

1-Saddle CNC Lathes

GENOS L II series

GENOS L250 II / GENOS L400 II



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GENOS—The high-quality global machine.
High-quality, compact lathes specifically
for turning



GENOS L250 II

■ Specification extensions

	Spindle	Turret	Tailstock	DBC
GENOS L250II	3,000 min ⁻¹ JIS A2-6	V8 turret [V12 turret]	MT No. 4 (DBC 290) MT No. 5 (DBC 500)	290, 500

High rigidity gives machining accuracy and productivity exceeding expectations,
with thorough ease of use from the customer’s perspective.

Okuma squarely faced the challenge of these expectations from machine shops
worldwide in developing the GENOS high quality global machine.

Since its launch in 2010, GENOS has earned an outstanding reputation from
customers around the world.

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

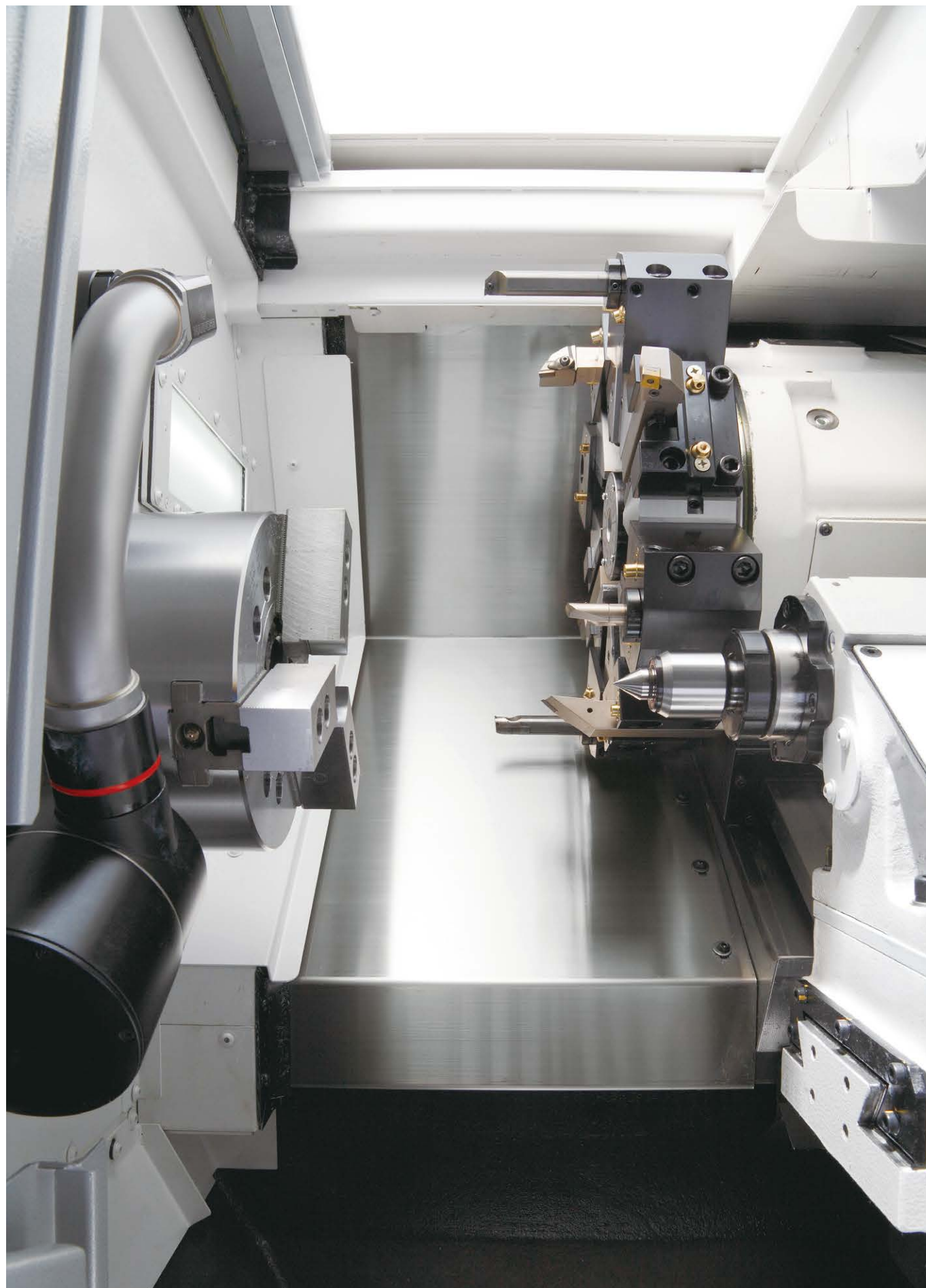


GENOS L400 II

■ Specification extensions

	Spindle	Turret	Tailstock	DBC
GENOS L400II	3,000 min ⁻¹ JIS A2-8	V8 turret [V12 turret]	MT No. 5 (DBC 500) MT No. 4 (DBC 1,100) [live quill]	500, 1,100

Photographs used in this brochure may show optional equipment.

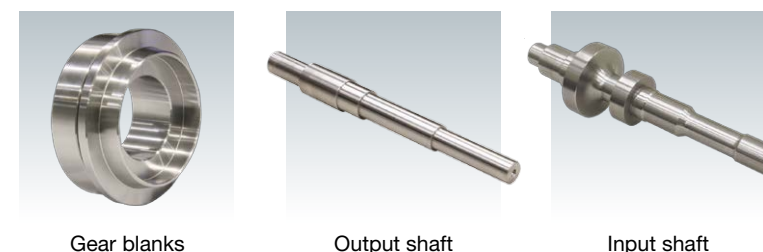


A turning specialist. A compact lathe suitable for mass production.

