

NC Specifications / FANUC Series

Item		Specification
Controlled axis	Controlled Axes	2 axis(X,Z)
	Max. Simultaneously Controlled Axis	Positioning(G00) / Linear Interpolation(G01) Circular Interpolation(G02, G03)
	Lead Input Increment	0.001 mm
Spindle Function	Spindle Speed Control	35 (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	0.001/0.01/0.1 mm
	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(4 digit)
	Tool nose radius compensation	G40 - G42
	Tool offset/air	G28EA
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	±9999.999mm
	M Function	M98 Dig(0)
	Input Code	ISO/EIA Auto Recognition
	IO Interface	RS232C
	Program Storage Socket	12ROM(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 skipping during automatic operation
	Backlash Compensation	Rich Emr Offset Compensation for Each Axis
	Search Function	Sequence / program number search
	Safety Function	Emergency stop / overspeed
	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



www.smec.com



https://www.youtube.com/c/smecmachinetools

SMEC
Smart One,
Global One

SMEC
SMEC CO.,LTD.

- 1988 - Started as Samsung Heavy Industries Machine Tools Business
- 1989 - Horizontal and vertical machining center technology partnership with ODK 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 4500/4500X/4500L/4500XL

- A Type : 18(15)"
- B Type : 21"
- C Type : 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

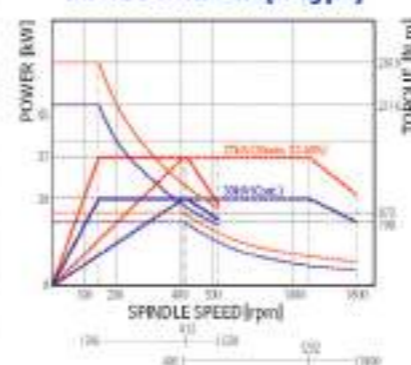


Equipped as standard feature, high Output Converting Transmission provides heavy-duty machining.

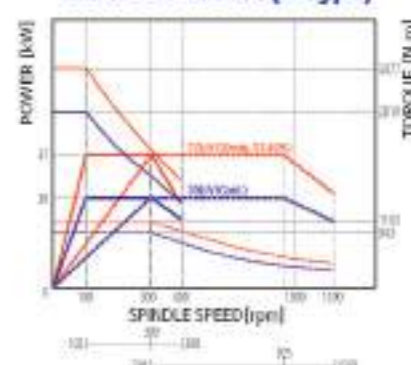


Spindle Power & Torque Diagram

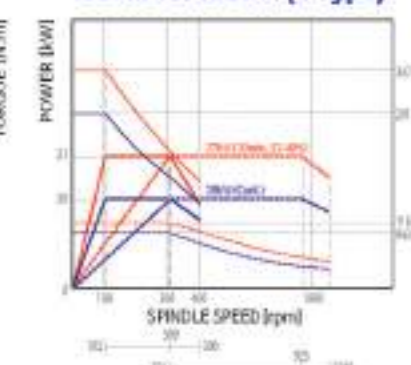
SL 4500/4500M(A Type)



SL 4500/4500M (B Type)



SL 4500/4500M (C Type)



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

Spindle speed
2,000 rpm (A Type 131)
1,800 rpm (A Type 181)
1,500 rpm (B Type 211)
1,200 rpm (C Type 231)

Max. machining length
1,250 mm (SL 4500) **1,213 mm** (SL 4500M)
2,255 mm (SL 4500V) **2,255 mm** (SL 4500VM)
3,055 mm (SL 4500U) **3,055 mm** (SL 4500UM)

Spindle motor (cont./max)
30/45 kW

Feed motor (X/Z)
7/6 kW

Rapid traverse (X/Z)
20/20 m/min (SL 4500M)
20/18 m/min (SL 4500VM)
20/10 m/min (SL 4500UM)

Max. machining diameter
Ø690 mm (STD turret)
Ø620 mm (M8 turret)



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
0.2 sec (60 Hz)

