

GB Series

GRINDING TURNING CENTER



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GB Series

PL 800GB
SL 1000GB



GB Series

PL 800GB / SL 1000GB

High precision, high rigidity ceramic and quartz grinding machine

- Superb stability with the use of precision bearings
- High position accuracy and extended machine lifetime
- High rigidity bed and spindle design for minimized thermal growth
- Optimized to machine ceramic, SiC and quartz needed to manufacture semiconductor wafers

Category		PL 800GB	SL 1000GB
Travels (X/Z)	mm(inch)	400/400(15.75/15.75)	510/500(20.08/19.69)
Max turning dia	mm(inch)	650(25.60)	820(32.29)
Max turning length	mm(inch)	150(5.91)	340(13.39)
Spindle speed	rpm	2,200	1,000
Main motor	kW(Hp)	11/15(14.76/20.12)	7.5/11(10.06/14.76)
Spindle nose	ASA	A2-6	A2-6
Rapid traverse (X/Z)	m/min(ipm)	24/30(944.89/1,181.11)	16/16(629.93/629.93)
Spindle lubrication and cooling	-	Grease lubrication, natural cooling	Grease lubrication, natural cooling

Superb spindle design

The radiator fin spindle design to minimize thermal growth and application of the Bzi sensor for more accurate rotation detection provides for high quality machining

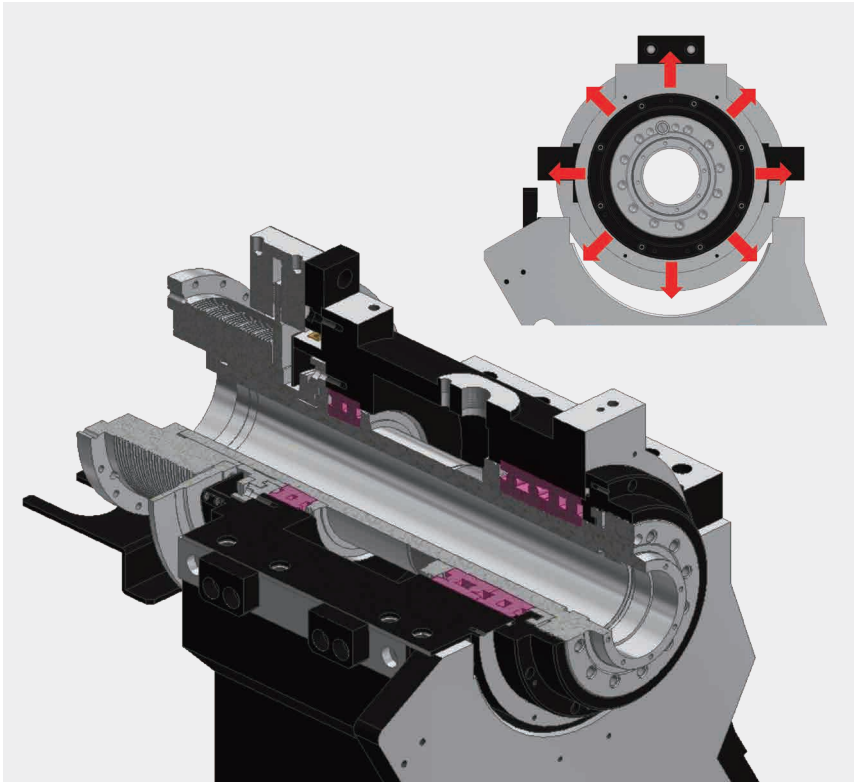
High rigidity bed and optimized feed system design

High torque tube rib bed design supports heavy duty machining while the pre-tensioned double anchored feed system and 6 sided x-axis slideway frame enables high precision

Optimized for ceramic, SiC and quartz machining

The grinding spindle with its powerful tool clamp and BBT40 tool shank (for easy tool changes), comes with a low-vibration motor and reliable performance and is optimized for ceramic, SiC, and quartz machining

