

***LB3000EX II***  
***SPACE TURN***

1-Saddle CNC Lathe



# Transcending the Legendary LB

Okuma's best and long-selling LB Series, the spearhead of a wide range of CNC lathes, now provides new functionality for today's requirements, breakthrough possibilities for the next generation, and more reliability to satisfy greater customer expectations.

We are on a mission to "continuously enhance the LB to go beyond itself," and achieve **productivity improvements** linked to new strategic value chains.

## The SPACE TURN LB EX II Series.

Offering improved machining quality, speed, power and torque, process-intensive applications, automation . . .

All of the above—driven by the never-ending story of craftsmanship from Okuma.

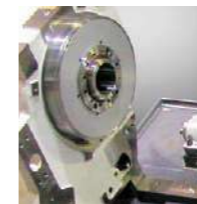


# LB3000EX II

## SPACE TURN

Machine photo shows optional specifications.

# The machine against which all others will be measured



## Highest Quality

- Application of Thermo-Friendly Concept
- Slanted-box bed construction



## Super Fast and Rigid

- Equipped with new high-power, high-torque motor
- Combination of larger and faster spindle
- Large through-hole diameter, large working range



## Extreme Versatility

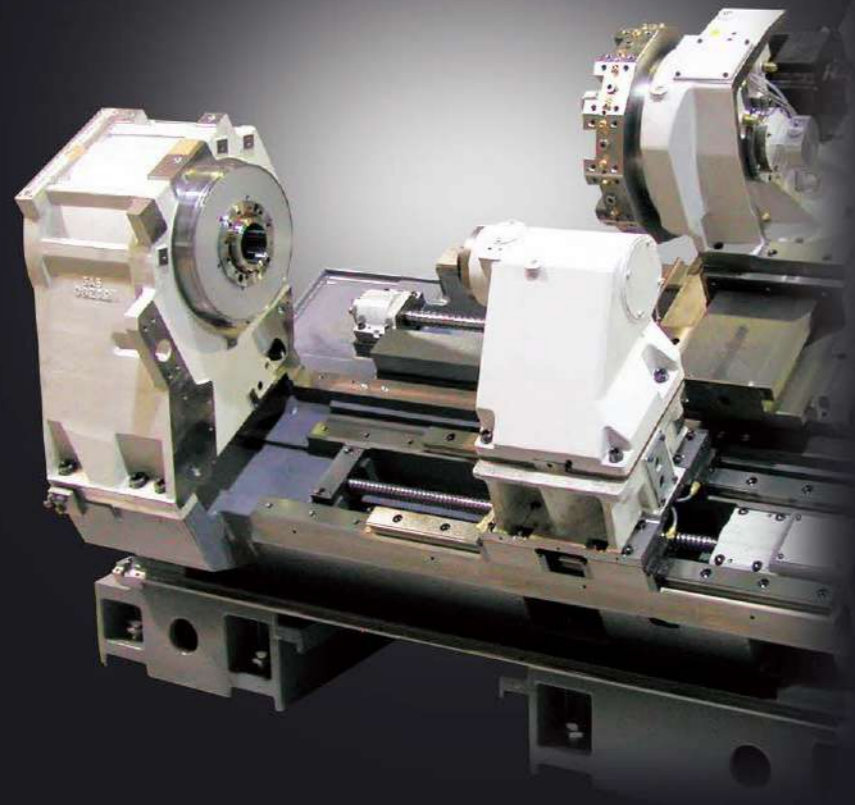
- Abundant series variation
- NC tailstock standard equipment



## Easy Operation

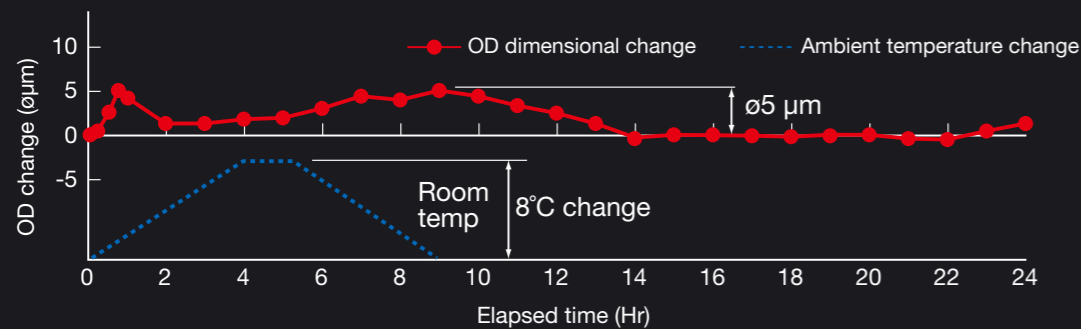
**OSP suite** *OSP-P300LA*  
The Next-Generation Intelligent CNC

# Highest Quality



## Machining dimensional change over time: $\pm 5 \mu\text{m}$

Actual data [LB3000 EX II(L) turning] (ambient temperature: 8°C change)



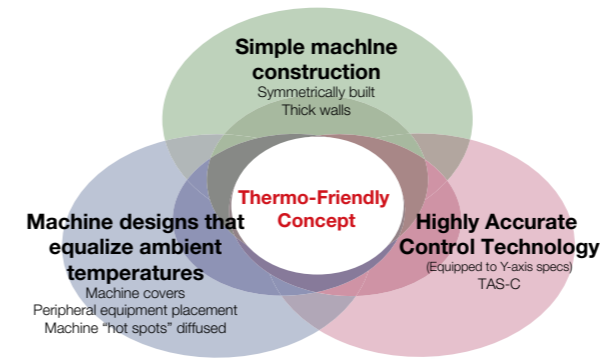
## High accuracy specifications overall assure machining with high dimensional stability

### Thermo-Friendly Concept for unparalleled dimensional stability

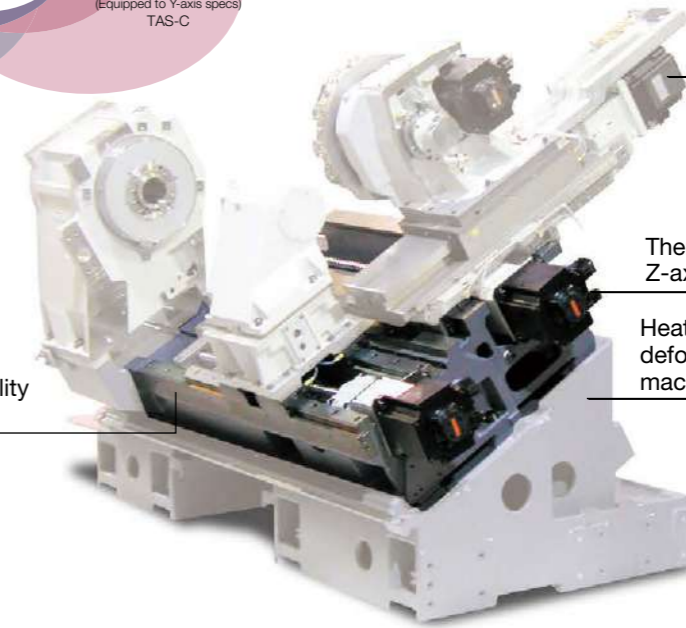
Okuma's Thermo-Friendly Concept is used on all the LB EX machines for extraordinary machining accuracy, using our unique machine design and thermal deformation control technology. Outstanding dimensional stability in long-time continuous operation, multitasking, front and back side machining with a subspindle, and even Y-axis machining without troublesome compensation or warming up.

### Slanted-box bed configuration with superior construction and rigidity

The next evolution of the slanted-box bed construction that has been highly praised as a "rugged, Okuma-like construction" in the SPACE TURN series. The primary units of headstock and turret on a box bed is optimally placed for outstanding dimensional stability and high rigidity. Exhibits stable machining accuracy even in heavy cutting.



Slanted-box bed achieves outstanding dimensional stability and high rigidity



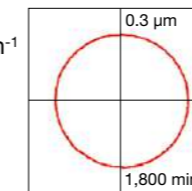
Optimized X-axis feed element

Thermal deformation minimized on Z-axis

Heat sources eliminated and thermal deformation suppressed from the machine's construction

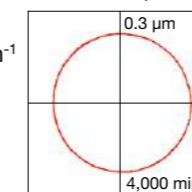
### Roundness [Actual data\*]

● Standard spindle  
0.3 μm / 1,800 min<sup>-1</sup>



Standard spindle

● Sub-spindle  
0.3 μm / 4,000 min<sup>-1</sup>

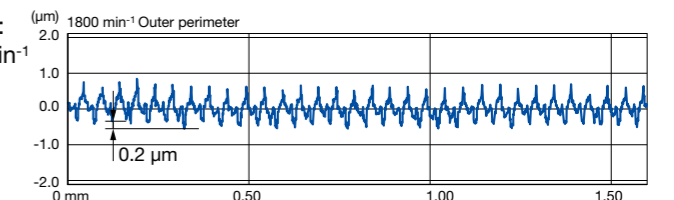


Sub-spindle

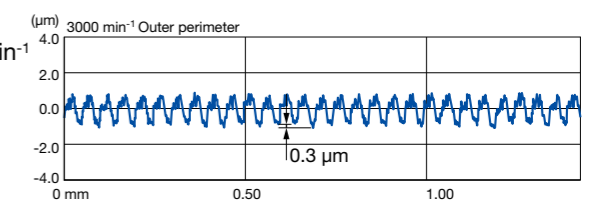
Material: BsB

### Tool nose uniformity (for better surface roughness) [Actual data\*]

● Standard spindle:  
0.2 μm / 1,800 min<sup>-1</sup>



● Sub-spindle:  
0.3 μm / 3,000 min<sup>-1</sup>



Material: BsB

\* The "actual data" referred to above for this brochure represent examples, and may not be obtained due to differences in specifications, tooling, cutting and other conditions.

# Super First and Rigid

## Huge reduction in machining time with an original high power motor and faster machine movements

### Powerful motor on the spindle gives turning capacity of 4.4 mm<sup>2</sup>

Spindle with a larger bearing internal diameter of  $\phi 120$  mm can accommodate larger workpieces, and a turning capacity of 4.4 mm<sup>2</sup> is achieved with a high-speed, wide-area full power motor. Stable, high quality machining, from heavy to high speed cutting.

• Spindle size	Bearing ID $\phi 120$ (bore $\phi 80$ )
• Spindle speed	5,000 min <sup>-1</sup>
• Output	22 kW (30 hp)
• Torque	427 N-m (314 ft-lbf)

### Reduced operation time achieved with higher speed machine movements

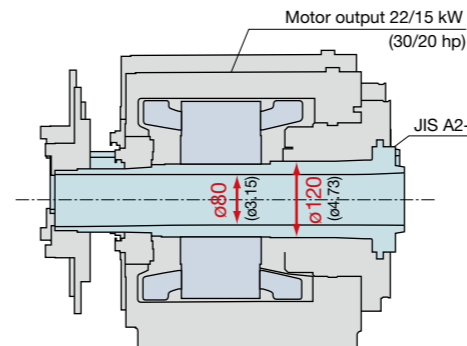
• Rapid traverse	X: 25 m/min (984 ipm)
	Z: 30 m/min (1,181 ipm)
• Spindle start/stop	3 sec (5,000 min <sup>-1</sup> )
• Turret rotate	0.1 sec/index
• NC tailstock rapids	12 m/min (472 ipm)

### Turning 4.4 mm<sup>2</sup>

(Workpiece: S45C)

(Actual data\*)

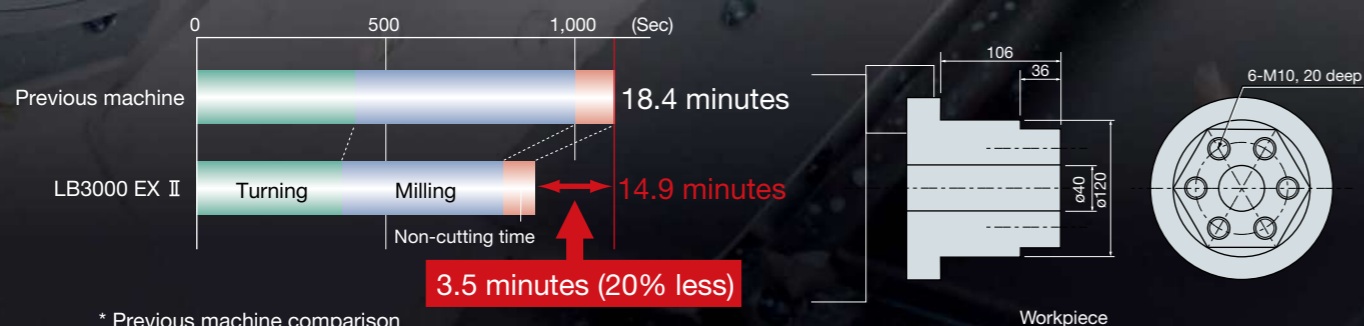
Cylindrical, heavy-duty cutting	4.4 mm <sup>2</sup> (0.007 in <sup>2</sup> )
	Cutting speed V: 150 m/min (492 fpm)
	Cutting depth t: 8 mm (0.31 in)
	Feedrate f: 0.55 mm/rev (0.02 ipr)
Drilling	$\phi 59$ ( $\phi 2.32$ ) carbide insert drill
	Cutting speed V: 180 m/min (591 fpm)
	Feedrate f: 0.25 mm/rev (0.01 ipr)



