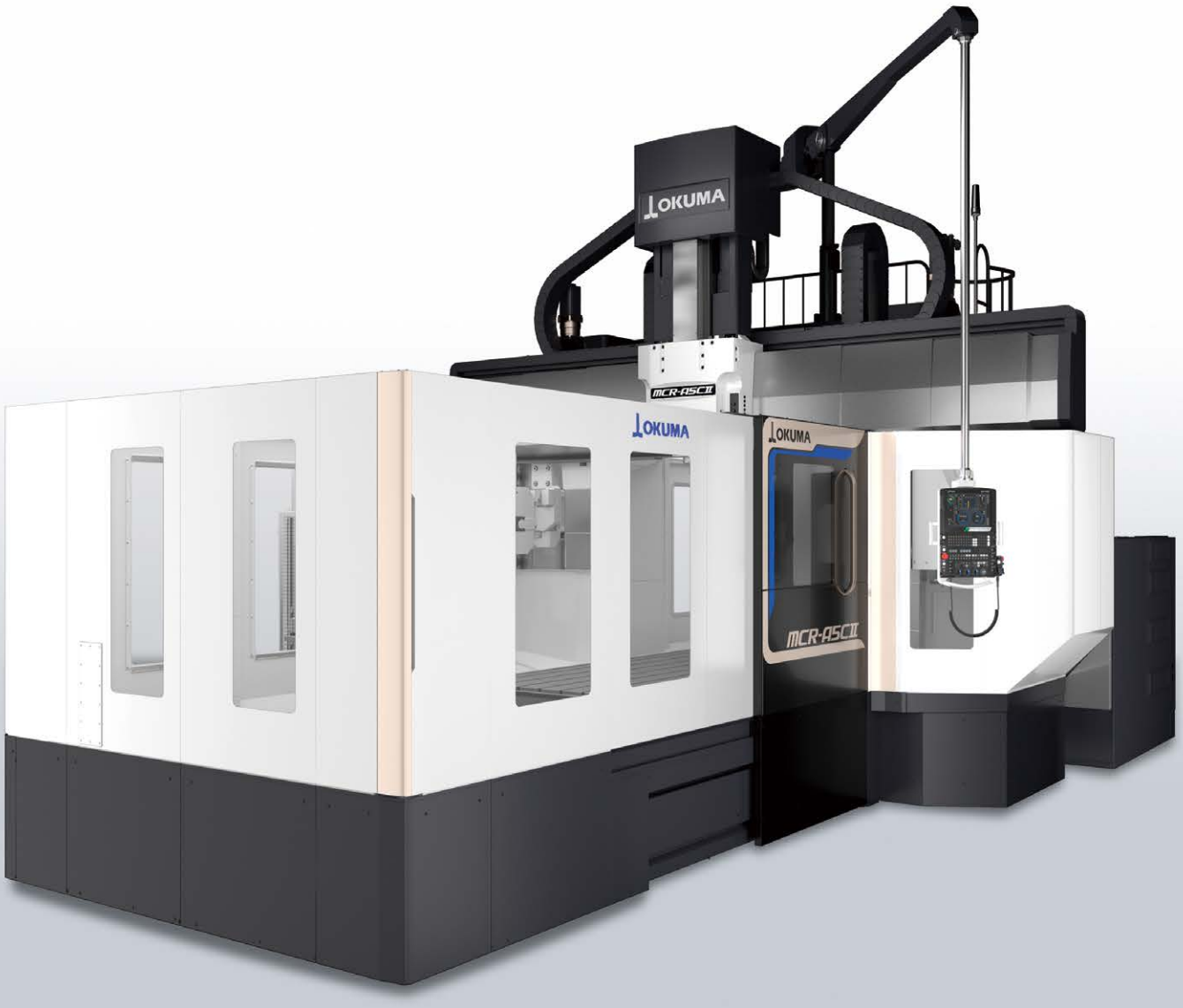
OKUMA

OPEN POSSIBILITIES

MCR-A5CII

Double-Column Machining Center
[5-Face Machining]



MCR-A5CII

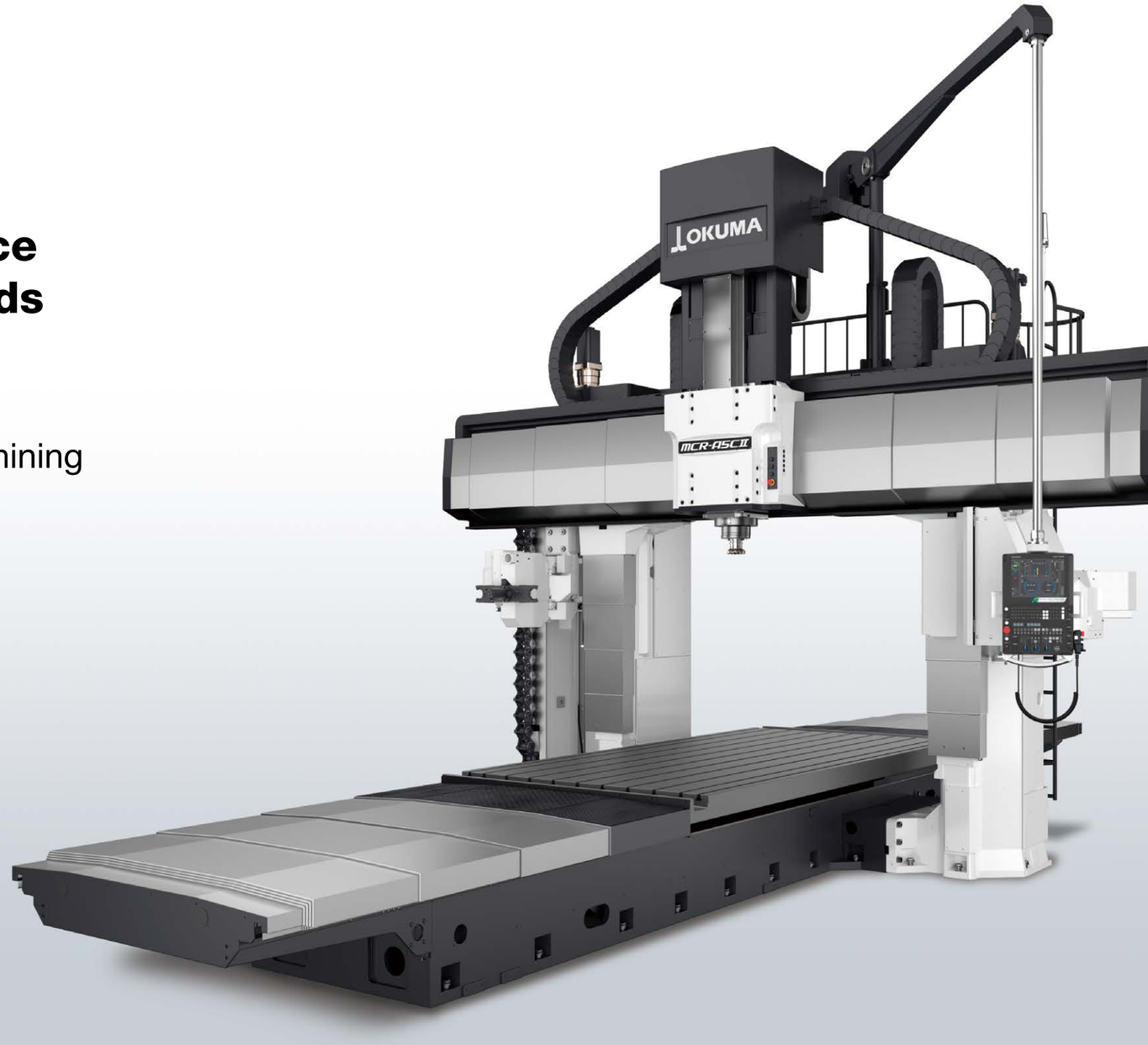
Double-Column Machining Center
[5-Face Machining]

Intelligent Technology | Thermo-Friendly Concept | Collision Avoidance System | Machining Navi | SERVONAVI

Hugely expanded range for powerful 5-face machining

A space-saving, high-performance machine for large parts of all kinds

- Machine design that is easy on operators
- Increased productivity with high-speed machining



Photographs and images used in this brochure may include optional equipment.
Not showing full-enclosure shielding and other items.

Highly efficient machining of large parts

Improved productivity with higher machining capacity

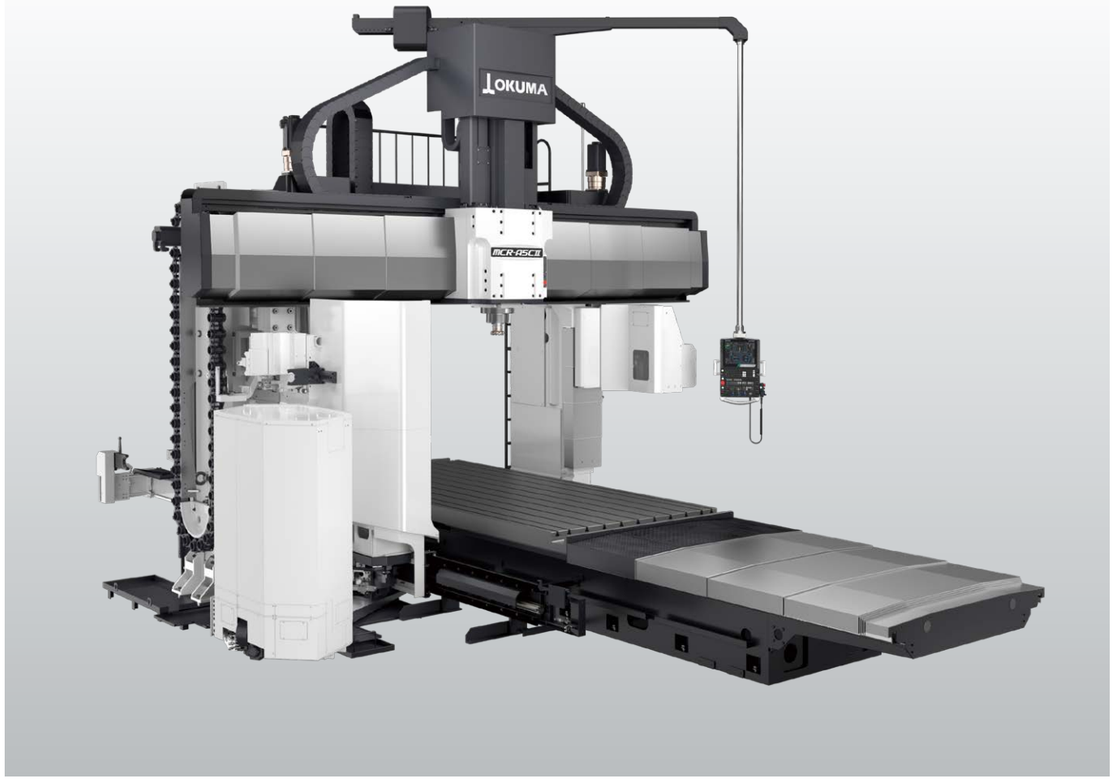
Rapid traverse

- X-axis: 30 m/min
- Y-axis: 32 m/min
- Z-axis: 20 m/min
- W-axis: 3 m/min

Figures may vary depending on kit specs and machine size.

