OKUMA

OPEN POSSIBILITIES

MULTUS U Series

MULTUS U3000
MULTUS U4000
MULTUS U5000

Multitasking Machines

MULTUS U Series

MULTUS U3000 / MULTUS U4000 / MULTUS U5000

Multitasking Machines

Green-Smart Machine
Powered by Intelligent Technology

Process integration and environmental sustainability achieved with a high-precision, high-rigidity, and high-performance machine

The ultimate multi-tasking machine that meets all demands

Manufacturing sites face challenges such as labor shortages, a decline in skilled workers, shifting mindsets toward work styles, and initiatives for decarbonization.
To enhance productivity while addressing these challenges, it is essential to integrate processes by using multi-tasking machines that can consistently maintain high precision—enabling shorter lead times, lower production costs, reduced labor and space requirements, and extended unmanned operation.
The MULTUS U series is the ultimate multi-tasking machine that meets all of these demands.

Multi-tasking machines, which integrate the functions of a lathe and machining center, are often considered difficult to maintain high precision over extended periods due to their complex structures with multiple drive axes along with the challenges of suppressing dimensional changes over time. However, this is precisely where Okuma excels.
To ensure machining accuracy, the machine's rigidity—a critical foundation—is maintained through our signature high-rigidity design, featuring a bed with a diagonal rib structure similar to that of double-column machining centers, and a column movement system that preserves straightness.
Thanks to Okuma's proprietary structural design and thermal displacement control, the machine achieves exceptional stability in accuracy, unmatched by others, even under varying environmental temperatures—enabling prolonged continuous high-precision machining.

Moreover, the machine continues to evolve as an intelligent system that autonomously monitors its operational status, allowing even novice operators to maintain high precision and productivity with ease while supporting decarbonization and saving energy.
It is well-equipped to meet the growing demand for decarbonization and contributes to achieving sustainable productivity improvements.

Medical component
Artificial hip joint

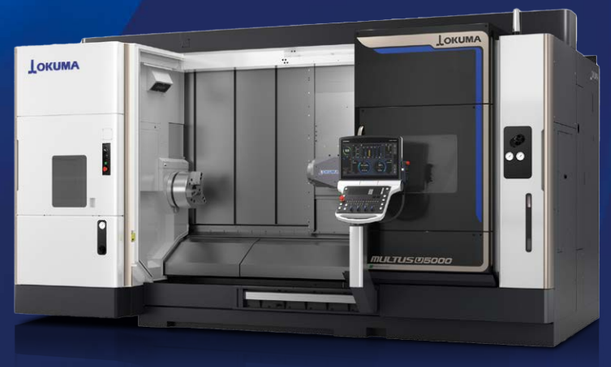
Construction machinery component
Reduction gear

Hydropower component
Guide vane

MULTUS U3000

MULTUS U4000

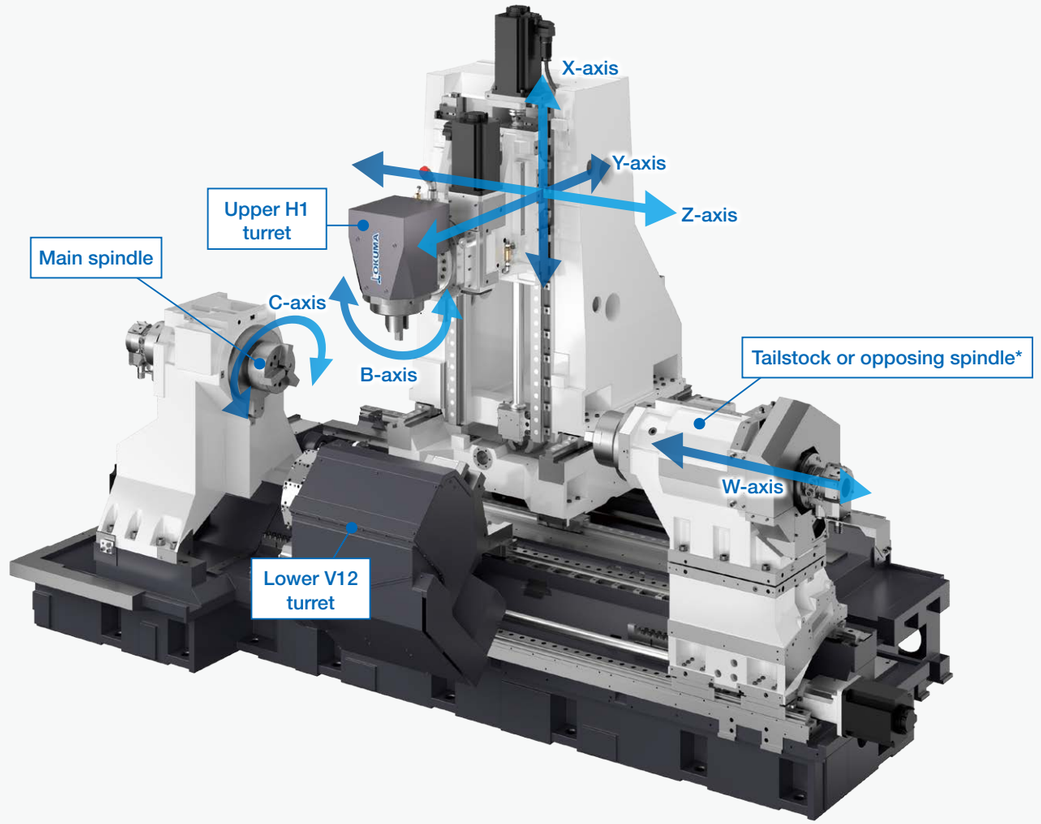
MULTUS U5000



Photographs and images used in this brochure may include optional equipment.
Note: Door shape differs between upper turret specifications and upper and lower turret specifications.

For details, please watch the video.

Extensive variations to handle a wide range of workpieces 29 models available in total



* The model shown in the image features opposing spindles (2SW)

Spec extension

		MULTUS U3000		MULTUS U4000		MULTUS U5000		
Distance between centers (DBC)		1000	1500	1500	2000	1500	2000	3000
Upper turret	Chuck work (1ST)	●						
	Tailstock (1SC)	●	●	●	●	●	●	●
	Opposing spindles (1SW)	●	●	●	●	●	●	●
Upper and lower turret	Tailstock (2SC)	●	●	●	●	●	●	●
	Opposing spindles (2SW)	●	●	●	●	●	●	●

High accuracy Stable accuracy reduces the burden of dimensional control and boosts productivity

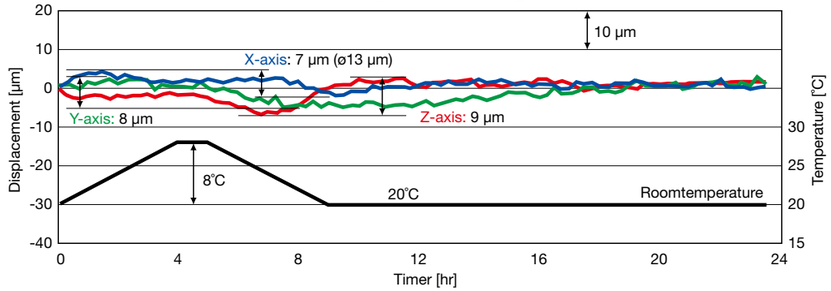
Exceptional dimensional stability enables extended continuous high-precision machining

Despite being a multi-tasking machine, it maintains consistent machining accuracy over long periods

Thermo-Friendly Concept
The Okuma Intelligent Technology that enables machines to autonomously maintain high accuracy stability

Okuma's "Thermo-Friendly Concept" enables remarkable machining accuracy through original structural design and thermal deformation control technology. Free from troublesome dimensional compensation and warm-up, it exhibits excellent dimensional stability even during consecutive operation over long periods and environmental temperature change in the plant.

Thermal deformation over time (actual data): Less than 10 µm
Ambient temperature change: 8°C



[Operating conditions (MULTUS U3000 actual data)]

Main spindle	3,800 min^{-1}	2.5 min
Milling tool spindle	6,000 min^{-1}	6 min
	10,000 min^{-1}	6 min
Interval		0.5 min
Cycle time	Total	15 min
Coolant: Used		

Note: The data mentioned in this brochure are "actual data" and do not represent guaranteed accuracies.

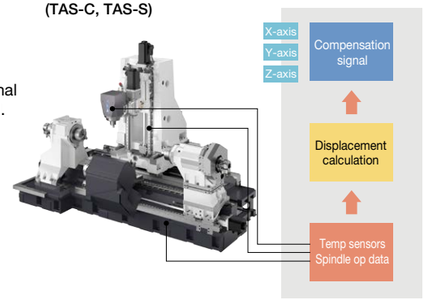
Eliminate waste with the Thermo-Friendly Concept

In addition to maintaining high dimensional accuracy when room temperature changes, Okuma's Thermo-Friendly Concept provides high dimensional accuracy during machine startup and machining restart.
To stabilize thermal deformation, warming-up time is shortened and the burden of dimensional correction during machining restart is reduced.

- Machine startup
- Machining restart
- Room temp change

→ **High dimensional stability**

Outline of thermal deformation control (TAS-C, TAS-S)



TAS-C
(Thermo Active Stabilizer – Construction)

The machine is optimally controlled and machining accuracy is maintained when the ambient temperature changes.

TAS-S
(Thermo Active Stabilizer – Spindle)

Even when the spindle speed changes frequently, the thermal deformation of the milling tool spindle is accurately controlled.

5-Axis Auto Tuning System option
Gauging and compensation of geometric error

Anyone can automatically check for geometric error quickly and easily

On multi-tasking machines there is "geometric error," such as spindle misalignment, that have huge effects on machining accuracy. The 5-Axis Auto Tuning System measures geometric error with a touch probe and datum sphere, and tunes On multi-tasking machines for better operating accuracy through compensation control using the measurement results. This helps to achieve a higher level of 5-axis machining accuracy.

Notes: Applicable to the opposing spindle side as well
May not be applicable depending on the specifications of jigs such as chucks or steady rests.

Manual measurement and adjustment of geometric error is bothersome and time-consuming.
The 5-Axis Auto Tuning System conducts automatic tuning to correct geometric error in a short time.

Start of tuning →

Set datum sphere on the chuck and move probe directly above it


Press START MEASURE key and cycle start button


Auto measurement and then auto setting of compensation parameters

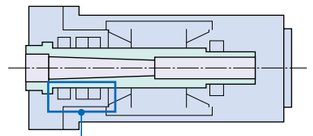
→ Tuning complete

Engineered for excellence — a trusted machine structure delivering high rigidity and precision machining

Milling spindle

Highly rigid roller bearings

Roller bearings for the front make the spindle extremely rigid.
That enables full-potential tooling applications and solid support for powerful cutting.


Roller + angular contact ball bearings

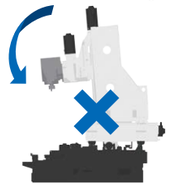
Column

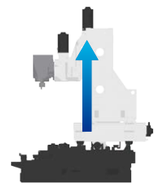
Orthogonal 3-axis column feed structure

Achieves geometric accuracy comparable to machining centers.

Suppresses tilt caused by temperature changes

A machine structure that prevents tilt of the column and milling spindle even with temperature changes.


When tilt occurs due to room temperature changes, thermal deformation becomes complex

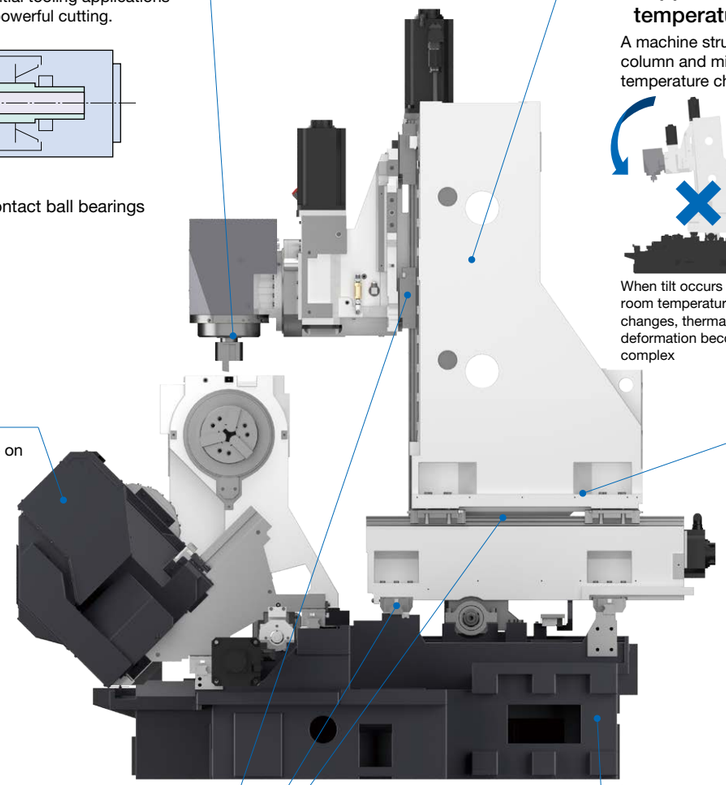

If no tilt occurs despite room temperature changes, thermal deformation remains simple—only expansion

Lower turret

Highly rigid slide guide on the X-axis feed shaft.

Y-axis travel

Adopts a highly rigid column movement system.



Bed

Diagonal rib structure

The bed casting adopts a ribbed structure similar to that of a double-column machining center, delivering high strength and durability.

Rigidity comparison sample (rigidity per mass)
Diagonal ribs provide 7 times the rigidity compared to a non-ribbed structure.

Axis guideway system

X-, Y-, Z-axis roller linear guides

- Faster feed rates
- Improved positioning accuracy
- Minimal following error
- Suppressed heat generation

High productivity

Increase in productivity by shortening machining time with highly efficient machining

Outstanding productivity for turning and milling—perfect for hard-to-machine materials

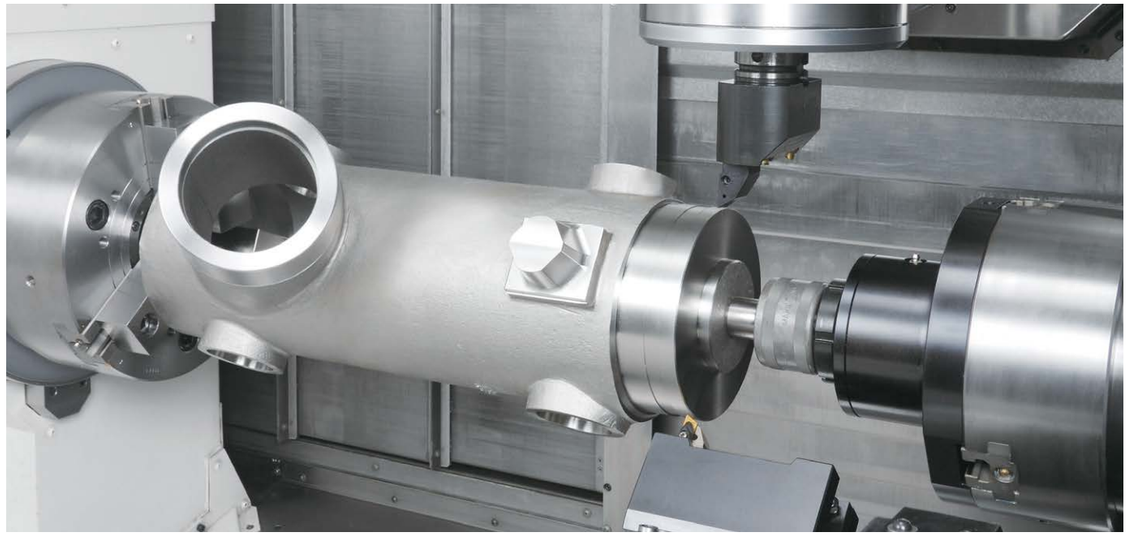


Photo shows a tailstock attachment mounted on the opposing spindle with tailstock control.

Machining capacity

Turning (workpiece material: S45C)

MULTUS U3000 (ø120 spindle)				MULTUS U4000/U5000 (ø160 spindle*)			
<Actual data> Cutting area	4.8 mm²			<Actual data> Cutting area	5.0 mm²		
Heavy-duty		Drilling		Heavy-duty		Drilling	
4.8 mm²		ø63 Throwaway drill		5.0 mm²		ø63 Throwaway drill	
Speed	150 m/min	Speed	150 m/min	Speed	150 m/min	Speed	150 m/min
Depth	8 mm	Feed rate	0.23 mm/rev	Depth	8 mm	Feed rate	0.23 mm/rev
Feed rate	0.6 mm/rev			Feed rate	0.625 mm/rev		

Milling (workpiece material: S45C)

MULTUS U3000/U4000/U5000							
<Actual data> Chip volume	604 cm³/min						
End milling		Face milling		Drilling		Tapping	
ø20 end mill 7-flute		ø50 milling cutter 5-flute		ø50 Throwaway drill		M30 P3.5	
Speed	192 m/min	Speed	300 m/min	Speed	150 m/min	Speed	30 m/min
Depth × width	6.5 × 20 mm	Depth × width	6 × 35 mm	Feed rate	134 mm/min	Feed rate	1,113 mm/min
Feed rate	4,644 mm/min	Feed rate	2,865 mm/min				
Chip volume	604 cm³/min	Chip volume	602 cm³/min				

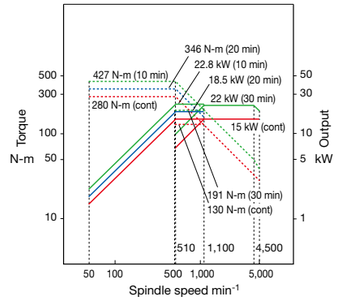
* Optional on MULTUS U4000, standard on MULTUS U5000

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

The spindle lineup

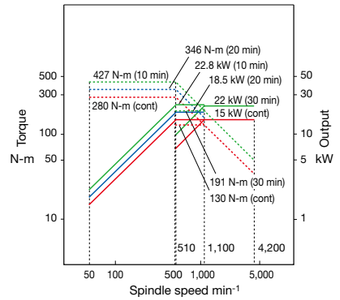
MULTUS U3000 ø120-mm Std spindle
ø120-mm Standard opposing spindle (1S)

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



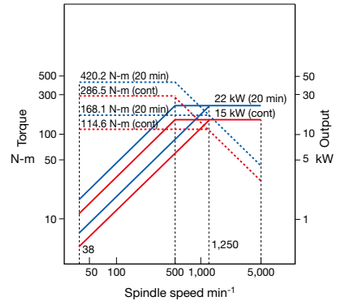
MULTUS U3000 ø140-mm Big-Bore spindle
ø140-mm Opposing Big-Bore spindle (1S)

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



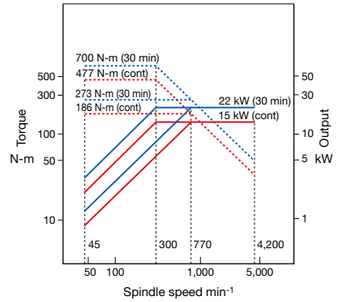
MULTUS U3000 ø100-mm Standard opposing spindle (2S)

- Spindle speed 5,000 min^{-1}
- Output 22/15 kW (20 min/cont)
- Torque 420.2/286.5 N-m (20 min/cont)



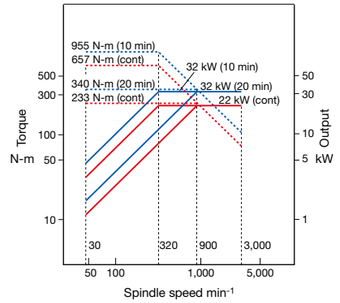
MULTUS U4000 ø140-mm Std spindle
ø140-mm Standard opposing spindle (1S)

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



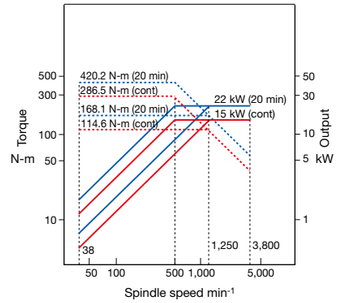
MULTUS U4000 ø160-mm Big-Bore spindle
ø160-mm Opposing Big-Bore spindle (1S)
MULTUS U5000 ø160-mm Standard opposing spindle (1S)

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



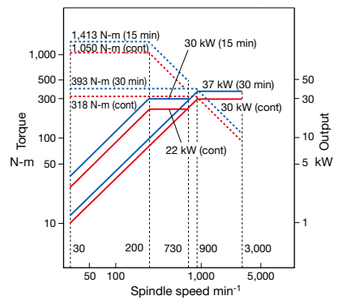
MULTUS U4000 ø120-mm Standard opposing spindle (2S)
MULTUS U5000 ø120-mm Standard opposing spindle (2S)

- Spindle speed 3,800 min^{-1}
- Output 22/15 kW (20 min/cont)
- Torque 420.2/286.5 N-m (20 min/cont)



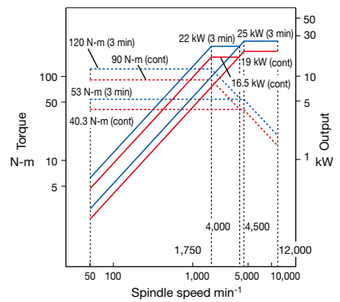
MULTUS U5000 ø160-mm Std spindle

- Spindle speed 3,000 min^{-1}
- Output 37/30 kW (30 min/cont)
- Torque 1,413/1,050 N-m (15 min/cont)



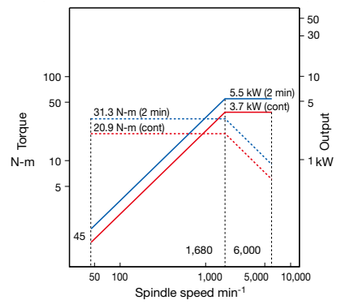
MULTUS U3000 Upper turret M-spindle
MULTUS U4000 Upper turret M-spindle
MULTUS U5000 Upper turret M-spindle

- Spindle speed 12,000 min^{-1}
- Output 25/19 kW (3 min/cont)
- Torque 120/90 N-m (3 min/cont)



MULTUS U3000 Lower turret M-spindle
MULTUS U4000 Lower turret M-spindle
MULTUS U5000 Lower turret M-spindle

- Spindle speed 6,000 min^{-1}
- Output 5.5/3.7 kW (2 min/cont)
- Torque 31.3/20.9 N-m (2 min/cont)



High productivity

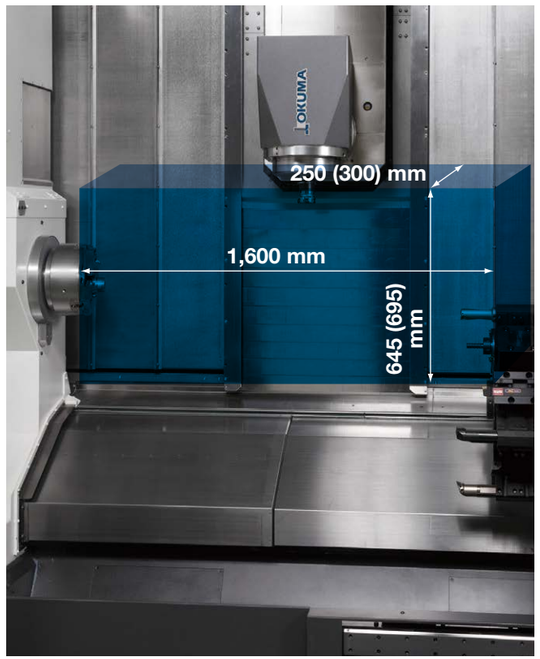
Achieves both high-precision process integration and enhanced productivity

Integrates diverse machining processes for a wide range of workpieces—all in a single machine

Flexible machining that fully utilizes the machine's travel range

Tough cutting in entire Y-axis range

With the ideal, large work envelope for lots of milling of complex parts. The class best Y-axis travel is fully utilized with a highly rigid traveling column, for powerful cutting along the entire Y-axis.

