

# TMC Series

CNC Turnmill Centres

Performance  
Technology  
Power  
Accuracy





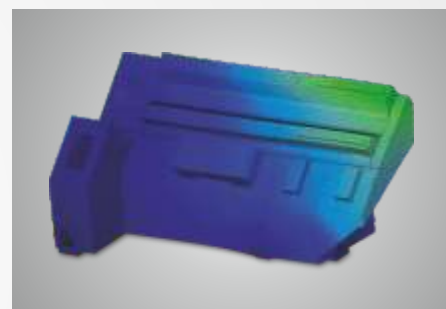
# TMC Series

## Overview

Turnmill centres give your business the flexibility to produce complete components in one operation and distinct competitive edge. Based on the proven DX design with all the tried and tested family features TMC Series 12-stations driven tool turret can perform milling, drilling and turning in a single set up with no need for additional processes.

## Monoblock structure

The rigid single piece 45° slant bed is made out of high grade cast iron for rigidity, heavier cuts and faster production. With virtually no vibration, it means higher surface finish even on hard materials for hard-part applications.



\*Structure for TMC 250 / TMC 350  
\*Different structure for TMC 200



## Spindle

Machine spindle is manufactured in house with the help of world class precision mother machineries and assembled in a dust free controlled temperature environment. Spindle is housed in a precision 3 angular contact bearings in the front and 2 angular contact bearings at the rear end. This arrangement takes care of radial as well as axial loads.

Powerful spindle with high torque motor allow high material removal rate.

## Headstock

Taking into consideration ability to take heavy cutting loads, head stock is made out of closed grain FG 300 grade casting. Fins are provided with better surface area for proper heat dissipation enabling better life.

## Linear axes

Machines are fully capable to take higher cutting parameters even with hard turning materials thanks to wide linear roller guideways, preloaded direct coupled ball-screws and monoblock structure.

## Operator panel

The newly designed Easy-to-Operate operator panel of the machine is made considering the reliability and the operator friendliness.

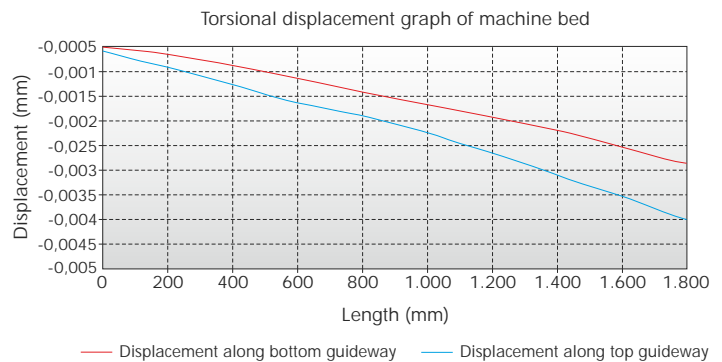
## 3 point leveling

Structural design followed with the concept of 3PL provides it with higher base rigidity due to which twisting of bed is eliminated during actual working load conditions. Also this feature enables machine to be installed and relocated quickly and easily.

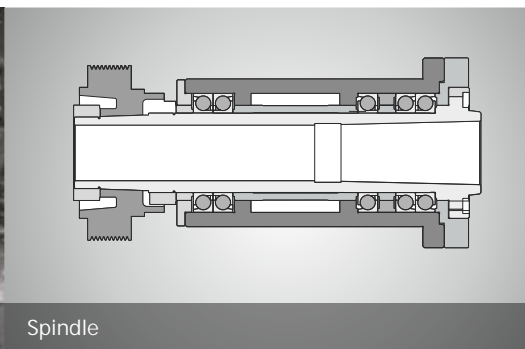
## Driven tool turret

Standard VDI servo driven 12 tools indexing turret on Turnmill Centres allows mix and match of the static or powered tools. Each turret movement is controlled by high torque servo motor for various applications like drilling and tapping, OD & ID profiles with radial and axial live tools.

