

# Z-MaT Group

*Smart CNC Solutions*



Smart CNC Solutions | Great Machine Tools

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Zhejiang Manufacturing Base 2: Lupu Nanwan Zhigu, Yuhuan, Taizhou, Zhejiang Province, China

**GreMaT**  
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Z-MaT Factory No.1: Zhejiang Manufacturing Base



Z-MaT Factory No.2: Nanjing Manufacturing Base



Z-MaT Factory No.3: Zhejiang Manufacturing Base is under construction



Z-MaT Group, is one of the world's largest and fastest-growing machine tool manufacturers. The group operates three manufacturing sites spanning a total land area of 132,000 square meters and a construction area of 150,000 square meters. Under its brands Z-MaT and GreMaT, the group produces a comprehensive range of CNC machines, including CNC Turning Centers, Double-Column Machining Centers, and 5-axis Machining Centers, with over 200 models currently in production.

Z-MaT Group has independently developed an advanced digital management platform, Z-MaT Manufacturing (EZM). This intelligent platform integrates ERP, OA, CRM, WMS, and PLM systems, and incorporates the TPS lean production philosophy to significantly enhance operational management and decision-making efficiency. Leveraging modular design and manufacturing technologies, the EZM platform enables Z-MaT Group to achieve cost efficiency in large-scale production while offering customers extensive machine customization options.

Z-MaT is committed to internationalization. From the CE safety design, reliable configurations, solid packaging and shipping to the subsequent professional after-sales service of its products, all aspects have taken fully into account the requirements of overseas markets. Z-MaT Group has maintained the top position in China's export rankings for medium-sized turning and machining centers (According to custom Data resources from 2015 to 2025). Z-MaT machine tools are trusted by tens of thousands of customers across 80 countries.

Besides, Z-MaT Group prioritizes customer-centered service. Its international service team comprises multilingual engineers from diverse countries ensuring rapid response and seamless communication to help clients run equipment effectively. To minimize machine downtime, Z-MaT Group operates a large-scale spare parts warehouse capable of dispatching over 90% of components within 12 hours. Notably, the group does not profit from after-sales parts sales; post-warranty spare parts are priced below 30% of international market rates. Free lifelong technical consultations further reduce operational costs for customers.

As a global industry leader, Z-MaT Group is committed to sustainability and social responsibility. All facilities are powered by green energy, with solar panels fully covering factory rooftops. The third factory is being built as zero-carbon Emission standard. Additionally, the group partners with educational institutions and community organizations to support social welfare initiatives, aligning its mission with improving quality of life worldwide.

**Timeline of Z-MaT Development:**



**1981** In 1981, Mr. Jin Yihong, the founder of the Z-MaT Group, officially embarked upon the machine tool manufacturing industry, thereby inaugurating the Z-MaT's historical odyssey within the machine tool domain.

**1990** Established in 1990 as a mold and auto parts manufacturer. The early company was successful and experienced rapid growth. The company gained valuable experience using CNC machine tools in the manufacturing of the company's product line.

**2000** From 2000 onward Z-MaT made a variety of machine tools for use in the company's parts manufacturing. These CNC machine tools dramatically increased productivity and cut costs.

**2005** In 2005 Z-MaT moved out of auto parts manufacturing and fully committed the company's resources into the production of CNC machine tools.

**2010** In 2010 Z-MaT established a precision parts manufacturing subsidiary, named Giessen to produce high speed and precision spindles.

**2015** In 2015 Z-MaT established a R&D center subsidiary in Taiwan. The 4-axis Turning Center TC500 was designed in the same year in Taichung Taiwan.

**2017** In 2017 Z-MaT established a second plant in Nanjing city, 3 times the area of our existing headquarter factory. Larger size machines, HMC and Gantry Milling has been made in the new plant. The production capacity has been increased extraordinarily.

**2023** In 2023, Z-MaT implemented the EZM (Electrical Z-MaT Manufacturing) intelligent manufacturing platform, which integrates ERP, OA, and CRM software, milestone of improvement of QC and management efficiency.

**2024** Z-MaT has successfully bid for a new plot of land in Nanwan Zhigu, Yuhuan, Zhejiang Province. The company aims to build a world-class high-end CNC machine tool manufacturing base with an area of 90,000 square meters, which is targeted to be put into use by the end of 2026. In addition, Z-MaT has launched its first self-developed 5-axis Vertical Machining Center U630, a core functional component independently developed and manufactured — the electric spindle, as well as its self-developed CNC system ZMATROL.

# Milling

## Vertical Machining Center

**10** High Speed F Series  
48m/min fast traverse to increase productivity



**11** Power V Series  
Same size, higher rigidity



Portal Type Vertical Machining Center  
Ultra cost-effective  
Ultra rigidity

**15**



**17** Twin Spindle Machining Center  
Same investment double productivity, a secret weapon for the large volume products manufacturer

**19** The General Purpose Vertical Machining Center  
The complete line of VMC,  
X axis from 320mm to 1600mm

High Speed Tapping Center  
60m/min super high speed tapping center

**21**



Portal Machining Center  
**23** With good vibration absorption and wear resistance



Horizontal Machining Center  
**26** Upright t-base structure

# Contents

5-Axis Machining Center  
5-axis Simultaneously Technology

**29**



Compact APC Solution - MX530H / VMX640  
**32** Exchange workpieces without stopping machine

Automation & Production Line  
**33** Machine with robot

Vertical Lathe  
**37** Excellent option for large, heavy, thin-walled and irregular disk parts

Star Family Turning Centers

**47** Star STL Series  
Slant bed, tailstock, linear guideway

**51** Star SL Series  
Slant bed, linear guideway, compact design – without tailstock

**52** Star STH-B Series  
Slant bed, turret, hard-box guideway

**53** Star TN/TS Series  
X.Z.C. 3-axis turning centers

**55** Star DT Series  
X.Z.C.Y. 4-axis turning centers

**57** Multi Turrets Double Turret GT260V  
Multiple turrets, multiply your production

# Turning

Double Turrets Double Spindles

**61** GT500/GT500-M  
Ideal for complex workpieces and bar machining

Center Drive Turning Center  
**62** ATB Series  
To achieve the best concentricity

Dual Spindle

**63**

TC500  
Advanced 45 degree cross Y axis



**65** STL/TN/DT-S Series  
Handle maximum capacities with ease

**67** TN/DT/STL-SX Series  
Sub-spindle coupling machining function

**69** DA Series  
Two channels machining, a complete advanced automation on one single machine

**70** SA28-S/SA45-VS  
Single automation option you can use - and price justify

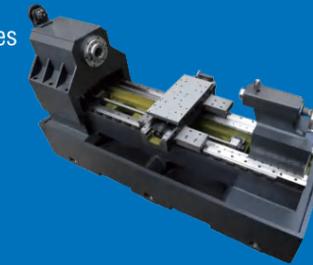
Flash Family Turning Center

**71** Flash SL Series  
The beauty of speed and accuracy

**77** Flash FL Series  
Center mounted ballscrew with heavy duty linear motion guideway

Flash FTL Series  
The world's first and best design

**81**



Super P Series  
**85** High precision and compact size

Rigid Series Power A  
**86** 60° slant bed, greater rigidity and fast speed

Hunter Family Turning Center

**89** HUNTER FTH Series  
Revolutionize the NC/conventional lathe



**93** HUNTER STH Series  
Cost-effective slant bed hard guideway cnc lathe from original design of Z-MaT

Multi-Tasking Machine  
**95** Unique structure turn-mill center

Turn-Mill TF01

**98** Turning center transform into VMC like "transformer"

Tool Room CNC Machine

**99** Innovative, heavy cast base-with narrow footprint

Special Purpose Machine

**100** Increase Productivity-Beyond Expectations  
Spherical Cutting CNC lathe Q50, Big Head, Multi-Tool, Double End Milling, Car Wheel Repairing, Steering Rod



**105** Professional Manufacturer Broad Production Line

Service Network

**109** The pursuit of the fastest response is our promise

# The Latest - MILLING & TURNING TECHNOLOGY

- Vertical Machining Center
- Gantry Machining Center
- Horizontal Machining Center
- Tapping Center
- 5-axis Machining Center
- Multi Turrets Turning Center
- Dual Spindles Turning Center
- Flat Bed Turning Center
- Slant Bed Turning Center
- Multi-tasking Machine

## Steadfast in Our Faith

Recently, the machine tools industry is playing a price game, manufacturers are pushing machine tools prices down in a race to the bottom. The machine tools builders are facing overwhelming pressure to push prices lower and lower in order to compete. Their margins are being cut slimmer and slimmer. This only drives a need to cut costs by using lower priced components, reducing manufacturing processes and designing lighter machine. Though the parameters seem the same, the machines are getting weaker and service is getting poorer. CNC machines are a complex piece of equipment, integrated with pre-service and after-service for a long term operating life, it is impossible to identify the difference by sight. The end user will pay the price by running the machine at high cost and worse accuracy, reduced operating life, increased machine downtime and after sales service.

Z-MaT has always been known for being a manufacturer of heavyweight and high-rigidity structure machines. We were a massive CNC machines end-user before. Our faith is helping our customer gain competitive advantage by providing them with cost-effective products, fast and superior service and tailor-made machining solutions. Our company, and our people will never compromise on our commitment to providing quality products and service.

## CONTROL SYSTEM Cutting edge and easier operation

Z-MaT has established in-depth partnerships with globally renowned CNC system corporations, undertaking secondary development endeavors. Simultaneously, we are dedicated to the research and development of our proprietary, next-generation Super Geometric Intelligence system, ZMATROL.



■ FANUC

■ SIEMENS

■ HEIDENHAIN

■ MITSUBISHI

## ZMATROL SMOOTH G&M



# Z-MaT Enhanced FANUC Oi-F PLUS System

A new generation of High-performance CNC



## Fine Surface Technology

### • AICC I / AICC II +

This function enables suppression of acceleration/deceleration delays and servo delays that become larger with increases in the feedrate and reduction of machining profile errors.

### • Smooth Tolerance+Control

This function generates smooth machining path within specified tolerance.

### • Machining Condition Selection Function

For AICC function parameters which place importance on feedrate or precision are set and a precision level is specified according to the machining condition during machining.



■ Standard in MF PLUS

- HRV+High Response AC Servo System
- Edit Program In Memory Card
- Fast Cycle-time Technology
- Quick Program Restart

### ■ AICCI/AICC II +(TYPE \*3B)

AI Contour Control I/AI Contour Control II +

### ■ Smooth Tolerance+Control

### ■ Machining Condition Selection Function(TYPE \*3B)

### ■ Manual Handle Retrace

### ■ Polygon Turning

### ■ Polar Coordinate Interpolation

### ■ Cylindrical Interpolation

- Standard
- Standard in MF PLUS
- Standard in TF PLUS
- ★ Option in MF PLUS
- ★ Option in TF PLUS

## Conical/Spiral Interpolation

- Specify circular interpolation command, revolutions or per-revolution radius increment (decrement) to enable spiral interpolation.
- Specify spiral interpolation command, an additional axis and its per-spiral-revolution position increment (decrement) to enable conical interpolation.

★ Option in MF PLUS



## Involutes Interpolation

- Involute interpolation enables involute curve machining with cutter compensation. It avoids approximating curves, ensures continuous pulse distribution for smooth high-speed operation, and simplifies program creation, shortening program length.

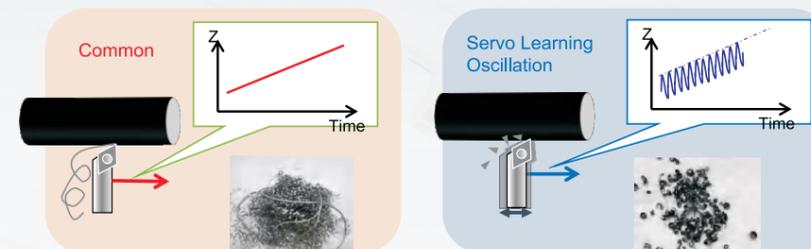
★ Option in MF PLUS



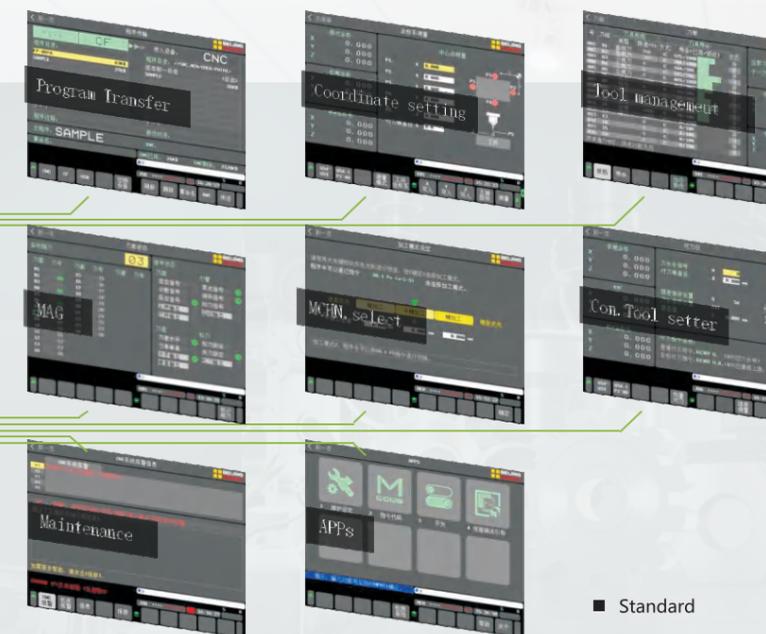
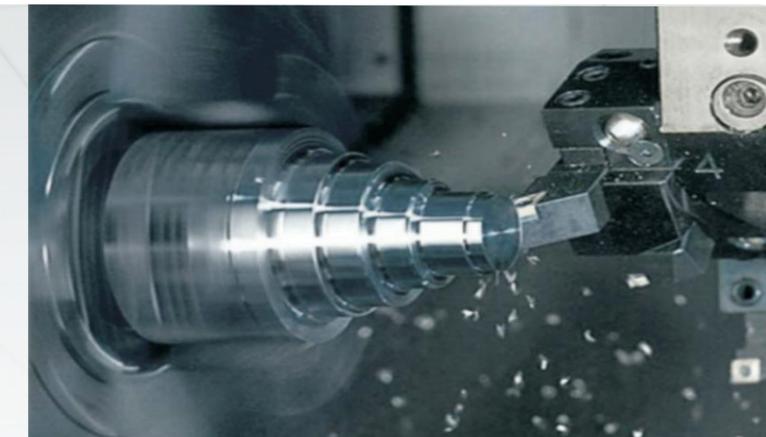
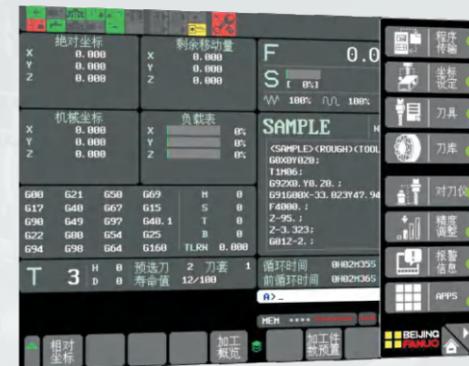
## Servo Learning Oscillation

- A function for shredding chips in lathe applying high frequency oscillation with Servo Learning Control
- This function is necessary to two-axes oscillation cutting

★ Option in TF PLUS



## FANOVI Multifunctional HMI product based on FANUC CNC



■ Standard

# Z-MaT Enhanced SINUMERIK 828D System

A new generation of High-performance CNC



## Z-MaT added standard functions package

- Additional 1 Axis/Spindle (C20)
- Run MyScreens (P64)
- OPC UA (P67)
- Extended Technology Functions (P58)
- Contour Handwheel (M08)

## Turning

- ShopTurn: Machining Step Programming (P17)
- 3D Simulation 1 (machined part) (P25)
- TRANSMIT/TRACYL without Y-axis (S50)
- Travel to Fixed Endstop with Force Control (M01)

## Milling

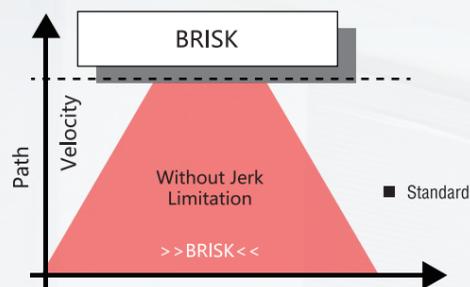
- Friction Compensation (S06)
- Top Surface (S17)
- Extended Operator Functions

Z-MaT Extended    Standard    Option

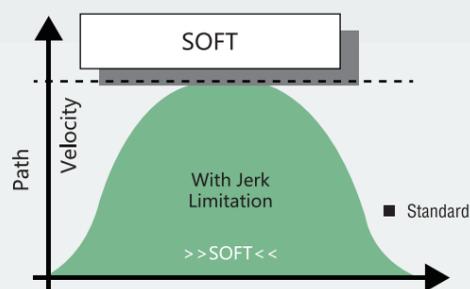
## High Cutting Efficiency

### Jerk Control (Acceleration Rate of Change)

- Unlimited acceleration
- Commutation shock, easy to produce vibration ripple
- Forced to reduce acceleration, low efficiency.

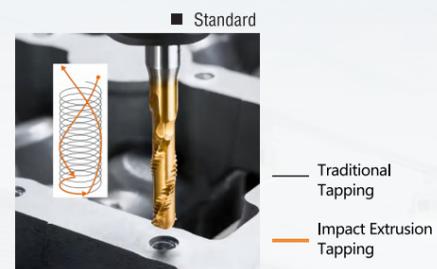


- Limit the maximum value of acceleration
- Smooth commutation without shocks and vibration ripples
- Increased acceleration, high efficiency



## Impact Extrusion Tapping

- Support for punching, extruding and tapping tools
- Special cycle for punching, extruding and tapping



Thread machining time savings > **70%**

## Comb Grooving

- Uniform blade loading, greatly increased feed rate FB (up to 200 per cent) for comb grooves
- Significantly increased machining efficiency due to higher feed rates
- Graphical interactive programming for easier and time-saving programming



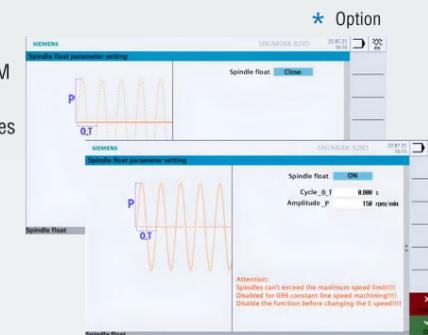
## Spindle Floating Anti-vibration

When turning slender shafts and discs, tool vibration (cutting resonance) occurs during machining at certain intervals of rotational speed, and the quality of machining can be improved by adjusting the spindle speed float (changing the real-time fixed rotational speed of the spindle during machining) to inhibit turning co-seismic vibration.



## Recommended Values for Spindle Float

- Recommended speed range: 100 to 200 RPM
- Recommended cycle time: 0.5 to 2 seconds
- Lower parameters may be used in some cases 20 to 50 RPM / 1 to 3 seconds

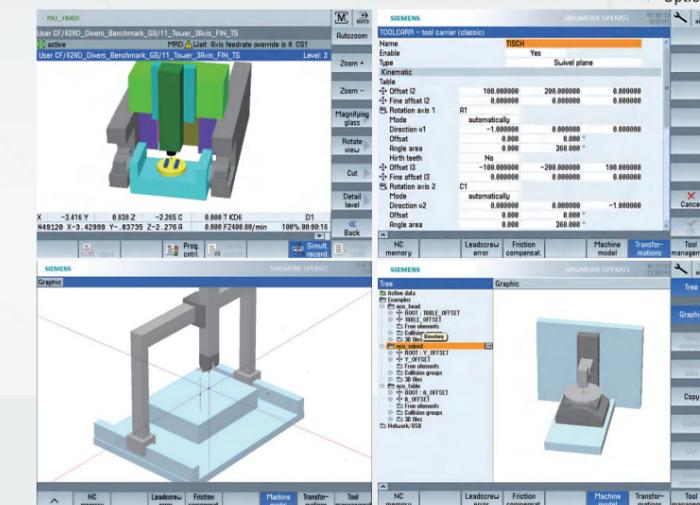


## Recommended Application Scenarios

- Use during rough or semi-finishing operations under vibrational conditions.
- Roughing with large R-angle turning tools.
- Applicable in finishing operations where surface appearance is not critical.

## Collision Avoidance ECO

With the Collision Avoidance ECO function, 3D collision protection models can be created for machine components and tools, providing real-time, easy and effective protection for moving machine components and tools.



Rapid collision modelling with basic elements such as cylinders, cubes, etc. Define protected areas for each moving part. Setting up multiple collision pairs according to the actual machine mechanism. Dedicated human-machine interface for display and commissioning. Supports tool rotation/workpiece rotation/hybrid 3+2 setups

## More Standard Features

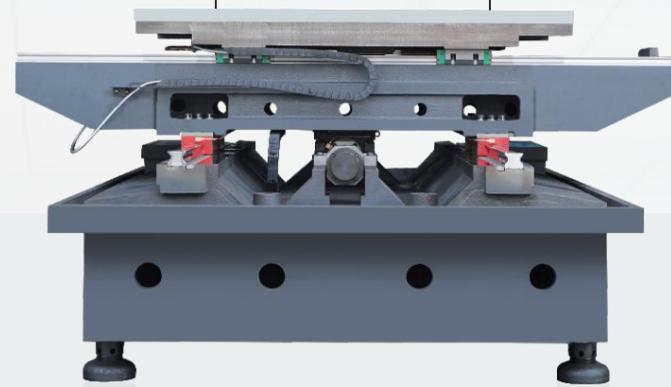
- Preparation of the blank
- Tool Measurement
- Workpiece Measurement
- ISO Programming
- Program GUIDE: Graphical Programming
- Rich 2D/3D Viewing Angle
- Processing Time Evaluation
- Quick View of the Mould
- 80-bit Floating-point Nano Calculation Precision
- Dynamic Feedforward Control
- Premium Surface Optimization
- Pitch Compensation

## The Rigidity is Hidden in the Design Details

It's hard to tell the quality of a machine by only reading parameters. However, you could always find design details in Z-MaT machines sparking the spirit of Z-MaT R&D team in full pursuit of solid inside quality.

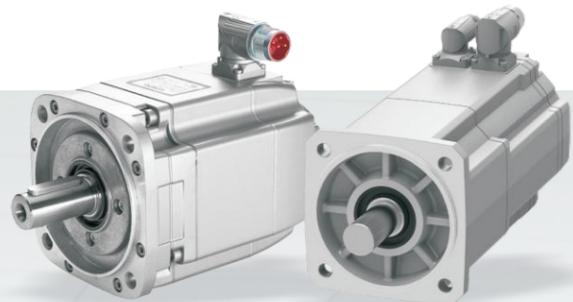
V10: 880mm (3 pairs of slide blocks)  
 V8: 820mm (2 pairs of slide blocks)  
 V6: 750mm (2 pairs of slide blocks)  
 VMC1050E: 820mm (3 pairs of slide blocks)  
 F1055: 770mm (2 pairs of slide blocks)

The distance between X axis slide blocks



### Wider Width of Distance Between Slide Blocks

The distance between slide-blocks is a very important parameter which affects the machine's accuracy, rigidity and load capacity. If the span between the slide-blocks is short, it cannot guarantee the accuracy and rigidity in the full travel due to bending caused by side thrust force.



### Standard with More Powerful Motor

To exploit the performance of mechanical robust design, Z-MaT uses powerful servo motors to drive axes, spindles, tool-changers, etc. Taking one point as an example, for medium - size VMC, Z-MaT uses a rated 3.0kW (Fanuc)/3.1kW (Siemens), Max. 9.4kW, 45N.M high-torque axis servo motor, while others commonly use rated 2.0kW or 2.5kW motors.



### One Class-up Servo Driver

Z-MaT usually uses one class-up servo driver to shorten start-stop time, to increase overload capacity. Matched with solid mechanics, it increases the CNC machine reliability and performance extremely.

### Larger Size LM Slide Blocks

Z-MaT VMC uses heavy-duty linear rails together with large-size slide blocks which support and guide the motion much more steadily than regular ones. It is one of Z-MaT's unique mechanical engineering details for super anti-vibration, rigidity and long-life characteristics.

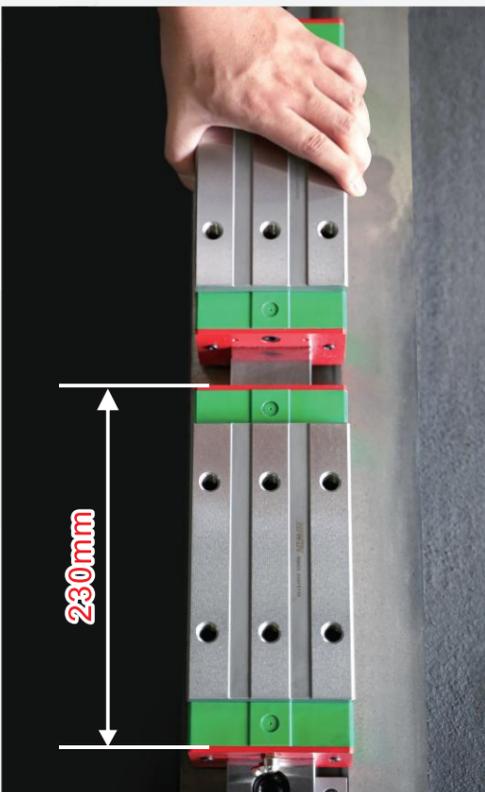


Photo: Power V10 Z axis slide blocks



## High-quality Machining Supported by High-performance Spindle

The machining centers are equipped with high-performance spindles with various speeds and sizes, whose designs are optimized through structural analysis to increase rigidity of machining. The high durability and high speed of the spindle allow high quality machining.

### ● High-Capacity Spindle Unit

The advanced design of our spindles provides high axial-thrust capability, yet generates minimal heat. Several options of spindle heads and speed are available to fulfill various high speed machining requirements.

### ● High Efficiency Belt-drive Spindle

Our high-efficiency belt-driven spindle offers a speed of 8000 rpm, adaptable to different machining needs. For all series, a spindle oil cooler system is an optional addition. It helps prevent issues like thermal expansion and deformation. The contact surfaces between the headstock and the spindle are meticulously hand-scraped. This ensures top-notch performance and precision.

### ● High Speed, High Power Direct Drive Spindle

Direct drive spindle efficiently separates the heat generated from the motor, which reduces deformation, therefore increasing machining accuracy.

## High-production Tool Changer with Super-fast Exchange Speed

Tool storage capacity 24/30/40/60 tools increases productivity and reduces setup times. A double-arm gripper swaps tools quickly to minimize non-cutting time. Locating the tool changer outside of the work envelope frees up additional workspace, keeps tools and tool pockets free of contamination, and adds greater flexibility when using large fixtures or rotary tables. With adjacent pockets empty, the tool changer will accept oversized tooling.

## Fast and Reliable

- The high-performance magazine and ATC enable quick tool changes, minimizing non-cutting time.
- The highly reliable magazine and ATC, which can accommodate a wide range of tools, ensure stable tool changes and flexible machining.
- The ATC arm, equipped with a holding lever to firmly secure a tool, can tightly hold long and heavy tools, providing reliable tool changes.



Disk Arm ATC Chain Type ATC Gripper ATC Carousel ATC

# Open Innovation for Maintaining Ideal Machining Quality

We offer a variety of high-performance peripheral equipment according to customer production requirements. The combination of the VMC machine and high-performance peripheral equipment delivers high-precision machining and excellent durability.



**4th and 5th axis auxiliary device interface**  
Users who wish to set up a rotary axis on the table to increase application flexibility are encouraged to contact sales representatives.

**Chip conveyor**  
Reduced chip accumulation inside the machine and operator spends less time removing chips.

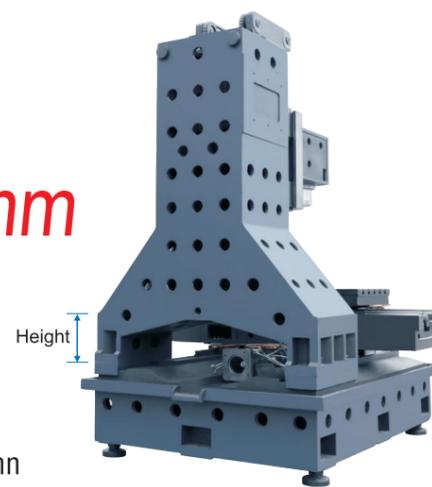


**Automatic measurement**  
Automatic tool setting and workpiece measurement offer easy operation and help operator save working time.

**Spindle oil chiller**  
An oil cooler correlated to room temperature can be equipped for long-term operation at high speed.



Height raised  
**100-300mm**



## One Piece Raised Column

When the distance between the table top and the spindle nose needs to be extended, for example, to accommodate a fixture or rotary axis on the table, the column of the machine can be raised. One-piece monoblock design structure guarantees the rigidity and reliability.

# HIGH SPEED VERTICAL MACHINING CENTER-F SERIES

## Fast Motion and Compact Design

To increase your productivity, the Z-MAT F series vertical machining center is standard equipped with a 48m/min fast traverse, a high-speed ATC, big pitch C3 ballscrew, cylindrical roller linear guideway. The all-around design and enhanced performance of the F series machines are popularly applied to 5G, IT, aerospace and defence industry.

### Standard Features

- Disk Type ATC
- Automatic Lubrication System
- Full Machine Enclosure
- Operator Door Safety Lock
- Air Conditioned Electrical Cabinet
- Handheld Air Gun
- 10000rpm Belt-Drive Spindle
- Spindle Oil Chiller
- Spiral Type Chip Conveyor

### Optional Features

- CNC Controlled 4th/5th Axis Rotary Table
- Different CNC Control System
- Coolant Through Spindle
- Chian Type Chip Conveyor
- 12000rpm Direct Drive Spindle
- Tool Measurement System
- Workpiece Measurement System



## Specifications

	Unit	F650	F855	F1060	F1055
<b>Table</b>	Table size	mm 750×500	950×550	1200×600	1200×550
	Max.load	kg 400	500	600	600
	T slot(width×nos.×distance)	mm 14×5×80	18×5×90	18×5×100	18×5×90
<b>Travel</b>	X Travel	mm 600	800	1000	1000
	Y Travel	mm 500	550	600	550
	Z Travel	mm 550	550	550	550
	Spindle center to column	mm 510	570	610	580
	Spindle nose to table	mm 100-650	130-680	130-680	130-680
<b>Spindle</b>	Guideway type	LM (Roller)	LM(Roller)	LM (Roller)	LM (Roller)
	Spindle speed	rpm 10000,*12000	10000,*12000	10000,*12000	10000,*12000
<b>Feed &amp;Magazine</b>	Spindle type	BT40	BT40	BT40	BT40
	Max. power of spindle	kW 7.5,*11	11	11,*15	11,*15
	XY/Z axis rapid traverse	m/min 48	48	48	48
<b>Dimension &amp;Weight</b>	ATC capacity/type	No./type 24/Disk	24/Disk	24/Disk	24/Disk
	Max. weight of tool	kg 8	8	8	8
	Power capacity	kVA 24	24	24	24
<b>Dimension &amp;Weight</b>	Dimension	mm 2200×2000×2250	2820×2140×2430	3100×2150×2400	3120×2890×3080
	Weight (about)	kg 4400	5600	6400	6500



# HEAVY DUTY VERTICAL MACHINING CENTER-POWER V SERIES

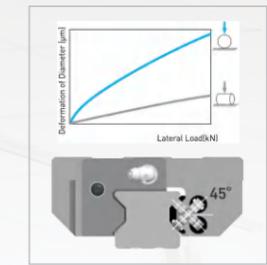
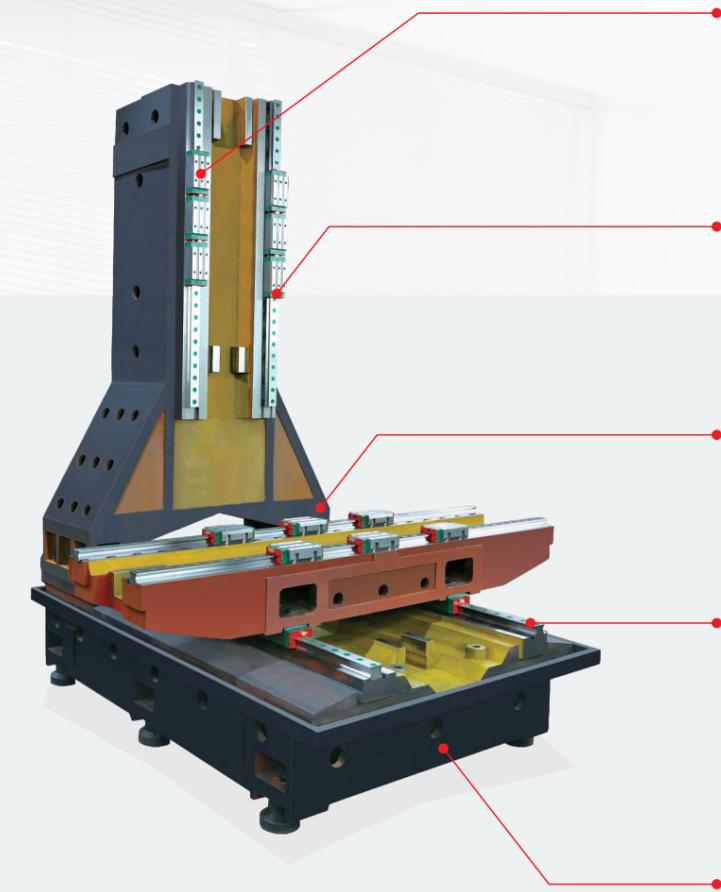


## SAME SIZE & HIGHER RIGIDITY

The machine is designed with large work area and big loading capacity, combining high speed and high rigidity. High milling capacity and powerful drives make the machine super versatile, enabling it to make a wide variety of workpieces for different industries.

- Optimal machine design ensures super rigidity of the machine.
  - Heavy duty roller type linear guideway
  - Larger motor power
  - Wider guideway span
  - Heavier machine weight
  - Standard with BT40-150 type big spindle and BT50 spindle is available as option
- The casting bed and Y-shaped column design provide solid support to ensure ultimate dynamic accuracy.
- The contact surfaces of the column and bed are all hand scraped to ensure precision assembly, strong structure and loading balance.

### Rigidity Features 5-Combo!



**4x45°-Roller**  
Longer running life higher rigidity roller LM

With 4-rows of rollers arranged at a contact angle of 45 degrees, the guideway has equal load ratings in the radial, reverse radial and lateral directions. The contact pressure of the rolling element is distributed on the line region, rollers have a greater contact area than balls, this provides the roller guideway with higher load capacity and longer running life. The figure shows the rigidity of a roller and a ball under equal volume.



**6 units**  
More slide blocks

**X/Z axis linear guideway**  
X and Z axes both use 6 slide block bearings to support spindle units and worktables



**1320mm**

Wide span column structure provides optimal machining rigidity. The headstock retains stability and accuracy even under high speed traveling.



**45/55/45mm**  
Larger X/Y/Z axis linear guideway

Rather than popular 35mm width LM as standard of this size VMC, we use 55mm and 45mm width size on Power V10. Moreover we select longer overall LM block length for greater rated load.



**8200kg**  
Heavier weight of machine

Robust casting design is an essential feature for resisting vibration. No matter how good other parameters look, it will affect the machining performance of hard material and heavy cutting, further impact on productivity, accuracy and running life.

Note: The picture is the frame of Power V10.

