



OPEN POSSIBILITIES

Intelligent Multitasking Machines

# **MULTUS BII series**

**MULTUS B200II / MULTUS B250II**

**MULTUS B300II / MULTUS B400II**



Intelligent Multitasking Machines

## **MULTUS BI series**

**MULTUS B200II / MULTUS B250II**  
**MULTUS B300II / MULTUS B400II**



Collision Avoidance  
System



Machining  
Navi



5-Axis Auto  
Tuning System



SERVO NAVI

## High value-added production on easy-to-use machines

Process-intensive with multitasking reduces lead times.

Both high machining capacity and large machining area on a compact machine for high value-added machining of a wide range of parts.



**MULTUS B250II**



**MULTUS B200II**

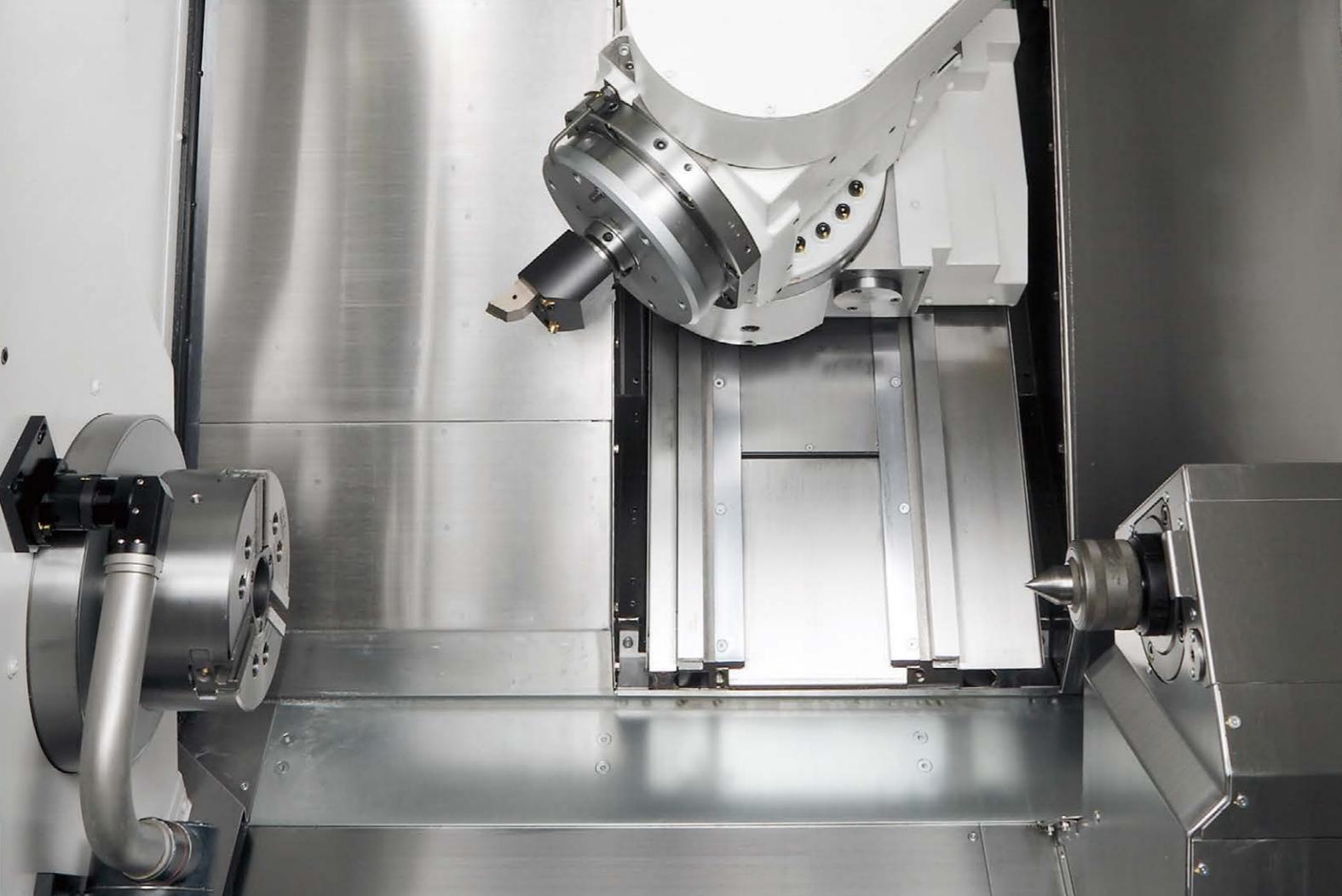


**MULTUS B400II**



**MULTUS B300II**

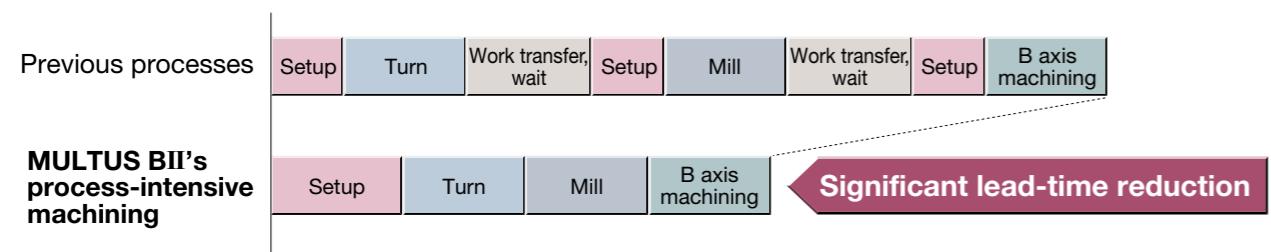
Machine photo shows special front doors for show purposes, and other optional specifications.



## Multitasking is easier than ever

**Lathe, vertical or horizontal machining center, and material handling operations consolidated into one machine...**

Shorter deliveries and more effective use of floor space, plus fewer setups and operation with fewer workers, result in better process control and greatly reduced total cost.



## Exceptional operability, accuracy, power

MULTUS BII Series machines are compact multitasking machines with exceptional operability, accuracy and power. Lathe and turning center processes on a single machine enable simple, comfortable operations with maximum incorporation of operator's wishes.

### Process-intensive machining of complex shaped workpieces

Abundant lineup handles a wide range of workpieces.



Carrier                      Vacuum rotor                      Spiral bevel gear

### Stable, high productivity

High productivity achieved with a powerful milling spindle and bed structured to maximize use of machine depth.

### High operability

The NC tailstock can program sizer and thrust settings, thus shortening setup times.

Machining preparations are also easier with swivel operation panel, lightweight front door, and good tool nose visibility.

### Array of intelligent technology supports operators

Dimensional stability is maintained at a high level during machine startup or machining restart with use of the Thermo-Friendly Concept. Work efficiency is improved thanks to fewer compensations.

MULTUS BII machines support operators with Okuma's advanced intelligent technologies, including the Collision Avoidance System to prevent collisions and Machining Navi to find the best cutting conditions.

# Steady, high production

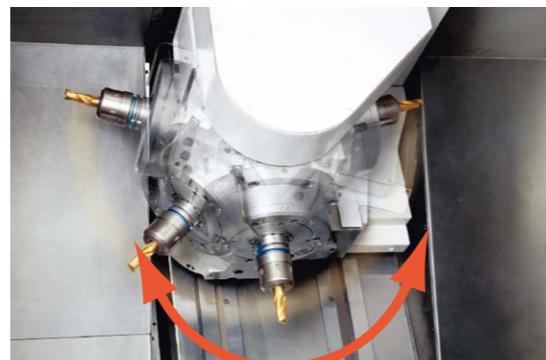
## Powerful, compact turret

- Compactness and high output with PREX motor
- Highly rigid roller bearings for live tool spindle (front bearings) (for MULTUS B300II/B400II)

### Motor output

MULTUS B200II/	<b>12,000 min<sup>-1</sup></b>	<b>12 kW</b>
MULTUS B250II	<b>20,000 min<sup>-1</sup></b>	<b>9 kW *</b>
MULTUS B300II	<b>6,000 min<sup>-1</sup></b>	<b>11 kW</b>
	<b>10,000 min<sup>-1</sup></b>	<b>16 kW</b>
MULTUS B400II	<b>6,000 min<sup>-1</sup></b>	<b>14 kW</b>
	<b>10,000 min<sup>-1</sup></b>	<b>20 kW</b>

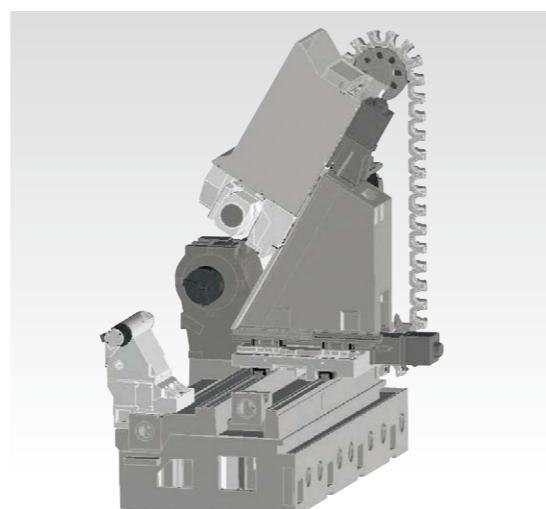
\*HSK-A63



**B-axis indexing: 225°**  
(minimum control angle: 0.001°)

## Highly rigid bed and guideways

- Stable machining achieved with wide, rigid bed.
- Featuring X-Y-Z-axis roller linear guides designed with high rigidity, antiwear, and vibration damping. Roller linear guide rigidity 2.6 to 3.0 times that of ball linear guide.



## Large work envelope

### Y-axis travel

MULTUS B200II:	<b>160 mm</b>
MULTUS B250II:	<b>200 mm</b>
MULTUS B300II:	<b>160 mm</b>
MULTUS B400II:	<b>230 mm</b>



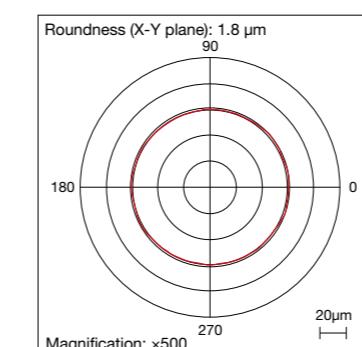
## Improved machining efficiency with reliable accuracy and power

### Machining Capacity [Actual data\*]

	MULTUS B200II/B250II	MULTUS B300II	MULTUS B400II
<b>Turning</b>			
● OD (S45C)	· Heavy-duty: <b>2.5 mm<sup>2</sup></b> (379 cm <sup>3</sup> /min)	· Heavy-duty: <b>3.0 mm<sup>2</sup></b> (490 cm <sup>3</sup> /min)	· Heavy-duty: <b>4.8 mm<sup>2</sup></b> (726 cm <sup>3</sup> /min)
Cutting speed	135 m/min	150 m/min	140 m/min
Cutting depth	5 mm	6 mm	8 mm
Feed rate	0.5 mm/rev	0.5 mm/rev	0.6 mm/rev
● Insert drill (S45C)			
Cutting speed	ø40-mm carbide drill 150 m/min	ø50-mm carbide drill 150 m/min	ø63-mm carbide drill 180 m/min
Feed rate	0.18 mm/rev	0.22 mm/rev	0.22 mm/rev
<b>Milling</b>			
● 7-flute, carbide, ø20-mm end mill (S45C)	· Chip volume: <b>224 cm<sup>3</sup>/min</b>	· Chip volume: <b>360 cm<sup>3</sup>/min</b>	· Chip volume: <b>450 cm<sup>3</sup>/min</b>
Cutting speed	200 m/min	250 m/min	210 m/min
Cutting depth	2.8 × 20 mm	8 × 20 mm	4 × 20mm
Feed rate	1.26 mm/rev	0.56 mm/rev	1.68 mm/rev
Chip volume	224 cm <sup>3</sup> /min	360 cm <sup>3</sup> /min	450 cm <sup>3</sup> /min
● 5-blade ø50-mm face mill (S45C)			
Cutting speed	300 m/min	300 m/min	300 m/min
Cutting depth	2.6 × 35 mm	3.3 × 35 mm	3.8 × 35 mm
Feed rate	1.25 mm/rev	1.5 mm/rev	1.5 mm/rev
Chip volume	217 cm <sup>3</sup> /min	330 cm <sup>3</sup> /min	380 cm <sup>3</sup> /min
● Insert drill (S45C)			
Cutting speed	ø30-mm carbide drill 160 m/min	ø40-mm carbide drill 120 m/min	ø40-mm carbide drill 120 m/min
Feed rate	0.13 mm/rev	0.11 mm/rev	0.13 mm/rev
● TAP (S45C)			
	M20 P2.5	M20 P2.5	M24 P3

