

## NC Specifications / FANUC Series

Item	Specification	
Controlled axis	Controlled Axes	2 axis(X,Z)
	Max. Simultaneously Controlled Axes	Positioning(G00) / Linear Interpolation(G01) Circular Interpolation(G02, G03)
	Least Input Increment	0.001mm
Spindle Function	Spindle Speed Control	S5 (5 digit)
	Spindle Speed Override	0~120%
	Spindle Orientation	M19
Feed Function	Feedrate Override (10% increase)	0~150%
	Dwell	G04
	Reference Position Return	G27, G28
	Manual Pulse Generator	0.001/0.01/0.1mm
	Dry Run	F0(Fine Feed), 25/50/100%
Tool Functions	Rapid Traverse Override	F0(Fine Feed), 25/50/100%
	Tool Number Command	T2(2 Digit), T4(Digit)
	Tool nose radius compensation	G40 ~ G42
	Tool offset pair	128EA
Programming Function	Tool geometry/wear offset	GEOMETRY & WEAR DATA
	Canned Cycle	G70~G72, G74~G76
	Decimal Point Input	Able to input up to decimal point
	Sub Program	4Phase
	Work Coordinate System	G52~G59
Tape Functions	Max Program Dimension	±99999.999mm
	M Function	M3(3 Digit)
	Input Code	ISO/EIA Auto Recognition
	I/O Interface	RS232C
	rogram Storage Space	1280M(512kb)
Other Functions	Number of stored programs	400EA
	Display Unit / MDI	10.4" color LCD / Soft input type MDI
	Synchronized Tapping	Rigid Tapping Function
	Background Tapping	Program saving/editing during automatic operation
	Backlash Compensation	Pitch Error Offset Compensation for Each Axis
	Search Function	Sequence / program number search
	Safety Function	Emergency stop / overtravel
	Program Test Function	Machine Lock / Single Block
	Control Function	Memory / MDI / Manual
	Mirror Image	
Run hour and parts count display		
Custom Macro	#100 ~ #199, #500 ~ #999	

# SMEC

## SL 4500 series

### HORIZONTAL TURNING CENTER



**SMEC**  
SMEC CO.,LTD.

**SMEC Co., Ltd.**

157-10, Goldenroot-ro, Juchon-myeon, Gimhae-si, Gyeongsangnam-do, Korea

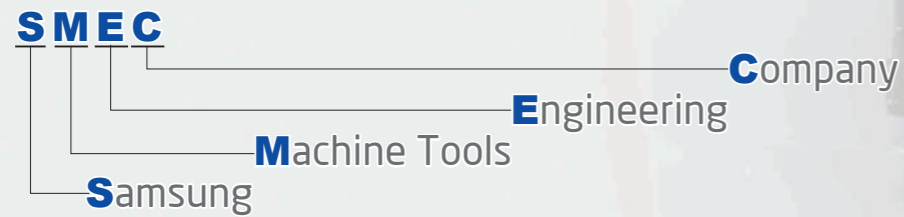
Tel +82 55 340 4800 Fax +82 55 340 4740

<http://www.esmec.com>



**SMEC**  
SMEC CO.,LTD.

- 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

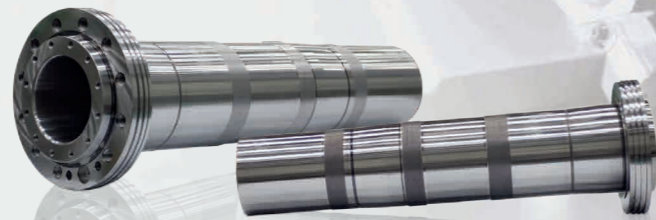


## SL 4500/4500M

A Type : Chuck Size 18"(15")

B Type : Chuck Size 21"

C Type : Chuck Size 24"



