

NC 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	○
	Feedrate per minute	○
	Feedrate per revolution	○
Interpolation functions	Linear interpolation	○
	Circular interpolation	○
	Dwell	○
	Polar coordinate interpolation	○
	Cylindrical interpolation	○
	Variable lead thread cutting	○
	Continuous threading	○
	Reference position return	○
	Reference position return check	○
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	○
	Tool geometry/wear offset	GEOMETRY & WEAR DATA
	Tool life management	○
	Tool path graphic display	○
	Automatic tool offset	○
	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	○
	Max. programmable dimension	±99999.999mm/±9999.999"
	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	○
	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
	Display screen	10.4" color
Data input/output	Memory card input/output	○
	USB memory input/output	○
Editing operation	Part program storage size	512Kbyte(1280m)
Manual guide i	Manual Guide i	○



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❖ Design and specifications subject to change without notice.

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SMEC

PL 45 series

CNC TURNING CENTER



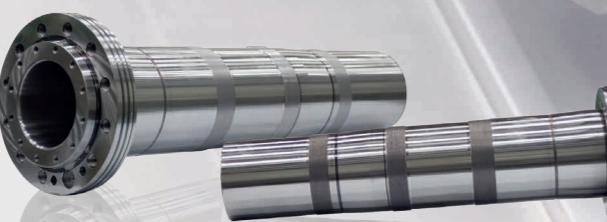
- 1988 - Started as Samsung Heavy Industries Machine Tools Business
- 1989 - Horizontal and vertical machining center technology partnership with OKK Japan
- 1991 - Turning center and vertical machining center technology partnership with Mori Seiki
- 1996 - 5-sided processing center technology partnership with Toshiba
- 1999 - Spun out from Samsung Aerospace Industries and established SMEC Co, Ltd

SMEC
Company
Engineering
Machine Tools
Samsung

PL 45L PL 45XL PL 45LM PL 45XLM

Strongest in class with superb structural design
Simultaneous heavy duty and precision turning

- 45 degree torque tube type bed to support heavy duty turning
- Significantly reduced non-cutting time and efficient turning
- Low-center of gravity reducing vibration, thermal deformation and improving rigidity



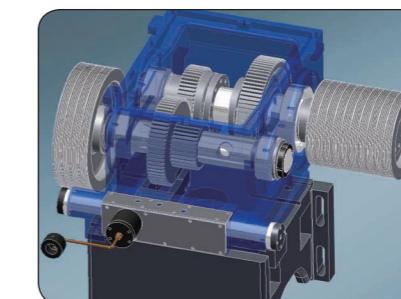
High Accuracy, High Rigidity Spindle

Pin Tube Rib Design for Minimal Axis Heat Transfer

Radiator fan-like pin tube rib design dissipates heat generated by axis movements, maintaining minimal thermal expansion.



Output Converting Transmission

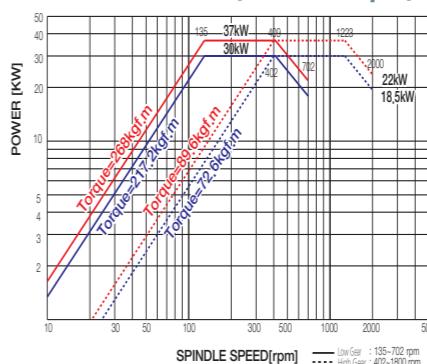


Equipped as standard feature, high Output Converting Transmission provides heavy-duty machining.