High accuracy and dimensional stability

- Thermo-Friendly Concept structure
- Z-axis: High level of straightness and smooth movements with double ball-screw drive system
- W-axis: NC control
- Hyper-SurfaceII (High Speed Contouring)
  Auto machining data compensation for highly accurate and fast machining of 3D curved surfaces (option)



Spindles and attachment heads to handle a huge variety of workpieces

A wide variety of attachment heads can be changed automatically to achieve highly efficient machining

- 4-station AAC (Auto Attachment Changer) is optionally available

Highly rigid ram-type spindlehead

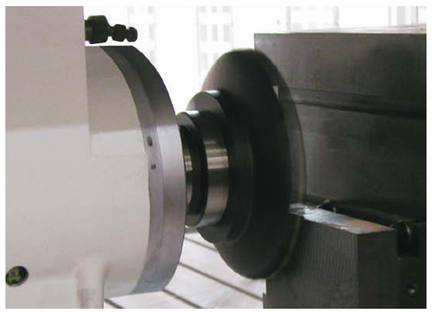
- Ram size 350 x 350 mm
- Spindle taper 7/24 taper No. 50
- Spindle speed 4,000 min^{-1}
- Spindle output 26/22 kW
- Z-axis travel 800 mm

Machining capacity (Material: S50C)

Extension head (spindle bore dia. ø100 L150)
710 cm^3/min

ø160 face mill	8-blade
Cutting speed	221 m/min
Cutting depth x width	5 x 112 mm
Feedrate	1,267 mm/min (0.36 mm/blade)
Z-axis extension	800 mm

90°angular head (spindle bore dia. ø100 L150)
600 cm^3/min

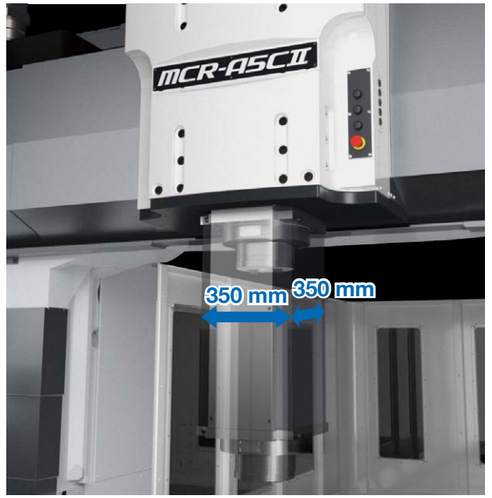


ø160 face mill	8-blade
Cutting speed	221 m/min
Cutting depth x width	5 x 112 mm
Feedrate	1,071 mm/min (0.30 mm/blade)
Z-axis extension	800 mm

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

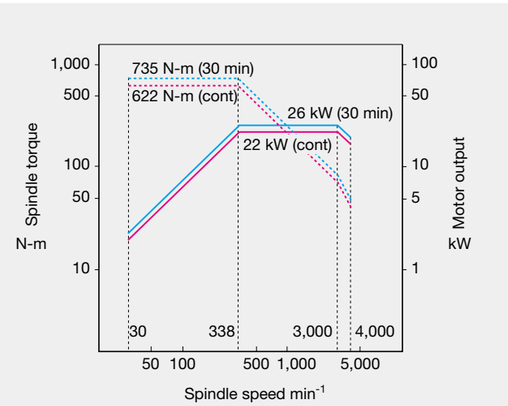
A ram-type spindlehead for super rigidity

The spindlehead is designed with a large 350 mm square ram, to provide the solid rigidity required for horizontal-spindle applications.



Standard main spindle

- Spindle speed 4,000 min^{-1}
- Spindle output 26/22 kW (30 min/cont)
- Spindle torque 735 N-m



Accurate, rigid, and reliable machine structure that exceeds expectations

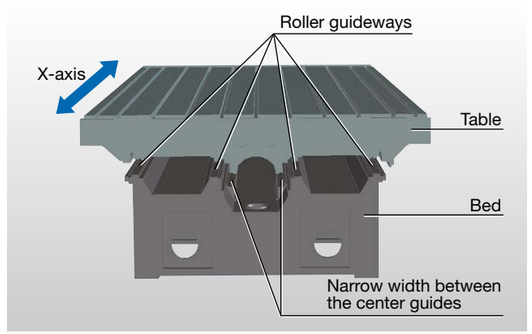
Highly rigid and accurate guide system

Bed and table remain completely steady even with heavy workpieces

(X-axis: table front/back)

The table has a roller guide system. The weight of the table and workpiece is supported by four rows of roller bearings to enable smooth and light movement and accurate positioning.

Featured in the table support layout are the center guideways with a narrow width between them, to achieve outstanding linear motion straightness and long-term stability.

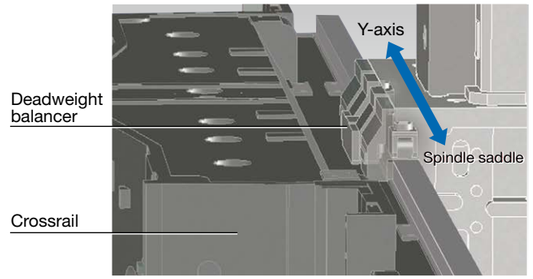


Crossrail firmly absorbs cutting vibrations

(Y-axis: spindle saddle left/right)

The Y-axis guideway of the spindlehead has a wide, highly rigid, rectangular cross-sectional configuration. Highly accurate straightness and excellent damping performance is achieved with finish-ground slideways.

The spindlehead weight and forward moment are supported by a deadweight balancer via crossrail rollers. This ensures high speed and accuracy for superior quality machined surfaces.



Spindlehead enables powerful cutting over entire travel range

(Z-axis: spindle ram up/down)

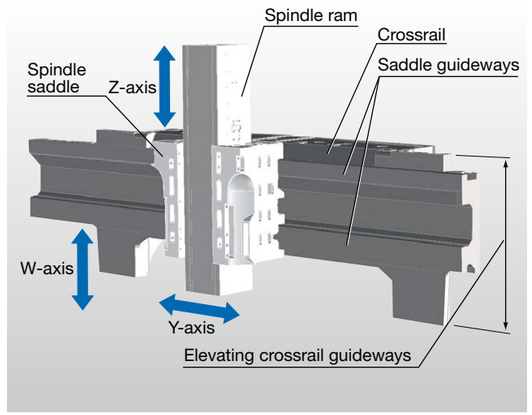
350 × 350 mm square ram is guided on 4 corners with box slideways, enabling powerful cutting along the entire Z-axis travel with effective vibration damping, large cross section, and long guideway length.

Z-axis straightness is improved with a double ball-screw drive system that has ball screws on the left and right sides of the ram, achieving less following error, smooth vertical movement with good balance, and accurate positioning.

Crossrail positioning with CNC control

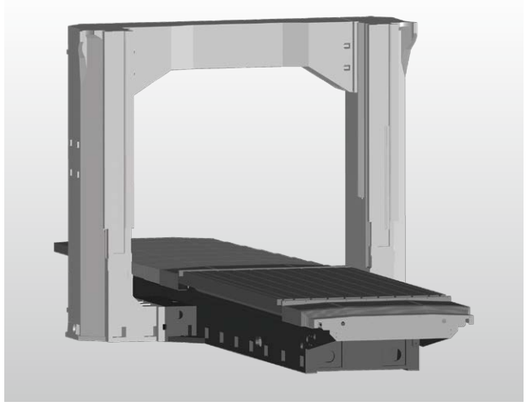
(W-axis: crossrail up/down)

Synchronization with Z-axis is also possible with CNC control. When machining, solid clamping will support highly rigid and accurate cutting conditions.



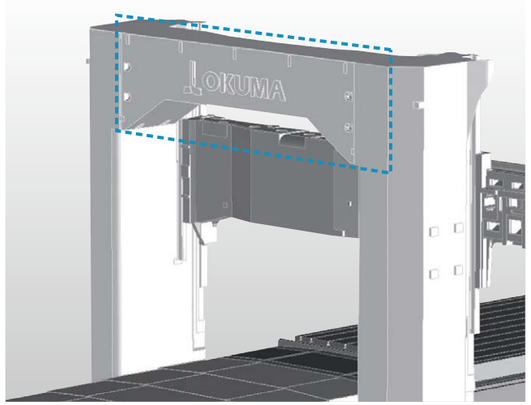
Square double-column construction

The bridged double-column structure with square, prismatic design has great rigidity to withstand axial, lateral, and torsional loads from heavy-duty cutting—and provide superb accuracies.



Powerful cross beam used

Simple designing is achieved with a powerful structure that combines top beam and cross beam in a single piece. Stable quality is achieved over the long term.



Operator-friendly machine reduces stress

Complete handling of chips and coolant with full enclosure shielding (option)

Improved chip discharge

In-machine chip discharge uses a full length gutter (standard). The optional chip conveyor is wide, for easier chip cleaning and more effective discharge of large amounts of chips from steel and aluminum applications.

Space-saving, fully automatic and fast, multi-face machining

Full array of attachment heads

All kinds of shapes can be machined under the best conditions with the wide variety of attachment heads.

