

■ NC Unit Specifications / FANUC 18i-TB

Item	Specification
Controls Controlled Axes(max) Simultaneous Controllable Axes Least Input Increment/Least Command Increment	4(6) axes 4 axes X/Y/Z axis : 0.001mm(0.0001") B axis : 0.001deg.
Spindle functions Spindle Speed Command Spindle Speed Override Spindle Orientation (1 Position)	S5 digits, Binary Output 10% ~ 150% Provided
Programming functions Maximum Programmable Dimensions Interpolation Functions Absolute and Incremental Command Decimal Point Input Miscellaneous Function Rigid Tap Program Stop Program End Programmable Data Input(G10)	+/- 9999.9999" (+/- 8digits) Positioning/Linear/Circular(G00/G01/G02/G03) G90 ~ G91 Provided M2 Provided M00, M01 M02, M30a Provided
Feed functions Manual Jog Feed : Rapid, Jog Feed, Handle Manual Handle Feed-rate F initial value setting Rapid Traverse Override Manual Continuous Feed Jog-Handle (Same Mode) Automatic Corner Override Incremental Feed	0~5,000mm/min[197 ipm] x1, x10, x100 Provided F0, F25, F50, F100% Simultaneous, 1 Axis Provided Provided X1-1000
Tool functions Cutter Compensation C Tool Offset Number Tool Life Management	G40~G42 64 Pairs Provided
Tape functions Tape Code Number of Register-able Program Part Program Storage Length	EIA RS-244-A/ISO 840(Automatic Recognition) 63 160M(524 FT)
Other functions Custom Macro B Skip Function CRT/MDI Program Protect Key Back Ground Editing Run Hour Display Program Restart	Provided G31 10.4" Color LCD/MDI Provided Provided Provided Provided
Options Advanced Preview Control(G80) Additional Work Coordinate System(48 Pairs) Polar Coordinate Command / Interpolation Helical Interpolation Cylindrical Interpolation(Additional axis needed) Extended Part Program Editing Single Direction Positioning(G60) Coordinate System Rotation External Data Input / Output Optional Chamfering/Corner R Optional Block Skip 9 EA Handle Interrupt Part Program Storage	320/640/1280/2560M(8,400FT)



SAMSUNG Machine Tools PL2000SY CNC TURNING CENTER



SMEC

SAMSUNG MACHINE TOOLS

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SAMSUNG MACHINE TOOLS

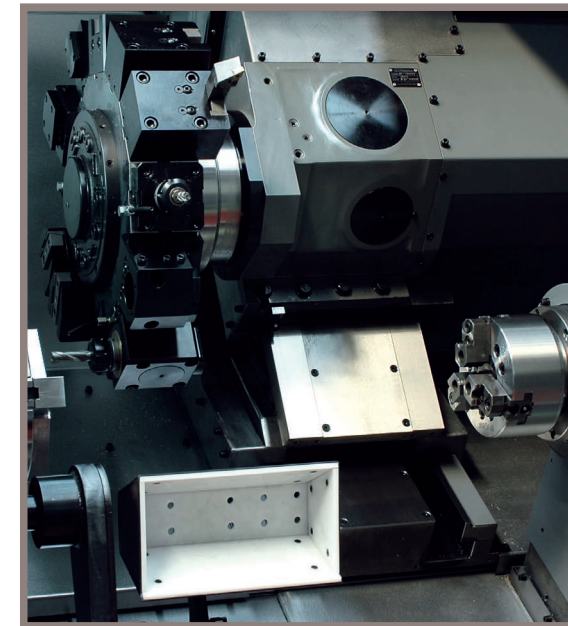
SAMSUNG'S Advanced Engineering and Machine Design

- Cast iron structure for superior dampening characteristics and thermal displacement
- Rigid 30 degree slant bed design for heavy-duty machining
- Torque tube design to minimize bending and twisting
- Integrated box ways for long-term rigidity and heavy-duty machining

PL 2000SY



PL2000SY is a heavy-duty, ultra precision Turning Center, combined with Samsung's advanced technological features.



Spindle Speed

Main **4,000 rpm**

Sub **6,000 rpm**

Spindle Motor(30min/cont.)

