

TURNING CENTER SERIES

TN500/ TN600/ TS60



- ◆ Star STL Series
- ◆ Star SL Series
- ◆ Flash SL Series
- ◆ Flash FL Series
- ◆ Flash FTL Series
- ◆ Hunter Series
- ◆ VMC Series
- ◆ SPM Series
- ◆ Toolroom Series
- ◆ Multi-Tasking Series
- ◆ **3-Axis Turning Center Series**



Scan to Watch Video

CONFIGURATIONS

Standard Features

- Hydraulic 3-jaw Chuck
- 12-station Power Turret (VDI)
- Automatic Lubrication System
- Automatic Coolant System
- Tailstock (TN500, TN600)
- Work and Alarm Light

Optional Features

- Tool Setter
- Chip Conveyor
- Live Tool Holders
- Different Chucks And Collets
- Different CNC Systems
- Bar Feeder

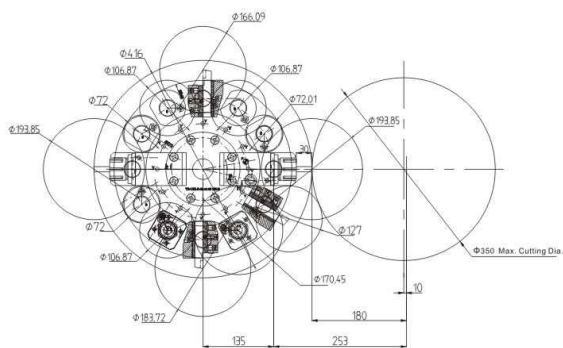
Specifications	UNIT	TN500	TN600	TS60	
Capacity	Chuck size	inch	8	10,*12	10,*12
	Max. length of workpiece	mm	400	750	400
	Max. swing dia. over bed	mm	Φ500	Φ600	Φ600
	Max. swing dia. over slide	mm	Φ280	Φ380	Φ380
Spindle	Spindle bore	mm	Φ66	Φ66, *Φ100	Φ66, *Φ100
	Max. dia. of through-hole	mm	Φ52	Φ52, *Φ75, *Φ90	Φ52, *Φ75, *Φ90
	Spindle nose	-	A2-6	A2-6, *A2-8	A2-6, *A2-8
	Max. spindle speed	rpm	4000	4000, *2500	4000, *2500
	Main motor power	kW	15	15, *18.5	15, *18.5
Axis	X axis travel	mm	265	280	280
	Z axis travel	mm	400	750	750
	X/Z axis rapid traverse	m/min	15/20	15/20	15/20
	Max. feed speed	m/min	8	8	8
Turret	No. of tool stations	pcs	12	12	12
	Tool shank size		VDI30	VDI40	VDI40
	Max. speed of driving tool	rpm	5000~6000	4500~5000	4500~5000
	Adjacent tool change and lock time	s	0.45	0.6	0.6
	Opposite tool change and lock time	s	2.3	3.2	3.2
Tailstock	Type of tailstock	—	Hydraulic, *LM	LM	—
	Taper of tailstock quill	—	MT4	MT5	—
	Travel of tailstock	mm	400	750	—
Others	Power capacity	KVA	24	25	25
	Overall dimension (L×W×H)	mm	2650×1720×1890	3220×1950×2000	2750×1800×1900
	Weight(about)	kg	3400	5200	4500

Note. “*” means optional, “LM” means linear motion guideway, automatic driven body move tailstock.
Specification may differ by using different control system or optional function parts.

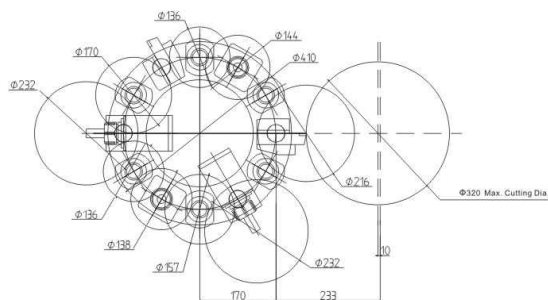
Precautions:

- Catalog content is subject to change without notice. Z-MaT is not responsible for typographical errors.
- Images may show base machines with added optional equipment.
- Actual machine standard features may differ in some details from machines shown in catalog images. This includes the size and dimensions of name plates and other labels.
- Z-MaT is not responsible for discrepancies between information in this catalog and actual machines.

