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HCN SERIES 16.03.1000 T 99J337616E0

HCN SERIES



4000
5000
5000/50
5000/50S
6000



HCN
SERIES



Advanced features of the Mazak SmoothG CNC

Touch screen operation — Operate similar to your smart phone / tablet

PC with Windows® 8 embedded OS

Fastest CNC in the world — Latest hardware and software for unprecedented speed and precision

Easy conversational programming of multiple surface machining

Smooth user graphical interface and support functions for unsurpassed ease of operation

Fine tuning functions — Easily configure machine parameters for different workpiece materials and application requirements

MTConnect® ready — Convenient networking

Windows is a registered trademark of Microsoft Corporation in the United States and other countries. MTConnect is a registered trademark of AMT in the United States and other countries.

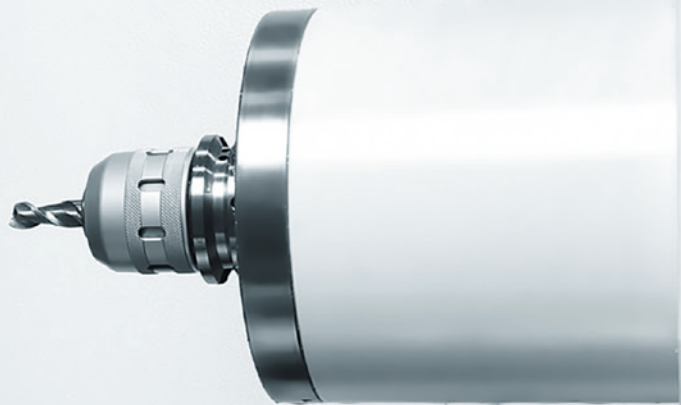


MAZATROL SMOOTHG

The MAZATROL SmoothC is optionally available

High speed, high accuracy horizontal machining center

HCN SERIES



Designed for unsurpassed productivity

- Wide variety of spindles for optimum cutting conditions
- Rigid machine construction for heavy-duty machining
- Advanced factory automation equipment available for higher productivity

Extensive series range to meet any machining requirement



HCN-4000

High speed machining
of small components

Max. spindle speeds :
from 12000 rpm to 30000 rpm
Tool change time(chip to chip) :
2.4 sec.
Axis acceleration / deceleration
(X-, Y-, Z-axes) : **1.0 G**



HCN-5000

High speed machining of
multiple workpieces
mounted on large multiple
surface fixtures

Max. spindle speeds :
from 12000 rpm to 30000 rpm
Tool change time(chip to chip) : **2.6 sec.**
Axis acceleration / deceleration
(X-, Y-, Z-axes) : **1.0 G**
Max. table load :
500 kg or 700 kg (1102 lbs or 1543 lbs)



HCN-5000/50

Optimum for large volume
production of small to mid
size die cast components

Max. torque :
216 N·m (159 ft-lbs)
[40 % ED(30 min.rating)]
Max. tool diameter : **ø250 mm**
Spindle acceleration : **1.2 sec.**

* When adjacent pockets are empty and pockets
next to them have tools less than 240 mm, max.
tool diameter is ø260 mm.



HCN-5000/50S

Single table machine for
convenient integration
into a production line

Max. torque :
216 N·m (159 ft-lbs)
[40 % ED(30 min.rating)]
Max. tool diameter : **ø250 mm (9.84")**
Spindle acceleration : **1.2 sec.**
A-axis table : **optionally available**
Gantry loader preparation : **optionally available**



HCN-6000

High rigidity machine for
heavy-duty machining of steel
and cast iron

Max. torque : **350 N·m (258 ft-lbs)**
[10000 rpm, 30 min. rating to]
to 442 N·m (325 ft-lbs)[30 min.rating]
Max. tool diameter : **ø250 mm (9.84")***
Max. tool length : **500 mm (19.69")**
Max. table load : **1000 kg (2205 lbs)**



Automotive



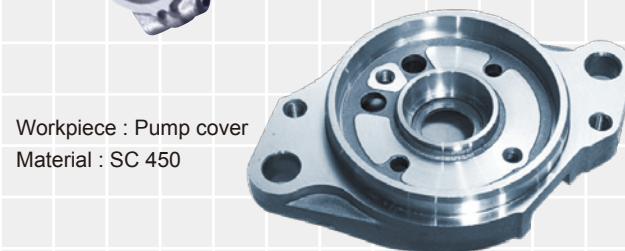
Aerospace



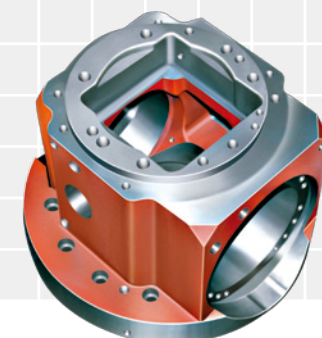
Construction machinery



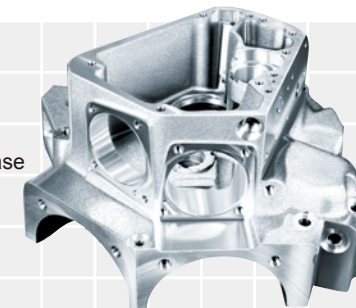
Workpiece : Connecting rod
Material : SCM 435



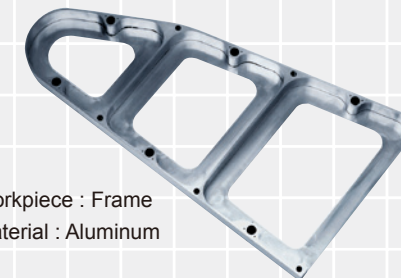
Workpiece : Pump cover
Material : SC 450



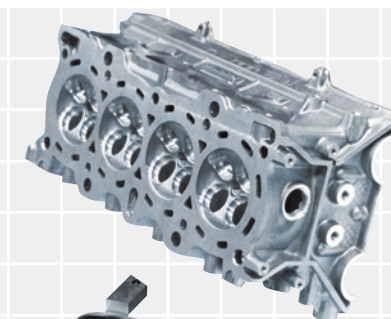
Workpiece : Housing
Material : FC 250



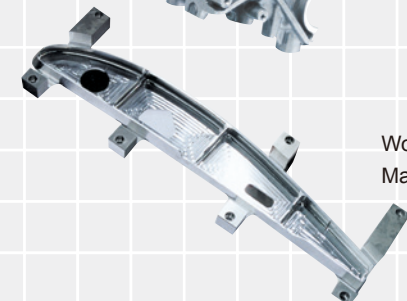
Workpiece : Crankcase
Material : Aluminum