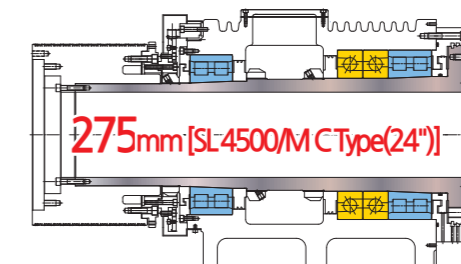
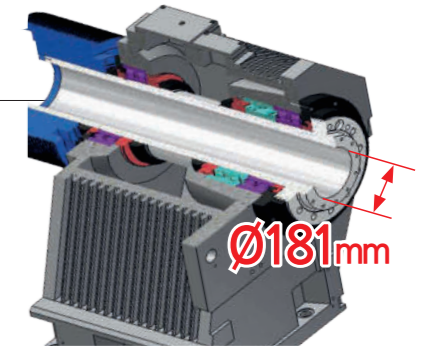
Strongest in its class with superb structural design  
Simultaneous heavy duty and precision turning

- 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

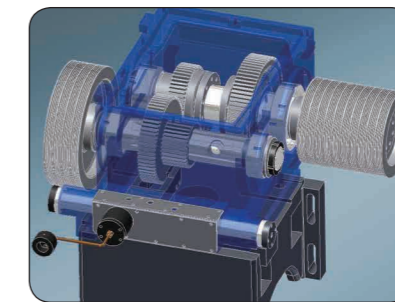
## High Accuracy, High Rigidity Spindle

### Pin Tube Rib Design for Minimal Axis Heat Transfer

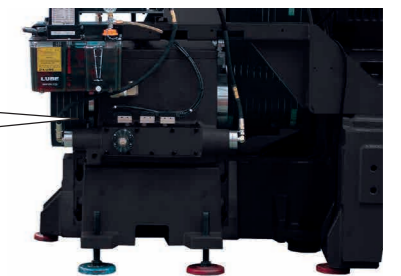
Radiator fan-like pin tube rib design dissipates heat generated by axis movements, maintaining minimal thermal expansion.



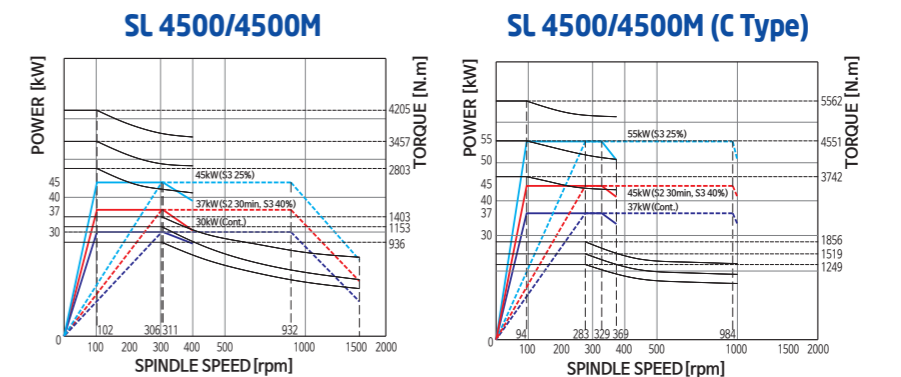
### Output Converting Transmission



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



### Spindle Power & Torque Diagram





An innovative high precision, heavy duty CNC Lathe, integrated with all of SMEC's advanced technology - **SL 4500 series**

Spindle speed  
**2,000 rpm** (SL 4500)  
**1,800 rpm** (SL 4500M)