Main **15/11 kW**

Sub **7.5/5.5 kW**

Rapid travel(X/Z/Y/B)

18/24/12/24 m/min

Feed Motor(X/Z/Y/B)

3/4/3/4 kW

■ Highly Reliable and Rigid Structural Design

- One piece Meehanite casting with heavily ribbed torque tube design
- Rigid bed supports for powerful cutting
- Excellent vibration dampening and thermal displacement design

Max. Turning Diameter

360 mm

Max. Turning Length

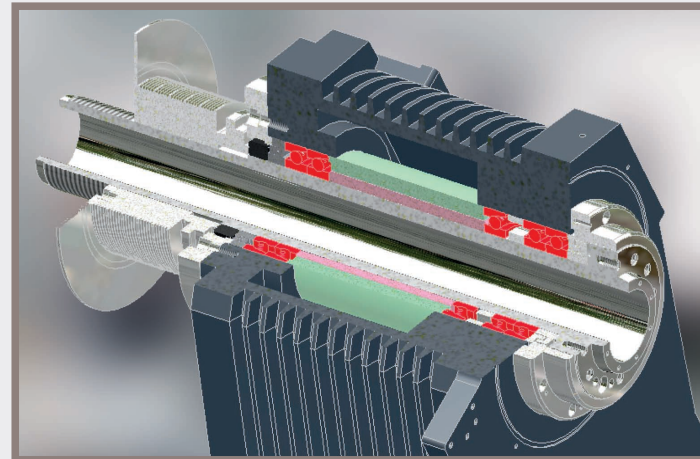
520 mm

Y Axis Travel

± 50 mm



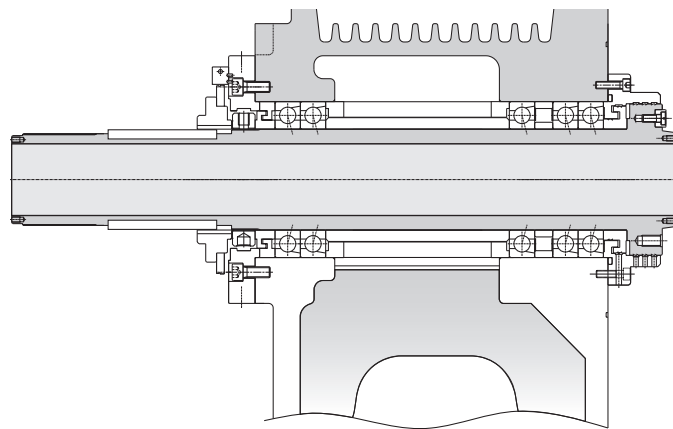
High Precision, High Rigidity Spindle



■ Pin Tube Rib Design for Minimal Thermal Growth

The pin tube rib design of the Headstock ensures minimal thermal growth, and precision(class P4) angular contact ball bearings in the front and rear provides high rigidity for heavy-duty machining and unsurpassed surface finish.

■ Main-Spindle & Headstock



The Spindle and Headstock are machined and ground in temperature controlled environment and assembled in a clean room.

Max. Bar-work capacity

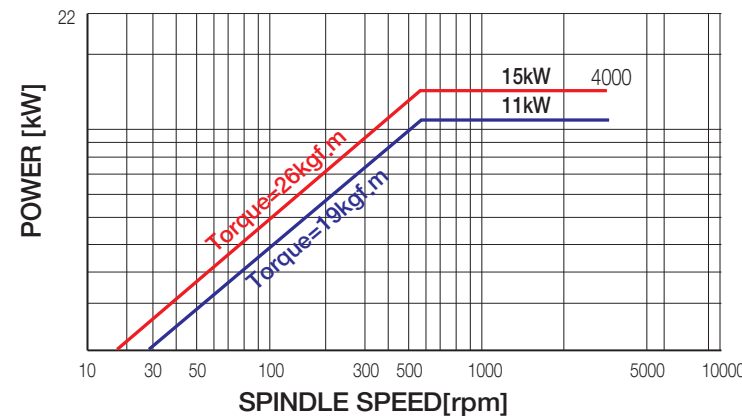
Ø 65 mm

Spindle Speed (8" Chuck)