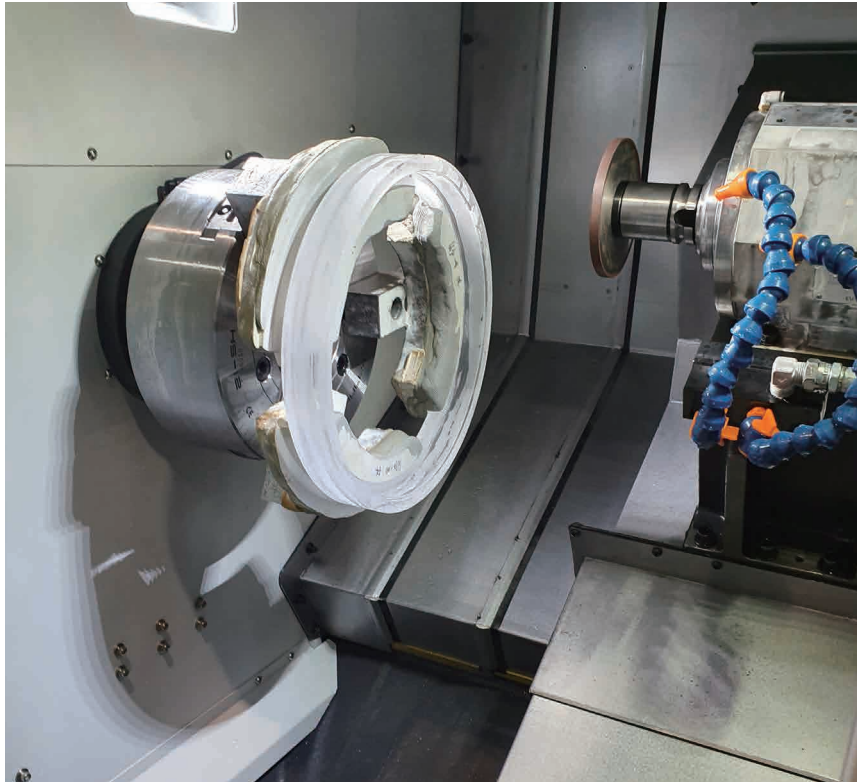
Superb spindle design



Symmetrically designed headstock to minimize thermal growth

The symmetrically designed spindle cartridge is exposed to air on every side to facilitate heat dissipation and minimize thermal growth and prevent loss of precision due to increases in temperature. Also, the separated spindle cartridge and headstock body allows for easier maintenance.

Optimized for ceramic, SiC and quartz machining



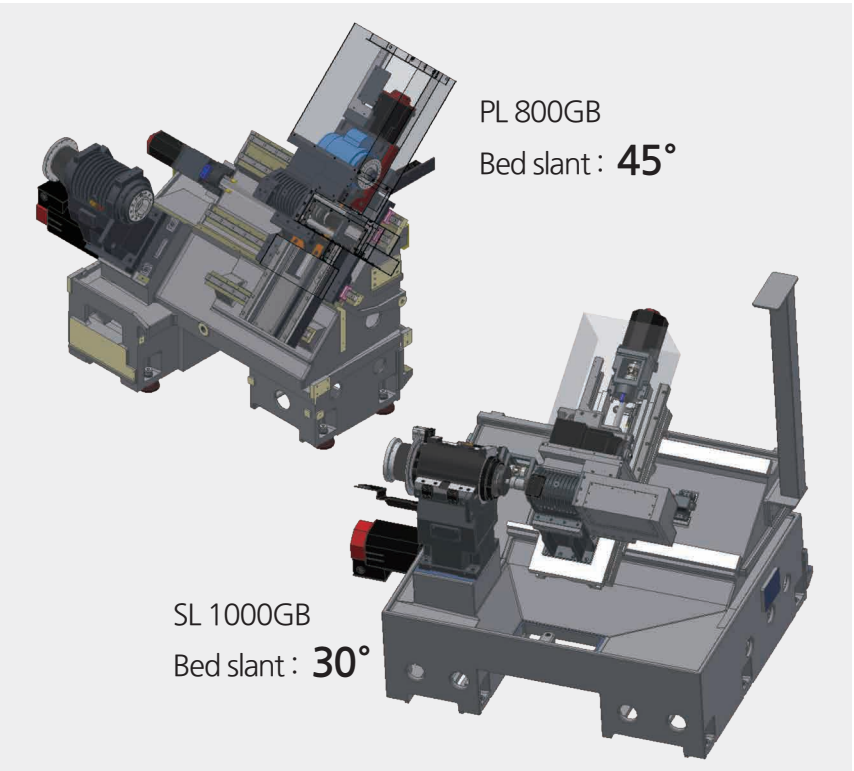
Anti-dust design

Special sealed anti-dust ballscrews are used to ensure the reliability of the feed system while the sealed slide cover design prevents dust from entering and simplifies maintenance

