

SMEC

SL 6500 series

HORIZONTAL TURNING CENTER



SMEC Co., Ltd.

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SMEC
Smart One,
Global One

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



- 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

SL 6500/6500X/6500L/6500XL
SL 6500M/6500XM/6500LM/6500XLM

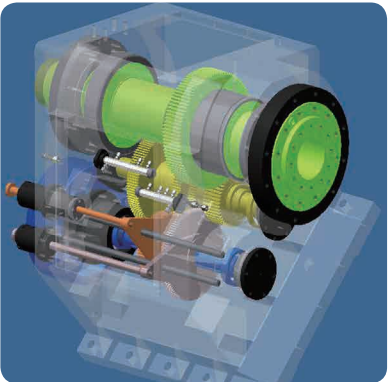
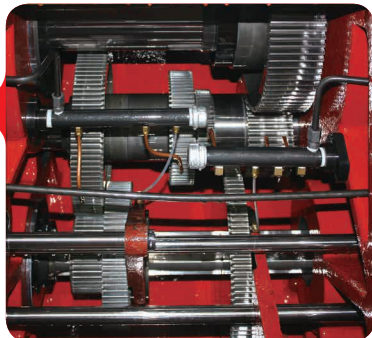
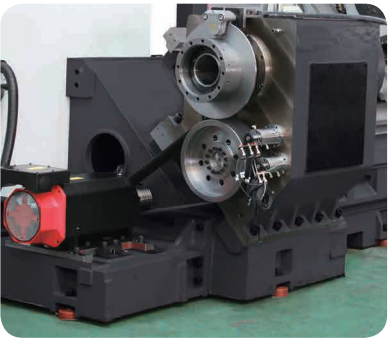
Strongest in class with superb structural design
Simultaneous heavy duty and precision turning

- 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

Main Spindle Motor and Geared Headstock

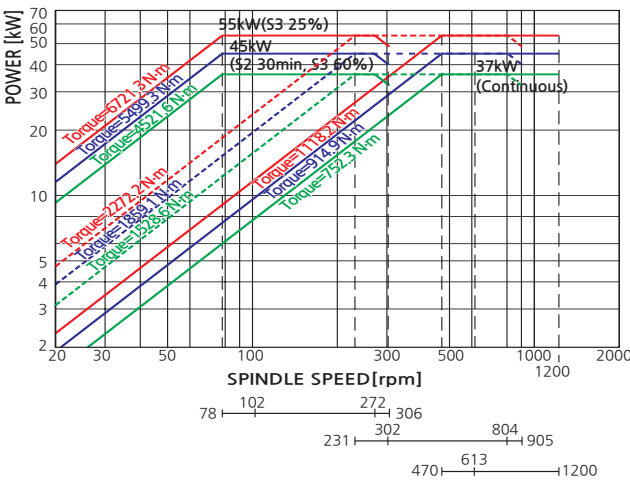
Heavy-duty cutting with a maximum 6,721 N.m of torque via 3-step gearbox transmission



One Body Spindle and Headstock Construction for Minimal Thermal Expansion

By integrated the gearbox and main spindle, we improve cooling efficiency by cooling the gearbox and main spindle at the same time. And through the integration, the usage of belts was reduced, which significantly reduced the amount of noise and vibration caused by belts.

Spindle Power & Torque Diagram SL 6500 24" Chuck



An innovative high precision, heavy duty CNC Lathe,
integrated with all of SMEC's advanced technology
- **SL 6500 series**

Spindle speed
1,500 rpm (A Type 21")
1,200 rpm (B Type 24")

Spindle motor(cont./Max)
37/55 kW

Rapid traverse(X/Z)
12/18 m/min (SL 6500[M])
12/15 m/min (SL 6500X[M])
12/10 m/min (SL 6500L/XL[M])

Feed motor(X/Z)
7/6 kW

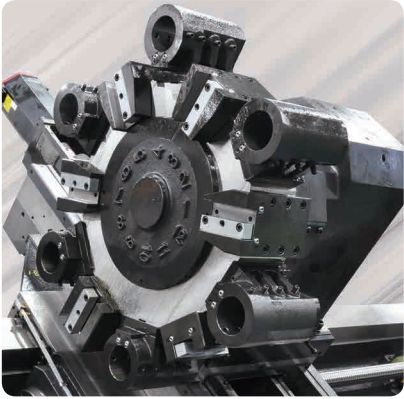
Max. machining length
1,000 mm (SL 6500[M])
2,000 mm (SL 6500X[M])
3,200 mm (SL 6500L[M])
5,050 mm (SL 6500XL[M])

Max. machining diameter
900 mm

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 6500 (High Speed Servo Index Hydraulic Turret)



