

■ 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-Digt / T2-Digt	○
	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	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		○
	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	○
	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		○

SAMSUNG Machine Tools PL45 Series CNC TURNING CENTER



SMEC

SAMSUNG MACHINE TOOLS

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SAMSUNG MACHINE TOOLS

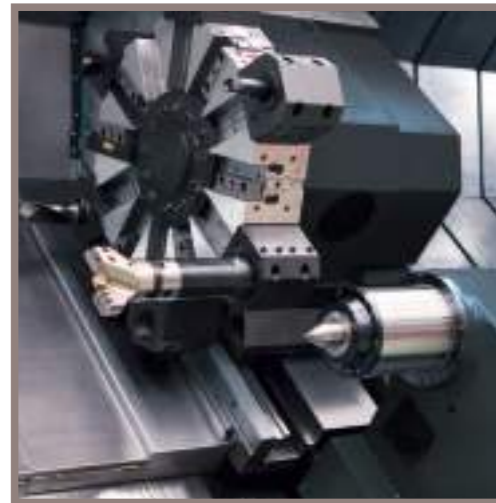
SAMSUNG'S Advanced Engineering and Machine Design

- Cast iron structure for superior dampening characteristics and thermal displacement
- Rigid 45 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 45L
PL 45XL
PL 45LM
PL 45XLM



PL45 is a heavy duty, ultra precision Turning Center, combined with Samsung's advanced technological features.



Spindle Speed
2,000 rpm / 1,200 rpm_(BB)

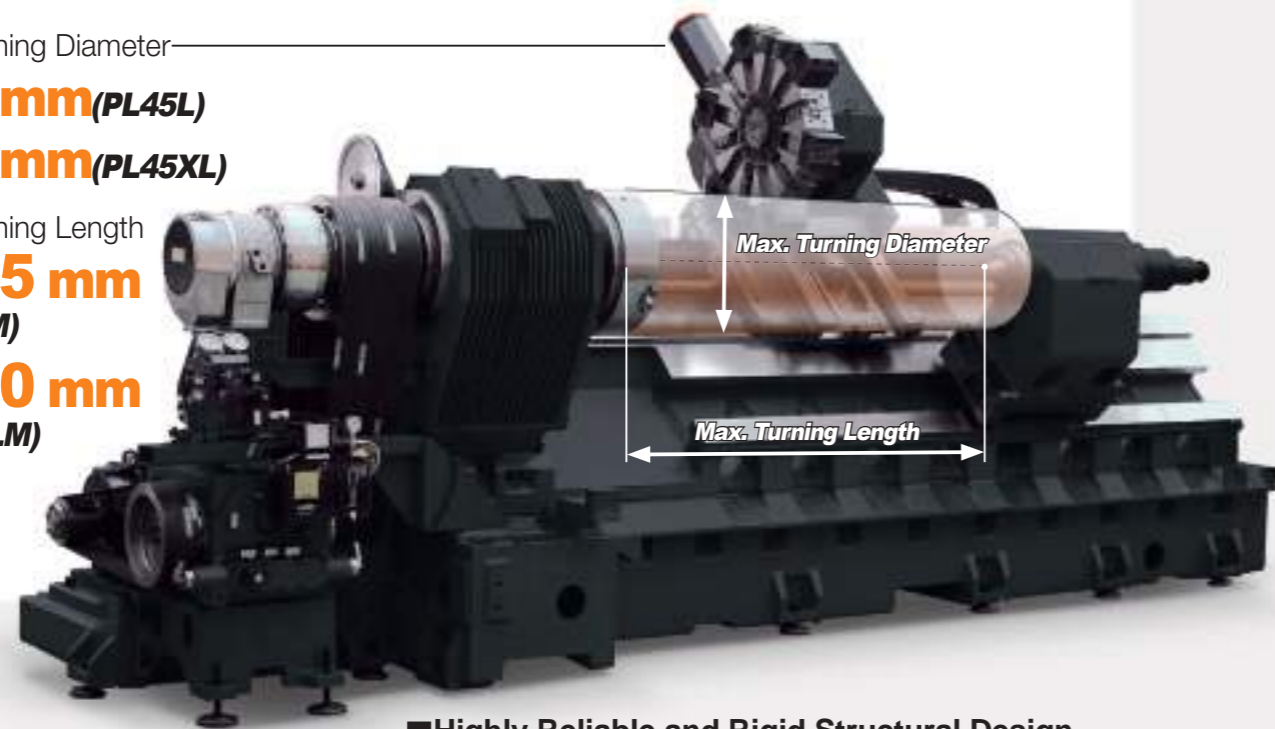
Spindle Motor(30min/cont.)
37/30 kW

Rapid Travel(X/Z)
20/18 m/min_(PL45L, 45LM)
20/10 m/min_(PL45XL, 45XLM)

