World Trade Service

GENOS

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

Global
Efficient
No.1
Standard

Agent

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2019.12

OKUMA

1-Saddle CNC Lathe

***GENOS** L1000 series*

GENOS L2000-e
GENOS L3000-e

High quality, high performance
with execellant operator-friendliness

GENOS L2000-e

8" chuck

	Spindle	Turret	Tailstock		SPEC.
GENOS L2000-e Lx290, Lx500 Mx380,MYx380	5,000 min^{-1} JIS A2-6 15/11 KW (20 min/cont)	(L) V8(STD) V12(OP)	Hydraulic (STD)	MT NO.4	Lx290,MYx380
				MT NO.5	Lx500,Mx380
		(M/MY)V12 VDI multitasking turret	NC (OP)	MT NO.4	Lx290
				MT NO.5	Lx500,Mx380,MYx380

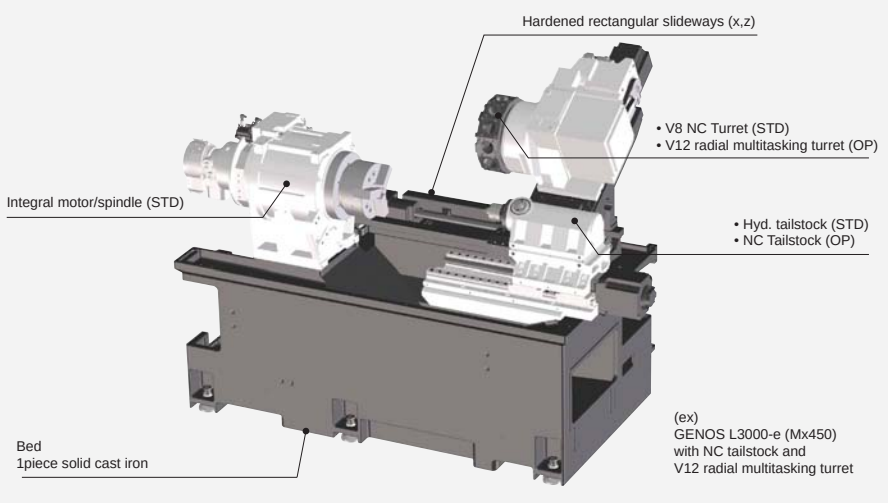
GENOS L3000-e

10" chuck

	Spindle	Turret	Tailstock		SPEC.
GENOS L3000-e Lx500,Lx1100 Mx450, MYx400 Mx1000, MYx1000	3,800 min^{-1} JIS A2-8 22/15 KW (20 min/cont)	(L) V8(STD) V12(OP)	Hydraulic (STD)	MT NO.4	Lx1100,Mx1000,MYx1000
				MT NO.5	Lx500,Mx450,MYx400
		(M/MY)V12 VDI multitasking turret(STD) (M/MY)V12 Radial multitasking turret(OP)	NC (OP)	MT NO.5	Lx500,Lx1100,Mx450 MYx400,Mx1000,MYx1000

Achieve a powerful, high-quality machining

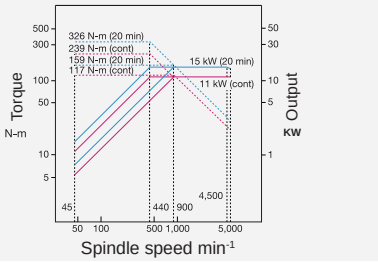
Basic structure



Integral motor/spindle

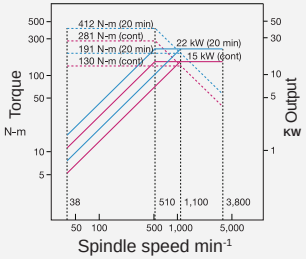
GENOS L2000-e

- Bearing inside diameter: ø100 mm
- Through-hole diameter: ø62 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: ø120 mm
- Through-hole diameter: ø80 mm
- Spindle speed: 3,800 min^{-1}
- Power: 22/15 kW (20 min/cont)
- Torque: 412/281 N-m (20 min/cont)



Capability

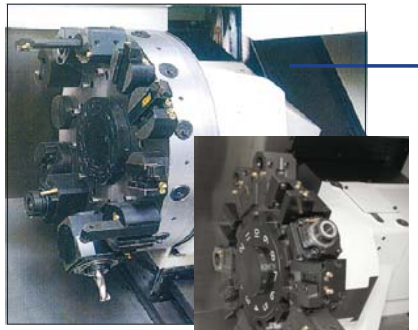
Type	L2000-e	L3000-e	Note
• Heavy duty turning (OD)	3.0mm^2	4.0mm^2	S45C/V= 150m/min
• Roundness	under 1.0 um		
• Machining dimensional change over time	under ø9 um		8°C temperature change

NC Turret

For Turning

V8 (STD), V12 (OP)

For Turning + Milling



V12 VDI turret

V12 Radial turret (OP)

Tailstock

Hydraulic tailstock (STD)

NC Tailstock (Option)

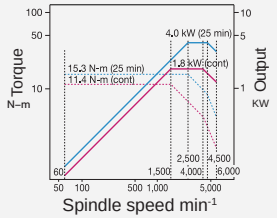
	GENOS L2000-e	GENOS L3000-e
Tailstock thrust	1.0–2.0 KN	1.0–5.0 KN
Rapid traverse	12 m/min	
Approach	10 m/min	
Retract	12 m/min	

Milling tool spindle

GENOS L2000-e (M/MY)

V12 VDI multitasking turret

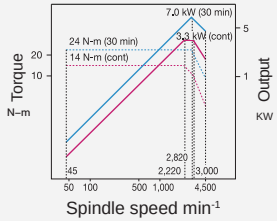
- Spindle speed: 6,000 min^{-1}
- Power: 4.0/1.8 kW (25 min/cont)
- Torque: 15.3 N-m



GENOS L3000-e (M/MY)

V12 VDI multitasking turret

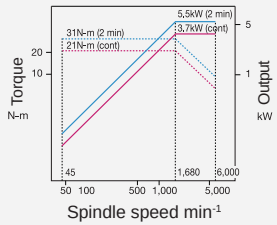
- Spindle speed: 4,500 min^{-1}
- Power: 7.0/3.3 kW (30 min/cont)
- Torque: 24 N-m



