

■ NC Unit Specifications / FANUC Series

	Item	Specification	0i-TD
Controlled axis	Max. feed axes		4 AXIS
	Feed axes		X/Z/(Cs)
	Max. simultaneously controlled axis		4
	Least command increment	0.001mm / 0.0001"	○
Operation functions	Pulse handle feed	X1, X10, X100	○
	Feedrate per minute	G98	○
	Feedrate per revolution	G99	○
Interpolation functions	Linear interpolation	G01	○
	Circular interpolation	G02, G03	○
	Dwell	G04	○
	Polar coordinate interpolation	G12.1, G13.1	○
	Cylindrical interpolation	G70.1	○
	Variable lead thread cutting	G34	○
	Continuous threading		○
	Reference position return	G28	○
	Reference position return check	G27	○
Feed function	Rapid traverse rate override	F0, 25%, 50%, 100%	○
	Feedrate override		0~150%
Spindle function	Spindle orientation		○
	Rigid tapping		○
Tool functions	Tool number command	T4-Digit / T2-Digit	○
	Tool nose radius compensation	G40 ~ G42	○
	Tool offset pairs		64
	Tool geometry/wear offset	GEOMETRY & WEAR DATA	○
	Tool life management		○
	Tool path graphic display		○
	Automatic tool offset	G36, G37	○
	Direct input of tool offset value measured B		○
Program input	Absolute/incremental programming		○
	Multiple repetitive cycle	G70 ~ G76	○
	Canned cycles	G90, G92, G94	○
	Inch/metric conversion	G20 / G21	○
	Program restart		○
	Retraction for rigid tapping		Opt.
	Max. programmable dimension	±99999.999mm/±9999.9999"	○
	M function	M3 digit	○
	Custom macro		○
	Canned cycle for drilling		○
	Direct drawing dimension programming		○
	Programmable data input	G10	○
	Optional block skip		○
	Workpiece coordinate system	G52 ~ G59	○
Number of registerable programs		400EA	
Setting and display	Alarm & Operator history display	ALARM & OPERATION DISPLAY	○
	Run hour and parts count display	RUNNING TIME & PART NO. DISPLAY	○
	Display spindle & servo overload	SPINDLE & SERVO LOAD DISPLAY	○
	Self-diagnosis function		○
	Extended part program editing	COPY, MOVE, CHANGE OF NC PROGRAM	○
Data input/output	Display screen		10.4" color
	Memory card input/output		○
Editing operation	USB memory input/output		○
	Part program storage size	512Kbyte(1280m)	○
Manual guide i	Manual Guide i		○

SAMSUNG Machine Tools PL 2000MS/2500MS CNC TURNING CENTER



SMEC

SAMSUNG MACHINE TOOLS

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SMEC

SAMSUNG MACHINE TOOLS

SAMSUNG'S Advanced Engineering and Machine Design

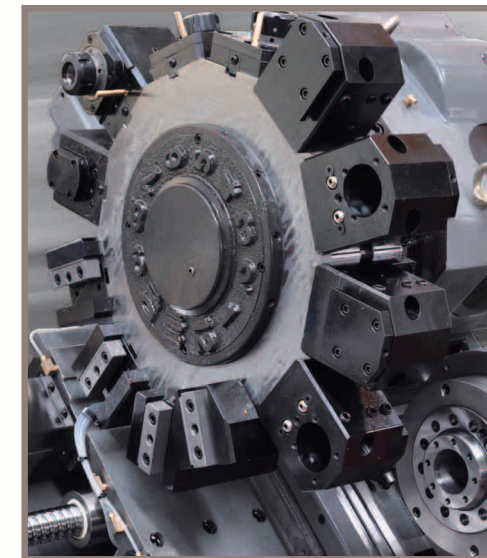
Excellent machine design for Strongest Power in its class and High Precision machining

- 45 degree Tube Type Bed for heavy-duty machining
- Realize High Efficiency by innovative reduction of idle time
- Low-centered design for Low vibration, High Rigidity, Thermal displacement

PL 2000MS/2500MS



PL 2000MS, 2500MS is a heavy-duty, ultra precision Turning Center, combined with Samsung's advanced technological features.



Spindle Speed

Main **4,000 rpm** (PL 2000MS)

3,500 rpm (PL 2500MS)

Sub **6,000 rpm** (PL 2000MS/2500MS)

Spindle Motor(30min/cont.)