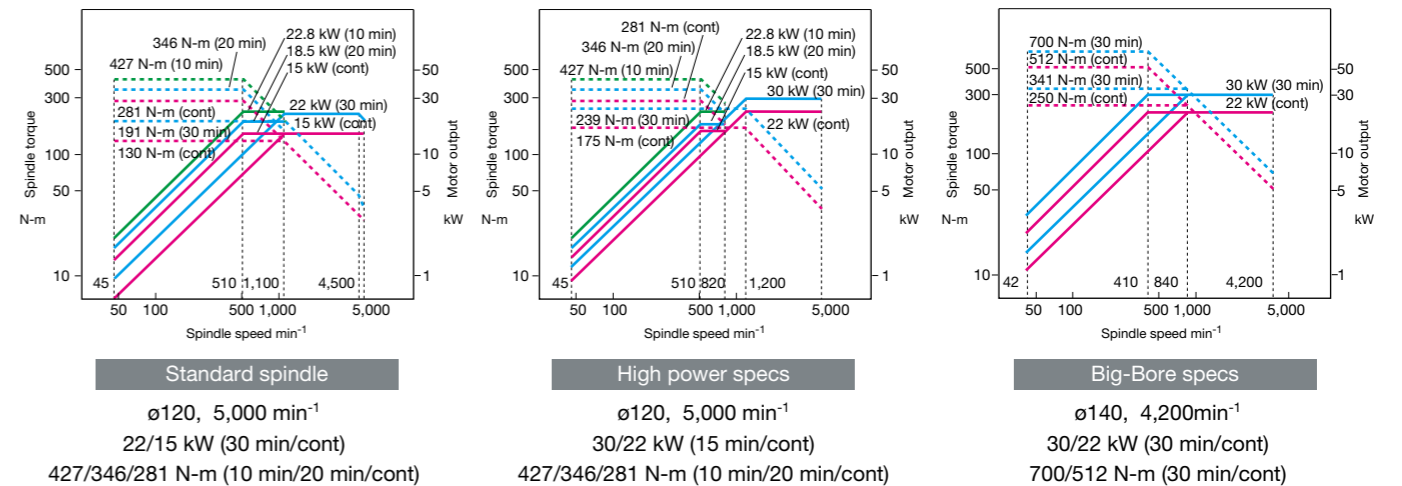
Built-in motor—Okuma's own powerful motor—retains full power over a wide area. There are no gears or belts that can cause vibration or bending, for stable machining without chatter.

\* The "actual data" referred to above for this brochure represent examples, and may not be obtained due to differences in specifications, tooling, cutting and other conditions.

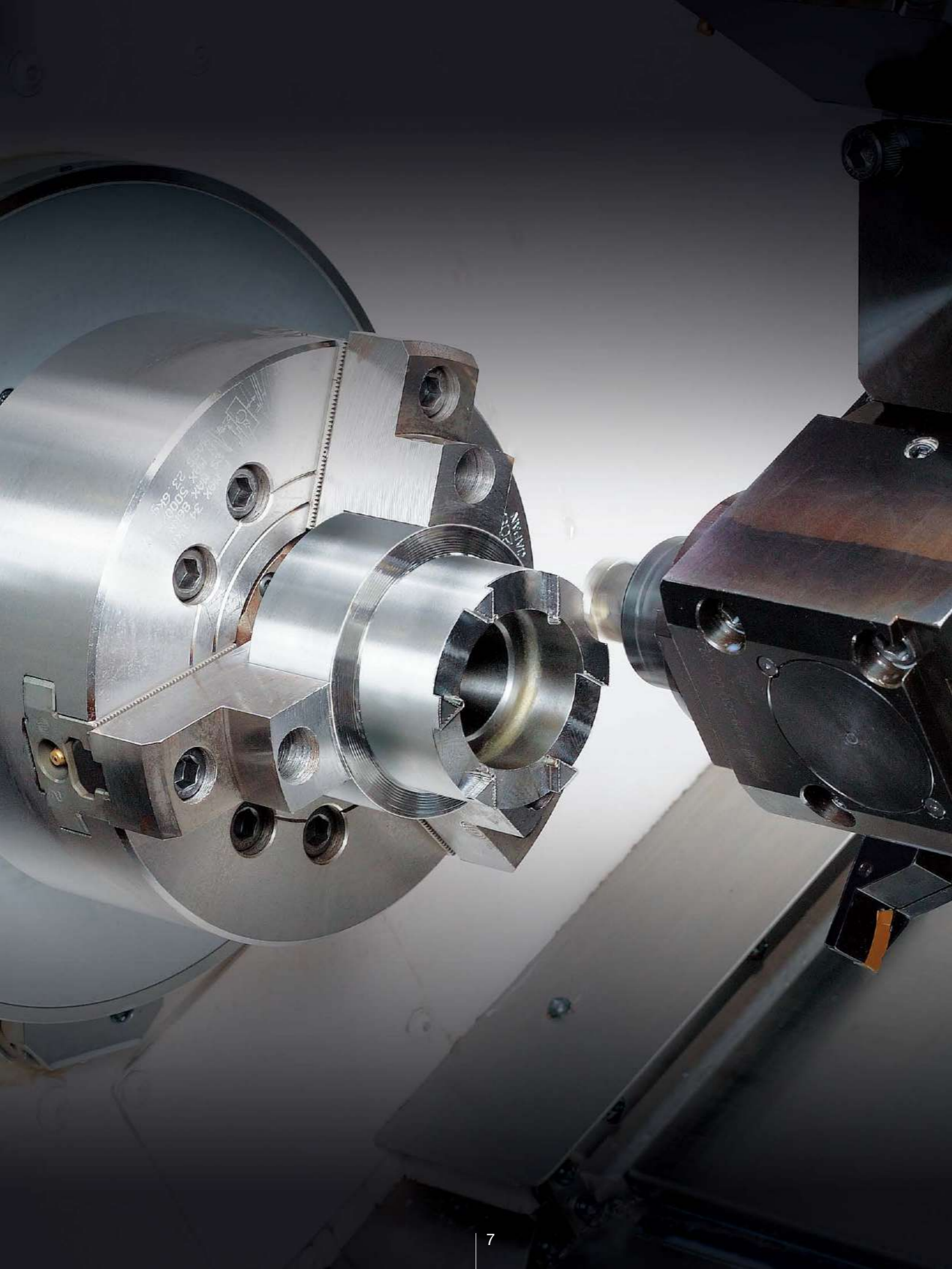
### Improved productivity: 20% shorter cycle time\*



### Spindle/motor variations



\* Previous machine comparison



# Greater efficiency with highest milling performance in its class and fast tool change times

## Compact new PREX motor gives milling performance of 200 cm<sup>3</sup>/min

Compact, high-power, high-torque PREX motor also used for milling spindle of the multitasking V12 radial turret. This combined with a powerful, highly rigid bolt clamp system greatly increases multitasking speed.

• M spindle	6,000 min <sup>-1</sup>
• Output	PREX 7.1 kW (9.5 hp)
• Torque	40.4 N-m (29.7 ft-lbf)

## Reduced operation time achieved with higher speed machine movements

• Turret rotate	0.1 sec/ index
• M-spindle start/stop	0.3 sec (6,000 min <sup>-1</sup> )
• M-M switch	0.7 sec

## Milling capacity 200 cm<sup>3</sup>/min

(Workpiece: S45C)

(Actual data\*)

End milling	Chip volume	200 cm <sup>3</sup> /min (12.2 in <sup>3</sup> /min)
	ø20 7-flute carbide	
	Cutting speed V	200 m/min (7,874 ipm)
	Cutting depth t	20 × 2.5 mm (0.79 × 0.10 in)
Feedrate	f	1.26 mm/rev (0.05 ipr)

Drilling	ø20 carbide solid drill	
	Cutting speed V	135 m/min (4,429 ipm)
	Feedrate	f : 0.3 mm/rev (0.01 ipr)

Tapping	M20 P2.5	
	(Synchronized tapping)	

\* The "actual data" referred to above for this brochure represent examples, and may not be obtained due to differences in specifications, tooling, cutting and other conditions.



## Wide working range, new longitudinal expansion

### Max machining dia: ø410 mm (M turret: ø340 mm)

• Standard spindle	JIS A2-6	8-in chuck, 10-in chuck
• Big-Bore spindle	JIS A2-8	10-in chuck, 12-in chuck
• Super Big-Bore spindle	JIS A2-11	15-in chuck

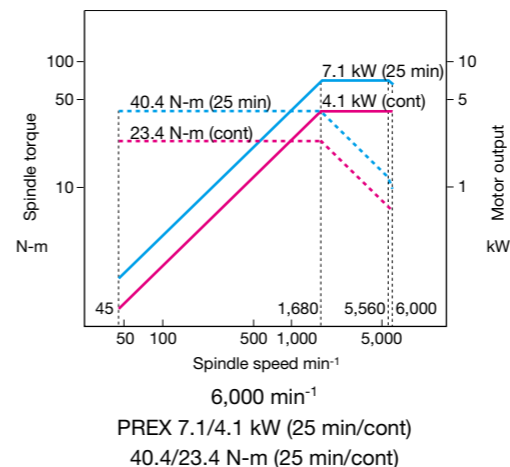
### Distance between centers:

• L · M specs	500 / 1,000 / 1,300 mm
• MY specs	450 / 950 / 1,200 mm
• W · MW · MYW spec	500 / 800 mm

### Spindle thru hole: Bigger

• Standard spindle:	ø80 mm (ø3.15 in)
• Big-Bore spindle:	ø91 mm (ø3.59 in)
• Super Big-Bore spindle:	ø110 mm (ø4.33 in)

## Milling tool spindle



# Extreme Versatility



## Providing rich variation and optimum ease of use

### NC tailstock that shortens setup and automates center work is standard equipment

Up to 10 pairs of tailstock positions can be set, enabling continuous machining of workpieces with 10 different lengths without setup. In addition, thrust can be switched between high and low without resetting the workpiece. (Tailstock thrust high/low switch: Optional)  
High accuracy positioning is also possible with a high speed linear guide employing a ball screw guide.

• Tailstock thrust	0.5 to 5 kN (Opt: 1 to 7.5 kN)
• Rapid traverse	12 m/min (472 ipm)
• Approach	10 m/min (394 ipm)
• Retract	12 m/min (472 ipm)

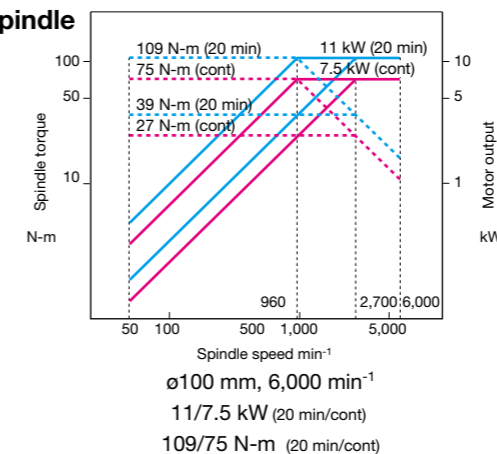
Note: Please select a hydraulic quill for face driver machining applications.

### Integrated operations with sub-spindle

With these sub-spindle specifications, front and back machining can be done on a single LB3000 EXII. Interference is not a worry even in back face machining with a multitasking V12 radial turret. (Compatible only with W, MW, MYW specs with distance between centers of 500 mm, 1,000 mm)



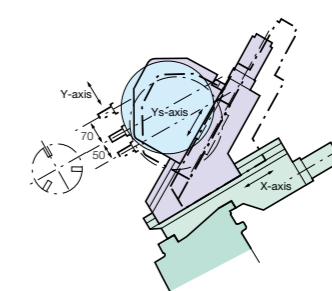
### Sub-spindle



### Complete multitasking with Y-axis functions One chuck machining even with irregularly shaped workpieces

A variety of milling operations can be accommodated with high-accuracy, wide-range Y-axis travel using a double slide system. Achieves complete multitasking with a single chucking (MY, MYW specifications).

• Travel	MY specs: 120 mm (+70 to -50)
	MYW specs: 115 mm (+70 to -45)
• Y-axis rapid traverse	12.5 m/min (492 ipm)



### More efficient turning of long workpieces with auto follower rest

By synchronizing with turret in NC part program, support is always provided near the place being cut, even with long or cantilevered workpieces (optional for 1300 DBC L/M, 1200 DBC MY specs).



\* Auto follower rest requires selection of auto tow-along tailstock and hydraulic tailstock

## Complete control — always at your fingertips

- ◆ With “suite apps” to resolve shop floor problems and maximize productivity
- ◆ “Suite operation” provides stress-free, smartphone-like touch control
- ◆ Connect Plan allows you to have visual control of your plant
- ◆ Okuma smart factories evolving with AI coupled to reliable security applications



### CNC systems have evolved into a new form of cognitive computing

The OSP suite is no longer a CNC that only controls machining. Based on Okuma’s Intelligent Technology and a passion for “craftsmanship service,” each manufacturing process is optimized by digital links to shop floor work orders, setup information, cutting conditions, and operating status. Moreover, connections to plant equipment and maintenance information necessary for efficient factory operations, productivity of the entire manufacturing system improves considerably.

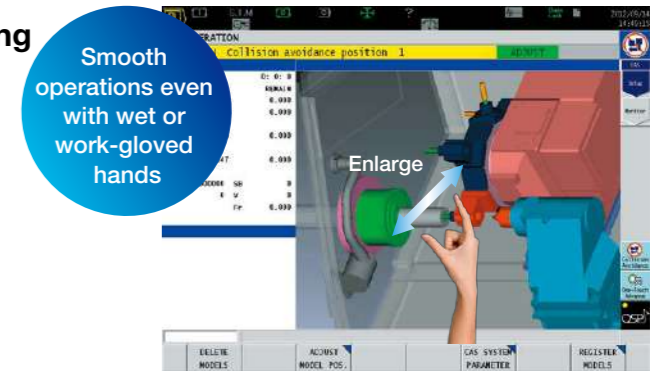
The OSP suite transforms machine tools into smart machines, working together as a team and evolving into a smart factory. And that will open the door to advances in manufacturing that have never before been possible.

