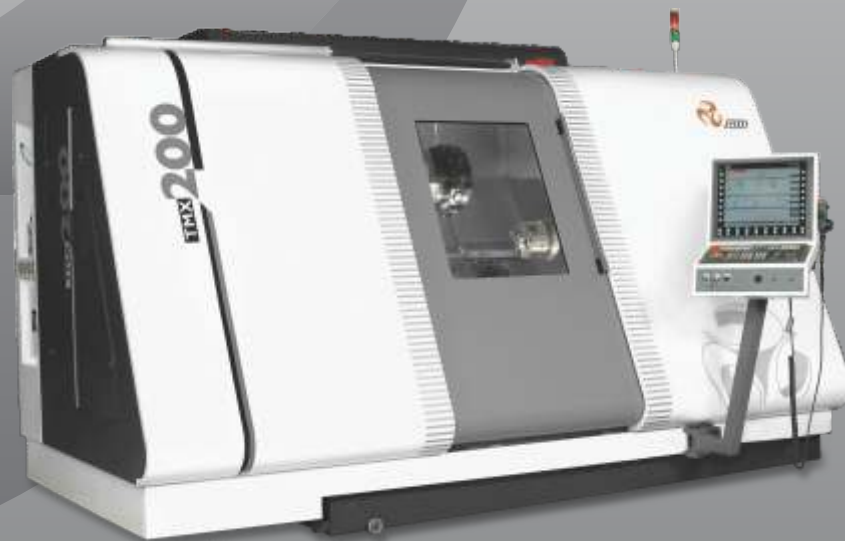




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## **TMX Series**

Twin Spindle Twin Turret  
Turnmill Center



# TMX Series

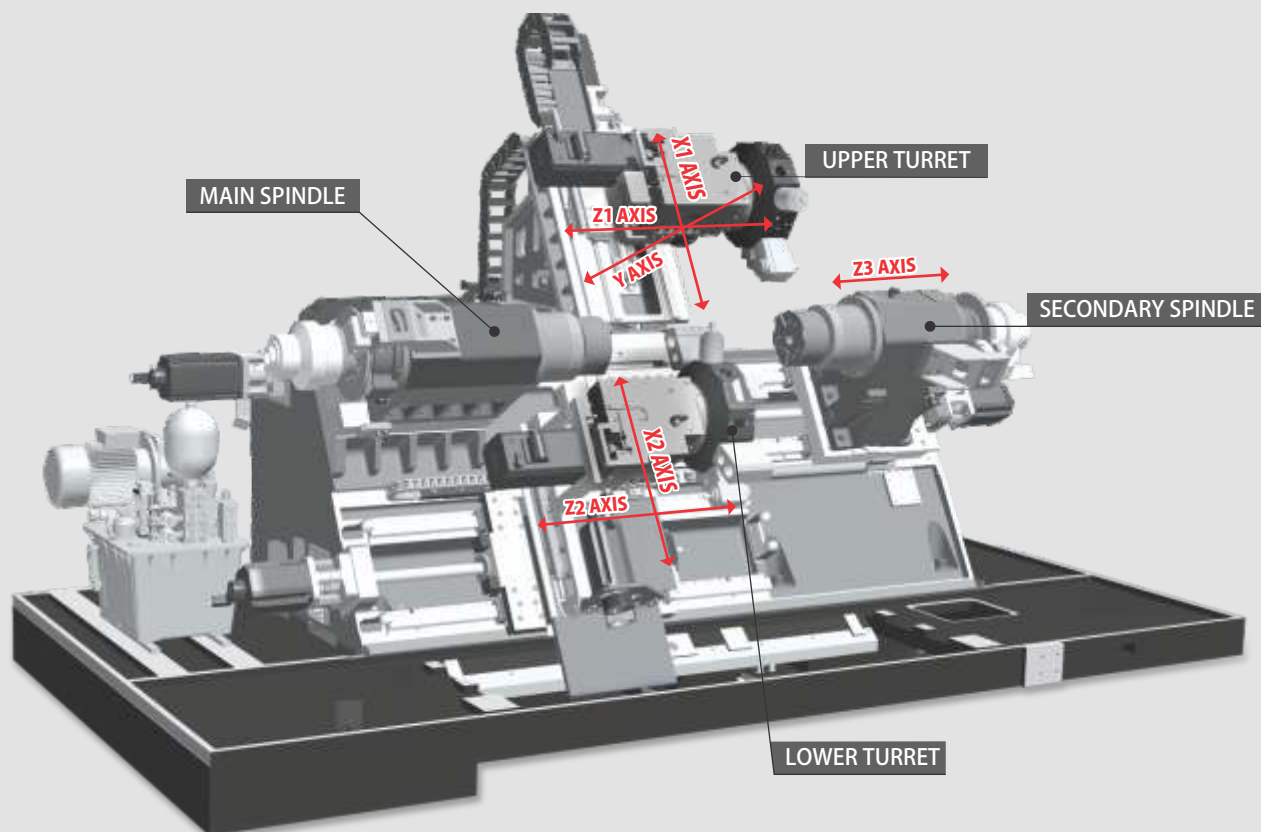
## Twin Spindle Twin Turret Turnmill Center

