OKUMA

OPEN POSSIBILITIES

1-Saddle CNC Lathe

SPACE TURN LB2000 EX II

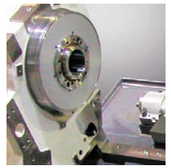
Birth of the LB that transcends LB

Okuma's LB series of NC lathes have always been pioneers,
leaving a path for others to follow behind.
The LB series thus has an obligation to respond to the needs of the times, open possibilities for the next generation, and deliver new value to customers worldwide.
That means constantly developing LBs that transcend LB.
Okuma's advanced technology in its SPACE TURN EXII series continues to write new pages in world standards for machining quality, speed, power & torque, multitasking, ease of operation, and more.

SPACE TURN
LB2000 EXII

Photo includes 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**
- **Top rotation speed, horsepower, and torque in its class**

Extreme Versatility

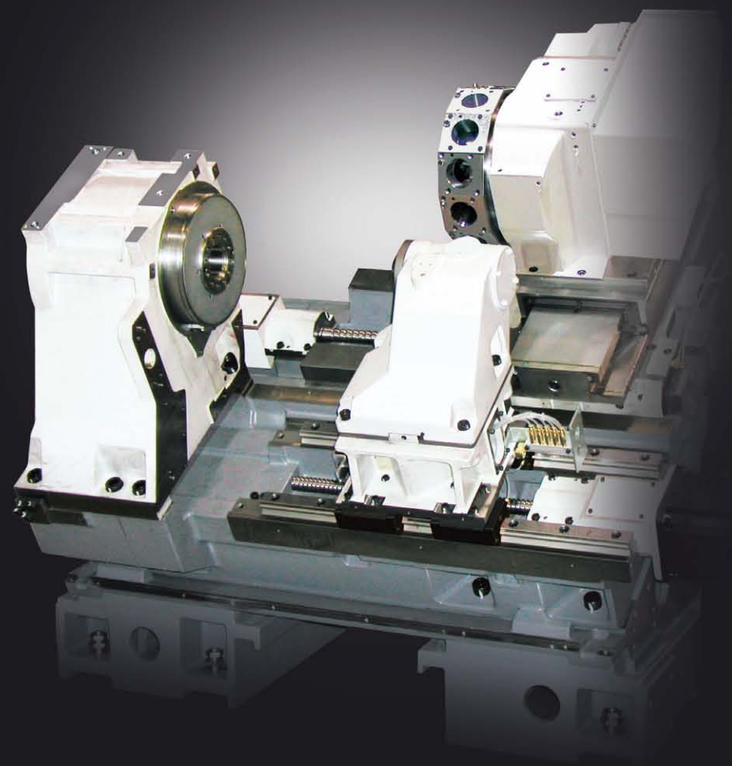
- **Abundant series variation**
- **NC tailstock standard equipment**

Easy Operation

- **The Next-Generation Intelligent CNC**

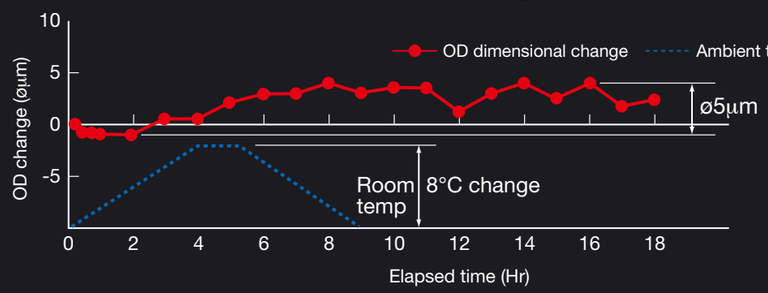
OSP suite OSP-P300LA

Highest Quality



Machining dimensional change over time: ø5 μm*

Actual data [LB2000 EXⅡ(L) turning] (ambient temperature: 8°C change)



- Cycle time: 60 sec
  [X-axis travel: 60 mm
  3 repetitions/cycle]
- Cutting conditions Spindle speed: 4,000 min^{-1}
  Cutting depth : 0.1 mm
  Feed : 0.05 mm/rev
- Workpiece material: BsB

* ø0.0002 in.

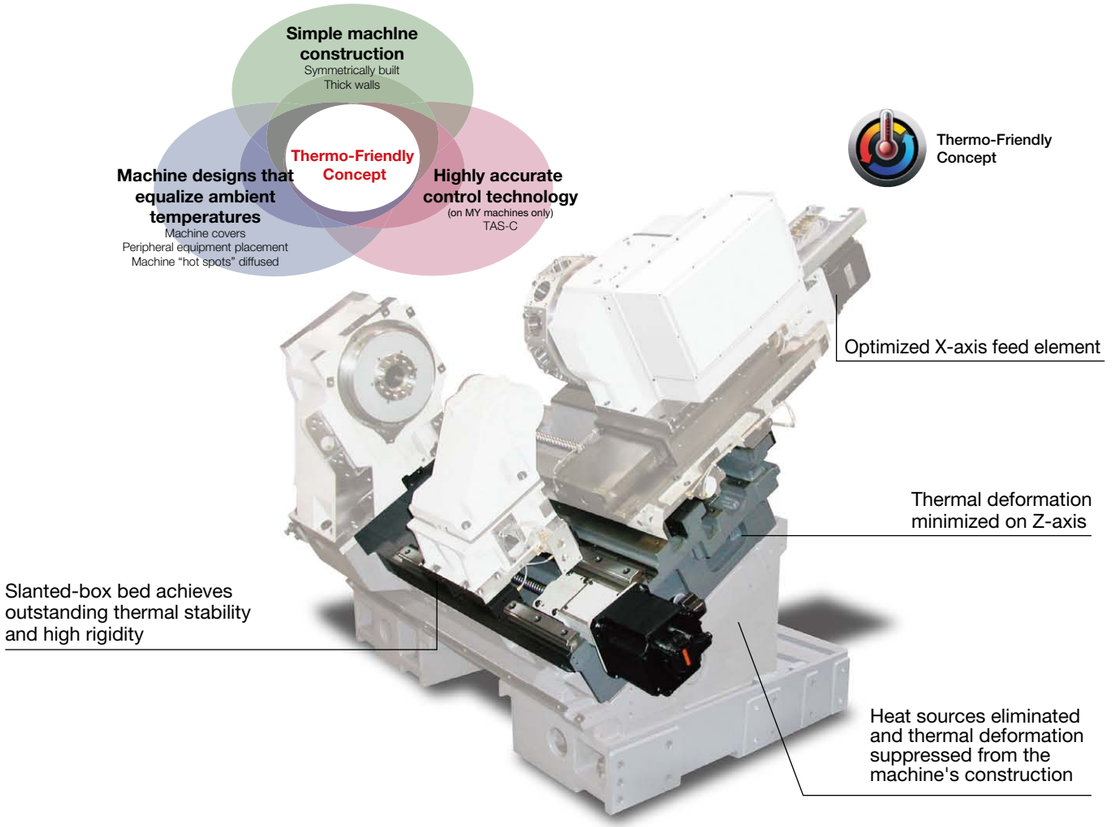
High accuracy specifications overall assure machining with high thermal stability

Thermo-Friendly Concept for unparalleled thermal 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 thermal 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.

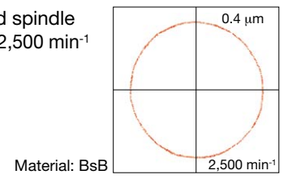
Slanted-box bed configuration with superior construction and rigidity

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 thermal stability and high rigidity. Exhibits stable machining accuracy even in heavy cutting.



