OKUMA

OPEN POSSIBILITIES

2-Saddle CNC Lathes

SIMUL TURN LU EX series

LU3000EX/LU4000EX

2-Saddle CNC Lathes

SIMUL TURN LU EX series

LU3000EX/LU4000EX

Intelligent Technology

Thermo-Friendly Concept

Collision Avoidance System

Machining Navi

Max power 2-saddle turning centers for even higher productivity

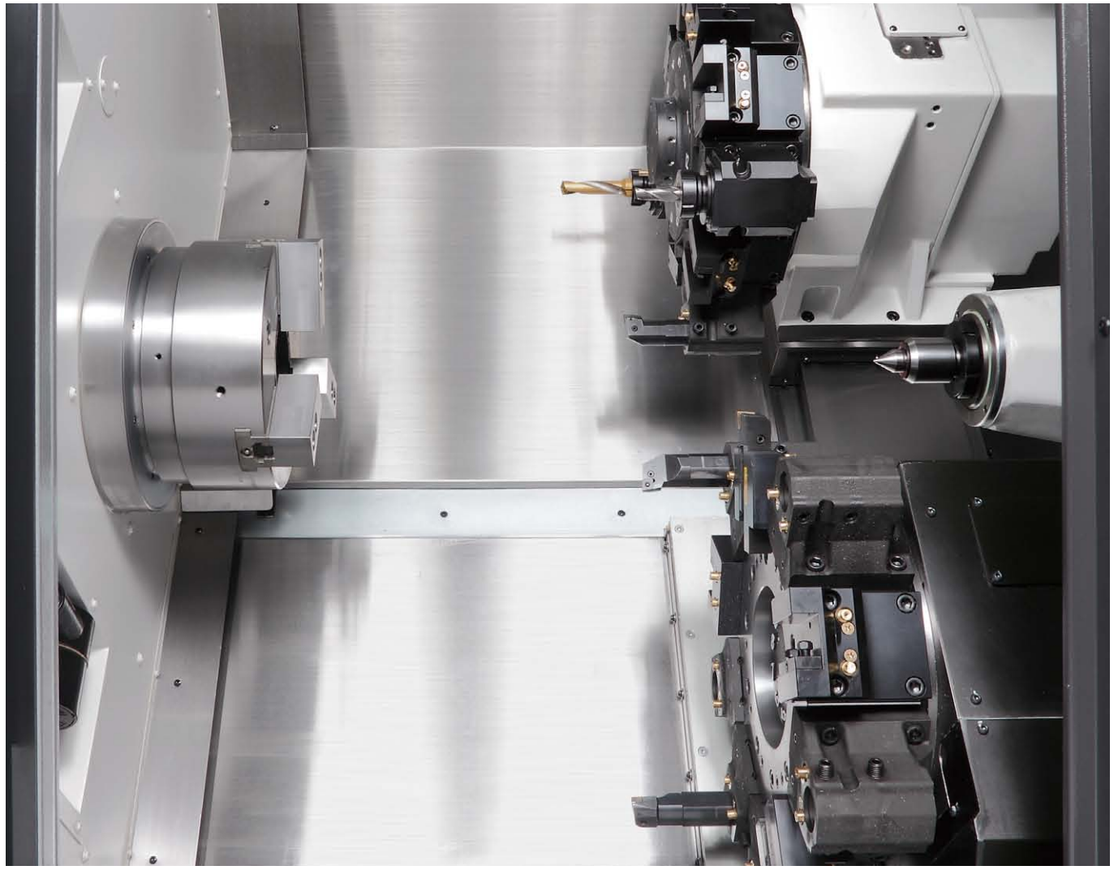
- Huge productivity gains at higher performance levels
- Achieve the best production system with our wide-ranging lineup
- Wide array of intelligent technologies are powerful support for operator

SIMUL TURN LU3000EX

SIMUL TURN LU4000EX (MY specifications)

Photos include optional specifications.

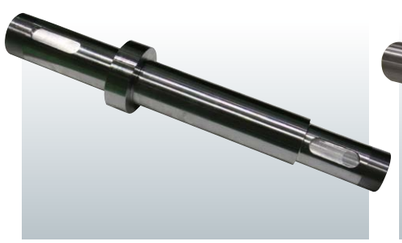
Max power 2-saddle turning centers for even higher productivity



Shaft shapes are machined with high efficiency

- Part name : Spindle
- Size : ø145 × 465 mm

- Part name : Drive shaft
- Size : ø100 × 500 mm

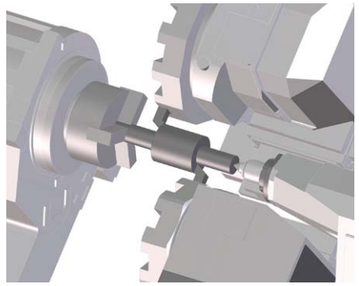


- Part name : Worm screw
- Size : ø85 × 500 mm

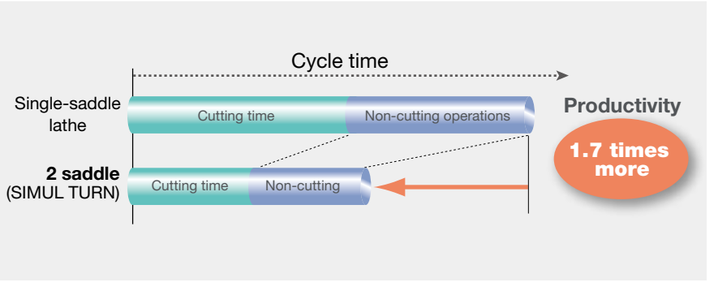
Many types of machining with the flexibility of 4 axes

Huge reduction in machining time with simultaneous 4-axis machining on upper and lower turrets

In other words, simultaneous OD/OD or ID/OD operations drastically reduce cycle times. In addition with optional turnaround stand and/or a steadyrest attached to the lower turret—the possibilities are endless.

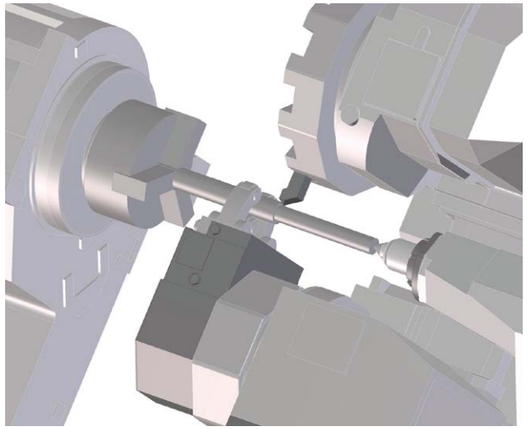


High-efficiency machining from simultaneous 4-axis turning



Turning long shafts with a steadyrest—without chatter

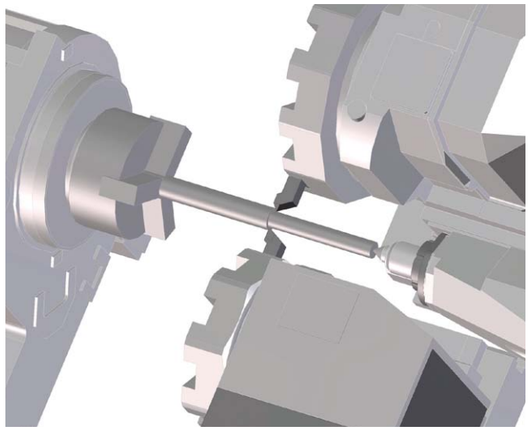
A steadyrest (optional) mounted on the lower turret does provide steady workpiece support. With an NC programmed upper turret and simultaneous control, long shafts will always be supported near the cutting point.



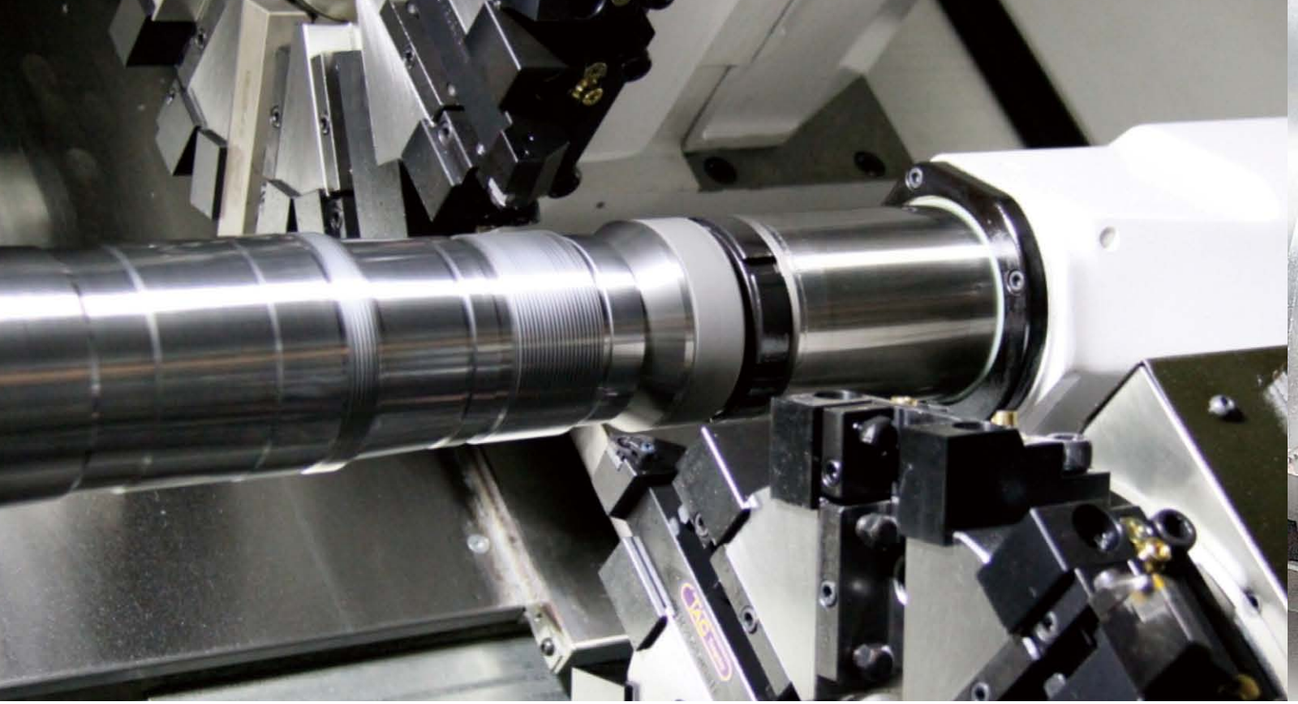
Prevents chatter with steadyrest support

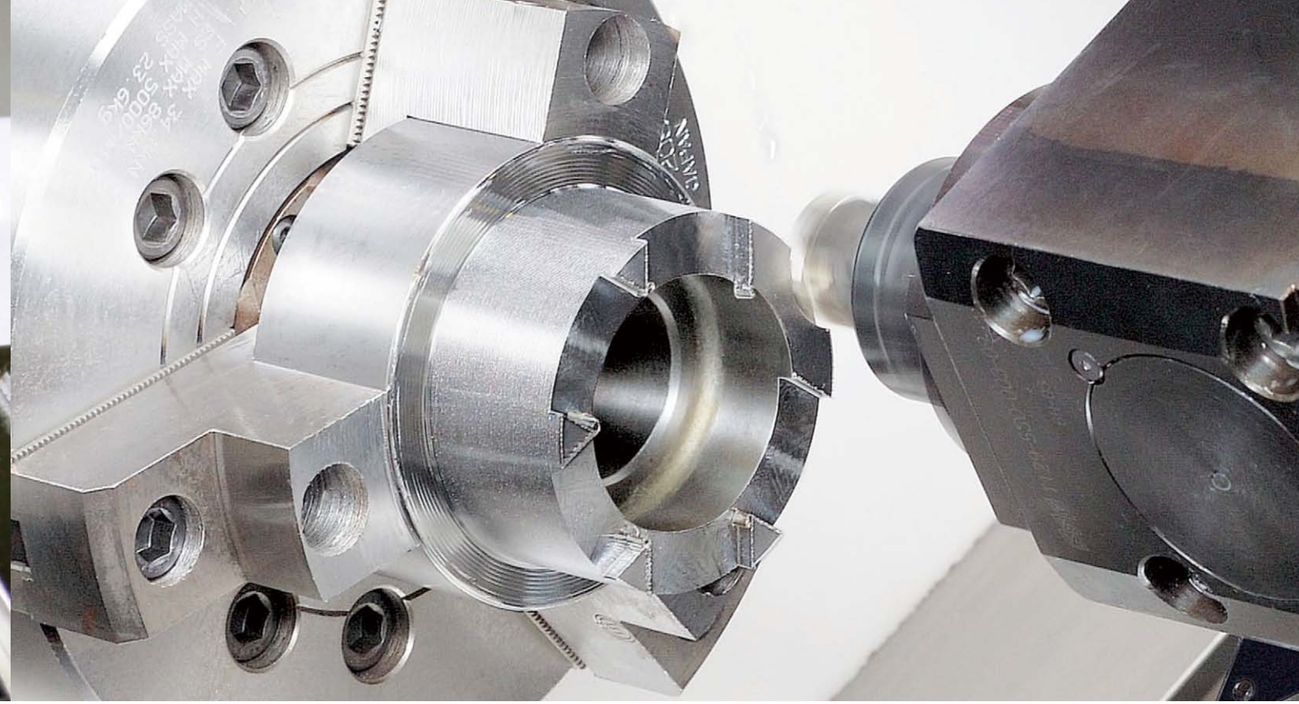
Balanced cutting for highly efficient turning of long workpieces

With balanced turning, tool passes can be reduced by a half. Cycle times are also reduced considerably, and chatter-free.