Main **15/11 kW** (PL 2000MS)

22/18.5 kW (PL 2500MS)

Sub **7.5/5.5 kW** (PL 2000MS/2500MS)

Rapid travel(X/Z/B)

18/24/24 m/min

Feed Motor(X/Z/B)

3/4/4 kW

Max. Turning Diameter

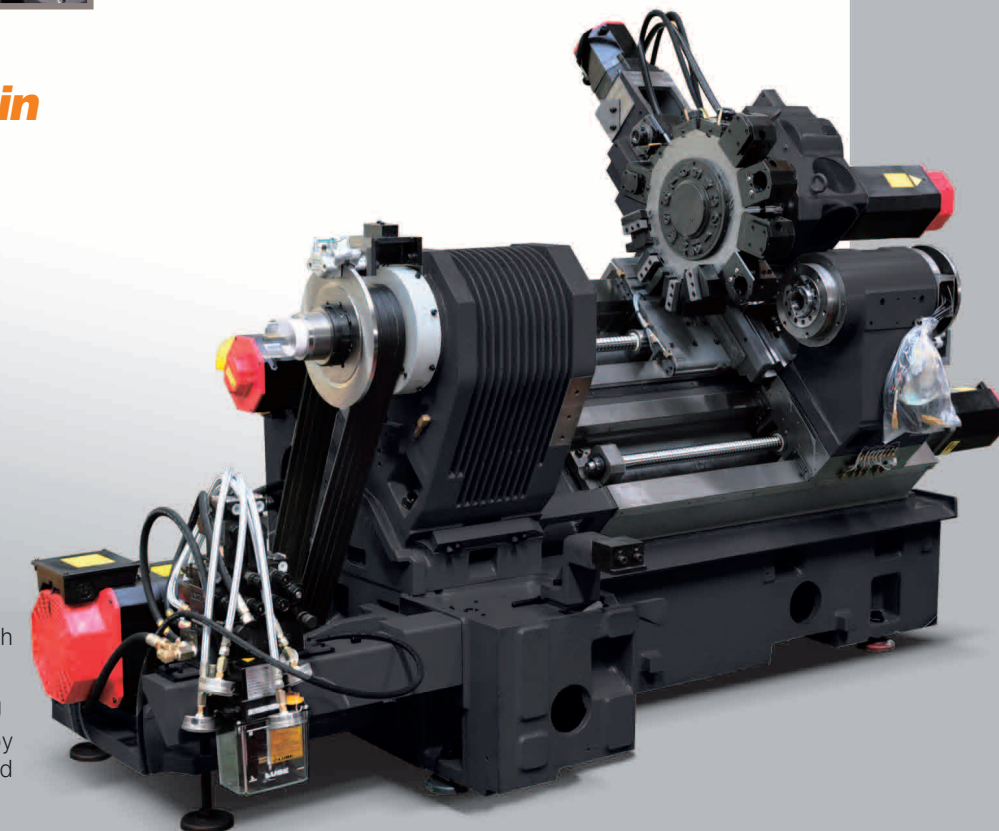
354 mm

Max. Turning Length

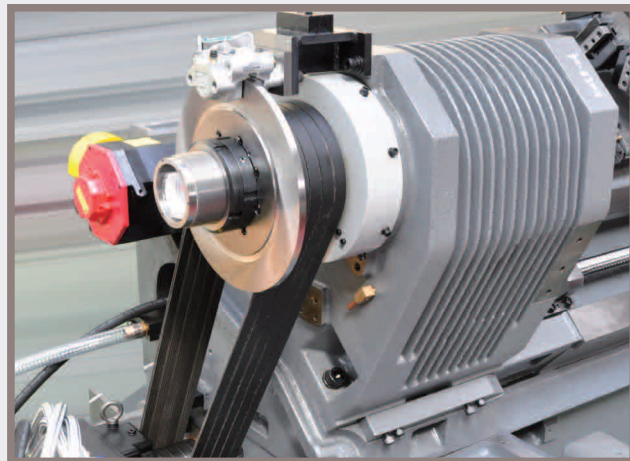
460 mm

■ Highly Reliable and Rigid structural design

- One piece Meehanite casting with heavily ribbed torque tube design
- Rigid bed supports for powerful cutting
- Ensure machine's lifetime longer by unsurpassed vibration dampening and thermal displacement design



High Precision, High Rigidity Spindle



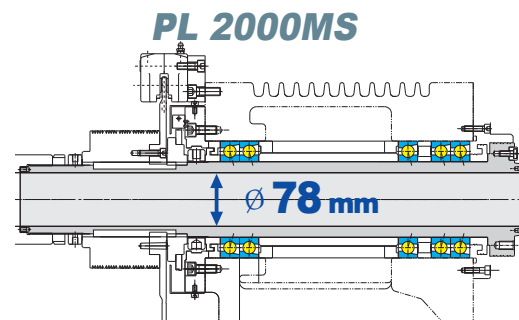
Pin Tube Rib Design for Minimal Thermal Growth

The pin tube rib design of the Headstock ensures minimal thermal growth and prevent precision change by thermal growth. Also, symmetrical design of the Headstock provide minimal thermal growth.