Max 4,000 rpm

■ Main-Spindle Power & Torque Diagram

Unit : inch



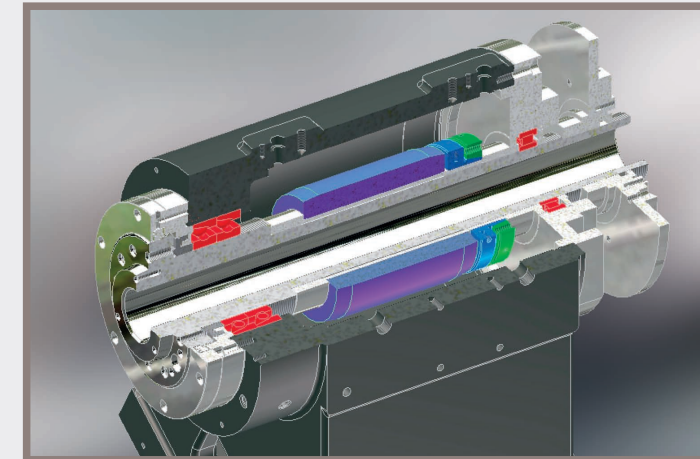
Spindle Power

15/11 kW

Maximum Spindle Torque

26kgf.m

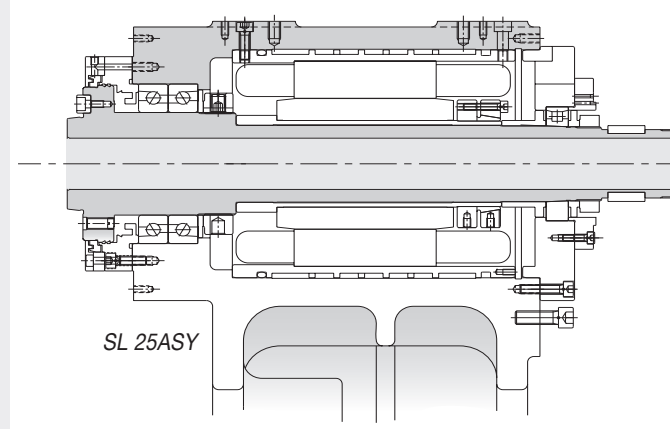
High Accuracy, High Rigidity Sub-Spindle



■ 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 (6kgf.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



The Spindle and Headstock are machined and ground in temperature controlled environment and assembled in a clean room.

Max. Bar-work capacity

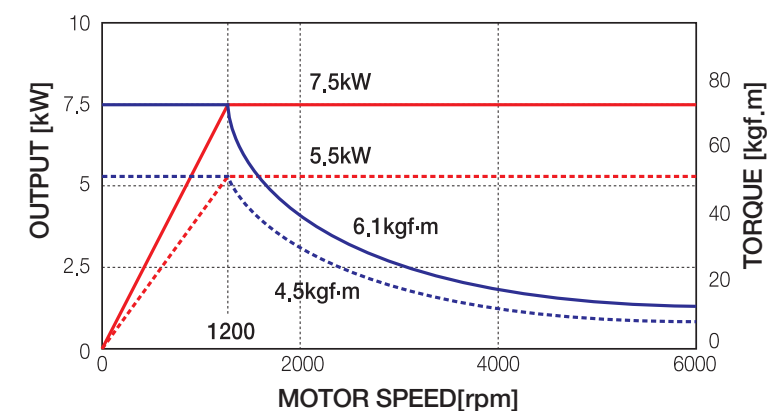
Ø 35 mm

Spindle Speed (6" Chuck)

Max 6,000 rpm

■ Sub-Spindle Power & Torque Diagram

Unit : inch



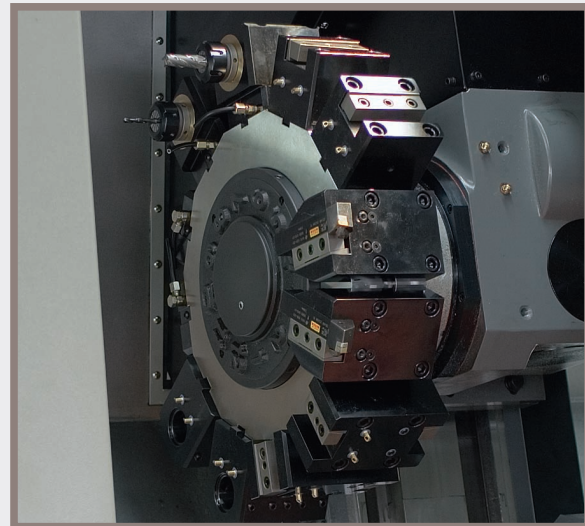
Spindle Power

7.5/5.5 kW

Maximum Spindle Torque

6kgf.m

Turret Structure



Fast Indexing and Heavy-Duty Turret Design

The 12 station heavy-duty turret features a large diameter 3-piece Curvic coupling and 3553kgf.m of hydraulic clamp force. The heavy-duty design provides high rigidity for heavy cutting, unsurpassed surface finishes, and long tool life. Turret rotation, deceleration and clamp are all controlled by a reliable high torque servo motor. Turret indexing is non-stop bi-directional with a 0.2 second next station index time. Each turret station is capable of accepting both milling and turning tools.