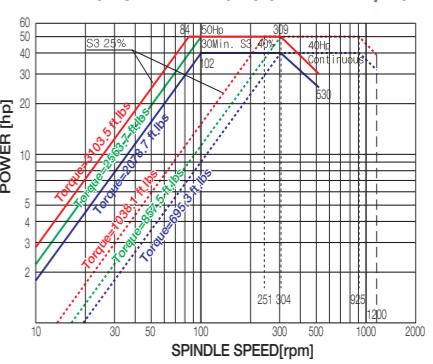


Spindle Power & Torque Diagram

PL 45L, 45LM (15", 2,000rpm)



PL 45L(BB), PL 45LM(BB) (24", 1,200rpm)



PL 45 series

CNC TURNING CENTER

An innovative high precision, heavy duty CNC Lathe,
integrated with all of SMEC's advanced technology
- PL 45 series

Spindle speed
2,000 rpm
1,200 rpm (BB)

Spindle motor(30min/cont.)
37/30 kW

Rapid traverse(X/Z)
20/18 m/min (PL 45L/45LM)
20/10 m/min (PL 45XL/45XLM)

Feed motor(X/Z)
7/6 kW

Max. machining length
2,255 mm (PL 45LM)
3,000 mm (PL 45XLM)

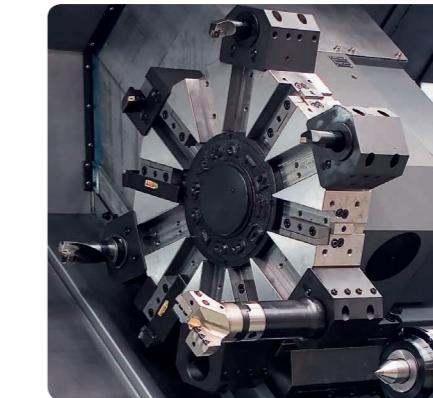
Max. machining diameter
690 mm (PL 45)
620 mm (PL 45M)



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

PL 45 (High Speed Hydraulic Turret)

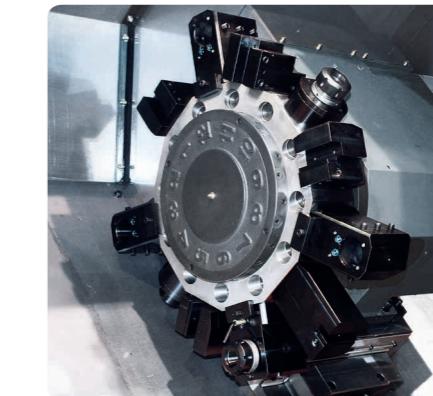


Indexing Time Number of tool positions
0.25 sec **12 stations**

High Speed, Heavy Duty Hyd. Index Turret

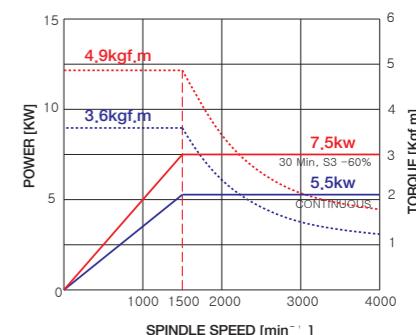
Driven by a high torque hydraulic index motor, the 10-station heavy-duty turret can accept tools on both left and right side of each station. Turret indexing (repeatability ± 0.005) is non-stop, bi-directional with a fast 0.25 second next station index time. A large diameter ($\varnothing 250$) Curvic coupling with 6,377kgf clamping force enables precision as well as heavy-duty cutting.

PL 45LM (BMT High Speed Turret)



Indexing Time Number of tool positions
0.25 sec **12 stations**

Turret Torque Diagram



Milling Spindle Speed Tool Holder
4,000 rpm **BMT 75**

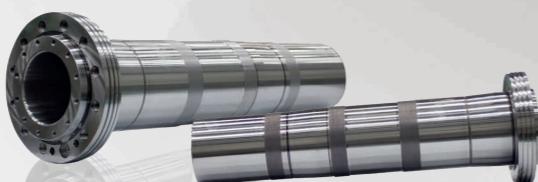
BMT Milling Turret (M Type)

PL45LM is equipped with standard 12-station BMT turret capable of accepting rotary tools at any station, providing flexible machining thru various machining operations in just one set-up. Each BMT holder is securely tightened by 4 screws, allowing the turret to perform heavy-duty cutting, milling and drilling operations. Turret indexing is non-stop, bi-directional with a fast 0.25second next station index time.