GENOS L3000-e (M/MY)

V12 radial multitasking turret (Option)

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



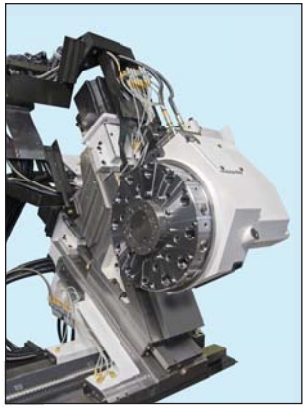
Complete multitasking with Y-axis functions

Y-axis (MY)

Basic structure for Y-axis

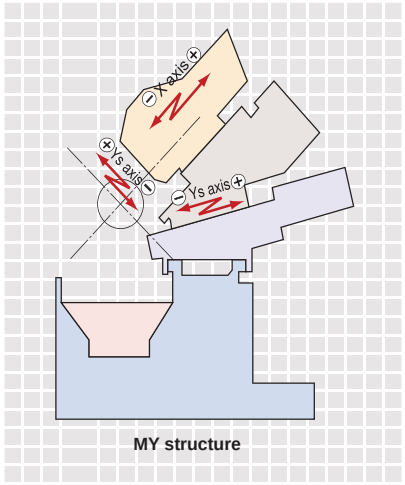
A variety of milling operations can be accommodated with high-accuracy, wide-range Y-axis travel using a double side system. Achieves complete multitasking with a single chucking.

● **Turret**
(V12 VDI quick-change tooling system)



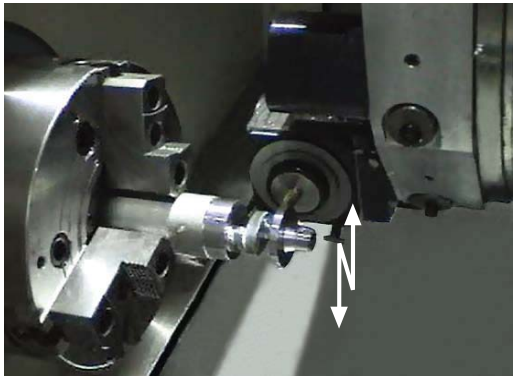
● **Travels**

GENOS L2000-e(MYx380):80mm(+30 to -50)
GENOS L3000-e(MYx400,MYx1000)
:100mm(+50 to -50)



MY structure

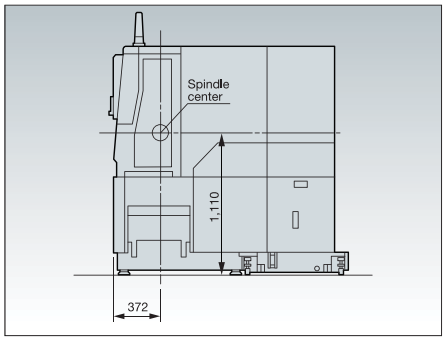
Machining sample



Easy to operate

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.



GENOS L3000-e(M)

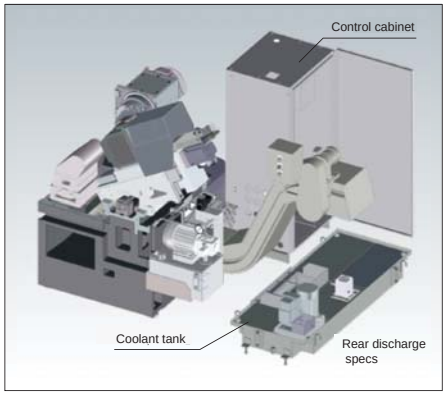
Outstanding chip discharge

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

Previous chip discharge

Simplified coolant tank maintenance

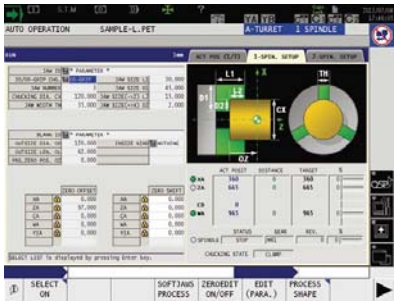
The coolant tank can be separated away from the machine for easier cleaning. The tank and the control cabinet share the same maintenance space to minimize the machine footprint.



OSP intelligent technology reduces operator burden

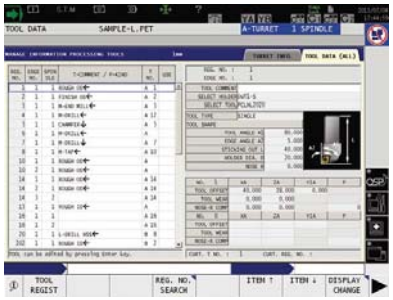
Processing preparation screen

Spindle Select / Place / Chuck parameter / Zero offset
Operation settings of the same screen



Tool data setting screen

Each tool, shape, type of processing, such as tool processing data management

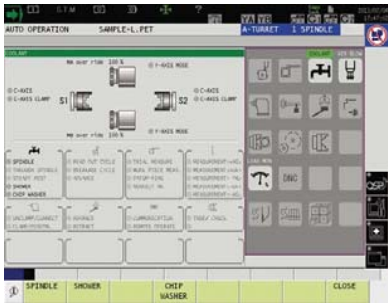


Processing operation screen

A screen corresponding to: Place/Main program / Real 3D simulation / One-touch IGF programming

Mechanical operation panel screen

Based on the use frequency is high, the new layout screen for operation



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)

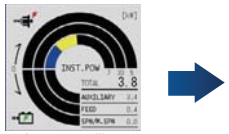
●Example of equipment that can use Idling Stop

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 Idling Stop
The displayed values are one example.

Hi-tech Okuma mechatronics for advanced machining applications

Thermo Active Stabillzer-Construction, Mechanical Door Interlock

Thermo Active Stabillzer-Construction (Standard Spindle)

"Proactively"keeps the machine (Construction) in optimum, stable construction during shop environment temperature change-resulting in superb (stable) machining accuracies.

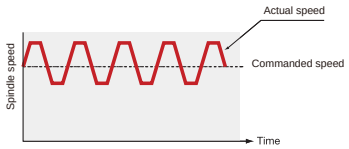
Mechanical Door Interlock

Consider comprehensively safely, it is the carelessness to avoid the person of the processing course,cause users to damage.