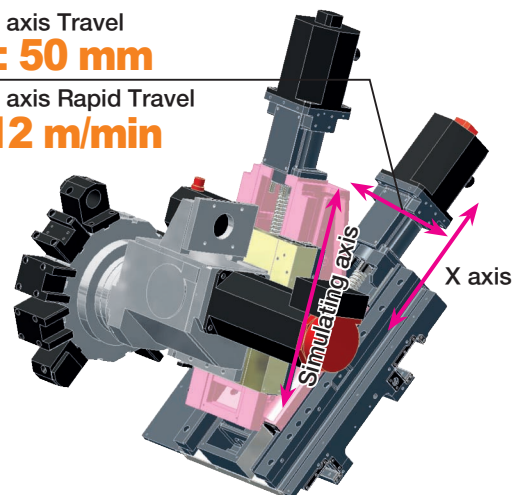
Variations

Y-Axis Machining

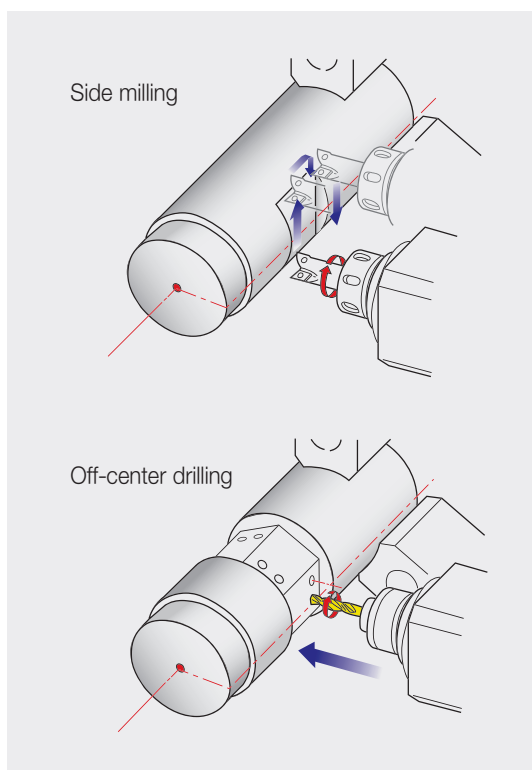
Y-axis adds integrated machining feature to a conventional turning center, providing machining capability on the workpiece that is not parallel or perpendicular to the spindle center line.

Y axis Travel
± 50 mm

Y axis Rapid Travel
12 m/min



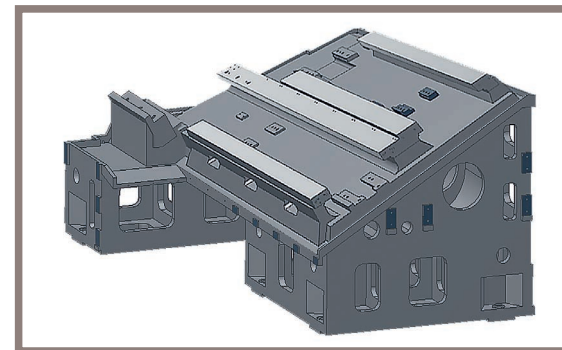
Bar machining with Y-axis control



Machine Structure

Rigid 30 degree Slant Bed

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



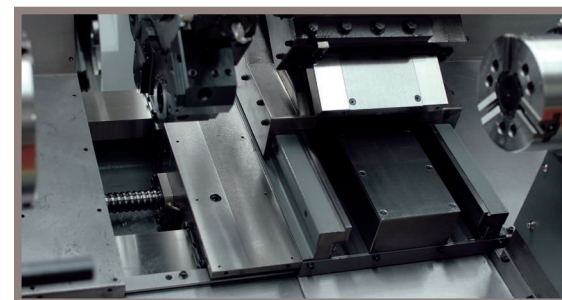
Swivel Operation Panel

Swivel operation panel of 10.4 inch color TFT LCD monitor can turn to 81 degree, providing operators with easy access to the control panel while working on the machine.