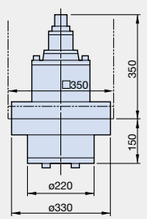
Many different processes can be performed continuously in auto operation with the auto tool changer (ATC) and auto attachment changer (AAC), greatly increasing productivity. The wide variety of attachment heads are compatible for the MCR-B Series machines (MCR-BⅢ, MCR-BⅤ). (with some limitations)

Powerful machining on upper and side surfaces: 5C Kits

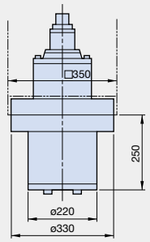
Extension head

Unit: mm

■ L150 4,000, 6,000 min^{-1}

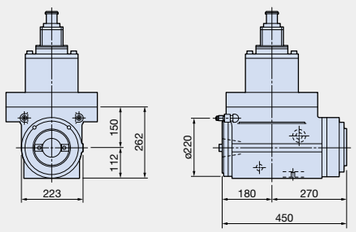


■ L250 (option) 4,000, 6,000, 10,000 min^{-1}

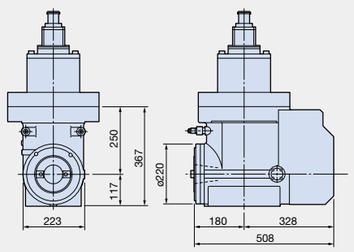


90°anglular head

■ L150 3,000, 6,000 min^{-1}
(C-axis indexing: 5°)



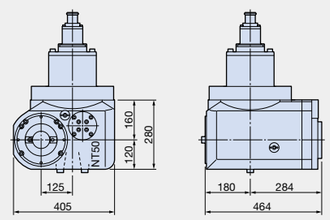
■ L250 (option) 3,000, 6,000 min^{-1}
(C-axis indexing: 1°, 5°)
Note: Thru-spindle coolant, C-axis 5° indexing



Head change unnecessary with upper and side machining: M Kit

Vertical/horizontal swivel head Unit: mm

■ 3,000 min^{-1}

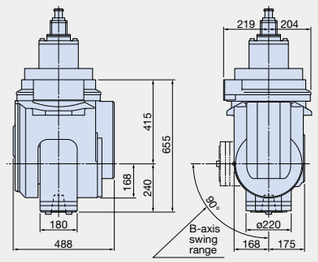


Slope and multi-sided machining: BC Kit

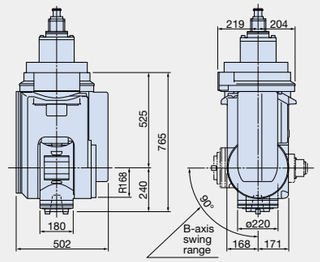
Universal index head (B-/C-axis) Unit: mm

■ 2,000, 6,000 min^{-1} (Indexing: B1°/C5°, B1°/C1°, B5°/C5°)

Note: B-/C-axis 1° indexing heads



Note: Thru-spindle coolant, B-/C-axis 1° indexing [6,000 min^{-1}]



Note: A variety of attachment heads with extensions 350 mm or longer are available. Please inquire for information on special heads

Fast ATC (Automatic Tool Changer)

Magazine tools can be changed on the attachment heads in the shortest time with swivel-type ready station. Tools can also be moved from magazine to ready station during machining operation.

- ATC compatible attachment heads
  - Extension head
  - 90° angular head
  - Vertical/horizontal swivel head
  - B-/C-axis universal index head

- ATC times (MCR-A5CII 25 × 40 actual data)
  - T-T*1 : 6 sec
  - C-C*1 : 25 sec (Extension head)
  : 27 sec (90° angular head)
  - CTC min*2 : 25 sec (Extension head)
  : 27 sec (90° angular head)

Extension head change (ready station 0°)

90° angular head change (ready station 90°)

Next tool readied during machining operation

*1. MAS standard measurements (formerly JIS B 6013)
*2. ISO 10791-9 (2001) (JIS B 6336-9) measurements

Space-saving AAC (Automatic Attachment Changer)

Attachment heads can be automatically changed with the AAC (stocker on the right column).

With auto attach/detach heads and ATC, multi-sided machining can be performed fully automatically.

- AAC compatible attachment heads
  - Extension head
  - 90° angular head

- AAC times (MCR-A5CII 25 × 40 actual data)
  : 36 sec

With AAC cover closed

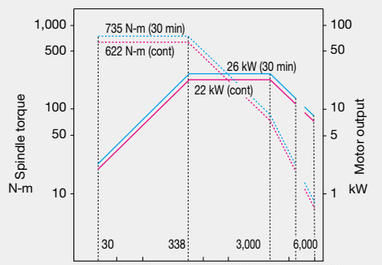
With AAC cover opened

90° angular head and station

Optional spindle speeds

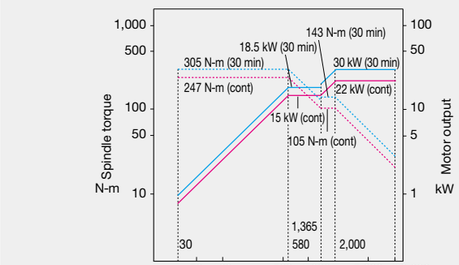
High-speed spindle

Spindle speed 6,000 min^{-1} (26/22 kW, 735 N-m)
10,000 min^{-1} (26/22 kW, 735 N-m)



High-speed spindle (recommended for aluminum, etc.)

Spindle speed 10,000 min^{-1} (30/22 kW, 305 N-m)



High accuracy is enabled in normal factory environments

Thermo-Friendly Concept
Manageble Deformation — Accurately Controlled

Eliminate waste with the Thermo-Friendly Concept

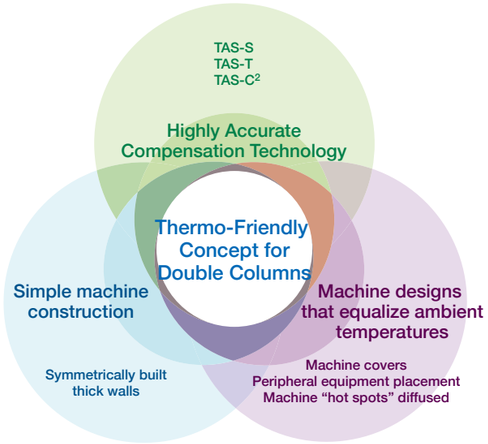
Okuma's Thermo-Friendly Concept achieves high dimensional stability not only when the room temperature changes, but also at machine startups or when machining is resumed.

The warm-up operation time to stabilize thermal deformation is shortened, and the burden of dimensional correction when resuming machining is reduced.

Machine startup
Machining restart
Room temp change

High dimensional stability

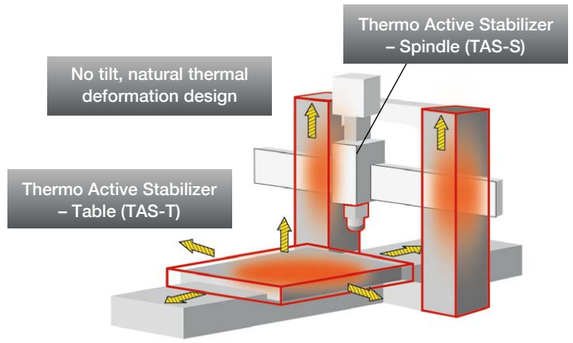
Control technology
[Accurate control]



Machine design
[Manageable thermal deformation]

Machining dimensional change over time minimized with outstanding dimensional stability

1	2	3
Minimal temperature deformation	Manageable thermal deformation	Accurate compensation



[Manageable Deformation] [Accurately Controlled]

Integrated machine design and control technology

The Thermo-Friendly Concept plays a principal role in our machine design. With simple machine designs and construction that equalize ambient temperatures, deformation is predictable, and complex torsion or tilting is controlled.

Highly accurate compensation technology with the OSP controller developed by Okuma accurately controls thermal deformation from room temperature changes, spindle thermal deformation from frequently changing spindle speeds, and inconsistent thermal deformation from coolant temperature.

With the Thermo-Friendly Concept (Manageable Deformation – Accurately Controlled), Okuma products provide unrivaled dimensional stability.

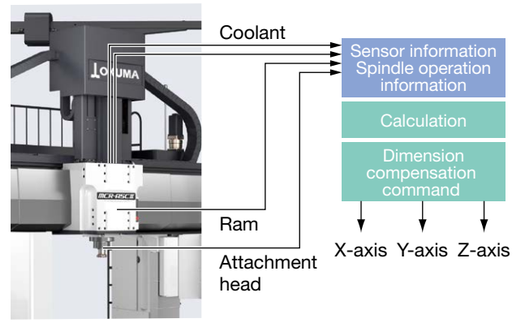
Sophisticated thermal displacement control technology

	Thermo-Friendly Specifications	Thermo-Friendly Premium Specifications (option)*
Spindle thermal deformation control technology	**Thermo Active Stabilizer – Spindle (TAS-S)** Thermal deformation from spindle rotation controlled with high accuracy.	
Environmental thermal deformation control technology	**Thermo Active Stabilizer – Table (TAS-T)** Deformation from thermal expansion of table is accurately controlled.	**Thermo Active Stabilizer – Construction for large machines (TAS-C²)** TAS-C²: Thermo Active Stabilizer – Table Thermo Active Stabilizer – Construction In addition to TAS-T at the left, the machine is optimally controlled to maintain machining accuracy even when ambient temperatures change.

* X-Y-Z axes AbsoScale specs required.

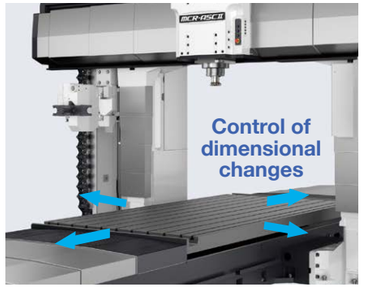
Thermo Active Stabilizer – Spindle (TAS-S)

Thermal deformation of the spindle from high spindle speeds is accurately controlled (X-Y-Z axes). Accurate control is also performed in cases of frequent spindle speed changes, and thermal deformation of attachment heads are also controlled.



Thermo Active Stabilizer – Table (TAS-T)

In machining large workpieces, things like hole pitch deviation may become larger due to thermal expansion. Thermo Active Stabilizer – Table controls dimensional changes from thermal expansion of the table to obtain stable dimensional accuracies of even large components.



Thermo Active Stabilizer – Construction for large machines (TAS-C²) (option)

In addition to Thermo Active Stabilizer – Table (TAS-T), the machine is optimally controlled to maintain machining accuracy even when ambient temperatures change.

Highly accurate, productive and eco-friendly

Green-Smart Machine

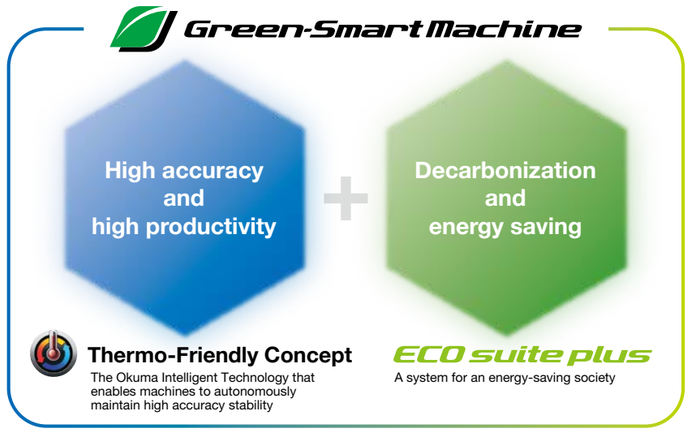
Okuma has worked to reduce energy consumption in order to achieve carbon neutrality at the three factories in Japan which are our main production bases.

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 supplying them all over the world, we will work together with our customers to help solve the social issues faced by the manufacturing industry.

Green-Smart Machines are **environmentally friendly**
products that autonomously achieve stable dimensional accuracies and reduced energy consumption.