The highly stable machining accuracies and compact body really deliver high productivity. The GENOS LII series achieves the best cost performance customers require for high machining performance, accuracy, and ease of use.

Applicable workpieces

GENOS LII machines handle workpieces with diverse shapes.



Gear blanks

Output shaft

Input shaft

Improve productivity

A compact lathe with machine width of 1,400 mm* (GENOS L250II) specifically for turning. The slideway for the turret is a slide guideway to support loads during powerful cutting and raise productivity. In addition, the feed rate is 20% faster than the previous machine, and non-cutting time is shorter.

* Cylinder cover, operation panel not included.

Ease of use in any shop floor was a thoroughly pursued objective

The machines were structurally designed to have easy access to the spindle and good maintainability. The coolant tank is separated, so the tank can be washed without removing the chip conveyor. In addition, the chip discharge outlet is 1.8 times larger than before, which keeps chip build-up low and machine-stop cleaning time short during continuous, long-run operations.

Mass production lines also compact

In combination with loaders and stockers, mass production system layouts can be flexibly arranged. Even a large number of machines lined up in mass production factories can also be kept compact and efficient. As the number of machines increase, the space-saving machine design itself will become a more valuable benefit.

Okuma's Intelligent Technology reduces operator burden

Thermo Active Stabilizer-Construction (TAS-C) is used to support dimensional stability at high levels during cycle start and machining restart, and of course during continuous operation. This significantly reduces man-hours for controlling dimensions. With graphic visualization of machining status provided by Machining Navi (Optional), any operator can easily use the machine and cutting tools to their fullest.

Improve productivity

Productivity increases with compact, high-speed operations

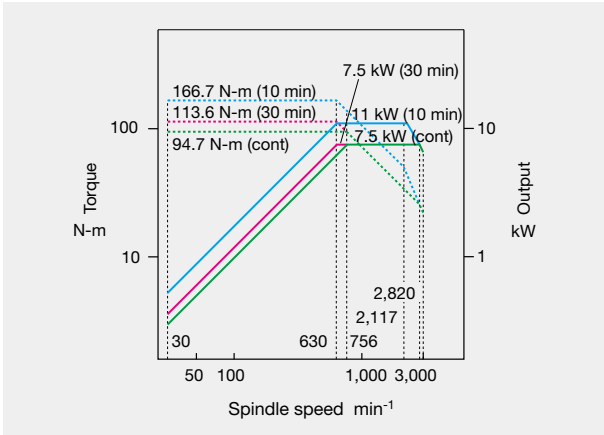
Compared to the previous model, productivity improves with faster feed rates for each axis. Installation width: 1,400 mm (GENOS L250II DBC 290). The highly rigid structural design supports powerful cutting loads to offer high productivity.



Spindle

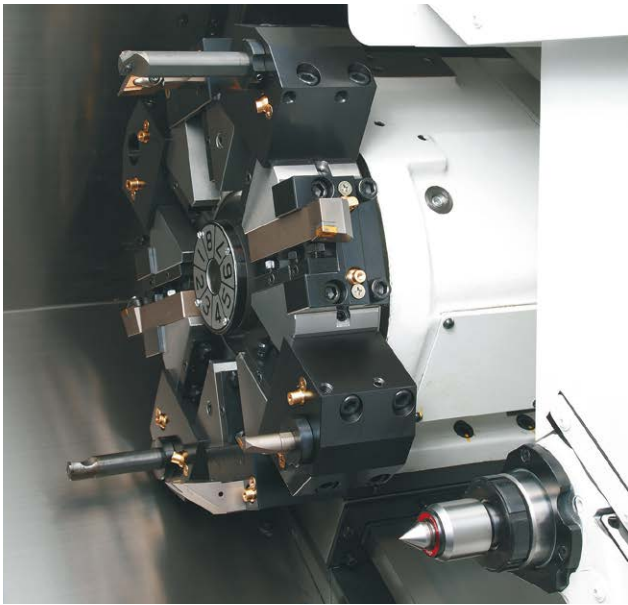
GENOS L250II

- Bearing ID/through-hole diameter: $\varnothing 100$ mm/ $\varnothing 66$ mm
- Spindle speed: 3,000 min⁻¹
- Power: 11/7.5/7.5 kW (10 min/30 min/cont)
- Torque: 166.7/113.6/94.7 N-m (10 min/30 min/cont)



Turret (turning operations)

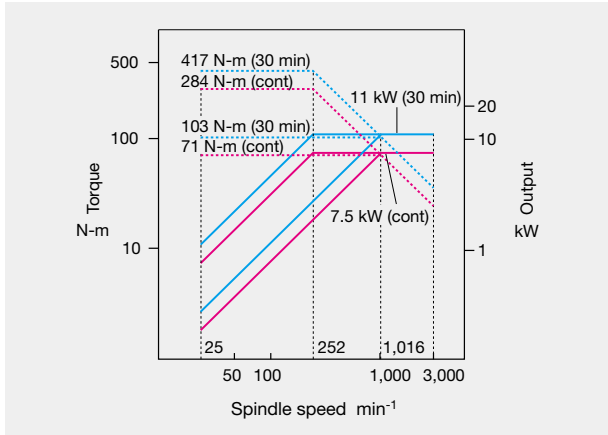
V8 and V12 turrets are available. Boring bars of $\varnothing 32$ mm or $\varnothing 40$ mm can be attached.



