

1-Saddle CNC Lathes

GENOS L2000-e

GENOS L3000-e



GENOS L2000-e GENOS L3000-e



High quality, high performance

The GENOS lathe is designed for powerful, high precision machining, and since its launch in 2010, the GENOS series of machines have earned an outstanding reputation for quality and performance from customers around the world. The operator-friendly lathes feature solid guideways that handle vigorous cutting with ease and precision.

Okuma's GENOS series has evolved at the leading edge of "Monozukuri"* that seeks to balance high quality and low cost, contributing to improved productivity.

* Craftsmanship-based, sustainable manufacturing



GENOS L3000-e (M)



GENOS L3000-e (MY)

Users can select the best specifications for their work

Models with different distances between centers for turning and milling specifications are available. Users can select the best specifications for their workpiece length and shape.

	Spindle	Turret	Tailstock	DBC
GENOS L2000-e (L)	5,000 min ⁻¹ JIS A2-6 15/11 kW (20 min/cont)	V12 turret	MT No. 4 (DBC 290) MT No. 5 (DBC 500)	290, 500

	Spindle	Turret	Tailstock	DBC
GENOS L3000-e (L)	3,800 min ⁻¹ JIS A2-8 22/15 kW (20 min/cont)	V12 turret	MT No. 5 tailstock	500, 1,100
GENOS L3000-e (M)		V12 radial multitasking turret		450, 1,000
GENOS L3000-e (MY)				400, 1,000

Photos used in this brochure include optional equipment.



Powerful, easy to use and a compact design.

The GENOS L is specifically designed for customers who want high machining capacity, increased efficiency and maximum ease of use. It delivers precise machining and increased productivity, all in compact body.

Applicable workpieces



Meeting capacity and accuracy requirements with high productivity

An integral spindle is used for low spindle vibration to achieve high accuracy machining. Powerful cutting made possible by highly rigid machine structure that uses a box guideway system on X- and Z-axis. Fixturing work before machining can also be done easily with an NC tailstock.

Excellent user-friendliness allows operators to concentrate on the work

The machine design makes it easy to perform routine maintenance. A separate coolant tank is used to greatly reduce maintenance time and effort. Machine down time is reduced with little chip accumulation for machine cleanliness even during long, continuous operation in mass production.

Okuma's Intelligent Technology reduces operator burden

Thermo Active Stabilizer-Construction (TAS-C) is used to support dimensional stability on a high plane at cycle start and machining restart. With graphic visualization of machining status on Machining Navi (optional), anyone can use the machine and tools to their fullest without difficulty.

Machining dimensional change over time
 GENOS L3000-e actual data
 (ambient temperature: 8°C change)
 $\leq \varnothing 9 \mu\text{m}$

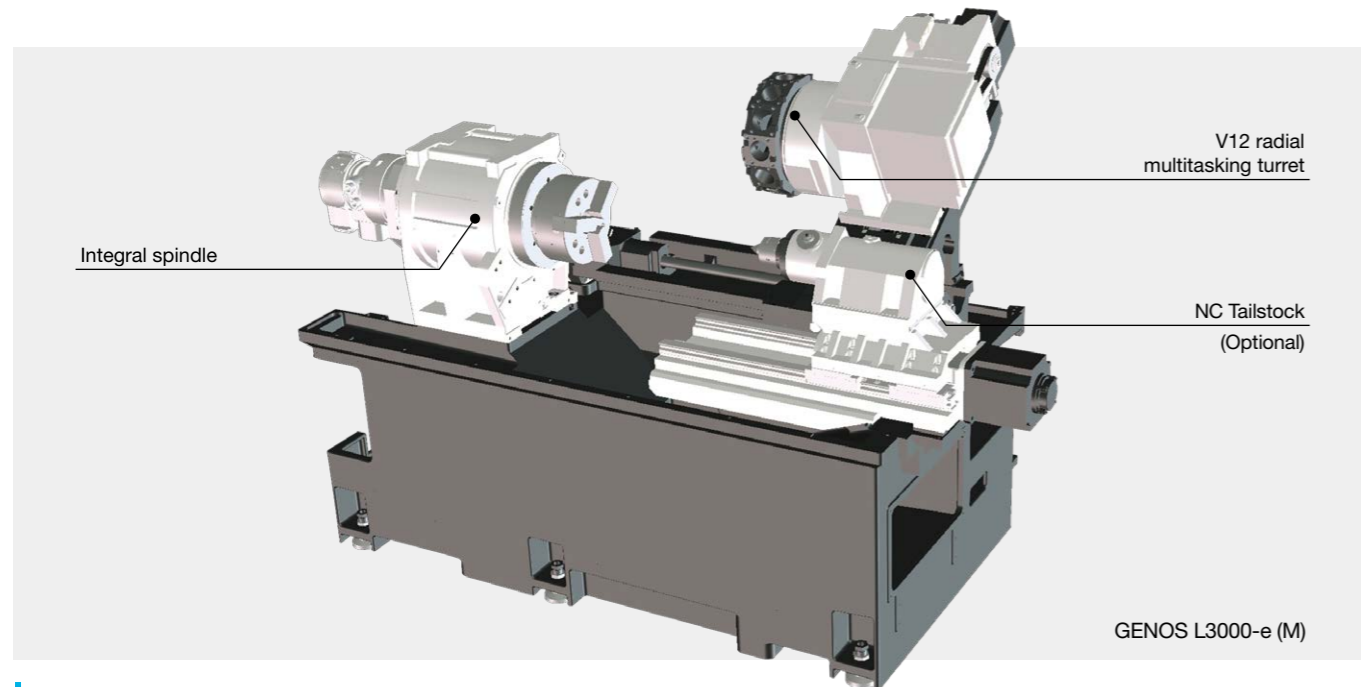
- Machine startup
- Machining Idle
- Room temp change

▶ **High dimensional stability**

Meeting capacity and accuracy requirements with high productivity

Achieve powerful, high-quality machining

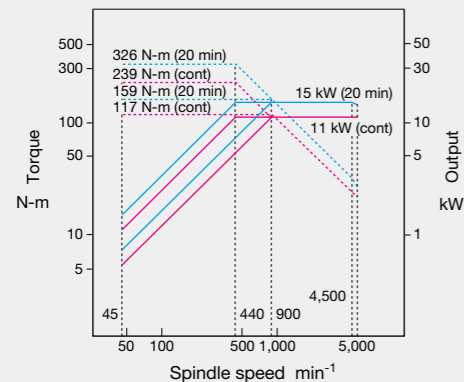
The integral spindle provides fast and high output with high machining capacity—at high quality. And Okuma's legendary slide guideways are highly rigid to handle powerful cutting loads that result in high productivity.



Integral spindle

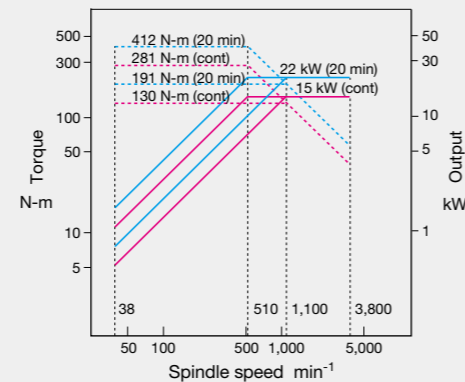
GENOS L2000-e

- Bearing inside diameter: $\phi 100$ mm
- Through-hole diameter: $\phi 62$ mm
- Spindle speed: 5,000 min^{-1}
- Power: 15/11 kW (20 min/cont)
- Torque: 326/239 N-m (20 min/cont)



GENOS L3000-e

- Bearing inside diameter: $\phi 120$ mm
- Through-hole diameter: $\phi 80$ mm
- Spindle speed: 3,800 min^{-1}
- Power: 22/15 kW (20 min/cont)
- Torque: 412/281 N-m (20 min/cont)



High accuracy milling

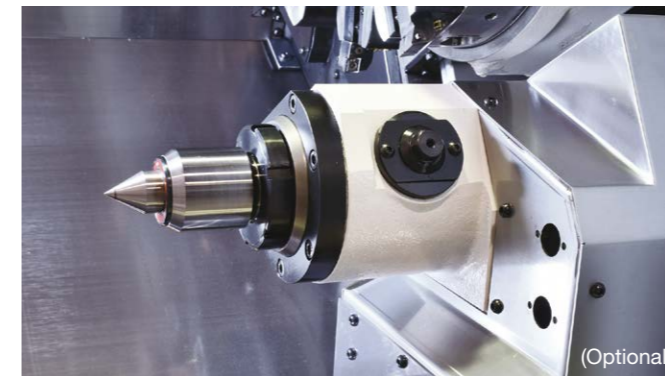
Milling tools can be attached to all locations on turrets with milling specifications. With a spindle indexing command of 0.001° , high accuracy milling can be done at any angle.



V12 radial multitasking turret

Simplified shaft work fixturing

Servomotor control NC tailstock (Optional) is used for the tailstock. Travel and thrust can be set with program commands, greatly increasing ease of use. Changeover is simplified, reducing set-up times.



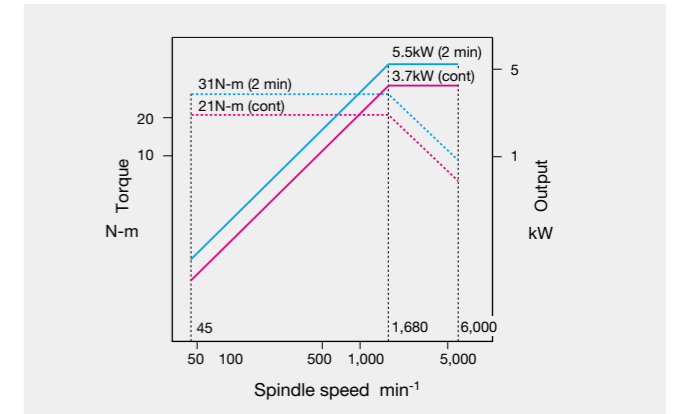
(Optional)

Milling tool spindle

GENOS L3000-e (M)

V12 radial multitasking turret

- Spindle speed: 6,000 min^{-1}
- Power: 5.5/3.7 kW (2 min/cont)
- Torque: 31 N-m



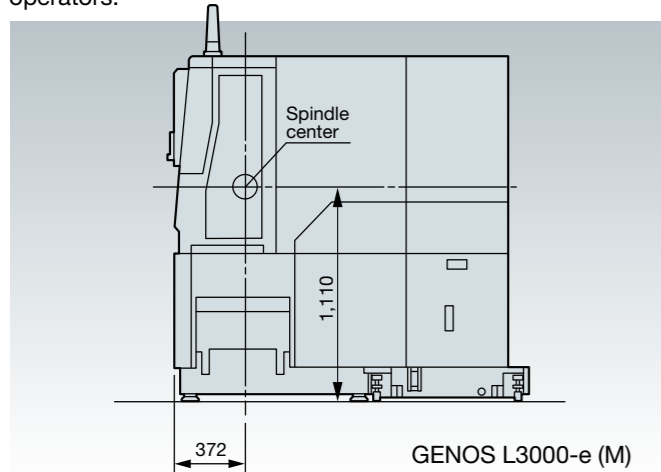
Tailstock specifications

	GENOS L2000-e	GENOS L3000-e
Tailstock thrust	1.0–2.0 kN	1.0–5.0 kN
Rapid traverse		12 m/min
Approach		10 m/min
Retract		12 m/min

Excellent user-friendliness allows operators to concentrate on the work

Machine designed for good accessibility

Spindle access is good with 372 mm from the machine front face to the spindle center, reducing the work burden of operators.