Optimized design

The grinding spindle with its powerful tool clamp and BBT40 tool shank (for easy tool changes), comes with a low-vibration motor and reliable performance and is optimized for ceramic, SiC, and quartz machining

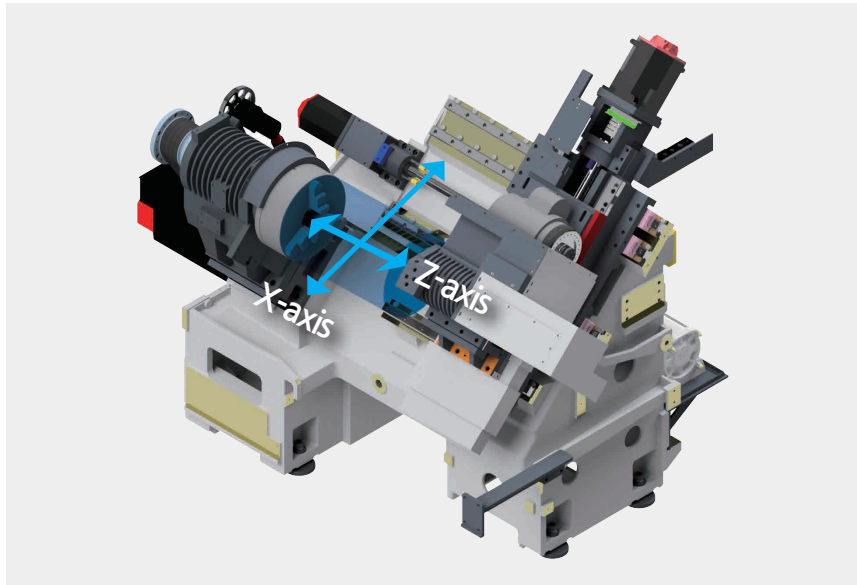
High rigidity bed and optimized feed system design



30 degree slant bed offering superb stability even during heavy duty machining (SL 1000GB)

The 30 degree slant bed with high torque tube ribbing offers superb resistance to torsion and bending and provides excellent vibration suppression even during heavy duty machining, allowing for high precision machining. In addition, the slant bed offers superb accessibility and chip discharge capacity.

Design & Work Range



High rigidity box guideways are applied to feed axes, allowing for heavy duty machining and providing superb production efficiency.

Model	Travel [mm(inch)]		Rapid Traverse [m/min(ipm)]		Max turning dia. [mm(inch)]	Max turning length [mm(inch)]
	X-axis	Z-axis	X-axis	Z-axis		
PL 800GB	400(15.75)	400(15.75)	24(944.89)	30(1,181.11)	Ø650(25.60)	150(5.91)
SL 1000GB	510(20.08)	500(19.69)	16(629.93)	16(629.93)	Ø820(32.29)	340(13.39)

Grinding unit

Built-in spindle
BT40[BBT40]

Built-in spindle
FLANGE

Belt Drive spindle
BBT40

Various grinding units available
to meet customer needs

By attaching a Grinding Spindle onto a turning center, various grinding operations are possible, such as ID, OD and face grinding of workpieces, as well as simultaneous roughing and finishing with the Slide Unit and application of the Spindle Chip Box for ceramic grinding

PL 800GB

Category	Unit	GRIND UNIT	
		Built-in Type	Belt Type
Motor power	kW(Hp)	3.5(4.7)	3.7(4.97)
Workpiece	-	Quartz	Quartz
Spindle speed	rpm	6,000	6,000
Spindle taper	-	BT40(BBT40)	BBT40

SL 1000GB

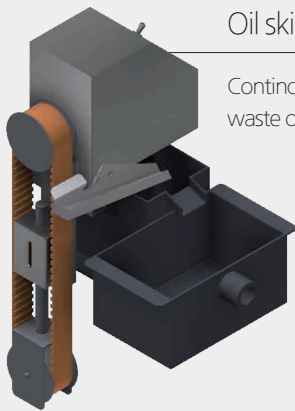
Category	Unit	GRIND UNIT		
		Built-in Type	Belt Type	
Motor power	kW(Hp)	3.5(4.7)	7.5(10.06)	3.7(4.97)
Workpiece	-	Quartz	CVD SiC	Quartz
Spindle speed	rpm	6,000	6,000	6,000
Spindle taper	-	BT40(BBT40)	FLANGE	BBT40

FLANGE : A separate grinding FLANGE is required and must be purchased separately.