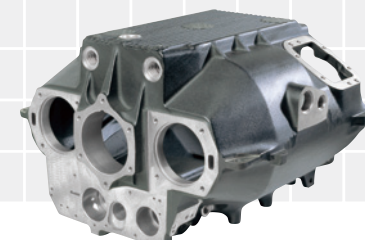
Workpiece : Frame
Material : Aluminum



Workpiece : Cylinder head
Material : Aluminum



Workpiece : Rib
Material : Aluminum



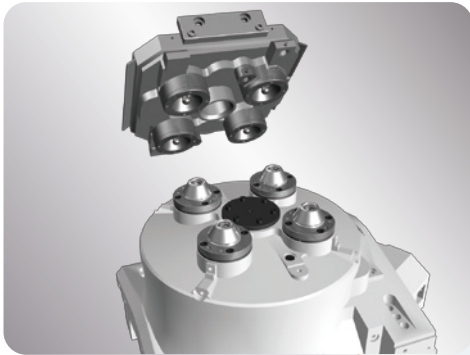
Workpiece : Gear box
Material : SCM 435

Higher Productivity & Higher Accuracy

High rigidity construction for high accuracy machining

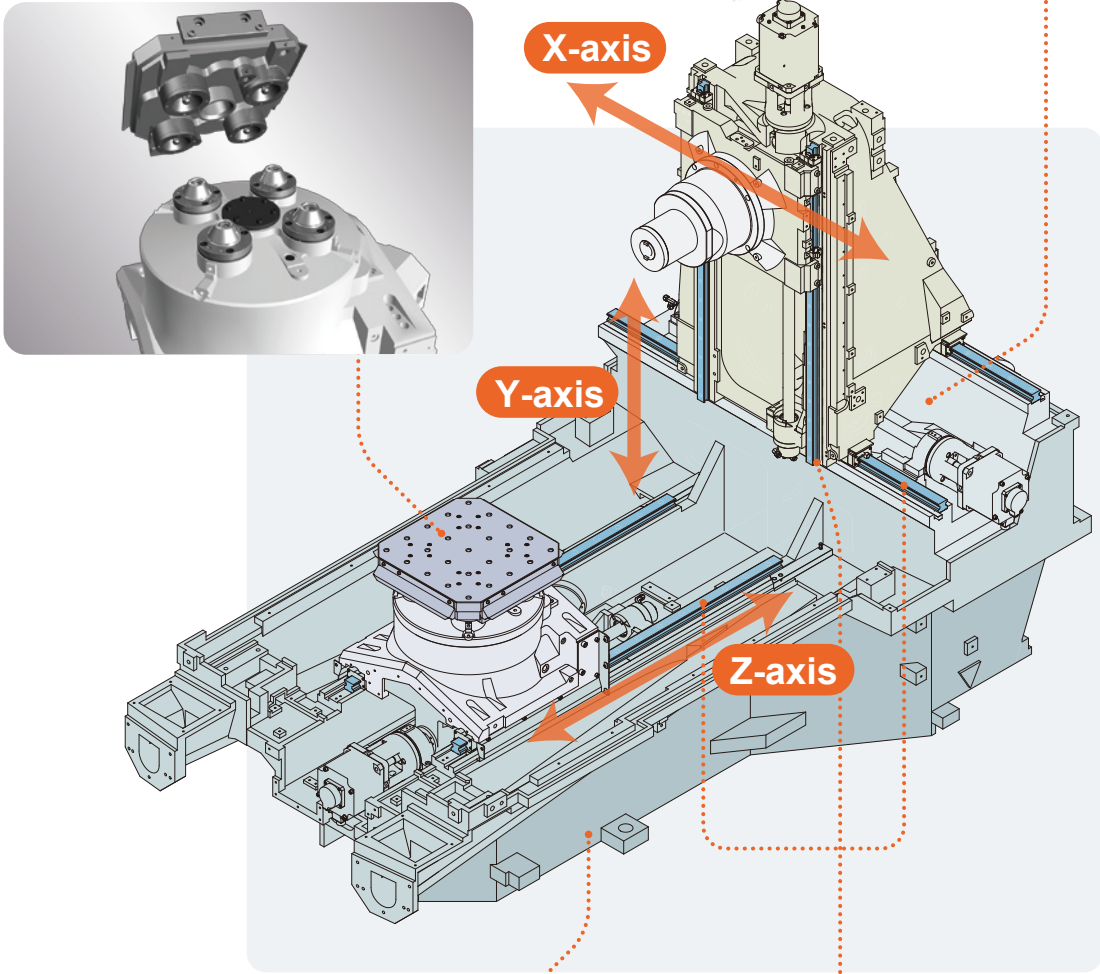
Table coupling

The table and pallet are clamped on 4 taper cones by 73.2 kN(16456 lbs) of force. The index table coupling is clamped by 85.2 kN(19153 lbs) of force for stable machining during heavy duty machining. (The single pallet of the HCN-5000/50S is bolted directly to the machine table)



X-axis slanted design

The mounting surfaces of the X-axis linear guide rails are at different heights to ensure high rigidity for high speed and high accuracy positioning.



High speed acceleration / deceleration on X-, Y-, Z-axes

Rapid traverse rate
60 m/min
(X-, Y-, Z-axes)

Maximum feedrate
60 m/min
(X-, Y-, Z-axes)

Acceleration / deceleration
1.0 G
(X-, Y-, Z-axes)
(HCN-4000 and HCN-5000)

High rigidity bed

The high rigidity bed is reinforced with strategically located ribs to ensure stability during X- and Y-axes travel.

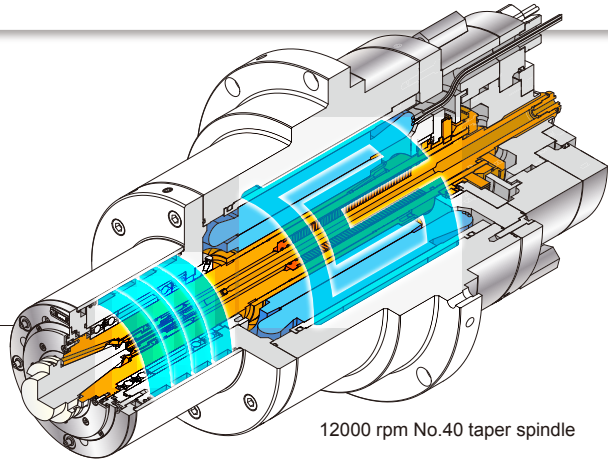
Linear roller guides utilized on the X-,Y- and Z-axes

Linear roller guides on the X-, Y-, and Z-axes are utilized by the HCN series in order to provide high-accuracy and heavy duty machining.

Designed for high accuracy machining

Integral spindle / motor

Thanks to the integral spindle / motor design, vibration is minimized during high speed operation to ensure exceptional surface finishes and maximum tool life.



Spindle temperature control

For high accuracy machining, temperature controlled cooling oil is circulated around the spindle bearings and headstock to minimize any thermal change to the spindle.

X-, Y-, Z-axes Ball screw core cooling

Temperature controlled cooling oil circulates through the ball screw cores to ensure stable machining accuracy over extended periods of high speed operation.



X-, Y-axes cover

Instead of a multi-stage sheet metal cover with wipers, a protective cover is used over the accordion covers. This compact system keeps chips and coolant contained in the machining area.
(Machines : HCN-4000, 5000, 5000/50, 5000/50S)



Higher Productivity

Spindle specifications for any workpiece material requirement

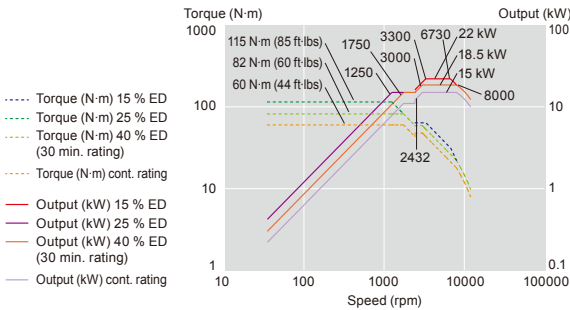
HCN-4000, HCN-5000

Standard

Designed for versatile performance

No.40	Speed	12000 rpm
Integral spindle / motor	Output	AC 18.5 kW (25 HP) [40 % ED] (30 min. rating) AC 15 kW (20 HP) [cont. rating]
Grease lubrication	Max. torque	82 N-m (60.5 ft-lbs) [40 % ED] (30 min. rating)

12000 rpm Milling spindle output / torque diagram

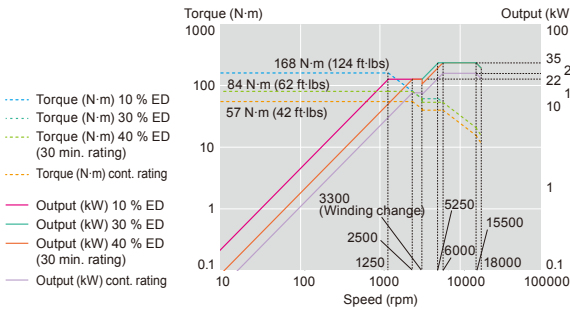


High speed OPTION

High speed machining of steel, cast iron and aluminum

No.40	Speed	18000 rpm
Integral spindle / motor	Output	AC 35 kW (47 HP) [40 % ED] (30 min. rating) AC 26 kW (35 HP) [cont. rating]
Oil & air lubrication	Max. torque	84 N-m (62 ft-lbs) [40 % ED] (30 min. rating)

18000 rpm Milling spindle output / torque diagram

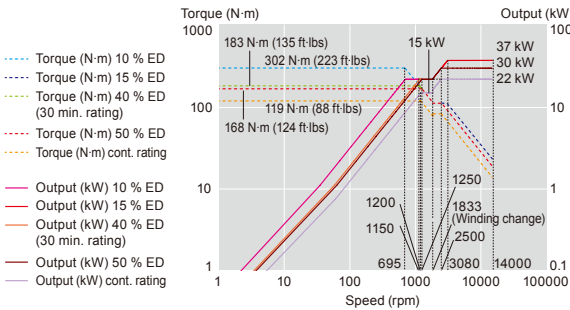


High torque OPTION

Heavy duty machining of difficult to cut materials, steel and cast iron

No.40	Speed	14000 rpm
Integral spindle / motor	Output	AC 30 kW (40 HP) [40 % ED] (30 min. rating) AC 22 kW (30 HP) [cont. rating]
Oil & air lubrication	Max. torque	183 N-m (135 ft-lbs) [40 % ED] (30 min. rating)

14000 rpm Milling spindle output / torque diagram

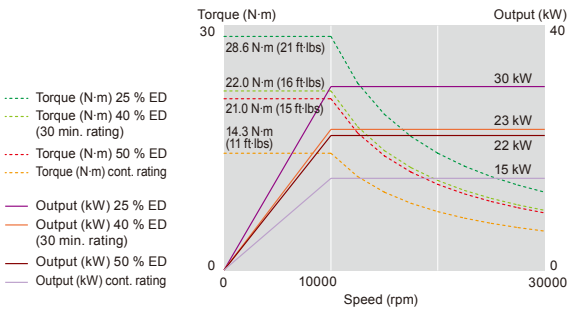


High speed OPTION

High speed machining of precision aerospace components, die-cast components

HSK-F63	Speed	30000 rpm
Integral spindle / motor	Output	AC 23 kW (30.6 HP) [40 % ED] (30 min. rating) AC 15 kW (20 HP) [cont. rating]
Oil & air lubrication	Max. torque	22 N-m (16 ft-lbs) [40 % ED] (30 min. rating)

30000 rpm Milling spindle output / torque diagram



Coolant through spindle is not available.
25000 rpm, HSK-A63, BIG-PLUS specifications are optionally available.