The V8 turret

GENOS L400II

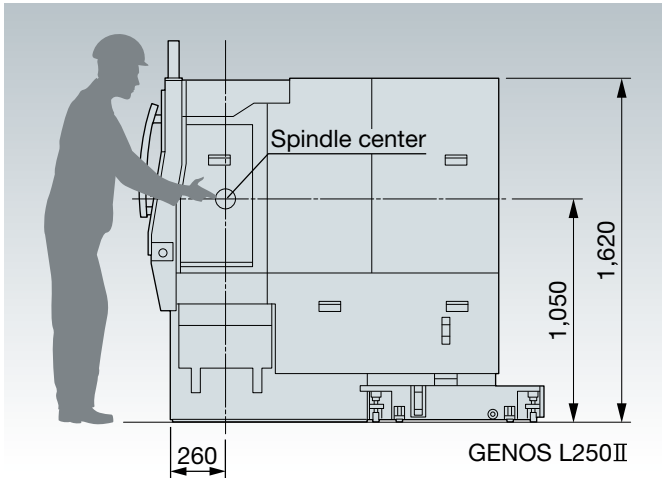
- Bearing ID/through-hole diameter: $\varnothing 120$ mm/ $\varnothing 80$ mm
- Spindle speed: 3,000 min⁻¹
- Power: 11/7.5 kW (30 min/cont)
- Torque: 417/284 N-m (30 min/cont)



Ease of use in any shop floor was a thoroughly pursued objective

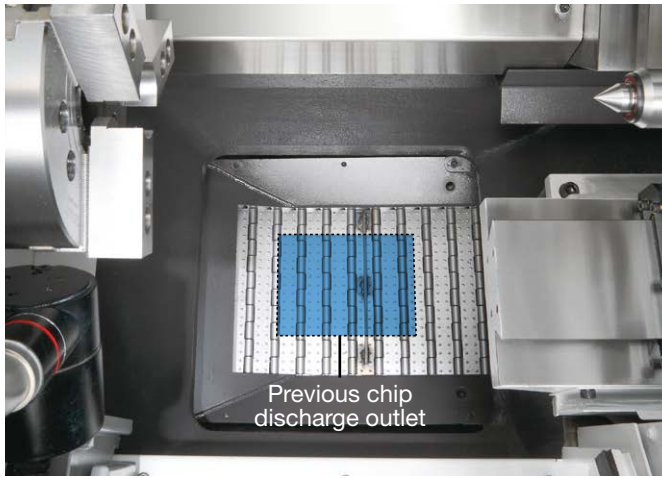
Structurally designed with good accessibility

The spindle centerline is just 260 mm from the front of the machine for easy access and reduced operator workload. The low 1,620-mm machine height also allows operators to easily see other machines and operators nearby. (GENOS L250II)



Outstanding chip discharge

The chip discharge outlet is 1.8 times larger than on previous machines, minimizing chip accumulation. The cleaning frequency is reduced for maximum operation time.



Hydraulic tailstock

A high-rigidity, low center height hydraulic tailstock supports powerful, accurate machining.



GENOS L250II MT No. 4 (revolving center)

Easy maintenance of the coolant tank

The separated coolant tank can slide out and be cleaned without removing the chip conveyor. In addition, it can be pulled out into the maintenance space, resulting in minimal machine installation space.



Mass production lines also compact

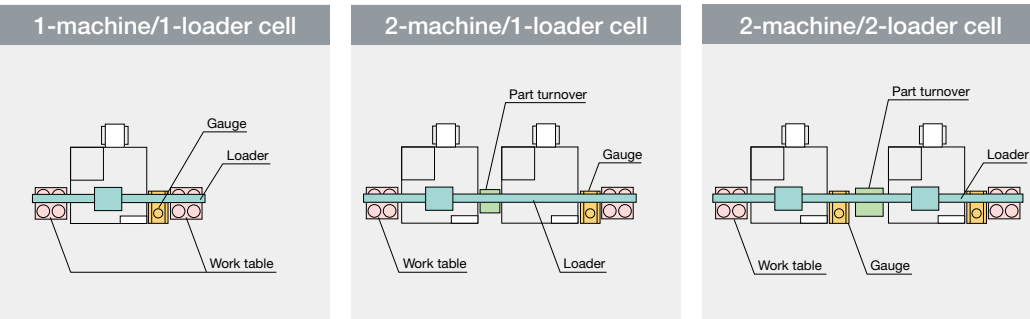
Ready-to-go systems for 1-machine 1-loader applications to full-scale production lines

Get outstanding flexibility from 1-machine/1-loader to multi-machine lines, with optimum cycle times, operation mix, work flow, floor space and the like. Okuma's selection of work tables, part turnover stands, post-process gauges and other peripherals, can provide an ideal system arrangement to meet your needs.

- OGL5-0II
- Workpiece size
- Flange: $\phi 150 \times 100$ mm
- Shaft: $\phi 80 \times 150$ mm



Loader Specs



* Blanks and finished parts can be stacked on one work table. (Not possible with 2-machine/2-loader.)

* 2-machine/2-loader cell machines can be laid out in parallel.