### Contouring accuracy (roundness)

**1.8 µm** (MULTUS B300II actual data)

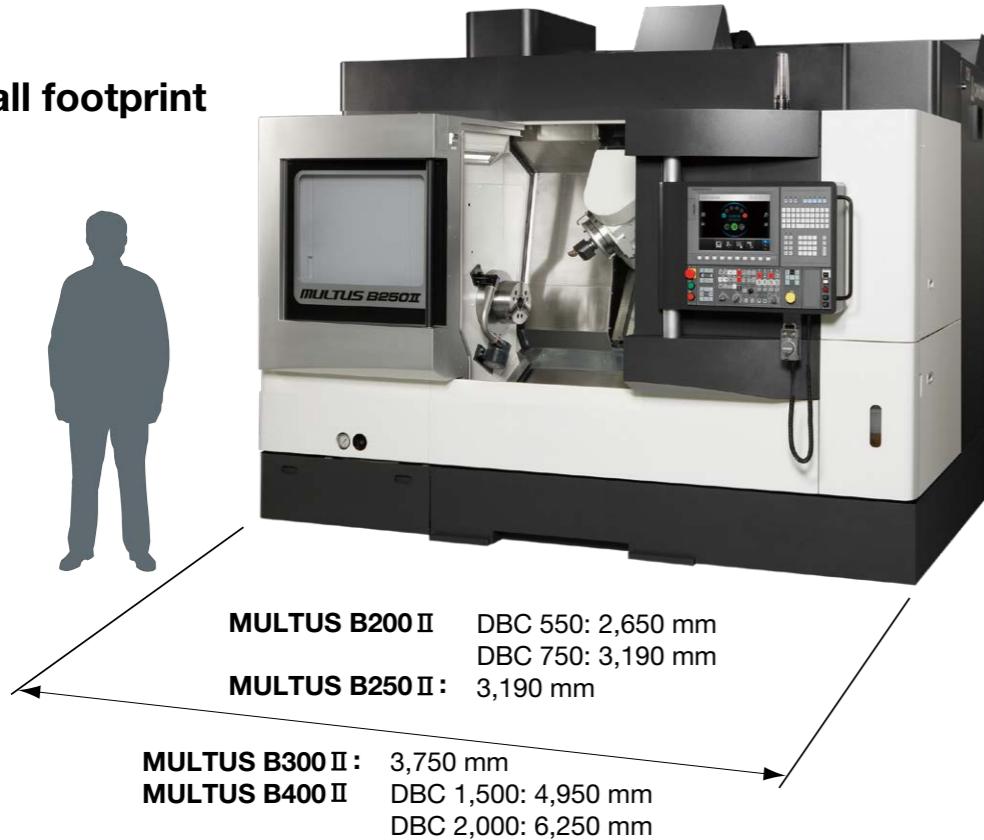


- Workpiece: Al
- Cutting conditions: ø12-mm end mill (4-flute)  
Spindle speed: 8,000 min<sup>-1</sup>  
Feedrate: 500 mm/min

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

## High operability

### Small footprint



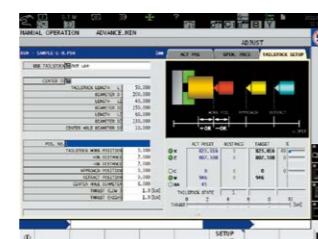
### NC tailstock

- Tailstock positions and thrust settings can be set and changed by program
- Drastically reduces setup times

#### Tailstock

MULTUS B200II: 0.5 to 3 kN  
MULTUS B250II: 1 to 5 kN  
MULTUS B300II: 1 to 5 kN  
MULTUS B400II: 1.5 to 7 kN

(High thrust specs: to 10 kN)



### With keyboard operations reduced by: 1/2

For multitasking machines that handle high-mix low volume production, the Okuma Control considerably reduces the cost and time required to perform first-part trial cuts. Tool preparations, forming soft-jaws, origin settings; all of the related machining preps required for the job can be done much easier simply because the CNC was produced by a machine tool manufacturer who has the experience and know-how to reduce keyboard input operations by half compared with the previous control.

## Spec extensions to handle all kinds of workpieces

### Abundant spec extensions

Model	MULTUS B200II	MULTUS B250II	MULTUS B300II	MULTUS B400II
Distance between centers	550	750	750	900
Chuck work specs	○	—	—	○
Tailstock specs	○	○	○	○
Opposing spindle specs	—	○	○	○

### Opposing spindle (W specs)



#### MULTUS B200II MULTUS B250II

- Spindle speed 6,000 min<sup>-1</sup>
- Output 11/7.5 kW

#### MULTUS B300II

- Spindle speed 5,000 min<sup>-1</sup>
- Output 15/11 kW

#### MULTUS B400II

- Spindle speed 3,800 min<sup>-1</sup>
- Output 22/15 kW

#### Machining Capacity [Actual data]

(Workpiece: S45C)

OD Turning : 2.0 mm<sup>2</sup>  
Cutting speed : 150 m/min  
Cutting depth : 5 mm  
Feed rate : 0.4 mm/rev

OD Turning : 2.5 mm<sup>2</sup>  
Cutting speed : 100 m/min  
Cutting depth : 5 mm  
Feed rate : 0.5 mm/rev

OD Turning : 3.0 mm<sup>2</sup>  
Cutting speed : 100 m/min  
Cutting depth : 6 mm  
Feed rate : 0.5 mm/rev

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

### Gear Machining Package (Optional) High accuracy gear machining with a multitasking machine

Gear machining that previously required complex programming can now be done with ease. With the Gear Machining Package, simply input the tool type, gear data, and cutting conditions. Programming time is reduced to about one-tenth that of manual input. Process-intensive machining is achieved, including the gear machining that used to be done on expensive special-purpose machines.



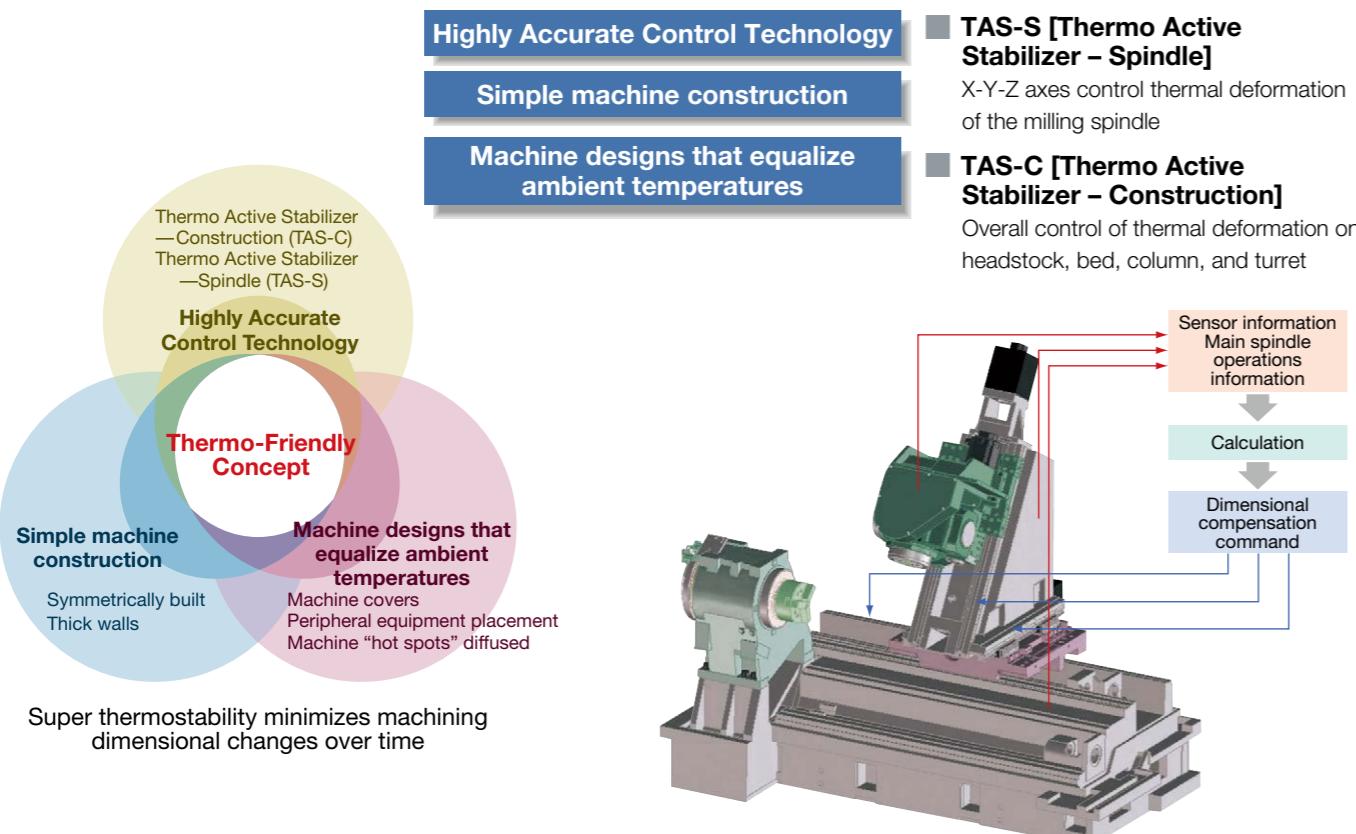
Skiving  
(OD/ID splines)

## "Working with temperature changes"

Manageable Deformation—Accurately Controlled

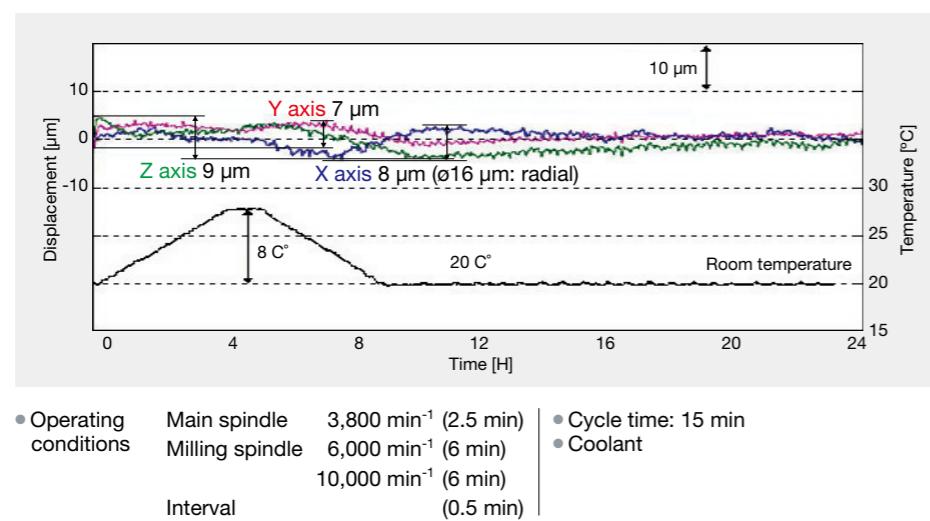
## Thermo-Friendly Concept

"Thermo-friendly" concept that enables remarkable machining accuracy through original structural design and thermal deformation control technology. Free from troublesome dimensional compensation and warm-up. Exhibits excellent dimensional stability even during consecutive operation over long periods and environmental temperature change in the plant.