Thermo-Friendly Concept

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

The unique concept of accepting temperature changes achieves consistent high accuracy without special coolers or excessive air conditioning.

■ Reduction of warm-ups and dimensional compensation

Reduce the time needed for daily warm-ups and dimensional compensation to adjust to ambient temperature changes.

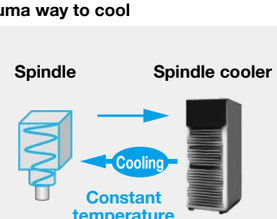
■ Reduction of power used for air conditioning

Maintain high stability of dimensional accuracy even if the air conditioning temperature range is expanded.

■ Reduction of machine body coolers

Achieve outstanding dimensional accuracy without any special machine body cooling being required to maintain accuracy.

■ The Okuma way to cool



By always setting a constant coolant supply temperature, the cooler power consumption is reduced.

ECO suite plus A system for an energy-saving society

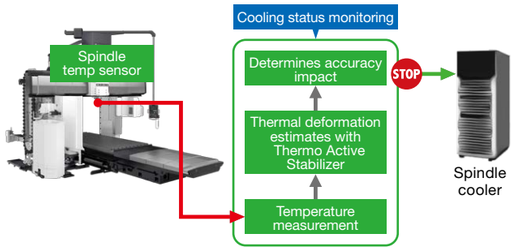
ECO Idling Stop

Accuracy ensured, cooler off

All auxiliary equipment when not needed (most of factory power consumption), can be turned off. The cooling system necessary for maintaining accuracy uses Thermo-Friendly Concept technology, and the machine itself decides when to cool and stop idling while maintaining high accuracy.

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.

■ The machine monitors the cooling level when not machining, and proactively turns off the cooler while maintaining high accuracy conditions.



ECO Operation

Peripheral equipment runs only when needed

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 “operation patterns” to thoroughly reduce carbon dioxide emission.

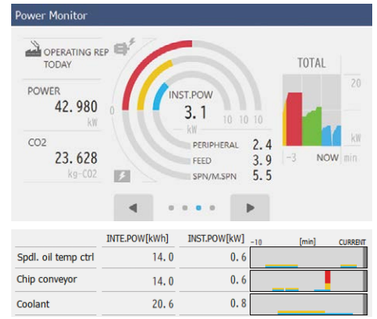
ECO Power Monitor

Confirming energy savings and analyzing reductions

Power is shown individually for spindle, feed axes, and auxiliaries on the OSP operation screen. In addition to regenerative power, the energy-saving benefits from auxiliary equipment stopped with ECO Idling Stop can be confirmed on the spot.

[On-the-spot checks of operating status, power consumption, and carbon dioxide emissions]

Three phases of visualization (view, record, and analyze) and energy-saving functions, which make it possible to analyze even the operating status of each device, support the decarbonization cycle.



[Analyze carbon dioxide emissions and improve machine tool operation]

With ECO suite plus, detailed data analysis of carbon dioxide emissions for each device is possible on a PC.

[Example of auxiliary power display using One-Touch Spreadsheet (option)**]**

Note: The spreadsheet file for data analysis needs to be prepared by the customer.

Technology for high-speed, high-accuracy machining

3D Smart Calibration System (option)

Calibrating the volumetric accuracy of the machine

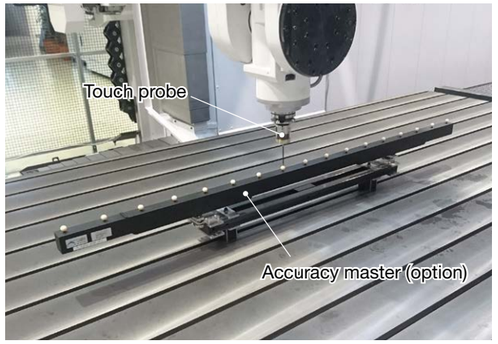
■ Any operator can easily calibrate machine accuracy

Factory floor surface deformation over the long term affects machine accuracy.

The 3D Smart Calibration System checks and calibrates the machine accuracy (positioning, straightness, perpendicularity) by automatically measuring the accuracy master (the absolute accuracy reference) using an easy-to-operate touch probe.

By calibrating accuracy at the right time, high accuracy is maintained throughout the machining space over the long term.

Notes: The machine accuracy that can be calibrated differs depending on the machine specifications and type of accuracy master (option) used.
The floor deformation of the customer's machine shop foundation may be large and require machine level adjustments.



Automatic measurement of ball beam by touch probe

Accuracy Stability Diagnosis Function (option)

Self-diagnosis of changes in machine accuracy

■ To diagnose mechanical thermal deformation due to non-uniform factory temperatures

On production floors where the machine is exposed to wind or sunlight, the temperature around the machine becomes uneven, creating an environment in which the thermal deformation of the machine tends to increase.

The Accuracy Stability Diagnosis Function estimates the change in machine accuracy due to non-uniform factory temperatures, quantifies it as "accuracy stability" and displays that information on the screen.

If the accuracy is unstable, the operator will be notified by a message or alarm. More stable machining accuracy can be achieved by performing accuracy checks and adjustments when notified.

■ Diagnosing changes in machine accuracy from factory floor thermal deformation

The change in machine accuracy due to thermal deformation of the production floor is also estimated and quantified as a factor of "accuracy stability". Notifications of the best timing for machine accuracy adjustments with 3D Calibration etc, will be provided.

Auto Attachment Head Compensation (option)

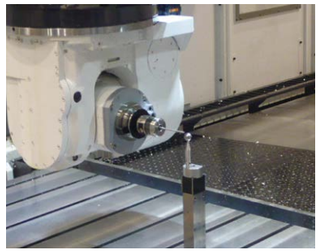
Anyone can perform rotation compensation of attachment heads easily

■ Rotation compenstion that used to take half day to a full day now done automatically in twenty minutes*

Auto Attachment Head Compensation is a function that is automatically sets attachment head rotation compensation values. It is quick, easy and can be used by anyone. By setting the compensation values, the program commands can be made for tool tip position even with different attachment head type and rotation tilt. Creation of NC programs and machine operation becomes much easier.

Auto Attachment Head Compensation performs this rotation compensation work automatically, enabling automatic setting in 20 minutes* for a task that used to take an experienced operator a half to full day with three attachment heads. High machining accuracy can also be maintained with regular measurements.

* The time needed for automatic settings differs with the ahment head.



The datum sphere is fixed to the table and measurement preparations are completed by simply positioning the attachment head with attached touch probe near the top of the datum sphere.

Note: AAHC requires Okuma's auto gauging and auto zero offset functions (with touch probe).

Hyper-SurfaceⅡ (option)

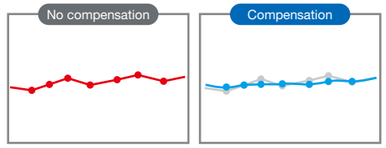
Improving the performance of machining dies and free-form surfaces

There is no need to modify machining data. Ridgelines and uneven surface edges are reduced, the machined surface quality is improved, and hand-polishing time is eliminated.

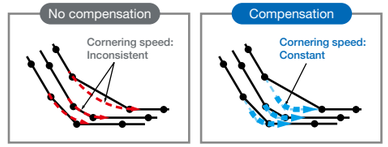
Hyper-SurfaceⅡ automatically compensates for fluctuations in the CAM machining data, and for positional misalignment between edges and adjacent cutter paths, while maintaining the required shape accuracy. In addition, SMART finishing suppresses vibration without reducing the speed at the corners, reduces the cycle time and improves the surface quality.

Notes: Please contact us for 5-axis specifications.
The effect varies depending on the machining shape.

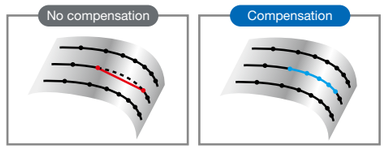
Smooths minor fluctuations and variations In command points



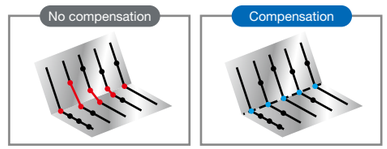
Consistent passing speeds to align corner paths



Adjust steps errors between adjacent cutter paths



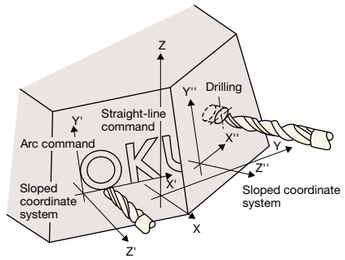
Reproducing edge lines between sides

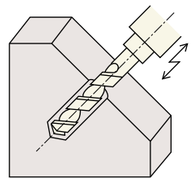


Comparison of machined surface quality

Slope machining (option)

The slope surface coordinate system lets you use coordinate change to rotate coordinates to match the cutting plane. Just program sloped surfaces as X-Y planes to machine any surface. The pulse handle feed in the sloped coordinate system can be used to adjust the tool play.





Slopes are programmed as straight X-Y planes.

Okuma Intelligent Technology exhibits powerful effect on machine shop floors

Collision Avoidance System (option)

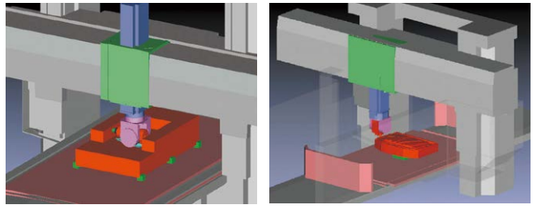
Collision prevention

Significantly reducing setup and trial times

“Concentrate on machining”—without collision worries

NC controller (OSP) with 3D model data of machine components—workpiece, tool, fixture, attachment head— performs real time simulation just ahead of actual machine movements. In both automatic operation and manual movements, advance checks are made for interference or collisions and the machine movement is stopped.

Machinists (novice or pro) will benefit from reduced setup and trial cycle times, and the confidence to focus on making parts.



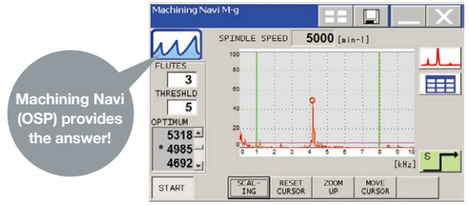
Machining Navi M-*g*Ⅱ (option)

Cutting condition search for milling/machining

Longer tool life and shorter machining times by optimizing cutting conditions

Maximizing machine tool performance

Navigates effective measures by detecting and analyzing machining chatter with a microphone attached to the machine. Effects are seen mainly on high rotation chatter with M-*g*Ⅱ.