# POWER V SERIES

## SAME SIZE MORE POWER!

- Heavy duty LM guideway support bearing
- Larger motor power
- Large guideway span
- Heavier machine weight
- BT40-150 type big spindle with 8000RPM



POWER V8



POWER V10



### Standard Features

- Disk Arm Type ATC
- Ergonomic CNC Panel & MPG
- Automatic Lubrication System
- Full Machine Enclosure
- Operator Door Safety Lock
- Air Conditioned Electrical Cabinet
- Handheld Air Gun

### Optional Features

- CNC Controlled 4th/5th Axis Rotary Table
- Different CNC Control System
- Higher Speed Spindle
- Coolant Through Spindle
- Chip Conveyor
- Spindle Oil Chiller
- Measurement System

## Specifications

	Unit	Power V6	Power V8	Power V10
<b>Table</b>	Table size	mm	1000×450	1200×520
	Max.load	kg	750	800
	T slot(width×nos.×distance)	mm	18×3×130	18×5×90
<b>Travel</b>	X Travel	mm	600	850
	Y Travel	mm	400	500
	Z Travel	mm	530	570
	Spindle center to column	mm	450	580
<b>Spindle</b>	Spindle nose to table	mm	160-690	130-700
	Guideway type		LM (Roller)	LM(Roller)
	Spindle speed	rpm	8000,*10000,*12000	8000,*10000,*12000
	Spindle type		BT40	BT40,*BT50
	Max. power of spindle	kW	11,*15	15,*18.5
<b>Feed &amp; Magazine</b>	X/Y/Z axis rapid traverse	m/min	30	30/30/30
	ATC capacity/type	No./type	24/Disk Arm	24/Disk Arm
	Max. weight of tool	kg	8	8,*15
<b>Dimension &amp; Weight</b>	Power capacity	kVA	21	21
	Dimension(L W H)	mm	2550×2070×2340	3000×2200×2350
	Weight (about)	kg	5500	7300

Note: "\*" means optional, "LM" means linear motion guide way.

# PORTAL TYPE VERTICAL MACHINING CENTER

## Extremely Stiff and High-precision Portal-type Mechanical Structure

Heavy cast iron construction and a unique axis configuration provides outstanding stiffness, rigidity, thermal stability, accuracy and unequaled axis support throughout the full travel of each axis:

- X and Z on the column:
  - Constant spindle support distance
  - Fully supported throughout travel
- Y under table:
  - No "stack-up" of X and Y
  - No off-center table load condition
  - Fully supported throughout travel



Finite Element Analysis (FEA) of the basic components insure optimized structural rigidity and torsional stiffness for ultimate performance characteristics and consistent results.

This structural rigidity is the foundation for superior cutting performance, provides damping against vibration, and sustained accuracy for the life of the machine.

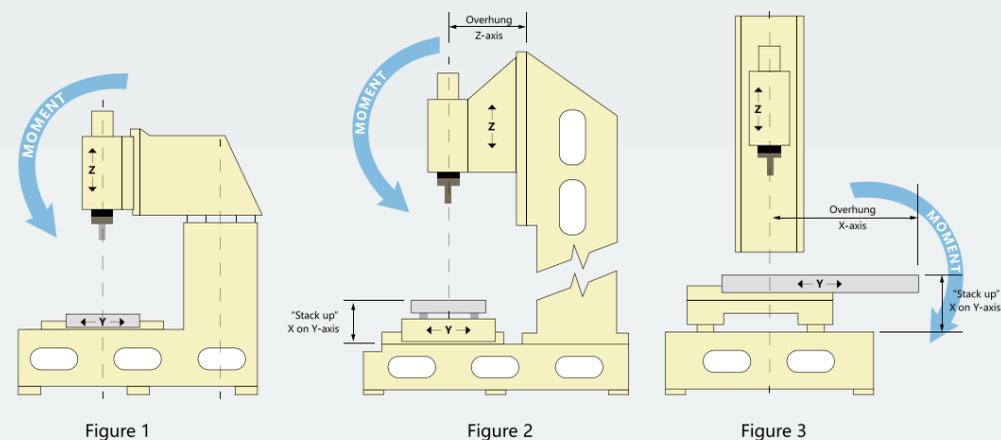
Most competitive machines feature some variation of a traditional "C - frame" design. Therefore, in most die and mold applications, by virtue of the machine configuration and associated geometry, the cutting tool elements significantly overhang their support structure:

- The Z axis is cantilevered from the X axis (Figure 1).
- The X axis is "stacked up" on the Y axis (Figure 2).
- The Y axis is overhung from the Y axis (Figure 3).

As a result, cutting forces-combined with these long, unsupported, and cantilevered distances create stiffness, rigidity and dynamic distortion issues that produce vibration and chatter. Such instabilities, inertial factors impact and bending moments during cutting dramatically impact surface finish, final part accuracy, cutting tool life, and productivity. By virtue of the unique design of the GV series, the machine provides a stiffer, even rigid construction, high accuracy, chatter-free platform for machining.



## Ultra Rigidity Ultra Cost-effective

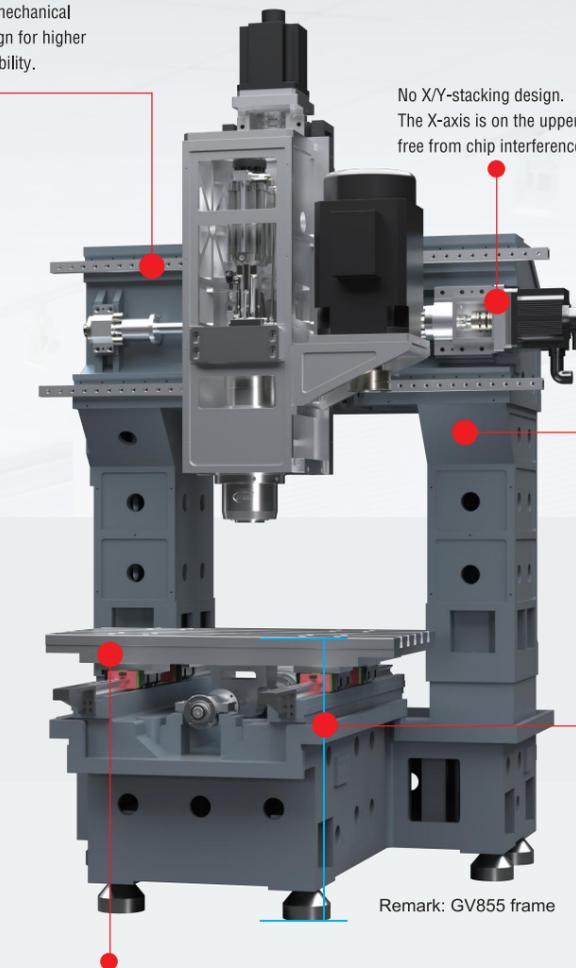


Symmetrical mechanical structure design for higher machining stability.

No X/Y-stacking design. The X-axis is on the upper part, free from chip interference.



Shoulder-type columns, which are beneficial for improving the rigidity of the machine tool.



The worktable only moves in one direction, resulting in higher precision and stability.

The worktable is close to the ground, making it convenient for loading and unloading workpieces and improving production efficiency.

### Standard Features

- Disk Arm Type ATC
- Spindle Oil Chiller
- Automatic Lubrication System
- Full Machine Enclosure
- Operator Door Safety Lock
- Air Conditioned Electrical Cabinet
- Handheld Air Gun

### Optional Features

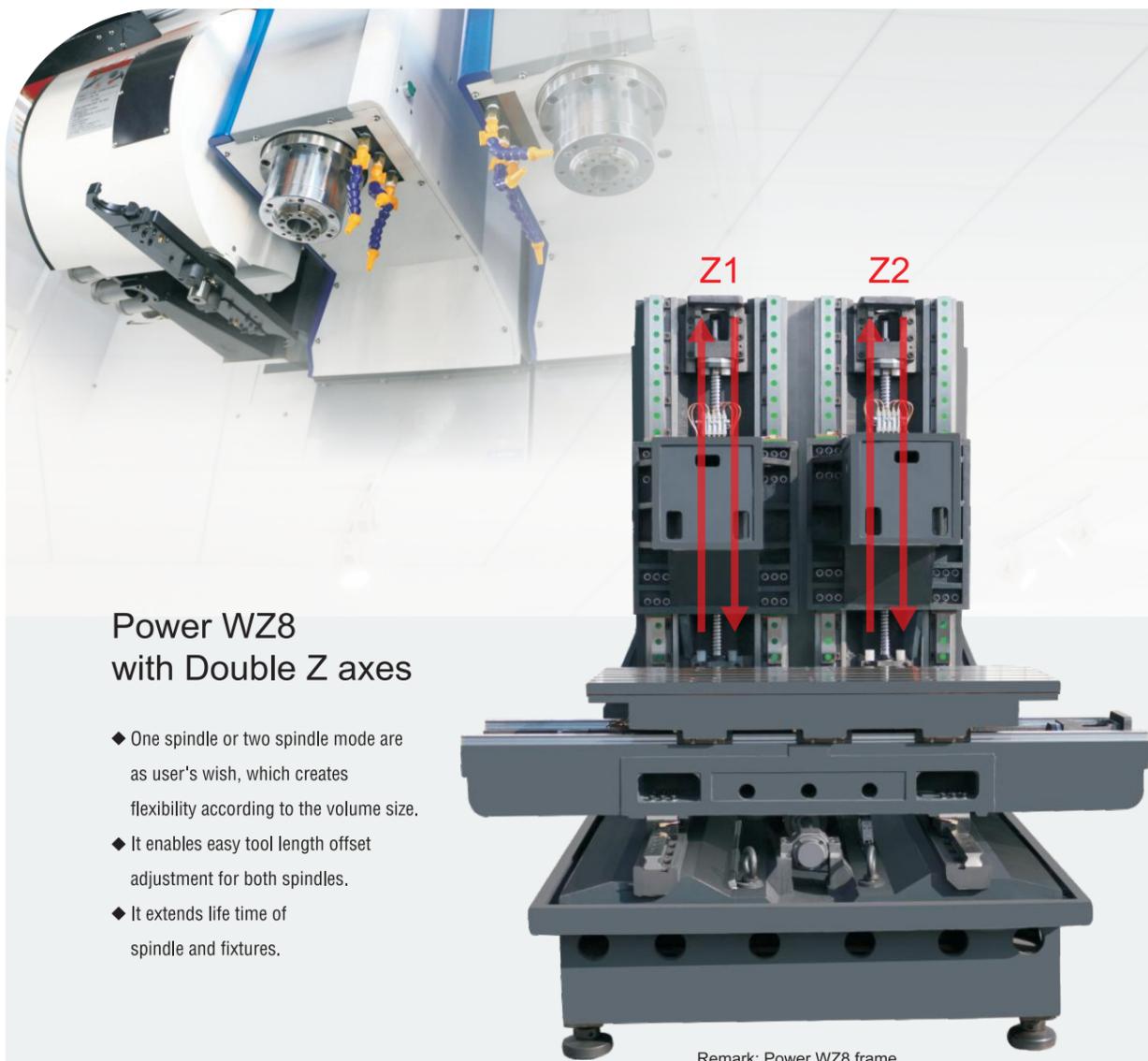
- 12000rpm Directly-connected Spindle
- Coolant Through Spindle
- Chip Conveyor
- Tool Measuring System
- Oil Mist Collector
- Workpiece Measuring System

## Specifications

	Unit	GV855	GV1165
<b>Table</b>	Table size	mm 1000×550	1300×650
	Max.load	kg 600	800
	Gantry Width	mm 800	950
	T slot(width×nos.xdistance)	mm 18×5×90	18×5×100
<b>Travel</b>	X Travel	mm 800	1100
	Y Travel	mm 550	650
	Z Travel	mm 400	500
	Spindle nose to table	mm 150-550	150-650
<b>Spindle</b>	Guideway type	LM (Roller)	LM (Roller)
	Spindle speed	rpm 10000	10000
	Spindle type	BT40-150	BT40-150
	Max. power of spindle	kW 11,*15	15,*18.5
<b>Feed &amp; Magazine</b>	X/Y/Z axis rapid traverse	m/min 36/48/48	36/48/48
	Max. cutting feed rate	mm/min 10000	10000
	ATC capacity/type	No./type 24/Arm	24/Disk
<b>Dimension &amp; Weight</b>	Max. weight of tool	kg 8	8
	Power capacity	kVA 25	28
	Dimension(L×W×H)	mm 2490×2145×2370	2800×2600×2650
Weight (about)	kg 5200	6500	

Note: "\*" means optional, "LM" means linear motion guideway.

# TWIN-SPINDLE MACHINING CENTER



## Power WZ8 with Double Z axes

- ◆ One spindle or two spindle mode are as user's wish, which creates flexibility according to the volume size.
- ◆ It enables easy tool length offset adjustment for both spindles.
- ◆ It extends life time of spindle and fixtures.

Remark: Power WZ8 frame

## Great Advantages

### +High productivity and small footprint

By adopting a twin-spindle design, one VMC can cut two workpieces simultaneously, which increases the productivity by almost 200%. Meanwhile, the floor space it occupies is the same as that of one traditional VMC.

### +Reduced investment and maintenance costs

Customers can lower the cost of the base machine when compared with the cost of buying two conventional VMCs. Moreover, only one set of ancillary items, such as a spindle probe, a 4th-axis rotary table, and a mist collector, is needed, thus reducing the overall investment cost.

### +Less electricity consumption, Eco-friendly.

Electricity consumption and operator walking distance are both reduced. This green design philosophy is one of the core elements of our brand promise.

## Same Investment Double Efficiency

### Power W6/8 with Single Z axis

Unlike the Power WZ8, Power W6 and W8 are designed with a single Z-axis. The simpler structure reduces the user's investment, and the double spindle design offers as high productivity as the double Z-Axes type Power WZ8. The price, the electricity consumption, the floor space and the labor investment are similar to that of one Standard VMC. Meanwhile, the productivity will be almost doubled. No doubt, it will enhance the user's competitiveness. It can be a secret weapon for the large-volume product manufacturer.

### Standard Features

- Disk Arm Type ATC X2
- Ergonomic CNC Panel & MPG
- Automatic Lubrication System
- Full Machine Enclosure
- Operator Door Safety Lock
- Air Conditioned Electrical Cabinet
- Air System with Handheld Air Gun

### Optional Features

- CNC Controlled 4th Axis Rotary Table
- Different CNC Control System
- Higher Speed Spindle
- Coolant Through Spindle
- Chip Conveyor
- Spindle Oil Coolant
- Automatic Tool Setter
- Automatic Workpiece Measurement
- Chip Blaster



## Specifications

	Unit	Power W6	Power W8	Power WZ6	Power WZ8
<b>Table</b>	Table size	mm	1200×450	1300×520	1200×450
	T slot(width×nos.×distance)	mm	18×3×130	18×5×90	18×3×130
	Max.load	kg	700	800	700
<b>Travel</b>	X/Y/Z1,Z2 Travel	mm	450/400/500	650/500/550	450/400/500/500
	Spindle nose to table	mm	150-650	150-700	130-650
	Spindle center to column	mm	450	580	450
	Distance between two spindle centers	mm	400	450	350
	Guideway type	mm	LM(Roller)	LM(Roller)	LM(Roller)
<b>Spindle(1, 2)</b>	Spindle type		BT40-150	BT40-150	BT40-150
	Max. power of spindle	kW	11,*15	11,*15	11,*15
<b>Feed &amp; Magazine</b>	Spindle speed	rpm	8000,*10000,*12000	8000,*10000,*12000	8000,*10000,*12000
	X/Y/Z axis rapid traverse	m/min	30/30/30	30/30/30	30/30/30
	ATC capacity/type	Nos./type	2×24/Disk Arm	2×24/Disk Arm	2×24/Disk Arm
	Max.weight of tool	kg	8	8	8
	Power capacity	kVA	33	38	40
<b>Dimension &amp; Weight</b>	Dimension	mm	2650×2700×2760	3250×2900×2900	2650×3100×3200
	Weight(about)	kg	6900	7900	7400

Note: \*\* means optional, "LM" means linear motion guide way.

# THE GENERAL PURPOSE VERTICAL MACHINING CENTER

## THE COMPLETE LINE OF VMC X axis from 320mm to 1600mm

Conventional Mill & Drill is past, VMC is better for production of parts. The High Performance Series machines feature heavier machine castings, big ballscrews and heavy duty linear guideways that provide superior surface finishes, excellent thermal stability, and quiet operation during heavy cutting.

### Standard Features

- Automatic Tool Changer
- Ergonomic CNC Panel & MPG
- Automatic Lubrication System
- Full Machine Enclosure
- Operator Door Safety Lock
- Heat Exchanger
- Air Conditioned Electrical Cabinet (VMC500/VMC700E)
- Handheld Air Gun

### Optional Features

- CNC Controlled 4th/5th Axis Rotary Table
- Different CNC Control System
- Higher Speed Spindle
- Coolant Through Spindle
- Chip Conveyor
- Air Conditioner (Except VMC500/VMC700E)
- 10000rpm Belt-Drive Spindle
- 12000rpm Direct Drive Spindle



### Standard Features

- Disk Arm Type ATC
- Ergonomic CNC Panel & MPG
- Automatic Lubrication System
- Full Machine Enclosure
- Operator Door Safety Lock
- Air Conditioned Electrical Cabinet
- Handheld Air Gun

### Optional Features

- CNC Controlled 4th/5th Axis Rotary Table
- Different CNC Control System
- Higher Speed Spindle
- Coolant Through Spindle
- Chip Conveyor
- Spindle Oil Chiller



VMC1300E



VMC840



VMC600E

## Specifications

	Unit	VMC320	VMC400	VMC420E	VMC500	VMC550E	VMC600E	VMC700E
<b>Table</b>	Table size	mm	600×305	600×380	720×305	700×400	800×305	800×380
	T slot(width×nos.×distance)	mm	14×3×85	14×3×110	14×3×85	18×3×110	14×3×85	18×3×110
	Max.load	kg	260	350	260	350	260	350
<b>Trave</b>	XYZ Travel	mm	320/240/450	400/350/450	420/240/450	500/400/450	600/350/450	700/400/450
	Spindle nose to table	mm	50-500	50-500	50-500	90-540	50-500	90-540
	Spindle center to column	mm	380	450	380	450	380	450
	Guideway type		LM:XYZ	LM:XYZ	LM:XYZ	LM:XYZ	LM:XYZ	LM(Roller):XYZ
<b>Spindle</b>	Spindle type		BT30	BT40	BT30	BT40	BT40	BT40
	Max. power of spindle	kW	7.5	7.5	7.5	7.5,*11	7.5	7.5,*11
	Spindle speed	rpm	8000,*12000	8000,*12000	8000,*12000	8000,*12000	8000,*12000	8000,*12000
<b>Feed &amp;Magazine</b>	XYZ axis rapid traverse	m/min	28/28/28	28/28/28	28/28/28	28/28/28	28/28/28	28/28/28
	ATC capacity/type	No./type	12/Carousel	24/Disk,*16/Carousel	12/Carousel	24/Disk,*16/Carousel	12/Carousel	24/Disk,*16/Carousel
	Max. weight of tool	kg	3	8	3	8	3	8
<b>Dimension &amp;Weight</b>	Power capacity	kVA	14	15	14	17	14	15
	Dimension	mm	2460×2480×2230	2510×2160×2410	2562×2154×2410	2540×2160×2290	2460×2480×2230	2510×2160×2410
	Weight (about)	kg	2800	3400	3100	3900	3400	4100

Note: " \* " means optional, "LM" means linear motion guide way.

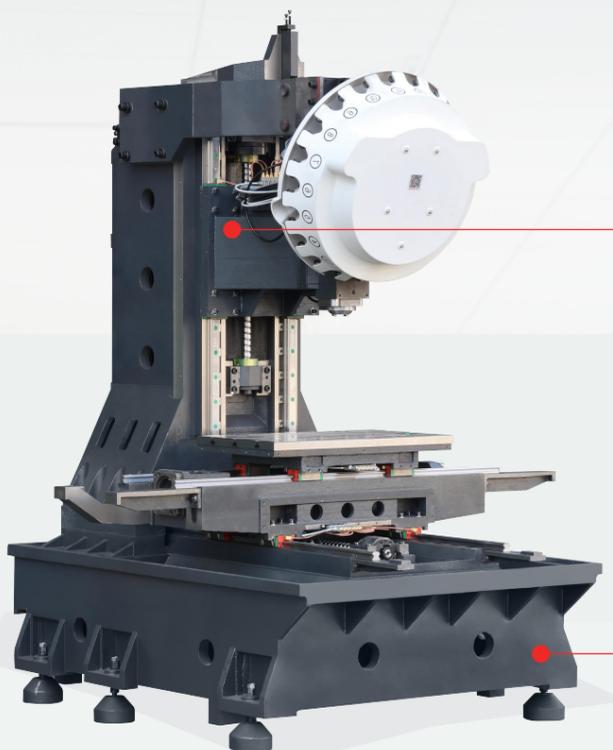
## Specifications

	Unit	VMC840	VMC1050E	VMC1200E	VMC1300E	VMC1375	VMC1580	VMC1675
<b>Table</b>	Table size	mm	1000×470	1300×520	1400×520	1600×650	1600×750	1700×800
	T slot(width×nos.×distance)	mm	18×3×120	18×5×90	18×5×90	18×5×100	18×5×140	18×5×135
	Max.load	kg	700	800	800	1000	1300	1500
<b>Travel</b>	XYZ Travel	mm	800/400/530	1050/500/570	1200/500/570	1300/650/600	1300/750/700	1500/800/700
	Spindle nose to table	mm	130-660	130-700	130-700	120-720	130-830	130-830
	Spindle center to column	mm	450	580	580	670	760	810
	Guideway type		LM(Roller):XYZ	LM(Roller):XYZ	LM(Roller):XYZ	LM(Roller):XYZ	LM(Roller):XYZ	LM(Roller):BOX:Z
<b>Spindle</b>	Spindle type		BT40	BT40,*BT50	BT40,*BT50	BT40,*BT50	BT50	BT40,*BT50
	Max. power of spindle	kW	11	15	15	15,*18.5	15,*18.5	18.5
	Spindle speed	rpm	8000,*10000,*12000	8000,*10000,*12000	8000,*10000,*12000	8000,*10000,*12000	8000,*12000,*6000	8000,*6000
<b>Feed &amp;Magazine</b>	XYZ axis rapid traverse	m/min	30/30/30	30/30/30	30/30/30	30/30/30	24/24/20	20/20/15
	ATC capacity/type	No./type	24/Disk	24/Disk	24/Disk	24/Disk	24/Disk	24/Disk
	Max. weight of tool	kg	8	8,*15	8,*15	8,*15	15	15
<b>Dimension &amp;Weight</b>	Power capacity	kVA	21	21	21	25	30	30
	Dimension	mm	2600×2810×2620	3120×2900×3030	3460×2900×3030	3590×3220×3000	3600×2860×3360	3950×3820×3470
	Weight (about)	kg	5700	7600	7900	9700	12300	11200

Note: " \* " means optional, "LM" means linear motion guide way.

# HIGH SPEED TAPPING CENTER

High Speed and High Rigidity Bundles!



## 21/26T Servo

Servo-driven 21T/26T ATC with non-stop tool change. High-speed tool change achieved via optimized spindle start/stop, Z-axis movement, and magazine operation.

## 24000rpm

The high speed tapping centers use brass lubrication tubes, ensuring longer service life and more reliable lubrication.

## 32mm

The high speed tapping centers are equipped with a large sized dia. 32mm high-precision C3-class ball screw, ensuring higher accuracy and more reliable repeat positioning.

## 35mm

The Z640 increases linear motion guideway width from 30 mm (previous model) to 35 mm, achieving a 16.7% cross-sectional improvement and thereby further enhancing rigidity and load capacity.

## 60m/min

The high speed tapping centers feature 48 m/min (Z540) and 60 m/min (Z640) rapid traverse speeds across all axes, delivering industry-leading acceleration and positioning efficiency.

## 840mm

With column widths of 680 mm (Z540) and 840 mm (Z640), both machines adopt a wide-span Y-axis guideway configuration. This design provides 25% higher rigidity compared to standard models, achieved through: Z540: 452 mm center distance (475 mm edge distance); Z640: 500 mm center distance (528 mm edge distance).

## 4300kg

Weight is the most important indicator of rigidity. For similar parameter, 4000kg is the heaviest weight we could find in the market.



Note: The picture is the frame of Z640.

# HIGH SPEED TAPPING CENTER-Z540/Z640

## Machine Characteristics

- Both base and column have wide spacing between ways, resulting in a design that is solid as a rock and stable as a mountain.
- Direct drive spindle provides high efficiency, and low noise – assuring speed and torque during high-speed tapping operations.
- Gripper arm type tool magazine – Servo driven and 21 (Z640 optionally 26) tool pockets, 48(Z540)/60(Z640) m/min rapid traverse in all axes.
- Solid ball screw, bearing structure and high precision linear guideways supports rapid traverse and high speed machining. Also, assures proper orientation of machine during operation.
- Rear chip conveyor is compact and makes for easy chip removal. Chip flow is direct and easy.

## Combine Agility and Rigidity for Maximum Productivity



### Standard Features

- Full Machine Enclosure
- 3-color Alarm Light
- Work Light
- Heat Exchanger
- Automatic Lubrication System
- Automatic Coolant System

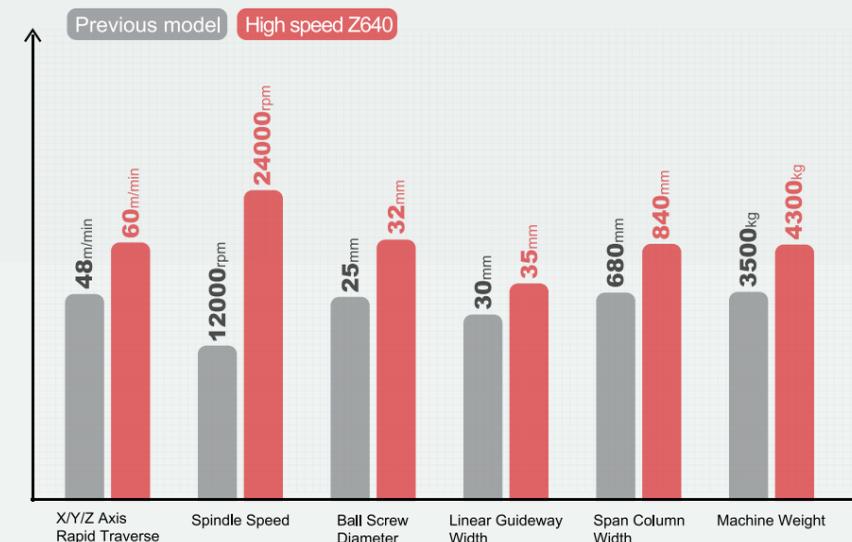
### Optional Features

- 26T Tool Magazine
- CNC Controlled 4th/5th Axis Rotary Table
- Electric Spindle
- Workpiece Measurement System
- Tool Measurement System
- CTS System
- Rear Chip Conveyor

## Specifications

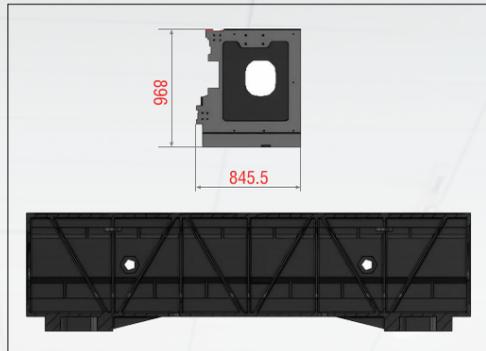
	Unit	Z540	Z640
Table size	mm	600×400	700×420
Max. load of table	kg	250	400
T slot(width x nos.x distance)	mm	14×3×100	14×3×120
X axis travel	mm	500	610
Y axis travel	mm	400	410
Z axis travel	mm	300	350
Spindle nose to table	mm	155-455	150-500
Spindle center to column	mm	465	459
Cutting feed rate	mm/min	20000	20000
X/Y/Z axis rapid traverse	m/min	48	60
Spindle type		BT30	BT30-100
Spindle driving method		Direct drive	Direct drive
Spindle speed	rpm	12000, *20000	24000, *20000, *12000
Max. power of spindle	kW	5.5, *7.5	5.5, *7.5, *11
ATC type		Gripper Arm	Gripper Arm
ATC capacity		21	21, *26
Max. weight of tools	kg	3	3
Max. length of tools	mm	250	250
Positioning Accuracy	mm	0.008	0.008
Repeat Positioning Accuracy	mm	0.005	0.005
Dimension	mm	1800×2600×2310	1860×2620×2350
Weight(about)	kg	3500	4300

Note: "\*" means optional.



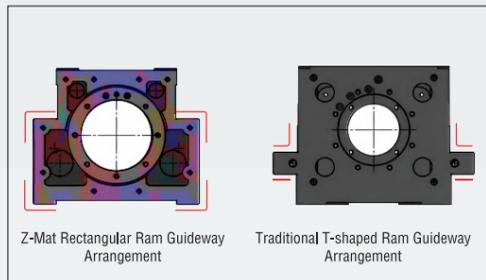
# PORTAL MACHINING CENTER PM/PM-H SERIES

## Ongoing Refinement



### Crossbeam Assembly

With an arch-bridge - style shape and a large cross - section of **968 × 845.5** mm, plus truss - style ribbing arranged within the cavity, it ensures the crossbeam is free from sagging deformation.



### Spindle Headstock Assembly

The rectangular spindle headstock (ram) features a surrounding guideway arrangement, offering significantly higher rigidity than T-shaped rams and superior heavy cutting performance.

The vertical axis features a completely symmetric design and has characteristics such as Damping Capacity, Oversized Structure, High Geometrical Precision, Large Cross-section Dimensions, Roughing Capacity, and Machine Geometry Stability.

The PM-H Series uses high-rigidity Box Guideways with good vibration absorption and wear resistance. It has stronger load-bearing capacity and better processing stability, suiting medium-to- large and heavy-duty part machining and meeting diverse part processing needs.



Long stroke ball screws, vital in high-precision machinery, face drooping and flexure risks. Additional support systems are installed to bear loads, maintaining transmission accuracy. Ball screws are pre-tensioned to compress components and eliminate backlash for smoother operation.

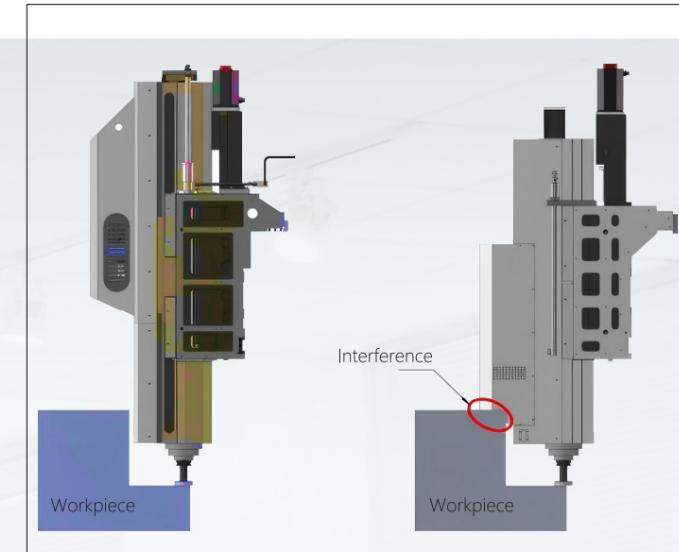
## HIGH-PRECISION

The bridge beam incorporates an anti-deformation crown design. To compensate for potential deformation caused by saddle droop and tool weight, a predetermined upward curvature is built into the beam during manufacturing. This pre-camber effectively counteracts downward forces during operation, ensuring consistent beam geometry for high-precision machining applications.

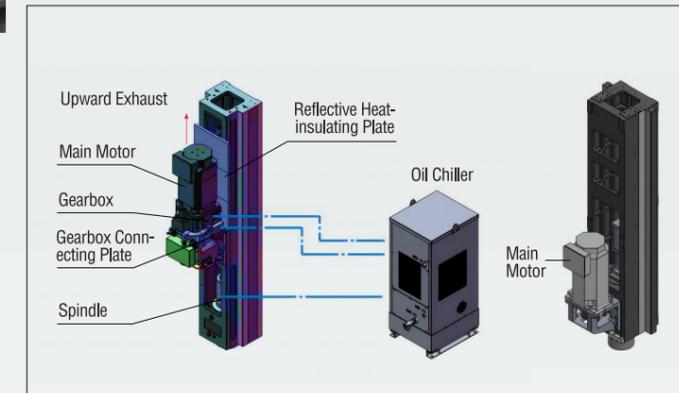
## BT50



The BT50 big spindle, equipped with separate motor mounts, plays a crucial role in high-performance machining. This design effectively controls heat transfer by isolating the motor operation, thereby minimizing thermal distortion and ensuring high-precision machining.



The top-mounted main motor enhances the machining of stepped workpieces and five-sided machining.

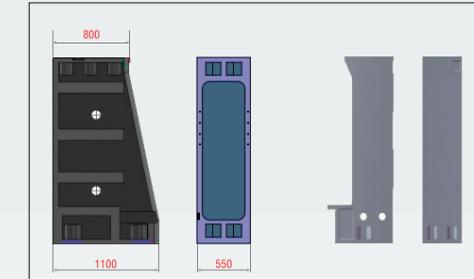


Employ integrated thermal management solutions: externally top-mounted main motor with upward air-cooling exhaust, reflective heat shield between motor and ram, and oil-chilled cooling for spindle, gearbox, and connections. These prevent thermal deformation of the spindle headstock, ensuring precision stability.



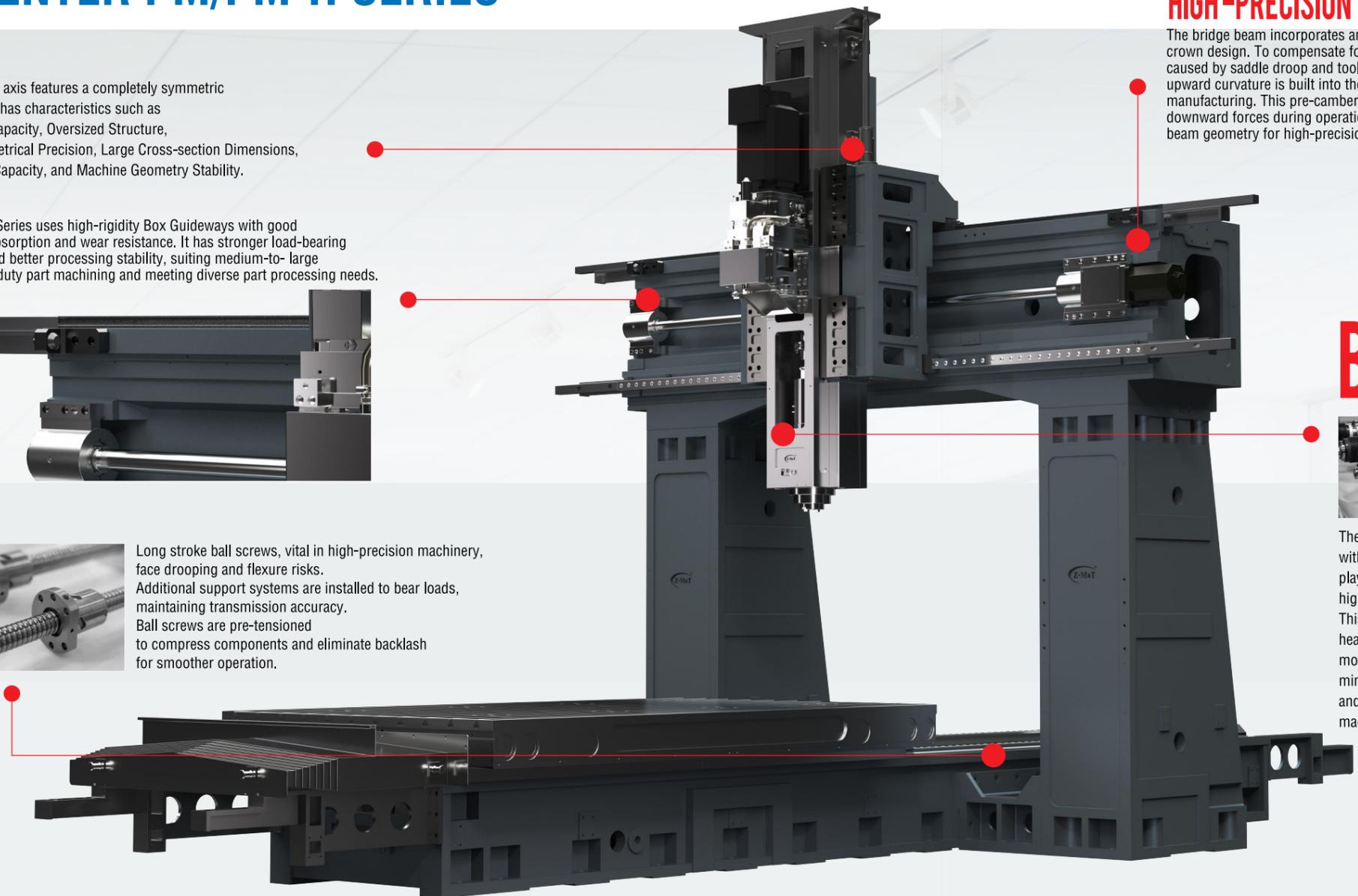
### Milling Heads

In advanced machining, to meet diverse needs, we provide different milling heads as options. There are A/C swivel heads, universal ones adjustable by  $\pm 45^\circ$ , suitable for inclined and complex contours, and fixed-angle ones like  $30^\circ$  and  $60^\circ$  for specific-angle tasks. Customers can choose according to project requirements, expanding machine tool capabilities and improving machining efficiency and precision.



