

CNC Turning Q+A

➔ Answers to questions:

1. Turret is another name for a lathe 'tool holder' or 'tool changer'. Although designs of CNC lathes do change, majority of CNC lathes uses turret as the means of storing the cutting tools
2. The two axes of a typical CNC lathe are the X-axis, which controls the part diameter, and the Z-axis, which controls the part length or depth
3. Slant bed is the successor of the original flat-bed design. It provides several advantages-
- the chips are not formed around the part, but fall down by gravity, the part falls into a safe area
in case of an accident, the machine forces go against the solid part of the lathe design
4. An engine type CNC lathe has the tool holder close to the operator, so it is often called the '**front lathe**' design
5. The most common incorrect term for a CNC vertical lathe is 'Vertical Boring Mill'
6. ... see chapter text for reference
7. CNC lathes come in several varieties, the most common ones are:
 - ... slant bed type
 - ... front bed type
 - ... vertical orientation type
 - ... multiaxis type (more than two axes)
 - ... lathe with a milling axis (live tooling)
 - ... and several others
8. The Z-axis always represents a horizontal tool motion, as viewed from the operator's side. The Z-axis is also associated with the depth of cut, for example, in drilling
9. On specially designed CNC lathes, the C-axis represents the absolute angle of spindle rotation
10. Spindle speed represents the range of spindle speed revolutions from the minimum to the maximum, represented in r/min (revolutions per minute)
11. A vertical CNC lathe can be used for virtually any purpose that its smaller versions can be used, but its most distinguishing feature is its ability to accept large diameters of stock
12. A 4-axis CNC lathe is basically a lathe with two independent controls and tool turrets, that can be used independently of each other, within certain restrictions. A 4-axis lathe speeds up production of suitable parts, but not every part is suitable for a 4-axis lathe