### With revamped operation and responsiveness— ease of use for machine shops first!

Smart factories are using advanced digitization and networking (IIoT) in manufacturing to achieve enhanced productivity and added value. The OSP has evolved tremendously as a CNC suited to advanced intelligent technology. Okuma’s new control uses the latest CPUs for a tremendous boost in operability, rendering performance, and processing speed. The OSP suite also features a full range of useful apps that could only come from a machine tool manufacturer, making smart manufacturing a reality.

### Smooth, comfortable operation with the feeling of using a smart phone

Improved rendering performance and use of a multi-touch panel achieve intuitive graphical operation. Moving, enlarging, reducing, and rotating 3D models, as well as list views of tool data, programs, and other information can be accomplished through smooth, speedy operations with the same feel as using a smart phone. The screen display layout on the operation screen can also be changed to suit operator preferences and customized for the novice and/or veteran machinists.



### “Just what we wanted.”— Refreshed OSP suite apps

This became possible through the addition of Okuma’s machining expertise based on requests we heard from real, machine-shop customers. The brain power packed into the CNC, built by a machine tool manufacturer, will “empower shop floor” management.

#### Spindle Output Monitor

Increased productivity through visualization of motor power reserve

The specified spindle output (red line: short time rating, green line: continuous rating) and the spindle output in current cutting (blue circle) are simultaneously displayed on the screen, for real-time view of power reserve during cutting. This allows speeding up cutting by increasing the spindle speed or feed rate while monitoring the graph to ensure that the blue circle does not cross the lines.



#### Scheduled Program Editor

Easy programming without keying in code

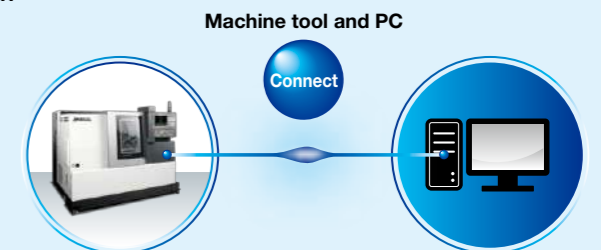
#### E-mail Notification

Monitoring utilization status even when away from the machine

### Connect Plan Get Connected, Get Started, and Get Innovative with Okuma “Monozukuri”

#### Connect, Visualize, Improve

Okuma’s Connect Plan is a system that provides analytics for improved utilization by connecting machine tools and visual control of factory operation results and machining records. Simply connect the OSP and a PC and install Connect Plan on the PC to see the machine operation status from the shop floor, from an office, from anywhere. The Connect Plan is an ideal solution for customers trying to raise their machine utilization.



# Ensuring smooth machining preparations

## Interactive operations Advanced One-Touch IGF-L (Optional)

### Part program create

After simple cutting data inputs (interactively), the required machining processes are determined and a part program is created (automatically).

### Advanced run

To run the machine directly from the interactive part program screen. When a problem is detected it can be quickly corrected and checked, speeding up first part machining.

Directly change cutting conditions for each process with this process sheet

PROCESS SHEET	MACHINING UNIT	TOOL
1	DRILL THR	TN 1
2	RGH OD FACE	TN 2
3	RGH OD <	TN 2
4	RGH ID <	TN 3
5	FIN OD <	TN 4
6	FIN ID <	TN 5

Tables make it easy to make mid-cycle or individual process starts

PROCESS SHEET	MACHINING UNIT	TOOL
1	DRILL THR	TN 1
2	RGH OD FACE	TN 2
3	RGH OD <	TN 2
4	RGH ID <	TN 3
5	FIN OD <	TN 4
6	FIN ID <	TN 5

Continuous run

PROCESS SHEET	MACHINING UNIT	TOOL
1	DRILL THR	TN 1
2	RGH OD FACE	TN 2
3	RGH OD <	TN 2
4	RGH ID <	TN 3
5	FIN OD <	TN 4
6	FIN ID <	TN 5

Mid-cycle start (finishing repeated)

PROCESS SHEET	MACHINING UNIT	TOOL
1	DRILL THR	TN 1
2	RGH OD FACE	TN 2
3	RGH OD <	TN 2
4	RGH ID <	TN 3
5	FIN OD <	TN 4
6	FIN ID <	TN 5

Individual run (machining repeated with this tool only)

### Easy to operate

#### Operation screen split into four displays

Simultaneous display includes setup work, current position needed in confirming movement in trial machining, NC program, and graphic simulation.



#### Tool registration

Register data for all of your tools. Since the registered tool data is also used by Okuma auto programming (Advanced One-Touch IGF) and a collision check function (Collision Avoidance System), this screen will complete the entire registering process. When loading a tool in the machine, simply select it from among the registered tools. ATC manual operation does not require inputting the tool number. Just select the tool from the list and press the function key.



#### Forming soft jaws

Templates like this make it easy to set required jaw shape, tool, and cutting conditions. Part programming not required to do this.



#### Zero offsets

A simple function key operation is all it takes to shift a zero offset to either the left or right end of a workpiece. The required zero offset will be calculated automatically based on jaw and workpiece lengths. (when the tool offset is set with reference to the turret tool mounting surface)



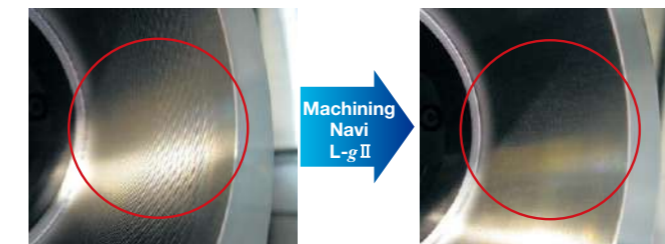
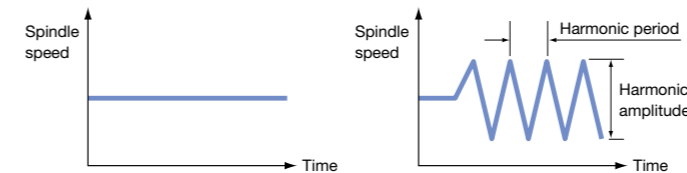
# Okuma's Intelligent Technology reduces operator burden



## Machining Navi L-gII (guided, harmonic spindle speed control) (Optional)

Cutting condition search function for turning

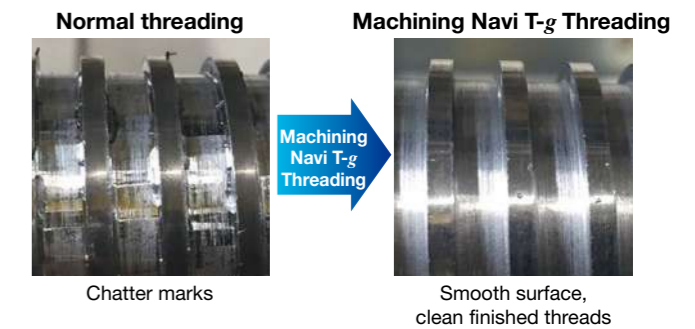
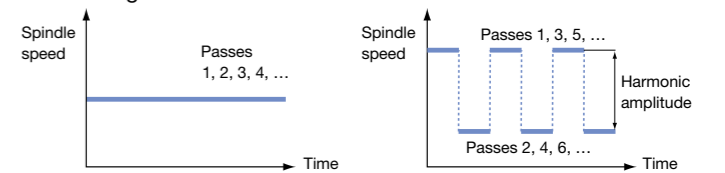
Varying the spindle speed in accordance with the best amplitude and period makes it possible to suppress chatter during turning operations. Tool life can be extended and machining time reduced with use of the optimum cutting conditions, producing significant effects in drilling/boring bar, threading, and grooving applications.



## Machining Navi T-g Threading (Optional)

Cutting condition search in threading

When chatter occurred during threading, it was common to lower the cutting conditions or use special tools that resist chatter. Okuma's Machining Navi T-g (Threading) breaks the vibration periodicity with a different spindle speed for each threading pass, and suppresses chatter growth. The machining capacity of your normally used tools can be maximized for stable machining.



## ECO suite Next-Generation Energy-Saving System

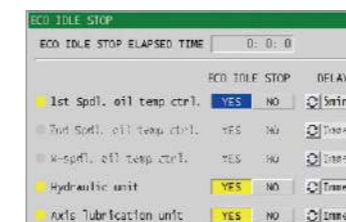
A suite of energy saving applications for machine tools

### ECO Idling Stop

Operation only for the time required for each unit

Idling time can be stopped for individual spindle, feed drives, and peripheral equipment. By reducing the idling time, power consumption can also be reduced.

● Example of equipment that can use Idling Stop

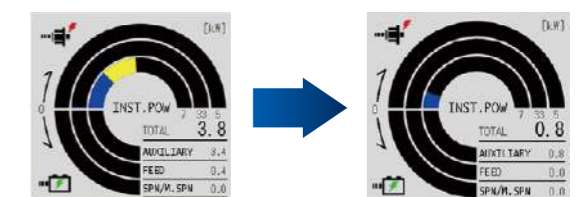


### ECO Power Monitor

On-the-spot check of energy savings

Power is shown individually for spindle, feed axes, and auxiliaries on the OSP operation screen. The energy-saving benefits from auxiliary equipment stopped with ECO Idling Stop can be confirmed on the spot.

● Example of Power Monitor check



The displayed values are one example.

## Machine Specifications

Item	Model	LB3000 EX II (L)				LB3000 EX II (M)						
		T	C x 500	C x 1000	C x 1300	T	C x 500	C x 1000	C x 1300			
Capacity	Swing over bed	mm (in) $\phi 580$ ( $\phi 22.83$ )										
	Swing over saddle	mm (in) $\phi 470$ ( $\phi 18.5$ )										
	Distance between centers (W specs: DBN)	-	520 (20.47)	1,020 (40.16)	1,335 (52.59)	-	520 (20.47)	1,020 (40.16)	1,335 (52.59)			
	Max turning dia	mm (in) $\phi 410$ (16.14)				mm (in) $\phi 340$ (13.39)						
	Max work length	250 (9.84)	500 (19.69)	1,000 (39.37)	1,300 (51.18)	250 (9.84)	500 (19.69)	1,000 (39.37)	1,300 (51.18)			
Travels	X axis	mm (in) 260 (10.24)										
	Z axis	565 (22.24)		1,065 (41.93)		1,380 (54.33)		565 (22.24)		1,065 (41.93)		
	Y axis	-				-						
	C axis (minimum control angle)	deg -				deg 360 (0.001)						
Spindle	Speed	min <sup>-1</sup> 45 to 5,000 {42 to 4,200} <28 to 2,800>										
	Speed ranges	2 auto ranges (2 range motor coil switching)										
	Nose	JIS A2-6 {JIS A2-8} <JIS A2-11>										
	Bore dia	mm (in) $\phi 80$ { $\phi 91$ } < $\phi 110$ > { $\phi 3.15$ { $\phi 3.58$ } < $\phi 4.33$ >}										
	Front bearing dia	mm (in) $\phi 120$ { $\phi 140$ } < $\phi 150$ > { $\phi 4.72$ { $\phi 5.51$ } < $\phi 5.91$ >}										
	Sub-spindle	Speed	min <sup>-1</sup> -									
Speed ranges		-										
Nose		-										
Bore dia		mm (in) -										
Front bearing dia		mm (in) -										
Turret		Type	V12 NC turret				M-V12 NC turret					
	No. of tools	L: 12				L / M: 12						
	OD tool shank	mm (in) $\square 25$ (1)										
	ID tool shank dia	mm (in) $\phi 40$ (1.57)										
	Turret rotation	sec/index 0.1										
Milling tool	Spindle speed	min <sup>-1</sup> -				45 to 6,000						
	Speed range	-				Infinitely variable						
Feed rates	Rapid traverse	m/min (ipm) X: 25, Z: 30 (984, 1,181)										
	Tailstock rapids	-	12 (472)			-	12 (472)					
	Rapid traverse (W)	m/min (ipm) -										
	Rapid traverse (C)	min <sup>-1</sup> - 200										
Tailstock	Tapered bore type	-	MT No. 5 (revolving center)			-	MT No. 5 (revolving center)					
	Travel	-	515 (20.28)	1,015 (39.96)	1,330 (52.36)	-	515 (20.28)	1,015 (39.96)	1,330 (52.36)			
Motors	Main spindle (30 min/cont)	kW (hp) 22/15 (30/20) {30/22 (40/30)} [30/22 (40/30)] <22/15 (30/20)>										
	Sub-spindle	kW (hp) -										
	Milling tool spindle	kW (hp) - 7.1/4.1 (9.5/5.5) (25 min/cont)										
	Axis drive	kW (hp) X: 2.8/Z: 3.5 (3.8/4.7)										
	Tailstock travel	-	2.9 (3.92)			-	2.9 (3.92)					
	Sub-spindle travel	kW (hp) -										
	Coolant pump (60 Hz / 50 Hz)	SD: 0.25/0.25 (0.34/0.34) RD: 0.75/0.55 (1/0.73)		SD: 0.82/0.52 (1.09/0.69)		SD: 0.25/0.25 (0.34/0.34) RD: 0.75/0.55 (1/0.73)		SD: 0.82/0.52 (1.09/0.69)				
	Machine size	Height	1,824 (71.81)		1,975 (77.76)		1,824 (71.81)		1,975 (77.76)			
		Floor space*1 (side discharge L type tank)	2,764 x 1,790 (108.82 x 70.47)		3,844 x 2,065 (151.34 x 81.30)		4,344 x 2,185 (171.02 x 86.02)		2,764 x 1,790 (108.82 x 70.47)		3,844 x 2,065 (151.34 x 81.30)	
		Floor space*1 (side discharge I type tank)	2,340 x 1,790 (92.13 x 70.47)		3,420 x 2,065 (134.65 x 81.30)		-		2,340 x 1,790 (92.13 x 70.47)		3,420 x 2,065 (134.65 x 81.30)	
Mass (w/ CNC)		4,250 (9,350)	4,400 (9,680)	6,000 (13,200)	6,700 (14,740)	4,350 (9,570)	4,500 (9,900)	6,100 (13,420)	6,800 (14,991)			
CNC	OSP-P300LA											