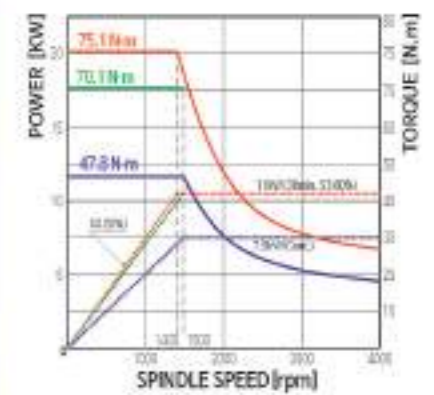
Number of tool positions
Std: 12 / Opt: 10 stations

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 (Ø1250) 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
0.2 sec (60 Hz)

Number of tool positions
12 stations

Milling Spindle Speed
4,000 rpm

Tool Holder
BMT 75

BMT Milling Turret (M Type)

SL4500 Milling type 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.



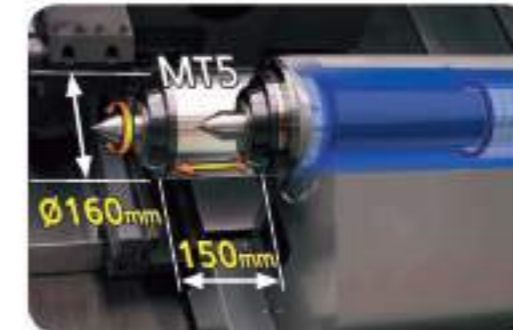
Centralized Operation Panel

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.

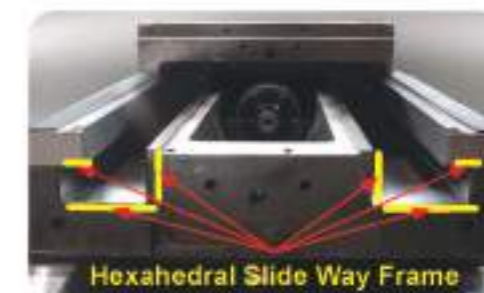


Programmable Tailstock (Carriage direct-coupled) [Std.]

The programmable tailstock body mounted is on wide guide ways to ensure rigid workpiece 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