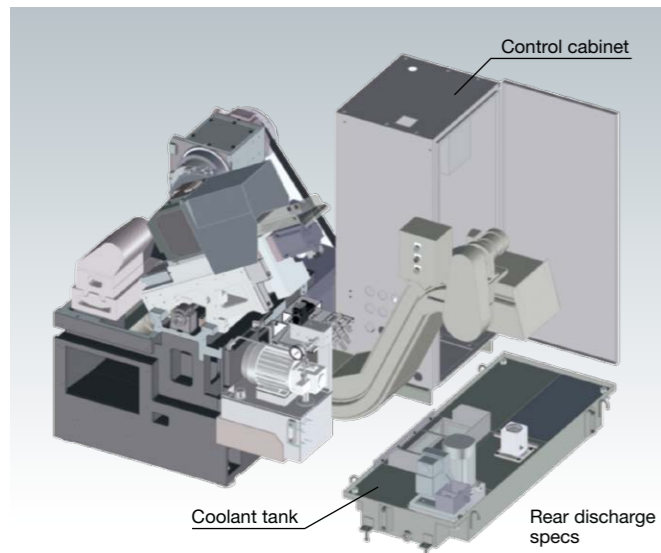
Outstanding chip discharge

The chip discharge outlet is 2 times larger than on previous machines, minimizing chip accumulation. The cleaning frequency is reduced for maximum operation time.



Simplified coolant tank maintenance

The coolant tank can be separated away from the machine for easier cleaning. The tank and the control cabinet share the same maintenance space to minimize the machine footprint.

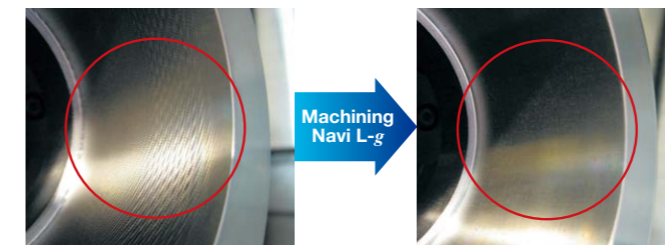
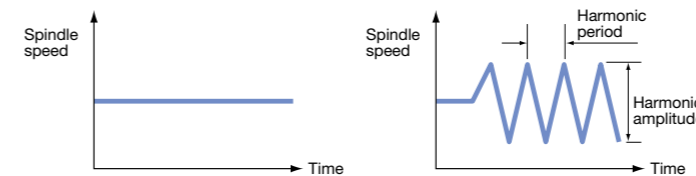


Okuma's Intelligent Technology reduces operator burden



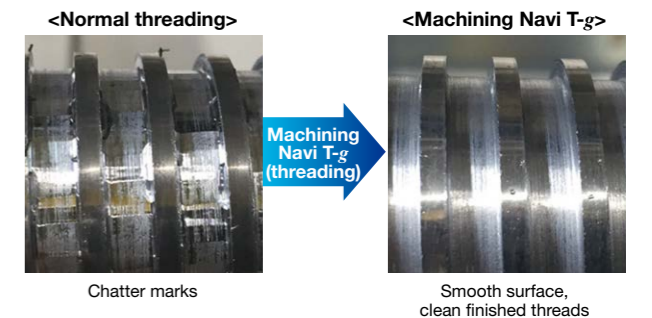
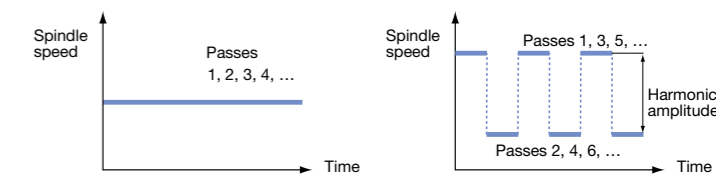
Cutting condition search function for turning **Machining Navi L-g** (guided, harmonic spindle speed control) (Optional)

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 (threading)** (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.



Next-Generation Energy-Saving System

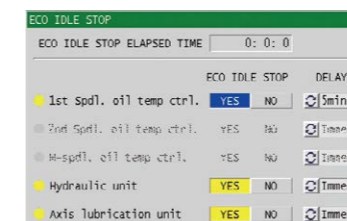
ECO suite

A suite of energy saving applications for machine tools

Operation only when needed **ECO Idling Stop**

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

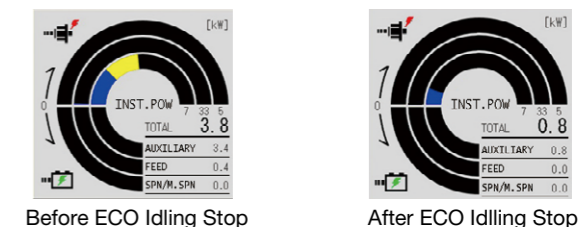
- Example of equipment that can use Idling Stop



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



The displayed values are one example.

Machine Specifications

Item	Model name	GENOS L2000-e (L)			
		T	C DBC 290	C DBC 500	
Capacity	Swing over bed	mm (in)	ø450 (17.72)		
	Swing over saddle	mm (in)	ø350 (13.78)		
	Max turning dia	mm (in)	ø230 (9.06)		
	Max work length	mm (in)	290 (11.42)	500 (19.69)	
Travels	X axis	mm (in)	165 (6.50)		
	Z axis	mm (in)	330 (12.99)	470 (18.50)	
	Y axis	mm (in)	-		
	C axis control angle	deg	-		
Spindle	Spindle speed	min ⁻¹	45 to 5,000		
	Speed ranges		2 auto ranges (2 range motor coil switching)		
	Spindle nose type		JIS A2-6		
	Spindle bore dia	mm (in)	ø62 (2.44)		
	Front bearing dia	mm (in)	ø100 (3.94)		
Turret	Type		V12		
	No. of tools	tool	12		
	OD tool shank	in	1 square		
	ID tool shank dia	in	ø1-1/4		
	Turret indexing time	sec/index	0.3/1 index		
Milling tool	Spindle speed	min ⁻¹	-		
	Speed range		-		
Feed rates	Rapid traverse	m/min (fpm)	X : 25 (82.03), Z : 30 (98.43)		
	Rapid traverse (tailstock)	m/min (fpm)	-	12 (39.37)	
	Rapid traverse (C)	min ⁻¹	-		
Tailstock	Tapered bore type		-	MT No.4 (revolving center) MT No.5 (revolving center)	
	Tailstock travel	mm (in)	-	245 (9.65) 420 (16.54)	
Motors	Main spindle	kW (hp)	15/11 (20 min/cont) (20/15)		
	Milling tool spindle	kW (hp)	-		
	Axis drive (X)	kW (hp)	3.0 (4)		
	Axis drive (Z)	kW (hp)	3.0 (4)		
	Axis drive (Ys)	kW (hp)	-		
	Tailstock travel	kW (hp)	-	1.5 (2)	2.9 (3.9)
	Coolant motor (50/60 Hz)	kW (hp)	0.55 (3/4) / 0.75 (1)		
Machine size	Height	mm (in)	1,620 (63.78)		
	Floor space (tank included)	mm×mm (in)	1,702 × 1,843 (67.01 × 72.56)	2,015 × 1,843 (79.33 × 72.56) 2,600 × 1,832 (102.36 × 72.13)	
	Weight	kg (lb)	3,000 (6,600)	3,200 (7,040) 3,800 (8,360)	
CNC		OSP-P300LA-e			

GENOS L3000-e (L)			GENOS L3000-e (M)			GENOS L3000-e (MY)		
T	C DBC 500	C DBC 1,100	T	C DBC 450	C DBC 1,000	T	C DBC 400	C DBC 1,000
			ø520 (20.47)					
			ø400 (15.75)					
ø340 (13.39)			ø300 (11.81)			ø390 (15.35)		
500 (19.69)		1,100 (43.31)	380 (14.96)		980 (38.58)	350 (13.78)		950 (37.40)
			235 (9.25)					
520 (20.47)		1,144 (45.04)	460 (18.11)		1,050 (41.34)	450 (17.72)		1,074 (42.28)
			-			100 (3.94) (±50 (1.97))		
			-			360° (min. control angle 0.001°)		
			38 to 3,800					
			2 auto ranges (2 range motor coil switching)					
			JIS A2-8					
			ø80 (3.15)					
			ø120 (4.72)					
V12			Multitasking V12 radial					
12			L and M: 12					
			1 square					
			ø1-1/2					
0.3/1 index			0.1/1 index					
-			Radial: 45 to 6,000					
-			Infinitely variable					
			X: 25 (82.03), Z: 30 (98.43)			X: 25 (82.03), Z: 30 (98.43), Y: 10 (32.81)		
-		12 (39.37)	-		12 (39.37)	-		12 (39.37)
			200					
-		MT No.5 (revolving center)	-		MT No.5 (revolving center)	-		MT No.5 (revolving center)
-	400 (15.75)	980 (38.58)	-	400 (15.75)	980 (38.58)	-	400 (15.75)	980 (38.58)
			22/15 (20 min/cont) (30/20)					
			5.5/3.7 (2 min/cont) (7.5/5)					
			2.8 (3.7)					
			3.5 (4.7)			4.6 (6.1)		
-			-			3.5 (4.7)		
-		2.9 (3.9)	-		2.9 (3.9)	-		2.9 (3.9)
			0.55 (3/4) / 0.75 (1)					
1,791 (70.51)		2,057 (80.98)	1,791 (70.51)		2,057 (80.98)	2,242 (88.27)		2,489 (97.99)
2,280 × 1,870 (89.76 × 73.62)	2,545 × 1,870 (100.20 × 73.62)	3,560 × 2,453 (140.16 × 96.57)	2,280 × 1,870 (89.76 × 73.62)	2,545 × 1,870 (100.20 × 73.62)	3,560 × 2,453 (140.16 × 96.57)	Under review	2,545 × 1,991 (100.20 × 78.39)	3,560 × 2,574 (140.16 × 101.34)
4,700 (10,340)	5,000 (11,000)	6,600 (14,520)	4,700 (10,340)	5,000 (11,000)	6,950 (15,290)	Under review	5,190 (11,418)	8,700 (19,140)
			OSP-P300LA-e					

[]: Optional

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

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

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

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



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

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

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 programming without keying in code
Scheduled Program Editor