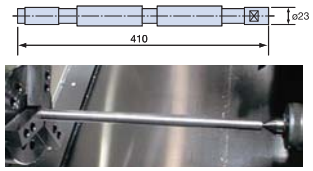
Variable spindle speed control

Reduce machining chatter

Holds down machining chatter as spindle speed is periodically changed and resonance points change, when cutting large, thin workpieces or small-diameter, long workpieces.



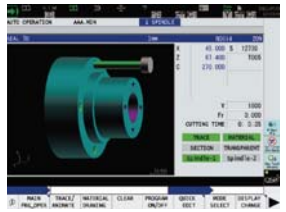
L/D = 18 is machined without steadyrest



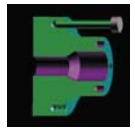
Real 3-D simulation

Live-performance machining

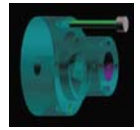
In all operating modes (auto, MDI, manual, etc), the cutting conditions are displayed in real time. Switching between solids, section views, transparent models, and performing machining simulation (dry runs with the machine locked) lets you check part program accuracy.



Solid view



Section view



Transparent view

One touch editing

G/M programs can be edited with a single touch on the shop floor. Editing can be started immediately by moving the cursor to the program execution block or the block that produced an alarm during machining in automatic operation mode.

OSP suite OSP-P300LA-e

In the shop floor production instructions, setup information, machining and utilization, machine maintenance information and more.

suite apps

Actual Load, MacMan Monitor, Tool Data etc.

Maintenance Monitor that displays daily and regular check items

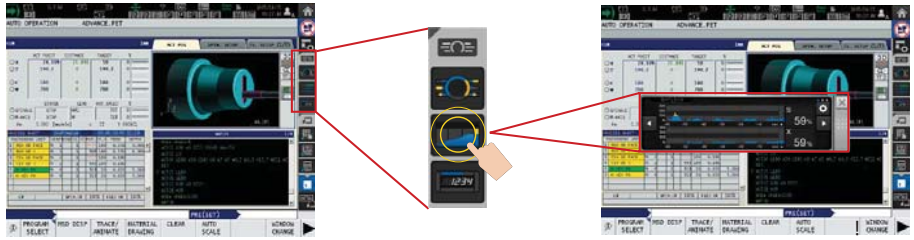
Actual Load

MacMan Monitor

Tool Data etc.

suite operation

A highly reliable touch panel suited to shop floors is used.



OSP suite P300LA-e

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 um,10 um,1mm (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 wear : 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	Application 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
High speed/accuracy		Hi-G control
Energy-saving function	ECO-suite	ECO Power Monitor **

** The power display shows estimated values. When precise electrical values are needed, select the on-machine wattmeter option.

Optional Specifications

Programming	Kit specifications TE	TD	TEX
User task2 I/O variables (each 8 points)	○	○	○
Automatic programming (LAP4)	○	○	○
Inch/metric switching		○	○
Circular threading			
Tool offset compensation ☐ 96 sets ☐ 200 sets (Standard 32 sets)			
Tool wear compensation ☐ 96 sets ☐ 200 sets (Standard 32 sets)			
Program storage (capacity) Standard : 2GB Operation backup : 2MB	○	○	○
Milling-machine specs — Coordinate convert	△	△	△
Milling-machine specs — Profile generation	△	△	△
Advance One Touch IGF-L (Real 3-D simulation included)			
Real 3-D simulation		○	○
Spindle synchronized tapping(rigid tapping)			
Monitoring			
Condition display with a 3-color (A-type) signal tower	○	○	○
NC operation monitor (counter, totaling)	○	○	○
NC work counter (M30)	○	○	○
Tool life management		○	○
Load monitor (spindle,feed axis)			○
Cycle time over check	○	○	○
DNC–T1 (Ethernet)	○	○	○
DNC-T* (PC-DNC): part program transfer			
Additional RS232C channel			

Gauging	Kit specifications TE	TD	TEX
Auto work gauging/compensation ☐ Internal ☐ External			
Touch setter tool tip ☐ Manual ☐ Automatic			
Automation / Untended Operation			
Auto chuck open/close			
Chuck pressure High/low switching			
Auto tailstock quill			
Tailstock quill pressure High/low switching			
Auto door open/close			
Air cleaner (Chuck, Turret, Tailstock, Spindle bore)			
Spindle orientation (Electric)	○	○	○
Extra M-codes ☐ 2 sets ☐ 4 sets			
Auto power shut-off			
Cycle time reduction	○	○	○
Other* ☐ Chuck open/close during spindle rotation ☐ Auto tailstock quill thrust during spindle rotation ☐ Bar feeder interface ☐ Loader interface			

* Need to discuss with sales engineer

△ Multi-machining Corresponding

○ Kit Corresponding

Machine Specifications

Item	Model name		GENOS L2000-e (L)			GENOS L2000-e (M)	
			Lx290	Lx290 with tailstock	Lx500	Mx380	MYx380
Capacity	Swing over bed	mm	Ø450				
	Max turning dia	mm	Ø280 [Ø230]			Ø200	
	Max work length	mm	290		500	380	
Travels	X axis	mm	165				
	Z axis	mm	330		520 [470]	400	
	Y axis	mm	–				80 (+30~-50)
	C axis	deg	–			360° (min. control angle 0.001°)	
Spindle	Spindle speed	min⁻¹	5,000				
	Speed ranges		2 auto ranges (2 range motor coil switching)				
	Spindle nose type		JIS A2-6				
	Spindle bore dia	mm	Ø62				
	Front bearing dia	mm	Ø100				
Turret	Type		V8 [V12]			V12 VDI multitasking (Axial)	
	No. of tools	tool	8 [12]			12 (L/M)	
	OD tool shank	mm	25 x 25			20 x 20	
	ID tool shank dia	mm	Ø40 [Ø32]			Ø32	
	Turrent indexing time	sec/index	0.3 /1			0.1 /1	
Milling tool	Spindle speed	min⁻¹ (rpm)	–			6,000	
	Spindle ranges		–			Infinitely variable	
Feedrates	Rapid travers (X,Z,Y)	m/min	X:25 , Z:30				X:25,Z:30,Y:10
	Rapid travers (C)	min⁻¹(rpm)	–			200	
	Feedrates(X,Z,Y)	mm/rev	0.001~1,000.000				
Tailstock	Talstock quill diameter	mm	–	Ø55	Ø90[Ø55]		Ø55
	Tapered bore type		–	MT.4 (revolving center)	MT.5 (revolving center) [MT.4(revolving center)]		MT.4 (revolving center)
	Quill travel	mm	–	80	100 [80]		80
Motors	Main spindle	kw	VAC15/11				
	Milling tool spindle	kw	–			4.0/1.8 (25min / cont)	
	Axis drive (X)	kw	3				2.8
	Axis drive (Z)	kw	3				
	Axis drive (Y)	kw	–				2.8
	Coolant motor	kw	0.8				
Machine size	Height	mm	1,620				2,087
	Floor space (tank included)	mm	1,682x1,853		2,074x1,831		2,047x1,932
	Weight	kg	3,000	3,200	3,700	3,700	4,100
CNC			OSP-P300LA-e				

Specifications are subject to be changed without prior notice.