### Column Assembly

With a cross-sectional area of **800-1100 × 550** mm, the right-angled trapezoidal column design increases the contact area with the foundation, making the whole machine more stable and enhancing shock resistance during heavy cutting.



Note: The picture is the frame of PM4022H.

# HORIZONTAL MACHINING CENTER-HMX SERIES

## Standard Features

- BT50 Spindle
- ATC
- Automatic Lubrication System
- Inner and Outer Guard
- Air Conditioned Electrical Cabinet
- Chip Conveyor

## Optional Features

- Different Control System
- Different Nos ATC
- Different Type Spindles
- Milling Head
- Linear Scale
- Tool Measuring Device
- Workpiece Measuremet



PM1510



PM3022H



Cross Sliding Table Structure: Static column and cross sliding table, modular design offers the most economical and compact horizontal machining center HMX series. X and Z axes are provided to the table and the spindle moves in the Y axis alone. With one-time clamping, milling, drilling, boring, broaching, reaming and tapping can be applied to all 4 sides of the workpieces. It is best for machining complex parts of boxes, plates, disks, valves, housing types, etc.

## Machine Characteristics

- Full guard protection, user friendly and easy maintenance.
- Positive displacement lubrication system.
- Chip conveyor, chips are conveyed at two sides and collected in the rear
- BT50-190 spindle with oil chiller system.
- Spindle air curtain protection function.
- The Finite Element Method ( FEM ) analysis provides optimum machine design and structure advantages while ensuring the best machine rigidity. Meehanite standard Casting along with twice aging treatment for long term reliability.
- Large-size heavy duty roller type linear motion guideways applied on all 3-axis for rigid support, smooth slide, stable accuracy as well as easier maintenance.



HMX500

## Specifications

	Unit	PM1510	PM2011	PM2015H	PM3022H	PM4022H	PM5022H	PM6036R	PM8038R	
<b>Table</b>	Table size	mm	1600×800	2000×900	2000×1300	3100×1900	4100×1900	5100×1900	6000×3000	8000×3000
	Max.load	kg	1800	2000	6500	10500	12000	14500	35000	35000
	T slot(width×nos.×distance)	mm	22×5×140	22×7×125	22×7×170	22×9×200	22×9×200	22×9×200	28×13×225	28×13×225
<b>Capacity</b>	X Travel	mm	1500	2000	2000	3000	4000	5000	6500	8500
	Y Travel	mm	1000	1100	1700	2400	2400	2400	3800	3800
	Z Travel	mm	620	800	800	1000	1000	1000	1250	1250
	Spindle nose to table	mm	150-770	120-920	200-1000	200-1200	200-1200	200-1200	250-1500	250-1500
	Gantry width	mm	950	1150	1500	2200	2200	2200	3600	3600
<b>Spindle</b>	Guideway type	XYZ	LM(Roller)	LM(Roller)	XY:LM(Roller), Z:BOX	XY:LM(Roller), Z:BOX	XY:LM(Roller), Z:BOX	XY:LM(Roller), Z:BOX	XY:LM(Roller), Z:BOX	XY:LM(Roller), Z:BOX
	Spindle speed	rpm	8000,*6000	8000,*6000	6000	6000	6000	6000	4500	4500
	Spindle type		BT50-155,*BT50-190	BT50-155,*BT50-190	BT50	BT50	BT50	BT50	BT50	BT50
	Max. spindle power	kW	18.5,*22	18.5,*22	18.5,*22	26,*30	26,*30	26,*30	37	37
	X/Y/Z axis rapid traverse	m/min	20	20	24/24/12	12/12/12	12/12/12	12/12/12	12/10/12	12/10/12
<b>Feed</b>	Max. feedrate	mm/min	10000	10000	10000	10000	10000	10000	10000	10000
	ATC capacity/type	No./type	24,*30/Disk,*40,*60/Chain	24,*30/Disk,*40,*60/Chain	24,*30/Disk,*40,*60/Chain	24,*30/Disk,*40,*60/Chain	24,*30/Disk,*40,*60/Chain	30/Disk,*40,*60/Chain	30/Disk,*40,*60/Chain	30/Disk,*40,*60/Chain
<b>ATC</b>	Max. weight of tool	kg	15	15	15	15	15	15	15	
	Power capacity	kVA	40	40	45	45	45	80	80	
<b>Others</b>	Dimension	mm	4400×3600×3400	6000×3900×3900	6000×3900×4500	9000×5000×5000	11000×5000×5000	13000×5000×5000	16500×7200×6500	18500×7400×6700
	Weight (about)	kg	16500	19600	21500	33500	34500	37500	75000	102000

Note: "\*" means optional, "LM" means linear motion guide way.

## Specifications

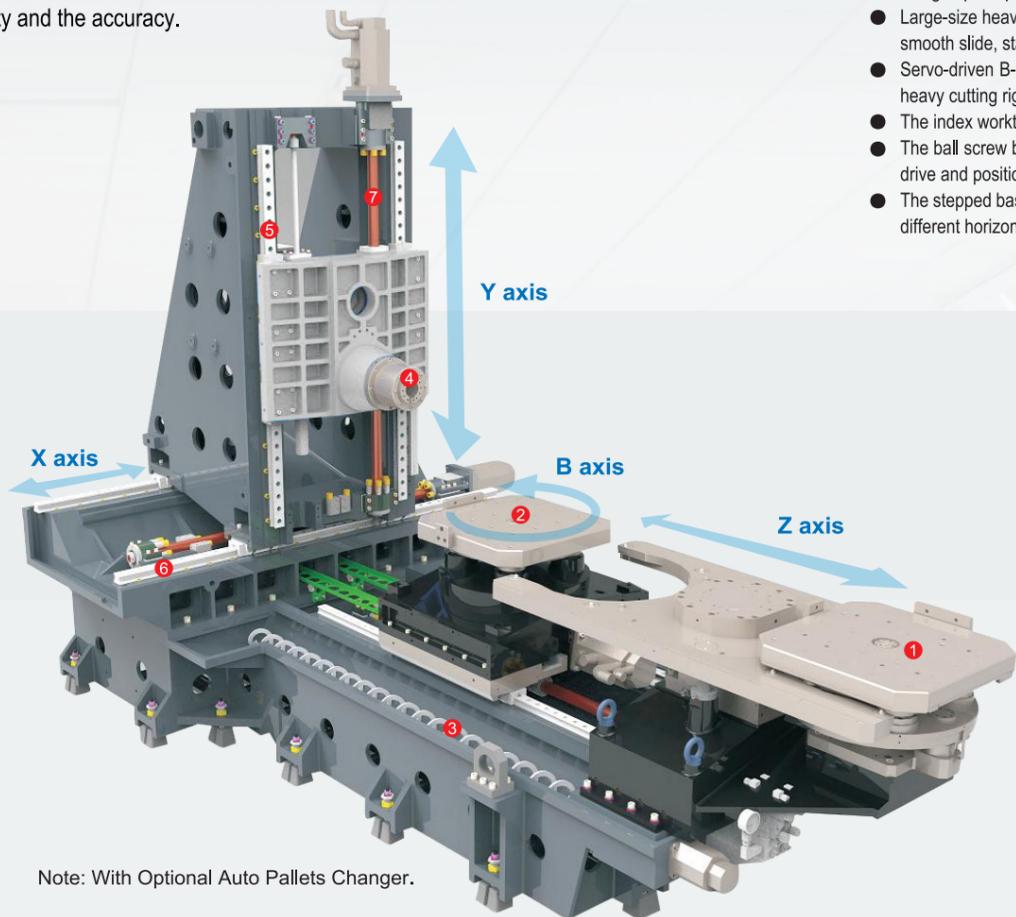
	Unit	HMX500	HMX630	
<b>Table</b>	Table size	mm	500×500	630×630
	T slot (Nos.-width-distance)	mm	5-18T-100	5-18T-125
	Max.load	kg	500	1200
<b>Travel</b>	Table quantities	pc	1	1
	Table indexing degree	degree	1°,*0.001°	1°,*0.001°
	Max. swing dia. of workpiece	mm	850	1000
<b>Spindle</b>	X/Y/Z Travel	mm	1000/600/650	1000/600/850
	Spindle center to table	mm	100-700	100-700
	Spindle end to table center	mm	150-800	230-1080
<b>Feed &amp; Magazine</b>	Spindle type		BT40,*BT50	BT50-190
	Max. power of spindle	kW	18.5	18.5
	Spindle speed	rpm	8000,*6000	6000
	X/Y/Z axis rapid traverse	m/min	24/20/24	24/20/24
	ATC capacity/type	No./type	30/ Disc	30/Disc
<b>Dimension &amp; weight</b>	Max.weight of tool	kg	8,*15	15
	Max.dia. of tool	mm	105/200	105/200
	Max. length of tool	mm	400	400
<b>Dimension &amp; weight</b>	Power capacity	kVA	25	35
	Dimension	mm	4050×3450×2700	4050×4300×2750
	Weight(about)	kg	9700	10500



- 01 Wide-span Herringbone Columns
- 02 Cross-slide Structure
- 03 Ultra-large and Stable Base
- 04 Large-sized Linear Guide Rails
- 05 High-speed Spindle Unit
- 06 Labyrinth Structure & Air Curtain Protection Function

# HORIZONTAL MACHINING CENTER

**Upright T-Base Structure** – the column moves as the X-axis and the worktable moves as the Z-axis, and this design matches the design concept of ultra-precision boring machines. The worktable carries the workpiece to the stationary spindle while machining is in progress, and this design maximizes the spindle rigidity and the accuracy.



Note: With Optional Auto Pallets Changer.

## Cutting-edge Design

- The Finite Element Method (FEM) analysis provides optimum machine design and optimum structural advantages while ensuring the best machine rigidity. Meehanite standard Casting along with twice aging treatment for long-term reliability.
- BT50-190 large-size spindle unit offers wide-range machining capacity from low-speed heavy cutting to high-speed precision cutting applications.
- Large-size heavy-duty roller-type linear motion guideways are applied on all 3-axis for rigid support, smooth slide, stable accuracy as well as easier maintenance.
- Servo-driven B-axis worktable and hydraulic locking guarantee the fast index speed and the heavy cutting rigidity.
- The index worktable uses curvic coupling for high-accuracy indexing.
- The ball screw brackets at both ends of the X-Y-Z axes ball screws are preloaded for high-accurate drive and positioning.
- The stepped base and column design of the MC-H Series, where two X-axis linear guide rails are on different horizontal planes, increases the rigidity and stability of the spindle-head column assembly.

- 01** Optional Auto Pallets Changer (APC)
- 02** Index Work Table a)Std: 1 degree b)Opt: NC 0.001°
- 03** Chip-Removal System
- 04** BT50-190 Heavy-Duty Spindle
- 05** Cylindrical Roller Linear Motion Guide-way
- 06** Stepped Base and Column Design
- 07** Large-Size Super Precision Ballscrew

## Standard Features

- BT50 Spindle
- Chain Arm Type ATC 40 Pcs
- Ergonomic CNC Panel & MPG
- Automatic Lubrication System
- Full Machine Enclosure
- Air Conditioned Electrical Cabinet
- Chip Conveyor

## Optional Features

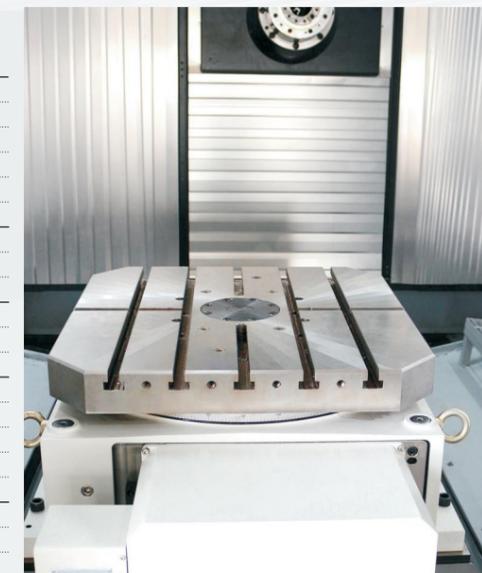
- Coolant Through Spindle
- Different CNC Control System
- Different Spindle
- Auto Pallet Changer



## Specifications

	Unit	MC630H	MC800H	MC1000HE
<b>Table</b>	Table size	mm	630×630	1000×1000
	T slot (Nos.-width-distance)	mm	5-18T-125	5-22T-160
	Max.load	kg	2500	3000
	Table quantities	pc	1,*APC	1,*APC
<b>Travel</b>	Table indexing degree	degree	1,*0.001	1,*0.001
	Max. swing dia. of workpiece	mm	950	1150
	X/Y/Z Travel	mm	1100/800/1100	1300/1100/1200
	Spindle center to table	mm	0-800	45-1145
<b>Spindle</b>	Spindle end to table center	mm	125-1225	150-1350
	Spindle type		BT50	BT50
	Max. power of spindle	kW	18.5	18.5,*22
	Spindle speed	rpm	6000	6000
<b>Feed &amp; Magazine</b>	X/Y/Z axis rapid traverse	m/min	24/20/24	24/20/24
	ATC capacity/type	No./type	40,*30/Chain type	40,*60/Chain type
	Max.weight of tool	kg	20	20
	Max.dia. of tool	mm	Φ125/250	Φ125/250
<b>Dimension &amp; weight</b>	Max. length of tool	mm	400	400
	Power capacity	kVA	65	75
	Dimension	mm	6000×4800×3400	6600×4900×3800
	Weight(about)	kg	20000	23800

Note: "\*"means optional. APC: Auto Pallet Changer.



# ULTRA HIGH-PERFORMANCE 5-AXIS MACHINING CENTER U630

## 5-axis Simultaneously Technology

### 3-axis in the Tool, 2-axis in the Workpiece

- The U630 5-Axis Machining Center adopts Gantry Type Design with the Crossbeam in Motion, Column and Worktable Fixed.
- The crossbeam, on both sides of the gantry, moves in the front and rear Y-axis direction. The saddle moves left and right in the X-axis direction on the crossbeam, and the spindle moves up and down in the Z-axis direction on the saddle. It is equipped with a swiveling A/C rotary table, enabling 5-axis simultaneous machining allowing for one-time clamping to complete multi-sided machining of the part. This effectively reduces the number of clampings and is suitable for machining of complex spatial surfaces, including industries such as new energy vehicles, molds, aerospace, and medical devices.



U630

### Sample Workpieces of U630



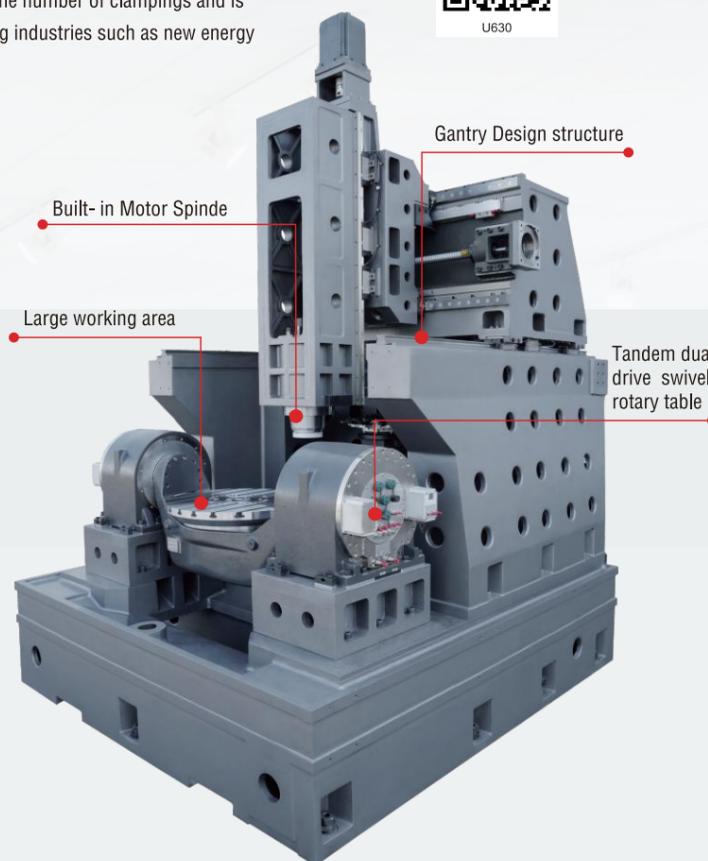
Capsule connecting ring      Integral blade disk



Fan blade disk      Engine crankcast      Lamina



Impeller



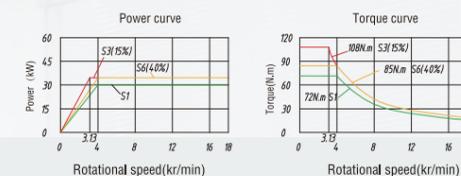
Tool magazine is integrated into the machine bed to save space



# 5-AXIS MACHINING CENTER U630

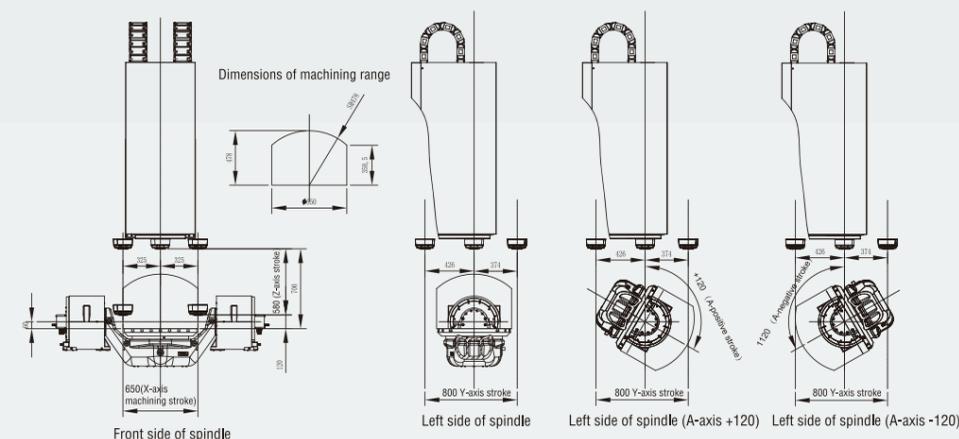
## Machine Characteristics

- The gantry-type structure provides strong rigidity and constant load, effectively ensuring the accuracy of the machine.
- Closed-loop control for X/Y/Z/A/C axes ensures high precision and allows for high-precision machining.
- The entire machine undergoes finite element analysis to ensure high rigidity. All components are finely crafted to maintain machine accuracy over an extended period.
- The machine is equipped with the Siemens ONE 5-Axis CNC system, ensuring reliable operation at various environment.
- It features a high-power electric spindle to meet requirements for both heavy-duty cutting and precision machining.
- The reinforced column structure, subjected to rigorous finite element analysis and optimization, is structurally sound, guaranteeing the rigidity and accuracy retention of the machine.
- For reliable machining processes in automated systems, the production cabin is with chip-waste-optimized stainless steel cladding and integrated bed flushing from left/right/front/rear ensures ideal chip disposal.



## 18000rpm Built-in Motor Spindle

## Working Range Diagram



### Standard Features

- Full Enclosed Protective Cover
- HSKA63 Internal Electric Spindle at 18000rpm
- 30-tool Magazine
- X/Y/Z Axes equipped with Heidenhain linear scales;
- High-precision Spindle Oil Chiller
- Electrical Cabinet Air Conditioning
- Ethernet, CF Card, USB Interfaces
- Chain-type Chip Conveyor
- Centralized Lubrication System
- Bed Chip Flushing System
- Automatic Coolant System
- LED Three-color Warning Light
- Detachable Electronic Handwheel

### Optional Features

- HSK-E50 Internal Electric Spindle at 36000rpm
- Minimum Quantity Lubrication System
- Coolant Temperature Control System
- Workpiece Measurement System
- Tool Measurement System
- Oil Mist Collector
- 200GB SSD for Expanded Program Storage
- Hollow Ball Screw Cooling System
- Collision Avoidance System
- Automatic Correction System for Rotary Center Error
- Load Adaptive Control (LAC)
- Graphite Machining
- CTS system

# ULTRA HIGH-PERFORMANCE 5-AXIS MACHINING CENTER

## Maximum Performance & Lasting Precision

Different mechanical constructions are designed for different size 5 axis machining centers that ensure optimum surface finish and a long tool life.



U500

### Specifications

	Unit	U320	U400	U500	U630	U800	
<b>Capacity</b>	X/Y/Z-axis travel	mm	500/500/400	700/500/450	700/500/500	800/800/550	1000/970/600
	A/B axis rotation range	°	A:±115	B:±115	B:±115	A:±115	A:±115
	C axis rotation range	°	360	360	360	360	360
	Distance from spindle nose to worktable	mm	100-500	120-570	120-620	120-670	120-720
	X/Y/Z-axis rapid traverse speed	m/min	48	48	48	48	48
	A/B/C axes rapid rotational speed	r/min	A/C:100/130	B/C:100/100	B/C:50/80	A/C:60/100	A/C:60/80
<b>Swivel Table</b>	Structure	/	Cross Slide	Portal Type	Shaper Type	Bridge Type (A-axis Dual Drive)	Bridge Type (A-axis Dual Drive)
	Table size	mm	Φ320	Φ400	Φ500	Φ630	Φ800
	Load capacity of rotary table	kg	400	500	500	850	850
<b>Accuracy</b>	T-slot	mm	8-14×45°	8-14×45°	8-14×45°	7-14×80°	5-18×120°
	Positioning accuracy X/Y/Z	mm	0.006/0.006/0.006	0.006/0.006/0.006	0.006/0.006/0.006	0.006/0.006/0.006	0.008/0.008/0.006
	Repeatability accuracy X/Y/Z	mm	0.004/0.004/0.004	0.004/0.004/0.004	0.004/0.004/0.004	0.004/0.004/0.004	0.004/0.004/0.004
	Positioning accuracy A/B/C	sec	A/C:±6/±6	B/C:±6/±6	B/C:±8/±8	A/C:±8/±8	A/C:±8/±8
<b>Servo Motor</b>	Repeatability accuracy A/B/C	sec	A/C:±4/±4	B/C:±4/±4	B/C:±4/±4	A/C:±4/±4	A/C:±4/±4
	A/B axis motor torque	Nm	A:280/634	B:1200/2000	B:1200/2000	A:1290/2400×2	A:2700×2
<b>Spindle</b>	C axis motor torque	Nm	172/300	410/780	560/780	600/1100	1730
	Rated power of electric spindle	kW	16	16	30	30	30
	Rated torque of electric spindle	Nm	17.5/43	28/34	72/85	72/85	72/85
	Max. spindle speed	r/min	24000	20000	18000	18000	18000
	Spindle taper hole	/	BT30	HSK E50	HSK A63	HSK A63	HSK A63
<b>Tool Changer</b>	Type	/	Gripper Type	Disk Type	Disk Type	Chain Type	Chain Type
	Num. of tool positions	nos	21	30	30	32,*40,*60,*90	32,*40,*60,*90
	Max. tool weight	kg	3	3	8	8	8
	Max. tool length	mm	200	250	300	300	300
	Max. tool diameter(Full/beside empty)	mm	Φ60/Φ100	Φ50/Φ100	Φ75/Φ120	Φ75/Φ120	Φ75/Φ120
<b>Other</b>	Compressed air	MPa	0.6-0.8	0.6-0.8	0.6-0.8	0.6-0.8	0.6-0.8
	Power capacity	kW	20	45	60	68	75
	Dimension (L×W×H)	mm	1800×2700×2510	2490×2145×2370	2630×3820×3395	2728×3760×3726	3500×3910×3726
	Weight	kg	4300	6200	10000	16500	18000

Note:\*\*\*\* means optional.

# COMPACT APC SOLUTION-MX530H / VMX640

## EXCHANGING WORKPIECES WITHOUT STOPPING MACHINES

The dual-workstation machining center facilitates automatic interchange of worktables. While one workstation is engaged in machining, the other side switches to load raw workpiece without the need for downtime. It ensures the efficient and high-precision machining of mass products.

### Machine Characteristics

- The rotary table is divided into front and rear worktables, and it is controlled by an automatic system for seamless transition. The front and rear worktables serve distinct purposes, with one designated for machining and the other for clamping. This design optimizes clamping processes, enabling continuous operation without interruptions.
- High-Quality Castings: The main castings are crafted using advanced Meehanite high-grade cast iron through resin sand casting technology. Employing advanced finite element analysis techniques, the design is structurally sound, with an optimized layout, and undergoes secondary aging treatment, ensuring long-term machining stability.
- Double-Sided End Gear Table Structure: The exchangeable table features a double-sided end gear structure, providing high positioning accuracy and strong load-bearing capacity.



VMX640

### Standard Features

- Dual Workstation Worktable
- Three-axis Roller LM Guideway
- Automatic Lubrication System
- Automatic Coolant System
- Coolant Tank and Chip
- Conveyor Chassis Chip Flush
- Electrical Cabinet Air Conditioning
- Handheld Air Gun and Water Gun

### Optional Features

- Oil Mist Collector
- Tool Measurement System
- Workpiece Measurement System
- Coolant Through Spindle
- Spindle Oil Chiller
- Different Type Spindles
- Different Nos ATC
- Different Control System



Image of VMX640 Vertical

Image of MX530H Horizontal

### Specifications

	Unit	MX530H	VMX640
X-Axis Travel	mm	600	600
Y-Axis Travel	mm	70-420(350)	400
Z-Axis Travel	mm	400	510
Distance from Spindle End Face to Worktable Surface	mm	0-400	150-660
Distance from Spindle Center to Column Guide Surface	/		450
Worktable Area	mm	900×820(unilateral 450×820)	1140×820(unilateral 570×820)
Maximum Load Capacity of the Worktable	kg	600(unilateral300kg)	600(unilateral300kg)
T-Slot Width		3-22T×P90×2	3×22H8×130×2
Maximum Spindle Speed	rpm	6000	8000
Spindle Hole Dimensions		BT50	BT40
Rapid Displacement of X/Y/Z Axes	m/min	30/30/30	30/30/30
Maximum Cutting Feed Rate	mm/min	10000	8000
Rated Power	kW	15/18.5	11
X, Y, Z Positioning Accuracy	mm	0.012	0.012
X, Y, Z Repeat Positioning Accuracy	mm	0.006	0.006
Overall Dimensions (Length x Width x Height)	mm	3500×3000×2780	3950×3400×2780
Machine Weight (Net Weight) Approximately	kg	8500	10200

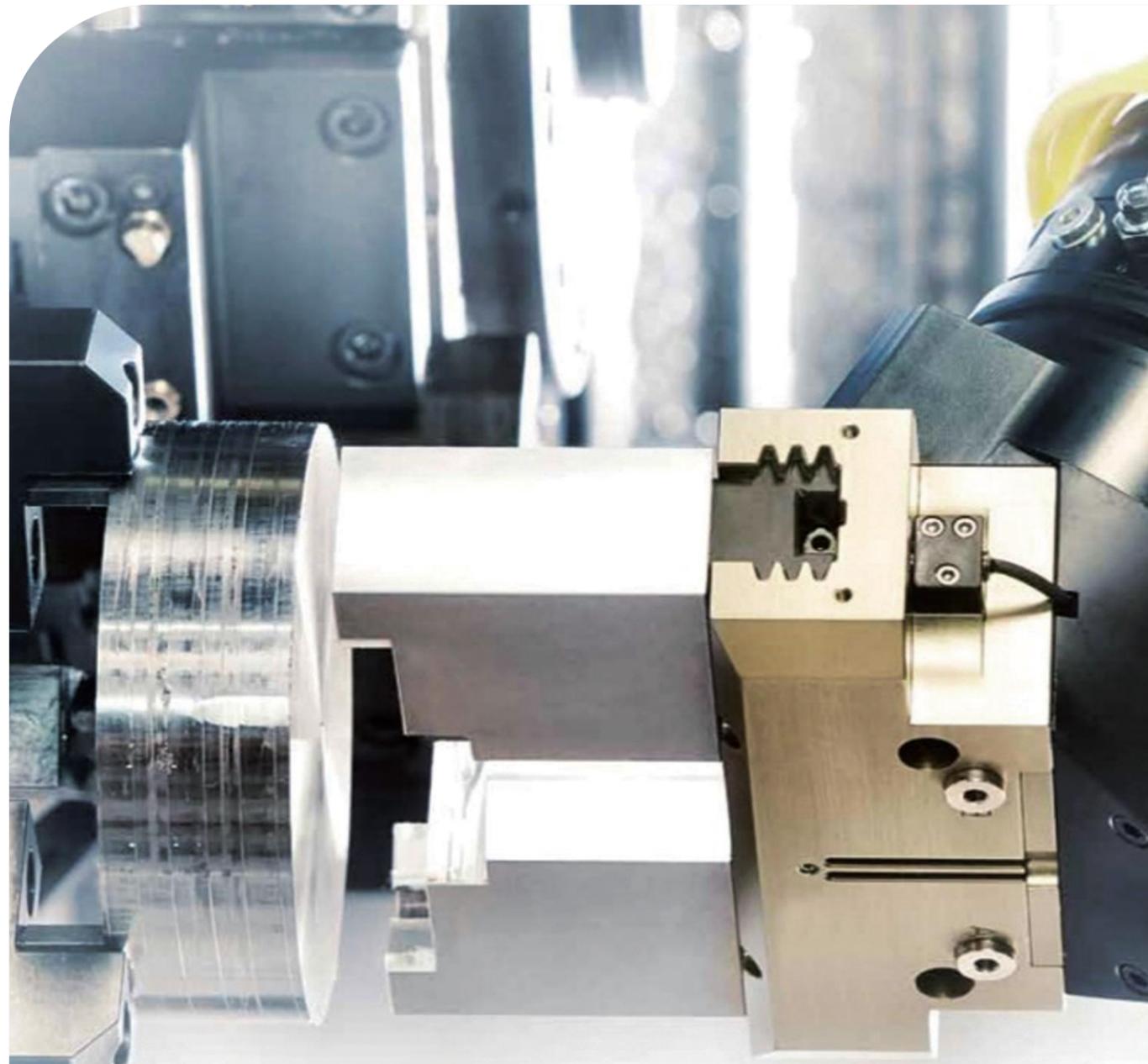
# AUTOMATION & PRODUCTION LINE

## Machine with Robot

From the set-up of raw materials to the removal of finished workpieces all on one machine, Z-MaT has smart solutions for complete automation. Reduce labor costs and the time between cuts by using loaders, unloaders, and bar feeders to ensure the greatest profit in production. With a combination of different tooling and workholding solutions, this series offers great flexibility for many usage scenarios.

### Machine Characteristics

- SL6-R and FL300-R are integrated with Gantry Robot as a unit, designed with a compact size it can be fitted in a standard container which can reduce installation and freight costs hugely, meanwhile the long distance transportation damage risk is eliminated.
- Most Z-MaT CNC machine have standard solutions with Z-MaT self made Gantry Robot such as Star SL6, Star SL8, TN500-S, STL8-S, Flash FL300, DA66G, etc.
- Heavier loading weight is available as option. Steel beam and aluminum alloy lift column are the quality foundation.



# GANTRY LOAD AUTOMATION

All Z-MaT machines are designed to allow the working area to be loaded efficiently from the front and from the top. Since the gantry loading equipment was developed and manufactured by Z-MaT, optimum matching of the individual components is guaranteed. The newly developed loading portal is characterized by very high acceleration rates and velocities as well as very high positioning accuracy and is suitable for loading workpieces of different dimensions. Together with a wide range of CNC machines, our engineering talents are capable to supply complete automatic production line turnkey solutions.



SL6-R



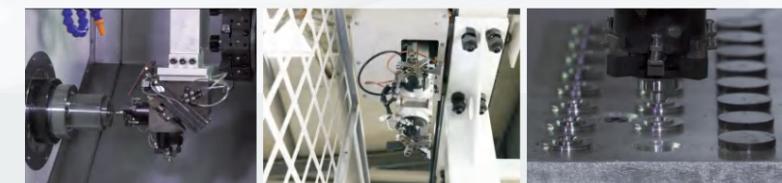
FL300-R



STL8-S



SP28-R



Different Clamping Tools

Different Grippers

Work Feeder Station



## Procedures of Automation Solution

### COLLABORATIVE DISCUSSION

Engage in comprehensive discussions with Z-MaT engineers. By pooling knowledge and ideas, a more informed and strategic approach to production challenges can be formulated.

### 01 DEMAND ASCERTAINMENT

Sales representatives have verified the requirement for labor reduction in mass production of parts.

### 02

### 03 STRATEGIC PATH-FINDING

Seek out the most dependable means to achieve the production target. The ultimate goal is to identify a foolproof strategy that ensures the successful realization of production objectives.

# COMPACT UNIVERSAL AUTOMATION

AUTOMATION WITH ROBOT  
Realize a complete automation solution  
by same investment of a lathe

A super compact design with width only 1504mm and still has large travel 160mm on X axis and 375mm on Z axis. It takes only 3.5m<sup>2</sup> footprint for M106 with gantry robot & stocker, which is almost same floor occupation as existing 6-inch 350mm Turning Center.



M106



Note: Except of Super M106-R, numerous other models are available with gantry robot solutions.

## Specifications

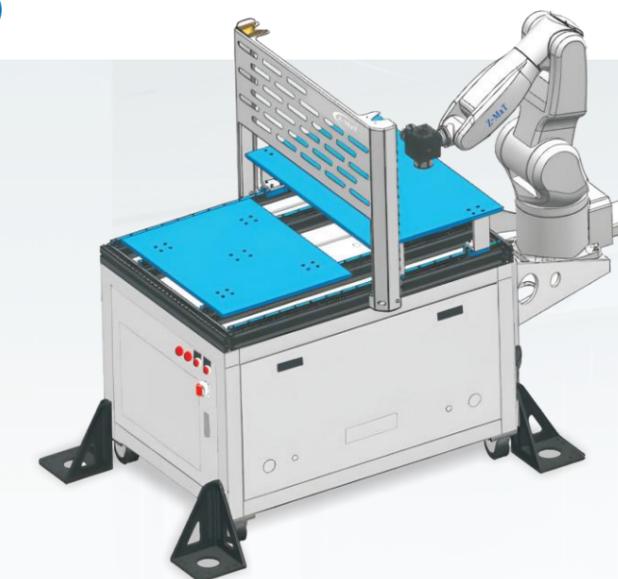
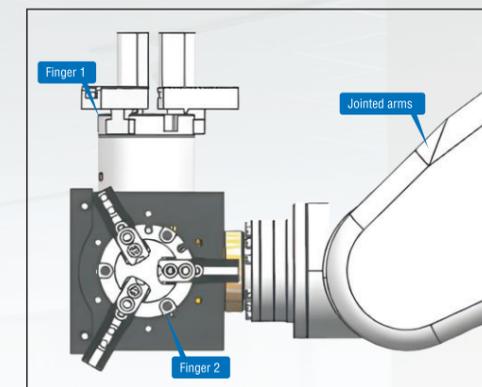
	Unit	M106	
<b>Capacity</b>	Max. length of workpiece	mm	350
	Max. swing diam. over bed	mm	320
	Max. swing diam. over slide	mm	200
<b>Spindle</b>	Spindle speed	rpm	5000
	Spindle nose		A2-5
	Diam. of spindle Bore	mm	56
<b>Axis</b>	Max. diam. of through-hole	mm	46
	Max. power of spindle	kW	11
	X axis Travel	mm	160
	Z axis Travel	mm	375
<b>Turret</b>	Rapid traverse	m/min	25
	Center height	mm	80
	No. of tool stations		8, *12
<b>Tailstock</b>	Tool shank size	mm	25×25, *20×20
	Type		LM
	Taper of quill		MT4
	Travel of quill	mm	/
<b>*Gantry Robot</b>	Travel of tailstock	mm	320
	Controller	-	Syntec
	Lift Capacity	Kg	6
	Workpiece Capacity	Kg	1, *2.5
	Rapid Traverse	m/min	80
	Transmission Type	-	Gear type
<b>Others</b>	Guideway	-	Linear guideway
	Power capacity	kVA	16
	Weight (about)	Kg	3200
	Overall dimension(L×W×H)	mm	1700×1800×1700

NOTE: "\*" means optional.