Monitoring operating status even when away from the machine
E-mail Notification

Standard Specifications

Name	Description
■ Features	
Axis control	X, Z simultaneous 2-axis running, X, Z, C simultaneous 3-axis multi-processing
Position feedback	Full range absolute position (zero point return not required)
Tape format	N4.G3, X+53, Z+53, I+53, K+53, F+53, S4, T6, M3
Programming	Auto ISO/EIA code recognition, absolute, incremental or both
Min command units	X-axis: 1m(dia) Z-axis: 1m C-axis: 0.001°
Max command units	8-digit decimal, ±99999.999 mm
Programmable units	Freely selectable: 1 μm, 10 μm, 1 mm
Decimal point data	1 μm, 10 μm, 1 mm increments
Feedrates feed	Feedrates are listed in the machine specs; override: 0~200%, dwell: 0.01~99999.99 sec.
Tooling	Tool selection: 8/12 sets, tool offset(compensation): 32 sets, max compensation value: 99999.999 mm Auto tool compensation: calculated from manually input wear and tear measurement values
Spindle VAC motor operation	Direct spindle speed commands (S4), fixed cutting speed Spindle speed override (50~200%), optimum turning speed designation
M-spindle motor operation (multi-machining)	Direct motor speed input
Display	15" Color display panel, multi-touch panel.
Manual operation	Spindle (inching, CW, CCW), tool rotation, pulse handle, X/Z-axis manual feed
Multitasking	Program writing, editing during work
Self-diagnostics	Automatic diagnostics and display of program, operation, machine and NC system problems
Door interlock	Safety function to interlock machine movement when the door is opened or closed
NC torque limiter	Instant detection of machine collision to reduce machine damage
Hi-G control	Calculates of the speed control and torque properties of a motor for high-speed, high-stability positioning
Thermal deformation prevention	Extremely accurate deformation control
Energy-saving function	ECO suite ECO Idling Stop, ECO Power Monitor
Other	Buffer resistor, zero offset, tool interference, software limit, chuck barrier, turret barrier, droop control, single block machine lock, block delete, optional stop, dry-run, stroke end-limit cancel, etc.

■ Operation	
suite apps	Applications to graphically visualize and digitize information needed on the shop floor
suite operation	Highly reliable touch panel suited to shop floors. One-touch access to suite apps.
Easy Operation	“Single-mode operation” to complete a series of operations
OSP-Win 7	Featuring easy-to-manipulate screen windows, Pop-up function displays, Quick closing windows.
Sequence number search	Cursor advances to a specified sequence number in the selected program
Sequence restart	Restart from an interrupted sequence
Manual interrupt/auto return	Manual operation during automatic operation; return to interrupt point
Threading slide hold	Slide hold during threading (optional for G34/G35 non-fixed cycles)
Programming	Two programs can be edited simultaneously on one screen.
Memory operation*	Tapeless operation: Program storage capacity: 4 GB, Operation backup capacity: 2 MB
Useful help	Alarm help, G/M-code help, variable help, operation help, diagram display
PLC monitor	Display of PLC ladder drawings and PLC data

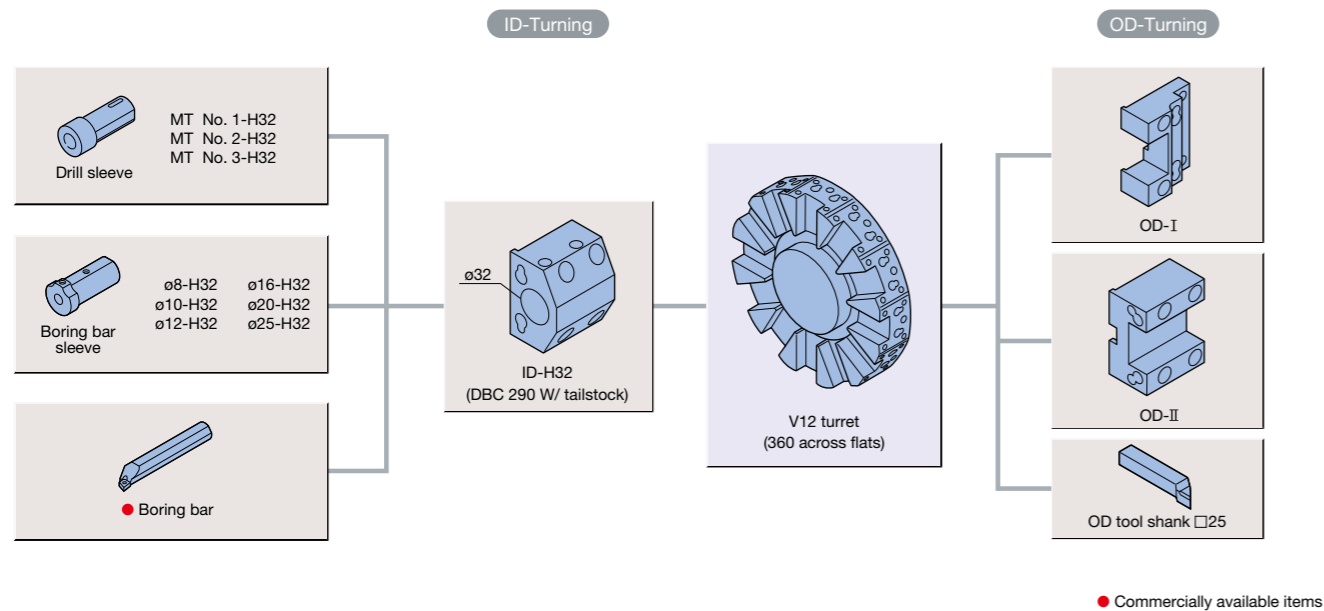
■ Output Management Function	
Display	Finished work list, operation results and alarm records
External output	Output above items to a USB port.

■ Programming Function	
Nose R compensation	Auto compensation for nose R dimension errors including arbitrary shapes and arcs
Arc radius designation	Circular interpolation by ordering the radius L and end points X and Z
Arbitrary angle chamfering	Simple programming of arbitrary angle chamfers (C, R)
Taper angle designation	Taper interpolation by designating either the X or Z-axis and the starting point angle
mm/min (ipm) programming	Both mm/rev and mm/min feedrate units are possible
Program schedule	Non-stop operation possible by setting the sequence order of several work programs
Zero offsets via G-codes	Program zero point offsets are possible
Threading	Thread lead: 0.001 to 1000.000 mm; possible to set the threading lead pitch Chamfering on/off, fix cycle threading, non-fixed threading cycle (the thread lead indicates the CNC limit value, the max thread lead differs per machine specification)
Custom fixed cycle	Threading cycle, grooving cycle, drilling cycle
Fixed drilling cycle (multi-machining)	Drill, deep-hole drilling, boring
User task 1	GOTO, IF statements, arithmetic, common variable, local variable, system operation variables
Program notes	Comments can be added to programs

Tooling System

Unit: mm

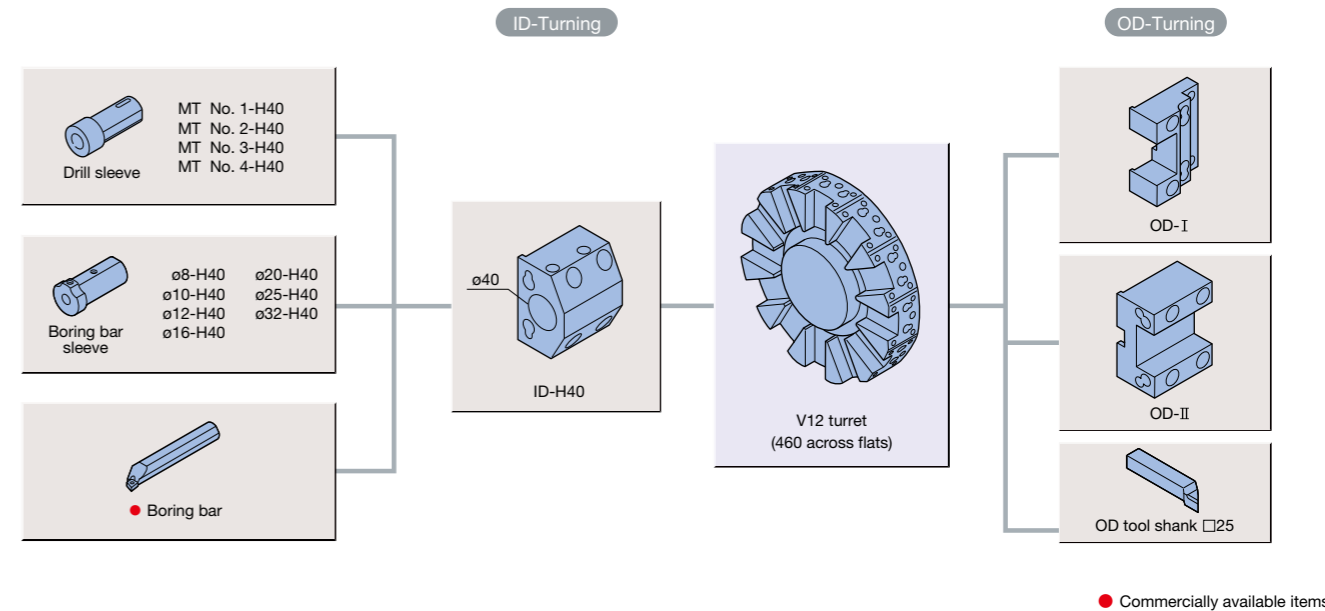
GENOS L2000-e (L)



Tooling System

Unit: mm

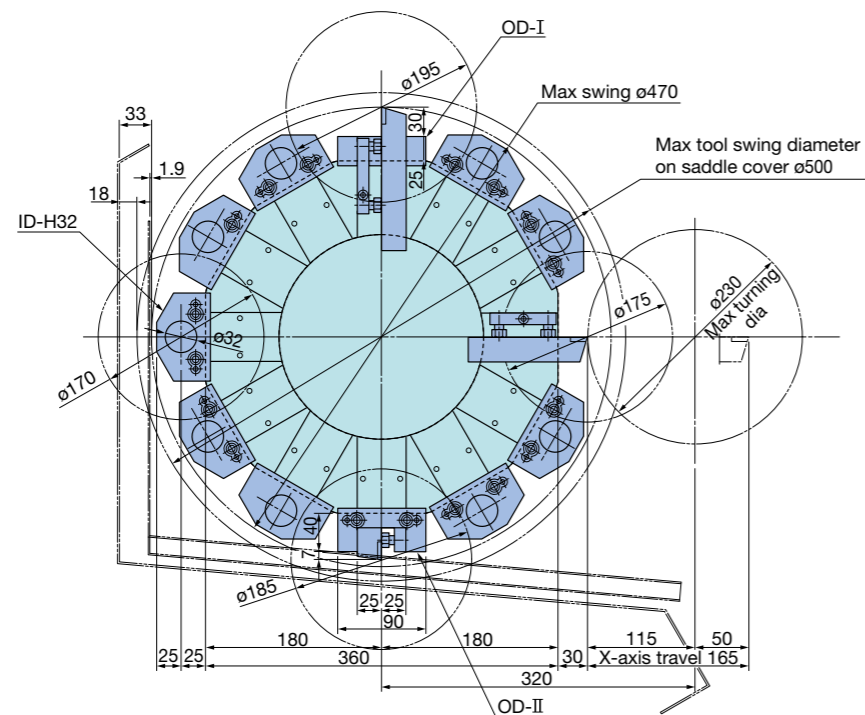
GENOS L3000-e (L)