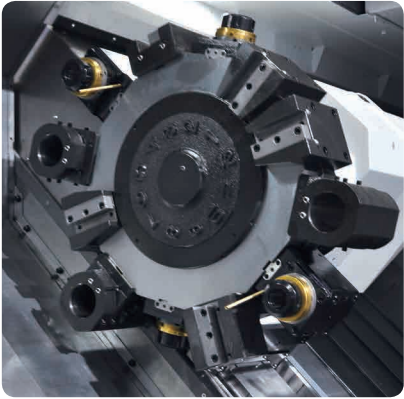
Indexing Time
0.25 sec(60 Hz)

Number of tool positions
12 stations

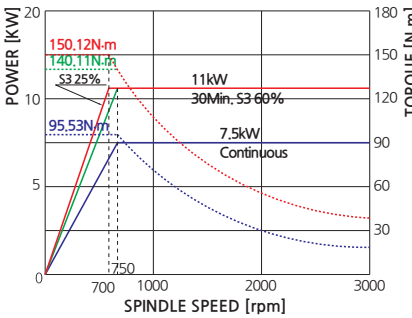
High Speed, Heavy Duty Servo Turret

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 ± 0.01) is non-stop, bi-directional with a fast 0.25 second next station index time. Large diameter (Ø287) precision Curvic coupling with 18,225kgf clamping force enables precision as well as heavy-duty cutting.

SL 6500M (BMT High Speed Turret)



Turret Torque Diagram



Indexing Time
0.25 sec(60 Hz)

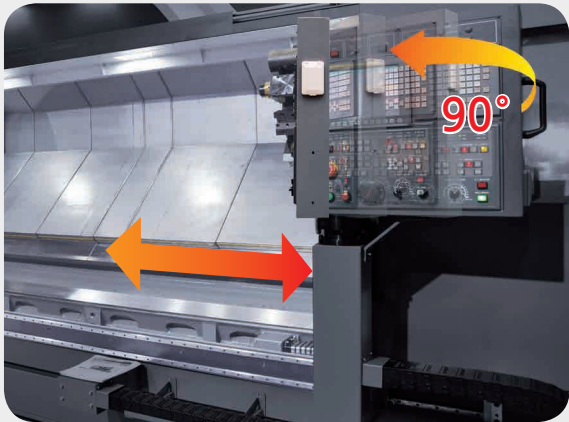
Number of tool positions
12 stations

Milling Spindle Speed
3,000 rpm

Tool Holder
BMT 85

BMT Milling Turret (M Type)

SL 6500M 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.



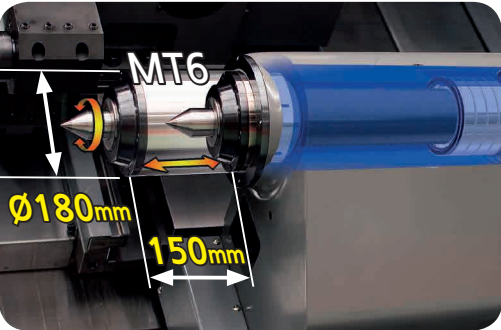
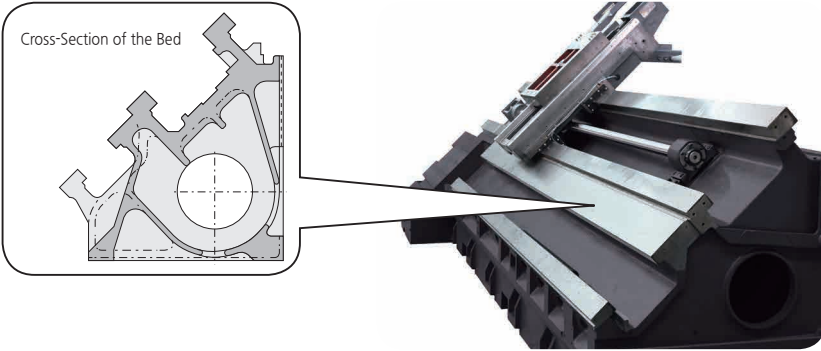
Centralized Operation Panel

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 for easier access to the workpiece and superb chip discharge.

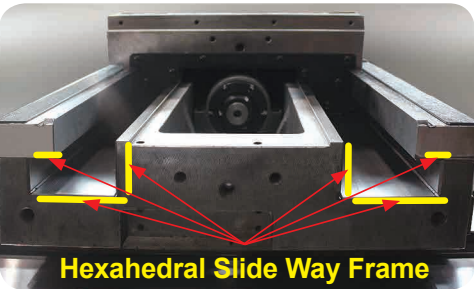
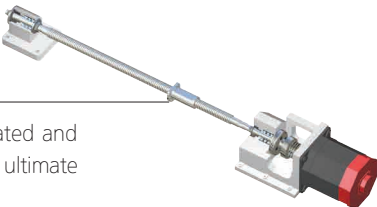


Programmable Tailstock(Carriage direct-coupled) [Std.]

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.