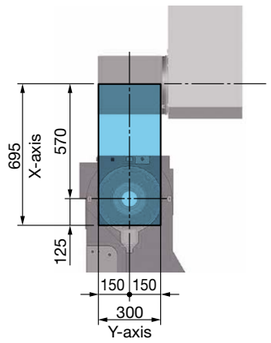


DBC 1500 illustration ( ) figures for the MULTUS U4000/U5000

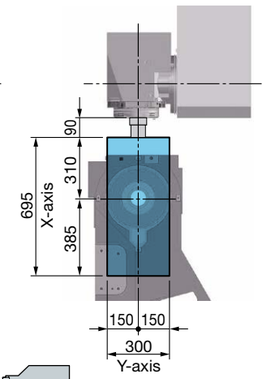
X-/Y-axis working range

Unit: mm

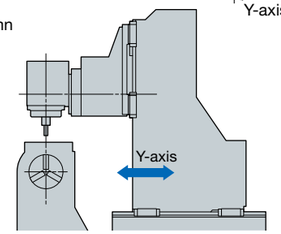
MULTUS U4000/U5000
B-axis 0°



MULTUS U4000/U5000
B-axis 90°



● Traveling column



Wide B-axis swing: 240°

The wide 240-degree swing of the B-axis spindle allows it to have equivalent machining areas for both the main and opposing spindle. With the NC B-axis (option), roller gears are used to achieve "0" backlash during B-axis drive, and highly accurate 5-axis machining.

Superb C-axis positioning accuracy: 0.0001° control

Highly accurate C-axis control function is used for both the main and opposing spindles. This will support end-users requiring very accurate machining of component shapes that are quite complex. Moreover, a retention mechanism that allows for heavy-duty milling enables the machine to achieve both high accuracy and high efficiency.

High-efficiency production for a wide variety of machining applications with process-intensive machining

Pinion shaft

Spline machining

Done by mounting a hob cutter on a milling tool spindle and synchronizing it to C-axis rotation (optional hobbing function).

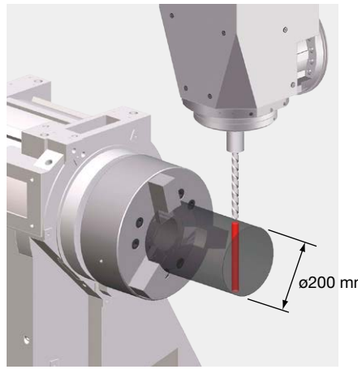
Cutting a spiral bevel gear

C-/B-axis indexing with X-Y-Z axes generated to cut a spiral bevel gear.

Machining examples

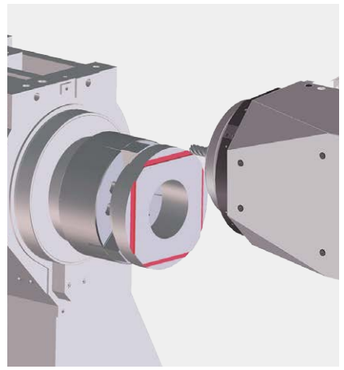
Thru-holes up to ø200 mm

Long X-axis travel makes possible side-face thru-holes in ø200 mm workpieces—without C-axis rotation.
(MULTUS U4000/U5000)



Maximum □230 mm contouring

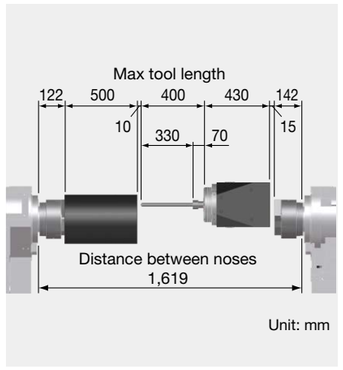
Cutting the outline of a □230 mm workpiece without C-axis rotation is also possible. Square parts can be cut with machining-center-equivalent geometric accuracy. (MULTUS U4000/U5000)



When using a ø20 mm end mill

Deep drilling: 330 mm

With the DBC 1000 machine, 500 mm long workpieces can be drilled (330 mm tool projection) to make deep holes.
(MULTUS U3000 with 1SW specifications, standard main and opposing spindles)

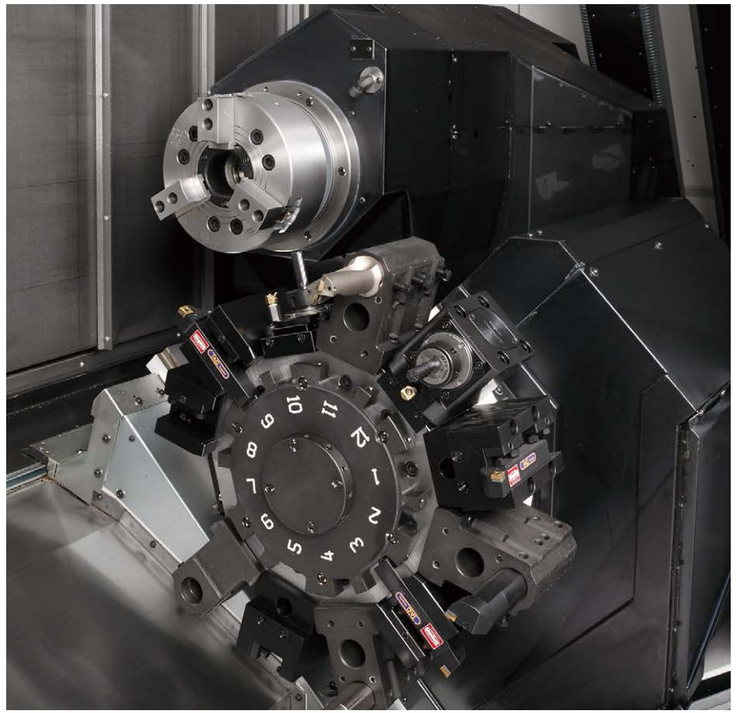


High productivity

Improved productivity through versatile process integration

Handles a wide variety of machining tasks with an extensive range of applications

2 saddles for minimum cycle times



Powerful cuts from a rigid lower turret

In variable-mix, variable-volume production, cycle times can be minimized, and high productivity can be achieved with a 2-saddle machine. The lower turret is very sturdy, and supports real milling and turning jobs. (The opposing spindle capacity and working range near the opposing spindle differ with 1SW and 2SW specifications.)

Turning specs

Many different types of machining are possible with 12 tools.

- Turret type: V12 turret
- OD tool size: □25 mm
- Boring bar size: ø40 mm

Multitasking specifications (Selectable for opposing spindle specifications only)

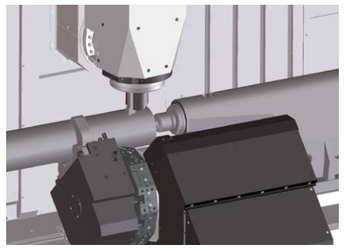
A milling tool can be attached to the lower turret.

- Turret type: V12 multitasking turret
- Milling tool spindle speed: 6,000 min^{-1}
- Milling tool spindle motor: 5.5/3.7 kW (2 min/cont)

Various types of machining is made possible with lower turret

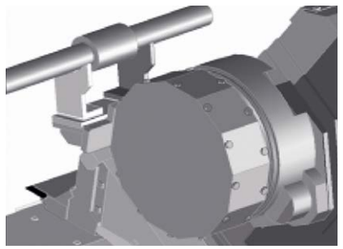
Steadyrest attachment (option)

A steadyrest can be attached to the lower turret to support the workpiece. Long or single-side clamped workpieces can then be cut with no chatter occurring.
(Attached to lower turret turning specifications)



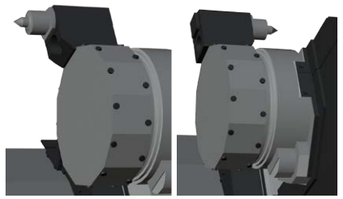
Mounted workrest (option)

A workrest can also be mounted to the lower turret, to help automate workpiece load/unload operations—and reduce operator burden.



Tailstock attachment (option)

A tailstock attachment is mounted on the lower turret, allowing the tailstock center to press against the end face of the workpiece to provide support.
It can be mounted in either the main spindle or opposing spindle direction.



Main spindle direction

Opposing spindle direction

Achieves process-intensive machining beyond the framework of multitasking machines

Sloped axis turning

Turn-Cut option

Want to integrate tilting-axis turning into process-intensive machining

This function enables turning operations using the milling spindle.
The circular turning of the feed axis and the spindle indexing angle are simultaneously controlled so that the tool edge is always facing the center of the milling spindle circular turning. Sloped axis turning can be done by sloping the B-axis.
Turning processes such as taper and end-face machining for unbalanced workpieces can be integrated without the need for dedicated machines.
Moreover, machining of any diameter can be done with a single tool. Inside and outside diameter machining that is larger than the maximum tool diameter can be done. When setting machining conditions, the diameter and roundness of the workpiece can be specified using the turning cut guide (option), which then advises on the optimal spindle speed.

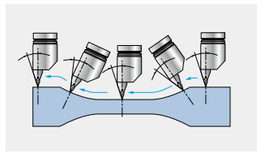
Turning can be done on a sloped axis

Efficient curved-surface turning

B-axis Turning option

Want to eliminate step marks at joints in curved surface machining

Simultaneously controlled X, Z and B axes of a multitasking machine efficiently turns curved surfaces.
When turning curved surfaces with a fixed (non-universal) B-axis head, tool changes are often required depending on the shape. However, with B-axis turning, the B-axis angle can be adjusted to match the curvature, keeping the cutting edge optimally aligned and enabling curved surface machining without tool changes.
When cutting a curve, machining can always be done at the best tool angle, to eliminate ridges and get uniform quality.



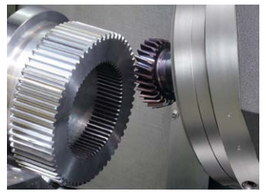
Turning with a constant cutting point angle

Easy multitasking for gears

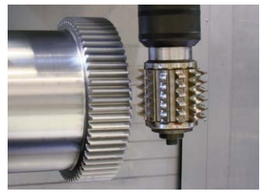
Gear Machining Package option

Want to achieve high-accuracy gear cutting without dedicated machines

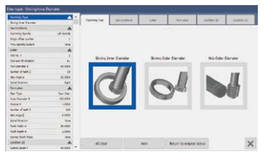
High-accuracy gear cutting can be performed using a multi-tasking machine.
Gear cutting that previously required complex programming can now be done with ease. With easy programming, simply input the tool type, gear data, and cutting conditions to achieve highly accurate machining, reducing programming time to about one-tenth that of manual input.
Process-intensive machining is achieved, including the gear cutting that used to be done on expensive special-purpose machines.



Skiving (OD/ID splines)



Hobbing



Input screen

High productivity A range of advanced technologies that enhance productivity

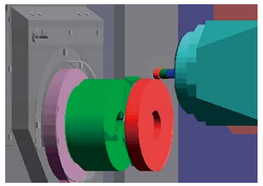
Okuma's advanced technologies deliver real results on the production sites

Collision Avoidance System
Setup, trial cut times reduced by 40%—preventing collisions

standard equipment

Want to focus on machining with peace of mind—without worrying about collisions

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 machining times, and the confidence to focus on making parts. Troublesome settings eliminated. With easy tool preps, you can use the preset tool data just as it is.



Virtual machine (advance simulation)

Actual machine

Eliminate collision-related machine down time

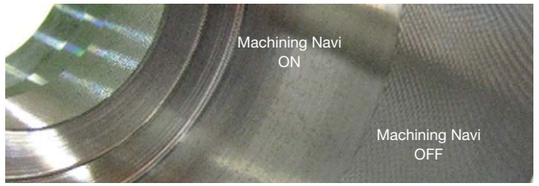
When a multitasking machine breaks down because of a collision, both L and M machining stop and causes large productivity losses. The Collision Avoidance System simply prevents this problem from occurring.

Machining Navi Cutting Conditions Search Function
With optimal cutting conditions: longer tool life, shorter cycle time

option

Want to suppress chatter while keeping costs under control

When chatter occurs, 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 instantly searches for the optimum cutting conditions and "visualizes" the machining status to help maximize machine and tooling capabilities, and provide improvements in productivity.



For turning

Machining Navi L-*g*Ⅱ (guidance)

Chatter-free applications for lathes

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

Machining Navi T-*g* (threading)

Threading chatter can be easily controlled by anyone

In the threading cycle, chatter during threading is controlled through appropriate change of the spindle speed in each pass.

For milling

Machining Navi M-*g*Ⅱ+ (Optimum spindle speed/harmonic spindle speed control)

Adjust cutting conditions while monitoring the data

From chatter noise picked up by the microphone, Machining Navi will display the best options for chatter-free spindle speed. The operator can select a recommended speed and immediately confirm the result.

Machining Navi M-*i* (Intelligently optimized spindle speed control)

Simple, auto-mode—leave it to the machine Finding optimum cutting conditions quickly

Chatter vibration is measured by built-in sensors, and spindle speed is automatically changed to the optimum speed. In addition, advanced graphics of the optimal cutting conditions represent effective alternatives to suppress various chatter characteristics throughout the low to high speed zones.

Reduced tool change time by shortening residual coolant discharge time

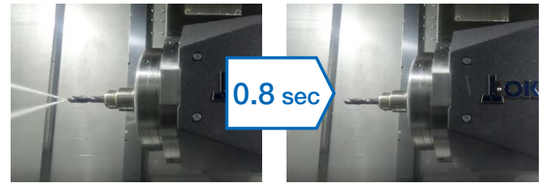
Suction of excess coolant in spindle

option

Removes residual coolant from the tool and inside the spindle in just 0.8 seconds (based on actual results using a drill tool).
With in-spindle coolant suction, there's no need for air blow (which typically takes at least 15 seconds) to remove residual coolant from the tool and spindle—significantly reducing tool change time.
It also avoids the generation of mist due to air blowing, and prevents deterioration of the working environment.
The frequency of required cleaning can also be reduced, to ease the workload on the operator.

Coolant suction time: 0.8 seconds*

* Coolant suction time varies depending on the tool.



With predictive maintenance, prevent machine stoppages just in time

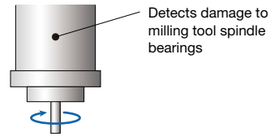
AI Machine Diagnosis Function
Machine tool diagnostics technology with artificial intelligence (AI)

option

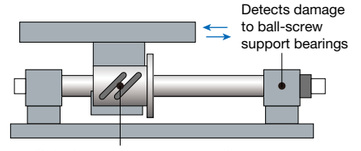
AI installed in the control system detects abnormalities in the spindle and feed axes before they lead to issues, preventing prolonged machine downtime and enabling stable, long-term production. The operators themselves can easily diagnose the machine by following simple screen guidelines on the Okuma control.

Notes: AI diagnostic models are already installed, and diagnoses can be performed by the machine itself.
AI diagnostic models can be updated through Okuma's Connect Plan.
With AbsoScale detection specs, ball-screw wear detection is possible.

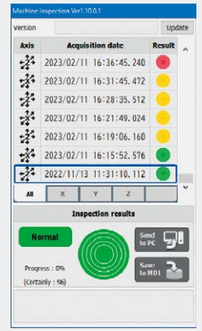
AI Spindle Diagnosis Function



AI Feed Axis Diagnosis Function



Self-diagnosis of spindle and feed axis status with AI



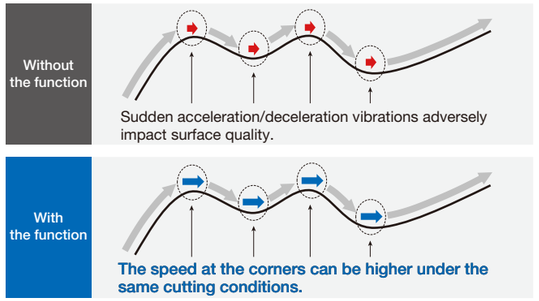
Improving the performance of machining dies and free-form surfaces

Hyper-SurfaceⅡ

option

No need to modify NC data. Ridgelines and uneven surface edges are reduced, the machined surface quality is improved, and hand-polishing time is eliminated. Hyper-Surface automatically compensates for fluctuations in the CAM machining data, and for positional misalignment between edges and adjacent cutter paths, while maintaining the required shape accuracy. In addition, SMART finishing suppresses vibration without reducing the speed at the corners, reduces the cycle time and improves the surface quality.

Notes: Engineering discussions required.
The effect varies depending on the machining shape.



Labor-saving Labor-saving solutions to address labor shortages

Labor-saving solutions that reduce operator workload

3D measuring for multitasking machines

NC Gage option

Removing, transporting, and reattaching workpieces for measurement is time-consuming and labor-intensive

Dimensions such as hole position and flatness, as well as geometric accuracy, can be measured directly on the machine. This eliminates the need for workpiece transport, loading/unloading, and setup changeovers for each measurement point—significantly reducing lead time. Over 20 types of geometric tolerance and positional dimension measurements are supported, with intuitive teaching enabling automatic generation of measurement programs. Measurement results can be saved as data.

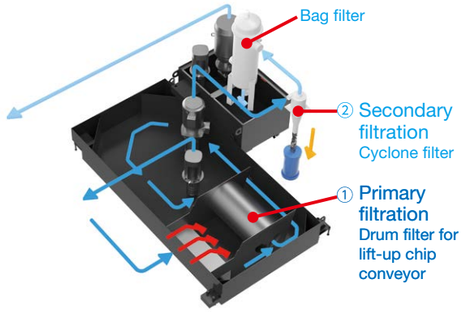
Inner diameter measurement of angled holes

Coolant maintenance work is significantly reduced
The environmental impact of coolant disposal is also minimized

Sludgeless Tank option

Cleaning tank and controlling cutting fluid are time-consuming and labor-intensive

The Sludgeless Tank continuously circulates cutting fluid within the tank, efficiently collecting sludge to prevent accumulation and significantly reducing issues and maintenance work.
This significantly reduces the frequency of tank cleaning, enabling stable operation over long periods and improving productivity.
It also extends the cutting fluid's lifespan, helps prevent spoilage and odors, and creates a better working environment.
Furthermore, reducing the frequency of cutting fluid changes decreases industrial waste and lessens the environmental impact.