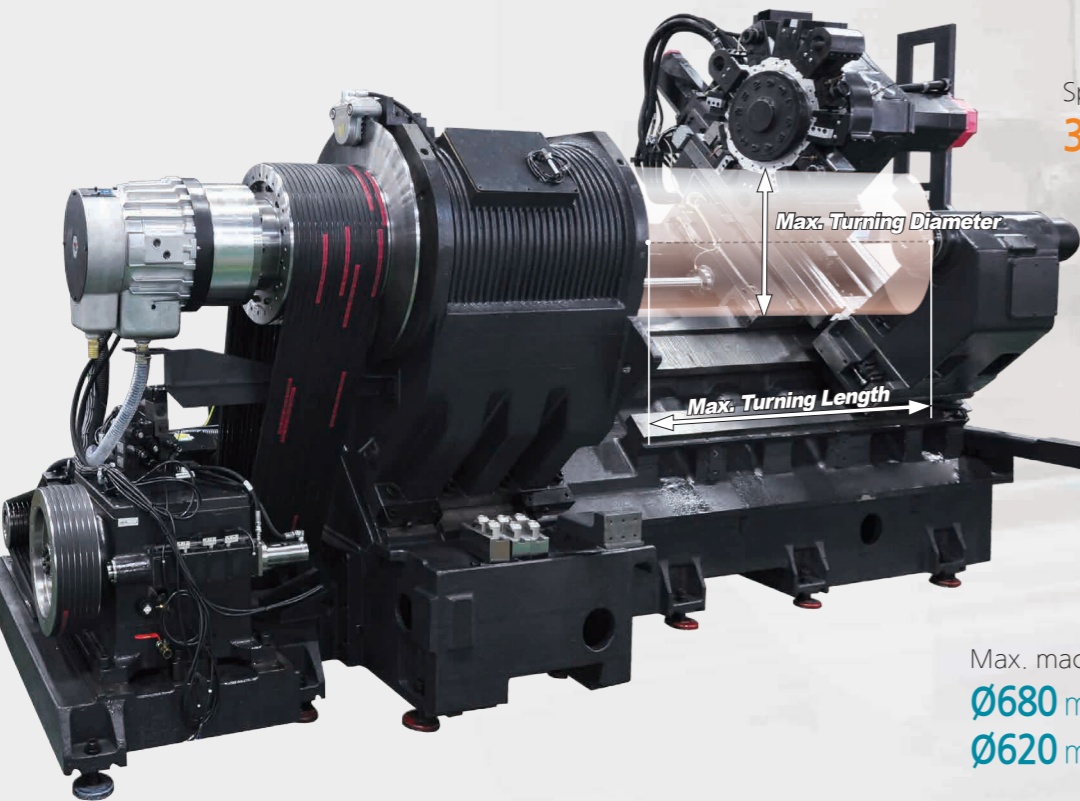
Max. machining length  
**1,250 mm** (SL 4500)  
**1,213 mm** (SL 4500M)  
 ※Machining Length : 2250, 3050, 5000 Possible

Spindle motor(cont./30min)  
**30/45 kW**

Feed motor(X/Z)  
**7/6 kW**

Rapid traverse(X/Z)  
**20/20 m/min**

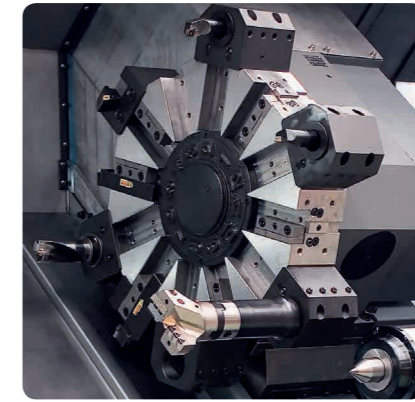
Max. machining diameter  
**Ø680 mm** (SL 4500)  
**Ø620 mm** (SL 4500M)



**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

**SL 4500 (High Speed Hydraulic Turret)**



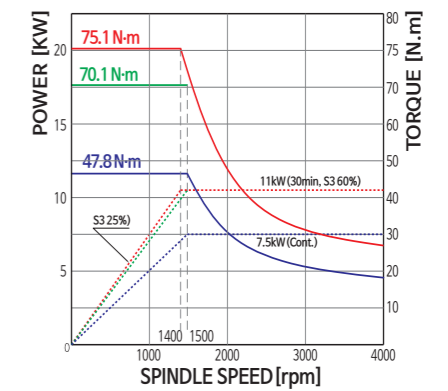
Indexing Time  
**0.25 sec(60 Hz)** Number of tool positions  
**12 stations**

**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 (Ø250) Curvic coupling with 6,377kgf clamping force enables precision as well as heavy-duty cutting.