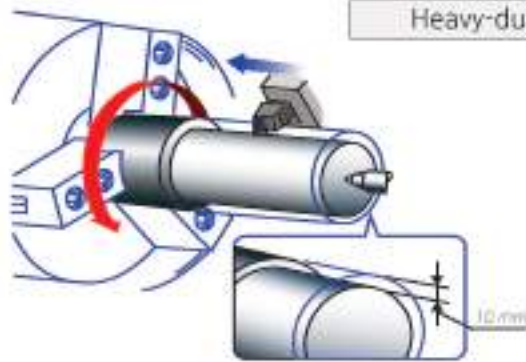
Roundness



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

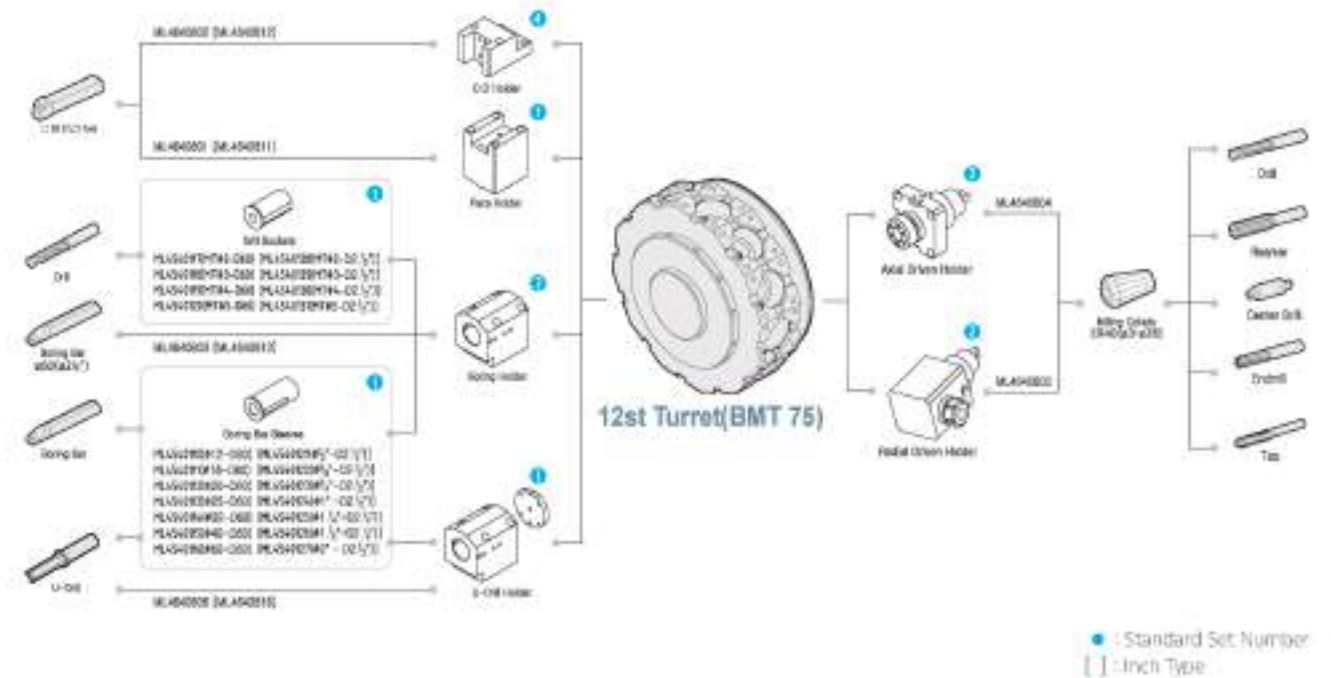
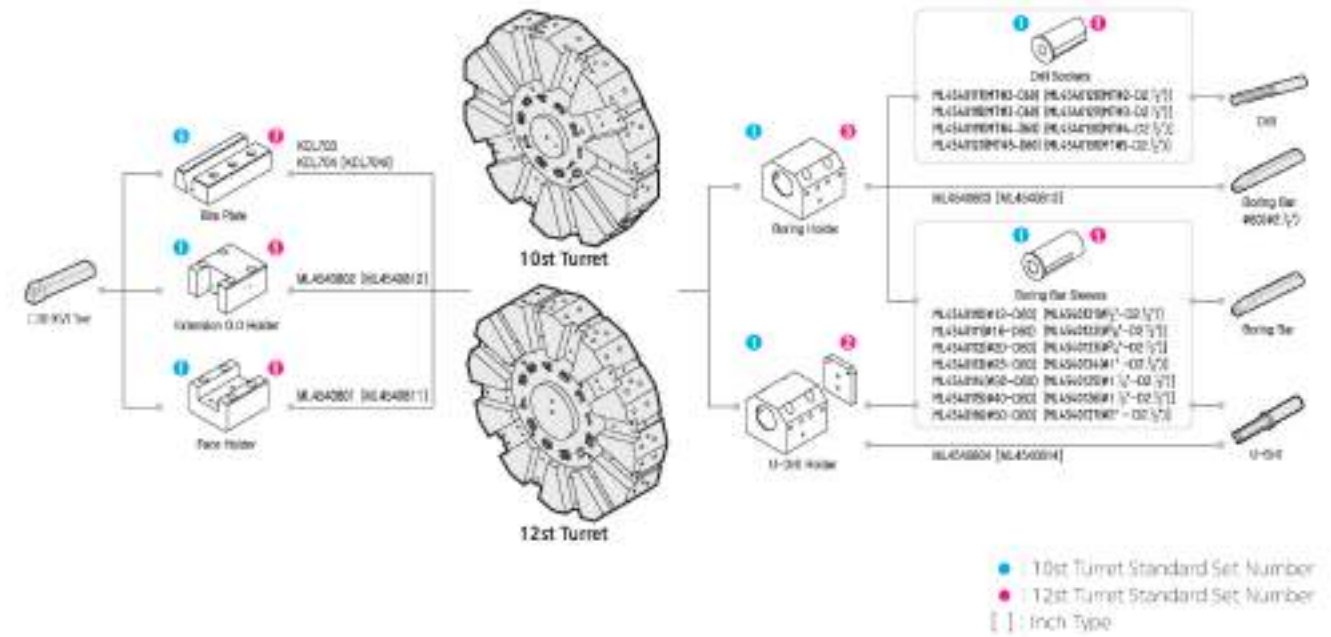


