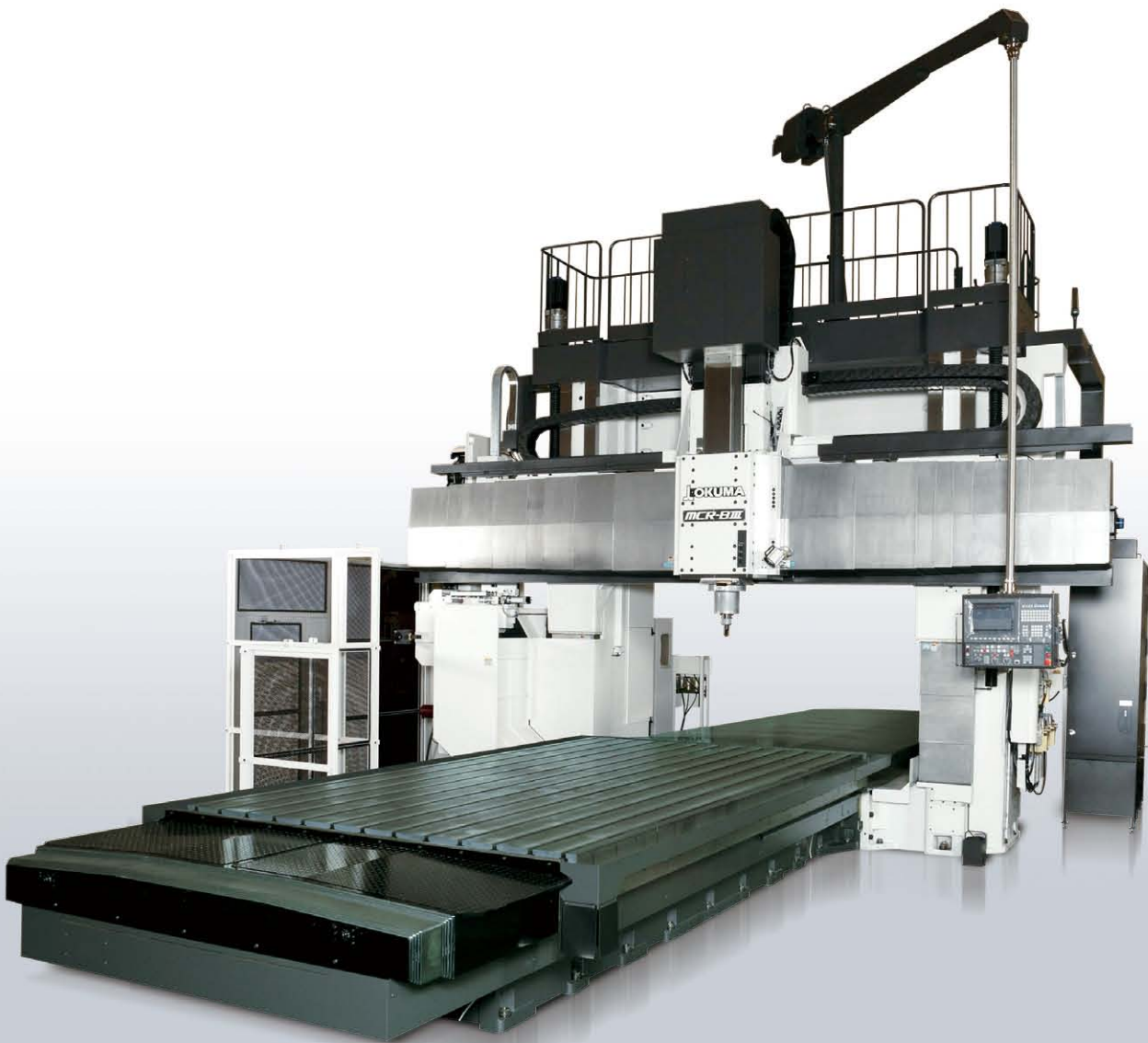
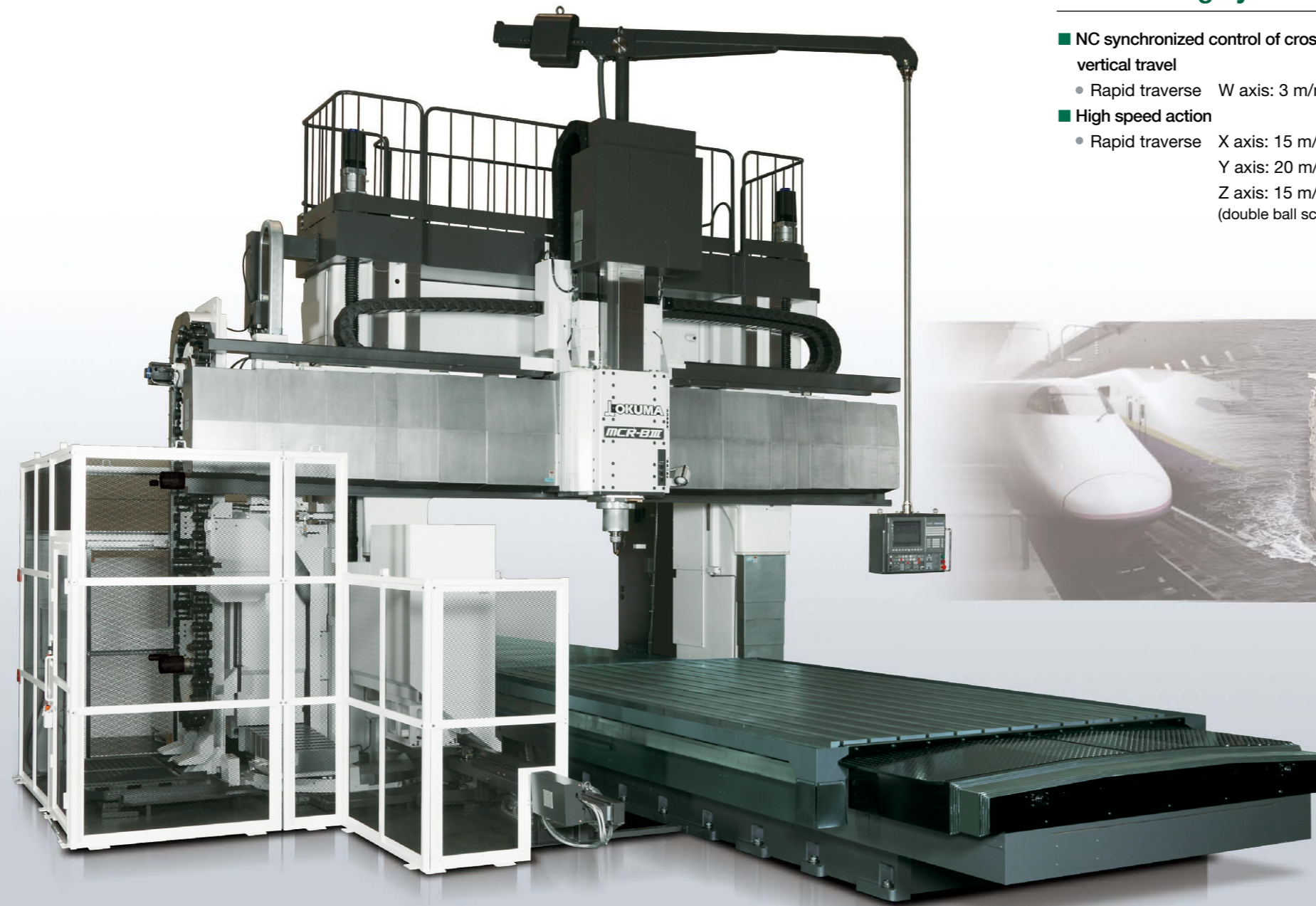


Double-Column Machining Center  
***MCR-BIII***  
[For 5-Sided Applications]





## A world-class double-column machining center



The most versatile machine for all machining processes, from heavy cutting to high-accuracy finishing for die/mold jobs and large complex parts.

### Fast and highly functional

- NC synchronized control of cross rail vertical travel
  - Rapid traverse W axis: 3 m/min
- High speed action
  - Rapid traverse X axis: 15 m/min
  - Y axis: 20 m/min
  - Z axis: 15 m/min (double ball screw)
- Lots of attachment heads
  - Wide variety of changeable attachment heads
  - Wide range of spindle speeds
  - Arbitrary angle slope machining 1° (0.0001° indexing: Optional)
- Super-NURBS\*
  - Required for streamlined die/mold machining (Optional)
  - X, Y, Z-axis feed cooling
  - Fast cutting feeds: 10 m/min (394 ipm) continuous

### Offering the ideal operating environment

- Full-enclosure shielding
- Chip conveyors running the full machine length

\* High Speed Contouring



# Okuma double-column machining centers with highly rigid and accurate construction

Big parts machining expertise. This machine was engineered with Okuma's field-proven experience of building in exceptional power, rigidity, and smooth operation to assure close tolerances over time and high production. The shudder free design means heavy-duty face milling and flawless fine boring—superb for fast and highly accurate machining of dies and molds. Parts that had to be cut on several machines can be finished on one MCR-BIII for dramatic savings in prep times for each process. And the ATC, AAC, and APC for continuous operations provide even greater productivity.

## Rock-solid double-column construction: Key to closer tolerances and greater rigidity

Heavy cutting of big parts at extremely high accuracies comes 'natural' to the set of stiff, square columns straddling the solid bed which supports the table. Virtually chatter-free rigidity under vertical, horizontal or torsional loads. Result: Okuma high accuracy.

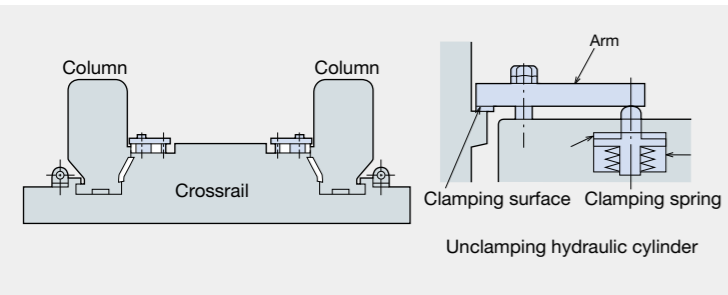
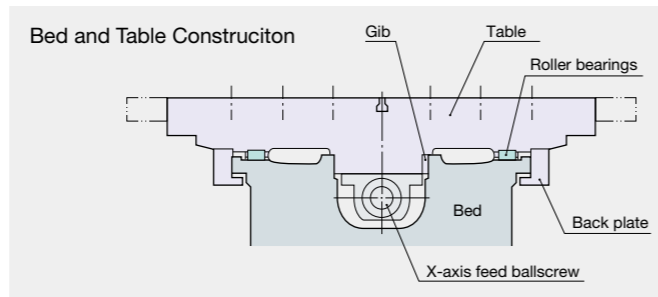


## Long crossrail guideways ensure high accuracy and long life.

The extra long upper and lower vertical guideways on the crossrail present a stable structure that ensures longer service life and rigidity. The wide spindlehead guides are highly rigid rectangular sliding faces.

## Slide/roller guideways

The table uses a combined roller pack and slideway system to absorb a high level of cutting vibrations. The roller bearings on the ways support the table and workpiece to enable smooth movement and high-accuracy positioning and maintain high accuracy over long periods.



## Powerful clamping

Powerful clamping devices that apply the principle of levers are used on crossrail clamps for powerful machining.

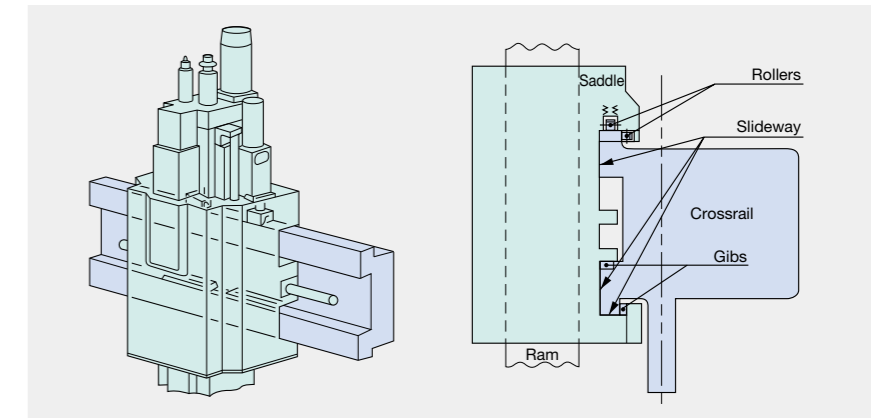
## A ram-type spindlehead for super rigidity

With a cross section of 350 x 350 mm (13.78 x 13.78 in.) there's enough rigidity in the square ram-type spindlehead to handle any horizontal cut.