Peripheral equipment

Stockers

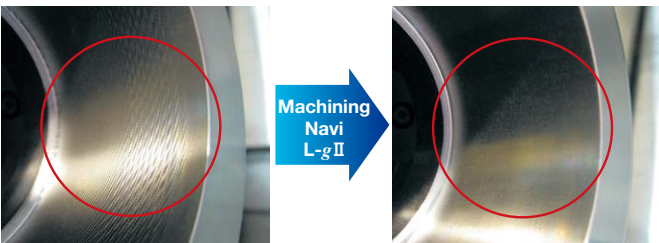
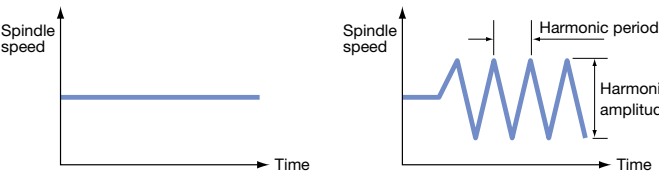
	Elevating worktable (Standard)	Palletized tray storage	Slat conveyor	Pitch-feed conveyor
Drawings				
Applicable workpieces	For flange	Mainly for flange	For flange only	For shaft only
Blanks and/or finished parts	Combinable	Combinable	Dedicated	Basically dedicated
Variations	3 types of station ● 6 stations ● 10 stations ● 20 stations	● Mounted transfer device (removal direction switch)	Conveyor length 3 types ● 1 m ● 1.5 m ● 2 m	Conveyor length 2 types ● 1.5 m ● 2 m

Okuma's Intelligent Technology reduces operator burden



Cutting condition search for turning Machining Navi L-gII (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.



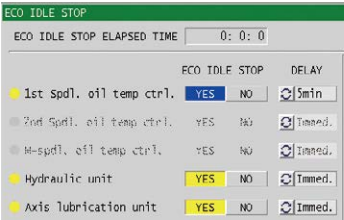
Next-Generation Energy-Saving System *ECO suite*

ECO Idling Stop

Operation only for the time required for each unit

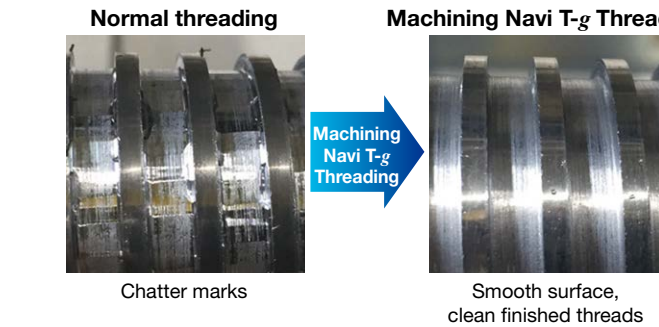
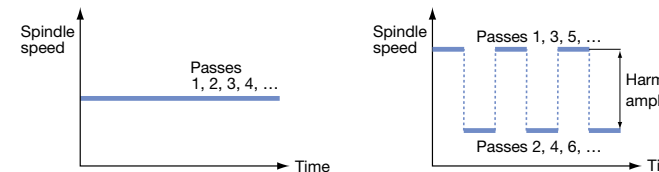
Idling time can be set by individual unit for the spindle, feed drives, and peripheral equipment. By reducing the idling time, power consumption can also be reduced.

- Example of equipment that can use ECO Idling Stop



Cutting condition search in threading Machining Navi T-g Threading (Optional)

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

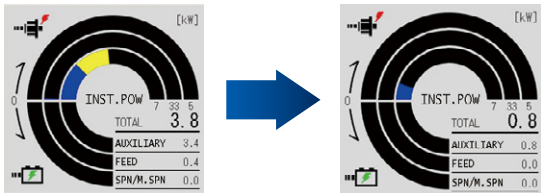


ECO Power Monitor

On-the-spot check of energy savings

Power is shown individually for spindle, feed axes, 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.

- Example of ECO Power Monitor check



Before ECO Idling Stop

After ECO Idling Stop

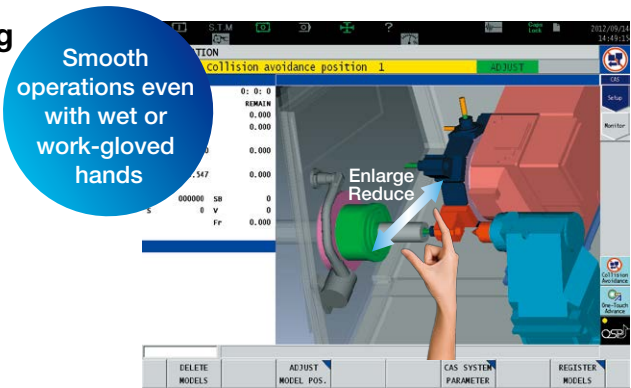
The displayed values are one example.