※ Machine size is based on hydraulic tailstock

GENOS L3000-e (L)		GENOS L3000-e (M)			
Lx500	Lx1100	Mx450	Mx1000	MYx400	MYx1000
Ø520					
Ø390 [Ø340]		Ø300		Ø340 [Radial:Ø390]	
500	1,100	450 [Radial:380]	1,060 [Radial:980]	420 [Radial:350]	1,020 [Radial:950]
235					
520	1,144	520 [Radial:460]	1,144 [Radial:1050]	450	1,074
–				100 (+50~-50)	
–		360° (min. control angle 0.001°)			
3,800					
2 auto ranges (2 range motor coil switching)					
JIS A2-8					
Ø80					
Ø120					
V8 [V12]		V12 VDI multitasking (Axial) [V12 Radial multitasking]			
8 [12]		12 (L/M)			
25 x 25					
Ø40					
0.3 /1		0.1 /1			
–		45 to 4,500 [Radial: 45 to 6,000]			
–		Infinitely variable			
X:25 , Z:30				X:25 , Z:30 ,Y:10	
–		200			
0.001~1,000.000					
Ø90					
MT.5 (revolving center)	MT.4(dead center)	MT.5 (revolving center)	MT.4 (dead center)	MT.5 (revolving center)	MT.4 (dead center)
100					
VAC22/15					
–		7.0/3.3(30min／cont) [5.5/3.7(2min／cont)]			
2.8					
3.5					
–				3.5	
0.8					
1,791	2,060	1,791	2,060	2,265	2,487
2,279x1,884	3,537x2,470	2,279x1,884	3,537x2,470	2,280x2,004	3,560x2,550
4,400	6,600	4,400	6,600	5,200	7,300
OSP-P300LA-e					

[ ]:Optional

Optional Specifications (L2000-e)

Turret (L)	▪ V12(NC)	Air blower	▪ Chuck ▪ Turret ▪ Spindle bore ▪ Tailstock
Chucking	▪ Hollow/Solid Power Chucks: 6",10" ▪ Auto chuck open/close with confirmation ▪ Chucking miss detection ▪ Chuck high/low pressure switch	Coolant	▪ High pressure(1.2MPa,7.0MPa) ▪ Spindle thru coolant ▪ Detection level ▪ Mist collector mount ▪ Oil skimmer
		Chip conveyor	▪ Hinge type(side/rear, L/H)
		Door auto open/close	▪ Front door ▪ Top door ▪ Right side door
Measuring	▪ In-process work gauging ▪ Touch Setter M (manual), A (automatic)	Automation	▪ Loader ▪ Robot ▪ Barfeeder ▪ Work rest ▪ Parts catcher
Tailstock (Hyd. type only)	▪ Tailstock quill auto advance/retract with confirmation ▪ Tailstock thrust high/low switch		
Work stopper in spindle	▪ front side ▪ rear side		

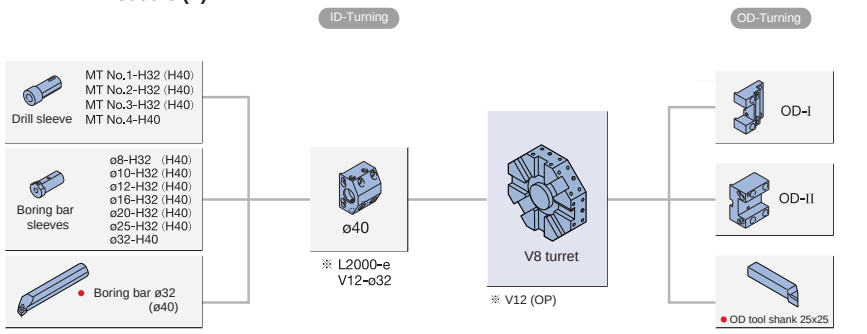
Optional Specifications (L3000-e)

Turret (L)	▪ V12 (NC)	Air blower	▪ Chuck ▪ Turret ▪ Spindle bore ▪ Tailstock
Chucking	▪ Hollow/Solid Power Chucks: 8",12" ▪ Auto chuck open/close with confirmation ▪ Chucking miss detection ▪ Chuck high/low pressure switch	Coolant	▪ High pressure(1.2MPa , 7.0MPa) ▪ Spindle thru coolant ▪ Detection level ▪ Mist collector mount ▪ Oil skimmer
		Chip conveyor	▪ Hinge type(side/rear, L/H) (rear : for Lx500,Mx450,MYx400 only)
Measuring	▪ In-process work gauging ▪ Touch Setter M(manual),A(automatic)	Door auto open/close	▪ Front door ▪ Top door ▪ Right side door
Tailstock (Hyd. type only)	▪ Tailstock quill auto advance/retract with confirmation ▪ Tailstock thrust high/low switch	Automation	▪ Loader ▪ Robot ▪ Barfeeder ▪ Work rest ▪ Parts catcher
Work stopper in spindle	▪ front side ▪ rear side	Steady rest	▪ Manual ▪ Automatic (For Lx1100,Mx1000,MYx1000 only)