## Thermal deformation over time: less than 10 µm

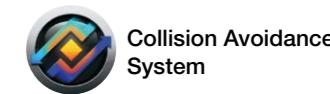
(MULTUS B300II actual data\*)



## World's first "Collision-free machine"

Collision prevention

## Collision Avoidance System



### Allowing operators to focus on making parts

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

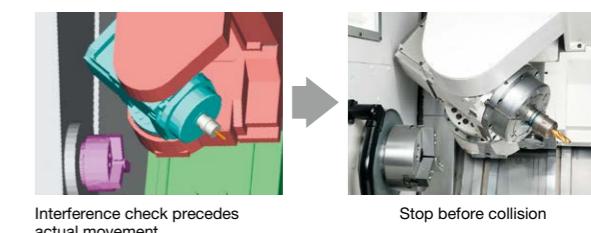
#### ■ Collision prevention during automatic operation

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

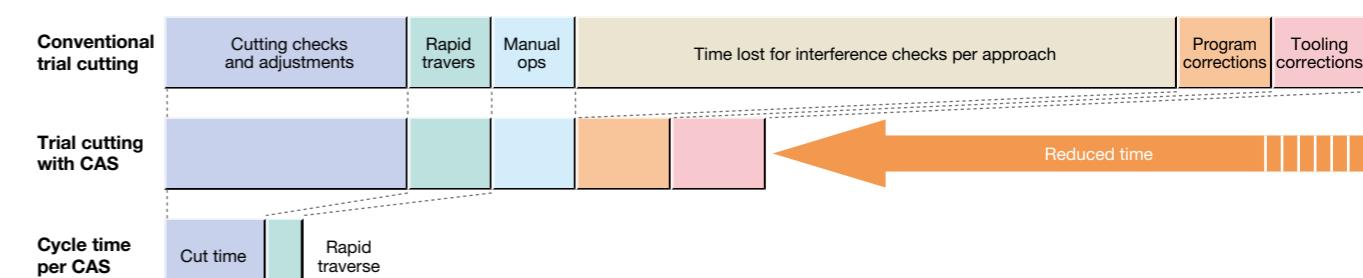


#### ■ Collision avoidance in manual operation

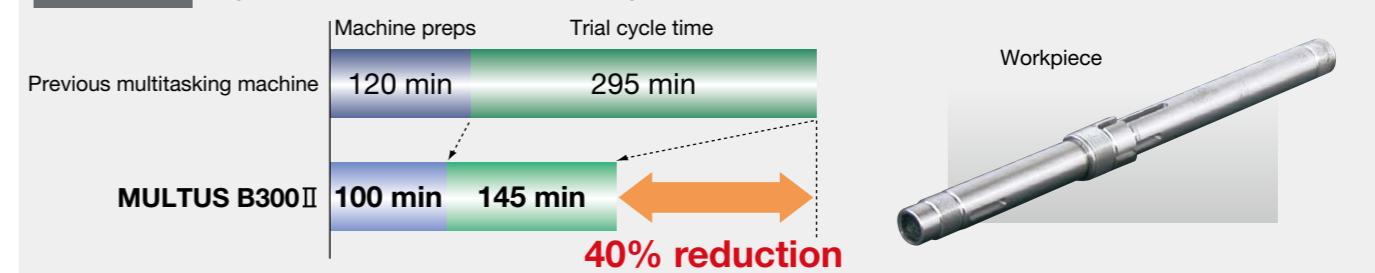
Especially useful for machine operators setting up a job, collision avoidance in manual mode provides collision-free confidence and faster machining preparations.



### Improved spindle utilization



#### Case example Significant reduction in machining preparation time



Caution: The Collision Avoidance System (CAS) detects collision per 3D models of the machine components, tools, fixtures, and workpieces stored in the OSP. Thus, if the entered tool, fixture, or workpiece shape differs from their actual dimensions, CAS will not accurately detect possible collisions. Also, for units with collision detection, there may be limitations. CAS will not function when turned OFF (though machine is ON).

## Find the best cutting condition for your application

Cutting conditions search

### Machining Navi (Optional)

Cost reduction—shorter cycle times and higher productivity—is required to compete in today's global market. Machining Navi, with clear visuals of complex cutting conditions, is a breakthrough tool that enables the machine operator to navigate the machine and tool capabilities to their best performance levels.

For turning



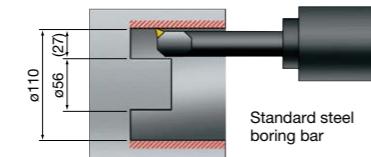
Machining  
Navi

#### Chatter-free applications for lathes "Machining Navi" L-g (guidance)

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

Boring bar with 5 times the extension for chatter-free internal diameter boring

- Tool: Boring bar (steel)
- Diameter: ø20 mm
- Extension: 100 mm
- Cutting speed: 180 m/min
- Workpiece material: S45C



Efficient, small OD shaft turning without steadyrest

- Workpiece: Drive shaft
- Diameter: ø17 mm
- Length: 400 mm
- Workpiece material: S45C
- Cutting conditions: Cutting depth: 0.1 mm, Feed rate: 0.12 mm/rev, Cutting speed: 170 m/min



#### Threading chatter can be easily controlled by anyone "Machining Navi" T-g (threading)

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

For milling

Simple, auto-mode—leave it to the machine

Finding optimum cutting conditions quickly

#### "Machining Navi" M-i (intelligently optimized spindle speed control)

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.

Adjust cutting conditions while monitoring the data

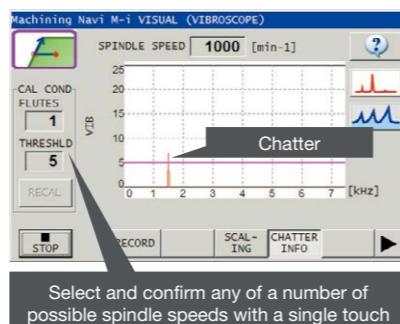
#### "Machining Navi" M-gII+ (intelligently optimized spindle speed control)

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.

**Changes tool rotation, cuts tool costs in half, and reduces cycle times**

Tooling cost reduced with small diameter end mill. Cycle time reduced by approximately double the spindle speed.

- Workpiece: S45C  
Tool: ø12 → ø6-mm end mill  
Spindle speed: 2,100 → 5,500 min<sup>-1</sup>



**Chatter disappeared after changing the tool rotation by only 7 revolutions**

- Workpiece: S45C  
Tool: ø63-mm face mill  
Spindle speed: Chattering at 400 min<sup>-1</sup>, → smooth cutting at 407 min<sup>-1</sup>

## Quick and easy tuning by anyone

Gauging and compensation of geometric error

### 5-Axis Auto Tuning System (Optional)



5-Axis Auto  
Tuning System

Multitasking machines have rotary axis misalignment and other “geometric error” that greatly affect machining accuracy. The 5-Axis Auto Tuning System measures geometric error with a touch probe and datum sphere, and tunes multitasking machines for better operating accuracy through compensation control using the measurement results. This helps to achieve a higher level of 5-axis machining accuracy.\*

#### Anyone can automatically check for geometric error quickly and easily

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.

Note: Optional specifications for MULTUS B300II, MULTUS B400II.

Note: May not be available for certain specifications.



Next-Generation Energy-Saving System

### ECO suite

#### Accuracy ensured, cooler off ECO Idling Stop

Intelligent energy-saving function with the Thermo-Friendly Concept. The machine itself determines whether or not cooling is needed and cooler idling is stopped with no loss to accuracy. (Standard application on machines with Thermo-Active Stabilizer—Spindle)

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

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

Peripheral equipment runs only in the necessary amount and at the necessary time

#### ECO Operation (Optional)

Chip conveyors, mist collectors and other equipment are automatically stopped after cutting is finished. The machine performs energy-saving operation automatically.

## Machine Specifications

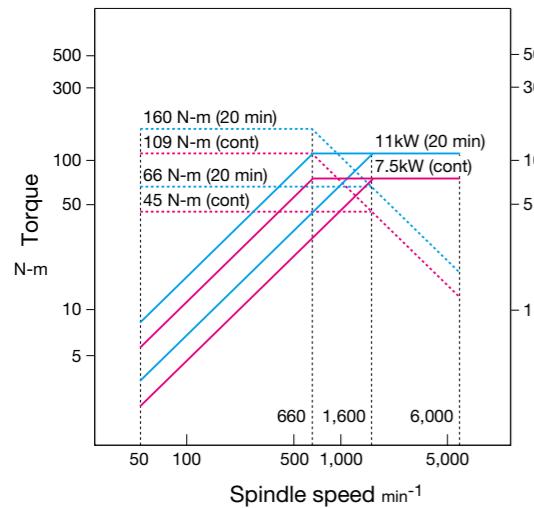
Specifications		MULTUS B200II				MULTUS B250II				MULTUS B300II				MULTUS B400II				
		X550		X750		X750		X900		X1,500		X2,000						
		T	C	C	W	C	W	T	C	W	T	C	W	C	W	C	W	
Capacity	Swing over saddle	mm (in)		ø600 (23.62)			ø600 (23.62) <sup>*1</sup>		ø630 (24.8) (Y=0)			ø710 (27.95) (Y=0)						
	Max machining dia	mm (in)			ø600 (23.62)				ø630 (24.8)			ø710 (27.95)						
	Distance between centers	mm (in)	550 (21.65)		750 (29.53)		750 (29.53)		900 (35.43)		1,500 (59.06)		2,000 (78.74)					
Travels	X axis	mm (in)		500 (+480 to -20) (19.69 (+18.9 to -0.79))				580 (+560 to -20) (22.83 (+22.05 to -0.79))			690 (+670 to -20) (27.17 (+26.38 to -0.79))							
	Z axis	mm (in)	600 (23.62)		800 (31.5)		800 (31.5)		935 (36.81)		1,545 (60.83)		2,045 (80.51)					
	Y axis	mm (in)	160 (+80 to -80) (6.3 (+3.15 to -3.15))		200 (+100 to -100) (7.87 (+3.94 to -3.94))		160 (+80 to -80) (6.3 (+3.15 to -3.15))		230 (+115 to -115) (9.06 (+4.53 to -4.53)) <sup>*2</sup>									
	W axis	mm (in)	-		810 (31.89)		-	810 (31.89)	-	1,000 (39.37)		-	1,550 (61.02)		-	2,050 (80.71)		
	C-axis control	degree		360 (min control angle 0.001)						360 (min control angle 0.001)								
Main spindle	B axis indexing angle	degree		225 (-30 to 195 (min control angle 0.001))						225 (-30 to 195 (min control angle 0.001))								
	Spindle speed	min <sup>-1</sup>		50 to 6,000 [45 to 5,000]			45 to 5,000		45 to 5,000 [38 to 3,800]			38 to 3,800 [30 to 2,800]						
	Speed ranges			2 auto ranges (2-speed motor coil switching)						2 auto ranges (2-speed motor coil switching)								
	Spindle nose			ø140 flat [JIS A2-6]			JIS A2-6		JIS A2-6 [JIS A2-8]			JIS A2-8 [JIS A2-11]						
Opposing spindle	Tapered bore / Bearing dia	mm (in)		ø62/ø100 [ø80/ø120] (ø2.44/ø3.94 [ø3.15/ø4.72])					ø62/ø100 [ø80/ø120] (ø2.44/ø3.94 [ø3.15/ø4.72])			ø80/ø120 [ø110/ø150] (ø3.15/ø4.72 [ø4.33/ø5.91])						
	Spindle speed	min <sup>-1</sup>	-	50 to 6,000		-	50 to 6,000		-	45 to 5,000		-	38 to 3,800 <sup>*3</sup>		-	38 to 3,800 <sup>*3</sup>		
	Speed ranges		-	2 auto ranges (motor coil switching)		-	2 auto ranges (motor coil switching)		-	2 auto ranges (motor coil switching)		-	2 auto ranges (motor coil switching)		-	2 auto ranges (motor coil switching)		
	Spindle nose		-	ø140 flat		-	ø140 flat		-	JIS A2-6		-	JIS A2-8 <sup>*3</sup>		-	JIS A2-8 <sup>*3</sup>		
Turret	Tapered bore / Bearing dia	mm (in)	-	ø62/ø100 (ø2.44/ø3.94)		-	ø62/ø100 (ø2.44/ø3.94)		-	ø62/ø100 (ø2.44/ø3.94)		-	ø80/ø120 (ø3.15/ø4.72) <sup>*3</sup>		-	ø80/ø120 (ø3.15/ø4.72) <sup>*3</sup>		
	Type			H1 ATC						H1 ATC								
	No. of tools stations			1 for both L and M tools							1 for both L and M tools							
Milling tool spindle	OD tool shank dimensions/ ID tool shank diameter	mm (in)		□20/ø32 (□3/4/ø1-1/4)			□25/ø32 (□1/ø1-1/4)				□25/ø40 (□1/ø1-1/2)							
	Speed range	min <sup>-1</sup>		50 to 12,000 [20,000 <sup>*4</sup> ]						50 to 6,000 [50 to 10,000]								
Feedrates	Max torque	N·m		40.1/26.3 (5 min/cont) [23.9/15.9 (5 min/cont) <sup>*4</sup> ]					65.7/44.8 (3 min/cont) [57.3/38.2 (5 min/cont)]			85/59.6 (5 min/cont) [65.5/45 (5 min/cont)]						
	Rapid traverse	mm/min		X : 40,000 Z : 40,000 Y : 26,000						X : 40,000 Z : 40,000 Y : 26,000								
		min <sup>-1</sup>	-	W : 12,000 (Tailstock)		W : 20,000	W : 12,000 (Tailstock)	W : 20,000	-	W : 12,000 (Tailstock)		W : 20,000	-	W : 12,000 (Tailstock)		W : 20,000		
NC tailstock	Tailstock spindle tapered bore type			C : 200, B : 30						C : 200 B : 30								
	Tailstock travel	mm (in)	-	MT No. 4		-	MT No. 5	-	-	MT No. 5		-	MT No. 5		-	MT No. 5		
ATC	Tool shank / Pull stud			HSK-A63 [CAPTO C6]						HSK-A63 [CAPTO C6]								
	No. of tools	tools		20 [40, 60]					20 [40, 60, 120]			20 [40, 80, 120]						
	Max tool dia	mm (in)		ø90 (3.54) (ø130 (5.12) w/o adjacent tools)						ø90 (3.54) (ø130 (5.12) w/o adjacent tools)								
	Max tool length	mm (in)		200 (7.87) (from gauge line)					300 (11.81) (from gauge line)			400 (15.75) (from gauge line)						
Motors	Max tool weight	kg (lb)		4 (9)					8 (18)			10 (22)						
	Main spindle	kW (hp)		11/7.5 (15/10) (20 min/cont) [22/15 (30/20) (15 min/cont)]			15/11 (20/15) (20 min/cont) [22/15 (30/20) (30 min/cont)]		15/11 (20/15) (20 min/cont) [22/15 (30/20) (20 min/cont)]			22/15 (30/20) (50%ED/cont) [30/22 (40/30) (50%ED/cont)]						
	Opposing spindle	kW (hp)	-	11/7.5 (15/10) (20 min/cont)		-	11/7.5 (15/10) (20 min/cont)		-	15/11 (20/15) (20 min/cont)		-	22/15 (30/20) <sup>*3</sup> (20 min/cont)		-	22/15 (30/20) <sup>*3</sup> (20 min/cont)		
	Milling tool spindle	kW (hp)		12/8 (16/11) (5 min/cont) [9/6 (12/8) (5 min/cont) <sup>*4</sup> ]				11/7.5 (15/10) (5 min/cont) [16/11 (21/15) (5 min/cont)]				14/10 (19/13) (5 min/cont) [20/14 (27/19) (5 min/cont)]						
Machine size	Axis drive motors	kW (hp)		X : 3.5 (5), Y : 2.9 (4), Z : 2.8 (4)				X : 3.5 (5), Y : 2.9 (4), Z : 3.5 (5)				X : 3.5 (5), Y : 2.8 (4), Z : 4.6 (6)						
	W axis motors	kW (hp)	-	2.9 (4) (Tailstock)		2.9 (4)	2.9 (4) (Tailstock)	2.9 (4)	-	2.9 (4) (Tailstock)		2.9 (4)	-	2.8 (4) (Tailstock)		2.8 (4) (Tailstock)		2.8 (4)
	Coolant pump motor (50/60Hz)	kW (hp)		0.55/0.75 (0.7/1)					0.55/0.75 (0.7/1)				0.55/0.75 (0.7/1)×3					
	Height	mm (in)		2,582 (101.66)					2,587 (101.85) <sup>*5</sup>			3,000 (118.11) <sup>*5</sup>			3,137 (123.5) <sup>*5</sup>			
	Floor space (with tank)	mmxmm (in)		3,080×2,210 (121.26 × 87.01)		3,620×2,210 (142.52 × 87.01)		3,620×2,210 (142.52 × 87.01)		4,035×2,257 (158.86 × 88.86)		5,750×2,693 (226.38 × 106.02)		7,050×2,693 (277.56 × 106.02)				
Standard Specifications and Accessories	Weight (with CNC)	kg (lb)		7,000 (15,400)		7,800 (17,160)	8,000 (17,600)	7,900 (17,380)	8,100 (17,820)	9,700 (21,340)	10,000 (22,000)	10,300 (22,660)	14,200 (31,240)	14,500 (31,900)	15,500 (34,100)	16,500 (36,300)	17,500 (38,500)	
	MULTUS B200II																	
	MULTUS B250II																	
	MULTUS B300II																	
	MULTUS B400II																	
	Headstock			ø140 flat (														