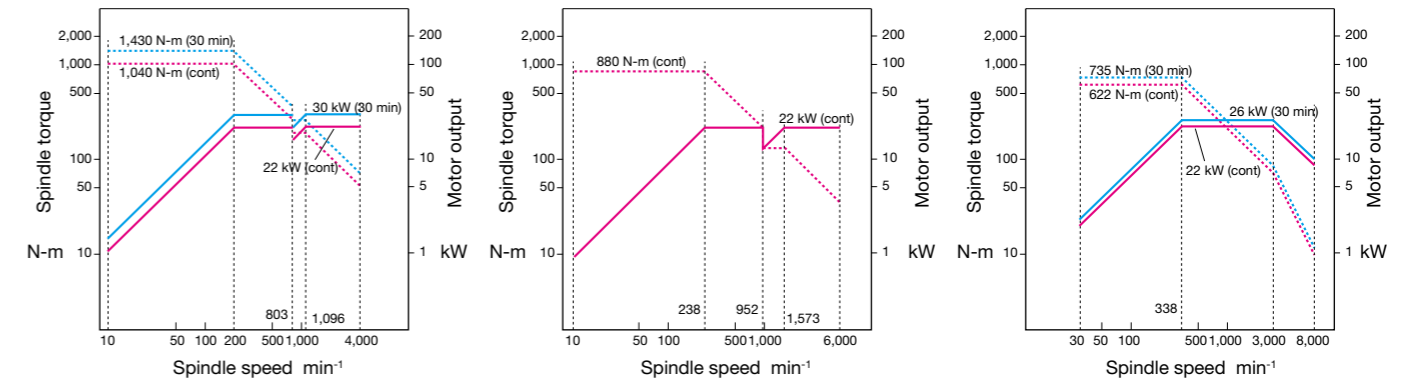
## Stability and high-accuracy from the spindlehead ways

Positioning is fast and smooth with the roller-mounted weight balancing system. The sliding surface absorbs cutting vibration, leading to high quality cut surfaces.

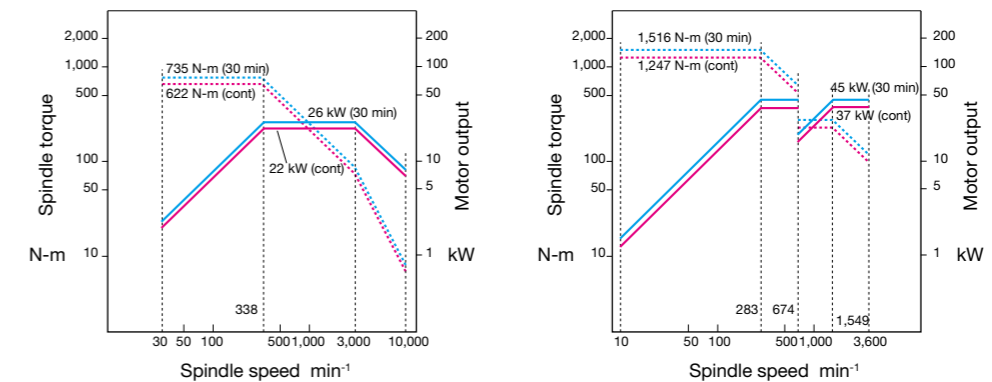


## Fast and powerful spindle for a larger machining range

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>Standard</li> <li>Spindle speed ..... 4,000 min<sup>-1</sup></li> <li>Max output ..... VAC 30/22 kW (30 min/cont)</li> <li>Max torque ..1,430/1,040 N-m (30 min/cont)</li> </ul> | <ul style="list-style-type: none"> <li>6,000 min<sup>-1</sup> (Optional)</li> <li>Spindle speed ..... 6,000 min<sup>-1</sup></li> <li>Max output ..... VAC 22 kW (cont)</li> <li>Max torque ..... 880 N-m (cont)</li> </ul> | <ul style="list-style-type: none"> <li>8,000 min<sup>-1</sup> (Optional)</li> <li>Spindle speed ..... 8,000 min<sup>-1</sup></li> <li>Max output ..VAC 26/22 kW (30 min/cont)</li> <li>Max torque ....735/622 N-m (30 min/cont)</li> </ul> |
|---|---|--|



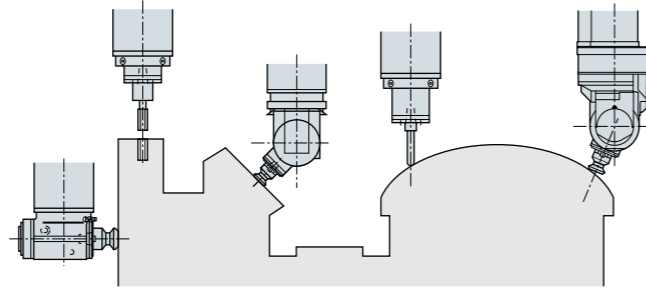
- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>10,000 min<sup>-1</sup> (Optional)</li> <li>Spindle speed .....10,000 min<sup>-1</sup></li> <li>Max output ..... VAC 26/22 kW (30 min/cont)</li> <li>Max torque .....735/622 N-m (30 min/cont)</li> </ul> | <ul style="list-style-type: none"> <li>3,600 min<sup>-1</sup> (Optional)</li> <li>Spindle speed ..... 3,600 min<sup>-1</sup></li> <li>Max output .....VAC 45/37 kW (30 min/cont)</li> <li>Max torque ...1,516/1,247 N-m (30 min/cont)</li> </ul> |
|--|--|



## Abundant range of attachment heads

All kinds of shapes can be machined under the best conditions by changing the abundant variation of attachments.

Many different processes can be performed continuously in auto operation with the auto tool changer (ATC) and auto attachment changer (AAC), greatly increasing productivity. For oil hole, air hole, thru-spindle coolant, oil mist, and dual contact specifications for each spindle (some specifications not available).

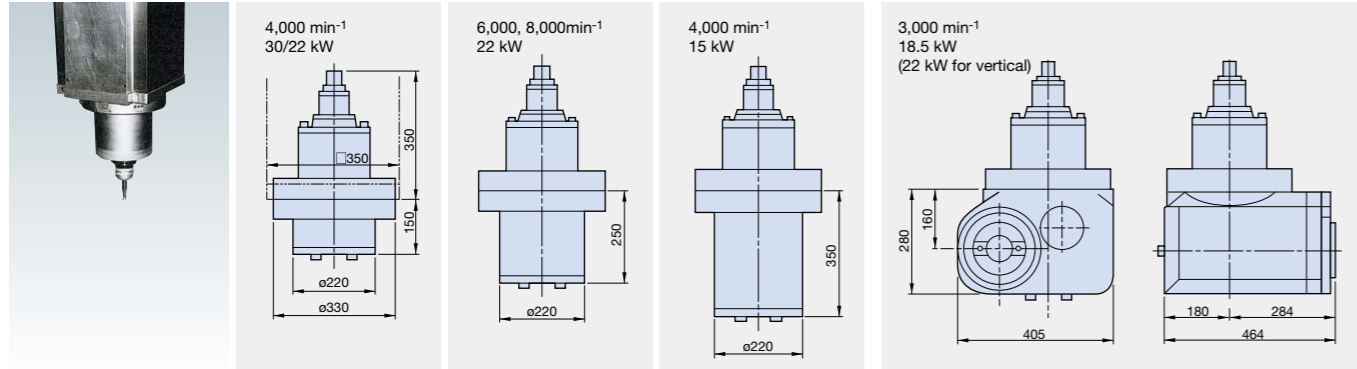


### Attachment head variations

Standard spindle	Extension head	L150 4,000 min <sup>-1</sup> (30 kW), L250 4,000 min <sup>-1</sup> (22 kW), L350 4,000 min <sup>-1</sup> (15 kW), L450 4,000 min <sup>-1</sup> (11 kW)	High speed spindle	Extension head	L150 6,000 min <sup>-1</sup> (22 kW), L250 6,000 min <sup>-1</sup> (22 kW), L350 6,000 min <sup>-1</sup> (15 kW), L250 8,000 min <sup>-1</sup> (22 kW), L250 10,000 min <sup>-1</sup> (22 kW)
	90° angular head	L150 3,000 min <sup>-1</sup> (22 kW), L250 3,000 min <sup>-1</sup> (22 kW), L470 2,000 min <sup>-1</sup> (11 kW)		90° angular head	L150 6,000 min <sup>-1</sup> (11 kW), L250 6,000 min <sup>-1</sup> (11 kW)
Special angular head	45° L410 2,000 min <sup>-1</sup> (22 kW), 30° L480 2,000 min <sup>-1</sup> (22 kW), 60° L320 2,000 min <sup>-1</sup> (22 kW) Ver/hor swivel head L280 3,000 min <sup>-1</sup> (22 kW)	Special angular head	30° L500 6,000 min <sup>-1</sup> (7.5 kW)		
Universal index head (B-/C-axis)	B-axis: 5° C-axis: 5° L550 2,000 min <sup>-1</sup> (15 kW), B-axis: 1° C-axis: 5° L610 2,000 min <sup>-1</sup> (10 kW), B-axis: 1° C-axis: 1° L655 2,000 min <sup>-1</sup> (10 kW)	Universal index head (B-/C-axis)	B-axis: 5° C-axis: 5° L610 6,000 min <sup>-1</sup> (7.5 kW), B-axis: 1° C-axis: 1° L655 6,000 min <sup>-1</sup> (7.5 kW), B-axis: 1° C-axis: 1° L715 8,000 min <sup>-1</sup> (10 kW)		
		NC-BC universal head	L830 6,000 min <sup>-1</sup> (26/22 kW) L890 10,000 min <sup>-1</sup> (15 kW)		

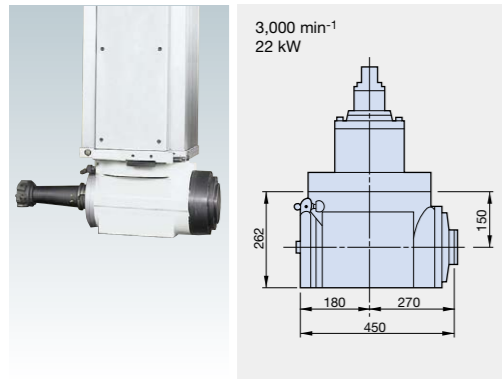
### Extension head

Effective in jobs from powerful surface cutting to machining of 3-dimensional shapes and cutting of tall workpieces



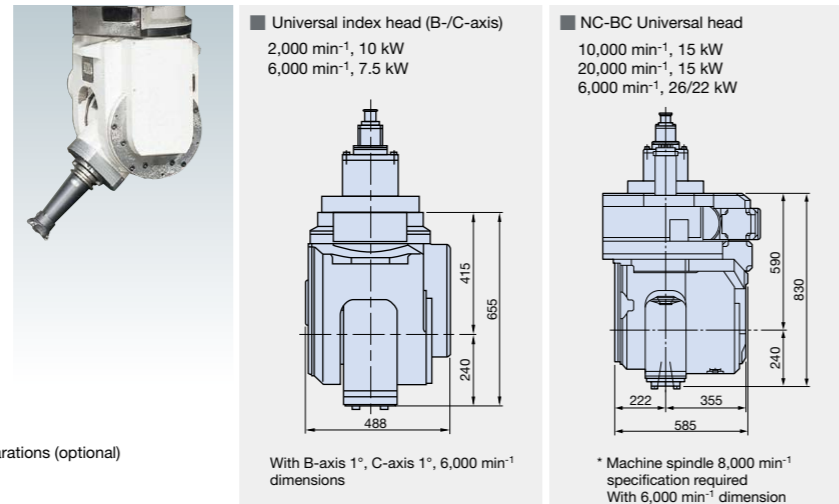
### 90° angular head

Effective in powerful side machining



### Universal index head (B-/C-axis), NC-BC Universal head

High quality, highly efficient machining from sloped surfaces and multi-sided machining to dies and other curved surfaces



\*Note: Please consult for applications which may have restrictions.

■ Coolant applications for above attachments:

(1) Coolant/air blow switchable (optional) (2) Oil-mist coolant preparations (optional)

■ Attachment cooler: Equipped with all above attachments (standard)

## Fast NC-ATC

One arm performs the changes for both the horizontal and vertical spindles. The next tool to be used, regardless of the spindle location, is brought to the standby position during cutting. This simultaneous operation greatly reduces tool-to-tool time.

An ATC can be used with a variety of attachments; extension head, a 90° angular head, a angular head, or the universal index head (B-/C-axis).



Extension head tool change



90° angular head tool change



Universal index head tool change

## Smaller and faster AAC (Automatic Attachment Changer)

Completely automate machining of multiple sides with a variety of attachment heads that mount automatically and accept ATC.



Extension head →  
90° angular attachment



Extension head →  
Universal index head (B-/C-axis)



Universal index head (B-/C-axis) →  
90° angular attachment



Auto attachment head change:  
Attachment station moves near the spindlehead below the crossrail, then attachments are changed.