SD: side discharge, RD: rear discharge, DBN: Distance between noses

Item	LB3000 EX II (MY)			LB3000 EX II (W)		LB3000 EX II (MW)		LB3000 EX II (MYW)										
	T	C x 450	C x 950	C x 1200	x500	x800	x500	x800	x450	x800								
Capacity	mm (in) $\phi 580$ ( $\phi 22.83$ )																	
	mm (in) $\phi 470$ ( $\phi 18.5$ )																	
	-	470 (18.5)	970 (38.19)	1,220 (48.03)	785 (30.91)	1,085 (42.72)	785 (30.91)	1,085 (42.72)	785 (30.91)	1,085 (42.72)								
	mm (in) $\phi 340$ (13.39)			mm (in) $\phi 410$ (16.14)			mm (in) $\phi 340$ (13.39)			mm (in) $\phi 340$ (13.39)								
	250 (9.84)	450 (17.72)	950 (37.4)	1,200 (47.24)	-	-	-	-	-	-								
Travels	mm (in) 260																	
	510 (20.08)		1,010 (39.76)		1,255 (49.41)		565 (22.24)		1,065 (41.93)		550 (21.65)		995 (39.17)		510 (20.08)		1,010 (39.76)	
	120 (+70 to -50) (4.72 (+2.76 to -1.97))				-				-				115 (+70 to -45) (4.53 (+2.76 to -1.77))					
	360 (0.001)				-				-				360 (0.001)					
	mm (in) 45 to 5,000 {42 to 4,200} <28 to 2,800>																	
2 auto ranges (2 range motor coil switching)																		
JIS A2-6 {JIS A2-8} <JIS A2-11>																		
mm (in) $\phi 80$ { $\phi 91$ } < $\phi 110$ > { $\phi 3.15$ { $\phi 3.58$ } < $\phi 4.33$ >}																		
mm (in) $\phi 120$ { $\phi 140$ } < $\phi 150$ > { $\phi 4.72$ { $\phi 5.51$ } < $\phi 5.91$ >}																		
Sub-spindle	min <sup>-1</sup> -																	
	2 auto ranges (2 range motor coil switching)																	
	mm (in) $\phi 140$ flat																	
	mm (in) $\phi 62$ (2.44)																	
	mm (in) $\phi 100$ (3.94)																	
	Turret	M-V12 NC turret			V12 NC turret			M-V12 NC turret										
L / M: 12			L: 12			L / M: 12												
mm (in) $\square 25$ (1)																		
mm (in) $\phi 40$ (1.57)																		
sec/index 0.1																		
Milling tool	45 to 6,000			-			45 to 6,000											
	Infinitely variable			-			Infinitely variable											
Feed rates	X: 25, Z: 30 (984, 1,181, 492)			X: 25, Z: 30 (984, 1,181)			X: 25, Z: 30 (984, 1,181)		X: 25, Z: 30, Y: 12.5 (984, 1,181, 492)									
	-	12 (472)			-			30										
	200			-			200											
	-	MT No. 5 (revolving center)			-			-										
Motors	515 (20.28)			1,015 (39.96)			1,330 (52.36)			515 (20.28)			1,015 (39.96)			1,330 (52.36)		
	22/15 (30/20) {30/22 (40/30)} [30/22 (40/30)] <22/15 (30/20)>																	
	-																	
	7.1/4.1 (9.5/5.5) (25 min/cont)			-			11/7.5 (15/10) (20 min/cont)											
	7.1/4.1 (9.5/5.5) (25 min/cont)			-			7.1/4.1 (9.5/5.5) (25 min/cont)											
	X: 3.5/Z: 4.6, Ys: 3.5 (4.7/6.1/4.7)			X: 2.8 / Z: 3.5 (3.8/4.7)			X: 2.8 / Z: 3.5 (3.8/4.7)		X: 3.5 / Z: 4.6, Ys: 3.5 (4.7/6.1/4.7)									
	2.9 (3.92)			-			-											
	-			-			2.8 (3.75)											
	SD: 0.25/0.25 (0.34/0.34) RD: 0.75/0.55 (1/0.73)			SD: 0.82/0.52 (1.09/0.69)			SD: 0.25/0.25 (0.34/0.34) RD: 0.75/0.55 (1/0.73)			SD: 0.82/0.52 (1.09/0.69)								
	Machine size	2,250 (88.58)		2,455 (96.65)		2,455 (96.65)		1,824 (71.81)		1,975 (77.76)		1,824 (71.81)		1,975 (77.76)		2,250 (88.58)		2,455 (96.65)
2,764 x 1,785 (108.82 x 70.28)		3,844 x 2,065 (151.34 x 81.30)		4,344 x 2,185 (171.02 x 86.02)		3,164 x 1,790 (124.57 x 70.47)		3,844 x 2,065 (151.34 x 81.30)		3,164 x 1,790 (124.57 x 70.47)		3,844 x 2,065 (151.34 x 81.30)		3,274 x 1,790 (128.90 x 70.47)		3,844 x 2,065 (151.34 x 81.30)		
2,340 x 1,785 (92.13 x 70.28)		3,420 x 2,065 (134.65 x 81.30)		-		2,740 x 1,790 (107.87 x 70.47)		3,420 x 2,065 (134.65 x 81.30)		2,740 x 1,790 (107.87 x 70.47)		3,420 x 2,065 (134.65 x 81.30)		2,850 x 1,790 (112.20 x 70.47)		3,420 x 2,065 (134.65 x 81.30)		
4,850 (10,692)		5,000 (11,022)	6,600 (14,520)	7,400 (16,280)	4,650 (10,230)	6,250 (13,750)	4,750 (10,450)	6,350 (13,970)	5,250 (11,550)	6,850 (15,070)								
CNC	OSP-P300LA																	

{ } : Big-Bore specs < > : Super Big-Bore specs [ ] : With high power spec

\*1: Includes standard spindle, side discharge specs; tank

## Standard Specifications & Accessories

Model Specifications	LB3000 EX II																	
	L			M			MY			W		MW		MYW				
	T	Cx500	Cx1000	Cx1300	T	Cx500	Cx1000	Cx1300	T	Cx450	Cx950	Cx1200	x500	x800	x500	x800	x450	x800
Spindle (30 min/cont)	A2-6 45 to 5,000 min <sup>-1</sup> 22/15 kW (30/20 hp)																	
Sub-spindle (20 min/cont)	- ø140 flat, 50 to 6,000 min <sup>-1</sup> 11/7.5 kW (15/10 hp)																	
Turret	NC indexing M-V12 radial V12 bolt clamp M-V12 radial																	
Milling tool (25 min/cont)	- 45 to 6,000 min <sup>-1</sup> 7.1/4.1 kW (9.5/5.5 hp)																	
Tailstock (dead quill)	-	NC travel * MT No.5			-	NC travel * MT No.5			-	NC travel * MT No.5			-					
Standard accessories	Coolant system (water soluble) Work lamp Full enclosure shielding Jack screws, foundation washers Hand tools Door interlock (standard)																	
Standard accessories	Lube monitor (A-1) + hydraulic source pressure detector - Chuck auto open/close confirm (main/sub) Chuck air blow (main/sub)																	
CNC	OSP-P300LA NC operation panel, 15-in color TFT (touch panel) Program storage; 4 GB Operation buffer; 2 MB - Chuck open/close during spindle rotation																	

\* Auto follower rest not available.

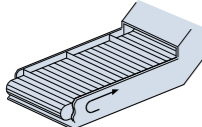
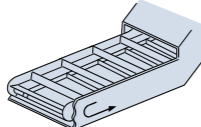
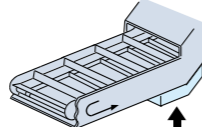
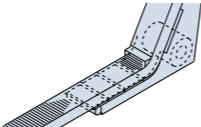
## Optional Specs & Accessories

Headstock	Big-Bore spindle: Bearing inside diameter ø140 JIS A2-8 42 to 4,200 min <sup>-1</sup> 30/22 kW (30 min/cont) Super Big-Bore specs Bearing inside diameter ø150 JIS A2-11 28 to 2,800 min <sup>-1</sup> 22/15 kW (30 min/cont) High power spindle specs: 30/22 kW (30 min/cont)	Coolant	Shower coolant A,B Spindle ID coolant A,B Pump motor: 0.75 kW/0.55 kW (60 Hz/50 Hz) Sludge control Flow / Level detection Mist collector Workpiece wash gun
Chucking	Chuck auto open/close confirm Chuck high/low pressure switch Work stopper in spindle	Air	Air blow (blast; chuck, center, spindle ID, turret)
Gauges	In-process gauging system Touch Setter M (manual), A (auto)	Cover	Front door auto open/close
Tailstock	Revolving center: MT No.5 Tailstock taper: Built-in center MT No.4 Threaded center MT No.4 High thrust specs	Chip handling	Chip pan side or rear Chip conveyor side or rear discharge* L, H Chip bucket L, H
Steadyrests	Rollers (fixed position) Auto steadyrest (self-centering)	Dustproofing	Air purge, double wiper
Lubrication	Lube monitor B-2, C-1, C-2	Automation	Bar feeder Bar puller NC robots NC loaders

\* 1,300 mm distance between centers available with side discharge only

## Various chip conveyors

### Chip conveyor types and application

Type	Hinge	Scraper	Magnet scraper	Hinge + Scraper (with drum filter)
Application	● For steel	● For castings	● For castings	● For steel, castings, nonferrous metal
Features	● General use	● Magnet scraper more effective for sludge disposal ● Easy maintenance ● Blade scraper	● Effective with sludge ● Not suited for nonferrous metals	● Filtration of long and short chips and coolant
Shape			 Magnet	

Note: Machine platform may be necessary depending on the type of conveyor.

## Chucking Kit / Tooling Kit

Model Specifications	LB3000 EX II															
	L			M			MY			W		MW				
	Std Chucking Kit	Std Tooling Kit	Chucking Kit	Chucking Kit	Chucking Kit	Std Chucking Kit	Sub Chucking Kit	Std Tooling Kit	Tooling Kit							
Chuck	Solid 8-in N-08A6		BB kit *1 E kit *2 D kit *3	BB kit *1 E kit *2 D kit *3	BB kit *1 E kit *2 D kit *3	Solid 8-in N-08A6										
Sub-spindle chuck							Hollow 6-in B206									
Soft jaws, A			5	5	5											
Soft jaws, B			3	3	3											
Hard jaws			1	1	1											
OD-I		4	6	6	4 (T specs: 3)											
OD-II		2	3	2	2											
OD-I-S								2	3							
OD-II-S								2	1							
OD-III-S								2								
ID-H40		6	6	3	3											
ID-I-S								4								
ID-II-S								2								
ID-III-S								1								
ID-H40-S (main)									3							
ID-I-S (H40) (sub)									2							
DS MT No. 1-H40			1													
DS MT No. 2-H40			1													
DS MT No. 3-H40		1	1	1	1			1								
DS MT No. 4-H40			1													
BS 10-H40			2	2	2											
BS 12-H40			2	2	2				1							
BS 16-H40			2	2	2				2							
BS 20-H40		2	2	2	2				2							
BS 25-H40		2	2	2	2			2	2							
BS 32-H40			2	2	2			2								
BS 12-H20								1								
BS 16-H20								2								
Axial mill/drill unit				2	2				2							
Radial mill/drill unit				2	2				2							
Dummy holder			3	3	3				3							
Revolving center* MT No. 5			1		1											