SERVONAVI

Optimized Servo Control

Achieves long term accuracy and surface quality

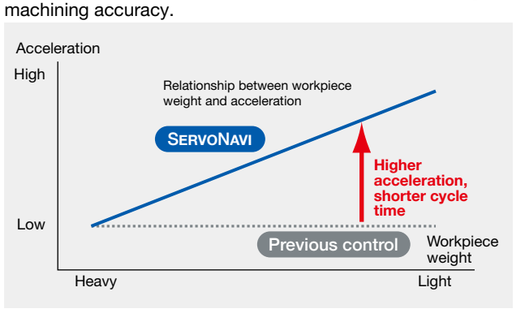
SERVONAVI AP (Automatic Parameter setting)

Work Weight Auto Setting

Cycle time shortened with faster acceleration

On table travel type machining centers, the table feed acceleration with the previous system was the same regardless of weight, such as workpieces and fixtures loaded on the table.

Work Weight Auto Setting estimates the weight of the workpiece and fixture on the table and automatically sets the linear axis servo parameters, including acceleration, to the optimum values. Cycle times are shortened with no changes to machining accuracy.



SERVONAVI SF (Surface Fine-tuning)

Reversal Spike Auto Adjustment

Maintains machining accuracy and surface quality

Slide resistance changes with length of time machine tools are utilized, and discrepancies occur with the servo parameters that were the best when the machine was first installed. This may produce crease marks at motion reversals and affect machining accuracy (part surface quality).

Reversal Spike Auto Adjustment maintains machining accuracy by switching servo parameters to the optimum values matched to changes in slide resistance.

Vibration Auto Adjustment

Contributes to longer machine life

When aging changes machine performance, noise, vibration, crease marks, or fish scales may appear.

Vibration Auto Adjustment can quickly eliminate noise and vibration even from machines with years of operation.

Deflection Auto Adjustment*

Maintaining high quality machined surfaces on dies/molds

With fast accleration/deceleration in the machining of dies and molds, etc, positioning error due to bending (ball screw expansion/contraction) can affect the machined surface quality.

Deflection Auto Adjustment maintains the surface quality of die/mold machined surfaces by automatically adjusting the servo parameters to match the amount of bending, even when the amount of bending of the ball screw has changed and positioning error has occurred as a result of changes over time.

* X-Y axes AbsoScale detection specs are needed.

Smooth discharge of large amounts of chips

Recommended chip conveyors (Please contact an Okuma sales representative for details.)

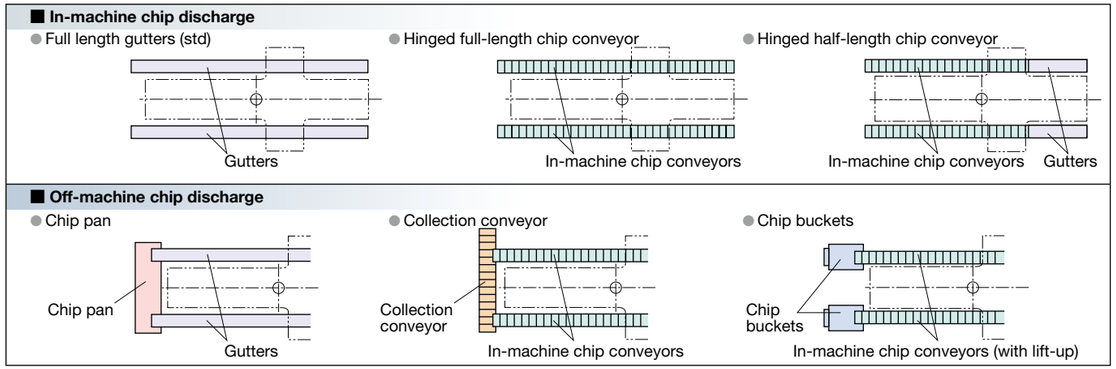
○: Recommended

Workpiece material		Steel, stainless steel	Cast iron	Aluminum/ non-ferrous metal	Mixed (general)	Special blank materials
Chip shape						Ceramic, carbon, glass, etc.
In-machine chip discharge	Full length gutters (std)	○	○	—	○	○
	Hinge type	○	○	○ (Alminum)	○	—
Off-machine chip discharge	Hinge + scraper with drum filter (recommended)	○	○*	○	○	—
	Hinge type	○	—	—	○	—

* Attachment of a magnet separator is recommended

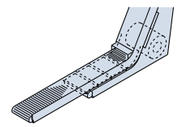
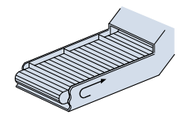
Note: The specs recommended above are based on wet machining (including washer specifications). For dry machining, please contact our sales staff.

Example of chip conveyor placement



Note: Conveyor chip discharge direction (rear), off-machine chip conveyor discharge direction (operation side, magazine side), chip coolant tank position, etc. can be combined to match space. Please consult with your Okuma sales representative to confirm final arrangements.

Collection conveyor chip discharge (lift-up conveyors)

Type	Shape
Hinge + scraper with drum filter	
Hinge	

Lift-up conveyors + chip buckets (rear discharge)

Machine Specifications

Item		MCR-A5CⅡ 20			MCR-A5CⅡ 25					MCR-A5CⅡ 30					MCR-A5CⅡ 35				
		20 × 30	20 × 40	20 × 50	25 × 30	25 × 40	25 × 50	25 × 65	25 × 80	30 × 40	30 × 50	30 × 65	30 × 80	30 × 100	35 × 50	35 × 65	35 × 80	35 × 100	35 × 120
Travel																			
X-axis (table front / back)	mm (in)	3,200 (125.98)	4,200 (165.35)	5,200 (204.72)	3,200 (125.98)	4,200 (165.35)	5,200 (204.72)	6,700 (263.78)	8,200 (322.83)	4,200 (165.35)	5,200 (204.72)	6,700 (263.78)	8,200 (322.83)	10,200 (401.57)	5,200 (204.72)	6,700 (263.78)	8,200 (322.83)	10,200 (401.57)	12,200 (480.31)
Y-axis (spindlehead left/right)	mm (in)	2,600 (102.36)			3,100 (122.05)					3,600 (141.73)					4,100 (161.42)				
Z-axis (ram up/down)	mm (in)	800 (31.50)								800 (31.50)									
W-axis (crossrail up/down)	mm (in)	800 (31.50)			1,000 (39.37)					1,200 (47.24)									
Effective width between columns	mm (in)	2,150 (84.65)			2,650 (104.33)					3,150 (124.02)					3,650 (143.70)				
Table to spindle nose	mm (in)	0 to 1,450 [0 to 1,350][*1] (0 to 57.09 [0 to 53.15][*1])			0 to 1,650 [0 to 1,550][*1] (0 to 64.96 [0 to 61.02][*1])					0 to 1,850 [0 to 1,750][*1] (0 to 72.83 [0 to 68.90][*1])					0 to 1,800 [0 to 1,700][*1] (0 to 70.87 [0 to 66.93][*1])				
Table																			
Working surface	mm (in)	1,500 × 3,000 (59.06 × 118.11)	1,500 × 4,000 (59.06 × 157.48)	1,500 × 5,000 (59.06 × 196.85)	2,000 × 3,000 (78.74 × 118.11)	2,000 × 4,000 (78.74 × 157.48)	2,000 × 5,000 (78.74 × 196.85)	2,000 × 6,500 (78.74 × 255.91)	2,000 × 8,000 (78.74 × 314.96)	2,500 × 4,000 (98.43 × 157.48)	2,500 × 5,000 (98.43 × 196.85)	2,500 × 6,500 (98.43 × 255.91)	2,500 × 8,000 (98.43 × 314.96)	2,500 × 10,000 (98.43 × 393.70)	3,000 × 5,000 (118.11 × 196.85)	3,000 × 6,500 (118.11 × 255.91)	3,000 × 8,000 (118.11 × 314.96)	3,000 × 10,000 (118.11 × 393.70)	3,000 × 12,000 (118.11 × 472.44)
Maximum load	kg (lb)	12,000 (26,400)	16,000 (35,200)	20,000 (44,000)	18,000 (39,600)	22,000 (48,400)	27,000 (59,400)	34,000 (74,800)	42,000 (92,400)	29,000 (63,800)	33,000 (72,600)	43,000 (94,600)	52,000 (114,400)	66,000 (145,200)	29,500 (64,900)	37,000 (81,400)	47,000 (103,400)	61,000 (134,200)	65,000 (143,000)
T-slots Width x No. <center pitch>	mm (in)	24H7 × 11 <center: 140 (5.51), both ends: 100 (3.94)>			24H7 × 11 <center: 200 (7.87), both ends: 130 (5.12)>					24H7 × 13 <center: 200 (7.87), both ends: 180 (7.09)>					24H7 × 15 <200> (7.87)				
Height from machine bottom	mm (in)	850[*8] (33.46[*8])								900[*8] (35.43[*8])					950[*8] (37.40[*8])				
[Pallet][*2]																			
Working surface	mm (in)	1,500 × 2,700 (59.06 × 106.30)	1,500 × 3,700 (59.06 × 145.67)	1,500 × 4,700 (59.06 × 185.04)	2,000 × 2,700 (78.74 × 106.30)	2,000 × 3,700 (78.74 × 145.67)	2,000 × 4,700 (78.74 × 185.04)	2,000 × 6,200 (78.74 × 244.09)	2,000 × 7,700 (78.74 × 303.15)	2,500 × 3,700 (98.43 × 145.67)	2,500 × 4,700 (98.43 × 185.04)	2,500 × 6,200 (98.43 × 244.09)	2,500 × 7,700 (98.43 × 303.15)	2,500 × 9,700 (98.43 × 381.89)	3,000 × 4,700 (118.11 × 185.04)	3,000 × 6,200 (118.11 × 244.09)	3,000 × 7,700 (118.11 × 303.15)	3,000 × 9,700 (118.11 × 381.89)	—
Maximum load	kg (lb)	5,000 (11,000)	6,000 (13,200)	8,000 (17,600)	6,000 (13,200)	8,000 (17,600)	10,000 (22,000)	13,000 (28,600)	15,000 (33,000)	10,000 (22,000)	12,000 (26,400)	15,000 (33,000)	20,000 (44,000)	24,000 (52,800)	14,000 (30,800)	18,000 (39,600)	21,000 (46,200)	25,000 (55,000)	—
T-slots Width x No. <center pitch>	mm (in)	24H7 × 9 <center: 140 (5.51), both ends: 100 (3.94)>			24H7 × 11 <center: 200 (7.87), both ends: 130 (5.12)>					24H7 × 13 <center: 200 (7.87), both ends: 180 (7.09)>					24H7 × 15 <200> (7.87)				—
Height from machine bottom	mm (in)	1,170 (46.06)			1,200 (47.24)					1,250 (49.21)					1,350 (53.15)				—
Spindle (Extension head)																			
Speed range	min^{-1}	30 to 4,000 [30 to 6,000, 30 to 10,000][*2]								30 to 4,000 [30 to 6,000, 30 to 10,000][*2]									
Taper bore		7/24 taper No.50								7/24 taper No.50									
Bearing diameter	mm (in)	ø100 [ø85][*3] (ø3.94 [ø3.35][*3])								ø100 [ø85][*3] (ø3.94 [ø3.35][*3])									
Feed rate																			
Rapid traverse	m/min (ipm)	X: 30, Y: 32, Z: 20[*4] (X: 1,181, Y: 1,260, Z: 787[*4])			X: 30, Y: 32[*5], Z: 20[*4] (X: 1,181, Y: 1,260[*5], Z: 787[*4])			X: 20, Y: 32[*4], Z: 20 (X: 787, Y: 1,260[*4], Z: 787)		X: 30, Y: 32[*5], Z: 20[*4] (X:1,181, Y: 1,260[*5], Z: 787[*4])			X: 20, Y: 32[*5], Z: 20 (X: 787, Y: 1,260[*4], Z: 787)		X: 30, Y: 30[*5], Z: 20[*4] (X: 1,181, Y: 1,181[*5], Z: 787[*4])			X: 20, Y: 30[*5], Z: 20 (X: 787, Y: 1,181[*5], Z: 787)
Cutting feed rate	mm/min (ipm)	1 to 10,000 (0.04 to 394)								1 to 10,000 (0.04 to 394)									
W-axis travel rate	m/min (ipm)	3 (118)								3 (118)									
Automatic Tool Changer																			
Tool shank		MAS BT50								MAS BT50									
Pull stud		MAS2								MAS2									
Tool magazine capacity	tools	50 [80, 100, 120, 180]								50 [80, 100, 120, 180]									
Max tool diameter	mm (in)	w/ adjacent tools: ø135 (5.31); w/o adjacent tools: ø230 (9.06)								w/ adjacent tools: ø135 (5.31); w/o adjacent tools: ø230 (9.06)									
Max tool length	mm (in)	400 (15.75)								400 (15.75)									
Max tool mass	kg (lb)	25 (55)								25 (55)									
Tool selection		Fixed adress								Fixed adress									
Motors																			
Spindle drive	kW (hp)	26/22 (35/30) (30 min/cont) [30/22 (40/30) (30 min/cont)][*6]								26/22 (35/30) (30 min/cont) [30/22 (40/30) (30 min/cont)][*6]									
Axis feed drives	kW (hp)	X: 9.4, Y: 6.4, Z: 5.2 × 2 (X: 12.5, Y: 8.5, Z: 6.9 × 2)					X: 14.0, Y: 6.4, Z: 5.2 × 2 (X: 18.7, Y: 8.5, Z: 6.9 × 2)												
Crossrail elevating	kW (hp)	W: 4.6 (6.1) × 2								W: 4.6 (6.1) × 2									
Power Sources																			
Electrical power supply	kVA	60[*7]								60[*7]									
Compressed air supply	L/min (ANR)	690 <0.5 MPa or more>[*7]								690 <0.5 MPa or more>[*7]									
Machine Size																			
Height	mm (in)	5,820[*8] (229.13[*8])			6,020[*8] (237.01[*8])					6,300[*8] (248.03[*8])									
Floor space (machine only)	mm (in)	6,180 × 8,430 (243.31 × 331.89)	6,180 × 10,730 (243.31 × 422.44)	6,180 × 12,830 (243.31 × 505.12)	6,680 × 8,430 (262.99 × 331.89)	6,680 × 10,730 (262.99 × 422.44)	6,680 × 12,830 (262.99 × 505.12)	6,680 × 16,430 (262.99 × 646.85)	6,680 × 19,430 (262.99 × 764.96)	7,280 × 10,730 (286.61 × 422.44)	7,280 × 12,830 (286.61 × 505.12)	7,280 × 16,430 (286.61 × 646.85)	7,280 × 19,430 (286.61 × 764.96)	7,280 × 23,930 (286.61 × 942.13)	7,780 × 12,830 (306.30 × 505.12)	7,780 × 16,430 (306.30 × 646.85)	7,780 × 19,430 (306.30 × 764.96)	7,780 × 23,930 (306.30 × 942.13)	7,780 × 27,930 (306.30 × 1,099.61)
Mass (machine only)[*9]	kg (lb)	32,000 (70,400)	36,000 (79,200)	40,000 (88,000)	33,000 (72,600)	39,000 (85,800)	44,000 (96,800)	52,000 (114,400)	58,000 (127,600)	44,000 (96,800)	50,000 (110,000)	59,000 (129,800)	67,000 (147,400)	78,000 (171,600)	56,000 (123,200)	65,000 (143,000)	79,000 (173,800)	87,000 (191,400)	101,000 (222,200)
CNC		OSP-P500M								OSP-P500M									