Centralized Operation Panel

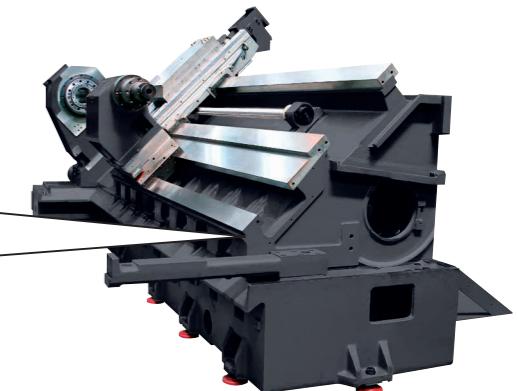
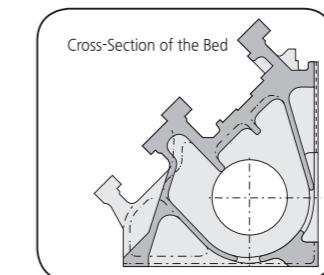
The centralized operation panel with its 10.4 inch color TFT LCD monitor is able to swivel 90 degrees, providing operators with easy access to the control panel while working on the machine.



Rigid 45 degree Slant Bed

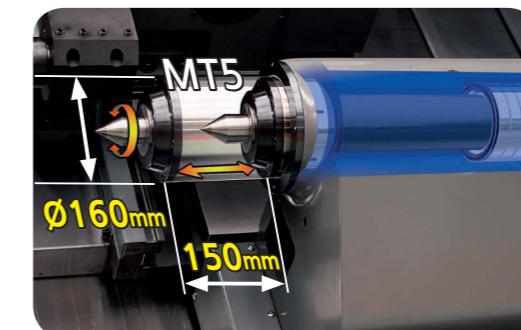
45 degree slant torque tube design bed and wide guide slide way ensure long term rigidity and machining accuracy.

Also, the Slant Type structure allows for easier access to the workpiece and superb chip discharge.



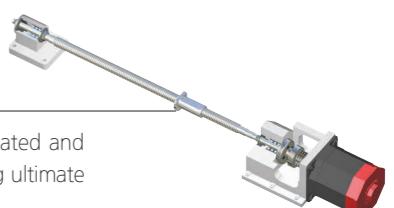
Programmable Tailstock(Carriage direct-coupled) [Std.]

The programmable tailstock body mounted is on wide guide ways to ensure rigid work piece support.



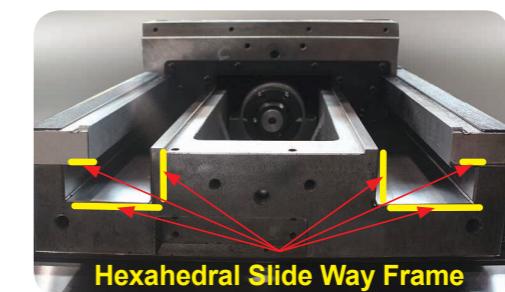
Pre-tensioned and Double Anchored Ballscrews

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



Hexahedral Slide Way Frame (X-axis)