## Bed torsion rigidity



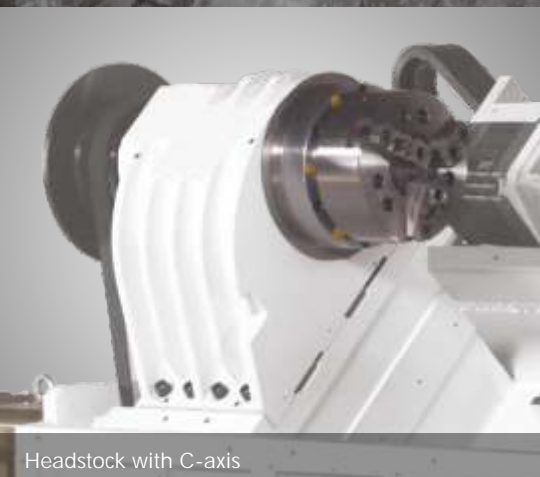
Axial live tool



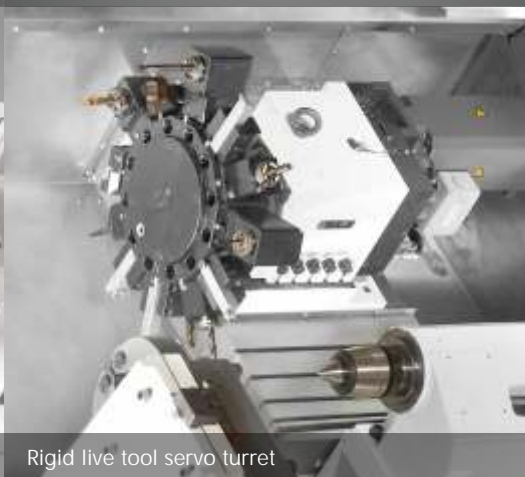
Spindle



Radial live tool



Headstock with C-axis



Rigid live tool servo turret



Tailstock with revolving centre

# TMC Series

## Overview

TMC 500 CNC turning centres are the most robust machine designed for heavy and interrupted cutting thereby letting you to achieve superior finishing & long term accuracies in conjunction with ease of service, excellent maintainability & flexibility. The machine offers wide range of cutting along with rapid positioning and fast bi-directional servo turret indexing resulting in unmatched cycle times.