# Universal Robot Package: UR7-P

## End picker:

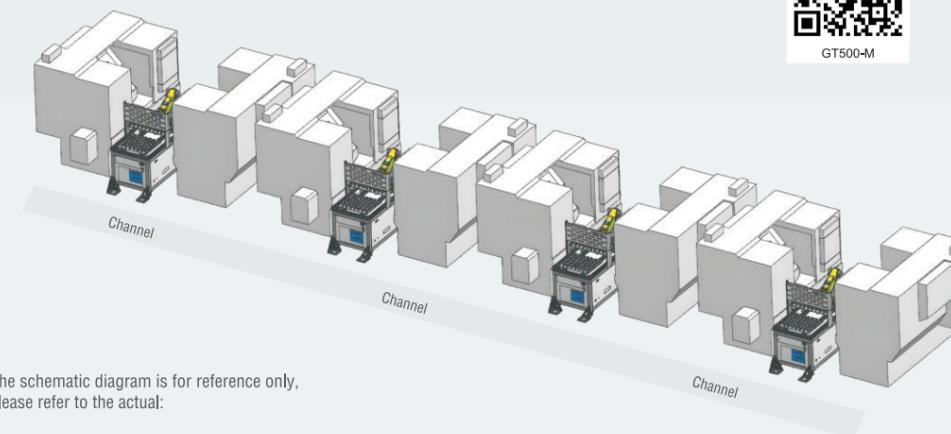
- The end picker (air jaw) clamps and fixes the product and material:
- Clamping cylinders drive the clamping fingers, which are serrated and adjustable to meet the needs of multiple products of the same type and model:
- The approximate shape of the hand jaw part is for reference only:
- The schematic diagram is for reference only, please refer to the actual:



## UR7-P

Payload	7KG	
Max Working Radius	980mm	
DOF	6 Axis	
Joint Weight	49KG	
Max Speed	J1	337.5°/S
	J2	337.5°/S
	J3	360°/S
	J4	367°/S
	J5	576°/S
	J6	576°/S
Max Operation Area	J1	±170°
	J2	+135°~-70°
	J3	+75°~-75°
	J4	±160°
	J5	±120°
	J6	±360°
Level of Protection Specification	IP54/IP65(Wrists)	
Position Repeat Accuracy	±0.05mm	
Working Temperature	0~45°C	
Feed Bin	Interactive	
Security Fence	Standard (customized logos are available)	
Overall Weight	300kg	

## Figure of the workshop for reference:



GT500-M

Note: The schematic diagram is for reference only, please refer to the actual:

# VERTICAL CNC LATHE

Excellent option for large, heavy, thin-walled or complicated parts



## Advantages of the VT Series Compared to a Horizontal CNC Lathe:

### VT Series Advantage

	NO	or	YES
Smallest floor space – required footprint?	/	✓	Footprint 50% smaller
Easiest parts loading and unloading?	/	✓	Requires 50% less set-up
Best parts machining roundness results?	/	✓	No deflection from gravity
Strongest foundation for heavy cutting?	/	✓	Twice the weight, power tripled
Best for turning complicated parts?	/	✓	Simpler clamping process



VT320

## Outstanding Efficiency & Accuracy

### Machine Characteristics

- Standard 8-Station Turret – Stands up to versatile production requirements.
- Compact design, PLUS, square base casting minimizes floor space requirements and increases anti-vibration forces.
- High speed spindle unit with powerful servo drive motor – offers high speed finish cutting, AND low speed heavy duty cutting in the same compact machine.

#### Standard Features

- Hydraulic 3-jaw Chuck
- 8-station Turret
- Chip Conveyor
- Fully Enclosed Guard
- Hydraulic System
- Heat Exchanger of Electric Cabinet

#### Optional Features

- Driven Tool Turret
- Gear Box
- Multi Tool Cutting
- Oil Mist Collector
- Air Conditioner of Electric Cabinet
- Grinding Function



VT400



VT600

## Specifications

	Unit	VT320	VT400	VT600	VT800	
<b>Capacity</b>	Max. swing dia.	mm	Φ450	Φ550	Φ720	Φ950
	Max. cutting dia.	mm	Φ350	Φ450	Φ600	Φ800
	Max. cutting height	mm	400	420	600	750
<b>Chuck</b>	Chuck type		Hydraulic chuck	Hydraulic chuck	Hydraulic chuck	Hydraulic chuck
	Chuck size	inch	10"	12"	21", *18", *24"	21", *24"
<b>Spindle</b>	Spindle speed	rpm	2500	2500, *Gear box	1000, *Gear box	1500, *Gear box
	Max. power of spindle	kW	18	18	18, *18.5, *22	30
	Spindle nose		A2-8	A2-8	A2-11	A2-11
<b>Turret</b>	Turret center height	mm	100	125	160	160
	No. of tools	nos	8, *12	8, *12	8, *12	8, *12
	Tool shank size	mm	25×25, *BMT55	32×32, *BMT65	40×40, *BMT65	40×40, *BMT65
<b>Axis</b>	X/Z axis travel	mm	300(+250/-50)/400	350(+300/-50)/450	450(+350/-100)/600	500(+450/-50)/780
	X/Z axis rapid traverse	m/min	15/18	15/18	15/18	16/16
<b>Others</b>	Power consumption	kVA	18	22	35	35
	Dimension (LxWxH)	mm	1700×3200×2750	1900×3050×3000	2150×3450×3300	2210×3875×3385
	Weight (About)	kg	5400	7000	10200	13000

Note: "\*" means optional.



Wheel Hub

Steering Knuckle

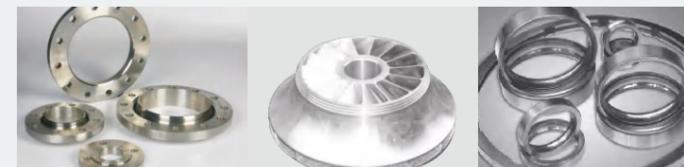
Differential Case



Motor Case

Brake Hub

Brake Disc



Flange

Impeller

Bearing

# STAR FAMILY TURNING CENTERS

STAR STL / SL / STH-B / TN / TS / DT SERIES

The STAR family of CNC lathes feature a cast mono-block, slant bed design and have configurable tooling options.

The SL Series lathes are typically equipped with a high-speed bi-directional indexing turret and a hydraulic chuck.

The STL series adds a tailstock to the lathe features.

The TN series are equipped with driven tool turret and C axis for secondary milling /drilling /tapping.

The TS series is designed without a tailstock for saving space and investment meanwhile it retains the same efficiency and capacity as the TN series. Furthermore, the TS500 can put a real powerful VMC spindle under the turret for rigid milling.

The DT series is standard with Y axis for off center milling, together with sub spindle option. Complex workpieces can be finished in one time set-up.



## BRILLIANT INNOVATION SOPHISTICATED TECHNOLOGY

### Heavy-Duty Cast Iron Base – PLUS, Quality Components

Nearly all Star Family Lathes have a heavy-duty cast base with “true align” slant bed design. The machine bed, head stock, turret and tailstock are aligned on the same plane. This unique design feature reduces heat build-up and resulting thermal expansion. The net result is a higher precision machine tool.

Additional resulting efficiencies from the “true align” design are greater rigidity and smoother operation – which provides a variety of benefits. You can expect to produce highly accurate parts with extremely fine surface finishes.

There are multiple benefits to having a lathe that combines such a large sized “vibration damping” solid, cast base – PLUS, properly aligned and balanced components. Some of these benefits include: 1) Smoother slide surface operation; 2) Higher speed and accuracy; 3) Fewer machine adjustments and lower maintenance costs; 4) Shortened machine warm-up time; 5) Lower power consumption.

### The Foundation for Success



#### Turret Features

Bi-directional indexing high speed 8/12 station static tools type or 12 stations driven tools type turret provides optimal tool change efficiency and speed. VDI and BMT standard are available in this series.



#### Sub-spindle & Automatic Tailstock

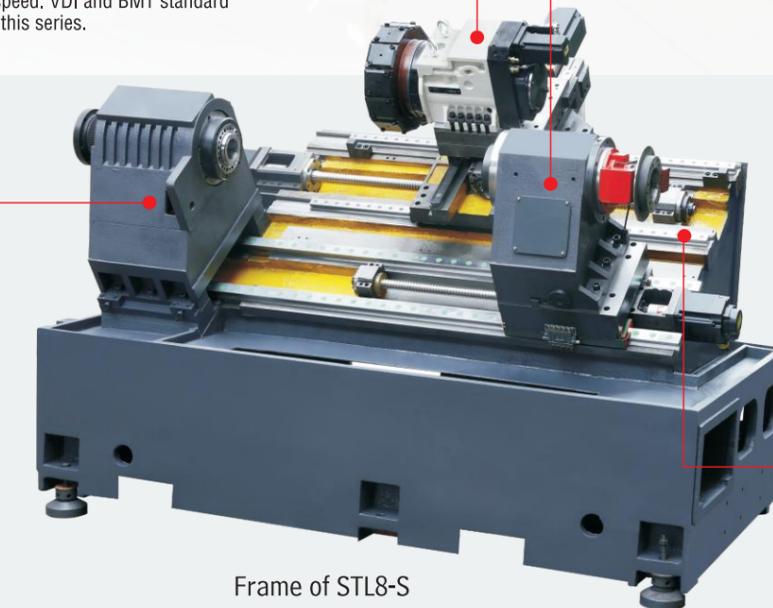
This efficient tailstock provides a combination of rigidity, accuracy and rapid set-up times on sub spindle or servo automatic tailstock solutions. In addition, Z-MaT smartly designed an economic automatic tailstock. The tailstock body is positioned by a hydraulic traction bar on LM guideway.

**90%** reduction in set-up time, compared to manual tailstock lathes.



#### Rigid Headstock and Spindle

Different types and sizes of spindles are available on one model which adds extreme flexibility and optimized machining performance according to the target workpieces of customer.



Frame of STL8-S

Cylindrical Roller Linear Motion Guideway

Base and bed are **One-piece square casting** monoblock design

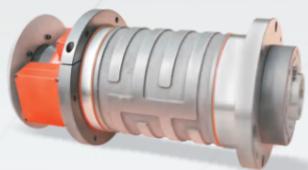
# SPINDLE & TURRET FEATURES

## Combined Speed and Rigidity

Different sizes of direct mount spindles, cartridge type spindles and built-in motor spindles are standard according to exact models. With modular design production, each model has various spindle options to create the perfect balance of speed and rigidity.

The headstock and main spindle are manufactured then assembled and tested in a clean room. Heavy duty type spindle is supported by a double-row tapered cylindrical roller bearing plus angular ball bearing and double-row cylindrical roller bearing in the rear. It is a perfect marriage of speed and rigidity.

### 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

Motorized spindle (Built-in motor) offers higher torque, better overload capability and high speed acceleration which shortens cycle time and increases productivity better than a traditional belt driven spindle. The machine is running with less vibration and less noise, together with better accuracy. It represents a new generation of turning center.

**Overload protection** and **oil coolant** are standard features to guarantee long term stability.

Legend:   
 Belt Driven Spindle   
 Direct Driven Spindle



### Cartridge Type Spindle

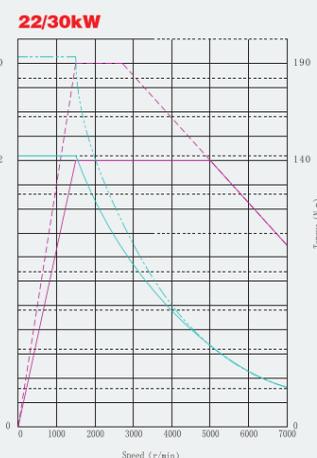
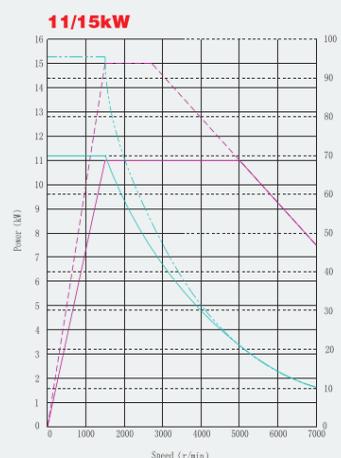
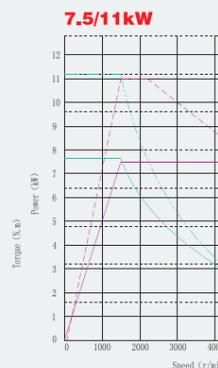


### Direct Mount Spindle



## SPINDLE MOTOR TORQUE DIAGRAM

Legend:   
— Max. Torque   
— Continuous Torque of Drive   
— Max. Power   
— Continuous Power of Drive



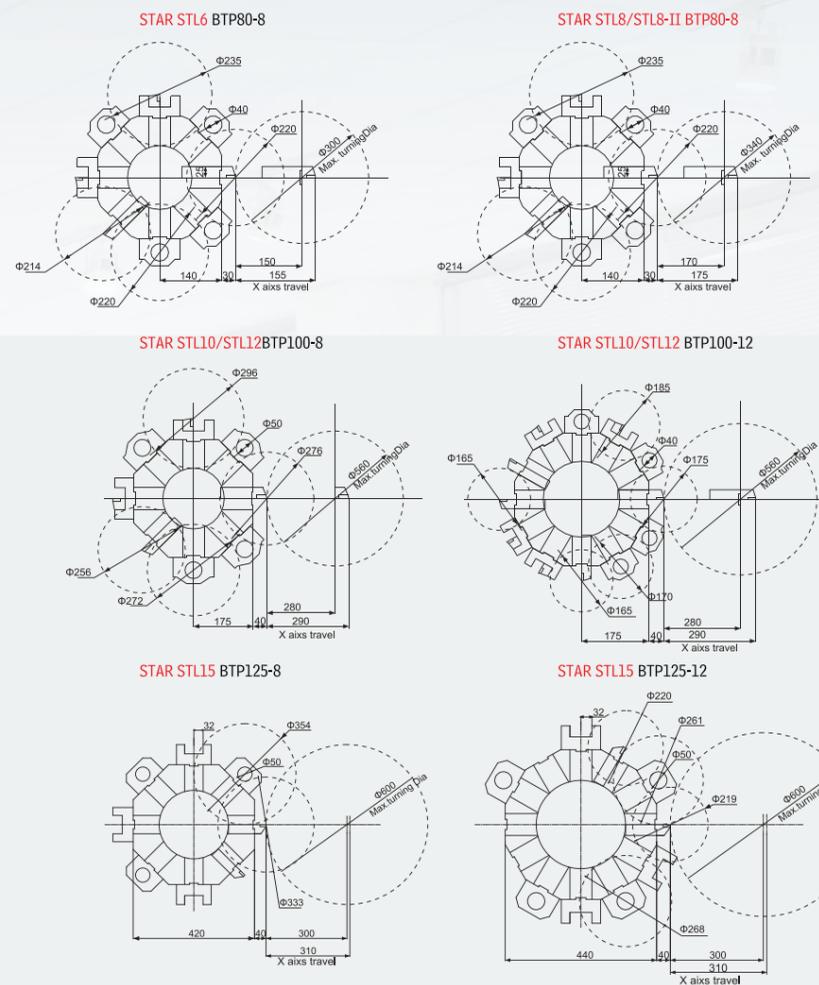
Note: The real spindle output torque are converted by actual belt pulley ratio, please contact sales representative to get more technical details. The above diagrams are shown as 4 poles servo motor. 6, 8, 10 poles are widely selected to increase torque at low speed.

# VARIOUS HIGH CLASS TURRET

## Increase efficiency and reliability

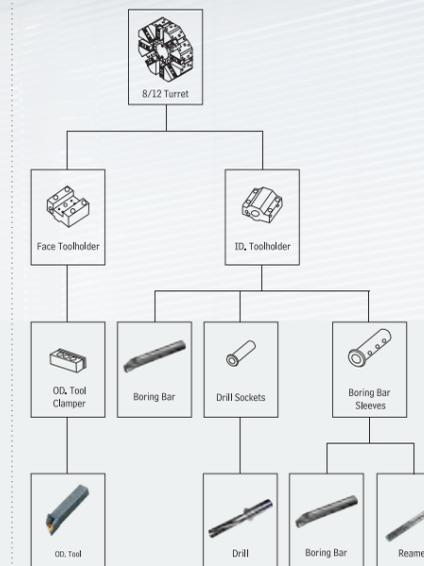
8-station turret is standard on 2 axes CNC lathes. 12-station driven tool turret is standard for 3 and 4 axes turning centers. High quality, high speed bi-directional indexing turret provides optimal tool change efficiency and speed.

## Tool Interference Diagram



## Tooling System

STAR STL6/STL8/STL8-II/STL10/STL12



Hydraulic



Servo

	Adjacent tool change and lock time	Opposite tool change and lock time
8P Center Height - 63	0.6s	2s
<b>8P BTP63</b>	<b>0.4s</b>	<b>1.4s</b>
8P Center Height - 80	0.6s	2s
<b>8P BTP80</b>	<b>0.45s</b>	<b>1.6s</b>

Optional Hydraulic Turret

Z-MaT Adopted Standard Turret

# DRIVEN TOOL POWER TURRET FEATURES

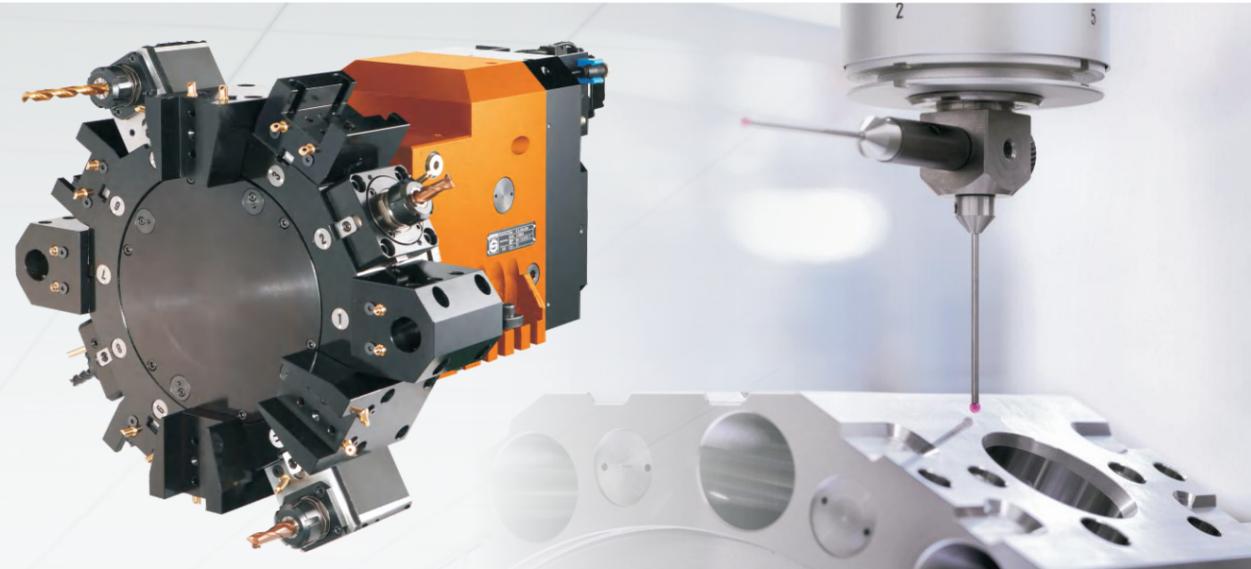
## Powerful Driven Tool Turret

Standard with 12-station driven tool turret, it features bi-directional indexing and non-lifting. The 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 the tool in position gets drive. Motorized Cam operated mechanism ensures positive engage and disengage movements of the clutch for the driven tool. All drive elements are grease lubricated and properly sealed to prevent coolant entry.

## BMT Standard

The BMT "Base Mounted Turret" holder will mount solidly to the face of the turret with 4 socket head cap screws, and is located and further secured with locating keys present on the turret face. These keys eliminate the need for indicating the toolholder to straighten it. Operator does not need to adjust the straightness for BMT toolholder, overall precision is based on the precision of the toolholder, and which is not adjustable.



## Various VDI Tool Holders



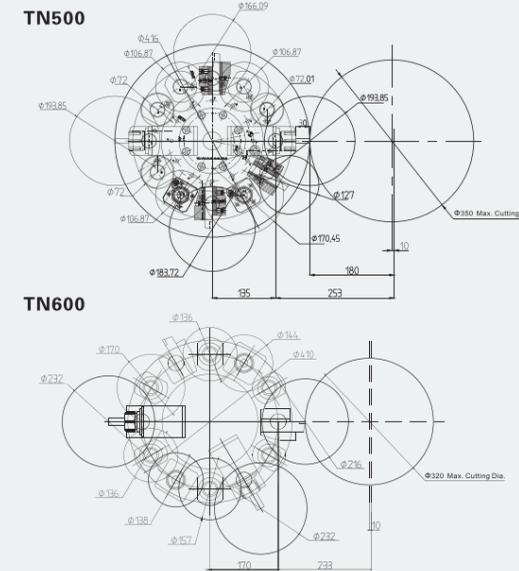
# BMT & VDI TECHNOLOGY

## VDI Technology

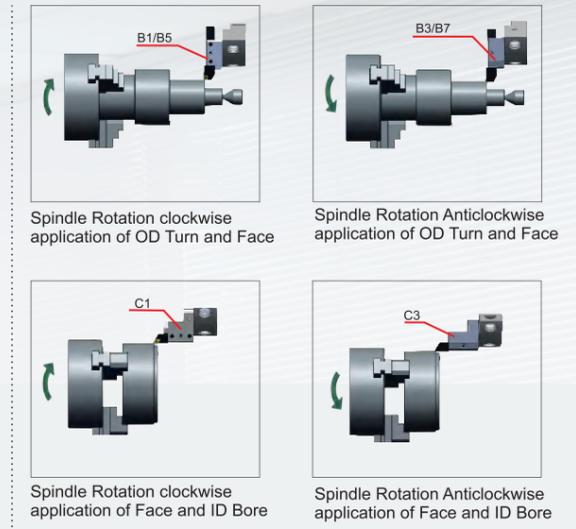
The VDI system is a quick change clamping system for each tool holder within the tool disc. Tool changes can therefore be performed within seconds, rather than minutes as with the traditional Block Bolt on system.



## Tool Interference Diagram



VDI30/12-STATION		★ [ATH-30ER25-80] ER25 ★ [ATH-40ER32-80] ER32 * Compact size is option	0 degree live toolholder on Axial(Face)direction
		★ [RTH-30ER25-80] ER25 ★ [RTH-40ER32-80] ER32 * Compact size is option	90 degree live toolholder on Radial(OD)direction
		★ [B1 (30 20 40)] [B5 (30 20 40)] □ 20 ★ [B1 (40 25 44)] [B5 (40 25 44)] □ 25 * B5 is extra length design	Application of OD turn and face
VDI40/12-STATION		★ [C1 (30 20)] □ 20 ★ [C1 (40 25)] □ 25	Application of ID bore and face
		★ [Z2 30] ★ [Z2 40]	Plug to seal VDI hole
		★ [E2 (30×32)] Φ32 ★ [E2 (40×32)] Φ32 * Other sizes option	Boring Bar tool holder
		☆ [E1 (30×32)] Φ32 ☆ [E1 (40×32)] Φ32 * Other sizes option	Through Coolant Boring tool holder
		☆ [E4 (30×25)] ER25 ☆ [E4 (40×25)] ER25 ☆ [E4 (30×32)] ER32 ☆ [E4 (40×32)] ER32 ☆ [E4 (30×40)] ER40 ☆ [E4 (40×40)] ER40	Er Collet tool holder
VDI40/12-STATION		☆ [B3 (30 20 40)] [B7(30 20 40)] □ 20 ☆ [B3 (40 25 40)] [B7(40 25 40)] □ 25 * B7 is extra length design	Application of OD turn and face
		☆ [C3 (30 20)] □ 20 ☆ [C3 (40 25)] □ 25	Application of ID bore and face



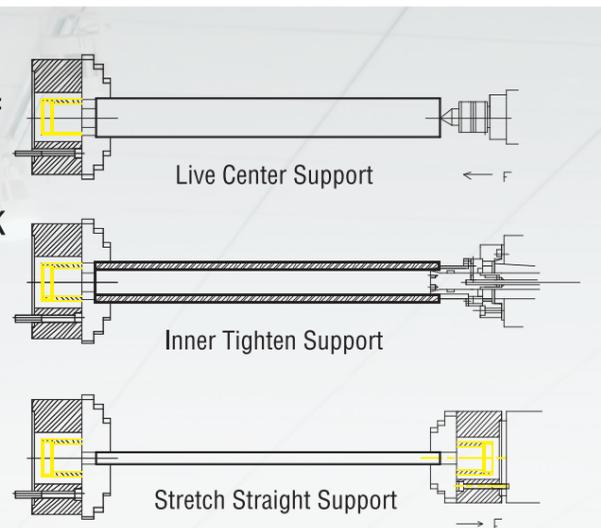
**Note:**

- I. The codes in [ e.g. C1 (30 20) ] is purchasing codes. Written in Blue color is for VDI30, written in red color is for VDI40.
- 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. There are more different VDI standard toolholders, you may get from your closest local market or consult Z-MaT's sales reps. for further details.



# VARIOUS TAILSTOCK FEATURES

Typical Application Diagram of Spindle Type & Servo Programmable Tailstock



# VARIOUS SUPERB ACCESSORIES

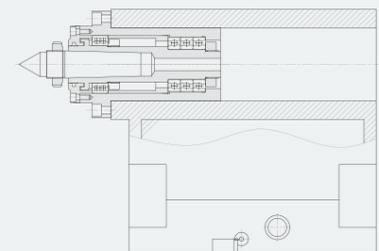


2/3/4 Jaws Chuck

DIN Standard Collet

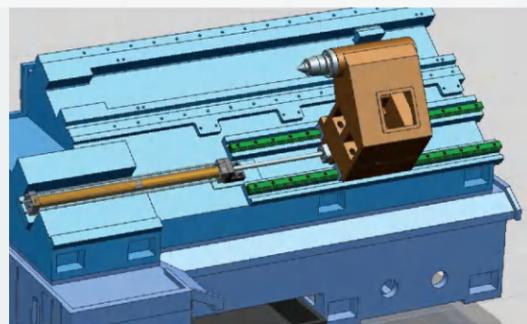
Hollow Hydraulic Cylinder

Solid Hydraulic Cylinder



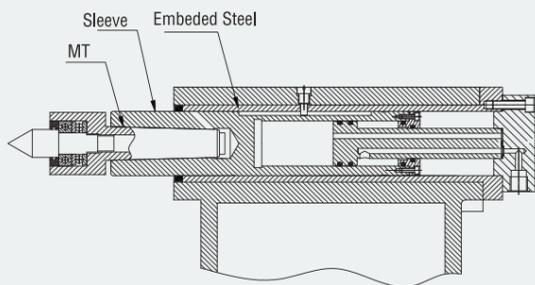
## SST: Small Spindle Type Tailstock

The tailstock is designed similar to the sub-spindle structure. It offers great rigidity, accuracy and wide capability. Live center lubrication is not necessary on such a structure.



## HPT: Hydraulic Programmable Tailstock

The complete tailstock body is driven by a hydraulic traction bar on cylindrical roller linear motion guide way. With no sleeve design and linear motion guide way, it ultimately increases the accuracy as well as being free of lubrication and maintenance. It has the same full automatic travel feature as the servo programmable tailstock. Set up time is saved and efficiency is increased by such a design.



## Embedded Steel Tailstock

Unlike traditional tailstock, Z-MaT uniquely created an embedded steel type tailstock. The design extremely resists wear and increases accuracy.



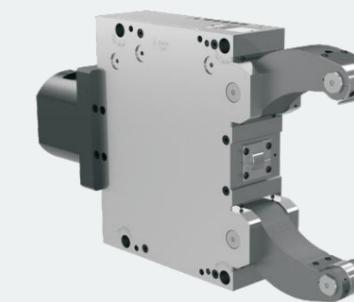
Bar Feeder



Oil Mist Collector



Tool Setter



Steady Rest

# STAR STL SERIES

Slant bed, Tailstock, Linear Guideway

## Standard Features

- Hydraulic 3-jaw Chuck
- 8-station Turret
- Automatic Lubrication System
- Automatic Coolant System
- Hydraulic Tailstock
- 3 Color Indicator Lamp
- Work Lamp
- Fully Enclosed Guard
- Hydraulic System
- Heat Exchanger of Electric Cabinet

## Optional Features

- 12-Station Turret
- Different Chucks and Collets
- Automatic Tailstock
- Chip Conveyor
- Tool Setter
- Bar Feeder
- Oil Mist Collector
- Air Conditioner of Electric Cabinet
- Servo/Hydraulic/Manual Steady Rest



Specifications	Unit	STL5	STL6	STL8	STL8-550				
<b>Capacity</b>									
Chuck size	inch	5", *6"	6", *8"	8", *10"	8", *10"				
Max. swing dia. over bed	mm	Φ300	Φ400	Φ450	Φ550				
Max. length of workpiece	mm	300, *400	380	500	550				
Max. swing dia. over slide	mm	Φ180	Φ220	Φ220	Φ360				
<b>Spindle</b>									
Spindle bore	mm	Φ48	*Φ55	Φ55	*Φ62	Φ66	*Φ75	Φ62	*Φ75
Max. dia. of through-hole	mm	Φ40	*Φ46	Φ46	*Φ52	Φ52	*Φ65	Φ52	*Φ65
Spindle nose	type	A2-5	*A2-5	A2-5	*A2-6	A2-6	*A2-8	A2-6	*A2-8
Spindle speed	rpm	4500	*4500	4500	*4000	4000	*1600	4000	*3200
						*2000	*3200		
Max. power of spindle	kW	5.5, *7.5	11	11, *15	15				
<b>Axis</b>									
X axis travel	mm	150	150	170	250				
Z axis travel	mm	300, *400	400	500	550				
X/Z rapid traverse	m/min	20/20	20/20	20/20	20/20				
<b>Turret</b>									
Center height	mm	63	80	80	100				
No. of tool stations	nos	8, *12	8, *12	8, *12	8, *12				
Tool shank size	mm	20×20	25×25, *20×20	25×25, *20×20	25×25				
<b>Tailstock</b>									
Type of tailstock		HPT, *SPT	Hydraulic, *HPT	Hydraulic, *HPT, *SST	HPT, *SPT				
Taper of tailstock quill		MT4	MT4	MT4	MT5				
Travel of tailstock quill	mm	90	90	100	150				
Travel of tailstock	mm	300, *400	80-400	100-500	550				
<b>Structure</b>									
Slant bed degree		45°	45°	35°	35°				
Guideway type		LM	LM	LM	LM				
<b>Others</b>									
Power capacity	kVA	12	14	15	16				
Overall dimension (L×W×H)	mm	2400×1640×2050	2470×1745×1990	2700×1750×1950	2860×1950×2200				
Weight (about)	kg	2700	3400	3900	4800				

Note: "\*" means optional. "LM" means linear motion guideway. Tailstock: "Hydraulic" means automatic hydraulic driven tailstock sleeve. "HPT" means linear motion guide way, automatic hydraulic driven body move tailstock. "SST" means small spindle hydraulic tailstock. "SPT" means servo programmable tailstock. Programmable tailstock is available on STL5 for slim bar machining.



Specifications	Unit	STL8-750	STL8-1100	STL10	STL10-1600	STL10-2000	
<b>Capacity</b>							
Chuck size	inch	8", *10"	8", *10"	10"	10"	10"	
Max. swing dia. over bed	mm	Φ550	Φ600	Φ520, *Φ620	Φ600	Φ570	
Max. length of workpiece	mm	750	1100	750, *1000	1600	1800(C2C 2000)	
Max. swing dia. over slide	mm	Φ360	Φ360	Φ280, *380	Φ400	Φ360	
<b>Spindle</b>							
Spindle bore	mm	Φ62	*Φ75	Φ62	*Φ75	Φ86	*Φ75
Max. dia. of through-hole	mm	Φ52	*Φ65	Φ52	*Φ65	Φ75	*Φ65
Spindle nose	type	A2-6	*A2-8	A2-6	*A2-8	A2-8	*A2-8
Spindle speed	rpm	4000	*1600	4000	*1600	3000	*3200
		*2000	*3200	*2000	*3200	*Gear box	*Gear box
Max. power of spindle	kW	11, *15	11, *15	15, *18.5	18.5	18.5	
<b>Axis</b>							
X axis travel	mm	250	250	280	250	280	
Z axis travel	mm	750	1100	750, *1000	1600	2000	
X/Z rapid traverse	m/min	20/20	20/20	15/20	15/20	15/20	
<b>Turret</b>							
Center height	mm	80, *100	80, *100	100, *125	100	100	
No. of tool stations	nos	8, *12	8, *12	8, *12	8, *12	8, *12	
Tool shank size	mm	25×25	25×25	25×25	25×25	25×25	
<b>Tailstock</b>							
Type of tailstock		SST, *SPT	SST, *SPT	Hydraulic, *HPT, *SST	SST, *SPT	SST, *SPT	
Taper of tailstock quill		MT3	MT3	MT5	MT4	MT4	
Travel of tailstock quill	mm	150	150	150	150	150	
Travel of tailstock	mm	750	1100	100-750/*1000	1600	1800	
<b>Structure</b>							
Slant bed degree		35°	35°	35°	35°	35°	
Guideway type		LM	LM	LM	LM	LM	
<b>Others</b>							
Power capacity	kVA	16	18	20	22	22	
Overall dimension (L×W×H)	mm	3000×2000×2200	3500×2000×2200	3350/3700×1950×2350	4000×2000×2200	5150×2070×2150	
Weight (about)	kg	5400	6200	5300/6500	8300	8700	

Note: "\*" means optional. "LM" means linear motion guideway. Tailstock: "Hydraulic" means automatic hydraulic driven tailstock sleeve. "HPT" means linear motion guide way, automatic hydraulic driven body move tailstock. "SST" means small spindle hydraulic tailstock. "SPT" means servo programmable tailstock. "C2C", Spindle Center to tailstock Center Distance.

# STAR STL SERIES

Slant bed, Tailstock, Linear Guideway



Specifications	Unit	STL12	STL12-1600	STL12-2000	STL12-3000	STL15-1500
<b>Capacity</b>						
Chuck size	inch	12", *15"	12", *15"	12", *10", *15"	12", *15"	15", *12"
Max. swing dia. over bed	mm	Φ530	Φ600	Φ620	Φ620	Φ650
Max. length of workpiece	mm	750, 1000	1600	1820 (C2C 2000)	3000	1320 (C2C 1500)
Max. swing dia. over slide	mm	Φ280	Φ400	Φ360	Φ460	Φ500
<b>Spindle</b>						
Spindle bore	mm	Φ105	*Φ120	Φ105	*Φ120	Φ105
Max. dia. of through-hole	mm	Φ91	*Φ110	Φ91	*Φ110	Φ91
Spindle nose	type	A2-8	*A2-11	A2-8	*A2-11	A2-8
Spindle speed	rpm	1800	*1000	1800	*1000	1800
		*Gear box	*Gear box	*Gear box	*Gear box	*Gear box
Max. power of spindle	kW	15, *18.5	18.5	18.5	18.5	18.5
<b>Axis</b>						
X axis travel	mm	280	250	280	320	300
Z axis travel	mm	750, *1000	1600	2000	3300	1500
X/Z rapid traverse	m/min	15/20	15/20	15/20	15/20	15/20
<b>Turret</b>						
Center height	mm	100	100	100	100, *125	125
No. of tool stations	nos	8, *12	8, *12	8, *12	12	8, *12
Tool shank size	mm	25×25	25×25	25×25	25×25, *32×32	32×32
<b>Tailstock</b>						
Type of tailstock		Hydraulic, *HPT, *SST	SST, *SPT	SST, *SPT	SPT	SST-LM
Taper of tailstock quill		MT5	MT4	MT4	MT5	MT5
Travel of tailstock quill	mm	150	150	150	/	0
Travel of tailstock	mm	100-750/*1000	1600	100-1800	3200	100-1320
<b>Structure</b>						
Slant bed degree		35°	35°	35°	35°	45°
Guideway type		LM	LM	LM	LM	LM
<b>Others</b>						
Power capacity	kVA	20	22	22	25	25
Overall dimension (L×W×H)	mm	3350/3700×1950×2350	4000×2000×2200	5150×2070×2150	6100×2200×2320	4550×2270×2300
Weight (about)	kg	5600/6600	8300	9200	12500	10000

Note: "\*" means optional. "LM" means linear motion guideway. Tailstock: "Hydraulic" means automatic hydraulic driven tailstock sleeve. "HPT" means linear motion guideway, automatic hydraulic driven body move tailstock. "SST" means small spindle hydraulic tailstock. "SPT" means servo programmable tailstock.