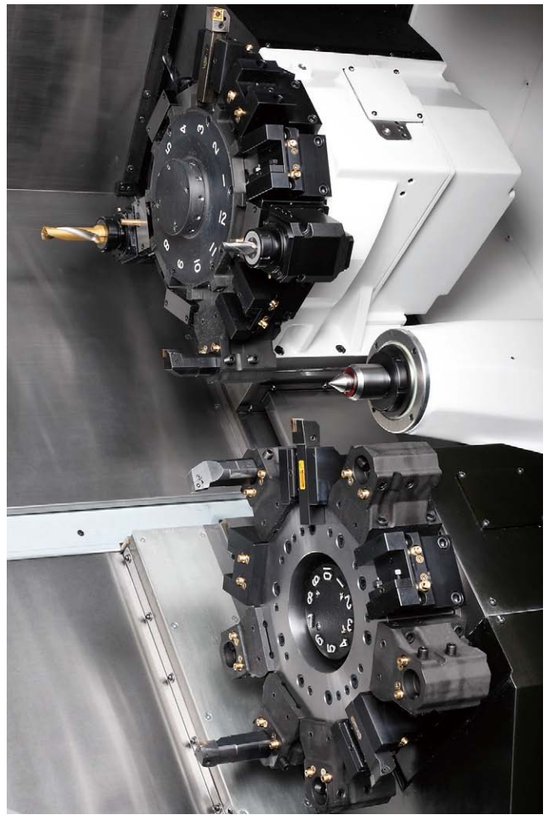


Balanced cutting prevents chatter during machining of long workpieces





Highly accurate machining of shafts



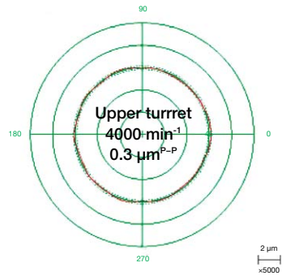
Wide working ranges for upper and lower turrets

		LU3000 EX	LU4000 EX
Upper turret	X axis	260 mm	300 mm
Lower turret	X axis	160 mm	195 mm

Example of high accuracy machining (LU3000 EX actual data)

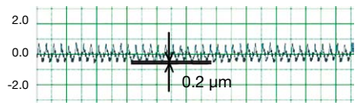
Roundness

- 0.3 µm (upper turret)/0.4 µm (lower turret)



Surface roughness (tool edge uniformity)

- 0.2 µm (upper turret)/0.5 µm (lower turret)



Powerful machining and rapid movements mean shorter cycle times

High-performance simultaneous (heavy) turning with power to spare (Actual data)

		<LU3000 EX>	<LU4000 EX>
Turning		Heavy-duty: 4.4 mm² (379 cm³/min)	Heavy-duty: 6.0 mm² (648 cm³/min)
OD (S45C)	Cutting speed	150 m/min	96 m/min
	Cutting depth	8 mm	10 mm
	Feed rate	0.55 mm/rev	0.6 mm/rev
ø63 carbide insert drill (S45C)			ø63 carbide insert drill
	Cutting speed	180 m/min	150 m/min
	Feed rate	0.25 mm/rev	0.23 mm/rev
Milling		Chip volume: 240 cm³/min	Chip volume: 240 cm³/min
7-Flute, carbide, ø20-mm end mill (S45C)			7-Flute, carbide, ø20-mm end mill
	Cutting speed	200 m/min	200 m/min
	Cutting depth	18 mm	18 mm
	Feed rate	1.4 mm/rev	1.4 mm/rev
	Chip volume	240 cm³/min	240 cm³/min
ø20 carbide drill (S45C)			ø28 carbide drill
	Cutting speed	135 m/min	90 m/min
	Feed rate	0.25 mm/rev	0.20 mm/rev
Tapping (S45C)		M20 P2.5	M24 P3

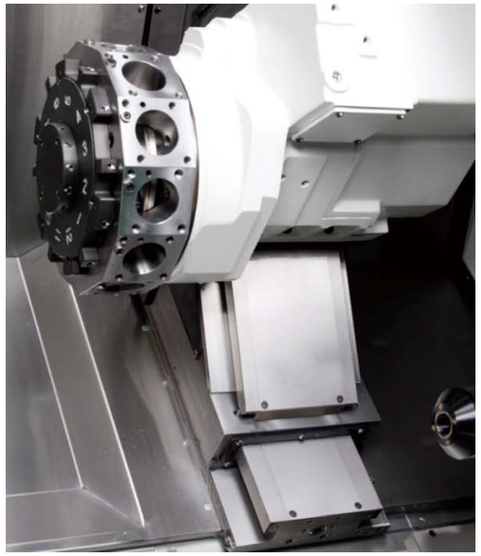
Note: The “actual data” referred to above for this brochure represent examples, and may not be obtained due to differences in specifications, environmental conditions during measurement, tooling, cutting, and other conditions.

Quick moving components shorten non-cutting times

Rapid feedrates
- X axis 25 m/min
- Z axis 30 m/min

Turret indexing time
- 0.1 sec/index (LU3000 EX)
- 0.2 sec/index (LU4000 EX)

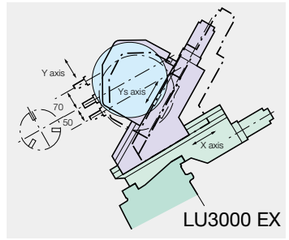
Achieve the best production system with our wide-ranging lineup

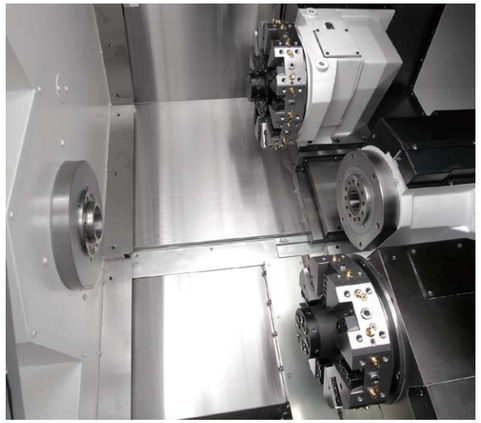


Complete multitasking with Y-axis functions One chuck machining even with irregularly shaped workpieces

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).

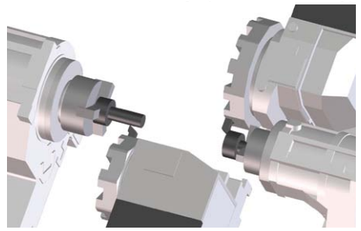
	LU3000 EX	LU4000 EX
● Y-axis-travel	120 mm (+70 to –50)	140 mm (+70 to –70)
● Y-axis rapid traverse	12.5 m/min	12.5 m/min





Sub-spindle for integrated front/back (1 machine) operations

With a sub-spindle, front and back machining can be done on a single machine. Since machining of both ends can be completed on one machine, workpiece storage space and post-process machines are unnecessary. (LU3000 EX only)



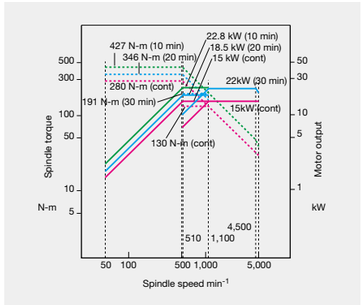
Simple automation with parts catcher
(optional)

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

Spindle torque/output diagram

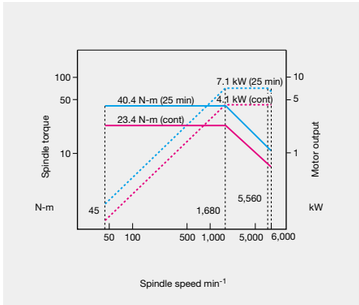
● LU3000 EX Turning spindle

Spindle speed	5,000 min^{-1}
Output	VAC 22/15 kW (30 min/cont)
Torque	427/280 N-m (10 min/cont)



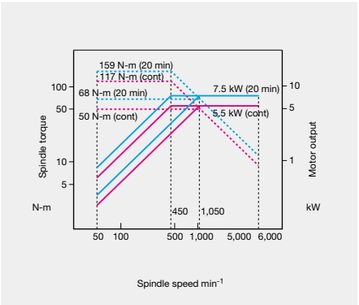
● LU3000 EX (M/2M/MY) Milling tool spindle

Milling tool spindle speed	6,000 min^{-1}
Milling tool spindle motor	PREX 7.1/4.1 kW (25 min/cont)
Output/Torque	40.4/23.4 N-m (25 min/cont)



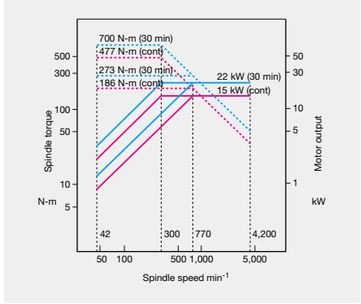
● LU3000 EX (W) Sub-spindle

Spindle speed	6,000min^{-1}
Spindle speed	VAC7.5/5.5 kW (20 min/cont)
Torque	159/117 N-m (20 min/cont)



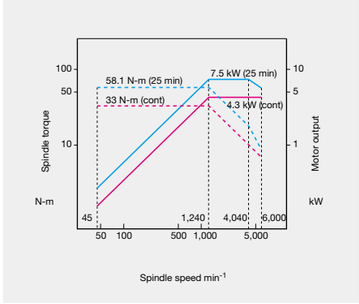
● LU4000 EX Turning spindle

Spindle speed	4,200 min^{-1}
Output	VAC 22/15 kW (30 min/cont)
Torque	700/477 N-m (30 min/cont)



● LU4000 EX (M/MY) Milling tool spindle

Milling tool spindle speed	6,000 min^{-1}
Milling tool spindle motor	PREX 7.5/4.3 kW (25 min/cont)
Output/Torque	58.1/33 N-m



The unique approach of "accepting temperature "changes."

Manageable Deformation—Accurately Controlled
Thermo-Friendly Concept

Thermo-Friendly Concept

Okuma's Thermo-Friendly is a structurally designed system that provides astonishing machining accuracy.
It frees the machinist from troublesome offsets and machine warm-ups—is superb for long runs, multitasking, front/backend work, plus Y-axis applications.

Fewer tool compensation checks

Compensation due to ambient temperature changes and temporary midday or evening machine stops is performed fewer times thanks to outstanding dimensional stability. This leads to better machine utilization, improving efficiency especially for mass-production machining.

Machine start up
Machining restart
Room temp change

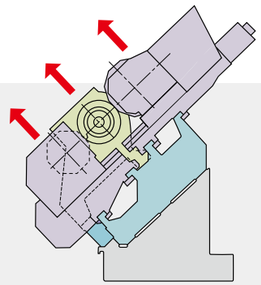
High dimensional stability

Simple machine construction

Machine designs that equalize ambient temperatures

Box slant bed

The innovative box slant bed gives you far more consistently higher accuracies than conventional lathes.



ECO suite

Machine tool idling stop
ECO Idling Stop

Only the necessary unit operates

Operation only for the time required for each unit
ECO Idling Stop

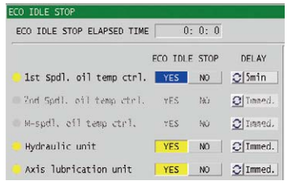
Idling time can be set by individual unit for the spindle, feed shaft, and peripheral equipment. By reducing the idling time, power consumption can also be reduced.

On-the-spot check of energy savings
ECO Power Monitor

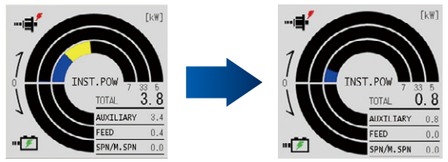
Power is shown individually for spindle, feed axis, and peripheral equipment on OSP operation screen. The energy-saving effect from peripheral equipment stopped with ECO Idling Stop can be confirmed on the spot.

- Intermittent/continuous operation of chip conveyor and mist collector during operation
  "ECO Operation" (optional)

- Example of equipment that can use Idling Stop



- Example of Power Monitor check



Before ECO Idling Stop — After ECO Idlling Stop

The displayed values are one example.

World's first "Collision-Free Machine"

Collision prevention
Collision Avoidance System

Collision Avoidance System

Allowing operators to focus on making parts

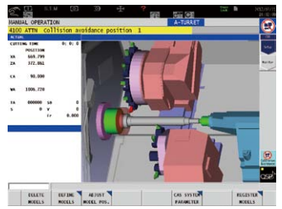
NC controller (OSP) with 3D model data of machine components—workpiece, tool, chuck, fixture, headstock, turret, tailstock—performs real time simulation just ahead of actual machine movements. It checks for interference or collisions, and stops the machine movement immediately before collision. Machinists (novice or pro) will benefit from reduced setup and trial cycle times, and the confidence to focus on making parts.

Collision prevention during automatic operation

NC program is read in advance and axial travel commands are checked for interference with consideration of zero point and tool compensation values set in NC. Axial travel movement is stopped temporarily before collision occurs.

Collision avoidance in manual operation

Especially useful for machine operators setting up a job, collision avoidance in manual mode provides collision-free confidence and faster machining preparations.



Virtual machine (interference check)

Find the best cutting condition for your application

Cutting conditions search
Machining Navi (Optional)

Machining Navi

Machining Navi instantly searches for the best cutting conditions and gives visual graphics of the machining status. This helps to elicit the maximum machine and tool performance and supports the operator in raising productivity.

For turning

Chatter-free applications for lathes **Machining Navi L-*g*** (guidance function)

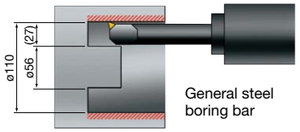
Chatter in a lathe can be suppressed by changing spindle speeds to the ideal amplitude and wave cycle.