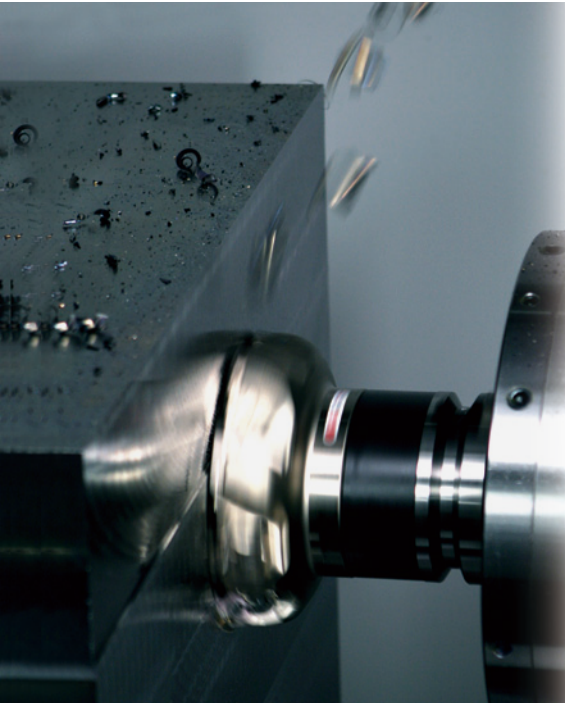
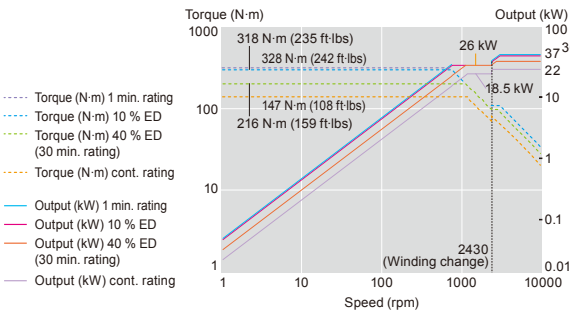
HCN-5000/50, HCN-5000/50S

Standard

Large volume production of small/mid-size die-cast components

No.50	Speed	10000 rpm
Integral spindle / motor	Output	AC 30 kW (40 HP) [40 % ED] (30 min. rating) AC 22 kW (30 HP) [cont. rating]
Oil & air lubrication	Max. torque	216 N-m (159 ft-lbs) [40 % ED] (30 min. rating)

10000 rpm Milling spindle output / torque diagram



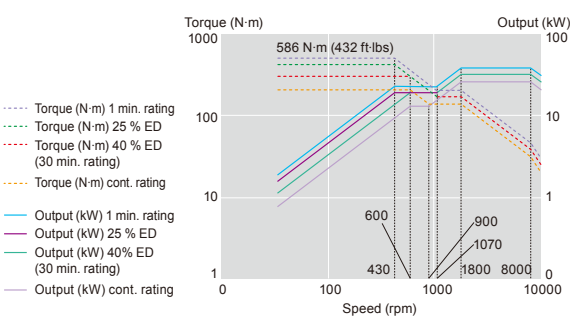
HCN-6000

Standard

For general purpose machining of a variety of materials

No.50	Speed	10000 rpm
Integral spindle / motor	Output	AC 37 kW (50 HP) [40 % ED] (30 min. rating) AC 30 kW (40 HP) [cont. rating]
Oil & air lubrication	Max. torque	350 N-m (258 ft-lbs) [40 % ED] (30 min. rating)

10000 rpm Milling spindle output / torque diagram

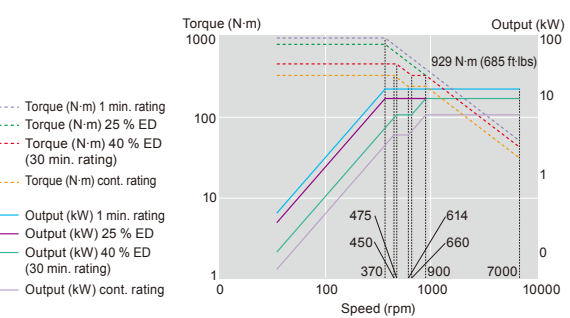


High torque OPTION

Heavy duty machining of steel and cast iron

No.50	Speed	7000 rpm
Integral spindle / motor	Output	AC 30 kW (40 HP) [40 % ED] (30 min. rating) AC 22 kW (30 HP) [cont. rating]
Oil & air lubrication	Max. torque	442 N-m (325 ft-lbs) [40 % ED] (30 min. rating)

7000 rpm Milling spindle output / torque diagram



Higher Productivity

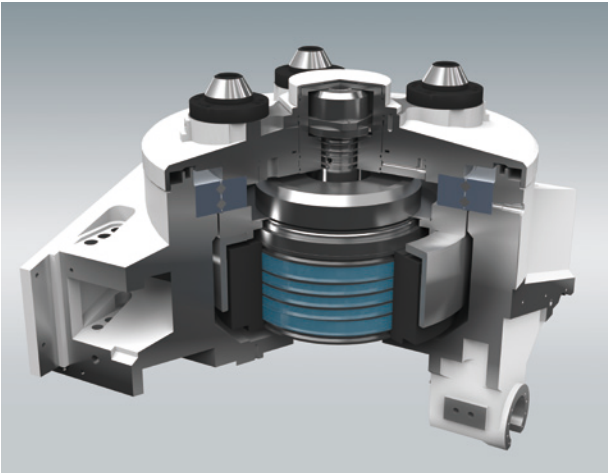
Wide variety of tables available

1° × 360 index table is standard equipment.
NC rotary table and DDM table with 0.0001° × 3600000 positions is optionally available.



High speed DDM rotary table OPTION

Efficient, high speed operation thanks to the direct transmission of driving power to the rotary table axis, eliminating power transmission components such as the worm shaft and the worm gear.



Shown with optional automatic top door for gantry loader

A-axis NC positioning table OPTION

High efficiency multiple surface machining.

Max. workpiece dimension / weight

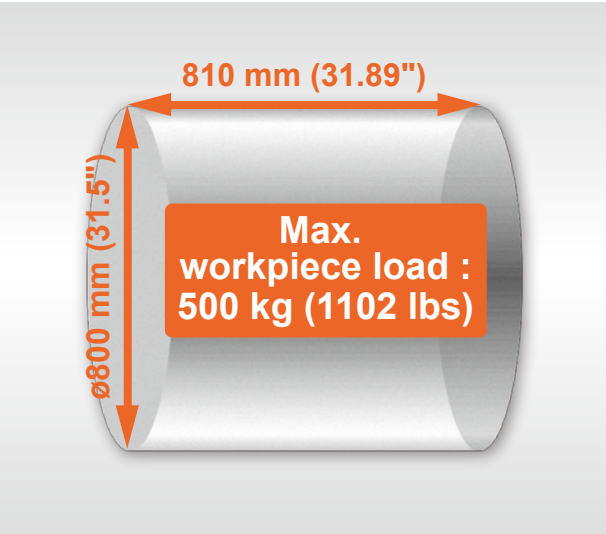


Table Specifications

Machine	HCN-4000			HCN-5000		
Table	Index table	NC rotary table	DDM table	Index table	NC rotary table	DDM table
	STANDARD	OPTION	OPTION	STANDARD	OPTION	OPTION
Table load capacity	400 kg (881 lbs)	400 kg (881 lbs)	400 kg (881 lbs)	500 kg (1102 lbs) [700 kg] (1543 lbs)	500 kg (1102 lbs) [700 kg] (1543 lbs)	500 kg (1102 lbs) [700 kg] (1543 lbs)
Minimum indexing angle increment	1°	0.0001°	0.0001°	1°	0.0001°	0.0001°
Indexing time (90°)	1.3 sec.	1.0 sec.	0.8 sec.	1.4 sec.	1.2 sec. [1.3 sec.]	0.9 sec. [1.0 sec.]