Sludge removal rate

99%(when the material is casting and aluminum)

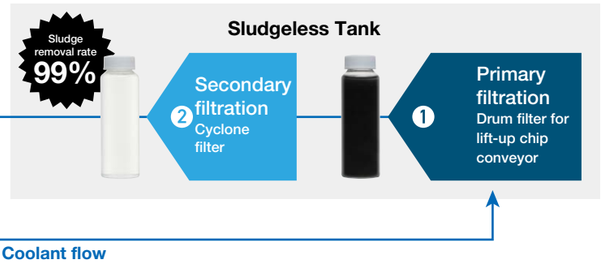
Notes: After secondary filtration (cyclone filter) permeation
Okuma evaluated removal rate

No tank cleaning for 3 years
(Okuma equipment actual data)

No coolant replacement for 3 years
(Okuma equipment actual data)

Note: If the Sludgeless Tank is chosen, it is necessary to select a hinge + scraper chip conveyor with a drum filter.

Clean cutting fluid is supplied to the upper turret



Automation Flexible automation that matches the customer's production form

An automated system with stable dimensional accuracy enhances productivity

Thermo-Friendly Concept
The Okuma Intelligent Technology that enables machines to autonomously maintain high accuracy stability

The MULTUS U series, equipped with the Thermo-Friendly Concept, provides exceptional accuracy stability, enabling consistent dimensional precision even during extended continuous machining.
Even in automated systems composed of multiple machines, dimensional variation between units is minimal, reducing the workload for dimensional control and contributing to increased productivity.

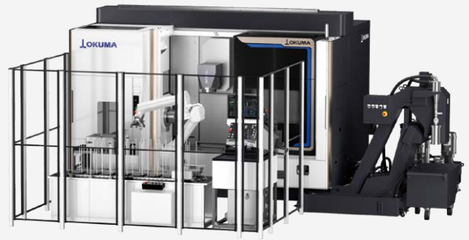
Achieves extended operation with automation tailored to your needs

By selecting the optimal automation system based on workpiece geometry and surrounding processes, you can increase machine utilization, enhance productivity, stabilize quality, and reduce labor requirements.

Highly versatile and applicable to irregularly shaped parts and high-mix workpieces

Stand-alone articulated robot option

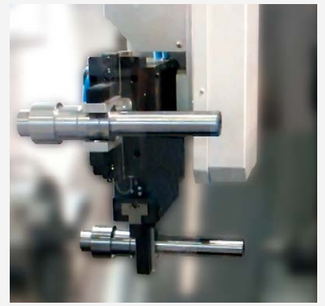
- Highly versatile and applicable to irregularly shaped parts and high-mix workpieces
- Layout of peripheral devices is freely configurable
- Transfer between different machines, such as a lathe and a machining center, is possible



Optimal cell for mass-production machining of similar parts

Loader option

- It is effective for mass-production machining of similar parts
- The workflow line in front of the machine is secured by using the space above it
- It is possible to load/unload in a short time and achieve machining with a short takt time



Material supply is automated

Bar feeder option

Bar materials are supplied into the spindle.

The discharge of machined workpieces is automated

Parts catcher option

This device discharges workpieces automatically with a simple mechanism.

Flexible, long-hour automated production for a wide variety of workpieces

Highly versatile and applicable to irregularly shaped parts and high-mix workpieces

Stand-alone articulated robots

This stand-alone articulated robot meets the needs of customers who want to automate work, even high-mix, low-volume production, or want to automate measurement, cleaning, and other tasks in addition to workpiece loading and unloading. With high versatility, the robot is widely applicable to odd-shaped or high-mix workpieces. The layout of peripheral devices can be set freely, and it is possible to transfer workpieces between different types of machines such as a lathe and a machining center. An automated cell with a high degree of freedom can be configured according to the customer's production operation.

A wide range of peripheral devices (option) can be included in the automated system to achieve flexible production

The automation and manpower saving of production lines is supported by workpiece turnover and other devices that are indispensable for connecting processes. An optimal system can be configured with a wide variety of peripheral devices according to the customer's needs.

Workpiece stand

The stand is used to adjust the posture of the material to be grasped by the hand. Re-grasping workpieces that tilt during stacking enables workpieces to be transported in a stable posture.

Workpiece turnover device

This device turns workpieces over onto the reverse side. The gripper rotates 90 degrees and the table moves up and down to transfer workpieces. Reversing workpieces allows both sides to be machined.

NG chute

This device discharges materials and unmachined workpieces judged to be NG by chucking error detection. Each NG item is carried off on the inclined chute and its own weight causes it to be ejected.

Air blower station

This device performs air-blowing cleaning of machined products. It cleans workpieces inside the device while gripping them with air-blowing to remove coolant and chips adhering to machined items.

Phase determination device

This device detects the phase reference parts (spikes, notches, holes, grooves, etc.) on the outer periphery of workpieces, and stabilizes the workpiece supply phase to the machine.
It is used for avoiding interference of the jaw part stop during chucking and for workpieces that require phasing during milling and other operations.

Quality check station

This device discharges machined products for quality check.

Ease of use

Comfortable machine operation reduces operator workload

Ease of use in consideration of harmony between people and machines

1 OSP-P500 operation panel with good operability and visibility

The machine operation panel is equipped with a tilting mechanism, allowing its angle to be adjusted.

21.5-inch panel

Improved operability, with the operation screen displaying information on actual position and programs running, concurrently with data from the digital twin and decarbonization applications.

The panel swivels for an easy visual check of the inside of the machine

The keyboard orientation is adjustable.

The panel can be moved left or right, providing excellent access to the spindle

Note: The operation panel of the MULTUS U3000 (distance between centers: 1000 mm) cannot be moved left or right.

2 Wide door opening for easy operation Large window with excellent visibility for clear monitoring of machining status

Wide opening for easy loading and unloading of workpieces

Large window for clear visibility of machining operations

Note: For the opening width of each model, please refer to the specification and installation drawings (p.41–p.44).

3 Easy Tool Inspection and Replacement

Tools can be loaded from the front of the machine, making tool inspection easy.

4 Good accessibility to the spindle and workpiece

With considerably improved access to the spindle, and easier workpiece loading/unloading.

● **550 mm from the machine front to the spindle**

5 Optimized workflow with minimal movement Improved maintainability

Service functions are concentrated in the maintenance area on the front side of the machine—a machine layout designed to make daily inspections easier.

A next-generation CNC that makes customer manufacturing DX (digital transformation) a reality

OSP-P500

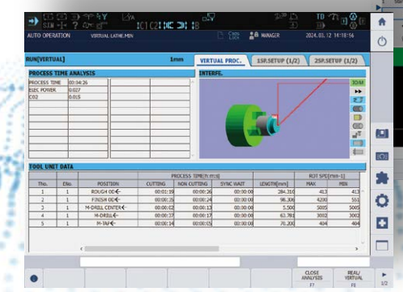
Improved productivity and stable production

As Your Single Source for M-E-I-K (Mechanics - Electronics - IT - Knowledge) merging technologies, Okuma offers this CNC to build an advanced "digital twin" that faithfully reproduces machine control and machining operations and creates new value. In addition, the product helps improve productivity and realize stable production, featuring ease of use that allows customers to use their machining know-how. Additional features are: control technology that achieves high-speed and high-accuracy machining, energy-saving solutions that achieve both high accuracy/productivity and eco-friendliness, and robust security functions to protect against the increasing threat of cyber attacks.

21.5-inch operation panel

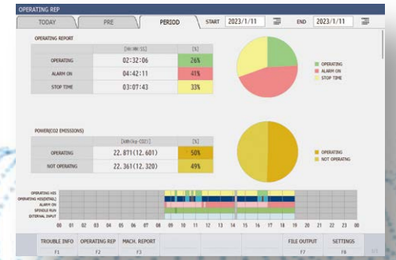
Home screen

Preparation of the process chart



Virtual machining

Operation with the process chart



MacMan plus

❶ Faithful digital reproduction of machines and processes

Ground-breaking concept of a digital twin

❷ Novice-friendly smart operation

Innovative operability

❸ Realizing high-speed and high-accuracy machining

Revolutionary control technology

❹ Reducing environmental impact Energy-saving solutions

ECO suite plus

❺ Increasing cyber resilience

Robust security

CNC Significant increase in productivity are achieved through advance machining simulations (front loading) in order to reduce machinery downtime

OSP-P500 A next-generation CNC that makes customer manufacturing DX (digital transformation) a reality

1 Faithful digital reproduction of machines and processes

Digital twin | option

Ground-breaking concept of a digital twin

Okuma's digital twin faithfully simulates a virtual machine, offering control equivalent to that in a real environment, by using the latest machine operation data and 3D models. Through super high-speed and high-accuracy simulation based on the features of Okuma, which is a machine tool manufacturer that produces NC control in-house, the digital twin calculates cycle time, machining shape, and electricity consumption. It supports accurate estimates of cycle time, development of the machining schedule, and quick and accurate estimates of delivery time and costs when an order is received.

Two digital twin systems are made possible by using an office PC and OSP-P500

Simulation using the latest machine information can be achieved with an office PC and OSP-P500 installed on the physical machine. This enables preparation for machining in advance in the office environment (front loading). Preparing machining for the next part while continuing machining can reduce the preparation time for the physical machine. When a problem occurs on the shop floor, it can be solved quickly on site without going back to the office.

"Okuma's two digital twin systems"

1 Digital Twin On PC*

Simulate shop machines in the office

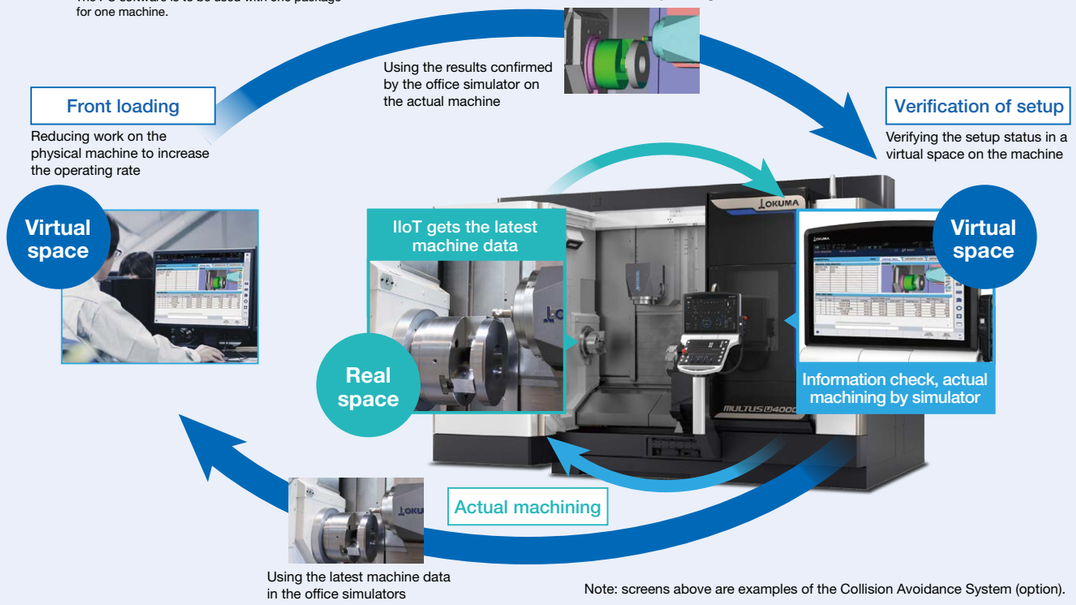
Front loading is performed with the actual status matched with the data on the office PC to further improve productivity.
Highly accurate pre-verification minimizes trial and error in first part machining, and reduces machine downtime to the minimum.

* The PC software is to be used with one package for one machine.

2 Digital Twin On Machine

Simulating the CNC of a real machine

Super-fast and super-accurate machining simulations are performed with the CNC of a real machine on-site to minimize machining preparation work.
Actual machining can be started immediately, greatly improving the operating rate of the machine.



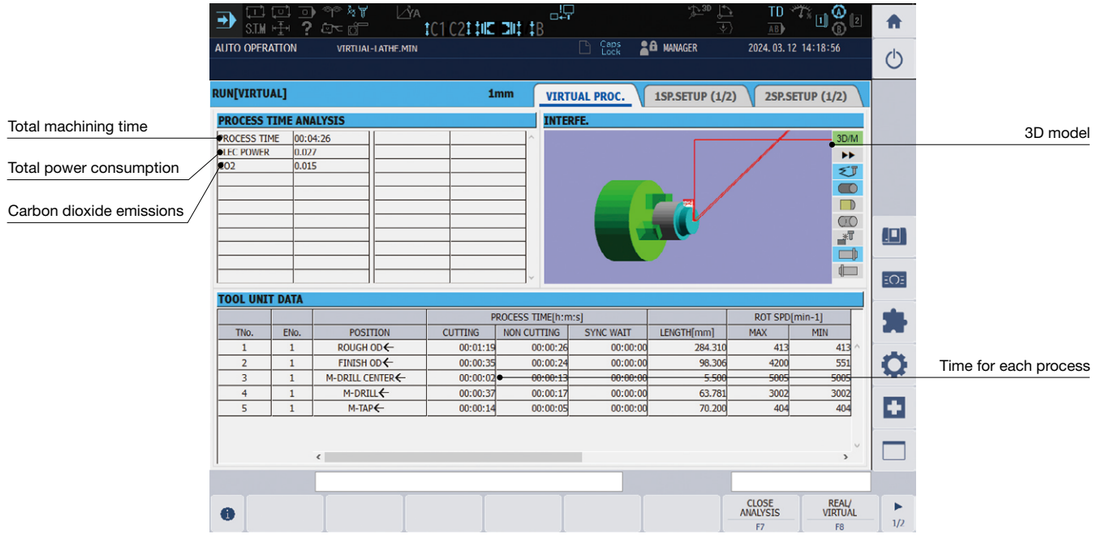
Note: screens above are examples of the Collision Avoidance System (option).

Using the latest machine information to support the production plan with high-speed, high-accuracy machining time estimation

Time is estimated accurately to support customer production plans and also solve machining problems quickly in the digital sphere.

Virtual machining

Time is estimated accurately by considering not only axis movements but also peripheral units such as auto tool changers, and collecting real drive data on physical machine movements to give feedback to the virtual machine. In addition, power consumption and carbon dioxide emissions are displayed.

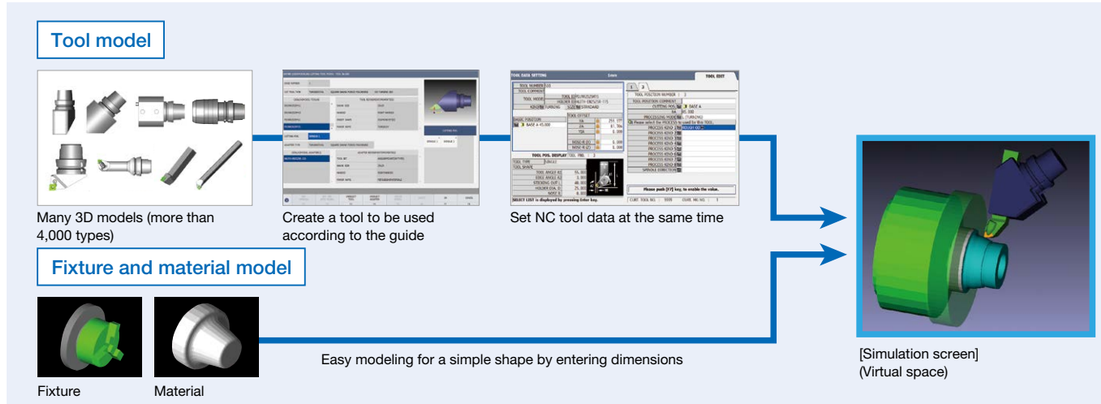


Reducing the burden of the operator with variously 3D models and easy modeling of fixtures and materials

A virtual space for simulation is easily set up.

Quick modeling

Modeling of tools for simulation can be easily prepared. Since 3D models of more than 4,000 types are provided, 3D models prepared in easy modeling before can be prepared easily.
Create a tool to be used by selecting from the variously 3D models according to the guide and set the NC tool data at the same time. For shapes with simple fixtures and materials, you can prepare models easily just by entering the dimensions.



CNC Significant increase in productivity are achieved through advance machining simulations (front loading) in order to reduce machinery downtime

OSP-P500 A next-generation CNC that makes customer manufacturing DX (digital transformation) a reality

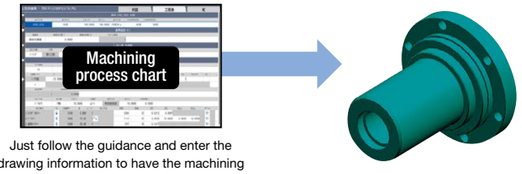
❷ Novice-friendly smart operation

Smart OSP Operation option

Innovative operability

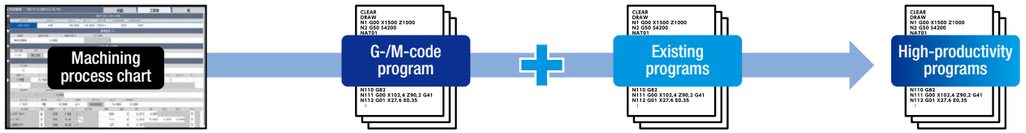
Conventionally, machining operations are programmed with G-/M-code based on drawings.
With OSP-P500, however, you only have to follow the guidance to enter drawing information.
So you can prepare for machining quickly, even if you have no familiarity at all with the NC program language.

■ Operation without reliance on G-/M-codes enables easy, quick machining by anyone



Just follow the guidance and enter the drawing information to have the machining process be determined automatically

■ High-productivity programs are easy to create



The process chart with the automatically determined machining process

The machining process chart is converted to a G-/M-code program

Programs containing the customer's expertise are added

High-productivity programs are easy to create

❸ Realizing high-speed and high-accuracy machining

Revolutionary control technology

CNC operation performance has been doubled compared to the conventional model (OSP-P300A). The processing capacity and the response speed between control modules have been improved to shorten the machining time. The time for machining general parts can be shortened if the machining program and machining conditions are the same as before.

❹ Reducing environmental impact Energy-saving solutions

ECO suite plus

"ECO suite plus" features the functions ECO Idling Stop, which allows the device to autonomously judge and shut down unnecessary auxiliary equipment, ECO Power Monitor, which gives visibility to carbon dioxide emissions, enabling these to be recorded and analyzed, and ECO Operation, which enables the optimized operation of peripheral equipment during machining. This is an energy-saving system that achieves both high accuracy, high productivity, and environmental friendliness to support improvement cycles for decarbonization. For details, please refer to P27.

❺ Protecting the operation of machines and precious assets such as part programs from cyber attacks

Robust security that increases cyber resilience

As digital networks develop and servers are increasingly connected to factory machines, the threat of cyber attacks increases, making it ever more important to protect against them. OSP-P500 is equipped with robust security functions for defense against and protection from cyber attacks, along with data restoration, to protect the operation of machines and precious assets such as part programs in the event of a cyber attack.

Defense	Prevent unauthorized access and connection	Identification of operators and communications, authentication function, etc.
Protection	Control damage	Anti-virus measures based on the allowlist, functions to prevent falsification and detect abnormalities, etc.
Data restoration	Preparation for emergencies	Control software and data backup function, etc.

OSP-VPSⅡ (Virus Protection System Ⅱ)

OSP-VPSⅡ (Virus Protection System Ⅱ) incorporates allowlisting*1 antivirus functions into the Okuma CNC (OSP) to prevent infection by viruses via networks and USB devices.

■ OSP-VPSⅡ-STD

OSP-VPSⅡ-STD [Standard] includes antivirus functions developed exclusively for Okuma's numerically controlled machines. Machines can be used safely, as only software tested by Okuma can be run.

Note: Because the allowlist is locked, only Okuma software can be run.

■ OSP-VPSⅡ-EX (option)

OSP-VPSⅡ-EX [Expert] includes antivirus functions made by TXOne Networks*2. The allowlist can be edited by the customer, so any software can be installed*3.

Note: Incorrectly editing the allowlist may prevent OSP from operating normally, so specialized knowledge of allowlisting antivirus functions is required.

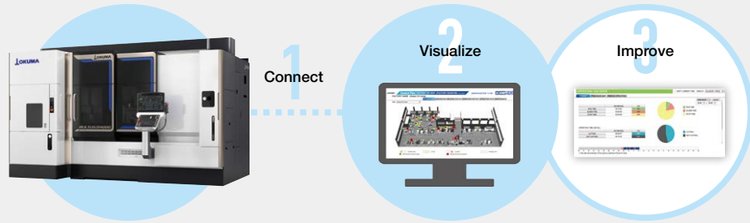
*1. Allowlisting is a method in which safe software is listed and software not included in the list is prevented from running.
*2. TXOne Networks is a registered trademark of TXOne Networks Inc.
*3. This does not guarantee the operation of any software on OSP. Note that installed software may prevent OSP from operating properly.

Connect Plan

Get Connected, Get Started, and Get Innovative with Okuma "*Monozukuri*" option

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.