[ ]: Option
*1. With 250 mm long extension head
*2. In the case of APC specs (option), please also consider the high column because the distance from the end of the spindle to the top of the pallet will be shorter.
*3. 6,000 min^{-1}, 10,000 min^{-1} spec
*4. 20 m/min on each axis with die/mold kit.
*5. Deceleration near both ends of Y-axis travel
*6. High-speed 10,000 min^{-1} aluminum machining spec
*7. Standard spec
*8. Height increases 40 mm with use of chemical anchors.
*9. With 50-tool magazine, 2-station AAC

MCR-A5CⅡ Standard Specifications and Accessories

Spindle speed	30 to 4,000 min^{-1}	ATC magazine safety fence	
Spindle cooler	Oil temperature controller	Seesaw pendant operation panel	Elevation: 600 mm
Thermo-Friendly specifications	TAS-S, TAS-T	Tapered bore cleaning bar	
Synchronized W-axis NC (NC crossrail)	Absoscale detection (W-axis)	Full-length gutters	Front discharge
Z-axis double ball screw		Work lamp	LED
Auto Tool changer (ATC)	50 tools	Table shape	T slots (24H7)
Hydraulic unit		Crossrail screw cover	
ATC air blower and spindle air curtain	Air blower (blast)	Crossrail clamp	
Column guideway cover		Ladder and platform	
ATC tool magazine loader/unloader		Tool kit	
Door interlock		Tool box	

MCR-A5CⅡ Kit Specifications

		5C	5CP*3	M	MP*3	BC2000	BC2000P*3	BC6000	BC6000P*3	Die/mold	Die/mold P*3
Spindle speed		4,000 min^{-1}						6,000 min^{-1}			
Head index angle		5°				B-axis: 1°, C-axis: 1°				5°	
Auto attachment changer (AAC)*1		2-station		AAC storage stations not available						2-station	
Attachment heads	Extension head L150 4,000 min^{-1}	●		–							
	Extension head L250 6,000 min^{-1}	–								●	
	90° angular head L150 3,000 min^{-1}*2	●		–						●	
	Vertical/horizontal swivel head 3,000 min^{-1}	–		●		–					
	Universal index head (B-/C-axis) 2,000 min^{-1}	–				●		–			
	Universal index head (B-/C-axis) 6,000 min^{-1}	–						●		–	
ATC auto cover		●									
AAC safety cover		●		–						●	
X-axis 2.0 m travel extension (side-shuttle APC)		–	●	–	●	–	●	–	●	–	●
Auto pallet changer preparations		–	●	–	●	–	●	–	●	–	●
AbsoScale (X, Y, Z axes)		–								●	
Hyper-SurfaceⅡ Type A		–								●	

*1. One or two stations can be added. Additional stations can be equipped with an extension head, 90° angular head, and B-/C-axis universal angular head. (Please inquire about special heads.)
*2. L250 mm head length required when using thru-spindle coolant
*3. P kits comes with auto pallet changer

MCR-A5CⅡ Optional Specifications and Accessories

Automatic pallet changer (APC)	2-pallet side shuttle (X-axis 2.0 m travel extension)	Attachment heads	Please consult
		Thermo-Friendly specifications	Premium (includes TAS-S)
Average continuous cutting with limited upper feedrate	X, Y, Z: 6 m/min	Dust-proofing	
		NC rotary tables	NC rotary table, inclined rotary table
Coolant system		Mist collector	
Coolant tank	500 L, 1,000 L, 1,500 L, 2,000 L	Dust collector	
Coolant heater/cooler		Full-enclosure shielding	Column front/back covers
Oil skimmer			w/o ceiling
Filtration system			With ceiling
Semi-dry machining	Thru-spindle, nozzle	Auto Attachment Head Compensation	
Thru-spindle coolant*1		3D Smart Calibration System	Includes linear axis error measurement, spatial compensation and accuracy stability diagnosis
Coolant pump	0.75 kW, 1.1 kW		
Oil mist coolant	Insert nozzle		
Oil-hole coolant system	Simple system, High/low pressure switch (2 MPa)	AbsoScale detection*3	X-Y-Z axes, X-Y axes
		Auto tool length compensation & breakage detection	Touch sensor, laser sensor
Chip air blower (blast)			
ATC tool magazine capacity	80, 100, 120, 180 tools	Auto gauging & auto zero offset	Touch probe
ATC tools	Heavy tool: (35 kg × 120 mm)	In-machine chip conveyors	Full length, lift-up type Half length, lift-up type
Tool shank	CAT 50, DIN 50		
Spindle speeds	30 to 6,000 min-1, 30 to 10,000 min^{-1}	Chip flushers	Crossrail shower (L/R column front), front/back gutters with telescopic covers, workpiece wash gun
Pull stud	MAS1		
Table T-slot width	20H7, 22H7, 28H7		
Table cross slot width	Please consult for width depth, pitch	Collection chip conveyors	Hinged, hinge + scraper (w/ drum filter), hinged + magnetic separator
Optional table width	+300 mm		
High column specs	200 mm increments (please inquire for +400 mm or higher)	Chip buckets	L type, H type
Optional W-axis travel*2	Standard travel +200 mm (please inquire for +400 mm or higher)	Pendant arms	Parallel linked, manual, electric, floor mounted, Above the duct
Work lamp	Spotlight	Foundation methods	Foundation bolt (800 mm, 500 mm), chemical anchor, no foundation bolts (foundation blocks only)
Ram oil pan slush collector			
Attachment head accelerator preps		Machine foundation pit work	50 to 1,400 mm
Angle head preps		Optional control cabinet positions	
Auto attachment changer (AAC)	3 stations, 4 stations		

*1. Dedicated Okuma pull studs required for thru-spindle coolant
*2. Depending on the spec conditions, certain applications may not be possible.
*3. X-axis linear scale required for n × 65 and larger machines (X-axis travel larger than 6,700 mm)

Auto attachment changer (AAC)

A next-generation CNC that makes 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 technology, Okuma offers this CNC to build an advanced “digital twin” that faithfully reproduces machine control and machining operations and create new value. In addition, Okuma offers productivity improvement and stable production with ease of use that allows customers to use their machining know-how, an energy-saving solutions that achieve both high accuracy/productivity and eco-friendly products, with robust security protection against increasing threats of cyber attacks.