Tool Interference Diagram

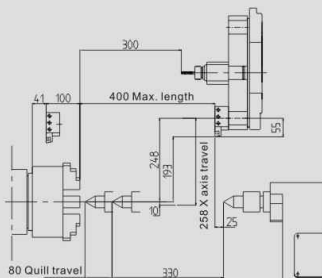


TN500

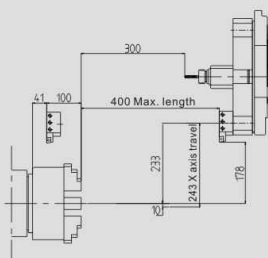


TS60/TN600

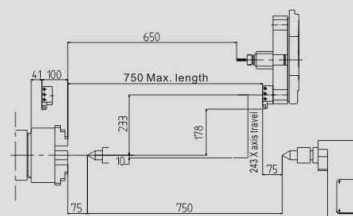
Machining Capacity Diagram



TN500

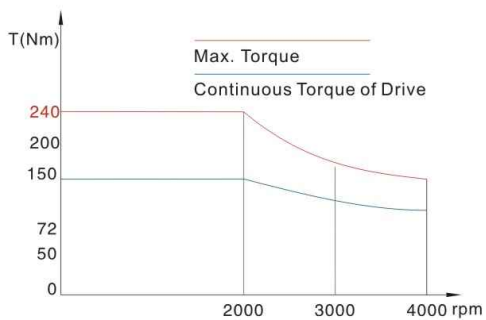


TS60

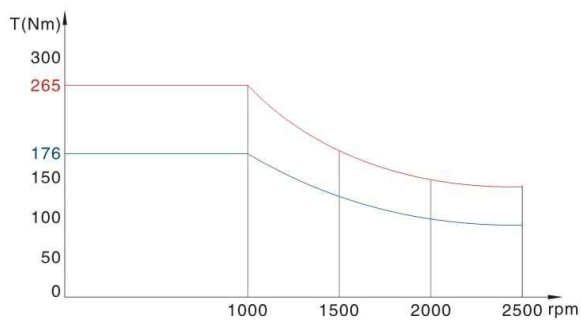


TN600

Main Motor Torque Diagram



15.0kW



18.5kW

ONGOING PRODUCT REFINEMENT

3-AXIS TURNING CENTERS

TN500, TN600 and TS600 are turning centers able to flexibly handle various workpieces. The models feature Direct Driven Spindle (Built-in Motor) that achieves high speed with great rigidity, and outstanding C axis accuracy. 12-station Power turret enables operators to perform machining of work pieces from simple to complex shaped components with one set up operation.

The models can satisfy a wide range of users from beginners of shop production to group corporation with experienced technicians.

Heavy-Duty Cast Iron Base-PLUS, Quality Components

Z-MaT Turning Center have a heavy-duty cast base with "True Align" slant bed design. The machine bed, head stock, turret and tail stock are aligned on the same plane. This unique design feature reduces heat build-up and resulting thermal expansion.

Cylindrical Roller Guideway

Cylindrical Roller type guideways and Large diameter high precision ballscrew provides improved rigidity and higher accuracy. With a very low coefficient of friction, they consume less power and do not require adjustment.

Automatic Tailstock

The tailstock body is positioned by hydraulic traction bar on roller linear guideway. Tremendous reduction in set up, compared to hydraulic sleeve type manual tailstock.