Chip Conveyor



Steady Rest & Preparation

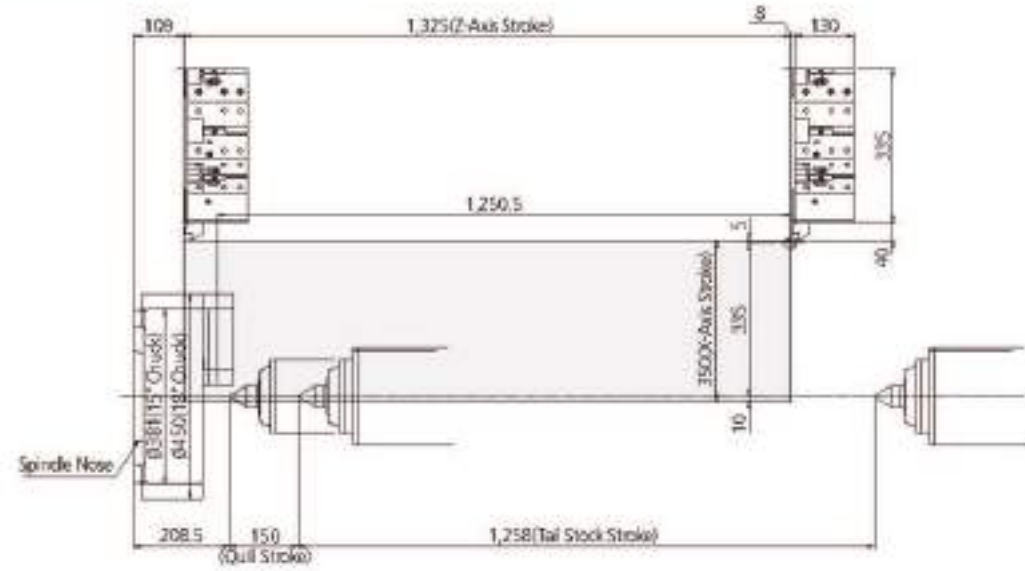
Tooling System



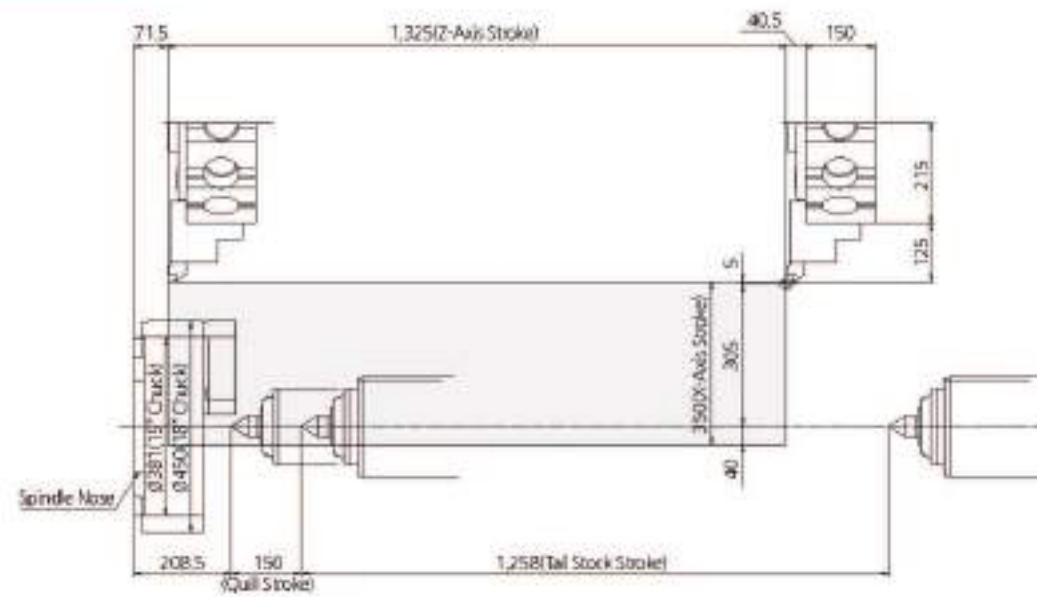
Work Range

Unit: mm

STD Turret



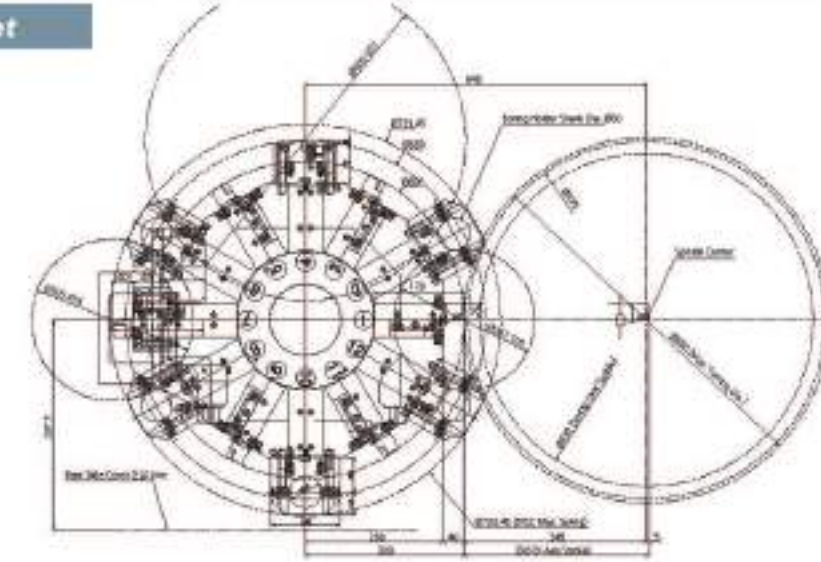
Mill Turret (BMT 75)



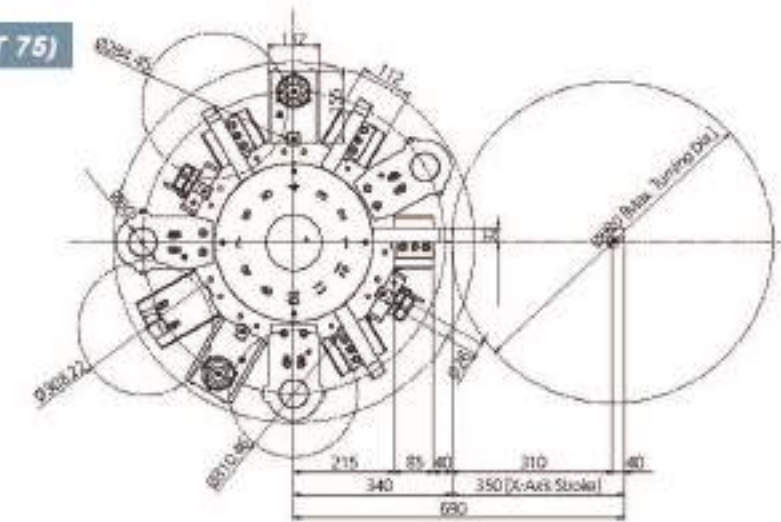
Turret Head Interference

Unit: mm

STD Turret



Mill Turret (BMT 75)



Standard Accessories

- 15" hollow 3 jaws chuck (A Type)
- 18" hollow 3 jaws chuck (A Type)
- 21" hollow 3 jaws chuck (B Type)
- 24" hollow 3 jaws chuck (C Type)
- Chuck damp confirmation
- Chuck damp foot switch
- Chuck pressure switch
- Coolant system
- Door interlock
- Full splash guard with coolant tank
- Jaw (soft 3set, hard 1set)
- Leveling unit
- Main spindle orientation
- Manual/Part list (1 set)
- Patrol lamp (3 colors)
- Safety precaution name plate
- Tailstock (programmable)
- Tool box
- Tool holders
- Work light (LED lamp)