Tooling System

Unit: mm

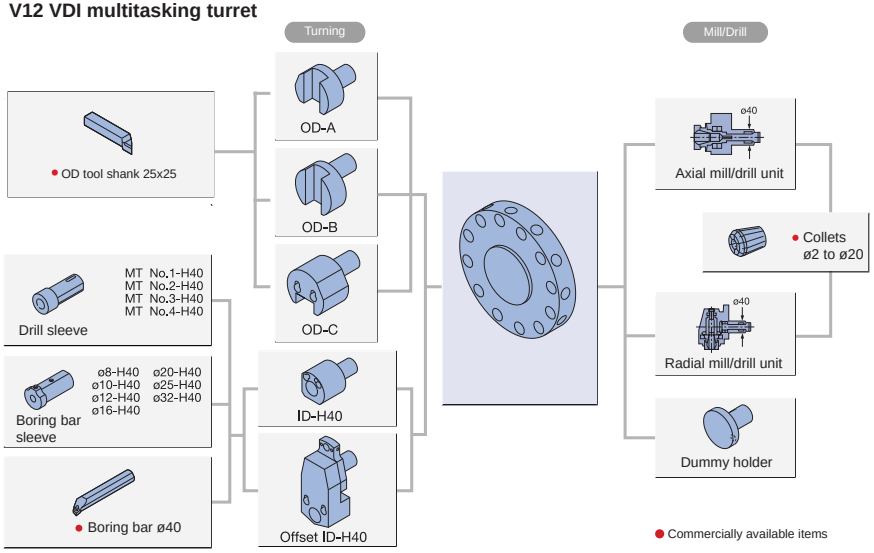
GENOS L2000-e (L)
L3000-e (L)



● Commercially available items

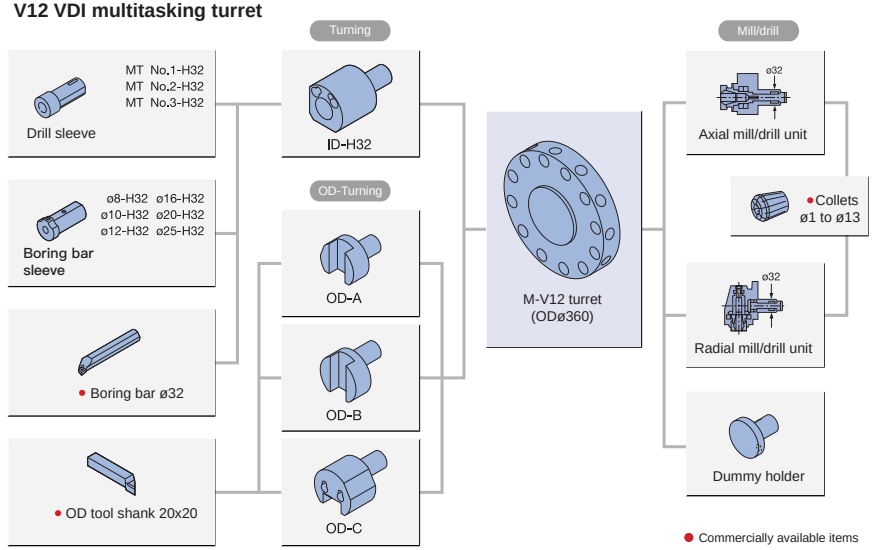
GENOS L3000-e (M/MY)
V12 VDI multitasking turret

Unit: mm



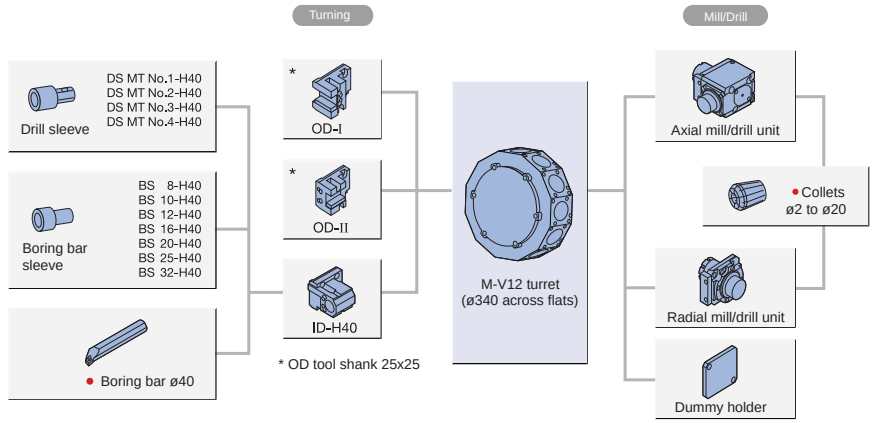
● Commercially available items

GENOS L2000-e (M/MY)
V12 VDI multitasking turret



● Commercially available items

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

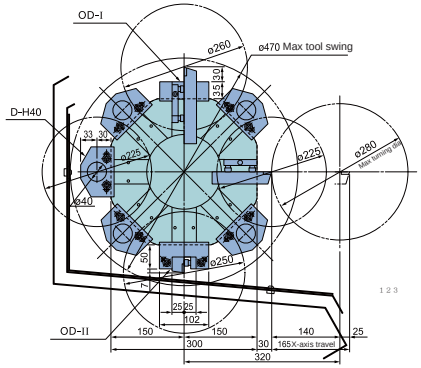


● Commercially available items

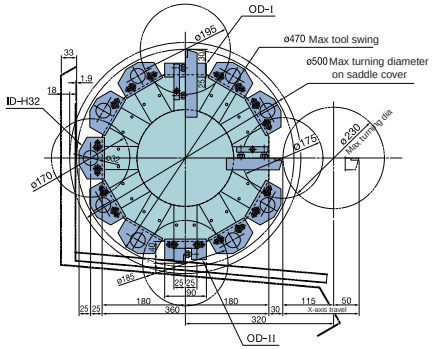
Tool Interference Drawings

Unit:mm

GENOS L2000-e (L)
V8 turret

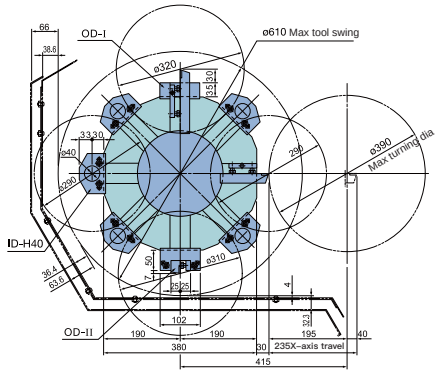


GENOS L2000-e (L)
V12 turret(Option)