## Spindle torque/output diagrams (Standard) \*See page 22 for Optional specifications

### MULTUS B200II

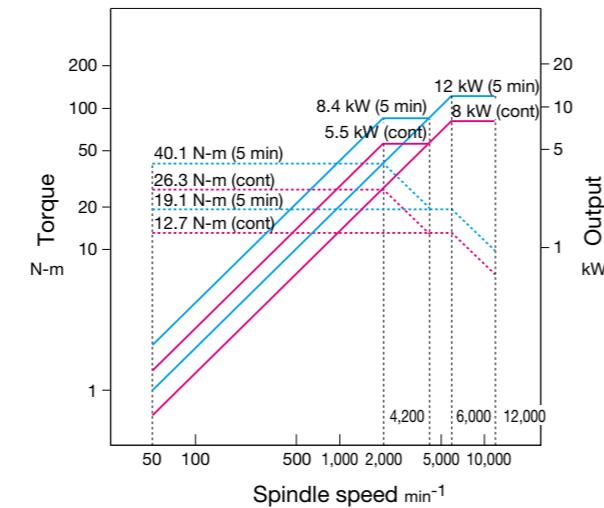
#### Main spindle

- Spindle speed 6,000 min<sup>-1</sup>
- Output 11/7.5 kW (20 min/cont)
- Torque 160/109 N·m (20 min/cont)



#### Milling tool spindle

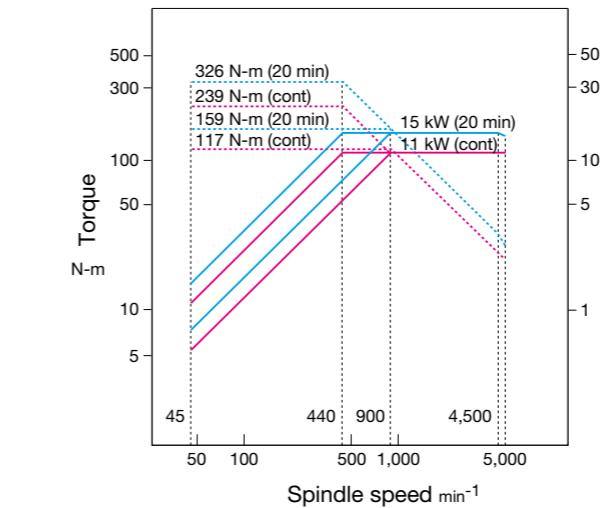
- Spindle speed 12,000 min<sup>-1</sup>
- Output 12/8 kW (5 min/cont)
- Torque 40.1/26.3 N·m (5 min/cont)



### MULTUS B300II

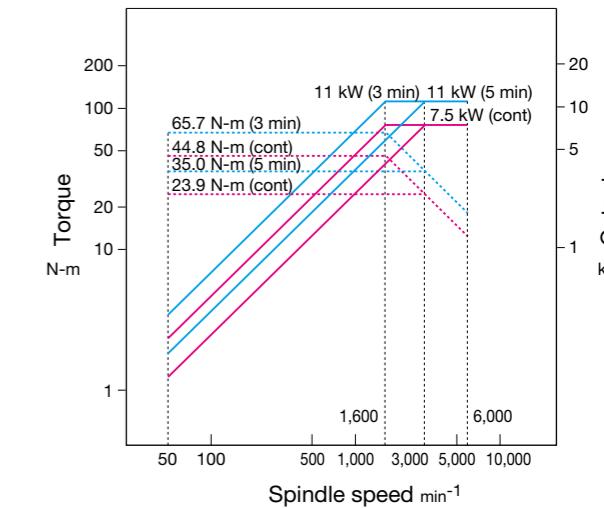
#### Main spindle

- Spindle speed 5,000 min<sup>-1</sup>
- Output 15/11 kW (20 min/cont)
- Torque 326/239 N·m (20 min/cont)



#### Milling tool spindle

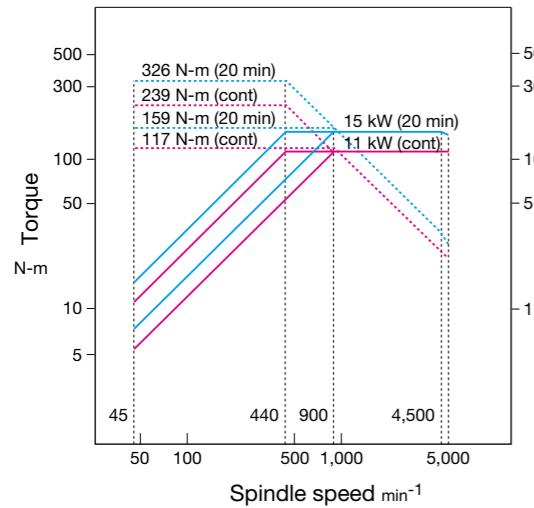
- Spindle speed 6,000 min<sup>-1</sup>
- Output 11/7.5 kW (5 min/cont)
- Torque 65.7/44.8 N·m (3 min/cont)



### MULTUS B250II

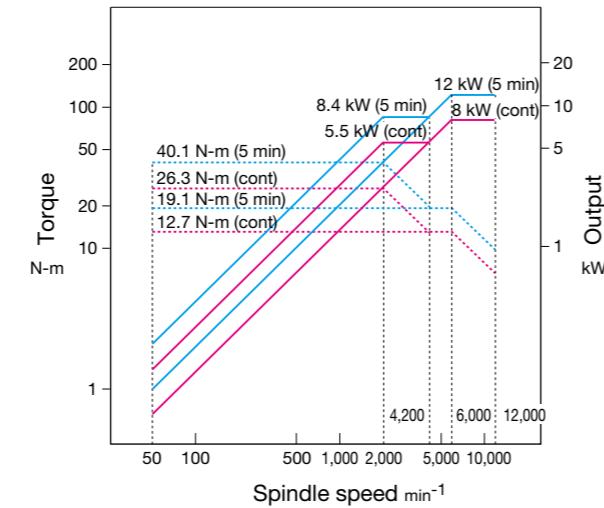
#### Main spindle

- Spindle speed 5,000 min<sup>-1</sup>
- Output 15/11 kW (20 min/cont)
- Torque 326/239 N·m (20 min/cont)



#### Milling tool spindle

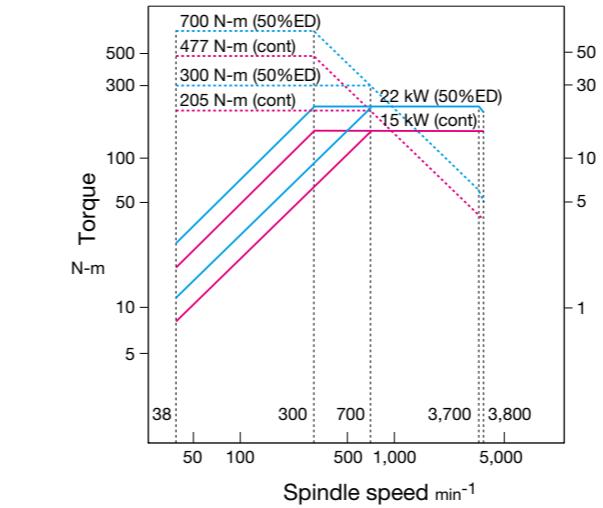
- Spindle speed 12,000 min<sup>-1</sup>
- Output 12/8 kW (5 min/cont)
- Torque 40.1/26.3 N·m (5 min/cont)



### MULTUS B400II

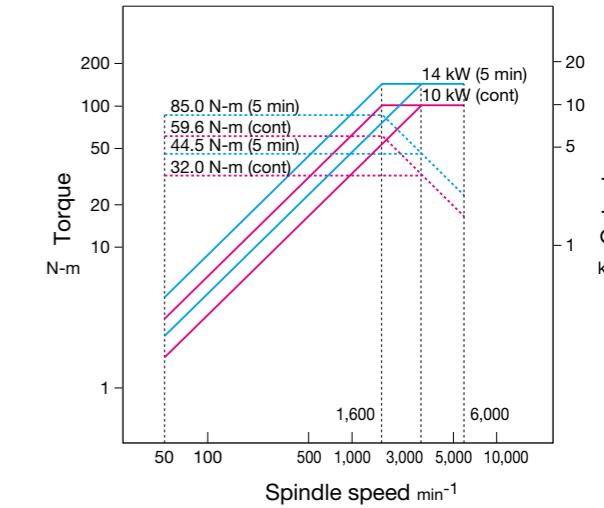
#### Main spindle

- Spindle speed 3,800 min<sup>-1</sup>
- Output 22/15 kW (50%ED/cont)
- Torque 700/477 N·m (50%ED/cont)