The attachment head station is set at the rear of the ATC magazine behind the column



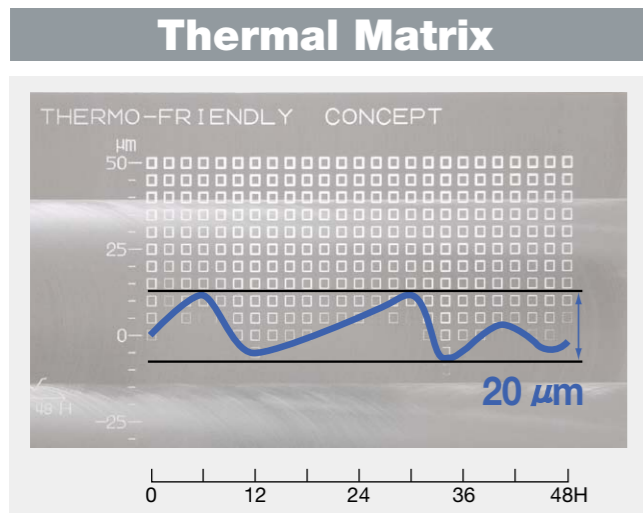
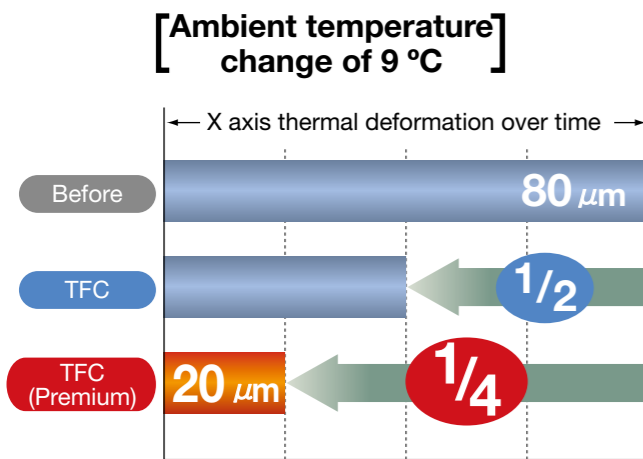


# Accurate control of simple thermal deformation

## Thermo-Friendly Concept

# Machining dimensional change over time $1/4$ (compared with conventional machines)

A new perspective of accepting changes in temperature in general temperature change environments  
 Thermo-Friendly Concept on double-column machining centers gives outstanding machining dimensional accuracies over time



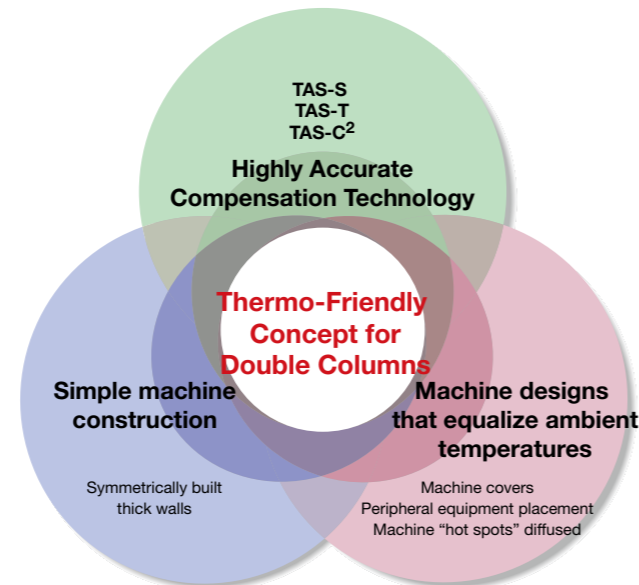
Machining dimensional changes over time reduced 1/4 - 1/3 compared with earlier machines even with room temperature change of 9 °C over 48 hours.

Thermal deformation causes dimensional changes on the micron level that are difficult to see with the naked eye.

The Thermal Matrix is a machining sample that allows you to see these changes.

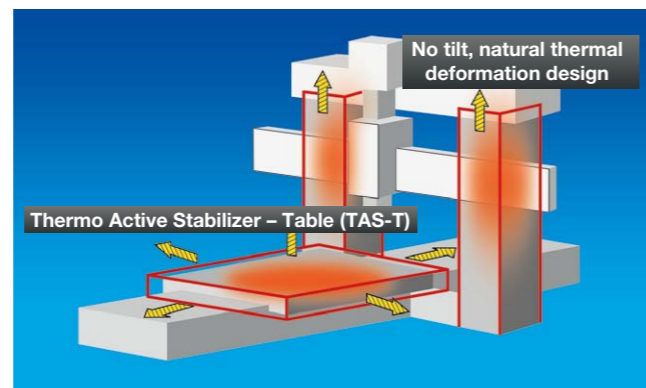
Machining is normally done under factory environments in which temperature changes (9 °C in 48 hours). In the Thermal Matrix, a grid in which the machining depth in a flat finished sample becomes 5 μm shallower is scored in vertical columns. Two hours later the same machining is repeated, with the direction shifted to horizontal rows. This machining is continued every 2 hours.

With machine thermal deformation (misalignment of position on X axis) from room temperature changes, the changing conditions between the tool edge and workpiece leave visible machining traces. Confirm the high performance of double-column machining centers equipped with the Thermo-Friendly Concept with your own eyes.



Super thermostability minimizes machining dimensional changes over time

- 1 Minimal thermal deformation
- 2 Manageable thermal deformation
- 3 Accurate compensation



### Thermo-Friendly Concept (Optional)

- Thermo Active Stabilizer — Spindle (TAS-S)  
Thermal deformation from spindle rotation controlled with high accuracy.
- Thermo Active Stabilizer — Table (TAS-T)  
Control of deformation from thermal expansion of table.

### Thermo-Friendly Premium Specs (Optional)

- Thermo Active Stabilizer — Spindle (TAS-S)
- Thermo Active Stabilizer — Construction for large machines (TAS-C<sup>2</sup>)

The machine is optimally controlled to maintain machining accuracies even when ambient temperatures change.

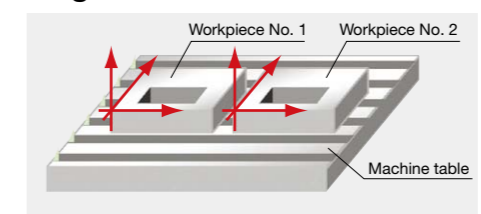
Note: XYZ axis AbsoScale specs required.

TAS-C<sup>2</sup>: Thermo Active Stabilizer-Construction (TAS-C) + TAS-T

### Example of parts machining (Application effect)

**Previous machine**  
Must find origin every time before machining multi-quantity parts (misalignment from workpiece origin: 100 μm)

**With Thermo-Friendly Premium**  
Confirmation only OK! (misalignment from workpiece origin: 20 μm)  
**Huge reduction in zero offsets**



Machine tool idling stop

### ECO Idling Stop

Only the necessary unit operates

### ECO Idling Stop

Accuracy ensured, cooler off  
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)

### ECO Power Monitor

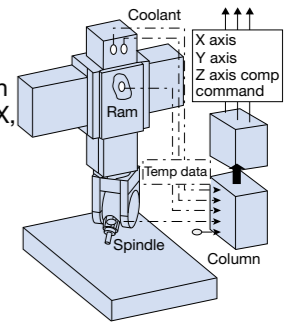
Power is shown individually for spindle, feed axes, and auxiliaries on the OSP operation screen. The energy-saving benefits from auxiliary equipment stopped with ECO Idling Stop can be confirmed on the spot.

### ECO suite provides a suite of energy-saving functions that can be used on machines

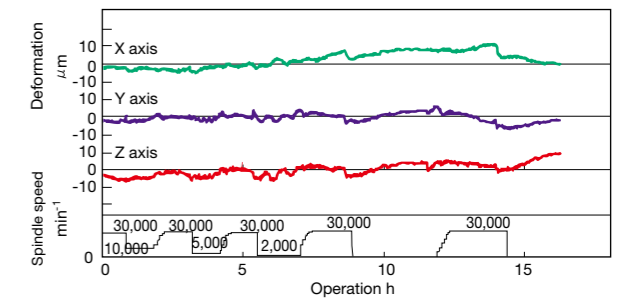
- Intermittent/continuous operation of chip conveyor and mist collector during operation—"ECO Operation" (Optional)
- Energy-saving hydraulic unit using servo control technology—"ECO Hydraulics" (Optional)

### TAS-S

- Control of thermal deformation on spindle with super speed (X, Y, and Z axes)
- Accurate control even when spindle speed frequently changes

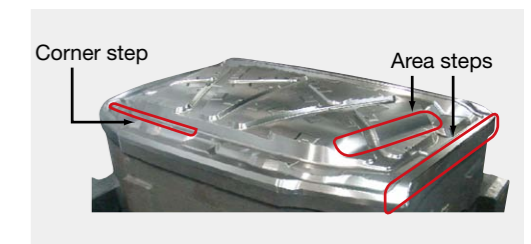


Actual results with TAS-S (30° angular head, 30,000 min<sup>-1</sup>)



### Example of die machining (Application effect)

By minimizing area and corner steps  
**Manual finishing time 1/3 to 1/2**

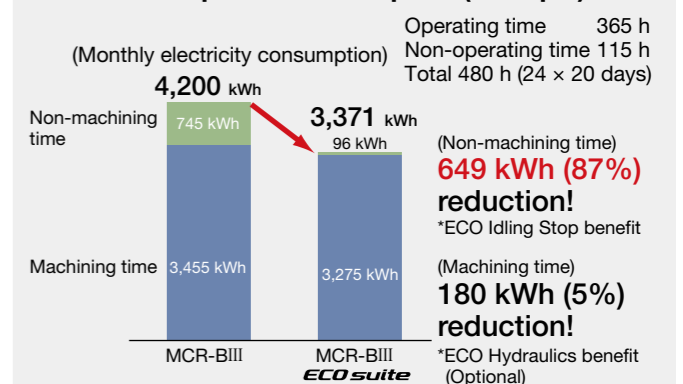


**ECO suite**

### ECO suite benefits

Electricity consumption during non-machining time greatly reduced with "ECO Idling Stop", which shuts down each piece of auxiliary equipment not in use.

### Reduction in power consumption (example)



\* Calculated from actual electricity consumption data. Electricity consumption will differ depending on machine specifications and usage status.

# Okuma Intelligent Technology exhibits powerful effect on machine shop floors

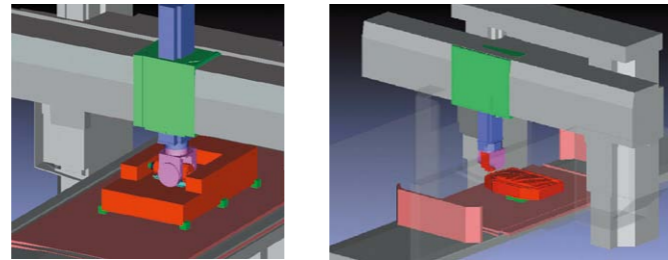


Collision Avoidance System

## Allowing operators to focus on making parts

### Collision Avoidance System (Optional)

NC controller (OSP) with 3D model data of machine components—workpiece, tool, fixture, spindlehead—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.



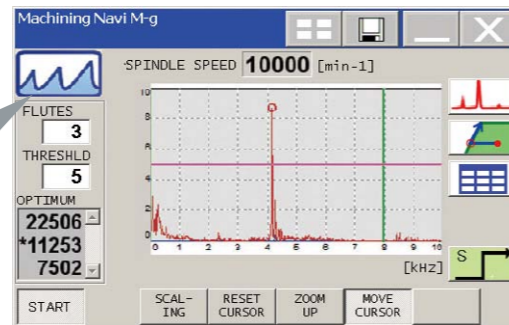
Machining Navi

## Maximizing machine tool performance

### Machining Navi M-gII (Optional)

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.

Machining Navi (OSP) provides the answer!

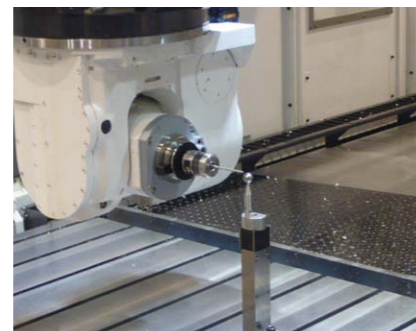


### Auto Attachment Head Compensation (Optional)

#### Rotation compension 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.



## Optimized Servo Control SERVO NAVI

Achieves long term accuracy and surface quality

### SERVONAVI AI (Automatic Identification)

#### Cycle time shortened with faster acceleration Work Weight Auto Setting

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.

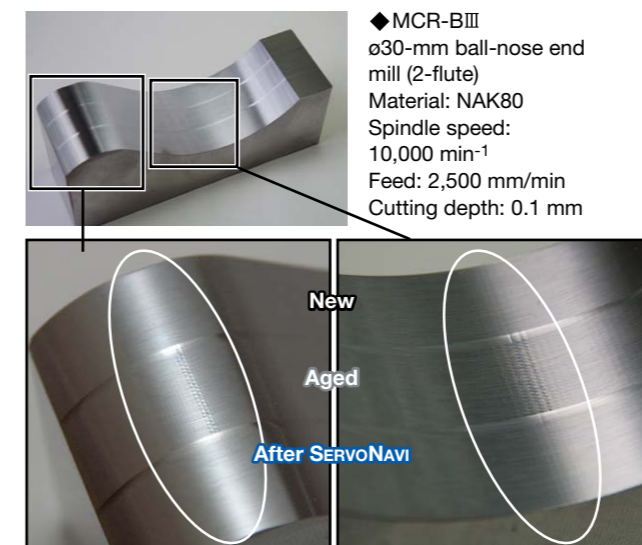
Work Weight Auto Setting estimates the weight of the workpiece and fixture on the table and automatically sets servo parameters, including acceleration, to the optimum values. Cycle times are shortened with no changes to machining accuracy.

### SERVONAVI SF (Surface Fine-tuning)

#### Maintains machining accuracy and surface quality Reversal Spike Auto Adjustment

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).