Specifications	Unit	STL15-2000	STL18-750	STL18-1000	STL18-1500	STL18-2000	STL24-1000
<b>Capacity</b>							
Chuck size	inch	15", *12"	18", *15"	18", *15"	18", *15"	18", *15"	24"
Max. swing dia. over bed	mm	Φ650	Φ800	Φ800	Φ800	Φ800	Φ720
Max. length of workpiece	mm	1820 (C2C 2000)	750	1000	1500	2000	1000
Max. swing dia. over slide	mm	Φ500	Φ600	Φ600	Φ600	Φ600	Φ600
<b>Spindle</b>							
Spindle bore	mm	Φ105	*Φ120	Φ110	*Φ120	Φ110	*Φ120
Max. dia. of through-hole	mm	Φ91	*Φ110	Φ95	*Φ110	Φ95	*Φ110
Spindle nose	type	A2-8	*A2-11	A2-11	*A2-11	A2-11	*A2-11
Spindle speed	rpm	1800	*1000	1500	*1000	1500	*1000
		*Gear box	*Gear box	*Gear box	*Gear box	*Gear box	*Gear box
Max. power of spindle	kW	18.5	18.5, *22	18.5, *22	18.5, *22	18.5, *22	22
<b>Axis</b>							
X axis travel	mm	300	380	380	380	380	430
Z axis travel	mm	2000	750	1000	1500	2000	1000
X/Z rapid traverse	m/min	15/20	15/20	15/20	15/20	15/20	15/20
<b>Turret</b>							
Center height	mm	125	125	125	125	125	160
No. of tool stations	nos	8, *12	8, *12	8, *12	8, *12	8, *12	8, *12
Tool shank size	mm	32×32	32×32	32×32	32×32	32×32	32×32
<b>Tailstock</b>							
Type of tailstock		SST, *SPT	Hydraulic, *HPT, *SST, *SPT	Hydraulic, *HPT, *SST, *SPT	Hydraulic, *SST, *SPT	Hydraulic, *SST, *SPT	Hydraulic, *SPT
Taper of tailstock quill		MT5	MT6	MT6	MT6	MT6	MT6
Travel of tailstock quill	mm	150	150	150	150	150	150
Travel of tailstock	mm	100-1820	100-750	200-1000	200-1500	200-2000	200-1000
<b>Structure</b>							
Slant bed degree		45°	45°	45°	45°	45°	45°
Guideway type		LM	LM	LM	LM	LM	LM
<b>Others</b>							
Power capacity	kVA	25	32	32	32	32	32
Overall dimension (L×W×H)	mm	5000×2270×2550	3900×2200×2550	4200×2270×2550	4800×2200×2550	5200×2200×2550	4350×2200×2550
Weight (about)	kg	11500	7800	9150	10900	12000	9500

Note: "\*" means optional. "LM" means linear motion guideway. Tailstock: "Hydraulic" means automatic hydraulic driven tailstock sleeve. "HPT" means linear motion guideway, automatic hydraulic driven body move tailstock. "SST" means small spindle hydraulic tailstock. "SPT" means servo programmable tailstock. "C2C", Spindle Center to tailstock Center Distance.

# STAR SL SERIES

Slant bed, Linear Guideway  
Compact Design – Without Tailstock

For disc and short parts, SL has the Same Performance as the STL  
– At a Lower Price Point, Perfect for Automation Options

Cast Mono-Block, “True Align” Slant Bed Structure.  
Star SL6 and SL10E are designed with extra gang static or live tool holder options under the turret.



### Standard Features

- Hydraulic 3-jaw Chuck
- 8-station Turret
- Automatic Lubrication System
- Automatic Coolant System
- Heat Exchanger of Electric Cabinet

### Optional Features

- 12-Station Turret
- Chip Conveyor
- Tool Setter
- Bar Feeder
- Air Conditioner of Electric Cabinet

## Specifications

	Unit	SL6	SL8	SL10E	SL10	SL12-500
<b>Capacity</b>	Chuck size	inch	6", *8", *10"	8"	8", *10"	10"
	Max. swing dia. over bed	mm	Φ480	Φ450	Φ500	Φ550
	Max. length of workpiece	mm	250, *350	320	300, *400	450, *600
	Max. swing dia. over slide	mm	Φ210	Φ300	Φ210	Φ300
<b>Spindle</b>	Spindle bore	mm	Φ55	*Φ62	*Φ81	Φ62
	Max. dia. of through-hole	mm	Φ46	*Φ52	*Φ70	Φ52
	Spindle nose	type	A2-5	*A2-6	*A2-8	A2-6
	Spindle speed	rpm	4500	*2000	*1600	4000
Max. power of spindle	kW	*5000	*4000	*2500	*2000	
<b>Axis</b>	X axis travel	mm	200	250	280	280
	Z axis travel	mm	250, *350	300	300, *400	450, *600
	X/Z rapid traverse	m/min	20/25	20/20	20/20	20/20
	Center height	mm	63,*80	80	80	80,*100
<b>Turret</b>	No. of tool stations	nos	8, *12	8, *12	8, *12	8, *12
	Tool shank size	mm	20×20, *25×25	25×25, *20×20	25×25, *20×20	25×25
<b>Structure</b>	Slant bed degree	degree	35°	45°	60°	35°
	Guideway type		LM	LM	LM	LM
<b>Others</b>	Power capacity	kVA	13	15	15	18
	Overall dimension (L×W×H)	mm	2450×1800×1950	2500×1750×2100	2550×1750×2250	3000×1900×2350
	Weight (about)	kg	3100	3300	3800	4400

Note: "\*" means optional, "LM" means linear motion guideway.

# STAR STH-B SERIES

Slant bed, Turret, Hard-Box guideway

## Machine Characteristics

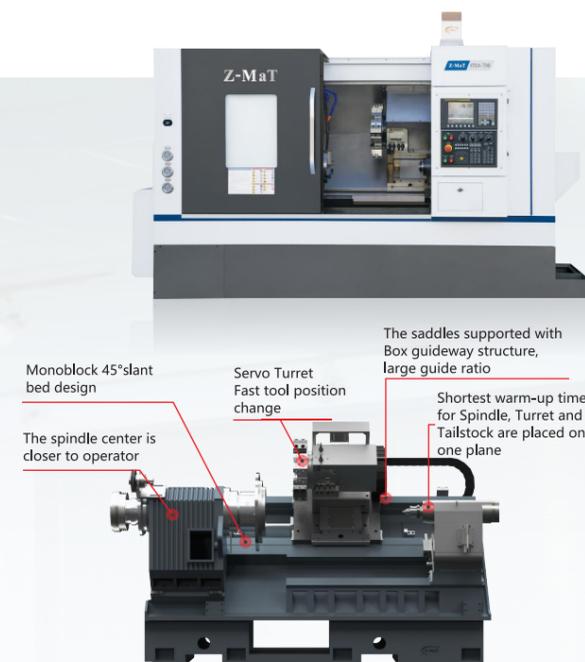
- 45° slant bed - efficient chip flow and optional for chip conveyor (Right or Rear side)
- The machine tool castings are designed by finite element analysis, and the structure is reasonable. The machine tool guideways adopt rectangular plastered sliding guide, with large span and high rigidity, which can meet the heavy cutting requirements of the machine tool;
- The X/Z axis ball screw is a pre-load structure, which can effectively reduce the influence of temperature on accuracy and keep the machine high precision for a long time;
- The tailstock adopts Box guideway with high rigidity with two modes of programming and manual option.

### Standard Features

- Hydraulic 3-jaw Chuck
- 8-station Turret
- Automatic Lubrication System
- Automatic Coolant System
- Heat Exchanger of Electric Cabinet
- Hydraulic Tailstock

### Optional Features

- 12-Station Turret
- Chip Conveyor
- Tool Setter
- Manual/Hydraulic Steady Rest
- Air Conditioner of Electric Cabinet
- Gear Box Spindle



Monoblock 45° slant bed design  
The spindle center is closer to operator  
Servo Turret Fast tool position change  
The saddles supported with Box guideway structure, large guide ratio  
Shortest warm-up time for Spindle, Turret and Tailstock are placed on one plane

Remark: STH10-B frame

## Specifications

	Unit	STH10-420B	STH12-420B	STH10-750B	STH12-750B	STH10-1000B	STH12-1000B
<b>Capacity</b>	Max. turning diameter	mm	Φ320	Φ320	Φ320	Φ320	Φ320
	Max. length of workpiece	mm	420	420	750	750	1000
	Max. swing dia. over bed	mm	Φ500	Φ500	Φ500	Φ500	Φ500
	Max. swing dia. over slide	mm	Φ210	Φ210	Φ210	Φ210	Φ210
<b>Spindle</b>	Max. spindle speed	rpm	3200	3000	*2000	3200	3000/*2000
	Max. dia. of through-hole	mm	Φ75	Φ86	*Φ105	Φ75	Φ86/*Φ105
	Spindle nose	type	A2-8	A2-8	*A2-8	A2-8	A2-8
	Max. dia. of through hole	mm	Φ65	Φ75	*Φ91	Φ65	*Φ91
Max. power of spindle	kW	15, *18.5	15, *18.5	15, *18.5	15, *18.5	15	15
<b>Structure</b>	Slant bed degree	degree	45°	45°	45°	45°	45°
	Guideway type		Hard-Box	Hard-Box	Hard-Box	Hard-Box	Hard-Box
<b>Axis</b>	X axis travel	mm	220	220	220	220	220
	Z axis travel	mm	560	560	750	750	1000
	X/Z axis rapid traverse	m/min	15/15	15/15	15/15	15/15	15/15
	Max. cutting feed rate	m/min	8	8	8	8	8
<b>Tailstock</b>	Travel of tailstock quill	mm	100	100	100	100	100
	Taper of tailstock quill		MT5	MT5	MT5	MT5	MT5
<b>Others</b>	Overall dimension(L×W×H)	mm	3000×1700×2200	3000×1700×2200	3300×1700×2200	3300×1700×2200	3300×1700×2200
	Weight(about)	kg	4300	4500	4800	5000	6700

Note: "\*" means optional.

# STAR TN & TS SERIES

FULL RANGE OF X/Z/C 3-AXIS TURNING CENTERS

Turning Center  
Turning Center for Short Parts

TS Feature a Compact Design – Without Tailstock

TS has the Same Performance as TN – At a Lower Price Point

## Standard Features

- Hydraulic 3-jaw Chuck
- 12-station Power Turret
- Automatic Lubrication System
- Automatic Coolant System
- Tailstock (TN Series)
- Work and Alarm Light

## Optional Features

- Tool Setter
- Chip Conveyor
- Live Tool Holders
- Different Chucks and Collets
- Servo Tailstock
- Bar Feeder
- Servo/Hydraulic Steady Rest
- Static or Live tools under Turret (TS400, TS500)



## Machine Characteristics

TN and TS are turning centers able to flexibly handle various workpieces. The models feature Belt-Driven or 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 workpieces from simple to complex shaped components with one set up operation.

TS are models are without a tailstock for a more compact and economic design to satisfy short or disc type workpiece.



## Specifications

	Unit	TN500	TN500-450	TN500-650	TN500-1000	TN500-1600	
<b>Capacity</b>	Chuck size	inch	8	8	8, *10	8, *10	
	Max. length of workpiece	mm	500	450	650	1000	
	Max. swing dia. over bed	mm	Φ540	Φ550	Φ600	Φ600	
	Max. swing dia. over slide	mm	Φ280	Φ360	Φ380	Φ380	
<b>Spindle</b>	Spindle bore	mm	Φ66	Φ66	Φ66	Φ66	
	Max. dia. of through-hole	mm	Φ52	Φ52	Φ52	Φ52	
	Spindle nose	-	A2-6	A2-6	A2-6	A2-6	
	Max. spindle speed	rpm	4000	4000	4000	4000	
	Max. power of spindle	kW	30	30	30	30	
<b>Axis</b>	X axis travel	mm	260	260	230	230	
	Z axis travel	mm	500	450	650	1000	
	X/Z axis rapid traverse	m/min	20/20	20/20	20/20	20/20	
<b>Turret</b>	No. of tool stations	nos	12	12	12	12	
	Tool shank size		VDI30, *BMT45	BMT45, *BMT55	BMT45, *BMT55	BMT55	
	Max. speed of driving tool	rpm	4000, *5000	4000, *5000	4000, *5000	4000, *5000	
<b>Tailstock</b>	Type of tailstock	-	Hydraulic, *HPT	Hydraulic, *HPT, *SPT	SST, *SPT	SST, *SPT	
	Taper of tailstock quill	-	MT4	MT5, *MT3	MT5, *MT3	MT5, *MT3	
	Travel of tailstock	mm	100-500	100-500	100-650	100-1000	
<b>Others</b>	Slant bed degree	-	35°	35°	35°	35°	
	Guideway type	-	LM	LM	LM	LM	
	Power capacity	kVA	28	28	28	28	
	Overall dimension(L*W*H)	mm	2750*1700*1900	2860*1950*2200	2960*1950*2200	3500*1950*2200	4100*2200*2350
	Weight(about)	kg	4800	5400	5500	6500	8300

Note: "\*" means optional. "LM" means linear motion guideway. Tailstock: "Hydraulic" means automatic hydraulic driven tailstock sleeve. "HPT" means linear motion guide way, automatic hydraulic driven body move tailstock. "SST" means small spindle hydraulic tailstock. "SPT" means servo programmable tailstock.



## Specifications

	Unit	TN600	TN600-3000	TN700	TN800	TS400	TS500	TS600
<b>Capacity</b>	Chuck size	inch	10, *12	10, *12	15	18", *15"	6	8
	Max. length of workpiece	mm	700, *900, *1700	3000	1250, *1700	650, *900, *1400, *1900	320	320
	Max. swing dia. over bed	mm	Φ620	Φ620	Φ620	Φ620	Φ400	Φ550
	Max. swing dia. over slide	mm	Φ360	Φ360	Φ360	Φ600	Φ200	Φ320
<b>Spindle</b>	Spindle bore	mm	Φ86	Φ86	Φ105	Φ110	Φ55	Φ66
	Max. dia. of through-hole	mm	Φ75	Φ75	Φ91	Φ95	Φ46	Φ52
	Spindle nose	-	A2-8	A2-8	A2-8	A2-11	A2-5	A2-6
	Max. spindle speed	rpm	3000	3000	2000	1500	5000	4000
	Max. power of spindle	kW	45, *Belt	45, *Belt, *22	Belt: 22	18.5, *22	15	30
<b>Axis</b>	X axis travel	mm	280	280-320	300	380	250	250
	Z axis travel	mm	700, *900, *1800	3300	1250, *1700	650, *900, *1400, *1900	320	320
	X/Z axis rapid traverse	m/min	20/20	20/20	15/20	15/20	20/20	20/20
<b>Turret</b>	No. of tool stations	nos	12	12	12	12	12	12
	Tool shank size		BMT55, *VDI40	BMT55	BMT65	BMT65	VDI30, *BMT45	VDI30, *BMT45
	Max. speed of driving tool	rpm	4000, *5000	4000, *5000	4000, *5000	4000, *5000	4000, *6000	4000, *6000
<b>Tailstock</b>	Type of tailstock	-	Hydraulic, *SPT, *HPT	Hydraulic, *SPT	SST-LM, *SPT	SST-LM, *SPT	-	-
	Taper of tailstock quill	-	MT5	MT5	MT5	MT5	-	-
	Travel of tailstock	mm	100-750, *1000, *1700	3000	100-1250, *1700	100-650, *900, *1400, *1900	-	-
<b>Others</b>	Slant bed degree	-	35°	35°	45°	45°	35°	60°
	Guideway type	-	LM	LM	LM	LM	LM	LM
	Power capacity	kVA	45	45	45	48	25	25
	Overall dimension(L*W*H)	mm	3200*1920*2130	4550*2270*2550	4550*2270*2550	3900*2200*2550	2500*1600*1900	2600*1750*2050
	Weight(about)	kg	6400	12300	10500	8000	3400	4200

Note: "\*" means optional. "LM" means linear motion guideway. Tailstock: "Hydraulic" means automatic hydraulic driven tailstock sleeve. "HPT" means linear motion guide way, automatic hydraulic driven body move tailstock. "SST" means small spindle hydraulic tailstock. "SPT" means servo programmable tailstock. Programmable steady rest is available on TN500-1600. Ts500 is able to put BT30/40 spindle type live tool below turret to realize heavy milling. 37/45kW Motorized Spindle is N/A for Fanuc, belt driven spindle is an option for all machine model standard with motorized spindle.

# STAR DT SERIES

FULL RANGE OF X/Z/C/Y 4-AXIS TURNING CENTERS

## Dual Processes Turning Center With Y Axis

### Standard Features

- Hydraulic 3-jaw Chuck
- 12 station BMT Power Turret
- Y Axis
- Hydraulic Tailstock
- Work Light
- 3-Color Alarm Light
- Automatic Lubrication System
- Automatic Coolant System

### Optional Features

- Different Chucks and Collets
- Different CNC Control Systems
- Different Spindle Bore Diameters
- Chip Conveyor
- Tool Setter
- Servo Tailstock
- Servo/Hydraulic Steady Rest

## Machine Characteristics

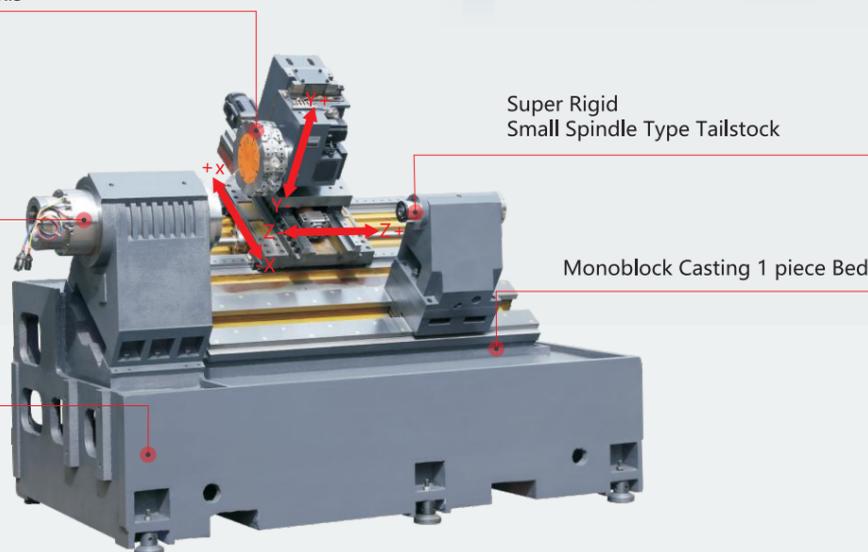
Z-MaT DT series turning centers provide DDS spindle or Belt spindle units, Driven tool turret and Y axis features. This Series extremely extends machining capability for combining turning and off center milling. With Y axis, customers can replace more than 90% secondary machining process by milling machine for turned parts. It will save the labor time, increase accuracy and efficiency. Thanks for mass production, Z-MaT work hard to make every customer own an excellent turning center at an affordable price. You don't need 1 CNC lathe and 1 milling/drilling/tapping machine any more. In most instances, one unit of DT series turning center solves all your problems in one setup.



Driven Tool Turret with Y Axis

Large Torque Direct Driven Spindle

Wide Span Base and Bed Module design provides foundation of reliability



Remark: DT500E frame, DT350E/DT400E/DT450E is similar.



## Specifications

	Unit	DT300E	DT350E	DT400E	DT450E	DT500E-450	DT500E	DT500E-1000	DT500E-1500	
<b>Capacity</b>	Max. turning diameter	mm	160	160	160	200	320	320	320	
	Max. length of workpiece	mm	250	320	320	450	450	650	1500	
	Max. swing dia. over bed	mm	Φ500	Φ500	Φ500	Φ600	Φ600	Φ600	Φ600	
	Max. swing dia. over slide	mm	Φ250	Φ300	Φ350	Φ380	Φ430	Φ430	Φ430	
<b>Spindle</b>	Hydraulic chuck	Inch	6	6	6	8	8	8	8	
	Dia. of spindle bore	mm	Φ55	Φ55	Φ55	Φ66	Φ66	Φ66	Φ66	
	Max. dia. of through-hole	mm	Φ46	Φ46	Φ46	Φ52	Φ52	Φ52	Φ52	
	Spindle nose		A2-5	A2-5	A2-5	A2-6	A2-6	A2-6	A2-6	
	Max. spindle speed	rpm	5000	5000	5000	4000	4000	4000	4000	
	Max. power of spindle	kW	15	15	15	30	30	30	30	
<b>Structure</b>	Slant bed degree	degree	35°	45°	35°	35°	35°	35°	35°	
	Guideway type	mm	LM	LM	LM	LM	LM	LM	LM	
	X axis travel	mm	300 (+200 -100)	150	230	220	250	250	250	
<b>Axis</b>	Z axis travel	mm	250	320	320	450	450	650	1500	
	Y axis travel	mm	±35	70 (±35)	70 (±35)	100 (±50)	100 (±50), *140 (±70)	100 (±50), *140 (±70)	140 (±70)	140 (±70)
	X/Z/Y axis rapid traverse	m/min	20/20/12	20/20/12	20/20/12	20/20/12	20/20/12,*7	20/20/12,*7	20/20/12,*7	20/20/12,*7
	Type of turret		BMT40	BMT40	BMT40	BMT45	BMT45,*BMT55	BMT45,*BMT55	BMT55,*BMT65	BMT55,*BMT65
<b>Turret</b>	No. of tool		12	12	12	12	12	12	12	
	OD tool shank size	mm	20×20	20×20	20×20	20×20	20×20 *25×25	20×20 *25×25	20×20 *25×25	20×20 *25×25
	Boring tool shank size	mm	Φ25	Φ25	Φ25	Φ32	Φ32,*Φ40	Φ32,*Φ40	Φ32,*Φ40	Φ32,*Φ40
	Max. speed of live tooling	rpm	4000	4000	4000	4000,*6000	4000,*6000	4000,*6000	4000,*6000	4000,*6000
<b>Tailstock</b>	Type of tailstock		-	Hydraulic,*SST	*Hydraulic	Hydraulic	SPT,*SST	SPT,*SST	SPT,*SST	
	Taper of tailstock quill		-	MT4	*MT4	MT4	MT3(spindle unit type)	MT3(spindle unit type)	MT3(spindle unit type)	MT3(spindle unit type)
	Travel of tailstock	mm	-	320	*350	450	100-450	100-650	100-1000	100-1500
<b>Others</b>	Weight (about)	kg	2800	3500	3900	4900	5300	5600	6100	
	Overall dimension (L×W×H)	mm	2230×1545×2105	2405×1665×2190	2365×1895×2145	2750×1795×2350	3100×2050×2350	3100×2050×2350	3600×2050×2350	4200×2050×2350

Note: "\*" means optional. "LM" means linear motion guideway. Tailstock: "Hydraulic" means automatic hydraulic driven tailstock sleeve. "HPT" means linear motion guide way, automatic hydraulic driven body move tailstock. "SST" means small spindle hydraulic tailstock. "SPT" means servo programmable tailstock. "DT500E-1500" is special purpose design for slim shaft workpiece standard with programmable steady rest and servo programmable tailstock.



# MULTI-TURRET SERIES



## MULTIPLE TURRETS MULTIPLY YOUR PRODUCTION

Expanded machine functionality promises reduced cycle times. Suitable for a broad range of production processes.

This machine's development was driven by the demands of entrepreneurial manufacturers. The Z-MaT GT260V combines the highest levels of reliability, accuracy and efficiency. As a result of large production volume and well managed supply chain, Z-MaT has produced a machine that operates at the highest levels of performance - providing you with a powerful weapon for improving your competitive advantage

# DOUBLE TURRETS TURNING CENTER

## Experience The Real Power

High Speed Tool Change Turret; Heavy Cast Body; Cylindrical Roller Linear Guideway; Large-Sized Ball Screws

This combination of rigid and agile hardware combines seamlessly with Double Channel Control System – offering two times the productivity and broadly expanded machine work capabilities and options.

- 1 Hydraulic Dashboards
- 2 Accessories & Tool Box
- 3 3-color Indicator Lamp
- 4 Coolant Tank
- 5 Central Auto Lubrication System
- 6 Adjustable Control System Panel



## User-friendly Operability

The ergonomically designed operator interface is situated at an optimal height and has a swing arm to allow the operator to adjust the interface angle for ease and convenience. Frequently used buttons are conveniently located and easy to press. The MPG is a standard option and provides optimal visibility.

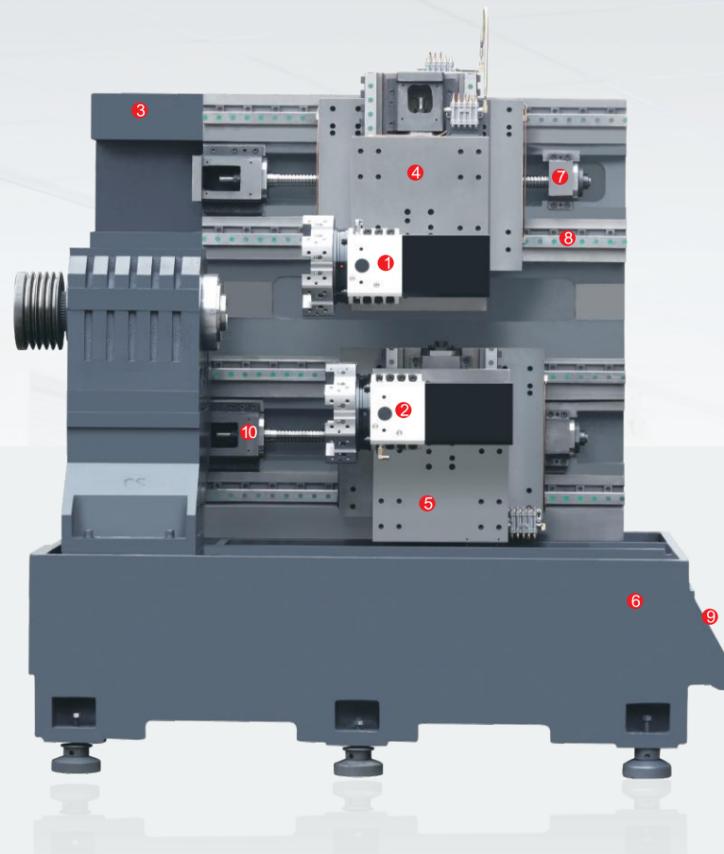
The difference in height of operators was considered in the design of the door handles. The door handle is elongated for easier opening and closing of the door. An enclosure for tooling and supplies is located just under the control panel. A separate coolant tank makes clean-up easy.

The automatic lubrication pump is located in an enclosure near the operator. It has a clear glass door for easy observation. Enclosing the pump keeps away chips and other contaminants. Hydraulic Dashboards are in the left and front side, chuck, turrets and general hydraulic pressure are all observed clearly and neatly.

# DOUBLE TURRETS TURNING CENTER GT260V / GT260V-650

## Scientific Design Structure

By centering the machine symmetrically from the spindle, heat is distributed evenly and accurately during continuous machining. Overall machining efficiency is increased. As GT260V-650 is standard with a spindle unit type tailstock. A slim shaft workpiece can be ideally made with straight stretch and lower turret support process by selecting a hydraulic clamping chuck and servo driven axis.



- 1 Upper Turret Gang Type Tools As Option
- 2 Sub Turret Gang Type Tools As Option
- 3 90 Degree Robust Bed Offers Super Rigidity
- 4 Upper X1/Z1 Slides
- 5 Sub X2/Z2 Slides
- 6 Large Span Solid Casting Base Provides Perfect Anti-vibration Performance
- 7 Double End Support and Pre-load Super Precision Ballscrew.
- 8 Cylindrical Roller Type Heavy Duty Linear Guideway.
- 9 Big Capacity Right Removal Chip Tank
- 10 Direct Transmission Servo Motor With Backlash Free Couplings



GT260V



## Specifications

	Unit	GT260V	GT260V-650
<b>Capacity</b>	Chuck Size	inch	8"
	Max Swing Dia. Over Bed	mm	Φ580
	Max. Length of Workpiece	mm	340/*260
	Max. Swing Dia. Over Slide	mm	Φ200
<b>Spindle</b>	Spindle Bore	mm	Φ62 *Φ75
	Max Dia. of Through Hole	mm	Φ52 *Φ65
	Spindle Nose	type	A2-6 *A2-8
	Spindle Speed	rpm	4000 *3200
	Max. power of spindle	kW	15
	<b>Axis</b>	X1 Axis Travel	mm
Z1 Axis Travel		mm	340
X2 Axis Travel		mm	160
Z2 Axis Travel		mm	650
X1/Z1 Rapid Traverse		m/min	25
X2/Z2 Rapid Traverse		m/min	25
<b>Turret</b>	Turret1 Stations		8
	Turret2 Stations		8
	OD Tool Shank size	mm	25×25
	Boring Bar Size	mm	Φ40
<b>Tailstock</b>	Type of tailstock		N/A SST
	Taper of tailstock quill		N/A MT4(Spindle unit type)
	Travel of tailstock	mm	N/A 550
<b>Others</b>	Slant Bed Degree		90°
	Guideway Type		Linear Motion
	Power Capacity	kVA	20
	Overall Dimension(L×W×H)	mm	2760×1850×2500
	Weight (About)	kg	6900
			3250×1850×2500

Note: "\*" means optional. "SST" means Spindle unit type Servo programmable Tailstock.



### Standard Features

- Hydraulic 3-Jaw Chuck
- 8-station Turret
- Full Guard
- Work Light
- Tri-Color Alarm Light
- Automatic Lubrication System
- Automatic Coolant System

### Optional Features

- Different Chucks and Collets
- Different Control Systems
- Different Spindle Speed and Bore Dia
- Chip Conveyor
- Bar Feeder
- Gang Type Tool Holders



GT260V-650

# DOUBLE TURRETS DOUBLE SPINDLES TURNING CENTER GT500 / GT500-M

## Ideal for Complex Workpieces and Bar Machining

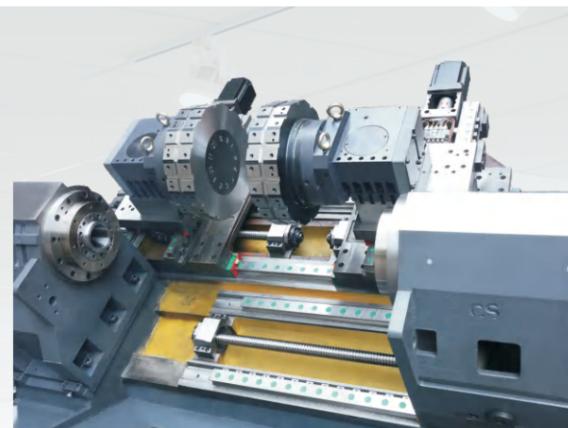
Dual channel machining allows for 2 turrets and 2 spindles to simultaneously machine components. It machines parts from raw material to a finished component in a single setup. The machines' symmetrical structure kinematics allows for even heat distribution and helps to provide continuous machining accuracy. In addition the machine is standard with motorized spindle and servo turret. It opens up new opportunities for high-speed production of bar parts.

### Standard Features

- Hydraulic 3-jaw Chuck
- 12-station BMT Turret
- Full Guard
- Work Light
- 3-color Alarm Light
- Automatic Lubrication System
- Automatic Coolant System

### Optional Features

- Different Chucks and Collets
- Different Control Systems
- Different Spindles and Bore Dia
- Chip Conveyor
- Bar Feeder
- Gang Type Tool Holders



## Specifications

	Unit	GT500	GT500-M
<b>Capacity</b>	Chuck Size	inch	8"
	Max Swing Dia. Over Bed	mm	Φ260
	Max. Length of Workpiece	mm	300
	Max. turning Dia.	mm	Φ210
<b>Spindle &amp; Sub Spindle</b>	Spindle Bore	mm	Φ66
	Max Dia. of Through Hole	mm	Φ52
	Spindle Nose	type	A2-6
	Spindle Speed	rpm	4000
	Max. power of spindle	kW	30
<b>Axis</b>	X1/X2 Axis Travel	mm	190
	Z1/Z2 Axis Travel	mm	300
	B Axis Travel (sub spindle)	mm	720
	B Axis Rapid Traverse	mm	25
	X1/X2 Rapid Traverse	m/min	20
	Z1/Z2 Rapid Traverse	m/min	25
<b>Turrets</b>	Turret1&2 Stations		BMT55/12 stations
	DrivenTool Function		N/A
	OD Tool Shank Size	mm	25×25
	Boring Bar Size	mm	Φ40
	Y-axis Function		N/A
<b>Structure</b>	Slant Bed Degree		45°
	Guideway Type		Linear Motion
	Power Capacity	kVA	40
<b>Others</b>	Overall Dimension(L×W×H)	mm	3100×2000×2250
	Weight (About)	kg	6800

Note: "\*"means optional.

# CENTER DRIVE DOUBLE TURRETS TURNING CENTER

## Center Drive Turning Center

Single Holding Spindle  
Hydraulic collets are built into the spindle which is placed in the center of the machine bed, and two independent Cross slides(X1/Z1, X2/Z2) carry tooling systems to turn the two ends of workpiece simultaneously. Hence, the best concentricity accuracy are achieved by using Z-MaT center drive lathe.

### Standard Features

- Hydraulic Collet
- Double Turrets or Gang tools
- Spindle Oil Chiller
- Automatic Coolant
- Automatic Lubrication

### Optional Features

- Driven Tool Turrets
- Chip Conveyor (Standard for ATB500)
- Different Center Drive Spindles



## Specifications

	Unit	ATB300E	ATB500	ATB600E
<b>Capacity</b>	Max. swing dia.	mm	Φ300	Φ300
	Max. shaft through hole dia.	mm	Φ32	Φ20-72
	Spindle speed	rpm	3000	2000
<b>Axis</b>	Max. power of spindle	kW	5.5, *7.5	11
	X1/X2 axis travel	mm	290	200
	Z1/Z2 axis travel	mm	180	350
	X1/X2 rapid traverse	m/min	15	15
	Z1/Z2 rapid traverse	m/min	20	20
<b>Turrets &amp; Toolposts</b>	Type		Square toolpost, *Gang type	12-station turret(two)
	OD tool shank size	mm	20×20	25×25
	Boring bar size	mm	Φ32	Φ40
	Slant bed degree		Flat	45°
<b>Others</b>	Guideway type		LM	LM
	Overall dimension(L×W×H)	mm	2300×1530×1770	3150×2050×2250
	Weight	Kg	2200	5000

Note: "\*"means optional.



# DUAL-SPINDLE SERIES



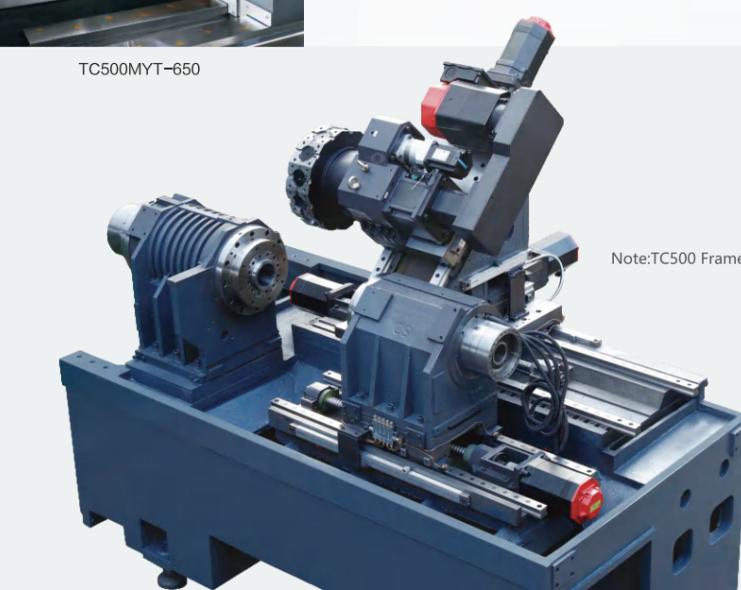
# TURNING CENTER TC500

## Advanced 45 Degree Cross Y Axis

The TC500 adopts an advanced 45 degree Y axis structure which is the fundamental performance of rigidity and compactness. The TC500 offers a standard chuck size of 8 inches for spindle 1 and 6 inches for spindle 2. The sub spindle specification enables continuous machining of both surfaces. The combination of driven live tools and Y-axis function enables integrated machining from turning to secondary/back face machining, and multi-axis interpolation machining, allowing for process integration. The model provides 2-axis turning, and Y axis milling with various spindle and turret options. Customers can choose a "one-of-a-kind machine" that flexibly meets their own needs.