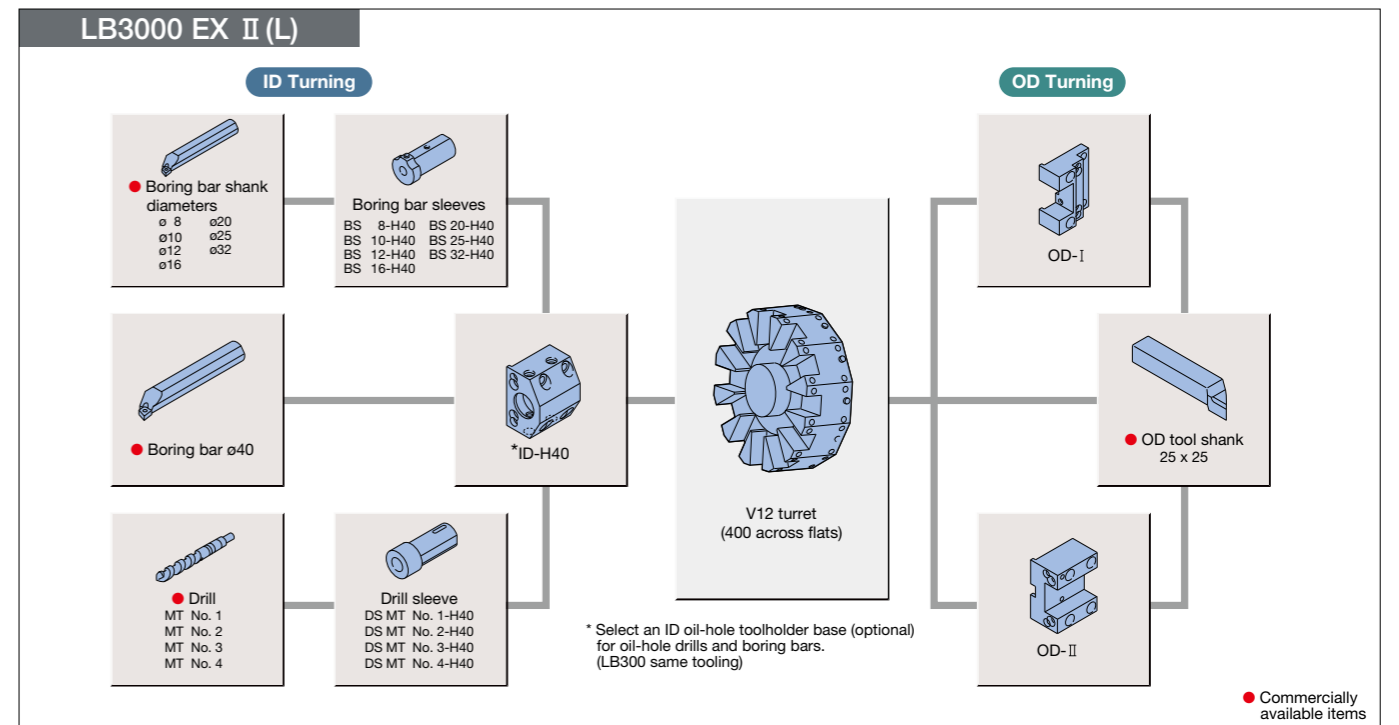
\* Tailstock, MT 5; not for T specs

## Chucking Kit

Chuck	BB Kit *1	E Kit *2	D Kit *3
Hollow 8-in BB208A6		Hollow 8-in B-208A6	Hollow 10-in B-210A6

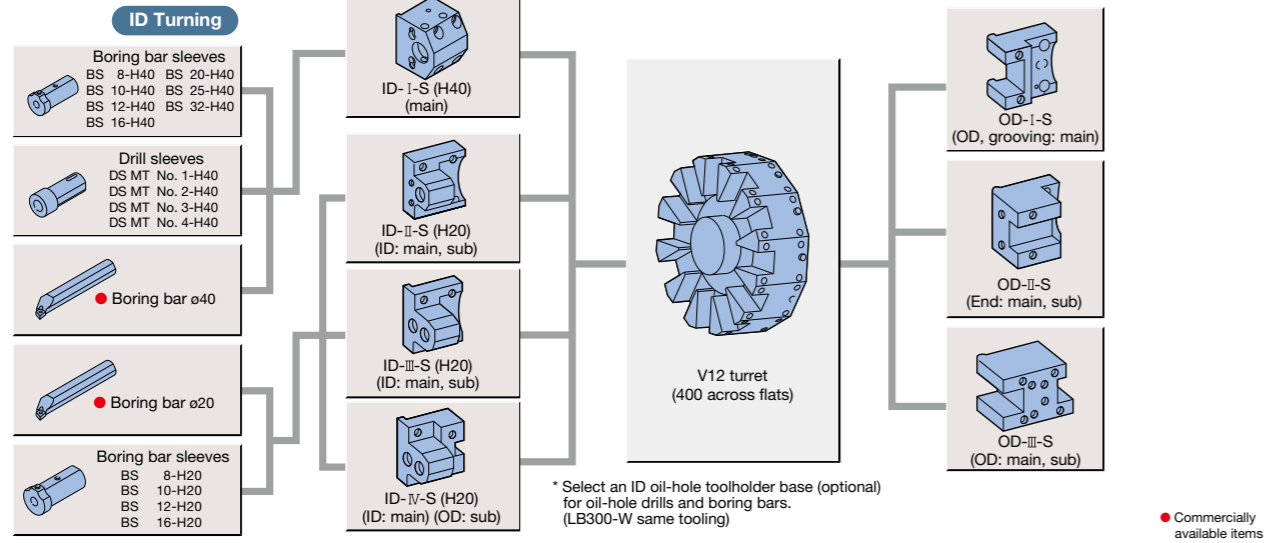
\*1, \*2, \*3 cross-referenced for these two tables.

## Tooling System

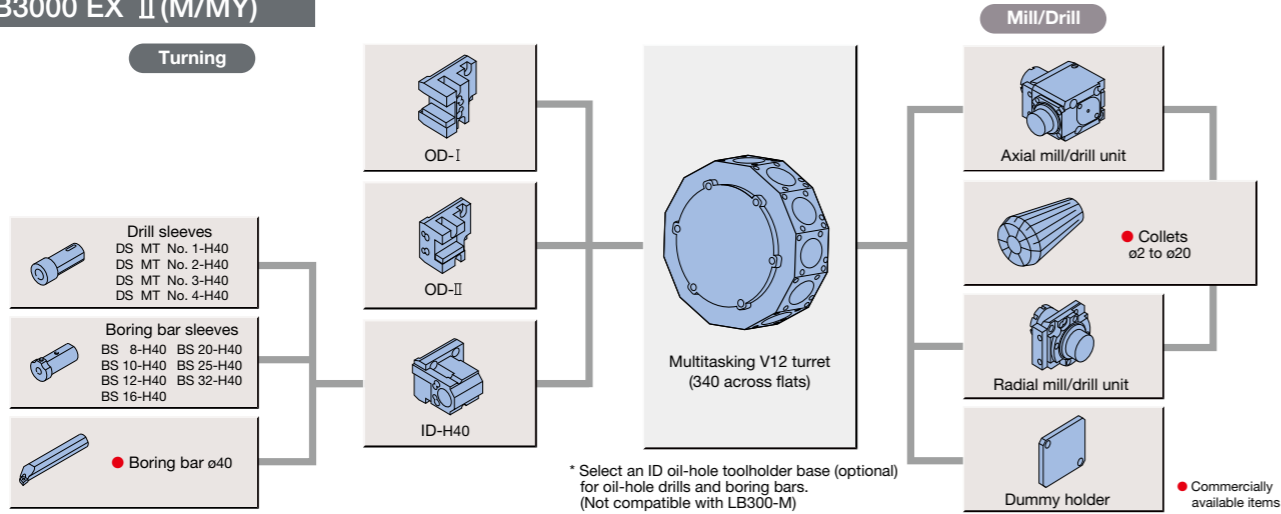


● Commercially available items

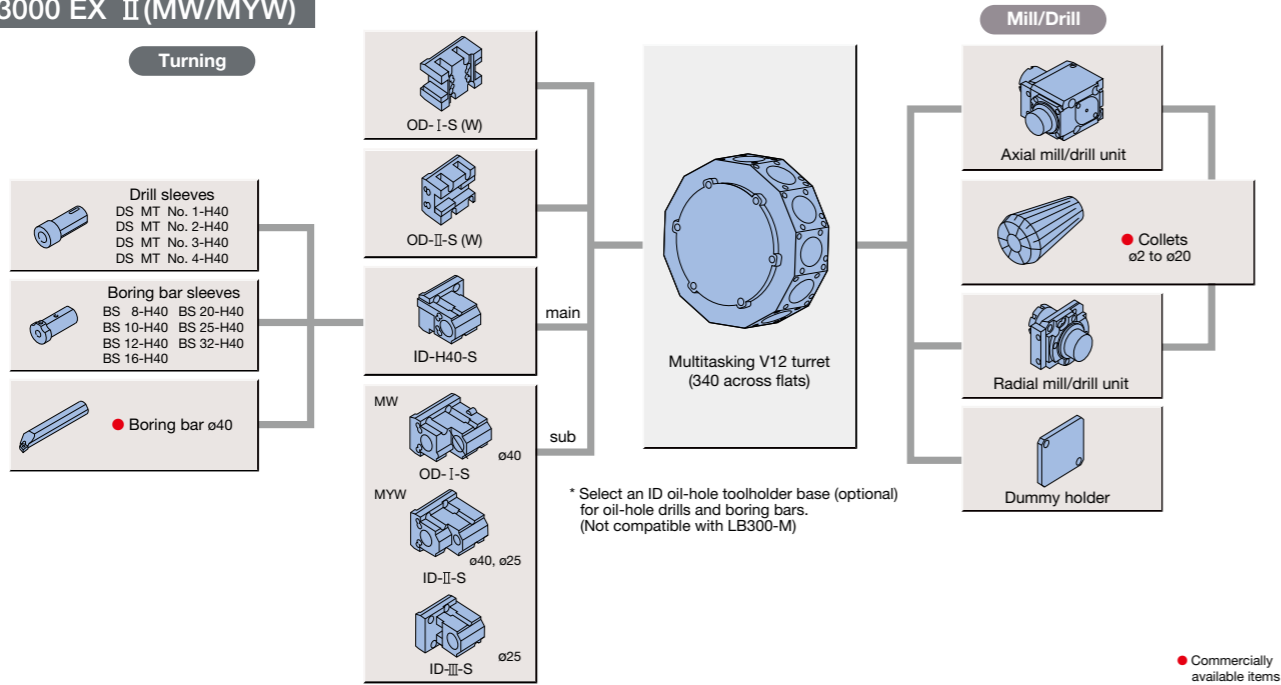
### LB3000 EX II (W)