### Overview

TMX Series, turning/milling machine with various possibilities of configuration with spindles and turrets was developed to equip production facilities. Its main advantage is to allow the simultaneous machining of several parts and various operations in order to obtain significant gains in productivity and profitability.

Carefully designed through the analysis of structure and an advanced design of all components, TMX Series allows perfect control of the machining process. Electrospindles with high precision, high performances of the numerical controller, a fully safe and protected environment, make the TMX Series a range providing optimal performances for various industry needs. An important choice of additional options boosts productivity of these machines.

- Multitasking possible with combination of 2-Spindle and 2-Turrets with only single workpiece clamping thanks to live tool, C & Y axis
- Significant reduction in cycle time
- Increased tool life
- Ergonomy and easy accessibility for setting up of tools and inserts
- Very efficient removal of chips
- Possibility to add option equipments as bar feeder, finished workpiece conveyor to achieve maximum profitability



### Structure

In order to meet the requirements of dynamic behavior of moving elements, TMX Series of machines are designed with single piece slant bed architecture made out of high grade cast iron for maximal rigidity even working at feed rates of 30 m/min. Such a design shows excellent vibration damping to deliver high level of machined surface quality and accuracy even for hard materials.

### Spindle

Spindle is enclosed in headstock made out of closed grain casting and provided with fins for better heat dissipation and a chiller unit. Machine is equipped with powerful electrospindle which is stationary. Secondary electrospindle option is available that can slide on linear Z-axis in combination to main spindle for 2<sup>nd</sup> set-up workpiece pickup and perform machining. In case of different application demand, both spindles can also simultaneously and independently work in combination to either turrets.

## Linear Axis (Turrets)

There is a standard live-tool servo type Upper Turret with 3-Axis movement (X/Y/Z) showing flexibility for complex application requirements in turning and milling. An option of Secondary Turret is also available with movements in (X/Z). A combination of both turrets allow tool for complex machining, while simultaneous working allow an optimal distribution of use of each turret. Both the turrets have a stroke capacity which allows each to individually work in proximity and in combination of either spindle as per application demand thus creating a total flexible working environment.

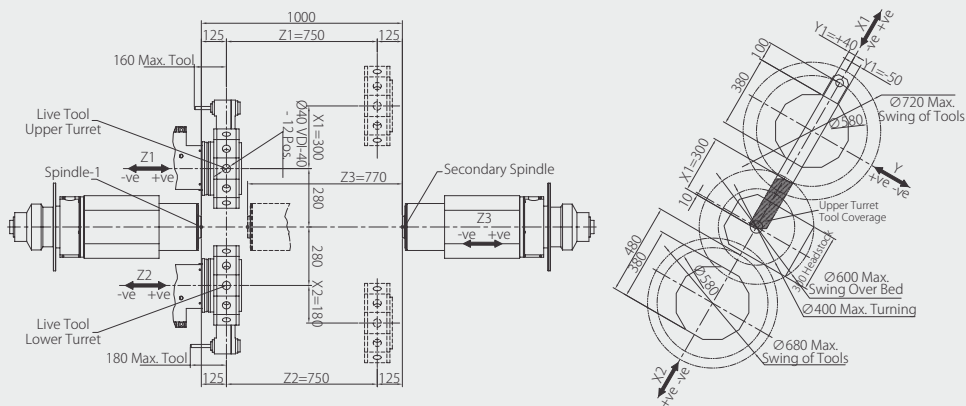
## Operator Panel

The newly designed easy-to-operate operator panel of the machine is made considering operator friendliness and TPM Concept. Flexible swivel movement of the panel helps manage operator to manage tooling arrangements while the same can be moved out of working range when not required.



