



Experience Precision Electronic Product Prototype With CNC Turning For Smart Electronic

Our Product Introduction

for more products please visit us on cncmachining-prototype.com

Basic Information

- Place of Origin: China Shenzhen
- Brand Name: Smart Electronic Rapid Prototype
- Certification: Polishing, Anodizing, Painting, Chrome Plating, Silkscreen
- Model Number: ABS, PC, PMMA, POM, PA, PTFE, PEEK
- Minimum Order Quantity: 1 piece
- Price: USD 50 piece
- Packaging Details: Carton, Plywood Box
- Delivery Time: 5 - 8 work days
- Payment Terms: T/T, Paypal
- Supply Ability: 1 piece per day



Product Specification

- Tolerance: +/- (0.05 - 0.1)mm
- Quality Control: 100% Inspection Before Shipments
- Application: Medical Industry
- Technology: CNC Turning
- Business Type: Original Manufacturer
- Process: Cnc Machining+deburrs Smart Electronic Rapid Prototype
- Material: Plastic
- Drawing Format: PDF, STP, STEP, IGS, PRT
- Highlight: **0.1mm precision electronic product prototype, 100% Inspection electronic prototype, cnc turning electronic prototype**



Product Description

CNC turning

CNC turning is a machining process where material is removed from a rotating workpiece via a cutting tool. It's mainly utilized to craft cylindrical components with both external and internal features. During CNC turning, the workpiece, often a metal or plastic bar or rod, is held in a chuck and spun at high velocities. The cutting tool makes contact with the workpiece, systematically eliminating material to form the required shape and size.

CNC Turning Tolerances	
we machine CNC turning lathe parts to meet tight tolerance requirements. Based on your design, our CNC lattes can reach tolerances of up to $\pm 0.005"$. Our standard tolerances for CNC milled metals is ISO 2768-m and ISO 2768-c for plastics.	
Type	CNC Turning Tolerances
Linear dimension	± 0.025 mm- ± 0.001 inch
Hole diameters	± 0.025 mm- ± 0.001 inch
Shaft diameters	± 0.025 mm- ± 0.001 inch
Part size limit	950 * 550 * 480 mm-37.0 * 21.5 * 18.5 inch

CNC turning machines are capable of performing a multitude of operations such as facing, turning, grooving, threading, and drilling. The cutting tool is able to move in both the axial direction, which is parallel to the workpiece's rotational axis, and the radial direction, perpendicular to the rotational axis. This capability enables the creation of complex shapes both internally and externally, and allows for the production of various thread types. The benefits of CNC turning include:

Versatility: CNC turning machines can fabricate a broad array of cylindrical components featuring different diameters, lengths, and characteristics. They are adept at crafting parts with detailed internal cavities, external contours, and accurate threading.



Efficiency: CNC turning is a highly efficient process, as it allows for continuous machining once the setup is complete. This enables fast production rates and shorter lead times.

Accuracy and Repeatability: CNC turning machines excel in achieving high accuracy and repeatability, ensuring consistent and

precise parts production. This is crucial for manufacturing components that demand strict tolerances.



Cost-Effectiveness: CNC turning offers a cost-efficient approach for fabricating cylindrical components, outperforming other machining processes like milling or grinding in terms of material conservation and reducing secondary operations.

Scalability: CNC turning accommodates both small and large production scales. It's adept at producing everything from prototypes and bespoke parts to high-volume manufacturing components.

CNC turning finds extensive application across industries such as automotive, aerospace, manufacturing, and electronics, which frequently require cylindrical components. It provides a dependable and proficient means of creating parts with intricate internal and external geometries, including diverse threading options.



CNC turning is a precision machining process where a cutter removes material by contacting a rotating workpiece. The machinery's movements are governed by computer instructions, guaranteeing precise and consistent outcomes.

CNC turning is distinct from CNC milling; in turning, the cutting tool rotates and approaches the fixed workpiece from various angles. The workpiece itself is spun in a chuck during CNC turning, facilitating the production of circular or tubular shapes. This technique is especially adept at creating precise rounded surfaces that might be difficult to attain with CNC milling or alternative methods.