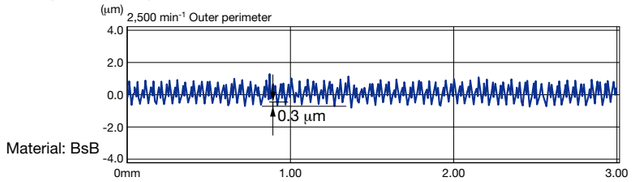
Roundness [actual data*]

- Standard spindle
  0.4 μm/ 2,500 min^{-1}



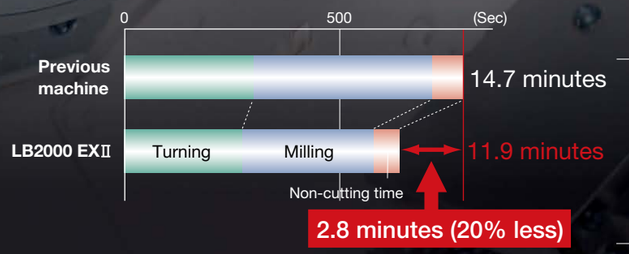
Tool nose uniformity* (for better surface roughness) [actual data*]

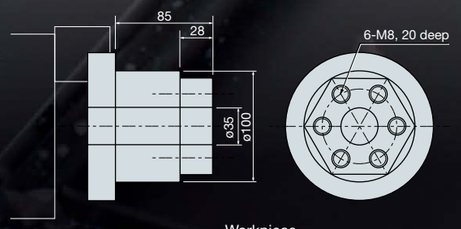
- Standard spindle: 0.3 μm/ 2,500 min^{-1}



Super Fast and Rigid

■ Improved productivity: 20% shorter cycle time*





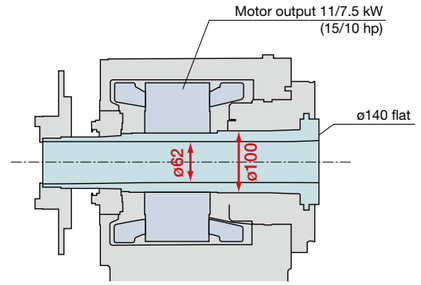
* Previous machine comparison
Actual data

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

Powerful motor on the spindle gives turning capacity of 2.7 mm²

Spindle with a larger bearing internal diameter of ø100 mm can accommodate larger workpieces, and a turning capacity of 2.7 mm² 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 ø100 (bore ø62)
● Spindle speed	6,000 min^{-1}
● Output	11/7.5 kW (15/10 hp)
● Torque	160 N-m (118 ft-lbf)



Integral motor/spindle—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.

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	3.4 sec (6,000 min^{-1})
● Turret rotate	0.1 sec/index
● NC tailstock rapids	12 m/min (472 ipm)

Turning 2.7 mm²

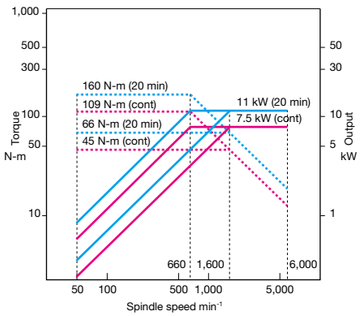
(Workpiece: S45C)

[Actual data*]

Cylindrical, heavy-duty cutting	2.7 mm² (0.0042 in.²) Cutting speed V: 120 m/min (393 fpm) Cutting depth t : 6.0 mm (0.24 in.) Feedrate f : 0.45 mm/rev (0.02 ipr)
Drilling	ø30 (ø1.18) carbide insert drill Cutting speed V: 150 m/min (492 fpm) Feedrate f : 0.22 mm/rev (0.01 ipr)

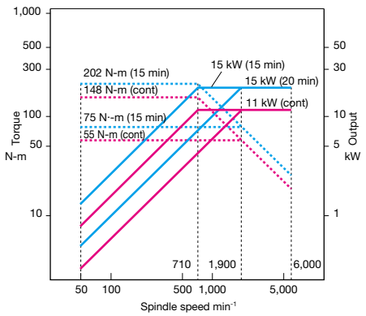
* The "actual data" referred to above for this brochure represent examples, and may not be obtained due to differences in specifications, tooling, cutting and other conditions.

■ Motor/spindle variations



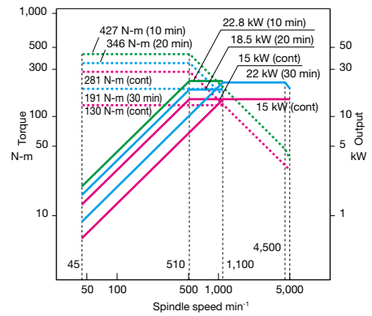
Standard spindle

ø100, 6,000 min^{-1}
11/7.5 kW (20 min/cont)
160 N-m (118 ft-lbf)



High power specs

ø100, 6,000 min^{-1}
15/11 kW (15 min/cont)
202 N-m (149 ft-lbf)



Big bore spindle specs

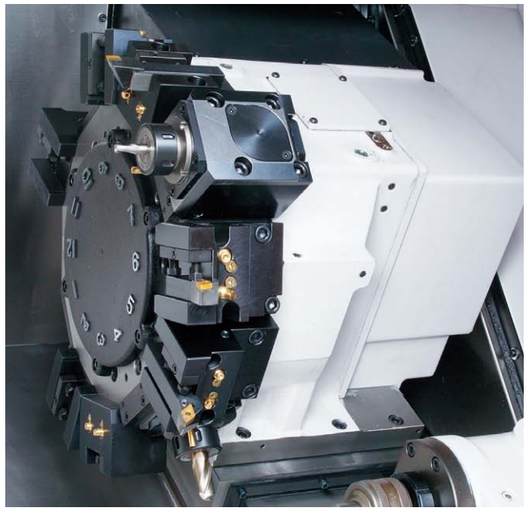
ø120, 5,000min^{-1}
22/15 kW (30 min/cont)
427 N-m (314 ft-lbf)

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

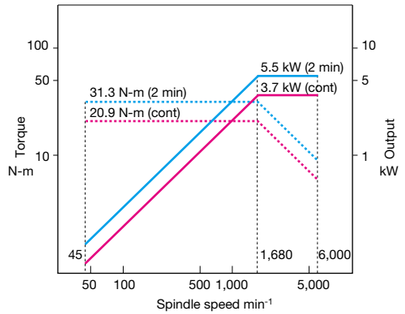
Compact new PREX motor gives milling performance of 144 cm³/min

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^{-1}
● Output	PREX 5.5/3.7 kW (7.5/5 hp)
● Torque	31.3/20.9 N-m (23/15.4 ft-lbf)



Milling tool spindle



6,000 min^{-1}
PREX 5.5/3.7 kW (2 min/cont)
31.3 N-m (23 ft-lbf)

Reduced operation time achieved with higher speed machine movements

● Turret rotate	0.1 sec/ index
● M-spindle start/stop	0.4 sec (6,000 min^{-1})
● M-M switch	1.2 sec

Milling capacity 144 cm³/min

(Workpiece: S45C)

[Actual data*]

End milling
Chip volume 144 cm³/min (8.8 in.³/min)
ø16 6-flute carbide end mill
Cutting speed V: 100 m/min (328 fpm)
(Spindle speed N: 2,000 min^{-1})
Cutting depth t : 20 x 6.0 mm (0.79 x 0.23 in.)
Feedrate f : 0.60 mm/rev (0.02 ipr)

Drilling
ø20 carbide insert drill
Cutting speed V: 135 m/min (443 fpm)
Feedrate f : 0.25 mm/rev (0.01 ipr)

Tapping
M16 P2
(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

Max machining dia: ø430 mm (M turret: ø360 mm)

● Standard spindle	ø140 flat	6-in. chuck
● Big-bore spindle	JIS A2-6	8-in. chuck
		10-in. chuck

Distance between centers: 300 mm

Spindle thru hole: Bigger

● Standard spindle	ø62 mm (ø2.44 in.)
● Big-bore spindle	ø80 mm (ø3.15 in.)

Extreme Versatility

Providing rich variation and optimum ease of use

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

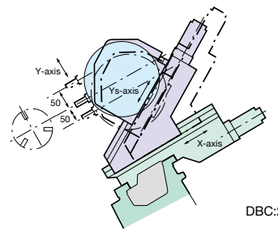
Up to 10 pairs of tailstock positions can be set, enabling continuous machining of workpieces with 10 different lengths without setup. In addition, thrust can be switched between high and low without resetting the workpiece. (Tailstock thrust high/low switch: option)
High accuracy positioning is also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

● Tailstock thrust	0.5 to 3 kN, 0.5 to 5 kN (DBC 500)
● Rapid traverse	12 m/min (472 ipm)
● Approach	10 m/min (394 ipm)
● Retract	12 m/min (472 ipm)

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 specifications).