#### Comparison of machined surface quality



#### Crease marks eliminated

- With aging: Crease marks from axis reversal
- After SERVONAVI : Equivalent to the new (machine)

When SERVONAVI is used, crease marks during axis reversal can be eliminated. This makes it possible for users to eliminate these marks themselves when reversal spikes occur on machines after years of use.

Note: Okuma's AbsoScale offers considerable improvement of machining accuracy and surface quality. Without an AbsoScale, backlash compensation should be done when required.

#### Comparison of press die finishing times



#### Cycle time reduced 12%

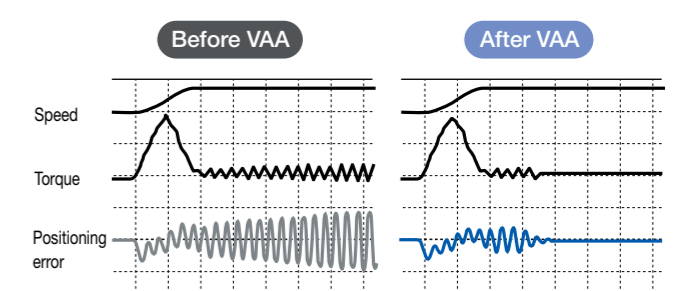
- Previous: About 13 h
- SERVONAVI: About 11.5 h

Simulated comparison. Especially beneficial for dies requiring sculptured surface shaping.

#### Contributes to longer machine life Vibration Auto Adjustment

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.

#### Comparison of following error during feed shaft movement



◆ MCR-B III (30 x 50) X-axis rapid traverse positioning time [rapid traverse: 15 m/min]

#### Vibration is controlled

Using Vibration Auto Adjustment can quickly eliminate the vibration to improve machined surface quality. This makes it possible for users themselves to resolve vibration or other problems when they occur. Machine life is also lengthened since the ball screw replacement cycle can be increased.

# Fast and accurate die/mold machining

## High-speed machining

- Spindle speed 10,000 to 30,000 min<sup>-1</sup>
- Continuous cutting feed speed Max 20 m/min
- High-speed NC Fast contouring Super-NURBS

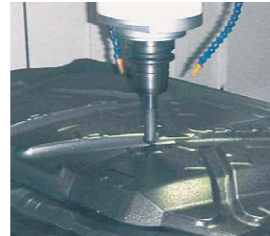
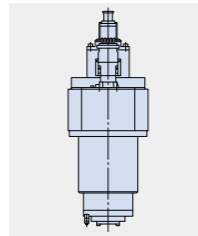
## High-accuracy machining

- Thermo-Friendly Premium Specs (Optional)
- SERVONAVI
- Auto Attachment Head Compensation
- Feed axis bending compensation

## Spindleheads with built-in attachment heads

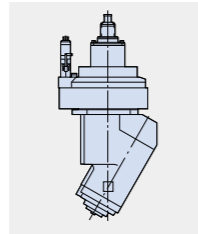
### ■ Extension head

15,000 min<sup>-1</sup>, 20,000 min<sup>-1</sup>  
11 kW, 15 kW



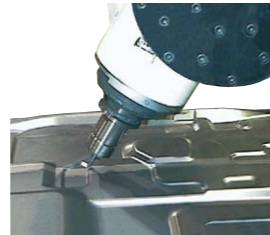
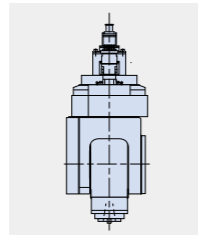
### ■ 30° angular head

10,000 min<sup>-1</sup>, 30,000 min<sup>-1</sup>  
15 kW, 11 kW



### ■ Universal index head

10,000 min<sup>-1</sup>, 20,000 min<sup>-1</sup>  
7.5 kW, 15 kW



## Press die machining

### ■ High speed, high accuracy machining of 3-dimensional die/mold shapes with B, C axis universal index head and NC-BC universal head

- Workpieces Auto press die (automobile hood interior)  
Material: FC250  
Size: 1,700 x 1,200 x 600
- Cutting conditions Spindle speed 20,000 min<sup>-1</sup>  
Cutting feedrate 20,000 mm/min  
ø30 CBN ball-nose end mill
- Cycle time About 9 hours

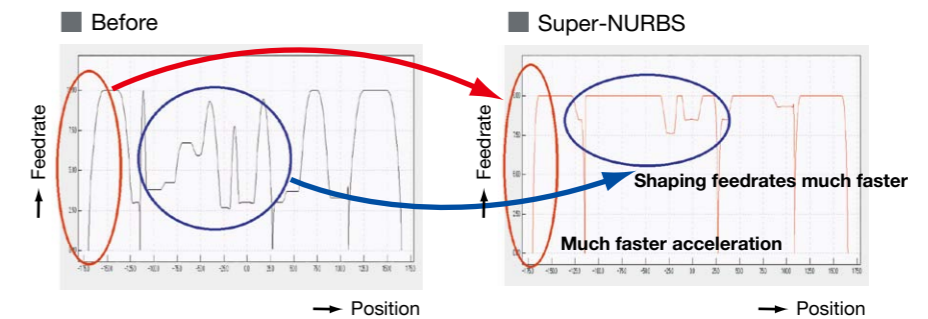


**Contouring with Super-NURBS  
High Speed Contouring**

## A full selection of die-making software

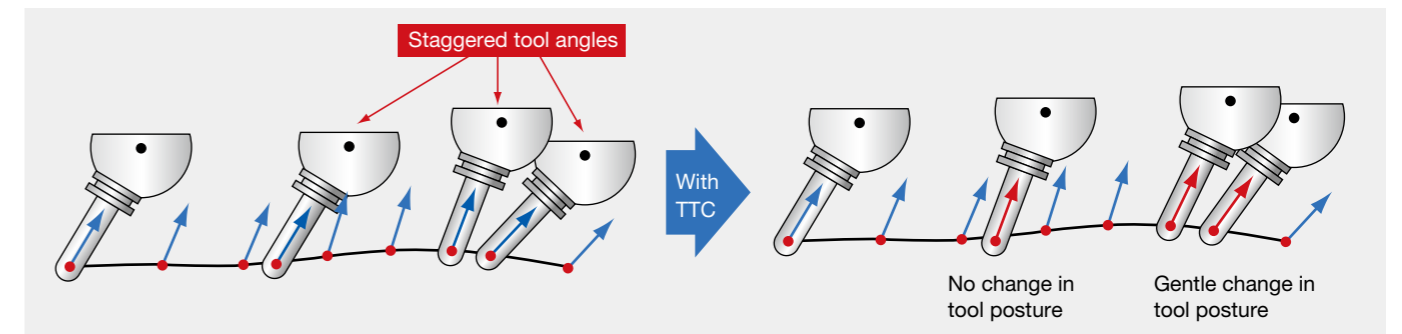
### High Speed Contouring Super-NURBS (Optional)

This is a high-speed NC function for high accuracy, high quality, and high speed machining of all types of curved surface with "sculptured-surface adaptive acceleration control".



### Simultaneous 5-Axis Tool Tilt Compensation (Optional)

The tool angle on a workpiece (tool tilt) in 5-axis machining will change on a waving surface. CAM processing errors will cause the tool to stagger with unnecessary accel/decel and reverse angles during axis feed. Simul 5-Axis TTC will keep feedrates steady with a smooth sequence of commands to automatically correct tool tilt angles-resulting in shorter cycle times and smoother surface finishes.

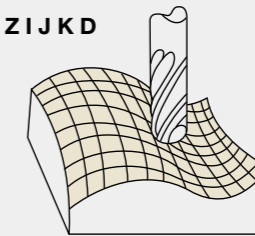


### Parameter F1 digit (Optional)

When it is difficult to program feedrates for die-making and you need different feedrates for specific cutting patterns, you can simply program using feedrate numbers. Choose either the rotary switch or the keyboard type F1 parameters.

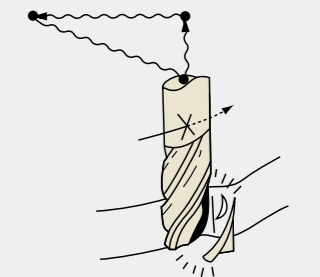
### 3-D tool compensation (Optional)

G44 X Y Z I J K D



See 3-dimensional tool offsets by commanding the I, J, and K offset directions with the coordinates.

### Mid-block restart (Optional)

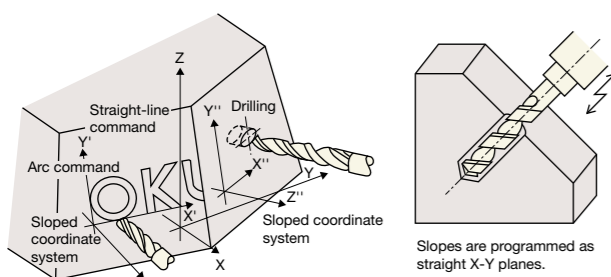
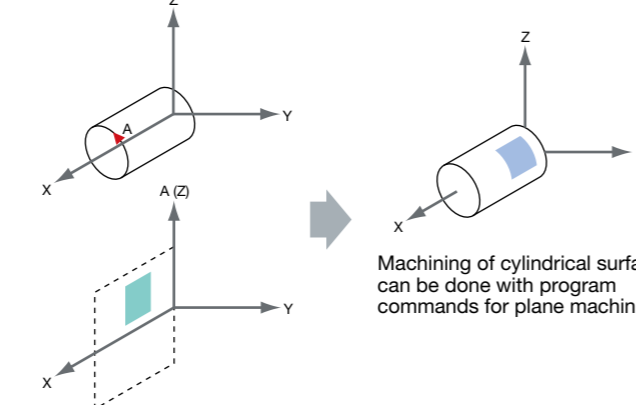


Resume cutting either from the beginning or midway into a desired block.

## Many functions for a wider range of applications

The Okuma NC makes it all possible. Things impossible on non-NC machines like User Task for example, are programmable like on a PC; making for a tremendous range of machining center applications.

Geometric change (Optional)	User Tasks	DNC Linkage (Optional)
<p><b>1 Programmable mirror image</b> Mirror image operations can be command programmable as well as handled by switching.</p> <p><b>2 Drawing enlarge/reduce</b> Using the points commanded by local coordinates, the drawings produced by a part program can be enlarged or reduced with this function.</p>	<p>Variables can be used with arithmetic and branch commands to create a program. Then similar jobs can be patternized. And math functions with equations can be made for profiling and 3-D geometric applications. (Additional common variables [Std 200 increased to 1000 sets], and I/O variables are optional.)</p>	<p>More packages are ready to help you with jobs like transferring NC programs to building an FMS. These are online machining management software applications that collect and control the required data. Ethernet and RS-232-C interfacing with the host computer allows for remote controlled operations.</p>

Slope machining (Optional)	Cylindrical side machining (Optional)
<p>The slope surface coordinate system lets you use coordinate conversion 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 coordinate conversion system can be used to adjust the tool play.</p>  <p>Slopes are programmed as straight X-Y planes.</p>	<p>This is machining on cylindrical side with a regular plane machining image for flat surfaces that displace the rotating axis on a straight axis and develop to cylindrical surfaces.</p>  <p>Flat surface expands to cylindrical surface</p>

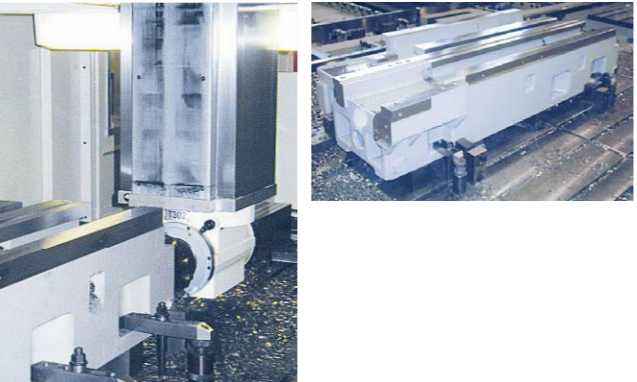
### Examples of heavy cutting

Attachment	Material	Tool	Spindle speed min	Cutting Speed m/min (fpm)	Cutting Width mm (in.)	Cutting Depth mm (in.)	Feedrate		Removal Rate cm <sup>3</sup> /min (in <sup>3</sup> /min)	Power kW (hp)	Ram Extension mm (in.)
							mm/blade (in/blade)	mm/min (ipm)			
Extension head L150	S45C	ø200 (ø7.87) face mill	300	188 (617)	140 (5.51)	5 (0.20)	0.3 (0.012)	900 (35.43)	630 (38.44)	24 (30)	780 (30.71)
		ø63 (ø2.48) end mill	400	79 (259)	63 (2.48)	50 (1.97)	0.11 (0.0043)	1,170 (46.06)	819 (49.98)	30 (40)	500 (19.69)
	FC300	ø200 (ø7.87) face mill	240	150 (492)	140 (5.51)	8 (0.31)	0.32 (0.0126)	756 (29.76)	847 (51.69)	28 (37)	500 (19.69)
		ø63 (ø2.48) end mill	400	79 (259)	63 (2.48)	50 (1.97)	0.14 (0.0055)	252 (9.92)	794 (48.45)	26 (35)	500 (19.69)
Standard 90° angular head	S45C	ø200 (ø7.87) face mill	300	188 (617)	140 (5.51)	5 (0.20)	0.27 (0.0106)	810 (31.89)	567 (34.60)	22 (29)	600 to 800 (23.62 to 31.50)
		ø63 (ø2.48) end mill	400	79 (259)	63 (2.48)	50 (1.97)	0.08 (0.0031)	128 (5.04)	403 (24.59)	20 (27)	700 (27.56)
	FC300	ø200 (ø7.87) face mill	240	150 (492)	140 (5.51)	8 (0.31)	0.24 (0.0094)	576 (22.68)	645 (39.36)	22 (29)	700 to 800 (23.62 to 31.50)
		ø63 (ø2.48) end mill	400	79 (259)	31.5 (1.24)	50 (1.97)	0.21 (0.0083)	336 (13.23)	529 (32.28)	21 (28)	750 (29.53)

Note: The above are actual examples. Your results may vary due to differences in specifications, tooling and cutting conditions.

