The Main Types and Characteristics of CNC Tools in China(4)

1.milling cutter: face milling, end milling, face and side cutter.

A face mill machines a flat surface of the workpiece in order to provide a smooth finish. The depth of the face, typically very small, may be machined in a single pass or may be reached by machining at a smaller axial depth of cut and making multiple passes. tooth material is high-speed steel or carbide blade for 40Cr.
An end mill makes either peripheral or slot cuts, determined by the step-over distance, across the workpiece in order to machine a specified feature, such as a profile, slot, pocket, or even a complex surface contour. The depth of the feature may be machined in a single pass or may be reached by machining at a smaller axial depth of cut and making multiple passes. Structure and mechanisms integral clip-like high-speed steel and carbide milling work is part of the common materials.

Die cutter is developed from milling cutter, and can be divided into taper end mill and ball nose end mills.
Taper ball nose end mills: the shank straight shank, Weldon shank and Morse taper shank. The conical-shaped end mills feature a highly accurate ball nose, capable of completely machining impellers, blisks, turbine blades and tire profiles without changing tools during three-axis and five-axis operations.

cotter milling cutter
Drum-shaped cutter
Completed cutter

Special tool
Special tool: Morse taper shank,strong spring chuck clamping straight shank,
reversible (auto reverse) Tapping Chuck, composite tooling and extension rods and the like.
Characteristics of CNC machining tools:
In order to achieve the purpose of higher efficiency, more output, quick-change, cost save,compared with common metal cutting tools,CNC machining tools
have the following characteristics:
high standardized, serialized blade and shank,
The durability of the blade or cutter and reasonable economic life indicators.
Standardized parameters of tool or blade and cutting performance,
The match between the blade or tool material and cutting parameters and material to be processed.
high accuracy, including the accuracy of tool, tool shape, calibration position of the blade and shank to the machine tool spindle,
High strength, rigidity and wear-resistance of the shank,
The limited weight of the tool shank or installed systems;
The optimized inserted position and orientation of the blade and shank;
CNC machine tools should be of easy installation, high rigidity, high accuracy, good durability.