SMEC

SL 2000/2500 Y series

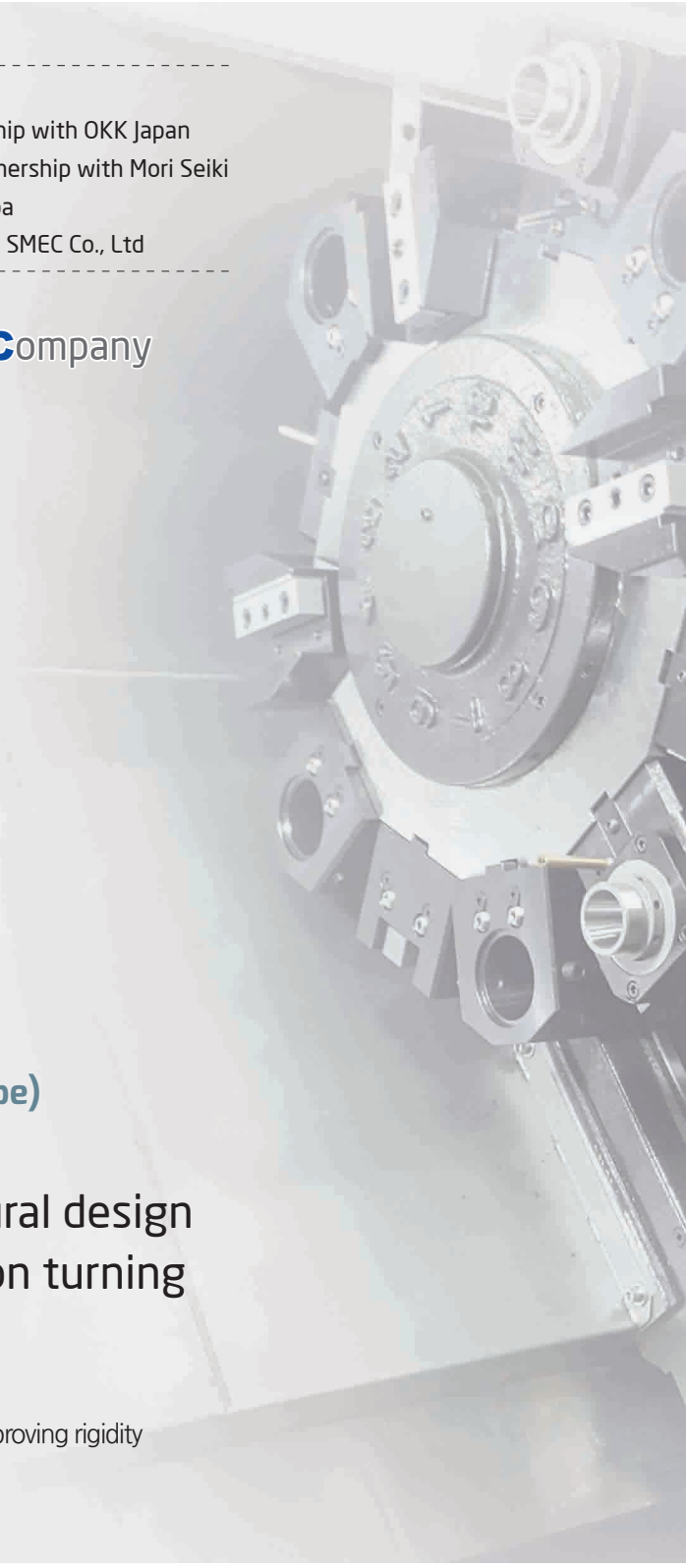
Y-AXIS HORIZONTAL TURNING CENTER

SMEC America Corp.

SMEC *Smart One, Global One*

- 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

Samsung
Machine Tools
Engineering
Company



SL 2000 Y series

SL 2000Y/2000SY(A/B Type)

SL 2500 Y series

SL 2500Y/2500SY/2500LY/2500LSY(A/B Type)

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

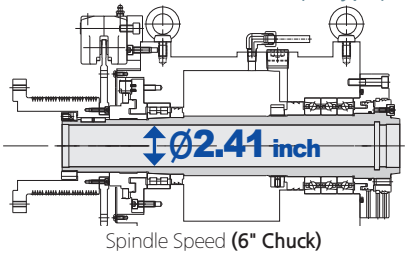
- 30 degree torque tube type bed to support heavy duty turning
- Significantly reduced non-cutting time and efficient turning
- Low-center of gravity reducing vibration, thermal deformation and improving rigidity

High Accuracy, High Rigidity Spindle

SPINDLE & HEADSTOCK

The Spindle and Headstock are machined and ground in temperature controlled environment and assembled in a clean room.

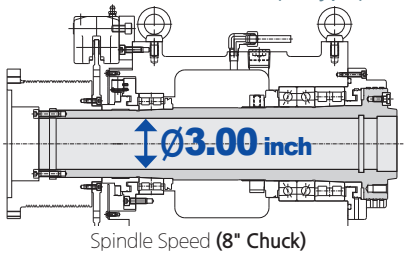
SL 2000 Y Series (A Type)



Spindle Speed (6" Chuck)

Max 6,000 rpm

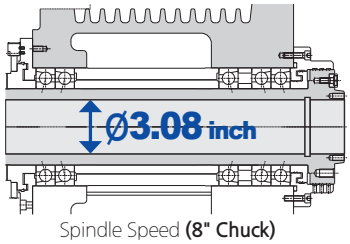
SL 2000 Y series (B Type)



Spindle Speed (8" Chuck)

Max 4,500 rpm

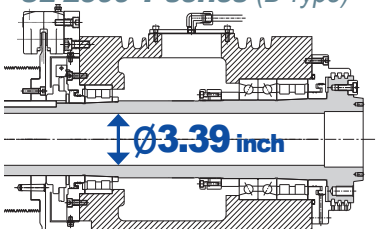
SL 2500 Y Series (A Type)



Spindle Speed (8" Chuck)

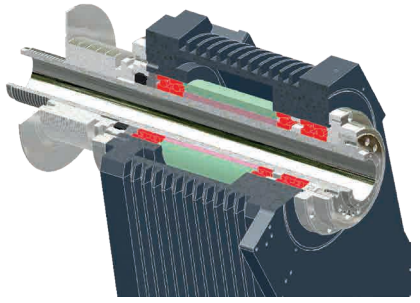
Max 4,500 rpm

SL 2500 Y series (B Type)



Spindle Speed (10" Chuck)

Max 3,500 rpm

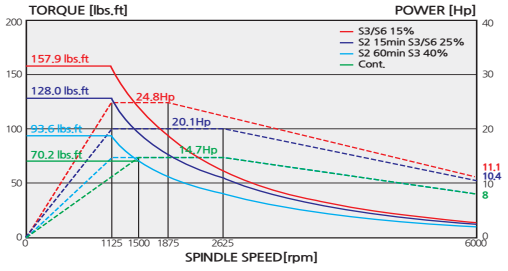


Pin Tube Rib Design for Minimal Thermal Growth

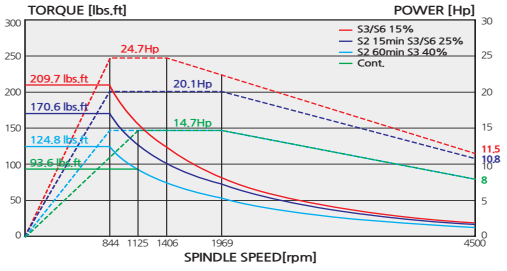
The pin tube rib design of the Headstock ensures minimal thermal growth, and precision (class P4) angular contact ball bearings in the front and rear provides high rigidity for heavy-duty machining and unsurpassed surface finish.

Main-Spindle Power & Torque Diagram

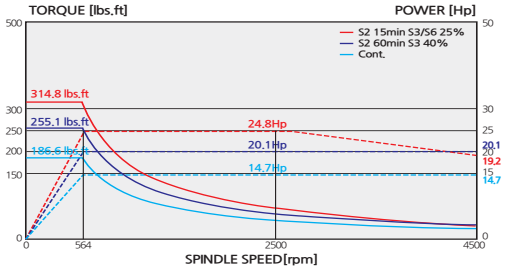
SL 2000 Y Series (A Type)



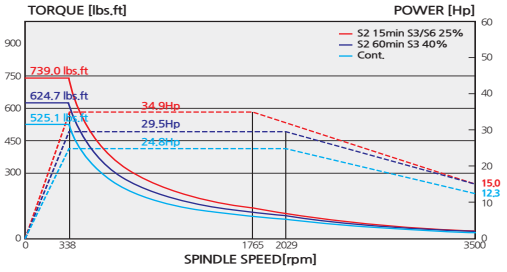
SL 2000 Y series (B Type)



SL 2500 Y Series (A Type)



SL 2500 Y series (B Type)



SL 2000/2500 Y series is a heavy-duty, ultra precision Turning Center, combined with SMEC's advanced technological features.