High Precision, High Rigidity Spindle

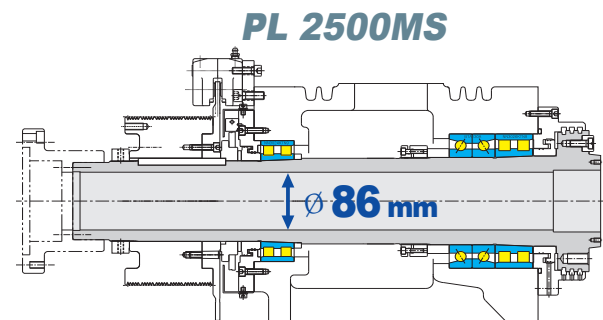
Spindle is supported by two ultraprecision bearings (class P4) in the front and rear. In the middle of two bearings dual Angular Thrust Ball Bearings provide unsurpassed stability on a heavy-duty.

Main-Spindle & Headstock



Spindle Speed (8" Chuck)

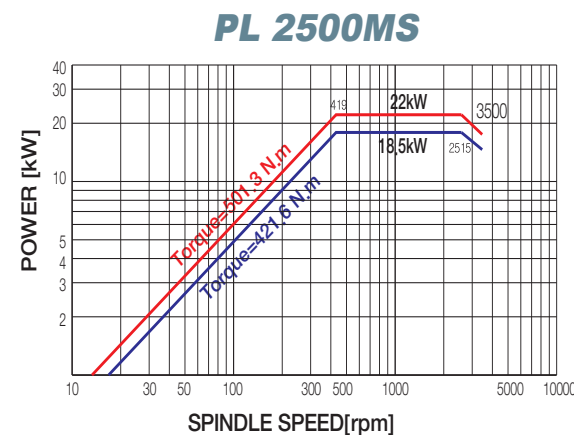
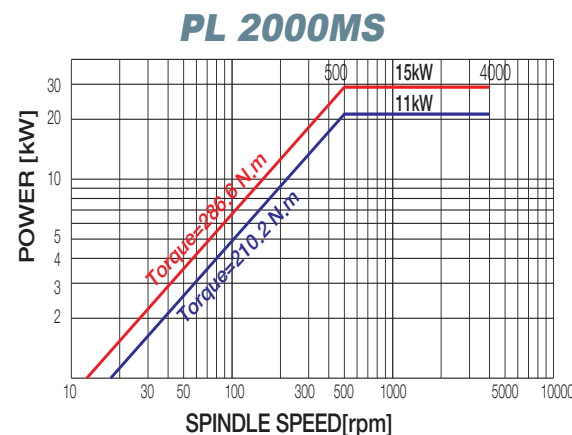
Max **4,000 rpm**



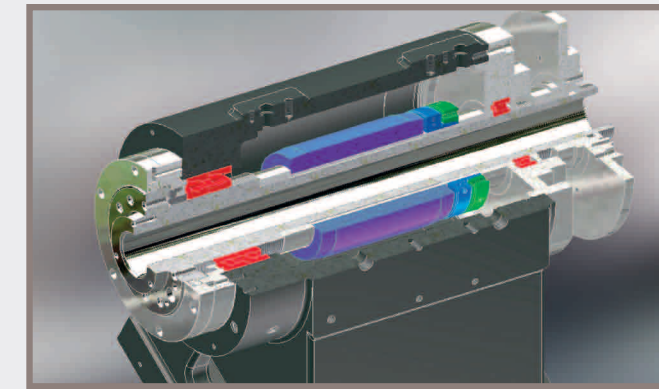
Spindle Speed (10" Chuck)

Max **3,500 rpm**

Main-Spindle Power & Torque Diagram



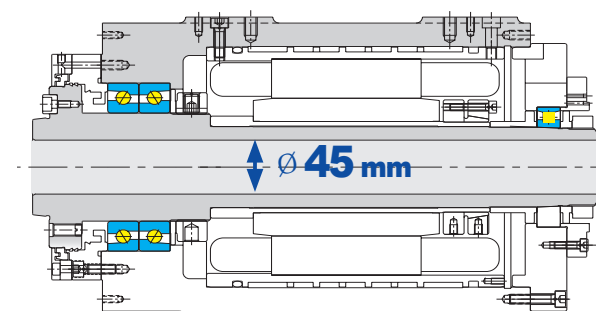
High Accuracy, High Rigidity Sub-Spindle



Built-in Sub-Spindle Motor

- The sub-spindle with full C-axis capability allows milling, drilling and tapping on the back side of parts, and a powerful 7.5kW Fanuc built-in motor provides fast acceleration with high torque (59.7 N.m)
- Precision angular contact ball bearings located in the front and double row cylindrical roller bearings in the rear of the sub-spindle ensure heavy-duty cutting as well as unsurpassed surface finish.