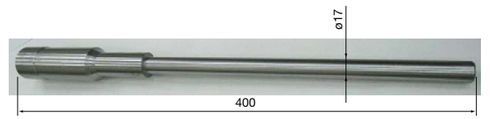
ID machining without chatter with a boring bar extended 5-fold

- Tool : Boring bar (steel)
  Diameter : ø20 mm
  Extension
- Cutting speed : 180 m/min
- Material : S45C

Efficient OD turning of a small diameter shaft without the use of a steadyrest (L/D=23)

- Workpiece : Drive shaft
  Diameter : ø17 mm
  length : 400 mm
- Material : S45C
- Cutting conditions : Drive shaft
  Cutting : 0.1 mm
  Feed : 0.12 mm/rev
- Cutting speed : 170 m/min





Machine Specifications〈LU3000 EX〉

Item		unit	LU3000 EX			LU3000 EX (M)		
			2ST	2SC × 600	2SC × 1000	2ST	2SC × 600	2SC × 1000
Capacity	Swing over bed	mm (in.)	ø580 (ø22.84)					
	Distance between centers	mm (in.)	–	600 (23.63)	1,000 (39.37)	–	600 (23.63)	1,000 (39.37)
	Max turning diameter	mm (in.)	ø410 (16.14)			ø340 (13.39)		
	Max work length	mm (in.)	350 (13.78)	600 (23.63)	1,000 (39.37)	350 (13.78)	600 (23.63)	1,000 (39.37)
Travels	X-axis	mm (in.)	U: 260 / L: 160 (U: 10.24 / L: 6.30)					
	Z-axis	mm (in.)	U: 685/L: 615 (U: 26.97/L: 24.22)		U: 1,085/L: 1,015 (U: 42.72/L: 39.96)	U: 685/L: 615 (U: 26.97/L: 24.22)		U: 1,085/L: 1,015 (U: 42.72/L: 39.96)
	Y-axis	mm (in.)	–					
	C-axis	deg	–			360 (0.001 unit)		
Spindle	Speed	min^{-1}	50 to 5,000 [42 to 4,200, 30 to 3,000]					
	Speed ranges		Two auto ranges (motor coil switching ranges)					
	Spindle noze		JIS A2-6 [JIS A2-8, JIS A2-11]					
	Bore dia	mm (in.)	ø80 [ø91, ø112] (ø3.15 [ø3.59, ø4.73])					
	Front bearing dia	mm (in.)	ø120 [ø140, ø160] (ø4.73 [ø5.52, 6.30])					
Turret	Type		U: V12 / L: V8			U: Multitasking V12 / L: V8		
	No. of tools		U: 12 / L: 8			U: 12 (L/M) / L: 8		
	OD tool shank height	mm (in.)	□25 (1)					
	ID tool shank dia	mm (in.)	ø40 (ø1-1/2)					
	Turret index time	sec/1 index	0.1					
Milling tool spindle	Spindle speed	min^{-1}	–			45 to 6,000		
Feedrates	Rapid traverse	m/min (ipm)	X: 25/Z: 30 (X: 984/Z: 1,181)			X: 25/Z: 30/C: 200 min^{-1} (X: 984/Z: 1,181)		
Tailstock	Quill dia	mm (in.)	–	ø90 (ø3.55)		–	ø90 (ø3.55)	
	Quill bore taper		–	MT No.5		–	MT No.5	
	Quill travel	mm (in.)	–	120 (4.72)		–	120 (4.72)	
Motors	Spindle	kW (hp)	22/15 (30/20) (30 min/cont)					
	Milling tool	kW (hp)	–			7.1/4.1 (9.5/5.5) (25 min/cont)		
	Axis drive	kW (hp)	XA: 2.8 (3.7) ZA: 3.5 (4.7) / XB: 2.2 (2.9) ZB: 3.5 (4.7)					
	Coolant pump (50 Hz/60 Hz)	kW (hp)	0.52/0.815 (0.69/1.09)					
Machine size	Height*	mm (in.)	2,080 (82)		2,229 (88)	2,080 (82)		2,229 (88)
	Floor space	mm (in.)	2,950 × 2,176 [2,995 x 2,176] (116 × 86 [118 x 86])		3,980×2,478 (156×98)	2,950 × 2,176 [2,995 x 2,176] (116 × 86 [118 x 86])		3,980×2,478 (156×98)
	Weight (w/ CNC)	kg (lb)	6,400 (14,080)	6,700 (14,740)	8,200 (18,040)	6,500 (14,300)	6,800 (14,960)	8,300 (18,260)
CNC			OSP-P300L					

LU3000 EX (2M)		LU3000 EX (MY)			LU3000 EX (W)
2ST	2SC × 600	2ST	2SC × 550	2SC × 950	2SW × 600
ø580 (ø22.84)					
–	600 (23.62)	–	550 (21.65)	950 (37.40)	Distance between noses: 900 (35.43)
ø340 (13.39)					ø410 (16.14)
–	600 (23.62)	250 (9.84)	550 (21.65)	950 (37.40)	600 (23.62)
U: 260 / L: 160 (U: 10.24 / L: 6.30)					
U: 685/L: 615 (U: 26.97/L: 24.22)		U: 630/L: 615 (U: 26.97/L: 24.22)		U: 1,030/L: 1,015 (U: 40.55/L: 39.96)	U: 685/L: 610 (U: 26.97/L: 24.02)
–		120 (+70 to -50)			–
360 (0.001 unit)					–
50 to 5,000 [42 to 4,200]		50 to 5,000 [42 to 4,200, 30 to 3,000]			Main: 50 to 5,000 [42 to 4,200, 30 to 3,000], Sub: 50 to 6,000
Two auto ranges (motor coil switching ranges)					
JIS A2-6 [JIS A2-8]		JIS A2-6 [JIS A2-8, JIS A2-11]			Main: JIS A2-6 [JIS A2-8, JIS A2-11], Sub: ø140 flat
ø80 [ø91] (ø3.15 [ø3.59])		ø80 [ø91, ø112] (ø3.15 [ø3.59, ø4.73])			Main: ø80 [ø91, ø112] (ø3.15 [ø3.59, ø4.73]), Sub: ø43 (1.69)
ø120 [ø140] (ø4.73 [ø5.52])		ø120 [ø140, ø160] (ø4.73 [ø5.52, 6.30])			Main: ø120 [ø140, ø160] (ø4.73 [ø5.52, 6.30]), Sub: ø80 (3.15)
U: Multitasking V12 / L: Multitasking V8		U: Multitasking V12 / L: V8			U: V12 / L: V8
U: 12 (L/M) / L: 8 (L/M)		U: 12 (L/M) / L: 8			U: 12 / L: 8
□25 (1)					
ø40 (ø1-1/2)					
0.1					
45 to 6,000		45 to 6,000			–
X: 25/Z: 30/C: 200 min^{-1}		X: 25/Z: 30/Y: 12.5/C: 200 min^{-1} (X: 984/Z: 1,181/Y: 492)			X: 25/Z: 30
–	ø90 (ø3.55)	–	ø90 (ø3.55)		–
–	MT No.5	–	MT No.5		–
–	120 (4.72)	–	120 (4.72)		–
22/15 (30/20) (30 min/cont)					Main: 22/15 (30 min/cont), Sub: 7.5/5.5 (20 min/cont)
7.1/4.1 (9.5/5.5) (25min/cont)					–
XA: 2.8 (3.7) ZA: 3.5 (4.7) / XB: 2.2 (2.9) ZB: 3.5 (4.7)		XA: 2.8 (3.7), ZA: 4.6 (3.5) / XB: 2.2 (2.9), ZB: 3.5 (4.7), YS: 3.5 (4.7)			XA: 2.8 (3.7) XB: 2.2 (2.9) ZA, ZB: 3.5 (4.7) W: 3.5 (4.7)
0.52/0.815 (0.69/1.09)					
2,080 (82)		2,507 (99)		2,677 (105)	2,080 (82)
2,950 × 2,176 [2,995 x 2,176] (116 × 86 [118 x 86])				3,980 × 2,478 (157 × 98)	3,750×2,176 (148×86)
6,500 (14,300)	6,800 (14,960)	7,000 (15,430)	7,300 (16,090)	8,800 (19,400)	7,100 (15,620)
OSP-P300L					

[ ]: Optional *Raised machine height of 45 mm is standard for rear discharge.

Standard Specification

	L		M/MY		2M		W
	2ST	2SC	2ST	2SC	2ST	2SC	2SW
Spindle							
JIS A2-6 45 to 5,000 min^{-1} VAC integral 22/15 kW (30 min/cont)	●						
Sub-spindle							
ø140 flat 50 to 6,000 min^{-1} VAC integral 7.5/5.5 kW (20 min/cont)	—						●
Turret							
Upper V12 + lower V8	●		—		—		●
Upper multitasking V12 + lower V8	—		●		—		—
Upper multitasking V12 + lower multitasking V8	—		—		●		—
Milling tool spindle							
45 to 6,000 min^{-1} PREX 7.1/4.1 kW (25 min/cont)	—		●		●		—
Tailstock							
Dead hydraulic MT No. 5	—	●	—	●	—	●	—
Manual tow-along	—	●	—	●	—	●	—
Accessories							
Hydraulic unit	●						
Coolant system	●						
Full-enclosure shielding	●						
Work lamp (LED)	●						
Chuck foot switch	●						
Tailstock sleeve foot switch	—	●	—	●	—	●	—
Lubrication monitor	●						
CNC	OSP-P300L						

Chucking Kit

	A	B	C	D	E
N-08 Kit A Solid 8 in.	1	—	—	—	—
N-08 Kit B Solid 8 in.	—	1	—	—	—
B-208 Kit C Solid 8 in., hole diameter ø52	—	—	1	—	—
B-210 Kit D Solid 10 in., hole diameter ø70	—	—	—	1	—
BB208 Solid 8 in., for big bore spindle, E hole diameter ø66	—	—	—	—	1
Standard soft jaws, A	—	5	5	5	5
Standard soft jaws, B	—	3	3	3	3
Standard hard jaws	—	1	1	1	1

Optional Equipment & Accessories

Big-bore spindle	JIS A2-8 42 to 4,200 min^{-1}
	Front bearing dia ø140 / spindle bore dia. ø91
Super big-bore spindle	JIS A2-11 30 to 3,000 min^{-1}
	Front bearing dia ø160 / spindle bore dia. ø112
L-VDI turret	
M-VDI turret	45 to 4,500 min^{-1}, 7.0/3.3 kw (30 min/cont)
Hydraulic tailstock	MT. No. 4
Programmable tailstock	
Chucking kit	Solid/hollow hydraulic power chuck, soft jaws
Tooling kit	Various toolholders
Chip discharge	Chip pan
	Chip conveyor (side discharge/rear discharge)
	Chip bucket
Touch setter	M (manual), A (auto)
Steadyrest	
Automation	On-machine loader, gantry loader
	Robots, bar feeders
Front cover	Auto open/close (safety tape SW, area sensor)
	Two-hand cycle start button
For chucking	Chuck auto open/close confirm
	Chucking miss detection (main)
	Chuck high/low pressure switch with reclamping (main)
For tailstock	Tailstock travel 230 mm
	Tailstock quill auto advance/retract confirm, tailstock thrust high/low switch
	Low tailstock thrust, tailstock quill position detection
	2-speed tailstock quill
Front door with large window	

For air blower	Chuck, tailstock
	Upper turret (internal piping, common coolant nozzle)
	Lower turret (common coolant nozzle)
	Upper/lower turret air blower outlet control (simultaneous, independent)
For coolant blower	Shower coolant (A, B), coolant gun
	In-machine chip washer (A, B)
	Spindle ID coolant (main, A, B)
Dust proofing	Spindle air purging, X-axis double wiper (Xa)
	Z-axis double wiper (Za + Zb)
Gauging-related options	In-process work gauging
Workrest	
Stopper in spindle	
Chuck internal sizing stopper	
Coolant	Upper/lower turret air blower outlet control (independent)
	Coolant high/low switch (upper, lower turret)
	Coolant sensors (level sensor, flow sensor, level + flow sensors)
Mist collector	
Parts catcher	
Optional high-accuracy specifications	Turcite® lining (Xa axis, Za axis, Zb axis)
	AbsoScale (Xa axis, Za axis, Xb axis)
	Coolant temperature regulator, Spindle cooling oil temperature regulator
	Hydraulic oil temperature regulator

Machine Specifications〈LU4000 EX〉

Item		unit	LU4000 EX (L)		
			2ST	2SC × 650	2SC × 1250
Capacity	Swing over bed	mm (in.)	ø695 (27.36)		
	Distance between centers	mm (in.)	–	650 (25.59)	1,250 (49.21)
	Max turning diameter	mm (in.)	ø480 (18.90)		
	Max work length	mm (in.)	400 (15.75)	650 (25.59)	1,250 (49.21)
Travels	X-axis	mm (in.)	U: 300 / L: 195 (U: 11.81 / L: 7.68)		
	Z-axis	mm (in.)	U: 740/L: 700 (U: 29.13/L: 27.56)		U: 1,340/L: 1,300 (U: 52.76/L: 51.18)
	Y-axis	mm (in.)	–		
	C-axis	deg	–		
Spindle	Speed	min^{-1}	42 to 4,200 [30 to 3,000]		
	Speed ranges		Two auto ranges (motor coil switching ranges)		
	Spindle noze		JIS A2-8 [JIS A2-11]		
	Bore dia	mm (in.)	ø91 [ø112] (ø3.58 [ø4.41])		
	Front bearing dia	mm (in.)	ø140 [ø160]		
Turret	Type		U: V12 / L: V10		
	No. of tools		U: 12 / L: 10		
	OD tool shank height	mm (in.)	□25 (1)		
	ID tool shank dia	mm (in.)	ø40 (ø1-1/2)		
Milling tool spindle	Speed	min^{-1}	–		
Feedrates	Rapid traverse	m/min (ipm)	X: 25/Z: 30 (X: 984/Z: 1,181)		
Tailstock	Quill dia	mm (in.)	–	ø120 (4.72)	
	Quill bore taper		–	MT.No5	
	Quill travel	mm (in.)	–	150 (5.91)	
Motors	Spindle	kW (hp)	22/15 (30/20) (30 min/cont) [32/22 (43/30) (20 min/cont)]		
	Milling tool	kW (hp)	–		
	Axis drive	kW (hp)	XA: 3.5 (4.7), XB: 3.0 (4), ZA, ZB: 4.6 (6)		
	Coolant pump (50 Hz/ 60Hz)	kW (hp)	0.52/0.815 (0.69/1.09)		
Machine size	Height*	mm (in.)	2,200 (87)		2,440 (96)
	Floor space	mm (in.)	3,570 × 2,310 [3,720 × 2,310] (141 × 91 [146 × 91])		4,780 × 2,620 (188.19 × 103.15)
	Weight (w/ CNC)	kg (lb)	9,000 (19,800)	9,600 (21,120)	11,400 (25,080)
CNC			OSP-P300L		