Spindle motor(Cont./Max) / HP

Model	SL 2000Y	SL 2000SY	SL 2500Y	SL 2500SY	SL 2500LY	SL 2500LSY
A Type	14.76/24.81	14.76/24.81	14.76/24.81	14.76/24.81	14.76/24.81	14.76/24.81
B Type	14.76/24.81	14.76/24.81	24.81/34.87	24.81/34.87	24.81/34.87	24.81/34.87

Spindle speed(Main) / rpm

Model	SL 2000Y	SL 2000SY	SL 2500Y	SL 2500SY	SL 2500LY	SL 2500LSY
A Type	6,000	6,000	4,500	4,500	4,500	4,500
B Type	4,500	4,500	3,500	3,500	3,500	3,500

Spindle speed(Sub) / rpm

[ ] : option

Model	SL 2000Y	SL 2000SY	SL 2500Y	SL 2500SY	SL 2500LY	SL 2500LSY
A Type	-	6,000	-	6,000	-	6,000
B Type	-	6,000	-	6,000[4,500]	-	6,000[4,500]

Rapid traverse(X/Y/Z/B) / ipm

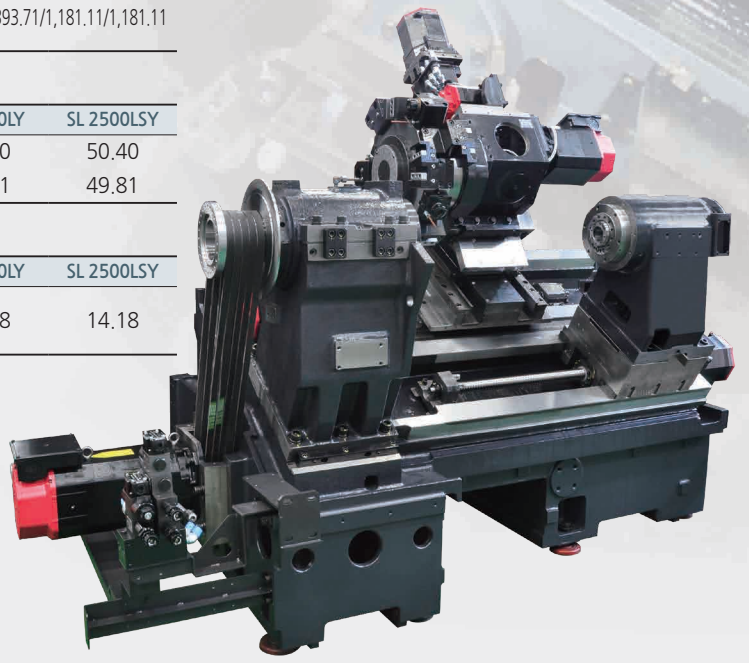
Model	SL 2000Y	SL 2000SY	SL 2500Y	SL 2500SY	SL 2500LY	SL 2500LSY
A Type B Type	944.89/393.71/1,181.11/944.89		708.67/472.45/944.89/944.89		1,181.11/393.71/1,181.11/1,181.11	

Max. turning length / inch

Model	SL 2000Y	SL 2000SY	SL 2500Y	SL 2500SY	SL 2500LY	SL 2500LSY
A Type	19.30	19.30	19.30	19.30	50.40	50.40
B Type	17.72	17.72	18.75	18.75	49.81	49.81

Max. turning diameter / inch

Model	SL 2000Y	SL 2000SY	SL 2500Y	SL 2500SY	SL 2500LY	SL 2500LSY
A Type B Type	15.56	15.56	14.18	14.18	14.18	14.18



Highly Reliable and Rigid Structural Design

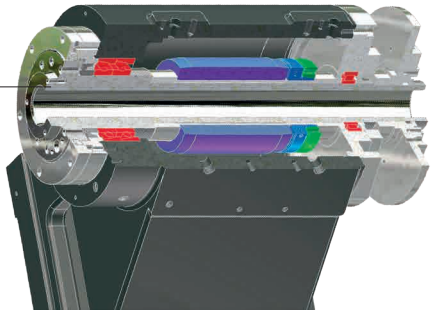
·One piece Meehanite casting with heavily ribbed torque tube design
·Rigid bed supports for powerful cutting
·Excellent vibration dampening and thermal displacement design

High Accuracy, High Rigidity ***Sub-Spindle***

Built-in Sub-Spindle Motor

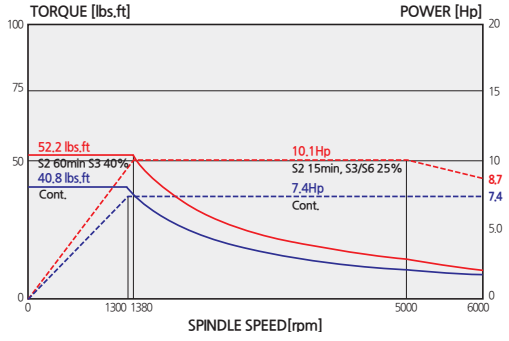
The sub-spindle with full C-axis allows milling, drilling and tapping on the back side of parts, and a powerful 7.5kW Fanuc built-in motor provides fast acceleration with high torque (52N.m)

Precision angular contact ball bearings located in the front and double row cylindrical roller bearings in the rear of the sub-spindle ensure heavy-duty cutting as well as unsurpassed surface finish.

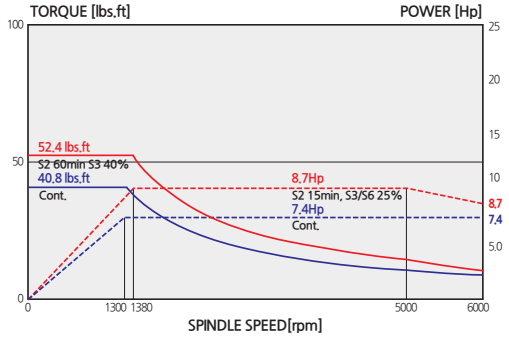


Sub-Spindle Power & Torque Diagram

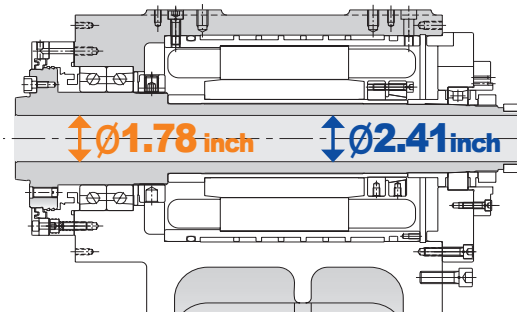
SL 2000SY Series



SL 2500SY Series



Sub-Spindle & Headstock



Spindle Speed (6" Chuck)

Max 6,000 rpm

SL 2000SY/2500SY/2500LSY

Spindle Speed (8" Chuck)

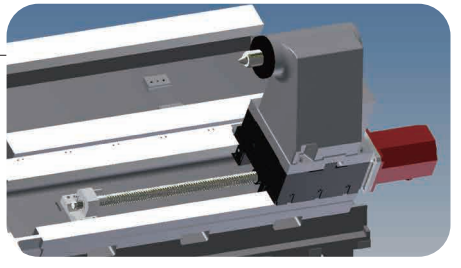
Max 4,500 rpm

SL 2500SY/LSY (OPT.) **B Type only**

Servo Tailstock Interface

Tailstock positioning and quill thrust force are simple to set up using the specially designed servo tailstock interface.

The high speed servo driven tailstock offers high speed high precision positioning and digitally controlled thrust force settings. Quill thrust force can be set according to part length & diameter. This results in reduced down time and increased manufacturing efficiency.



