

## CNC Milling Q+A

➔ Answers to questions:

1.     CNC Vertical Machining Center     ... also known as VMC  
        CNC Horizontal Machining Center     ... also known as HMC  
        CNC Horizontal Boring Mill
2.     CNC Horizontal Boring Mill has five axes, but it is **not** a five axis machine. The axes are: XYZBW
3.     CNC milling machine is a machine capable of a simultaneous cutting motion, using end mill as the primary cutting tool, along at least two axes at the same time
4.     BT40 and CAT50 are some of the most common designations of the spindle taper (or the tool shank size)
5.     **2 - 12000 mm/min** is a designation of a cutting feed range of the selected machine tool
6.     Vertical CNC machine always has 3 axes - X, Y and Z - and can have an optional axis, usually the A axis  
        Horizontal CNC machine always has 4 axes - X, Y, Z and B
7.     CNC milling machines can be divided into three categories:  
        ... by the number of axes  
        ... by the orientation of axes  
        ... by the presence or absence of a tool changer
8.     The table length is always longer than the X-motion, mainly to provide a larger setup area
9.     Spindle output is measured in HP (horse power) in imperial units, or kW (kilowatts) in metric units
10.    Majority of the specified features are important to the CNC programmer for one reason or another, with the possible exception of **tool shank size** and **spindle taper**.
11.    ATC                     ... Automatic Tool Changer  
        APC                     ... Automatic Pallet Changer  
        HMC                    ... Horizontal Machining Center  
        VMC                    ... Vertical machining center
12.    Vertical                ... flat type of work - single face cutting in one setup  
        Horizontal            ... cubically shaped parts, multi face machining in one setup