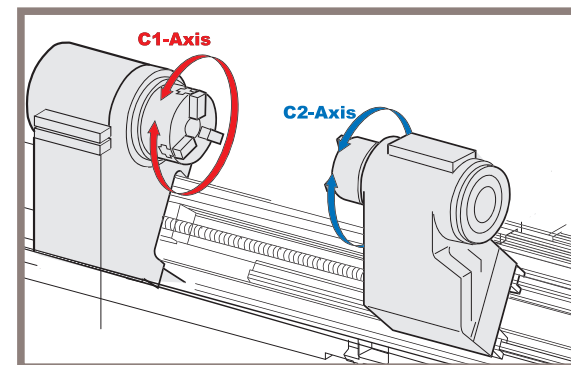
Hexahedral Slide Way Frame

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



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.



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.



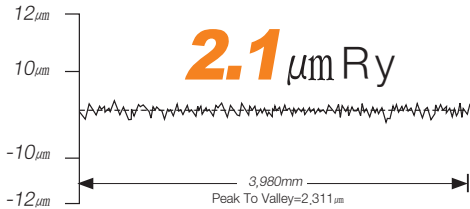
Sub-Spindle Oil Cooling Unit

Sub-spindle is surrounded by an oil jacket cooling system to minimize thermal displacement and to ensure machining accuracy regardless of different machining conditions.



High Precision

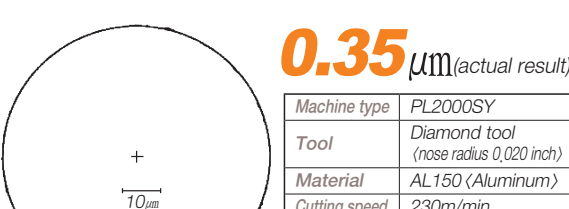
Surface Roughness (O.D. cutting)



Machine type	PL2000SY
Tool	Diamond tool (nose radius 0.020 inch)
Material	AL150 (Aluminum)

Cutting speed	230m/min
Feedrate	0.05mm/rev
Depth of cut	0.1mm
Outer diameter	200mm

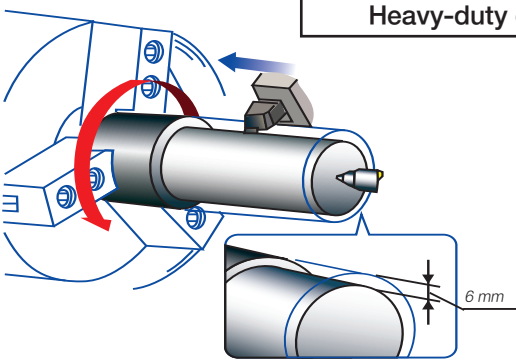
Roundness



Machine type	PL2000SY
Tool	Diamond tool (nose radius 0.020 inch)
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) PL2000SY



Heavy-duty cutting (O.D) (25mm × 25mm qualified tool)

Spindle speed
518 rpm
Cutting speed
120 m/min
Depth of cut
6 mm <Spindle Load 40%>
Feedrate
0.3 mm/rev

Standard Accessories



Tool Presetter

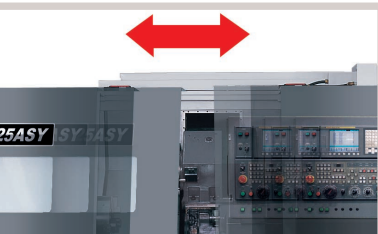


Automatic Lubricator



Full Cover

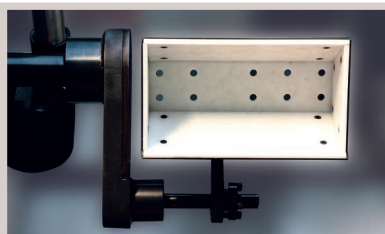
Optional Accessories



Auto Door

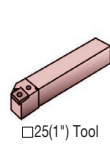


Chip Conveyor

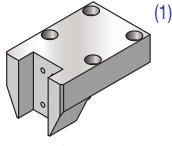


Parts Catcher

Tooling System



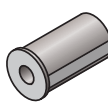
25(1") Tool



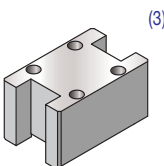
Main O.D Holder



Drill



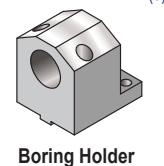
Drill Sockets
MT#3-D50 MT#3-D2"
MT#4-D50 MT#4-D2"