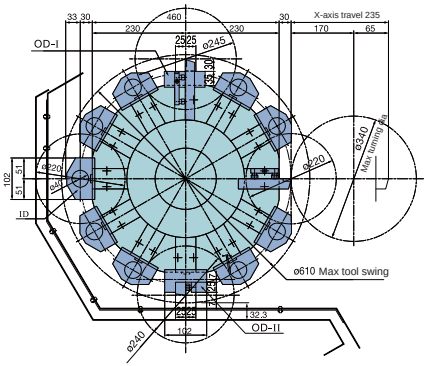


Unit:mm

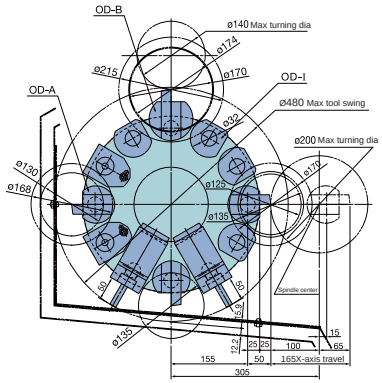
GENOS L3000-e (L)
V8 turret



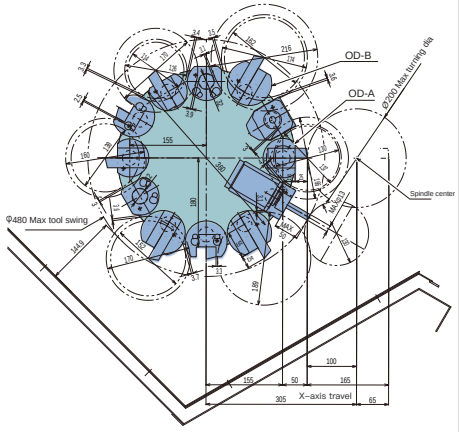
GENOS L3000-e (L)
V12 turret (Option)



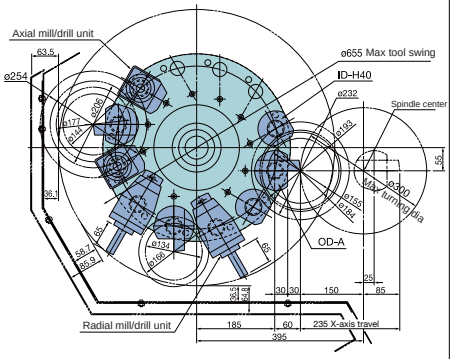
GENOS L2000-e (M)
V12 VDI multitasking turret



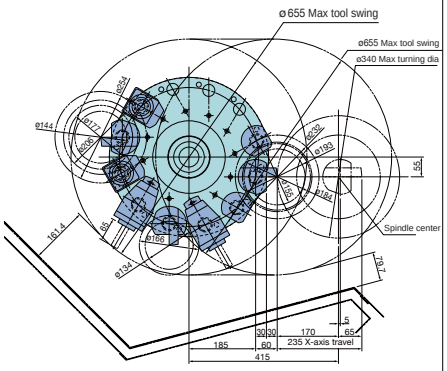
GENOS L2000-e (MY)
V12 VDI multitasking turret



GENOS L3000-e (M)
V12 VDI multitasking turret



GENOS L3000-e (MY)
V12 VDI multitasking turret

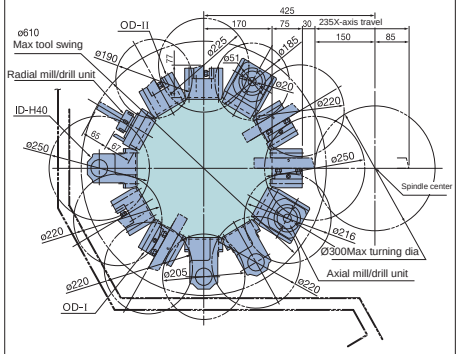


Tool Interference Drawings

Unit:mm

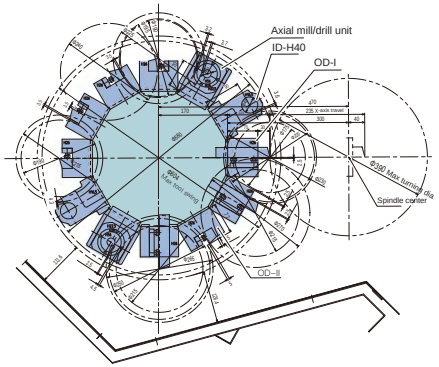
GENOS L3000-e (M)

V12 Radial multitasking turret (Option)



GENOS L3000-e (MY)

V12 Radial multitasking turret (Option)

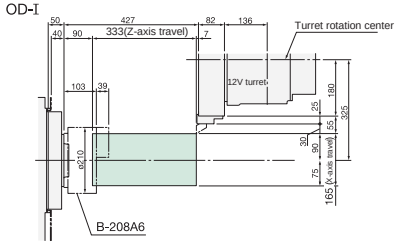


Working range

Unit:mm

GENOS L2000-e (Lx290) V8 turret

OD-I



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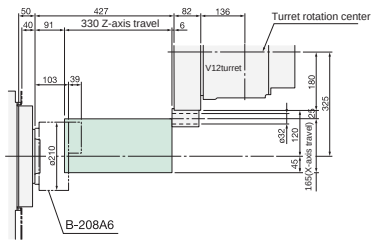
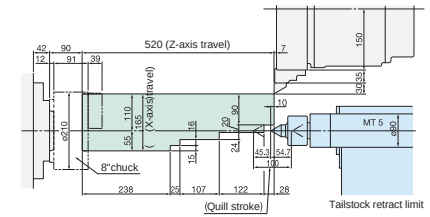


GENOS L2000-e (Lx500) V8 turret

OD-I



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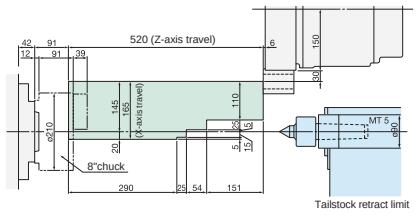
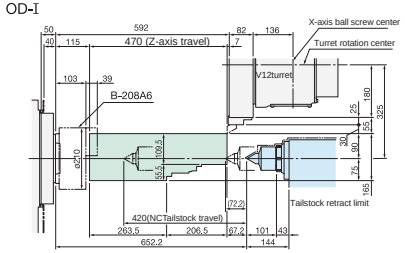