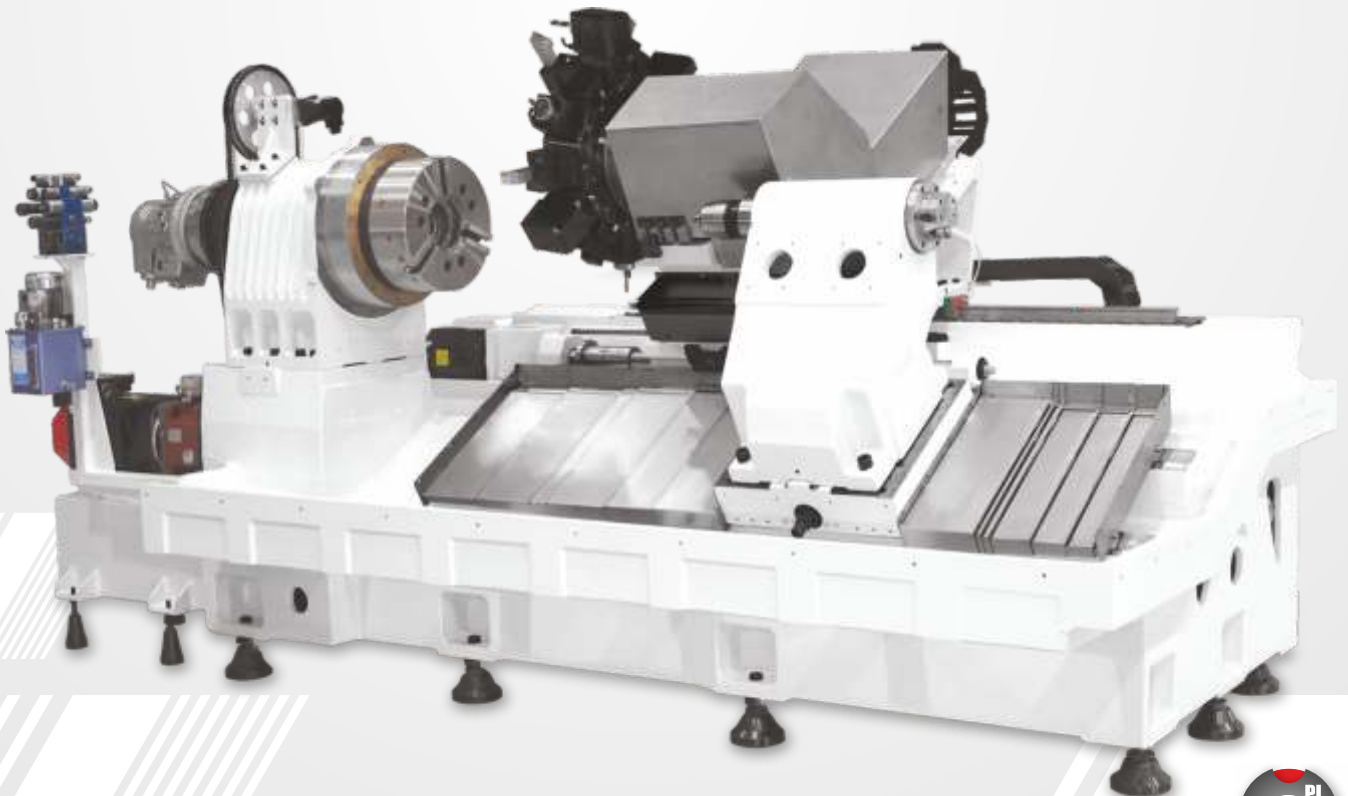
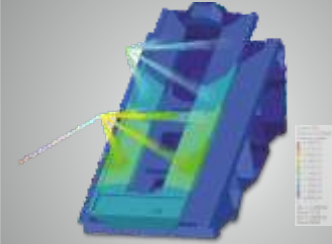
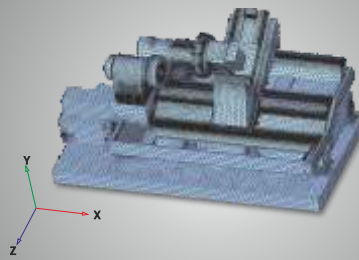
TMC 500 is an ideal partner for machining large diameter components used in automotive and sub-contracting industries. The machines are environmentally stable to meet your production demands.

## Rigid structure

Distinctively TMC 500 the robust bed and single piece 30°slant saddle construction is designed for high speed and heavy duty process forces. The bed and the saddle made from higher grade cast iron provides maximum rigidity, thermal stability, damping & least distortion which makes it most suitable for hard part turning.

Step-up structure concept with widely spaced guideways enables consistent machining performance even at bigger diameter.

Finite Element Analysis Techniques were deployed to design a rigid and structurally optimized machine resulting in superior damping characteristics which minimizes the vibrations occurring during the heavy interrupted metal cutting operations.



\*Structure for TMC 500  
\*Different structure for TMC 200



## Technical specifications

		TMC 500 1000	TMC 500 2000
<b>Capacity</b>			
Swing over bed	mm	800	800
Std. turning dia.	mm	550	550
Max. turning dia.	mm	555	555
Max. turning length	mm	1.000	2.000
<b>Travels</b>			
X-axis	mm	360	360
Z-axis	mm	1.000	2.000
Rapid traverse (X/Z axis)	m/min	24	24
<b>Spindle</b>			
Spindle motor power (30 min. / Cont.)	kW	25,5 / 18,5	25,5 / 18,5
Spindle bore	mm	80	80
Spindle nose		A,8	A,8
Max. bar capacity	mm	65	65
Spindle speed range	rpm	50 - 2.500	50 - 2.500
Full power range	rpm	750 - 2.500	750 - 2.500
<b>Turret (Servo)</b>			
No. of stations		12	12
Tool size (Cross-section)	mm	25 x 25	25 x 25
Boring bar diameter	mm	50	50
Live tool holder		VDI 50	VDI 50
Max. live tool speed	rpm	3.000	3.000
Live tool motor power	kW	9,7	9,7
<b>Tailstock</b>			
Quill diameter	mm	130	130
Quill stroke	mm	150	150
Thrust (adjustable)	kg	1.000	1.000
<b>Accuracy (as per VDI/DGQ3441)</b>			
Positioning Uncertainty (P)	mm	0,010	0,015
Repeatability (Ps medium)	mm	0,005	0,007
<b>Other datas</b>			
Weight	kg	9.500	12.500
Dimension	Length	mm	3.950
	Width	mm	2.400
	Height	mm	2.215