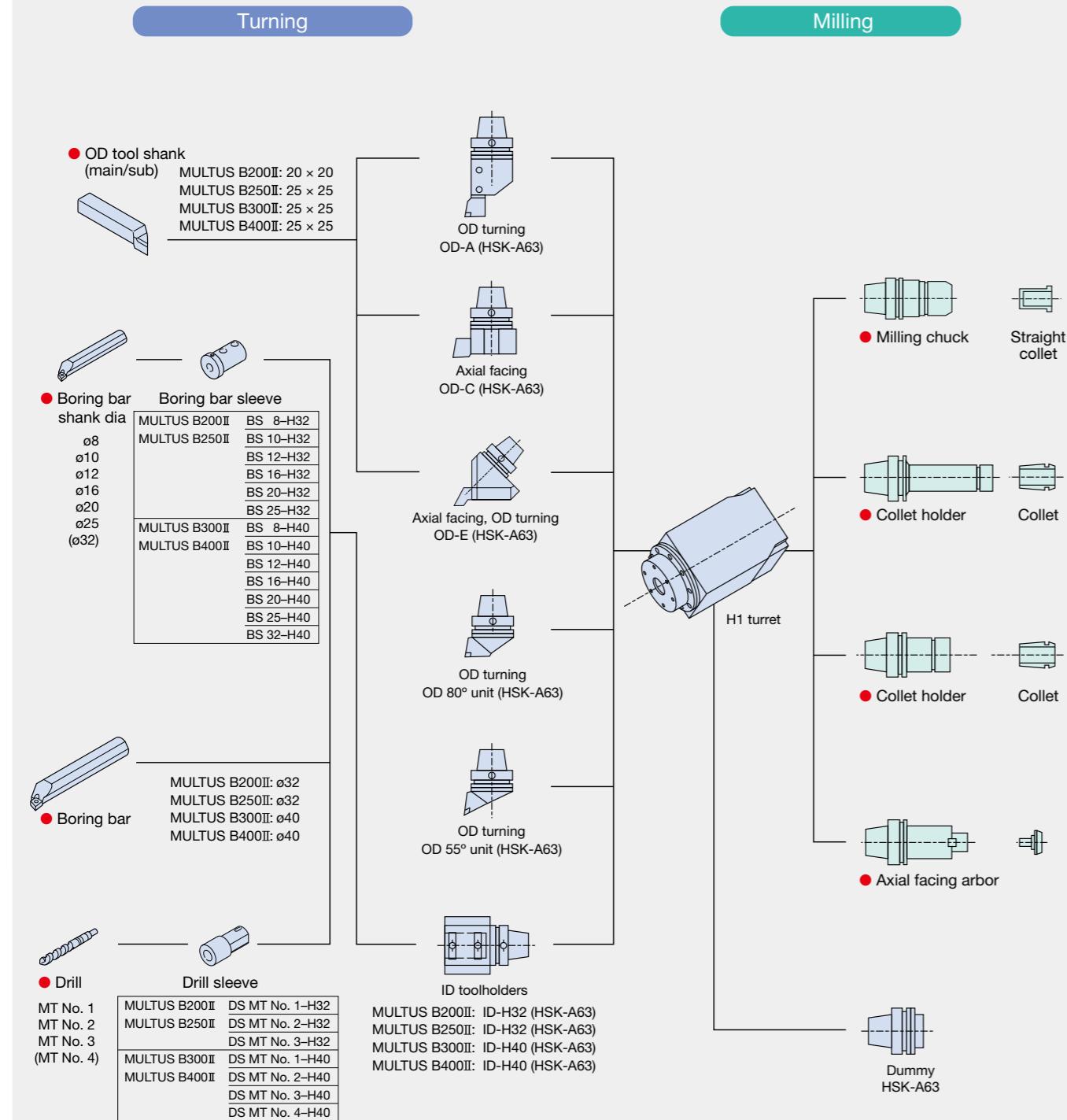


#### Milling tool spindle

- Spindle speed 6,000 min<sup>-1</sup>
- Output 14/10 kW (5 min/cont)
- Torque 85.0/59.6 N·m (5 min/cont)



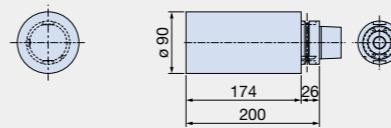
## ■ Tooling System (HSK-A63)



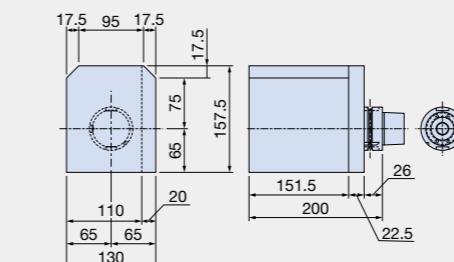
## ■ Max tool dimensions

### MULTUS B200II

- Std tool

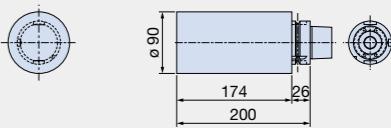


- Super big bore tool

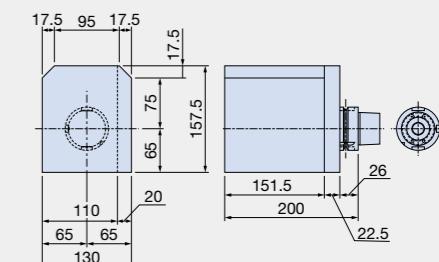


### MULTUS B250II

- Std tool

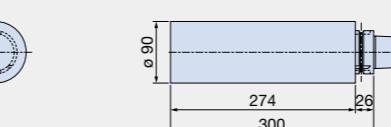


- Super big bore tool

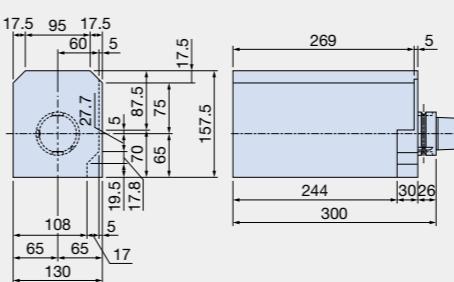


### MULTUS B300II

- Std tool

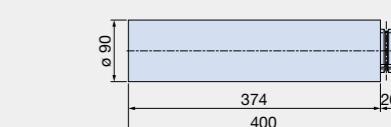


- Super big bore tool

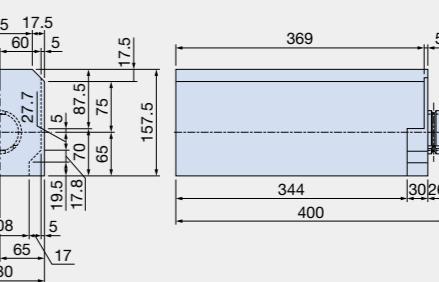


### MULTUS B400II

- Std tool



- Super big bore tool



\* Some commercial live tools, based on DIN69893-1 HSK-A63, can also be used.

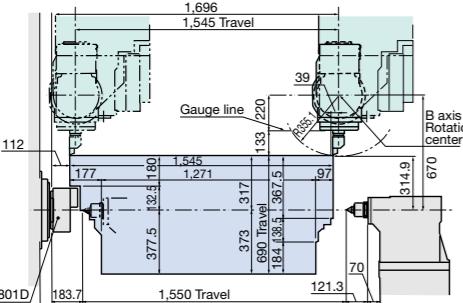


## Working Ranges

### MULTUS B400II

Main spindle [1,500 distance between centers]

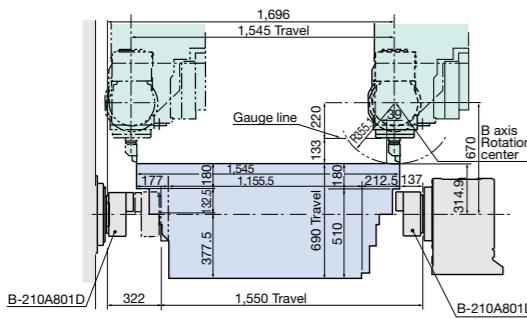
- OD-A (B axis 90°)



### MULTUS B400II

Opposing spindle [1,500 distance between centers]

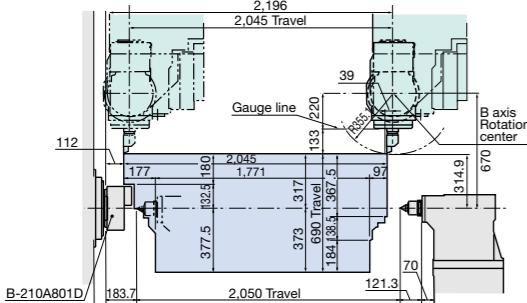
- OD-A (B axis 90°)



### MULTUS B400II

Main spindle [2,000 distance between centers]

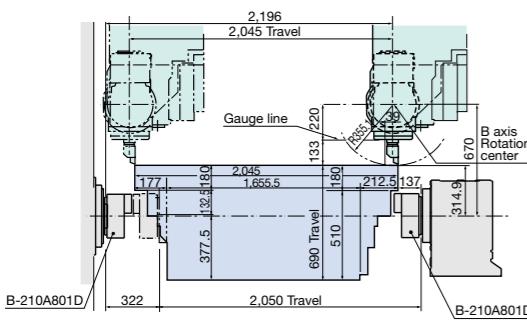
- OD-A (B axis 90°)



### MULTUS B400II

Opposing spindle [2,000 distance between centers]

- OD-A (B axis 90°)



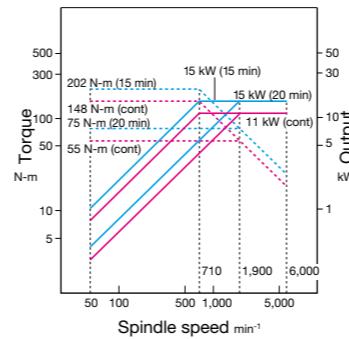
## Spindle torque/output diagrams (Optional) \*See page 15-16 for Standard specifications

Unit : mm

### High power spindle

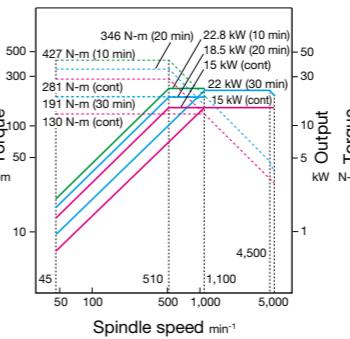
#### MULTUS B200II

- Spindle speed 6,000 min<sup>-1</sup>
- Output 15/11 kW (20 min/cont)
- Torque 202/148 N·m (15 min/cont)



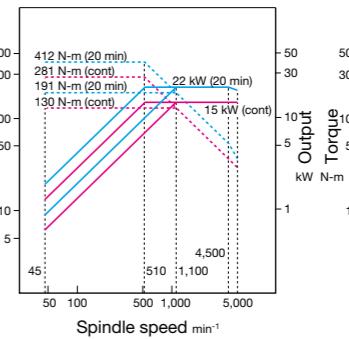
#### MULTUS B250II

- Spindle speed 5,000 min<sup>-1</sup>
- Output 22/15 kW (30 min/cont)
- Torque 427/346/281 N·m (10 min/20 min/cont)



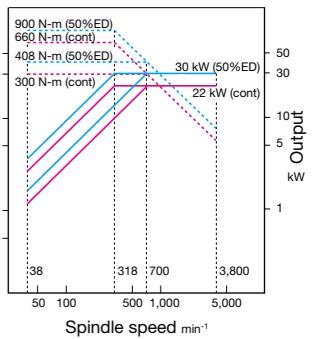
#### MULTUS B300II

- Spindle speed 5,000 min<sup>-1</sup>
- Output 22/15 kW (20 min/cont)
- Torque 412/346/281 N·m (20 min/cont)



#### MULTUS B400II

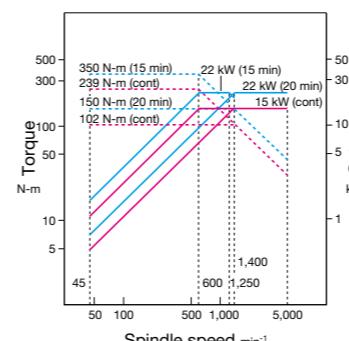
- Spindle speed 3,800 min<sup>-1</sup>
- Output 30/22 kW (50%ED/cont)
- Torque 900/660 N·m (50%ED/cont)



### Big-Bore specs

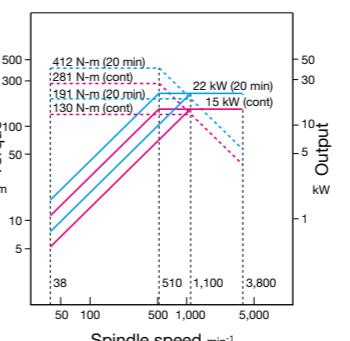
#### MULTUS B200II

- Spindle speed 5,000 min<sup>-1</sup>
- Output 22/15 kW (20 min/cont)
- Torque 350/239 N·m (15 min/cont)



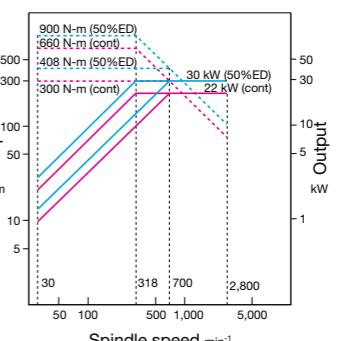
#### MULTUS B300II

- Spindle speed 3,800 min<sup>-1</sup>
- Output 22/15 kW (20 min/cont)
- Torque 412/346/281 N·m (20 min/cont)