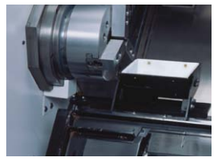
● Travel	100 mm (+50 to -50) (DBC:250) [3.94 in. (+1.97 to -1.97)]
	120 mm (+70 to -50) (DBC:450) [4.72 in. (+2.76 to -1.97)]
● Y-axis rapid traverse	12.5 m/min (492 ipm)

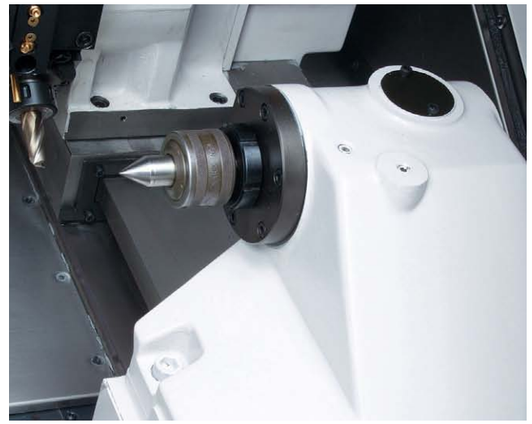


DBC:250

Simple automation with parts catcher (Optional)

Automation can be achieved easily with a simple mechanism in which the bucket swings and discharges workpieces outside the machine.



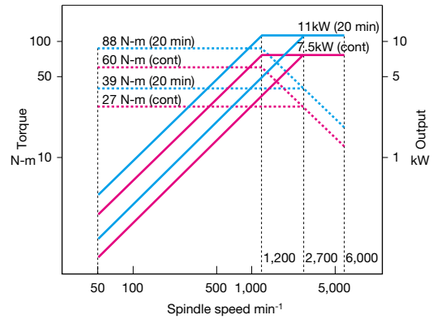


Note: Please select a hyrdraulic quill for face driver machining applications.

Integrated operations with sub-spindle

With these sub-spindle specifications, front and back machining can be done on a single LB2000 EXⅡ.
Interference is not a worry even in back face machining with a multitasking V12 radial turret
(W, MW specifications).

Sub-spindle ø100 mm (3.94 in.) 6,000 min^{-1}
11/7.5 kW (15/10 hp) (20 min/cont)
88/60 N-m (65/44 ft-lbf)



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

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

Smart factories implement advanced digitization and networking (IoT) in "Monozukuri," (manufacturing) achieving enhanced productivity and added value.
The OSP has evolved tremendously as CNC control 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 tastes, and customized for needs from beginning to veteran operator.

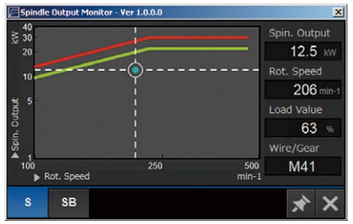
Features you wanted – loaded with new OSP suite apps!

We made these real through the addition of Okuma's machining expertise based on requests we heard from customers in the machine shop. These are filled with intelligence that enhances the "strength in the field" that CNC control can accomplish because it's created by a machine-tool manufacturer.

Increased productivity through visualization of motor power reserve

Spindle Output Monitor

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.



Easy programing without keying in code

Scheduled Program Editor

Monitoring utilization status even when away from the machine

E-mail Notification

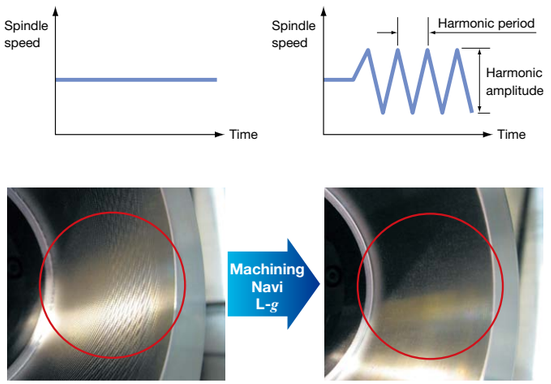
Okuma's Intelligent Technology reduces operator burden

Intelligent Technology

Cutting condition search function for turning

Machining Navi L-*g* (guided, harmonic spindle speed control) (Optional)

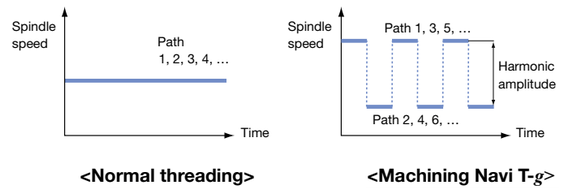
Varying the spindle speed in accordance with the best amplitude and period makes it possible to suppress chatter during turning operations. Tool life can be extended and machining time reduced with use of the optimum cutting conditions, producing significant effects in drilling/boring bar, threading,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



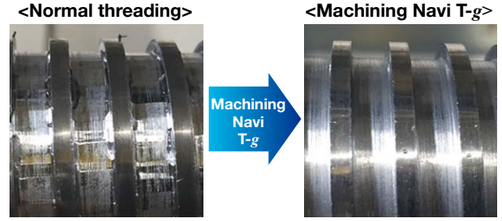
Cutting condition search in threading

Machining Navi T-*g* (Optional)

When chatter occurs in threading, general methods to resolve the problem have been to either lower cutting conditions at the expense of productivity, or to use special chatter-resistant tools at some cost. Machining Navi T-*g* (threading) provides optimum control, increasing or decreasing spindle speed on each pass to inhibit the periodic vibrations that are a cause of chatter.



<Normal threading> <Machining Navi T-*g*>



Chatter marks

Smooth surface, clean finished threads

Machine tool idling stop

ECO Idling Stop

ECO suite

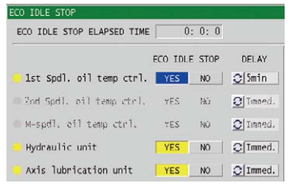
Only the necessary unit run

Accuracy ensured, cooler off

ECO Idling Stop

Intelligent energy-saving function with the Thermo-Friendly Concept.
The machine itself determines whether or not cooling is needed and cooler idling is stopped with no loss to accuracy.
(Standard application on machines with Thermo-Active Stabilizer—Spindle)

● Example of equipment that can use Idling Stop

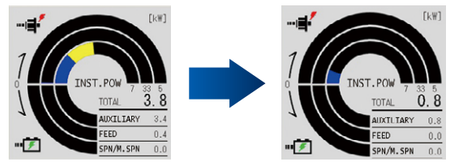


On-the-spot check of energy savings

ECO Power Monitor

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



Before ECO Idling Stop After ECO Idlling Stop

The displayed values are one example.