[] : Option

HCN-5000/50			HCN-5000/50S				HCN-6000		
Index table	NC rotary table	DDM rotary table	Index table	NC rotary table	DDM rotary table	A-axis NC positioning table	Index table	NC positioning table	NC rotary table
STANDARD	OPTION	OPTION	STANDARD	OPTION	OPTION	OPTION	STANDARD	OPTION	OPTION
500 kg (1102 lbs) [700 kg] (1543 lbs)	500 kg (1102 lbs) [700 kg] (1543 lbs)	500 kg (1102 lbs) [700 kg] (1543 lbs)	500 kg (1102 lbs) [700 kg] (1543 lbs)	500 kg (1102 lbs) [700 kg] (1543 lbs)	500 kg (1102 lbs) [700 kg] (1543 lbs)	500 kg (1102 lbs)	1000 kg (2205 lbs)	1000 kg (2205 lbs)	1000 kg (2205 lbs)
1°	0.0001°	0.0001°	1°	0.0001°	0.0001°	1°	1°	0.001°	0.0001°
1.4 sec.	1.2 sec. [1.3 sec.]	0.9 sec. [1.0 sec.]	1.4 sec.	1.2 sec. [1.3 sec.]	0.9 sec. [1.0 sec.]	1.5 sec.	1.9 sec.	2.2 sec.	1.8 sec.

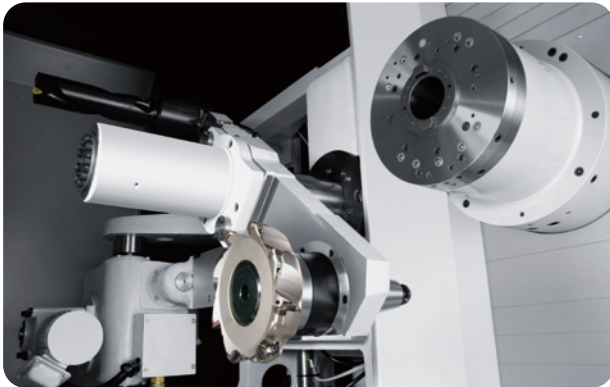
Higher Productivity

ATC

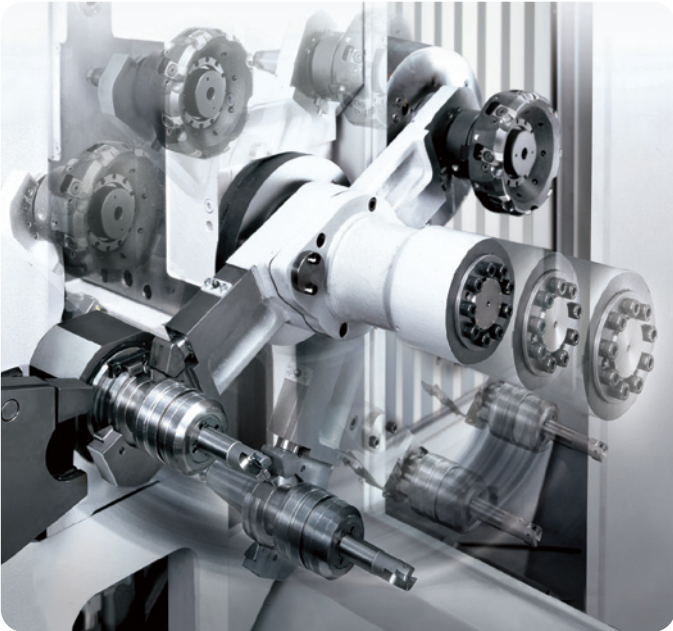
Can handle long boring bars and large diameter mills for higher productivity

Stable tool changing of heavy large diameter tools

The simple, reliable cam-driven automatic tool changer performs fast tool changes over extended periods of operation



HCN-6000



HCN-4000

ATC Specifications

Machine			HCN-4000	HCN-5000	HCN-5000/50	HCN-5000/50S	HCN-6000
Maximum tool size for ATC	Tool length		420 mm (16.54")	510 mm (20.08")	510 mm (20.08") [550]	510 mm (20.08") [550]	500 mm (19.69")
	Tool weight		12 kg (26 lbs)	12 kg (26 lbs)	30 kg (66.14 lbs)	30 kg (66.14 lbs)	30 kg (66.14 lbs)
	Tool diameter	with adjacent tools	ø95 mm (ø3.74")	ø95 mm (ø3.74")	ø125 mm (ø4.92")	ø125 mm (ø4.92")	ø125 mm (ø4.92")
		with adjacent pockets empty	ø170 mm (ø6.69")	ø170 mm (ø6.69")	ø250 mm*1 (ø9.84")	ø250 mm*1 (ø9.84")	ø250 mm*1 (ø9.84")
Tool change time (chip-to-chip)			2.4 sec	2.6 sec	3.5 sec	3.5 sec	3.5 sec
Magazine	Drum type magazine		40 [60]	40 [60]	43 [60]	43 [60]	—
	Tool chain magazine		[80, 120, 160]	[80, 120, 160]	[80, 120, 160]	[80, 120, 160]	43 [60, 80, 100, 120, 140, 160]
	Rack type tool magazine (TOOL HIVE)		[180, 240, 348]	[180, 240, 348]	[180, 240, 348]	[180, 240, 348]	[180, 240, 348]

*1 When adjacent pockets are empty and pockets next to them have tools less than 240 mm, maximum tool diameter is ø260 mm.

[] : Option

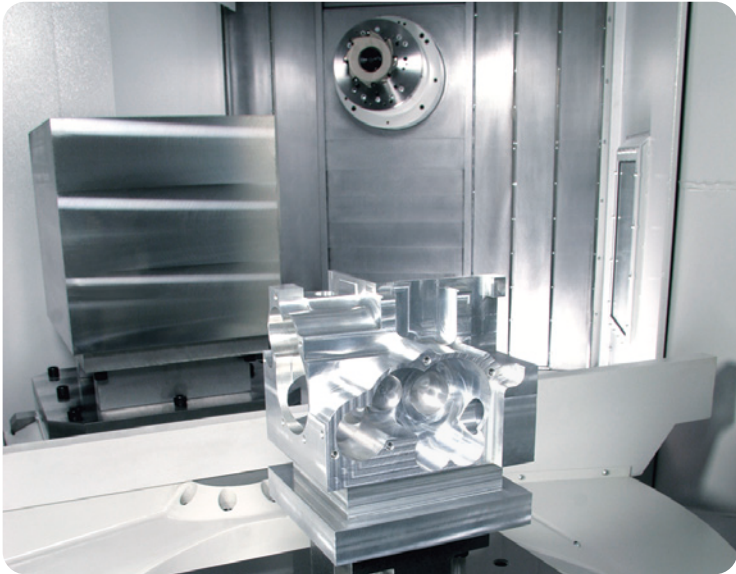
Automation

Pallet changer

Rotary 2 pallet changer and optional 6 pallet changer

Fast pallet change

Rotary-type pallet changers quickly change pallets with heavy workpieces for higher productivity.



6 pallet changer OPTION

Multiple workpieces can be setup on the 6 pallets making unmanned operation able to be performed over extended periods of time.



HCN-4000 with 6 pallet changer



HCN-6000 with 6 pallet changer

Pallet changer Specifications

Machine	HCN-4000	HCN-5000, HCN-5000/50	HCN-6000
Pallet changer	2 pallet changer	2 pallet changer	2 pallet changer
Pallet load capacity (evenly distributed)	400 kg (881 lbs)	500 kg [700 kg] (1102 lbs)	1000 kg (2205 lbs)
Max. workpiece diameter on pallet	ø630 mm	ø800 mm (ø31.5")	ø900 mm (35.43")
Max. workpiece height on pallet	900 mm (35.43")	1000 mm (39.37")	1000 mm (39.37")
Pallet change time	7 sec	8 sec [10sec]	9 sec

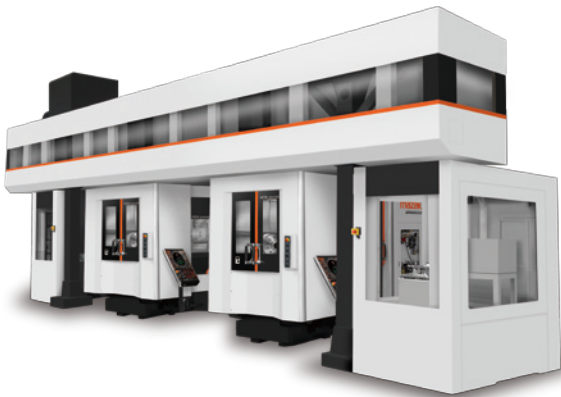
[] : Option

Automation

Wide variety of factory automation equipment available for single machines to production lines

Gantry loader

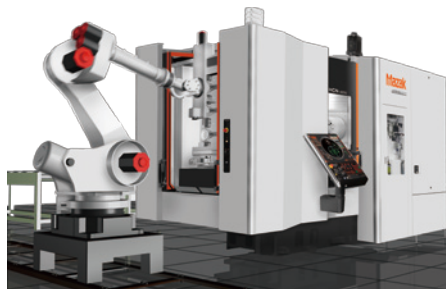
Multiple machines can be integrated in a compact production line. An automatic door for the gantry loader on top of the machining area is optionally available for the HCN-5000/50S.



Robot system

Interface for connecting an external robot for workpiece loading / unloading to / from automatic hydraulic fixtures is optionally available.

- Field network available
- Includes cycle start, door open / close, work loading confirmation and hydraulic fixtures (2).