#### MULTUS B400II

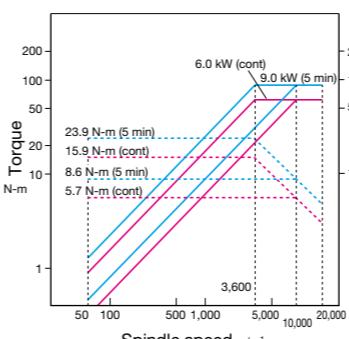
- Spindle speed 2,800 min<sup>-1</sup>
- Output 30/22 kW (50%ED/cont)
- Torque 900/660 N·m (50%ED/cont)



### Milling tool high speed spindle

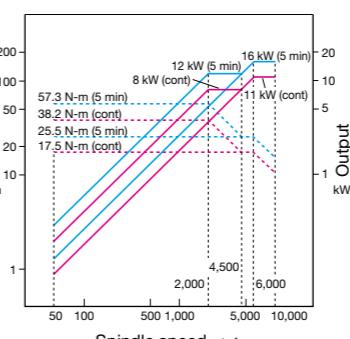
#### MULTUS B200II

- Spindle speed 20,000 min<sup>-1</sup>
- Output 9/6 kW (5 min/cont)
- Torque 23.9/15.9 N·m (5 min/cont)



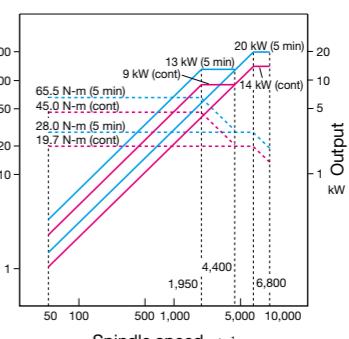
#### MULTUS B250II

- Spindle speed 10,000 min<sup>-1</sup>
- Output 16/11 kW (5 min/cont)
- Torque 57.3/38.2 N·m (5 min/cont)



#### MULTUS B400II

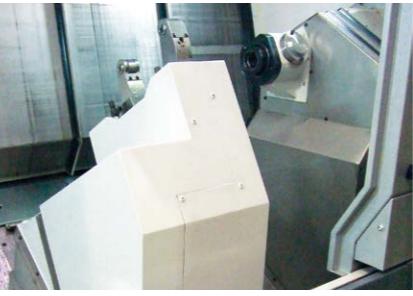
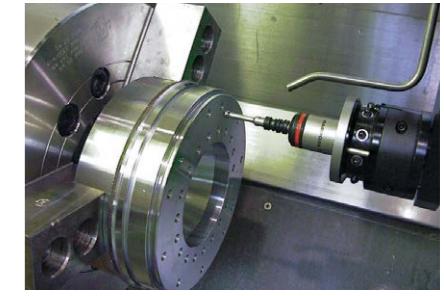
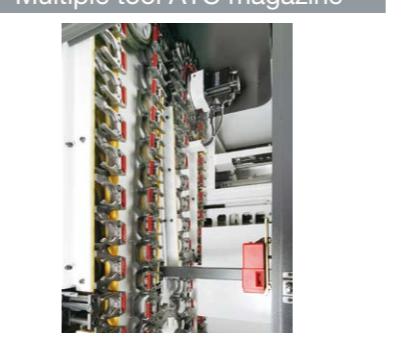
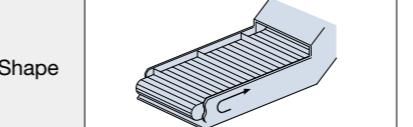
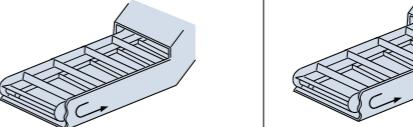
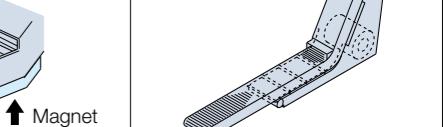
- Spindle speed 10,000 min<sup>-1</sup>
- Output 20/14 kW (5 min/cont)
- Torque 65.5/45 N·m (5 min/cont)



## ■ Optional Specifications and Accessories

	MULTUS B200II	MULTUS B250II	MULTUS B300II	MULTUS B400II
Big-Bore specs	ø120 A2-6 5,000 min <sup>-1</sup> High-power spindle 22/15 kW included	–	ø120 A2-8 3,800 min <sup>-1</sup> High-power spindle 22/15 kW included	ø150 A2-11 2,800 min <sup>-1</sup> High-power spindle 30/22 kW included
High power spindle	15/11 kW	22/15 kW	22/15 kW	30/22 kW
Milling tool high speed spindle	20,000 min <sup>-1</sup> 9/6 kW *HSK-A63 only	–	10,000 min <sup>-1</sup> 16/11 kW	10,000 min <sup>-1</sup> 20/14 kW
Tool shank	CAPTO C6	–	–	–
Milling tool thru-spindle	–	–	–	–
High pressure coolant	–	–	3.7 kW 7 MPa	–
ATC tool magazine capacity	40, 60 tools	–	40, 60, 120 tools	40, 80, 120 tools
Chip conveyor	Side discharge, drum filter type	–	–	–
	Side discharge, hinge type	–	–	–
Chip bucket	–	–	–	–
Touch setter	Touch setter M	–	–	–
In-process work gauging	Renishaw radio transmission	–	–	–
AbsoScale	X, Y, Z-axes	–	–	–
High accuracy C axis	–	–	–	–
Auto front door open/close	–	–	–	–
Automated systems	Bar feeder, parts catcher	–	–	–
	OGL loader	–	–	–
	Robot	–	–	–
Air blower (air blast)	Chuck	–	–	–
	Tailstock	–	–	–
	Within spindle	–	–	–
	Turret	–	–	–
Coolant blower	Shower coolant system	–	–	–
	Within spindle	–	–	–
Special coolant pump	High/low pressure	–	–	–
Coolant sensors	Oil level	–	–	–
	Flow	–	–	–
Coolant tank	With line filter	–	–	–
	With reverse washing filter (separate)	–	–	–
Coolant sludge prevention	Oil skimmer	–	–	–
Mist collector	–	–	–	–
Steadyrest	–	–	–	–
B-axis NC control	–	–	–	–
Hydraulic power chuck	Solid chuck, hollow chuck	–	–	–
Work stopper in spindle	–	–	–	–
Auto chuck open/close	With confirmation	–	–	–
Chuck pressure high/low switch	–	–	–	–
Chucking miss detection	–	–	–	–
Workpiece stand	–	–	–	–
Front cover auto open/close	Area sensor, Safe tape switch	–	–	–
Coolant gun	–	–	–	–
Tooling	Please refer to the tooling system	–	–	–

## ■ Optional Specifications and Accessories

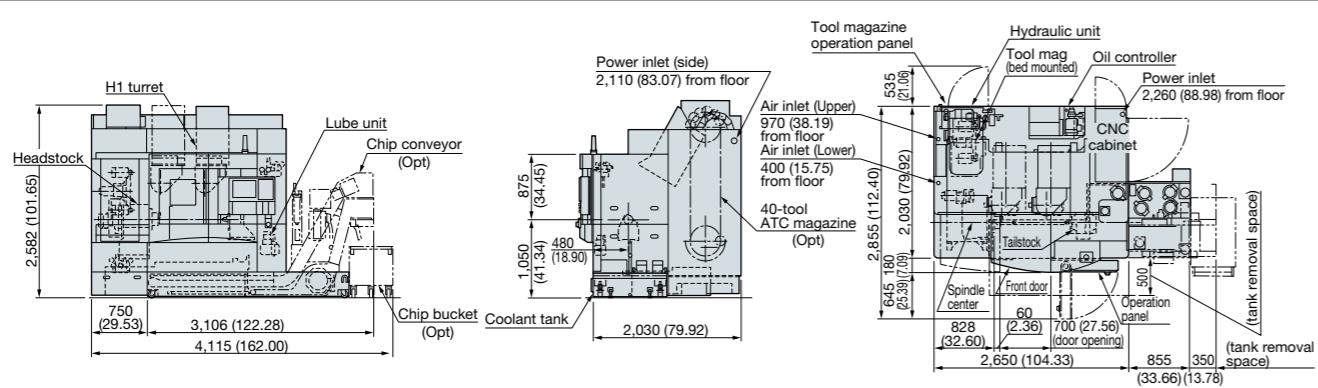
Touch setter		Steadyrest		In-process work gauging	
	Auto cutting-point measurement and tool offset/breakage detection		For highly efficient turning/machining of long workpieces		By ATC-delivered, high-precision wireless touch sensor – for superb auto work gauging (dual dia/radius gauging).
Multiple tool ATC magazine		CAPTO C6		AbsoScale/DD encoder	
	A large capacity tool magazine to handle a wider variety of workpieces		Sandvik quick-change tooling system		[AbsoScale] High speed, high resolution optical positioner. Not affected by ball screw thermal expansion or backlash, for improved finishing accuracy.
	MULTUS B200II/B250II: 60-tool magazine MULTUS B300II : 60, 120-tool magazine MULTUS B400II : 80, 120-tool magazine				[DD encoder] High accuracy, high resolution rotary encoder for high accuracy C axis control.
Chip conveyor		Hinged chip conveyor		Various chip conveyors (Optional)	
		Hinged chip conveyor	Hinge + scraper (w/drum filter) chip conveyor		
Chip conveyor types and applications	Type	Hinge	Scraper	Magnet scraper	Hinge + scraper (w/drum filter)
Application	● For steel	● For castings	● 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	● Filtration of long and short chips and coolant
Shape					
Remarks	Filter unit included with the selected conveyor (set).				–

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

## Dimensional/Installation Drawings

**MULTUS B200II**

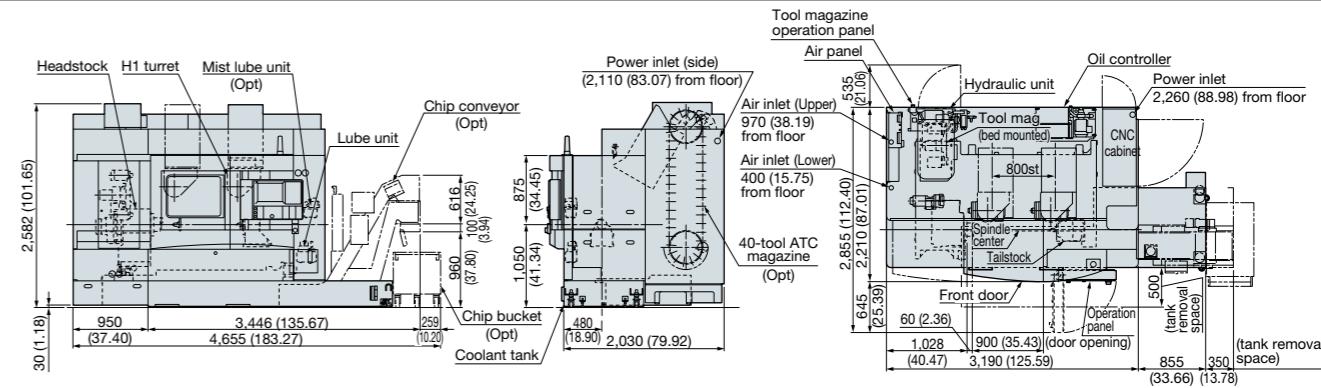
Chip conveyor with drum filter [550 distance between centers]



Units: mm (in)

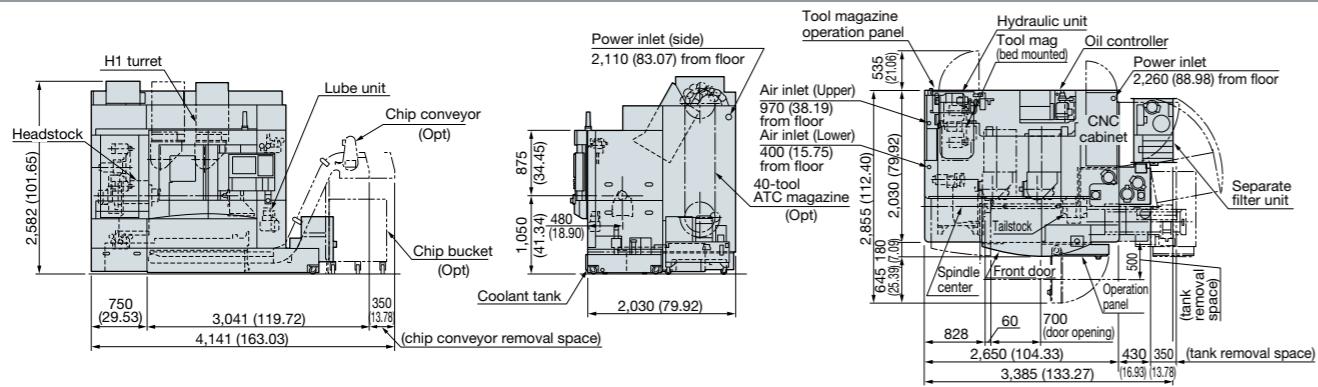
**MULTUS B250II**

Chip conveyor with drum filter [750 distance between centers]