### LB3000 EX II (M/MY)

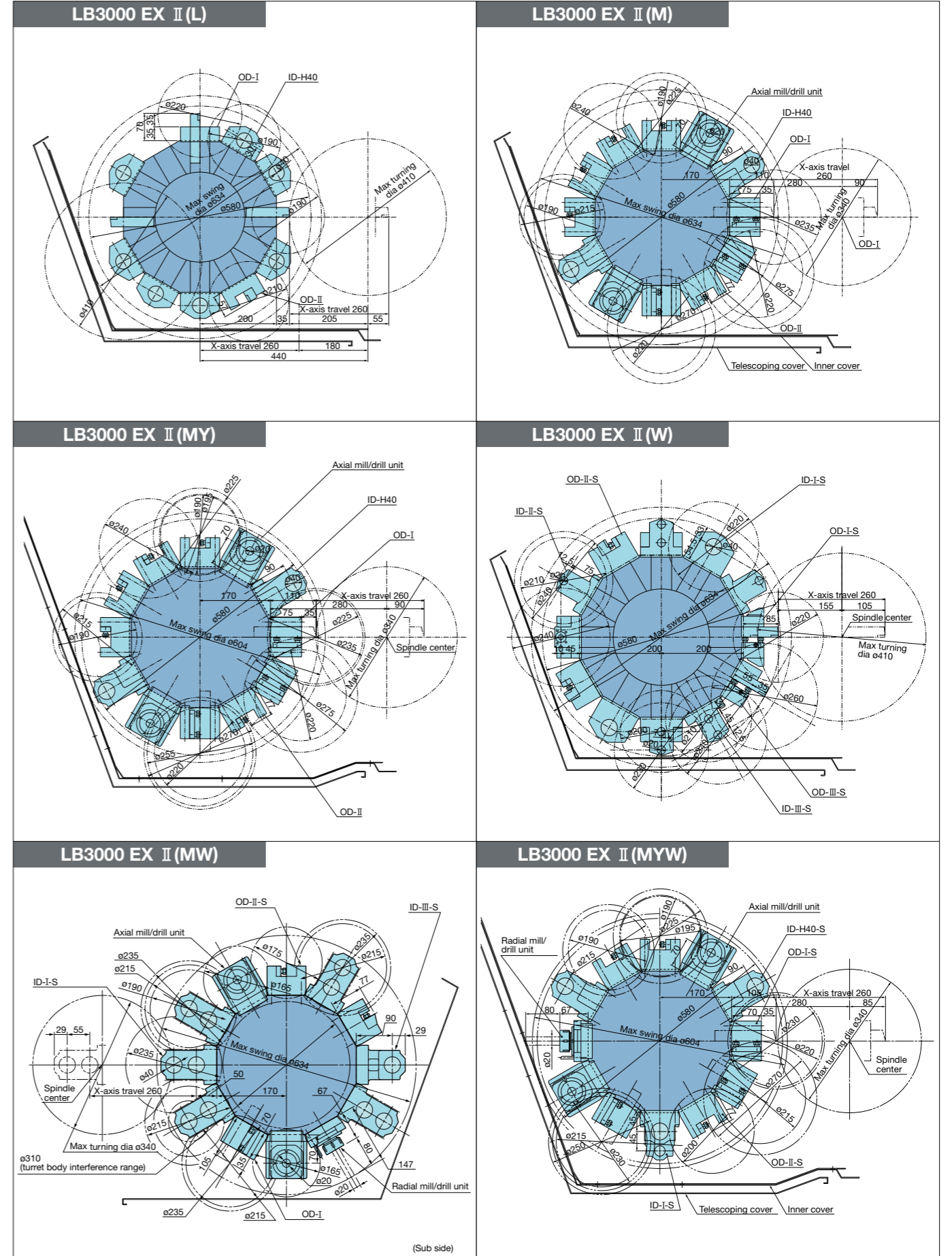


### LB3000 EX II (MW/MYW)



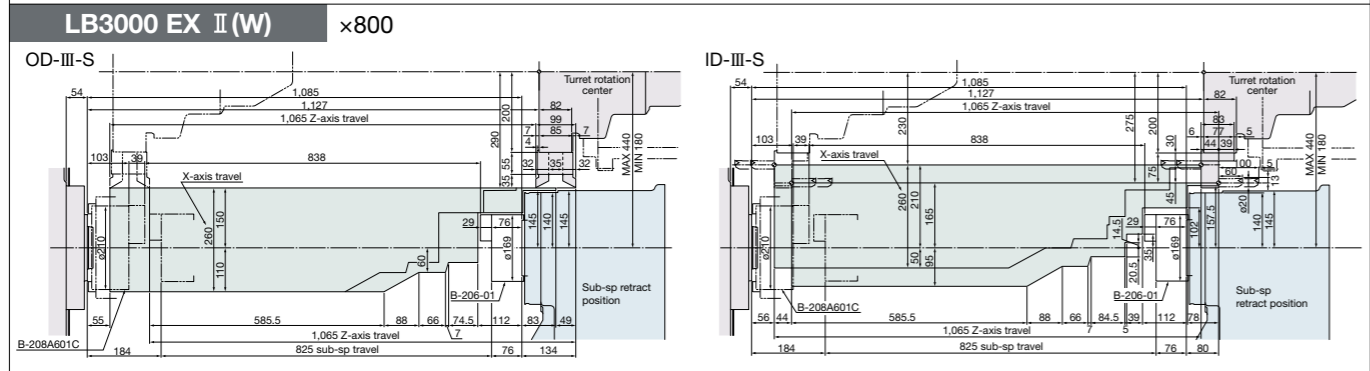
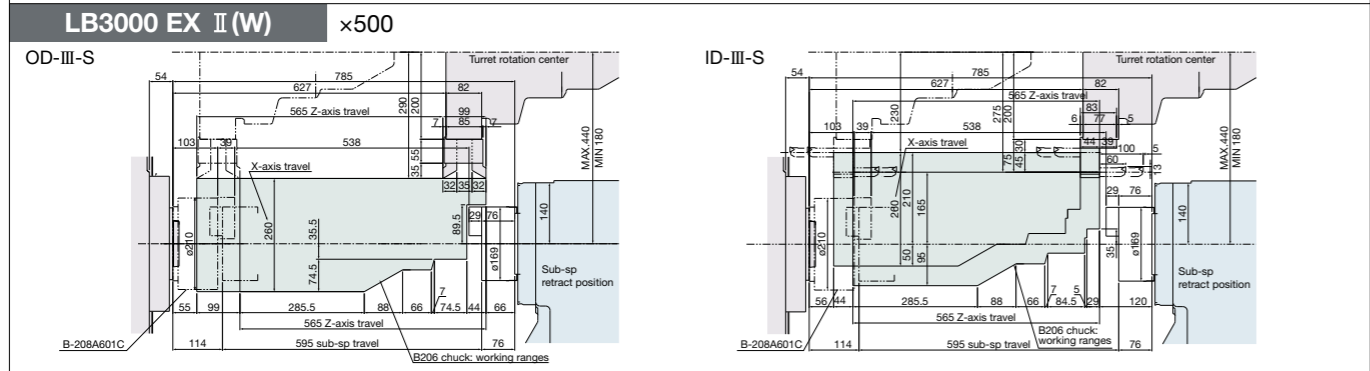
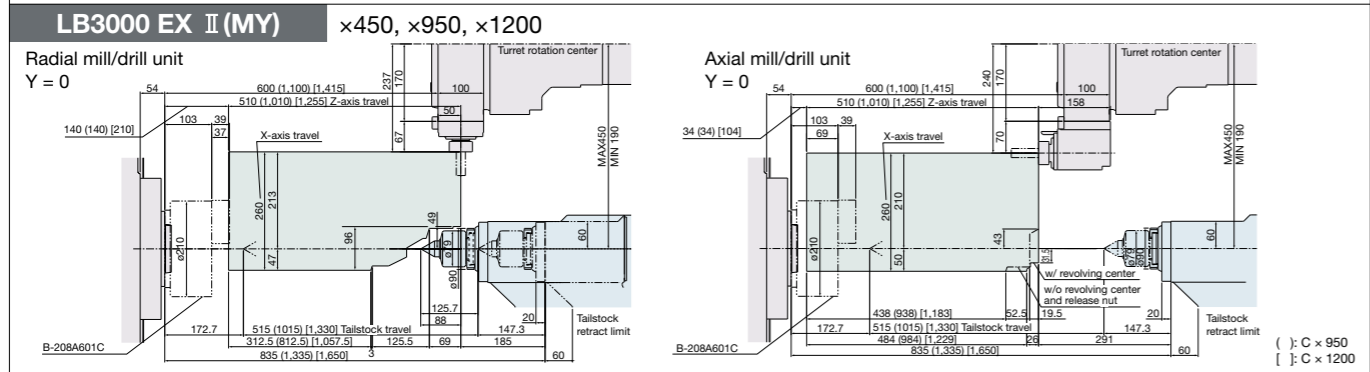
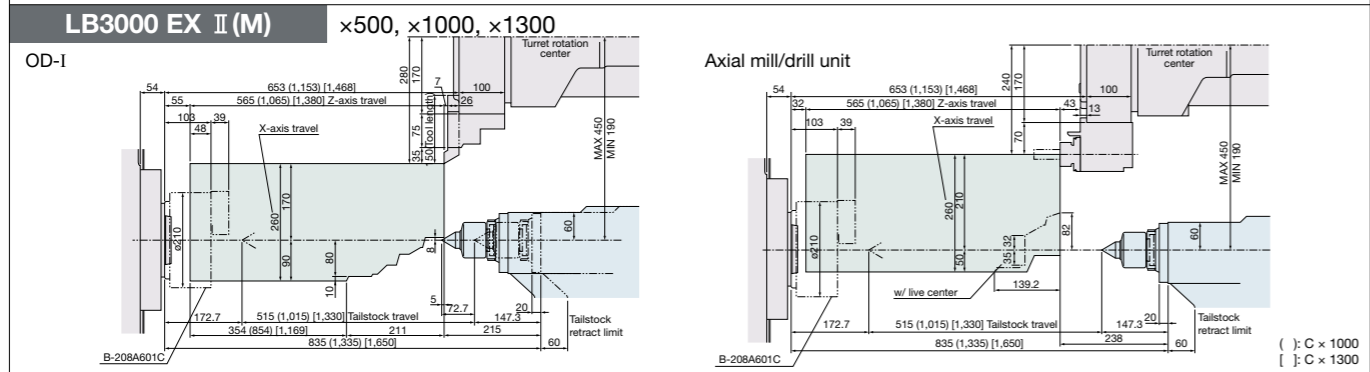
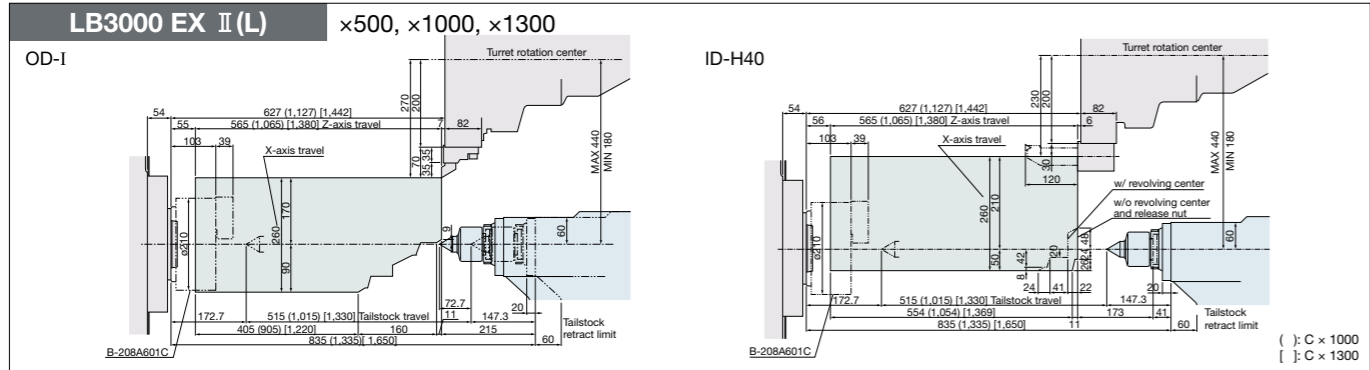
### Tool Interference Drawings

Unit: mm



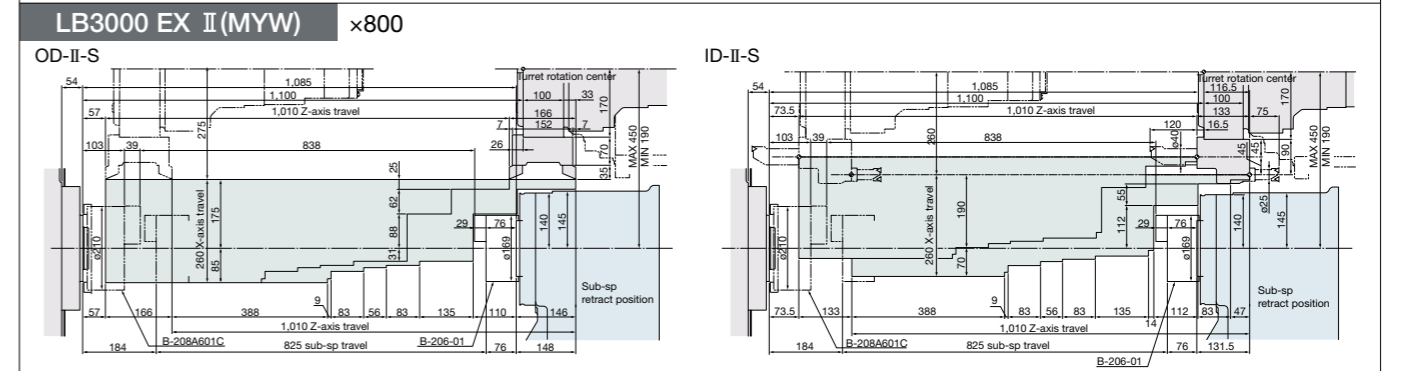
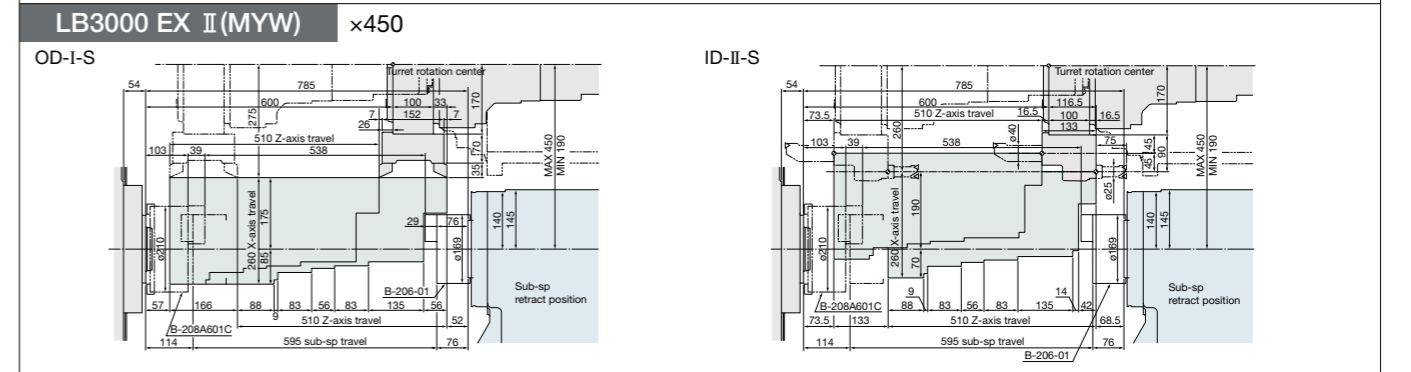
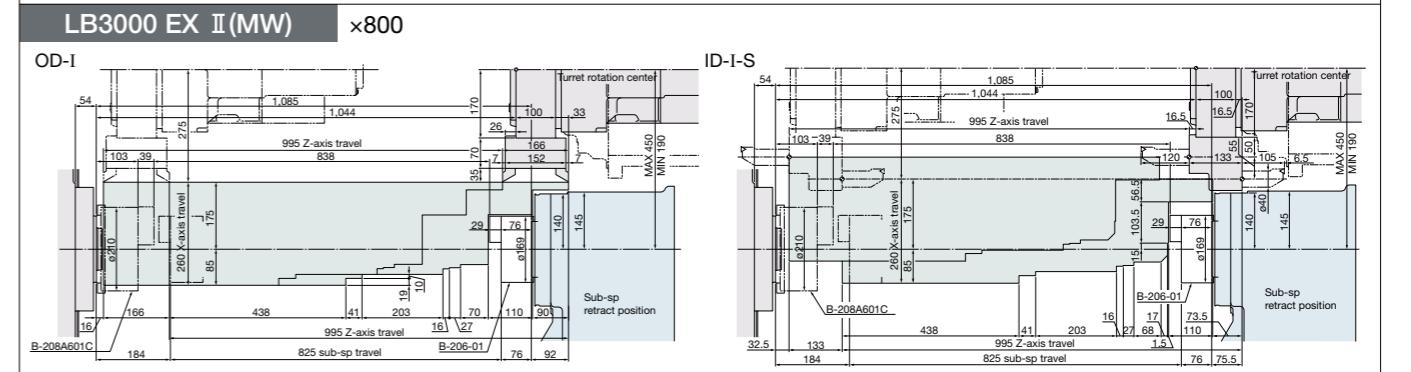
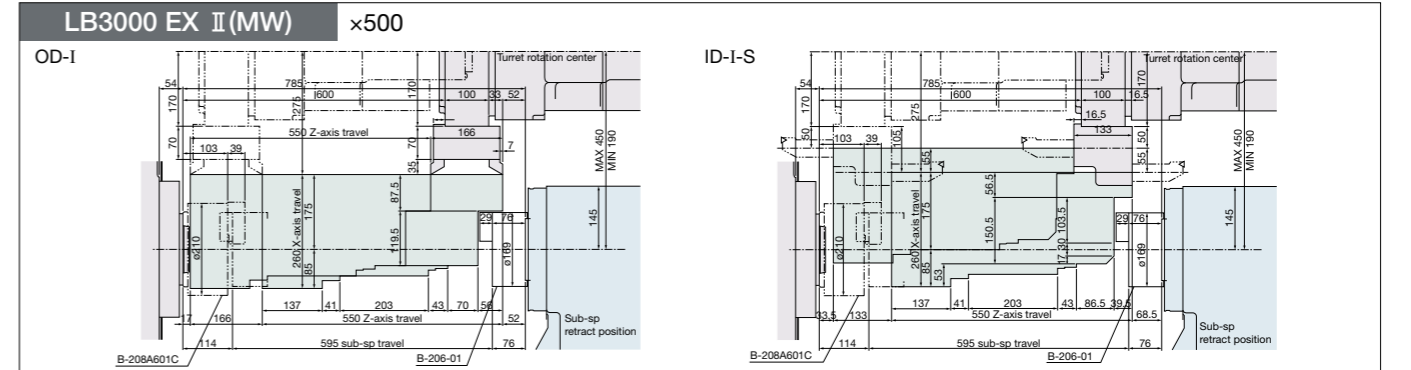
**Working Ranges**