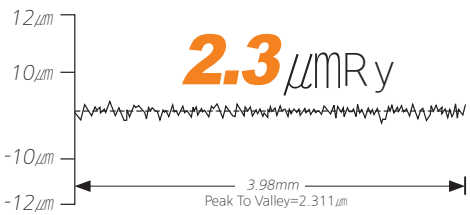


Hexahedral Slide Way Frame (X-axis)

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

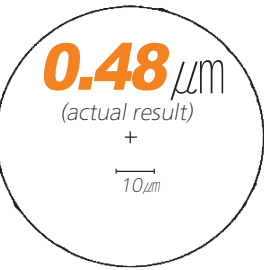
High Precision

Surface Roughness



Model : SL 6500L

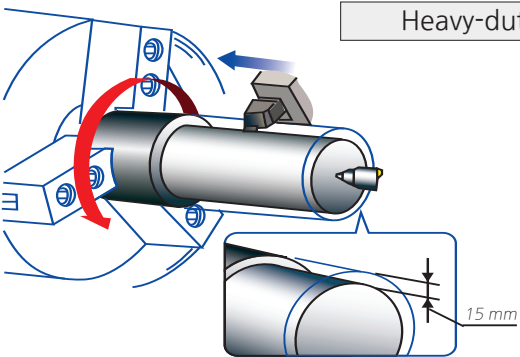
Roundness



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 6500L



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

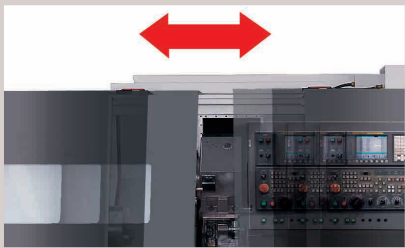
Spindle speed
367 rpm
Cutting speed
150 m/min
Depth of cut
15 mm <Spindle Load 65%>
Feedrate
0.4 mm/rev