Accessories [Optional]

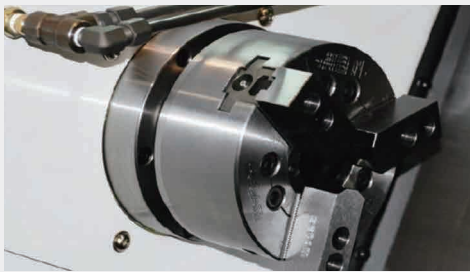
Oil skimmer

Continuously cleans the coolant by removing waste oils



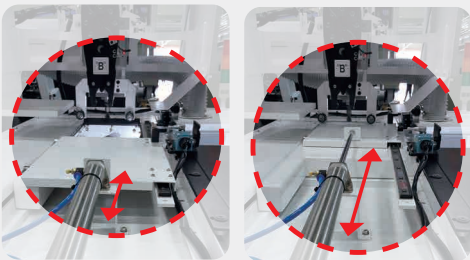
Air blow

Used to automatically remove chips from the chuck after machining and used for safe loading of the chuck in an automated line.

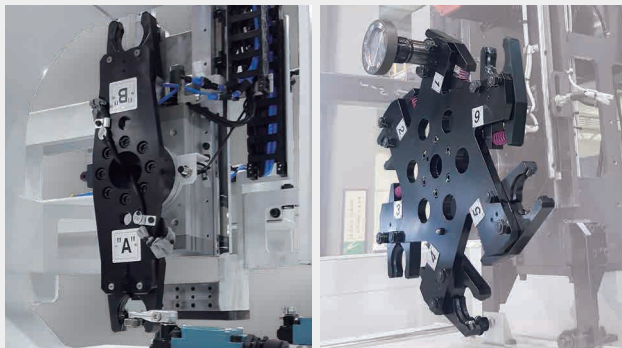


Autodoor

Used to quickly open/close the operator door via program to increase productivity in an automation line.



Auto Tool Changer



Power-Torque Diagram

PL 800GB

Max speed
2,200rpm

Power (cont/15min)
11/15kW
(14.76/20.12 Hp)

Torque (cont/15min)
9.3/17 N·m
(6.86/12.54bs-ft)

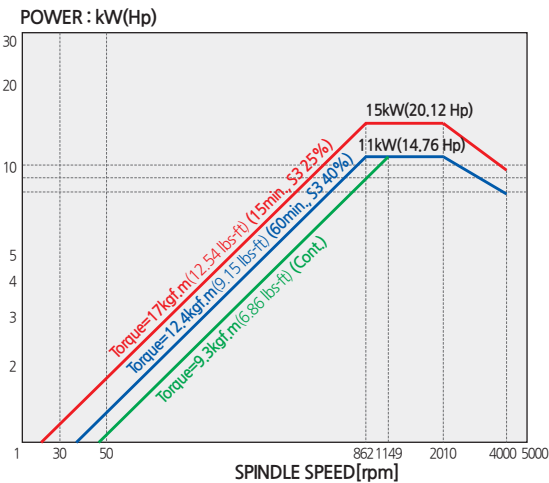
SL 1000GB

Max speed
1,100rpm

Power (cont/15min)
7.5/11 kW
(10.06/14.76 Hp)