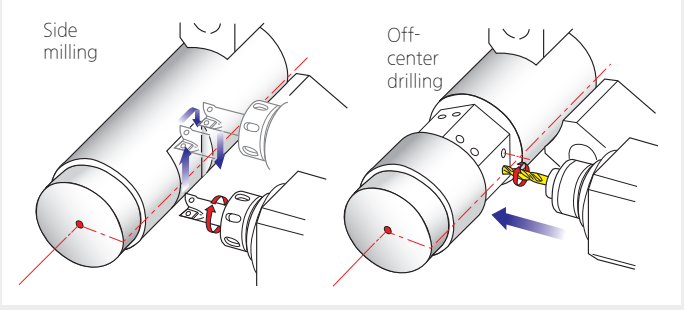
Swivel Operation Panel

Swivel operation panel of 10.4 inch color TFT LCD monitor can turn to 81 degree, providing operators with easy access to the control panel while working on the machine.

Y-Axis Machining

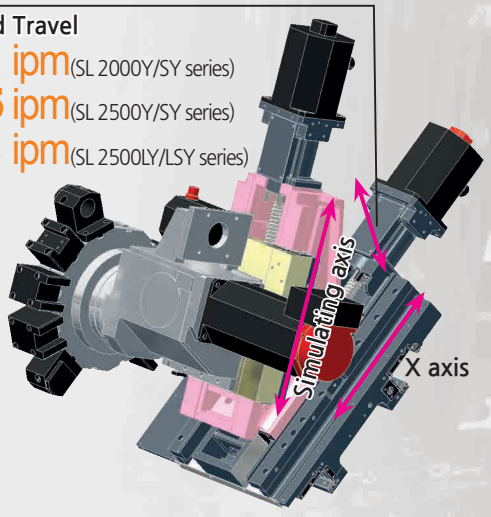
Y-axis adds integrated machining feature to a conventional turning center, providing machining capability on the workpiece that is not parallel or perpendicular to the spindle center line.

Bar machining with Y-axis control



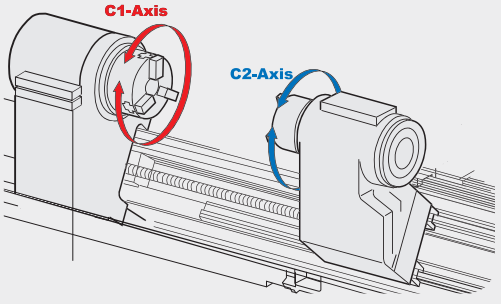
Y axis Travel
± 2.07 inch(SL 2000SY/Y series)
± 1.97 inch(SL 2500LSY/LY/SY/Y series)

Y axis Rapid Travel
393.71 ipm(SL 2000Y/SY series)
472.45 ipm(SL 2500Y/SY series)
393.71 ipm(SL 2500LY/LSY series)



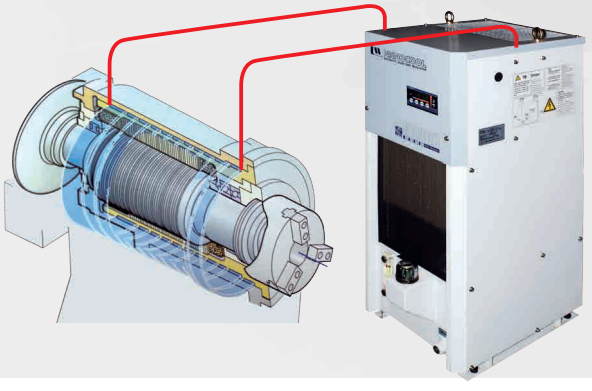
Synchronized C1 and C2-Axis Indexing

Synchronized C1-axis(main spindle) and C2-axis(sub-spindle) indexing provides machining flexibility in a wide variety of workpiece configurations. From simple turning and milling to multi-axis simultaneous machining, all operations can be completed in one set-up.

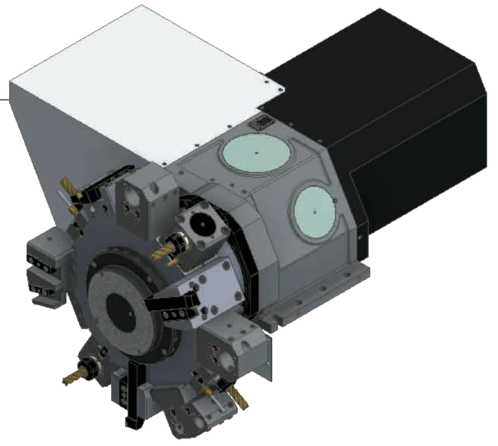


Sub-Spindle Oil Cooling Unit

Sup-spindle is surrounded by an oil jacket cooling system to minimize thermal displacement and to ensure machining accuracy regardless of different machining conditions.



Fast Indexing and Heavy-Duty Turret Design

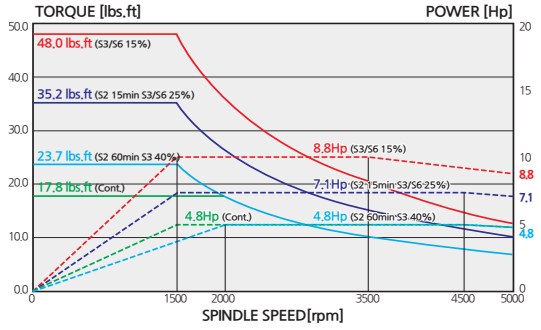


The 12 station heavy-duty turret features a large diameter 3-piece Curvic coupling and 4,735kgf(35kgf/㎠) of hydraulic clamp force. The heavy-duty design provides high rigidity for heavy cutting, unsurpassed surface finishes and long tool life.

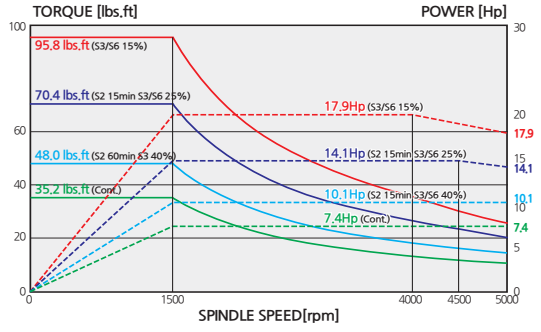
Turret rotation, deceleration and clamp are all controlled by a reliable high torque servo motor. Turret indexing is non-stop bi-directional with a 0.15 second next station index time. Each turret station is capable of accepting both milling and turning tools.

Turret Torque Diagram

SL 2000 Y series (A,B Type)

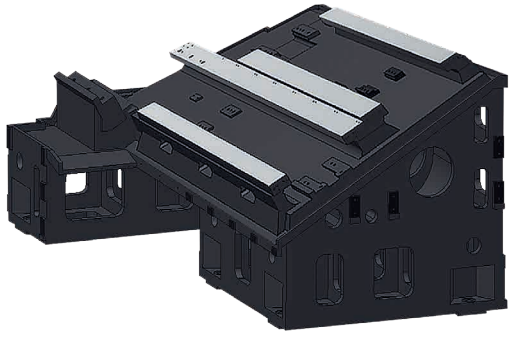


SL 2500 Y series (A,B Type)

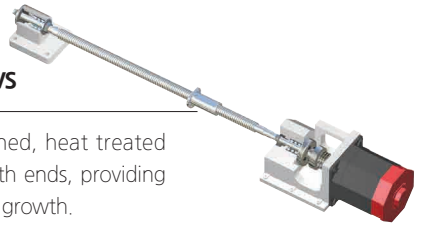


Rigid 30 degree Slant Bed

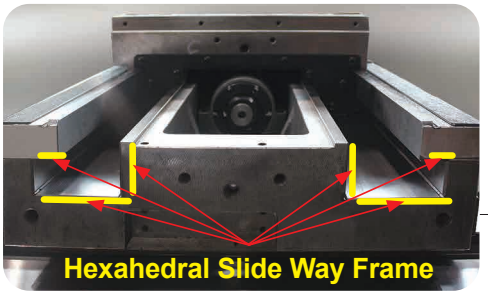
30 degree slant torque tube design bed and wide guide slide way ensure long term rigidity and machining accuracy.



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.