**SL 4500M (BMT High Speed Turret)**

**Turret Torque Diagram(BMT75)**



Indexing Time  
**0.25 sec(60 Hz)** Number of tool positions  
**12 stations** Milling Spindle Speed  
**4,000 rpm** Tool Holder  
**BMT 75**

**BMT Milling Turret (M Type)**

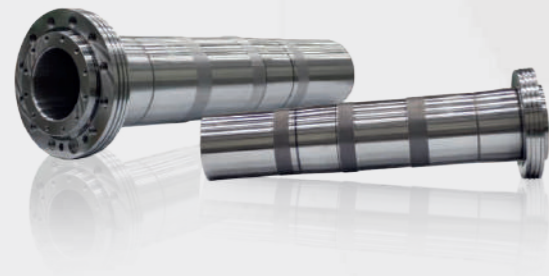
PL45LM is equipped with standard 12-station BMT turret capable of accepting rotary tools at any station, providing flexible machining thru various machining operations in just one set-up. Each BMT holder is securely tightened by 4 screws, allowing the turret to perform heavy-duty cutting, milling and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





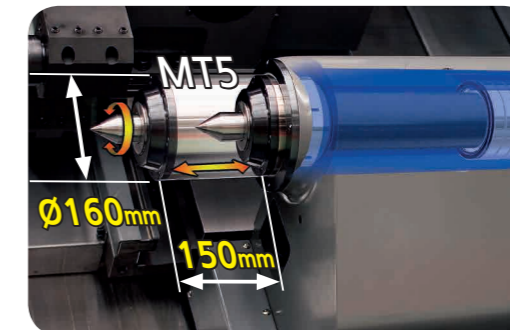
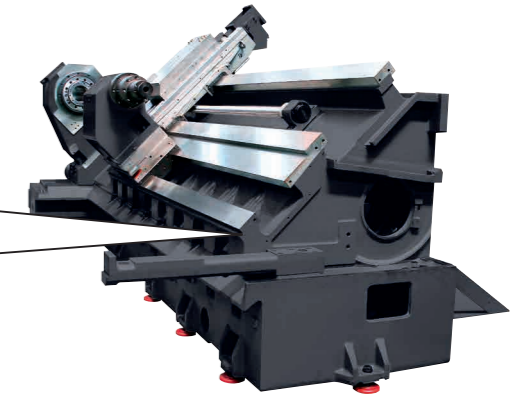
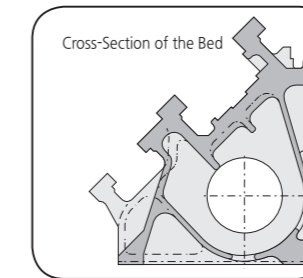
### Centralized Operation Panel

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 easier access to the workpiece and superb chip discharge.

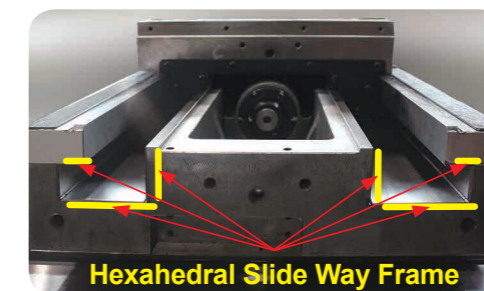
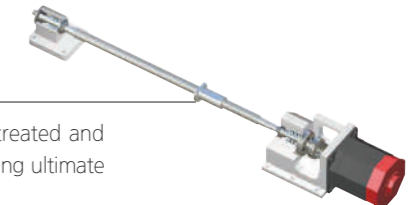


### Programmable Tailstock (Carriage direct-coupled) [Std.]

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.