### Machining example <machine tool component>

Machine major specs	4000 min <sup>-1</sup> , AAC: 3-st, ATC: 120 tools, 2-pallet APC
Part names	Lathe bed, machining center column
Part material	FC250
Part dimensions	Lathe bed: 1,150 x 900 x 3,000 (45 x 35 x 118) MC column: 900 x 1,000 x 1,700 (35 x 39 x 67)



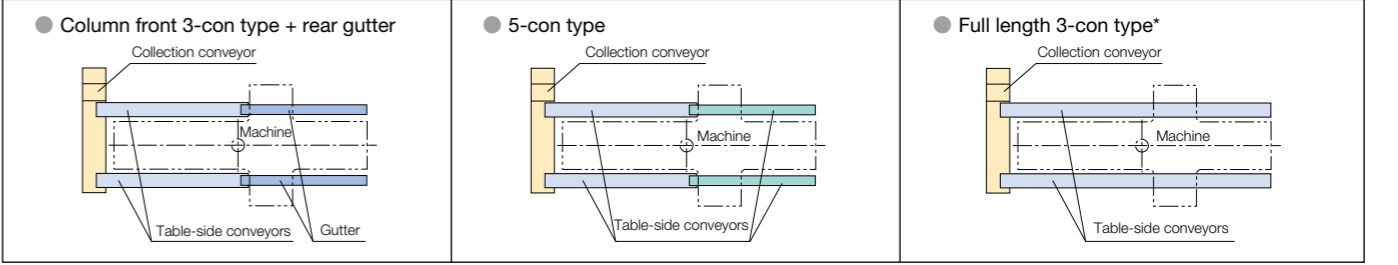
### Recommended specifications for chip disposal

○: Recommended specifications △: Optional specifications

Material		Steel	FC	Aluminum Nonferrous metal	Mixed (general use)
Chip shape					
In-machine	Hinge type	○	○	○	○
Off-machine (Optional)	Hinge type	○	○ (Dry)	—	△ (*2)
	Scraper type	—	○ (Wet)	—	—
	Magnet scraper type	—	○ (Wet)	—	—
	Hinge + scraper (with drum filter)	△ (*1)	—	○	○ (*3)

\*1. When there are many fine chips \*2. When there are few fine chips \*3. With magnets Please contact an Okuma sales representative for details.

### Example of conveyor placement



\* For full length 3-conveyors, the conveyor width becomes narrower—thus recommended for aluminum.

### Collection conveyor chip discharge (lift-up)

Name	Hinge type	Scraper type	Magnet scraper type	Hinge + scraper type (with drum filter)
Shape				

## Standard Accessories

Spindle speed	10 to 4,000 min <sup>-1</sup>	Chip air blower (blast)	
Main motor	VAC 30/22 kW (30 min/cont)	3-color status indicator	LED signal tower type
Spindle and spindle gear box cooler	Oil controller	Table shape	T slot specifications 24H7
Z axis double ball screw		Tool kit	
Hydraulic unit		Tapered cleaning rod	
ATC air blower		ATC magazine safety fence	
Coolant system		Tool release lever	
Coolant tank	500 L	Tool box	
Coolant nozzle	Eyeball nozzle	[Elevating crossrail]	
Coolant pump	0.75 kW	Crossrail screw cover	
Ladder and platform		Column guideway cover	
Door interlock		Automatic crossrail positioning	W axis NC (synchronized) W axis AbsoScale detection
Work lamp	LED	Elevating pendant arm	

## Kit Specifications

Specs	Kit	Elevating Crossrail				Fixed Crossrail			
		S	A	P	AP	S	A	P	AP
Spindlehead ATC		●	●	●	●	●	●	●	●
Spindlehead auto clamping/indexing (5° orientation)		—	●	—	●	—	●	—	●
Spindlehead manual tool changer		●	●	●	●	●	●	●	●
Auto attachment changer (AAC)		—	●	—	●	—	●	—	●
Coolant lines for spindlehead		●	●	●	●	●	●	●	●
ATC tool magazine capacity	32 tools	●	—	●	—	●	—	●	—
	50 tools	—	●	—	●	—	●	—	●
Auto pallet changer		—	—	●	—	—	—	●	—
2-pallet side loading system (X-axis travel extended 1.5 m)		—	—	●	—	—	—	●	—

## Optional Accessories and Optional Specifications

Item	Type/Dimensions/Remarks	Item	Type/Dimensions/Remarks
Optional spindle speed	10 to 3,600 min <sup>-1</sup> (45/37 kW), 10 to 6,000 min <sup>-1</sup> (22 kW), 30 to 8,000 min <sup>-1</sup> (26/22 kW), 30 to 10,000 min <sup>-1</sup> (26/22 kW)	Attachment head coolant	Eyeball coolant nozzle (air blower (blast) switchable) with oil-hole tool supply block Thru-spindle coolant* (extension, 90° angular only)
AbsoScale detection	X, Y axes; X, Y, Z axes	NC rotary table	NC rotary table, Inclined rotary table
Thermo-Friendly Concept	TAS-S, TAS-T	In-machine chip discharge	Consult for type and preparations (see page 12 for details)
Thermo-Friendly Premium	AbsoScale detection required	Off machine chip discharge	
Optional ATC tool magazine capacity	50, 72, 100, 120, 180 tools	Chip buckets	
Tool shank/pull stud configuration	Other than standard BT50 + MAS type 2	Work lamp (LED)	Additional spotlight
Optional table T-slots	20H7, 22H7, 28H7	Operation end buzzer	
Additional table cross slot	Consult for width x depth and pitch	Hour meters (2)	Power ON time (w/o reset) Cutting (G1, G2, G3) time (with reset)
Optional table shapes	Please consult	Automatic power shutoff device	Movement after M2, M30 execution
Auto pallet changer (APC)	2-pallet front shuttle 2-pallet side shuttle	CNC cabinet lamp	
Coolant system	Tanks: 1,000 L, 1,500 L, 2,000 L	Auto zero offset, auto gauging	Touch probe system
Tanks, pump motors	Pump 1.1 kW	Auto tool length compensation	Touch sensor, laser sensor
Sub-table	Please consult	Tool breakage detection (w/ auto tool length compensation)	w/ T-command spare tool change
Coolant heater/cooler		Tool life management	w/ T-command spare tool change
Chip air blower (blast)	Switch w/ coolant	Overload monitor (w/ feed adaptive control)	w/ T-command spare tool change
Oil mist coolant	Eyeball nozzle type	Machine foundation pit work	Please consult
Shower coolant system		Custom paint color	Please consult
Oil-hole coolant system (ATC OK)	Simple, high/low pressure switch (2 MPa)	Full-enclosure shielding	Without ceiling With ceiling (auto open/close)
Oil skimmer		Mist collector	
Workpiece washing gun		High column	Please consult (200, 400, 600, 800 mm)
Foundation methods	No foundation bolts	Pulse handle with liquid crystal	
Auto attaching attachments heads	Extension head 90° angular head, etc. (see page 5 for details)		
Auto attachment changer (AAC)	(see kit specs)		
ATC to attachment head	(see kit specs)		

\* Dedicated Okuma pull stud required for thru-spindle coolant

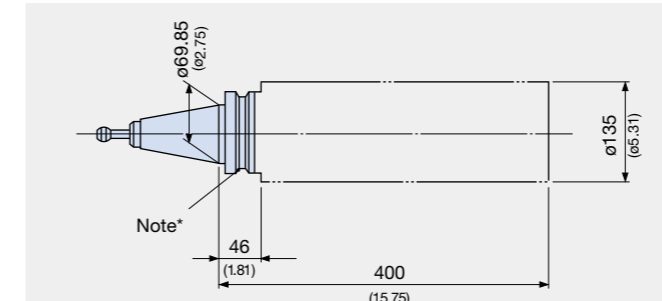
## ATC tooling

MAS BT50 tool shank and MAS 2 pull stud can be used. Please consult for other tooling standards.

### [Maximum Tool Dimensions]

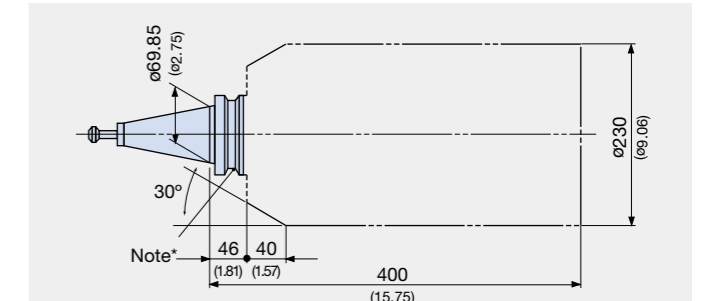
#### ● Maximum adjacent tool size

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.

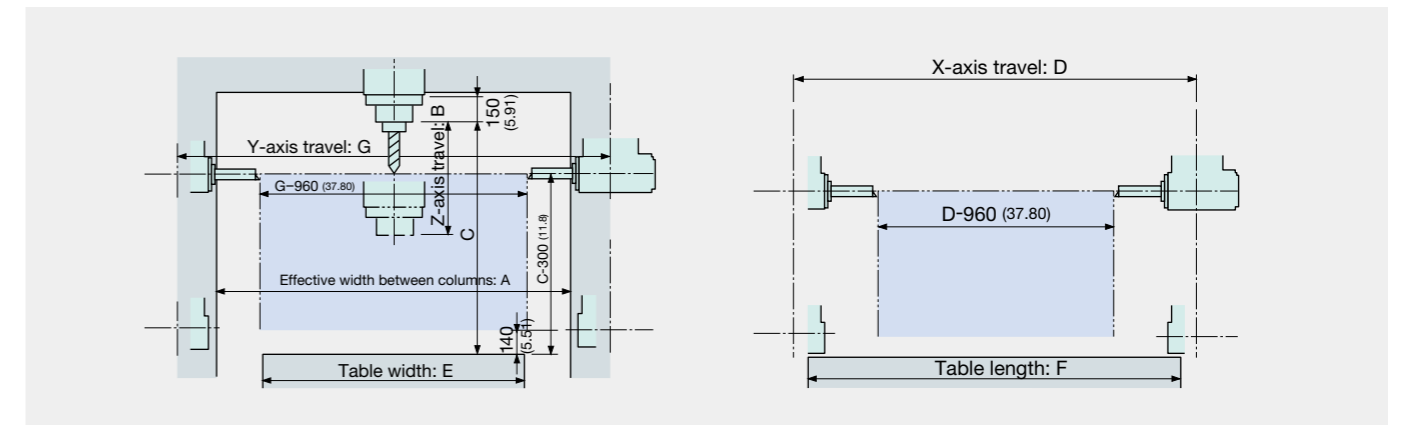


\* Note: Commercially available milling chucks may interfere with ATC arm and other tools. Prior to use, confirm size dimensions with the tool manufacturer (brochure, etc).

#### ● Maximum tool mass moment: 29.4 N-m (21.6 ft-lbf)

Tool weight (including shank) must be under 25 kg (55 lb). The center of gravity should be within 120 mm (4.72 in.) from the gauge line (at ø69.85 mm [ø2.75 in.]).