Feed Motor(X/Z)
7/6 kW

Max. Turning Diameter
690 mm_(PL45L)
620 mm_(PL45XL)

Max. Turning Length
2,255 mm_(PL45LM)
3,000 mm_(PL45XLM)



Highly Reliable and Rigid Structural Design

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

High Accuracy, High Rigidity Spindle

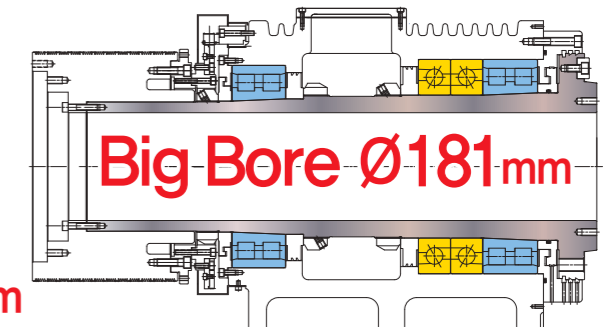
Output Converting Transmission

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



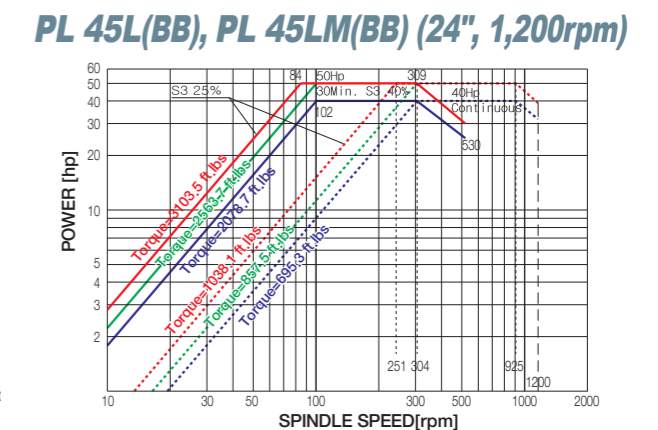
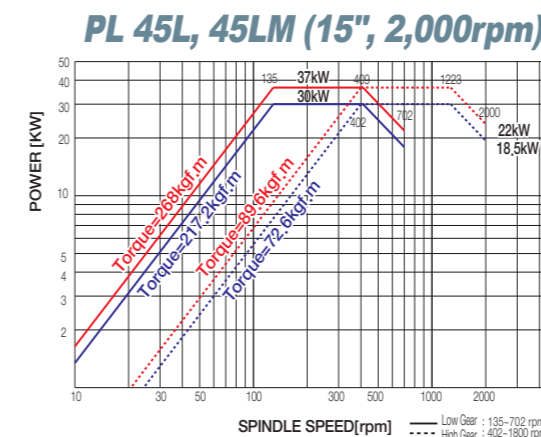
Pin Tube Rib Design for Minimal Axis Heat Transfer

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



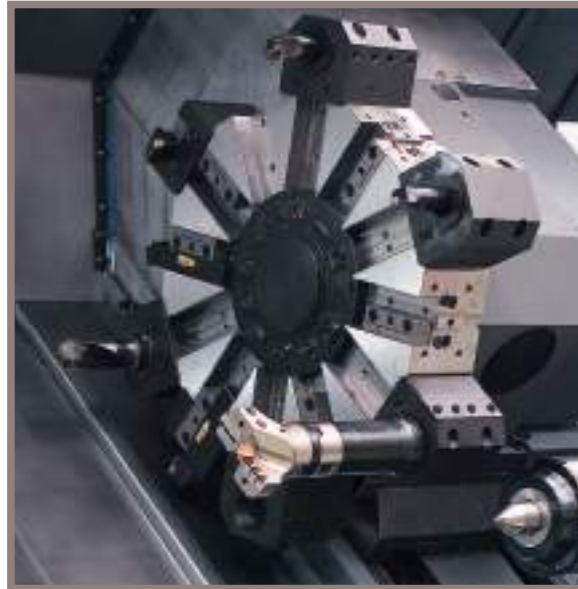
Spindle Power & Torque Diagram

Unit : inch



■ Turret Structure

■ PL45L (High Speed Servo Turret)

