# Expert PMMA PTFE Plastic For Cnc Machining Laser Etching Accurate And Consistent Results

Our Product Introduction

## Basic Information

- Place of Origin: China Shenzhen
- Brand Name: CNC Precision Machining
- Certification: Polishing,Anodizing,Painting,Chrome Plating, Silkscreen
- Model Number: Aluminum,SS,SGCC,Copper,MS
- Minimum Order Quantity: 1 piece
- Price: USD 30/piece
- Packaging Details: Carton, Plywood Box
- Delivery Time: 3 - 5 Days
- Payment Terms: T/T, Paypal
- Supply Ability: 1 piece/day

## Product Specification

- Material: ABS,PC,PMMA,PTFE,PVDF,PPS,POM,PA
- Tolerance: ±0.1mm, ±0.02, ±0.05,
- Surface Finish: Debur,Polishing,Anodizing,Painting,Chrome Plating, Silkscreen,Laser Etching
- Courier: DHL, FedEx, UPS
- Shipping: Express Or Air Freight
- Usage: Medical Device, Aerospace Prototype,Automotive Rapid Prototyping
- Machining Type: CNC Precision Machining
- Processing Time: 3-5 Days
- Highlight: **PMMA plastic for cnc machining**, **PTFE plastic for cnc machining**, **Laser Etching plastic for cnc machining**

Our Product Introduction



## Product Description

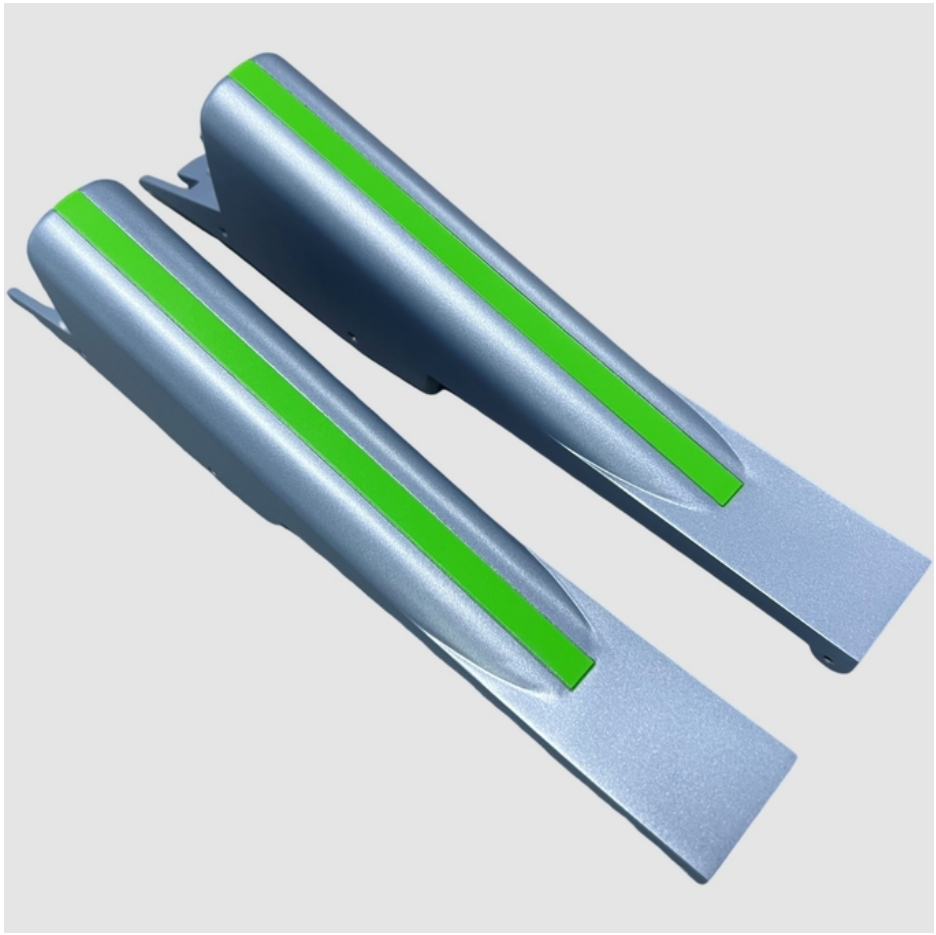
### Top reasons to use CNC machining for plastic part production

CNC plastic machining refers to the process of using Computer Numerical Control (CNC) machines to shape and fabricate plastic components. It involves the precise removal of material from a plastic workpiece using cutting tools controlled by computer software.
Here are some key points about CNC plastic machining:

CNC Machining Process: CNC machining involves the use of computer-controlled machines, typically mills or lathes, to cut, drill, mill, and shape plastic materials. The CNC machine follows instructions from a computer program to execute precise movements and cutting paths.