Tool Interference Drawings

Unit: mm

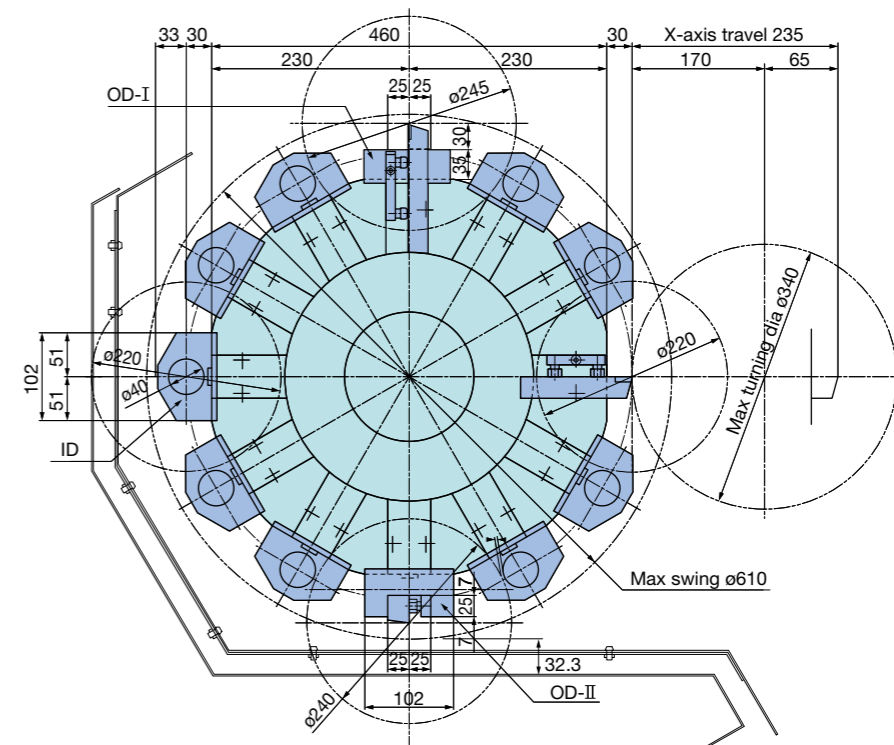
GENOS L2000-e (L) V12 turret



Tool Interference Drawings

Unit: mm

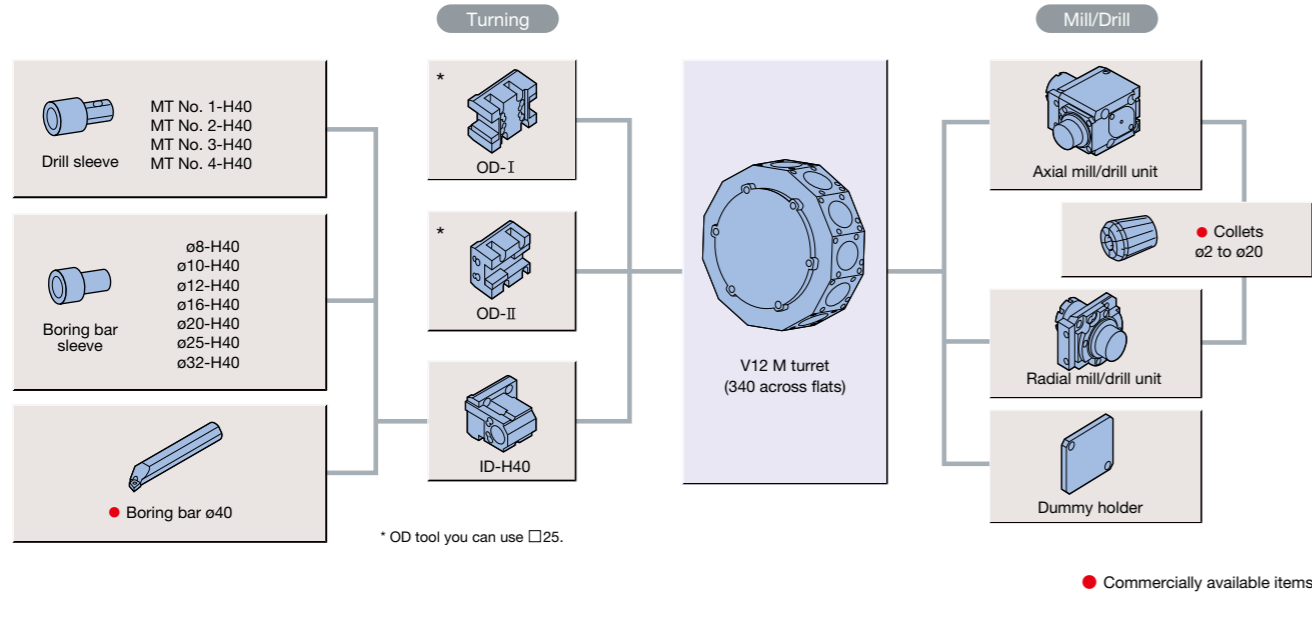
GENOS L3000-e (L) V12 turret



Tooling System

Unit: mm

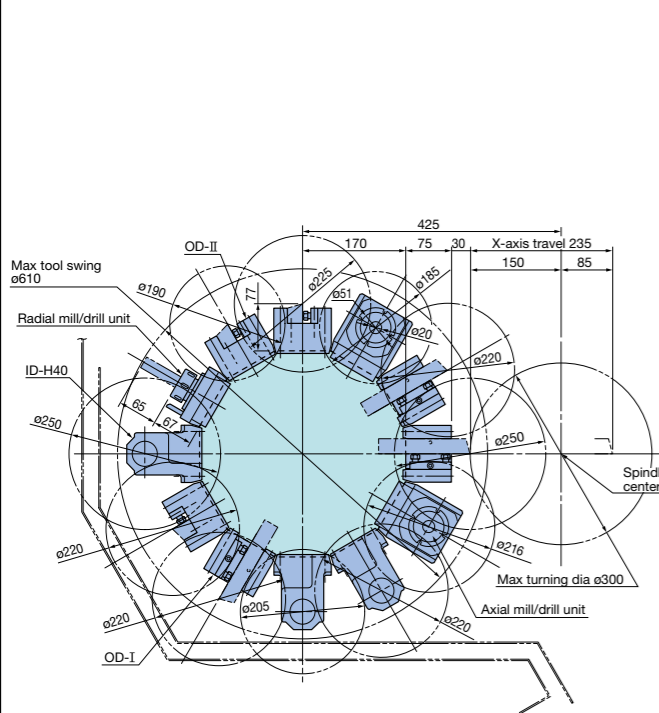
GENOS L3000-e (M, MY) V12 radial multitasking turret



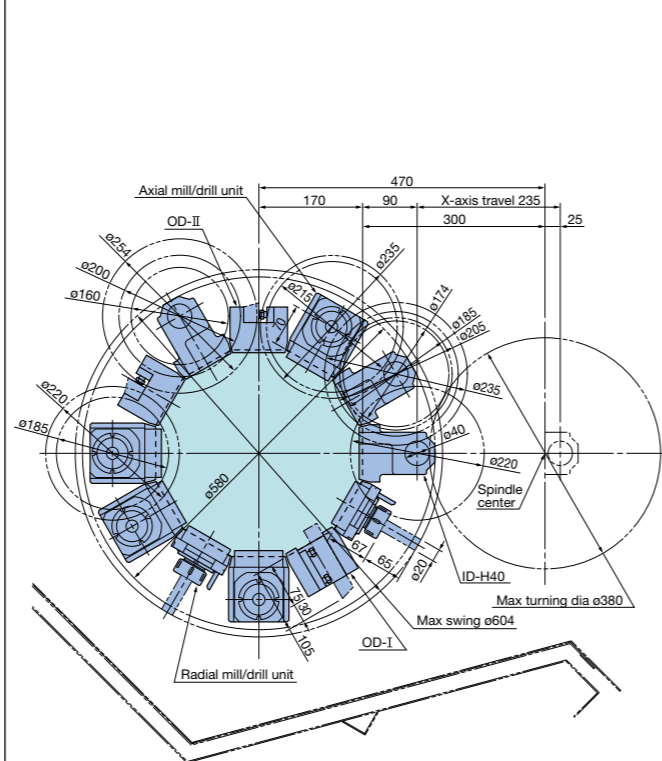
Tool Interference Drawings

Unit: mm

GENOS L3000-e (M) V12 radial multitasking turret



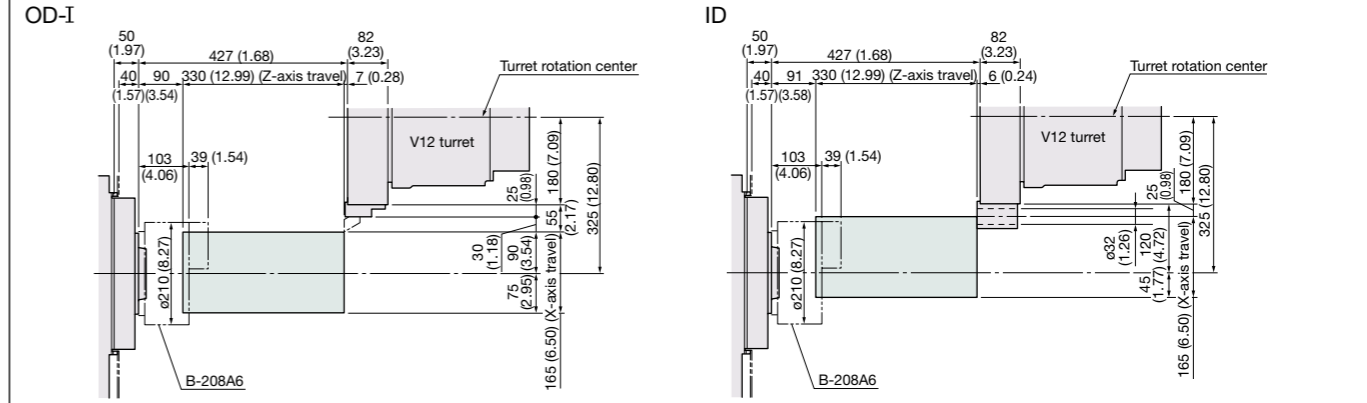
GENOS L3000-e (MY) V12 radial multitasking turret