TC500MYT-650



Note:TC500 Frame

## Specifications

	Unit	TC500	TC500MYT-650	
<b>Capacity</b>	Max. turning diameter	mm	Φ320	Φ320
	Max. length of workpiece	mm	400	650
	Max. swing dia. over slide	mm	Φ400	Φ400
	Max. swing dia. over bed	mm	Φ460	Φ460
<b>Spindle</b>	Hydraulic chuck / Collet chuck	Inch	8	8
	Diam. of spindle bore	mm	Φ66	Φ66
	Max. diam. of through-hole	mm	Φ52	Φ52
	Spindle nose		A2-6	A2-6
	Max. spindle speed	rpm	4000	4000
<b>Sub-Spindle</b>	Max. power of spindle	kW	30	30
	Hydraulic chuck	inch	6	N/A
	Diam. of spindle bore	mm	Φ55	N/A
	Max. diam. of through-hole	mm	Φ46	N/A
	Spindle nose		A2-5	N/A
<b>Axis</b>	Max. spindle speed	rpm	5000	N/A
	Main motor	kW	11/15	N/A
	X axis travel	mm	180	180
	Z axis travel	mm	400	650
	B axis travel	mm	400	N/A
<b>Feed Rate</b>	Y axis travel	mm	100 (±50)	100 (±50)
	X/Z1/Z2/Y axis rapid traverse	m/min	18/30/30/10	18/30/N/A/10
	X/Z1/Z2/Y axis ballscrew	mm	32×P08 / 32×P10 / 32×P10 / 32×P06	32×P08 / 32×P10 / N/A / 32×P06
	Cutting feed rate	m/min	10	10
<b>Turret</b>	Type of turret		BMT55	BMT55
	No. of tool		12	12
	OD tool shank size	mm	25×25	25×25
	Boring tool shank size	mm	Φ40	Φ40
	Live tooling motor	kW	3.7/5.5	3.7/5.5
<b>*Tailstock</b>	Max. speed of live tooling	rpm	5000	5000
	Type of tailstock		Servo programmable	Hydraulic
	Taper of tailstock quill		MT5	MT5
<b>Others</b>	Travel of tailstock	mm	80-400	80-650
	Weight (about)	kg	5400	5900
	Overall dimension (L×W×H)	mm	2980×1910×2130	3100×1900×2250

Note: "\*" means optional

# DUAL-SPINDLE DT500E-S/TN500-S/STL8-S SERIES

## Machine Characteristics

Standard with cylindrical roller heavy duty linear motion guideways, pre-loaded high class ballscrew, NSK Bearings, DDS spindle and centralized oil lubrication. DT500E-S/TN500-S/STL8-S are modular designed and manufactured using only the best parts and materials to handle maximum capacities with ease.

### Standard Features

- Hydraulic 3-Jaw Chuck
- 12 Stations BMT Turret
- Sub Spindle
- Work Light
- 3-Color Alarm Light
- Automatic Lubrication System
- Automatic Coolant System

### Optional Features

- Different Chucks and Collets
- Different CNC Control Systems
- Different Spindle Bore Diameters
- Chip Conveyor(Right or Rear side)
- Tool Setter
- Bar Feeder
- Gantry Robot



## Integrated Automation Option

Double spindles offer capacity to machine from raw material to finished parts in one set-up. Together with automatic loading system-gantry arm or industry robot, this series machines are able to realize single machine integrated automation with great reliability and super efficiency.



STL8-S



DT500E-S

## Specifications

	Unit	STL8- S	TN500- S	TN500S- 900	TN500S- 1500	DT500E- S	DT500ES- 900	DT500ES- 1500
<b>Capacity</b>	Max. turning diameter	mm	Φ320	Φ320	Φ320	Φ320	Φ320	Φ320
	Max. length of workpiece	mm	650	650	900	1500	550,*620	900
	Max. swing dia. over bed	mm	Φ600	Φ600	Φ600	Φ600	Φ650	Φ650
	Max. swing dia. over slide	mm	Φ360	Φ360	Φ360	Φ360	Φ460	Φ460
<b>Spindle</b>	Hydraulic chuck	Inch	8	8	8	8	8	8
	Dia. of spindle bore	mm	Φ66	Φ66	Φ66	Φ66	Φ66	Φ66
	Max. dia. of through-hole	mm	Φ52	Φ52	Φ52	Φ52	Φ52	Φ52
	Spindle nose		A2-6	A2-6	A2-6	A2-6	A2-6	A2-6
	Max. spindle speed	rpm	4000	4000	4000	4000	4000	4000
<b>Sub Spindle</b>	Max. power of spindle	kW	30	30	30	30	30	30
	Hydraulic chuck		6	6	6	6	6	6
	Dia. of spindle bore	mm	Φ55	Φ55	Φ55	Φ55	Φ55	Φ55
	Max. dia. of through-hole	mm	Φ46	Φ46	Φ46	Φ46	Φ46	Φ46
	Spindle nose		A2-5	A2-5	A2-5	A2-5	A2-5	A2-5
<b>Axis</b>	Max. spindle speed	rpm	5000	5000	5000	5000	5000	5000
	Main motor	kW	11/15	11/15	11/15	11/15	11/15	11/15
	X axis travel	mm	250	250	250	250	200	200
	Z/B axis travel	mm	620	620	900	1500	550,*620	900
	Y axis travel	mm	N/A	N/A	N/A	N/A	140 (±70)	140 (±70)
	X axis rapid traverse	m/min	20	20	20	20	20	20
	Z axis rapid traverse	m/min	20	20	20	20	20	20
<b>Turret</b>	Y axis rapid traverse	m/min	N/A	N/A	N/A	N/A	12,*7	12,*7
	Type of turret		BMT55	BMT55	BMT55	BMT55	BMT55	BMT55
	No. of tool		12	12	12	12	12	12
	OD tool shank size	mm	25×25	25×25	25×25	25×25	20×20,*25×25	20×20,*25×25
	Boring tool shank size	mm	40	40	40	40	40	40
<b>Structure</b>	Max. speed of live tooling	rpm	N/A	4000,*6000	4000,*6000	4000,*6000	4000,*6000	4000,*6000
	Boring depth of sub spindle	mm	120	120	120	120	120,*90	120,*90
	Slant bed degree	degree	35°	35°	35°	35°	35°	35°
<b>Others</b>	Guideway type		LM	LM	LM	LM	LM	LM
	Weight (about)	Kg	5600	5800	6500	8300	6000	7300
	Overall dimension (L×W×H)	mm	3020×1950×2200	3020×1950×2200	3500×1950×2200	4000×1950×2200	3100×2050×2350	3600×2050×2350

Note: "\*" means optional

# DUAL SPINDLE TURNING CENTER TN400-SX/DT400-SX/STL6-SX

## Sub-Spindle Coupling Machining Function

The TN400-SX/DT400-SX/STL6-SX use its sub-spindle to follow the movements of the main spindle, in order to perform on both sides of a workpiece simultaneously, while also using the program coupling between X1/Z1 and X2/Z2 coordinate system to synchronize their movements.

- One-piece moulding 45° inclined bed, precision large specification linear roller guide rail, large span layout, stable structure, strong rigidity and good accuracy retention.
- Precision high-speed electric main and sub spindle A2-5 with NSK bearings can get the optimal combination of high precision, high load capacity, high speed and long-lasting durability.
- 12 station power turret-BMT55 turret is used on left drag plates of the machine. The turret has short tool change time and high positioning accuracy, which is conducive to the improvement of machining accuracy.

### Machine Characteristics

45 ° overall inclined bed layout, main and sub spindle single power turret, dual spindle automatic docking turning and milling composite function, sub spindle with X-axis function. The system adopts the load-bearing coupling function programming to achieve the positive and vice spindle simultaneous machining. It significantly shorten the time of the product left and right end of the machining, with a strong integrated machining to solve the problem.

- 01 45° Integral Inclined Bed
- 02 A2-5 High-precision Electric Spindle
- 03 Coupling Function of Main and Sub-spindles
- 04 Turning and Milling Composite Function
- 05 Servo Turret / Power Turret(DT400-SX with Y-axis)



Note: TN400-SX Frame

### Standard Features

- Hydraulic 3-Jaw Chuck
- 12 Stations BMT Turret
- Sub Spindle
- Work Light
- 3-Color Alarm Light
- Automatic Lubrication System
- Automatic Coolant System

### Optional Features

- Different Chucks and Collets
- Different CNC Control Systems
- Different Spindle Bore Diameters
- Chip Conveyor(Right or Rear side)
- Tool Setter
- Bar Feeder
- Gantry Robot



TN400-SX



## Specifications

	Unit	TN400-SX	DT400-SX	STL6-SX
<b>Capacity</b>	Standard turning diameter	mm	160	160
	Maximum turning length	mm	400	400
	Max swing diameter over bed	mm	240	240
	Max swing diameter over slide	mm	240	240
<b>Spindle</b>	Maximum speed of main spindle and sub-spindle	rpm	5000/5000	5000/5000
	Taper hole of main spindle and sub-spindle		MT6	MT6
	Spindle bore of main spindle and sub-spindle	mm	55/55	55/55
	Spindle nose		A2-5/A2-5	A2-5/A2-5
	Bar capacity of main spindle and sub-spindle	mm	46/46	46/46
	Bearing of main spindle and sub spindle		3-7018/NN3015	3-7018/NN3015
<b>Axis</b>	X1/X2-axis travel	mm	170/300	170/300
	Z1/Z2-axis travel	mm	400/400	400/400
	Rapid traverse of the X1/X2/Z1/Z2 axis	m/min	20	20
	Maximum cutting feed speed	m/min	8	8
<b>Turret</b>	No. of tool stations	nos	12	/
	Tool shank size		BMT55	BMT55
	Max. speed of driving tool	rpm	4000, *6000	4000, *6000
<b>Others</b>	Rated power	kW	11 /11	/
	Overall dimensions (L×W×H)	mm	2700×2000×2220	2700×2000×2400
	Weight of machine tool (net)	kg	5800	6000

Note: "\*" means optional.

# DOUBLE-SPINDE DA SERIES

Dual Spindle Automation  
Design and Build for Mass Production

## Moveable Spindle + Moveable Spindle

Together with robot or auto loading system, Z-MaT dual-spindle turning machine could realize two channels machining, a complete advanced automation on one single machine.

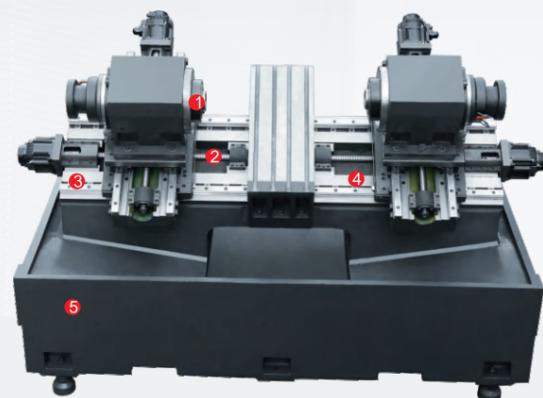


DA66-G



### 1 Main and Sub-Spindles

Both spindles adapt servo high-speed motors or DDS spindle options. This level of speed and synchronization assures total process accuracy and efficiency. Workpieces are exchanged from main to sub spindle and work in two separate working channels, which tremendously increases productivity.



Note: DA66-G Frame

### 2 Center-Mounted Ball Screw

Center mounted ball screws along with quality pre-loaded bearing assemblies assures optimal power transmission, speed and accuracy.

### 3 Heavy Linear Guideways

Extra heavy linear guides and rails, couples with wide way spacing producing superior rigidity. Two crossed slides and symmetry structure design meet both rigidity and efficiency.

### 4 Slant Bed Design

30° slant bed layout provides a reliable, efficient structure. Optimal chip removal is accomplished. Provides easy operator access – an important consideration for dual spindle set-ups and operation.

### 5 Mono-Block Casting

Lathe bed and machine base are produced in a single cast unit. This heavy, quality cast structure provides a strong foundation for operations that require high-speed yet smooth, multiple axis movements and direction changes. Wide span base and bed are in a one piece casting. This solid base guarantees great reliability.



Note: DA88-T Frame

## Specifications

	DA66-G	DA88-T
Bed structure	30°	0° Flat
Max. machining dia.	Φ160mm	Φ320mm
Standard machining dia.	Φ100mm	Φ200mm
2 spindles type	A2-5	A2-6, *A2-8
2 spindles taper	MT6	1:20
2 spindles X/Z axis travel	370mm/200mm	280mm/300mm
2 spindles X/Z rapid traverse	15/15 m/min	15/15 m/min
2 spindles bore	Φ55mm	Φ62mm
2 spindles bar capacity	Φ46mm	Φ52mm
2 spindles speed	4500rpm	2000, *4000rpm
2 spindles chuck/collet	6" Hydraulic chuck/ Hydraulic collet	Left: 8" Hydraulic chuck/ Right: Hydraulic collet
2 spindles motor power	11 kW	11 kW
2 turrets type	Gang type	8-Station turret
Overall dimension(L×W×H)	2620×1750×2050	3910×1850×2100
Weigh (about)	4000kg	5600kg

# DUAL-SPINDLE AUTOMATION SA28-S/SA45-VS SERIES

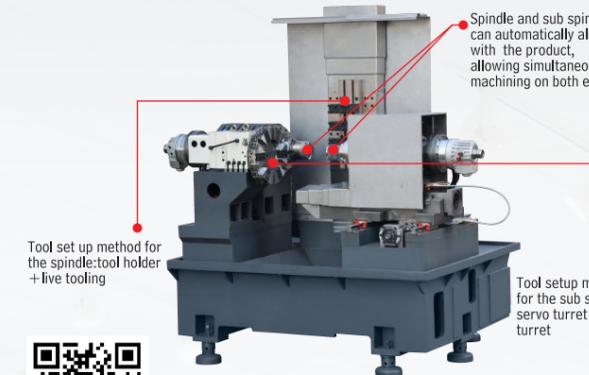
## SA28-S Fixed Spindle & Movable Spindle

Meet the new low cost option for dual-spindle machining. Advantages of dual-spindle/turret machining centers include:

- One machine is cheaper than two
- More accurate when a machining process is accomplished on a single machine, rather than moving the part from machine to machine.
- Lower labor cost due to reduced set-up requirements.



SA45-VS



Tool set up method for the spindle: tool holder + live tooling

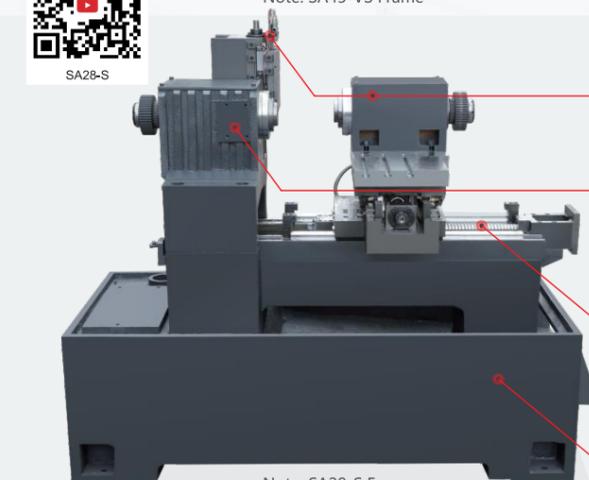
Spindle and sub spindle can automatically align with the product, allowing simultaneous machining on both ends.

Tool setup method for the sub spindle: servo turret / power turret



SA28-S

Note: SA45-VS Frame



Note: SA28-S Frame

### Secondary Spindle Options

X axis secondary spindle is mounted on the machine carriage. Y axis spindle is mounted on the side of headstock.

### Main Spindle Options

Highly rigid frame structure with wide span provides high stability and heavy carrying capacity.

### Center-Mounted Ball Screw

Center mounted ball screw eliminates torque – increasing speed and efficiency. Dual, pre-loaded bearing structures support ball screw for optimal transmission accuracy.

### Stable Base Structure

Machine base and bed are one-piece casting, mono-block design. This provides optimal rigidity and accuracy.

## Specifications

	Unit	SA45-VS
Standard turning dia.	mm	Φ160
Max turning length	mm	180
Max swing dia. over bed	mm	Φ260
Max swing dia. over slide	mm	Φ200
X1/X2-axis travel	mm	350/210
Z1/Z2-axis travel	mm	180/180
Y-axis travel	mm	±70
Rapid traverse of the X1/X2/Z1/Z2 axis	m/min	20
Max cutting feed speed	mm/min	8000
B-axis travel	/	/
Max speed of spindle&sub-spindle	rpm	5000/6000
Taper hole of spindle&sub-spindle		MT6/49(1:20)
Through hole dia. of spindle&sub-spindle	mm	55/46
Head form of spindle&sub-spindle		A2-5/A2-4
Pull tube through hole of spindle&sub-spindle	mm	46/36
Rated power of spindle&sub-spindle	kw	11/5.5
Rated torque of spindle&sub-spindle	N.M	42/17.5
Dimension(L×W×H)	mm	2360×1950×2000
Weight (about)	kg	3800

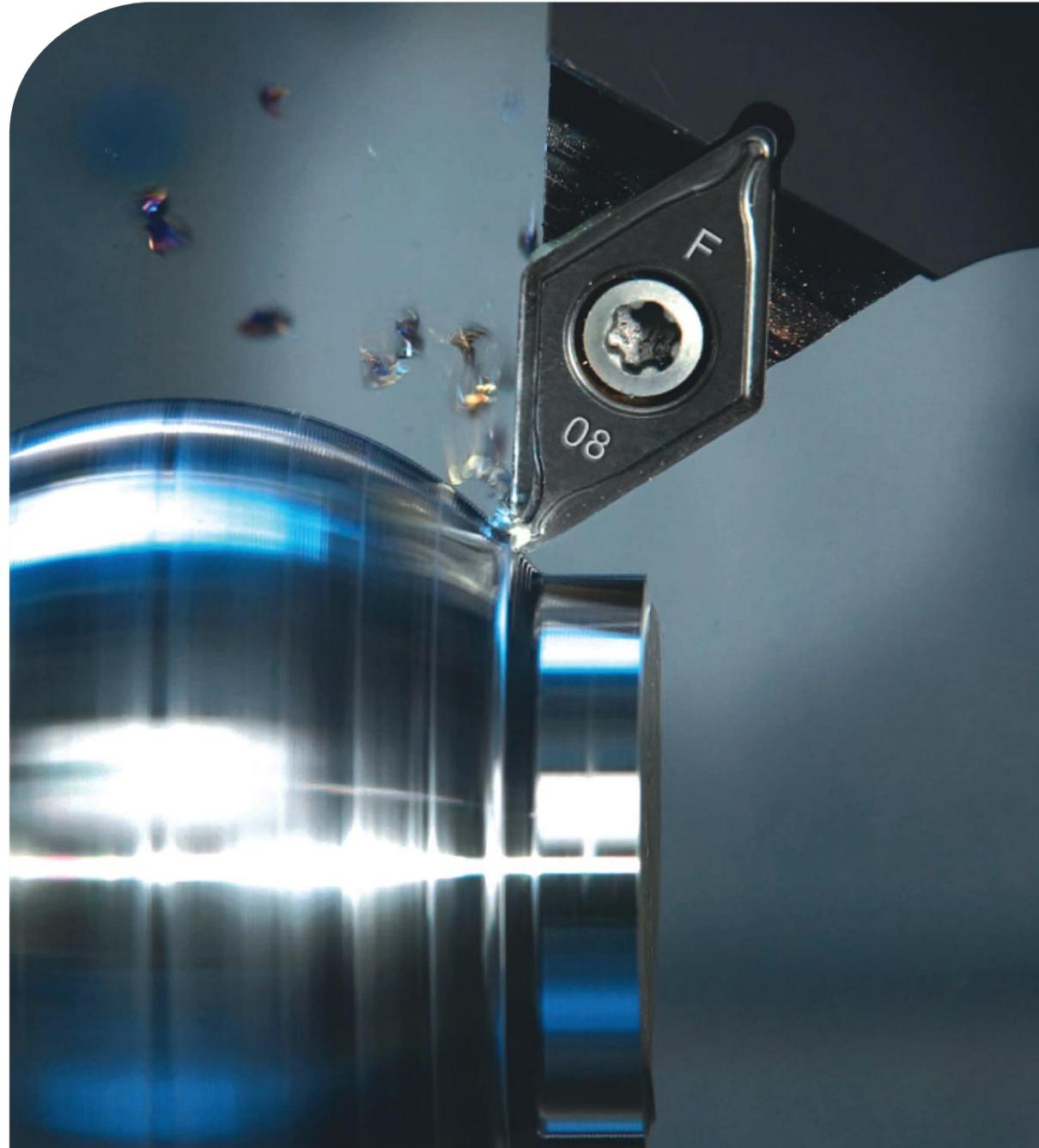
## Specifications

	SA28-S	SUB-SPINDLE
Standard machining dia.	Φ40mm	
Max. rod dia.	Φ28mm	
X axis travel	350mm	
Z axis travel	200mm	
Y axis travel	80mm	
X/Z rapid traverse	15/15 m/min	
Spindle bore	Φ37mm, *Φ48mm	Φ37mm
Spindle bar capacity	Φ28mm, *Φ40mm	Φ28mm
Spindle speed	3000rpm	3000rpm
Spindle chuck/collet	Hydraulic collet	Hydraulic collet
Spindle turret type	Gang type tools, *8-Station turret	Gang type tool
Max. power of spindle	5.5kW	3.7kW
Spindle type	Φ68mm	
Spindle taper	39°, *42°	
Dimension(L×W×H)	2130×1530×1750mm	
Weight	2300kg	

# FLASH FAMILY TURNING CENTERS

FLASH SL/ FL/ FTL SERIES

The FLASH family of CNC lathes were designed with speed and accuracy in mind. FLASH CNC lathes feature both slant bed and flat bed designs. The SL and FL series lathes are typically set-up for gang tool operations – optimal for high speed, low-cost turning requirements. Live tooling, turrets and various chuck options are easily added. The FTL series includes a tailstock for added functionality.



## FLASH SL SERIES

Slant Bed with Linear Guideway

SL280/SL340/SL350/SL400/SL450/SL580

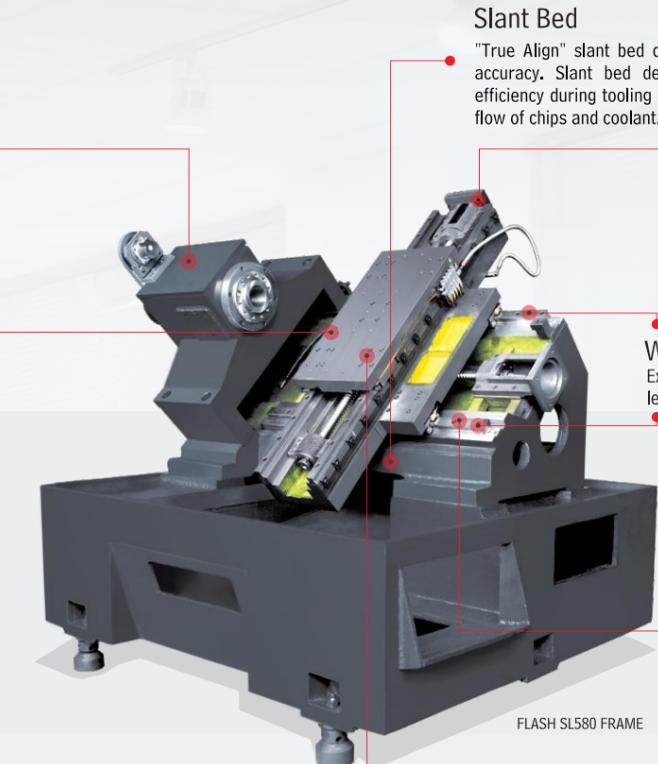
### Symmetrical Headstock

The main spindle design is based on the concept of "Bilateral Symmetry". The major benefit of this design is the elimination of heat expansion at higher speeds. This assures high accuracy and rigidity on all SL turning centers – while performing both forward and reverse turning operations.



### Sleeve-type Follow Rest

Longer parts requiring only simple turning operations can be machined accurately with good repeatability using the optional table-mounted follow rest. This option supports small shaft parts working like a Swiss-type CNC lathe - with the assurance of comparable, or better accuracy and repeatability.



### Slant Bed

"True Align" slant bed design increases machine accuracy. Slant bed design increases operator efficiency during tooling set-ups and optimizes the flow of chips and coolant.

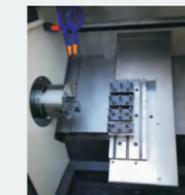
### Wide Spaced Linear Guideways

Extra wide spacing between linear guideways adds leverage – even during heavy cuts. This assures greater rigidity and accuracy.



### 28M/M Rapid Feed Rate (Model SL280/SL340)

High quality components like Bosch Rexroth linear guideways and PMI ball screws assure extra high rapid feed speeds. Quality components also provide for higher accuracy, lower operating costs and minimal maintenance requirements.



### Gang Plate and Tooling

Gang type tools allow for a broad selection of tooling – allowing for more turning operations and reduced cycle time. The results often mean more parts made at the lowest price possible.



Note: SL280, SL340, SL350, SL400, SL450's base and bed are one-piece casting, monoblock design.

*The Beauty  
of Speed and  
Accuracy*

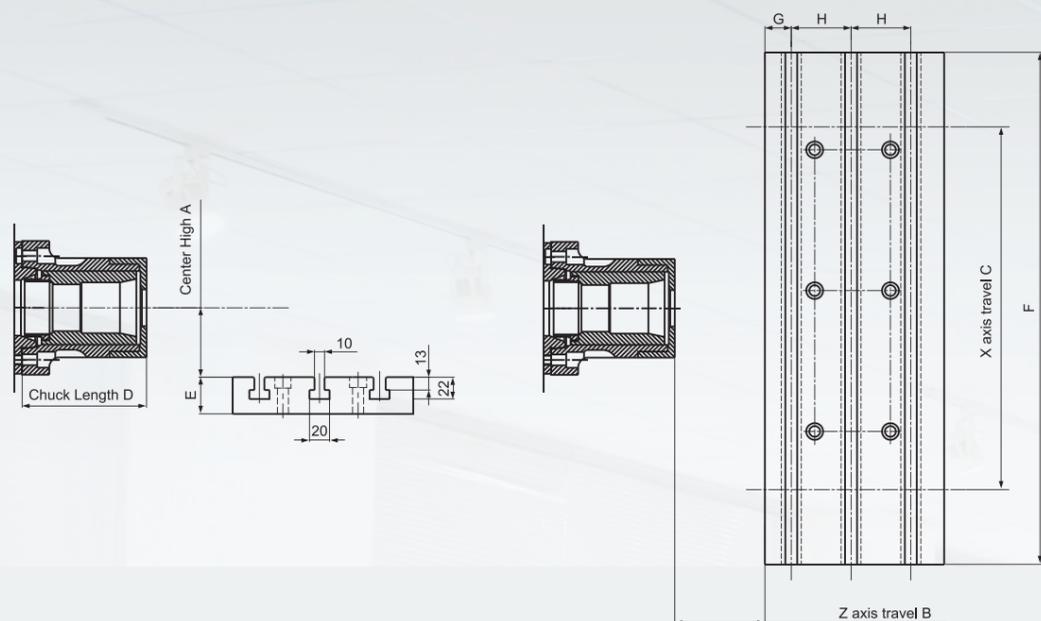
**580mm** X Axis Travel

Generous X axis travel, coupled with an extra-large work table allows for maximum tooling options – including live tooling or high-speed turret.

# FLASH SL FEATURES

## Chuck/Table Interface Diagrams

Flash SL series are standard with gang type tools and collet chuck, which offers infinite space for the creative application engineers. Users can design their own type tool holders and fixtures to optimize their production. The chuck/table interference diagrams will help you to calculate the machining capacity after changing different clamping and holding systems.



Model	Spindle Nose	Clamping Type	Center Hight A	Z Axis Travel B	X Axis Travel C	Length Of Chuck D	Slide Table Thickness E	Slide Table Length F	Distance From First Slot G	Slot Pitch H
SL280	A2-5	Z-MaT collet	72mm	240mm	280mm	113.5mm	37mm	520mm	26mm	60mm
		173E collet	72mm	225mm	280mm	127mm	37mm	520mm	26mm	60mm
		6" chuck	72mm	210mm	280mm	137mm	37mm	520mm	26mm	60mm
SL340	A2-5	Z-MaT collet	56mm	200mm	340mm	113.5mm	37mm	520mm	26.5mm	60mm
		173E collet	56mm	185mm	340mm	127mm	37mm	520mm	26.5mm	60mm
		6" chuck	56mm	170mm	340mm	137mm	37mm	520mm	26.5mm	60mm
SL350	A2-5	Z-MaT collet	72mm	300mm	350mm	87.5mm	37mm	520mm	26.5mm	60mm
		173E collet	72mm	250mm	350mm	127mm	37mm	520mm	26.5mm	60mm
		6" chuck	72mm	235mm	350mm	137mm	37mm	520mm	26.5mm	60mm
SL450	A2-5	Z-MaT collet	80mm	450mm	450mm	113.5mm	40mm	610mm	35mm	60mm
		173E collet	80mm	435mm	450mm	127mm	40mm	610mm	35mm	60mm
		6" chuck	80mm	420mm	450mm	137mm	40mm	610mm	35mm	60mm
SL580	A2-5	Z-MaT collet	53mm	320mm	580mm	113.5mm	48mm	700mm	26mm	60mm
		173E collet	53mm	305mm	580mm	127mm	48mm	700mm	26mm	60mm
		6" chuck	53mm	290mm	580mm	137mm	48mm	700mm	26mm	60mm

## Reconsidering the Obvious

Perfect Combination  
Unsurpassed Productivity

### Linear Guideway

- Higher accuracy and faster speeds than ordinary box ways.
- No adjusting—Maintenance free and very accurate.

### Gang Type Tooling

- No indexing - Direct contact with individual tool during each turning operation. Solid and Highly Accurate. Turrets and toolpost may lose accuracy each time a tool changes.
- Low failure rate – low maintenance compared to turret or tool post.

Linear guideway

+

Gang type tools



The machining accuracy can easily reach **<0.01mm**

Machining productivity **increase by 20-90%** than traditional

Box guideway + Toolpost CNC lathe!



Most Flash Series models are standard with this perfect match



Linear guideway

+

Gang type tools

+

C axis & live tooling

**An Even Better Option!**

Reliable and Economical  
**Turning** – PLUS,  
**Milling,**  
**Drilling & Tapping**  
True Multi-Task,  
Multi-Operation Machining

C Axis, Y Axis, and Live Tooling Options are Available on Most FLASH Series Lathes

# FLASH SL SERIES

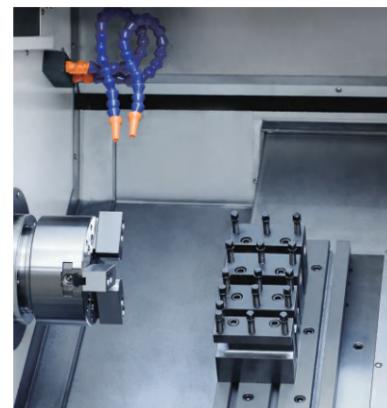
Slant bed, Linear guideway

## Standard Features

- Hydraulic Collet
- Gang Type Tooling
- Ergonomic Operator Panel Design
- Automatic Lubrication System
- Automatic Coolant System
- Built-in Safety Features

## Optional Features

- Different Chucks and Collets
- Different Control Systems
- Live Tooling
- Bar Feeder



## Machine Characteristics

- Heat treated and annealed high quality cast iron base – provides a strong foundation for the high speed, highly accurate SL Series of CNC Lathes.
- True Slant Bed design is highly rigid and withstands heavy cutting forces.
- Slant bed also allows for easy operator access and efficient chip removal.
- The combination of high X/Z rapid speeds and gang tool set-up increases productivity tremendously. Highly accurate parts at the lowest cost.
- Quality machine at a value price – High volume production and good QC.



## Full Range of Turning Machines



## Specifications

	Unit	SL280				SL340				
<b>Capacity</b>	Chuck/collet		Hydraulic Collet *Hydraulic Chuck 6", *8"				Hydraulic Collet *Hydraulic Chuck 6", *8"			
	Max. swing dia. over bed	mm	Φ300				Φ300			
	Max. length of workpiece	mm	Collet 240, * Chuck 210				Collet 200, Chuck 170			
	Max. swing dia. over slide	mm	Φ140				Φ140			
<b>Spindle</b>	Spindle bore	mm	Φ48	*Φ55	*Φ62	*Φ81	Φ48	*Φ55	*Φ62	
	Max. dia. of through-hole	mm	Φ40	*Φ46	*Φ52	*Φ70	Φ40	*Φ46	*Φ52	
	Spindle nose		A2-5	*A2-5	*A2-6	*A2-8	A2-5	*A2-5	*A2-6	
	Max. Spindle speed	rpm	3000	*2500	*2000	*1600	3000	*2500	*2000	
			*4500	*4500	*4000		*4500	*4500	*4000	
				*5000			*5000			
			5.5, *7.5				5.5, *7.5			
<b>Axis</b>	X travel	mm	280				340			
	Z travel	mm	240				200			
	X/Z rapid traverse	m/min	28/28				28/28			
<b>Toolpost</b>	Type		Gang type				Gang type			
	No. of tool stations	No.	4-6				4-7			
	OD tool and bore tool shank	mm	20×20 / Φ25				20×20 / Φ25			
<b>Structure</b>	Inclined bed degree		35°				35°			
	Guideway type		LM				LM			
<b>Others</b>	Power capacity	kVA	11				11			
	Dimensions (L×W×H)	mm	2050×1550×1750				2050×1540×1750			
	Weight(about)	kg	2300				2300			

Note: "\*" means optional, "N/A" means not available, "LM" means linear motion guide way.

## Specifications

	Unit	SL350			SL450			SL580			
<b>Capacity</b>	Chuck/collet		Hydraulic Collet *Hydraulic Chuck 6", *8"			Hydraulic Collet *Hydraulic Chuck 6", *8"			Hydraulic Collet *Hydraulic Chuck 6", *8"		
	Max. swing dia. over bed	mm	Φ420			Φ400			Φ380		
	Max. length of workpiece	mm	Collet 300, * Chuck300			Collet 430, * Chuck 400			Collet 320, * Chuck 290		
	Max. swing dia. over slide	mm	Φ140			Φ160			Φ106		
<b>Spindle</b>	Spindle bore	mm	Φ48	*Φ55	Φ55	*Φ62	Φ48	*Φ62	*Φ55	*Φ75	
	Max. dia. of through-hole	mm	Φ40	*Φ46	Φ46	*Φ52	Φ40	*Φ52	*Φ46	*Φ65	
	Spindle nose		A2-5	*A2-5	A2-5	*A2-6	A2-5	*A2-6	*A2-5	*A2-6	
	Max. Spindle speed	rpm	3000	*2500	4500	*2000	3000	*2000	*2500	*2500	
			*4500	*4500	*4000	*4500	*4000	*4500	*4500	*5000	
			5.5, *7.5			7.5			7.5		
<b>Axis</b>	X travel	mm	350			450			580		
	Z travel	mm	300			410			320		
	X/Z rapid traverse	m/min	28/28			25/25			20/20		
<b>Toolpost</b>	Type		Gang type			Gang type			Gang type		
	No. of tool stations	No.	5-8			5-9			6-10		
	OD tool and bore tool shank	mm	20×20 / Φ25			20×20 / Φ25			20×20 / Φ25		
<b>Structure</b>	Inclined bed degree		35°			45°			45°		
	Guideway type		LM			LM			LM		
<b>Others</b>	Power capacity	kVA	12			12			13		
	Dimensions (L×W×H)	mm	2050×1540×1880			2350×1760×2090			2400×1810×2050		
	Weight(about)	kg	2200			3500			3700		

Note: "\*" means optional, "N/A" means not available, "LM" means linear motion guide way.