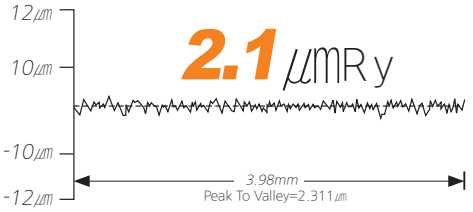


Hexahedral Slide Way Frame (X-axis)

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

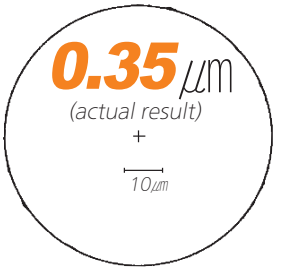
High Precision

Surface Roughness



Model : SL 2500ASY

Roundness

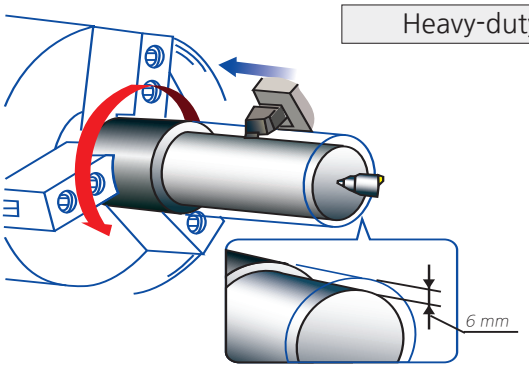


Cutting condition	
Tool	Diamond tool <nose radius 0.020 inch>
Material	AL150<Aluminum>
Cutting speed	230 m/min
Feedrate	0.05 mm/rev
Depth of cut	0.1 mm
Outer diameter	200 mm
Filter	1-50

Processing Speed

Turning Performance (material:SM45C) SL 2500SY

Heavy-duty cutting (O.D) <25mm×25mm qualified tool>



Spindle speed
518 rpm
Cutting speed
120m/min
Depth of cut
6 mm **<Spindle Load 40%>**
Feedrate
0.3 mm/rev

Standard Accessories

- 6" hollow 3 jaws chuck (SL 2000Y/SY A Type main, SL 2000SY A/B Type sub, SL 2500SY/LSY A/B Type sub)
- 8" hollow 3 jaws chuck (SL 2000Y/SY B Type main, SL 2500Y/SY/LSY A Type main)
- 10" hollow 3 jaws chuck (SL 2500Y/SY/LSY B Type main)
- Chuck clamp confirmation
- Chuck clamp foot switch
- Chuck pressure switch
- Coolant system
- Door interlock
- Full splash guard with coolant tank
- Jaw (soft 3set, hard 1set)
- Leveling unit
- Manual/Part list (1set)
- Oil cooler (for sub spindle) *only SL 2000SY/2500SY/LSY series
- Patrol lamp (3colors)
- Safety precaution name plate
- Spindle orientation
- Tailstock (digital servo) *only SL 2000Y/2500Y series
- Tool box
- Tool holders
- Work light (LED lamp)

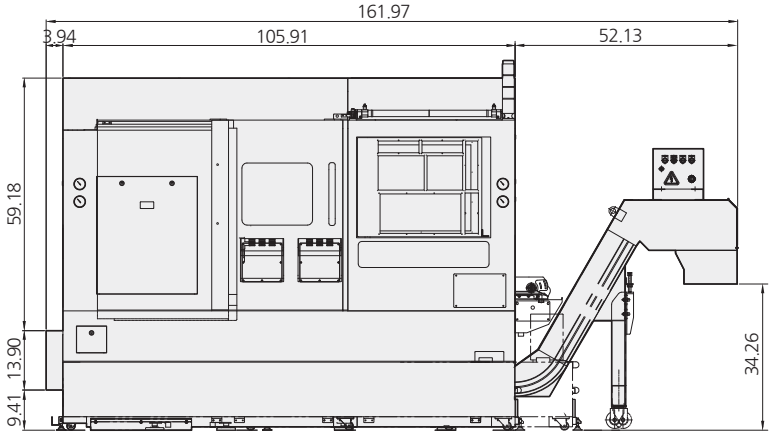
Optional Accessories

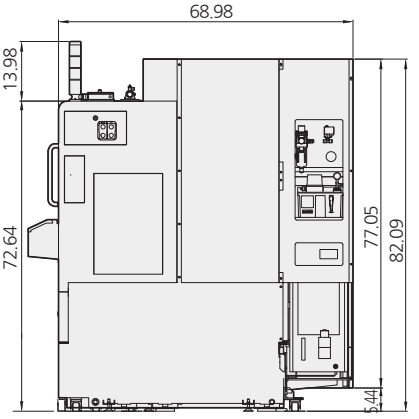
- 8" hollow 3 jaws chuck (SL 2500SY/LSY B Type sub)
- Air blower
- Air conditioners (electric cabinet)
- Air gun
- Auto door
- Bar Feeder Interface
- Chip bucket
- Chip conveyor
- Coolant gun
- Counter (total, multi, tool, work)
- Dual pressure chucking
- Oil mist collector
- Oil skimmer
- Robot interface
- Special chuck
- Steady rest
- Tool presetter (manual/auto)
- Transformer