Machine Specifications

Item	Model	LB2000 EXⅡ(L)			LB2000 EXⅡ(M)		
		T	C x 300	C x 500	T	C x 300	C x 500
Capacity	Swing over bed mm (in.)	ø580 (ø22.83)					
	Swing over saddle mm (in.)	ø470 (ø18.50)					
	Distance between centers (W specs: DBN)*1 mm (in.)	150 (5.91)	300 (11.81)	540 (21.26)	–	300 (11.81)	540 (21.26)
	Max turning dia mm (in.)	ø430 (ø16.93)			ø360 (ø14.17)		
	Max work length mm (in.)	–	300 (11.81)	500 (16.39)	150 (5.91)	300 (11.81)	500 (19.69)
Travels	X axis mm (in.)	260 (10.24)					
	Z axis mm (in.)	390 (15.35)		565 (22.24)	390 (15.35)		565 (22.24)
	Y axis mm (in.)	–			–		
	C axis deg	–			360 (0.001 increments)		
Spindle	Spindle speed min^{-1}(rpm)	50 to 6,000 [45 to 5,000]					
	Speed ranges	2 auto ranges (motor coil switching)					
	Spindle nose	ø140 flat 〈JIS A2-6〉					
	Spindle bore dia / Front bearing dia mm (in.)	ø62 〈ø80〉/ø100 〈ø120〉 (ø2.44 〈ø3.15〉/ø3.94 〈4.72〉)					
Sub-spindle	Spindle speed min^{-1}(rpm)	–					
	Speed ranges	–					
	Spindle nose	–					
	Spindle bore dia / 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.)	□ 20 (3/4)					
	ID tool shank dia mm (in.)	ø32 (ø1-1/4)					
	Turret rotation sec/index	0.1					
Milling tool	Spindle speed min^{-1}(rpm)	–			45 to 6,000		
	Speed range infinitely variable	–			Infinitely variable		
Feedrates	Rapid traverse m/min (ipm)	X: 25, Z: 30 (984, 1,181)					
	Tailstock rapids m/min (ipm)	–	12 (472)		–	12 (472)	
	Rapid traverse (W) m/min (ipm)	–			–		
	Rapid traverse (C) min^{-1}(rpm)	–			200		
	Cutting (X-Z-Y) mm/rev (ipr)	0.001 to 1,000.000 (0.00004 to 39.37)					
Tailstock	Tapered bore type (revolving center)	–	MT 4 (revolving center)		–	MT 4 (revolving center)	
	Quill travel mm (in.)	–	415 (16.34)	515 (20.28)	–	415 (16.34)	515 (20.28)
Motors	Main spindle kW (hp)	11/7.5 (15/10) (20 min/cont) [15/11 (20/15) (15 min/cont)] 〈22/15 (30/20) (30 min/cont)〉					
	Sub-spindle kW (hp)	–			–		
	Milling tool spindle kW (hp)	–			5.5/3.7 (7.5/5) (2 min/cont) [7.1/4.1 (9.5/5.5) (25 min/cont)]		
	Axis drive kW (hp)	X: 2.8 / Z: 3.5 (3.7/4.7)					
	Tailstock travel kW (hp)	–	2.9 (3.9)		–	2.9 (3.9)	
	Sub-spindle travel kW (hp)	–			–		
	Coolant pump (60 Hz / 50 Hz) kW (hp)	Side discharge: 0.25/0.25 (0.34/0.34), Rear discharge: 0.82/0.52 (1.10/0.70)					
Machine size	Height mm (in.)	1,839 (72)					
	Floor space (Side discharge) mm (in.)	1,980 x 1,734 (78 x 68)		2,290 x 1,734 (90 x 68)	1,980 x 1,734 (78 x 68)		2,290 x 1,734 (90 x 68)
	Floor space (Rear discharge) mm (in.)	1,890 x 1,984 (74 x 78)		2,200 x 1,984 (87 x 78)	1,890 x 1,984 (74 x 78)		2,200 x 1,984 (87 x 78)
	Weight (w/ CNC) kg (lb)	3,250 (7,150)	3,400 (7,480)	4,300 (9,460)	3,350 (7,370)	3,450 (7,590)	4,350 (9,570)
CNC		OSP-P300LA					

Item	Model	LB2000 EXⅡ(MY)			LB2000 EXⅡ(W)	LB2000 EXⅡ(MW)
		T	C x 250	C x 450	W x 500	W x 500
Capacity	Swing over bed mm (in.)	ø580 (ø22.83)				
	Swing over saddle mm (in.)	ø470 (ø18.50)				
	Distance between centers (W specs: DBN)*1 mm (in.)	—	250 (9.84)	490 (19.69)	791 (31.14)	791 (31.14)
	Max turning dia mm (in.)	ø360 (ø14.17)			ø430 (ø16.93)	ø360 (ø14.17)
	Max work length mm (in.)	150 (5.91)	250 (9.84)	450 (17.72)	—	—
Travels	X axis mm (in.)	260 (10.24)				
	Z axis mm (in.)	350 (13.78)		510 (20.08)	565 (22.24)	550 (21.65)
	Y axis mm (in.)	100 (+50 to -50) (3.94 (+1.57 to -1.57))		120 (+70 to -50) (4.72 (+2.76 to -1.57))	—	—
	C axis deg	360 (0.001 increments)			—	360 (0.001 increments)
Spindle	Spindle speed min^{-1}(rpm)	50 to 6,000 〈45 to 5,000〉				
	Speed ranges	2 auto ranges (motor coil switching)				
	Spindle nose	ø140 flat 〈JIS A2-6〉				
	Spindle bore dia / Front bearing dia mm (in.)	ø62 〈ø80〉/ø100 〈ø120〉(ø2.44 〈ø3.15〉/ø3.94 〈ø4.72〉)				
Sub-spindle	Spindle speed min^{-1}(rpm)	—			50 to 6,000	
	Speed ranges	—			2 auto ranges (motor coil switching)	
	Spindle nose	—			ø140 flat	
	Spindle bore dia / Front bearing dia mm (in.)	—			ø62/ø100 (ø2.44/ø3.94)	
Turret	Type	M-V12 NC turret			V12 NC turret	M-V12 NC turret
	No. of tools	L / M: 12			L: 12	L / M: 12
	OD tool shank mm (in.)	□20 (3/4)				
	ID tool shank dia mm (in.)	ø32 (ø1-1/4)				
	Turret rotation sec/index	0.1				
Milling tool	Spindle speed min^{-1}(rpm)	45 to 6,000			—	45 to 6,000
	Speed range infinitely variable	Infinitely variable			—	Infinitely variable
Feedrates	Rapid traverse m/min (ipm)	X: 25, Z: 30, Y: 12.5 (984, 1,181, 492)			X: 25, Z: 30 (984, 1,181)	
	Tailstock rapids m/min (ipm)	—	12 (472)		—	
	Rapid traverse (W) m/min (ipm)	—			30 (1,181)	
	Rapid traverse (C) min^{-1}(rpm)	200			—	200
	Cutting (X-Z-Y) mm/rev (ipr)	0.001 to 1,000.000 (0.00004 to 39.37)				
Tailstock	Tapered bore type (revolving center)	—	MT 4 (revolving center)		—	
	Quill travel mm (in.)	—	415 (16.34)	515 (20.28)	—	—
Motors	Main spindle kW (hp)	11/7.5 (15/10) (20 min/cont) [15/11 (30/15) (15 min/cont)] 〈22/15 (30/20) (30 min/cont)〉				
	Sub-spindle kW (hp)	—			11/7.5 (15/10) (20 min/cont)	
	Milling tool spindle kW (hp)	5.5/3.7 (7.5/5) (2 min/cont) [7.1/4.1 (9.5/5.5) (25 min/cont)]			—	5.5/3.7 (7.5/5) (2 min/cont) [7.1/4.1 (9.5/5.5) (25 min/cont)]
	Axis drive kW (hp)	X: 3.5 / Z: 4.6, Ys: 3.5 (4.7/6.2/4.7)			X: 2.8 / Z: 3.5 (3.8/4.7)	X: 2.8 / Z: 3.5 (3.8/4.7)
	Tailstock travel kW (hp)	—	2.9 (3.9)		—	
	Sub-spindle travel kW (hp)	—			2.8 (3.7)	
	Coolant pump (60 Hz / 50 Hz) kW (hp)	Side discharge: 0.25/0.25 (0.34/0.34), Rear discharge: 0.82/0.52 (1.10/0.70)				
Machine size	Height mm (in.)	2,250 (88)			1,839 (72)	
	Floor space (Side discharge) mm (in.)	2,020 x 1,734 (80 x 68)		2,290 x 1,734 (90 x 68)	2,740 x 1,734 (108 x 68)	
	Floor space (Rear discharge) mm (in.)	2,020 x 1,984 (80 x 78)		2,250 x 1,984 (89 x 78)	2,650 x 1,984 (104 x 78)	
	Weight (w/ CNC) kg (lb)	4,050 (8,910)	4,200 (9,240)	4,850 (10,670)	4,600 (10,120)	4,700 (10,340)
CNC		OSP-P300LA				