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

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

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

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



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

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

**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.

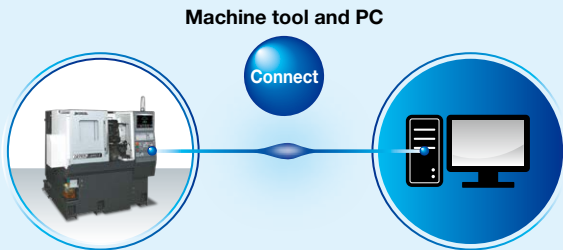


**Easy programming without keying in code
Scheduled Program Editor**

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

Connect Plan **Get Connected, Get Started, and Get
Innovative with Okuma “Monozukuri”**
Connect, Visualize, Improve

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



Ensuring smooth machining preparations

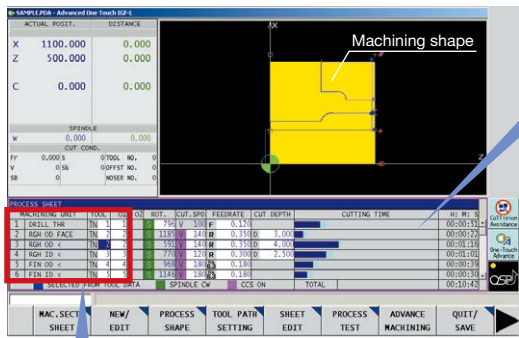
Interactive operations Advanced One-Touch IGF-L (Optional)

Part program create

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

Advanced run

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



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

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

Continuous run

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

Mid-cycle start
(finishing repeated)

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

Individual run
(machining repeated with this tool only)

Easy to Operate

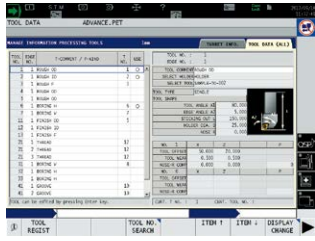
Operation screen split into four displays

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



Tool registration

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



Forming soft jaws

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



Zero offsets

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



Machine Specifications

Item	Model name		GENOS L250II		
	Spec extension		T	C × 290	C × 500
Capacity	Swing over bed	mm (in)	ø450 (17.72)		
	Swing over carriage	mm (in)	ø350 (13.78)		
	Swing over cross-slide	mm (in)	ø300 (11.81)		
	Max turning dia	mm (in)	V8 turret: ø280 (11.02) [V12 turret: ø220 (8.66)]		
	Max work length	mm (in)	290 (11.42)		500 (19.69)
Travels	X axis	mm (in)	160 (6.30)		
	Z axis	mm (in)	330 (12.99)		520 (20.47) [V12: 470 (18.50)]
Spindle	Speed	min ⁻¹	30 to 3,000 [high torque: 20 to 2,000, high speed: 45 to 4,500]		
	Speed ranges		Infinitely variable		
	Nose		JIS A2-6		
	Bore dia	mm (in)	ø66 (2.60)		
	Front bearing dia	mm (in)	ø100 (3.94)		
Turret	Type		V8 [V12]		
	No. of tools		8 [12]		
	OD tool shank	mm (in)	□25 (0.98)		
	ID tool shank dia	mm (in)	ø40 (1.57) [V12: ø32 (1.26)]	ø32 (1.26)	ø40 (1.57) [V12: ø32 (1.26)]
	Turret indexing time	sec	0.3/index		
Feedrates	Rapid traverse	m/min (fpm)	X: 25 (82), Z: 30 (98)		
Tailstock	Quill diameter	mm (in)	—	ø70 (2.76)	ø90 (3.54)
	Tapered bore type		—	MT No. 4 (revolving center)	MT No. 5 (revolving center)
	Quill travel	mm (in)	—	80 (3.15)	100 (3.94)
Motors	Main spindle	kW (hp)	11/7.5/7.5 (15/10/10) (10 min/30 min/cont)		
	Axis drive	kW (hp)	X: 3.0 (4), Z: 3.0 (4)		
	Coolant electric motor (50/60 Hz)	kW (hp)	0.55/0.75 (0.7/1)		
Machine size	Height	mm (in)	1,620 (63.78)		
	Floor space: width × depth (including tank)	mm × mm (in)	1,482* × 1,843 (58.35 × 72.56)		2,076 × 1,852 (81.73 × 72.91)
	Machine weight	kg (lb)	2,800 (6,160)	2,900 (6,380)	3,300 (7,260)
CNC			OSP-P300LA		

[] : Optional * Cylinder cover not included.

Standard Specifications

Model	GENOS L250II			GENOS L400II		
Specifications	T	C × 290	C × 500	T	C × 500	C × 1100
Spindle	A2-6 30 to 3,000 min ⁻¹			A2-8 25 to 3,000 min ⁻¹		
	11/7.5/7.5 (10 min/30 min/cont)			11/7.5 (30 min/cont)		
Turret	V8 bolt clamp					
Tailstock	—	MT No. 4 (revolving center)	MT No. 5 (revolving center)	—	MT No. 5 (revolving center)	MT No. 4 (dead center**)
Traveling system		Manual	Manual tow-along		Manual tow-along	
Standard Accessories	Full enclosure shielding, lighting equipment (LED), door interlock, hand tools					
	Coolant system, hydraulic unit, lubrication monitor, NC operation panel 15 in color TFT (touch panel)					
	Chuck foot switch, tailstock quill foot switch					
CNC	OSP-P300LA					

** Live quill

Chuck Sizes

	Chuck size	Solid / hollow chuck			
		6 in	8 in	10 in	12 in
GENOS L250II	Standard spindle A2-6	●	●	●	—
GENOS L400II	Standard spindle A2-8	—	●	●	●

Chucking Kits

Kit (solid / hollow)	A kit	B kit
Chuck (solid / hollow)	8 / 10 / 12 in	
Soft jaws, A	—	5
Soft jaws, B	—	3
Hard jaws	—	1

* 12-inch chuck cannot be selected with GENOS L250II.

* 6-inch chuck cannot be selected with GENOS L400II.