GENOS L2000-e (Lx500) V12 turret NC tailstock (Option)

OD-I



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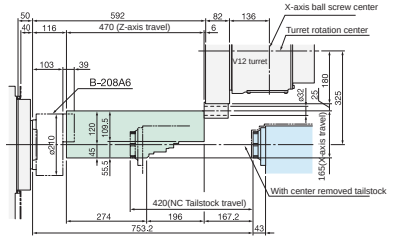
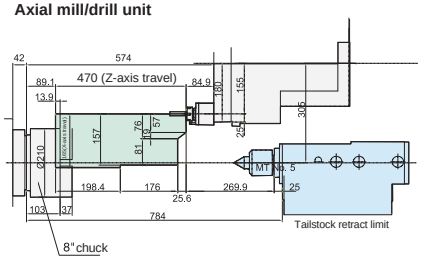
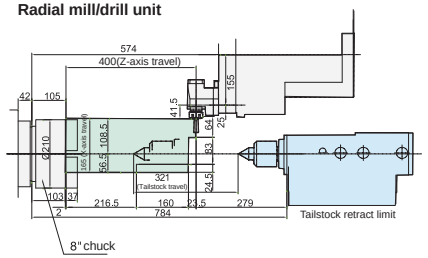


GENOS L2000-e (Mx380) V12 VDI multitasking turret

Axial mill/drill unit



Radial mill/drill unit

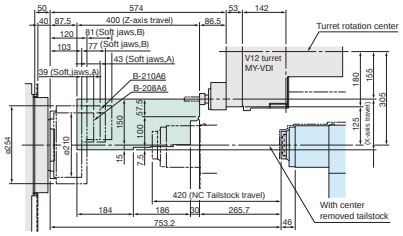


Working Ranges

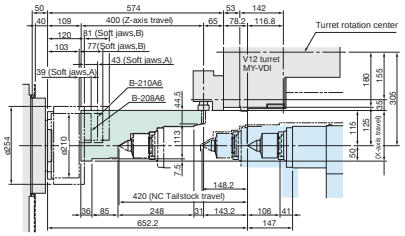
Unit:mm

GENOS L2000-e (MYx380) V12 VDI multitasking turret NC tailstock (Option)

Axial mill/drill unit

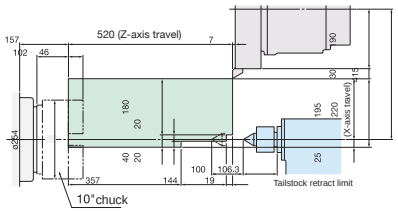


Radial mill/drill unit



GENOS L3000-e (Lx500) V8 turret

OD-I



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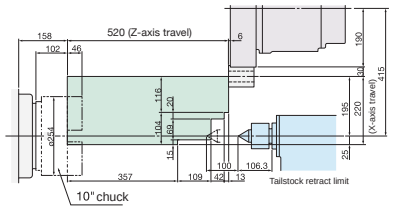
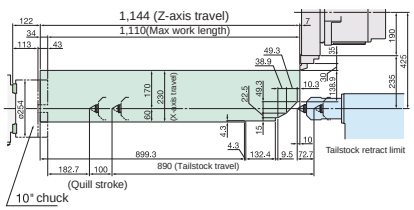


GENOS L3000-e (Lx1100) V8 turret

OD-I



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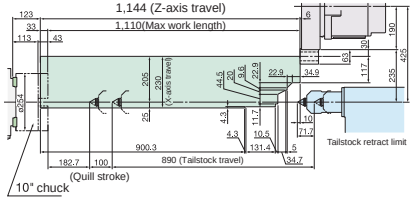
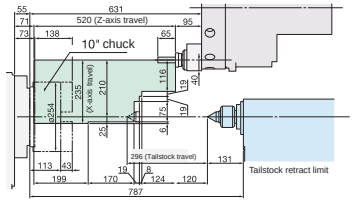
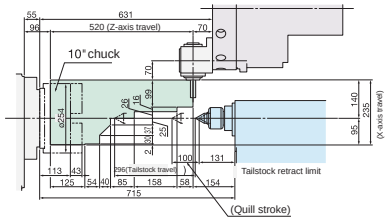


GENOS L3000-e (Mx450) V12 VDI multitasking turret

Axial mill/drill unit



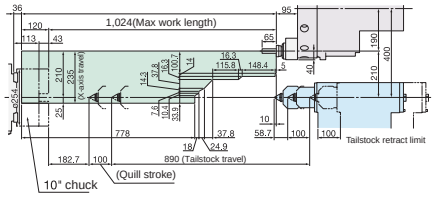
Radial mill/drill unit



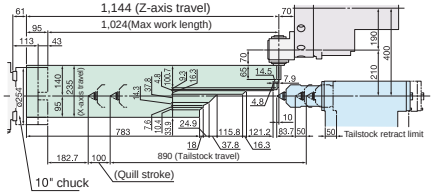
Unit:mm

GENOS L3000-e (Mx1000) V12 VDI multitasking turret

Axial mill/drill unit

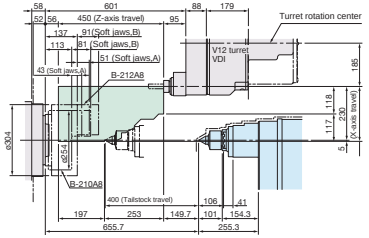


Radial mill/drill unit

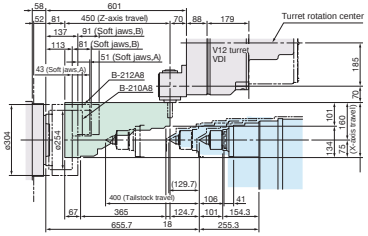


GENOS L3000-e (MYx400) V12 VDI multitasking turret NC tailstock (Option)