15-inch operation panel

Faithful reproduction of machines and processing — Digital support for shop floor work

Digital Twin (option)

“Okuma’s two digital twins” made possible by an office PC and a next-generation CNC reduce machine downtime and improve machine utilization

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.

1 Digital Twin On PC*

Simulate shop machines in the office

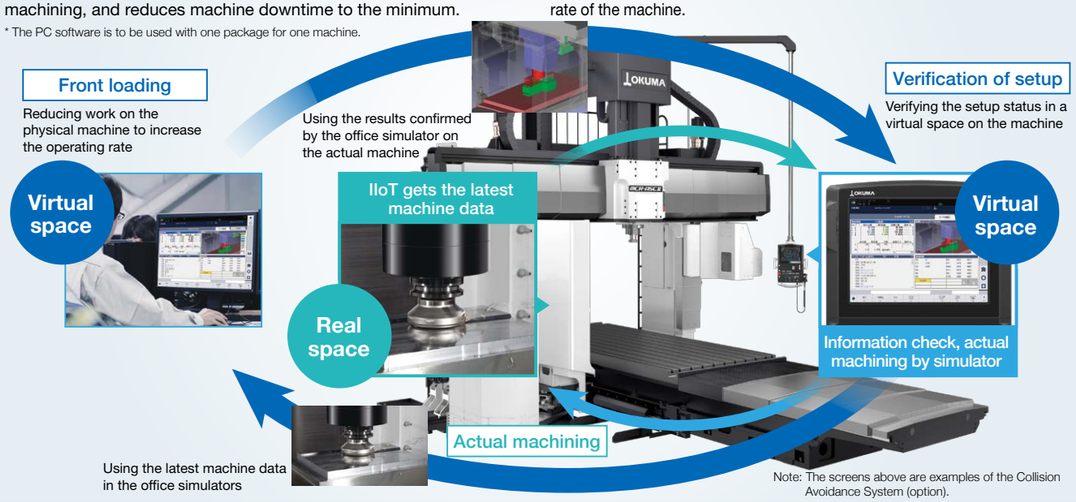
Front loading is performed with the actual status matched with the data on the office PC to further improve productivity.
Highly accurate pre-verification minimizes trial and error in first part machining, and reduces machine downtime to the minimum.

* 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.



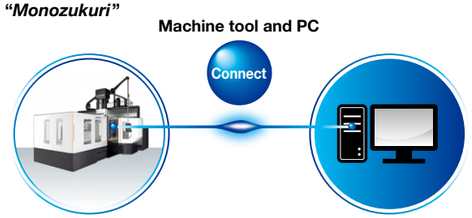
Note: The screens above are examples of the Collision Avoidance System (option).

Connect Plan

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

Connect, Visualize, Improve

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



OSP-P500M standard specifications

Basic Specs	Control	X, Y, Z, W, simultaneous 4 axis, spindle control (1 axis)
	Position feedback	OSP full range absolute position feedback (zero point return not required)
	Coordinate functions	Machine coordinate system (1 set), work coordinate system (20 sets)
	Min / Max command	±99999.999 mm, ±9999.9999° 8-digit decimal, command units: 0.001 mm, 0.01 mm, 1 mm, 0.0001°, 0.001°, 1°
	Feed	Cutting feed override: 0 to 200%, rapid traverse override 0 to 100%
	Spindle control	Direct spindle speed commands, override 30 to 300%, multi-point indexing
	Tool compensation	No. of registered tools: Max 999 sets, tool length/radius compensation: 3 sets per tool
	Display	15-inch color LCD + multi-touch panel operations
	Security	Operator authentication, Lock screen, OSP-VPSⅡ-STD
Programming	Program capacity	Program storage capacity: 4 GB; operation buffer: 2 MB
	Program operations	Scheduled program, fixed cycle, G-/M-code macros, arithmetic, logic statements, math functions, variables, branch commands, Coordinate calculate, area machining, coordinate convert, programming help, user task, keyway cycle
Operations	OSP suite	“suite apps” to graphically visualize and digitize information needed on the shop floor, “suite operation” enable one-touch access to “suite apps”.
	Easy Operation	“Single-mode operation” to complete a series of operations. Advanced operation panel/graphics facilitate smooth machine control
	MacMan plus	Machining management: aggregation and display of machining records, operating records and problem information, Visualization of power consumption, file output
	Machine operations	Operation help, load meter, alarm help, sequence return, manual interrupt/auto return, pulse handle overlap, parameter I/O, PLC monitor, auto power shut-off
Communications / Networking		USB (2 ports), Ethernet, DNC-T1, Smart I/F
High speed/accuracy specs		Thermo-Friendly (TAS-S: Thermo Active Stabilizer – Spindle, TAS-T: Thermo Active Stabilizer – Table), Hi-Cut Pro, Pitch error compensation, Hi-G control, SERVONAVI*1, Cycle time reduction (operation time reduction, machining time shortening, easy parameter setting)
Energy-saving functions	ECO suite plus	ECO Idling Stop, ECO Operation, oil temperature controller auto control, ECO Power Monitor*2
	Power Regeneration System	Regenerative power is used when the spindle and feed axes decelerate to reduce energy waste.

*1. For Deflection Auto Adjustment included in the specs, X-Y axes AbsoScale detection specs are needed.
*2. The power display shows estimated values. When precise electrical values are needed, select the wattmeter option.

OSP-P500M kit specifications/optional specifications

Item	Kit Specs	NML E	NML D	AOT E	AOT D	DT E	DT D	DT AOT E	DT AOT D
Digital Twin									
Virtual Machining						● (VE)	● (VD)	● (VE)	● (VD)
Quick Modeling						● (VE)	● (VD)	● (VE)	● (VD)
OPC UA for Machine Tools						●	●	●	●
OSP API KIT						●	●	●	●
Interactive functions									
Advanced One-Touch IGF-M (w/ Real 3-D Simulation)				●	●			●	●
Interactive MAP (I-MAP)						●	●		
Smart OSP Operation				●	●	●	●	●	●
Programming									
Operation buffer 10MB		●	●	●	●	●	●	●	●
Program notes (MSG)		●	●	●	●	●	●	●	●
Auto scheduled program update		●	●	●	●	●	●	●	●
Block skip; 9 sets									
Program branch; 9 sets									
Coordinate system select (Std: 20 sets)	100 sets	●		●		●		●	
	200 sets		●		●		●		●
	400 sets								
Helical cutting (within 360 degrees)		●	●	●	●	●	●	●	●
3-D circular interpolation									
Skip									
Synchronized Tapping Ⅱ		●	●	●	●	●	●	●	●
Arbitrary angle chamfering		●	●	●	●	●	●	●	●
Cylindrical side facing									
Tool max rotational speed setting									
F1-digit feed	External switch type, parameter type								
Programmable travel limits (G22, G23)		●	●	●	●	●	●	●	●
Slope machining	Type Ⅰ, Type Ⅱ								
Axis name designation									
3-D tool compensation									
Coordinate change and drawing conversion	Programmable mirror image (G62)		●		●		●		●
	Enlarge/reduce (G50, G51)		●		●		●		●
User task	Common variables 1,000, 2,000 pcs								
	G code macros: 80 sets added								
	I/O variables (16 each)								
Sequence stop		●	●	●	●	●	●	●	●
Sequence return	Mid-block sequence return		●		●		●		●
Tool wear compensation	Includes input restriction	●	●	●	●	●	●	●	●
Tool life management	Includes warning	●	●	●	●	●	●	●	●
External I/O communication									
RS-232C connector									
DNC connection	DNC-T3, DNC-B, DNC-DT DNC-C/Ethernet								
Gauging									
Auto tool length offset/breakage detection									
Auto Workpiece Gauging/Auto zero offset									
Manual gauging (w/o sensor)		●	●	●	●	●	●	●	●
Interactive gauging (touch sensor, touch probe required)									

Item	Kit Specs	NML E	NML D	AOT E	AOT D	DT E	DT D	DT AOT E	DT AOT D
Monitoring									
One-Touch Spreadsheet									
Collision Avoidance System									
Real 3-D Simulation				●	●	●	●	●	●
Simple load monitor	Spindle overload monitor	●	●	●	●	●	●	●	●
NC operation monitor	Hour meter, workpiece counter	●	●	●	●	●	●	●	●
Status indicator									
Operation end buzzer									
Workpiece counters on machine									
Tool breakage no-load detection			●		●		●		●
MOP-TOOL	Adaptive control, overload monitor								
AI machine diagnostics*	Feed axes								
Machine Status Logger									
Cutting Status Monitor									
Machining Navi M-gⅡ (cutting condition search)									
Feed axis retraction									
Tool retract cycle									
Automation / unattended operation									
Warm-up (calendar timer)									
External program	Button, rotary switch								
	BCD (2-digit, 4-digit)								
High-speed, high-precision									
Auto Attachment Head Compensation									
Thermo-Friendly Premium									
AbsoScale detection	X-Y axes, X-Y-Z axes								
Straightness compensation									
Dynamic displacement compensation		●	●	●	●	●	●	●	●
0.1 μm control (linear axis commands)									
Hyper-SurfaceⅡ	3-axis, Type A, Type B								
3D Smart Calibration System									
Accuracy Stability Diagnosis									
ECO suite plus									
ECO Power Monitor	On-machine wattmeter								
Spindle Power Peak Limiter									
Energy-saving hydraulic unit	ECO Hydraulics								
External output interface of consumed electricity									
Other									
Circuit breaker									
OSP-VPSⅡ-EX (Virus Protection System)									
Pulse handles	2 pcs, 3 pcs								
External M codes [4 sets, 8 sets]									

Notes: NML: Normal kit, AOT: Advanced One-Touch IGF-M kit, DT: Digital Twin kit,
DT AOT: Digital Twin Advanced One-Touch IGF-M, E: Economy, D: Deluxe
VE and VD kits are also equipped with the Digital Twin on PC function, allowing running from a PC.
Specifications, etc. are subject to change without notice.
* With AbsoScale detection specs, ball-screw wear detection is possible.