Standard Accessories

Optional Accessories



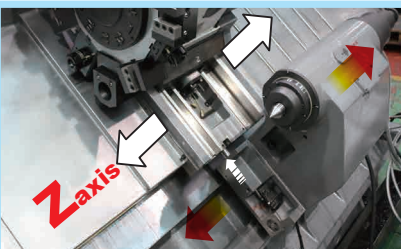
Automatic Lubricator



Auto Door



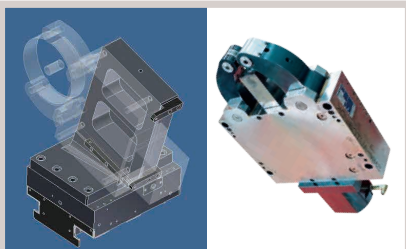
Tool Presetter



Programmable Tailstock



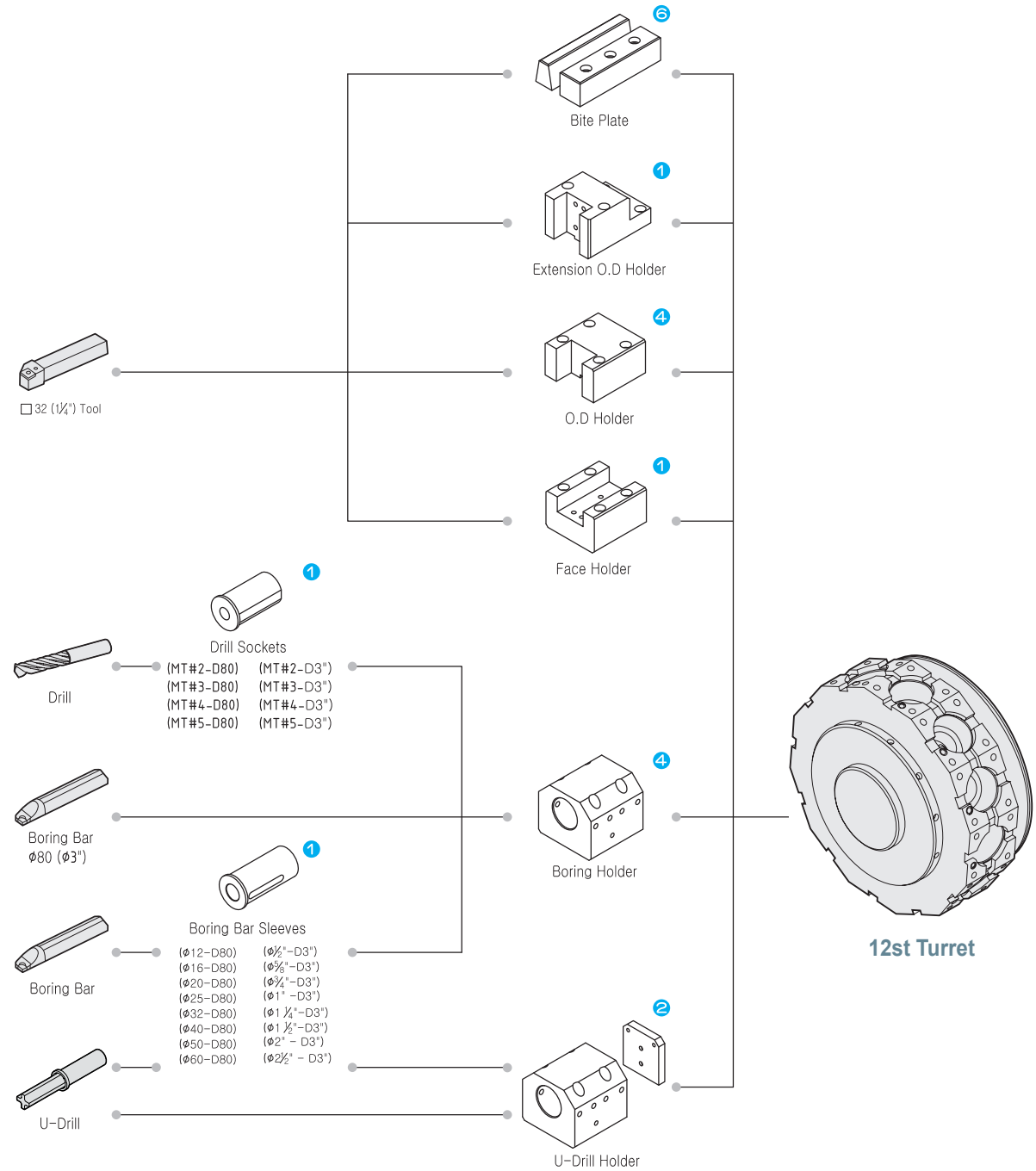
Chip Conveyor



Steady Rest & Preparation

Tooling System

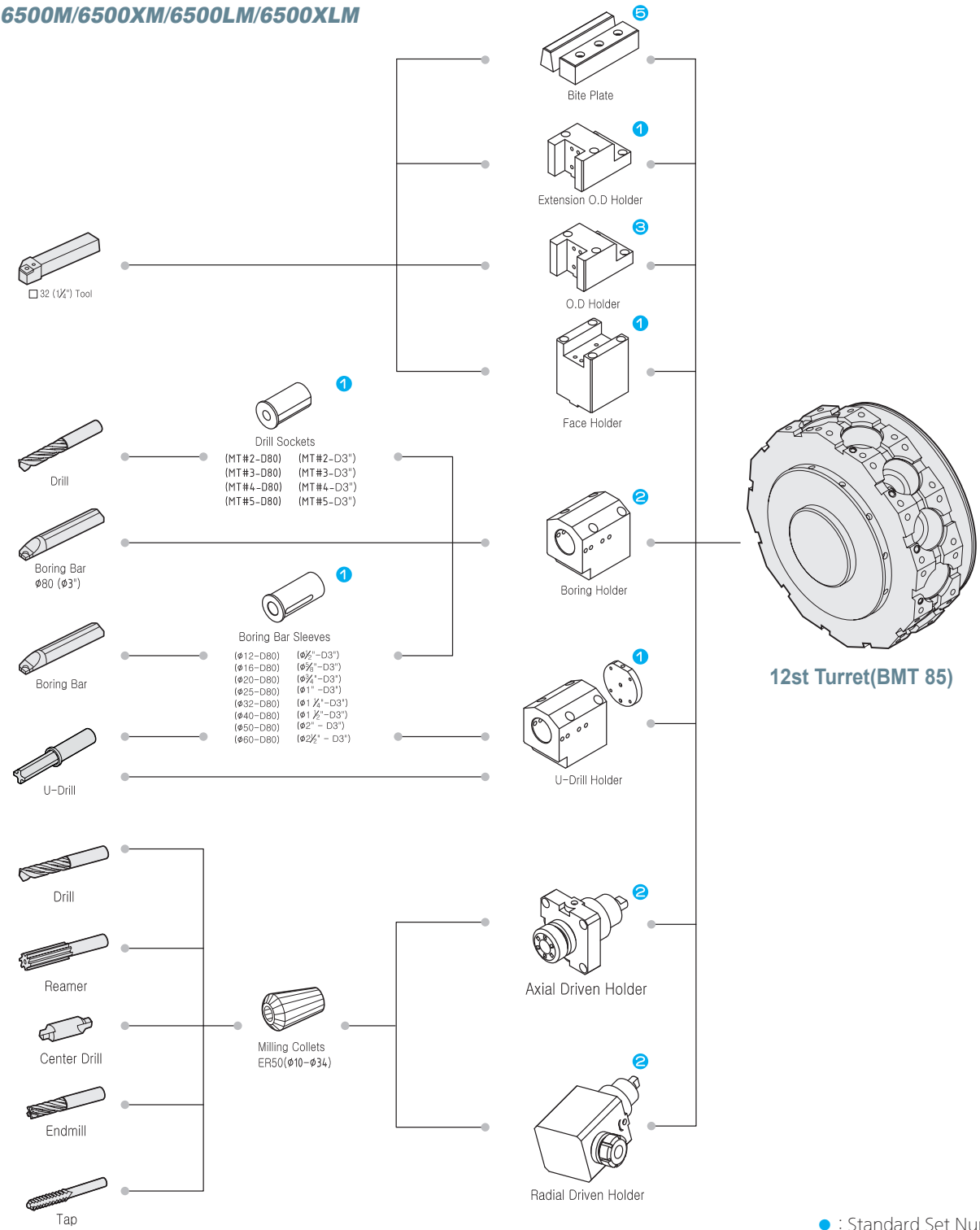
SL 6500/6500X/6500L/6500XL



● : Standard Set Numbers

Tooling System