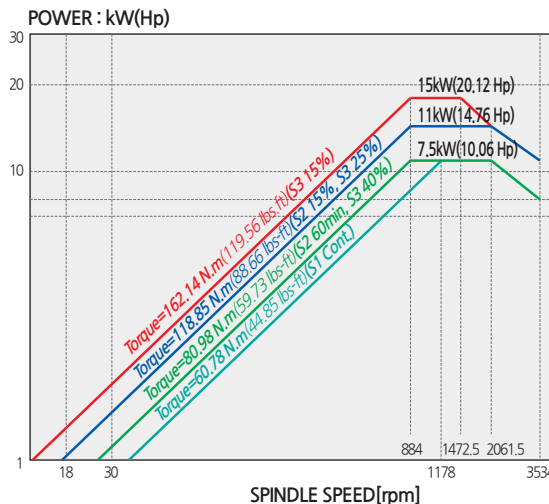
Torque (cont/15min)
60.8/162.1 N·m
(44.85/119.56bs-ft)

POWER : kW(Hp)



SPINDLE SPEED[rpm]

POWER : kW(Hp)

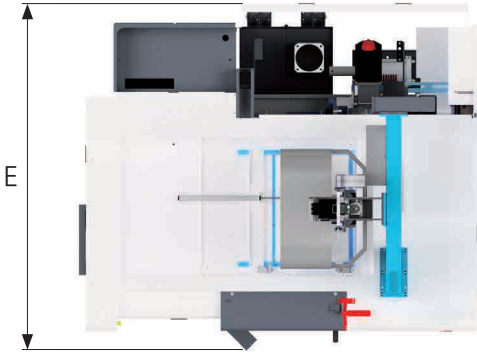


SPINDLE SPEED[rpm]

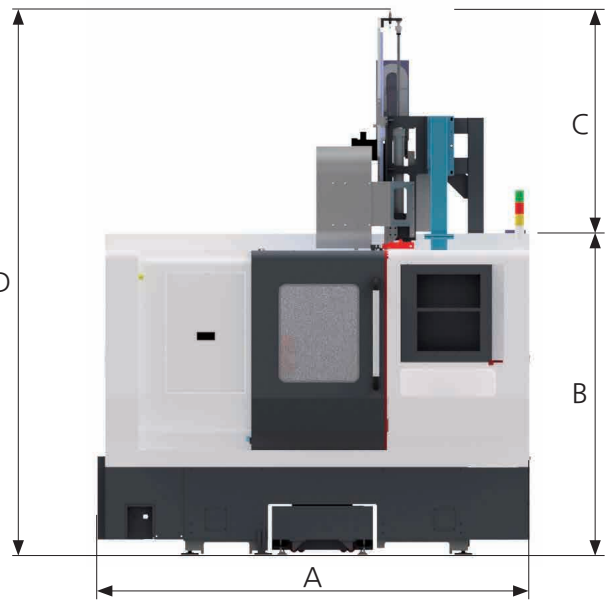
Machine Dimensions

Unit : mm(inch)

Top view



Front view



Model	A (Length)	B	C	D (Height)	E (Width)
PL 800GB	2,893(113.90)	1,886(74.26)	1,014(39.93)	2,902(114.26)	1,843(72.56)
SL 1000GB	2,593(102.09)	2,222(87.49)	1,300(51.19)	3,272(128.82)	2,014(79.30)