Built-in Motor Spindle



C Axis Motion

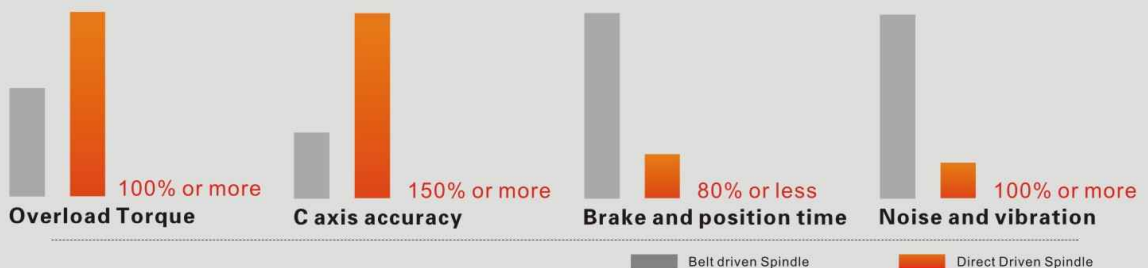
PMSM (spindle permanent magnet synchronous motor) type Direct Driven Spindle provides high-precision C axis motion that is fully interpolated with X and Z Motion.



Direct Driven Spindle

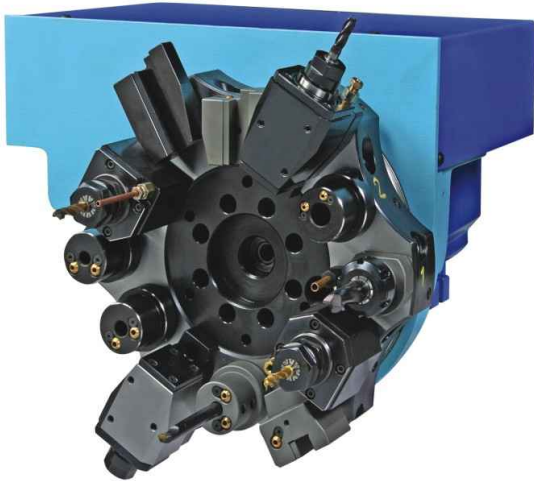
Electrical Spindle (Built-in Motor) offers high torque, better overload capability and high speed accelerate which shorten cycle time and increase productivity than Belt driven traditional spindle. The machining is running with less vibration and less noise, together with better accuracy. It represents New Generation Turning Center.

Overload Protection and Oil Coolant are standard features to guarantee long term stability.



POWERFUL DRIVEN TOOL TURRET

Standard with 12-station driven tool turret, features bi-directional indexing and non-lifting. High quality, high speed power turret provides optimal tool change efficiency and speed. Robust construction of internal elements ensures smooth transmission of high torque and speed. Only tool in position get drive. Motorized Cam operated mechanism ensures positive engage and disengage movements of clutch for driven tool. All drive elements are grease lubricated and properly sealed to prevent coolant entry.



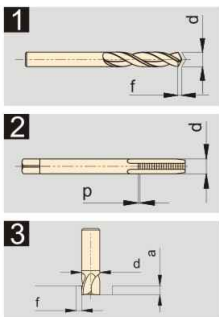
VDI Technology

The VDI system is a quick change clamping systems for each tool holder within the tool disc. Tool changes can therefore be performed within seconds, rather than minutes as with the traditional Block Bolt on system.

Sample Workpieces



Cutting Capacity



Model	TN500	TN600\TS60
Twist Drilling $d \times f$ (mm \times mm/min)	14 \times 0.15	20 \times 0.2
Tapping $d \times p$ (mm \times mm/u)	M10 \times 1.5 M24 \times 1	M16 \times 2 M24 \times 1.5
Slot Milling $d \times f \times a$ (mm \times mm \times mm/min)	20 \times 10 \times 40	25 \times 14 \times 40

It's only for reference, it can be more or less with different control system or different quality tools.