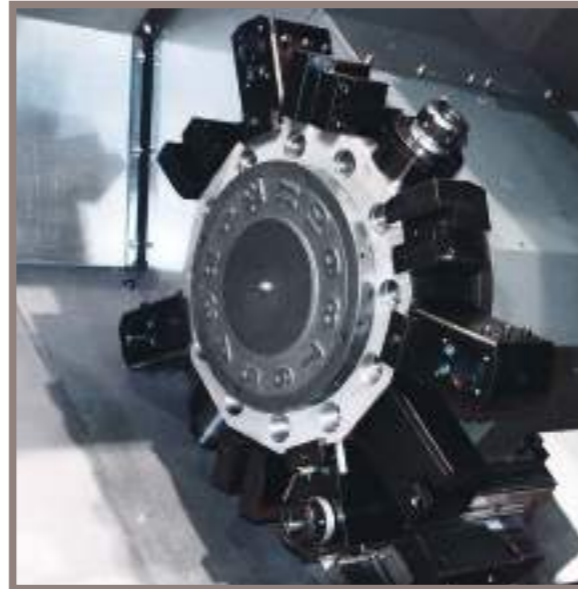


Indexing time
0.25 sec.
Number of tool positions
12 stations

■ High Speed, Heavy Duty Servo Turret

Driven by a high torque servo motor, the 12-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. Large diameter ($\phi 230$) precision Curvic coupling with 8,411kgf clamping force enables precision as well as heavy-duty cutting.

■ PL45LM (BMT High Speed Turret)

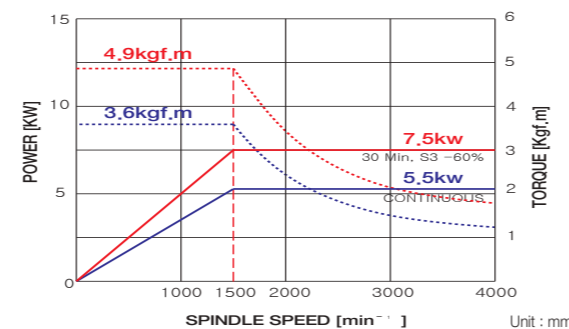


Indexing time
0.25 sec. Number of tool positions
12 stations
Milling Spindle Speed
4,000 rpm Tool Holder
BMT 75

■ BMT Milling Turret (M Type)

PL45MC 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 0.25 second next station index time.

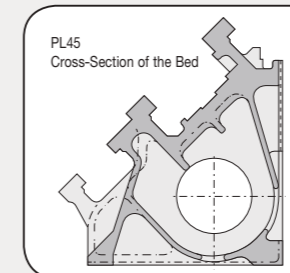
■ Turret Torque Diagram



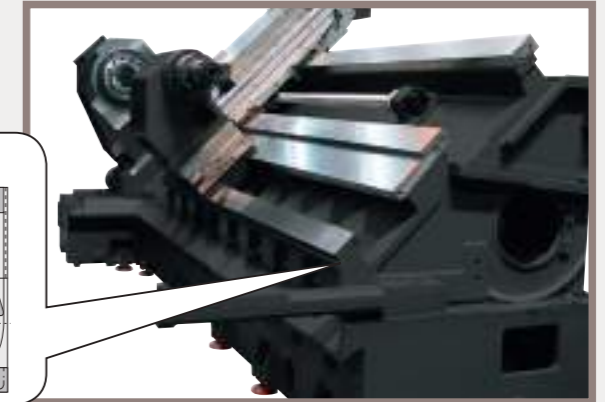
■ Machine Structure

■ 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.