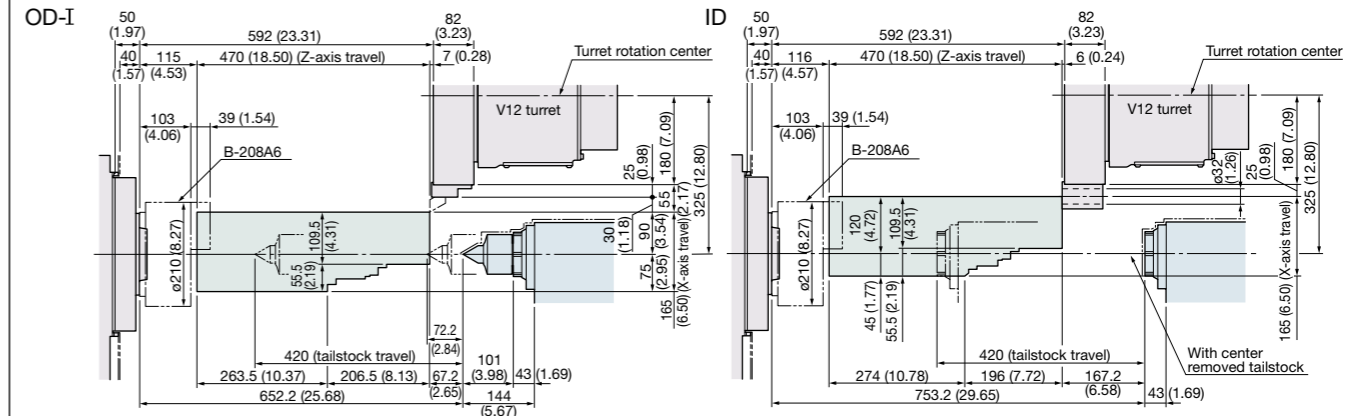
Working Ranges

Unit: mm (in)

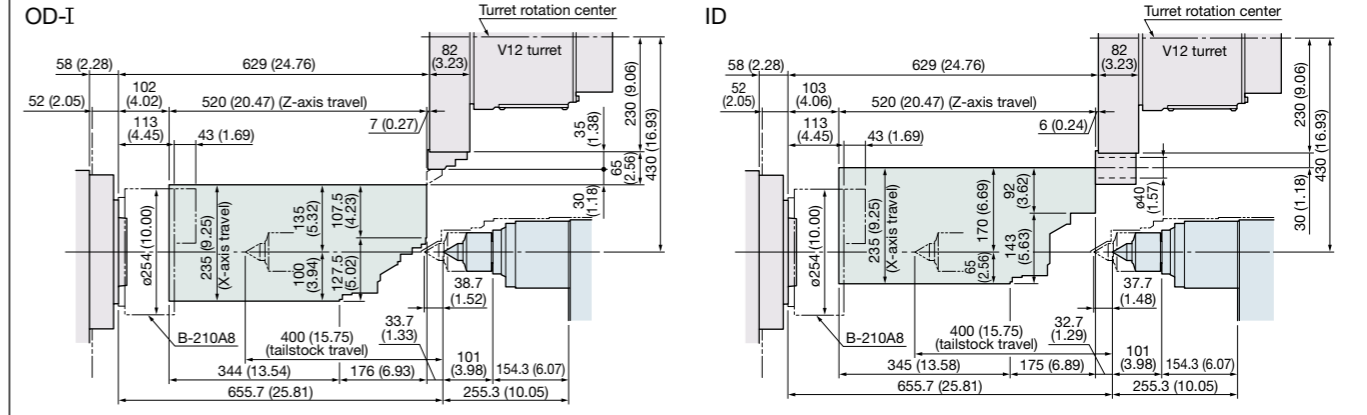
GENOS L2000-e (L) DBC 290 V12 turret



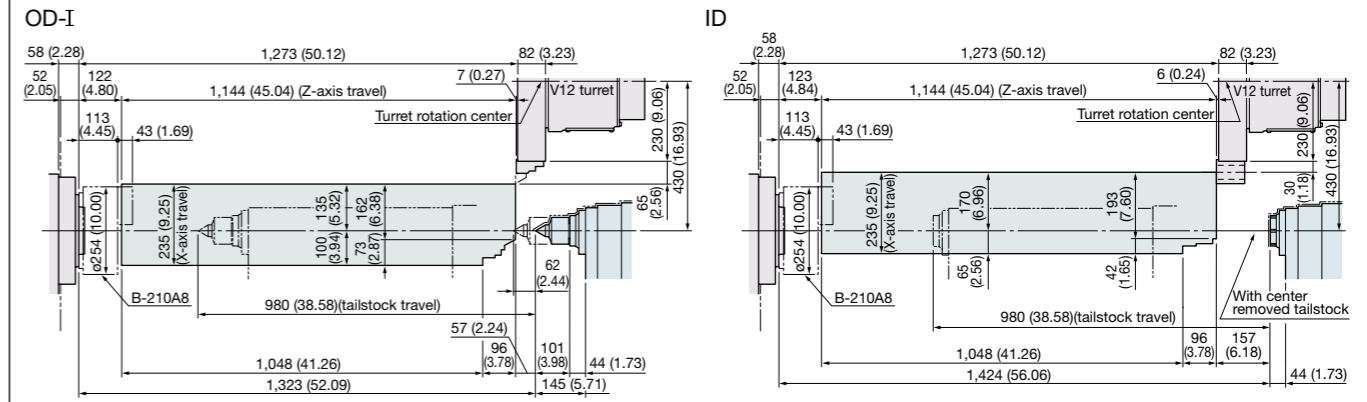
GENOS L2000-e (L) DBC 500 V12 turret W/ tailstock



GENOS L3000-e (L) DBC 500 V12 turret W/ tailstock



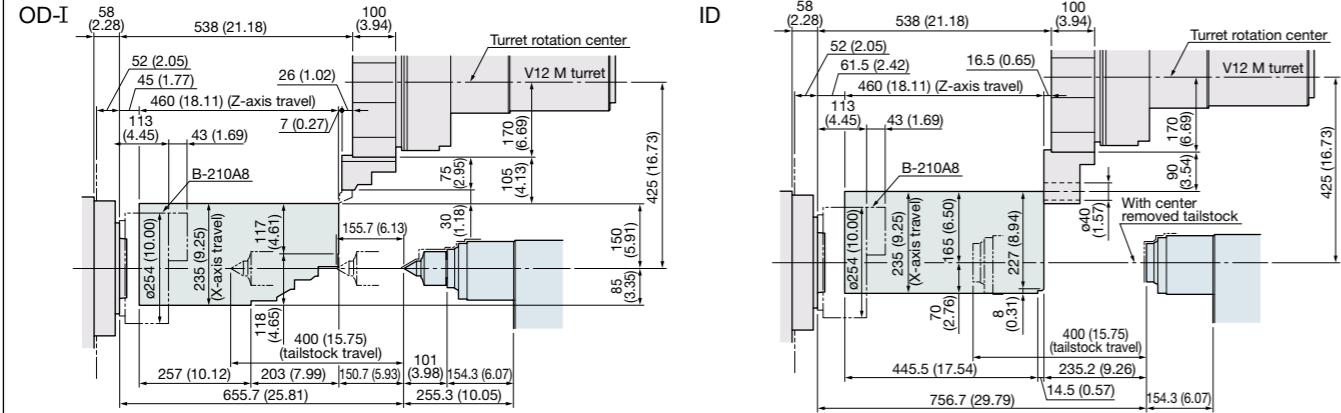
GENOS L3000-e (L) DBC 1100 V12 turret W/ tailstock



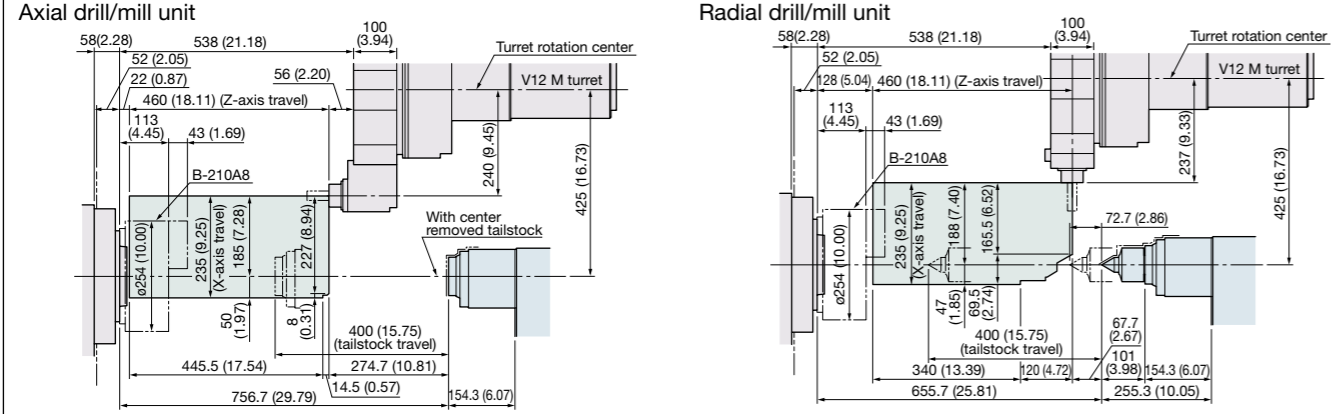
Working Ranges

Unit: mm (in)

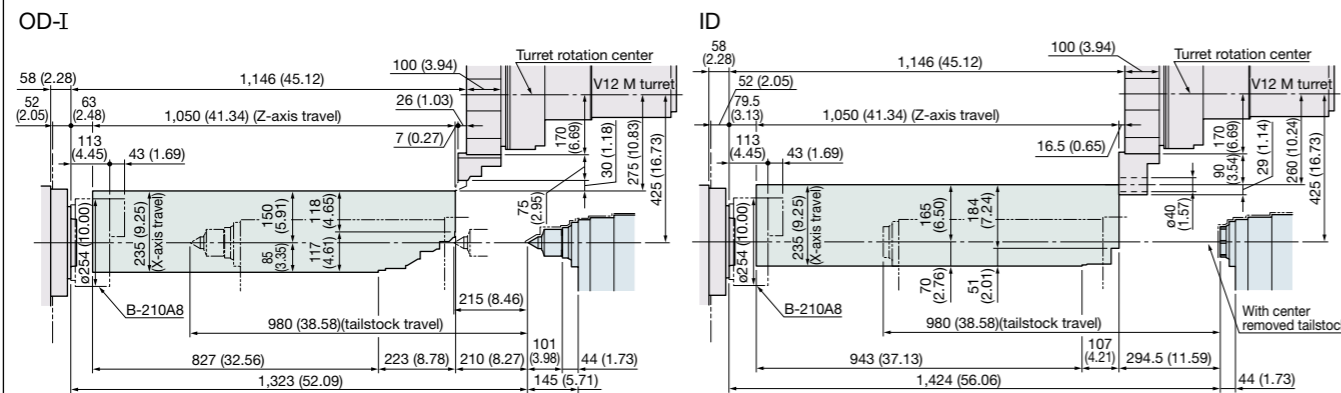
GENOS L3000-e (M) DBC 450 V12 radial multitasking turret W/ tailstock