Double O.D Holder



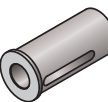
Boring Bar
φ50(φ2")



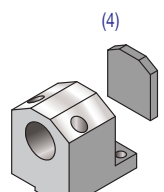
Boring Holder



Boring Bar



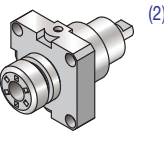
Boring Bar Sleeves
φ10-D50 φ3/8" -D2"
φ12-D60 φ1/2" -D2"
φ16-D60 φ5/8" -D2"
φ20-D60 φ3/4" -D2"
φ25-D60 φ1" -D2"
φ32-D60 φ1 1/4" -D2"
φ40-D60 φ1 1/2" -D2"



U-Drill Holder



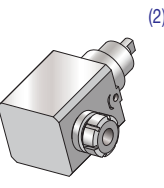
U-Drill



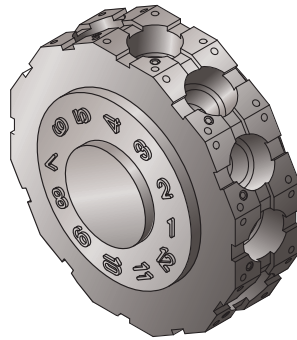
Axial Driven Holder



Milling Collets
ER32(φ3-φ20)



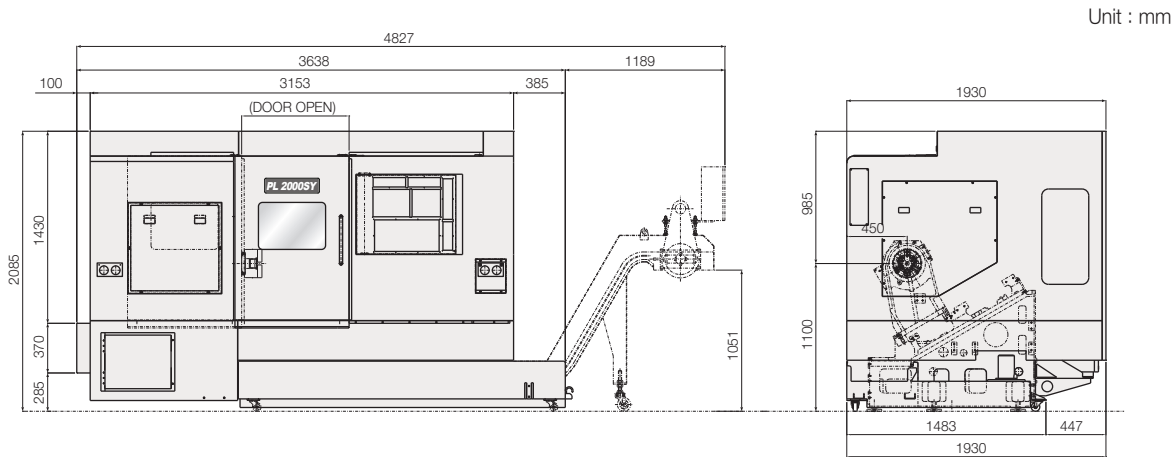
Radial Driven Holder



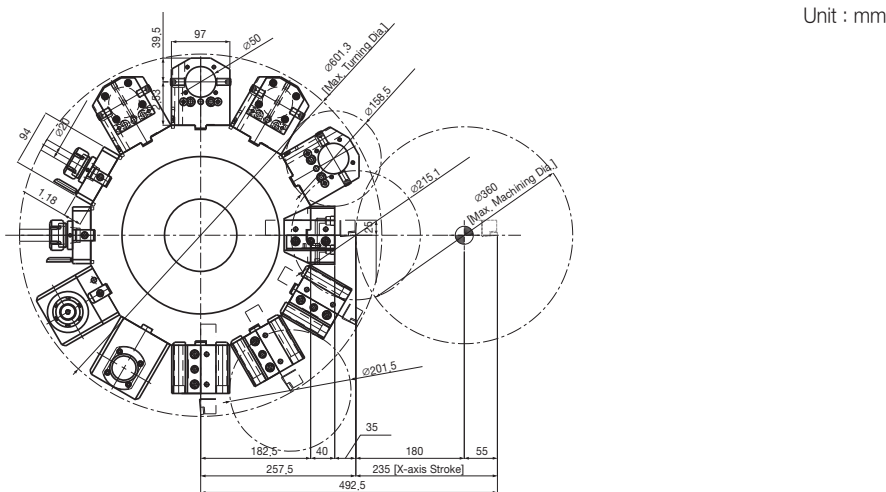
12-station Turret(BMT 65)