Item		unit	LU4000 EX (M)			LU4000 EX (MY)		
			2ST	2SC × 650	2SC × 1250	2ST	2SC × 650	2SC × 1250
Capacity	Swing over bed	mm (in.)	ø695 (27.36)					
	Distance between centers	mm (in.)	–	650 (25.59)	1,250 (49.21)	–	650 (25.59)	1,250 (49.21)
	Max turning diameter	mm (in.)	ø430 (16.93)					
	Max work length	mm (in.)	400 (15.75)	650 (25.59)	1,250 (49.21)	400 (15.75)	650 (25.59)	1,250 (49.21)
Travels	X-axis	mm (in.)	U: 300 / L: 195 (U: 11.81 / L: 7.68)					
	Z-axis	mm (in.)	U: 740/L: 700 (U: 29.13/L: 27.56)		U: 1,340/L: 1,300 (U: 52.76/L: 51.18)	U: 740/L: 700 (U: 29.13/L: 27.56)		U: 1,340/L: 1,300 (U: 52.76/L: 51.18)
	Y-axis	mm (in.)	–			140 (+70 to –70) (5.51 (+2.76 to –2.76)		
	C-axis	deg	360 (0.001 unit)					
Spindle	Speed	min^{-1}	42 to 4,200 [30 to 3,000]					
	Speed ranges		Two auto ranges (motor coil switching ranges)					
	Spindle noze		JIS A2-8 [JIS A2-11]					
	Bore dia	mm (in.)	ø91 [ø112]					
	Front bearing dia	mm (in.)	ø140 [ø160]					
Turret	Type		U: Multitasking V12 / L: V10					
	No. of tools		U: 12 (L/M) / L: 10					
	OD tool shank height	mm (in.)	□25 (1)					
	ID tool shank dia	mm (in.)	ø40 (ø1-1/2)					
Milling tool spindle	Speed	min^{-1}	45 to 6,000					
Feedrates	Rapid traverse	m/min (ipm)	X: 25, Z: 30, C: 200 min^{-1}			X: 25, Z: 30, Y: 12.5, C: 200 min^{-1}		
Tailstock	Quill dia	mm (in.)	–	ø120 (4.72)		–	ø120 (4.72)	
	Quill bore taper		–	MT.No5		–	MT.No5	
	Quill travel	mm (in.)	–	150 (5.91)		–	150 (5.91)	
Motors	Spindle	kW (hp)	22/15 (30/20) (30 min/cont) [32/22 (43/30) (20 min/cont)]					
	Milling tool	kW (hp)	7.5/4.3 (25 min/cont)					
	Axis drive	kW (hp)	XA: 3.5 (4.7), XB: 3.0 (4), ZA, ZB: 4.6 (6)			XA: 3.5 (4.7), XB: 3.0 (4), ZA: 4.6 (6), ZB: 4.6 (6), Ys: 3.5 (4.7)		
	Coolant pump (50 Hz/ 60Hz)	kW (hp)	0.52/0.815 (0.69/1.09)					
Machine size	Height*	mm (in.)	2,200 (87)		2,440 (96)	2,587 (102)		2,770 (109)
	Floor space	mm (in.)	3,570×2,310 [3,720×2,310] (141×91 [146×91])		4,780×2,620 (188.19×103.15)	3,570×2,310 [3,720×2,310] (141×91 [146×91])		4,880×2,645 (192×104)
	Weight (w/ CNC)	kg (lb)	9,100 (20,020)	9,700 (21,340)	11,500 (25,300)	9,600 (21,120)	10,200 (22,440)	12,000 (26,400)
CNC			OSP-P300L					

[ ]: Optional *Raised machine height of 70 mm is standard for rear discharge.

Standard Specification

	LU4000 EX		LU4000 EX (M/MY)	
	2ST	2SC	2ST	2SC
Spindle				
JIS A2-6 42 to 4,200 min^{-1} VAC integral 22/15 kW (30 min/cont)	●			
Turret				
Upper V12 + lower LV10	●		—	
Upper multitasking V12 + lower LV10	—		●	
Milling tool spindle				
45 to 6,000 min^{-1}	—		●	
PREX 7.1/4.1 kW (25 min/cont)	—		●	
Tailstock				
Dead hydraulic MT No. 5	—	●	—	●
Manual tow-along	—	●	—	●
Accessories				
Hydraulic unit	●			
Coolant system	●			
Full-enclosure shielding	●			
Work lamp (LED)	●			
Chuck foot switch	●			
Tailstock sleeve foot switch	—	●	—	●
Lubrication monitor	●			
CNC	OSP-P300L			

Chucking Kit

	A	B	C	D	E
N-10 Kit A Solid 10 in.	1	—	—	—	—
N-10 Kit B Solid 10 in.	—	1	—	—	—
B-210 Kit C Solid 10 in., hole diameter ø70	—	—	1	—	—
B-212 Kit D Solid 12 in., hole diameter ø70	—	—	—	1	—
BB210 Solid 10 in., for big bore spindle, E hole diameter ø75	—	—	—	—	1
Standard soft jaws, A	—	5	5	5	5
Standard soft jaws, B	—	3	3	3	3
Standard hard jaws	—	1	1	1	1

Optional Equipment & Accessories

Big-bore spindle	JIS A2-11 30 to 3,000 min^{-1}
	Front bearing dia ø160 / spindle bore dia. ø112
High-Power spindle	PREX 32/22 kW (20 min/cont)
L-VDI turret	
M-VDI turret	30 to 3,000 min^{-1}, 7.0/3.0 kw (15 min/cont)
Hydraulic tailstock	MT. No. 5
Programmable tailstock	
Chucking kit	Solid/hollow hydraulic power chuck, soft jaws
Tooling kit	Various toolholders
Raised machine height	50 mm, 100 mm, 150 mm
Chip discharge	Chip pan
	Chip conveyor (side discharge/rear discharge)
	Chip bucket
Touch setter	M (manual), A (auto)
Steadyrest	
Automation	On-machine loader, gantry loader
	Robots, bar feeders
Front cover	Auto open/close (safety tape SW, area sensor)
	Two-hand cycle start button
For chucking	Chuck auto open/close confirm
	Chucking miss detection (main)
	Chuck high/low pressure switch with reclamping (main)
For tailstock	Tailstock travel 260 mm
	Tailstock quill auto advance/retract confirm, tailstock thrust high/low switch
	Low tailstock thrust, High tailstock thrust
	Tailstock quill position detection, 2-speed tailstock quill
Front door with large window	

For air blower	Chuck, tailstock, Spindle ID
	Upper turret (internal piping, common coolant nozzle)
	Lower turret (common coolant nozzle)
	Upper/lower turret air blower outlet control (simultaneous, independent)
For coolant blower	Shower coolant (A, B), coolant gun
	In-machine chip washer (A, B)
	Spindle ID coolant (main, A, B)
Dust proofing	Spindle air purging, X-axis double wiper (Xa)
	Z-axis double wiper (Za + Zb)
Gauging-related options	In-process work gauging
Workrest	
Stopper in spindle	
Chuck internal sizing stopper	
Coolant	Upper/lower turret air blower outlet control (independent)
	Coolant high/low switch (upper, lower turret)
	Coolant sensors (level sensor, flow sensor, level + flow sensors)
Mist collector	
Parts catcher	
Optional high-accuracy specifications	Turcite® lining (Xa axis, Za axis, Zb axis)
	AbsoScale (Xa axis, Za axis, Xb axis)
	Coolant temperature regulator, Spindle cooling oil temperature regulator
	Hydraulic oil temperature regulator

〈LU3000 EX〉

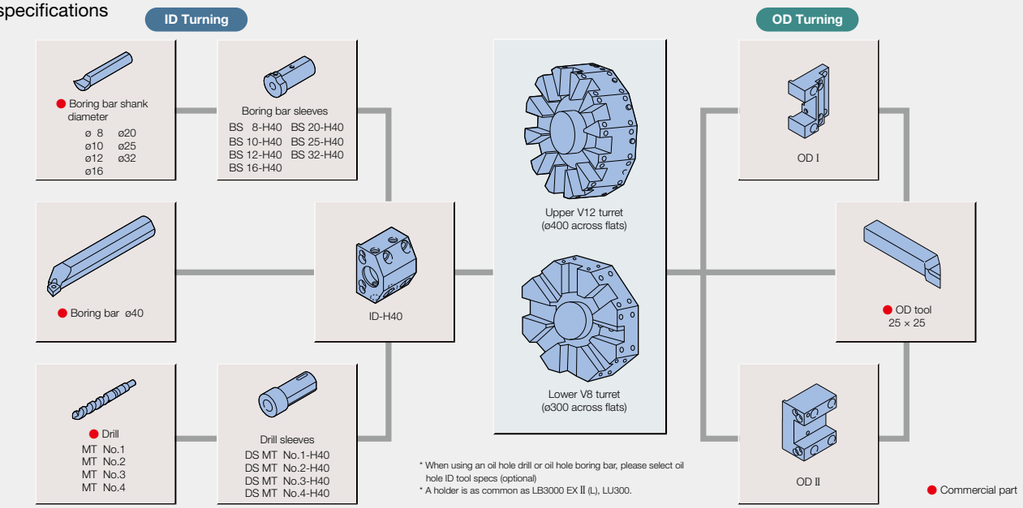
Tooling Kit

	LU3000 EX				LU3000 EX (M/MY)			
	2ST		2SC		2ST		2SC	
	E	D	E	D	E	D	E	D
OD-I	6	8	8	10	6	8	6	8
OD-II	4	6	2	4	2	4	2	4
ID-H40	8	10	8	10	8	10	8	10
BS 10-H40	—	2	—	2	—	2	—	2
BS 12-H40	—	2	—	2	—	2	—	2
BS 16-H40	—	2	—	2	—	2	—	2
BS 20-H40	4	4	4	4	4	4	4	4
BS 25-H40	4	4	4	4	4	4	4	4
BS 32-H40	—	2	—	2	—	2	—	2
DS MT No. 1-H40	—	1	—	1	—	1	—	1
DS MT No. 2-H40	—	1	—	1	—	1	—	1
DS MT No. 3-H40	1	1	1	1	1	1	1	1
Axial drill/mill unit					2	4	2	3
Radial drill/mill unit					2	3	2	4
Dummy holder					3	3	3	3
Revolving center MT No. 5	—	—	1	1	—	—	1	1