[ ]: High-power spindle specs 〈 〉: Big-Bore spindle specs

*1. DBN: Distance between nose

Standard Specifications & Accessories

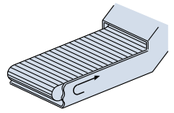
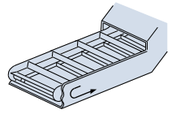
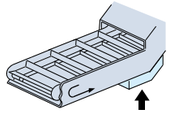
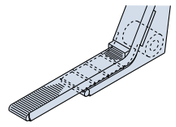
Model	LB2000 EXⅡ										
Specifications	L			M			MY			W	MW
	T	C x 300	C x 500	T	C x 300	C x 500	T	C x 300	C x 500	W x 500	W x 500
Spindle	ø140 flat 50 to 6,000 min^{-1} 11/7.5 kW (15/10 hp) (20 min/cont)										
Sub-spindle	–									ø140 flat 50 to 6,000 min^{-1} 11/7.5 kW (15/10 hp) (20 min/cont)	
Turret	NC indexing										
	V12 bolt clamp			M-V12 radial						V12 bolt clamp	M-V12 radial
Milling tool (2 min/cont)	–			45 to 6,000 min^{-1} PREX 5.5/3.7 kW (7.5/5 hp) (2 min/cont)						–	45 to 6,000 min^{-1} PREX 5.5/3.7 kW (2 min/cont)
Tailstock	–	NC travel Dead quill MT 4		–	NC travel Dead quill MT 4		–	NC travel Dead quill MT 4		–	
Standard accessories	Coolant system (water soluble)										
	Work lamp (LED)										
	Full enclosure shielding										
	Jack screws, foundation washers										
	Hand tools										
Standard accessories	Door interlock (standard)										
	Lube monitor (A-1 + oil 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; over 2 GB										
	Operation buffer; over 2 MB										
	–									Chuck open/close during spindle rotation	

Optional Specs & Accessories

Headstock	Big-Bore spindle Spindle bearing ID ø120 JIS A2-6 45 to 5,000 min^{-1} Spindle motor 22/15 kW (30 min/cont) High-power spindle 15/11 kW (15 min/cont)
Chucking	Chuck auto open/close confirm Chuck high/low pressure switch Work stopper in spindle
Gauges	In-process gauging system Touch setter M (manual), A (auto)
Tailstock	Revolving center: MT 4 Tailstock taper: Built-in center MT 3 Built-in center MT 4 (DBC 500) Threaded center MT 3 High thrust specs
Lubrication	Lube monitor B-2, C-1, C-2
Coolant	Shower coolant A,B Spindle ID coolant A,B Coolant pump, 0.82/0.52 kW (60 Hz/50 Hz) Coolant sludge control Coolant detection; flow volume, level Mist collector Coolant gun
Air	Air blow (blast; chuck, center, spindle ID, turret)
Shielding	Front door auto open/close
Chip handling	Chip pan side rear Chip conveyor side rear discharge L,H Chip bucket L,H
Dustproofing	Air purge, double wiper
Automation	Bar feeder Bar puller NC robots NC loaders

Various chip conveyors

■ Chip conveyor types and application

Name	Hinge type	Scraper type	Magnet scraper type	Hinge scraper type※
Application	● For steel	● For castings	● For castings	● For steel, castings, nonferrous metal
Features	● General use	● Magnet scraper for sludge processing ● Easy for maintenance ● Blade scraper	● Suitable with sludge ● Not suitable 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.

※With drum filter

Chucking Kit / Tooling Kit

Model	LB2000 EXⅡ							
Specifications	L			M	W			MW
	Std Chucking Kit	Std Tooling Kit	Chucking Kit	Chucking Kit	Std Chucking Kit	Sub Chucking Kit	Std Tooling Kit	Tooling Kit
Chuck	Solid 6 in. N-06		BB kit : *1 E kit : *2 D kit : *3	BB kit : *1 E kit : *2 D kit : *3	Solid 6 in. N-06			
Drive	Y1020				Y1020			
Sub-spindle chuck						Hollow 6 in. B-206		
Sup-spindle drive						SR1146		
Soft jaws, A			5	5				
Soft jaws, B			3	3				
Hard jaws			1	1				
OD-Ⅰ		4	6	6				
OD-Ⅱ		2	3	2				
OD-Ⅰ-S							2	3
OD-Ⅱ-S							2	1
OD-Ⅲ-S							2	
OD-Ⅳ-S							1	
ID-H32		6	6	3				
ID-Ⅰ-S (H32)							4	
ID-Ⅱ-S (H20)							2	
ID-Ⅲ-S (H20)							1	
ID-H32-S (main)								3
ID-H32-S (sub)								2
DS MT No.1-H32			1					
DS MT No.2-H32		1	1	1			1	
DS MT No.3-H32								
BS 8-H32			2					
BS 10-H32			2	2				
BS 12-H32			2	2				
BS 16-H32		2	2	2			2	2
BS 20-H32		2	2	2			2	2
BS 25-H32			2	2				2
BS 12-H20							1	
BS 16-H20							2	
Axial mill/drill unit				2				2
Radial mill/drill unit				2				2
Dummy holder				3				3
Revolving center*MTNo.4				1				

* MT 4; not available for T model specifications

MY kit specs not available.

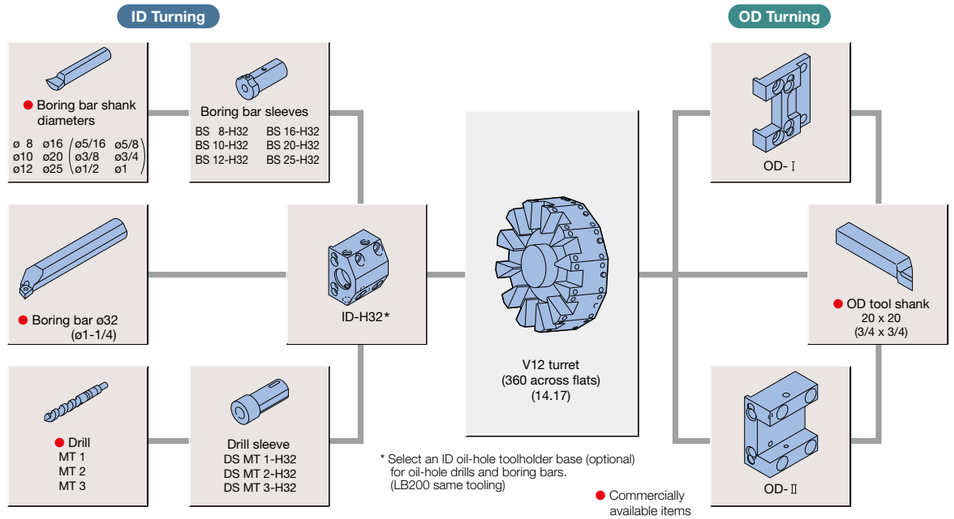
Chucking Kit Chuck table

	BB Kit : *1	E Kit : *2	D Kit : *3
Chuck	Hollow 6 in. B-206-01	Hollow 6 in. B-206-01	Hollow 8 in. B-208-01
Drive	SR1453	SR1146	SR1453

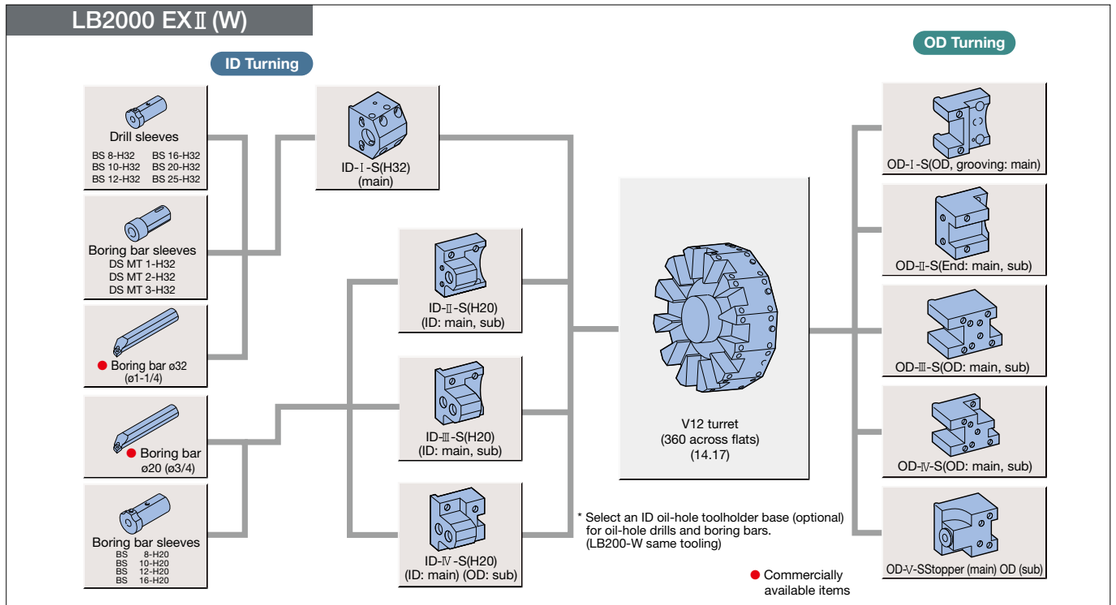
*1, *2, *3 cross-referenced for these two tables.