Tooling Kits (V8 turret)

	GENOS L250II	GENOS L400II
OD-I	2	
OD-II	2	
ID-H40 (offset ID-32)	4	
DS No. 2 H40 (H32)	1	—
DS No. 3 H40	—	1
BS 16-H40 (32)	2	—
BS 20-H40 (32)	2	
BS 25-H40	—	2

* () are for GENOS L250II C × 290

Machine Specifications

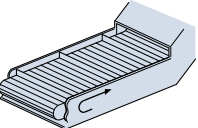
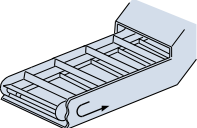
Item	Model name		GENOS L400II		
	Spec extension		T	C × 500	C × 1100
Capacity	Swing over bed	mm (in)	ø520 (20.47)		
	Swing over carriage	mm (in)	ø400 (15.75)		
	Max turning dia	mm (in)	V8 turret: ø390 (15.35) [V12 turret: ø310 (12.20)]		V8 turret: ø410 (16.14) [V12 turret: ø330 (12.99)]
	Max work length	mm (in)	500 (19.69)		1,100 (43.31)
Travels	X axis	mm (in)	220 (8.66)		230 (9.06)
	Z axis	mm (in)	520 (20.47)		1,144 (45.04)
Spindle	Speed	min ⁻¹	25 to 3,000 [high torque: 13 to 2,000, high torque, high power: 17 to 2,000]		
	Speed ranges		2 auto ranges (2 range motor coil switching)		
	Nose		JIS A2-8		
	Bore dia	mm (in)	ø80 (3.15)		
	Front bearing dia	mm (in)	ø120 (4.72)		
Turret	Type		V8 [V12]		
	No. of tools		8 [12]		
	OD tool shank	mm (in)	□25 (0.98)		
	ID tool shank dia	mm (in)	ø40 (1.57)		
	Turret indexing time	sec	0.3/index		
Feedrates	Rapid traverse	m/min (fpm)	X: 25 (82), Z: 30 (98)		
Tailstock	Quill diameter	mm (in)	—	ø90 (3.54)	
	Tapered bore type		—	MT No. 5 (revolving center)	MT No. 4 (dead center*)
	Quill travel	mm (in)	—	100 (3.94)	
Motors	Main spindle	kW (hp)	11/7.5 (15/10) (30 min/cont) [high power motor: 15/11 (30 min/cont)]		
	Axis drive	kW (hp)	X: 2.8 (4), Z: 3.5 (5)		X: 2.8 (4), Z: 4.6 (6)
	Coolant electric motor (50/60 Hz)	kW (hp)	0.55/0.75 (0.7/1)		
Machine size	Height	mm (in)	1,791 (70.51)		2,057 (80.98)
	Floor space: width × depth (including tank)	mm × mm (in)	2,280 × 1,855 (89.76 × 73.03)		3,537 × 2,453 (139.25 × 96.57)
	Machine weight	kg (lb)	4,350 (9,570)	4,500 (9,900)	6,600 (14,520)
CNC			OSP-P300LA		

* Live quill [] : Optional

Optional Specifications

Spindle speeds	(L250II)	High-torque specs (A2-6) 20 to 2,000 min ⁻¹ High-speed specs (A2-6) 45 to 4,500 min ⁻¹	Tailstock	Tailstock quill auto advance/retract confirmation, tailstock thrust high/low switch
	(L400II)	High-torque specs (A2-8) 13 to 2,000 min ⁻¹		
Main spindle motor (special)	(L400II)	High-power spindle motor specs 15/11 kW (30 min/cont)	Air blower (blast)	Chuck, turret, spindle bore, tailstock
V12 turret		Bolt clamp	Coolant	High/low pressure switch Pump: 0.8 / 0.5 kW (60/50 Hz) Detection (level), mist collector mount Sludge measures
Chucking		Auto chuck open/close with confirmation, chucking miss detection, chuck high/low pressure switch, spindle work stopper, chuck work stopper		Chip discharge Pan (side, rear), bucket Conveyor (side, rear; hinged L, H)
Measuring		In-process work gauging, Touch Setter gauging M (manual), A (automatic)	Door auto open/close	Front door, the upper door
Centers	(L250II)	MT 5, MT 4, for small diameters	Automation specs	Work rest, bar feeder, parts catcher, Work discharge conveyor, loader (OGL)
	(L400II)	MT 5, MT 4 threaded dead center (live quill), MT 5 for small diameters		

Chip Conveyors and Applications

Name	Hinge type	Scraper type
Application	● For steel	● For castings
Features	● General use	● Magnet scraper for sludge processing ● Easy for maintenance ● Blade scraper
Shape		

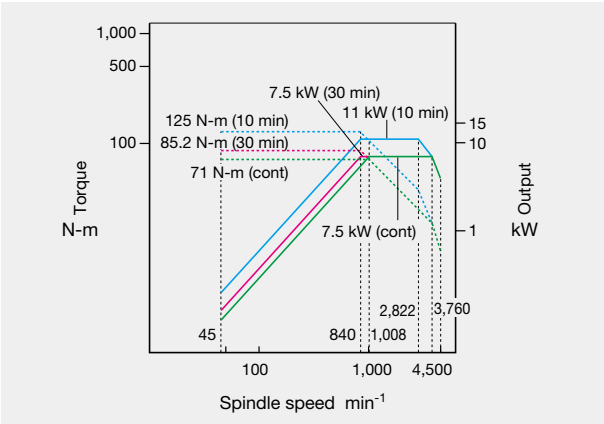
* The machine may need to be raised (platform) depending on the type of chip conveyor.