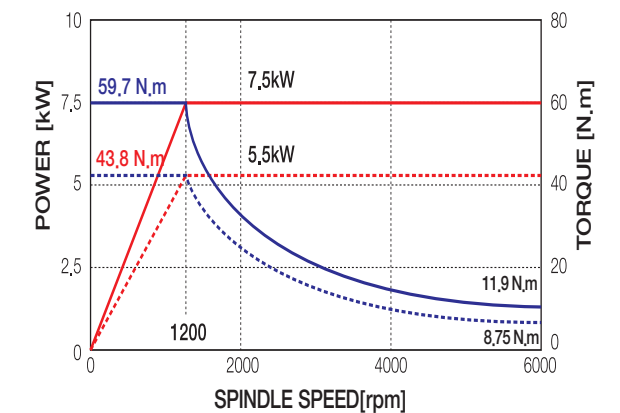
Sub-Spindle & Headstock



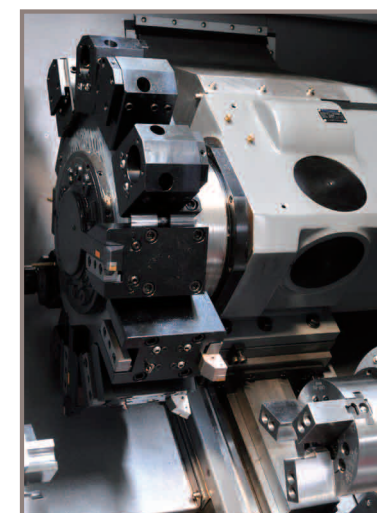
Spindle Speed (6" Chuck)

Max **6,000 rpm**

Sub-Spindle Power & Torque Diagram



Servo Tailstock Interface

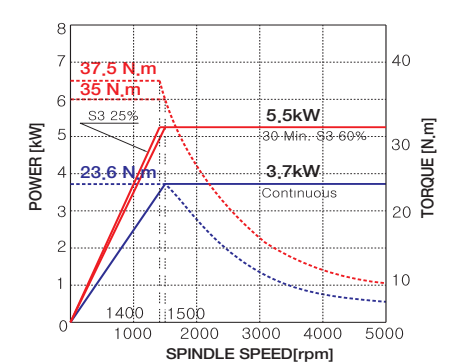


Fast Indexing and Heavy-Duty Turret Design

The 12 stations BMT turret which has strong Curvic Coupling and hydraulic clamp force is able to set the tools in any position and various type of working in one set-up. Using BMT65 Tool Holder ensure High Precision and High Rigidity machining. Turret indexing is non-stop, bi-directional with a fast 0.2 second next station index time.

Indexing Time **0.2 sec** Number of Tool Positions **12 Stations** Milling Spindle Speed **5,000 rpm** Tool Holder **BMT65**

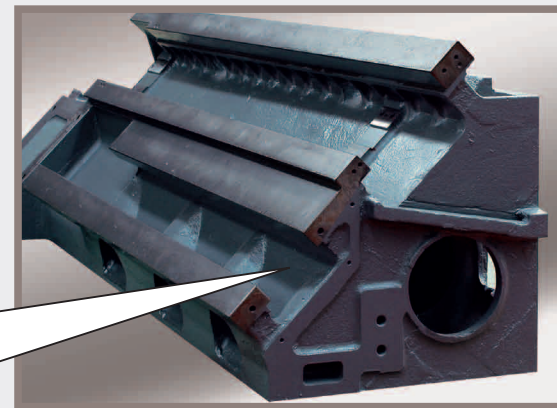
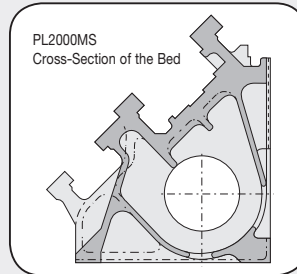
Milling Motor Torque Diagram



Machine Structure

Rigid 45 degree Slant Bed

45 degree slant torque tube design bed and wide guide slide way ensure long term rigidity and machining accuracy.



Featuring superior workability and chip-discharging capability, the bed is designed in a single tube structure boasting strong durability even in heavy-duty cutting.

Highly reliable Lubrication unit

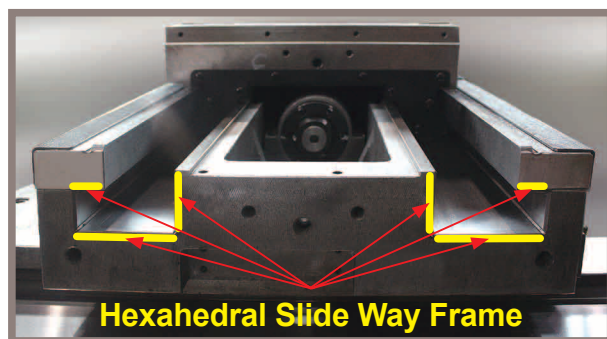
Highly reliable LUBE unit discharges the right amount of lubrication oil to each guide way automatically.

