



Application of thread mills in CNC machining industry

With the development of CNC machine tools in China, thread mills are increasingly being recognized. Due to its excellent processing performance, the low processing costs and improved efficiency, it is a very important tool to process threads. At present thread mills are made of carbide alloys, processing linear speed up to 80 ~ 200M / MIN, while for high speed steel taps, processing linear speed is only 10 ~ 30M / MIN, hence, thread mill is suitable for high-speed cutting, and working surface finish is also greatly improved. The processing of thread mills with high hardness materials and high temperature alloys, such as titanium-based or nickel-based thread mills, has been a difficult problem, mainly because when the high speed taps process the above materials, the tool service life is short, while it is an ideal solution to process hard thread by thread mills.

The process hardness of thread mills can reach HRC58 ~ 62. Thread mills are also excellent in processing threads with high temperature alloys and long service life can be expected. For thread holes with the same pitch, different diameters, normally various taps will be applied to finish the work, while only one thread mill can complete the work.

For the tap wear, working thread hole size is smaller than tolerance, the thread cannot continue to work;

while for thread mills, the processing thread hole size is smaller than tolerance, it can make the necessary adjustments of tools radius compensation by CNC tools, the thread mills can continue to process the qualified threads. Similarly, in order to produce high-precision thread holes, it is much easier to adjust the tool radius by thread mills than to produce the high-precision taps. When processing the threads with small diameter, especially high hardness materials and high-temperature materials, sometimes taps will break, and the remaining shavings will plug thread holes, which will result in disabled parts; while processing by thread mills, due to smaller diameters, the holes will not be choked, the broken parts can be easily removed, which cannot lead to parts obsolescence. Compared with taps, the reduced cutting force of thread mills can mitigate the machine load, which is very significant to process large diameter threads.

Thread mill, as a tool of processing threads by using CNC machining, is currently widely used as a practical tool.

With the increasing development of the CNC industry, the types and application conditions of CNC mills will change appropriately. We will pay continuous attention to its new development, which is of practical significance.