



October 7, 2014

5-Axis Horizontal Machining Center

TCX-365 Product Release

Matsuura Machinery Corporation has developed a new 5-axis horizontal machining center, *TCX-365*, and starts selling this model from today.

Matsuura has so far delivered over 1,000 sets of *MAM72* series 5-axis machining center to the industrial fields of automobile, aircraft, energy, tooling and medical equipment, which are worldwide leaders of cutting edge technologies for 5-axis machining. However, Matsuura has received many requests for productivity improvement of small dia. long parts (cutting drills, turbine blades of jet engines and motors) in the tooling, aircraft and energy fields, which offer high growth potentials.

The *TCX-365* is targeted for 5-axis machining of small dia. long parts, and based on the reputed horizontal machining center, is installed a dedicated 4th-/5th-axis unit developed exclusively by Matsuura. The new machine offers a solution to the existing problems in machining small dia. long parts (with a high ratio of total length L to diameter D): chattering and frequent setup changes to avoid chattering.

Equipped with application-specific units (tailstock & steady rest) which automatically synchronize with machining, the *TCX-365* effectively dampens chattering by supporting the part at optimal positions, and achieves a short cycle time with quality surface finish. The machine also allows programmable setups of these support units to eliminate setup changes between outer surface machining and end face machining, and improves the productivity through single chucking operation.

The *TCX-365* maintains the expandability of the base horizontal machining center. The **MAXIA** spindle offers a standard spindle speed of 12,000 min⁻¹ or optionally 20,000 min⁻¹ for high-speed machining and the tool magazine offers a standard tool storage capacity of 60 tools (drum type) or optionally a maximum of 520 tools (matrix type), and is sure to meet various customers' requirements. Hainbuch's SPANNTOP is employed for the part clamping mechanism to provide general universality. As an option, a BT#50 or HSK-A100 holder is also available. If the machine is used in combination with a robot system, extended unmanned operation and high-mix variable-volume production can be achieved flexibly.

In addition, Matsuura's original collision prevention software "Intelligent Protection System" is provided as a standard feature to facilitate safe machining operation without collisions.

Matsuura is going to exhibit the *TCX-365* at JIMTOF2014 (The 27th Japanese International Machine Tool Fair) that is to be held from October 30 at Tokyo Big Sight.

TCX-365 Features

1. Application-specific units automatically synchronized with machining (tailstock & steady rest)
 - 1.1. Easy setup change by programming (M codes)
 - 1.2. Tailstock stroke: 300 mm (servomotor driven)
 - 1.3. Steady rest: Part support at three positions
2. Newly designed 4th-/5th-axis unit dedicated to small dia. long parts
 - 2.1. Direct drive motor
 - 2.2. Rapid traverse rate : 100 min⁻¹ (A-axis), 40 min⁻¹ (B-axis)
3. Expandability
 - 3.1. **MAXIA** Spindle : 12,000 min⁻¹ (BT40) [Standard]
: 20,000 min⁻¹ (BT40) [Option]
 - 3.2. Tool magazine : 60 tools (drum type magazine) [Standard]
: 120 - 240 tools (240-tool base) [Option]
: 120 - 320 tools (320-tool base) [Option]
: 360 - 520 tools (520-tool base) [Option]
 - 3.3. Clamp system : *Hainbuch SPANNTOP* [Standard]
: BT#50 holder [Option]
: HSK-A100 holder [Option]
4. Collision avoidance system IPS (Intelligent Protection System): Standard
 - 4.1. Axis feed stopped before a collision occurs between machine, tool, workpiece and fixture
 - 4.2. Machine collision avoidance during manual operation or setup work that might occur due to human error
 - 4.3. Machine collision avoidance during automatic operation that might occur due to programming error

Main Specifications

Item	TCX-365
Travel (X / Y / Z axis)	675/ 660/ 660 mm (26.57 / 25.98 / 25.98 / 11.81in.)
Travel (A / B axis)	360°/ -95 ~ +20°
Travel (U axis)	300 mm (11.81 in.)
Rapid traverse rate (X / Y / Z axis)	60 m/min (2,362.2 ipm)
Rapid traverse rate (A / B axis)	100/ 40 min ⁻¹
Rapid traverse rate (U axis)	40 m/min (1,574.8 ipm)
Spindle speed	12,000 min ⁻¹
Maximum workpiece size	L365 x D63 mm (L14.37 x D2.48 in.)
Loading capacity	20 kg (44lb.)

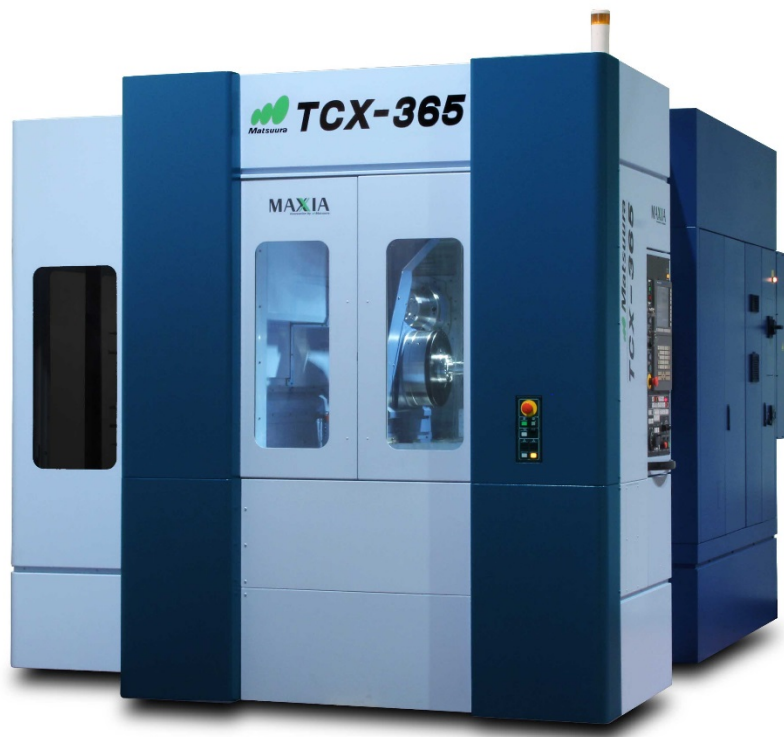


Fig. *TCX-365* outline



Fig. Application-specific units (Tailstock & Steady rest)