· MAKER : **Lube** · Capacity : **1.8 l**



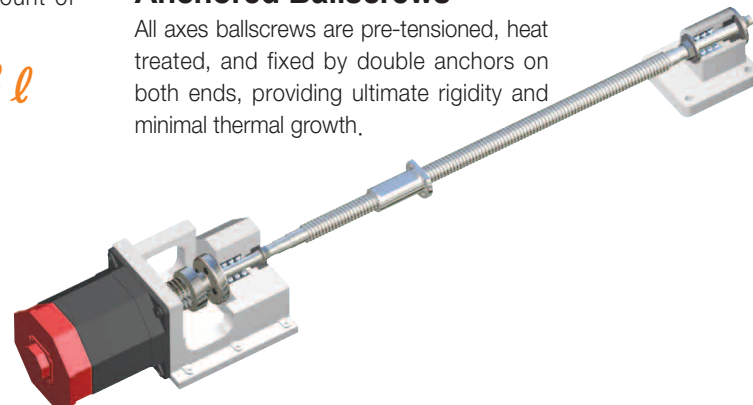
Hexahedral Slide Way Frame

Wide integral way is machined from casting, induction hardened and precision ground to ensure long-term rigidity, machining accuracy and heavy-duty machining.



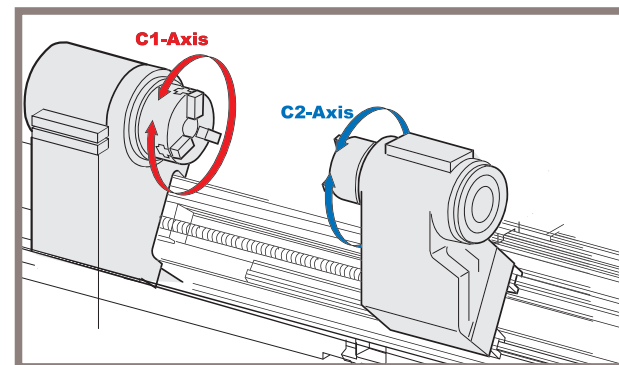
Pre-tensioned and Double Anchored Ballscrews

All axes ballscrews are pre-tensioned, heat treated, and fixed by double anchors on both ends, providing ultimate rigidity and minimal thermal growth.

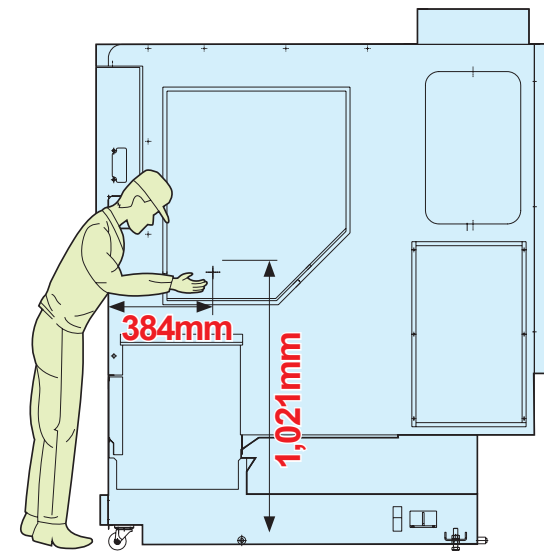


Synchronized C1 and C2-Axis Indexing

Synchronized C1-axis(main spindle) and C2-axis(sub-spindle) indexing provides machining flexibility in a wide variety of workpiece configurations. From simple turning and milling to multi-axis simultaneous machining, all operations can be completed in one set-up.

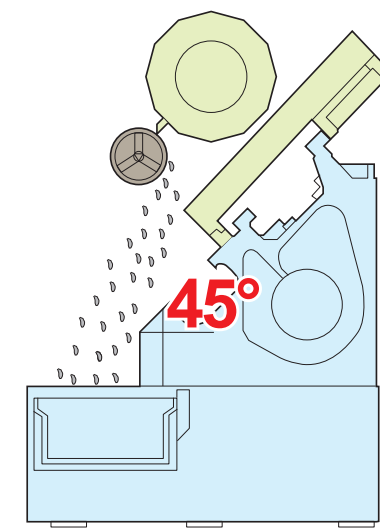


Machine Structure



High-accessibility

Improving the user's accessibility for easy work between tool and workpiece



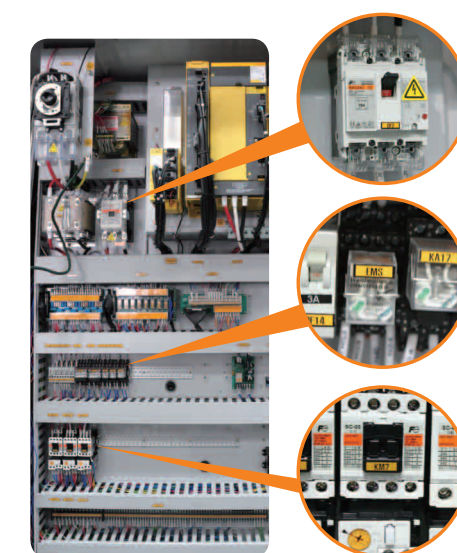
Easy chip disposal

45 degree slant bed to achieve easy chip disposal and tool inspection as well as tool change



User friendly centralized control panel.