Machine Dimensions

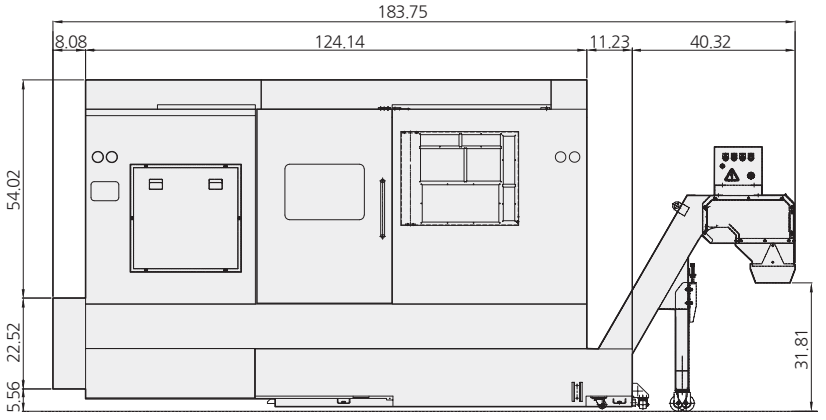
Unit : inch

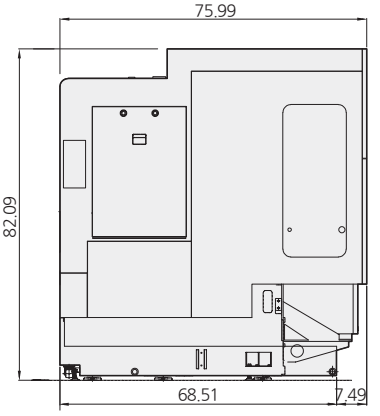
SL 2000SY/Y series



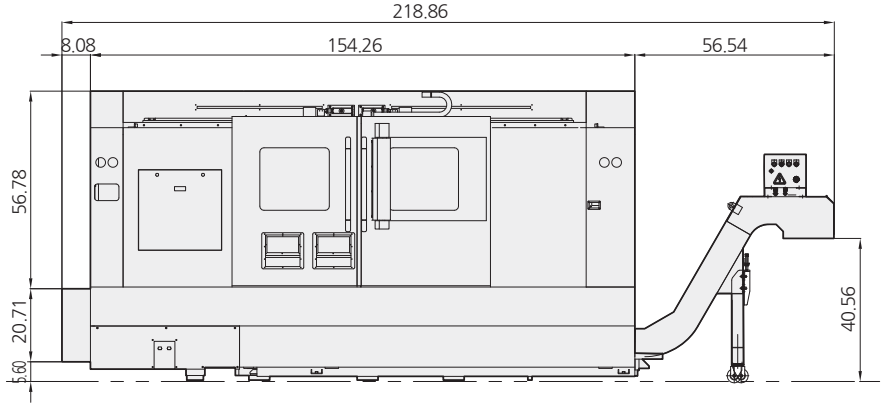


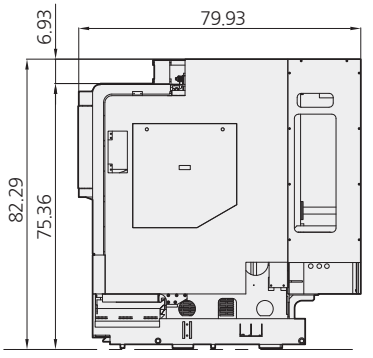
SL 2500SY/Y series



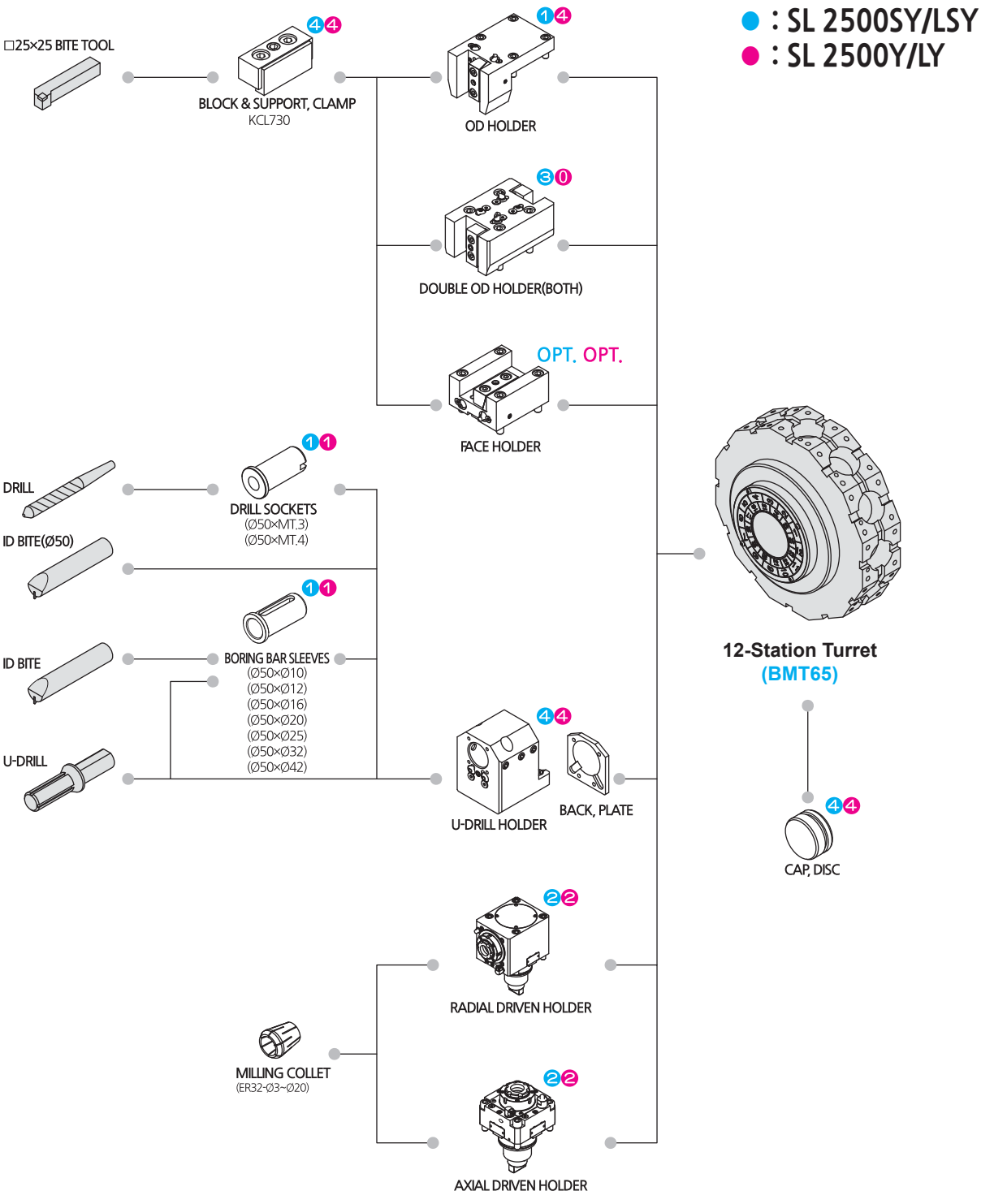


SL 2500LSY/LY series





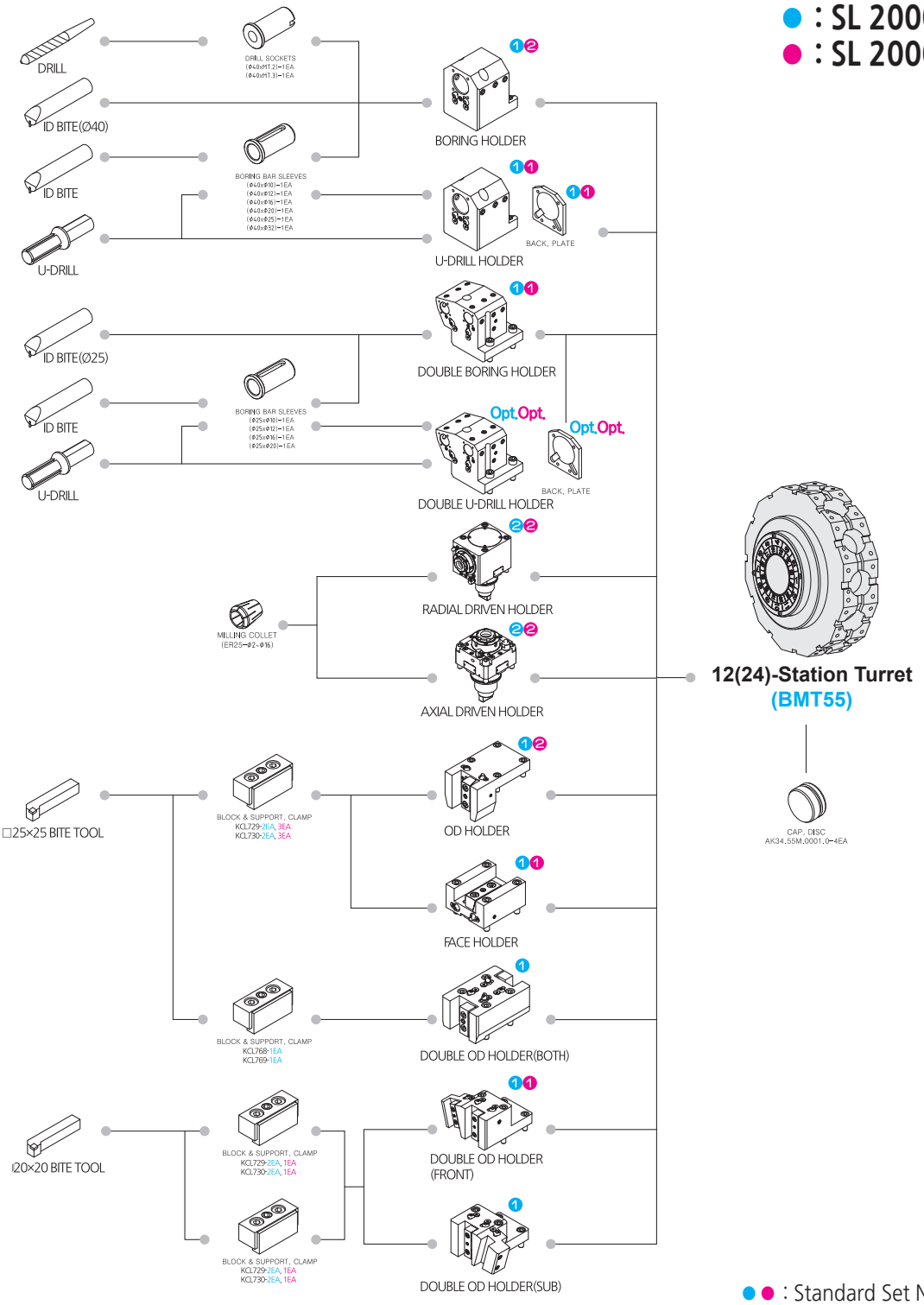
Tooling System



●● : Standard Set Numbers

Tooling System

● : SL 2000SY
● : SL 2000Y

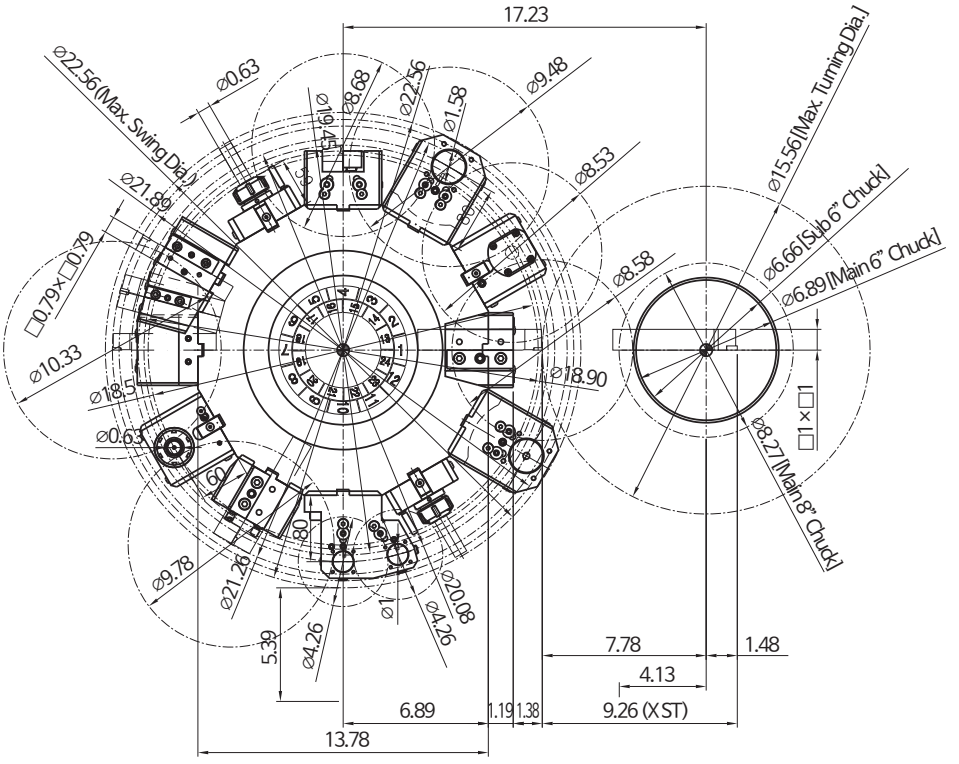


●● : Standard Set Numbers

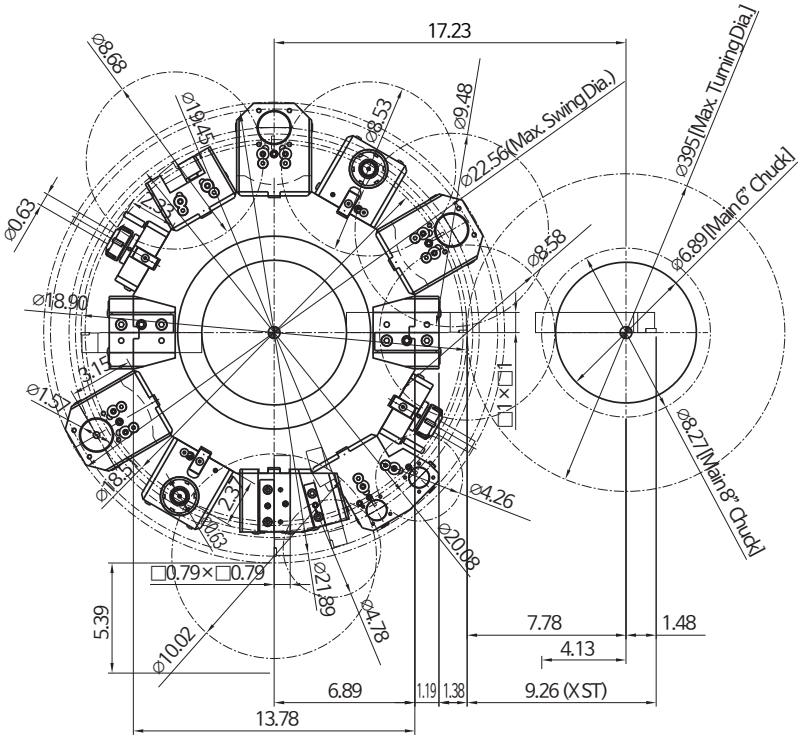
Turret Head Interference

Unit : inch

SL 2000SY



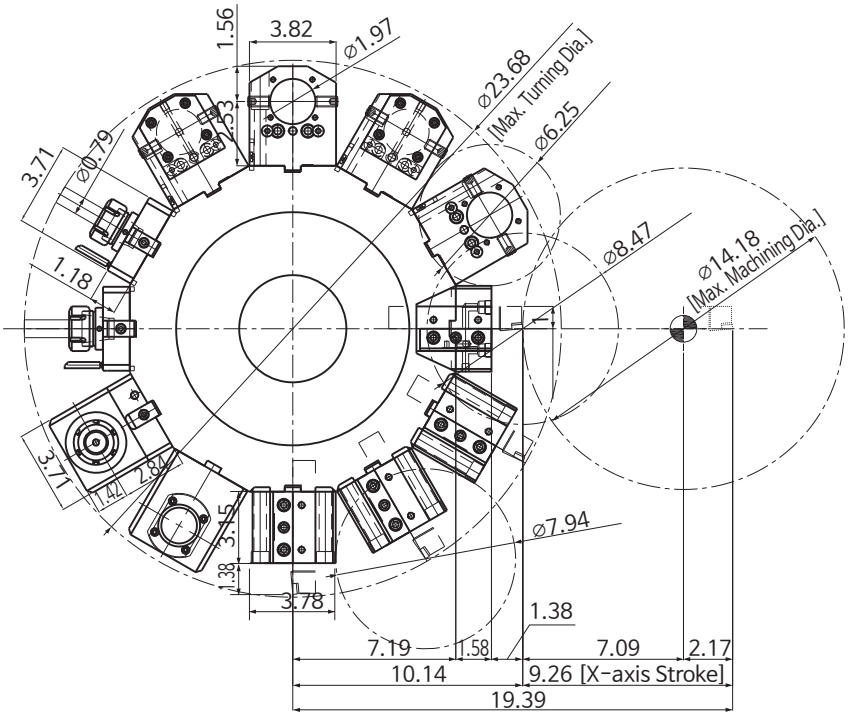
SL 2000Y



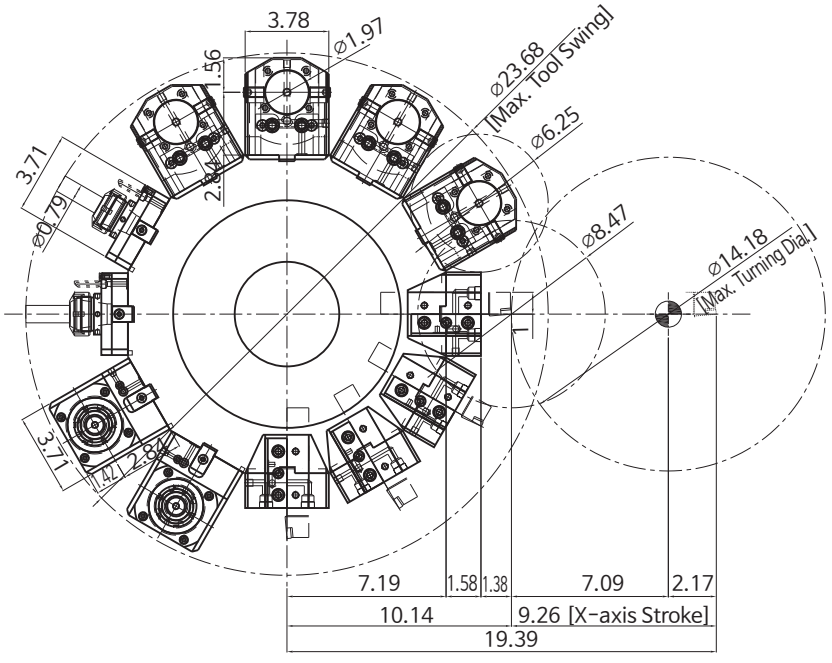
Turret Head Interference

Unit : inch

SL 2500SY/ LSY



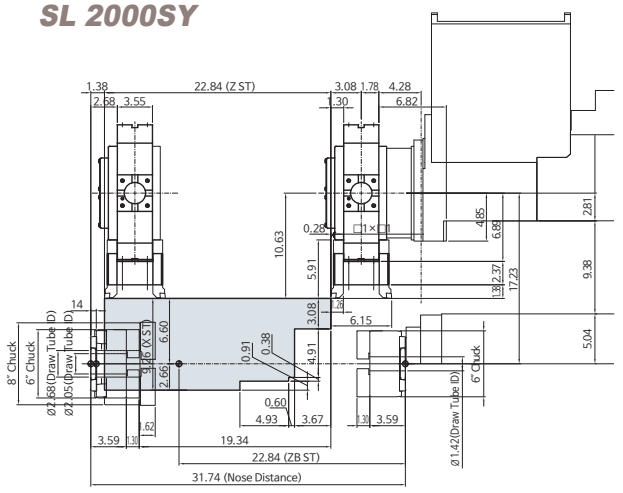
SL 2500Y/LY



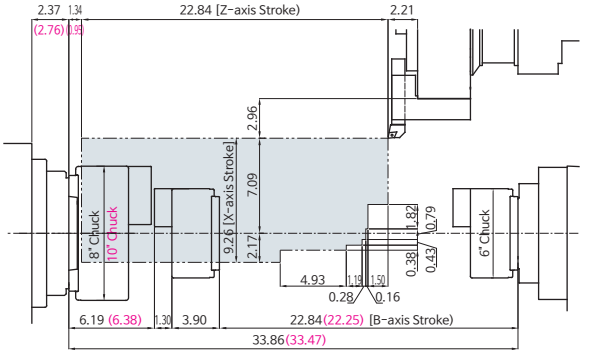
Work Range

Unit : inch

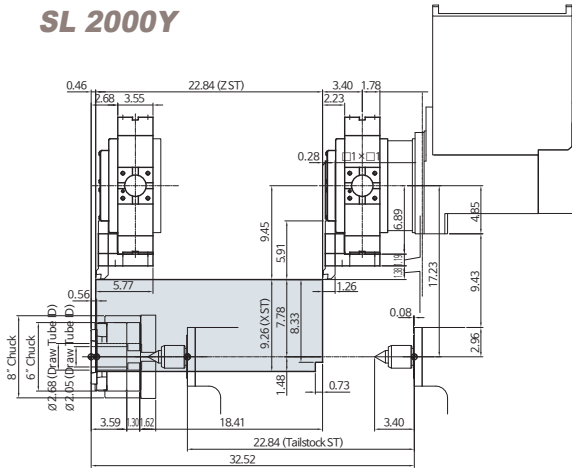
SL 2000SY



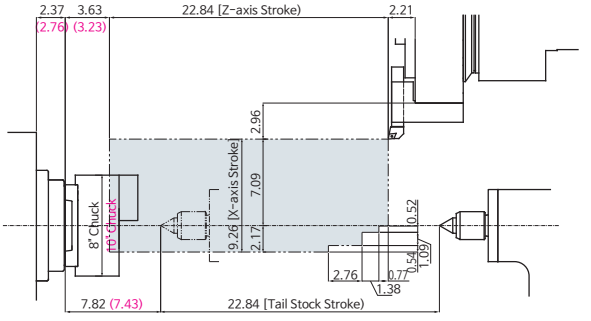
SL 2500SY(A/B Type)



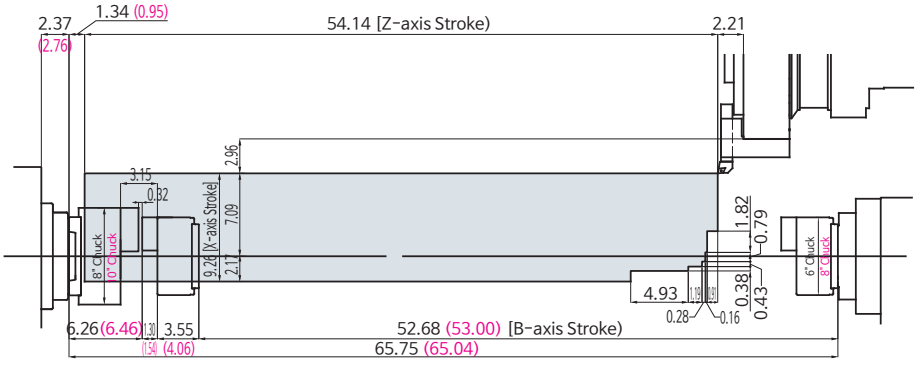
SL 2000Y



SL 2500Y(A/B Type)



