

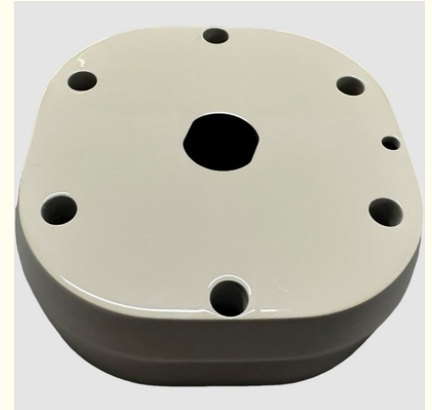


## Precision Measuring Device Prototype for Custom Parts with Complex Designs

### Our Product Introduction

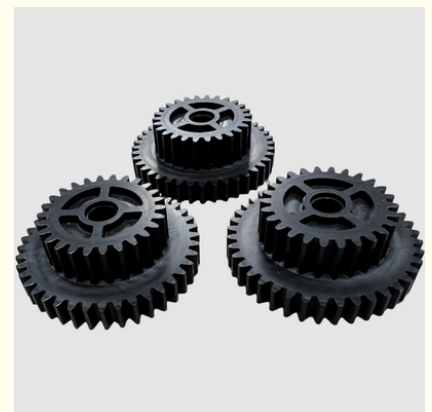
#### Basic Information

- Place of Origin: China Shenzhen
- Brand Name: Measuring Device Prototype
- Certification: Polishing, Anodizing, Painting, Chrome Plating, Silkscreen
- Model Number: ABS, PC, PMMA, POM, PA, PTFE, PEEK
- Minimum Order Quantity: 1 piece
- Price: USD 30 piece
- Packaging Details: Carton, Plywood Box
- Delivery Time: 5 - 8 work days
- Payment Terms: T/T, Paypla
- Supply Ability: 1 piece per day



#### Product Specification

- Units Of Measurement: Mm/inch
- Accuracy: 0.01mm
- Measurement Range: 0-100mm
- Material: Plastic
- Operating Temperature: 0-40 Degrees Celsius
- Color: White
- Weight: 1 Pound
- Storage Temperature: Measuring Device Prototype
- Highlight: precision measuring device prototype, precision plastic cnc machining, 0.01mm plastic cnc machining



## Product Description

CNC milling services play a crucial role in manufacturing custom parts with precision and accuracy. By utilizing advanced CNC milling machines, such as 3-axis, 4-axis, and 5-axis machines, you can create parts of various shapes and sizes from both plastic and metal materials.

Investing in machines from reputable manufacturers in the United States and Japan demonstrates a commitment to quality and reliability. These machines are known for their advanced capabilities, allowing for intricate and complex designs to be milled accurately.



Barana Rapid's experienced team is a valuable asset in ensuring the production of high-quality CNC milled parts. Their expertise and knowledge in CNC milling techniques enable them to meet the specific requirements and expectations of clients.

By leveraging CNC milling services, you can benefit from precise and repeatable manufacturing processes, reduced production time, and the ability to create custom parts tailored to your specific needs.



What Is Vacuum Casting?

Polyurethane vacuum casting is a specialized technique for making high-fidelity copies of master patterns using inexpensive silicone molds and pourable casting resins. Copies made in this way demonstrate the same quality as plastic injection molded parts while taking only a fraction of the time and expense to produce.

Advantages Of Vacuum Casting

Molds are affordable and can be created quickly, within a few days. A wide variety of polyurethane resins are available for casting, including options for overmolding. The resulting cast copies boast high accuracy and an excellent surface finish. Additionally, molds are durable enough to produce 20 or more replicas. This makes them ideal for engineering models, samples, rapid prototypes, and as a bridge to production.


Materials for Vacuum Casting	
You can choose a wide range of vacuum casting materials depending on the peculiarities of your project. Here are some choices for you:	
Process	Description
Step 1. Master Pattern Creation	The process begins with the creation of a master pattern, which serves as the original model for replication. The master pattern can be produced using various methods, such as 3D printing, CNC machining, or traditional fabrication techniques.
Step 2. Mold Preparation	A silicone mold is created around the master pattern. The mold is typically made in two halves, allowing for easy removal of the pattern and subsequent casting. The mold is then secured within a casting frame.

Step 3. Mold Release and Preparation	Prior to casting, a mold release agent is applied to ensure the easy removal of the final casted part from the mold. The mold is then preheated to a specific temperature to enhance material flow and reduce curing time.
Step 4. Material Mixing and Vacuum Degassing	The chosen casting material, usually a two-part polyurethane (PU) resin, is mixed thoroughly to achieve a homogeneous consistency. The mixed material is then placed in a vacuum chamber to remove any air bubbles or voids that could affect the final part's quality.
Step 5. Casting Process	Polycarbonate (PC) is an amorphous thermoplastic known for its exceptional transparency and impact resistance. It also possesses strong electrical insulating properties and moderate chemical resistance.
Step 6. Curing and Solidification	After the mold is filled, the casting is left undisturbed to cure and solidify. The curing time varies based on the resin type, thickness of the part, and ambient conditions. If necessary, heat or post-curing may be applied to accelerate the curing process.
Step 7. Mold Opening and Part Extraction	Once the resin has solidified, the mold is opened, and the cast part is carefully removed. The mold can then be reused multiple times to produce additional parts.
Step 8. Finishing and surface treatment	To achieve the desired aesthetics and functionality, the casted part may require finishing and surface treatment, such as trimming excess material, sanding, painting, or surface treatments.