SMEC

Machine Tools

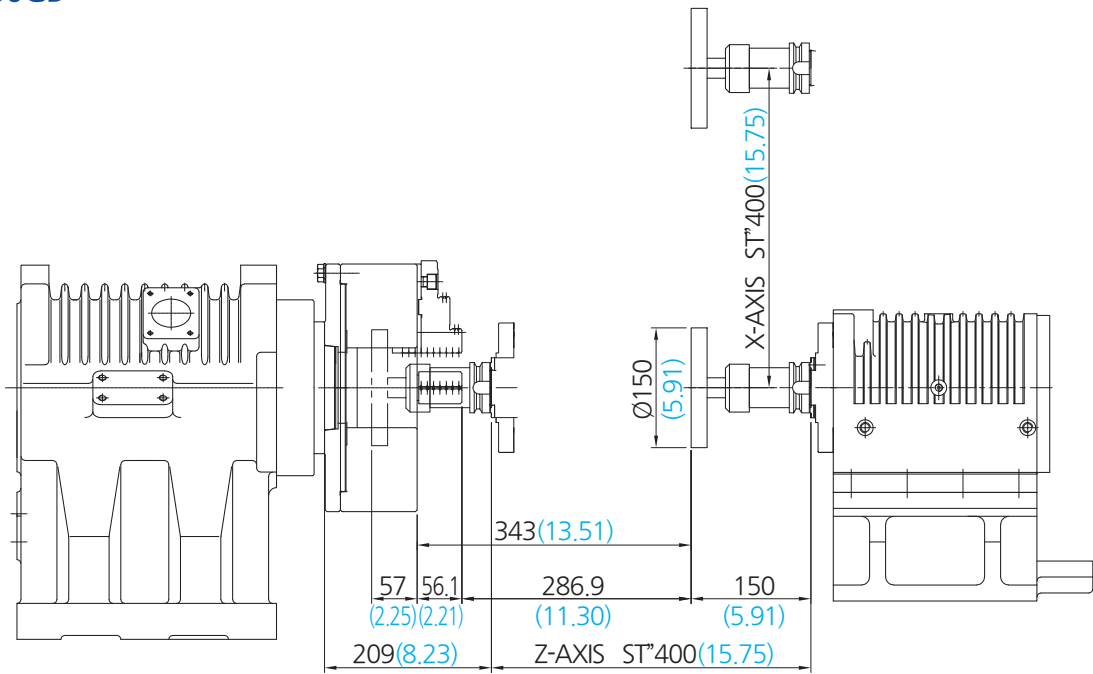
GB Series

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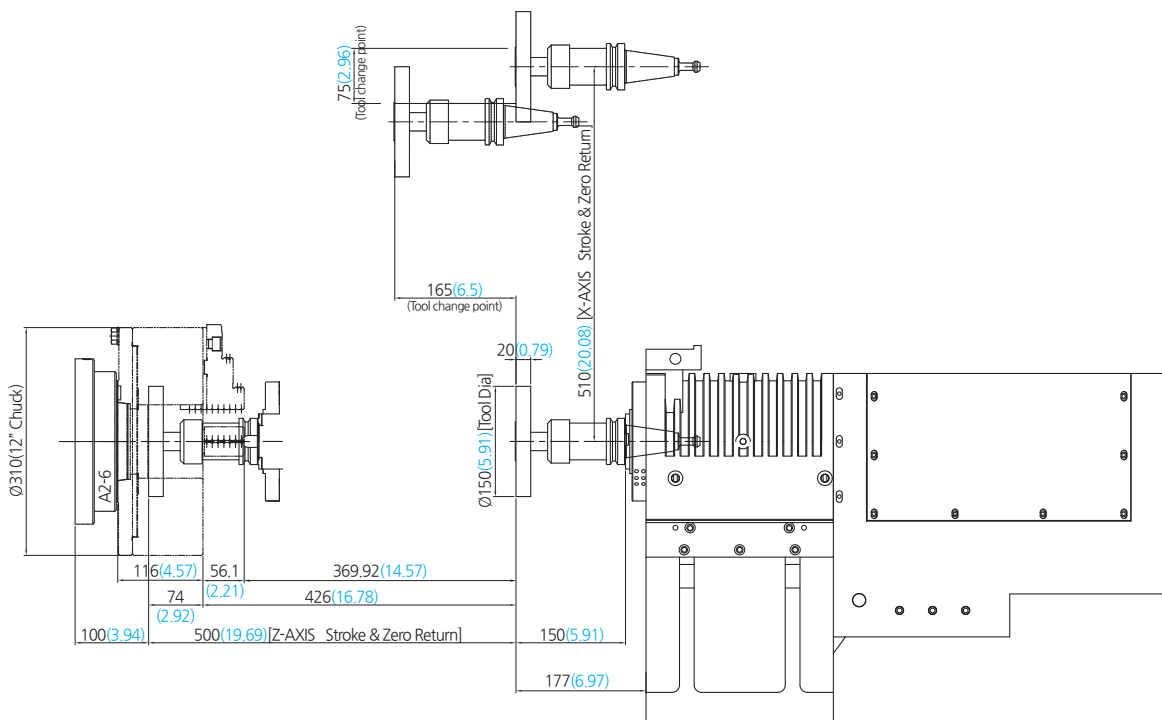
Grinding tool system

PL 800GB

Unit : mm(inch)



