



Generation Corporation

CNC Turning Service

AXIS Generation offers instant quotation and online ordering for CNC turned parts. With factory direct turned parts, easy online order management and shipping, along with flawless in-house production, we provide CNC machined parts with highly competitive lead times and cost.

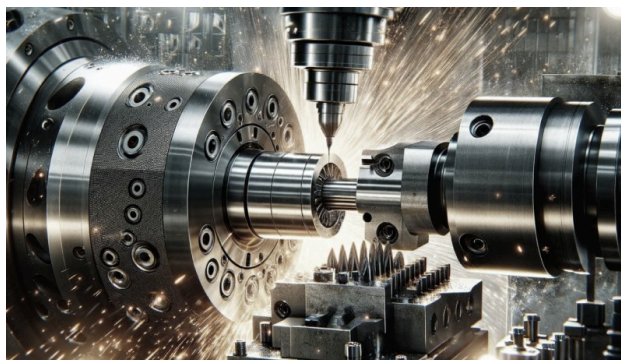
Why Use AXIS Generation for CNC Turning?

- › Factory direct pricing
- › Fast turnaround times
- › In-Machine tool changing for more complex geometries
- › Wide range of stock materials

What is CNC Turning?

CNC turning is a subtractive manufacturing process, which means it starts with a larger block of material and removes what is needed in order to form the final part. Turning uses computer numerical control (CNC) to spin a part and control the movement of cutting tools to remove material to create a desired shape.

CNC turning is a highly versatile process that can be used to create a wide range of parts, from simple shafts to complex geometric shapes. Depending on the type of CNC machine used, turning machines can also add holes, change tooling, add milled-style features, etc. for more complicated parts.



What Materials Does AXIS Generation Offer for CNC Turning?

Hot Rolled Steel - #20, Q235, Q345

>Aluminum- AL6061 T6, AL7075 T6

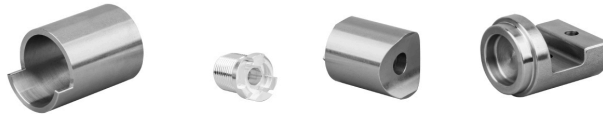
>Stainless Steel- SS304, SS316

For a detailed list of materials see the table section

What Types of Parts Can AXIS Generation Make With CNC Turning?

In general, the parts more commonly made with CNC turning are cylindrical, with or without threading, which require a level of precision that simpler processes cannot provide. This can include such common mechanical parts types as:

- > Bushings
- > Pins
- > CNC turned screws and bolts
- > Shafts
- > Axles
- > Nuts



What Applications Is CNC Turning Used For?

CNC turning is used to manufacture a wide variety of parts in a wide range of industries, including:

- > Automotive
- > Aerospace
- > Medical
- > Electronics
- > Industrial machinery
- > Consumer goods

Basically, any possible application that requires precise metal and plastic pins, shafts, axles, pins and other parts will utilize CNC turning.

CNC Turning Process

The CNC turning process typically involves the following steps:

- > **Setup:** The workpiece is loaded into the CNC lathe and secured in a chuck.
- > **Programming:** The CNC lathe is programmed with the desired part geometry.
- > **Machining:** The CNC lathe rotates the workpiece and moves the cutting tools to remove material according to the programmed geometry.
- > **Inspection:** The finished part is inspected to ensure that it meets the required specifications.

Commonly Asked Questions for CNC Turning

CNC Turning vs. Milling: What's the Difference? >

How Accurate is CNC Turning? >

Can CNC Turning Handle Complex Geometries? >

Which Industries Benefit from CNC Turning? >

AXIS Generation Design Guidelines for CNC Turning

ROUGHNESS	STAINLESS STEEL	CARBON STEEL	ALUMINIUM
AS MILLED ≤ 6.0 MM RA	✓	✓	✓
STANDARD ≤ 3.2 MM RA	✓	✓	✓
FINE ≤ 1.6 MM RA	✓	✓	✓
HIGH GRADE ≤ 0.8 MM RA	✓	✓	✓

FINISH	STAINLESS STEEL	CARBON STEEL	ALUMINIUM
NONE	✓		✓
OILING		✓	
POWDER COATING	✓	✓	✓
E-COATING	✓	✓	
ANODIZING			✓
PASSIVATION	✓		
ZINC PLATING		✓	

MATERIAL	YIELD (MPA)	TENSILE (MPA)	HARDNESS	GB STANDARD	SHEET METAL	CNC TURNING
Cold Rolled Steel (CRS)						
↳ SPCC	≥ 210	≥ 350	HB 65 - 80	JIS G3141-2009	✓	
↳ SAPH440	≥ 305	≥ 440	HB 80 \pm 30	Q/BQB 310-2009	✓	
Hot Rolled Steel						
↳ #20	≥ 245	≥ 410	≥ 143	GB/20CrNiMo		✓
↳ Q235	≥ 235	375 - 500	HB 120 \pm 40	GB/T 700-2006	✓	✓
↳ Q345	≥ 345	490 - 675	HB 120 \pm 40	GB/T 1591-2008	✓	✓

MATERIAL	YIELD (MPA)	TENSILE (MPA)	HARDNESS	GB STANDARD	SHEET METAL	CNC TURNING
Spring Steel						
↳ 65Mn	≥785	≥980	HB 190 - 340	GT/T 1222-2007	✓	
Aluminium						
↳ AL1060	≥35	≥75	26 ± 5	GB/T 3190-2008	✓	
↳ AL5052 H32	≥70	210-260	HB 11 ± 2	GB/T 3190-2008	✓	
↳ AL6061 T6	≥276	≥260	HB 15 - 18	GB/T 3190-2008	✓	✓
↳ AL6063 T5	≥170	≥250	HV 25 ± 5	GB/T 3190-2008	✓	
↳ AL7075 T6	≥503	≥572	HB 150 ± 5	GB/T3880-2017		✓
Stainless Steel						
↳ SS301	≥205	≥520	HB 76 - 187	GB/T 8170-2008	✓	
↳ SS304	≥205	≥520	HB 76 - 187	GB/T 24511-2009	✓	✓
↳ SS316	≥205	≥520	HB 76 - 187	GB/T 24511-2009	✓	✓
Cold Galvanized Steel						
↳ SGCC	≥200	≥380	HB 60 - 65	JIS-G3302	✓	

Upload your 3D drawings for instant quotes and online ordering for your CNC turning parts