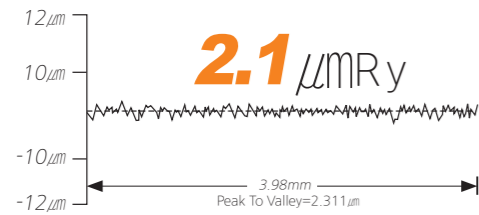


### Hexahedral Slide Way Frame (X-axis)

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

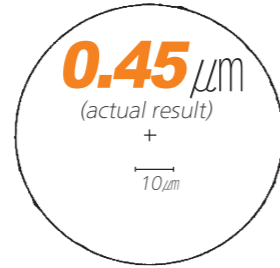
**High Precision**

**Surface Roughness**



Model : SL 4500

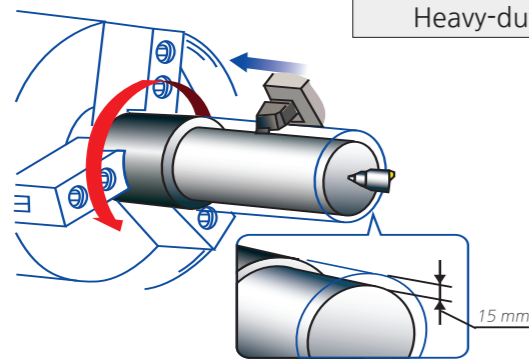
**Roundness**



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) SL 4500LM**



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

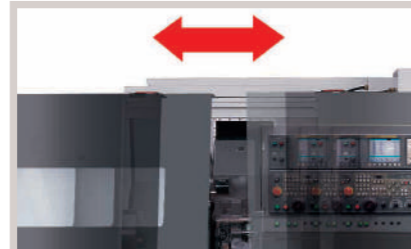
Spindle speed  
**367 rpm**  
Cutting speed  
**150 m/min**  
Depth of cut  
**10 mm <Spindle Load 65%>**  
Feedrate  
**0.4 mm/rev**