Plastic Material Compatibility: CNC machining is compatible with a wide range of plastic materials, including but not limited to acrylic (PMMA), polycarbonate (PC), polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC), nylon, ABS, PEEK, and more. Each plastic material has its own properties and characteristics, such as hardness, heat resistance, and machinability, which need to be considered during the machining process.

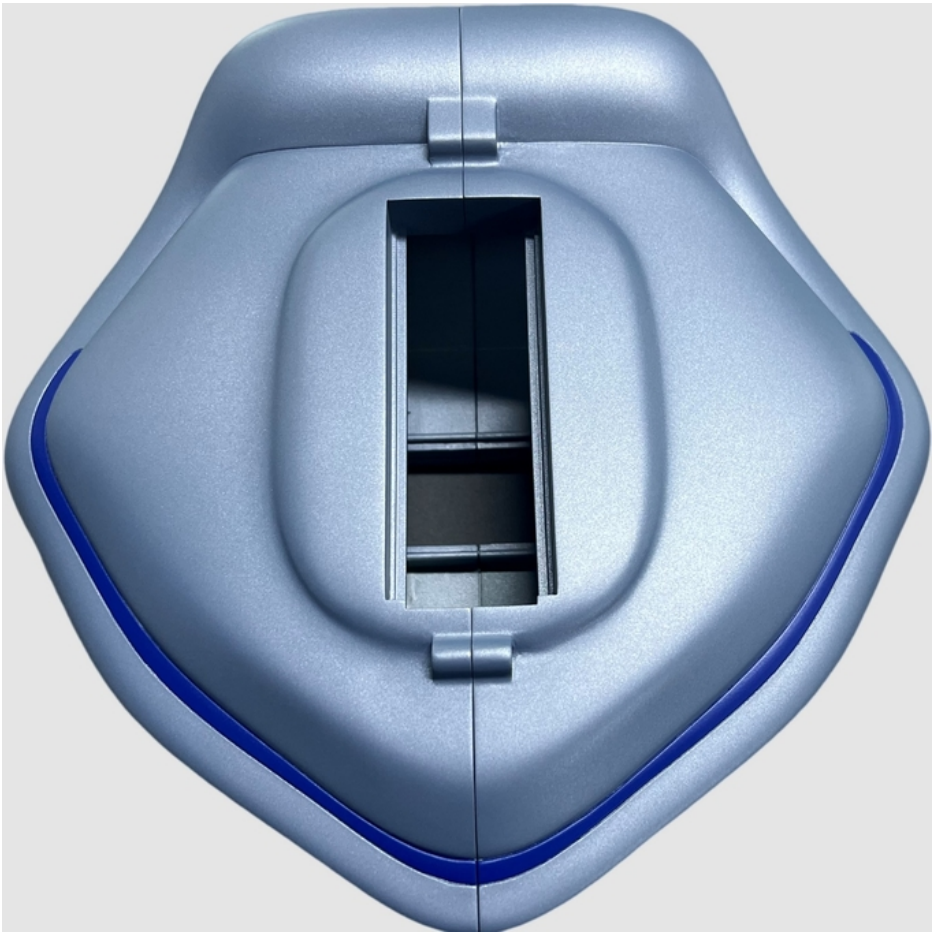
Design Considerations: When preparing a plastic component for CNC machining, certain design considerations should be taken into account. These include selecting appropriate plastic materials, optimizing part geometry for machining, considering tool access and clearance, and minimizing undercuts or features that may be challenging to machine.



Machining Operations: CNC plastic machining can encompass various operations, including milling (3-axis, 4-axis, or 5-axis), drilling, turning, threading, chamfering, and more. These operations are performed using specialized cutting tools, such as end mills, drills, taps, and inserts, which remove material from the plastic workpiece to achieve the desired shape.

Finishing and Surface Treatments: After the machining process, additional finishing operations may be employed to enhance the appearance and functionality of the plastic component. These can include deburring, sanding, polishing, or applying surface treatments like painting, anodizing, or applying a protective coating.

Applications: CNC plastic machining finds applications in various industries, including automotive, aerospace, electronics, medical devices, consumer goods, and more. It is used to produce precision plastic parts, prototypes, functional components, enclosures, housings, and custom plastic components with tight tolerances.