■ Swivel Operation Panel

Swivel operation panel of 10.4 inch color TFT LCD monitor can turn to 90 degree, providing operators with easy access to the control panel while working on the machine.



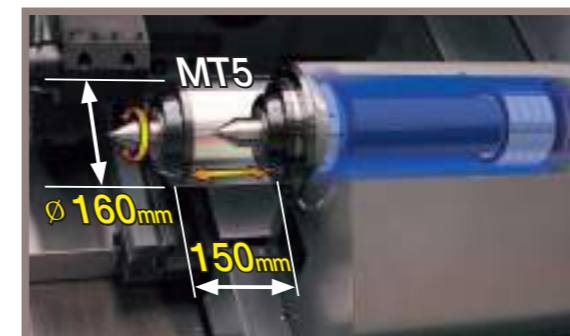
■ Pre-tensioned and Double Anchored Ballscrews



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

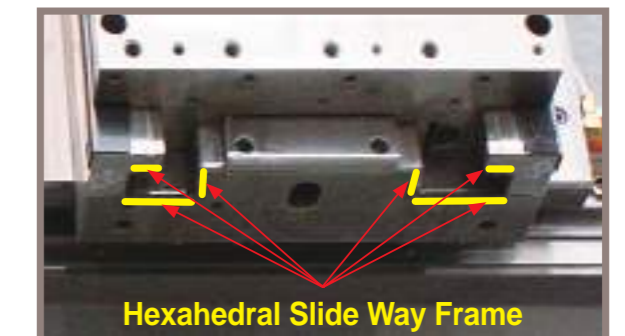
■ Programmable ailstock (Carriage direct-coupled)

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



■ Hexahedral Slide Way Frame

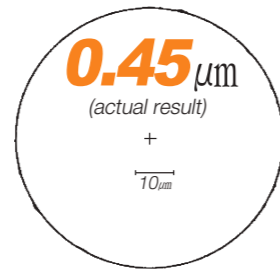
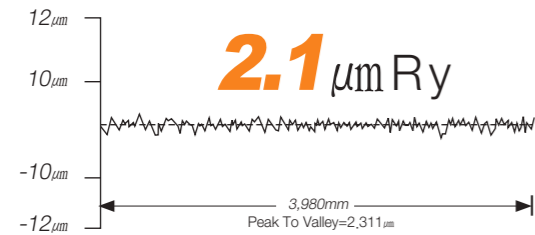
Wide integral way is machined from the casting, induction hardened and precision ground to ensure long-term rigidity, machining accuracy and heavy-duty machining.



High Precision

Surface Roughness <O.D. cutting>

Roundness

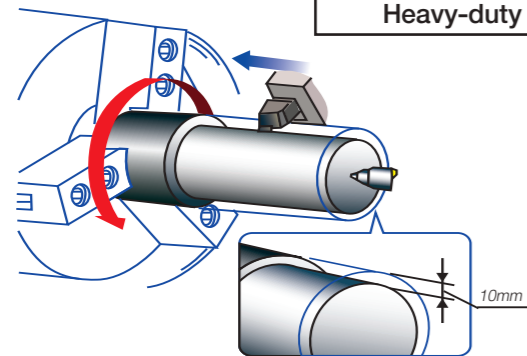


Machine type	PL 45L
Tool	Diamond tool (nose radius 0.5mm)
Material	AL150 (Aluminum)
Cutting speed	230m/min
Feedrate	0.05mm/rev
Depth of cut	0.1mm
Outer diameter	200mm
Filter	1-50

Processing Speed

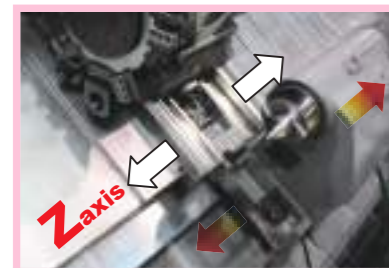
Turning Performance (material:SM45C) PL45LM

Heavy-duty cutting (O.D) <32mm x 32mm qualified tool>

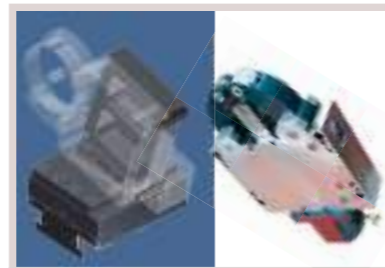


Spindle speed
367 rpm
Cutting speed
150 m/min
Depth of cut
10 mm <Spindle Load 65%>
Feedrate
0.4 mm/rev