**Standard Accessories**

**Optional Accessories**



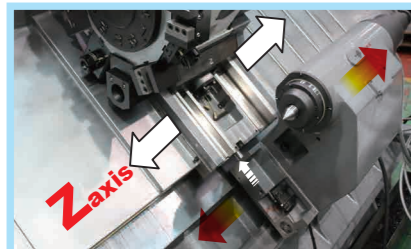
Automatic Lubricator



Auto Door



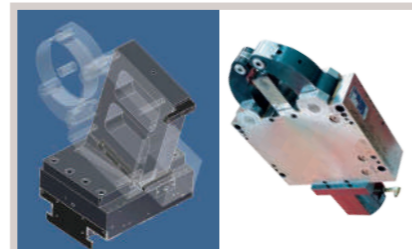
Tool Presetter



Programmable Tailstock

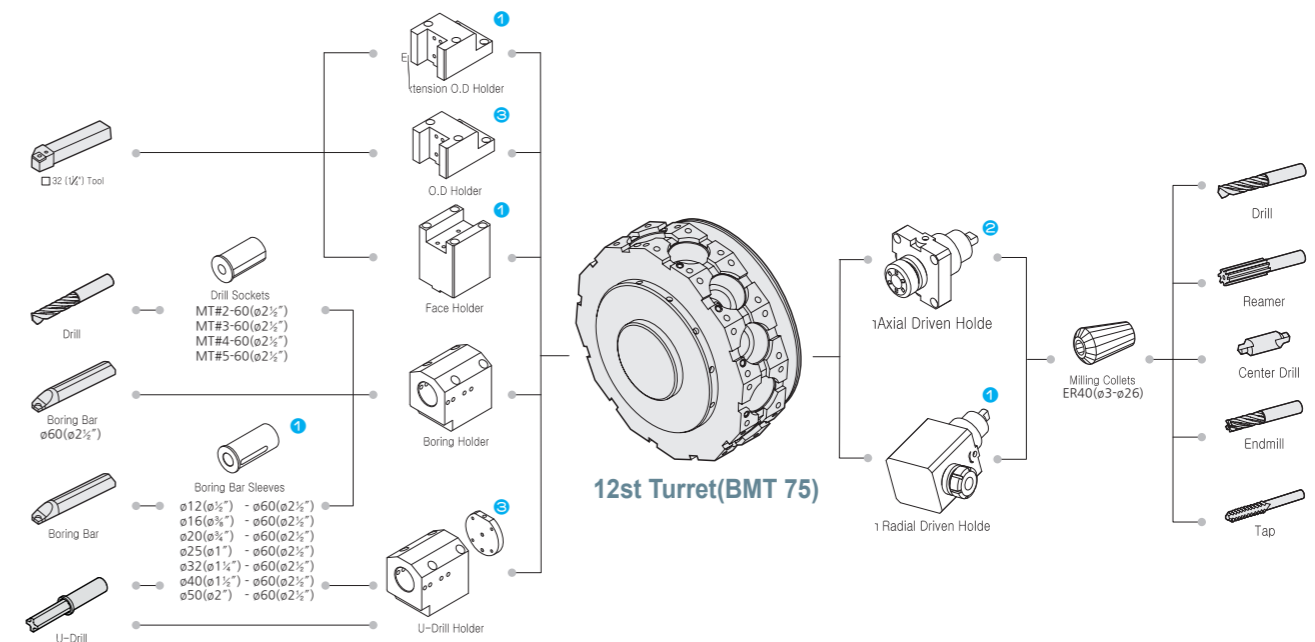
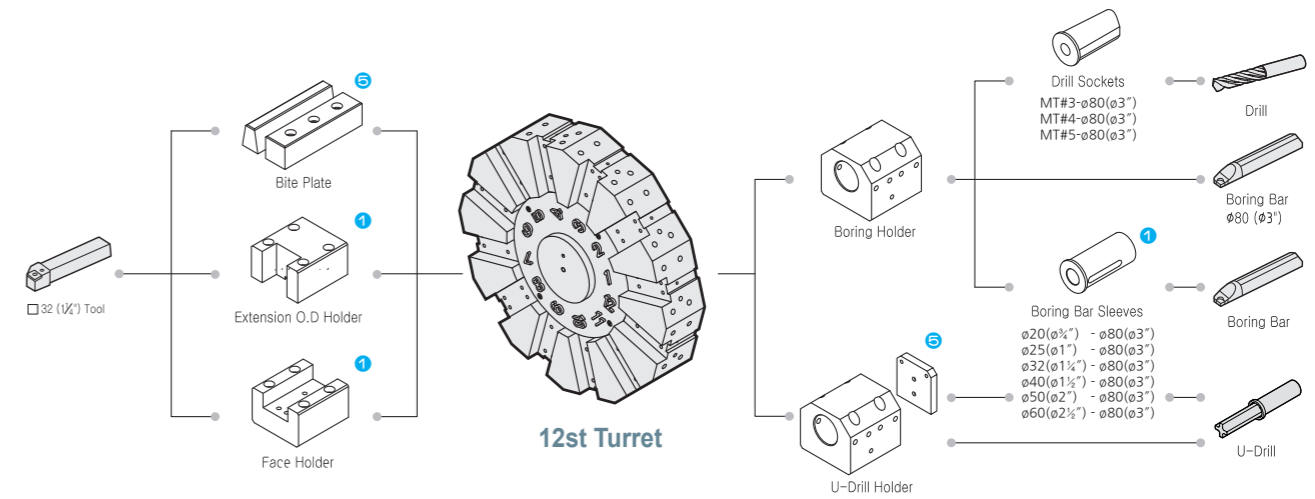