## Working ranges [When using an L150 extension head, a 90° angular head, and a 300-mm (11.81 in.) tool]



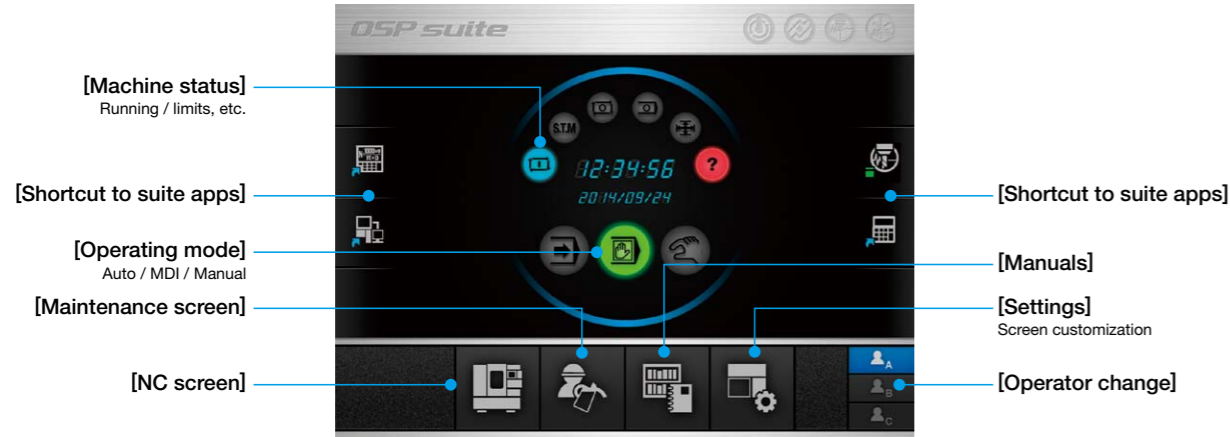
## Table dimensions

Type	A	B	C	D	E	F	G	H	I	J
20 x 30				3,000 (118.11)	1,500 (59.06)	2,800 (110.24)	2,700 (106.30)	4 (0.16)	140 (5.51)	2 (0.08)
20 x 40	2,050 (80.71)	800 (31.50)	1,350 (53.15)	4,000 (157.48)		3,800 (149.61)				
20 x 50				5,000 (196.85)		4,800 (188.98)				
25 x 40				4,000 (157.48)		3,800 (149.61)				
25 x 50	2,550 (100.39)	800 (31.50)	1,650 (64.96)	5,000 (196.85)	2,000 (78.74)	4,800 (188.98)	3,200 (125.98)	8 (0.31)	130 (5.12)	1 (0.04)
25 x 65				6,500 (255.91)		6,300 (248.03)				
25 x 80				8,000 (314.96)		7,800 (307.09)				
30 x 50				5,000 (196.85)		4,800 (188.98)				
30 x 65	3,050 (120.08)	800 (31.50)	1,850 (72.83)	6,500 (255.91)	2,500 (98.43)	6,300 (248.03)	3,700 (145.67)	10 (0.39)	180 (7.09)	1 (0.04)
30 x 80				8,000 (314.96)		7,800 (307.09)				
30 x 100				10,000 (393.70)		9,800 (385.83)				
30 x 120				12,000 (472.44)		11,800 (464.57)				
35 x 50				5,000 (196.85)		4,800 (188.98)				
35 x 65	3,550 (139.76)	800 (31.50)	1,800 (70.87)	6,500 (255.91)	3,000 (118.11)	6,300 (248.03)	4,200 (165.35)	14 (0.55)	0	0
35 x 80				8,000 (314.96)		7,800 (307.09)				
35 x 100				10,000 (393.70)		9,800 (385.83)				
35 x 120				12,000 (472.44)		11,800 (464.57)				

[ ] for MCR-BIII 35E machine

# The Next-Generation Intelligent CNC *OSP suite* *OSP-P300M*

Increased status visibility and digitization of machining floor production instructions, setup information, machining and operational status, machine maintenance information and more.  
Intelligent, fast machining and efficient monozukuri achieved with operation on a new dimension.



## Suite apps

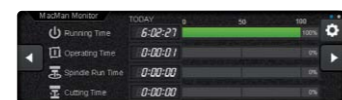
In addition to Okuma's Intelligent Technology, a rich array of applications is available for visualization and digitization of information needed on shop floors to support high-level *monozukuri*.

PERIODICAL MAINTENANCE		DAILY INSPECTION		CHANGE MODE		
NO	ITEM	WORK	PROGRESS	REMAIN	INFO	EXECUTE
310	Ceases for tool clamping unit (HSQ)	Supply	5%			
311	Packing in tool clamping unit (HSQ)	Inspection	50%			
320	3-axis contour lubrication oil	Replace	100%			
411	Hydraulic unit oil	Replace	0%			
412	Hydraulic unit line filter	Cleaning	1%			
413	Hydraulic unit line filter	Replace	50%			
421	Oil for SPCL cooling unit	Replace	100%			

Maintenance monitor that displays daily and regular check items



Actual Load



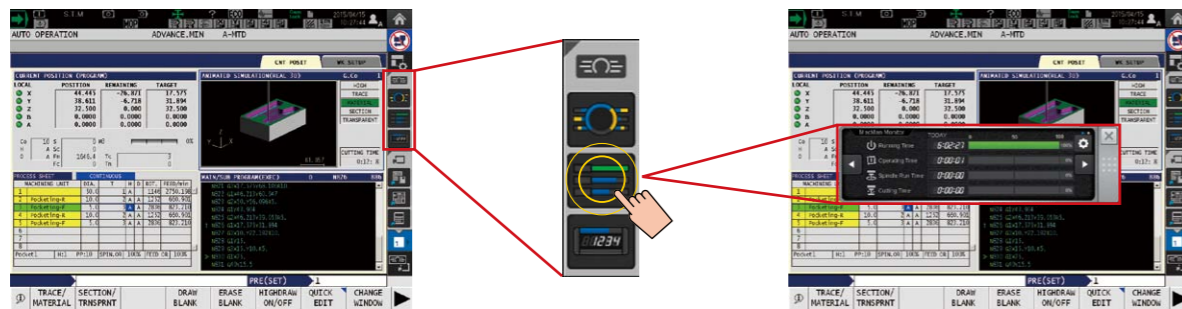
MacMan Monitor



Tool data

## Suite operation

A highly reliable touch panel suited to shop floors is used. Suite apps can be started by touching a function key icon on the right side of the screen. They are then displayed in a pop-up window. The icon layout is customizable. Suite apps can be accessed with one touch according to the desired phase.



## 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 inputs	8-digit decimal, ±99999.999 to 0.001 mm (±3937.0078 to 0.0001 in.), 0.001° Decimal: 1 μm, 10 μm, 1 mm (0.0001, 1 in.) (1°, 0.01°, 0.001°)
	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 + touch panel operations
	Self-diagnostics	Automatic diagnostics and display of program, operation, machine, and NC system problems
	Programming	Program capacity
Program operations		Program management, editing, multitasking, scheduled program, fixed cycle, G-/M-code macros, arithmetic, logic statements, math functions, variables, branch commands, coordinate calculate, area calculate, coordinate convert, programming help
Operations	Suite apps	Applications to visualize and digitize information needed on the shop floor
	Suite operation	Highly reliable touch panel suited to shop floors. One-touch access to suite apps.
	Easy Operation	"Single-mode operation" to complete a series of operations
	Machine operations	MDI, manual (rapid traverse, manual cutting feed, pulse handle), load meter, operation help, alarm help, sequence return, manual interrupt/auto return, pulse handle overlap, parameter I/O, PLC monitor, alignment compensation
	MacMan	Machining management: machining results, machine utilization, fault data compile & report, external output
Communications / Networking		USB (2 ports), Ethernet, RS-232-C interface (1 channel)
High speed/accuracy specs		Hi-Cut Pro, pitch error compensation, Hi-G control, SERVONAVI
Energy-saving function	ECO suite	ECO Idling Stop *1, ECO Power Monitor *2

\*1. Spindle cooler Idling Stop is used on TAS-S machines.

\*2. The power display shows estimated values. When precise power values are needed, select the on-machine wattmeter option.

## Optional Specifications

Item	Kit specifications	NML		3D		One-Touch	
		E	D	E	D	E	D
<b>Interactive functions</b>							
Advanced One-Touch IGF-M							
I-MAP							
<b>Programming</b>							
Auto scheduled program update							
G-/M-code macros							
Common variables	1,000 sets (Std: 200)						
Program branch 2 sets	2,000 sets						
Program notes (MSG)							
Coordinate system selection	100 sets (Std: 20)						
Helical cutting (Within 360 degrees)							
3-D circular interpolation							
Synchronized Tapping II							
Arbitrary angle chamfering							
Cylindrical side facing							
Slope machining							
Permissible spindle speed setting							
F1-digit feed	4 sets, 8 sets, parameter						
Programmable travel limits (G22, G23)							
Skip (G31)							
Axis naming (G14)							
3-D tool compensation							
Tool wear compensation							
Drawing conversion	Programmable mirror image (G62)						
	Enlarge/reduce (G50, G51)						
User task 2	I/O variables, 16 each						
Tape conversion*							
<b>Monitoring</b>							
Real 3-D simulation							
Simple load monitor	Spindle overload monitor						
NC operation monitor	Hour count-up, work counter						
Hour meters	Power ON, spindle run-time NC ON time, machining						
Operation end buzze	With M02, M30, and END commands						
Work counter	M02, M30 counts						
MOP-TOOL	Adaptive control, overload monitor						
Tool life management	Cutting time and number of tools						
<b>Energy-saving function ECO suite</b>							
ECO Operation							
ECO Power Monitor	On-machine wattmeter						
Energy-saving hydraulic unit	Inverter system ECO Hydraulic						

Note 1. NML: Normal, 3D: 3D simulation, E: Economy, D: Deluxe

Note 2. ★ Technical consultation needed for specifications

Item	Kit specifications	NML		3D		One-Touch	
		E	D	E	D	E	D
<b>Gauging</b>							
Auto gauging	Touch probe (G31)						
Auto zero offset	Includes auto gauging						
Tool breakage detection	Touch sensor (G31) Includes tool offset						
Gauging data printout	File output						
Manual gauging (w/o sensor)							
Interactive gauging (Touch setter, touch-probe required)							
<b>External I/O, Communications</b>							
Additional RS-232-C channels (Std: 1)							
DNC-T3							
DNC-B (232C-Ethernet converter used on OSP side)							
DNC-DT							
DNC-C/Ethernet							
Additional USB (2 ports are standard)							
<b>Automated/attended operation</b>							
Auto power shut-off	With M02 and END alarms Workpiece preps done → off						
Warm-up (by calendar timer)							
External program selection	Button type, rotary switch BCD (2-digit, 4-digit)						
Cycle time reduction (Reduced cycle time)							
<b>High-speed, high-precision</b>							
Thermo-Friendly Concept	TAS-S, TAS-T						
Thermo-Friendly Premium	TAS-S Thermo Active Stabilizer – Spindle TAS-C <sup>2</sup> Thermo Active Stabilizer – Construction for large machines						
AbsoScale detection	X, Y-axis, X, Y, Z-axis						
Straightness compensation							
0.1 μm control (straight axis command unit)							
Super-NURBS	Type A, Type B						
Simultaneous 5-axis kit							
<b>Operations</b>							
Control cabinet lamp							
Circuit breaker							
Sequence operation	Sequence stop						
Sequence restart (standard)	Mid-block restart						
Pulse handles	2, 3 (1 standard)						
LCD pulse handle							
External M signals	4, 8						
Collision Avoidance System							
Machining Navi M-gII (cutting condition search function)							
Excel machining							
Block skip	3 sets						
Feed axis retract							
OSP-VPS (virus protection system)							