() : Standard Set Numbers

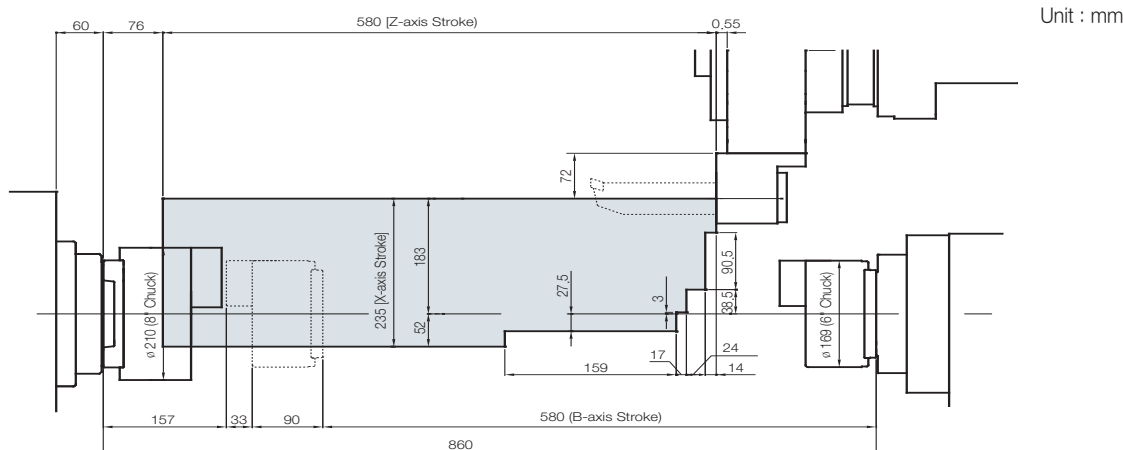
Machine Dimensions



Turret Head Interference



Work Range



Major Specifications

DESCRIPTION			PL2000SY
CAPACITY	Swing over the bed	mm	φ 650
	Swing over the cross slide	mm	540
	Max. machining diameter	mm	360
	Max. machining length	mm	520
MAIN SPINDLE	Chuck size	inch	8
	Speed	rpm	4,000
	Spindle nose	ASA	A2-6
	Bore diameter	mm	φ 78
	Draw tube I.D.	mm	66
	Motor(30min/cont.)	kW	15 / 11
SUB SPINDLE	Chuck size	inch	6
	Speed	rpm	6,000
	Spindle nose	ASA	A2-5
	Bore diameter	mm	45
	Draw tube I.D.	mm	36
TRAVEL	Motor(30min/cont.)	kW	7.5 / 5.5
	X/Z/Y/B axis travel	mm	235 / 580 / 100 / 580
	X/Z/Y/B rapid traverse rate	m/min	18 / 24 / 12 / 24
	X/Z/Y/B feed motor	kW	3 / 4 / 3 / 4
TURRET	Number of tool positions	st.	12
	Indexing time	sec	0.2
	Shank size for square tool	mm	□ 25
	Shank diameter for boring bar	mm	φ 50
	Live tool type		BMT65
	Live tool speed	rpm	5,000
	Milling motor (30min/cont.)	kW	5.5 / 3.7
ELECTRIC POWER SUPPLY			kVA
REQUIRED FLOOR SPACE			mm
MACHINE WEIGHT			kg
CONTROLLER			

• Figures in inches are converted from metric measurements.
 • Design and specifications subject to change without notice.

Standard Accessories

- COOLANT SYSTEM
 • BUILT-IN WORK LIGHT
 • SPLASH GUARD
 • HAND TOOLS
 • TOOL HOLDER
 • 8" HYDRAULIC CHUCK
 • 6" HYDRAULIC CHUCK

• TOOL PRESETTER
 • SOFT JAW
 - 8", 6" each 3 SET
 • LEVELING BLOCK

Optional Accessories

- HARD JAW
 - 8", 6" each 1 SET
 • CHIP CONVEYOR
 • PARTS CATCHER
 • AUTO DOOR
 • AIR BLOW UNIT
 • AUTO MEASURING SYSTEM