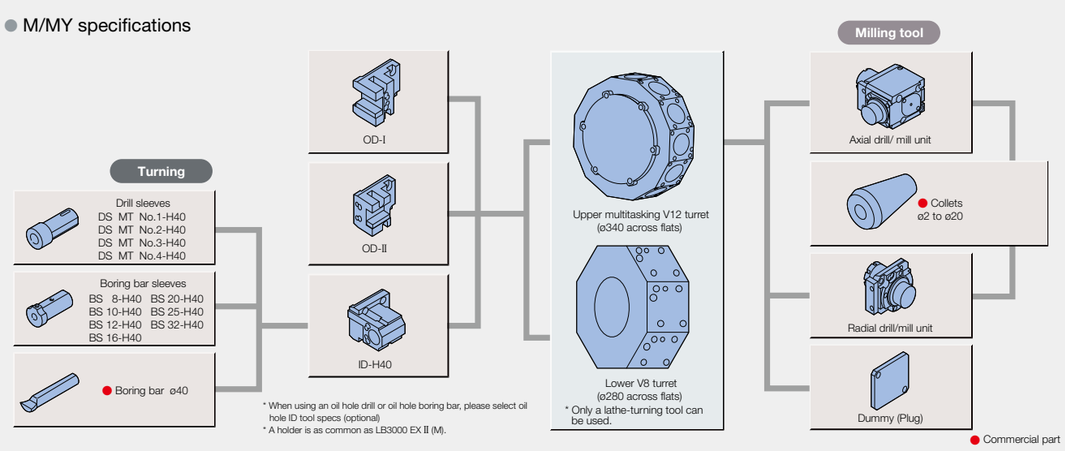
E Kit: Economy
D Kit: Deluxe

Tooling System

● L specifications

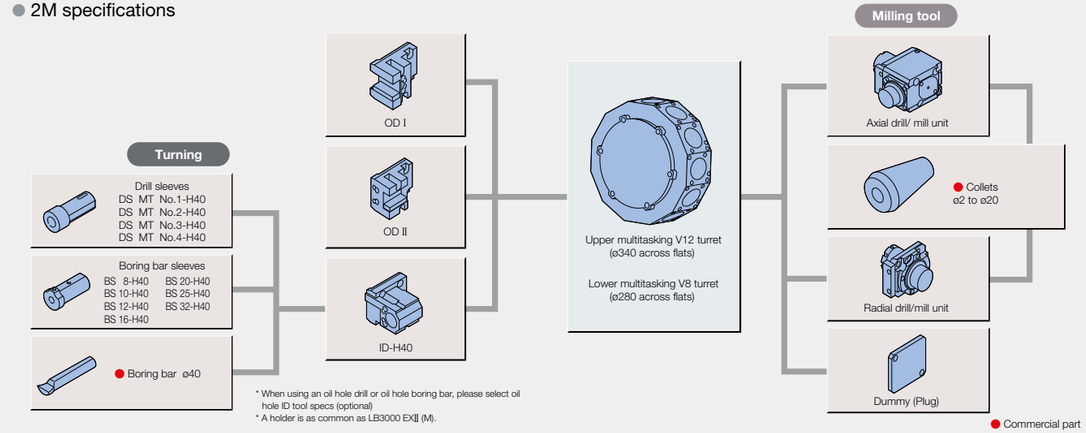


● M/MY specifications

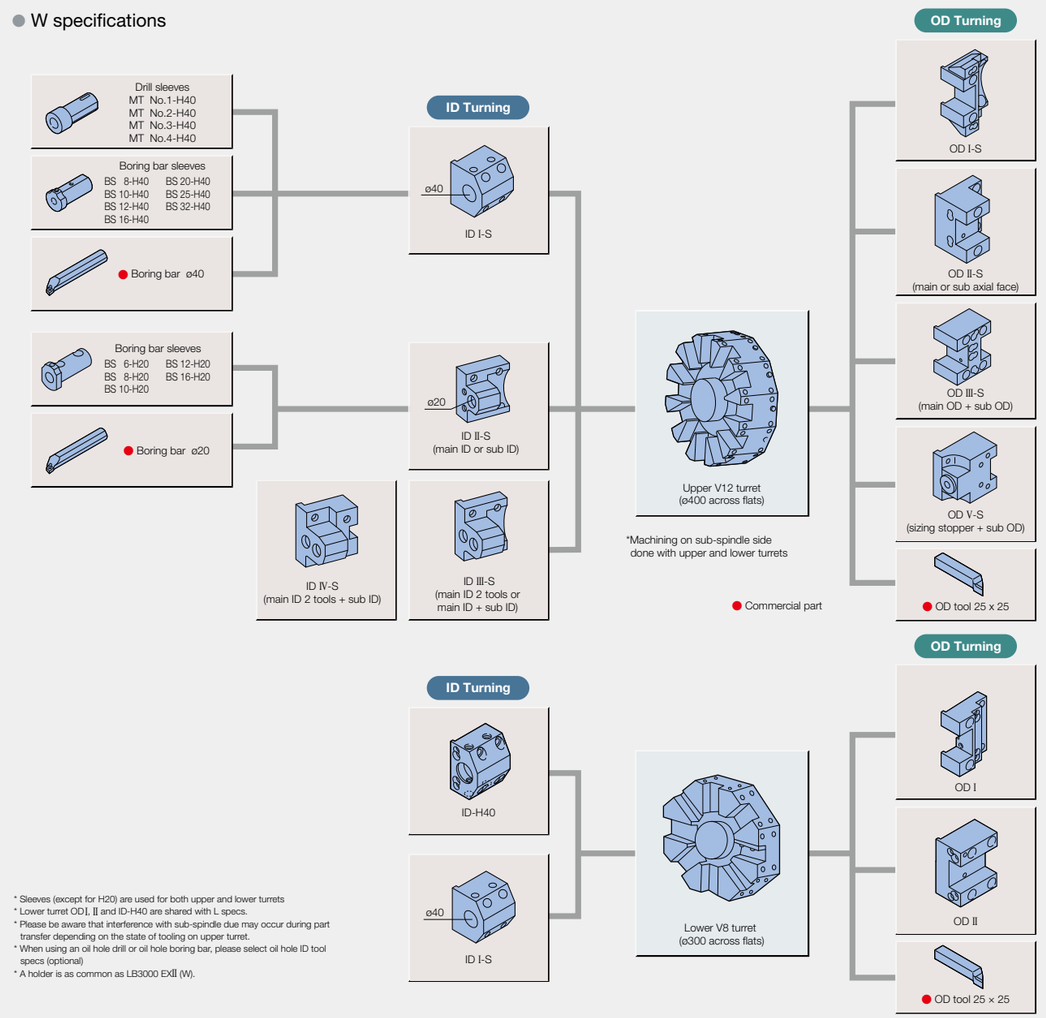


Tooling System

● 2M specifications



● W specifications



〈LU4000 EX〉

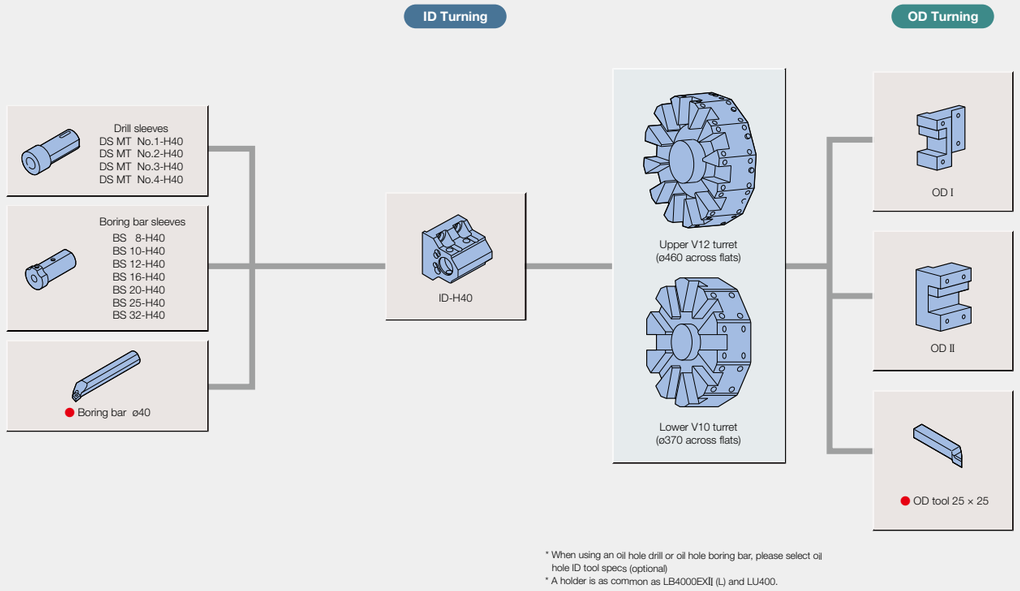
Tooling Kit

	LU4000 EX				LU4000 EX (M/MY)			
	2ST		2SC		2ST		2SC	
	E	D	E	D	E	D	E	D
OD-I	6	8	8	10	6	8	6	8
OD-II	4	6	2	4	2	4	2	4
ID-H40	8	10	8	10	8	10	8	10
BS 10-H40	—	2	—	2	—	2	—	2
BS 12-H40	—	2	—	2	—	2	—	2
BS 16-H40	—	2	—	2	—	2	—	2
BS 20-H40	4	4	4	4	4	4	4	4
BS 25-H40	4	4	4	4	4	4	4	4
BS 32-H40	—	2	—	2	—	2	—	2
DS MTNo.1-H40	—	1	—	1	—	1	—	1
DS MTNo.2-H40	—	1	—	1	—	1	—	1
DS MTNo.3-H40	1	1	1	1	1	1	1	1
Axial drill/mill unit					2	4	2	3
Radial drill/mill unit					2	3	2	4
Dummy holder					3	3	3	3
Revolving center MT No. 5	—	—	1	1	—	—	1	1

E Kit: Economy
D Kit: Deluxe

Tooling System

● L specifications

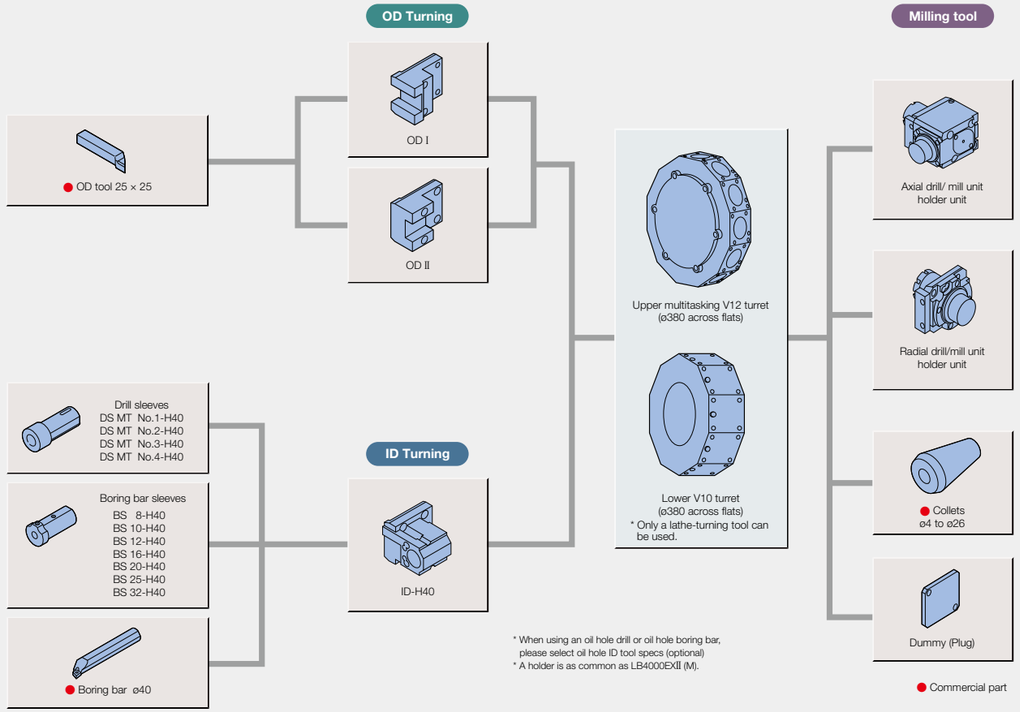


* When using an oil hole drill or oil hole boring bar, please select oil hole ID tool specs (optional)
* A holder is as common as LB4000EXII (L) and LU400.

● Commercial part

Tooling System

● M/MY specifications



* When using an oil hole drill or oil hole boring bar, please select oil hole ID tool specs (optional)
* A holder is as common as LB4000EXII (M).

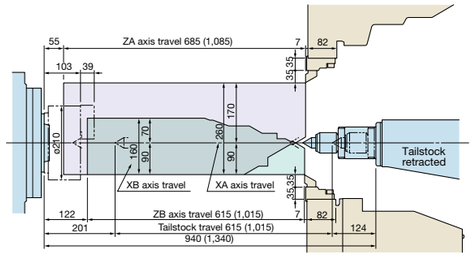
● Commercial part

〈LU3000 EX〉

Working Ranges

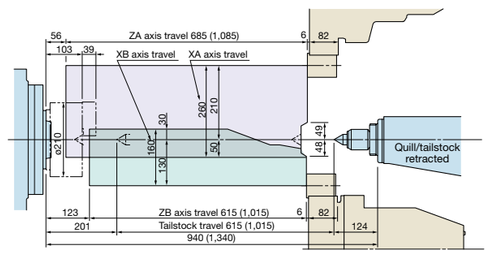
LU3000 EX (L)

OD-I



( ): Distance between centers 1,000.

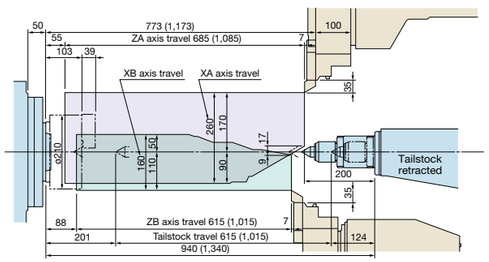
ID



( ): Distance between centers 1,000.

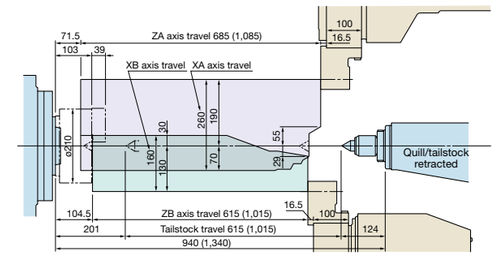
LU3000 EX (M)

OD-I



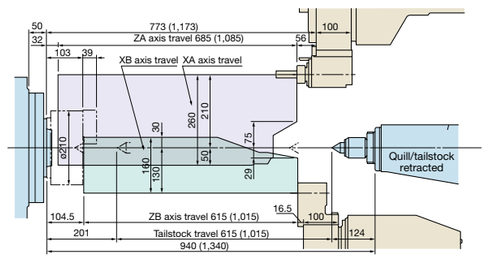
( ): Distance between centers 1,000.

ID



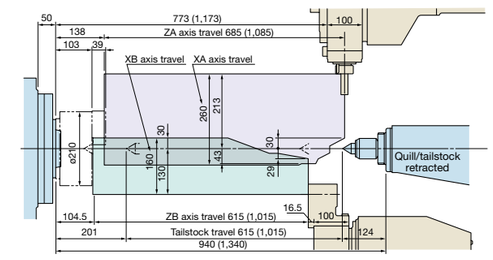
( ): Distance between centers 1,000.

Axial drill/mill unit



( ): Distance between centers 1,000.

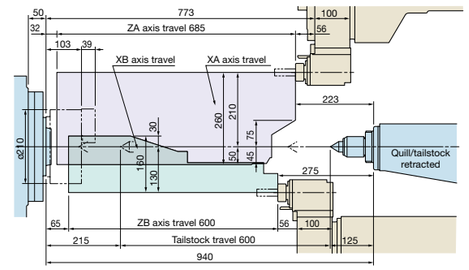
Radial drill/mill unit



( ): Distance between centers 1,000.

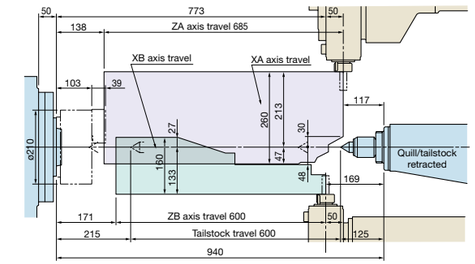
LU3000 EX (2M)

Axial drill/mill unit



( ): Distance between centers 1,000.

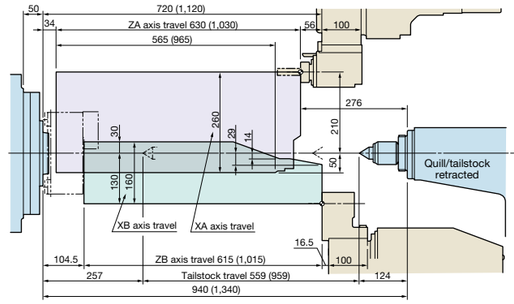
Radial drill/mill unit



( ): Distance between centers 1,000.

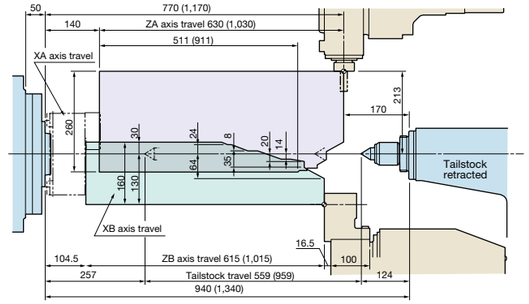
LU3000 EX (MY)

Axial drill/mill unit Y=0



( ): Distance between centers 950.

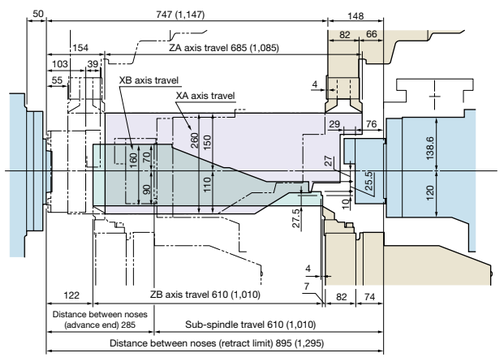
Radial drill/mill unit Y=0



( ): Distance between centers 950.

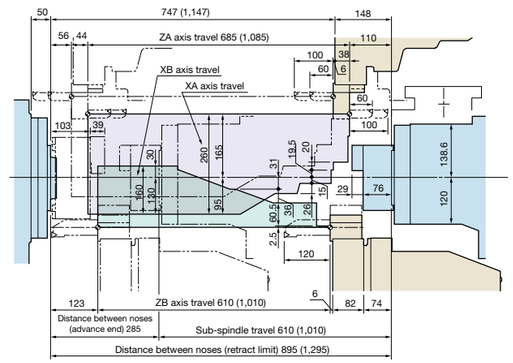
LU3000 EX (W)

OD Ⅲ-S



( ): Distance between centers 1,000.