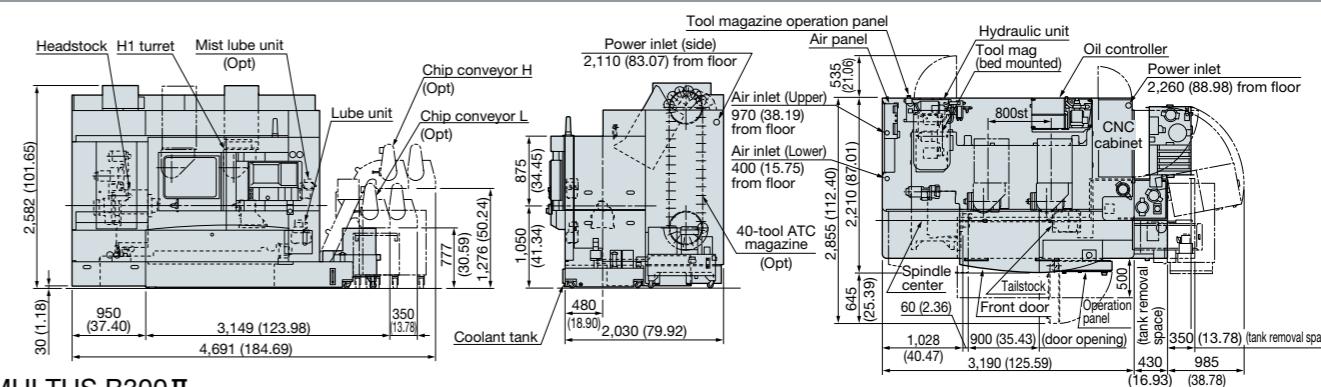


Units: mm (in)

Hinge-type chip conveyor [550 distance between centers]

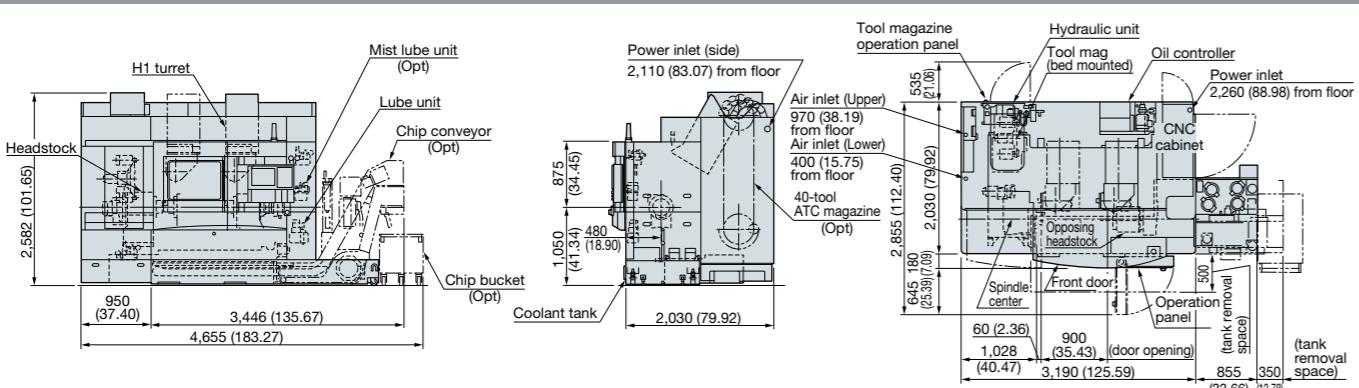


Hinge-type chip conveyor [750 distance between centers]



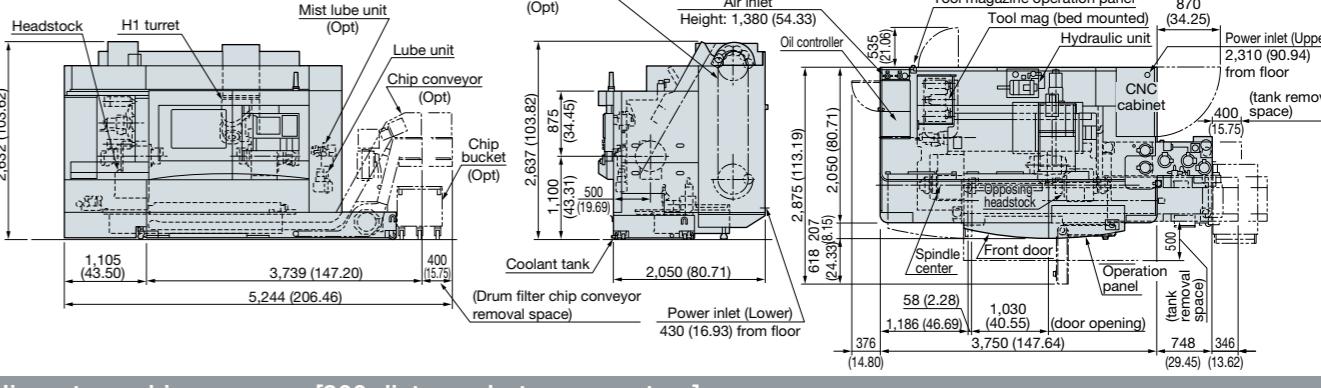
Units: mm (in)

Chip conveyor with drum filter [750 distance between centers]

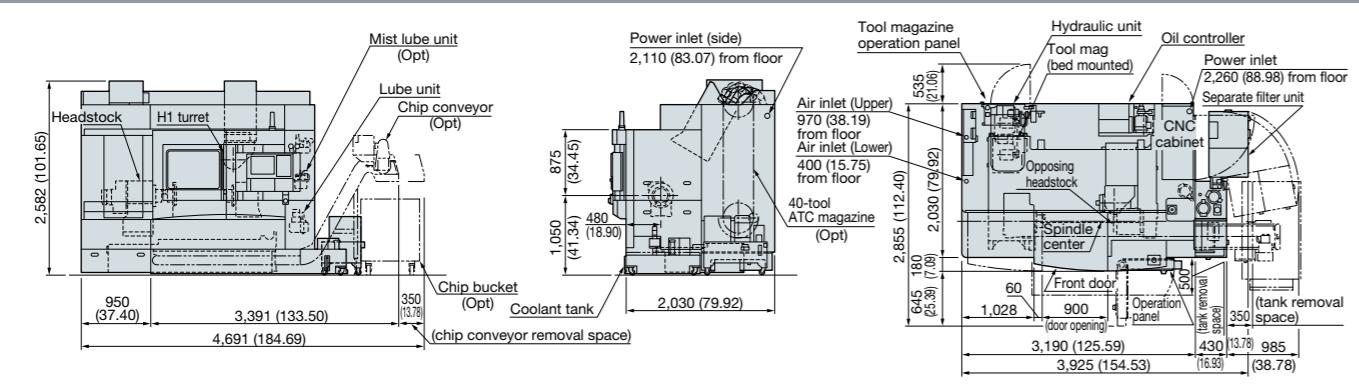


**MULTUS B300II**

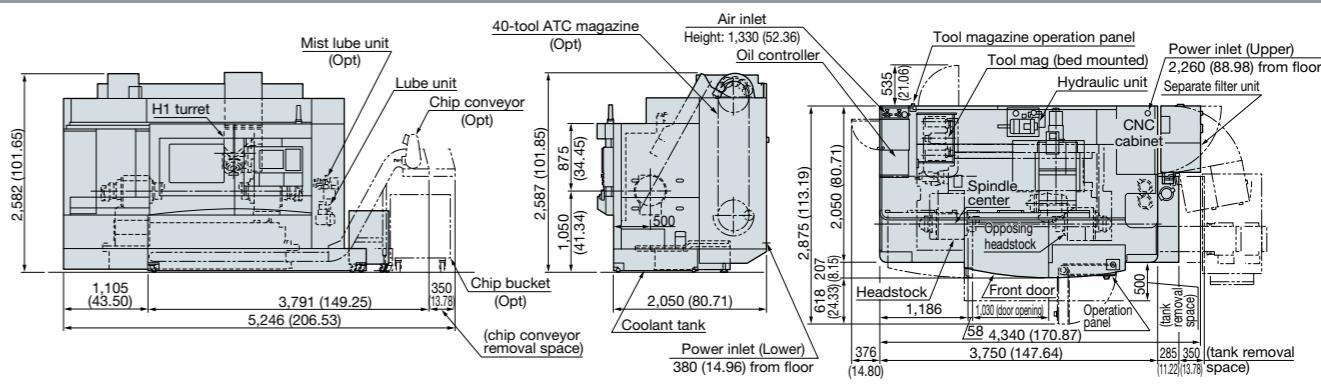
Chip conveyor with drum filter [900 distance between centers]



Hinge-type chip conveyor [750 distance between centers]



Hinge-type chip conveyor [900 distance between centers]

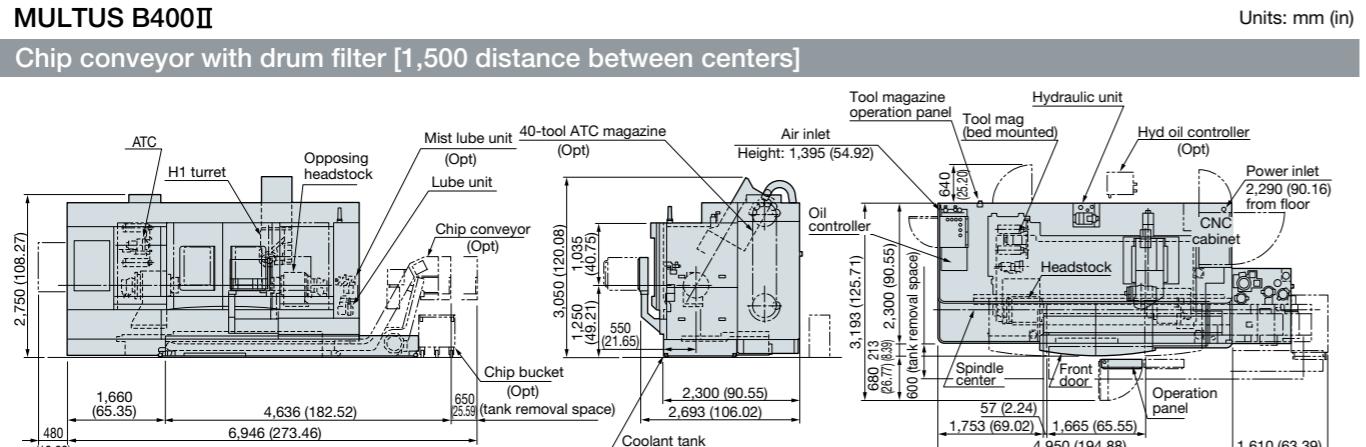


Units: mm (in)