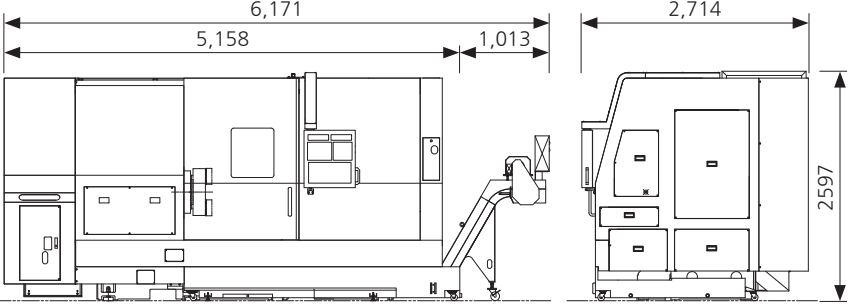
SL 6500M/6500XM/6500LM/6500XLM



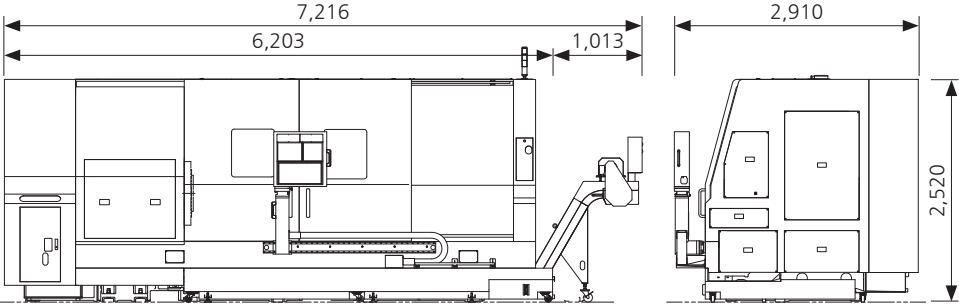
Machine Dimensions

Unit : mm

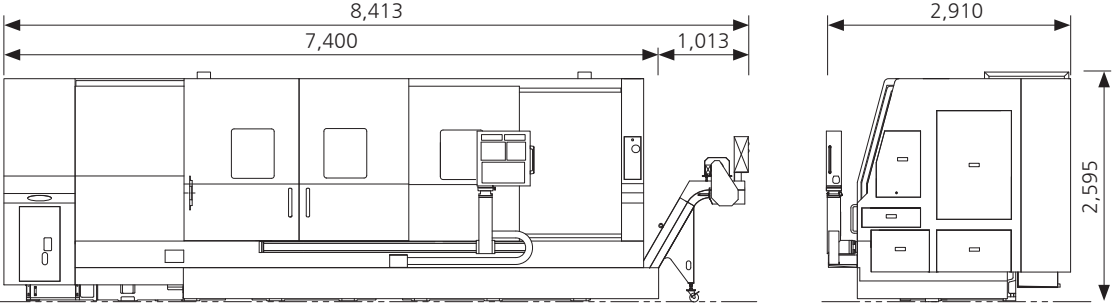
SL 6500/6500M



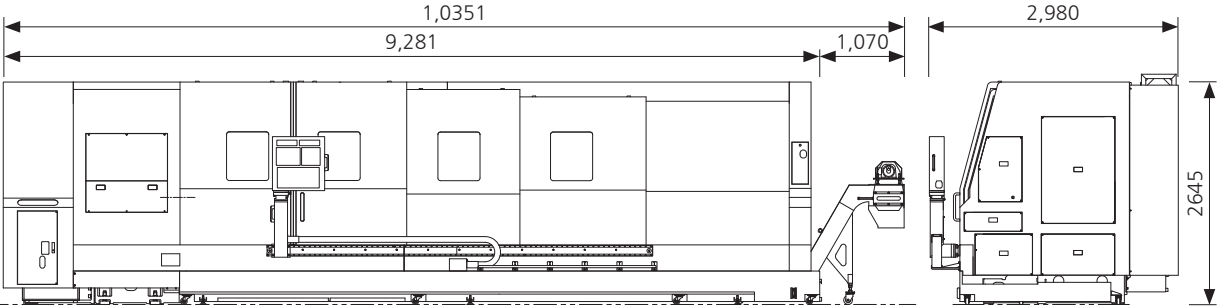
SL 6500X/6500XM



SL 6500L/6500LM



SL 6500XLM/6500XLM

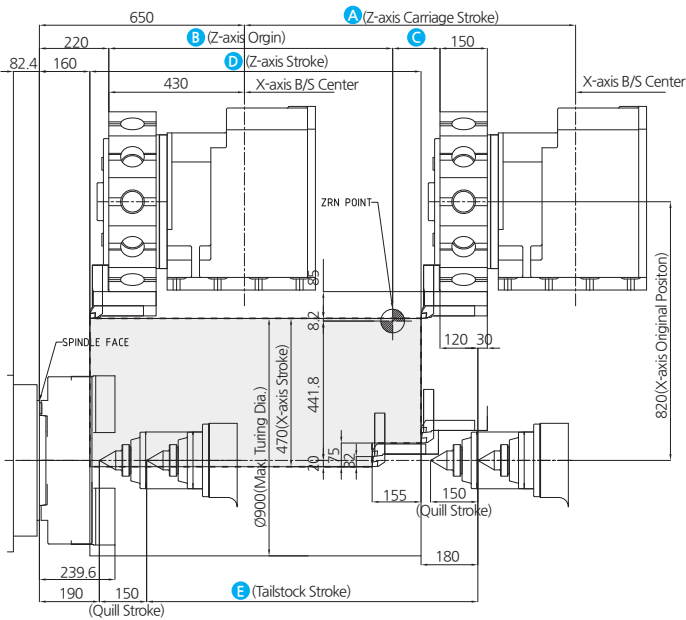


● : Standard Set Numbers

Work Range

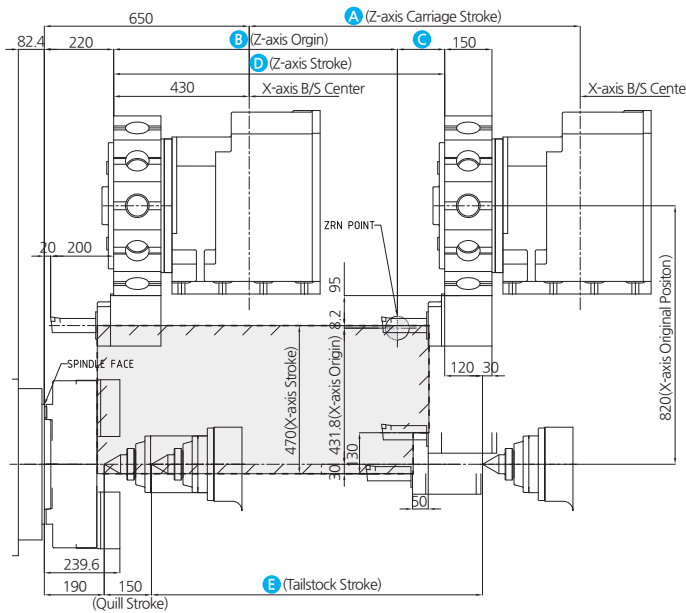
Unit : mm

FACE CUT



