight as ± 0.0005 inches to function reliably under extreme conditions. This level of accuracy reduces

assembly errors, enhances product performance, and minimizes waste from rework or scrap.

Material Versatility and Adaptability

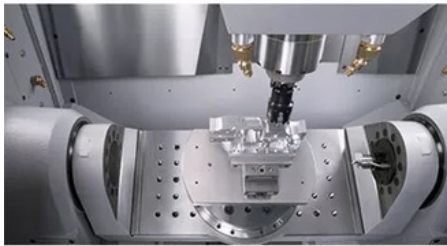
CNC machining supports a wide range of materials, from soft metals like aluminum (ideal for lightweight automotive parts) to hardened tool steels (used in industrial machinery). It also accommodates engineering plastics (e.g., PEEK, Delrin) and composites, enabling cross-industry solutions. For instance, a single CNC setup can switch between machining titanium for aerospace brackets and nylon for consumer electronics enclosures, streamlining production flexibility.

High-Speed Production with Rapid Lead Times

Unlike traditional methods, CNC machining operates 24/7 with minimal downtime. Once programmed, a 5-axis mill can produce complex parts like impellers or molds in hours, compared to days for manual machining. Automated tool changers and pallet systems further accelerate throughput, making it feasible to deliver 10,000+ precision parts per week while maintaining consistency. This efficiency is critical for industries like automotive (e.g., rapid prototyping of engine components) or electronics (e.g., mass production of heat sinks).

Cost-Effectiveness Through Scalability and Repeatability

While initial setup costs for CNC programming and tooling may be higher, the per-unit cost drops significantly in high-volume production due to reduced labor and error rates. For example, a medical device manufacturer using CNC machining for surgical instruments can achieve 99.9% part consistency across 50,000 units, avoiding costly recalls or quality disputes. Additionally, CNC's repeatability ensures that replacement parts (e.g., hydraulic fittings) match original specifications perfectly, extending product lifespans.



High Precision

**5-Axis CNC & Imported machines
with accuracy $\pm 0.02-0.10\text{mm}$**



Fast Lead Time

**Multiple 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 Equipment



WEDM



Milling Machine



CNC Wire Cut



Coordinate measuring machine



CNC Bending Machine



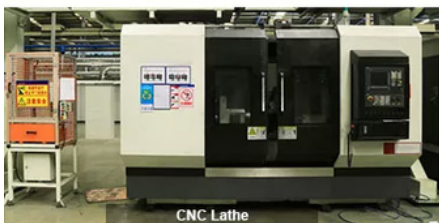
Hydraulic Press Machine



SLS/SLA Machine



5-Axis CNC



CNC Lathe



Laser cutting Machine



CNC Punching Machine



Injection Molding machine

FAQ

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, Height, Width), CAD or 3D file will be made for you if placed order.



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