CNC plastic machining provides a versatile and precise method for shaping plastic materials into desired components. The computer-controlled nature of the process allows for high accuracy, repeatability, and intricate detailing. It is an efficient and effective manufacturing technique for producing custom plastic parts with complex geometries and tight tolerances.

| Materials for CNC Turning Parts | | | |
|---|---|---|---|
| Our CNC turning capabilities are suited for a diverse array of materials, encompassing both machine-grade metals and plastics. Tailored to your specific needs, we can produce accurate rapid prototypes and low-volume production runs using a variety of high-quality materials. Explore the common materials available for your CNC turning endeavors. | | | |
|  | ALuminum<br><br>Aluminum is a highly ductile metal, making it easy to machining. The material has a good strength-to-weight ratio and is available in many types for a range of applications. | | ALuminum |
| | | Machinable Material Types | AL 6061, AL6063,AL6082,AL7075 |
| | | Lead Time | 3 days |
| | | Tolerances | ±0.01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Copper<br><br>Copper displays excellent thermal conductivity, electrical conductivity and plasticity. It is also highly ductile, corrosion resistant and can be easily welded. | | Copper |
| | | Wall Thickness | 0.75 mm |
| | | Lead Time | 3 days |
| | | Tolerances | ±0.01mm |
| | | Max part size | 200 x 80 x 100 cm |
| | | | Brass |

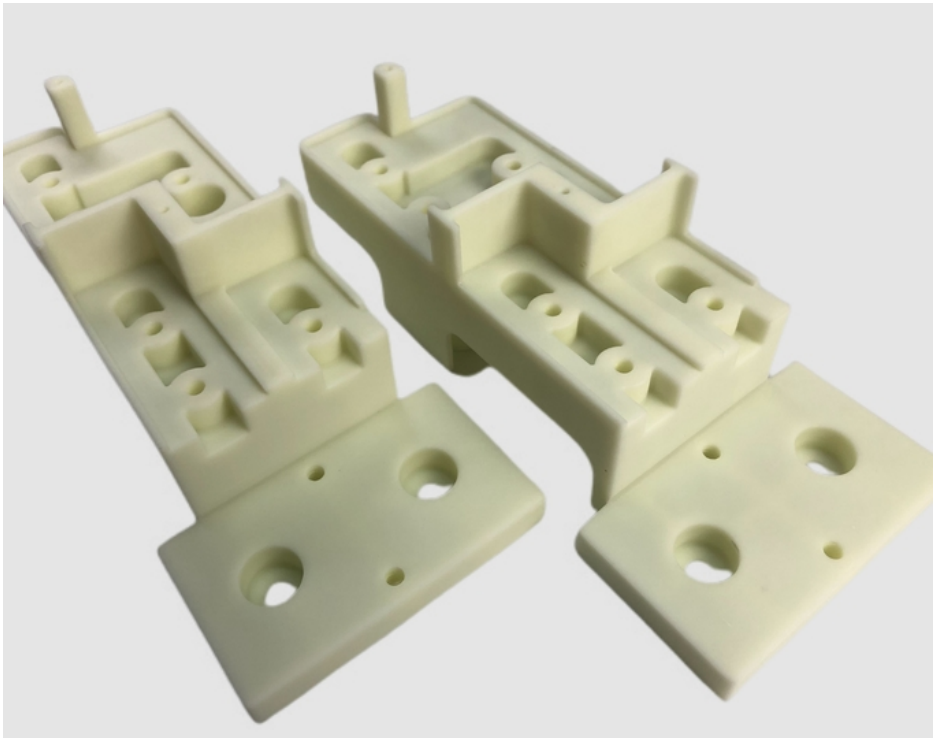
| | | | |
|---|---|---|---|
|  | Brass<br><br>Brass has desirable properties for a number of applications. It is low friction, has excellent electrical conductivity and has a golden (brass) appearance. | Wall Thickness | 0.75 mm |
| | | Lead Time | 3 days |
| | | Tolerances | ±0.01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Stainless Steel<br><br>Stainless steel is the low carbon steel that offers many properties that are sought after for industrial applications. Stainless steel typically contains a minimum of 10% chromium by weight. | | Stainless Steel |
| | | Wall Thickness | 0.75 mm |
| | | Lead Time | 3 days |
| | | Tolerances | ±0.01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Titanium<br><br>Titanium has a number of material properties that make it the ideal metal for demanding applications. These properties include excellent resistance to corrosion, chemicals and extreme temperatures. The metal also has an excellent strength-to-weight ratio. | | Titanium |
| | | Wall Thickness | 0.75 mm |
| | | Lead Time | 3 days |
| | | Tolerances | ±0.01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Plastics<br><br>Plastics are also a very popular option for CNC machining because of its wide choices, relatively lower price, and significantly faster machining time needed. We provide all common plastics for CNC machining services. | | Plastics |
| | | Machinable Material Types | ABS,PC,PMMA,PTFE,PVDF,POM, PA |
| | | Lead Time | 3 days |
| | | Tolerances | ±0.01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Magnesium<br><br>Magnesium is a silver-white metal with a density of 1.74 g/cm3. Its characteristics are small density, good ductility, high strength, large elastic modulus, good heat dissipation, good shock absorption, greater impact load capacity than aluminum alloy, and good corrosion resistance to organic substances and alkalis. | | Magnesium |
| | | Wall Thickness | 0.75 mm |
| | | Lead Time | 3 days |
| | | Tolerances | ±0.01mm |
| | | Max part size | 200 x 80 x 100 cm |