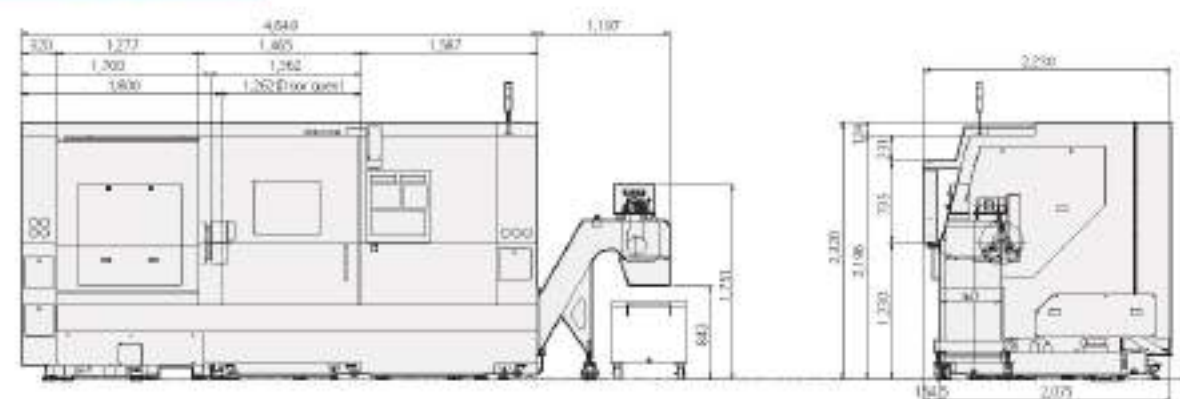
Optional Accessories

- Air blower
- Air conditioners (electric cabinet)
- Air gun
- Auto door
- Bar Feeder Interface
- Chip bucket
- Chip conveyor
- Coolant blower
- Coolant chiller
- Coolant gun
- Coolant level switch
- Counter (total, multi, tool, work)
- Dual pressure chucking
- Oil mist collector
- Oil skimmer
- Robot interface
- Special chuck
- Steady rest (single, dual)
- Tool presetter (manual/auto)
- Transformer

