

Longxiang Enterprise

Making the Move to Multitasking



Using turn-mill technique to create the Phalanx Close-In Weapon System (CIWS) model

Longxiang Enterprise is a metal parts manufacturing factory located in Changhua, Taiwan. Besides being an expert in that field, the entrepreneur, Wu Tech, is also a modelling enthusiast. His latest work, the Phalanx CIWS, is reported on by the media and has won great appreciation by internet users. Wu said, "I was without any practical size drawings about this weapon. The only information I could refer to were some pictures on Google. With countless tests and failures, finally I made this Phalanx CIWS model. This model was assembled by multiple different delicate parts of aluminum alloy manufactured by a multi-tasking turning center."

Behind this model are a depth of practices and experiences. "How to keep competitive with small-volume and large-variety production" is the common challenge for manufacturing companies. Wu said, "Business is as fierce as war, every customer's workpieces are different. You need to manage your costs, understand your capacity, and the most critical thing is your reactions need to be fast and flexible." For overcoming various requirements from customers, Wu chose Tongtai multi-tasking turning center, TD-2000Y, for meeting the needs of the extremely flexible production modes of the JOB SHOP.

The X/Y/Z axes of TD series are perpendicular to each other. That ensures the high accuracy in machining. Furthermore, with the Y axis travel of $\pm 51\text{mm}$, and being equipped with a 16 stations power turret, users can complete turning and machining tasks in a single machine. The TD series is like a combination of a lathe and a small-sized 4-axis machining center. The 16 stations power turret allows users to finish complicated machining tasks without frequent tool changing and resetting. Use the model of Phalanx CIWS as an example, 16 tools are able to satisfy the machining requirements of 30 different parts.

In addition, for extending more applications in the multi-tasking turning center, Wu also uses an automatic bar feeder on the TD-2000Y. The turn-mill technique facilitates production of many different parts from the same metal bar even though the sizes and shapes of the workpieces are different. Moreover, the NC programs can be edited through the conversational programming function in the machine, instead of by CAD/CAM software. It allows the users to do program editing and machining simulation on the machine directly, which not only ensures the final results of machining, but also saves time in machine adjustments and modifications.



TD-2000Y[BC]



More Information

Expert's perspective

- X/Y/Z axes are perpendicular to each other with a real linear Y axis, which ensures outstanding position accuracy.
- Large Y axis travel ($\pm 51\text{mm}$), equals to a 4-axis small-sized vertical machining center.
- 16 stations power turret not only brings high machining flexibility, but also reduces idle time during tool changing and resetting.
- The conversational programming function facilitates NC program editing, so that CAD/CAM software is not necessary.