1. Solid BEZEL for maintaining the original form of control panel
2. High-reliability of Fuji products(Cycle Start, Feed Hold, Power On/Off, key S/W)
3. Preventing to erase the name of the buttons with transparent cap (cap changable)
4. High-intensity LED lamp
5. Manual turret control and tool No display
6. Serve control panel for additional options
7. Swivel control panel for user friendly

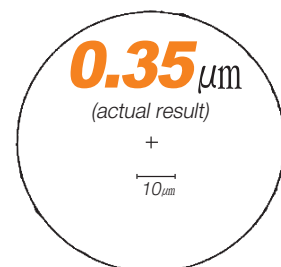
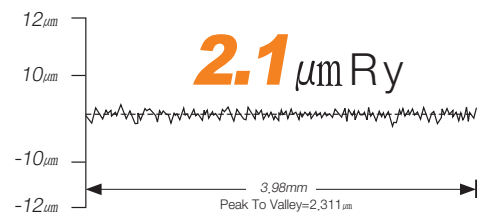


Electric Cabinet Made with Highly Reliable Components

- Magnet switch, circuit breaker, Key S/W (Fuji)
- Relays (Widemuller, Omron)

High Precision

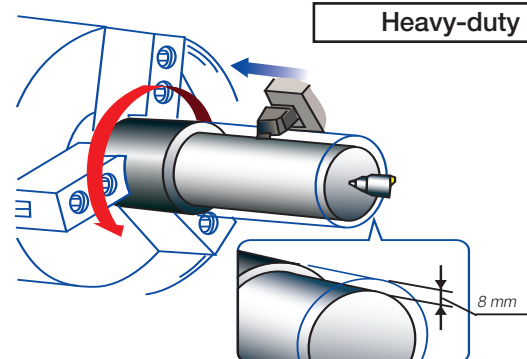
- Surface Roughness <O.D. cutting>
- Roundness



Cutting condition	
Tool	Diamond tool (nose radius 0.5mm)
Material	AL150 (Aluminum)
Cutting speed	230m/min
Feedrate	0.05mm/rev
Depth of cut	0.1mm
Outer diameter	200mm
Filter	1-50

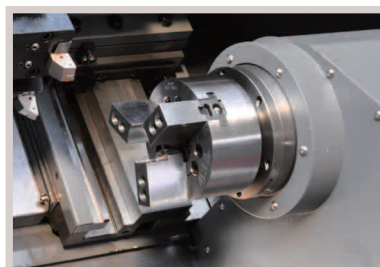
Processing Speed

- Turning Performance (material:SM45C) PL 2000MS



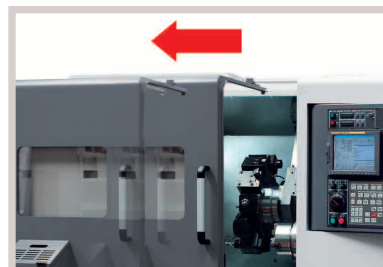
Spindle speed
580 rpm
Cutting speed
120 m/min
Depth of cut
8 mm <Spindle Load 60%>
Feedrate
0.4 mm/rev