■ Spindle output/torque diagrams (Optional)

GENOS L250II

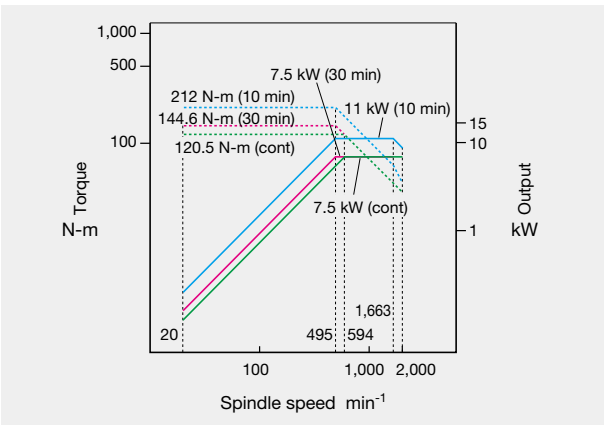
High-speed spindle

- Spindle speed: 4,500 min⁻¹
- Power: 11/7.5/7.5 kW (10 min/30 min/cont)
- Torque: 125/85.2/71 N-m (10 min/30 min/cont)



High-torque spindle

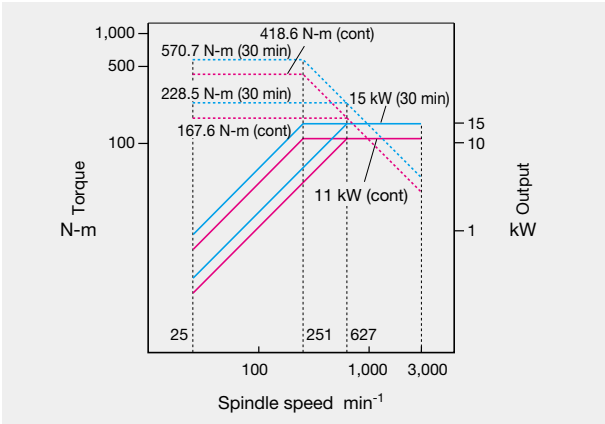
- Spindle speed: 2,000 min⁻¹
- Power: 11/7.5/7.5 kW (10 min/30 min/cont)
- Torque: 212/144.6/120.5 N-m (10 min/30 min/cont)



GENOS L400II

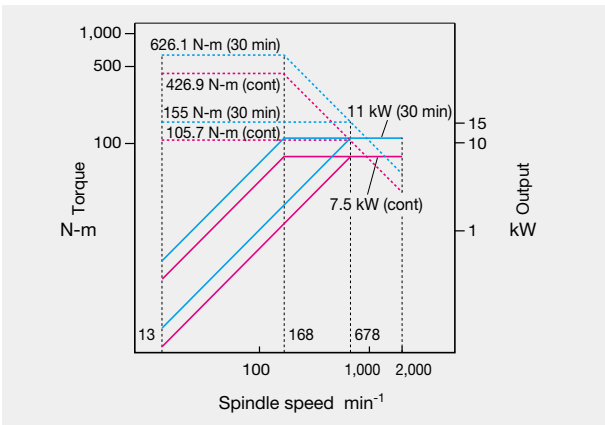
Standard high-power spindle

- Spindle speed: 3,000 min⁻¹
- Power: 15/11 kW (30 min/cont)
- Torque: 570.7/418.6 N-m (30 min/cont)



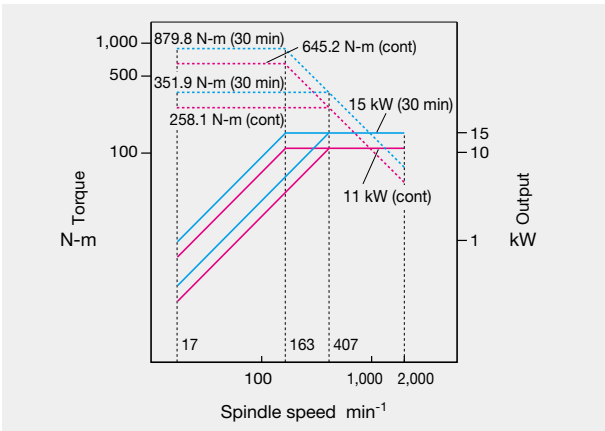
High-torque spindle

- Spindle speed: 2,000 min⁻¹
- Power: 11/7.5 kW (30 min/cont)
- Torque: 626.1/426.9 N-m (30 min/cont)



High-torque, high-power spindle

- Spindle speed: 2,000 min⁻¹
- Power: 15/11 kW (30 min/cont)
- Torque: 879.8/645.2 N-m (30 min/cont)