Energy-saving technology

Energy-saving solutions that reduce environmental impact

ECO suite plus A system for an energy-saving society

The “ECO suite plus” retains the concept of achieving both high machining accuracy stability and energy savings (less carbon dioxide emissions) achieved by the Thermo-Friendly Concept and the “ECO suite” that was put into practical use in 2014. It is an energy-saving system with enhanced high-accuracy/-productive functionality and advanced eco-friendly support.

Ensure accuracy and actively turn off unnecessary peripherals

ECO Idling Stop

All auxiliary equipment when not needed (most of factory power consumption), can be turned off. The ECO Idling Stop button enables diligent idle stop operations even during machining and maintenance work. With ECO suite plus, the machine automatically detects the operating status, eliminating the need to push buttons while reducing carbon dioxide emission as much as possible without operator awareness.

Peripheral equipment runs only when needed

ECO Operation

By using only the required peripherals (chip conveyor, mist collector), energy-saving operations that also maintain high productivity are possible.
ECO suite plus enables more detailed tuning of operations to thoroughly support carbon dioxide emission reduction activities that do not reduce productivity.

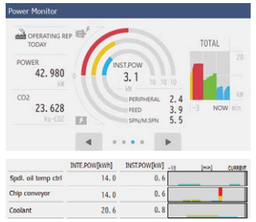
Confirming energy savings and analyzing reductions

ECO Power Monitor

Making it possible for the OSP control to analyze the operating status of each device.
The decarbonization cycle on the shop floor is supported through the three phases, 1. View, 2. Record, and 3. Analyze.

1 Check carbon dioxide emissions on the spot

With ECO suite plus, you can also check the power consumption of each device.



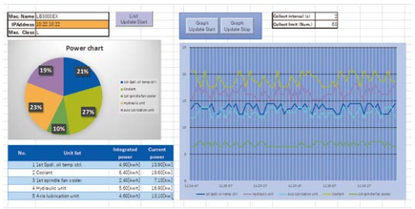
2 Simultaneously records operating status and carbon dioxide emissions

With ECO suite plus, recording carbon dioxide emissions for each device, and data output is possible.

3 Analyze carbon dioxide emissions and improve machine tool operation

With ECO suite plus, not only the display on the machine but data analysis for each device is also possible on a PC, to see a more detailed carbon dioxide emission analysis.

Example of utilizing One-Touch Spreadsheet (option) to creative visual feedback of machine’s power consumption and carbon dioxide emissions.



Environmental effects

The product has excellent environmental performance to reduce power consumption and help mitigate climate change (decarbonization)

Achieving high accuracy and high productivity while achieving decarbonization and energy saving

Green-Smart Machine Powered by Intelligent Technology

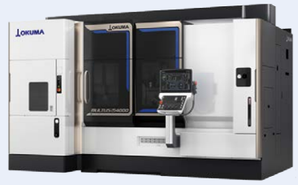
Okuma has worked to reduce energy consumption in order to achieve carbon neutrality at the three factories in Japan which are our main production bases.
We have realized high productivity through automation and process-intensive machining, in addition to high-accuracy machining, and we then introduced the use of green energy to transform the three domestic factories into carbon-neutral factories.
“Green-Smart Machines” is our definition of Okuma’s intelligent machine tools, which autonomously achieve stable dimensional accuracy and reduced energy consumption, to support environmentally friendly production. Our policy is to deploy “Green-Smart Machines” fully, to help achieve a carbon-free society.
Starting with products manufactured at those carbon-neutral factories and distributing them globally, we will partner with our customers to address the social challenges faced by the manufacturing industry.

High accuracy and high productivity

Thermo-Friendly Concept

The Okuma Intelligent Technology that enables machines to autonomously maintain high accuracy stability

Thermal deformation over time (actual data)
Less than 10 μm/
ambient temperature change: 8°C



With minimal dimensional adjustments, anyone can easily achieve high-accuracy machining in a short time

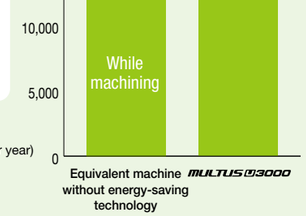
Decarbonization and energy saving

ECO suite plus
A system for an energy-saving society

Further reductions in carbon dioxide emissions from energy-saving machine tools
28% less

[Calculations]
60% utilization
(8 hours per day, 220 days per year)

Annual Power Consumption Reduction Effect

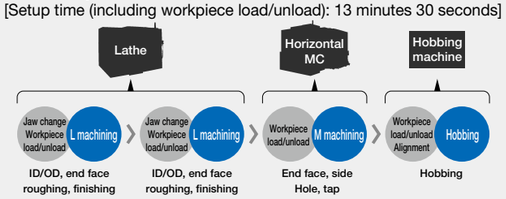


Significant Reduction in Power Consumption Through Process Integration with a Multi-tasking Machine

Example: Process Integration for Spline Shaft Machining

Conventional process (process-split approach)

Total: 4 processes, 1hour and 7minutes
[Setup time (including workpiece load/unload): 13 minutes 30 seconds]

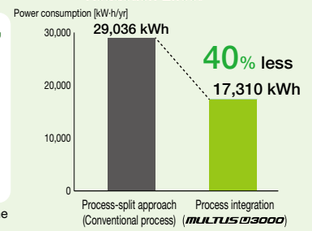


Process integration

Total: 2 processes*, 43 minutes
[setup time: 1 minute]

* Including automatic transfer to the opposing spindle

Annual Power Consumption Reduction Effect



Key points for reduction

- Reducing the number of machines (from 3 to 1) eliminates work-in-progress and cuts standby power consumption to zero
- Effectiveness of Okuma’s proprietary energy-saving technology “ECO suite plus”
- Process integration enables one-chucking machining, reducing power consumption during setup

Notes: Calculated values based on an example of spline shaft machining
Estimated for 10 units/day, 220 operating days/year
Conversion factor: 0.435 kg-CO_2/kWh

Machine Specifications

			MULTUS U3000				
			1ST	1SC		1SW	
			1000	1000	1500	1000	1500
Capacity	Swing over saddle	mm (in)	ø650 (25.59)				
	Distance between nose and center (between noses)	mm (in)	–	1,338.7 (52.70)	1,746.7 (68.77)	1,619 (63.74)	1,888 (74.33)
	Max machining dia	mm (in)	ø650 (25.59)				
	Max machining length	mm (in)	–	1,000 (39.37)	1,500 (59.06)	1,000 (39.37)	1,500 (59.06)
Travels	X-axis	mm (in)	645 (25.39)				
	Z-axis	upper: mm (in)	1,100 (43.31)		1,600 (62.99)	1,100 (43.31)	1,600 (62.99)
		lower: mm (in)	–				
	Y-axis	mm (in)	250 (±125) (9.84 (±4.92))				
	W-axis	mm (in)	–			1,325 (52.17)	1,594 (62.76)
	C-axis / indexing angle	degree	360 (min controlled angle 0.0001)				
	B-axis / indexing angle	degree	–30 to +210 (min controlled angle 0.001)				
Spindle	Speed	min^{-1}	50 to 5,000 [50 to 4,200]				
	Speed ranges		2 auto ranges (2-speed motor coil switching)				
	Nose shape		JIS A2-6[JIS A2-8]				
	Taper bore / Bearing dia	mm (in)	ø80/ø120 [ø91/ø140] (ø3.15/ø4.72 [ø3.58/ø5.51])				
Opposing spindle*	Speed	min^{-1}	–			50 to 5,000 [50 to 4,200]	
	Speed ranges		–			2 auto ranges (2-speed motor coil switching)	
	Nose shape		–			JIS A2-6[JIS A2-8]	
	Taper bore / Bearing dia	mm (in)	–			ø80/ø120 [ø91/ø140] (ø3.15/ø4.72 [ø3.58/ø5.51])	
Turret (milling tool spindle)	Type		H1				
	No. of tools		L / M: 1				
	Tool shank dimensions / ID tool shank diameter	mm (in)	□25/ø40 (1 × 1/1-1/2)				
	Milling tool spindle	min^{-1}	50 to 12,000				
	Milling tool spindle speed ranges		2 auto ranges (2-speed motor coil switching)				
Feed rates	X-, Z-, Y-axis	upper: m/min (fpm)	X: 50, Z: 50, Y: 40 (X: 164, Z: 164, Y: 131)				
		lower: m/min (fpm)	–				
	W-axis	m/min (fpm)	–	20 (66) (tailstock)	12 (39) (tailstock)	30 (98)	
	C-, B-axis	min^{-1}	C: 200, B: 30				
Tailstock	Tapered bore		–	MT No. 5 (revolving center)		–	
	Travel	mm (in)	–	1,186 (46.69)	1,594 (62.76)	–	
Auto tool changer (ATC)	Tool shank		HSK-A63				
	No. of tools	tools	40				
	Max tool dia	mm (in)	ø90 (3.54) (w/o adjacent tools: ø130 (5.12))				
	Max tool length	mm (in)	400 (15.75) (from gauge line)				
	Max tool mass	kg (lb)	10 (22)				
Motor	Main spindle motor	kW (hp)	22/15 (30/20) (30 min/cont)				
	Opposing spindle motor	kW (hp)	–			22/15 (30/20) (30 min/cont)	
	Milling tool spindle motor	kW (hp)	25/19 (33/25) (3 min/cont)				
	X-, Z-, Y-, B-axis motors	kW (hp)	X: 5.2, Z: 4.6, Y: 3.5, B: 3.0 (X: 6.9, Z: 6.1, Y: 4.7, B: 4.0)				
	W-axis motor	kW (hp)	–	2.8 (3.7) (tailstock)		3.5 (4.7)	4.6 (6.1)
	Coolant motor (50Hz/60Hz)	kW (hp)	0.25/0.25 × 1, 0.55/0.75 × 3 (0.33/0.33 × 1, 0.73/1.0 × 3)				
Machine size	Height	mm (in)	2,955 (116.34)				
	Floor space	mm × mm (in)	DBC 1000: 4,925 × 2,995 (193.90 × 117.91)				
	W × D (tank included)		DBC 1500: 5,425 × 2,995 (213.58 × 117.91)				
	Mass	kg (lb)	DBC 1000: 15,500 (34,100)/DBC 1500: 16,500 (36,300)				
CNC			OSP-P500S				

[ ]: option * The opposing spindle capacity and working range near the opposing spindle differ with 1SW and 2SW specifications. Note: HSK holders with coolant supply pipes are required.

Standard Specifications/Accessories

		MULTUS U3000		
		1ST	1SC	1SW
Spindle	JIS A2-6 5,000 min^{-1} 22/15 kW (30 min/cont)		○	
Opposing spindle	JIS A2-6 5,000 min^{-1} 22/15 kW (30 min/cont)	–		○
	JIS A2-6 5,000 min^{-1} 22/15 kW (20 min/cont)		–	
Turret	Upper turret H1 ATC L/M HSK-A63			
	12,000 min^{-1} 25/19 kW (3 min/cont)		○	
	Through coolant, B-axis indexing 0.001°			
	Lower turret V12 direct mounting		–	
	V12 radial		–	
ATC	40-tool ATC chain magazine		○	
Tailstock	NC tailstock inching specifications, including tailstock thrust high/low switch	–	○	–
	Self-traveling hydraulic quill		–	
High-accuracy C-axis control			○	
Spindle temperature regulator (both turning spindle and milling tool spindle)			○	
Thermo Active Stabilizer — Spindle [milling tool] (TAS-S)			○	
Thermo Active Stabilizer — Construction (TAS-C)			○	
Collision Avoidance System			○	
Chuck auto open/close confirmation			○	
CNC	OSP-P500S		○	
	21.5-inch LCD operation panel		○	
	Portable pulse handle		○	
Accessories	Full enclosure shielding, work lamp (L/R LED), door interlock, lubrication monitor A-1, hydraulic unit, coolant supply system, foundation block and jack bolts, hand tools			

Machine Specifications

			MULTUS U3000			
			2SC		2SW	
			1000	1500	1000	1500
Capacity	Swing over saddle	mm (in)	Upper: ø650 (25.59), Lower: ø320 (12.60)			
	Distance between nose and center (between noses)	mm (in)	1,186.7 (46.72)	1,686.7 (66.41)	1,399 (55.08)	1,883 (74.13)
	Max machining dia	mm (in)	Upper: ø650 (25.59)*1, Lower: ø320 (12.60)			
	Max machining length	mm (in)	1,000 (39.37)	1,500 (59.06)	1,000 (39.37)	1,500 (59.06)
Travels	X-axis	mm (in)	Upper: 645 (25.39), Lower: 235 (9.25)			
	Z-axis	upper: mm (in)	1,100 (43.31)	1,600 (62.99)	1,100 (43.31)	1,600 (62.99)
		lower: mm (in)	961 (37.83)	1,461 (57.52)	1,100 (43.31)	1,584 (62.36)
	Y-axis	mm (in)	250 (±125) (9.84 (±4.92))			
	W-axis	mm (in)	–		1,100 (43.31)	1,584 (62.36)
	C-axis / indexing angle	degree	360 (min controlled angle 0.0001)			
	B-axis / indexing angle	degree	–30 to +210 (min controlled angle 0.001)			
Spindle	Speed	min^{-1}	50 to 5,000 [50 to 4,200]			
	Speed ranges		2 auto ranges (2-speed motor coil switching)			
	Nose shape		JIS A2-6[JIS A2-8]			
	Taper bore / Bearing dia	mm (in)	ø80/ø120 [ø91/ø140] (ø3.15/ø4.72 [ø3.58/ø5.51])			
Opposing spindle*2	Speed	min^{-1}	–		38 to 5,000	
	Speed ranges		–		2 auto ranges (2-speed motor coil switching)	
	Nose shape		–		JIS A2-6	
	Taper bore / Bearing dia	mm (in)	–		ø62/ø100 (ø2.44/ø3.94)	
Turret (milling tool spindle)	Type		Upper: H1, Lower: V12		Upper: H1, Lower: V12 [Multitasking V12]	
	No. of tools		Upper: L / M: 1, Lower: 12		Upper: L / M: 1, Lower: 12 [L / M: 12]	
	Tool shank dimensions / ID tool shank diameter	mm (in)	□25/ø40 (1 × 1/1-1/2)			
	Milling tool spindle	min^{-1}	Upper: 50 to 12,000		Upper: 50 to 12,000, Lower: 45 to 6,000	
	Milling tool spindle speed ranges		Upper: 2 auto ranges (2-speed motor coil switching)		Upper: 2 auto ranges (2-speed motor coil switching), Lower: Infinitely variable	
Feed rates	X-, Z-, Y-axis	upper: m/min (fpm)	X: 50, Z: 50, Y: 40 (X: 164, Z: 164, Y: 131)			
		lower: m/min (fpm)	X: 25, Z: 40 (X: 82, Z: 131)			
	W-axis	m/min (fpm)	20 (66) (tailstock)	12 (39) (tailstock)	30 (98)	
	C-, B-axis	min^{-1}	C: 200, B: 30			
Tailstock	Tapered bore		MT No. 5 (revolving center)		–	
	Travel	mm (in)	961 (37.83)	1,359.5 (53.52)	–	
Auto tool changer (ATC)	Tool shank		HSK-A63			
	No. of tools	tools	40			
	Max tool dia	mm (in)	ø90 (3.54) (w/o adjacent tools: ø130 (5.12))			
	Max tool length	mm (in)	400 (15.75) (from gauge line)			
	Max tool mass	kg (lb)	10 (22)			
Motor	Main spindle motor	kW (hp)	22/15 (30/20) (30 min/cont)			
	Opposing spindle motor	kW (hp)	–		22/15 (30/20) (20 min/cont)	
	Milling tool spindle motor	kW (hp)	25/19 (33/25) (3 min/cont)		Upper: 25/19 (33/25) (3 min/cont), Lower: 5.5/3.7 (7.5/5) (2 min/cont)	
	X-, Z-, Y-, B-axis motors	kW (hp)	XA: 5.2, ZA: 4.6, Y: 3.5, B: 3.0 (XA: 6.9, ZA: 6.1, Y: 4.7, B: 4.0) XB: 3.5, ZB: 3.5 (XB: 4.7, ZB: 4.7) (DBC 1000)/4.6 (6.1) (DBC 1500)			
	W-axis motor	kW (hp)	2.8 (3.7) (tailstock)		3.5 (4.7)	4.6 (6.1)
	Coolant motor (50Hz/60Hz)	kW (hp)	0.25/0.25 × 1, 0.55/0.75 × 3 (0.33/0.33 × 1, 0.73/1.0 × 3)			
Machine size	Height	mm (in)	3,030 (119.29)			
	Floor space	mm × mm (in)	DBC 1000: 4,925 × 3,276 (193.90 × 128.98)			
	W × D (tank included)		DBC 1500: 5,425 × 3,326 (213.58 × 130.94)			
	Mass	kg (lb)	DBC 1000: 16,500 (36,300)/DBC 1500: 17,500 (38,500)			
CNC			OSP-P500S			

[ ]: option *1. ø320 (swing over lower turret) during shaft work and when machining with opposing spindles. *2. The opposing spindle capacity and working range near the opposing spindle differ with 1SW and 2SW specifications. Note: HSK holders with coolant supply pipes are required.

Standard Specifications/Accessories

		MULTUS U3000	
		2SC	2SW
Spindle	JIS A2-6 5,000 min^{-1} 22/15 kW (30 min/cont)	○	
Opposing spindle	JIS A2-6 5,000 min^{-1} 22/15 kW (30 min/cont)	–	
	JIS A2-6 5,000 min^{-1} 22/15 kW (20 min/cont)	–	○
Turret	Upper turret H1 ATC L/M HSK-A63		
	12,000 min^{-1} 25/19 kW (3 min/cont)	○	
	Through coolant, B-axis indexing 0.001°		
	Lower turret V12 direct mounting	○	–
	V12 radial	–	○
ATC	40-tool ATC chain magazine	○	
Tailstock	NC tailstock inching specifications, including tailstock thrust high/low switch	–	
	Self-traveling hydraulic quill	○	–
High-accuracy C-axis control		○	
Spindle temperature regulator (both turning spindle and milling tool spindle)		○	
Thermo Active Stabilizer — Spindle [milling tool] (TAS-S)		○	
Thermo Active Stabilizer — Construction (TAS-C)		○	
Collision Avoidance System		○	
Chuck auto open/close confirmation		○	
CNC	OSP-P500S	○	
	21.5-inch LCD operation panel	○	
	Portable pulse handle	○	
Accessories	Full enclosure shielding, work lamp (L/R LED), door interlock, lubrication monitor A-1, hydraulic unit, coolant supply system, foundation block and jack bolts, hand tools		

Machine Specifications

			MULTUS U4000			
			1SC		1SW	
			1500	2000	1500	2000
Capacity	Swing over saddle	mm (in)	ø650 (25.59)			
	Distance between nose and center (between noses)	mm (in)	1,738.7 (68.45)	2,238.7 (88.14)	1,876 (73.86)	2,376 (93.54)
	Max machining dia	mm (in)	ø650 (25.59)			
	Max machining length	mm (in)	1,500 (59.06)	2,000 (78.74)	1,500 (59.06)	2,000 (78.74)
Travels	X-axis	mm (in)	695 (27.36)			
	Z-axis upper:	mm (in)	1,600 (62.99)	2,100 (82.68)	1,600 (62.99)	2,100 (82.68)
	Z-axis lower:	mm (in)	–			
	Y-axis	mm (in)	300 (±150) (11.81 (±5.91))			
	W-axis	mm (in)	–		1,554 (61.18)	2,054 (80.87)
	C-axis / indexing angle	degree	360 (min controlled angle 0.0001)			
	B-axis / indexing angle	degree	–30 to +210 (min controlled angle 0.001)			
Spindle	Speed	min^{-1}	45 to 4,200 [30 to 3,000]			
	Speed ranges		2 auto ranges (2-speed motor coil switching)			
	Nose shape		JIS A2-8 [JIS A2-11]			
	Taper bore / Bearing dia	mm (in)	ø91/ø140 [ø112/ø160] (ø3.58/ø5.51 [ø4.41/ø6.30])			
Opposing spindle*	Speed	min^{-1}	–		45 to 4,200 [30 to 3,000]	
	Speed ranges		–		2 auto ranges (2-speed motor coil switching)	
	Nose shape		–		JIS A2-6 [JIS A2-8]	
	Taper bore / Bearing dia	mm (in)	–		ø91/ø140 [ø112/ø160] (ø3.58/ø5.51 [ø4.41/ø6.30])	
Turret (milling tool spindle)	Type		H1			
	No. of tools		L / M: 1			
	Tool shank dimensions / ID tool shank diameter	mm (in)	□25/ø40 (1 × 1/1-1/2)			
	Milling tool spindle	min^{-1}	50 to 12,000			
	Milling tool spindle speed ranges		2 auto ranges (2-speed motor coil switching)			
Feed rates	X-, Z-, Y-axis upper:	m/min (fpm)	X: 50, Z: 50, Y: 40 (X: 164, Z: 164, Y: 131)	X: 50, Z: 40, Y: 40 (X: 164, Z: 131, Y: 131)	X: 50, Z: 50, Y: 40 (X: 164, Z: 164, Y: 131)	X: 50, Z: 40, Y: 40 (X: 164, Z: 131, Y: 131)
	X-, Z-, Y-axis lower:	m/min (fpm)	–			
	W-axis	m/min (fpm)	12 (39) (tailstock)		30 (98)	20 (66)
	C-, B-axis	min^{-1}	C: 200, B: 30			
Tailstock	Tapered bore		MT No. 5 (revolving center)		–	
	Travel	mm (in)	1,594 (62.76)	2,094 (82.44)	–	
Auto tool changer (ATC)	Tool shank		HSK-A63			
	No. of tools	tools	40			
	Max tool dia	mm (in)	ø90 (ø3.54) (w/o adjacent tools: ø130 (ø5.12))			
	Max tool length	mm (in)	400 (15.75) (from gauge line)			
	Max tool mass	kg (lb)	10 (22)			
Motor	Main spindle motor	kW (hp)	22/15 (30/20) (30 min/cont)			
	Opposing spindle motor	kW (hp)	–		22/15 (30/20) (30 min/cont)	
	Milling tool spindle motor	kW (hp)	25/19 (33/25) (3 min/cont)			
	X-, Z-, Y-, B-axis motors	kW (hp)	X: 5.2, Z: 4.6 (X: 6.9, Z: 6.1) (DBC 1500)/5.2 (6.9) (DBC 2000) Y: 3.5, B: 3.0 (Y: 4.7, B: 4.0)			
	W-axis motor	kW (hp)	2.8 (3.7) (tailstock)		4.6 (6.1)	
	Coolant motor (50Hz/60Hz)	kW (hp)	0.25/0.25 × 1, 0.55/0.75 × 3 (0.33/0.33 × 1, 0.73/1.0 × 3)			
Machine size	Height	mm (in)	2,955 (116.34)			
	Floor space W × D (tank included)	mm × mm (in)	DBC 1500: 5,425 × 2,995 (213.58 × 117.91) DBC 2000: 6,175 × 2,995 (243.11 × 117.91)			
	Mass	kg (lb)	DBC 1500: 17,000 (37,400)/DBC 2000: 19,000 (41,800)			
CNC			OSP-P500S			

[ ]: option * The opposing spindle capacity and working range near the opposing spindle differ with 1SW and 2SW specifications. Note: HSK holders with coolant supply pipes are required.