# FLASH FL SERIES

## Flat Bed with Linear Guideways

### Machine Characteristics

- Linear Guideways are protected by stainless steel telescoping guards – provides maximum protection from chips and coolant and extended machine life.
- Center mounted ball screws are placed between the bed ways, minimizing side torque and friction. Provides cooler operation, better dynamic efficiency and longer life.
- Servo motors and drives on X/Z axes. Spindle can be driven by VFD or Servo.
- Various control systems, chucks and tool posts are available. Highly configurable to fit your needs.

The FL Series is produced at high volume in our factory- using world standard quality control processes. These facts contribute to the FL lathe's reputation in the world market for excellent quality at a reasonable price. We produce a great machine at a great price, and pass the savings on to you.



### Smart Design – and Powerful

This series allows high flexibility in tooling configurations. A wide range of gang type, turret, milling, and polygon tools can be combined to fit your specific part production task.

### Various Spindle Options

Different speeds, spindle bore and chuck options to match your needs

### Center Mounted Ball Screws

Ball screws are mounted between the ways – reducing side torque and friction and increasing speed and service life.

### 1-Piece Mono-Block Casting

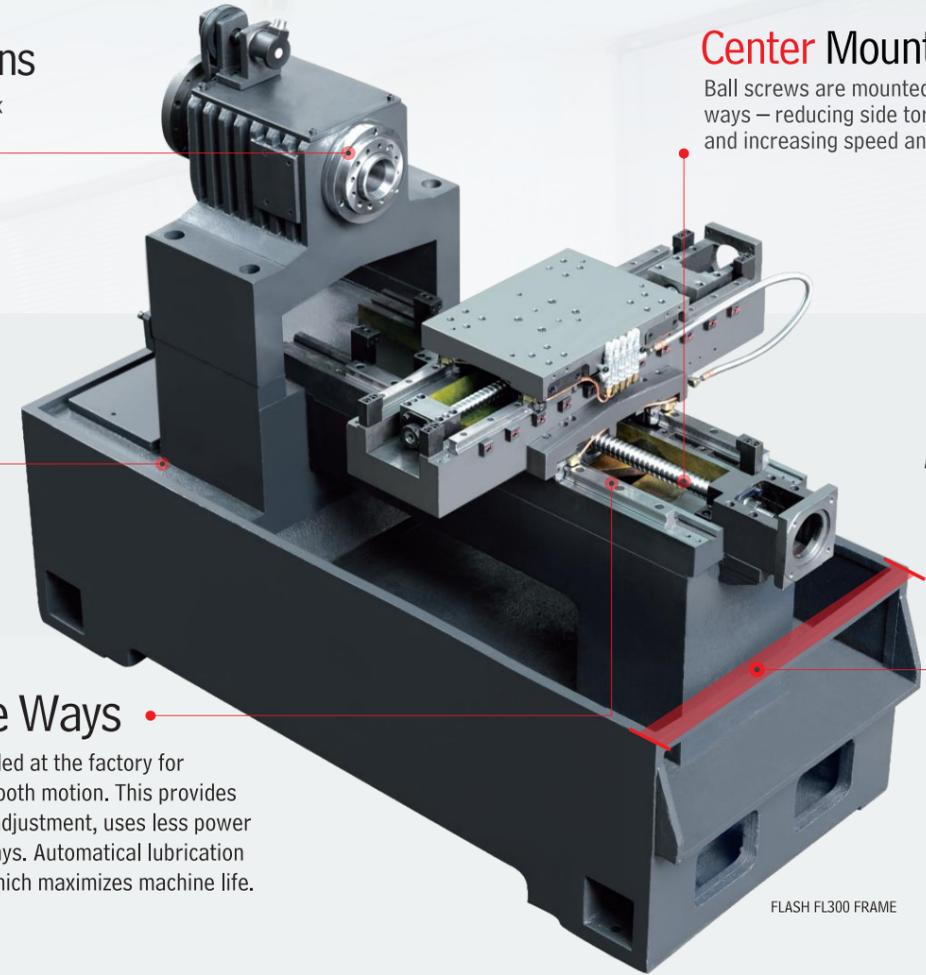
### “Bi-Laterally Symmetrical”

Complete bi-laterally symmetrical machine body and head stock design increases rigidity and stiffness in all movements of the machine. An added feature bonus is the compact dimensional casting, which keeps advanced performance in a smaller footprint.

### Linear Motion Guide Ways

Linear guideway bearings are pre-loaded at the factory for maximum balance of accuracy and smooth motion. This provides axis movement that does not require adjustment, uses less power and will out-perform standard hard ways. Automatical lubrication system assures optimal lubrication, which maximizes machine life.

Customers report high satisfaction and high productivity with their FL Series CNC Turning Centers. That's why it's one of our best selling lathes!



FLASH FL300 FRAME

# FLASH FL SERIES

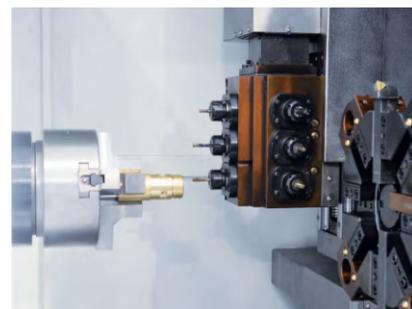
Flat bed, Linear guideway

## Standard Features

- Manual 3-Jaw Chuck (For Swing >400mm)
- Hydraulic Collet (For Swing <400mm)
- Gang Type Tooling (For Swing <400mm)
- 4-Station Tool Post + Gang Plate (For Swing >400mm)
- Ergonomic Operator Panel Design
- Automatic Lubrication System
- Automatic Coolant System
- Built-in Safety Features

## Optional Features

- Hydraulic Chucks
- Different Spring Collets
- Different Control Systems
- Live Tooling
- Bar Feeder
- 8-Station Turret (Available on FL300/ FL400/ FL500/ FL550/ FL630)



FL300

## Full Range of Turning Machines



FL400



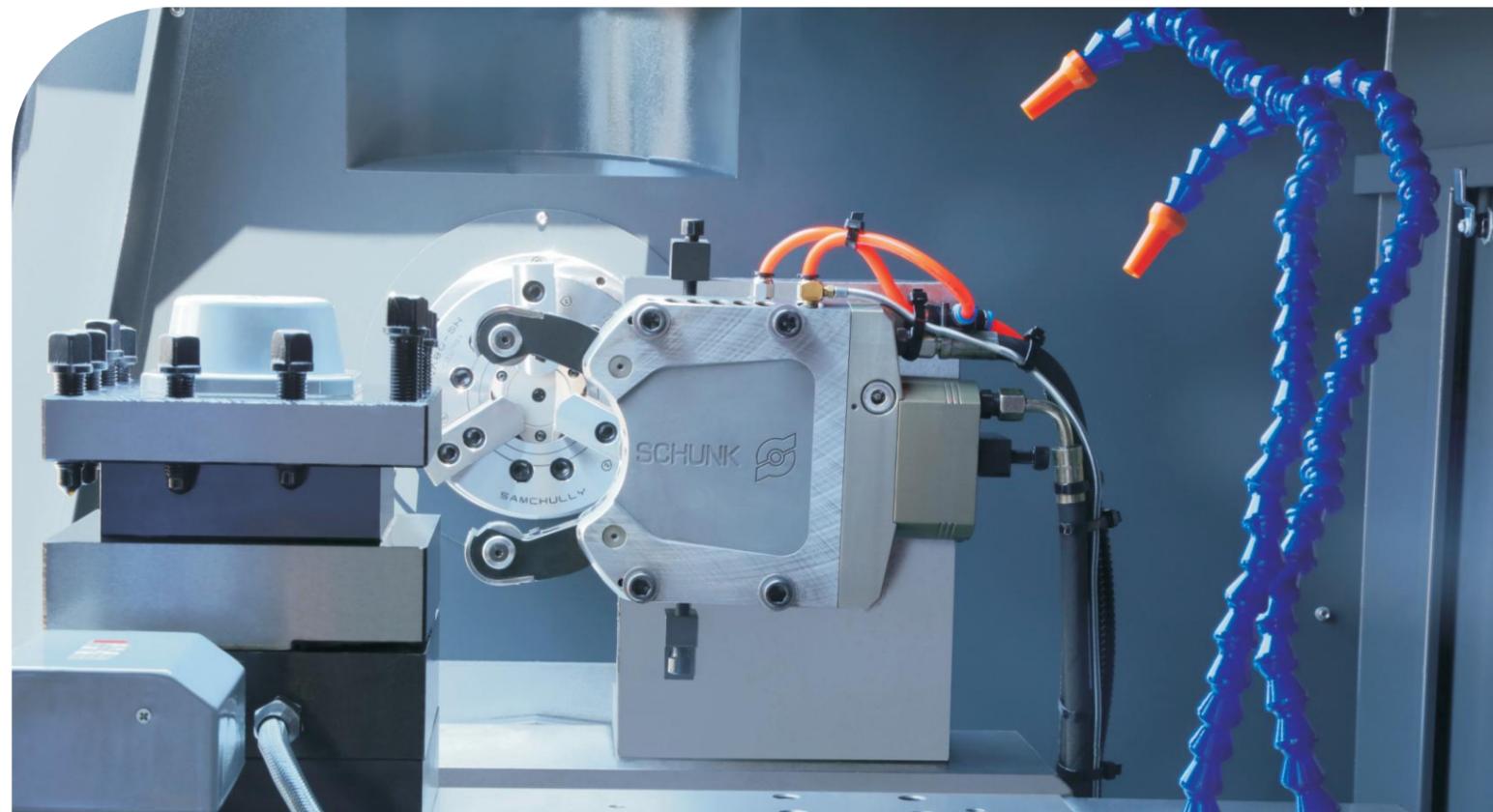
FL630

## Specifications

	Unit	FL280	FL300	FL400	FL500	FL550	FL630					
<b>Capacity</b>	Chuck/collet	type	Pneumatic collet * Hydraulic collet	Pneumatic collet *Hydraulic collet, *chuck 6"	Manual chuck 8" *Hydraulic chuck 8", *6"	Manual chuck 10" *Hydraulic chuck 10", *8"	Manual chuck 12" *Hydraulic chuck 12"	Manual chuck 15" *Hydraulic chuck 15"				
	Bed type/ guideway		Flat/LM	Flat/LM	Flat/LM	Flat/LM	Flat/LM	Flat/LM				
	Max. swing dia. over bed	mm	Φ300	Φ300	Φ400	Φ500	Φ550	Φ650				
	Max. length of workpiece	mm	250(collet),*165 (chuck)	300, 180(chuck) *260 (chuck)	320	500	500	430				
<b>Spindle</b>	Max. swing dia. over slide	mm	Φ140	Φ140	Φ180	Φ360	Φ360	Φ380				
	Spindle bore	mm	Φ48	Φ48	*Φ55	*Φ62	Φ62	Φ48	Φ81	*Φ62	Φ105	Φ120
	Max. dia. of through hole	mm	Φ41	Φ40	*Φ46	*Φ52	Φ52	Φ40	Φ70	*Φ52	Φ91	Φ110
	Spindle nose		A2-5	A2-5	*A2-5	*A2-6	A2-6	A2-5	A2-8	*A2-6	A2-8	A2-11
<b>Toolpost</b>	Spindle speed	rpm	3000	3000	*2500	*2000	2000	3000	1600	*2000	1000	1000
	Max. power of spindle	kW	*4500	*4500	*4500	*4000	*4000	*4500	*2500	*4000	*2000	
<b>Axis</b>	X/Z travel	mm	5.5	5.5, *7.5	7.5	7.5, *11	11, *15	15, *18.5				
	X/Z rapid traverse	mm/min	280/250	350/300	380/350	260/500,*350/500	260/500, *350/500	350/500				
<b>Others</b>	Type		Gang type *4-station toolpost	Gang type *4-station toolpost *8-station turret	4-station toolpost *8-station turret *Gang type tooling							
	No. of tool stations	No.	4-6	4-10	4-10	4-10	4-10	4-10				
<b>Others</b>	Power capacity	kVA	8	9	11	12	15	18				
	Dimensions (L×W×H)	mm	1980×1450×1800	2110×1600×1800	1950×1250×1620	2650×1360×1800	2650×1360×1800	2650×1360×1800				
	Weight(about)	kg	1400	2000	2000	2700	2800	3000				

Note: "\*" means optional, "N/A" means not available, "LM" means linear motion guide way.

# FLASH FTL SERIES

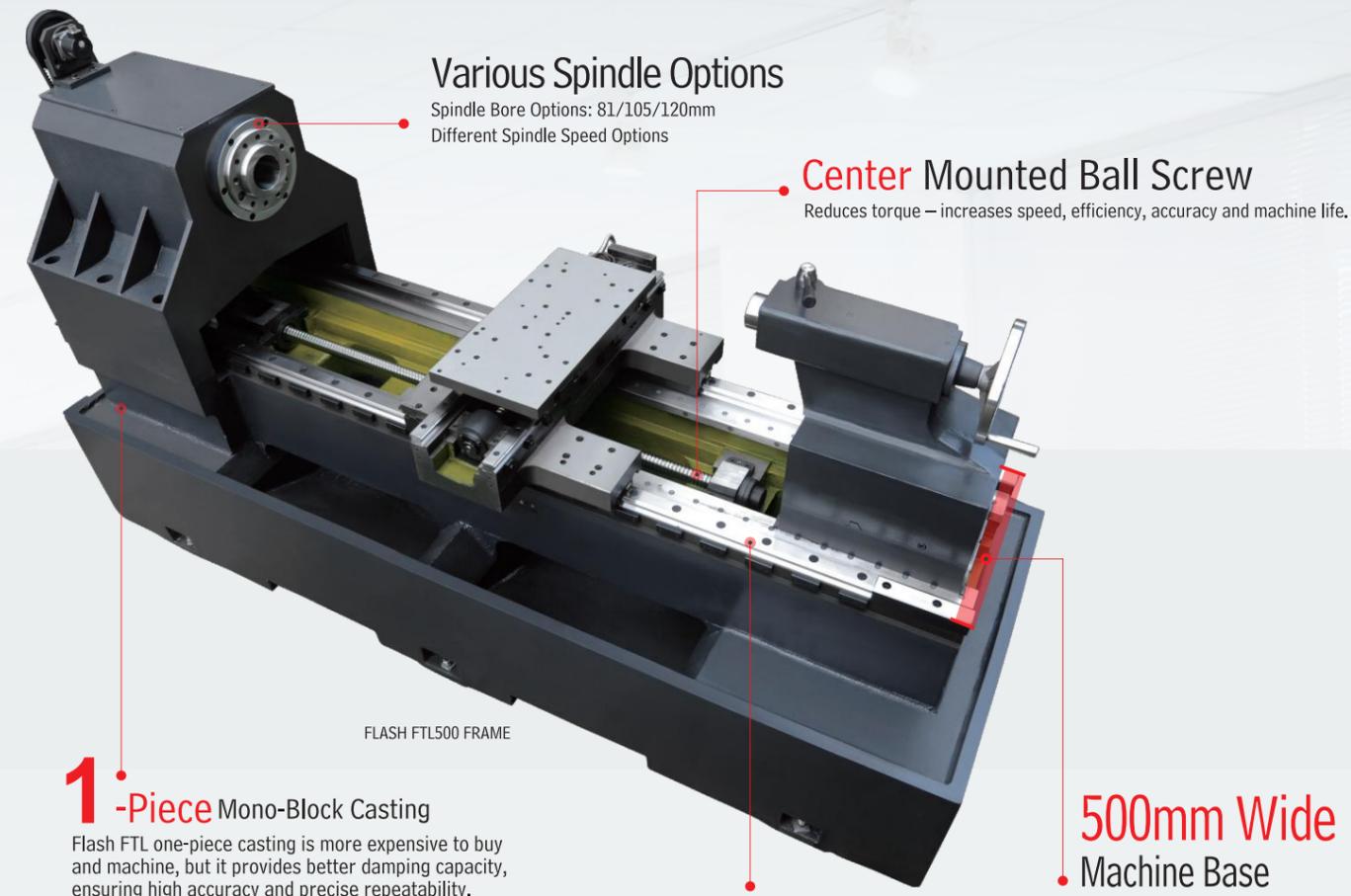


## Machine Characteristics

- The tailstock is set on its own guide way, parallel to the main bed ways. This structure is highly rigid and accurate.
- Linear guideways are protected by telescoping stainless steel covers – maximizing ball screw protection and extending tool life.
- Center mounted ball screws eliminate torque – providing better dynamic properties and greater stability over the life of the machine.
- Servo drives on X/Z axes. Spindle can be driven by VFD or Servo.
- Various control systems, chucks and tool mounting systems are available.

## The World's *First* and *Best* Design

You will be hard pressed to find another linear guide way type CNC lathe that has a center mounted ball screw and stainless covers over the full length of the ball screw and guide ways. This unique, Z-MaT patented design provides the perfect combination of long-term speed, accuracy and repeatability for a CNC lathe of this size and design.



### Various Spindle Options

Spindle Bore Options: 81/105/120mm  
Different Spindle Speed Options

### Center Mounted Ball Screw

Reduces torque – increases speed, efficiency, accuracy and machine life.

### 1-Piece Mono-Block Casting

Flash FTL one-piece casting is more expensive to buy and machine, but it provides better damping capacity, ensuring high accuracy and precise repeatability.

### Heavy-Duty Linear Guideways

Heavy roller and ball-type linear guideways were selected for this heavy duty machine – so it has the efficiency advantages of linear guides, but also can compete with box ways for stability during heavy cutting operations.

### 500mm Wide Machine Base

Extra wide machine base adds mass and stability to this heavy-duty lathe designed for heavy-duty turning operations.

## Various option features



8/12 stations turret



Vertical live tool ( Y axis)



Hydraulic steady rest



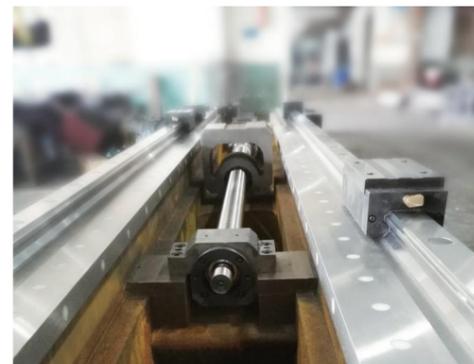
Manual steady rest



Manual operation box

# FLASH FTL SERIES

Flat bed, Tailstock, Linear guideway



### Standard Features

- Manual 3-Jaw Chuck
- 4-Station Tool Post Plus Gang Tool Plate
- Manual Tailstock
- Ergonomic Operator Panel Design & MPG
- Automatic Lubrication System
- Automatic Coolant System
- Work Lamp & Built-in Safety Features

### Optional Features

- Different Chucks
- Different Control Systems
- 8-Station Turret (except FTL300)
- Hydraulic Tailstock
- Gear Box Spindle
- C Axis & Live Tooling
- C Axis & 12 station Power Turret (for big model)

## Full Range of Turning Machines



## Specifications

	Unit	FTL300	FTL320	FTL400	FTL500	FTL550	FTL660	
<b>Capacity</b>	Chuck size	inch 6"	6" *8"	8"	10" *8"	12" *15"	15" *18"	
	Max. swing dia. over bed	mm Φ300	Φ400	Φ400	Φ500	Φ550	Φ700	
	Max. length of workpiece	mm 180	Collet: 380, Chuck: 320 *300(8 station turret)	650(C2C) 500(chuck) 450(turret)	700/1000/1500/2000(C2C) 550/850/1350/1850(chuck) *450/750/1250/1750 (turret)	700/1000/1500/2000/3000(C2C) 550/850/1350/1850/2850(chuck) *450/750/1250/1750/2750 (turret)	1000/1500/2000/3000(C2C) 800/1300/1800/2800(chuck) *700/1200/1700/2700 (turret)	
<b>Spindle</b>	Max. swing dia. over slide	mm Φ135	Φ140	Φ250	Φ350	Φ350	Φ480	
	Spindle bore	mm Φ48	*Φ55	Φ55	*Φ62	Φ62	Φ83	*Φ62
	Max dia. of through hole	mm Φ40	*Φ46	Φ46	*Φ52	Φ52	Φ75	*Φ52
	Spindle nose	A2-5	*A2-5	A2-5	*A2-6	A2-6	A2-8	*A2-6
	Spindle speed	rpm 3000	*2500	2500	*2000	2000	1600	*2000
<b>Axis</b>	Max. power of spindle	kW 5.5, *7.5	5.5, *7.5	7.5, *11	11, *15, *18.5	15, *18.5	15, *18.5	
	X/Z travel	mm 250/200	280/380	280/650	280/700, 1000, 1500, 2000	280/700, 1000, 1500, 2000, 3000	370/1000, 1500, 2000, 3000	
	X/Z rapid traverse	m/min 15/15, *25/25	25/15, *25/25	15/15, *20/20	15/15, *20/20	15/15, *20/20	15/15, *20/20	
<b>Tool post</b>	Type	4-station toolpost *gang type tooling	4-station toolpost *8-station turret *gang type tooling	4-station toolpost *8-station turret *gang type tooling	4-station toolpost *8-station turret *gang type tooling	4-station toolpost *8-stations turret *gang type tooling	4-station toolpost *8-stations turret *gang type tooling	
	No. of tool stations	nos 4+2	4+2, *8+2	4+2, *8+2	4+2, *8+2, * Driven 12	4+2, *8+2, * Driven 12	4+2, *8+2	
<b>Tailstock</b>	Tailstock type	Manual, * Hydraulic	Manual, * Hydraulic	Manual, * Hydraulic	Manual, *Hydraulic	Manual, *Hydraulic	Manual, *Hydraulic	
	Taper of quill	MT	MT4	MT4	MT4	MT5	MT5	
	Travel of tailstock quill	mm 80	80	100	100	100	100	
<b>Structure</b>	Bed type /guideway	Flat/LM	Flat/LM	Flat/LM	Flat/LM	Flat/LM	Flat/LM	
	Bed width	mm 300	400	405	500	500	680	
<b>Others</b>	Power capacity	kVA 9	13	13	15	18	18	
	Dimensions (L×W×H)	mm 1800×1580×1600	2310×1650×1850	2800×1650×1900	3005×1715×2075 (shortest)	3005×1715×2075 (shortest)	3820×1950×2000(shortest)	
	Weight (about)	kg 1900	3100	3700	4400/4800/6000/7100	4500/5000/6100/7200	5400/6800/7600	

Note: "\*" means optional, "N/A" means not available, "LM" means linear motion guide way. Dimensions are only list the shortest length model.  
 Different chucks and toolposts will affect the real Max. cutting length capacity-  
 C2C: Spindle center to Tailstock center; Chuck: Spindle 3 jaws chuck to tailstock; Turret: 3 jaws chuck to tailstock while configured with 8/12 stations turret.

# SUPER P SERIES

Super Precision CNC Lathe

High Precision  
and Compact Size

## Machine Characteristics

- Spindle runout  $\leq 2 \mu m$
- Space saving, compact footprint
- Smooth, efficient chip removal
- Built-in spring collets – low vibration, high accuracy
- Servo spindle motor, Bosch Rexroth linear guideway,
- THK ballscrew

### Standard Features

- Hydraulic Collet (SP28)
- Pneumatic Collet (P30H)
- Work & Alarm Light
- Automatic Coolant System
- Automatic Lubrication System
- Gang Plate Work Table
- Tools & Tool Box

### Optional Features

- Different Collets
- Different CNC Control Systems
- Part Catcher
- C Axis and Live Tooling
- Bar Feeder



## Specifications

	Unit	SUPER P30H	SUPER SP28
<b>Capacity</b>	Max. swing dia. over bed	mm	Φ300
	Max cutting length	mm	160
	Max. swing dia over slide	mm	Φ80
<b>Spindle</b>	Spindle bore	mm	Φ36
	Bar dia. capacity of hyd. collet	mm	Φ30
	Nose type		Φ54mm 1:1
	Spindle speed	rpm	5000
	Max. power of spindle	kW	5.5, *7.5
	X axis travel	mm	250
<b>Axis</b>	Z axis travel	mm	180
	X/Z rapid traverse	m/min	20/20
	Type of tool post		Gang type
<b>Toolpost</b>	No. of tool stations	nos	4-6
	ODTool shank size	mm	16×16
	Power capacity	kVA	6.5
<b>Others</b>	Bed / Guideway type		Flat / Linear motion
	Overall dimension (L×W×H)	mm	1420×1200×1550
	Weight (about)	kg	1500

Note:\*\*\* means optional.

# POWER A SERIES TURNING CENTERS

A6 / A8L



When we set out to build a heavy duty cutting (hogging) machine we did a number of things:

- Increased spindle rigidity
- Widened guideway spacing
- Increased bed casting weight
- Increased spindle torque

The result is a machine that will take heavy cuts and still assure minimal tool tip vibration. Finer surface finish is the result – even when making heavy cuts.

# POWER A SERIES

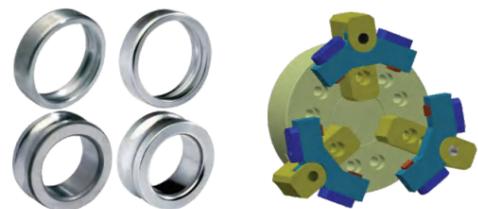
**POWER A SERIES** for 60° Rigid Structure

## Machine Characteristics

- German-made BOSCH Rexroth Linear Guideways
- High speed with heavy torque – suitable for machining hard materials
- 60° slant bed makes for easy chip removal
- Optional floating jaws for securely holding hard, thin-walled pipe

## Bearing Ring Solution

Power A machines are widely used in bearing industry. And Z-MaT has mature solutions for inner ring and outer ring machining.



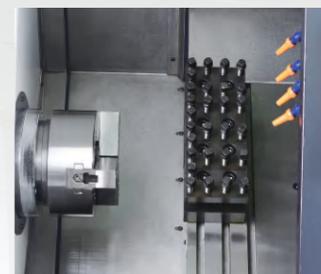
Floating jaws



**Depth of cut**  
**9mm(0.35in)**

Material: S45C(Carbon steel)  
Cutting speed: 220m/min(721.8 ipm)  
Feedrate: 0.4mm/rev(0.016ipr)

## Greater Rigidity and Faster Speed



By using German-made BOSCH Rexroth heavy-duty linear guides, over-sized ball screws, thicker head stock ribs and wider bed ways we have created a highly rigid, high speed lathe. The POWER A Series is a true 60 slant bed lathe – significantly increasing machine accuracy and capacity. The steep slant bed and over-sized chip tanks allow efficient chip removal, even during "heavy cut" turning operations. An optional chip conveyor is available.

## Built for High Speed Heavy Cutting

### 60° Slant Bed

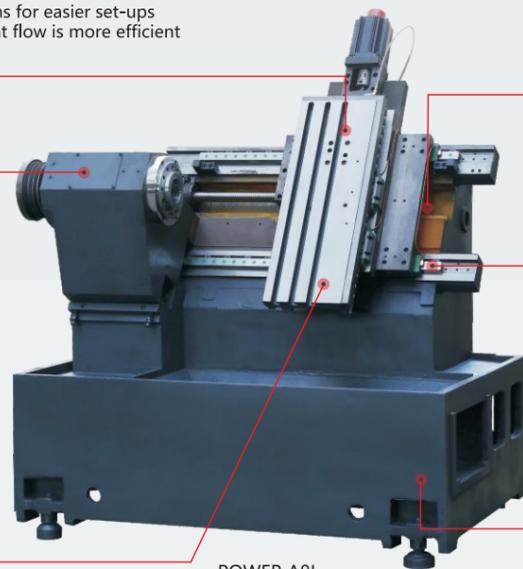
Operator is close to tooling stations for easier set-ups and tool changes. Chip and coolant flow is more efficient with the steeper table incline.

### Heavy Duty Spindle

Extra built-in ribbing on the headstock and higher torque spindle drive provides a spindle ready and willing to handle all-day heavy cutting.

### Extended X Axis Travel

X Axis travel up to 380mm. Allows for a large number of gang, live tooling and turret mounted tools to be mounted on the table and sequentially moved to the point of tool tip turning contact.



POWER A8L

### Larger Ball Screw Diameter

40mm diameter ball screw supports heavy machining operations. Pre-loaded bearings are mounted on both ends of the ball screw assembly for optimal support.

### Heavier Linear Guideways

Heavy duty ball linear guideways are necessary for heavy cutting. These heavy duty linear guides will hold up and maintain accuracy for the long-term.

### High Volume Chip Collection

Standard feature includes extra-large chip collection tank. POWER A Series chip tanks are three times larger than ones used on the FLASH Series. Chip conveyor optional.

### One-Piece Mono-Block Casting

## FULL RANGE OF TURNING MACHINE



**60°** steep inclined bed, closer to operator

**300%** size chip tank larger than previous

**280%** sized linear guide way slide block

**45mm** width heavy duty linear guideway

**40mm** ballscrew diameter

### Standard Features

- Hydraulic Chuck
- Gang Type Tooling
- Frequency Inverter
- Work and Alarm Light
- Foot Pedal & Safety Features
- Automatic Lubrication System
- Automatic Coolant System

### Optional Features

- Different Chucks & Collets
- Different Control Systems
- Larger Spindle
- Servo Spindle Motor
- Chip Conveyor
- Bar Feeder
- C Axis & Live Tooling



POWER A8L

## Specifications

	Unit	POWER A6	POWER A8L
<b>Capacity</b>	Collet/Chuck size	inch	6", * 8"
	Max. swing dia. over bed	mm	Φ400
	Max cutting length	mm	320
	Max. swing dia. over slide	mm	Φ150
<b>Spindle</b>	Spindle bore	mm	Φ48
	Max dia. of through hole	mm	*Φ45
	Spindle nose		A2-5
	Spindle speed	rpm	3000
	Max. power of spindle	kW	7.5, *11
	X axis travel	mm	260
<b>Axis</b>	Z axis travel	mm	320
	X/Z rapid traverse	m/min	15/15
	Type of toolpost		Gang type
<b>Toolpost</b>	No. of tool stations	nos	4-6
	OD tool shank size	mm	32X32
	Slant bed degree		60°
<b>Structure 1</b>	Guideway type		Linear Motion
	Power capacity	kVA	14
<b>Others</b>	Overall dimension (L×W×H)	mm	2100×1750×2250
	Weight (about)	kg	3000
			2520×1750×2250
			3900

Note: "\*" means optional.

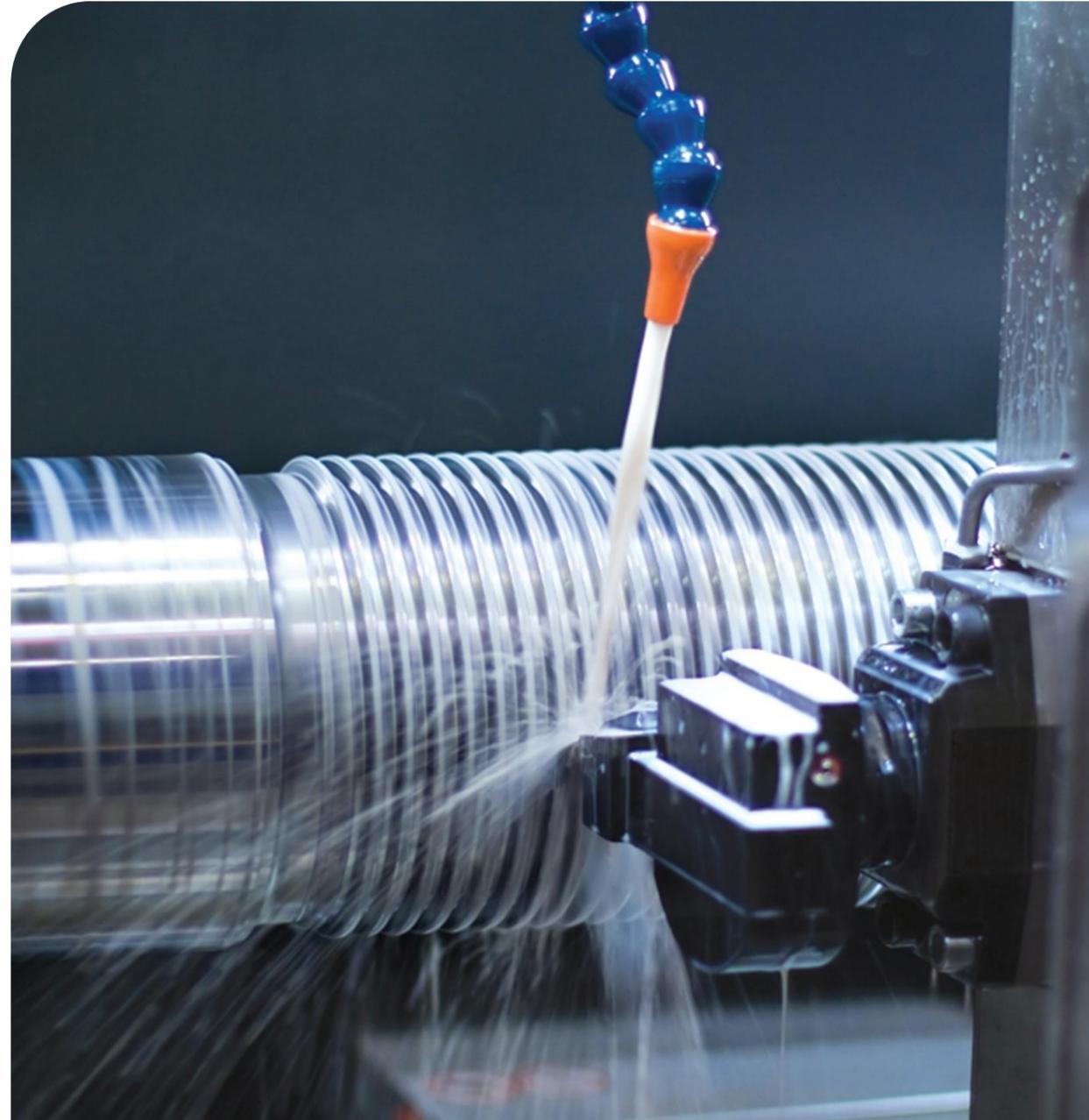
# HUNTER FAMILY TURNING CENTERS

FTH /STH /SH Series

## Machine Characteristics

The HUNTER Series are a new take on the traditional, economic hard way CNC lathe. The new HUNTER lathe series offer outstanding acceleration, low friction guideways, precision ball screws – and a lower price point.

The series of HUNTER CNC lathes include the STH(Slant Bed with Tailstock), the SH (Slant Bed without Tailstock), the FTH (Flat Bed with Tailstock) lathe series.



# HUNTER SERIES

FTH /STH /SH

*Constant Research and Ongoing Product Refinement*

## Evolving a Lathe Tradition: Improving the Flat Bed Box Way Design for CNC Turning

Unlike the old CK CNC lathe design, which has the ball screw mounted on the front side of the lathe bed, the HUNTER Series moved the ball screw to the middle of the lathe bed, between the guideways. This eliminates friction and ball screw torque – increasing efficiency and assuring higher speeds. The HUNTER lathes also have telescoping stainless steel guards that cover the ball screw along its entire length. This assures smooth operation and long machine life.



**Comparison of tradition CK type CNC lathe**



## Reliable and Efficient Lubrication Oil Distribution



This efficient unit assures all machine components are lubricated evenly – extending machine operating life.

## Double “V” Machine Bed Ways

Lathe carriage is continually aligned for torque-free, smooth operation and increased accuracy. The center-mounted, covered ball screws increase the smoothness and speed of carriage movement along the V ways.



## Pre-Loaded Ball Screws with Bumpers



A pre-loaded ball screw reduces thermal distortion. The ball screw bumper helps protect the ball screw in case of operator error or machine malfunction.