**Machine Specifications (Elevating Crossrail)**

Item	Unit	MCR-BIII20E			MCR-BIII25E				MCR-BIII30E					MCR-BIII35E					
		20 x 30	20 x 40	20 x 50	25 x 40	25 x 50	25 x 65	25 x 80	30 x 50	30 x 65	30 x 80	30 x 100	30 x 120	35 x 50	35 x 65	35 x 80	35 x 100	35 x 120	
<b>● Travel</b>																			
X-axis (table front / back)	mm (in.)	3,000 (118.11)	4,000 (157.48)	5,000 (196.85)	4,000 (157.48)	5,000 (196.85)	6,500 (255.91)	8,000 (314.96)	5,000 (196.85)	6,500 (255.91)	8,000 (314.96)	10,000 (393.70)	12,000 (472.44)	5,000 (196.85)	6,500 (255.91)	8,000 (314.96)	10,000 (393.70)	12,000 (472.44)	
Y-axis (spindlehead horizontal)	mm (in.)	2,700 (106.3)			3,200 (125.98)				3,700 (145.67)					4,200 (165.35)					
Z-axis (ram vertical)	mm (in.)	800 (31.50)																	
W-axis (crossrail vertical)	mm (in.)	700 (27.56)			1,000 (39.37)				1,300 (51.18)					1,300 (51.18)					
Effective width between columns	mm (in.)	2,050 (80.71)			2,550 (100.39)				3,050 (120.08)					3,550 (139.76)					
Table to spindle nose (*1)	mm (in.)	0 to 1,350 [0 to 1,250] (0 to 53.15) [0 to 49.21]			0 to 1,650 [0 to 1,550] (0 to 64.96) [0 to 61.02]				0 to 1,850 [0 to 1,750] (0 to 72.83) [0 to 68.90]					0 to 1,800 [0 to 1,700] (0 to 70.87) [0 to 66.93]					
<b>● Table</b>																			
Working surface	mm	1,500 x 2,800	1,500 x 3,800	1,500 x 4,800	2,000 x 3,800	2,000 x 4,800	2,000 x 6,300	2,000 x 7,800	2,500 x 4,800	2,500 x 6,300	2,500 x 7,800	2,500 x 9,800	2,500 x 11,800	3,000 x 4,800	3,000 x 6,300	3,000 x 7,800	3,000 x 9,800	3,000 x 11,800	
Maximum load	kg (lb)	12,000 (26,400)	16,000 (35,200)	20,000 (44,000)	22,000 (48,400)	27,000 (59,400)	34,000 (74,800)	42,000 (92,400)	33,000 (72,600)	43,000 (94,600)	52,000 (114,400)	66,000 (145,200)	72,600 (159,720)	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 x 9 <center 200 both ends 70>			24H7 x 11 <center 200 both ends 70>				24H7 x 13 <center 200 both ends 70>					24H7 x 15 <center 200 both ends 100>					
Height from machine bottom	mm (in.)	800 (31.50)			850 (33.46)				900 (35.43)					950 (37.4)					
<b>● Spindle</b>																			
Speed range	min <sup>-1</sup>	10 to 4,000 [10 to 3,600, 10 to 6,000, 30 to 8,000, 30 to 10,000] *2																	
Number of speed ranges	Steps	2																	
Taper bore		7/24 taper No. 50																	
Bearing diameter (*2)	mm (in.)	ø100 (3.94) [Optional: ø85 (3.35)]																	
<b>● Feederates</b>																			
Rapid traverse	m/min (ipm)	X: 15, Y: 20 *3, Z: 15 (X: 0.59, Y: 0.79, Z: 0.59)																	
Feedrate	mm/min (ipm)	1 to 10,000 (0.04 to 394)																	
Crossrail traverse	m/min	3 (0.12)																	
<b>● Automatic Tool Changer</b>																			
Tool shank		MAS BT50 (CAT)																	
Pull stud		MAS P50T-2 (CAT)																	
Tool magazine capacity	tools	32 *4 [50, 72, 100, 120, 180]																	
Max tool diameter	mm (in.)	w/ adjacent tools: ø135 (5.31); w/o adjacent tools: ø230 (9.06)																	
Max tool length	mm (in.)	400 (15.75)																	
Max tool weight	kg (lb)	25 (55)																	
Tool selection		Fixed adress																	
<b>● Motors</b>																			
Spindle drive (*2)	kW (hp)	VAC 30/22 (40/30) (30 min/cont) [Optimal: 45/37 (60/50) (30 min/cont), 22 (30) (cont), 26/22 (35/30) (30 min/cont)] *																	
Axis feed drives	kW (hp)	X: 9.4 (12.5), Y: 7.3 (9.7), Z: 4.6 x 2 (6.1 x 2) *5									X: 9.4 (12.5), Y: 9.4 (12.5), Z: 4.6 x 2 (6.1 x 2) *5								
Crossrail traverse drive	kW (hp)	W: 4.6 x 2 (6.1 x 2)									W: 5.2 x 2 (6.9 x 2)								
<b>● Power Sources</b>																			
Electrical power supply	kVA	60 (200V ± 10%, 50/60 Hz) *6																	
Compressed air supply	L/min (ANR)	650 (0.5 MPa or more) *6																	
<b>● Machine Size</b>																			
Height	mm (in.)	6,250 (246)			6,600 (260)				6,850 (270)					6,850 (270)					
Floor space (machine only)*6	mm	6,950x 8,200	6,950x 10,200	6,950x 12,200	7,450x 10,200	7,450x 12,200	7,450x 15,800	7,450x 18,800	7,970x 12,200	7,970x 15,800	7,970x 18,800	7,970x 23,400	7,970x 27,400	8,700x 12,200	8,700x 15,800	8,700x 18,800	8,700x 23,400	8,700x 27,400	
Weight (machine only)	kg (lb)	36,000 (79,200)	39,000 (85,800)	42,000 (92,400)	46,000 (101,200)	49,000 (107,800)	54,000 (118,800)	60,000 (132,000)	56,000 (123,200)	61,000 (134,200)	66,000 (145,200)	73,000 (160,600)	79,800 (175,560)	72,300 (159,060)	84,000 (184,800)	95,800 (210,760)	106,500 (234,300)	120,900 (265,980)	

\*1. [ ] Numbers when extension head length is 250 mm. \*2. [ ] for 6,000/8,000/10,000 min<sup>-1</sup> \*3. Deceleration in range of Y axis travel tip 250 mm with 35-tool type \*4. 32-tool ATCs have limitations on 25 or larger machines \*5. X axis motor is 14 kW with 30 x 120, 35 x 120. \*6. Standard specs ANR: Atmosphere Normale de Reference

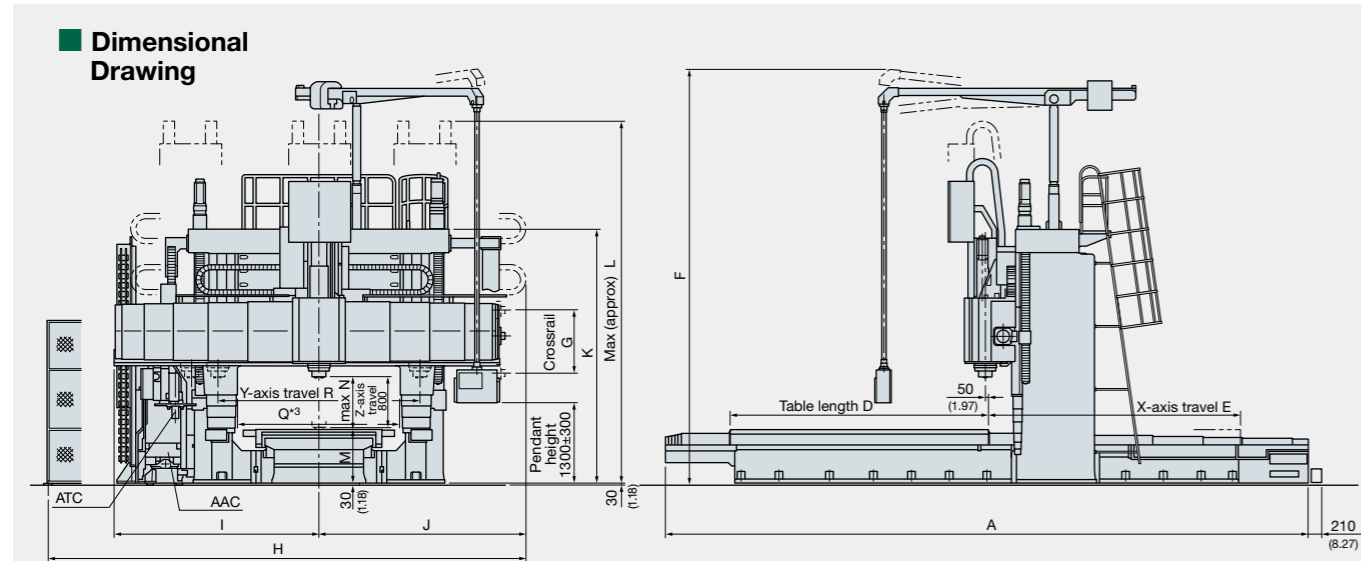
**Machine Specifications (Fixed Crossrail)**

Item	Unit	MCR-BIII16F		MCR-BIII20F			MCR-BIII25F			MCR-BIII30F			
		16 x 20	16 x 30	20 x 30	20 x 40	20 x 50	25 x 40	25 x 50	25 x 65	30 x 50	30 x 65	30 x 80	
<b>● Travel</b>													
X-axis (table front / back)	mm (in.)	2,000 (78.74)	3,000 (118.11)	3,000 (118.11)	4,000 (157.48)	5,000 (196.85)	4,000 (157.48)	5,000 (196.85)	6,500 (255.91)	5,000 (196.85)	6,500 (255.91)	8,000 (314.96)	
Y-axis (spindlehead horizontal)	mm (in.)	2,300 (90.55)		2,700 (106.30)			3,200 (125.98)			3,700 (145.67)			
Z-axis (ram vertical)	mm (in.)	800 (31.50)											
Effective width between columns	mm (in.)	1,700 (66.93)		2,100 (82.68)			2,600 (102.05)			3,100 (122.05)			
Table to spindle nose (*1)	mm (in.)	230 to 1,030 [130 to 930], 20F only 180 to 980 [80 to 880] (9.06 to 40.56) [5.12 to 36.61], (7.09 to 38.58) [3.15 to 34.65]											
<b>● Table</b>													
Working surface	mm	1,200 x 1,800	1,200 x 2,800	1,500 x 2,800	1,500 x 3,800	1,500 x 4,800	2,000 x 3,800	2,000 x 4,800	2,000 x 6,300	2,500 x 4,800	2,500 x 6,300	2,500 x 7,300	
Maximum load	kg (lb)	6,000 (13,200)	8,000 (17,600)	10,000 (22,000)	12,000 (26,400)	20,000 (44,000)	22,000 (48,400)	27,000 (59,400)	34,000 (74,800)	33,000 (72,600)	43,000 (94,600)	52,000 (114,400)	
T-slots Width x No. <center pitch>	mm (in.)	24H7 x 7 <200>		24H7 x 9 <200>			24H7 x 11 <200>			24H7 x 13 <200>			
Height from machine bottom	mm (in.)	700 (27.56)		800 (31.50)			850 (33.46)			900 (35.43)			
<b>● Spindle</b>													
Speed range	min <sup>-1</sup>	10 to 4,000 [10 to 3,600, 10 to 6,000, 30 to 8,000, 30 to 10,000]											
Number of speed ranges	Step	2											
Taper bore		7/24 taper No. 50											
Bearing diameter (*2)	mm (in.)	ø100 (3.94) [Optional: ø85 (3.35)]											
<b>● Feederates</b>													
Rapid traverse X-axis	m/min (ipm)	20 (0.79)					15 (0.59)						
Y-axis	m/min (ipm)	20 (0.79)											
Z-axis	m/min (ipm)	15 (0.59)											
Feedrate X, Y, Z axes	mm/min (ipm)	1 to 10,000 (1 to 394)											
<b>● Automatic Tool Changer</b>													
Tool shank		MAS BT50 (CAT)											
Pull stud		MAS P50T-2 (CAT)											
Tool magazine capacity	tools	32 [50, 72, 100, 120, 180]											
Max tool diameter	mm (in.)	w/ adjacent tools: ø135 (5.31); w/o adjacent tools: ø230 (9.06)											
Max tool length	mm (in.)	400 (15.75)											
Max tool weight	kg (lb)	25 (55)											
Tool selection		Fixed adress											
<b>● Motors</b>													
Spindle drive	kW (hp)	VAC 30/22 (40/30) (30 min/cont) [Optimal: 45/37 (60/50) (30 min/cont), 22 (30) (cont), 26/22 (35/30) (30 min/cont)]											
Axis feed drives	kW (hp)	4.6 to 9.4 (Varies per machine size and spindle.)											
<b>● Power Sources</b>													
Electrical power supply	kVA	60 (200V ± 10%, 50/60 Hz) *3											
Compressed air supply	L/min (ANR)	650 (0.5 MPa or more) *3											
<b>● Machine Size</b>													
Height	mm (in.)	5,050 (198.82)		5,100 (200.79)			5,200 (204.72)			5,250 (206.69)			
Floor space (machine only)	mm	6,455x 6,100	6,455x 8,100	6,855x 8,100	6,855x 10,100	6,855x 12,100	7,505x 10,100	7,505x 12,100	7,505x 15,700	8,005x 12,100	8,005x 15,700	8,005x 18,700	
Weight (machine only)	kg (lb)	23,000 (50,600)	26,000 (57,200)	35,000 (77,000)	38,000 (83,600)	41,000 (102,000)	42,000 (92,400)	45,000 (99,000)	50,000 (110,000)	52,000 (114,400)	57,000 (125,400)	62,000 (136,400)	

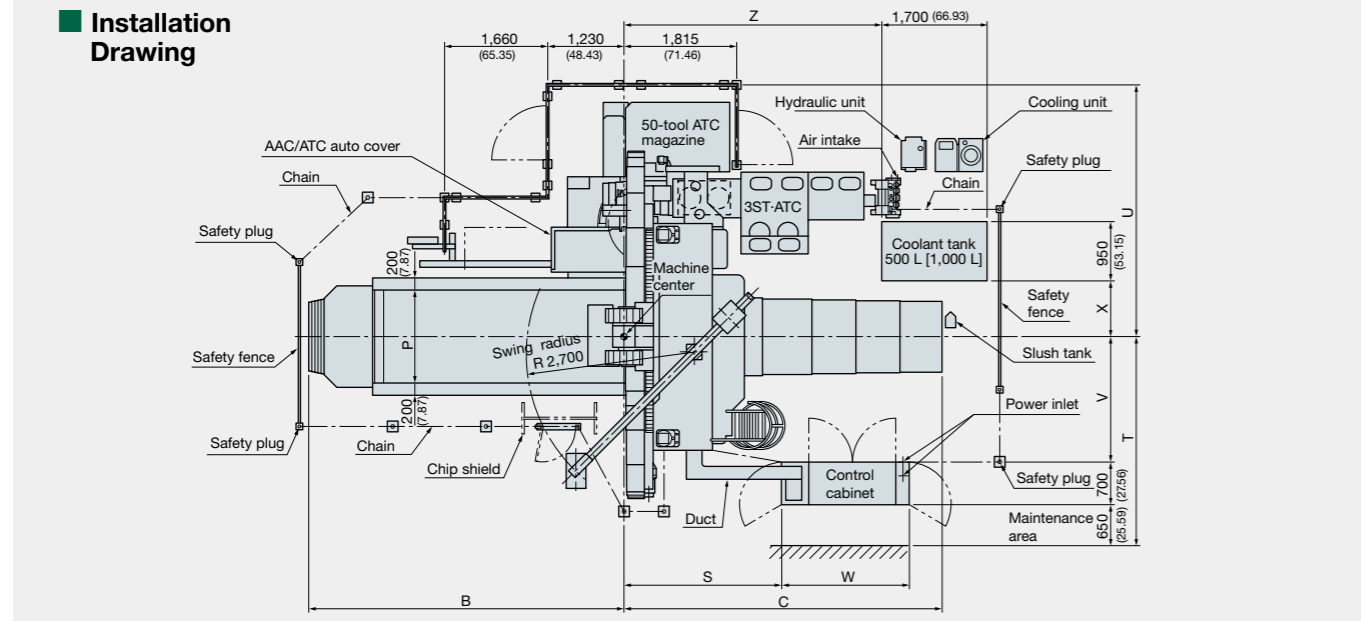
\*1. [ ] Numbers when extension head length is 250 mm. \*2. [ ] for 6,000/8,000/10,000 min<sup>-1</sup> specs. \*3. Standard specs

**Elevating Crossrail (MCR-BIII-E)**

Dimensions may change depending on specifications.