SL 2500LSY(A/B Type)



Major Specifications

DESCRIPTION			SL 2000Y		SL 2000SY	
			A type	B type	A type	B type
Chuck	Chuck size (Main/Sub)	inch	6"/—	8"/—	6"/6"	8"/6"
Capacity	Swing over bed	inch	25.60	25.60	25.60	25.60
	Swing over cross slide	inch	21.26	21.26	21.26	21.26
	Max. turning diameter	inch	15.56	15.56	15.56	15.56
	Max. milling diameter	inch	12.21	12.21	12.21	12.21
	Max. machining length	inch	19.30	17.72	19.30	17.72
Spindle	Spindle speed (Main/Sub)	rpm	6,000/—	4,500/—	6,000/6,000	4,500/6,000
	Spindle nose (Main/Sub)	ASA	A2-5/—	A2-6/—	A2-5/A2-5	A2-6/A2-5
	Draw tube ID	inch	2.05	2.68	2.05	2.68
	Spindle bore diameter	inch	2.41	3.00	2.41	3.00
	Main spindle motor (Cont./Max)	HP	14.76/24.81	14.76/24.81	14.76/24.81	14.76/24.81
	Sub spindle motor (Cont./Max)	HP	-	-	7.38/10.06	7.38/10.06
Travels	X-axis travel	inch	9.26	9.26	9.26	9.26
	Y-axis travel	inch	4.14 (±2.07)	4.14 (±2.07)	4.14 (±2.07)	4.14 (±2.07)
	Z-axis travel	inch	22.84	22.84	22.84	22.84
	ZB-axis travel	inch	22.84	22.84	22.84	22.84
	X-axis Rapid traverse rate	ipm	944.89	944.89	944.89	944.89