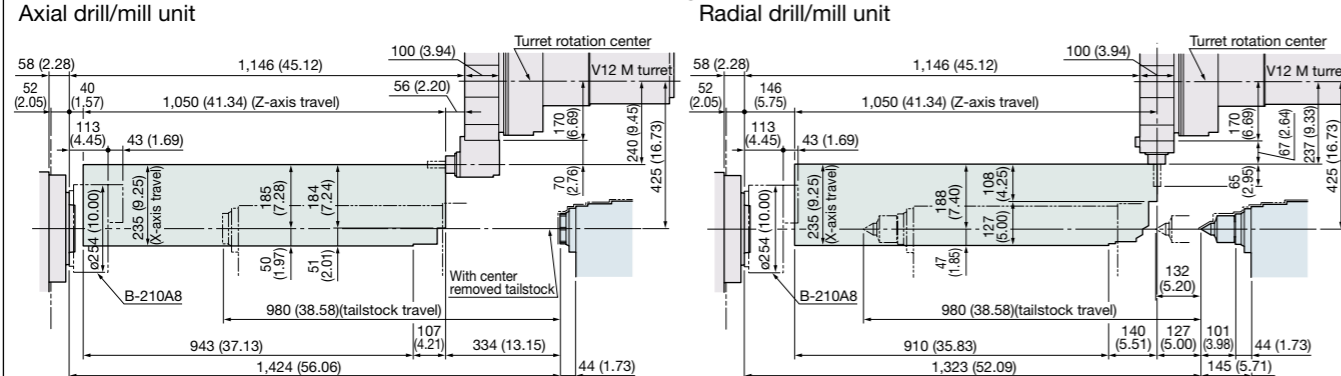
GENOS L3000-e (M) DBC 450 V12 radial multitasking turret W/ tailstock



GENOS L3000-e (M) DBC 1000 V12 radial multitasking turret W/ tailstock

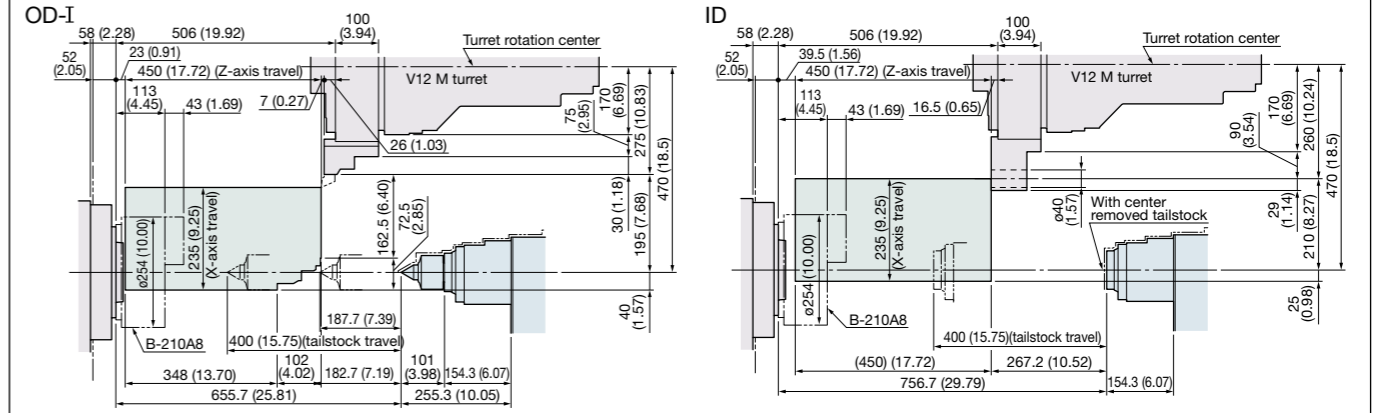


GENOS L3000-e (M) DBC 1000 V12 radial multitasking turret W/ tailstock

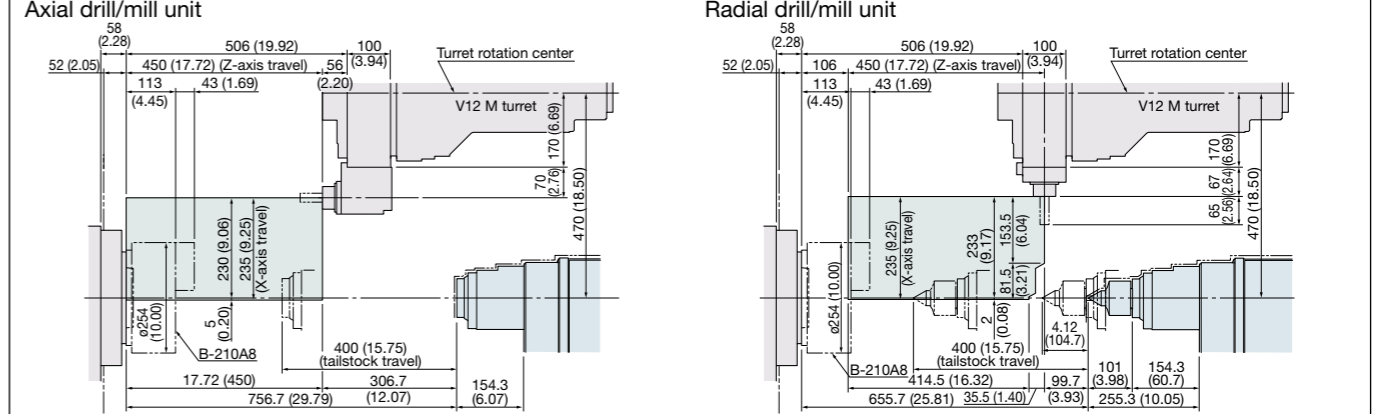


Unit: mm (in)

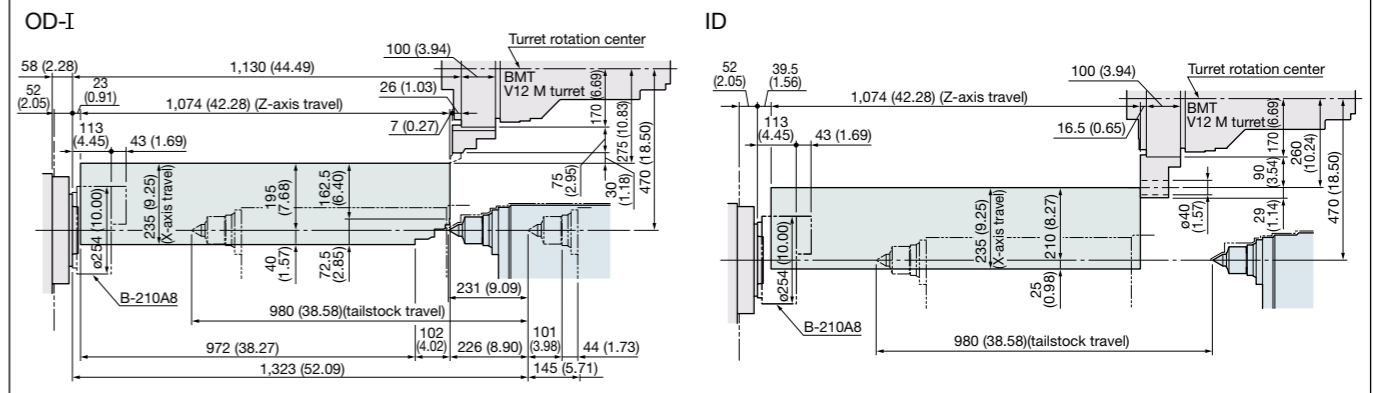
GENOS L3000-e (MY) DBC 400 V12 radial multitasking turret W/ tailstock



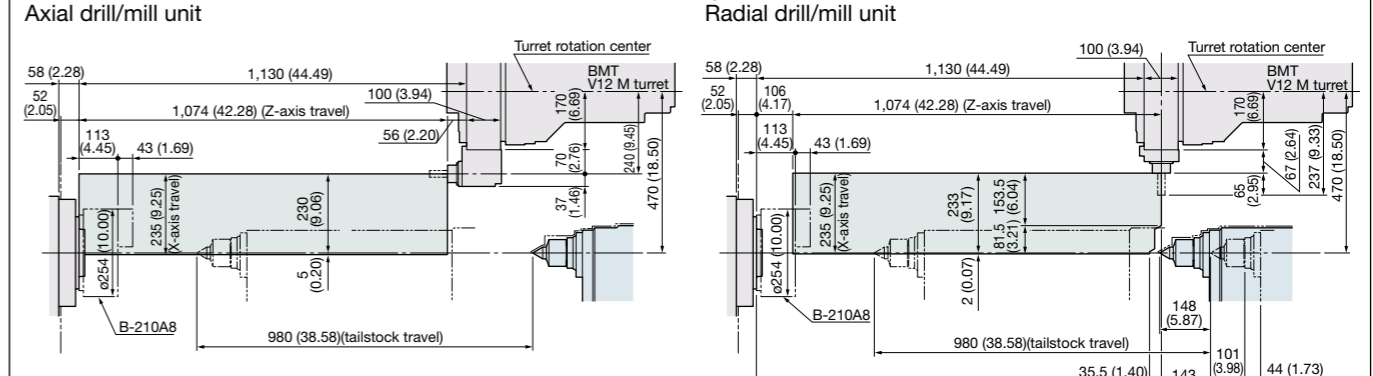
GENOS L3000-e (MY) DBC 400 V12 radial multitasking turret W/ tailstock



GENOS L3000-e (MY) DBC 1000 V12 radial multitasking turret W/ tailstock



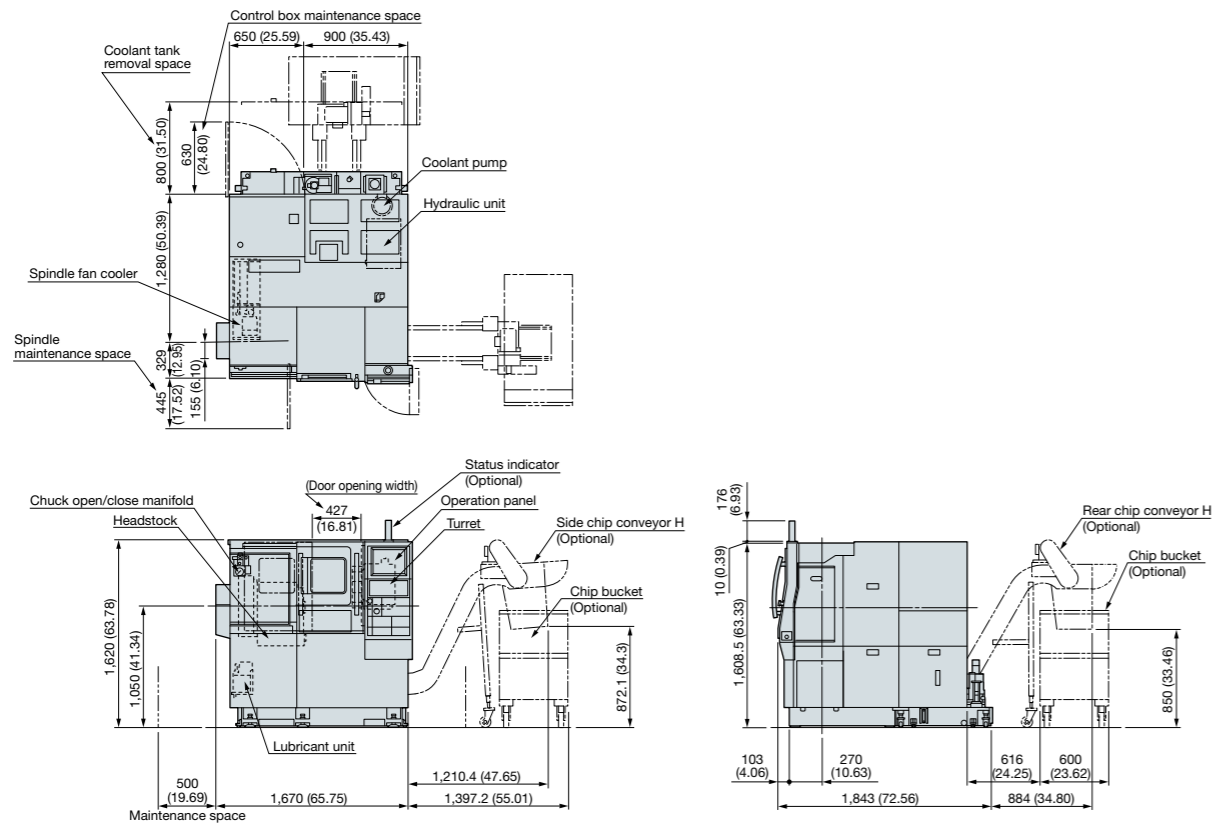
GENOS L3000-e (MY) DBC 1000 V12 radial multitasking turret W/ tailstock