SL 1000GB



Standard / Optional

● : Standard ○ : Optional △ : Discuss X : N/A

Category		PL 800GB	SL 1000GB
Spindle	Scroll chuck	●	●
	3 jaw open-center chuck	●	●
	3 jaw closed-center chuck	○	○
	Soft jaw (3set)	●	●
	Hard jaw (1set)	○	○
	Chuck clamp footswitch	●	●
	Dual pressure chucking	○	○
	C-axis control (0.001°)	○	○
	Chuck clamp confirmation	●	●
	Chuck dual footswitch	○	○
GRINDING UNIT	HIGEN 3.7kW	●	●
	Built-in SPINDLE (3.5kW)	○	○
	Built-in SPINDLE (7.5kW)	△	○
Coolant & Air Blow	Standard coolant (nozzle)	○	○
	Coolant above chuck	○	○
	Coolant gun	○	○
	TSC for chuck (for special chuck)	△	△
	Bed flushing	○	○
	Air blower (above chuck)	○	○
	Tailstock air blower	X	X
	Air gun	○	○
	Through spindle air blower (for special chuck)	△	△
	Coolant pump	4.5Bar	●
		6Bar	○
		10Bar	○
		14.5Bar	○
		20Bar	○
	Power coolant system (for automation solutions)	△	△
	Coolant chiller	△	△
Chip Disposal	Coolant tank	●	●
	Chip conveyor (Hinge / Scraper)	Side	○
		Rear	△
	Special chip conveyor (drum filter)	△	△
Safety Features	Chip bucket	○	○
	Fixed 380L	○	○
Safety Features	Door interlock	●	●
	Back-spin torque limiter (BST)	X	X
	Torque limiter	X	X
	Full splash guard	●	●
	Chuck hyd pressure interlock	X	X
Category		PL 800GB	SL 1000GB
Electrical	3 step patrol lamp and buzzer	●	●
	Lamp for electrical cabinet	X	X
	Remote MPG	X	X
	Work counter	Digital	△
	Total counter	Digital	△
	Tool counter	Digital	△
	Multi counter	6EA	△
		9EA	△
	Grounded circuit breaker	△	△
	AVR(Auto Voltage Regulator)	X	X
Transformer	25kVA	○	○
		30kVA	△
	Auto Power Off	○	○
Measurement	Tool Presetter	Manual	○
	Tool Presetter	Auto	○
	Part seat (air gap) measuring device (for special chuck)	TACO	△
		SMC	△
	Linear scale	X-axis	○
		Z-axis	○
	Coolant level gauge (requires chip conveyor)	○	○
Environmental	Air conditioner for electrical cabinet	○	○
	Dehumidifier	△	△
	Oil mist collector	○	○
	Oil skimmer	○	○
	MQL(Minimal Quantity Lubrication)	△	△
Automation	Auto door	○	○
	Auto shutter (for automation solutions)	△	△
	Sub controller	△	△
	Barfeeder interface	△	△
	Additional M-codes (4 pairs)	△	△
	Automation interface	△	△
	I/O expansion (including both IN and OUT)	16 contacts	△
		32 contacts	△
	Parts catcher	○	○
	Parts conveyor (parts catcher required)	X	X
Hydraulic Supply	Standard hydraulic cylinder	Open-center	●
	Standard hydraulic unit	35Bar / 14L	●
		35Bar / 15L	X

※ For detailed information, please contact your local SMEC dealer.