**Installation Drawing**

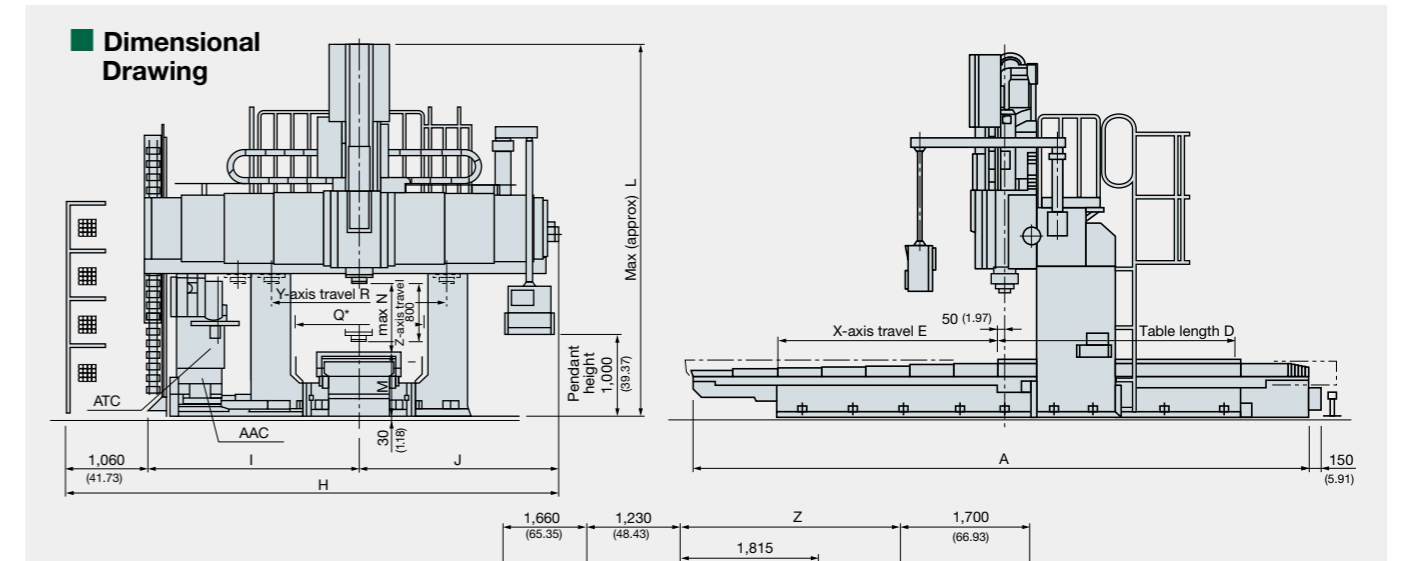


		A	B	C	D	E	F <sup>1</sup>	G	H <sup>1</sup>	I	J <sup>1</sup>	K	L <sup>1</sup>	M	N <sup>2</sup>	P	Q	R	S	T	U	V	W	X	Z	
MCR-BII 20	20x30	8,200 (322.83)	4,075 (160.43)	4,125 (162.40)	3,100 (122.05)	3,000 (118.11)	6,250 (246.06)	700 (27.56)	6,950 (273.62)	2,990 (117.72)	2,900 (114.17)	3,680 (144.88)	5,590 (220.08)	800 (31.50)	1,350 (53.15)	1,500 (59.06)	2,050 (80.71)	2,700 (106.30)	2,525 (99.41)	3,360 (132.28)	4,050 (159.45)	2,010 (79.13)	2,070 (81.50)	900 (35.43)	2,180 (85.83)	
	20x40	10,200 (401.57)	5,075 (199.80)	5,125 (201.77)	4,100 (161.42)	4,000 (157.48)	6,300 (248.03)		7,050 (277.56)		3,000 (118.11)	5,620 (221.26)														
MCR-BII 25	25x40	12,200 (480.31)	6,075 (239.17)	6,125 (241.14)	5,100 (200.79)	5,000 (196.85)	6,600 (259.84)	1,000 (39.37)	7,450 (293.31)	3,240 (127.56)	3,150 (124.02)	4,030 (158.66)	5,940 (233.86)	850 (33.46)	1,650 (64.96)	2,000 (78.74)	2,550 (100.39)	3,200 (125.98)	2,525 (99.41)	3,610 (142.13)	4,300 (169.29)	2,260 (88.98)	2,070 (81.50)	1,150 (45.28)	3,015 (118.70)	
	25x50	12,200 (480.31)	6,075 (239.17)	6,125 (241.14)	5,100 (200.79)	5,000 (196.85)	6,600 (259.84)		7,450 (293.31)		3,240 (127.56)	4,030 (158.66)	5,940 (233.86)													
MCR-BII 30	30x50	15,800 (622.05)	7,875 (310.04)	7,925 (312.01)	6,600 (259.84)	6,500 (255.91)	6,850 (269.69)	1,300 (51.18)	7,970 (313.78)	3,490 (137.40)	3,420 (134.65)	4,460 (175.59)	6,190 (243.70)	900 (35.43)	1,850 (72.83)	2,500 (98.43)	3,050 (120.08)	3,700 (145.67)	2,725 (107.28)	3,860 (151.97)	4,550 (179.13)	2,260 (88.98)	2,070 (81.50)	1,400 (55.12)	3,015 (118.70)	
	30x80	18,800 (740.16)	9,375 (369.09)	9,425 (371.06)	8,100 (318.90)	8,000 (314.96)	8,950 (352.82)		8,050 (316.93)		3,500 (137.80)	4,460 (175.59)	6,220 (244.88)													
MCR-BII 35	35x50	23,400 (921.26)	11,675 (459.65)	11,725 (461.61)	10,100 (397.64)	10,000 (393.70)	10,950 (427.32)		11,725 (461.61)		3,700 (145.67)	4,460 (175.59)	6,220 (244.88)													
	35x120	27,400 (1,078.74)	13,675 (538.39)	13,725 (540.35)	12,100 (472.44)	12,000 (472.44)	12,950 (508.16)		13,725 (538.39)		3,900 (153.54)	4,460 (175.59)	6,220 (244.88)													

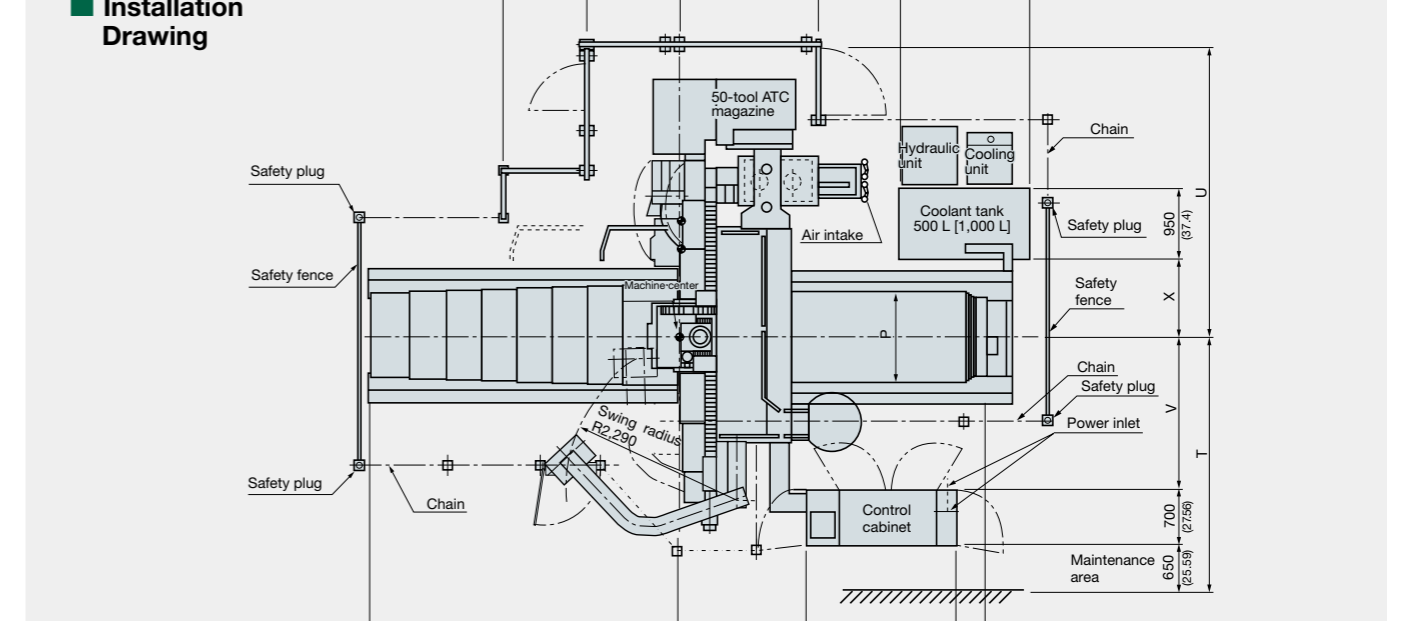
\*1. Upper figures for 4,000 min<sup>-1</sup>, 6,000 min<sup>-1</sup>; lower figures for 8,000 min<sup>-1</sup> or faster spindles  
 \*2. Upper figures for 150-L extension head; lower figures for 250-L extension head  
 \*3. Effective width between columns

**Fixed Crossrail (MCR-BIII-F)**

Dimensions may change depending on specifications.



**Installation Drawing**



		A	B	C	D	E	H	I	J	L	M	N	P	Q	R	T	U	V	W	X	Z				
MCR-BIII 16F	16x20	6,100 (240.16)	3,050 (120.08)	3,050 (120.08)	2,100 (82.68)	2,000 (78.74)	6,455 (254.13)	2,790 (109.84)	2,805 (102.56)	5,050 (198.82)	700 (27.56)	1,030 (40.55)	1,200 (47.24)	1,700 (66.93)	2,300 (90.55)	3,400 (133.86)	3,850 (151.57)	2,050 (80.71)	2,070 (81.50)	1,000 (39.37)	2,725 (107.28)				
	16x30	8,100 (318.90)	4,050 (159.45)	4,050 (159.45)	3,100 (122.05)	3,000 (118.11)																			
MCR-BIII 20F	20x30	8,100 (318.90)	4,050 (159.45)	4,050 (159.45)	3,100 (122.05)	3,000 (118.11)																			
	20x40	10,100 (397.64)	5,050 (198.82)	5,050 (198.82)	4,100 (161.42)	4,000 (157.48)	6,855 (269.88)	2,990 (117.72)	2,805 (110.43)	5,100 (200.79)	800 (31.5)	980 (38.58)	1,500 (59.06)	2,100 (82.68)	2,700 (106.30)	3,600 (141.73)	4,052 (159.53)	2,250 (88.58)	2,070 (81.50)	1,150 (45.28)	3,900 (153.54)				
MCR-BIII 25F	25x40	12,100 (476.38)	6,050 (238.19)	6,050 (238.19)	5,100 (200.79)	5,000 (196.85)																			
	25x50	12,100 (476.38)	6,050 (238.19)	6,050 (238.19)	5,100 (200.79)	5,000 (196.85)	7,505 (295.47)	3,390 (133.46)	3,055 (120.28)	5,200 (204.72)	850 (33.46)	1,030 (40.55)	2,000 (78.74)	2,600 (102.36)	3,200 (125.98)	3,850 (151.57)	4,450 (175.20)	2,500 (98.43)	2,070 (81.50)	1,400 (55.12)	4,900 (192.91)				
MCR-BIII 30F	30x50	15,700 (618.11)	7,850 (309.06)	7,850 (309.06)	6,600 (259.84)	6,500 (255.90)																			
	30x65	18,700 (736.22)	9,350 (368.11)	9,350 (368.11)	8,100 (318.90)	8,000 (314.96)	8,005 (315.16)	3,640 (143.31)	3,305 (130.12)	5,250 (206.69)	900 (35.43)	1,030 (40.55)	2,500 (98.43)	3,100 (122.05)	3,700 (145.67)	4,100 (161.42)	4,700 (185.04)	2,750 (108.27)	2,070 (81.50)	1,650 (64.96)	5,900 (232.28)				

\* Effective width between columns

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

● The specifications, illustrations, and descriptions in this brochure vary in different markets and are subject to change without notice.  
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This product is subject to the Japanese government Foreign Exchange and Foreign Trade Control Act with regard to security controlled items; whereby Okuma Corporation should be notified prior to its shipment to another country.



**OKUMA Corporation**

Oguchi-cho, Niwa-gun,  
Aichi 480-0193, Japan  
TEL: +81-587-95-7825 FAX: +81-587-95-6074