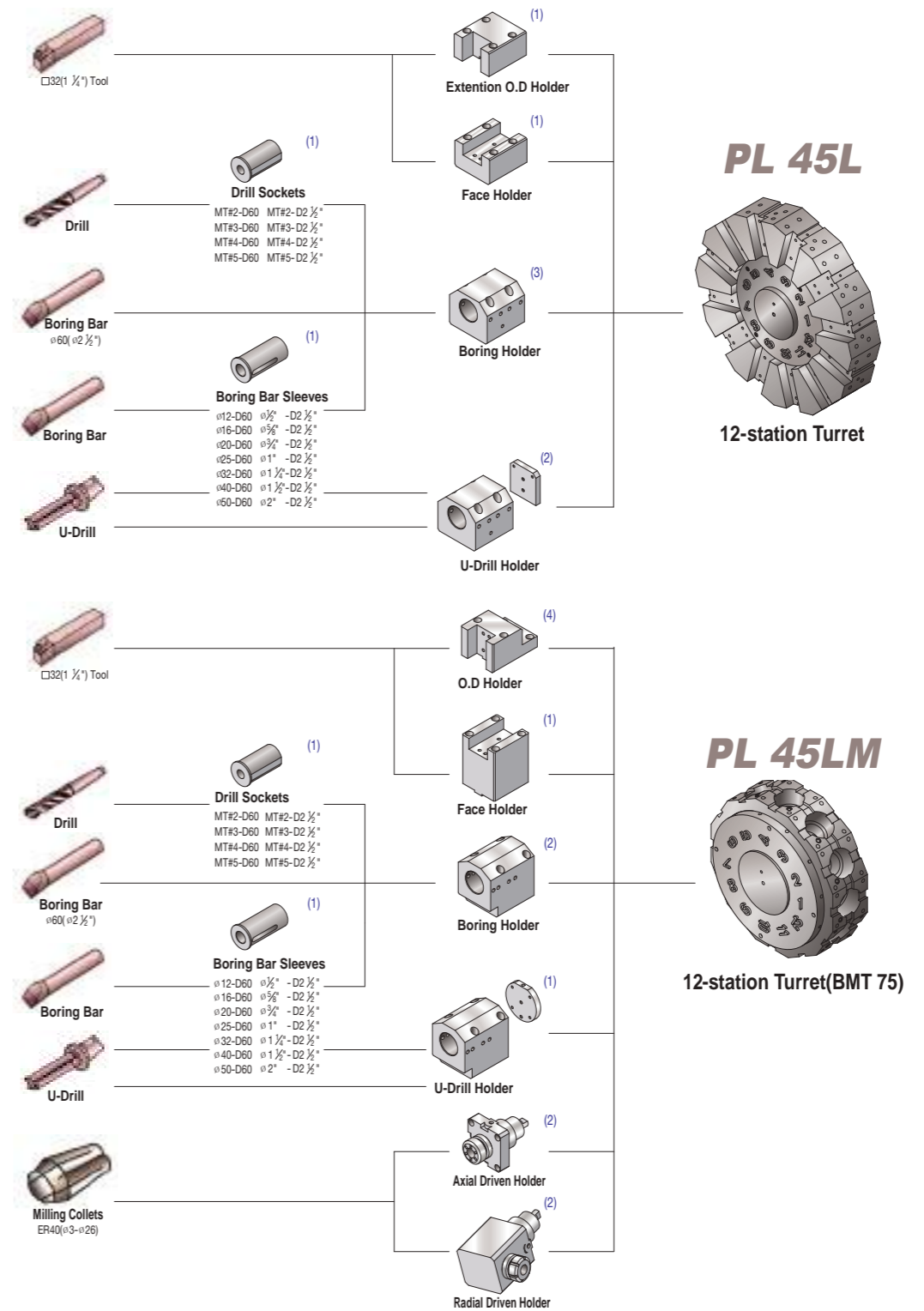
Standard Accessories



Optional Accessories

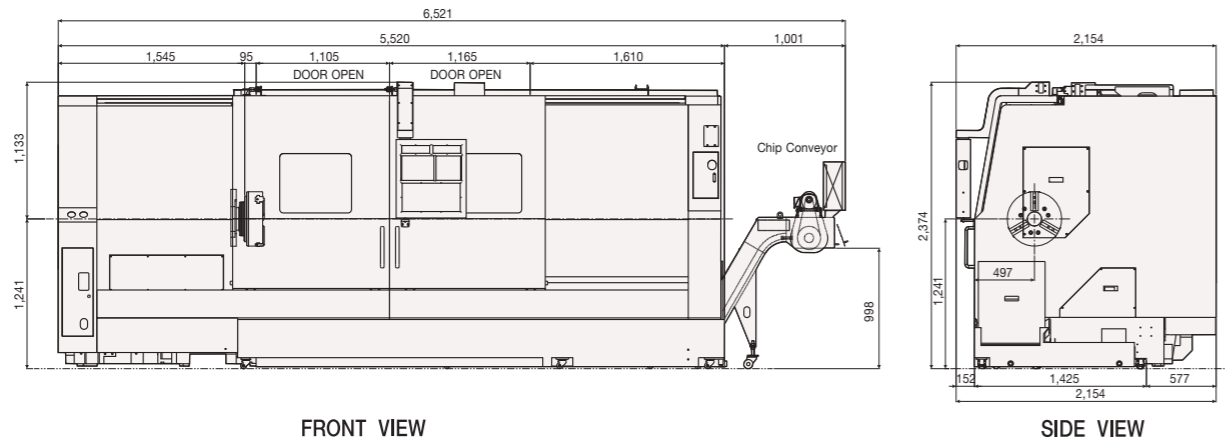


Tooling System



Machine Dimensions

Unit : mm

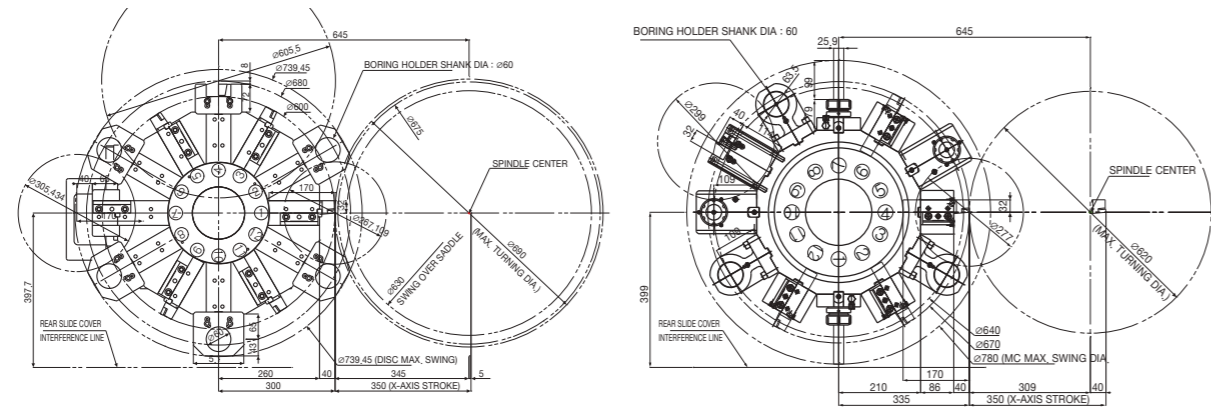


Turret Head Interference

Unit : mm

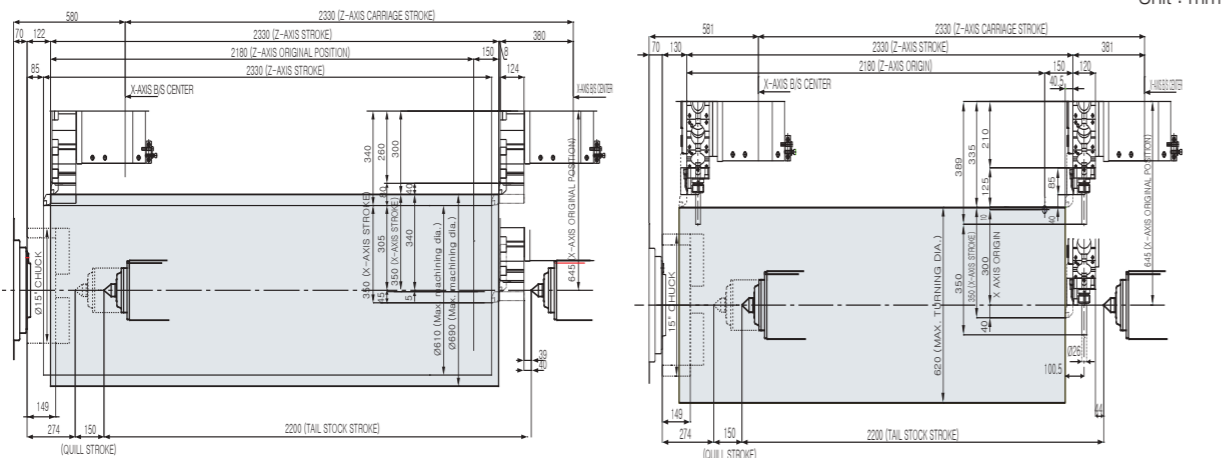
HYD TURRET (STD 12 station)

MILL TURRET (BMT 75)



Work Range

Unit : mm



Major Specifications

DESCRIPTION		PL 45L	PL 45XL	PL 45LM	PL 45XLM
CAPACITY	Swing over bed	mm ϕ 775			
	Swing over saddle	mm ϕ 630			
	Recom. turning diameter	mm ϕ 380			
	Max. machining diameter	690		620	
	Max. machining length	2,255	3,000	2,255	3,000
	Bar working diameter	mm ϕ 117.5 [ϕ 165.5]			
TRAVELS	X-axis travel	mm 350			
	Z-axis travel	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 ϕ 132 [ϕ 181]			