Standard Specifications/Accessories

			MULTUS U4000	
			1SC	1SW
Spindle	JIS A2-8	4,200 min^{-1} 22/15 kW (30 min/cont)	○	
	JIS A2-11	3,000 min^{-1} 37/30 kW (30 min/cont)	–	
Opposing spindle	JIS A2-8	4,200 min^{-1} 22/15 kW (30 min/cont)	–	○
	JIS A2-8	3,800 min^{-1} 22/15 kW (20 min/cont)	–	
	JIS A2-11	3,000 min^{-1} 32/22 kW (20 min/cont)	–	
Turret	Upper turret	H1 ATC L/M HSK-A63		
		12,000 min^{-1} 25/19 kW (3 min/cont)	○	
		Through coolant, B-axis indexing 0.001°		
	Lower turret	V12 direct mounting	–	
		V12 radial	–	
ATC	40-tool ATC chain magazine		○	
Tailstock	NC tailstock inching specifications, including tailstock thrust high/low switch		○	–
	Self-traveling hydraulic quill		–	
High-accuracy C-axis control			○	
Spindle temperature regulator (both turning spindle and milling tool spindle)			○	
Thermo Active Stabilizer — Spindle [milling tool] (TAS-S)			○	
Thermo Active Stabilizer — Construction (TAS-C)			○	
Collision Avoidance System			○	
Chuck auto open/close confirmation			○	
CNC	OSP-P500S		○	
	21.5-inch LCD operation panel		○	
	Portable pulse handle		○	
Accessories	Full enclosure shielding, work lamp (L/R LED), door interlock, lubrication monitor A-1, hydraulic unit, coolant supply system, foundation block and jack bolts, hand tools			

Machine Specifications

			MULTUS U4000			
			2SC		2SW	
			1500	2000	1500	2000
Capacity	Swing over saddle	mm (in)	Upper: ø650 (25.59), Lower: ø320 (12.60)			
	Distance between nose and center (between noses)	mm (in)	1,678.7 (66.09)	2,178.7 (85.78)	1,872 (73.70)	2,372 (93.39)
	Max machining dia	mm (in)	Upper: ø650 (25.59)*1, Lower: ø320 (12.60)			
	Max machining length	mm (in)	1,500 (59.06)	2,000 (78.74)	1,500 (59.06)	2,000 (78.74)
Travels	X-axis	mm (in)	Upper: 695 (27.36), Lower: 235 (9.25)			
	Z-axis upper:	mm (in)	1,600 (62.99)	2,100 (82.68)	1,600 (62.99)	2,100 (82.68)
	Z-axis lower:	mm (in)	1,461 (57.52)	1,961 (77.20)	1,524 (60.00)*2	2,024 (79.69)*3
	Y-axis	mm (in)	300 (±150) (11.81 (±5.91))			
	W-axis	mm (in)	–		1,524 (60.00)*2	2,024 (79.69)*3
	C-axis / indexing angle	degree	360 (min controlled angle 0.0001)			
	B-axis / indexing angle	degree	–30 to +210 (min controlled angle 0.001)			
Spindle	Speed	min^{-1}	45 to 4,200 [30 to 3,000]			
	Speed ranges		2 auto ranges (2-speed motor coil switching)			
	Nose shape		JIS A2-8 [JIS A2-11]			
	Taper bore / Bearing dia	mm (in)	ø91/ø140 [ø112/ø160] (ø3.58/ø5.51 [ø4.41/ø6.30])			
Opposing spindle*4	Speed	min^{-1}	–		38 to 3,800	
	Speed ranges		–		2 auto ranges (2-speed motor coil switching)	
	Nose shape		–		JIS A2-8	
	Taper bore / Bearing dia	mm (in)	–		ø80/ø120 (ø3.15/ø4.72)	
Turret (milling tool spindle)	Type		Upper: H1, Lower: V12		Upper: H1, Lower: V12 [Multitasking V12]	
	No. of tools		Upper: L / M: 1, Lower: 12		Upper: L / M: 1, Lower: 12 [L / M: 12]	
	Tool shank dimensions / ID tool shank diameter	mm (in)	□25/ø40 (1 × 1/1-1/2)			
	Milling tool spindle	min^{-1}	Upper: 50 to 12,000		Upper: 50 to 12,000, Lower: 45 to 6,000	
	Milling tool spindle speed ranges		Upper: 2 auto ranges (2-speed motor coil switching)		Upper: 2 auto ranges (2-speed motor coil switching), Lower: Infinitely variable	
Feed rates	X-, Z-, Y-axis upper:	m/min (fpm)	X: 50, Z: 50, Y: 40 (X: 164, Z: 164, Y: 131)	X: 50, Z: 40, Y: 40 (X: 164, Z: 131, Y: 131)	X: 50, Z: 50, Y: 40 (X: 164, Z: 164, Y: 131)	X: 50, Z: 40, Y: 40 (X: 164, Z: 131, Y: 131)
	X-, Z-, Y-axis lower:	m/min (fpm)	X: 25, Z: 40 (X: 82, Z: 131)	X: 25, Z: 30 (X: 82, Z: 98)	X: 25, Z: 40 (X: 82, Z: 131)	X: 25, Z: 30 (X: 82, Z: 98)
	W-axis	m/min (fpm)	12 (39) (tailstock)		30 (98)	20 (66)
	C-, B-axis	min^{-1}	C: 200, B: 30			
Tailstock	Tapered bore		MT No. 5 (revolving center)		–	
	Travel	mm (in)	1,359.5 (53.52)	1,961 (77.20)	–	
Auto tool changer (ATC)	Tool shank		HSK-A63			
	No. of tools	tools	40			
	Max tool dia	mm (in)	ø90 (ø3.54) (w/o adjacent tools: ø130 (ø5.12))			
	Max tool length	mm (in)	400 (15.75) (from gauge line)			
	Max tool mass	kg (lb)	10 (22)			
Motor	Main spindle motor	kW (hp)	22/15 (30/20) (30 min/cont)			
	Opposing spindle motor	kW (hp)	–		22/15 (30/20) (20 min/cont)	
	Milling tool spindle motor	kW (hp)	25/19 (33/25) (3 min/cont)		Upper: 25/19 (33/25) (3 min/cont), Lower: 5.5/3.7 (7.5/5) (2 min/cont)	
	X-, Z-, Y-, B-axis motors	kW (hp)	XA: 5.2, ZA: 4.6 (XA: 6.9, ZA: 6.1) (DBC 1500)/5.2 (6.9) (DBC 2000) XB: 3.5, ZB: 4.6, Y: 3.5, B: 3.0 (XB: 4.7, ZB: 6.1, Y: 4.7, B: 4.0)			
	W-axis motor	kW (hp)	2.8 (3.7) (tailstock)		4.6 (6.1)	
	Coolant motor (50Hz/60Hz)	kW (hp)	0.25/0.25 × 1, 0.55/0.75 × 3 (0.33/0.33 × 1, 0.73/1.0 × 3)			
Machine size	Height	mm (in)	3,030 (119.29)			
	Floor space W × D (tank included)	mm × mm (in)	DBC 1500: 5,425 × 3,326 (213.58 × 130.94) DBC 2000: 6,175 × 3,326 (243.11 × 130.94)			
	Mass	kg (lb)	DBC 1500: 18,000 (39,600)/DBC 2000: 20,000 (44,000)			
CNC			OSP-P500S			

[ ]: option *1. ø320 (swing over lower turret) during shaft work and when machining with opposing spindles. *2. In the main Big-Bore spindle, it will be 1,500. *3. In the main Big-Bore spindle, it will be 2,000. *4. The opposing spindle capacity and working range near the opposing spindle differ with 1SW and 2SW specifications. Note: HSK holders with coolant supply pipes are required.

Standard Specifications/Accessories

			MULTUS U4000	
			2SC	2SW
Spindle	JIS A2-8	4,200 min^{-1} 22/15 kW (30 min/cont)	○	
	JIS A2-11	3,000 min^{-1} 37/30 kW (30 min/cont)	–	
Opposing spindle	JIS A2-8	4,200 min^{-1} 22/15 kW (30 min/cont)	–	
	JIS A2-8	3,800 min^{-1} 22/15 kW (20 min/cont)	–	○
	JIS A2-11	3,000 min^{-1} 32/22 kW (20 min/cont)	–	
Turret	Upper turret	H1 ATC L/M HSK-A63		
		12,000 min^{-1} 25/19 kW (3 min/cont)	○	
		Through coolant, B-axis indexing 0.001°		
	Lower turret	V12 direct mounting	○	–
		V12 radial	–	○
ATC	40-tool ATC chain magazine		○	
Tailstock	NC tailstock inching specifications, including tailstock thrust high/low switch		–	
	Self-traveling hydraulic quill		○	–
High-accuracy C-axis control			○	
Spindle temperature regulator (both turning spindle and milling tool spindle)			○	
Thermo Active Stabilizer — Spindle [milling tool] (TAS-S)			○	
Thermo Active Stabilizer — Construction (TAS-C)			○	
Collision Avoidance System			○	
Chuck auto open/close confirmation			○	
CNC	OSP-P500S		○	
	21.5-inch LCD operation panel		○	
	Portable pulse handle		○	
Accessories	Full enclosure shielding, work lamp (L/R LED), door interlock, lubrication monitor A-1, hydraulic unit, coolant supply system, foundation block and jack bolts, hand tools			

Machine Specifications

			MULTUS U5000					
			1SC			1SW		
			1500	2000	3000	1500	2000	3000
Capacity	Swing over saddle	mm (in)	ø650 (ø25.59)					
	Distance between nose and center (between noses)	mm (in)	1,724.6 (67.90)	2,224.6 (87.58)	3,391.6 (133.53)	1,858 (73.15)	2,358 (92.83)	3,508 (138.11)
	Max machining dia	mm (in)	ø650 (ø25.59)					
	Max machining length	mm (in)	1,500 (59.06)	2,000 (78.74)	3,000 (118.11)	1,500 (59.06)	2,000 (78.74)	3,000 (118.11)
Travels	X-axis	mm (in)	695 (27.36)					
	Z-axis upper:	mm (in)	1,600 (62.99)	2,100 (82.68)	3,170 (124.80)	1,600 (62.99)	2,100 (82.68)	3,170 (124.80)
	Z-axis lower:	mm (in)	–					
	Y-axis	mm (in)	300 (±150) (11.81 (±5.91))					
	W-axis	mm (in)	–			1,554 (61.18)	2,054 (80.87)	3,050 (120.08)
	C-axis / indexing angle	degree	360 (min controlled angle 0.0001)					
	B-axis / indexing angle	degree	–30 to +210 (min controlled angle 0.001)					
Spindle	Speed	min^{-1}	30 to 3,000					
	Speed ranges		2 auto ranges (2-speed motor coil switching)					
	Nose shape		JIS A2-11					
	Taper bore / Bearing dia	mm (in)	ø112/ø160 (ø4.41/ø6.30)					
Opposing spindle*	Speed	min^{-1}	–			30 to 3,000		
	Speed ranges		–			2 auto ranges (2-speed motor coil switching)		
	Nose shape		–			JIS A2-11		
	Taper bore / Bearing dia	mm (in)	–			ø112/ø160 (ø4.41/ø6.30)		
Turret (milling tool spindle)	Type		H1					
	No. of tools		L / M: 1					
	Tool shank dimensions / ID tool shank diameter	mm (in)	□25/ø40 (1 × 1 / 1-1/2)					
	Milling tool spindle	min^{-1}	50 to 12,000					
	Milling tool spindle speed ranges		2 auto ranges (2-speed motor coil switching)					
Feed rates	X-, Z-, Y-axis upper:	m/min (fpm)	X: 50, Z: 50, Y: 40 (X:164, Z: 164, Y:131)	X: 50, Z: 40, Y: 40 (X:164, Z:131, Y:131)		X: 50, Z: 50, Y: 40 (X:164, Z:164, Y:131)	X: 50, Z: 40, Y: 40 (X:164, Z:131, Y:131)	
	X-, Z-, Y-axis lower:	m/min (fpm)	–					
	W-axis	m/min (fpm)	8 (26) (tailstock)			30 (98)	20 (66)	
	C-, B-axis	min^{-1}	C: 200, B: 30					
Tailstock	Tapered bore		MT No. 5 (Built-in)			–		
	Travel	mm (in)	1,554 (61.18)	2,054 (80.87)	3,170 (124.80)	–		
Auto tool changer (ATC)	Tool shank		HSK-A63					
	No. of tools	tools	40					
	Max tool dia	mm (in)	ø90 (ø3.54) (w/o adjacent tools: ø130 (ø5.12))					
	Max tool length	mm (in)	400 (15.75) (from gauge line)					
	Max tool mass	kg (lb)	10 (22)					
Motor	Main spindle motor	kW (hp)	37/30 (50/40) (30 min/cont)					
	Opposing spindle motor	kW (hp)	–			32/22 (43/30) (20 min/cont)		
	Milling tool spindle motor	kW (hp)	25/19 (33/25) (3 min/cont)					
	X-, Z-, Y-, B-axis motors	kW (hp)	X: 5.2, Z: 4.6 (X: 6.9, Z: 6.1) (DBC 1500)/5.2 (6.9) (DBC 2000)/6.4 (8.5) (DBC 3000) Y: 3.5, B: 3.0 (Y: 4.7, B: 4.0)					
	W-axis motor	kW (hp)	2.8 (3.7) (tailstock)	4.2 (5.6) (tailstock)		4.6 (6.1)		5.2 (6.9)
	Coolant motor (50Hz/60Hz)	kW (hp)	0.25/0.25 × 1, 0.55/0.75 × 3 (0.33/0.33 × 1, 0.73/1.0 × 3)					
Machine size	Height	mm (in)	2,955 (116.34)	3,090 (121.65)		2,955 (116.34)		3,090 (121.65)
	Floor space W × D (tank included)	mm × mm (in)	DBC 1500: 5,530 × 2,995 (217.72 × 117.91)/DBC 2000: 6,280 × 2,995 (247.24 × 117.91) DBC 3000: 8,420 × 3,278 (331.50 × 129.06)					
	Mass	kg (lb)	DBC 1500: 17,300 (38,060)/DBC 2000: 19,300 (42,460)/ DBC 3000: 22,100 (48,620)			DBC 1500: 17,300 (38,060)/DBC 2000: 19,300 (42,460)/ DBC 3000: 22,300 (49,060)		
CNC			OSP-P500S					

[ ]: option * The opposing spindle capacity and working range near the opposing spindle differ with 1SW and 2SW specifications. Note: HSK holders with coolant supply pipes are required.

Standard Specifications/Accessories

			MULTUS U5000	
			1SC	1SW
Spindle	JIS A2-8	4,200 min^{-1} 22/15 kW (30 min/cont)	–	
	JIS A2-11	3,000 min^{-1} 37/30 kW (30 min/cont)	○	
Opposing spindle	JIS A2-8	4,200 min^{-1} 22/15 kW (30 min/cont)	–	
	JIS A2-8	3,800 min^{-1} 22/15 kW (20 min/cont)	–	
	JIS A2-11	3,000 min^{-1} 32/22 kW (20 min/cont)	–	○
Turret	Upper turret	H1 ATC L/M HSK-A63		
		12,000 min^{-1} 25/19 kW (3 min/cont)	○	
		Through coolant, B-axis indexing 0.001°		
	Lower turret	V12 direct mounting	–	
		V12 radial	–	
ATC	40-tool ATC chain magazine		○	
Tailstock	NC tailstock inching specifications, including tailstock thrust high/low switch		○	–
	Self-traveling hydraulic quill		–	
High-accuracy C-axis control			○	
Spindle temperature regulator (both turning spindle and milling tool spindle)			○	
Thermo Active Stabilizer — Spindle [milling tool] (TAS-S)			○	
Thermo Active Stabilizer — Construction (TAS-C)			○	
Collision Avoidance System			○	
Chuck auto open/close confirmation			○	
CNC	OSP-P500S		○	
	21.5-inch LCD operation panel		○	
	Portable pulse handle		○	
Accessories	Full enclosure shielding, work lamp (L/R LED), door interlock, lubrication monitor A-1, hydraulic unit, coolant supply system, foundation block and jack bolts, hand tools			

