



Customized Metal Frame Parts for Aerospace Defense Automotive and Industrial Machinery in High-Stakes Applications

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: MFA-XG-078
- 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: 50000 pcs per week



Product Specification

- Supply Type: OEM Service
- Material Capabilities: Stainless Steel, Brass, Aluminum, Steel
- Process: Bending, Laser Cutting, Welding, Stamping
- Application: Auto, motorcycle, industry, agriculture, furniture, etc.
- Packing Details: Carton, Wooden Case, Plastic Cargo
- Color: Black, Silver, Customized Color
- Place Of Origin: China



More Images



Product Description

What We Can Provide

Customized Metal Frame Parts for Aerospace Defense Automotive and Industrial Machinery in High-Stakes Applications

Description Of Customized Metal Frame Parts for Aerospace Defense Automotive and Industrial Machinery in High-Stakes Applications

Customized metal frame parts are precision-engineered components designed to meet the stringent demands of high-stakes industries such as aerospace, defense, automotive, and industrial machinery. These parts serve as structural foundations in critical applications, including aircraft and spacecraft frames, military vehicle chassis, automotive engine mounts, and heavy-duty machinery supports. Their design and manufacturing processes prioritize material selection, geometric accuracy, and surface finish to ensure reliability under extreme conditions.

Material Of Customized Metal Frame Parts for Aerospace Defense Automotive and Industrial Machinery in High-Stakes Applications

Production Capability Secondary Operations

Surface Operations	<ul style="list-style-type: none"> * Deburring work by machines, then by hands; * As long as you need no scratches on the products, we can use the film protected material for products during production; * Remove sharps of the products; * Ultrasonic cleaning after production.
Surface Treatments	Powder Coating, Polishing, Brushing, PVD Plating, PVC Coating, Ceramic Coating, Chrome Plating, Nickel Plating, Tin Plating, Copper Plating, Silver Plating, Sandblasting, Anodizing, Dacromet, Baking Varnish, Electrophoresis Coating, Zinc Plating, Hot Dip Galvanizing.
LOGO Printing	Laser Engraving, Silk-screening etc
Assembly Service	Yolanda provide products assembly service after each component production.
Custom Packaging	<ul style="list-style-type: none"> * Design packaging according to your products; * Make the packagings according to your requests; * Print your LOGO on the packaging as long as you need; * Other request according to your need.

Quality Control

1. Checking the raw material after they reach our factory----- Incoming quality control (IQC)
2. Checking the details before the production line operated
3. Have full inspection and routing inspection during mass production---In process quality control(IPQC)
4. Checking the goods after they are finished---- Final quality control(FQC)
5. Checking the goods after they are finished-----Outgoing quality control(OQC)

Why Choose Us

Advantages

High Precision and Tolerance Control

Customized metal frame parts are manufactured using advanced CNC machining, laser cutting, and 3D printing technologies, enabling micron-level accuracy. For example, aerospace components like satellite brackets require tolerances as tight as ± 0.005 mm to ensure proper alignment in zero-gravity environments. This precision minimizes assembly errors and enhances overall system performance.

Material Optimization for Extreme Conditions

These parts are tailored for specialized materials such as titanium alloys (e.g., Ti-6Al-4V), high-strength aluminum (e.g., 7075-T6), and nickel-based superalloys (e.g., Inconel 718). These materials offer exceptional strength-to-weight ratios, corrosion resistance, and thermal stability. For instance, titanium alloys used in fighter jet landing gear can withstand temperatures exceeding 600°C while maintaining structural integrity.

Lightweight Design for Enhanced Efficiency

By leveraging topology optimization and additive manufacturing, customized metal frames achieve significant weight reduction

without compromising strength. In the automotive sector, lightweight aluminum frames in electric vehicles (EVs) reduce battery consumption by up to 15%, extending driving range. Similarly, aerospace applications benefit from a 20–30% weight savings compared to traditional steel components, lowering fuel consumption and emissions.

Reliability Under High-Stress Environments

Customized parts undergo rigorous testing, including finite element analysis (FEA), fatigue testing, and non-destructive evaluation (NDE), to ensure performance under extreme loads, vibrations, and impacts. For example, defense vehicle frames are engineered to absorb blast energy, protecting occupants in combat scenarios. Industrial machinery components, such as robotic arm bases, are designed to endure continuous cyclic loading without deformation.

Aluminum Material

Material:

Aluminum 5052

Aluminum 6061

Aluminum 6063 etc

Finish:

Anodic Oxidation

Polishing

Powder Coating

Spray Painting



Why Choose Us



Multiple Machines

5-Axis CNC & Imp Professional machines, skillful workers, machines, skillful
with accuracy of guarantee the quality and lead time. 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



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

1. How can I get the price? - We usually quote within 24 hours after we get your inquiry (except weekend and holidays). If you are urgent to get the price, please email us or contact us in other ways so that we can offer you a quote.
2. Can I buy samples? - Yes. Please feel free to contact us.
3. What is your lead time? - It depends on the order quantity and the season you place the order. Usually we can ship within 7-15 days for small quantity, and about 30 days for large quantity.
4. What is your payment term? - T/T, Western Union, MoneyGram, and Paypal. This is negotiable.
5. What is the shipping method? - It could be shipped by sea, by air, or by express (EMS, UPS, DHL, TNT, FEDEX etc). Please confirm with us before placing orders.
6. How do you make our business long-term and good relationship? - We keep good quality and competitive price to ensure our customers benefit. Furthermore, we respect every customer as our friend and we sincerely do business and make friends with them, no matter where they come from.



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