	Y-axis Rapid traverse rate	ipm	393.71	393.71	393.71	393.71
	Z-axis Rapid traverse rate	ipm	1,181.11	1,181.11	1,181.11	1,181.11
	ZB-axis Rapid traverse rate	ipm	944.89	944.89	944.89	944.89
Turret	Number of tool stations	ea	12[24] (BMT55)	12[24] (BMT55)	12[24] (BMT55)	12[24] (BMT55)
	Turning tool shank size	inch	1	1	1	1
	Boring bar diameter	inch	1.58	1.58	1.58	1.58
	Turret index time(next station swivel time)	sec	0.15	0.15	0.15	0.15
	Rotary tool speed	rpm	5,000	5,000	5,000	5,000
	Rotary tool motor (Cont./Max)	HP	4.97/7.38	4.97/7.38	4.97/7.38	4.97/7.38
Tailstock	Quill diameter	inch	-	-	-	-
	Quill stroke	inch	-	-	-	-
	Spindle taper	MT	MT5 (Servo motor)	MT5 (Servo motor)	-	-
Machine	Size (with Side Chip conveyor) L×W×H	inch	109.85(161.97) × 68.98 × 82.09		109.85(161.97) × 68.98 × 82.09	
	Size (with Rear Chip conveyor) L×W×H	inch	-		-	
	weight	lbs	8,487.80	8,598.03	9,149.19	9,259.42
	Coolant tank capacity	gal	44.91	44.91	44.91	44.91
ELECTRIC POWER SUPPLY		kVA/V	43/220	45/220	55/220	58[66]/220
CONTROLLER			FANUC			

※Design and specifications subject to change without notice.