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

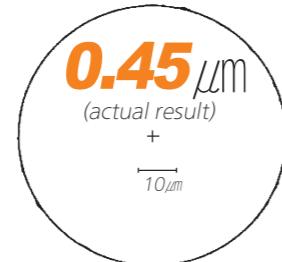


High Precision

Surface Roughness



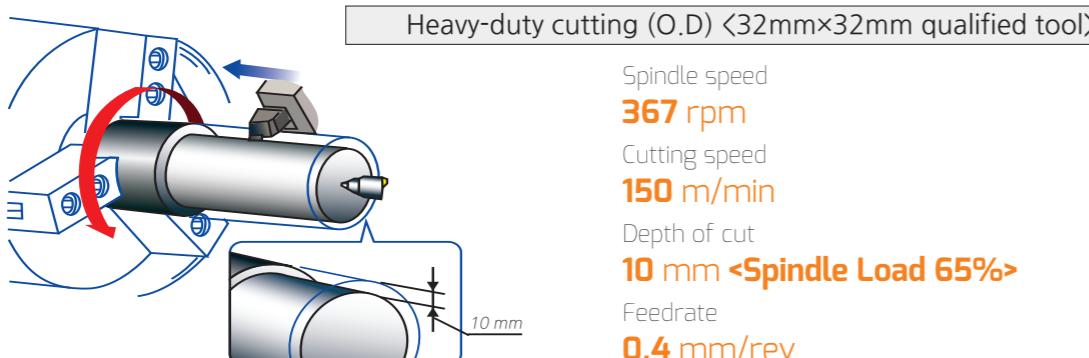
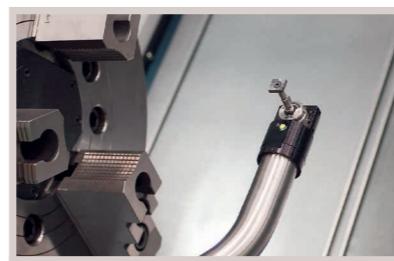
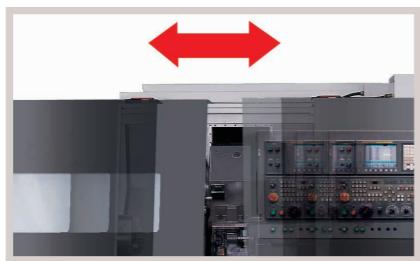
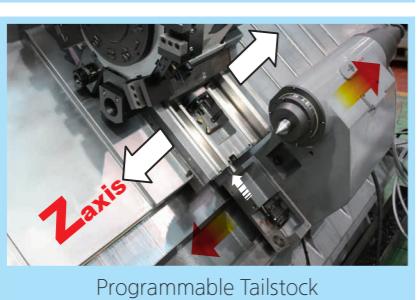
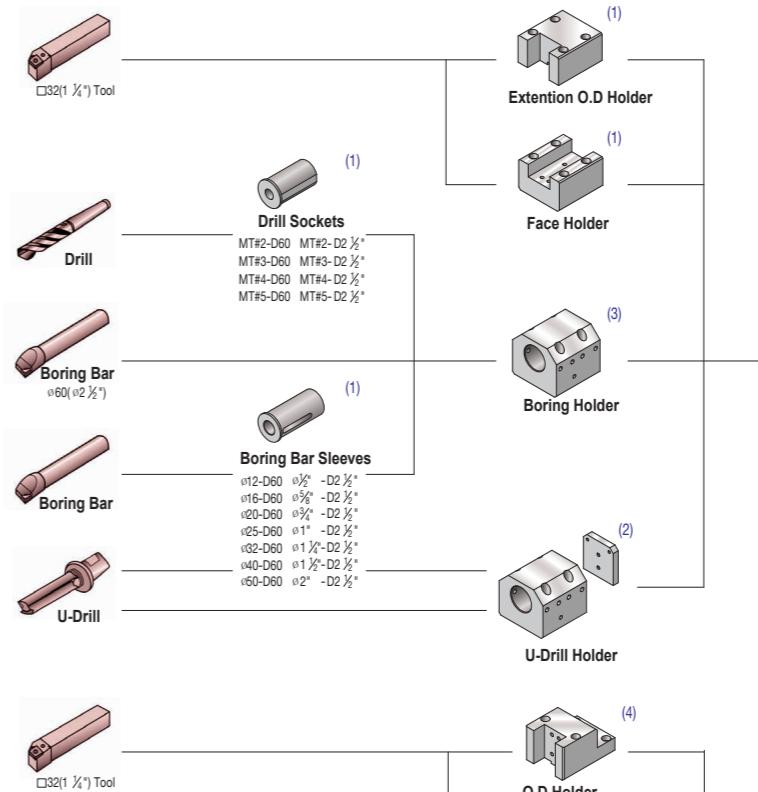
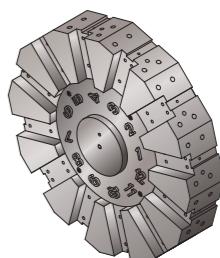
Roundness