Tooling System

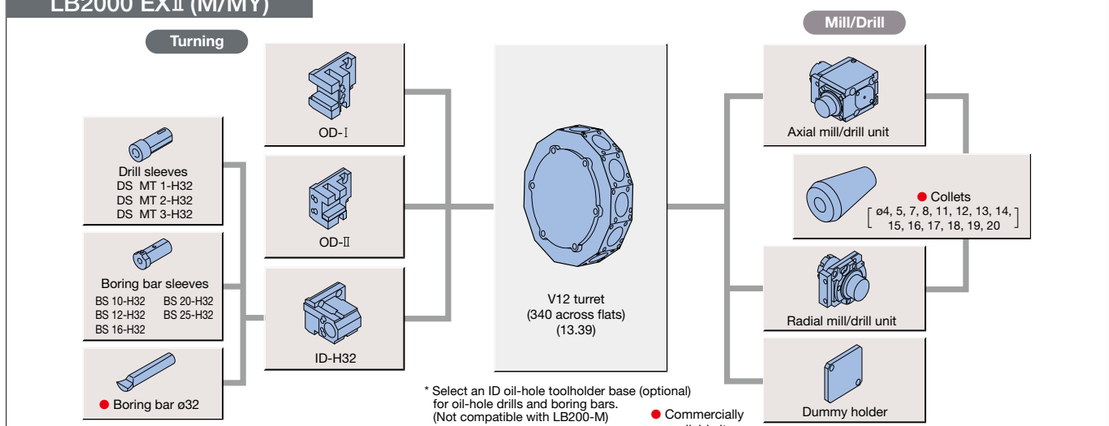
LB2000 EXⅡ (L)



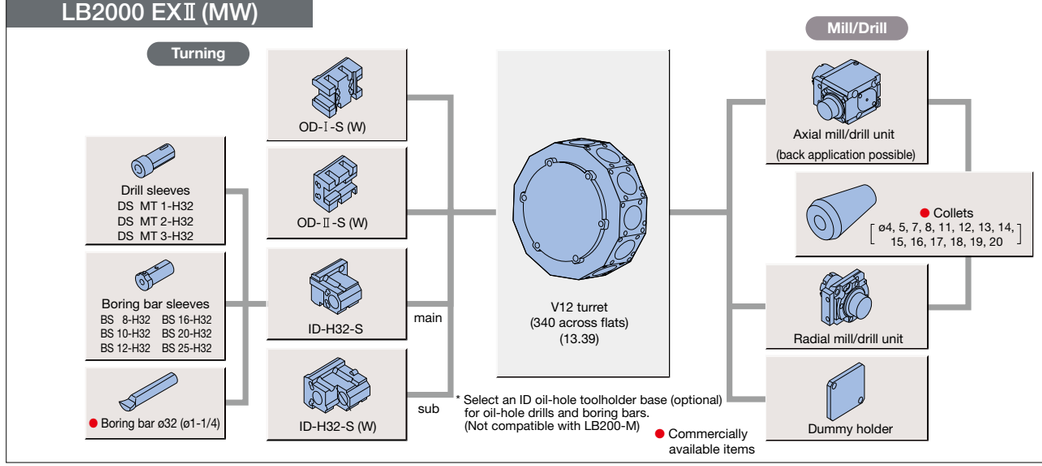
LB2000 EXⅡ (W)



LB2000 EXⅡ (M/MY)

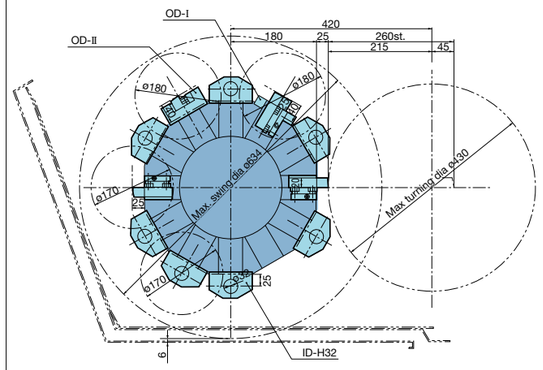


LB2000 EXⅡ (MW)

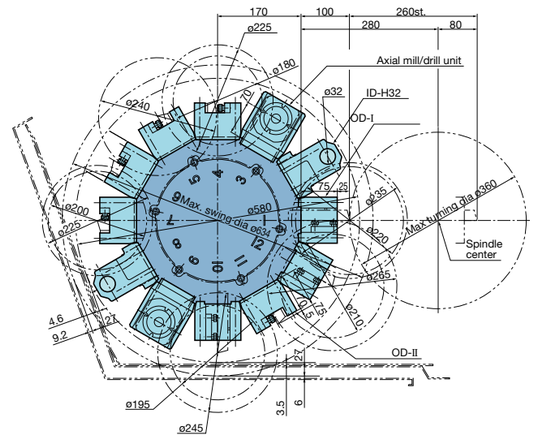


Tool Interference Drawings

LB2000 EXⅡ(L)



LB2000 EXⅡ(M)



LB2000 EXⅡ(MY)

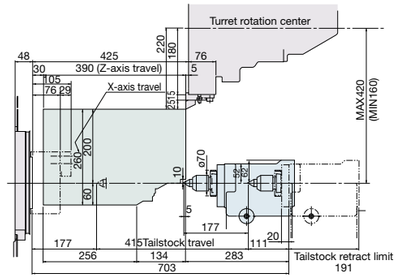
LB2000 EXⅡ(W)

LB2000 EXⅡ(MW)