	Min. spindle indexing angle	-		0,001	
TURRET (STD.)	Number of tool stations [option]	ea 12 [10]			
	Shank size for square tool	mm \square 32			
	Shank diameter for boring bar	mm ϕ 60			
TURRET (MC)	Number of tool stations [option]	ea -		12 (BMT75)	
	Shank size for square tool	mm - \square 32			
	Shank diameter for boring bar	mm - ϕ 60			
	Indexing time	sec - 0,2			
	Rotary tool spindle speed	rpm - 4,000			
FEED RATE	Rapid traverse (X/Z)	20 / 18	20 / 10	20 / 18	20 / 10
	Feed per revolution	mm/rev 0,0016~500			
MOTOR	X axis feed motor	kW 7			
	Z axis feed motor	kW 6			
	Spindle drive motor(cont./30min)	kW 30 / 37			
	Rotary tool spindle motor(cont./30min)	kW -		5,5 / 7,5	
TAILSTOCK	Tailstock travel	2,200	3,000	2,200	3,000
	Quill diameter	mm ϕ 160			
	Quill bore taper	MT MT-5(BUILT-IN)			
	Quill travel	mm 150			
ELECTRIC POWER SUPPLY		kVA/V 60 / 220			
REQUIRED FLOOR SPACE(L x W)		5,520 x 2,154	6,320 x 2,154	5,520 x 2,154	6,320 x 2,154
MACHINE WEIGHT		13,000	17,200	13,200	20,000
CONTROLLER		Fanuc Oi-TD			

※ Figures in inches are converted from metric measurements.

※ Opt. : [BB]

Standard

- COOLANT SYSTEM
- BUILT-IN WORK LIGHT
- SPLASH GUARD
- HAND TOOLS
- 15 " HYDRAULIC CHUCK
- SOFT JAW 3 SETS
- HARD JAW 1 SETS

- TOOL HOLDERS
- LEVELING BLOCK
- PROGRAMMABLE TAILSTOCK
- DOOR INTERLOCK

Optional Accessories

- CHIP CONVEYOR WITH BUCKET
- AIR BLOW UNIT
- 18 " HYDRAULIC CHUCK
- STEADYREST : SLU-4, 1
- TOOL PRESETTER
- OIL SKIMMER
- GUN COOLANT