ID Ⅲ-S



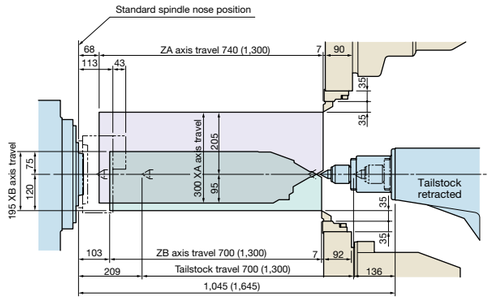
( ): Distance between centers 1,000.

〈LU4000 EX〉

Working Ranges

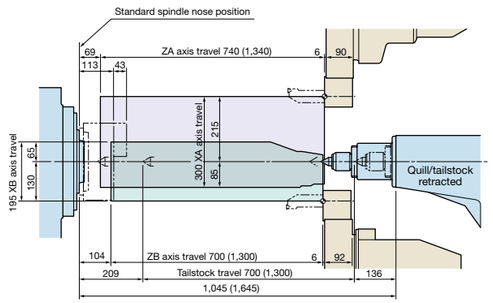
LU4000 EX (L)

OD-I



( ): Distance between centers 1,250.

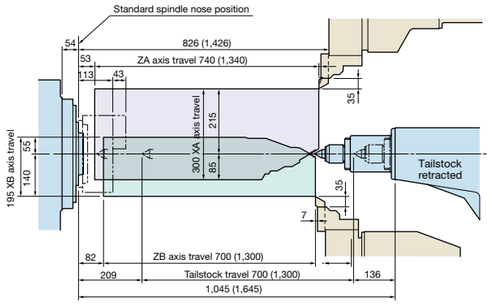
ID



( ): Distance between centers 1,250.

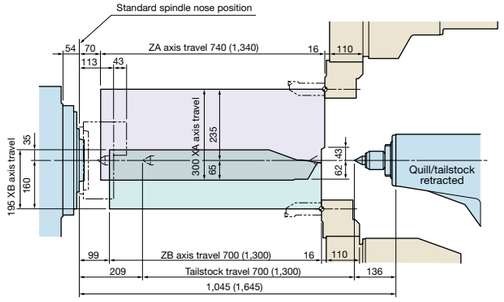
LU4000 EX (M)

OD-I



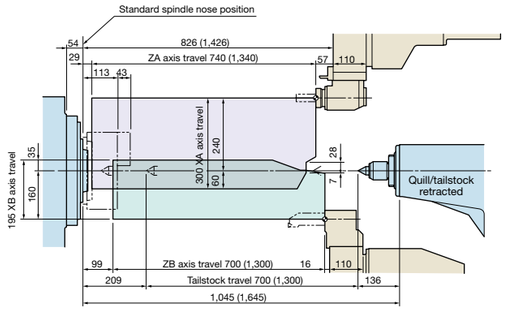
( ): Distance between centers 1,250.

ID



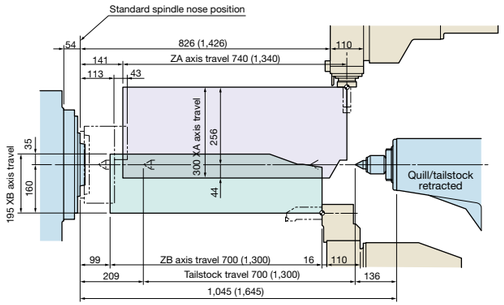
( ): Distance between centers 1,250.

Axial drill/mill unit



( ): Distance between centers 1,250.

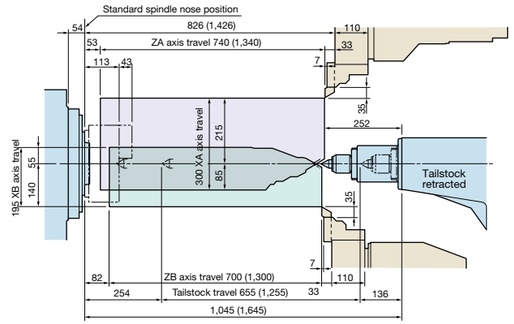
Radial drill/mill unit



( ): Distance between centers 1,250.

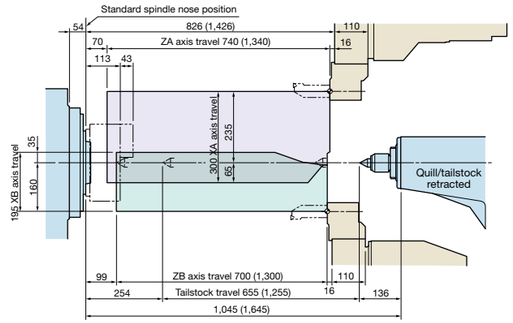
LU4000 EX (MY)

OD-I



( ): Distance between centers 1,250.

ID



( ): Distance between centers 1,250.

Axial drill/mill unit Y=0

( ): Distance between centers 1,250.

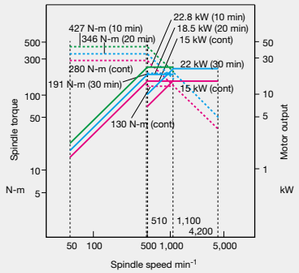
Radial drill/mill unit Y=0

( ): Distance between centers 1,250.

Spindle torque/output diagram 〈Optional〉

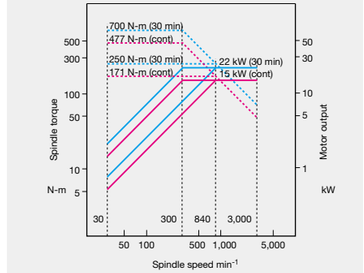
● **LU3000 EX Big-bore spindle** (optional)

Spindle speed 4,200 min^{-1}
Output VAC 22/15 kW (30 min/cont)
Torque 427/280 N-m (10 min/cont)



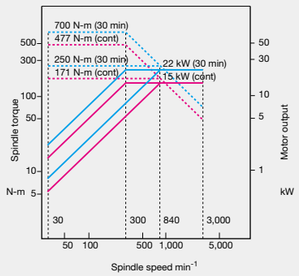
● **LU3000 EX Super big-bore spindle specs** (optional)

Spindle speed 3,000 min^{-1}
Output PREX 22/15 kW (30 min/cont)
Torque 700/477 N-m (30 min/cont)



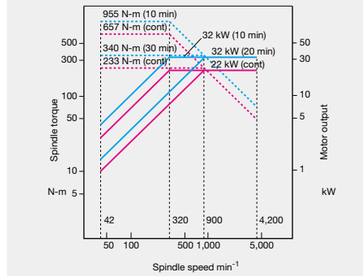
● **LU4000 EX Big-bore spindle** (optional)

Spindle speed 3,000 min^{-1}
Output PREX 22/15 kW (30 min/cont)
Torque 700/477 N-m (30 min/cont)



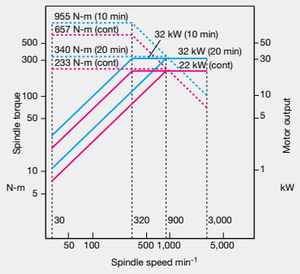
● **LU4000 EX Spindle and high power motor** (optional)

Spindle speed 4,200 min^{-1}
Output PREX 32/22 kW (20 min/cont)
Torque 955/657 N-m (10 min/cont)



● **LU4000 EX Big-bore spindle and high power motor specs** (optional)

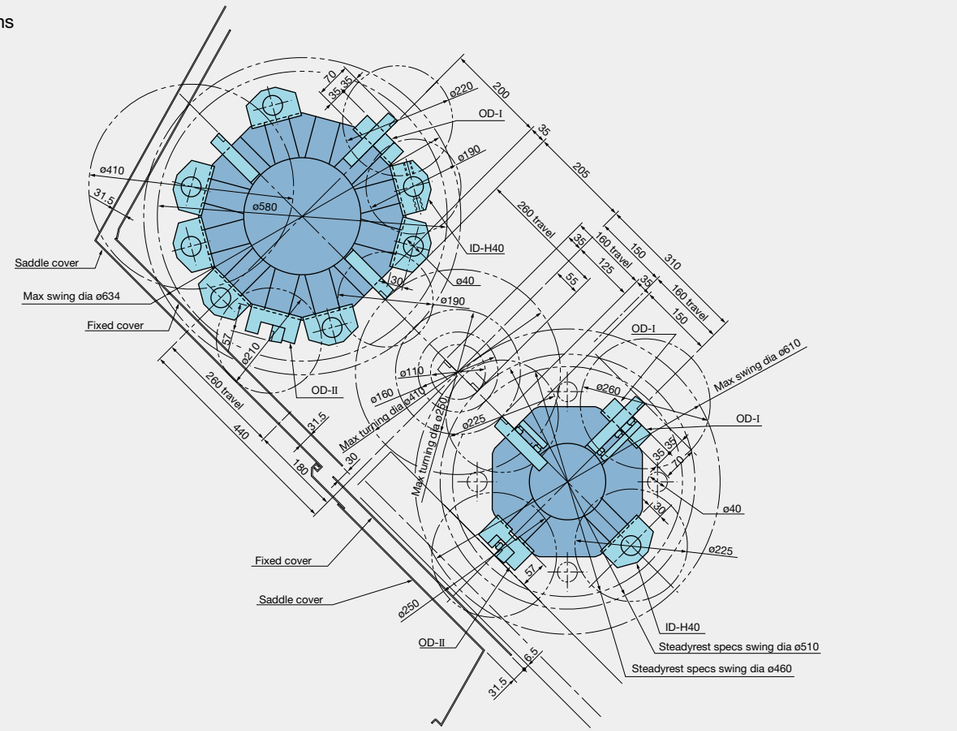
Spindle speed 3,000 min^{-1}
Output PREX 32/22 kW (20 min/cont)
Torque 955/657 N-m (10 min/cont)