Chip Conveyor



Steady Rest & Preparation

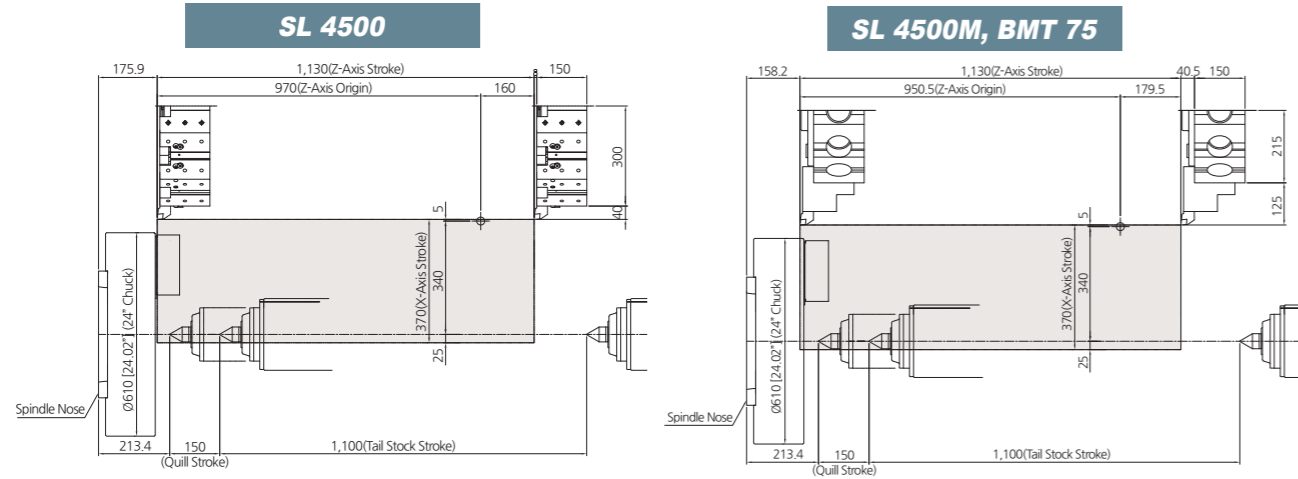
**Tooling System**



● : Standard Set Numbers

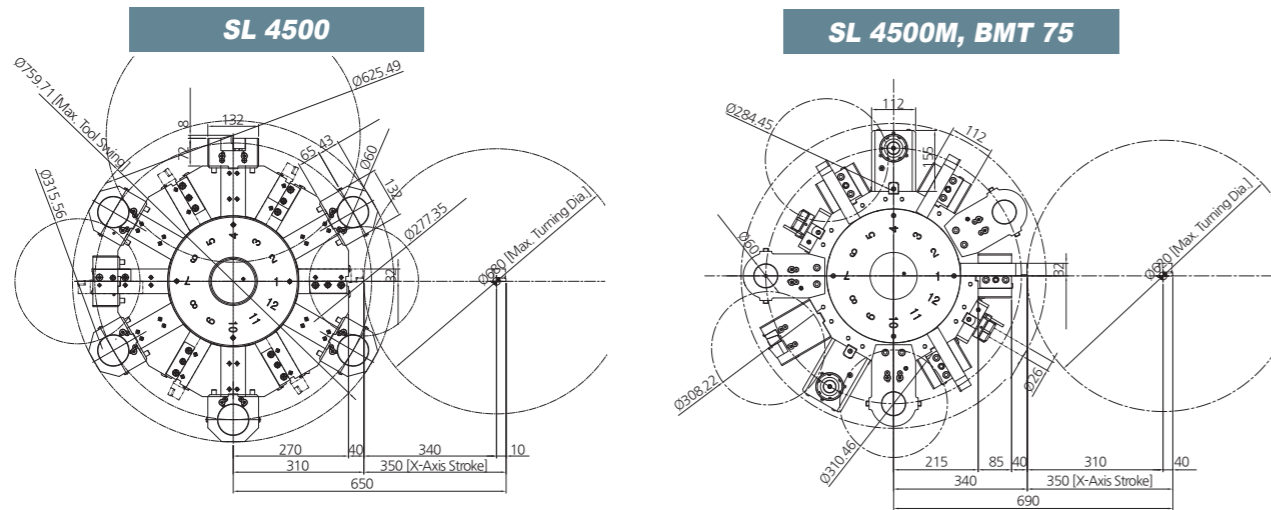
**Work Range**

Unit : mm



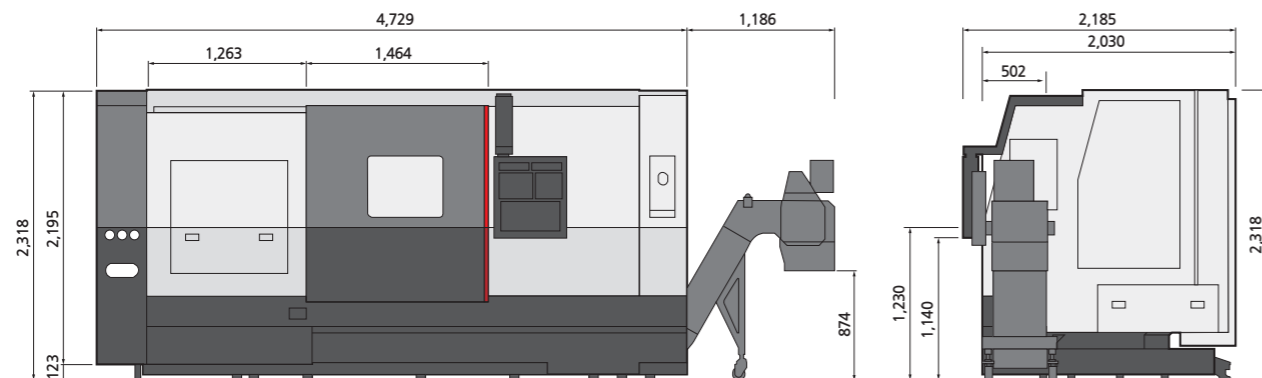
**Turret Head Interference**

Unit : mm



**Machine Dimensions**

Unit : mm



**Major Specifications**

DESCRIPTION		SL 4500	SL 4500M
Chuck	Chuck size	inch A Type:18[15]", B Type:21", C Type:24"	A Type:18[15]", B Type:21", C Type:24"
Capacity	Swing over bed	775	775
	Swing over cross slide	630	630
	Max. Turning diameter	680	620
	Max. machining length (*)	1,250(*)	1,213(*)
Travels	Bar working diameter	117.5	117.5
	X-axis travel	350	350
Main Spindle	Z-axis travel	1,325	1,325
	Spindle speed	rpm 2,000[1,800]	2,000[1,800]
	Spindle nose	ASA A2-11	A2-11
Turret	Spindle through hole diameter	mm 132	132
	Min. spindle indexing angle	deg -	0.001
	Number of tool stations	ea 12	12(BMT75)
Motor	Shank size for square tool	mm 32	32
	Shank diameter for boring bar	mm 60	60
	Indexing time	sec 0.25	0.25
Feed Rate	Rotary tool spindle speed	rpm -	4,000
	Rapid traverse (X/Z)	m/min 20/20	20/20
	X axis feed motor	kW 7	7
Tailstock	Z axis feed motor	kW 6	6