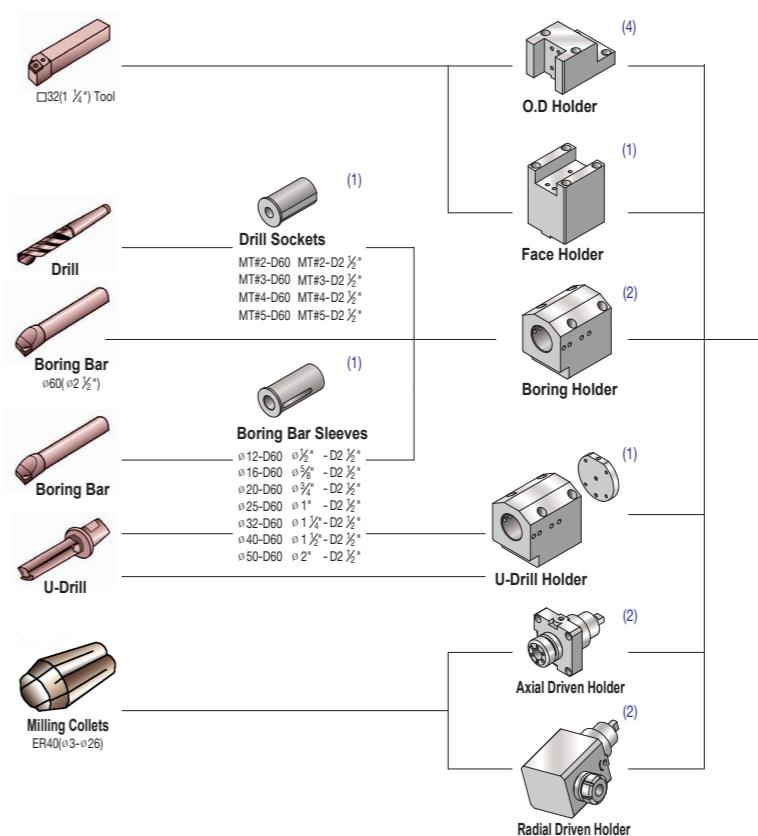
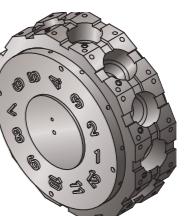
Cutting condition	
Tool	Diamond tool <nose radius 0.5mm>
Material	AL150<Aluminum>
Cutting speed	230 m/min
Feedrate	0.05 mm/rev
Depth of cut	0.1 mm
Outer diameter	200 mm
Filter	1-50

Processing Speed

Turning Performance (material:SM45C) PL 45LM

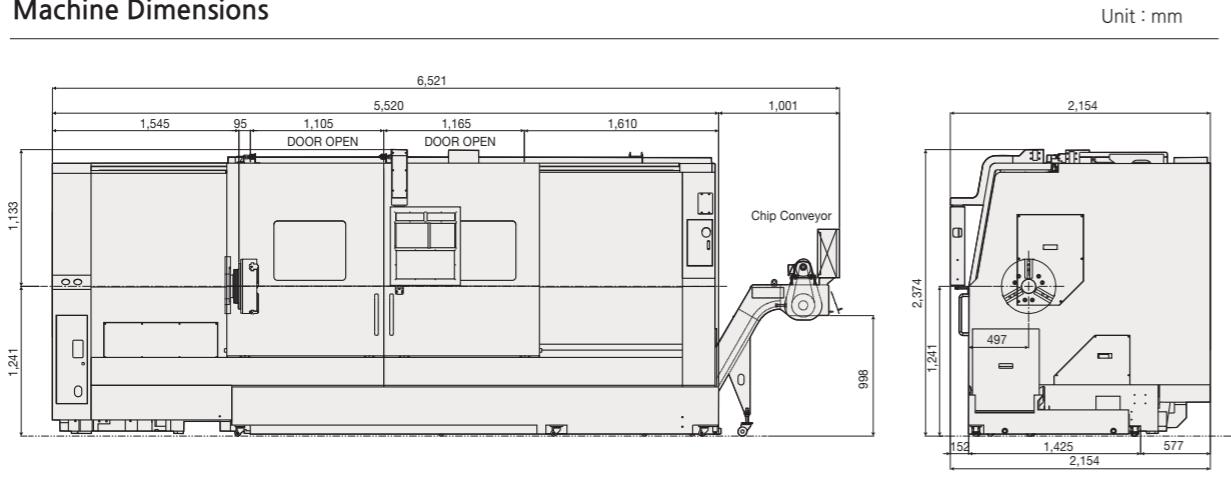
**Standard Accessories****Optional Accessories****Tooling System****PL 45L**

