

Abstract

The present invention relates to the field of computer numerical control (CNC) machine tool technology, specifically to a globoid cam technology-based automatic tool changer (ATC) mechanism, comprising a body assembly, a tool changing assembly, a positioning assembly and a fixing assembly, wherein the body assembly comprises a hydraulic rod installed in a CNC machine tool, and a servo motor fixed to the driving end of the hydraulic rod. With the tool changing assembly and the positioning assembly, the present invention can use the first cylinder to push the tool into the guide groove, and then use the second cylinder to continue to push the tool to move, and push the tool to be replaced on the machining spindle to the tool changing groove. At this time, the replaced tool is magnetically fixed on the outside of the second positioning plate. At this time, the electromagnet is located above the tool changing groove, and the electromagnet is used to generate electromagnetic attraction for the replaced tool. Then the first cylinder moves the tool to the top of the first positioning plate. After the electromagnet is de-energized, the tool falls on the first positioning plate and is fixed by magnetic attraction. This tool changing method requires low precision, and the loading and unloading of the tool are completed after one advancement and contraction, thus the tool changing efficiency is high.

[Fig. 1]