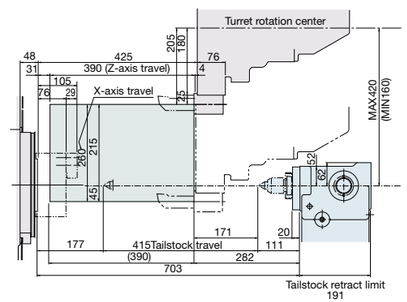
Working Ranges

LB2000 EXⅡ(L) ×300

OD-I

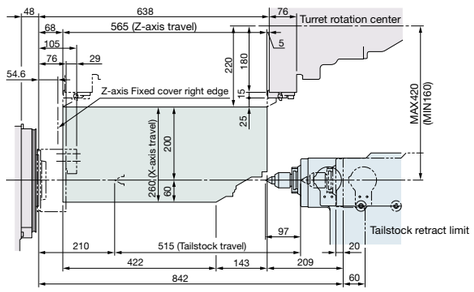


ID-H32

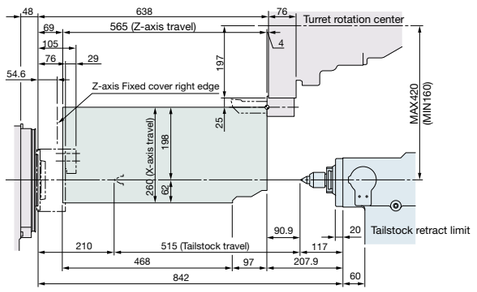


LB2000 EXⅡ(L) ×500

OD-I

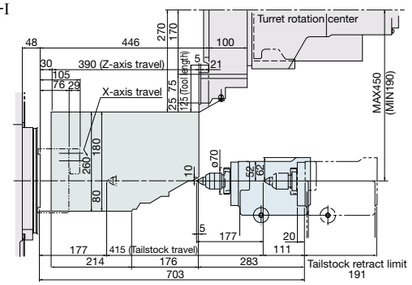


ID-H32

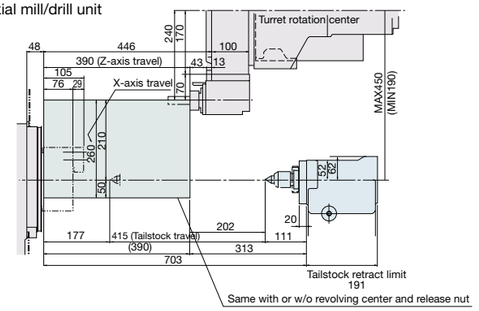


LB2000 EXⅡ(M) ×300

OD-I

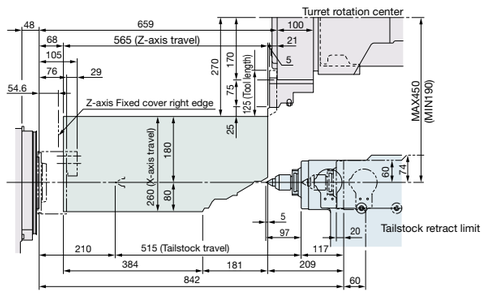


Axial mill/drill unit

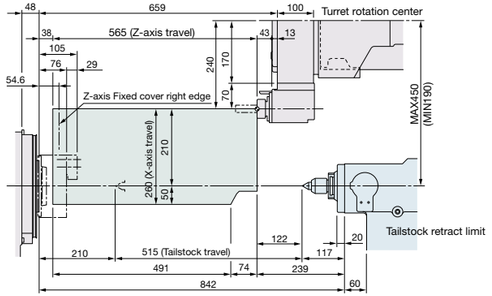


LB2000 EXⅡ(M) ×500

OD-I

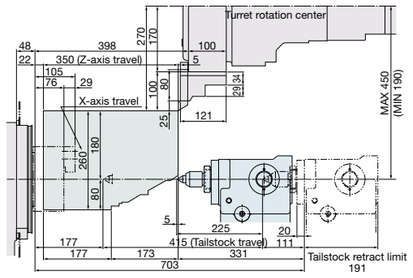


Axial mill/drill unit

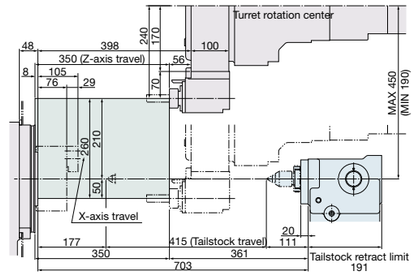


LB2000 EXⅡ(MY) ×250

OD-I

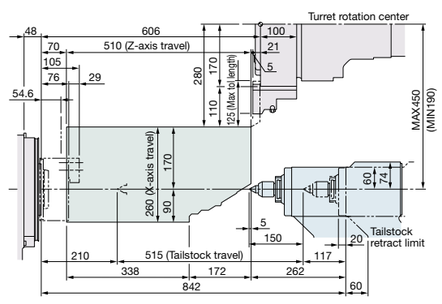


Axial mill/drill unit

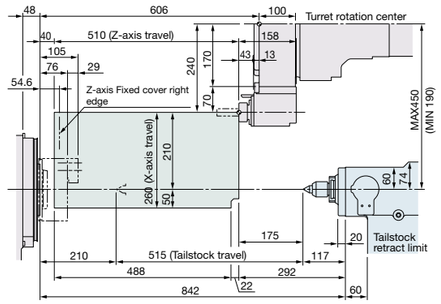


LB2000 EXⅡ(MY) ×450

OD-I

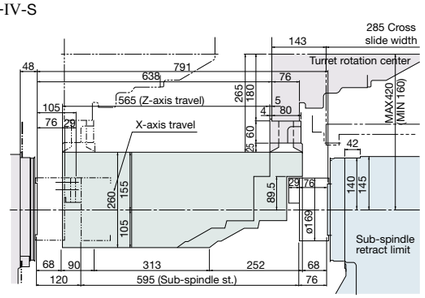


Axial mill/drill unit

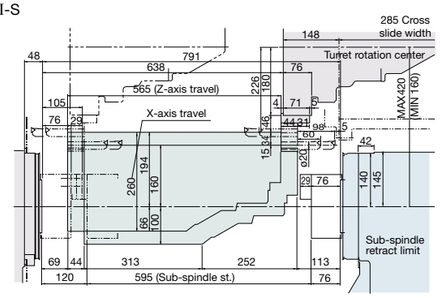


LB2000 EXⅡ(W)

OD-IV-S

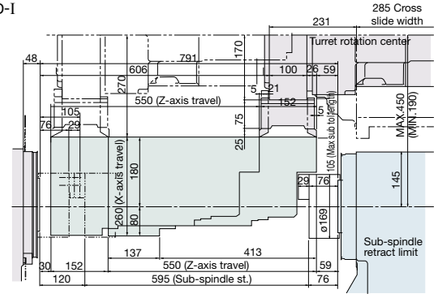


ID-III-S

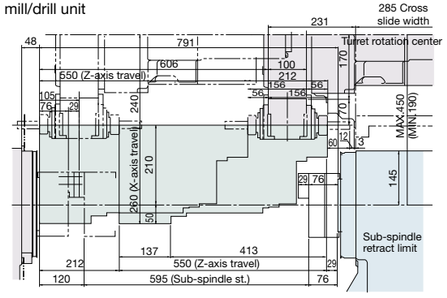


LB2000 EXⅡ(MW)

OD-I



Axial mill/drill unit



All travel range drawings shown are with standard spindle specs.
This will differ with big bore and super big bore specs.

Floor Space

Small machine footprint of 3.4 m² for effective use of plant floor space.

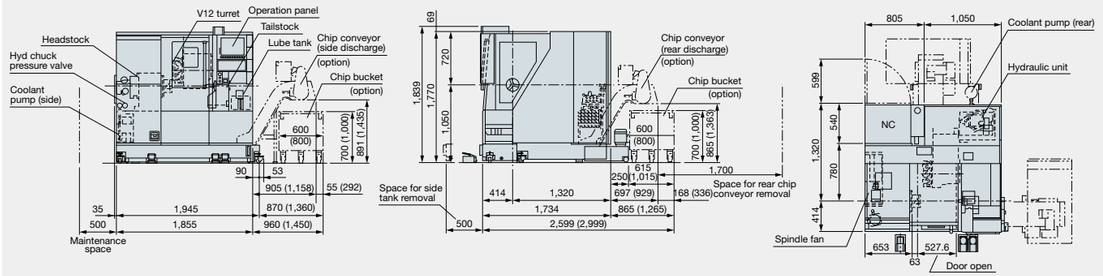
With a mere 3.4 m² (37 ft²) required for installation, workpieces of up to ø430 x 300 mm (16.93 x 11.81 in.) can be accommodated. This enables maximum use of limited factory space.

Photo includes some optional specifications.

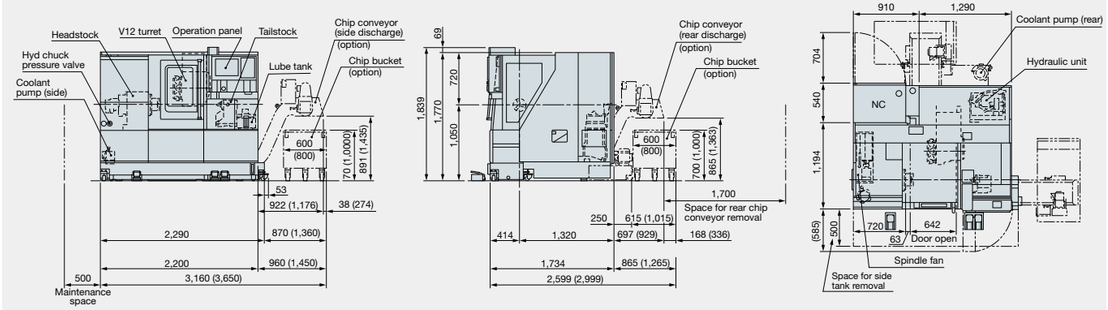
Dimensional Drawings

( ) dimensions for H chip conveyor (High)