PALLETECH MANUFACTURING CELL

The modular design of the PALLETECH conveniently allows more machines and increased pallet storage capacity to be added to the system after the initial installation in response to changing production requirements. The pallet stocker is available with one, two and three levels for large pallet storage capacity with small floor space requirements.

		Minimum	Maximum
Machine(s)		1	16
Number of pallets	1 level	6	240
	2 levels	12	240
	3 levels	18	240
Loading station(s)		1	8
Loading robot		1	1



FMS control / management software — Unsurpassed ease of system operation to meet sudden changes in schedule.



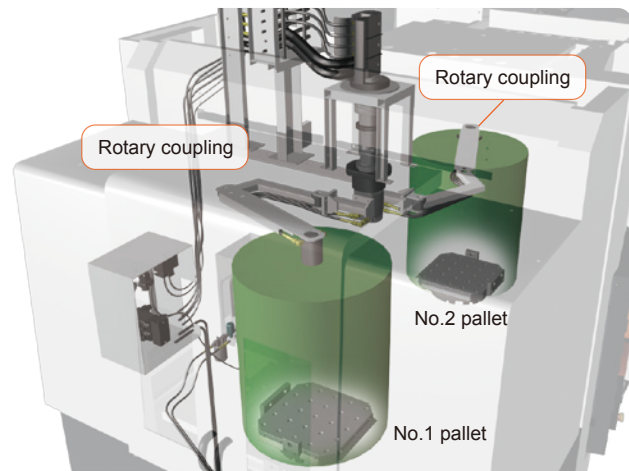
Optional factory automation equipment for automation

Hydraulic fixtures OPTION

Type A (supply from machine top, maximum : 8 ports)

By hydraulic hoses, hydraulic power is supplied from the top part of the pallet changer to fixtures mounted on each pallet.

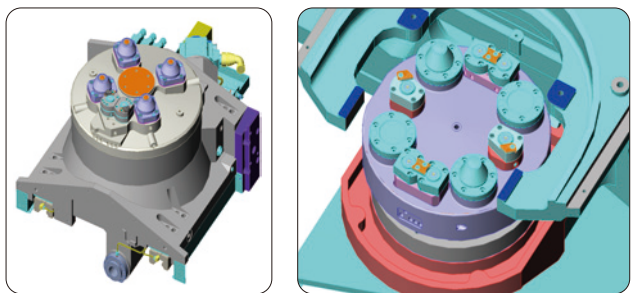
Hydraulic power supply from top



Type B (supply through pallet, maximum : 6 ports)

By using a leak-free coupling, hydraulic power is supplied to the supply port on the pallet bottom.

Hydraulic power supply through pallet



* HCN-4000, 5000, 5000/50, 5000/50S.
Max. 3 ports for HCN-6000

TOOL HIVE OPTION

The TOOL HIVE can store more than 180 tools in a small space. Operation and tool data editing can be performed on the TOOL HIVE TERMINAL control panel to reduce the time required for tool setup. The TOOL HIVE tool storage capacity can be expanded after the initial installation.

Tool storage	180tools	240tools	348tools
Magazine	Rack type	Rack type	Rack type
Tool selection method	Fixed pocket number, shortest path	Fixed pocket number, shortest path	Fixed pocket number, shortest path



240 tool TOOL HIVE magazine

Tool ID

Tool ID allows automatic input and update of tool data into the CNC for machines in a network. It eliminates mistakes when loading tools into the magazine and tool data input, reducing setup time. (requires retention bolt with tool ID and tool presetter)

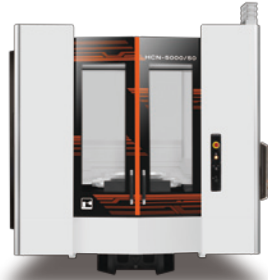


Ergonomics

Design focus on ergonomics provides unsurpassed ease of operation

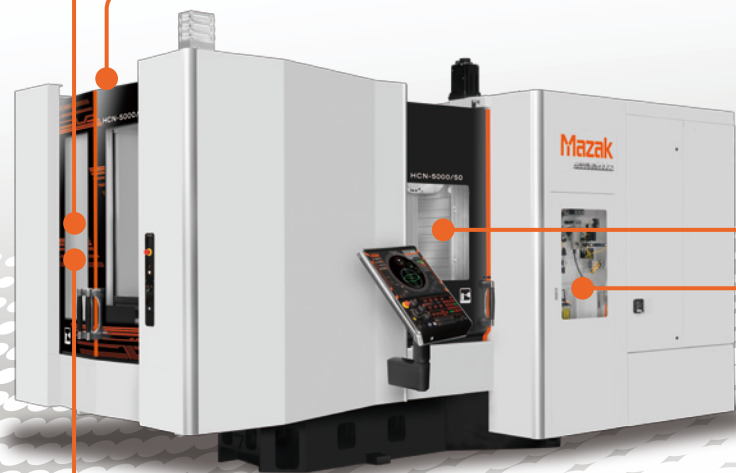
Large window

The large windows on the 2 pallet changer cover door allow the operator to easily see the status of the workpiece in the setup station.



Convenient workpiece loading / unloading

An over head crane can be easily used for the loading / unloading of heavy workpieces and fixtures.



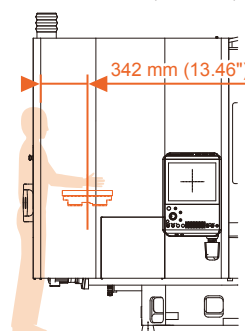
Large window

The large operation window allows the operator to easily monitor workpiece machining.

Convenient setup

The distance from the pallet center to the front cover is small for convenient setup. The setup station can be indexed by 90° for easy workpiece loading/unloading and setup.

Distance between pallet center to machine cover (HCN-4000)



Maintenance area

Items requiring frequent access for machine maintenance, such as hydraulic and air pressure inlets, lubrication reservoirs and others are conveniently arranged in a central location on the back side of the machine.

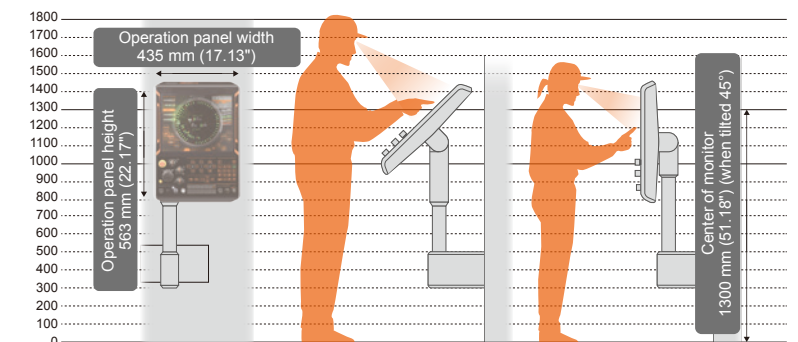
(HCN-6000 located on tool magazine side)



ergonomics

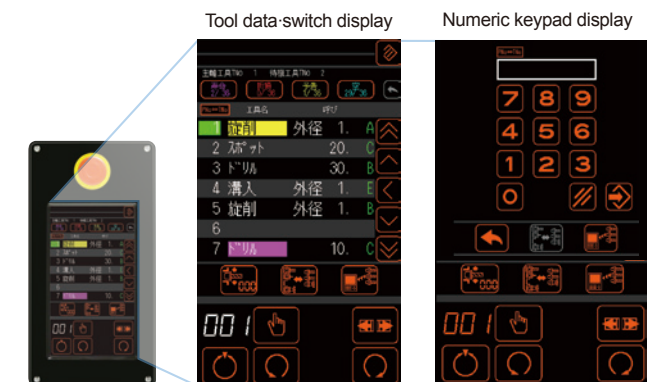
Adjustable CNC Touch Panel

Operation touch panel can be tilted to the optimum position for any operator's height to ensure ease of operation.



Tool magazine operation panel / Tool ID

The tool magazine operation panel is designed for increased ease of operation. Instead of having just a forward / reverse button for indexing the tool magazine and manually positioning the desired tool pocket, the pocket number or tool number can be input into the operation panel numeric keypad and the desired pocket will be automatically brought into position. Additionally, tool data is displayed on this panel eliminating trips back to the machine CNC. By touching the tool data, the tool magazine will be indexed to the selected tool. The sort key quickly shows which tool pockets are empty.



Remote manual pulse generator OPTION

The remote manual pulse generator provides convenient operation when the operator is not close to the CNC operation panel. Its display shows the position display and the machine coordinate values. 4 different positions can be registered in memory by the remote manual pulse generator.