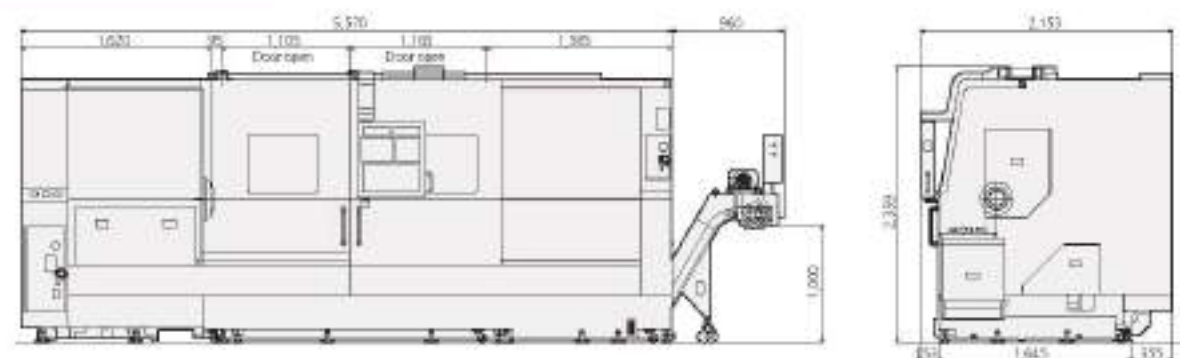
Machine Dimensions

Unit: mm

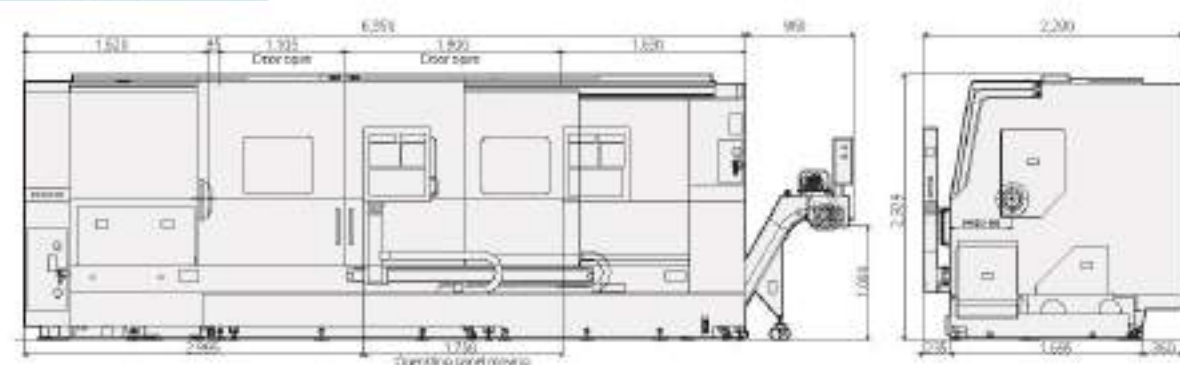
SL 4500



SL 4500X



SL 4500L



Major Specifications

DESCRIPTION	SL 4500			SL 4500M				
	A type	B type	C type	A type	B type	C type		
Chuck	Chuck size	inch	18(15)*	21*	24*	18(15)*	21*	24*
Capacity	Swing over bed	mm	775	775	775	775	775	775
	Swing over cross slide	mm	630	630	630	630	630	630
	Max. turning diameter	mm	690	690	690	620	620	620
	Max. milling diameter	mm	-	-	-	712	712	712
Spindle	Max. machining length	mm	1,250	1,250	1,250	1,213	1,213	1,213
	Spindle speed	rpm	1,800(2,000)	1,500	1,200	1,800(2,000)	1,500	1,200
Spindle	Spindle nose	ASA	A2-11	A2-15	A2-15	A2-11	A2-15	A2-15
	Draw tube ID	mm	117.5	140	166.5	117.5	140	166.5
	Spindle bore diameter	mm	132	181	181	132	181	181
	Motor (Cont./Max)	KW	30/37	30/37	30/37	30/37	30/37	30/37
	Travel	X-axis travel	mm	350	350	350	350	350
Travel	Z-axis travel	mm	1,325	1,325	1,325	1,325	1,325	1,325
	X-axis Rapid travers rate	mm/min	20	20	20	20	20	20
Travel	Z-axis Rapid travers rate	mm/min	20	20	20	20	20	20
	Turret	Number of tool stations	as	12(10)	12(10)	12(10)	12 (BMT75)	12 (BMT75)
Turret	Turning tool shank size	mm	32	32	32	32	32	32
	Boring bar diameter	mm	60	60	60	60	60	60
	Turret index time(next station swit time)	sec	0.20	0.20	0.20	0.20	0.20	0.20
	Rotary tool speed	rpm	-	-	-	4,000	4,000	4,000
	Rotary tool motor (Cont./Max)	KW	-	-	-	5.5/7.5	5.5/7.5	5.5/7.5
Tailstock	Quill diameter	mm	160	160	160	160	160	160
	Quill stroke	mm	150	150	150	150	150	150
	Spindle taper	MT	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)
Machine	Size (with Side Chip conveyor) LxWxH	mm	4,649(5,846) × 2,230 × 2,320			4,649(5,846) × 2,230 × 2,320		
	Size (with Rear Chip conveyor) LxWxH	mm	-			-		
	Weight	kg	10,000	11,000	11,000	10,500	11,500	11,500
	Coolant tank capacity	liter	351	351	351	351	351	351
ELECTRIC POWER SUPPLY	kWV	62/220	62/220	62/220	71/220	71/220	71/220	
CONTROLLER		FANUC, SIEMENS						

*Figures in inches are converted from metric measurements.