LB2000 EXⅡ (L / M) Specifications×300



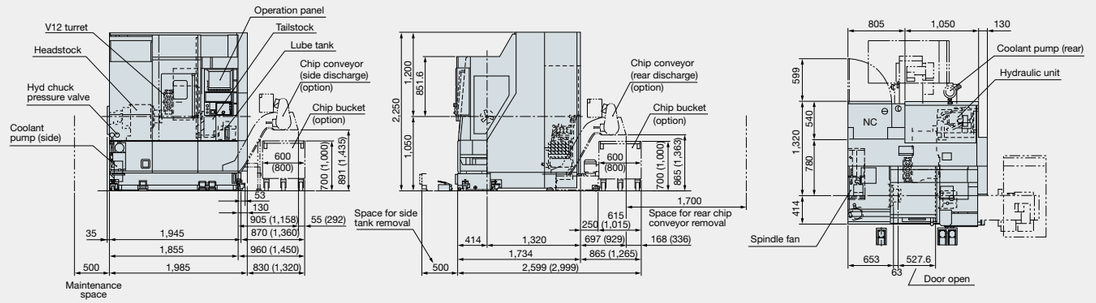
LB2000 EXⅡ (L / M) Specifications×500



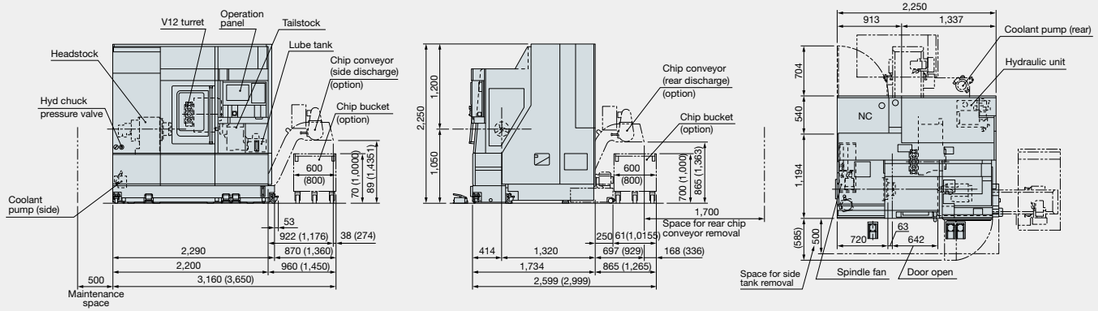
Dimensional Drawings

( ) dimensions for H chip conveyor (High)

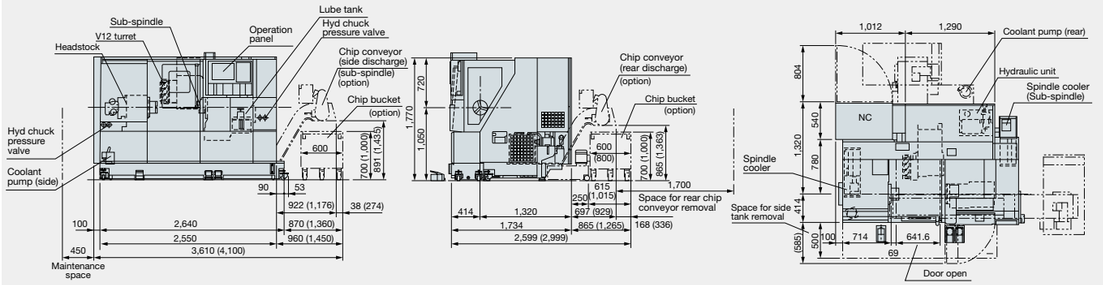
LB2000 EXⅡ (MY) Specifications×300



LB2000 EXⅡ (MY) Specifications×500



LB2000 EXⅡ (W / MW) Specifications



Drawings shown are with standard spindle specs.

OSP-P300LA 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 inputs	8-digit decimal, ±99999.999 to 0.001 mm (±3937.0078 to 0.0001 in.), 0.001° Decimal:1 μm, 10 μm, 1 mm (0.0001,1 in.) (1°, 0.01°, 0.001°)
	Feed	Override: 0 to 200%
	Spindle control	Direct spindle speed commands (S4) 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: 2 GB, operation buffer: 2 MB
Operations	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.
	Programing	Program management, edit, multitasking, 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
	Easy Operation	"Single-mode operation" to complete a series of operations Advanced operation panel/graphics facilitate smooth machine control
	Machine operations	MDI, manual (rapid traverse, manual cutting feed, pulse handle), load meter, operations help, alarm help, sequence, return, manual interrupt & auto return, threading slide hold, data I/O, chuck open/close during spindle rotation, spindle orientation (electric)
	MacMan	Machining Management: machining results, machine utilization, fault data compile & report, external output
Communications/Networks		USB ports, Ethernet, RS232C interface (1 channel)
High speed/accuracy		Hi-G control
Energy-saving function	ECO suite	ECO Idling Stop*1, ECO Power Monitor*2

*1. Spindle cooler Idling Stop is used on TAS-S machines.
*2. The power display shows estimated values. When precise electrical values are needed, select the on-machine wattmeter option.

OSP-P300LA Optional Specifications

Item		Kit Specs *1 NML E	NML D	3D E	3D D	OT-IGF E	OT-IGF D	OTM E	OTM D
New Operations									
Advanced One-Touch IGF-L *2						●	●		
Advanced One-Touch IGF-L Multitasking *2								●	●
Programming									
Circular threading			●		●		●		●
Program notes			●		●		●		●
User task 2 I/O variables, 8 ea									
Work coordinate system select	10 sets								
	50 sets								
	100 sets								
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 (spindle orientation required)									
Threading slide hold (G34, G35)									
Variable spindle speed threading (VSST)									
Inverse time feed									
Spindle synchronized tapping (rigid tapping)									
Milling machine specs	Coordinate convert	▲	▲	▲	▲			●	●
	Profile generate	▲	▲	▲	▲			●	●
	Flat turning								
	3-dimensional coordinate conversion								
Helical cutting (within 360 degrees)									
Monitoring									
Real 3-D simulation				●	●	●	●	●	●
Cycle time over check		●	●	●	●	●	●	●	●
Load monitor (spindle, feed axis)				●	●	●	●	●	●
Load monitor no-load detection (load monitor ordered)									
Tool life management			●		●		●		●
Tool life warning									
Operation end buzzer									
Chucking miss detection		Included in machine specs							
Work counters	Count only								
	Cycle stop								
	Start disabled								
Hour meters	Power ON								
	Spindle rotation								
	NC operating								
NC operation monitor (counter, totaling)		●	●	●	●	●	●	●	●
NC work counter (stops at full count with alarm)									
Status indicator (triple lamp) Type C [Type A, Type B]		●	●	●	●	●	●	●	●
Measuring									
In-process work gauging		Included in machine specs							
Z-axis automatic zero offset by touch sensor									
C-axis automatic zero offset by touch sensor									
Gauge data output	File output								
Post-process work gauging interface	Set levels (5-level, 7-level)								
	BCD								
	RS-232-C (dedicated channel)								
Touch setter [M, A]		Included in machine specs							

Item		Kit Specs *1 NML E	NML D	3D E	3D D	OT-IGF E	OT-IGF D	OTM E	OTM D
External Input/Output and Communication Functions									
Additional RS-232-C channel 2 channels (Std 1 channel)									
DNC link	DNC-T3								
	DNC-C/Ethernet								
	DNC-DT								
USB (additional)	2 additional ports possible								
Automation/Untended Operation									
Auto power shutoff MO2, alarm									
Warmup 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		Including loader specs							
Third party robot and loader interface *3	Type B (machine)								
	Type C (robot and loader)								
	Type D								
	Type E								
Bar feeders	Bar feeder	Included in machine specs							
	Interface only								
Cycle time reduction *3	Operation time reduction	●	●	●	●	●	●	●	●
	Chuck open/close during spindle rotation								
	Tailstock advance/retract during spindle rotation								
High-Speed/High-Accuracy Functions									
1/10 μm control *3									
Pitch error compensation									
AbsoScale detection *3									
Hi-Cut Pro		▲	▲	▲	▲			●	●
Super-NURBS	Linear axis								
	Linear axis + rotary axis								
ECO suite (energy saving functions)									
ECO Operation									
ECO Hydraulic									
Other Functions									
Collision Avoidance System (CAS)									
One-Touch Spreadsheet									
Machining Navi L-*g*									
Machining Navi T-*g*									
Harmonic spindle speed control (HSSC)		●	●	●	●	●	●	●	●
Spindle dead-slow cutting									
Spindle speed setting									
Spindle S command 0.1 min^{-1}									
Manual cutting feed									
Spindle power peak cutting									
Short circuit breaker									
External M signals [2 sets, 4 sets, 8 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. Real 3-D Simulation included
*3. Engineering discussions required.
Note: ▲Triangle items for M function (milling tool) machines only.

SPACE TURN LB2000 EXII

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 LB2000 EXII-E-(13a)-400 (Jan 2017)

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

OKUMA Corporation

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