MAZATROL CNC System

MAZATROL SMOOTHG

4 axes simultaneous CNC

Fastest CNC in the world

— Latest hardware and software for unprecedented speed and precision

Smooth user graphical user interface

PC with Windows® 8 embedded OS
MAZATROL Smooth graphical user interface for unsurpassed ease of operation
Touch screen operation — operate similar to your smart phone / tablet

Ease of operation

Designed for unsurpassed ease of operation with advanced Intelligent Functions
Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

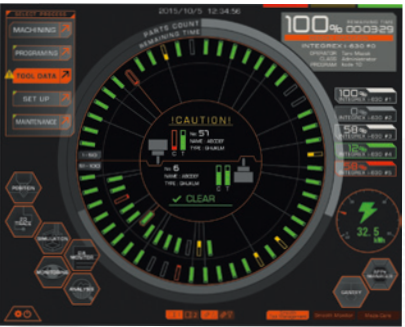


Process home screens

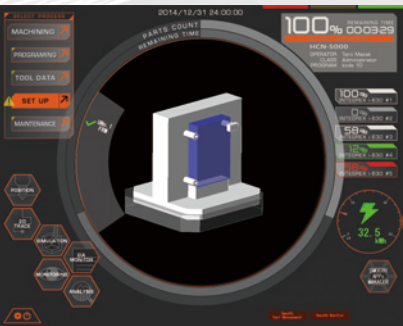
Five different home process screens — each home screen displays the appropriate data in an easy-to-understand manner. Icons can be touched in each process display for additional screen displays.



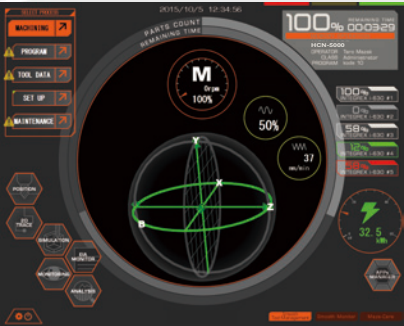
Programming



Tool data



Set up



Machining



Maintenance

Programming screen links tool path, workpiece shape and programming to reduce programming time.

QUICK MAZATROL

MAZATROL program, unit list and 3D workpiece shape are linked to each other. After defining a machining unit in a MAZATROL program, the 3D shape is immediately displayed to easily and quickly check for any programming error.

3D ASSIST

Workpiece and coordinates data can be imported from 3D CAD data to a MAZATROL program. No coordinate value inputs are required. Can reduce input errors and time for program checking.

QUICK EIA

Program, process list and 3D tool path display are linked to each other. Visible search on touch screen can reduce the time for program checking.

VIEW SURF

By analyzing tool path, any predictable failure on the finished surface can be visualized. Program modification can be done before machining to minimize the time for test cutting.

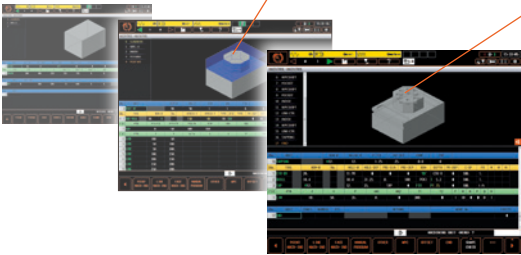
Quickly move to the corresponding section in the MAZATROL program by touching a feature in the 3D model.

3D model in the process list is displayed with updated programming in real time.

CAD model importing

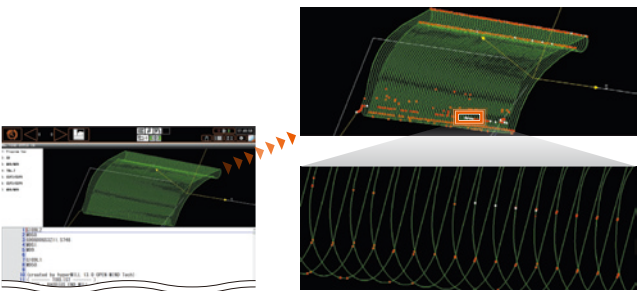
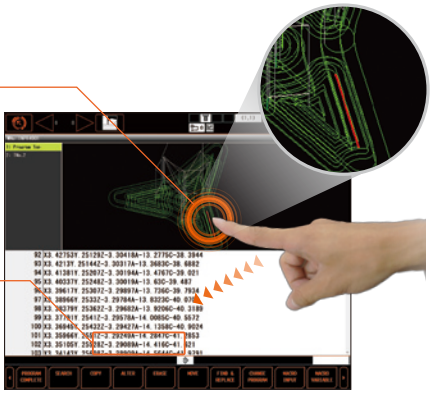
Shape selection

Automatically input to MAZATROL program



Selecting tool path by touching the screen.

Moving to the corresponding EIA program line.



Intelligent Machine



Yamazaki Mazak has developed a variety of functions for the improvement of productivity, high accuracy machining and operator support. A variety of unique technologies has been developed that incorporate the expertise of experienced machine operators that realizes unsurpassed productivity and higher accuracy machining.



Advanced Intelligent+ Functions

A variety of Intelligent+ Functions provides incomparable operator support for exceptional ease of operation and the optimum machine efficiency.

Set up

Machine Interference Prevention

INTELLIGENT SAFETY SHIELD

When an operator manually moves the machine axes for setup, tool measurement or changing inserts, the CNC shows a synchronized 3D model on the display for checking machine interference. If any machine interference occurs, the machine motion automatically stops.

Verbal Message System

MAZAK VOICE ADVISER

Verbal support for machine setup and safe conditions confirmation

Machining

Convenient Parameter Setting and Fine Tuning Function

SMOOTH MACHINING CONFIGURATION

Machining time, finished surface smoothness and machining shape can be adjusted for improved productivity

Variable Acceleration Control Function

VARIABLE ACCELERATION CONTROL

Variable acceleration control is a new function which permits the faster acceleration capability of linear axes to be used whenever possible. The slower acceleration of the rotary axes is not used for all program commands, resulting in faster machining cycle times.

Maintenance

Comprehensive Spindle Monitoring

INTELLIGENT PERFORMANCE SPINDLE

The INTELLIGENT PERFORMANCE SPINDLE monitors a variety of properties such as temperature with sensors housed in the spindle and provides useful information to the operator. Thanks to this monitoring, production loss due to machine down time can be minimized.



▲ Condition check
Temperature as well as the motor load can be displayed.



▲ Running recorder
Operation status of milling spindle (rpm / motor load) can be recorded for up to one year.

Comprehensive Maintenance Monitor

INTELLIGENT MAINTENANCE SUPPORT

Useful information for improved preventative maintenance to prevent unexpected machine downtime.



Seamless Corner Control

SMOOTH CORNER CONTROL

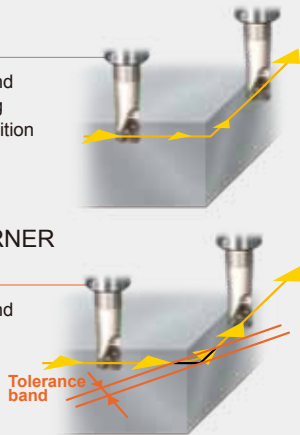
Improved finished surfaces and reduced cycle times by optimized acceleration / deceleration when machining corners.

Other systems

Move to next command position after reaching current command position

SMOOTH CORNER CONTROL

Move to next command position within tolerance band



Heat Displacement Control

INTELLIGENT THERMAL SHIELD

The INTELLIGENT THERMAL SHIELD is an automatic compensation system for room temperature changes, which realizes enhanced continuous machining accuracy. MAZAK has performed extensive testing in a variety of environments in a temperature controlled room and has used the results to develop a control system that automatically compensates for temperature changes in the machining area. Changes in the room temperature and compensation data are shown visually.



Temperature and compensation is displayed on screen. Operator can adjust compensation by looking at the data.

Minimized Vibration

ACTIVE VIBRATION CONTROL

Machine vibration can be reduced to perform excellent machining accuracy and high-speed machining.

Without ACTIVE VIBRATION CONTROL

+X Cutting feedrate : 3000 mm/min

+Y Cutting direction

With ACTIVE VIBRATION CONTROL

+X Cutting feedrate : 3000 mm/min

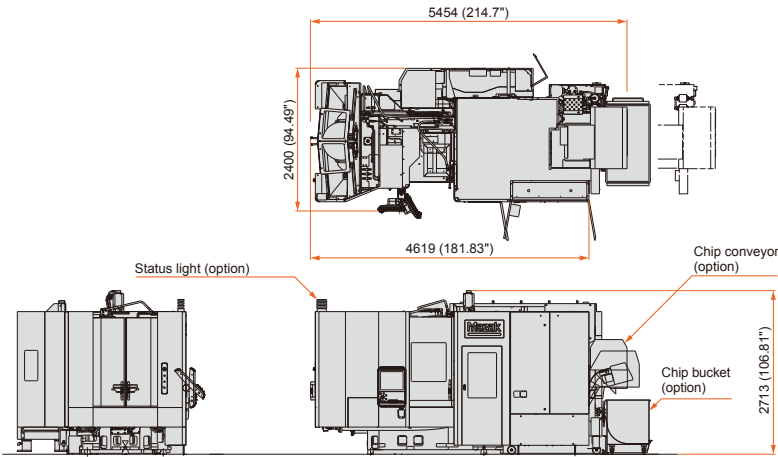
+Y Cutting direction



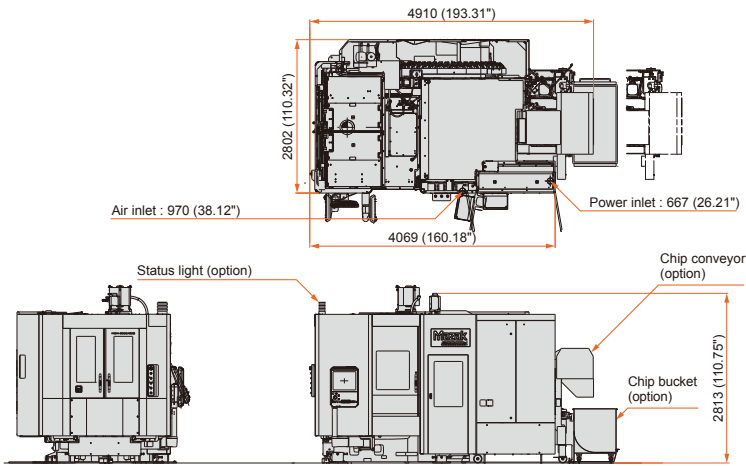
Machine Dimensions

Unit : mm (inch)