Unit: mm



**Working Ranges**

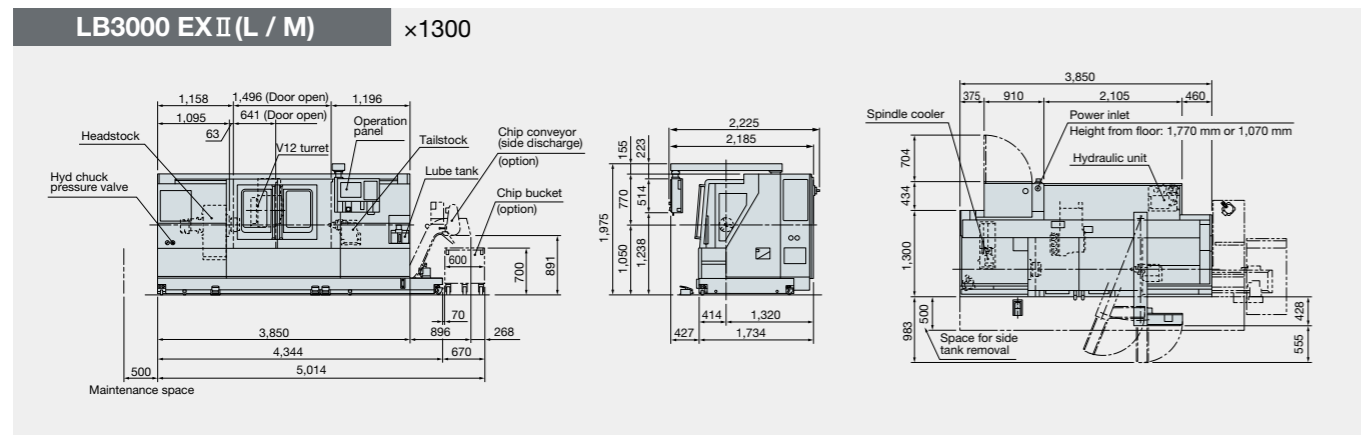
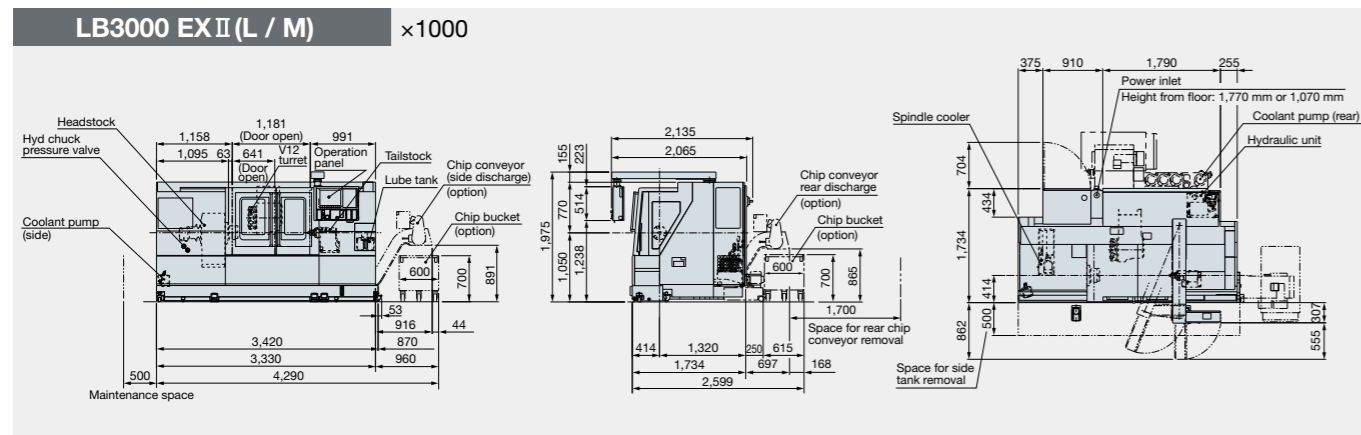
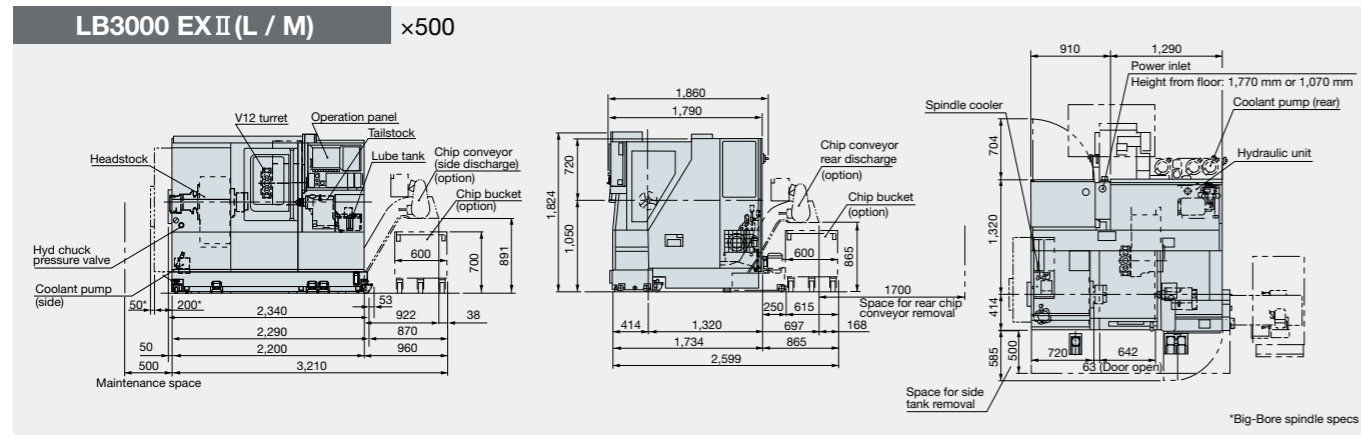
Unit: mm



All travel range drawings shown are with standard spindle specs. This will differ with Big-Bore and Super Big-Bore specs.

## Dimensional Installation Drawings

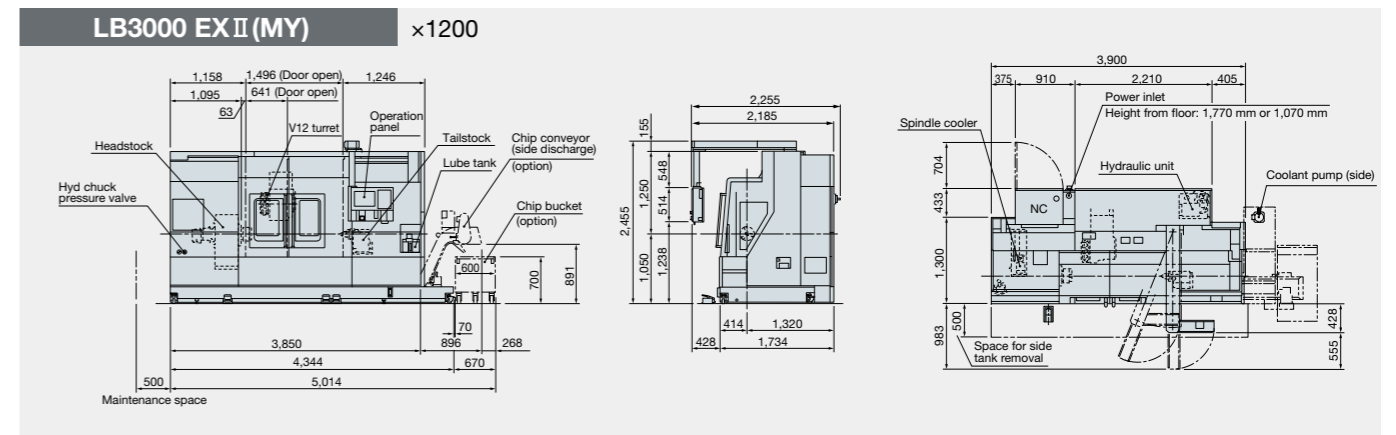
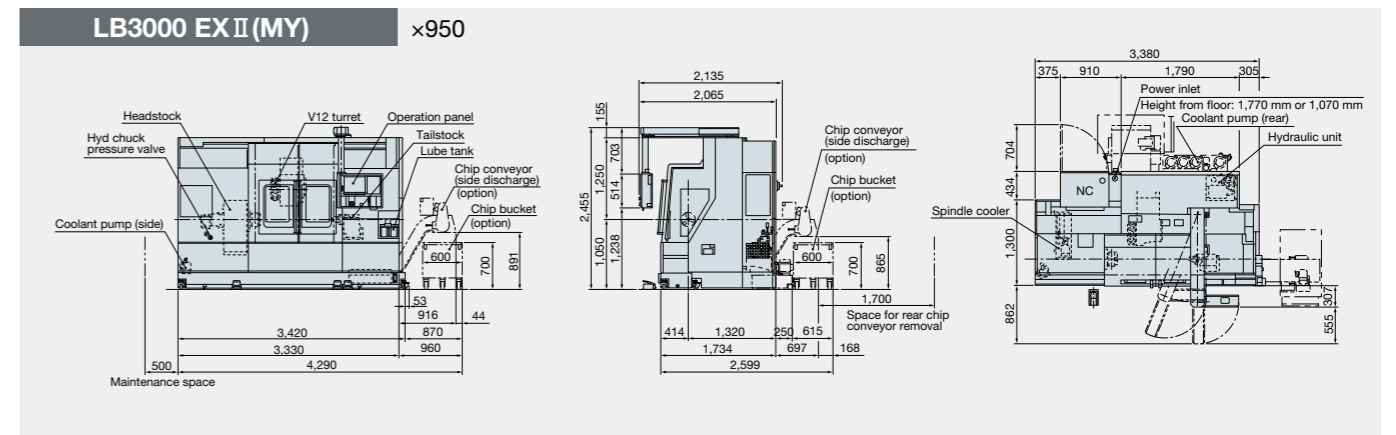
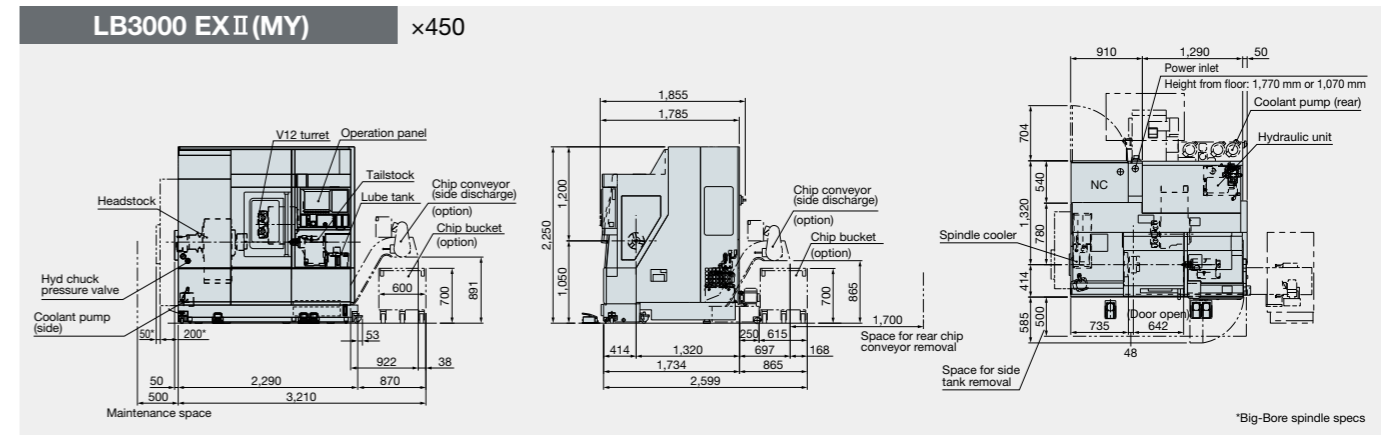
Unit: mm



Drawings shown are with standard spindle specs.