CNC Machining Process: CNC machining involves the use of computer-controlled machines, typically mills or lathes, to cut, drill, mill, and shape plastic materials. The CNC machine follows instructions from a computer program to execute precise movements and cutting paths.

Plastic Material Compatibility: CNC machining is compatible with a wide range of plastic materials, including but not limited to acrylic (PMMA), polycarbonate (PC), polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC), nylon, ABS, PEEK, and more. Each plastic material has its own properties and characteristics, such as hardness, heat resistance, and machinability, which need to be considered during the machining process.

Design Considerations: When preparing a plastic component for CNC machining, certain design considerations should be taken into account. These include selecting appropriate plastic materials, optimizing part geometry for machining, considering tool access and clearance, and minimizing undercuts or features that may be challenging to machine.

Machining Operations: CNC plastic machining can encompass various operations, including milling (3-axis, 4-axis, or 5-axis), drilling, turning, threading, chamfering, and more. These operations are performed using specialized cutting tools, such as end mills, drills, taps, and inserts, which remove material from the plastic workpiece to achieve the desired shape.



Finishing and Surface Treatments: After the machining process, additional finishing operations may be employed to enhance the appearance and functionality of the plastic component. These can include deburring, sanding, polishing, or applying surface treatments like painting, anodizing, or applying a protective coating.

Applications: CNC plastic machining finds applications in various industries, including automotive, aerospace, electronics, medical devices, consumer goods, and more. It is used to produce precision plastic parts, prototypes, functional components, enclosures, housings, and custom plastic components with tight tolerances.

CNC plastic machining provides a versatile and precise method for shaping plastic materials into desired components. The computer-controlled nature of the process allows for high accuracy, repeatability, and intricate detailing. It is an efficient and effective manufacturing technique for producing custom plastic parts with complex geometries and tight tolerances.

### Common Plastic Materials for CNC Machining

Plastic resins used for CNC milling and turning must be rigid enough to hold their shape while clamped. The following types of plastic resin have proven themselves over the years:

ABS
Tough, impact-resistant, and resistant to chemicals and electrical current, ABS is commonly used in automotive components, power tools, toys, and sporting goods.

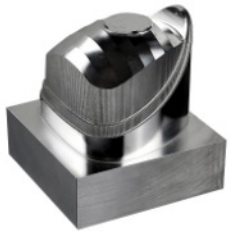
Nylon
With greater tensile strength, Nylon is used for fabric, rope, and mechanical parts, often mixed with ABS resins for enhanced properties.

PMMA Acrylic
Rigid and transparent, PMMA is used for clear optical parts, display screens, light pipes, lenses, enclosures, and food storage.

PEEK
A high-strength and stable engineering plastic, PEEK is used for advanced medical, aerospace, and electronic components, known for its resistance to high temperatures.