	SL 6500	SL 6500X	SL 6500L	SL 6500XL
A	1,050mm	2,050mm	3,270mm	5,100mm
B	900mm	1,900mm	3,070mm	4,900mm
C	150mm	150mm	200mm	200mm
D	1,050mm	2,050mm	3,270mm	5,100mm
E	1,050mm	2,050mm	3,270mm	5,100mm

BORING CUT

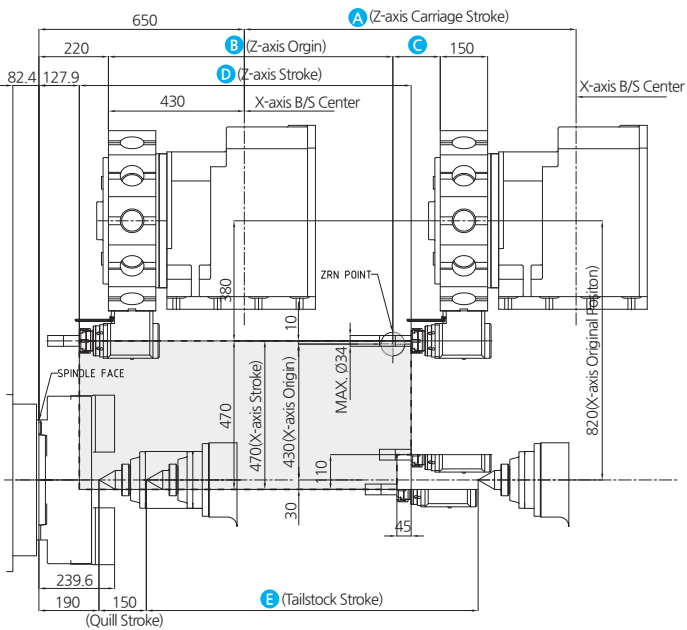


	SL 6500	SL 6500X	SL 6500L	SL 6500XL
A	1,050mm	2,050mm	3,270mm	5,100mm
B	900mm	1,900mm	3,070mm	4,900mm
C	150mm	150mm	200mm	200mm
D	1,050mm	2,050mm	3,270mm	5,100mm
E	1,050mm	2,050mm	3,270mm	5,100mm