## Dimensional Installation Drawings

Unit: mm

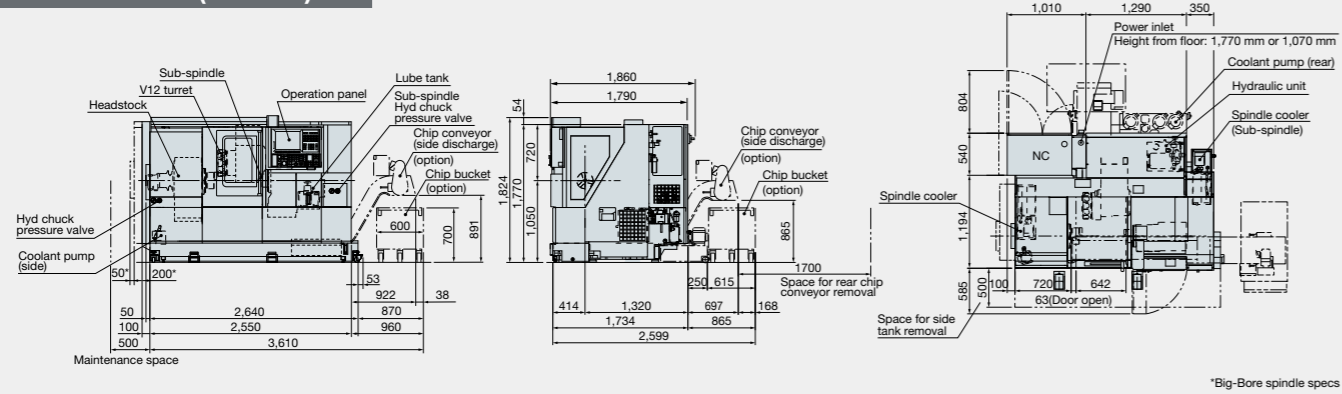


Drawings shown are with standard spindle specs.

# Dimensional Installation Drawings

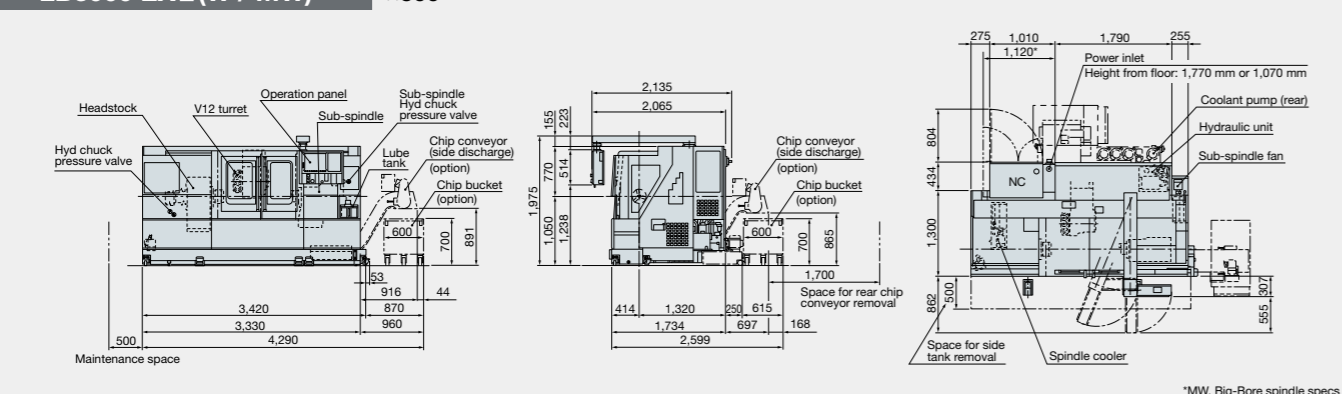
Unit: mm

## LB3000 EXII (W / MW) x500



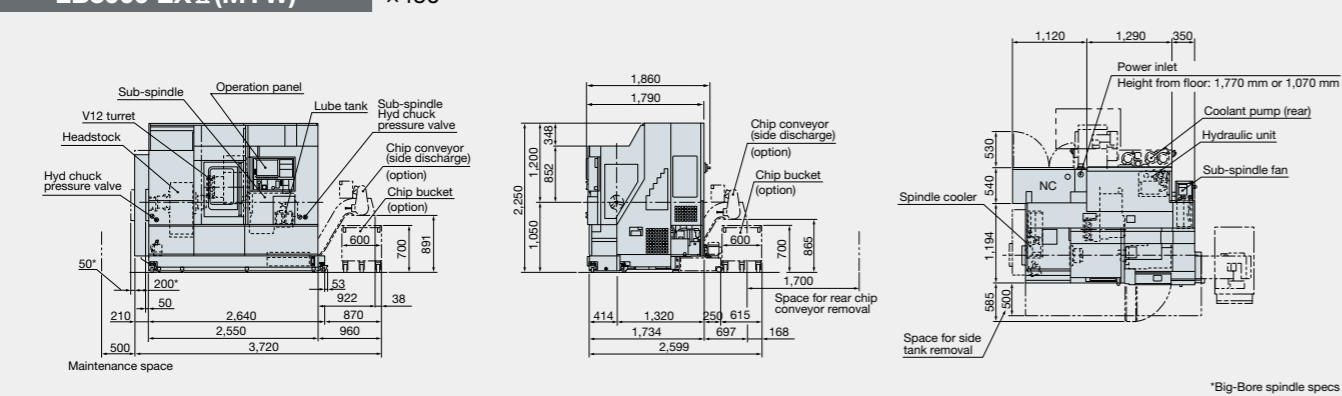
\*Big-Bore spindle specs

## LB3000 EXII (W / MW) x800



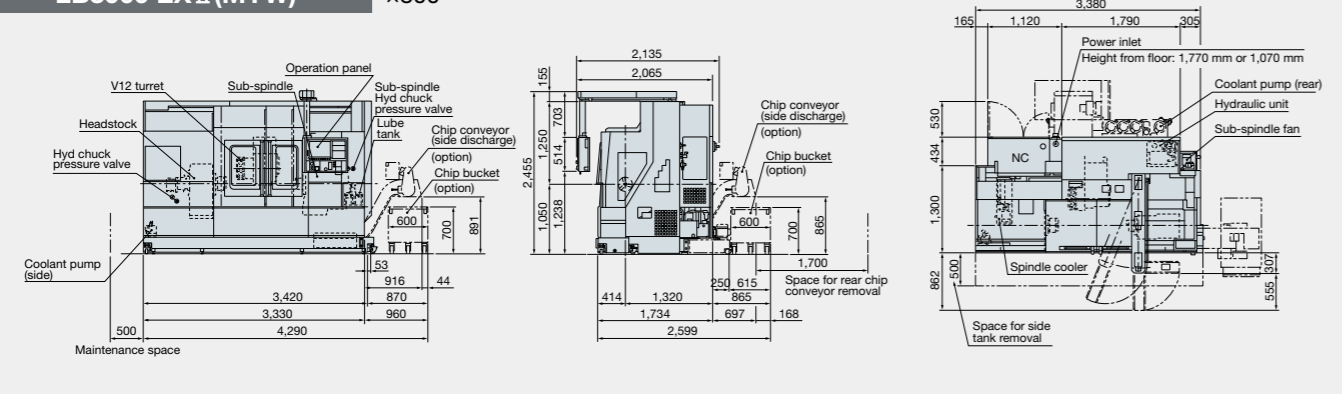
\*MW, Big-Bore spindle specs

## LB3000 EXII (MYW) x450



\*Big-Bore spindle specs

## LB3000 EXII (MYW) x800



Drawings shown are with standard spindle specs.

# OSP suite OSP-P300LA The Next-Generation Intelligent CNC

## Standard Specifications

Basic Specs	Control	Turning: X, Z simultaneous 2-axis, Multitasking: X, Z, C simultaneous 3-axis
	Position feedback	OSP full range absolute position feedback (zero point return not required)
	Min / Max command	±99999.999 mm, 99,999.999° 8-digit decimal, command units: 0.001 mm, 0.01 mm, 1 mm, 0.001°, 0.01°, 1°
	Feed	Override: 0 to 200%
Operations	Spindle control	Direct spindle speed commands, override 50 to 200%, constant cutting speed, optimum turning speed designate
	Tool compensation	Tool selection: 32 sets, tool offset: 32 sets
	Display	15-inch color display operational panel, Multi touch panel
	Self-diagnostics	Automatic diagnostics and display of program, operation, machine, and NC system problems
	Program capacity	Program storage: 4 GB, operation buffer: 2 MB
	"suite apps"	Applications to graphically visualize and digitize information needed on the shop floor
	"suite operation"	Highly reliable touch panel suited to shop floors. One-touch access to suite apps.
	Easy Operation	"Single-mode operation" to complete a series of operations.
	Programming	Program management, edit, scheduled programs, fixed cycles, special fixed cycles, tool nose R compensation, M-spindle synchronized tapping, fixed drilling cycles, arithmetic functions, logic statements, trig functions, variables, branch statements, auto programming (LAP4), programming help
	Machine operations	MDI, manual (rapid traverse, pulse handle), load meter, operations help, alarm help, sequence restart, manual interrupt & auto return, data I/O, oriented spindle stop (electric), easy setting of cycle time reduction
MacMan	Machining Management: machining results, machine utilization, fault data compile & report, external output	
Communications/Networks	USB ports, Ethernet, DNC-T1	
High speed/accuracy	Hi-G control	
Energy-saving function	ECO suite	ECO Idling Stop, ECO Power Monitor

## Optional Specifications

Item	Kit specs*1	NML		3D		OT-IGF		OTM	
		E	D	E	D	E	D	E	D
<b>New Operations</b>									
Advanced One-Touch IGF-L *2									
Advanced One-Touch IGF-L Multitasking *2									
<b>Programming</b>									
Circular threading									
Program notes									
User task 2 I/O variables, 8 each									
Work coordinate system select	10 sets								
	50 sets								
	100 se								
Tool compensation (Std: 32 sets)	Tool compensation 64 sets								
	Tool compensation 96 sets								
	Tool compensation 200 sets								
	Tool compensation 999 sets								
Common variables 1,000 sets (Std: 200 sets)									
Thread matching									
Threading slide hold (G34, G35)									
Variable Spindle Speed Threading (VSST)									
Inverse time feed									
<b>Spindle Synchronized Tapping (rigid tapping)</b>									
Milling machine specs	Coordinate convert								
	Profile generate								
	Flat turning								
	3-dimensional coordinate conversion								
	Coordinate calculate (w/NYCL commands)								
	Shift, rotate, copy coordinates								
	Profile helical cutting								
	C-axis torque skip function								
<b>Helical cutting (within 360 degrees)</b>									
<b>Monitoring</b>									
Real 3-D Simulation									
Cycle time over check									
Load monitor (spindle, feed axis)									
Load monitor no-load detection (load monitor ordered)									
AI machine diagnostics (feed axes)									
Machine Status Logger									
Tool life management									
Tool life warning									
Operation end buzzer									
Chucking miss detection									
Work counters	Count only								
	Cycle stop								
	Start disabled								
Hour meters	Power ON								
	Spindle rotation								
	NC operating								
NC operation monitor (counter, totaling)									
Status indicator (triple lamp) Type C [Type A, Type B]									
<b>ECO suite (energy saving function)</b>									
ECO Operation	Chip conveyor intermittent/linked operation								
	Mist collector intermittent/linked operation								
	Spindle Power Peak Limiter								

Item	Kit specs*1	NML		3D		OT-IGF		OTM	
		E	D	E	D	E	D	E	D
<b>External Input/Output and Communication Functions</b>									
RS-232C connector									
DNC link	DNC-T3								
	DNC-C/Ethernet								
	DNC-DT								
USB (additional)	2 additional ports possible								
<b>Measuring</b>									
In-process work gauging									
Z-axis automatic zero offset by touch sensor									
C-axis automatic zero offset by touch sensor									
Y-axis gauging									
Gauge data output	File output								
Post-process work gauging interface	Set levels (5-level, 7-level)								
	BCD								
	RS-232C (dedicated channel)								
Touch Setter [M, A]									
<b>Automation/Untended Operation</b>									
Auto power shutoff M02, alarm									
Warm-up function (by calendar timer)									
Tool retract cycle									
External program selections	A (pushbutton) 8 types								
	B (rotary switch) 8 types								
	C (digital switch) BCD, 2-digit								
	C2 (external input) BCD, 4-digit								
Okuma loader (OGL) interface									
Third party robot and loader interface *3	Type B (machine)								
	Type C (robot and loader)								
	Type D								
	Type E								
Bar feeders	Interface								
Cycle time reduction *3	Operation time reduction								
	Spindle rotating chuck open/close								
	Spindle rotating tailstock advance/retract								
<b>High-Speed/High-Accuracy Functions</b>									
0.1 μm control *3									
Pitch error compensation									
AbsoScale detection *3									
Hi-Cut Pro									
<b>Other Functions</b>									
Collision Avoidance System (CAS)									
One-Touch Spreadsheets									
Machining Navi L-gII									
Machining Navi T-g (Threading)									
Harmonic Spindle Speed Control (HSSC)									
Spindle dead-slow cutting									
Spindle speed setting									
Manual cutting feed									
Y-axis alignment compensation									
Short circuit breaker									
External M signals [2 sets, 4 sets, 8 sets, 16 sets]									
Edit interlock									
OSP-VPS (Virus Protection System)									

\*1. NML: Normal, 3D: Real 3D simulation, OT-IGF: One-Touch IGF, OTM: One-Touch M  
 E: Economy, D: Deluxe  
 \*2. Including 3-D simulation  
 \*3. Engineering discussions required.  
 \*Note: ▲Triangle items for M function (milling tool) machines only.

When using Okuma products, always read the safety precautions mentioned in the instruction manual and attached to the product.

● The specifications, illustrations, and descriptions in this brochure vary in different markets and are subject to change without notice.  
Pub No. SPACE TURN LB3000 EXII-E-(18a)-700 (Jan 2021)

This product is subject to the Japanese government Foreign Exchange and Foreign Trade Control Act with regard to security controlled items; whereby Okuma Corporation should be notified prior to its shipment to another country.



**OKUMA Corporation**

Oguchi-cho, Niwa-gun,  
Aichi 480-0193, Japan  
TEL: +81-587-95-7825 FAX: +81-587-95-6074