\*Large spindle bore options available

## Possible options

### Built-in motor spindle (Opt.)

The power of machine lies in its spindle. Built-in motor spindle for TMC is offered as an option. This high speed and high torque spindle employs a uniform heat construction that maintains an equal temperature all around the spindle which is protected from rise in temperature by the spiraling oil jacket located all the way to the back side. A separate oil chiller is provided for cooling purpose.

### Digital tailstock (Opt.)

Digital tailstock is provided as an option. The highly rigid tailstock is driven by a servo motor and moved on linear guideways. A digital tailstock with variable speed, feed control allows separate speeds to be set for approach and engagement, reducing the operating time of the tailstock spindle by over 20 %. The digital tailstock which has outstanding functionality as a tailstock uses the servo motor drive that allows it to be used as a third axis.

### Hydraulic steady rest (Opt.)

Machine can be equipped with hydraulic steady rest for smooth machining operation on over-hang work pieces as per required applications.

### Automatic tool setting (Opt.)

Programmable for confident unmanned running. Allows the machine to set accurate tool data and even detect in-process tool wear or breakages.



Built-in motor spindle (Opt.)



Hydraulic steady rest (Opt.)



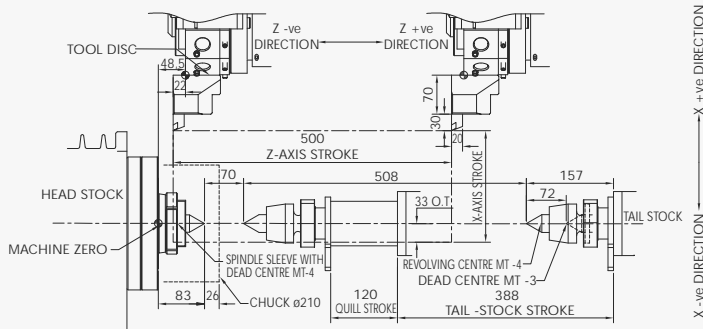
Automatic tool setting (Opt.)