A CNC lathe machine used for turning typically has a turret where the tooling is mounted. This turret can be programmed to execute specific movements and remove material from the raw materials, ultimately forming the desired 3D model or part.

Similar to CNC milling, CNC turning is suitable for both rapid prototyping and the production of end-use parts. Its precision and efficiency make it a valuable process for manufacturing components with round or tubular geometries.

By utilizing CNC turning, manufacturers can achieve high-quality results, optimize production time, and produce prototypes or final parts with accuracy and repeatability.

CNC turning as a subtractive manufacturing process where a stationary cutting tool removes material by making contact with the spinning workpiece to shape it according to the desired specifications.



In CNC turning, a blank bar of stock material is securely held in the chuck of the spindle and rotated along with the spindle itself. The cutting tool, which remains stationary, then removes material from the workpiece to create the desired shape. The movement of the machinery is precisely controlled by computer instructions, ensuring accuracy and repeatability in the manufacturing process.

CNC turning is particularly suited for creating round or tubular shapes and achieving highly accurate rounded surfaces. The rotational nature of the process allows for the creation of cylindrical components, such as shafts, cylinders, and other rotational symmetry parts, with excellent precision.




CNC Machining Tolerances and Standards		
With precision CNC machining services, Barana Rapid is your ideal partner to create precision machined prototypes and parts. Our standard CNC machining tolerances for metals is ISO 2768-f and for plastics is ISO 2768-m. We can also achieve special tolerances as long as you indicate your requirements for your drawing.		
Standards	CNC Milling	CNC Turning
Maximum Part Size	2000x1500x600 mm	200x500 mm
Minimum Part Size	4x4 mm 0.1*0.4 in	2x2 mm 0.079x0.079 in
Minimum Feature Size	Φ 0.50 mm Φ 0.00197 in	Φ 0.50 mm Φ 0.00197 in
Standar Tolerances	Metals: ISO 2768-f Plastics: ISO 2768-m	Metals: ISO 2768-f Plastics: ISO 2768-m

Hole Diameters	+/- 0.025 mm +/- 0.001 in.	+/- 0.025 mm +/- 0.001 in.
Linear Dimension	+/- 0.025 mm +/- 0.001 in	+/- 0.025 mm +/- 0.001 in
Edge Condition	Sharp corner will be removed in the form of a chamfer or radius. The size of the chamfer, or resulting radii, must be indicated on the drawing.	
Shaft Diameters	+/- 0.025 mm +/- 0.001 in.	+/- 0.025 mm +/- 0.001 in.
Threads and Tapped Holes	Diameter: Φ 1.5-5 mm, depth: 3×diameter Diameter: Φ 5 mm or more, depth: 4-6×diameter	Diameter: Φ 1.5-5 mm, depth: 3×diameter Diameter: Φ 5 mm or more, depth: 4-6×diameter
Types of Thread	Barana Rapid can produce threads of any specification and size required by our customers.	
Text	Minimum width of 0.5 mm, depth of 0.1 mm	Barana Rapid can use laser marking to create standard text for CNC turned parts.
Lead Time	3 business days	3 business days

Comparatively, CNC milling involves the rotation of the cutting tool while the workpiece remains stationary, allowing for the creation of more complex shapes and features. CNC milling is typically used for producing parts with intricate geometries, such as slots, pockets, and complex 3D profiles.

Understanding the difference between CNC milling and CNC turning is valuable in determining the appropriate machining process based on the desired outcome and the specific requirements of the part or component.

If you're looking for further information on the distinctions between CNC milling and CNC turning, you can refer to the link you provided or explore additional resources that delve into the topic in more detail.

Materials for CNC Turning Parts			
Our CNC turning processes are compatible with a wide range of materials, including machine-grade metals and plastics. Depending on your applications, we can create precise rapid prototypes and low-volume production from various superior-quality materials. Check out some of the common materials for your CNC turning projects.			
	ALuminum 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 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 has desirable properties for a number of applications. It is low friction, has excellent electrical conductivity and has a golden (brass) 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 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 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 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

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

Quality Inspection



Packing



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