12-station Turret

**PL 45LM**

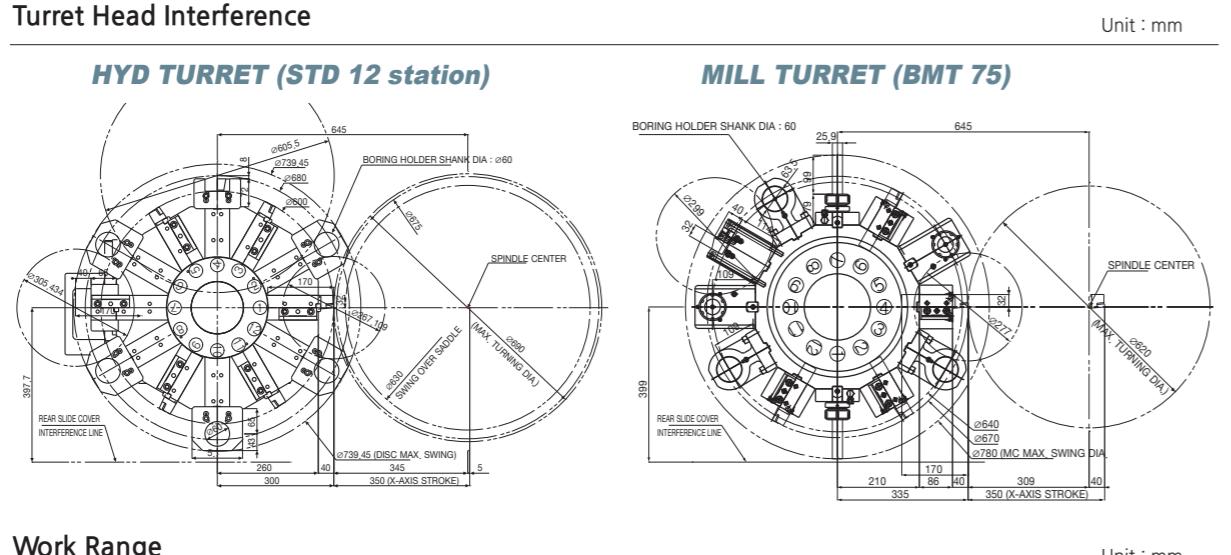
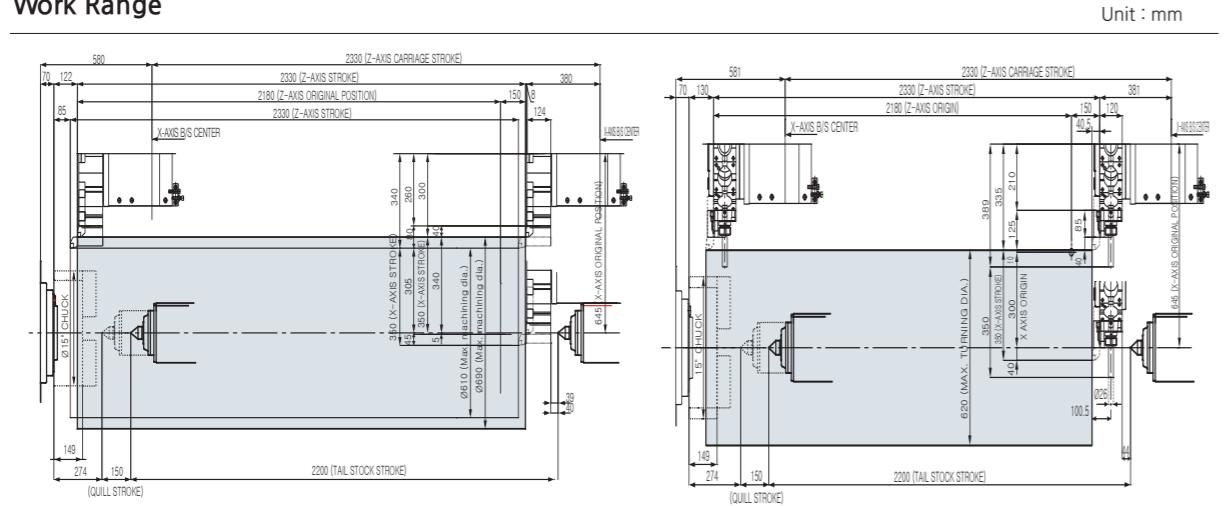
12-station Turret(BMT 75)