#### Vacuum Casting Service

We provide a comprehensive turnkey solution for generating master patterns and cast replicas from your CAD designs. Not only do we craft high-quality molds, but we also offer an extensive range of finishing services, including painting, sanding, pad printing, and more. We assist you in creating components for showroom-quality display models, engineering test samples, crowdfunding campaigns, and beyond.

Are you in need of high-quality plastic prototypes quickly? Polyurethane vacuum casting might be the perfect option for you. Star Rapid's vacuum casting service is acclaimed for its ability to produce showroom-quality display models, engineering prototypes, crowdfunding samples, and more. Naturally, all your parts are meticulously finished with professional painting, printing, and machining.

Materials for Vacuum Casting		
You can choose a wide range of vacuum casting materials depending on the peculiarities of your project. Here are some choices for you:		
Image	Materials	Description
	ABS	ABS is a thermoplastic polymer, is widely used due to its exceptional resistance to impact, temperature, and chemicals. It also offers a sleek surface finish and is easy to produce and handle.

	POM	POM, also known as acetal or Delrin, is a type of engineering thermoplastic that boasts exceptional dimensional stability, stiffness, temperature resistance, and impact resistance.
	PP(Polypropylene)	Polypropylene (PP) is a material that is typically white and translucent and is resistant to corrosion while also possessing good toughness. Its most notable characteristic is its versatility, as it is suitable for use in a variety of processing methods and applications.
	PE(Polyethylene)	Polyethylene is odorless, non-toxic, feels like wax, has excellent low-temperature resistance (minimum operating temperature can reach -100~-70°C), has good chemical stability, and can withstand most acid and alkali erosion (not resistant to oxidation) nature acid)
	PC(Polycarbonate)	Polycarbonate (PC) is an amorphous thermoplastic known for its exceptional transparency and impact resistance. It also possesses strong electrical insulating properties and moderate chemical resistance.
	PMMA(Polymethylmethacrylate)	Polymethylmethacrylate, also named Acrylic. Acrylic is a highly versatile material known for its exceptional transparency, chemical stability, and resistance to heat, cold, and corrosion.
	PEEK	PEEK boasts exceptional mechanical strength, self-lubrication, impact resistance, and flame retardancy. It is also highly resistant to acid, alkali, and other chemical corrosion, hydrolysis, wear, fatigue, stripping, and radiation.
	Nylon	Nylon is impressive mechanical properties such as heat and wear resistance, chemical resistance, and self-lubrication, polyamide fiber also possesses flame retardancy, a low coefficient of friction, and is easy to manufacture.
	PS (Polystyrene)	(PS) is a polymer derived from the monomer styrene, a liquid hydrocarbon produced commercially from petroleum. Normally a solid thermoplastic at room temperature, PS can be melted at higher temperatures for molding or extrusion before being resolidified. It is a high-impact strength, low-cost resin offering a broad array of options.
	Elastomer	Elastomers are polymers with viscosity and elasticity and therefore are known as viscoelasticity. The molecules of elastomers held together by weak intermolecular forces generally exhibit low Young's modulus and high yield strength or high failure strain. Examples are Natural rubber, Silicone Polyurethanes, and Polybutadiene, Polyurethane plastic resin.

#### What Separates Barana Rapid's Inspection Processes from the Rest?

Careful measurement, inspection and testing are necessary to ensure the conformance of your parts. We perform multiple inspections at every step of the product development journey, from incoming material verification to final 3D scanning. You will receive complete digital files and Certificates of Compliance so you can meet your own regulatory and performance goals.

An International Team with Unparalleled Experience



Quality inspection relies not only upon using advanced digital equipment but also having highly trained personnel with years of experience. As parts become more complex and tolerances more demanding for advanced applications, precision measurements conducted by professionals are the only way to ensure perfection.

#### 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



Visual inspection



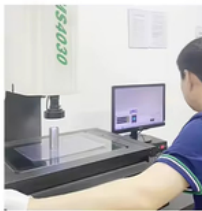
Touch test



Dimension inspection



High gauge



2D image  
measuring equipment



Hardness  
tester

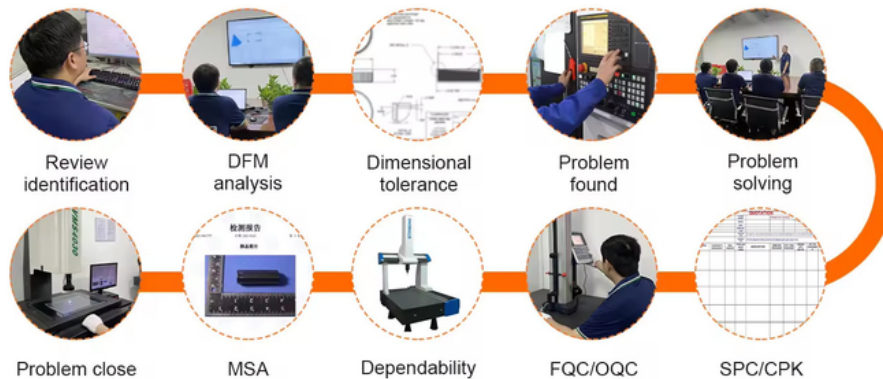


Tensile  
tester



Salt-spray  
testing machine

### Quality Inspection



### Packing





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