Axial mill/drill unit

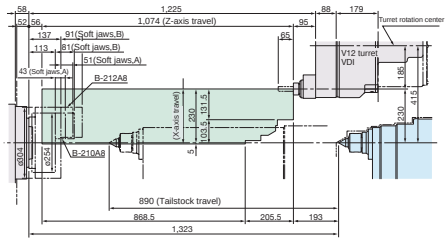


Radial mill/drill unit

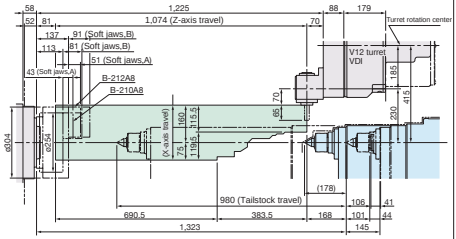


GENOS L3000-e (MYx1000) V12 VDI multitasking turret NC tailstock (Option)

Axial mill/drill unit

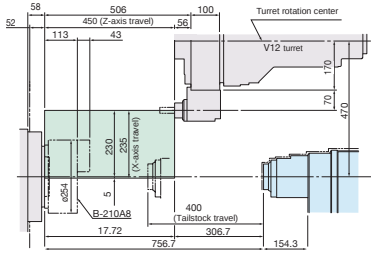


Radial mill/drill unit

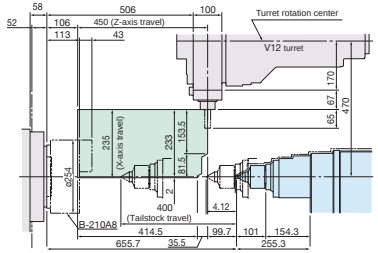


GENOS L3000-e (MYx400)V12 Radial multitasking turret NC tailstock (Option)

Axial mill/drill unit



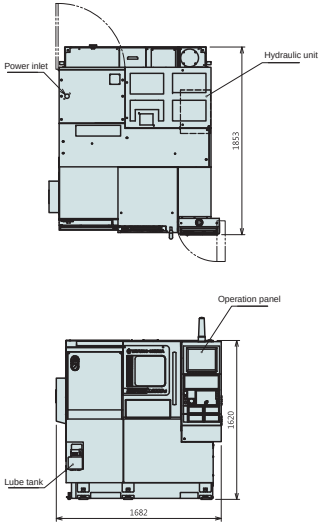
Radial mill/drill unit



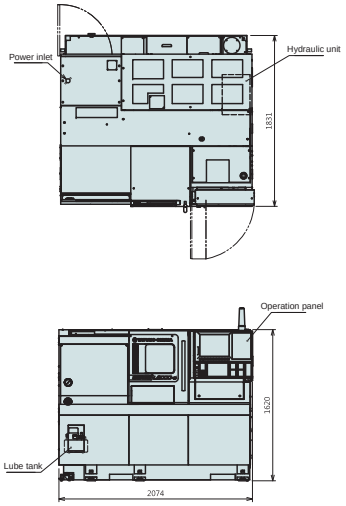
Dimensional Drawings Hydraulic tailstock (STD)

Unit:mm

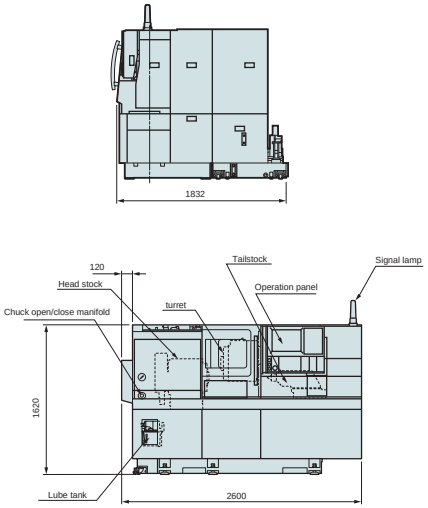
GENOS L2000-e (Lx290)



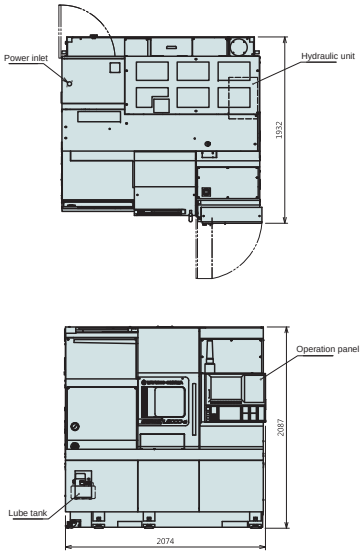
GENOS L2000-e (Lx500/Mx380)



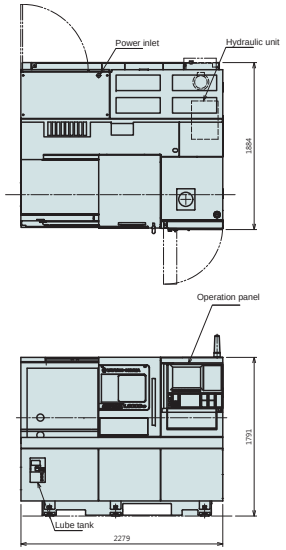
GENOS L2000-e (Lx500/Mx380) NC tailstock(Option)



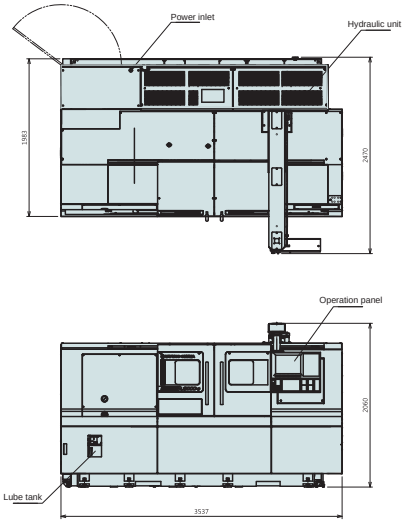
GENOS L2000-e (MYx380)



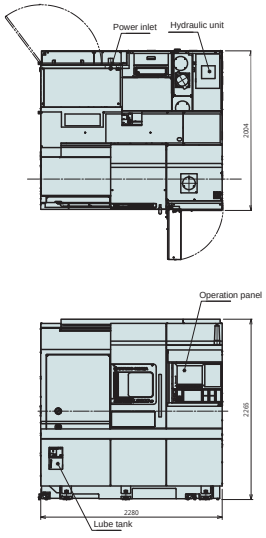
GENOS L3000-e (Lx500/Mx450)



GENOS L3000-e (Lx1100/Mx1000)



GENOS L3000-e (MYx400)



GENOS L3000-e (MYx1000)