() : Standard Set Numbers

Machine Dimensions

FRONT VIEW

SIDE VIEW

Turret Head Interference**Work Range****Major Specifications**

	DESCRIPTION	PL 45L	PL 45XL	PL 45LM	PL 45XLM
Capacity	Swing over bed mm			Ø775	
	Swing over saddle mm			Ø630	
	Recom. turning diameter mm			Ø380	
	Max. machining diameter mm		690		620
	Max. machining length mm	2,255	3,000	2,255	3,000
	Bar working diameter mm			Ø117.5 [Ø165.5]	
Travels	X-axis travel mm			350	
	Z-axis travel mm	2,330	3,130	2,330	3,130
Main Spindle	Spindle speed rpm			2,000	
	Spindle nose ASA			A2-11 [A2-15]	
	Spindle through hole diameter mm			Ø132 [Ø181]	
	Min. spindle indexing angle deg	-		0.001	
Turret (Std.)	Number of tool stations [option] ea			12 [10]	
	Shank size for square tool mm			□ 32	
	Shank diameter for boring bar mm			Ø60	
Turret (Mc)	Number of tool stations [option] ea			12 (BMT75)	
	Shank size for square tool mm			□ 32	
	Shank diameter for boring bar mm			Ø60	
	Indexing time sec			0.2	
Feed Rate	Rotary tool spindle speed rpm			4,000	
	Rapid traverse (X/Z) m/min	20 / 18	20 / 10	20 / 18	20 / 10
Motor	Feed per revolution mm/rev			0.0016~500	
	X axis feed motor kW			7	
	Z axis feed motor kW			6	
	Spindle drive motor(cont./30min) kW			30 / 37	
Tailstock	Rotary tool spindle motor(cont./30min) kW			5.5 / 7.5	
	Tailstock travel mm	2,200	3,000	2,200	3,000
	Quill diameter mm			Ø160	
	Quill bore taper MT			MT-5(BUILT-IN)	
ELECTRIC POWER SUPPLY	Quill travel mm			150	
	kVA/V			60 / 220	
	REQUIRED FLOOR SPACE(L×W) mm	5,520×2,154	6,320×2,154	5,520×2,154	6,320×2,154
	MACHINE WEIGHT kg	13,000	17,200	13,200	20,000
CONTROLLER					

*Figures in inches are converted from metric measurements.

*Opt. : [BB]

Standard Accessories

- Coolant System
- Hard Jaw 1 set
- Built-in Work Light
- Tool Holders
- Splash Guard
- Leveling Block
- Hand Tools
- Programmable Tailstock
- 15" Hydraulic Chuck
- Door Interlock
- Soft Jaw 3 Sets

Optional Accessories

- Chip Conveyor with Bucket
- Air Blow Unit
- 18" Hydraulic Chuck
- 21", 24" Hydraulic Chuck(Big Bore)
- Patrol Lamp
- Steady Rest : Slu-4
- Tool Presetter
- Oil Skimmer
- Gun Coolant