Working ranges Machinable area (5C kit uses extension head, 90° angular head. Tool length = 300 mm)

Unit: mm

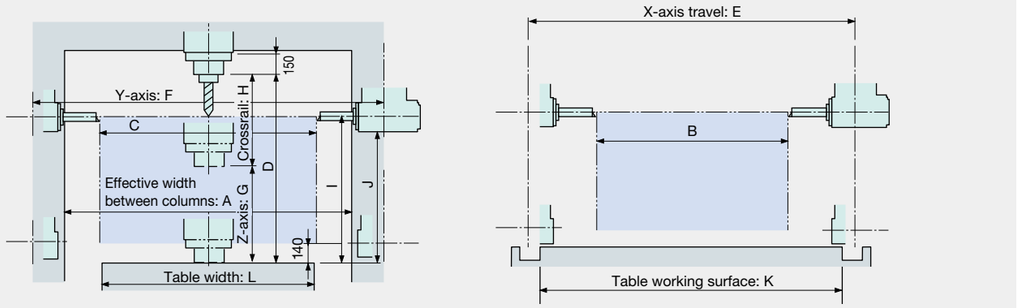
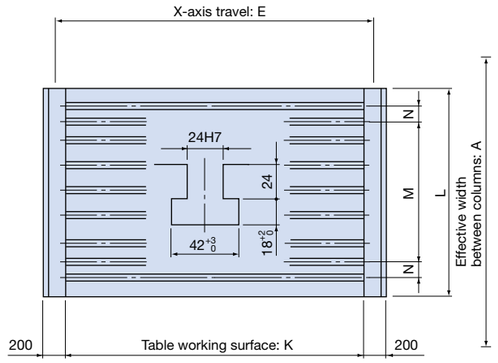


Table dimensions



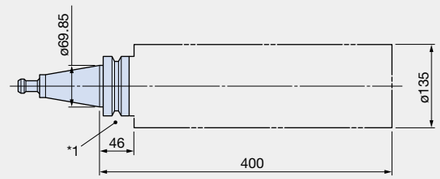
Unit: mm

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N
20 × 30		2,240			3,200						3,000			
20 × 40	2,150	3,240	1,640	0~ 1,450	4,200	2,600		800	1,150	1,338	4,000	1,500	8×140	100
20 × 50		4,240			5,200						5,000			
25 × 30		2,240			3,200						3,000			
25 × 40		3,240			4,200						4,000			
25 × 50	2,650	4,240	2,140	0~ 1,650	5,200	3,100		1,000	1,350	1,538	5,000	2,000	8×200	130
25 × 65		5,740			6,700						6,500			
25 × 80		7,240			8,200						8,000			
30 × 40		3,240			4,200						4,000			
30 × 50		4,240			5,200						5,000			
30 × 65	3,150	5,740	2,640	0~ 1,850	6,700	3,600	800		1,550	1,738	6,500	2,500	10×200	180
30 × 80		7,240			8,200						8,000			
30 × 100		9,240			10,200			1,200			10,000			
35 × 50		4,240			5,200						5,000			
35 × 65		5,740			6,700						6,500			
35 × 80	3,650	7,240	3,140	0~ 1,800	8,200	4,100			1,500	1,688	8,000	3,000	12×200	200
35 × 100		9,240			10,200						10,000			
35 × 120		11,240			12,200						12,000			

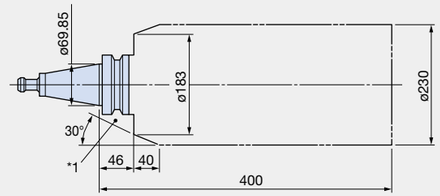
ATC tool dimensions

Unit: mm

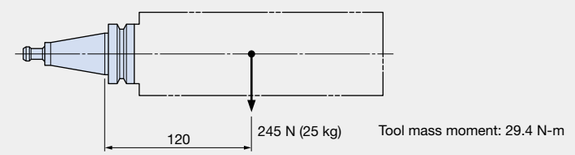
Maximum adjacent tool size
The maximum tool size is determined by the neighboring tool size



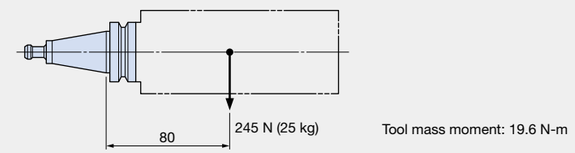
Maximum non-adjacent tool size
This is the maximum tool size when there are no tools on either side of a tool.



Maximum ATC tool
29.4 N-m (25 kg × 120 mm)



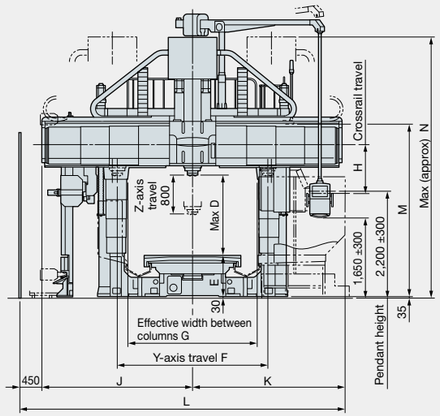
Maximum ATC tool with high speed movement
19.6 N-m (25 kg × 80 mm)

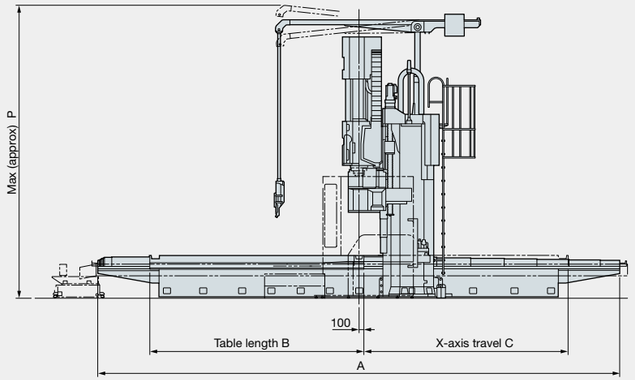


Note: Tools with tool mass moments over 29.4 N-m can not be used.
ATC with high speed movement can be done with tools of ≤ 19.6 N-m

*1. Commercially available milling chucks may interefere with ATC arm and other tools.
Prior to use, confirm size dimensions with tool manufacturer documentation.

Dimensional Drawing





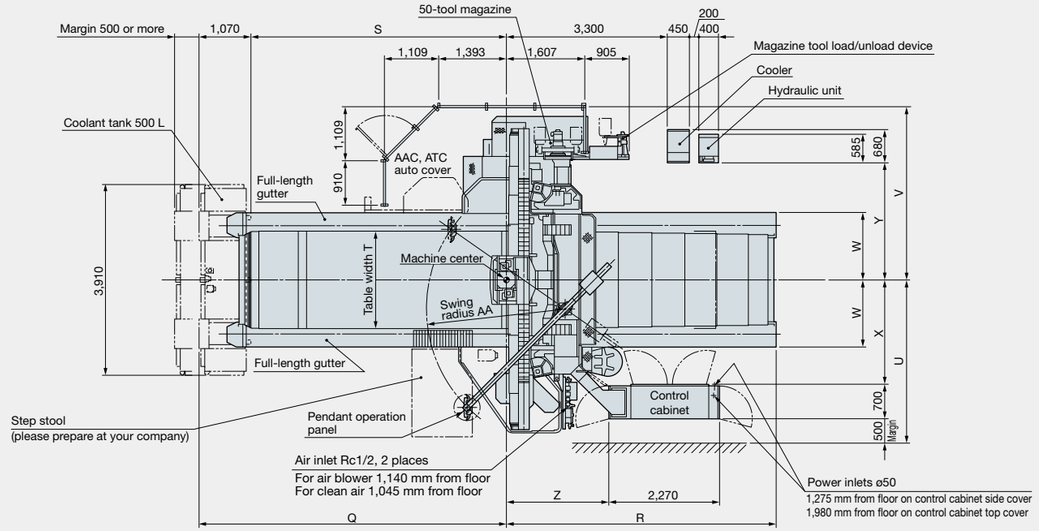
This drawing show outline of standard machine. These dimensions will change if optional specifications are selected.
And depending on the destination country or region, full enclosure or safety fences are required.

Unit : mm

	Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MCR-A5CⅡ 20	20 × 30	8,430	3,400	3,200	1,450 (1,350)	850	2,600	2,150	800	2,850	2,880	6,180	3,345	5,170	5,820
	20 × 40	10,730	4,400	4,200											
	20 × 50	12,830	5,400	5,200											
MCR-A5CⅡ 25	25 × 30	8,430	3,400	3,200	1,650 (1,550)	850	3,100	2,650	1,000	3,100	3,130	6,680	3,545	5,370	6,020
	25 × 40	10,730	4,400	4,200											
	25 × 50	12,830	5,400	5,200											
	25 × 65	16,430	6,900	6,700											
	25 × 80	19,430	8,400	8,200											
MCR-A5CⅡ 30	30 × 40	10,730	4,400	4,200	1,850 (1,750)	900	3,600	3,150	1,200	3,400	3,430	7,280	3,825	5,620	6,300
	30 × 50	12,830	5,400	5,200											
	30 × 65	16,430	6,900	6,700											
	30 × 80	19,430	8,400	8,200											
	30 × 100	23,930	10,400	10,200											
MCR-A5CⅡ 35	35 × 50	12,830	5,400	5,200	1,800 (1,700)	950	4,100	3,650	1,200	3,650	3,680	7,780	3,825	5,620	6,300
	35 × 65	16,430	6,900	6,700											
	35 × 80	19,430	8,400	8,200											
	35 × 100	23,930	10,400	10,200											
	35 × 120	27,930	12,400	12,200											

Notes: Dimensions, etc. may change depending on specifications. Please refer to delivered machine specifications for final specifications.
( ) dimensions for machines with 250 mm long extension head
Height increases 40 mm with the use of chemical anchors

Installation Drawing



This drawing show outline of standard machine. These dimensions will change if optional specifications are selected.
And depending on the destination country or region, full enclosure or safety fences are required.

Unit : mm

	Size	Q	R	S	T	U	V	W	X	Y	Z	AA
MCR-A5CⅡ 20	20 × 30	5,160	4,370	4,090	1,500	3,100	3,300	1,136	1,900	2,150	2,100	2,850
	20 × 40	6,310	5,520	5,240								
	20 × 50	7,360	6,570	6,290								
MCR-A5CⅡ 25	25 × 30	5,160	4,370	4,090	2,000	3,350	3,550	1,386	2,150	2,400	2,100	2,850
	25 × 40	6,310	5,520	5,240								
	25 × 50	7,360	6,570	6,290								
	25 × 65	9,160	8,370	8,090								
	25 × 80	10,660	9,870	9,590								
MCR-A5CⅡ 30	30 × 40	6,310	5,520	5,240	2,500	3,650	3,850	1,636	2,450	2,650	2,300	3,050
	30 × 50	7,360	6,570	6,290								
	30 × 65	9,160	8,370	8,090								
	30 × 80	10,660	9,870	9,590								
	30 × 100	12,910	12,120	11,840								
MCR-A5CⅡ 35	35 × 50	7,360	6,570	6,290	3,000	3,900	4,100	1,886	2,700	2,900	2,300	3,050
	35 × 65	9,160	8,370	8,090								
	35 × 80	10,660	9,870	9,590								
	35 × 100	12,910	12,120	11,840								
	35 × 120	14,910	14,120	13,840								

Note: Dimensions may change depending on coolant tank and other specifications.
Please refer to delivered machine specifications for final specifications.

MCR-A5CII

When using Okuma products, always read the safety precautions mentioned in the instruction manual and attached to the product.

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