	Spindle Motor(cont./30min)	kW 45/30[55/37]	45/30[55/37]
	Rotary tool spindle motor(cont./30min)	kW -	11/7.5
ELECTRIC POWER SUPPLY	Quill travel	mm 150	150
	Quill diameter	mm 160	160
	Quill bore taper	MT MT5(BUILT-IN)	MT5(BUILT-IN)
MACHINE SIZE(with chip conveyor)(LxWxH)	mm	4,729(5,915)x2,185x2,315	
MACHINE WEIGHT	kg	10,000	10,500
CONTROLLER		Fanuc Series	

\*Figures in inches are converted from metric measurements.  
(\*):2250, 3050, 5000 Possible

\*[ ] : Option

**Standard Accessories**

- Coolant unit (4.5bar-60Hz)
- Work light (Led lamp)
- Splash guard with side coolant tank
- Tool box
- 15" Hyd. Hollow chuck (SL4500/M)
- 24" Hyd. Hollow chuck (SL4500C/CM)
- Soft jaw
- Leveling unit
- Main spindle orientation
- Chuck clamp foot switch
- Chuck clamp confirmation
- Chuck pressure switch
- Manual/Part list
- Safety precaution name plate
- Door interlock

**Optional Accessories**

- 18" Hyd. Hollow chuck (SL4500/M)
- 21" Hyd. Hollow chuck (SL4500C/CM)
- Hard jaw
- Patrol Lamp
- Side chip conveyor
- Special chuck
- Dual pressure chucking
- Steady Rest(ASR 4.0/5.1)
- Air gun
- Air blower
- Oil skimmer
- Chuck coolant
- Coolant gun
- Chip bucket