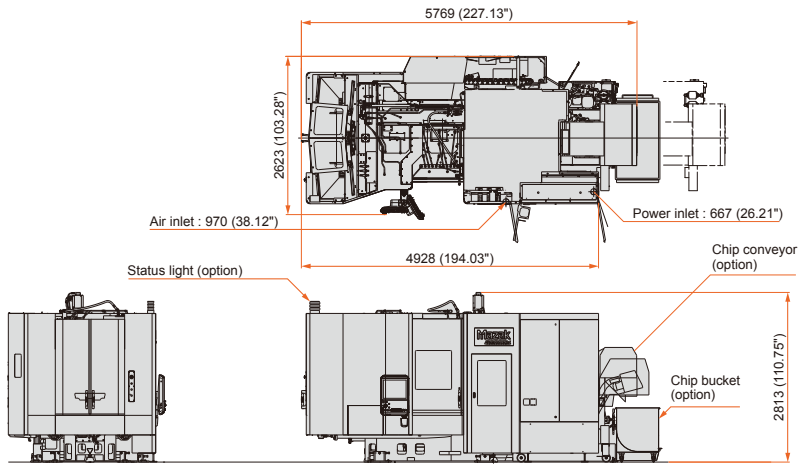
HCN-4000



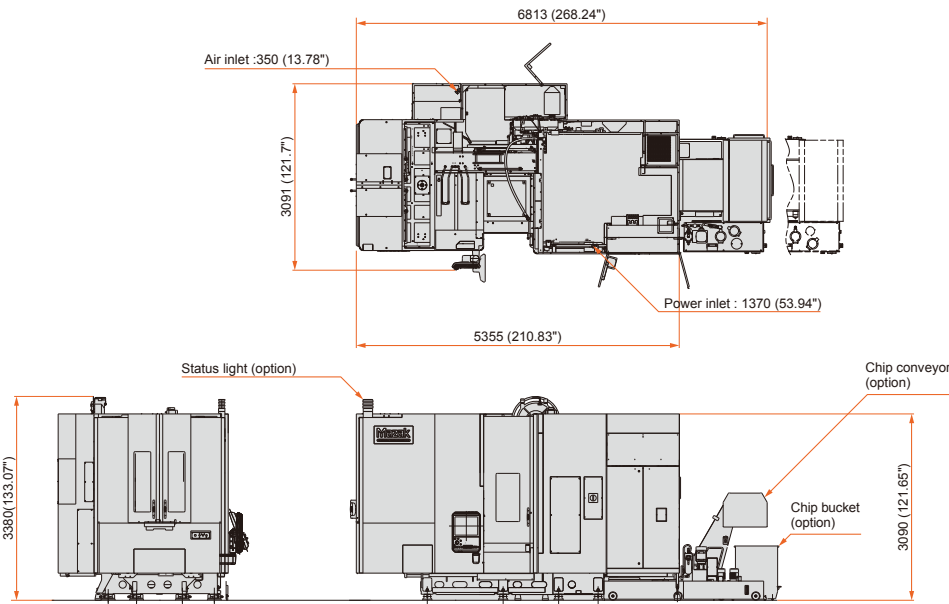
HCN-5000/50S



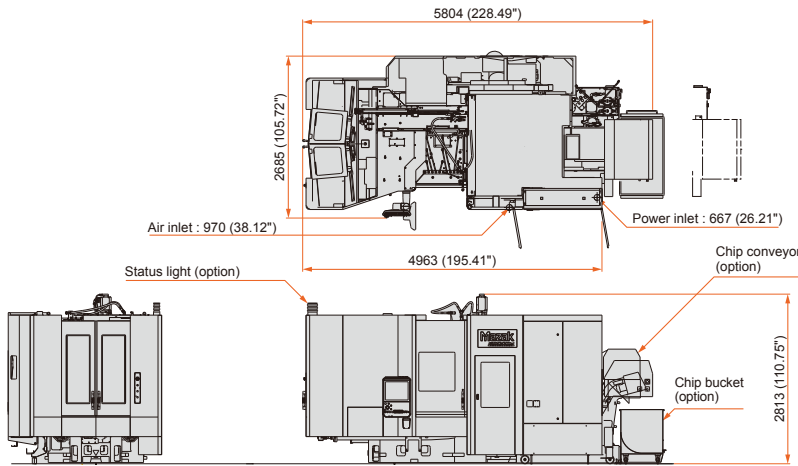
HCN-5000



HCN-6000



HCN-5000/50



Standard Machine Specifications

		HCN-4000	HCN-5000
Stroke	X-axis (column right / left)	560 mm (22.05")	730 mm (28.74")
	Y-axis (spindle up / down)	640 mm (25.2")	730 mm (28.74")
	Z-axis (table back / forth)	640 mm (25.2")	800 mm (31.5")
	Distance between table top to spindle nose	70 mm ~ 710 mm (2.76" ~ 27.95")	70 mm ~ 870 mm (2.76" ~ 34.25")
	Distance between pallet to spindle center	80 mm ~ 720 mm (3.15" ~ 28.35")	100 mm ~ 830 mm (3.94" ~ 32.68")
Table	Table size	400 mm × 400 mm (15.75" × 15.75")	500 mm × 500 mm (19.69" × 19.69")
	Max. workpiece dimensions	ø630 mm × 900 mm (ø24.8" × 35.43")	ø800 mm × 1000 mm (ø31.5" × 39.37")
	Pallet load capacity (evenly distributed)	400 kg (881 lbs)	500 kg (1102 lbs)
	Pallet top surface	5/8-11 UNC tapped holes 25 places 80 mm (3.15") pitch	5/8-11 UNC tapped holes 25 places 100 mm (3.94") pitch
	Minimum indexing angle increment	1°	
Spindle	Indexing time	1.3 sec. / 90°	1.4 sec. / 90°
	Max. spindle speed	12000 rpm	
	Spindle speed range	2-step (electric)	
	Spindle taper	No.40	
	Spindle bearing ID	ø70 mm (ø2.76")	
Feedrate	Spindle acceleration	1.48 sec. (0 → 12000 rpm)	
	Rapid traverse rate (X-, Y-, Z-axes)**	60000 mm/min (2362 IPM)	
	Cutting feedrate (X-, Y-, Z-axes)**	1 mm ~ 60000 mm/min (0.04 ~ 2362 IPM)	
Automatic tool changer	Axis acceleration / deceleration	1.0 G	
	Tool shank	No.40	
	Tool storage capacity	40	
	Max. tool diameter / length (from gauge line) / weight	ø95 mm / 420 mm / 12 kg (ø3.74" / 16.54" / 26 lbs) (max. moment : 5.9 N·m (4.35 ft·lbs))	ø95 mm / 510 mm / 12 kg (ø3.74" / 16.54" / 26 lbs) (max. moment : 5.9 N·m (4.35 ft·lbs))
	Max. tool diameter with adjacent pockets empty	ø170 mm (ø6.69")	
	Tool selection method	Random selection / shortest path	
	Tool change time (chip-to-chip)	2.4 sec.	2.6 sec.
Automati pallet changer	Number of pallets	2	
	Changing system	Rotary type	
	Pallet change time	7.0 sec.	8.0 sec.
Motors	Spindle motor (40 % ED (30 min. rating) / cont. rating)	18.5 kW / 15 kW (25 HP / 20 HP)	
	Flood coolant pump motor	730 W / 1210 W (50 Hz / 60 Hz)	
Power requirement	Electrical power supply (40 % ED (30 min. rating) / cont. rating)	47.4 kVA / 42.4 kVA (50 Hz), 49.2 kVA / 44.2 kVA (60 Hz)	48.4 kVA / 43.4 kVA (50 Hz), 50.2 kVA / 45.2 kVA (60 Hz)
	Air supply (pressure / flow rate)	0.5 MPa ~ 0.9 MPa (70 ~ 130 PSI) / 80 L/min (2.82 ft³/min)*2	
Machine size	Machine height	2713 mm (106.81")	2813 mm (110.75")
	Floor space requirement*3	2400 mm × 5454 mm (94.49"× 214.7") (ConSep2000)	2623 mm × 5769 mm (103.28"× 227.13") (ConSep2000)
	Machine weight	10720 kg (23633 lbs)	11430 kg (25198 lbs)