Work Range

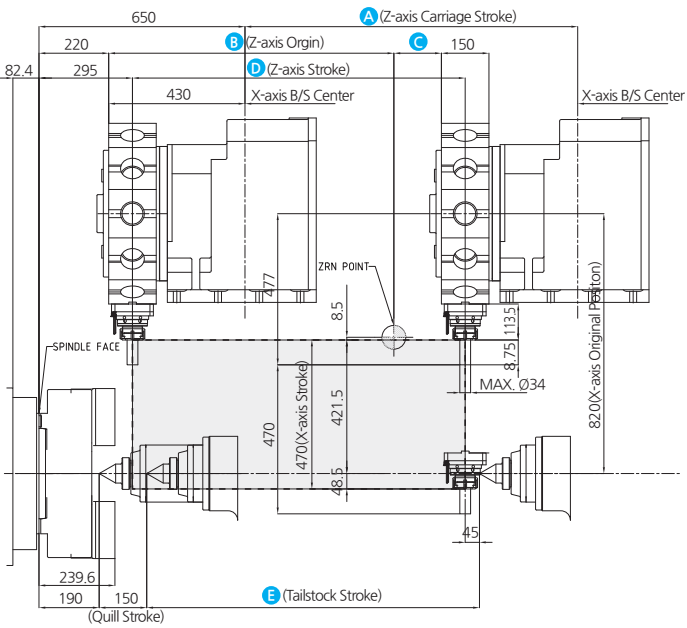
Unit : mm

BORING & RADIAL DRIVEN



	SL 6500M	SL 6500XM	SL 6500LM	SL 6500XLM
A	1,050mm	2,050mm	3,270mm	5,100mm
B	900mm	1,900mm	3,070mm	4,900mm
C	150mm	150mm	200mm	200mm
D	1,050mm	2,050mm	3,270mm	5,100mm
E	1,050mm	2,050mm	3,270mm	5,100mm

FACE & AXIAL DRIVEN



	SL 6500M	SL 6500XM	SL 6500LM	SL 6500XLM
A	1,050mm	2,050mm	3,270mm	5,100mm
B	900mm	1,900mm	3,070mm	4,900mm
C	150mm	150mm	200mm	200mm
D	1,050mm	2,050mm	3,270mm	5,100mm
E	1,050mm	2,050mm	3,270mm	5,100mm

Unit : mm

*Figures in inches are converted from metric measurements.

Major Specifications

DESCRIPTION			SL 6500X		SL 6500XM	
			A type	B type	A type	B type
Chuck	Chuck size	inch	21"	24"	21"	24"
Capacity	Swing over bed	mm	1,030	1,030	1,030	1,030
	Swing over cross slide	mm	800	800	800	800
	Max. turning diameter	mm	900	900	900	900
	Max. milling diameter	mm	-	-	843	843
	Max. machining length	mm	2,000	2,000	2,000	2,000
Spindle	Spindle speed	rpm	1,500	1,200	1,500	1,200
	Spindle nose	ASA	A2-15	A2-15	A2-15	A2-15
	Draw tube ID	mm	140	140	140	140
	Spindle bore diameter	mm	152	152	152	152
	Spindle motor (Cont./Max)	kW	37/55	37/55	37/55	37/55
Travels	X-axis travel	mm	470	470	470	470
	Z-axis travel	mm	2,050	2,050	2,050	2,050
	X-axis Rapid traverse rate	m/min	12	12	12	12
	Z-axis Rapid traverse rate	m/min	15	15	15	15
Turret	Number of tool stations	ea	12	12	12 (BMT85)	12 (BMT85)
	Turning tool shank size	mm	32	32	32	32
	Boring bar diameter	mm	80	80	80	80
	Turret index time(next station swivel time)	sec	0.25	0.25	0.25	0.25
	Rotary tool speed	rpm	-	-	3,000	3,000
	Rotary tool motor (Cont./Max)	kW	-	-	7.5/11	7.5/11
Tailstock	Quill diameter	mm	180	180	180	180
	Quill stroke	mm	150	150	150	150
	Spindle taper	MT	MT6 (Built-in)	MT6 (Built-in)	MT6 (Built-in)	MT6 (Built-in)
Machine	Size (with Side Chip conveyor) L×W×H	mm	6,203(7,216) × 2,910 × 2,520		6,203(7,216) × 2,910 × 2,520	
	Size (with Rear Chip conveyor) L×W×H	mm	-		-	
	weight	kg	19,000	19,000	19,000	19,000
	Coolant tank capacity	Liter	500	500	500	500
ELECTRIC POWER SUPPLY			kVA/V	68/220	69/220	69/220
CONTROLLER			FANUC, SIEMENS			

※Figures in inches are converted from metric measurements.