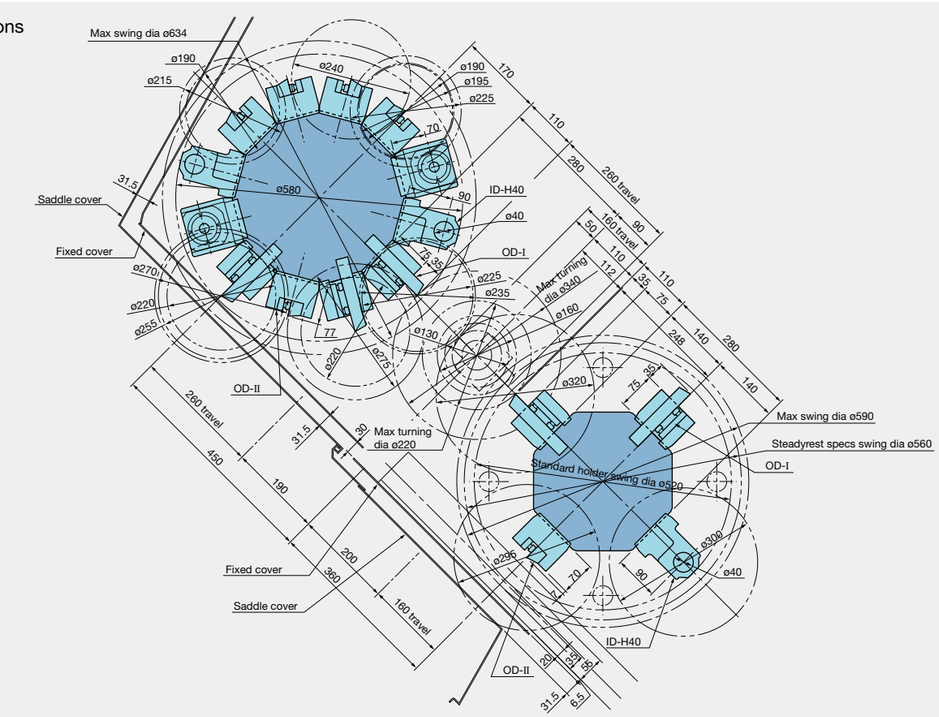
〈LU3000 EX〉

Turret interference diagrams

● L specifications



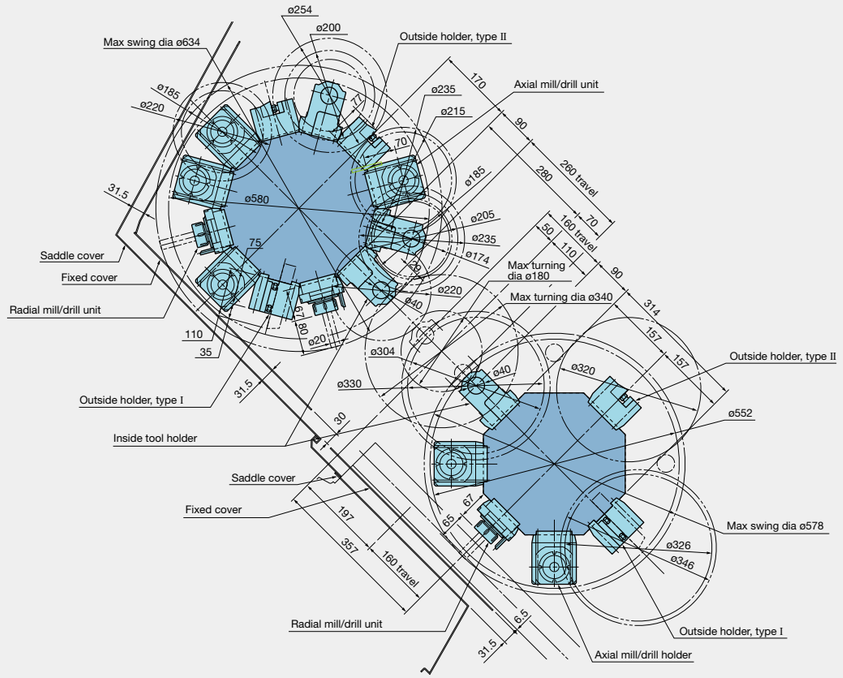
● M specifications



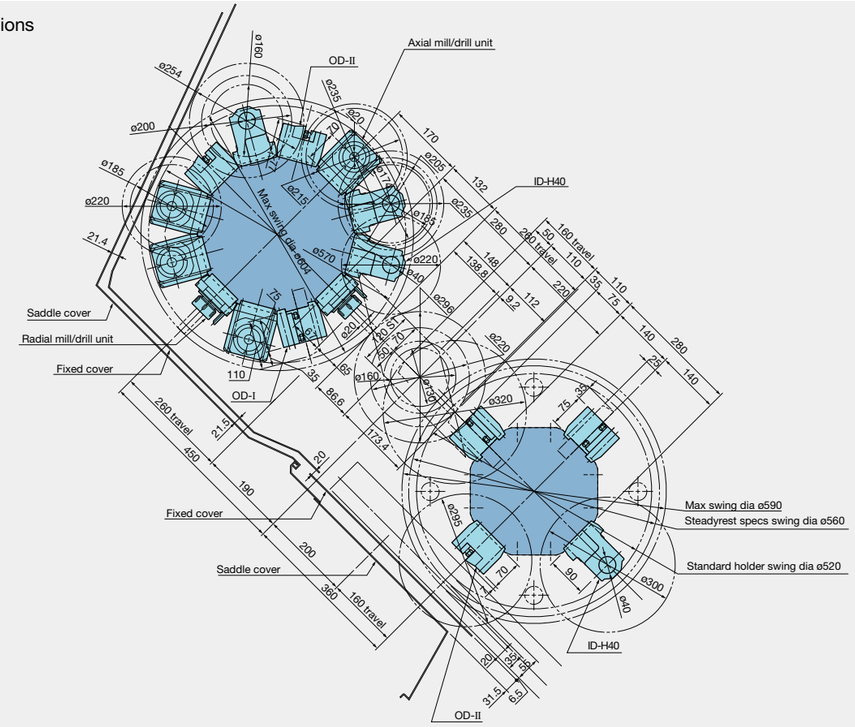
〈LU3000 EX〉

Turret interference diagrams

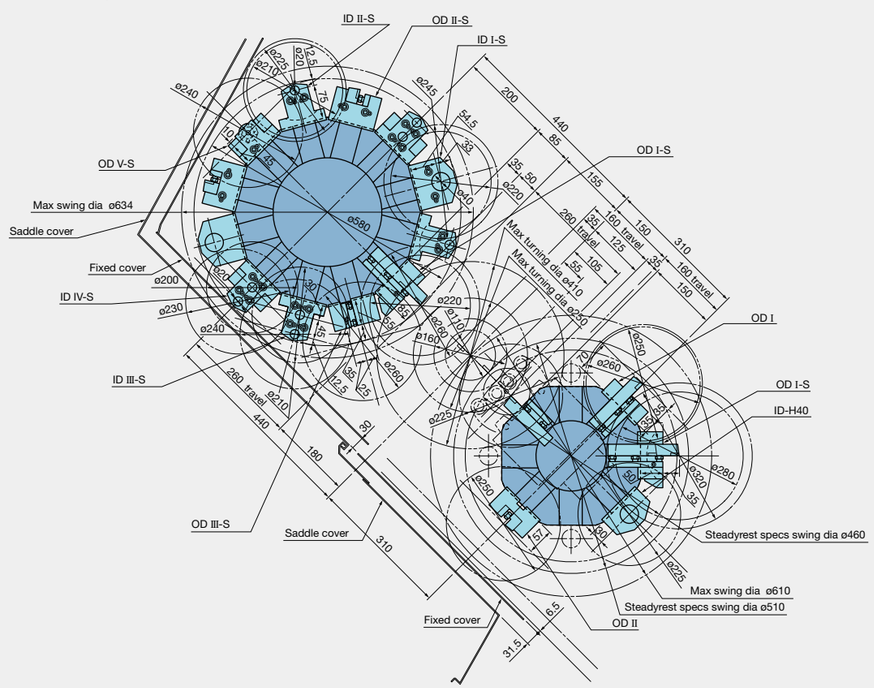
2M specifications



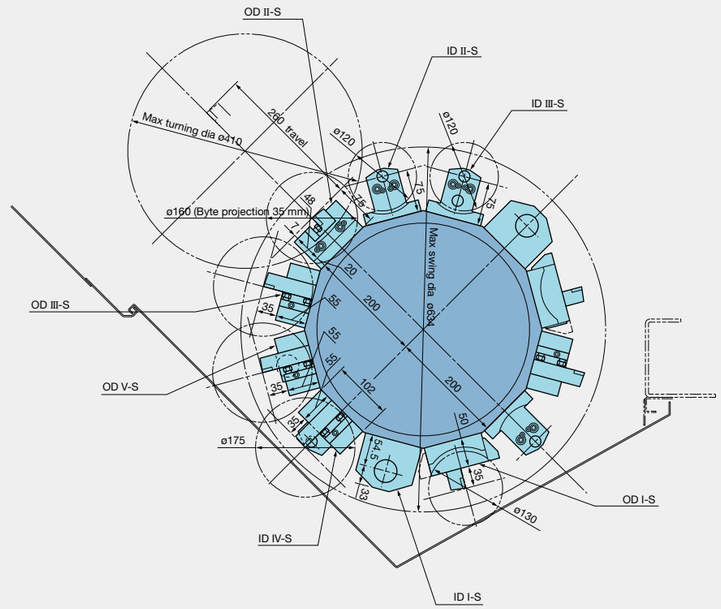
MY specifications



W specifications Main spindle



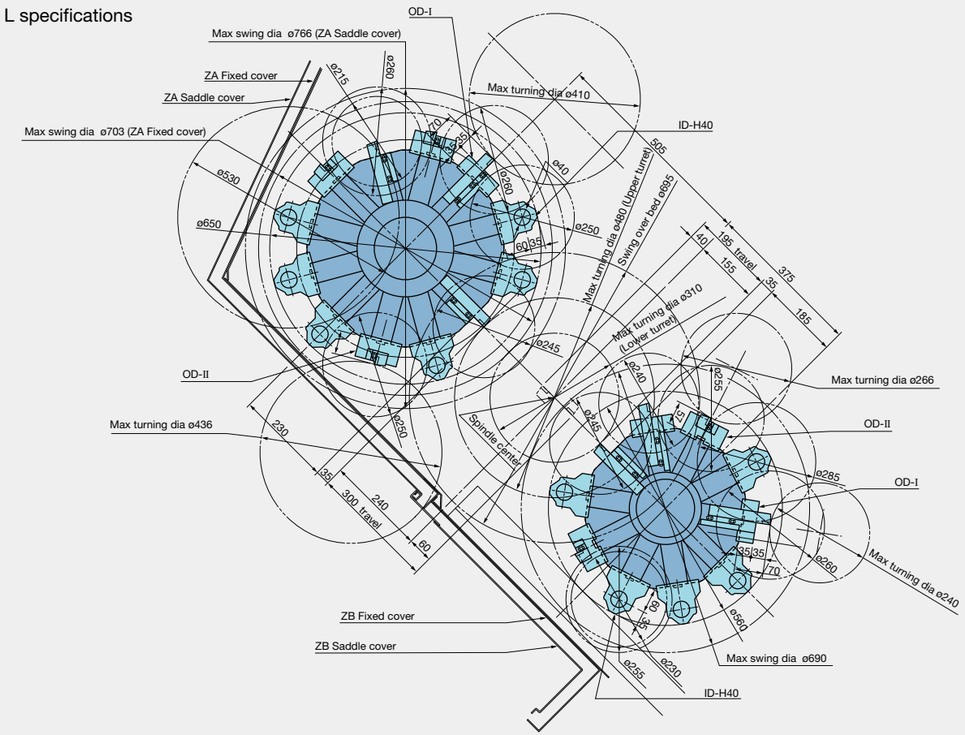
W specifications Sub-spindle



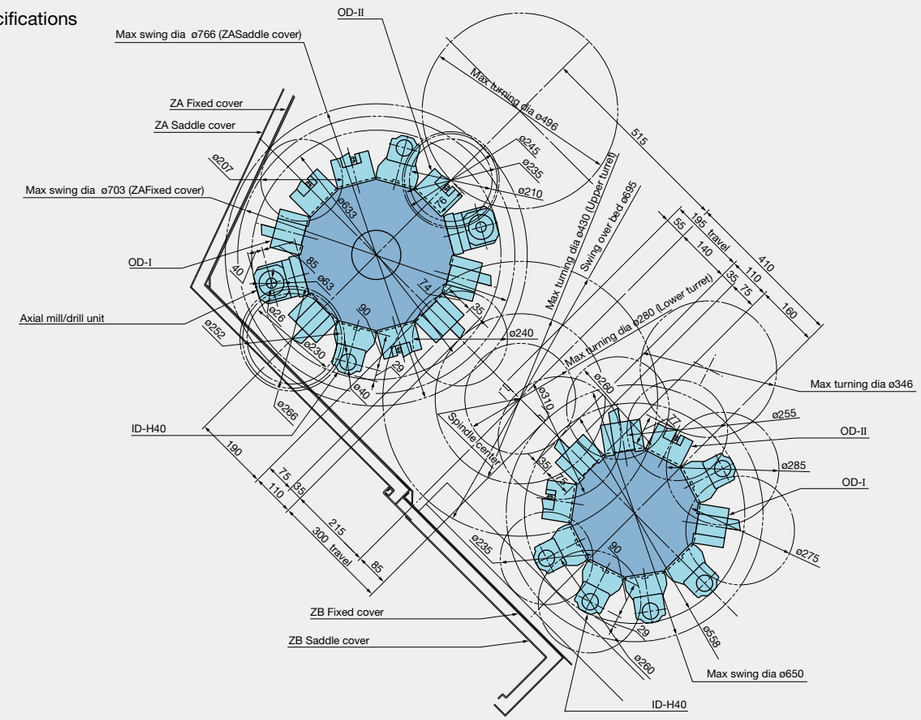
〈LU4000 EX〉

Turret interference diagrams

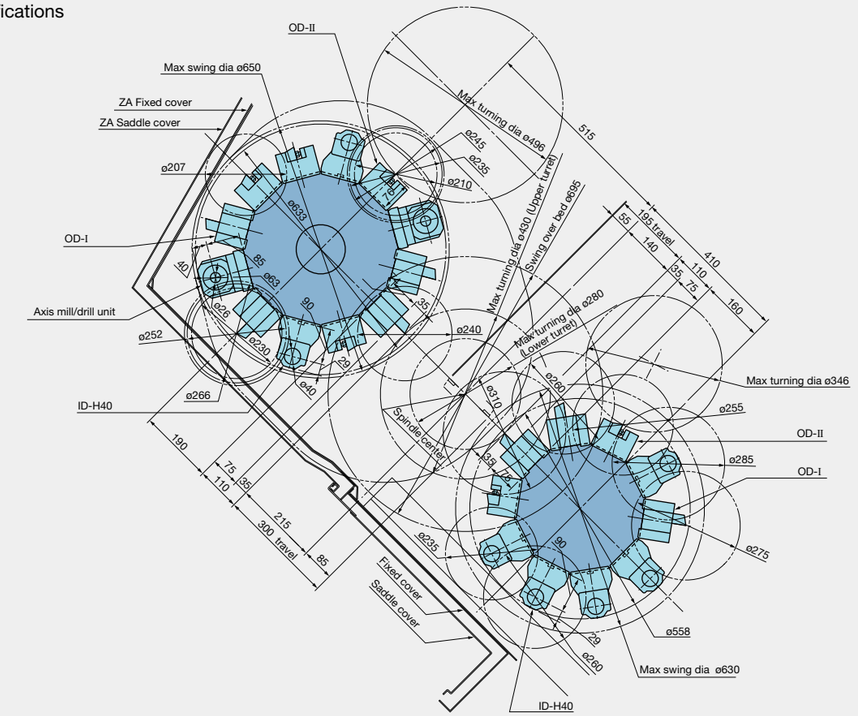
L specifications



M specifications

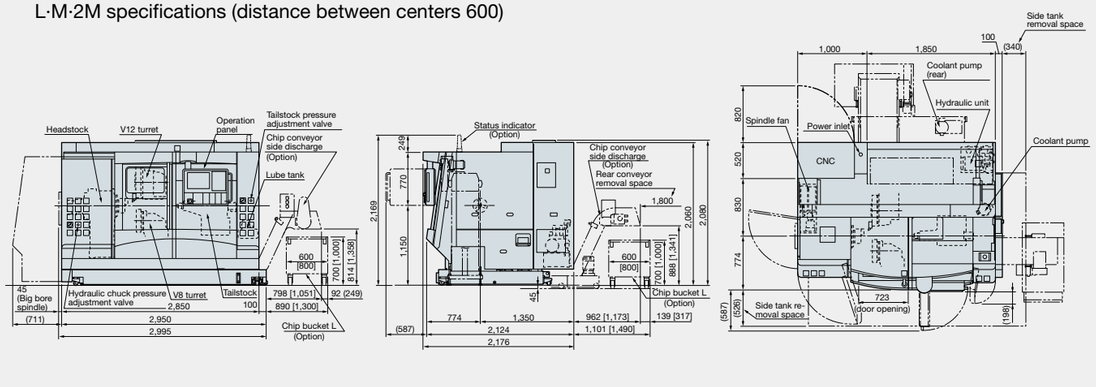


MY specifications



SIMUL TURN LU3000 EX
Dimensional / Installation Drawings

L·M·2M specifications (distance between centers 600)

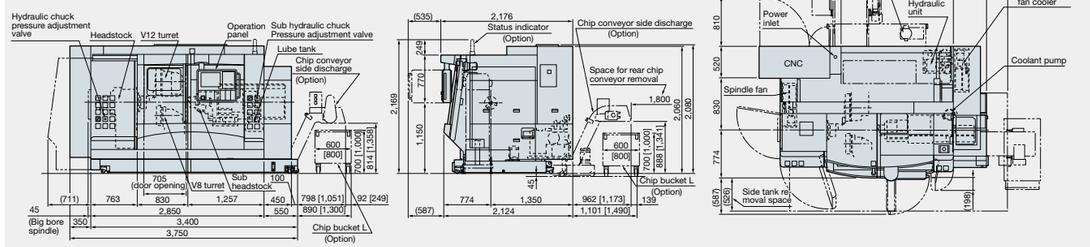


[ ]: H chip conveyor
*Raised machine height of 45 mm is standard for rear discharge.