Standard Accessories



Sub-Spindle

Optional Accessories



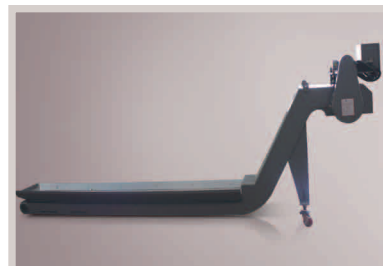
Auto Door



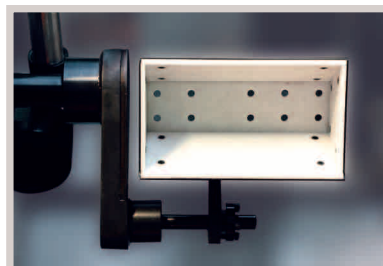
Tool Presetter



Automatic Lubricator

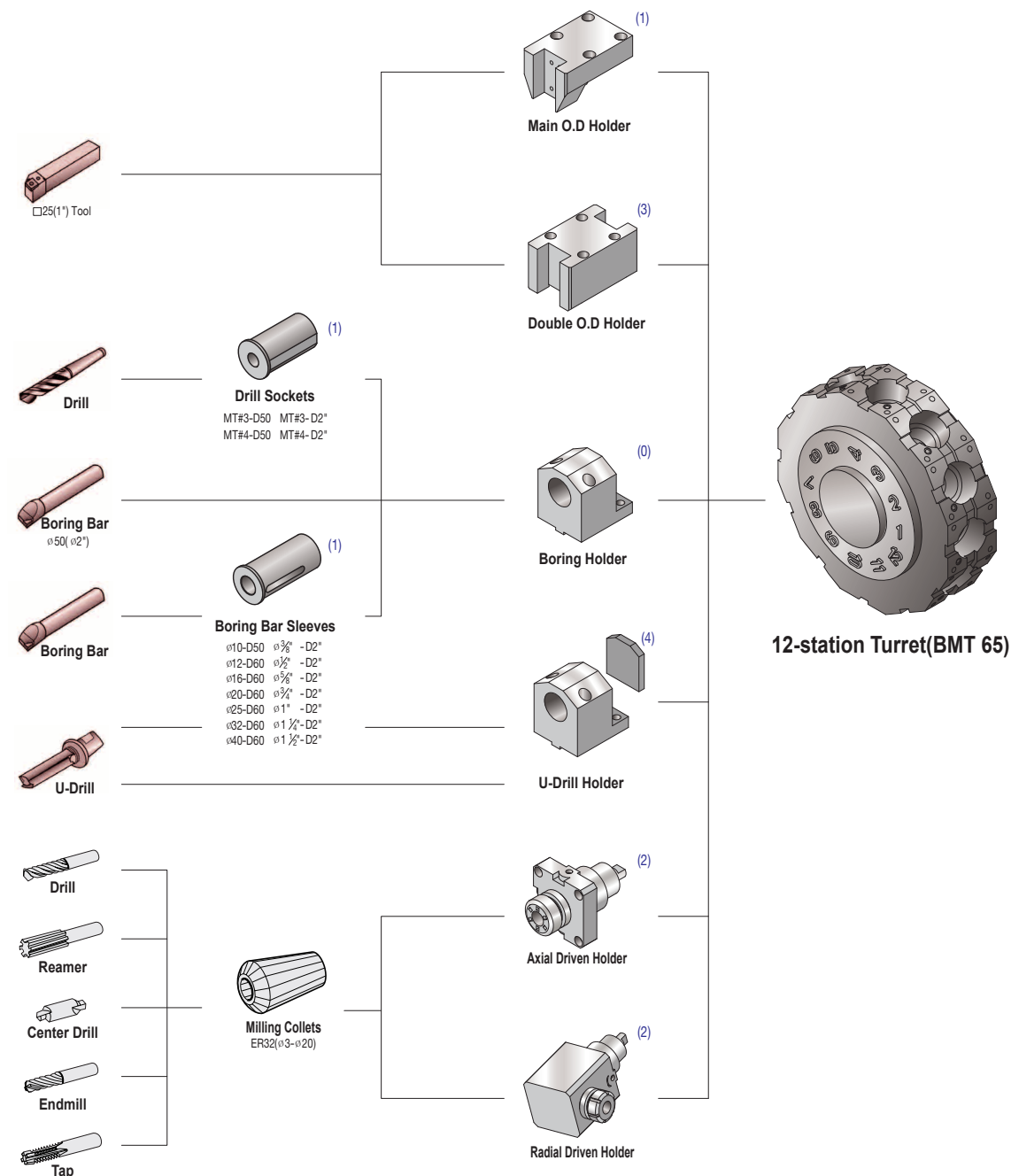


Chip Conveyor



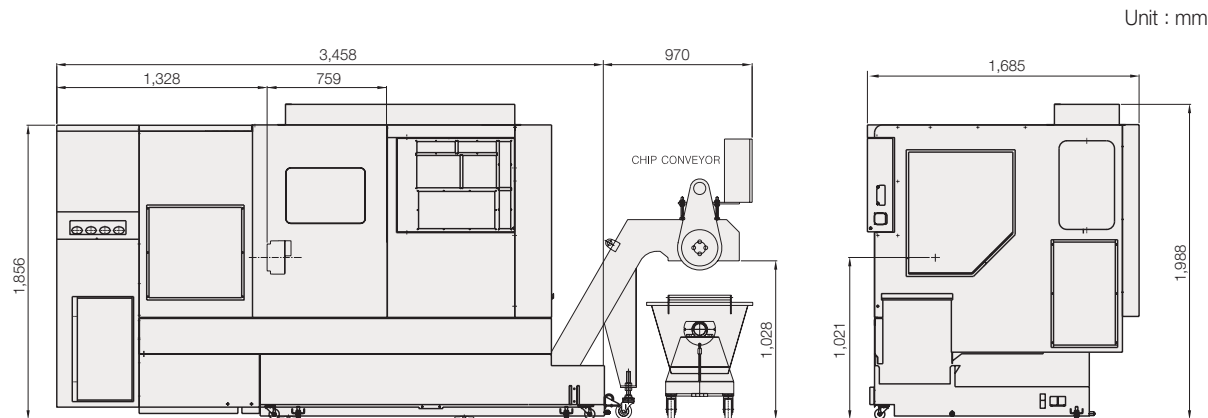
Parts Catcher

Tooling System



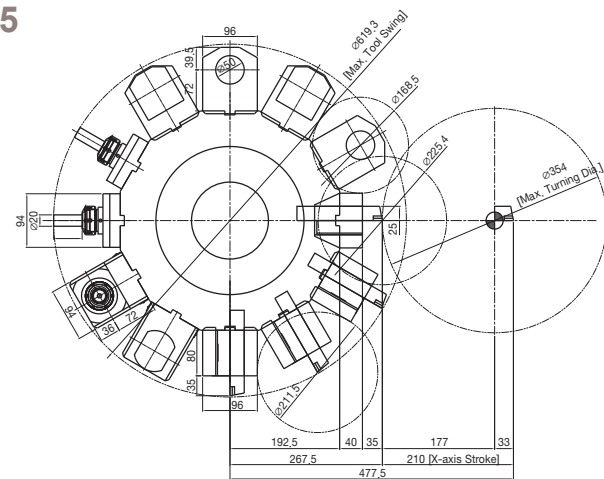
() : Standard Set Numbers

Machine Dimensions



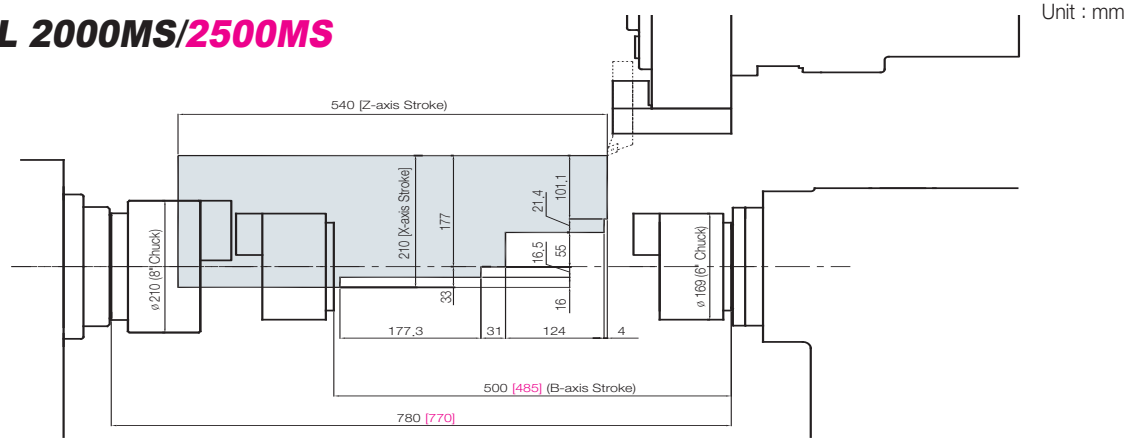
Turret Head Interference

BMT65



Work Range

PL 2000MS/2500MS



MAIN BORING HOLDER / BMT65

Major Specifications

DESCRIPTION			PL 2000MS	PL 2500MS
CAPACITY	Swing over bed	mm	ø 650	
	Swing over saddle	mm	ø 480	
	Max. machining diameter	mm	ø 354	
	Max. machining length	mm	460	
TRAVELS	Travel	X / Z / B axis mm	210 / 515 / 500	
	Rapid traverse	X / Z / B axis m/min	18 / 24 / 24	
MAIN SPINDLE	Spindle speed	rpm	4,000	3,500
	Spindle nose	ASA	A2-6	A2-8
	Spindle through hole diameter	mm	ø 78	ø 86
	Draw tube I.D.	mm	ø 66	ø 77