Usage Scenario



Cam Groove Milling

Face Milling

Face Tapping

Polygon Milling

Keyway Slotting

Tooling System

TN500/TN600/TS60

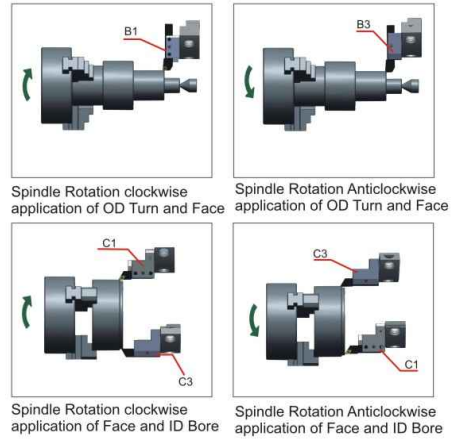


TN500 VDI30/12-STATION



TN600 & TS60 VDI40/12-STATION

	DIN69842	★ [ATH-30ER25-80] ER25 ★ [ATH-40ER32-80] ER32 * Compact size option
0 degree live tool holder on Axial(Face)direction		
	DIN69842	★ [RTH-30ER25-80] ER25 ★ [RTH-40ER32-80] ER32 * Compact size option
90 degree live tool holder on Radial(OD) direction		
	DIN69880	★ [B1 (30 20 40)] □20 ★ [B1 (40 25 44)] □25
Application of OD turn and face		
	DIN69880	☆ [B3 (30 20 40)] □20 ☆ [B3 (40 25 40)] □25
Application of OD turn and face		
	DIN69880	★ [C1 (30 20)] □20 ★ [C1 (40 25)] □25
Application of ID Bore and face		
	DIN69880	☆ [C3 (30 20)] □20 ☆ [C3 (40 25)] □25
Application of ID Bore and face		
	DIN69880	★ [Z2 30] ★ [Z2 40]
Plug to seal VDI hole		
	DIN69880	★ [E2 (30x32)] Φ32 ★ [E2 (40x32)] Φ32 *Other sizes option
Boring Bar tool holder		
	DIN69880	☆ [E1 (30x32)] Φ32 ☆ [E1 (40x32)] Φ32 *Other sizes option
Through Coolant Boring tool holder		
	DIN69499	☆ [E4 (30x25)] ER25 ☆ [E4 (40x25)] ER25 ☆ [E4 (30x32)] ER32 ☆ [E4 (40x32)] ER32 ☆ [E4 (30x40)] ER40 ☆ [E4 (40x40)] ER40
Er Collet tool holder		
	DIN69880	○ [F30 MT1] MT1 ○ [F40 MT1] MT1 ○ [F30 MT2] MT2 ○ [F40 MT2] MT2 ○ [F30 MT3] MT3 ○ [F40 MT3] MT3 ○ [F40 MT4] MT4
Morse Taper tool holder		
	DIN69880	○ [AR (30 26)] □26 ○ [AR (40 26)] □26 ○ [AR (30 32)] □32 ○ [AR (40 32)] □32
Cutoff tool holder		
	DIN69880	★ [BP 30] 8-60/54-110 ★ [BP 40] 8-66/54-110
Bar Puller		
	DIN69880	○ [A1 30x85] L85 ○ [A1 40x100] L100
Pre machined Turning Holder Blanks		
	DIN69880	○ [A2 30x100] 100 ○ [A2 40x120] 120
Pre machined Boring holder Blanks		



DIN69880	★ [SM E(32 08)] Φ8	★ [SM E(32 16)] Φ16
	★ [SM E(32 10)] Φ10	★ [SM E(32 20)] Φ20
	★ [SM E(32 12)] Φ12	★ [SM E(32 25)] Φ25

Reduction Sleeves

e.g. Recommended Tool Holder Package

Tool Holders	Code	Nos
0°live tool holder -	ATH	x1
90°live tool holder -	RTH	x1
OD Turning tool holder -	B1	x6
Facing tool holder -	C1	x1
Boring tool holder -	E2	x2
U drill Boring tool holder -	E1	x1

Note:

- I .The code in [e.g. C1 (30 20)] is purchasing code. Written in Blue color is for TN500, written in red color is for TN600/TS60.
- II . ★ mark means that the tool holders often used for general workpiece, we recommend customer to buy together with machine.
- III . ☆ mark means that the tool holders occasionally used for some workpiece.
- IV . * mark means that option size is available, please contact our sales representative for details.
- V . ○ mark means that the tool holders seldom used. Majority of customers don't need to consider it.