• [ ] : Option

Major Specifications

DESCRIPTION			SL 2500Y		SL 2500SY	
			A type	B type	A type	B type
Chuck	Chuck size (Main/Sub)	inch	8"/—	10"/—	8"/6"	10"/6[8]"
Capacity	Swing over bed	inch	25.60	25.60	25.60	25.60
	Swing over cross slide	inch	21.26	21.26	21.26	21.26
	Max. turning diameter	inch	14.18	14.18	14.18	14.18
	Max. milling diameter	inch	14.73	14.73	14.73	14.73
	Max. machining length	inch	19.30	18.75	19.30	18.75
Spindle	Spindle speed (Main/Sub)	rpm	4,500/—	3,500/—	4,500/6,000	3,500/6,000[4,000]
	Spindle nose (Main/Sub)	ASA	A2-6/—	A2-8/—	A2-6/A2-5	A2-8/A2-5[A2-6]
	Draw tube ID	inch	2.68	3.04	2.68/1.42	3.04/1.42[2.05]
	Spindle bore diameter	inch	3.08	3.39	3.08/1.78	3.39/1.78[2.41]
	Main spindle motor (Cont./Max)	HP	14.76/24.81	24.81/34.87	14.76/24.81	24.81/34.87
	Sub spindle motor (Cont./Max)	HP	-	-	7.38/10.06	7.38/10.06
Travels	X-axis travel	inch	9.26	9.26	9.26	9.26
	Y-axis travel	inch	3.94 (±1.97)	3.94 (±1.97)	3.94 (±1.97)	3.94 (±1.97)
	Z-axis travel	inch	22.84	22.84	22.84	22.84
	B-axis travel	inch	22.84	22.25	22.84	22.25
	X-axis Rapid traverse rate	ipm	708.67	708.67	708.67	708.67
	Y-axis Rapid traverse rate	ipm	472.45	472.45	472.45	472.45
	Z-axis Rapid traverse rate	ipm	944.89	944.89	944.89	944.89
	B-axis Rapid traverse rate	ipm	944.89	944.89	944.89	944.89
Turret	Number of tool stations	ea	12[24] (BMT65)	12[24] (BMT65)	12[24] (BMT65)	12[24] (BMT65)
	Turning tool shank size	inch	1	1	1	1
	Boring bar diameter	inch	1.97	1.97	1.97	1.97
	Turret index time(next station swivel time)	sec	0.20	0.20	0.20	0.20
	Rotary tool speed	rpm	5,000	5,000	5,000	5,000
	Rotary tool motor (Cont./Max)	HP	4.97/7.38	4.97/7.38	4.97/7.38	4.97/7.38
Tailstock	Quill diameter	inch	-	-	-	-
	Quill stroke	inch	-	-	-	-
	Spindle taper	MT	MT5 (Servo motor)	MT5 (Servo motor)	-	-
Machine	Size (with Side Chip conveyor) L×W×H	inch	143.43(183.75) × 75.99 × 820.87		143.43(183.75) × 75.99 × 820.87	
	Size (with Rear Chip conveyor) L×W×H	inch	132.21 × 97.56(111.03) × 820.87		132.21 × 97.56(111.03) × 820.87	
	weight	lbs	12,345.89	12,786.82	12,786.82	13,227.74
	Coolant tank capacity	gal	45.71	45.71	45.71	45.71
ELECTRIC POWER SUPPLY		kVA/V	43/220	55/220	45/220	58[66]/220
CONTROLLER			FANUC			

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• [ ] : Option

Major Specifications

DESCRIPTION			SL 2500LY		SL 2500LSY	
			A type	B type	A type	B type
Chuck	Chuck size (Main/Sub)	inch	8"/—	10"/—	8"/6"	10"/6[8]"
Capacity	Swing over bed	inch	25.60	25.60	25.60	25.60
	Swing over cross slide	inch	21.26	21.26	21.26	21.26
	Max. turning diameter	inch	14.18	14.18	14.18	14.18
	Max. milling diameter	inch	14.73	14.73	14.73	14.73
	Max. machining length	inch	50.40	49.81	50.40	49.81
Spindle	Spindle speed (Main/Sub)	rpm	4,500/—	3,500/—	4,500/6,000	3,500/6,000[4,000]
	Spindle nose (Main/Sub)	ASA	A2-6/—	A2-8/—	A2-6/A2-5	A2-8/A2-5[A2-6]
	Draw tube ID	inch	2.68	3.04	2.68/1.42	3.04/1.42[2.05]
	Spindle bore diameter	inch	3.08	3.39	3.08/1.78	3.39/1.78[2.41]
	Main spindle motor (Cont./Max)	HP	14.76/24.81	24.81/34.87	14.76/24.81	24.81/34.87
	Sub spindle motor (Cont./Max)	HP	-	-	7.38/10.06	7.38/10.06
Travels	X-axis travel	inch	9.26	9.26	9.26	9.26
	Y-axis travel	inch	3.94 (±1.97)	3.94 (±1.97)	3.94 (±1.97)	3.94 (±1.97)
	Z-axis travel	inch	54.14	54.14	54.14	54.14
	B-axis travel	inch	54.65	53.00	54.65	53.00
	X-axis Rapid traverse rate	ipm	1,181.11	1,181.11	1,181.11	1,181.11
	Y-axis Rapid traverse rate	ipm	393.71	393.71	393.71	393.71
	Z-axis Rapid traverse rate	ipm	1,181.11	1,181.11	1,181.11	1,181.11
	B-axis Rapid traverse rate	ipm	1,181.11	1,181.11	1,181.11	1,181.11
Turret	Number of tool stations	ea	12[24] (BMT65)	12[24] (BMT65)	12[24] (BMT65)	12[24] (BMT65)
	Turning tool shank size	inch	1	1	1	1
	Boring bar diameter	inch	1.97	1.97	1.97	1.97
	Turret index time(next station swivel time)	sec	0.15	0.15	0.15	0.15
	Rotary tool speed	rpm	5,000	5,000	5,000	5,000
	Rotary tool motor (Cont./Max)	HP	4.97/7.38	4.97/7.38	4.97/7.38	4.97/7.38
Tailstock	Quill diameter	inch	-	-	-	-
	Quill stroke	inch	-	-	-	-
	Spindle taper	MT	MT5 (Servo motor)	MT5 (Servo motor)	-	-
Machine	Size (with Side Chip conveyor) L×W×H	inch	162.33(218.86) × 79.93 × 82.29		162.33(218.86) × 79.93 × 82.29	
	Size (with Rear Chip conveyor) L×W×H	inch	-		-	
	weight	lbs	16,314.21	16,534.67	16,534.67	16,755.14
	Coolant tank capacity	gal	66.05	66.05	66.05	66.05
ELECTRIC POWER SUPPLY		kVA/V	43/220	55/220	45/220	66/220
CONTROLLER			FANUC			

※Design and specifications subject to change without notice.

• [ ] : Option

NC Specification / FANUC Series

● : Standard ○ : Optional ( ) : Option X : N/A

Category		0*i*-TF+
Controlled axis	Controlled axes	X, Z, C
	Max. simultaneosly controlled axes	4
	Least command increment	0.001mm / 0.0001"
	Built-in stroke limit	Soft overtravel 1, 2, 3
	Machine lock	●
Operation functions	Pulse handle feed	X1, X10, X100
	Dry run	●
	Single block	●
	Feedrate per minute	G94
	Feedrate per revolution	G95
	DNC operation	Ethernet, CF card
	Thread cutting pause	○
Interpolation functions	Linear interpolation	G01
	Circular interpolation	G02, G03
	Dwell	G04
	Cylindrical interpolation	G70.1
	Skip	G31
	Nano smoothing	X
	Polar coordinate interpolation	●
	Reference position (zero) return	G28
	Reference position (zero) return check	G27
	2nd/3rd/4th reference position return	G30
	Variable lead thread cutting	●
	Thread Repair	Manual guide i (required)
Feed function	Rapid traverse rate override	F0, 25%, 50%, 100%
	Feedrate override	0~150%
	Jog Override	●
	AI contour control I	OPT (40 block)
	AI contour control II	OPT(200 block)
Spindle function	Spindle orientation	●
	Rigid tapping	M29
	Spindle override	S0 ~ 150%
	Arbitrary speed threading	○
Tool functions	Tool number command	T4-Digt Tool number
	Tool nose radius compensation	G40 ~ G42
	Tool offset pairs	128-pairs
	Tool geometry/wear offset	●
	Tool length offset	X
	Tool life management	●
	Tool path graphic display	●

NC Specification / FANUC Series

● : Standard ○ : Optional ( ) : Option X : N/A

Category		0*i*-TF+
Program input	Absolute/incremental programming	G90/G91
	Multiple repetitive cycle	●
	Multiple repetitive cycle II	●
	Canned cycles	●
	Drilling canned cycle	●
	Decimal point input	●
	Inch/metric conversion	G20 / G21
	Program restart	●
	Sub program call	●
	Max programmable value	±99999.999mm/±9999.9999"
	M function	3 digit
	Custom macro	●
	Addition of custom macro common variables	#100~#199, #500~#999 (#98000 ~ #98499)
	Direct drawing dimension programming	●
	Programmable data input	G10
	Tape code	ISO / EIA
	Optional block skip	●
	Workpiece coordinate system	G52 ~ G59
	Addition of workpiece coordinate system	X
Interface function	Embedded ethernet	●
	Fast ethernet	○
Setting and display	Alarm & Operator histor display	●
	Run hour and parts count display	●
	Loadmeter display	●
	Self-diagnosis function	●
	Extended part program editing	●
	Machining condition selecting function	○
	Machining quality level adjustment	X
	Display screen	15" color LCD
	Multi-language display	25 language
Data input/output	Fast data server	○
	RS232C interface	●
	Memory card input/output	●
	USB memory input/output	●
Editing operation	Part program storage size	2Mbyte
	Number of registerable programs	1,000 EA
	Manual guide 0i	X
	Manual guide i	●

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