Machine Specifications

			MULTUS U5000					
			2SC			2SW		
			1500	2000	3000	1500	2000	3000
Capacity	Swing over saddle	mm (in)	Upper: ø650 (ø25.59), Lower: ø320 (ø12.60)					
	Distance between nose and center (between noses)	mm (in)	1,671.6 (65.81)	2,171.6 (85.50)	3,246.6 (127.82)	1,865 (73.43)	2,365 (93.11)	3,440 (135.43)
	Max machining dia	mm (in)	Upper: ø650 (ø25.59)*1, Lower: ø320 (ø12.60)					
	Max machining length	mm (in)	1,500 (59.06)	2,000 (78.74)	3,000 (118.11)	1,500 (59.06)	2,000 (78.74)	3,000 (118.11)
Travels	X-axis	mm (in)	Upper: 695 (27.36), Lower: 235 (9.25)					
	Z-axis upper:	mm (in)	1,600 (62.99)	2,100 (82.68)	3,170 (124.80)	1,600 (62.99)	2,100 (82.68)	3,170 (124.80)
	Z-axis lower:	mm (in)	1,461 (57.52)	1,961 (77.20)	3,036 (119.53)	1,524 (60.00)	2,024 (79.69)	3,075 (121.06)
	Y-axis	mm (in)	300 (±150) (11.81 (±5.91))					
	W-axis	mm (in)	–			1,500 (59.06)	2,000 (78.74)	3,050 (120.08)
	C-axis / indexing angle	degree	360 (min controlled angle 0.0001)					
	B-axis / indexing angle	degree	–30 to +210 (min controlled angle 0.001)					
Spindle	Speed	min^{-1}	30 to 3,000					
	Speed ranges		2 auto ranges (2-speed motor coil switching)					
	Nose shape		JIS A2-11					
	Taper bore / Bearing dia	mm (in)	ø112/ø160 (ø4.41/ø6.30)					
Opposing spindle*2	Speed	min^{-1}	–			38 to 3,800		
	Speed ranges		–			2 auto ranges (2-speed motor coil switching)		
	Nose shape		–			JIS A2-8		
	Taper bore / Bearing dia	mm (in)	–			ø80/ø120 (ø3.15/ø4.72)		
Turret (milling tool spindle)	Type		Upper: H1, Lower: V12			Upper: H1, Lower: V12 [Multitasking V12]		
	No. of tools		Upper: L / M: 1, Lower: 12			Upper: L / M: 1, Lower: 12 [L / M: 12]		
	Tool shank dimensions / ID tool shank diameter	mm (in)	□25/ø40 (1 × 1 / 1-1/2)					
	Milling tool spindle	min^{-1}	Upper: 50 to 12,000			Upper: 50 to 12,000, Lower: 45 to 6,000		
	Milling tool spindle speed ranges		Upper: 2 auto ranges (2-speed motor coil switching)			Upper: 2 auto ranges (2-speed motor coil switching), Lower: Infinitely variable		
Feed rates	X-, Z-, Y-axis upper:	m/min (fpm)	X: 50, Z: 50, Y: 40 (X:164, Z:164, Y:131)	X: 50, Z: 40, Y: 40 (X:164, Z:131, Y:131)		X: 50, Z: 50, Y: 40 (X:164, Z:164, Y:131)	X: 50, Z: 40, Y: 40 (X:164, Z:131, Y:131)	
	X-, Z-, Y-axis lower:	m/min (fpm)	X: 25, Z: 40 (X: 82, Z: 131)	X: 25, Z: 30 (X: 82, Z: 98)		X: 25, Z: 40 (X: 82, Z: 131)	X: 25, Z: 30 (X: 82, Z: 98)	
	W-axis	m/min (fpm)	8 (26) (tailstock)			30 (98)	20 (66)	
	C-, B-axis	min^{-1}	C: 200, B: 30					
Tailstock	Tapered bore		MT No. 5 (Built-in)			–		
	Travel	mm (in)	1,359.5 (53.52)	1,961 (77.20)	3,036 (119.53)	–		
Auto tool changer (ATC)	Tool shank		HSK-A63					
	No. of tools	tools	40					
	Max tool dia	mm (in)	ø90 (ø3.54) (w/o adjacent tools: ø130 (ø5.12))					
	Max tool length	mm (in)	400 (15.75) (from gauge line)					
	Max tool mass	kg (lb)	10 (22)					
Motor	Main spindle motor	kW (hp)	37/30 (50/40) (30 min/cont)					
	Opposing spindle motor	kW (hp)	–			22/15 (30/20) (20 min/cont)		
	Milling tool spindle motor	kW (hp)	25/19 (33/25) (3 min/cont)			Upper: 25/19 (33/25) (3 min/cont), Lower: 5.5/3.7 (7.5/5) (2 min/cont)		
	X-, Z-, Y-, B-axis motors	kW (hp)	XA: 5.2, ZA: 4.6 (XA: 6.9, ZA: 6.1) (DBC 1500)/5.2 (6.9) (DBC 2000)/6.4 (8.5) (DBC 3000) XB: 3.5, ZB: 4.6 (XB: 4.7, ZB: 6.1) (DBC 1500/2000)/5.2 (6.9) (DBC 3000), Y: 3.5, B: 3.0 (Y: 4.7, B: 4.0)					
	W-axis motor	kW (hp)	2.8 (3.7) (tailstock)	4.2 (5.6) (tailstock)		4.6 (6.1)		5.2 (6.9)
	Coolant motor (50Hz/60Hz)	kW (hp)	0.25/0.25 × 1, 0.55/0.75 × 3 (0.33/0.33 × 1, 0.73/1.0 × 3)					
Machine size	Height	mm (in)	3,030 (119.29)	3,090 (121.65)		3,030 (119.29)		3,090 (121.65)
	Floor space W × D (tank included)	mm × mm (in)	DBC 1500: 5,530 × 3,326 (217.72 × 130.94)/DBC 2000: 6,280 × 3,326 (247.24 × 130.94) DBC 3000: 8,420 × 3,278 (331.50 × 129.06)					
	Mass	kg (lb)	DBC 1500: 18,300 (40,260)/DBC 2000: 20,300 (44,660)/ DBC 3000: 23,100 (50,820)			DBC 1500: 18,300 (40,260)/DBC 2000: 20,300 (44,660)/ DBC 3000: 23,300 (51,260)		
CNC			OSP-P500S					

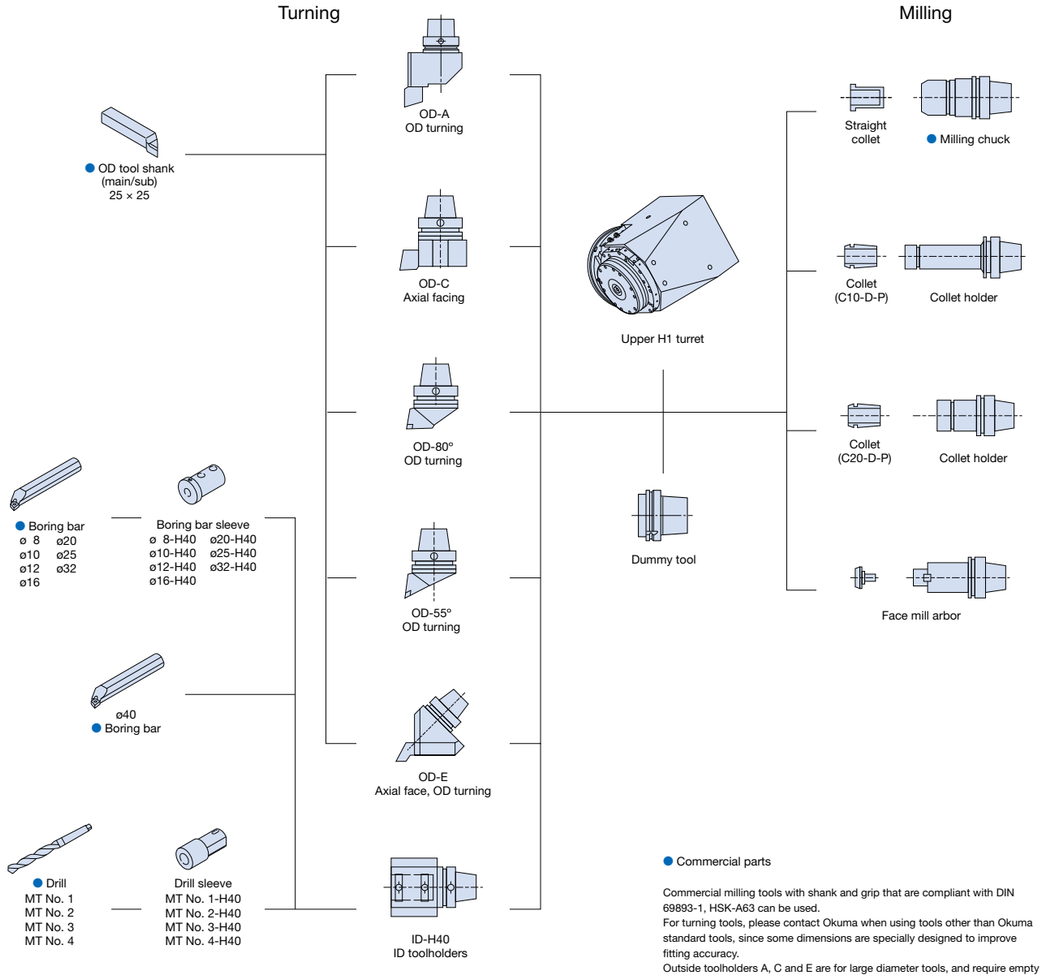
[ ]: option *1. ø320 (swing over lower turret) during shaft work and when machining with opposing spindles. *2. The opposing spindle capacity and working range near the opposing spindle differ with 1SW and 2SW specifications. Note: HSK holders with coolant supply pipes are required.

Standard Specifications/Accessories

			MULTUS U5000	
			2SC	2SW
Spindle	JIS A2-8	4,200 min^{-1} 22/15 kW (30 min/cont)	–	
	JIS A2-11	3,000 min^{-1} 37/30 kW (30 min/cont)	○	
Opposing spindle	JIS A2-8	4,200 min^{-1} 22/15 kW (30 min/cont)	–	
	JIS A2-8	3,800 min^{-1} 22/15 kW (20 min/cont)	–	○
	JIS A2-11	3,000 min^{-1} 32/22 kW (20 min/cont)	–	
Turret	Upper turret	H1 ATC L/M HSK-A63		
		12,000 min^{-1} 25/19 kW (3 min/cont)	○	
		Through coolant, B-axis indexing 0.001°		
	Lower turret	V12 direct mounting	○	–
		V12 radial	–	○
ATC	40-tool ATC chain magazine		○	
Tailstock	NC tailstock inching specifications, including tailstock thrust high/low switch		–	
	Self-traveling hydraulic quill		○	–
High-accuracy C-axis control			○	
Spindle temperature regulator (both turning spindle and milling tool spindle)			○	
Thermo Active Stabilizer — Spindle [milling tool] (TAS-S)			○	
Thermo Active Stabilizer — Construction (TAS-C)			○	
Collision Avoidance System			○	
Chuck auto open/close confirmation			○	
CNC	OSP-P500S		○	
	21.5-inch LCD operation panel		○	
	Portable pulse handle		○	
Accessories	Full enclosure shielding, work lamp (L/R LED), door interlock, lubrication monitor A-1, hydraulic unit, coolant supply system, foundation block and jack bolts, hand tools			

Upper Turret Tooling System (HSK-A63)

Unit: mm



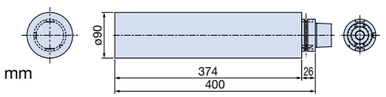
● Commercial parts

Commercial milling tools with shank and grip that are compliant with DIN 69893-1, HSK-A63 can be used.
For turning tools, please contact Okuma when using tools other than Okuma standard tools, since some dimensions are specially designed to improve fitting accuracy.
Outside toolholders A, C and E are for large diameter tools, and require empty adjacent tool pots when stored in the tool magazine.

Max Tool Dimensions

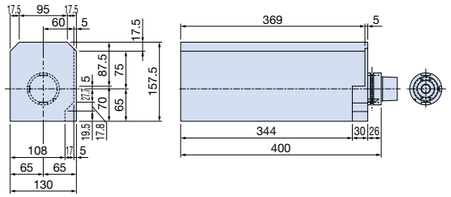
Unit: mm

Standard tool



ø 90 × 400 mm
10 kg

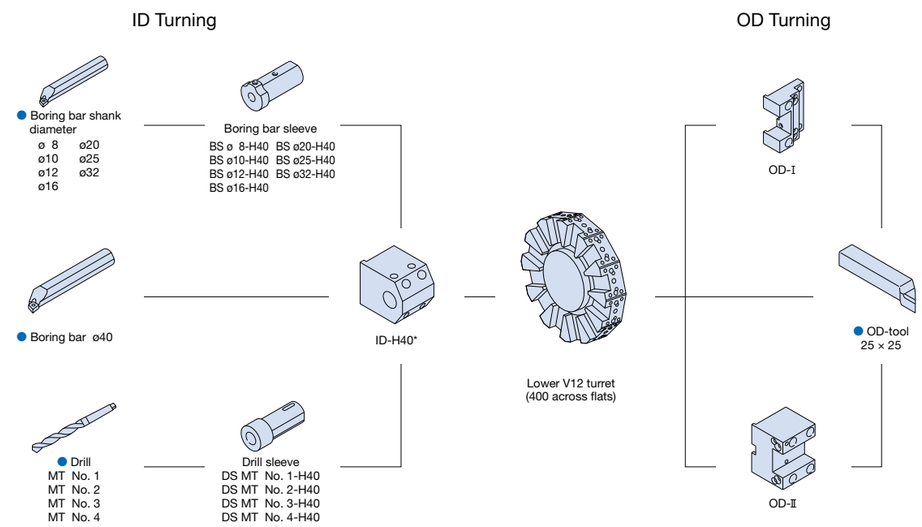
Super big dia tool



Lower Turret Tooling System

Unit: mm

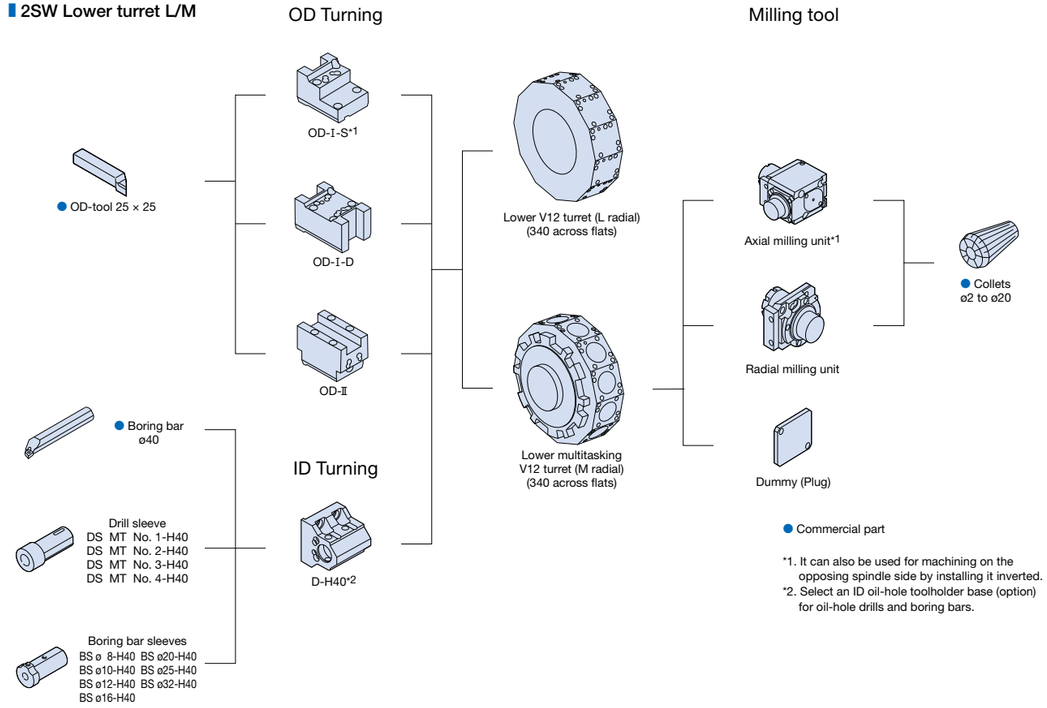
2SC Lower turret L



● Commercial part

* Select an ID oil-hole toolholder base (option) for oil-hole drills and boring bars.

2SW Lower turret L/M



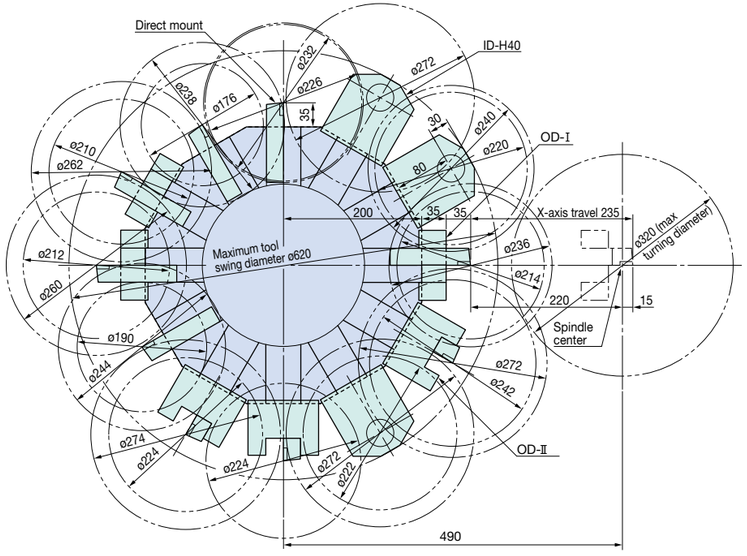
● Commercial part

*1. It can also be used for machining on the opposing spindle side by installing it inverted.
*2. Select an ID oil-hole toolholder base (option) for oil-hole drills and boring bars.

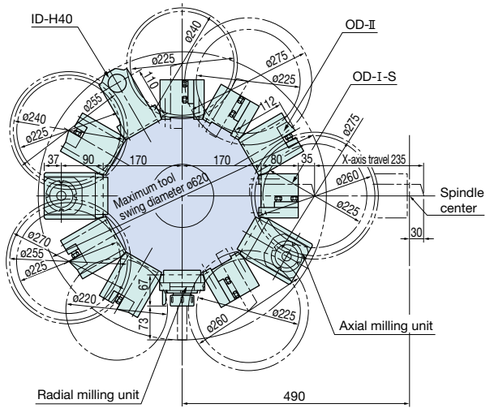
Lower Turret Interference Diagram

Unit: mm

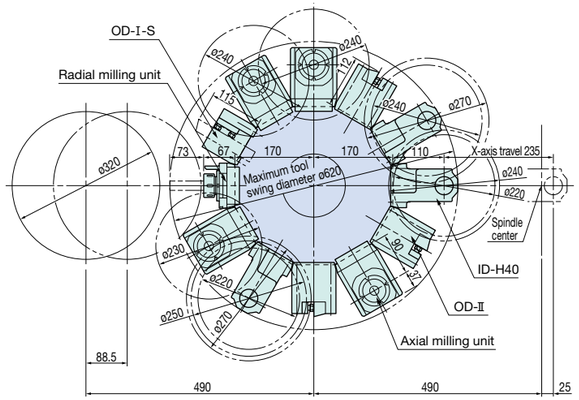
2SC Lower turret L



2SW Lower turret M OD



2SW Lower turret M ID

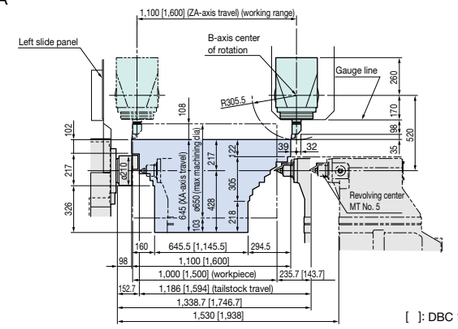


Working Range

Unit: mm

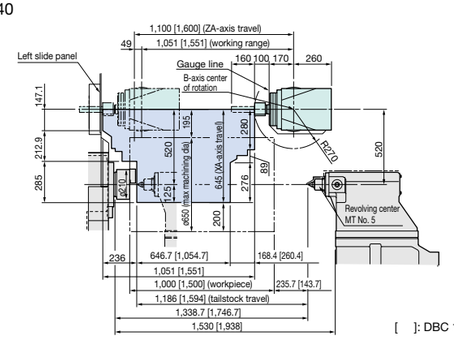
MULTUS U3000 1SC (DBC: 1000/1500)

OD-A



[ ]: DBC 1500

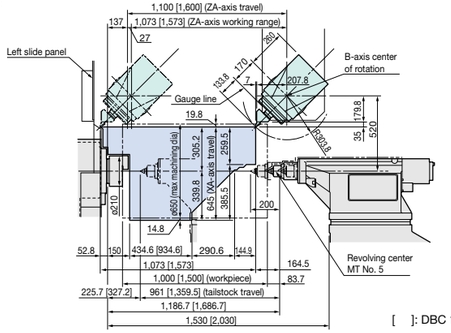
ID-H40



[ ]: DBC 1500

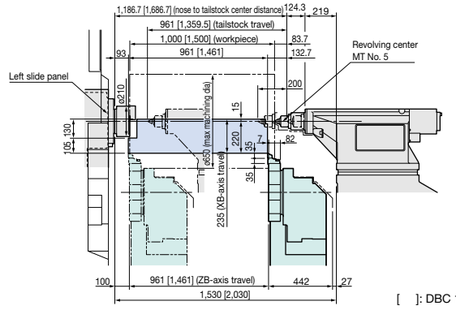
MULTUS U3000 2SC (DBC: 1000/1500)

OD-E



[ ]: DBC 1500

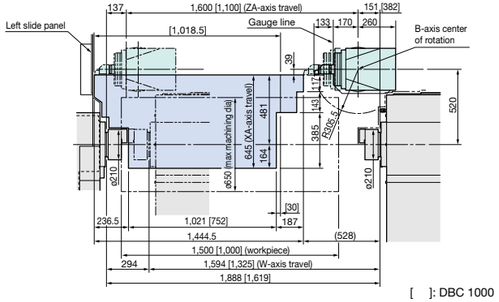
Lower turret, OD-Ⅰ



[ ]: DBC 1500

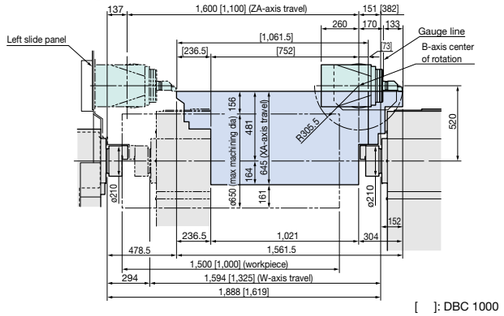
MULTUS U3000 1SW (DBC: 1000/1500)

OD-A, Main spindle



[ ]: DBC 1000

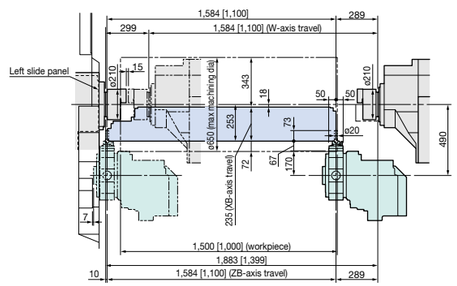
OD-A, Opposing spindle



[ ]: DBC 1000

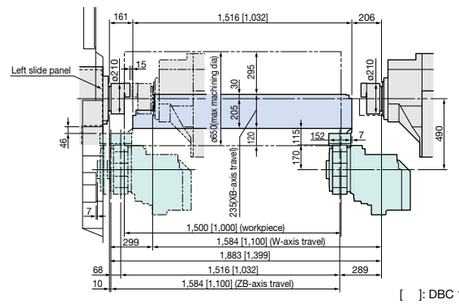
MULTUS U3000 2SW (DBC: 1000/1500)