■ Dimensional Drawing

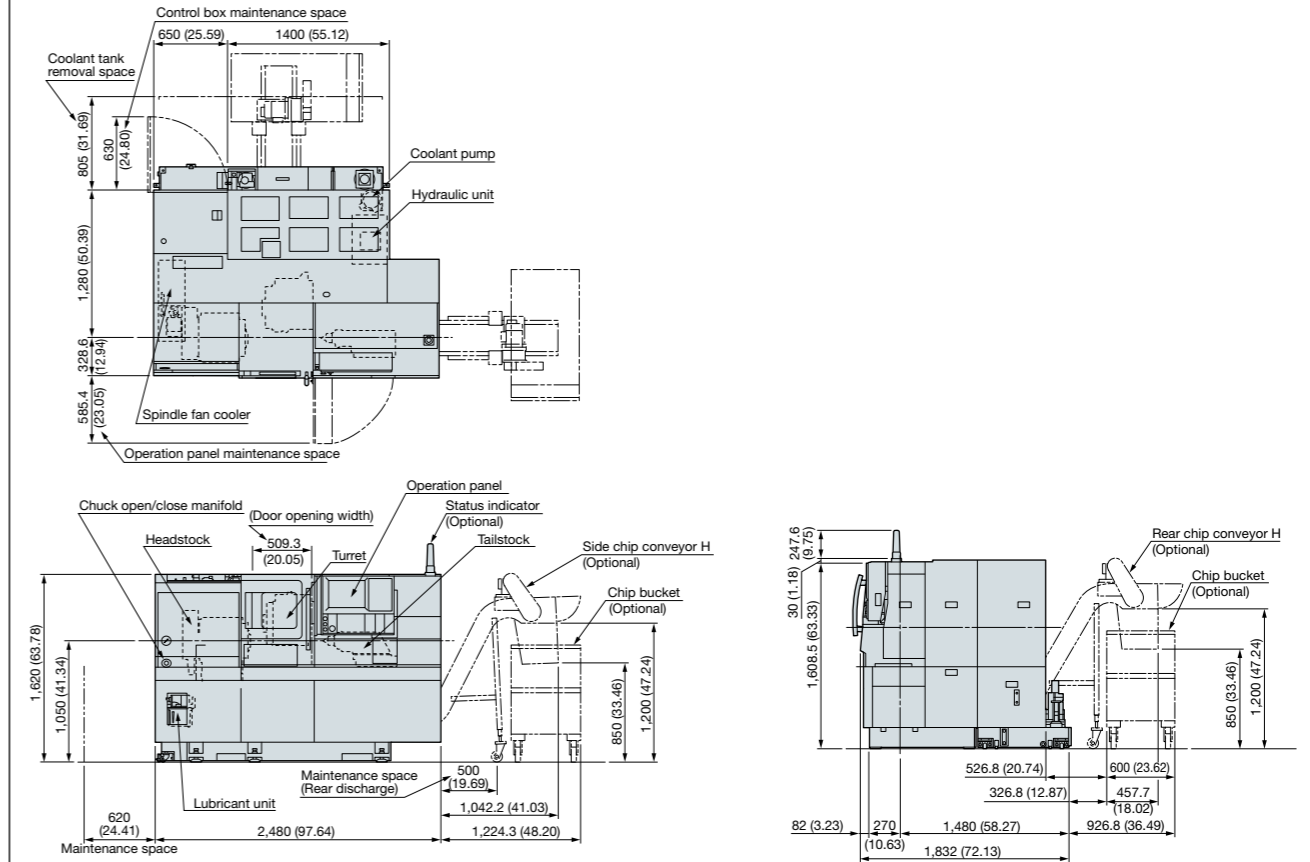
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GENOS L2000-e (L) T

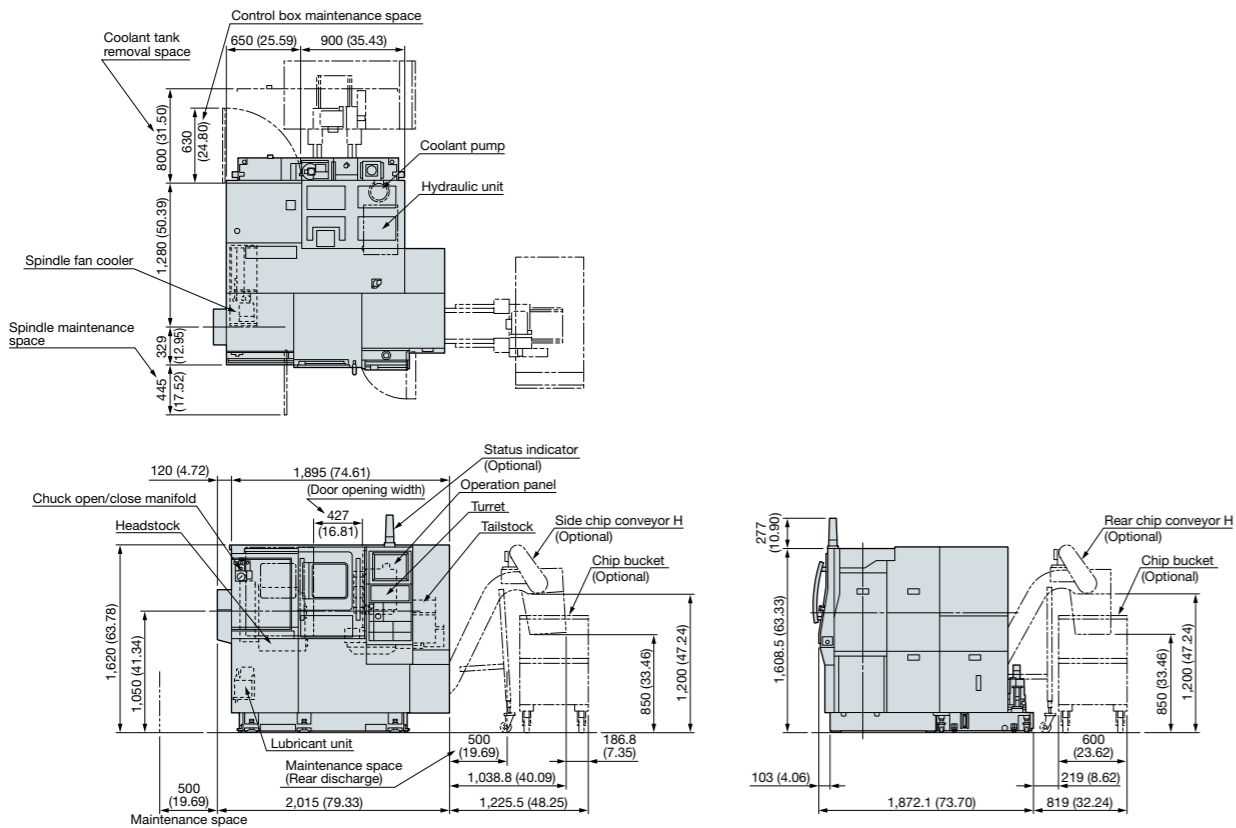


GENOS L2000-e (L) DBC 500

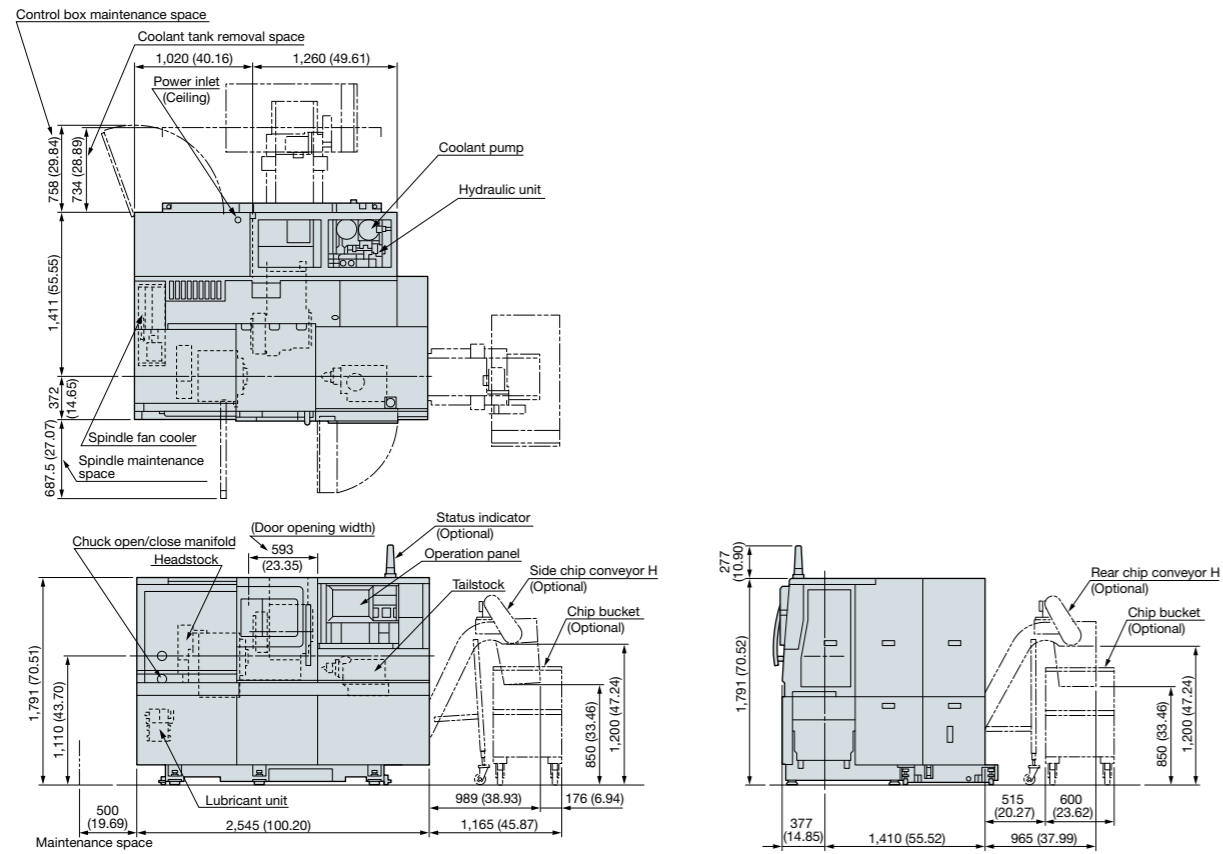
Unit: mm (in)