Major Specifications

DESCRIPTION			SL 4500X			SL 4500XM		
			A type	B type	C type	A type	B type	C type
Chuck	Chuck size	inch	18[15]*	21*	24*	18[15]*	21*	24*
Capacity	Swing over bed	mm	775	775	775	775	775	775
	Swing over cross slide	mm	630	630	630	630	630	630
	Max. turning diameter	mm	690	690	690	620	620	620
	Max. milling diameter	mm	-	-	-	712	712	712
	Max. machining length	mm	2,255	2,255	2,255	2,255	2,255	2,255
Spindle	Spindle speed	rpm	1,800[2,000]	1,500	1,200	1,800[2,000]	1,500	1,200
	Spindle nose	ASA	A2-11	A2-15	A2-15	A2-11	A2-15	A2-15
	Draw tube ID	mm	117.5	140	166.5	117.5	140	166.5
	Spindle bore diameter	mm	132	181	181	132	181	181
	Motor (Cont./Max)	kW	30/37	30/37	30/37	30/37	30/37	30/37
Travels	X-axis travel	mm	350	350	350	350	350	350
	Z-axis travel	mm	2,330	2,330	2,330	2,330	2,330	2,330
	X-axis Rapid travers rate	m/min	20	20	20	20	20	20
	Z-axis Rapid travers rate	m/min	18	18	18	18	18	18
Turret	Number of tool stations	ea	12	12	12	12 (BMT75)	12 (BMT75)	12 (BMT75)
	Turning tool shank size	mm	32	32	32	32	32	32
	Boring bar diameter	mm	60	60	60	60	60	60
	Turret index time (rot. station swivel time)	sec	0.20	0.20	0.20	0.20	0.20	0.20
	Rotary tool speed	rpm	-	-	-	4,000	4,000	4,000
	Rotary tool motor (Cont./Max)	kW	-	-	-	5.5/7.5	5.5/7.5	5.5/7.5
Tailstock	Quill diameter	mm	160	160	160	160	160	160
	Quill stroke	mm	150	150	150	150	150	150
	Spindle taper	MT	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)
Machine	Size (with Side Chip conveyor) LxWxH	mm	5,570(6,530) × 2,153 × 2,359			5,570(6,530) × 2,153 × 2,359		
	Size (with Rear Chip conveyor) LxWxH	mm	-			-		
	weight	kg	13,000	13,000	13,000	13,000	13,000	13,000
	Coolant tank capacity	liter	400	400	400	400	400	400
ELECTRIC POWER SUPPLY	kW/V	59/220	59/220	59/220	60/220	60/220	60/220	
CONTROLLER		FANUC, SIEMENS						

*Figures in inches are converted from metric measurements

Major Specifications

DESCRIPTION			SL 4500L			SL 4500LM		
			A type	B type	C type	A type	B type	C type
Chuck	Chuck size	inch	18[15]*	21*	24*	18[15]*	21*	24*
Capacity	Swing over bed	mm	775	775	775	775	775	775
	Swing over cross slide	mm	630	630	630	630	630	630
	Max. turning diameter	mm	690	690	690	620	620	620
	Max. milling diameter	mm	-	-	-	712	712	712
	Max. machining length	mm	3,055	3,055	3,055	3,055	3,055	3,055
Spindle	Spindle speed	rpm	1,800[2,000]	1,500	1,200	1,800[2,000]	1,500	1,200
	Spindle nose	ASA	A2-11	A2-15	A2-15	A2-11	A2-15	A2-15
	Draw tube ID	mm	117.5	140	166.5	117.5	140	166.5
	Spindle bore diameter	mm	132	181	181	132	181	181
	Motor (Cont./Max)	kW	30/37	30/37	30/37	30/37	30/37	30/37
Travels	X-axis travel	mm	350	350	350	350	350	350
	Z-axis travel	mm	3,130	3,130	3,130	3,130	3,130	3,130
	X-axis Rapid travers rate	m/min	20	20	20	20	20	20
	Z-axis Rapid travers rate	m/min	10	10	10	10	10	10
Turret	Number of tool stations	ea	12	12	12	12 (BMT75)	12 (BMT75)	12 (BMT75)
	Turning tool shank size	mm	32	32	32	32	32	32
	Boring bar diameter	mm	60	60	60	60	60	60
	Turret index time (rot. station swivel time)	sec	0.20	0.20	0.20	0.20	0.20	0.20
	Rotary tool speed	rpm	-	-	-	4,000	4,000	4,000
	Rotary tool motor (Cont./Max)	kW	-	-	-	5.5/7.5	5.5/7.5	5.5/7.5
Tailstock	Quill diameter	mm	160	160	160	160	160	160
	Quill stroke	mm	150	150	150	150	150	150
	Spindle taper	MT	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)
Machine	Size (with Side Chip conveyor) LxWxH	mm	6,350(7,310) × 2,290 × 2,329			6,350(7,310) × 2,290 × 2,329		
	Size (with Rear Chip conveyor) LxWxH	mm	-			-		
	weight	kg	20,000	20,000	20,000	20,000	20,000	20,000
	Coolant tank capacity	liter	600	600	600	600	600	600
ELECTRIC POWER SUPPLY	kW/V	59/220	59/220	59/220	60/220	60/220	60/220	
CONTROLLER		FANUC, SIEMENS						

*Figures in inches are converted from metric measurements