Lower turret, Radial milling unit



[ ]: DBC 1000

Lower turret, OD-I-D, Opposing spindle



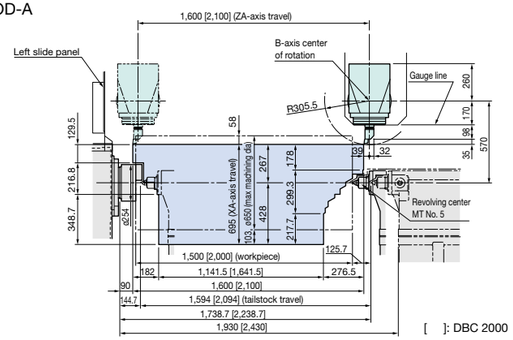
[ ]: DBC 1000

Working Range

Unit: mm

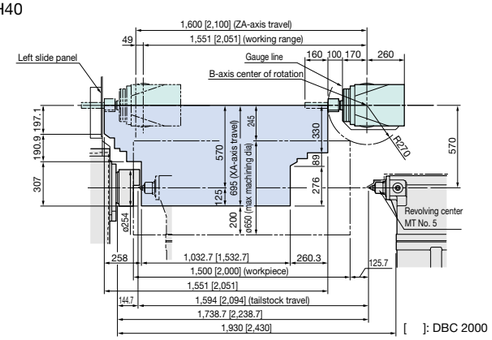
MULTUS U4000 1SC (DBC: 1500/2000)

OD-A



[ ]: DBC 2000

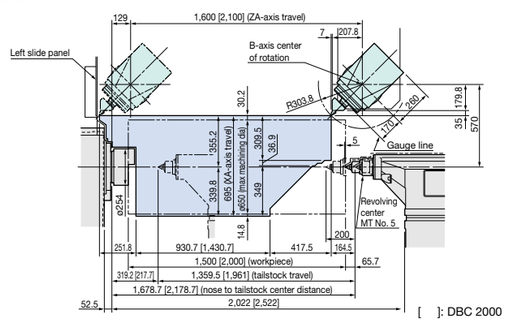
ID-H40



[ ]: DBC 2000

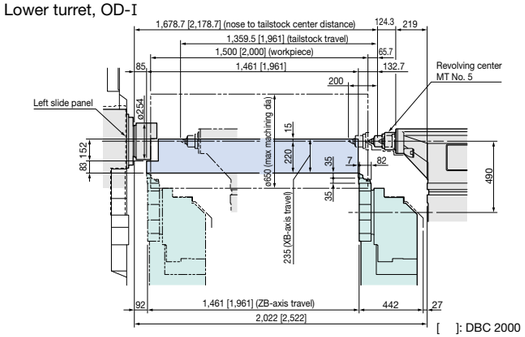
MULTUS U4000 2SC (DBC: 1500/2000)

OD-E



[ ]: DBC 2000

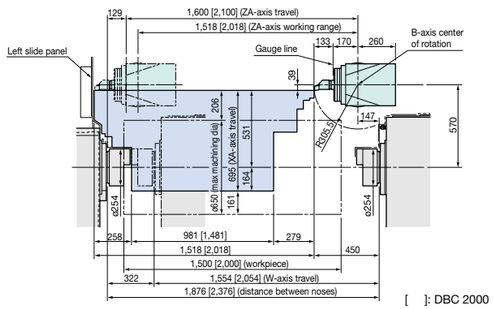
Lower turret, OD-I



[ ]: DBC 2000

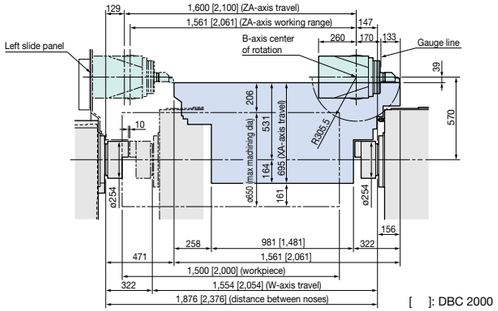
MULTUS U4000 1SW (DBC: 1500/2000)

OD-A, Main spindle



[ ]: DBC 2000

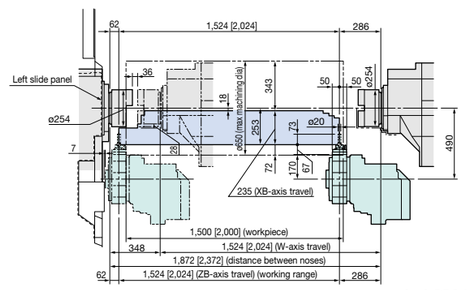
OD-A, Opposing spindle



[ ]: DBC 2000

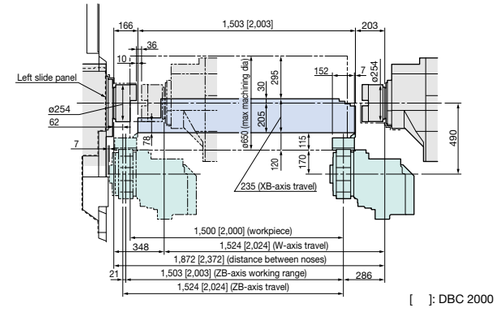
MULTUS U4000 2SW (DBC: 1500/2000)

Lower turret, Radial milling unit



[ ]: DBC 2000

Lower turret, OD-I-D, Opposing spindle

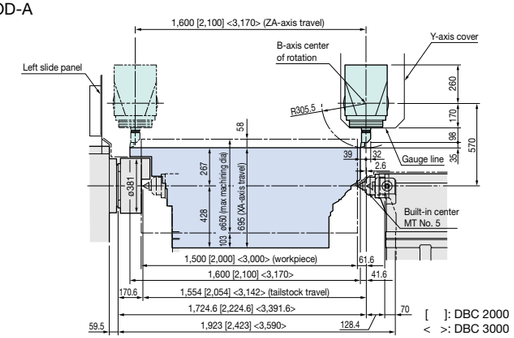


[ ]: DBC 2000

Unit: mm

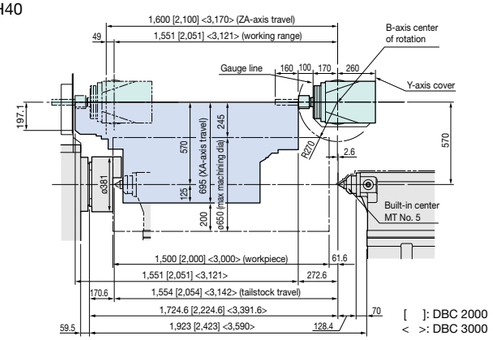
MULTUS U5000 1SC (DBC: 1500/2000/3000)

OD-A



[ ]: DBC 2000
< >: DBC 3000

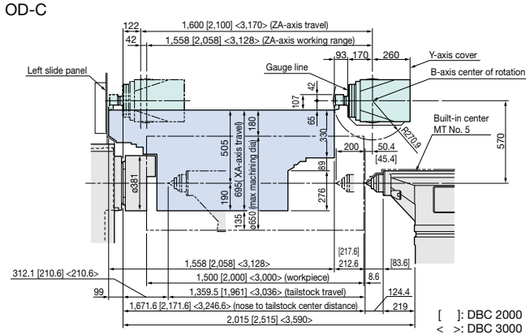
ID-H40



[ ]: DBC 2000
< >: DBC 3000

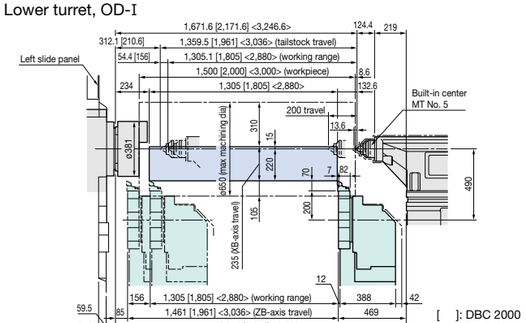
MULTUS U5000 2SC (DBC: 1500/2000/3000)

OD-C



[ ]: DBC 2000
< >: DBC 3000

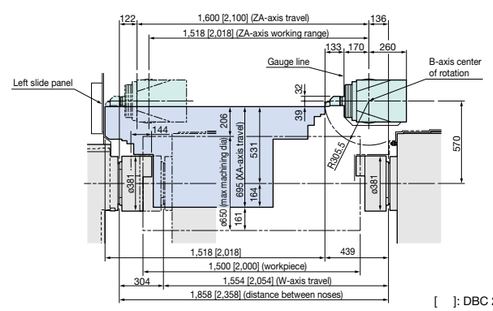
Lower turret, OD-I



[ ]: DBC 2000
< >: DBC 3000

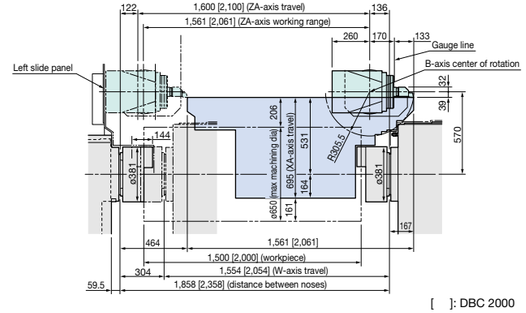
MULTUS U5000 1SW (DBC: 1500/2000)

OD-A, Main spindle



[ ]: DBC 2000

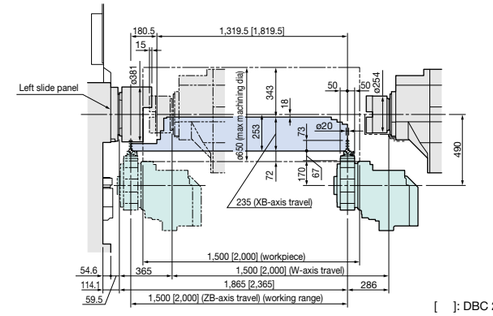
OD-A, Opposing spindle



[ ]: DBC 2000

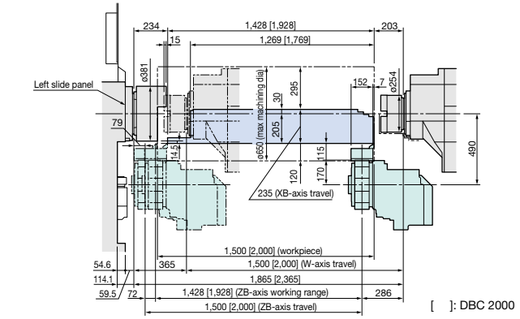
MULTUS U5000 2SW (DBC: 1500/2000)

Lower turret, Radial milling unit



[ ]: DBC 2000

Lower turret, OD-I-D, Opposing spindle



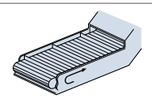
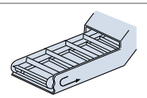
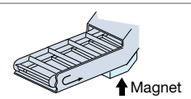
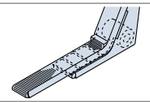
[ ]: DBC 2000

Optional Specifications

Big-Bore spindle	MULTUS U3000	4,200 min^{-1} A2-8 ø140 22/15 kW (30 min/cont)
	MULTUS U4000	3,000 min^{-1} A2-11 ø160 32/22 kW (20 min/cont)
Opposing spindle	MULTUS U3000	1S Big-Bore 4,200 min^{-1} A2-8 ø140 22/15 kW (30 min/cont)
	MULTUS U4000	1S Big-Bore 3,000 min^{-1} A2-11 ø160 32/22 kW (20 min/cont)
B-axis indexing		NC B-axis
Lower turret		V12 multitasking 6,000 min^{-1} 5.5/3.7 kW (2 min/cont) - opposing spindle specifications only
High pressure coolant		Upper turret, upper + lower turret
Tailstock		Hydraulic quill (self-propelled) (Standard with 2SC)
Tailstock sleeve system		Built-in type MT No. 4 - MULTUS U3000/U4000 only
Tool shank profile		CAPTO C6
ATC tool magazine capacity		80 tools, 120 tools, 180 tools (matrix)
Chip conveyor		Drum filter type, hinge type, scraper type
Conveyor-related options		Chip conveyor torque limiter (alarm C at detection), intermittent feed chip conveyor, machine linked chip conveyor
Chip buckets		L type, H type
Sludgeless Tank		
Coolant sludge prevention		Oil skimmer mounted
High pressure coolant unit		7 MPa
Turret coolant high/low pressure switch		L/M thru high/low pressure switch, M peripheral low pressure; L/M thru high/low pressure switch; M peripheral high/low pressure switch
Lower turret coolant high/low pressure switch		
Lubrication monitor		B-2 (w/ warning lamp)
Cover-related options		Upper door auto open/close, front door auto open/close, auto open/close on both upper + front door
Front cover auto open/close safety devices		Safety tape switch
Dual palm start buttons (door close interlock)		
Front cover open/close inching		
Chuck-related options		Chuck auto open/close confirm, chuck high/low pressure switch (re-gripping) (main, opposing), chucking miss detection (main, opposing)
Tailstock-related options		Tailstock quill auto advance/retract confirmation (hydraulic quill–type tailstock specifications), tailstock thrust high/low switch (standard for 1SC), door open/close tailstock quill advance speed switch (hydraulic quill–type tailstock specifications), high-thrust specifications (Big-Bore spindle specifications need to be selected) - MULTUS U3000/U4000 only
Opposing spindle tailstock control		
Air blower (blast) options		Chuck air blower, tailstock air blower, spindle ID air blower (main, opposing) Turret air blower (L/M thru-spindle during rotation only, L/M thru-spindle during rotation/M periphery, M periphery only) Lower turret air blower (internal piping, common coolant nozzle)
Coolant-related options		Shower coolant (main/opposing: A, B), Thru-Spindle Coolant (main/opposing: A, B), ceiling shower coolant (A, B)
Dust-proofing		Spindle air purge (main, opposing), guideway double wiper (X + Y + Z, X + Y + Z + Xb + Zb), Ball screw double wiper (X + Y + Z, X + Y + Z + Xb + Zb)
5-Axis Auto Tuning System		Standard kit, High spec kit
NC Gage		Standard kit, High spec kit
In-process workpiece gauging		Renishaw
Touch Setter		M (manual), A (auto), laser sensor
Workrest		
Workpiece stopper in spindle		Main (cannot be used in combination with tailstock specifications)
Chuck internal sizing stopper		Main, opposing
Additional coolant pump		0.8 kW
Coolant tank		Thickener bags, line filter, backwashing filter
Coolant sensor		Level detection, flow sensor, level + flow sensor
Coolant gun mounted		
Steadyrest		1S: Self-propelled (no relieving), 2S: lower turret, lower cross-slide
Mist collector		
High accuracy options		AbsoScale (Xa-axis, Xb-axis, Ya-axis, Za-axis), temperature regulator (coolant, hydraulic oil)
Bar feeder		
Workpiece sizing stopper		Upper turret, lower turret
Parts catcher-related options		Main spindle side eject, opposing spindle side eject, workpiece ejector (spring type, air type), workpiece eject conveyor (finished parts right eject)
Workpiece unloader		
Gantry loader		OGL10-P, OGL30-P, OGL50-P

Various chip conveyors (option)

Chip conveyor types and applications

Type	Hinge	Scraper	Magnet scraper	Hinge + scraper (w/drum filter)
Application	For steel	For castings	For castings	For steel, castings, nonferrous metal
Features	General use	Easy for maintenance Blade scraper	Suitable for sludge Not suitable for nonferrous metals	Filtration of long and short chips and coolant
Shape				
Remarks	Filter unit is included the conveyor as set.			—

* The machine may need to be raised depending on the type of conveyor.

Next-generation CNC OSP-P500S

Standard Specifications

Basic specs	Control	Turning: X, Z simultaneous 2-axis, Multitasking: X, Y, Z, B, C simultaneous 5-axis, Spindle control max 4 axes (2 spindles, 2 milling tool spindles)
	Position feedback	OSP full range absolute position feedback (zero-point return not required)
	Min/Max command	±99999.999 mm, ±99999.999° 8-digit decimal, command unit: 0.001 mm, 0.01 mm, 1 mm, 0.001°, 0.01°, 1°
	Feed	Override: 0 to 200%
	Spindle control	Direct spindle speed commands, override 50 to 200%, Milling tool override 30 to 200%, Constant cutting speed, Optimum turning speed designate
	Tool commands	2-digit tool no. + 4-digit tool no. (max tool registration: 1,000 sets)
	Tool compensation	Tool offset, nose R comp: 20 sets per tool, multi-coordinate tool compensation
	Display	21.5-inch color display operational panel, multi touch panel operations
	Security	Operator authentication, lock screen, OSP-VPSⅡ-STD (Virus Protection System)
Programming	Program capacity	Program storage: 4 GB, operation buffer: 2 MB
	Programming	Program management, edit, scheduled programs, G/M code macros, fixed cycles, special fixed cycles, M-spindle synchronized tapping, fixed drilling cycles, user task, auto programming (LAP4), programming help, block skip
Operations	OSP suite	Various “suite apps” support the series of machining operations, and “suite operation” enables one-touch access to those apps
	Easy Operation	“Single-mode operation” for a series of operations from a single screen. Easy-to-use operation panel supports complete machine control
	Collision Avoidance System	Prevents interference during manual, automatic operation Easy modeling of shape data (there are limits in interference prevention unit, unit movement)
	Machine operations	MDI, manual (rapid traverse, pulse handle), load meter, operations help, alarm help, sequence return, manual interrupt & auto return, auto power shut-off
	MacMan plus	Machining management: machining results, machine utilization, fault data compile & report, visualization of power consumption, External output
Communications / Networking		USB ports, Ethernet, DNC-T1, Smart I/F
High speed / accuracy	Thermo-Friendly Concept	TAS-C (Thermo Active Stabilizer—Construction): corrects machine construction thermal deformation error during shop temperature change TAS-S (Thermo Active Stabilizer—Spindle): corrects milling tool spindle thermal deformation error during spindle rotation
	High speed/accuracy	Hi-G control, SERVONAVI, cycle time reduction (machining time shortening, easy parameter setting)
Energy-saving function	ECO suite plus	ECO Idling Stop, ECO Operation, ECO Power Monitor (on machine watt meter is optional)
	Power Regeneration System	Regenerative power is used when the spindle and feed axes decelerate to reduce energy waste

Kit specs/optional specs

		NML E	NML D	AOT-M E	AOT-M D	DT E	DT D	DT AOT-M E	DT AOT-M D
Digital Twin									
Virtual Machining						● (VE)	● (VD)	● (VE)	● (VD)
Quick Modeling						● (VE)	● (VD)	● (VE)	● (VD)
OPC UA for Machine Tools						●	●	●	●
OSP API KIT						●	●	●	●
Interactive Programming									
Advanced One-Touch IGF-L Multitasking (w/Real 3D)				●	●			●	●
Smart OSP Operation				●	●	●	●	●	●
Programming									
Operation buffer (10 MB)		●	●	●	●	●	●	●	●
Circular threading			●		●		●		●
Program notes			●		●		●		●
User task I/O variables, 24 each 1,000 common variables									
Work coordinate 10 sets		●	●	●	●	●	●	●	●
system select 100 sets									
Thread matching									
Pause for threading during non-fixed cycle		●	●	●	●	●	●	●	●
Variable Spindle Speed Threading (VSST)									
Inverse time feed									
Mid-block sequence return			●		●		●		●
Coordinate convert		●	●	●	●	●	●	●	●
Profile generate		●	●	●	●	●	●	●	●
Flat turning									
Coordinate calculation (with NCYL commands)		●	●	●	●	●	●	●	●
Coordinate shifting, rotation, copying		●	●	●	●	●	●	●	●
Enlarge/reduce			●		●		●		●
Helical cutting									
Slope machining (Type Ⅰ, Type Ⅱ)									
B-axis slope machining		●	●	●	●	●	●	●	●
Profile helical cutting									
Harmonic Spindle Speed Control		●	●	●	●	●	●	●	●
Tool life management (include prior notice)			●		●		●		●
Turn-Cut									
Hobbing									
Multi-flute cutter function									
Block skip; 9 sets									
Home position									
Dynamic tilt turning									
Monitoring									
Real 3-D simulation				●	●	●	●	●	●
Cycle time over check		●	●	●	●	●	●	●	●
Load monitor (spindle, feed axis)									
No-load detection, part number expansion, Workpiece ejection detection				●	●	●	●	●	●
AI machine diagnostics (M-spindle, feed axes)*1									
Machine Status Logger									
Cutting Status Monitor									
Operation end buzzer									
Workpiece counters	Count only								
	Cycle stop								
	Start disabled								
Hour meters	Power ON								
	Spindle rotation								
	NC operating								
NC operation monitor (counter, totaling)		●	●	●	●	●	●	●	●
Status indicator (3-color C type) [A type, B type]		●	●	●	●	●	●	●	●
External Input/Output and Communication Functions									
RS-232C interface									
Ethernet/IP									
Networking	DNC-DT, DNC-T3								
	DNC-C/Ethernet								

		NML E	NML D	AOT-M E	AOT-M D	DT E	DT D	DT AOT-M E	DT AOT-M D
Measuring									
In-process workpiece gauging	Tool compensation								
	Z-axis automatic zero offset								
	C-axis automatic zero offset								
	Y-axis zero offset and tool offset								
	Y-axis slope gauging								
	3-point gauging								
Gauge data output	File output								
Post-process workpiece gauging	Quantitative compensation								
	(five level, seven level) BCD								
	RS-232C (w/dedicated channel)								
Energy-saving ECO suite plus									
Spindle power peak cutting									
ECO Power Monitor	On-machine wattmeter								
Automation / Unattended Operation									
Warm-up function (by calendar timer)									
Tool retract cycle									
External program	Pushbutton, rotary switch								
	Digital switch, BCD								
Connection with automated devices	Robot, loader I/F								
	Bar feeder I/F								
	FMS link I/F								
High-Speed /High-Accuracy									
B-axis NC									
Simultaneous 5-axis kit (NC B-axis)	Hyper-Surface Ⅱ (5 axes)								
	Tool center point control Ⅱ								
	Tool tilt command								
	DNC-DT								
	Inverse time feed								
	Herical cutting								
	Slope machining, B-axis slope machining								
Cycle time reduction*2	Operation time reduction	●	●	●	●	●	●	●	●
	Chuck and tailstock movement during spindle rotation								
0.1 μm control*2									
Pitch error compensation									
AbsoScale detection*2									
Hi-Cut Pro		●	●	●	●	●	●	●	●
Dynamic displacement compensation		●	●	●	●	●	●	●	●
Hyper-Surface Ⅱ	3 linear axes								
	3 linear axes + 2 rotary axes								
5-Axis Auto Tuning System kit	Standard, high spec								
NC Gage kit	Standard, high spec								
Other									
One-Touch Spreadsheet									
Gear machining package									
Machining Navi [M-*g*Ⅱ+, M-*i*]									
Machining Navi [L-*g*Ⅱ, T-*g* threading]									
Spindle dead-slow cutting									
Synchronized C-axis control									
Y-axis center height offset									
Feed axis retract									
Short circuit breaker									
External M codes [2 sets, 4 sets, 8 sets, 16 sets]									
OSP-VPSⅡ-EX (Virus Protection System)									

Note. NML: Normal kit, AOT-M: Advanced One-Touch IGF-L kit, DT: Digital Twin kit,
DT AOT-M: Digital Twin Advanced One-Touch IGF-L, E: Economy, D: Deluxe
VE and VD kits are also equipped with the Digital Twin on PC function, allowing running from a PC.