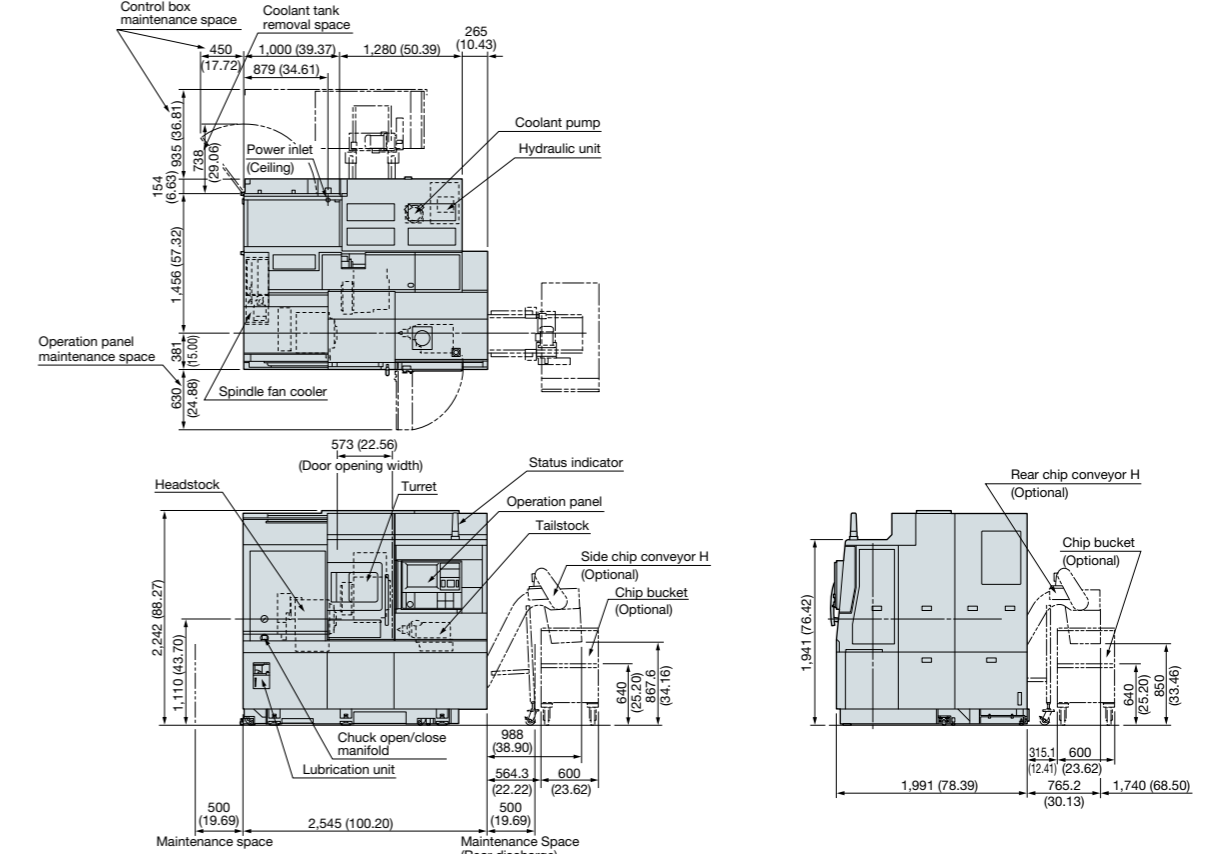
GENOS L2000-e (L) DBC 290



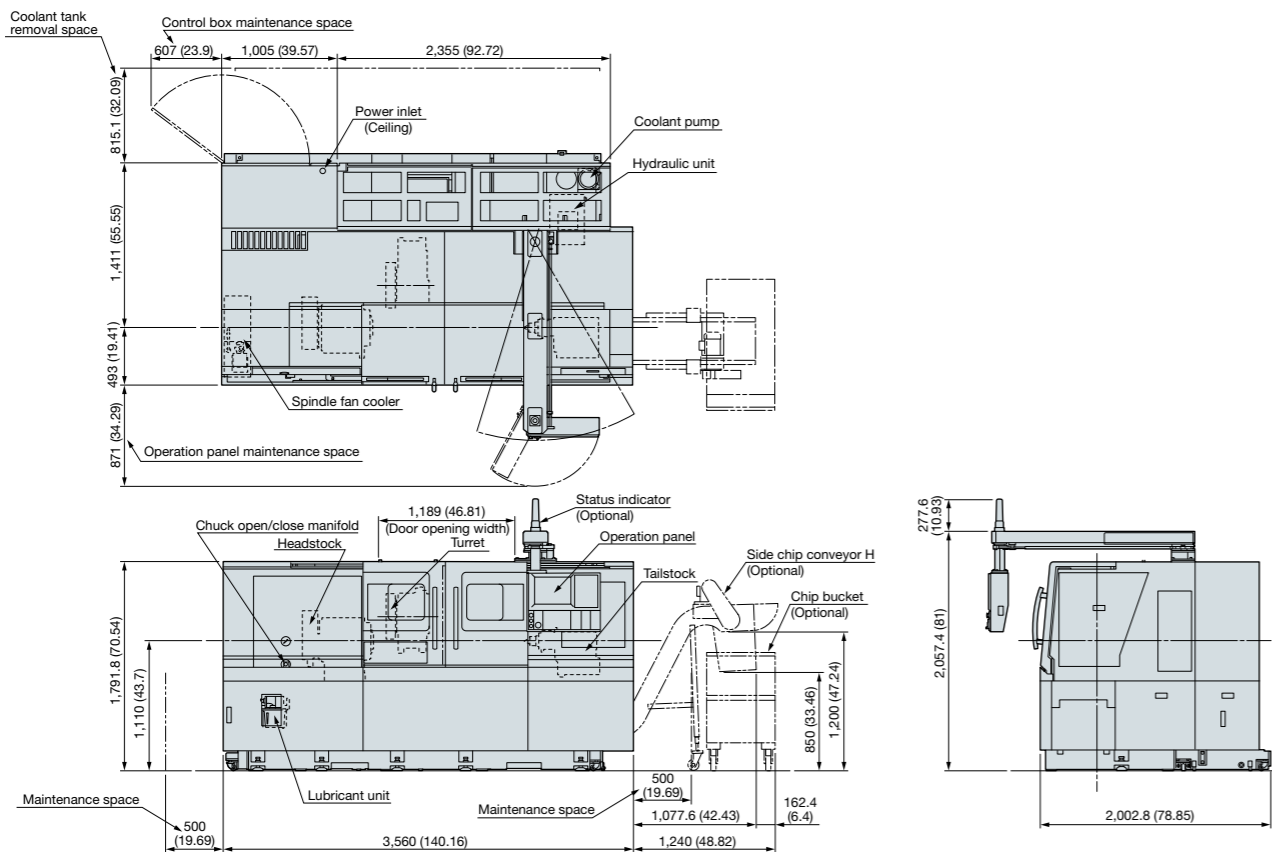
GENOS L3000-e (L, M) DBC 500



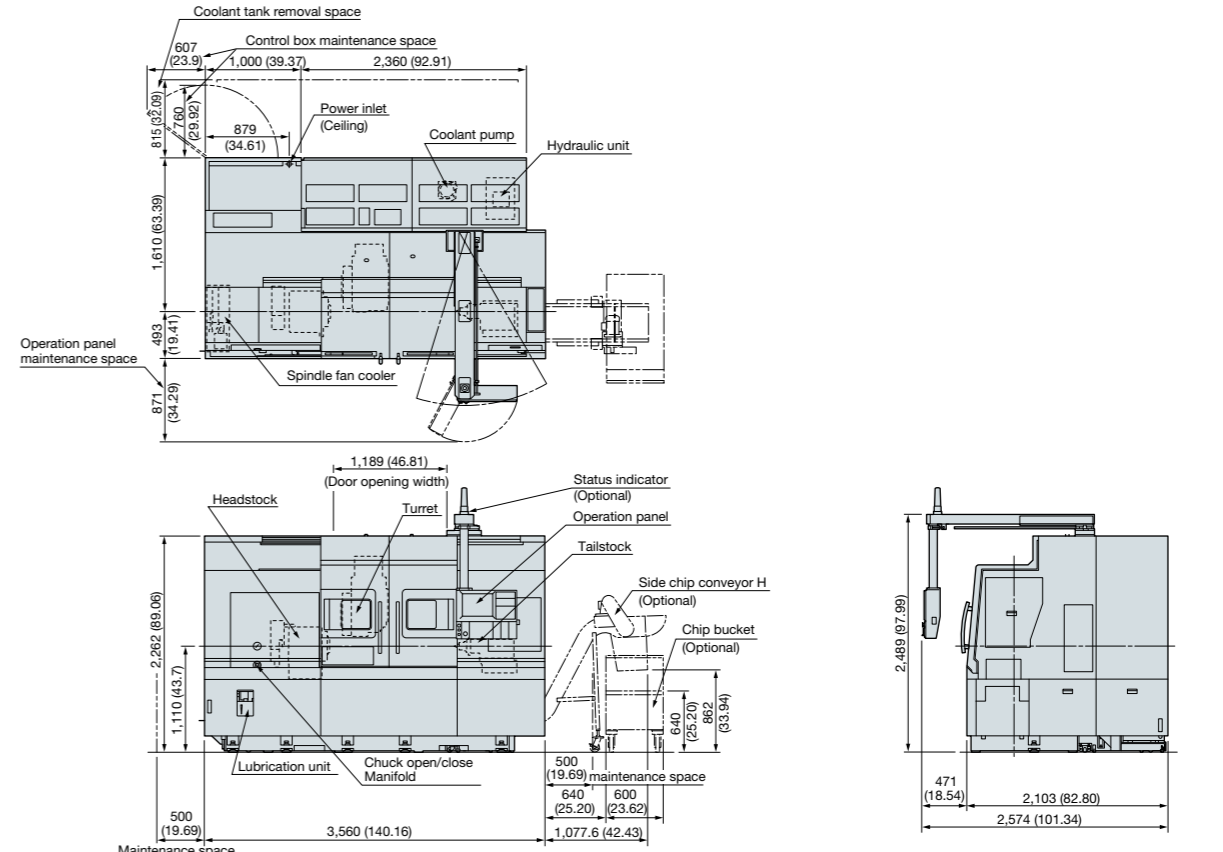
GENOS L3000-e (MY) DBC 400



GENOS L3000-e (L, M) DBC 1100



GENOS L3000-e (MY) DBC 1000



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.
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GENOS

The origin of gene, from Greek *genos*
meaning race, offspring, origin
(pronounced “γένος” as in “generous”)

Global
Efficient
No.1
Standard



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