L·M specifications (distance between centers 1,000)

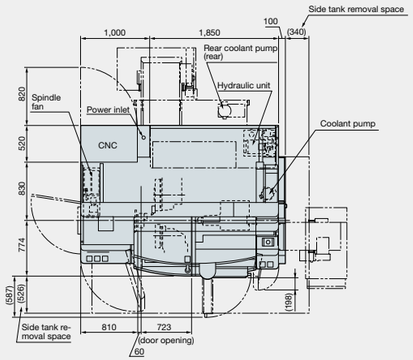
[ ]: H chip conveyor

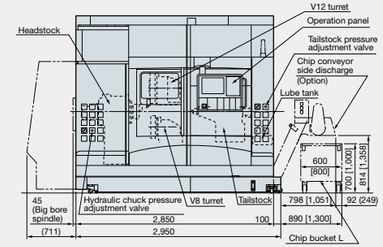
W specifications (distance between centers 600)

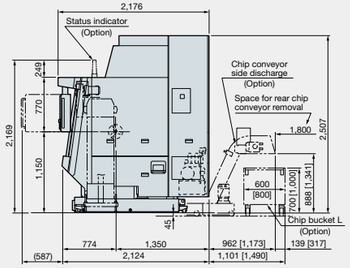


[ ]: H chip conveyor
*Raised machine height of 45 mm is standard for rear discharge.

MY specifications (distance between centers 550)

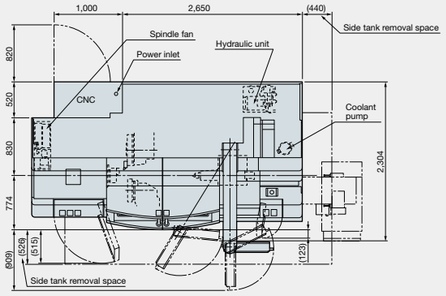




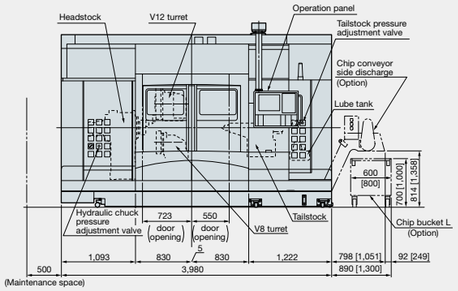


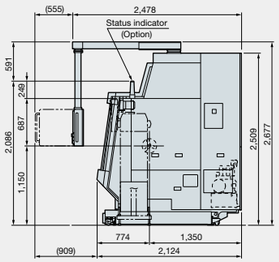
[ ]: H chip conveyor
*Raised machine height of 45 mm is standard for rear discharge.

MY specifications (distance between centers 950)



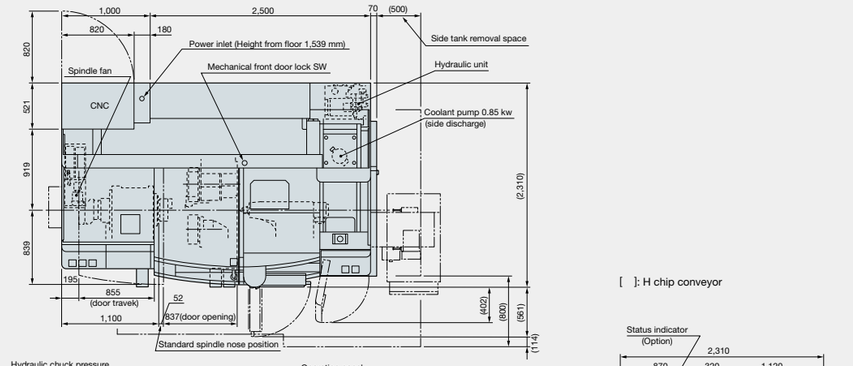
[ ]: H chip conveyor



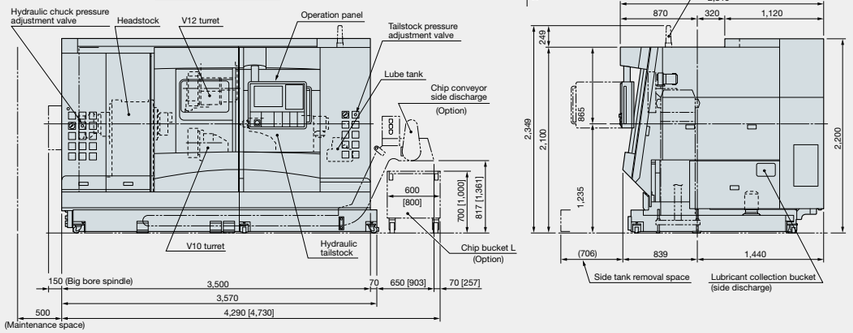


SIMUL TURN LU4000 EX
Dimensional / Installation Drawings

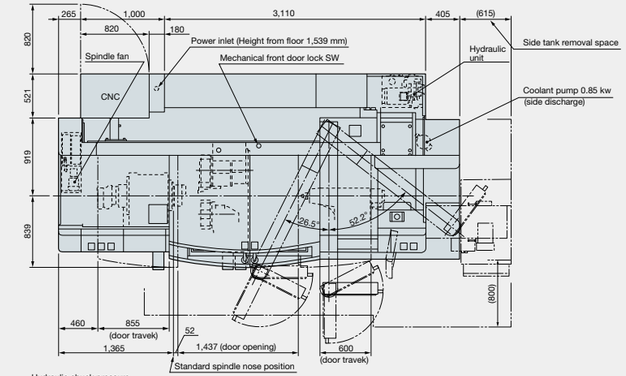
L·M specifications (distance between centers 650)



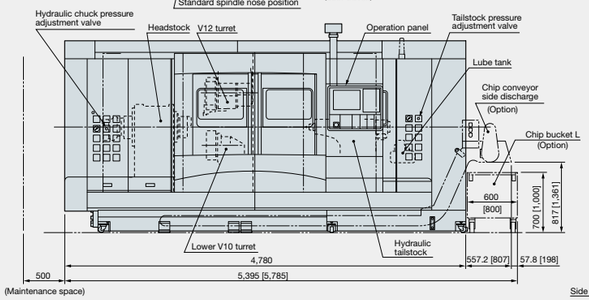
[ ]: H chip conveyor

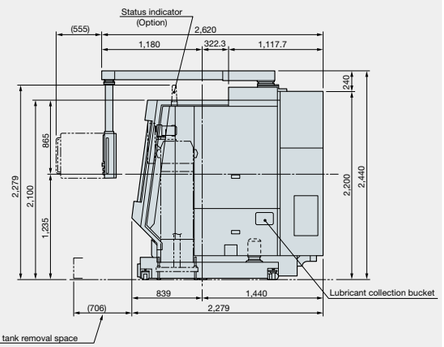


L·M specifications (distance between centers 1,250)

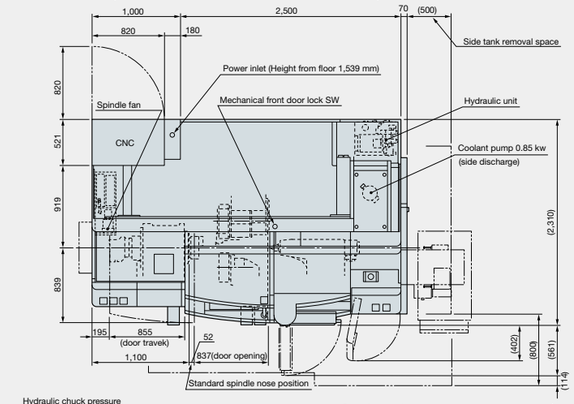


[ ]: H chip conveyor

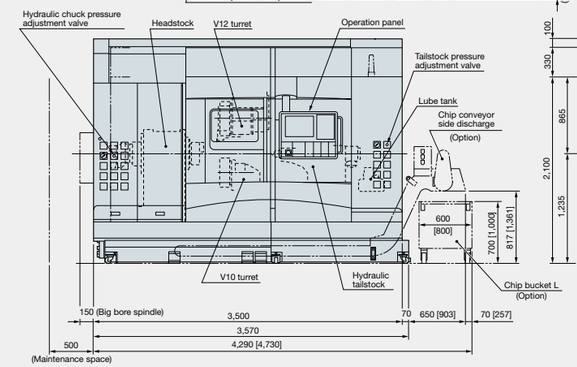


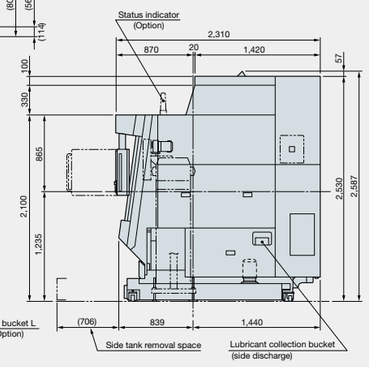


MY specifications (distance between centers 650)

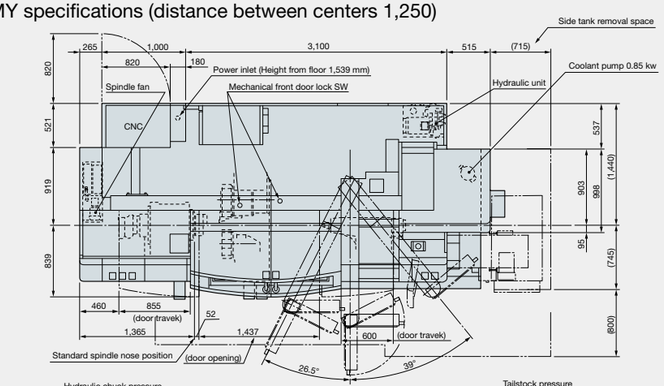


[ ]: H chip conveyor

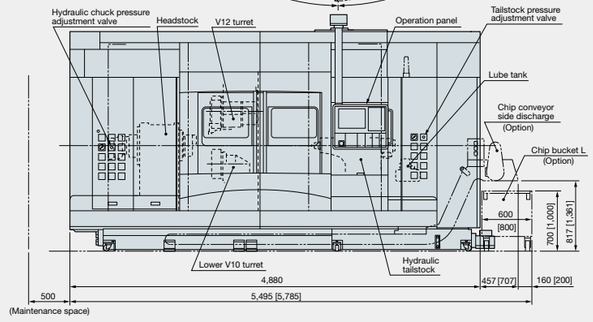


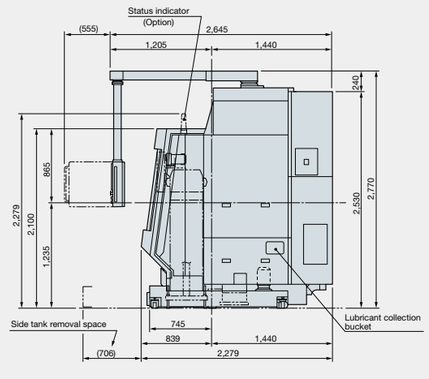


MY specifications (distance between centers 1,250)



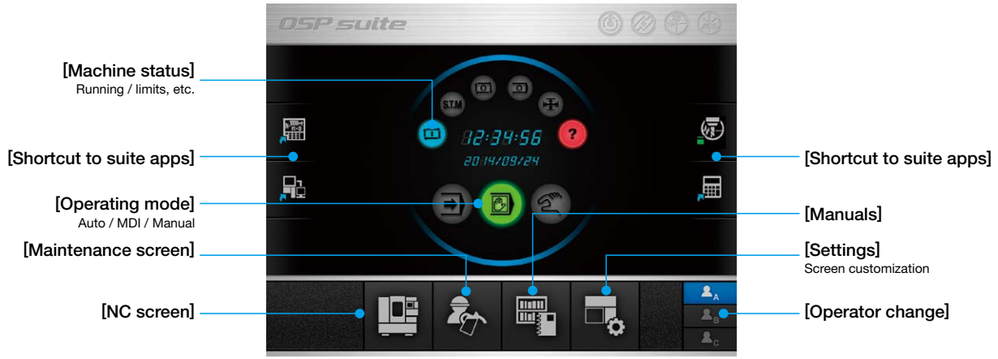
[ ]: H chip conveyor





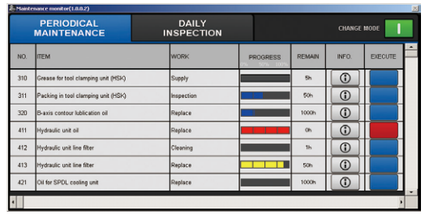
The Next-Generation Intelligent CNC OSP suite OSP-P300L

Increased status visibility and digitization of machining floor production instructions, setup information, machining and operational status, machine maintenance information and more.
Intelligent, fast machining and efficient “monozukuri” (craftsmanship-based manufacturing) achieved with a control interface that can be operated on a new dimension.



Suite apps

In addition to Okuma's Intelligent Technology, a rich array of applications is available for visualization and digitization of information needed on shop floors to support high-level “monozukuri”.



Maintenance Monitor that displays daily and regular check items

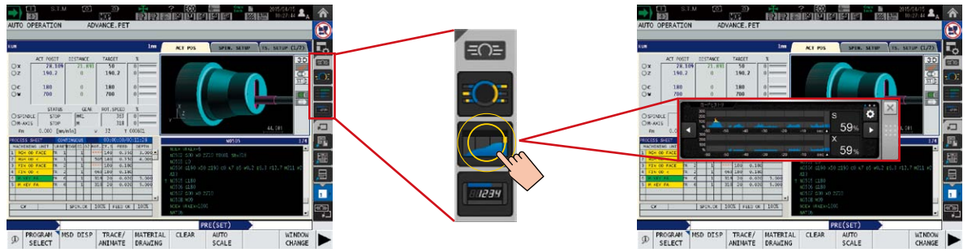
Actual Load

MacMan Monitor

Tool Data

Suite operation

A highly reliable touch panel suited to shop floors is used. Suite apps can be started by touching a function key icon on the right side of the screen. They are then displayed in a pop-up window. The icon layout is customizable. Suite apps can be accessed with one touch according to the desired phase of operation.



Standard Specifications

Basic Specs	Control	Turning: X, Z simultaneous 2-axis + 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, 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 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
	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
	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, 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, TAS-C (Thermal Active Stabilizer–Construction) (MY specifications only)
Energy-saving function	ECO suite	ECO Idling Stop, ECO Power Monitor

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 each								
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									
Y-axis gauging									
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 lotation								
High-Speed/High-Accuracy Functions									
0.1 µm control *3									
Pitch error compensation									
AbsoScale detection *3									
Hi-Cut Pro		▲	▲	▲	▲			●	●
Energy-saving function ECO suite									
ECO Operation									
Other Functions									
Collision Avoidance System (CAS)									
One-Touch Spreadsheet									
Machining Navi L-*g*									
Variable spindle speed control (VSSC)		●	●	●	●	●	●	●	●
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 is included
*3. Engineering discussions required.
Note. ▲Triangle items for M function (milling tool) machines only.

SIMUL TURN
LU EX series

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. SIMUL TURN LU3000/4000 EX-E-(2a)-400 (Aug 2015)

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