*1. Engineering discussions required. With AbsoScale detection specs, ball screw wear detection is possible.

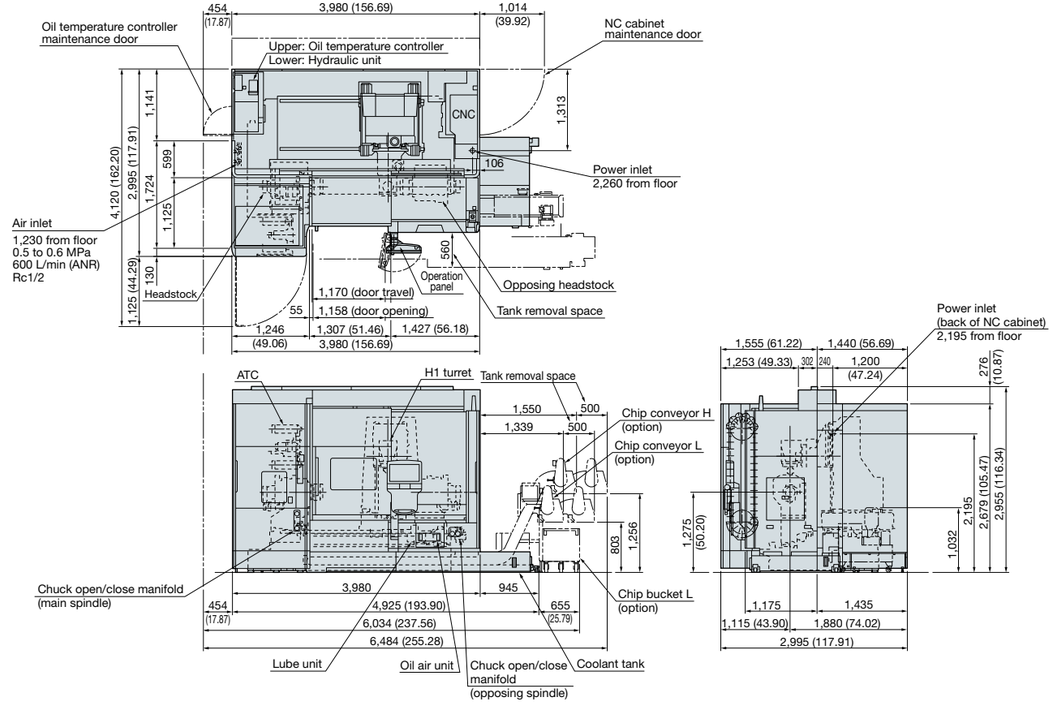
*2. Engineering discussions required.

Specifications, etc. are subject to change without notice.

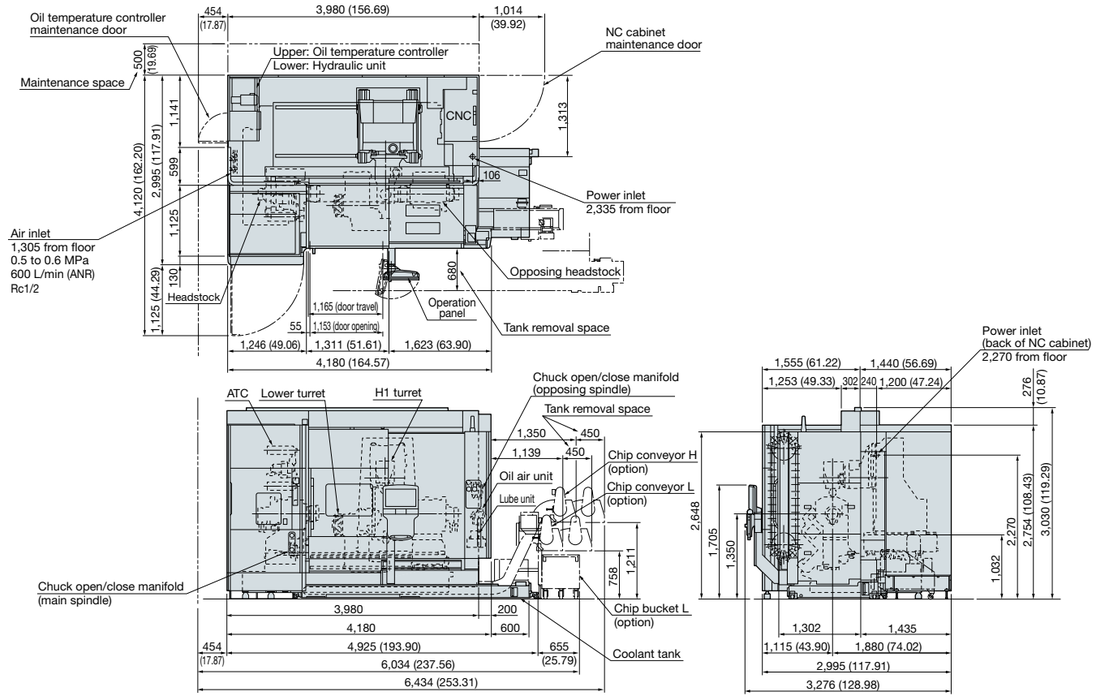
Dimensional and Installation Drawings

Unit: mm (in)

MULTUS U3000 (DBC: 1000 1SW)



MULTUS U3000 (DBC: 1000 2SW)

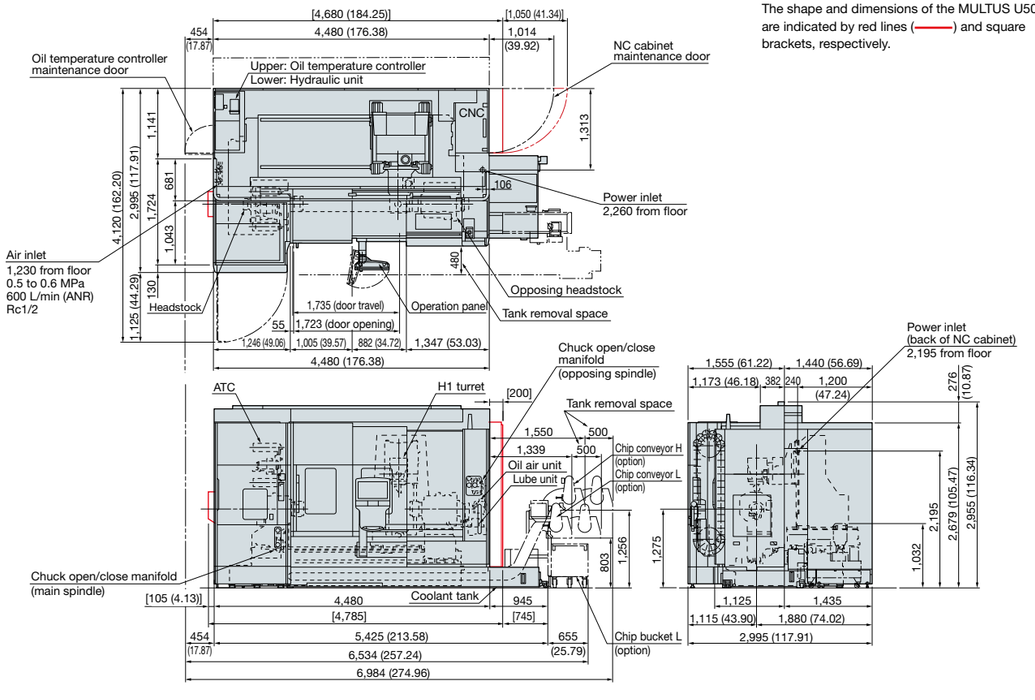


Dimensional and Installation Drawings

Unit: mm (in)

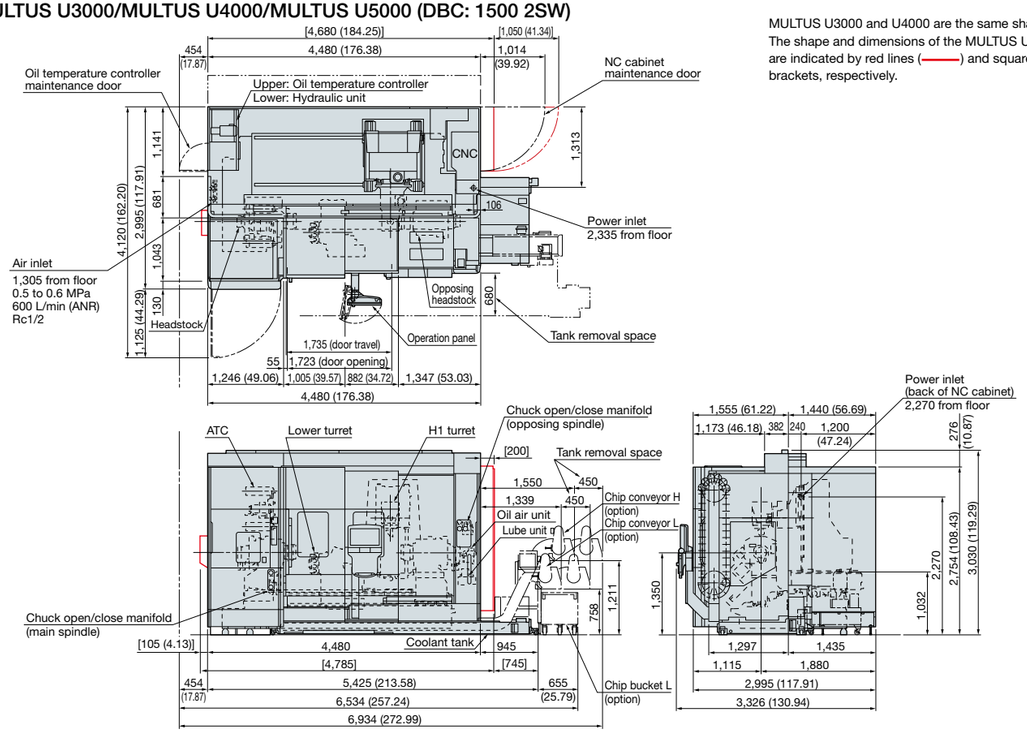
MULTUS U3000/MULTUS U4000/MULTUS U5000 (DBC: 1500 1SW)

MULTUS U3000 and U4000 are the same shape.
The shape and dimensions of the MULTUS U5000 are indicated by red lines (——) and square brackets, respectively.



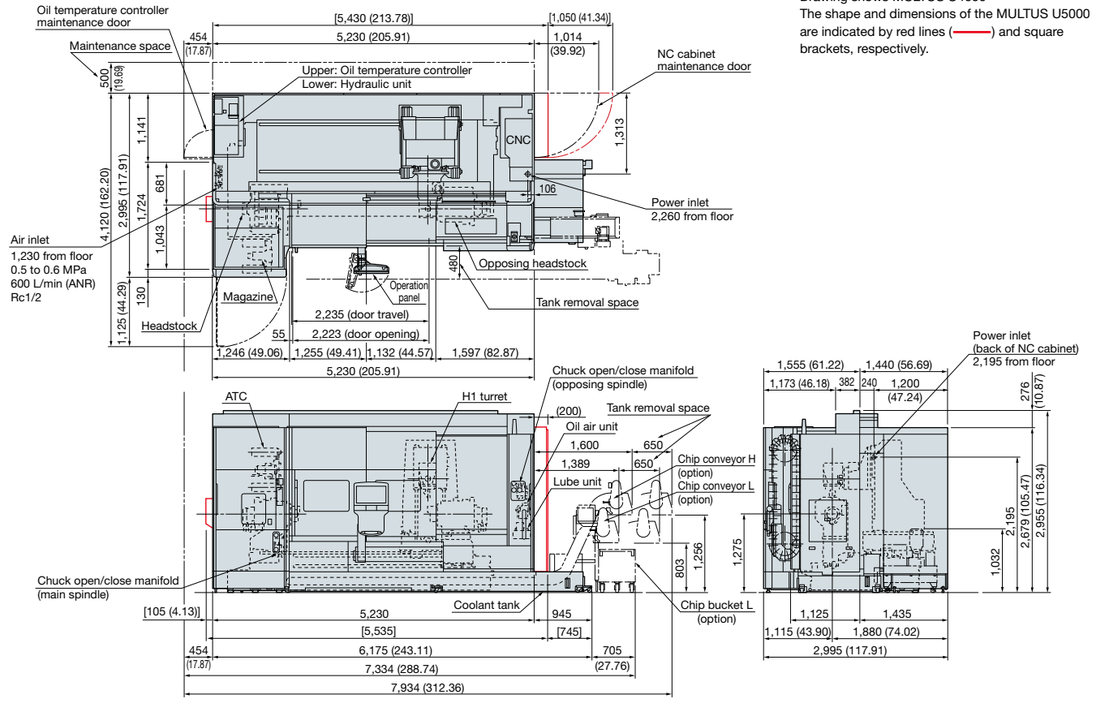
MULTUS U3000/MULTUS U4000/MULTUS U5000 (DBC: 1500 2SW)

MULTUS U3000 and U4000 are the same shape.
The shape and dimensions of the MULTUS U5000 are indicated by red lines (——) and square brackets, respectively.



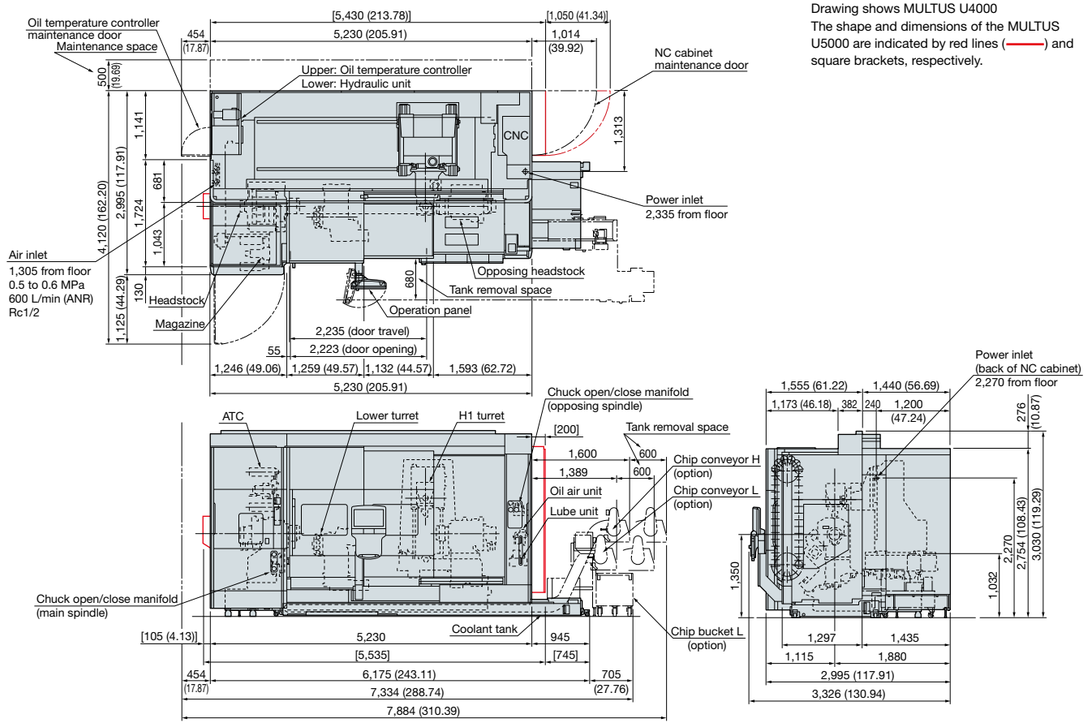
MULTUS U4000/MULTUS U5000 (DBC: 2000 1SW)

Drawing shows MULTUS U4000
The shape and dimensions of the MULTUS U5000 are indicated by red lines (——) and square brackets, respectively.



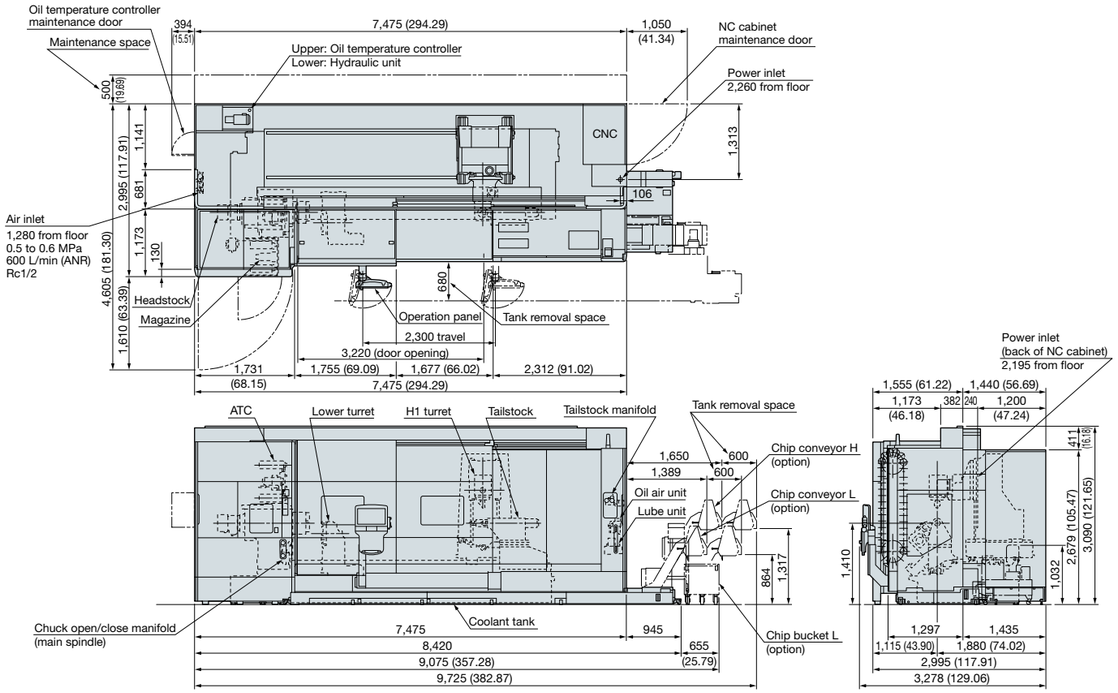
MULTUS U4000/MULTUS U5000 (DBC: 2000 2SW)

Drawing shows MULTUS U4000
The shape and dimensions of the MULTUS U5000 are indicated by red lines (——) and square brackets, respectively.



Unit: mm (in)

MULTUS U5000 (DBC: 3000 2SC)



MULTUS U 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. MULTUS U series-E-(12b)-100 (Jun 2025)

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