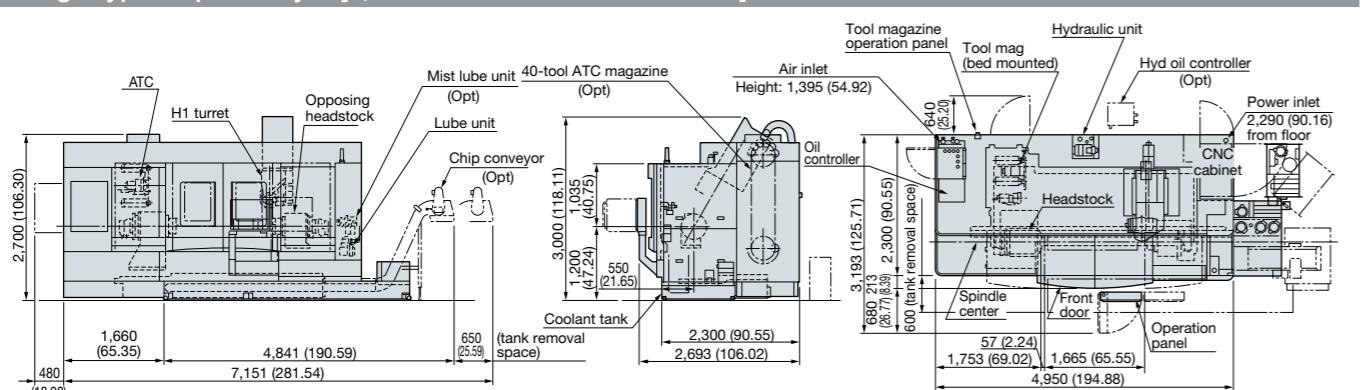
## ■ Dimensional/Installation Drawings

### MULTUS B400II

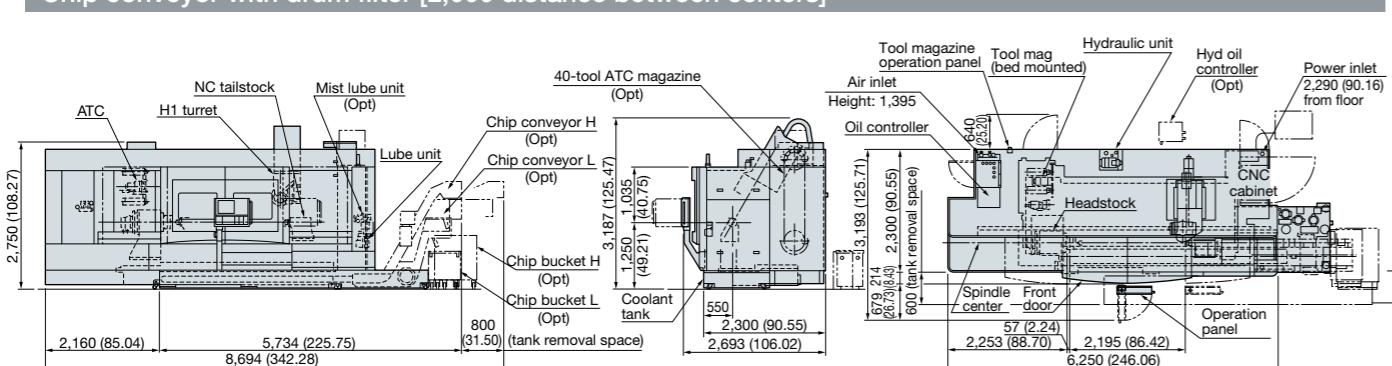
Chip conveyor with drum filter [1,500 distance between centers]



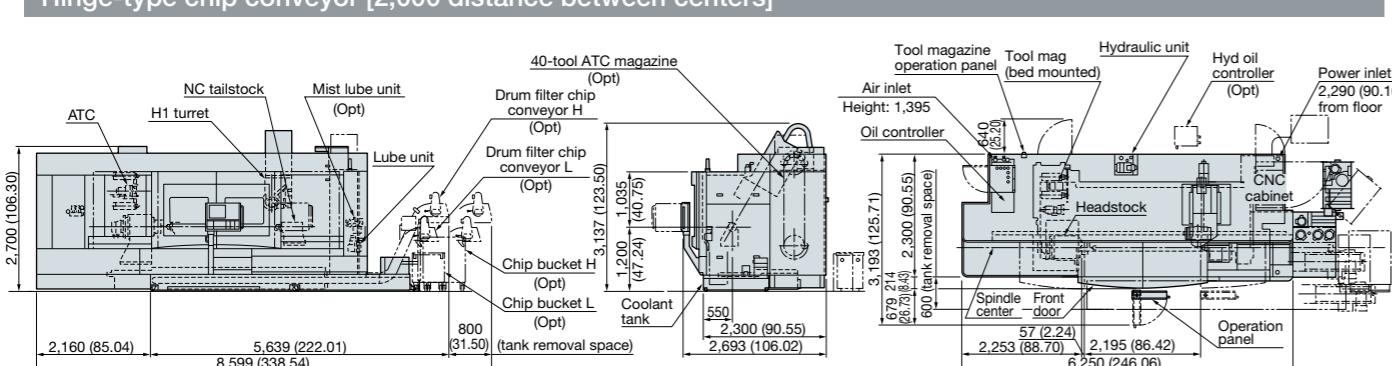
Hinge-type chip conveyor [1,500 distance between centers]



Chip conveyor with drum filter [2,000 distance between centers]



Hinge-type chip conveyor [2,000 distance between centers]



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ease of use for machine shops first!

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

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

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



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

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



Increased productivity through visualization of motor power reserve  
**Spindle Output Monitor**



The specified spindle output (red line: short time rating, green line: continuous rating) and the spindle output in current cutting (blue circle) are simultaneously displayed on the screen, for real-time view of power reserve during cutting. This allows speeding up cutting by increasing the spindle speed or feed rate while monitoring the graph to ensure that the blue circle does not cross the lines.



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



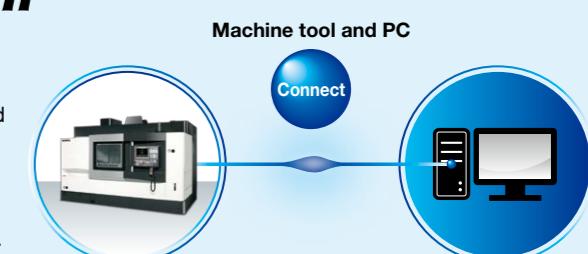
Monitoring operating status even when away from the machine  
**E-mail Notification**

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

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.



**Standard Specifications****Control**

5-axis machining	Multitasking X-Y-Z-B-C simultaneous:5 axes
Spindle axis	Max 4 axes (= 2 axes + 2 rotary tool axes)
Position feedback	OSP full range absolute position detection
No. of control systems	Max 4 systems (= 2 spindles × 2 turrets)
2-spindle independent control	Each spindle executes an independent part program
Y axis control	X-Y-Z simultaneous 3 axes, orthogonal Y axis
Override structure	Spindle override 50 to 200%
	Milling tool override 30% to 200% (max 300% possible)
	Feed override 0 to 200%
Programmable units	0.001 mm, 0.01 mm, 1 mm, 0.001°, 0.01°, 1°
Min input	0.001 mm, 0.001°
Max input	Decimal 8 digits, ±99999.999 mm (±3937.0078 in.)

**Display/Operating functions**

Suite operation	Shop floor suitable; pointing device not required
Suite apps	Instruction manual viewer
	Maintenance application
Operation panel	15-inch liquid crystal display
	Multi touch panel operations
Program editing	Simultaneous edit 2 files in 1 screen
	Selected part program edit
	A/B turret simultaneous editing (2 turret specs)
	Selected range copy, paste, delete
	Adds files
	Moves edit pointer (designates top, end and number of lines)
	Arranges sequence numbers
	Program editing exceeds editing backup capacity
File name index display	2 file name indexes displayed in 1 screen
	Sorting (by file names, date and size)
Programming operations	Copies, renames, deletes, protects and verifies programs
	Memory initializing, formatting
	Memory available display (pie graph)
	Multi-level directory
Scheduled programs	Run several programs in a sequence
Sequence number search	Machine from the specified sequence no.
Manual interrupt, auto return	After manual operations, auto mode restarted from interrupted position
Sequence return	Return to specified sequence, auto restart from returned point
PLC monitor	Supports maintenance work after machine shutdown
	Ladder display, data trace, etc
Parameter I/O	Parameter file input/output, verify

**Easy Operation**

Single-mode operation	Series of tasks completed on a single screen
Tool information management	Integrated management of collective tool data for each tool no.
	Setup data shared between machining operation, Advanced One-Touch IGF (optional), and Collision Avoidance System
	Multiple tool management for each turret station
	Display/change of tool comp data for tools commanded in machining program
Setup data save	Setup data saved together with machining program
Soft jaw machining	Automatic machining of soft jaws with set shape, tools, and conditions
Easy zero setting	Auto calculation of zero point offset from jaw and workpiece length
SERVO NAVI	Inertia auto setting
Tool position compensation	Dimensional errors corrected with cutting conditions
Tool command (TD command)	Tool orientation, tool comp command based on tool information
Machine operation panel	Clear, straightforward machine operation

**Programming**

Basic interpolation	Linear/circular interpolation
Tool compensation	No. of registered tools: Max. 1,000 sets
	Tool offset, tool edge R, amount of wear: 20 sets per tool
Nose-radius comp (2B)	Auto correct of tool nose error (No. of comp sets same as tool comp)
Tool wear compensation	Blade tip position compensation due to tool wear amount (No. of comp sets same as tool comp)
Automatic programming (LAP4)	Automatically carries out from roughing to finishing Generates cutting paths according to material shape
Taper fixed cycles	Taper machining with 4 patterns: ID, OD/longitudinal, axial face
mm/min programming	Use feedrate in mm/rev and mm/min together
Chamfering, corner R	Chamfering, corner R instructions on drawing commanded in program
Arbitrary angle chamfering	Easy any-angle chamfering (C, R)
Circular radius designate	Arc machining to command radius L and end points X, Z

Taper angle designate	With command for angle from starting point
Threading	Designated lead thread crest, variable lead thread
	Chamfering while thread cutting, thread cutting cycle
Threading slide hold	Temporary stop during threading, excluding G34/G35
User Task 1	GOTO statement, IF statement, arithmetic operation
	Local variables, system variables
	Common variable (Standard 200 sets)
User Task 2	Sub-programs, functional operation, logical operation
Zero shift	Zero offset calculation, and shift according to G code

<b>Milling programming (milling applications only)</b>	
Hole drilling fixed cycle	Drilling, boring and tapping
	Fine boring, back boring
	Deep bore drill cycle gradually decreasing movement
Synchronized tapping	High speed, high accuracy tapping with synchronized control of rotation angle and feed shaft position
	Synchronized tapping torque monitor
	Synchronized deep bore tapping
C axis synchronized control	Cutting with C axis on both main and opposing spindles

<b>Programming capacities</b>	
Program storage capacity	4 GB
Operation backup capacity	2 MB

<b>Machining management</b>	
Machining records	Totals and displays machining status per selected main program
Operating records	Machine operating times (power ON, cutting, etc)
	Input of reasons for non-operation
Operating history	Time charts of machine operating status
Trouble information	Auto totaling of data required for troubleshooting (alarm history, etc)
Records, trouble information output	Machining, operating, operating history, trouble info

<b>Monitoring</b>	
Collision Avoidance System	Prevents interference during manual operation
	Prevents interference during auto operation
	Easy modeling of shape data
	New path assurance: Prevents interference due to sagging paths
Load meter display	Feed and spindle axis loads (With peak value hold function)
Chuck barrier	Set up tool off-limit area depending on chuckshape
Tailstock spindle barrier	Set up tool off-limit area depending on tailstock shape
User regular maintenance	Management of maintenance period with respect to any item

<b>External input/output and networking</b>	
Ethernet interface	Ethernet (1000 Mbps)
USB interface	USB 2.0 interface 2 ch
DNC-T1	Ethernet part program transfers

<b>High-speed/high-accuracy functions</b>	
Hi-G control	Positioning acceleration/deceleration conforming to motor's speed/torque characteristics
Rapid traverse droop	Droop control at feedrate command
Lost motion compensation	Dead zone, elastic deformation compensation during travel direction reversal
TAS-S/H1 (spindle)	Corrects thermal deformation error generated milling tool spindle rotation
TAS-C (construction)	Corrects thermal deformation error generated during shop temperature changes affecting machine construction

<b>Pocket manual functions (online help)</b>	
Programming help	Explains part program G, M codes, cycle commands, etc
Operation help	Screen menu functions explained Menu selected operation procedures explained
Alarm help	Alarm causes and remedies explained

<b>Energy saving ECO suite</b>	
ECO Idling Stop	Stops peripheral devices when operation stops
	Thermal deformation monitoring oil controller
ECO Power Monitor	Visualization of power usage

<b>Other functions</b>	
Tool compensation function for multi control system	Management of compensation for base, vertical and L-tool index position (when using a turret with B axis control or tool index)

\* Ethernet is a registered trademark of Xerox Corp., USA.

**Optional Specifications**

Item	Kit spec	NML	3D	AOT-M	
		E	D	E	D
<b>Interactive Programming</b>					
Advanced One-Touch IGF-L Multitasking (w/Real 3D)				●	●
<b>Programming</b>					
Operation backup capacity (10MB)					
Circular threading		●	●	●	●
Program notes		●	●	●	●
User task 2 I/O variables [8 each, 16 each, 24 each]					
Work coordinate system select	10 sets	●	●	●	●
	50 sets				
	100 sets				
1,000 common variables (200 is standard)					
Thread matching					
Threading slide hold (G34, G35)					
Variable spindle speed threading (VSST)					
Inverse time feed					
Spindle synchronized tapping					
Coordinate convert		●	●	●	●
Profile generate		●	●	●	●
Flat turning					
Coordinate calculation (with NCYL commands)		●	●	●	●
Coordinate shifting, rotation, copying		●	●	●	●
Herical cutting					
Slope machining					
Profile helical cutting					
Hobbing					
Multi insert tool function					
C-axis torque skip function	</td				

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 BII series-E-(12a)-400 (Nov 2019)



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