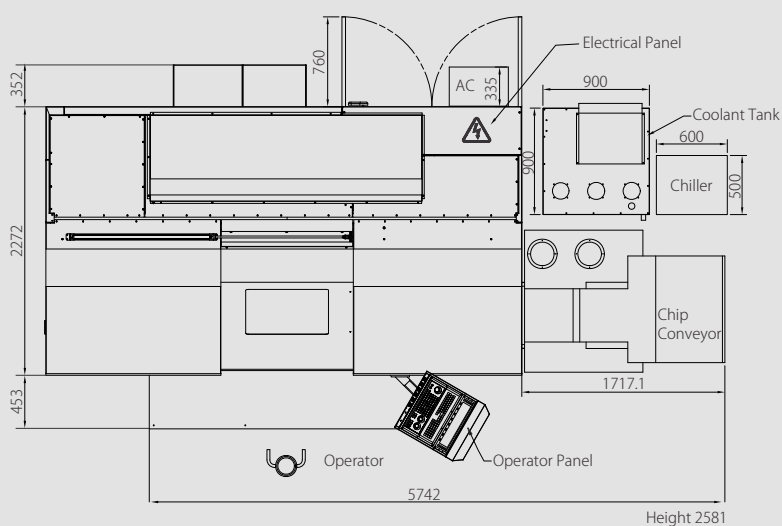
## Machining Range

## Interference Diagram



Upper Turret - Main Spindle, Lower Turret - Secondary Spindle

## Layout Diagram



Upper Turret - Secondary Spindle, Lower Turret - Main Spindle

## Technical Specification

		TMX 200	
<b>Machining capacity</b>			
Standard Turning Dia.	mm	250	
Max. Turning Length	mm	725	
<b>Travels</b>			
X1 / Y / Z1 Axis	mm	<b>Standard</b>	<b>Option</b>
X2 / Z2 / Z3 Axis	mm	300 / ±40 / 750	180 / 750 / 770
<b>Rapid Feed</b>			
X1 / Y / Z1 Axis	m/min	25 / 15 / 30	
X2 / Z2 / Z3 Axis	m/min		25 / 30 / 30
<b>Spindles</b>			
Spindle Motor Speed	rpm	<b>Main</b>	<b>Secondary (Opt.)</b>
Spindle Nose		A <sub>2</sub> 6	A <sub>2</sub> 6
Spindle Bore	mm	65	65
Spindle Motor Power (S6-40% / S1)	kW	27/21	27/21
Spindle Motor Torque (S6-40% / S1)	Nm	255/200	255/200
Max. Bar Capacity	mm	52	52
C-Axis Angular Resolution	Deg.	0.0001°	0.0001°
<b>Tailstock</b>			
Stroke of Axis Z3	mm	770	-
Quill Dia.	mm	85	-
Thrust (Adjustable)	kgf	500	-
<b>Turrets (Servo)</b>			
No. of Driven Stations		<b>Upper</b>	<b>Lower (Opt.)</b>
Driven Tool-Holder		VDI 40	VDI 40
Max. Live Tool Speed	rpm	50-4000	50-4000
Max. Boring Bar Dia.	mm	Ø40	Ø40
Live Tool Motor Power	kW	5.7	5.7
Live Tool Torque	Nm	13.5	13.5
<b>Accuracies (as per VDI/DGQ 3441)</b>			
Positioning (P) : X / Z / Y Axis	mm	0.008 / 0.012 / 0.008	
Repeatability (Ps) : X / Z / Y Axis	mm	0.005 / 0.005 / 0.005	
<b>Other Data</b>			
Machine Weight (Approx.)	kg	10500	
Machine Dimension (Approx.) : (With Chip Conveyor) (L x W x H)	mm	5500 x 2500 x 2600	

Note: • All above information is subject to change arising out of continuous product improvement without notice.  
• The description 'standard accessories / feature' conforms to its list; not the photo of machine shown in the catalogue.

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### Control System

The CNC System offered with the TMX Series machine is with latest digital controller from SIEMENS 828 D or SIEMENS 840 D SL.

### Standard Features

- Monoblock Structure with Slant Bed
- Linear Motion Guideways
- Main Electrospindle Equipped with Hydraulic Clamping Chuck
- Upper Turret with 12 Driven Station
- Linear Scaling on all Axes
- Programmable and Centralized Lubrication
- Laser Calibration of Axes for Higher Positioning and Repeatability Accuracies
- Chips Conveyor
- Tailstock

### Productivity Improving Options

- Bar Feeder
- Part Catcher
- Higher Power Main Electrospindle
- Tool Probe
- Coolant Through Tool Center
- Automatic Opening of Doors
- Job Probe
- Secondary Electrospindle Equipped with Hydraulic Clamping Chuck
- Lower Turret with 12 Driven Station

Power-Torque Diagram