Major Specifications

DESCRIPTION			SL 6500L		SL 6500LM	
			A type	B type	A type	B type
Chuck	Chuck size	inch	21"	24"	21"	24"
Capacity	Swing over bed	mm	1,030	1,030	1,030	1,030
	Swing over cross slide	mm	800	800	800	800
	Max. turning diameter	mm	900	900	900	900
	Max. milling diameter	mm	-	-	843	843
	Max. machining length	mm	3,200	3,200	3,200	3,200
Spindle	Spindle speed	rpm	1,500	1,200	1,500	1,200
	Spindle nose	ASA	A2-15	A2-15	A2-15	A2-15
	Draw tube ID	mm	140	140	140	140
	Spindle bore diameter	mm	152	152	152	152
	Spindle motor (Cont./Max)	kW	37/55	37/55	37/55	37/55
Travels	X-axis travel	mm	470	470	470	470
	Z-axis travel	mm	3,270	3,270	3,270	3,270
	X-axis Rapid traverse rate	m/min	12	12	12	12
	Z-axis Rapid traverse rate	m/min	10	10	10	10
Turret	Number of tool stations	ea	12	12	12 (BMT85)	12 (BMT85)
	Turning tool shank size	mm	32	32	32	32
	Boring bar diameter	mm	80	80	80	80
	Turret index time(next station swivel time)	sec	0.25	0.25	0.25	0.25
	Rotary tool speed	rpm	-	-	3,000	3,000
	Rotary tool motor (Cont./Max)	kW	-	-	7.5/11	7.5/11
Tailstock	Quill diameter	mm	180	180	180	180
	Quill stroke	mm	150	150	150	150
	Spindle taper	MT	MT6 (Built-in)	MT6 (Built-in)	MT6 (Built-in)	MT6 (Built-in)
Machine	Size (with Side Chip conveyor) L×W×H	mm	7,400(8,413) × 2,910 × 2,595		7,400(8,413) × 2,910 × 2,595	
	Size (with Rear Chip conveyor) L×W×H	mm	-		-	
	weight	kg	22,000	22,000	22,000	22,000
	Coolant tank capacity	Liter	600	600	600	600
ELECTRIC POWER SUPPLY			kVA/V	68/220	69/220	69/220
CONTROLLER			FANUC, SIEMENS			

※Figures in inches are converted from metric measurements.

Major Specifications

DESCRIPTION			SL 6500XL		SL 6500XLM	
			A type	B type	A type	B type
Chuck	Chuck size	inch	21"	24"	21"	24"
Capacity	Swing over bed	mm	1,030	1,030	1,030	1,030
	Swing over cross slide	mm	800	800	800	800
	Max. turning diameter	mm	900	900	900	900
	Max. milling diameter	mm	-	-	843	843
	Max. machining length	mm	5,050	5,050	5,050	5,050
Spindle	Spindle speed	rpm	1,500	1,200	1,500	1,200
	Spindle nose	ASA	A2-15	A2-15	A2-15	A2-15
	Draw tube ID	mm	140	140	140	140
	Spindle bore diameter	mm	152	152	152	152
	Spindle motor (Cont./Max)	kW	37/55	37/55	37/55	37/55
Travels	X-axis travel	mm	470	470	470	470
	Z-axis travel	mm	5,100	5,100	5,100	5,100
	X-axis Rapid traverse rate	m/min	12	12	12	12
	Z-axis Rapid traverse rate	m/min	10	10	10	10
Turret	Number of tool stations	ea	12	12	12 (BMT85)	12 (BMT85)
	Turning tool shank size	mm	32	32	32	32
	Boring bar diameter	mm	80	80	80	80
	Turret index time(next station swivel time)	sec	0.25	0.25	0.25	0.25
	Rotary tool speed	rpm	-	-	3,000	3,000
	Rotary tool motor (Cont./Max)	kW	-	-	7.5/11	7.5/11
Tailstock	Quill diameter	mm	180	180	180	180
	Quill stroke	mm	150	150	150	150
	Spindle taper	MT	MT6 (Built-in)	MT6 (Built-in)	MT6 (Built-in)	MT6 (Built-in)
Machine	Size (with Side Chip conveyor) L×W×H	mm	9,281(10,351) × 2,980 × 2,555		9,281(10,351) × 2,980 × 2,555	
	Size (with Rear Chip conveyor) L×W×H	mm	-		-	
	weight	kg	26,000	26,000	26,000	26,000
	Coolant tank capacity	Liter	790	790	790	790
ELECTRIC POWER SUPPLY			kVA/V	68/220	69/220	69/220
CONTROLLER			FANUC, SIEMENS			

※Figures in inches are converted from metric measurements.

NC Specifications / FANUC Series

Item		Specification	FANUC series
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 cordinate interpolation	G12.1, G13.1	○
	Cylindrical interpolation	G70.1	○
	Variable lead thread cutting	G34	○
	Continuous threading		○
	Reference position return	G28	○
Feed function	Reference position return check	G27	○
	Rapid traverse rate override	F0, 25%, 50%, 100%	○
Spindle function	Feedrate override		0~150%
	Spindle orientation		○
Tool functions	Rigid tapping		○
	Tool number command	T4-Digt / T2-Digt	T4-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	○
Program input	Direct input of tool offset value measured B		○
	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		○