# HUNTER FTH SERIES

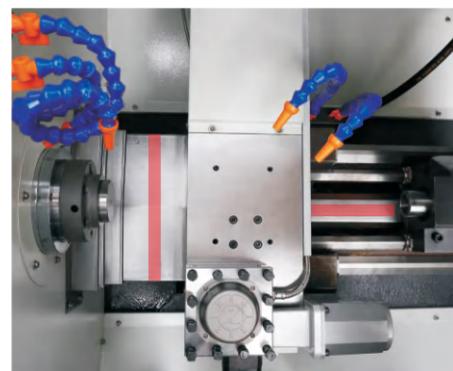
## Smart CNC Solutions

### Standard Features

- Manual 3-jaw Chuck
- 4-station Tool Post
- Manual Tailstock
- Ergonomic Operator Panel Design & MPG
- Automatic Lubrication System
- Automatic Coolant System
- Work Lamp & Built-In Safety Features

### Optional Features

- Different Chucks
- 8-station Turret
- Different Control Systems
- Hydraulic Tailstock
- Bar Feeder
- C Axis & Live Tooling
- Steady Rest & Hydraulic Follow Rest
- Gear Box



### Stainless Steel Telescopic Cover

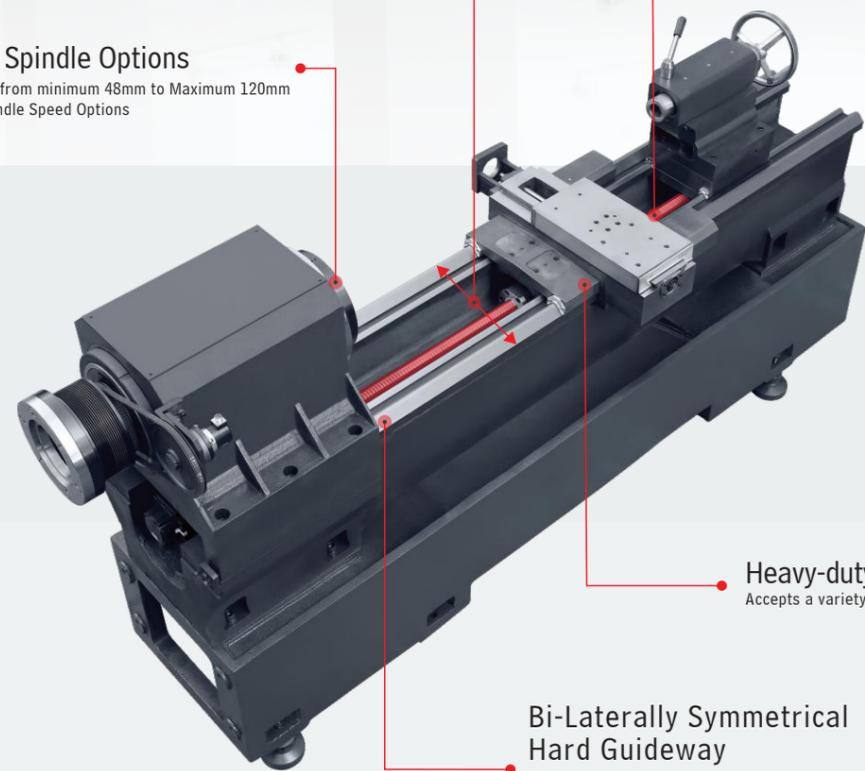
Provide excellent chip-proofing and protect guide way to extend long life span time

## Revolutionize the NC/Conventional Lathe

Structured to real CNC, but kept the economical features "Get the work done easily" featured in a smart way.

### Various Spindle Options

Spindle Bore from minimum 48mm to Maximum 120mm  
Different Spindle Speed Options



### Wider bed width

Eliminate Vibration, Lower Center of gravity,  
Solid base for heavier duty

### Center Mounted Ball Screw

Balance Torque Output – increases speed, efficiency,  
accuracy and machine life, Double protected by ballscrew  
cover and stainless steel telescopic guideway cover

### Heavy-duty cross-slide

Accepts a variety of tool post options

### Bi-Laterally Symmetrical Hard Guideway

The symmetrical Dual V bed design allows for even wear of the bedway over time,  
resulting in maintained accuracy over the life of the machine



## Specifications

	Unit	FTH6130	FTH6136	FTH6140	FTH6150	FTH6166
<b>Capacity</b>	Chuck size	inch 6"	8"	10", *15"	12"	15"
	Max. Swing dia. over bed	mm Φ300	Φ350, *Φ400	Φ500	Φ500	Φ700
	Max. length of workpiece	mm 400(collet), 300(chuck)	500, *650 Centers	750/1000/1500/2000 Centers	750/1000/1500/2000 Centers	1000/1500/2000/3100 Centers
	Max. swing dia. over slide	mm Φ150	Φ200	Φ290	Φ290	Φ480
<b>Spindle</b>	Spindle bore	mm Φ48 *Φ55 *Φ62 Φ55	*Φ62 *Φ75 Φ55	Φ62 *Φ55 *Φ75	Φ83 *Φ105 *Φ120	Φ120
	Bar dia. capacity	mm Φ40 *Φ46 *Φ52 Φ46	*Φ52 *Φ65 Φ46	Φ52 *Φ46 *Φ65	Φ75 *Φ91 *Φ110	Φ110
	Spindle nose	A2-5 *A2-5 *A2-6 A2-5	*A2-6 *A2-8 A2-5	*A2-5 *A2-8 A2-6	A2-8 *A2-11 *A2-11	A2-11
	Spindle speed	rpm 3000 *2500 *2000, *4000	2500 *2000 *1600	2000, *4000 *2500 *1600	1600, *2500 *1000, *2000 *1000	1000
Max. power of spindle	kW 3.7, *5.5	5.5, *7.5	7.5, *11	7.5, *11, *15	15	
<b>Axis</b>	X axis travel	mm 280	320	320	320	380, *450
	Z axis travel	mm 400	500, *650	750/1000/1500/2000	750/1000/1500/2000	1000/1500/2000/3100
	X/Z rapid traverse	m/min 9/12	9/12	9/15	9/15	9/15
<b>Toolpost</b>	Type of toolpost	4-station toolpost, *gang type	4-station toolpost, *gang type	4-station toolpost, *gang type, *8-station turret	4-station toolpost, *gang type, *8-station turret	4-station toolpost, *gang type, *8-station turret
	No. of tool stations	nos 4	4	4	4	4
<b>Tailstock</b>	Tool shank size	mm 20X20	25X25	25X25	32X32	40X40
	Type of tailstock	Manual, *Hydraulic	Manual, *Hydraulic	Manual, *Hydraulic	Manual, *Hydraulic	Manual, *Hydraulic
	Taper of tailstock quill	MT3*MT4	MT4	MT5	MT5	MT5, *MT6
	Travel of tailstock quill	mm 100	100	130	130	150
<b>Structure</b>	Travel of tailstock	mm 350	400/550	600/850/1350/1850	600/850/1350/1850	850/1350/1850/2900
	Bed width	mm 280	340	410	410	600
	Guideway type	Hard way	Hard way	Hard way	Hard way	Hard way
<b>Others</b>	Power capacity	kVA 9	11	14	15	18
	Overall dimension (L×W×H)	mm 2120×1480×1760	2340×1575×1730	2775(3055)(3553)(4003)×1675×1850	2725(3055)(3553)(4003)×1760×1910	3590(4090)(4590)×1820×2110
	Weight (about)	kg 1900	2650	3700/4150/5000/5600	3800/4400/5350/5700	6000/7000/7700/10500

Note: "\*" means optional. "Centers" means the distance between spindle center to tailstock Center, chuck to center distance will be less around 120~200mm.

# HUNTER STH SERIES

## Slant Bed Tailstock Hard Guideways

### Standard Features

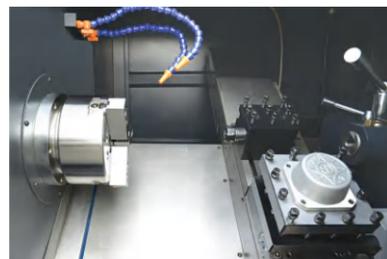
- Manual 3-Jaw Chuck
- 4-Station Tool Post + gang plate
- Manual Tailstock
- Automatic Lubrication System
- Automatic Coolant System

### Optional Features

- Hydraulic Chuck
- Spring Collet System
- Hydraulic Tailstock
- Different CNC Control Systems
- Different Spindle
- 8 Position turrets
- Gear Box Spindle

## Machine Characteristics

- 30 degree slant bed – efficient chip flow and easier operator access
- Ergonomically designed adjustable panel
- Center-mounted ball screw – less torsion and better accuracy
- STH10 and STH12 have cylindrical roller spindle bearings
- The most economical slant bed with tailstock in the market



There's only one place you'll find this Unique CNC lathe design - Z-MaT!

STH CNC Lathes are designed to provide a cheaper and easier machining option – while providing real production capacity and accuracy. Perfect for R&D, education, manufacturing or just getting a business started. STH Series CNC Lathes are a very affordable option that will allow you to accomplish your machining tasks easier and faster.



## Z-MaT Original Design

Cost-Effective,  
Full Production Capable  
Slant Bed CNC Lathe

## Specifications

	Unit	STH6130	STH6136
<b>Capacity</b>	Chuck size	inch 6"	8"
	Max.Swing dia.over bed	mm Φ300	Φ350
	Max.length of workpiece	mm 280,*350(collet)	300,*400(collet)
	Max.swing dia.over slide	mm Φ130	Φ150
<b>Spindle</b>	Spindle bore	mm Φ48	Φ48
	Max. dia of through hole	mm Φ40	Φ40
	Spindle nose	A2-5 *A2-5	A2-5 *A2-6
	Spindle speed	rpm 3000 *4500	3000 *2000 *4500 *4000
<b>Axis</b>	Main motor power	kW 4.0	5.5
	X axis travel	mm 300	320
	Z axis travel	mm 280,*350(collet)	300,*400(collet)
	X/Z rapid traverse	m/min 8/12	8/12
<b>Toolpost</b>	Type	4-station toolpost + Gang type tooling * 8-station turret	4-station toolpost + Gang type tooling * 8-station turret
	No. of tool stations	nos 4-8	4-8
	ODTool shank size	mm 20×20	20×20
<b>Tailstock</b>	Type of tailstock	Manual,*Hydraulic	Manual,*Hydraulic
	Taper of tailstock quill	MT3	MT4
	Travel of tailstock quill	mm 100	100
	Travel of tailstock	mm 300	400
<b>Structure</b>	Slant bed degree	30°	30°
	Guideway type	Hard	Hard
<b>Others</b>	Power capacity	kVA 8	8
	Overall dimension (L W H)	mm 2050×1380×1880	2290×1450×1880
	Weight (about)	kg 2000	2700

Note: "\*" means optional. "C to C" means spindle Center to tailstock Center.

## Machine Characteristics

The machine adopts a T-shaped inclined bed design. There are options for rear chip removal and front-right chip removal, ensuring smooth chip evacuation.

The tool post, designed with T300 castings and FEA-analyzed, has a reasonable structure. The machine tool guideways adopt a layout with rectangular plastic-faced sliding ones and a large span to achieve high rigidity and meet heavy-cutting needs.

The ball screw of the X-axis has a pre-tensioned structure, which can effectively reduce the impact of temperature on accuracy, enabling the machine tool to maintain high precision for a long time.



## Specifications

	Unit	STH6140	STH6150	STH6166
<b>Capacity</b>	Chuck size	inch 10"	12",*15"	15",*18"
	Max.Swing dia.over bed	mm Φ450	Φ500	Φ700
	Max.length of workpiece	mm 600	600	750(C to C)
	Max.swing dia.over slide	mm Φ250	Φ280	Φ500
<b>Spindle</b>	Spindle bore	mm Φ62	*Φ83	Φ83
	Max. dia of through hole	mm Φ52	*Φ75	Φ75
	Spindle nose	A2-6	*A2-8	A2-8
	Spindle speed	rpm 2000 *4000	1600 *2500	1600 *1000 *1800
<b>Axis</b>	Main motor power	kW 7.5,*11	11,*15	15,*18.5
	X axis travel	mm 300	300	380
	Z axis travel	mm 750 (C to C)	750 (C to C)	750
	X/Z rapid traverse	m/min 9/12	9/12	9/12
<b>Toolpost</b>	Type	4-station toolpost+ Gang type tooling, * 8-station turret	4-station toolpost + Gang type tooling, * 8-station turret	4-station toolpost + Gang type tooling, * 8-station turret
	No. of tool stations	nos 4-8	4-8	4-8
	ODTool shank size	mm 25×25	32×32	32×32
<b>Tailstock</b>	Type of tailstock	Manual,*Hydraulic	Manual,*Hydraulic	Manual,*Hydraulic
	Taper of tailstock quill	MT5	MT5	MT6
	Travel of tailstock quill	mm 100	100	150
	Travel of tailstock	mm 650	650	750
<b>Structure</b>	Slant bed degree	30°	30°	30°
	Guideway type	Hard	Hard	Hard
<b>Others</b>	Power capacity	kVA 11	15	16
	Overall dimension (L×W×H)	mm 3200×1490×1870	3200×1490×1870	3315×1820×2110
	Weight (about)	kg 4100	4500	4500

Note: "\*" means optional. "C to C" means spindle Center to tailstock Center.

# LIVE TOOLING & MULTI-TASKING MACHINE

## Secondary Machining Operations

### Powerful Solution for Secondary Machining of Turned Parts

Z-MaT is a recognized leader in C Axis and live tooling technology. This strong core competence makes Z-MaT the go-to source for secondary machining operations.

In addition to standard turning operations, with Z-MaT you can perform additional machining operations on a single machine – like milling, drilling, surface finishing and tapping on all surfaces. A Y axis unit is also available on many lathe models.



# LIVETOOLING

## High Torque Secondary System



Z-MaT live tooling units feature a robust gear drive system that provides efficient power transmission and maximum continuous torque. An extra-large servo motor drive provides 50% more torque than comparable units on the market. Also, the use of quality ground transmission gears reduces noise levels at high speed.

### C Axis Motion

C Axis drive units provide high precision bi-directional spindle motion that is fully interpolated with X and Z axis movements. The unit is servo driven with a timing pulley and belt, and a powerful hydraulic brake locks the main spindle during secondary operations.



### Y Axis Motion

Z-MaT Y axis drive units are used for off center milling, drilling and tapping. Each Y axis model comes standard with C axis and live tooling capabilities and fully interpolates with C axis, X axis and Z axis movement. This combination provides a powerful, efficient solution for secondary machining of turned parts.



### Driven Toolholders List

Form	Position	Group tool nos	Max dia. of live tool	Max. speed
ER20	Radial, Axial, Vertical	1、 2、 3	φ 13mm	5000rpm
ER25	Radial, Axial, Vertical	1、 2、 3	φ 16mm	5000rpm
ER32	Radial, Axial, Vertical	1、 2、 3	φ 20mm	5000rpm

Able to fit for most existing Z-MaT models.



Polygon turn-mill driven toolholder  
 Axial and Radial elevation adjustable driven toolholder  
 Axial and radial index adjustable driven toolholder  
 Double lifting vertical driven toolholder  
 Double lifting axial driven toolholder  
 ER20 single driven toolholder  
 ER32 single driven toolholder  
 Group 4 vertical driven toolholder  
 Group 3 lifting axial and 3 radial driven toolholder  
 Group 2 lifting axial and 2 radial driven toolholder  
 Single lifting vertical driven toolholder

# MULTI-TASKING MACHINE

## Turn-Mill Machining Center

### Long X Axis Travel

PLUS, an extra-long work table provides a large tool mounting area. This allows for a large number and variety of table mounted tooling options. This capacity makes the Series a powerful, "single set-up" turning center for turning, milling, tapping and drilling operations in a single part production cycle.

Smart operators can combine operations into a single machining center – saving on capital input and operating costs. The series machine owners report they have gained a competitive advantage with the addition of these machines to their production system.

### Machine Characteristics-TMC40V

- High-quality castings: reduce vibration, enhance rigidity, ensure fine surface finishes.
- 90° vertical structure: optimize chip/coolant flow, simplify operation setup.
- Single setup enables turning, milling, drilling, tapping; supports C-axis & 4-axis simultaneous machining.
- Modular design allows diverse configurations (e.g., tailstock-tool combinations).
- X/Y/Z/C axes interpolate. One setup finishes complex milling/drilling/tapping.

## 4-Axis Simultaneous Multitasking Turning Centers



SL580-MT



### Specifications

	Unit	SL450-MT	SL580-MT	TMC40V
<b>Structure</b>	Bed incline degree	45°		90°
	Guideway type	Linear motion		Linear motion
	Chuck/Collet	6" Hydraulic chuck/Hydraulic collet		Hydraulic collet, *6", *8"
<b>Capacity</b>	Max. swing dia. over bed	Φ450		Φ400
	Max. length of workpiece	Chuck 180, *Collet 210		Chuck 220, *Collet 250
	Max. swing dia. over slide	Φ150		Φ250
<b>Spindle</b>	Spindle type	A2-5	*A2-6	A2-5
	Spindle bore	Φ55	*Φ62	Φ48
	Max. dia. of through hole	Φ46	*Φ52	Φ40
	Spindle speed	4500	*4000	4500
	Max. power of spindle	7.5, *11	7.5, *11	7.5
<b>Axis</b>	X axis travel	450	580	220
	Z axis travel	210	270	320
	Y axis travel	150	150	300
	X/Z/Y rapid traverse	20/20/15	20/20/15	12/12/12
<b>Toolpost</b>	Toolpost type	8-Station turret mixed with livetoolings		Gang type tools mixed with livetoolings
<b>Tailstock</b>	Taper of tailstock	No		MT4
	Travel of tailstock quill	No		100
	Power capacity	13		14KVA
<b>Others</b>	Overall dimension(L×W×H)	2300×1800×2050	2400×1810×2050	2380×1850×2380
	Weight (about)	3500	3700	3500

Note: "\*" means optional, "N/A" means not available. Chip conveyor is available as option for SL450-MT

# DUAL-USE TECHNOLOGY SERIES TF01

## Turning Center Transform into VMC Like "Transformer"

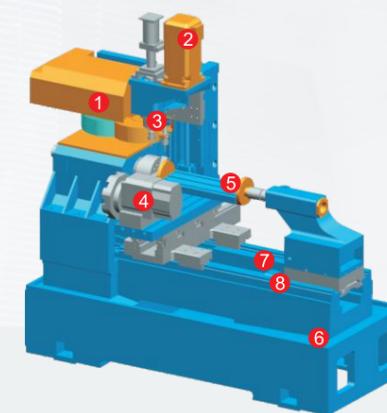
### CNC Turning Center With Y Axis VMC With 4th Axis integrated into One

This machine is designed based on wide span lathe bed, monoblock one-piece casting and large-size linear motion guideway which guarantee the solid foundation for balanced two purposes-turning and milling.

Its basic function is a powerful turning center. However, it can become a 4th axis VMC as long as we add a bridge plate between the 3-Jaw Chuck and Tailstock (Then C axis convert to "A" Axis function in VMC mode). The milling, drilling and tapping processes can be realized through automatic tool change and BT30 high speed VMC spindle.

Basically, this machine can realize two functions: CNC Turning Center with Y axis, or a VMC with 4th axis.

- 1 Automatic tool change magazine
- 2 Milling spindle motor
- 3 BT30 high rigid spindle
- 4 8/12-station turret in the front
- 5 4 axis rotary table function
- 6 One piece monoblock casting
- 7 Both ends anchored ballscrew
- 8 Roller type 45mm linear guideway



### Standard Features

- Manual 3 Jaws Chuck
- PMI/ HIWIN Linear Guideway
- PMI/ HIWIN Ballscrew
- 8-Station Turret
- BT30 Spindle Unit 8000rpm
- Drum Type ATC 8-Station
- Manual Tailstock

### Optional Features

- Hydraulic Chuck
- Chip Conveyor
- Quick Bridge Plate for 4th axis VMC Function
- Hydraulic Tailstock



TF01



### Specifications TF01

4 Axes Turning Center Mode		4 Axes VMC Mode	
Max. Swing Diam. Over Bed	650mm	4th Axis Center Height	145mm
Max. Swing Diam. Over Slide	290mm	Bridge Plate Size	550x45x200mm
Max. Turning Diam.	400mm	T Slot	12x3x70mm
Max. Length of Workpiece	500mm	Spindle Center to Column	210mm
Spindle Bore	Φ62mm	Spindle Nose to Table	350mm
Max. Diam. of Through Hole	Φ52mm	Max. Load	200kg
X Axis Travel	300mm	"Y" Axis Travel	200mm
Y Axis Travel	200mm	"Z" Axis Travel	200mm
Z Travel	500mm	"X" Axis Travel	500mm
X Rapid Traverse	20m/min	"Y" Axis Rapid Speed	20m/min
Y Rapid Traverse	10m/min	"Z" Axis Rapid Speed	10m/min
Z Rapid Traverse	20m/min	"X" Axis Rapid Speed	20m/min
Turning Spindle Nose Type	A2-6	Turning Spindle Nose Type	A2-6
Turning Spindle Motor	7.5/11kW	Turning Spindle Motor Power	7.5/11kW
Max. Turning Spindle Speed	2000, *4000rpm	Max. Turning Spindle Speed	2000, *4000rpm
Milling Spindle type	BT30	Milling Spindle Type	BT30
Max. Milling spindle speed	8000r/min	Max. Milling Spindle Speed	8000r/min
Milling Spindle motor	3.7/5.5kW	Milling Spindle Motor	3.7/5.5kW
Turning Turret Stations	8	Turning Turret Stations	8
Turning Tool Change Time-adjacent	≅ 0.45S	Turning Tool Change Time-adjacent	≅ 0.45S
*Milling ATC Capacity	8	*Milling ATC Capacity	8
*Max. Weight of Milling Tool	3kg	*Max. Weight of Milling Tool	3kg
*Milling Tool Change Time	≅ 8s	*Milling Tool Change Time	≅ 8s
*Air Source Pressure	0.5-0.8Mpa	*Air Source Pressure	0.5-0.8Mpa
Chuck Size	8"	Rotary Chuck Size	8"
Tailstock	MT5	Tailstock	MT5
Travel of Tailstock Sleeve	100mm	Travel of Tailstock Sleeve	100mm
Travel of Tailstock	100-500mm	Travel of Tailstock	100-500mm
C Axes Index Resolution	0.001°	4th Rotary Index Accuracy	0.001°
C Axes Machining Accuracy	±0.04°, ±0.02°	4th Index Accuracy	±0.04°, ±0.02°
Overall Dimension(L×W×H)	3000/*3300/*3800/*4300×1750×2400mm	Overall Dimension(L×W×H)	3000/*3300/*3800/*4300×1750×2400mm
Weight(about)	3500/*4200/*5200/*6200kg	Weight(about)	3500/*4200/*5200/*6200kg

Note: "\*" means optional. " " means equal to.

# TOOL ROOM CNC MACHINES

## “Fit Through a Door” CNC Lathes

Innovative, Heavy Cast Base – With Narrow Footprint



Perfect for getting through narrow halls and into small spaces. Up and into skyscrapers or down to a basement laboratory – or, maybe even into your garage.



820mm

Specifications	Unit	LTF5	LTS5
Chuck/Collet	N/A	Φ160mm Manual chuck	5" Manual chuck, * Hydraulic chuck
Max. swing dia. over bed	mm	Φ250	Φ300
Max. length of workpiece	mm	300	Turret 220, Gang type tool 320
Max. swing dia. over slide	mm	Φ140	Φ150
Spindle type	N/A	A2-4	A2-4
Spindle bore	mm	Φ30	Φ30
Spindle speed	rpm	3000	3000
Main motor power	kW	3.7	2.2
X/Z axis travel	mm	160/300	200/320
X/Z rapid traverse	m/min	8/12	6/9
Turret type	N/A	Quick change Toolpost	Gang type tool, *Quick change Toolpost, *8-station turret
Tailstock type	N/A	Manual, *Hydraulic	Manual, *Hydraulic
Taper of tailstock	N/A	MT3	MT4
Travel of tailstock quill	mm	80	80
Overall dimension (L×W×H)	mm	1650×820×1800	1300×820×1650
Weight (about)	kg	1300	1500

Note: " \* " means optional.

Specifications	Unit	VMC550E
Table size	mm	800×305
T slot (width×nos.×distance)	mm	14×3×85
Max. load	kg	260
X/Y/Z axis travel	mm	550/240/450
X/Y/Z axis rapid traverse	m/min	28/28/28
Spindle nose to table	mm	50-500
Spindle center to column	mm	380
Guideway type	N/A	LM: X/Y/Z
Spindle type	N/A	BT30
Main servo motor	kW	3.7/5.5
Spindle speed	rpm	8000
*ATC capacity/type	No./type	*12/Carousel
Max. weight of tool	kg	3
Overall dimension (L×W×H)	mm	2250×2000×2200
Weight (about)	kg	2600

Note: \* means optional, "LM" means linear motion guide way.

# SPM SERIES

Special Purpose Machine

## Increasing Productivity – Beyond Expectations

Because your efficiency and profitability are at the core of our mission, Z-MaT does not limit our engineering innovation to just general use CNC lathes and mills. We also design and produce special-purpose machines to meet specific needs that come to us from our diverse customer base.



# SPM SERIES Special Purpose Machine

## SPHERICAL CUTTING CNC LATHE

The **Q50** is a special design for machining ball-shaped parts. Turning, indexing and finish polishing can be accomplished in a single parts machining cycle.

### Machine Description

Traditional spherical cutting CNC lathes used a traditional technology that featured a straight rack drive and hydraulic system. The result was that tolerances were difficult to maintain and surface finishes were not smooth.

The Q50 uses a circular rack and tooth combination, along with a servo motor to control table movement. The improved results include machining results that match programming specifications and mirror-fine finishes.



### Machine Features

- Mono-Block single piece cast base and lathe bed. Extra-heavy casting is stabilized using traditional weather aging (an expensive and time consuming process). This helps to optimize lathe bed stability and accuracy.
- High precision, world-class linear motion bearing guideways increase machine accuracy and stability over the life of the machine.
- Center-mounted, high precision ball screw has optimal dynamic motion stability and efficiency.
- Accurate, high-speed cartridge spindle best fits the needs of the application – extra-fine finishes and optimal finish part roundness.
- Three axis simultaneous movement system maximizes felicity of parts accuracy to part design when cutting round or three dimensional shapes.

### Specifications Unit Q50

Specifications	Unit	Q50
Chuck/Collet	N/A	Hydraulic collet
Max. spherical turning dia.	mm	Φ50
X/Z axis travel	mm	200/150(*320)
X/Z rapid traverse	m/min	9/9
Spindle nose	mm	A2-5
Spindle speed	rpm	4000
Main motor power	kW	3.0, *4.0
Turret type	N/A	Double turret & Hyd. hob
Overall dimension(L×W×H)	mm	2200×1450×1900
Weight(about)	kg	2300



### A DIFFERENT SOLUTION The Power A8L Lathe w/Rotary Table

Besides the Q50 spherical lathe, another option for accurately machining spherical shapes is our highly accurate Power A8L lathe matched with a precision rotary table with servo drive. See this setup on the photo below:



## Big Head – CK62110 CNC Lathe

Extra-swing turning lathe for extra big diameter parts machining. Moreover, the machine bed is specially designed with rack and gear pair, which can move forward and backward manually for adapting different jobs' length.



## Dual End Milling and Drilling Machine STK Series

The dual end turning machine was developed specifically for the auto industry, and can be applied to other applications. This machine allows for double end cutting of parts that require machining on multiple surfaces of the part. Configurations of two to eight spindles can be configured for differing part turning requirements.



## Specifications

Gap-Bed Lathe	Unit	CK62110	CK62130
Chuck	inch	Manual 10", *12", *15"	Manual 18"
Max. swing dia. in the gap	mm	Φ1100	Φ1300
Max. swing dia. over bed	mm	Φ400	Φ850
Max. length in the gap	mm	250	450
Max. length of workpiece	mm	400	350
Spindle bore	mm	Φ55, *Φ81, *Φ105	Φ135
Spindle speed	rpm	1600, *800	500
Main motor power	kW	5.5, *7.5	11
X/Z axis travel	mm	320/400	580/350
X/Z rapid traverse	m/min	6/9	15/15
Turret type		4-station toolpost	4-station toolpost
Guideway type		Hard	Roller Linear Motion
Overall dimension(L×W×H)	mm	2600×1460×2050	3580×2310×2380
Weight(about)	kg	3100	8100

Note: \* means optional.  
Manual moving length 450mm,  
Gear box spindle is optional.

## Specifications

	Unit	STK50	STK200	
<b>Capacity</b>	Machining dia. range	mm	Φ20-70	Φ20-100
	Machining length range	mm	200-700	800-1600
	Size of centering	mm	Φ2.5-6.3	Φ2.5-6.3
	Max milling depth.(one side)	mm	5	5
<b>Spindle</b>	Spindle speed	rpm	200-2000	200-2000
	Max. power of spindle	kW	11×2	18.5×2
	Spindle nose	Type	BT50	BT50
	Tool type		Milling / Drilling	Milling / Drilling
<b>Axis</b>	Tool change type		Manual	Manual
	X/Z1/Z2 travel	mm	250/250/250	320/400/400
<b>Clamping</b>	X/Z1/Z2 rapid traverse	m/min	15	15
	Structure		Double V support self-positioning	Double V support self-positioning
	Driven		Hydraulic	Hydraulic
<b>Others</b>	Clamping force	kN	15	15
	Bed degree	degree	30°	30°
	Dimensions (L×W×H)	mm	3150×1700×2050	3850×1760×2100
	Machine weight (about)	kg	4500	7200

# SPM SERIES Special Purpose Machine



CK6163-F



SPM CK6163-F for Steering Rod

SPM for Brake Calipers



HM630TC

Mirror Structure CNC Lathe S-CK350

# SOCIAL RESPONSIBILITY

Z-MaT has expanded relationships with educational institutions and community organizations. We have encouraged public discussion about how to develop coordinated plans for addressing the shortage of trained CNC technicians.

A need was expressed for a low-cost training "work-seat" package that schools and companies can use to provide practical training for CNC control operations. The Z-MaT CNC Control Simulator was developed to address this need.



## Z-MaT CNC Trainer It's Like on the Job Training



- ZMATROL**
- Simple and Efficient Programming
  - High Machining Precision
  - High Degree of Intelligence
  - User-friendly Operation Interface
  - Strong System Stability
  - Good Compatibility and Expandability



FL630

Car Wheel Repairing Machine FL630



FL300-SPM

Multi-tool FL300-MT



Crankshaft Drilling Machine



## Industry Standard CNC Control Program with Operator Station

Capable of 3D Simulation → Industry Standard Hardware & Software → Seamless shift from CNC trainer to real world machine operation



# PROFESSIONAL MANUFACTURER – BROAD PRODUCT LINE

## Wide Product Line

Z-MaT is one of the few world-wide turning center manufacturers that can claim almost two dozen unique series of lathes with over 200 machine models.

Each machine series was designed to meet a specific target application. Individual machine models have their unique outstanding features that can be applied to the specific needs of individual customers.



## Hand Scraping

Expert Hand Scraping at Z- MaT machines to achieve stable machining accuracy. Every Z-MaT machine conducts strict hand Scraping process by skilled technicians, realizing perfect flatness, squareness and straightness required for all surfaces and axes.



Natural Aging Treatment

## Total Quality Management

No matter how far technology may evolve, the one ongoing concern of CNC customers is, "Will the machine make my parts, with higher productivity and without a hassle-And at a price I can justify?" Customers deserve our best effort towards always providing quality, reliability, efficiency and low cost. We have introduced the concept of TPS-Toyota quality system including TQM-Total Quality Management, which involves integrated control of quality, not just of the products but also service and communication, and all processes.

We are working to provide quality that exceeds customer expectations. Our machine Quality inspection process is far beyond the standard in the industry. We combine scientific process, along with disciplined procedural systems to assure the highest quality total experience for our customers.



## Always Innovating & Providing Solutions

The ultimate goal for Z-MaT is to become your Smart CNC Solution provider. We believe continual innovation is the key to accomplishing this goal. Here are a few things we do to increase innovation:

- Every year we invest large amounts of capital in the development of new models of CNC lathes and mills.
- Our advanced applications for live tooling technology provide industry leading capabilities in custom designs and applications for secondary machining operations.
- We are applying world-class quality control standards to our complete manufacturing process.
- Our technicians are recognized by the industry for fast, professional service.
- Our goal is to always get better.
- An entrepreneurial attitude and positive approach to innovation has brought us to the fore front of CNC machine tool design and sales. We will continue to innovate.

Innovation has been a key to our success and we continue to build a culture where ideas are important. Our goal is to practice continual learning, both in terms of technical and professional knowledge and capability. Tell us how we can do better – We're listening.

## Bar Feeders



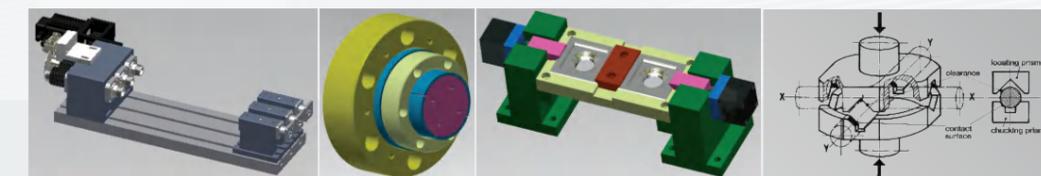
## High Value Human Resources

A key Z-MaT competitive advantage is the quality of our people, and our team approach to delivery of the best possible results. Each member of our team has training and proven expertise, as well as a positive, cheerful, can-do approach to supporting our customers.

Z-MaT supports each team member with training and advanced technology-enabled processes for accomplishing day-to-day tasks. Z-MaT has also created a work environment characterized by mutual trust, recognition for a job well done, and opportunities for personal and professional growth.

Z-MaT works hard to combine individual and combined strengths to generate tangible positive results that exceed customer expectations.

## Examples of Fixtures





# Workpiece Samples

Provider of Precision CNC Machines  
and Smart CNC Solutions  
for the Metal Cutting Industry



## Partners & Quality Components

Z-MaT uses only high-quality, precision components in the manufacture of our line of professional-quality and production-grade CNC machines. While this step is more costly, having quality components built into our machines is the only way to achieve the quality results and long service life our customers expect.

# INDUSTRY LEADING SERVICE NETWORK



## The Pursuit of the Fastest Response is Our Promise

"Responding within 18 Hours" is our commitment to client service standards, the cornerstone of service philosophy and a key to our success. We track our service response patterns and apply scientific process. One of the commitments we promise to our customers is to make sure we keep improving.

We know that technical service is important—as important as the physical machine. Our technicians are here to help provide you the most efficient machine process—this includes help in determining optimal cycle time and optimizing machine maintenance. Most of Z-MaT's valuable services are provided free of charge.



## The Z-MaT International Warranty – 18 Months

Demonstrates our confidence in the quality of our product, and brings peace of mind to our customers.

We will supply a replacement for parts that prove to be defective for a period of 18 months, starting on the machine's bill of lading date. Extended warranty is available at the time of purchase. Please contact your Z-MaT sales representative for details.



### Service Center



Our service and sales team are well trained to use multi-language, materials are also updated to international languages, which is critical capability to supply timely service and avoid loss by misunderstandings. In order to recover the normal operation of customers' machines as quickly as possible, we work to resolve problems speedily by the ways (conference apps, WhatsApp, telephone and Email) which customer is convenient, if necessary by dispatching well trained experienced staff from the worldwide technical centers for repairs, or supplying parts from the parts stocks.

### Parts Center



We will supply a replacement for parts that prove to be defective for a period of warranty. We build abundant stocks and track our service response patterns, 95% spare parts can be shipped out by air-courier within 1 day after receiving the request from customer.

### Pre-Sale Service



To select the most suitable machine with the right configuration and optimized solutions is the first most important step of everything. Machine tools are products that run continuously for many years. This means that machine tools manufacturers have to build very close partnerships with their customers, more so than in any other industries. Integrated with 30 years' experience in auto parts, medical mold and machine tools industries, our application engineers come up with the optimum proposals based on their requirements in regard to machining. Supporting the customer's production activities with greater speed and reliability, as well as cost reduction requirement for improving Z-MaT's client competitive advantage.



### Z-MaT Fast Facts:

- 97%+ Client Retention Rate
- 15,000+ Cooperate Clients
- In business for more than 33 years.
- 100% focus on our clients best interests

### China

- Direct service in china
- Technical Centers
- Headquarter Plant
- Subsidiaries

### Overseas countries

- Head office
- Subsidiaries
- Existing and planned overseas service centers