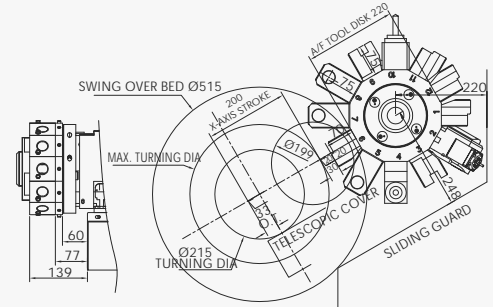
# TMC Series

## Machining range diagram

TMC 200

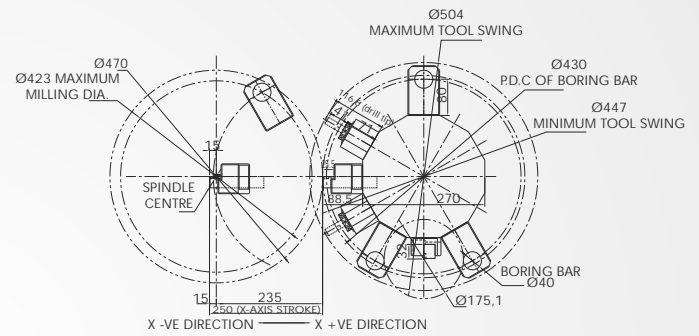
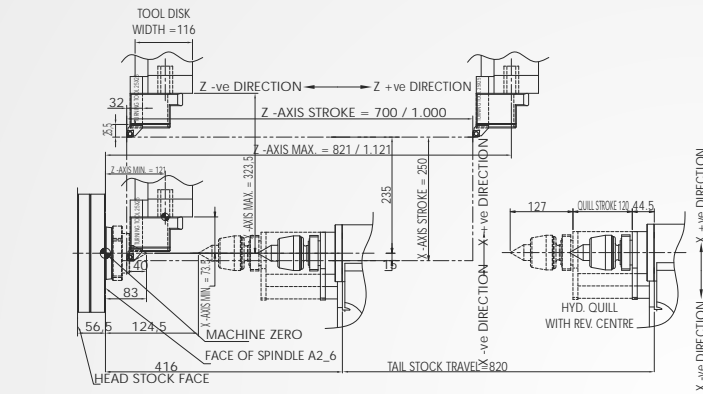


## Interference diagram



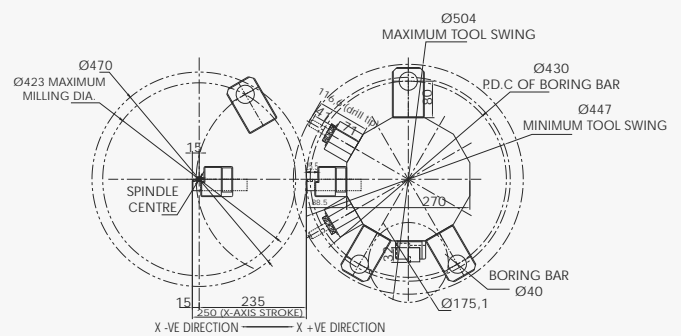
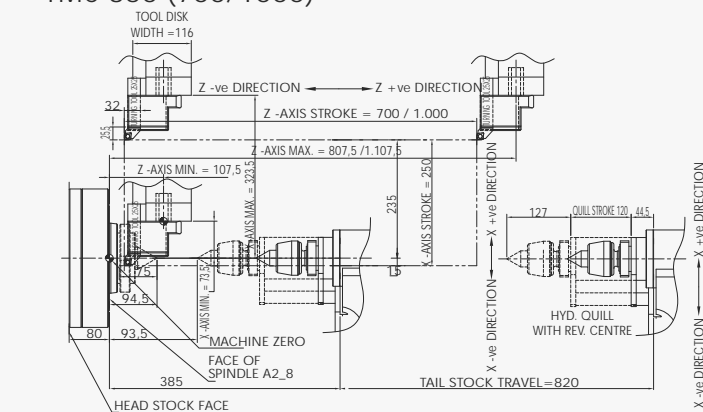
Servo turret live tool - VDI 25

TMC 250 (700/1000)



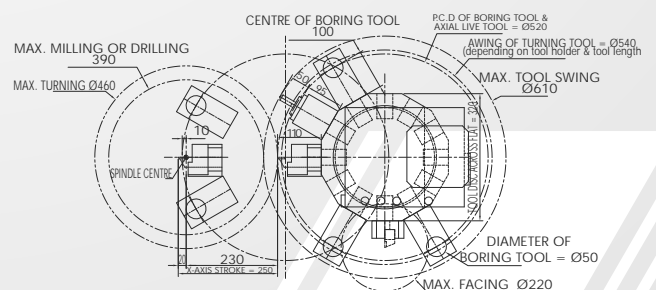
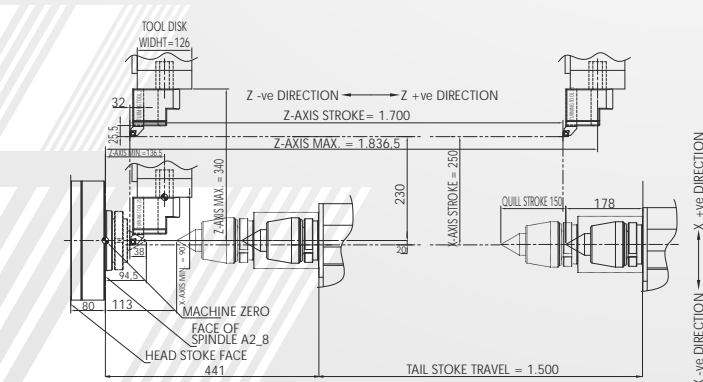
Servo turret live tool - VDI 30