GB Series

GANG CNC TURNING CENTER

Machine Specifications

[] : optional

Category			PL 800GB	SL 1000GB
Capacity	Swing over bed	mm(inch)	800(31.5)	1000(39.38)
	Swing over cross-slide	mm(inch)	650(25.6)	820(32.29)
	Max grinding diameter	mm(inch)	650(25.6)	820(32.29)
	Max grinding length	mm(inch)	150(5.91)	340(13.39)
Spindle	Spindle speed	rpm	2,200	1,000
	Spindle nose	ASA	A2-6	A2-6
	Spindle bore	mm(inch)	61[76](2.41[3.0])	76(3.0)
	Main spindle motor (cont/max)	kW(Hp)	11/15(14.76/20.12)	7.5/11(10.06/14.76)
	Spindle lubrication and cooling	-	Grease lubrication, natural cooling	Grease lubrication, natural cooling
Travels	X-axis stroke	mm(inch)	400(15.75)	510(20.08)
	Z-axis stroke	mm(inch)	400(15.75)	500(19.69)
	X-axis rapid traverse	m/min(ipm)	24(944.89)	16(629.93)
	Z-axis rapid traverse	m/min(ipm)	30(1,181.11)	16(629.93)
Grinding spindle	Spindle speed	rpm	6,000	6,000
	Spindle motor (cont/max)	kW(Hp)	3.7/5.5(4.97/7.38)	3.7/5.5(4.97/7.38)
	Tool shank type	-	BBT40	BBT40
	Spindle lubrication and cooling	-	Grease encapsulation	Grease encapsulation
ATC (optional)	Max number of tools	EA	[2]	[6]
	Tool change method	MT	[Double arm swing]	[Double arm swing]
Machine	Size (L×W×H) [with ATC]	mm(inch)	2,889 × 1,806 × 1,886[2,902] (113.75 × 71.11 × 74.26[114.26])	2,593 × 2,003 × 2,222[3,272] (102.09 × 78.86 × 87.49[128.82])
	Weight	kg(lb)	3,600(7,936.65)	4,900(10,802.66)
	Coolant tank capacity	Liter(gal)	175(46.24)	160(42.27)
ELECTRIC POWER SUPPLY			kVAV 20/220	20/220
CONTROLLER			FANUC Oi-TF+	

※ Design and specifications are subject to change without notice.

NC Specification / FANUC

● : STD ○ : Optional X : N/A

Category		0i-TF+	구분		0i-TF+
Controlled axis	Controlled axes	X, Z, C	Program input	Absolute / incremental command	G90/G91
	Max simultaneously controlled axes	4		Repeating canned cycle	●
	Least input increment	0.001mm / 0.0001"		Repeating canned cycle 2	●
	Built-in stroke limit	Soft overtravel 1, 2, 3		Canned cycles	●
	Machine lock	●		Drilling canned cycle	●
Operation functions	Manual handle feed	X1, X10, X100		Decimal point input	●
	Dry run	●		Inch / metric conversion	G20 / G21
	Single block	●		Program restart	●
	Feed per minute	G94		Sub program call	●
	Feed per revolution	G95		Max programmable value	±99999.999mm /±9999.9999"
	DNC operation	Ethernet, CF card		M function	3 digit
	Thread cutting pause	○		Custom macro	●
Interpolation functions	Linear interpolation	G01		Addition of custom macro common variables	#100~#199, #500~#999
	Circular interpolation	G02, G03		Direct drawing dimension programming	●
	Dwell	G04		Programmable data input	G10
	Cylindrical interpolation	G70.1		Tape code	ISO / EIA
	Skip	G31		Optional block skip	●
	Nano smoothing	X		Workpiece coordinate system	G52 ~ G59
	Polar coordinate interpolation	●		Addition of workpiece coordinate system	X
	Reference position (zero) return	G28	Interface function	Embedded ethernet	●
	Reference position (zero) return check	G27		Fast ethernet	X
	2nd, 3rd, 4th reference point return	G30	Setting and display	Alarm and operator history display	●
	Variable lead thread cutting	●		Run hour and parts count display	●
	Thread repair	Manual guide i 필요		Loadmeter display	●
Feed function	Rapid traverse override	F0, 25%, 50%, 100%		Self diagnosis function	●
	Feedrate override	0~200%		Extended part program editing	●
	Jog override	●		Machining condition selection function	○
	AI look ahead	X		Machining quality level adjustment	X
	AI contour control II	OPT(200 block)		Display screen	10.4" color LCD
Spindle function	Spindle orientation	●	Multi-language display	25 language	
	Rigid tapping	M29	Data input/ output	Fast data server	○
	Spindle override	S0 ~ 150%		RS232C interface	●
	Arbitrary speed threading	○		Memory card input / output	●
Tool functions	Tool number command	T4-Digt Tool number		USB memory input / output	●
	Tool nose radius compensation	G40 ~ G42	Editing operation	Part program storage size	512Kbyte(2Mbyte)
	Tool offset pairs	128-pairs		Number of registered programs	400(1,000) EA
	Tool geometry / wear offset	●		Manual guide Oi	X
	Tool length compensation	●		Manual guide i	●
	Tool life management	●			
	Tool path graphic display	●			