	Min. spindle indexing angle(C-Axis)	deg	0,001	
SUB SPINDLE	Spindle speed	rpm	6,000	
	Spindle nose	ASA	A2-5	
	Spindle through hole diameter	mm	ø 45	
	Draw tube I.D.	mm	ø 36	
	Min. spindle indexing angle(C-Axis)	deg	0,001	
MOTOR	Number of tool stations	ea	12(BMT65)	
	Shank size for square tool	mm	□ 25	
	Shank diameter for boring bar	mm	ø 50	
	Indexing time	sec	0,2	
	Rotary tool spindle speed	rpm	5,000	
	MOTOR	Spindle drive motor(30min/cont.)	kW	15/11
Rotary tool spindle motor(30min/cont.)		kW	7.5/5.5	
Milling		kW	5,5 / 3,7	
X / Z / B axis		m/min	3 / 4 / 4	
REQUIRED FLOOR SPACE(L x W)			mm	3,458 x 1,685
MACHINE WEIGHT			kg	5,500
CONTROLLER			Fanuc Oi-TD	

• Design and specifications subject to change without notice.

Standard Accessories

- COOLANT SYSTEM
- SPLASH GUARD
- HAND TOOLS
- HYDRAULIC CHUCK(10" or 8", 6")
- SOFT JAWS 3 SETS
- LEVELING BLOCK & BOLT
- HOLDER & SLEEVE STANDARD 1SET

Optional Accessories

- CHIP CONVEYOR
- PARTS CATCHER
- AUTO DOOR
- TOOL PRESETER