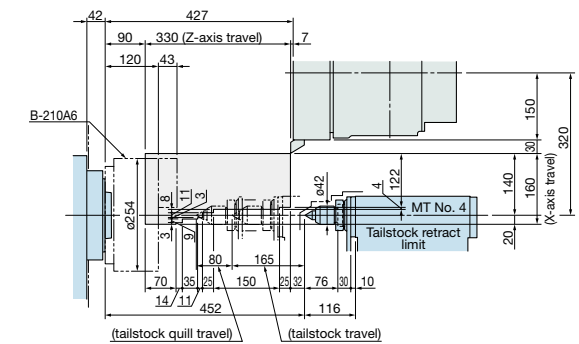


■ Working Ranges

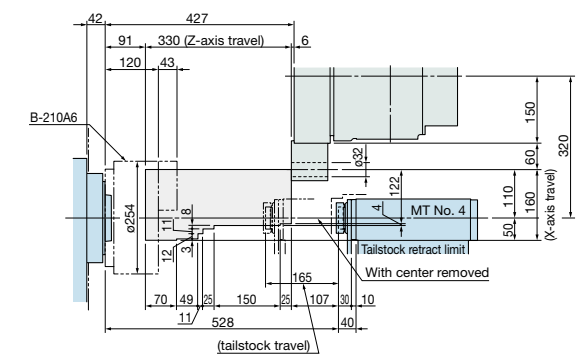
Unit: mm

GENOS L250II V8 turret (DBC 290)

Direct tool shank

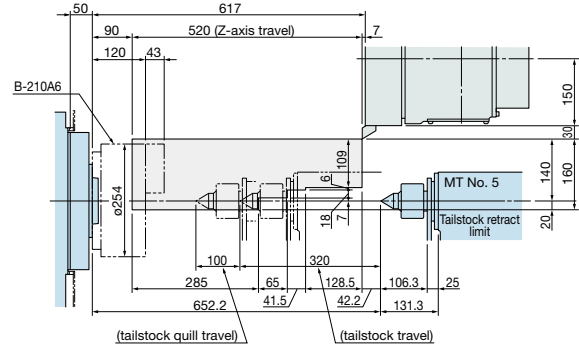


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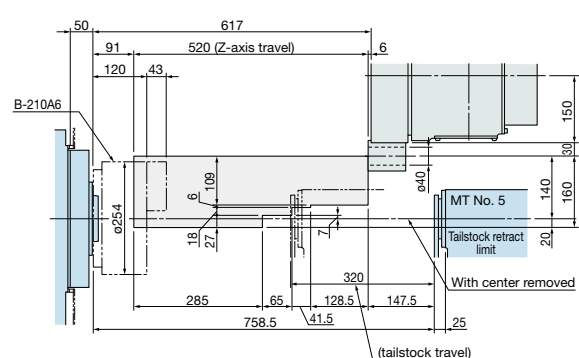


GENOS L250II V8 turret (DBC 500)

Direct tool shank

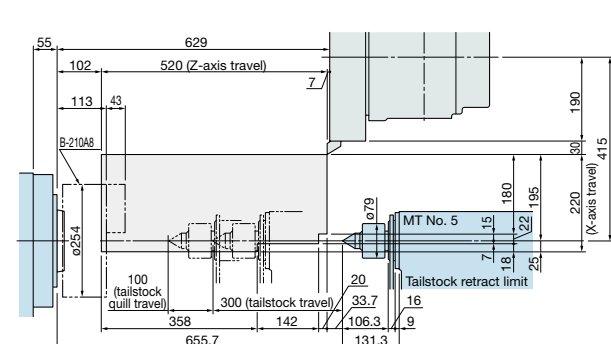


ID

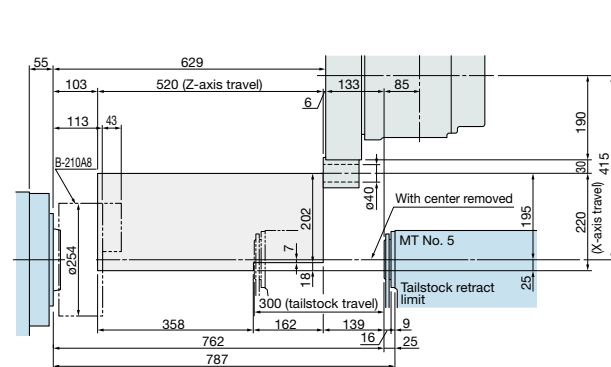


GENOS L400II V8 turret (DBC 500)

Direct tool shank

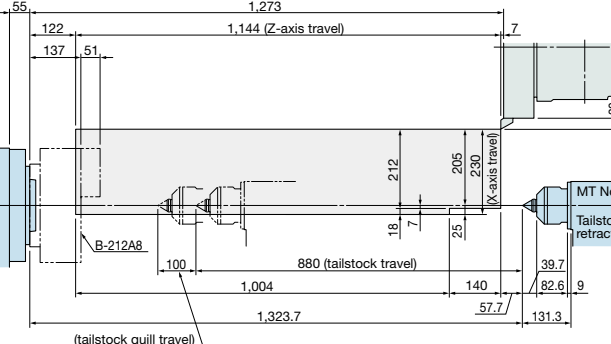


ID

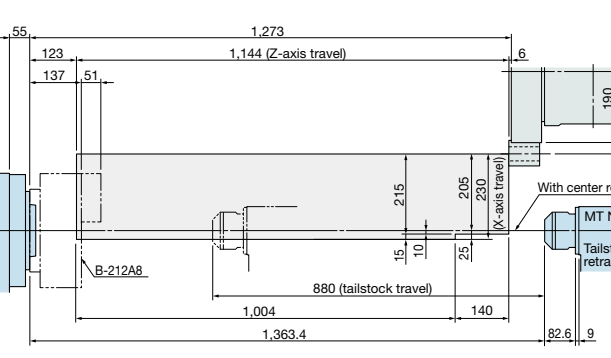


GENOS L400II V8 turret (DBC 1,100)

Direct tool shank



ID



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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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.



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