TMC 350 (700/1000)



Servo turret live tool - VDI 30

TMC 350 (1700)



Servo turret live tool - VDI 40



		TMC 200	TMC 250 700	TMC 250 1000	TMC 350 700	TMC 350 1000	TMC 350 1500
<b>Capacity</b>							
Swing over bed	mm	500	600	600	700	700	700
Standard turning dia.	mm	200	300	300	400	400	400
Max. turning dia.	mm	300	470	470	470	470	460
Max. turning length	mm	500	700	1.000	700	1.000	1.500
<b>Travels</b>							
X axis	mm	200	250	250	250	250	250
Longitudinal (Z axis)	mm	500	700	1.000	700	1.000	1.700
Rapid feed (X & Z axis)	m/min	24	24	24	24	24	24
<b>Standard Spindle</b>							
Spindle motor power (30 min. / Cont.)	kW	12 / 9	16 / 12	16 / 12	25,5 / 18,5	25,5 / 18,5	25,5 / 18,5
Spindle bore	mm	70	70	70	80	80	80
Spindle nose		A <sub>2</sub> 6	A <sub>2</sub> 6	A <sub>2</sub> 6	A <sub>2</sub> 8	A <sub>2</sub> 8	A <sub>2</sub> 8
Max. bar capacity	mm	52	52	52	65	65	65
Spindle speed range	rpm	50-4.000	50-3.500	50-3.500	50-2.500	50-2.500	50-2.500
Full power range	rpm	750-3.250	500-3.250	500-3.250	750-2.500	750-2.500	750-2.500
<b>Turret (Servo)</b>							
No. of stations		12	12	12	12	12	12
No. of driven stations		12	12	12	12	12	12
Live tool holder		VDI 25	VDI 30	VDI 30	VDI 30	VDI 30	VDI 40
Max. live tool speed	rpm	6.000	5.000	5.000	5.000	5.000	4.000
Max. boring bar dia.	mm	32	40	40	40	40	50
Live tool motor power	kW	1,3	4,1	4,1	4,1	4,1	5,7
<b>Tailstock</b>							
Quill diameter	mm	85	85	85	85	85	130
Quill stroke	mm	120	120	120	120	120	150
Thrust (adjustable)	kg	500	500	500	500	500	1.000
<b>Accuracy (as per VDI/DGQ3441)</b>							
Positioning Uncertainty (P)	mm	0,010	0,010	0,010	0,010	0,010	0,015
Repeatability (Ps medium)	mm	0,005	0,005	0,005	0,005	0,005	0,007
<b>Other datas</b>							
Weight	kg	3.900	5.750	6.000	6.500	6.750	10.000
Machine dimension:							
Length	mm	2.860	3.500	3.500	3.500	3.500	4.615
Width	mm	1.765	1.850	1.850	1.960	1.960	2.081
Height	mm	1.635	1.850	1.850	1.850	1.850	2.060

## Standard features

- AC spindle drive
- AC SERVO digital drive
- Monoblock structure
- Linear roller guideways
- Hydraulic chucking
- 12 stations high speed servo turret
- Automatic & manual coolant system
- Centralised & programmable lubrication
- Laser calibrated axis for highly precise positioning accuracy and repeatability
- Tailstock with hydraulic quill
- Chips conveyor

## Options

- Bar feeder
- Bar puller
- Programmable tailstock
- Part catcher
- Steady rest
- Automatic loading/unloading system
- Large spindle bore
- Digital tailstock
- Automatic opening door
- High speed motorized spindle
- Automatic tool setting
- Live quill (Built-in revolving centre)
- Two speed gearbox

Note : All above informations are subject to change arising out of continuous product improvement. The standard description, accessories and technical datas conforms to our pricelist, not to the photo of machines shown in the catalogue.



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