UHMWPE
Ultra high molecular weight polyethylene, known for its hardness, strength, chemical resistance, and slippery surface, is commonly used in joint replacements, marine environments, and gear trains.

| Materials for Custom CNC Machining Parts |
| --- |
| A wide range of materials is available for CNC machines, offering versatility for rapid prototyping and custom production of intricate parts. We offer instant quotes for over 150 metals and plastics to meet your manufacturing requirements, allowing you to compare costs across various processed materials. |
| |

| | | | |
|---|---|---|---|
|  | ALuminum<br><br>Aluminum is a highly ductile metal, making it easy to machining. The material has a good strength-to-weight ratio and is available in many types for a range of applications. | Aluminum | |
| | | Machinable Material Types | AL6061-T6,AL6063-T6,AL6082<br>AL7075-T6,AL5052-H32 |
| | | Lead Time | 3 days |
| | | Tolerances | ±0. 01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Copper<br><br>Copper displays excellent thermal conductivity, electrical conductivity and plasticity. It is also highly ductile, corrosion resistant and can be easily welded. | Copper | |
| | | Wall Thickness | 0. 75 mm |
| | | Lead Time | 3 days |
| | | Tolerances | ±0. 01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Brass<br><br>Brass is valued for various applications due to its low friction, superior electrical conductivity, and distinctive golden appearance. | Brass | |
| | | Wall Thickness | 0. 75 mm |
| | | Lead Time | 3 days |
| | | Tolerances | ±0. 01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Stainless Steel<br><br>Stainless steel is a low carbon steel that possesses numerous properties desirable for industrial applications. It generally contains at least 10% chromium by weight. | Stainless Steel | |
| | | Machinable Material Types | 304 SS, 303 SS, 316 SS,<br>SS 430F, 301 SS etc. |
| | | Lead Time | 3 days |
| | | Tolerances | ±0. 01mm |
| | | Max part size | 200 x 80 x 100 cm |
|  | Titanium<br><br>Titanium has a number of material properties that make it the ideal metal for demanding applications. These properties include excellent resistance to corrosion, chemicals and extreme temperatures. The metal also has an excellent strength-to-weight ratio. | Titanium | |
| | | Wall Thickness | 0. 75 mm |
| | | Lead Time | 3 days |
| | | Tolerances | ±0. 01mm |
| | | Max part size | 200 x 80 x 100 cm |
| | | Plastics | |

| | | | |
|---|---|---|---|
|  | Plastics<br><br>Plastics are also a very popular option for CNC machining because of its wide choices, relatively lower price, and significantly faster machining time needed. We provide all common plastics for CNC machining services. | Machinable Material Types | Buff ABS, Black ABS, Clear ABS, 94V0 flame retarding ABS, ABS+PC, Black Polycarbonate, Transparent Polycarbonate, Acrylic, NYLON 6, NYLON 66, PA6+30%GF , HDPE, POM, PP, PP+20%GF, PE, TEFLON,PPS, PEEK, PPO, PPE, PEI |
| | | Lead Time | 3 days |
| | | Tolerances | ±0. 01mm |
| | | Max part size | 200 x 80 x 100 cm |

**Inspections and Review for Every Stage of Production**

To ensure quality from start to finish, Barana Rapid provides the following inspection and review services:
Extensive incoming materials verification
Design for manufacturing reviews for all quotes provided
Contract reviews upon receipt of POs
First article and in-process inspections
Final inspections and testing with reports and certifications as required

| Our First Article Inspection Process | | | | |
|---|---|---|---|---|
| Upon receiving your order requirements, Barana Rapid will conduct a first article inspection service. In line with our company's policies, we offer this service to enhance the execution of your machining project when the order value meets or exceeds 3,000 US dollars, or the minimum order quantity is 300 pieces. | | | | |
| | Step 1 | Step 2 | Step 3 | Step 4 |
| Barana Rapid | Offer first article inspection<br>We offer first article inspection services for batch production. | Draft contract<br>We review the project and contact customers for detailed information. | Produce sample<br>We produce sample parts according to the FAI agreement and deliver them to you. | Full-scale production<br>The full-scale production starts and finishes production within lead time. |
| Client | Request inspection<br>You request first article inspection for a project that meets our FAI requirements. | Sign contract<br>You sign the FAI agreement provided by us and agree on our Terms and Conditions. | Receive sample<br>You receive and examine the parts, inform us of full-scale production may begin. | Receive products<br>You receive your prototypes or production parts on the required lead time. |

## Packing

Bubble bag

Bubble bags

Cartons


Customized packing as custom request

Carton

Pallet carton

Wooden case

Shipping

佰瑞纳 BETTER PROTOTYPE **Barana Rapid Technology Limited**

86 137 2889 6282 baranarm@baranarm.com cncmachining-prototype.com

RM502 Block B Floor 5th LiTong Semiconductor industrial park ShaPuWei Community SongGang Street Baoan District Shenzhen, Guangdong, China, ZipCode 518105