*1 Limited feedrate with continuous axis movement
*2 210 L/min (7.42 ft³/min) for optional 14000, 18000 and 30000 rpm spindle
*3 Including rear coolant tank and chip conveyor

		HCN-5000/50	HCN-5000/50S
Stroke	X-axis (column right / left)	730 mm (28.74")	
	Y-axis (spindle up / down)	730 mm (28.74")	
	Z-axis (table back / forth)	800 mm (31.5")	
	Distance between table top to spindle nose	70 mm ~ 870 mm (2.76" ~ 34.25")	
	Distance between pallet to spindle center	100 mm ~ 830 mm (3.94" ~ 32.68")	
Table	Table size	500 mm × 500 mm (19.69" × 19.69")	
	Max. workpiece dimensions	ø800 mm × 1000 mm (ø31.5" × 39.37")	
	Pallet load capacity (evenly distributed)	500 kg (1102 lbs)	
	Pallet top surface	5/8-11 UNC tapped holes 25 places 100 mm (3.94") pitch	
	Minimum indexing angle increment	1°	
Spindle	Indexing time	1.4 sec. / 90°	
	Max. spindle speed	10000 rpm	
	Spindle speed range	2-step (electric)	
	Spindle taper	No.50	
	Spindle bearing ID	ø90 mm (3.54")	
Feedrate	Spindle acceleration	1.2 sec. (0 → 10000 rpm)	
	Rapid traverse rate (X-, Y-, Z-axes)**	60000 mm/min (2362 IPM)	
	Cutting feedrate (X-, Y-, Z-axes)**	1 mm ~ 60000 mm/min (0.04 ~ 2362 IPM)	
Automatic tool changer	Axis acceleration / deceleration	0.9 G / 1.0 G	
	Tool shank	No.50	
	Tool storage capacity	43	
	Max. tool diameter / length (from gauge line) / weight	ø125 mm / 510 mm / 30 kg (ø4.92" / 20.08" / 66.14 lbs) (max. moment : 29.4 N·m) (22 ft·lbs)	
	Max. tool diameter with adjacent pockets empty	ø250 mm (ø9.84")	
	Tool selection method	Random selection / shortest path	
	Tool change time (chip-to-chip)	3.5 sec.	
Automati pallet changer	Number of pallets	2	1
	Changing system	Rotary type	—
	Pallet change time	8.0 sec.	—
Motors	Spindle motor (40 % ED (30 min. rating) / cont. rating)	30 kW / 22 kW (40 HP / 30 HP)	
	Flood coolant pump motor	730 W / 1210 W (50 Hz / 60 Hz)	
Power requirement	Electrical power supply (40 % ED (30 min. rating) / cont. rating)	65.7 kVA / 54.2 kVA (50 Hz), 67.6 kVA / 56.0 kVA (60 Hz)	
	Air supply (pressure / flow rate)	0.5 MPa ~ 0.9 MPa (70 ~ 130 PSI) / 210 L/min (7.42 ft³/min)	
Machine size	Machine height	2813 mm	
	Floor space requirement*2	2685 mm × 5804 mm (105.72" × 228.49") (ConSep2000)	2802 mm × 4910 mm (110.32" × 193.31") (ConSep2000)
	Machine weight	12830 kg (28285 lbs)	12150 kg (26786 lbs)

*1 Limited feedrate with continuous axis movements
*2 Including rear coolant tank and chip conveyor

Standard Machine Specifications

HCN-6000		
Stroke	X-axis (column right / left)	800 mm (31.5")
	Y-axis (spindle up / down)	800 mm (31.5")
	Z-axis (table back / forth)	800 mm (31.5")
	Distance between table top to spindle nose	150 mm ~ 950 mm (5.91" ~ 37.4")
	Distance between pallet to spindle center	100 mm ~ 900 mm (3.94" ~ 35.43")
Table	Table size	500 mm × 500 mm (19.69" × 19.69")
	Max. workpiece dimensions	ø900 mm × 1000 mm (ø35.43" × 39.37")
	Pallet load capacity (evenly distributed)	1000 kg (2205 lbs)
	Pallet top surface	5/8-11 UNC tapped holes 25 places at 100 mm (3.94") pitch
	Minimum indexing angle increment	1°
	Indexing time	1.9 sec. / 90°
Spindle	Max. spindle speed	10000 rpm
	Spindle speed range	2-step (electric)
	Spindle taper	No.50
	Spindle bearing ID	ø100 mm (ø3.94")
	Spindle acceleration	3.0 sec. (0 → 10000 rpm)
Feedrate	Rapid traverse rate (X-, Y-, Z-axes)*1	60000 mm/min (2362 IPM)
	Cutting feedrate (X-, Y-, Z-axes)*1	1 mm × 60000 mm/min (0.04 ~ 2362 IPM)
	Axis acceleration / deceleration	0.7 G
Automatic tool changer	Tool shank	No.50
	Tool storage capacity	43
	Max. tool diameter / length (from gauge line) / weight	ø125 mm / 500 mm / 30 kg (ø4.92"/ 19.69"/ 66 lbs) (max. moment : 29.4 N·m (22 ft·lbs))
	Max. tool diameter with adjacent pockets empty	ø250 mm*2(ø9.84")
	Tool selection method	Random selection, shortest path
	Tool change time (chip-to-chip)	3.5 sec.
Automati pallet changer	Number of pallets	2
	Changing system	Rotary type
	Pallet change time	9.0 sec.
Motors	Spindle motor (40 % ED (30 min. rating) / cont. rating)	AC 37 kW / 30 kW (50 HP / 40 HP)
	Flood coolant pump motor	720 W / 1180 W (50 Hz / 60 Hz)
Power requirement	Electrical power supply (40 % ED (30 min. rating) / cont. rating)	87.90 kVA / 77.97 kVA (50 Hz), 89.30 kVA / 79.38 kVA (60 Hz)
	Air supply (pressure / flow rate)	0.5 MPa ~ 0.9 MPa (70 ~ 130 PSI) / 350 L /min (12.36 ft³/min)
Machine size	Machine height	3380 mm (133.07")
	Floor space requirement*3	3091 mm × 6813 mm (121.7"× 268.24") (ConSep 2000 II)
	Machine weight	15800 kg (34833 lbs)

*1 Limited feedrate with continuous axis movement
*2 When adjacent pockets are empty and pockets next to them have tools less than ø240 mm (ø9.45"), maximum tool diameter is ø260 mm (ø10.24")
*3 Including rear coolant tank and chip conveyor

Standard and Optional Equipment

		● : Standard ○ : Option - : N / A	
		HCN-4000	HCN-5000
Spindle	12000 rpm (No.40)	●	●
	12000 rpm (BBT-40, HSK-A63)	○	○
	14000 rpm (No.40, BBT-40, HSK-A63)	○	○
	18000 rpm (No.40, BBT-40, HSK-A63)	○	○
	25000 rpm (BBT-40, HSK-A63)	○	○
	30000 rpm (HSK-F63)	○	○
Table	1° indexing table	●	●
	0.0001° × 3600000 NC rotary table	○	○
	0.0001° × 3600000 NC rotary table (with scale)	○	○
	0.0001° × 3600000 DDM table	○	○
	Table load capacity 500 kg (1102 lbs)*	-	●
	Table load capacity 700 kg (1543 lbs)*	-	○
Pallet	400 mm × 400 mm (15.75" × 15.75") tapped pallet (without edge locator)	●	-
	400 mm × 400 mm (15.75" × 15.75") tapped pallet with edge locator	○	-
	400 mm × 400 mm (15.75" × 15.75") tapped pallet with edge locator and center bore	○	-
	500 mm × 500 mm (19.69" × 19.69") tapped pallet (without edge locator)	○	●
	500 mm × 500 mm (19.69" × 19.69") tapped pallet with edge locator	○	○
	500 mm × 500 mm (19.69" × 19.69") tapped pallet with edge locator and center bore	○	○
	500 mm × 400 mm (19.69" × 15.75") tapped pallet with edge locator	○	-
	500 mm × 400 mm (19.69" × 15.75") tapped pallet with edge locator and center bore	○	-
	630 mm × 630 mm (24.8" × 24.8") tapped pallet with edge locator	-	○
	630 mm × 630 mm (24.8" × 24.8") tapped pallet with edge locator and center bore	-	○
	630 mm × 500 mm (24.8" × 19.69") tapped pallet with edge locator	-	○
	630 mm × 500 mm (24.8" × 19.69") tapped pallet with edge locator and center bore	-	○
Pallet changer	2 pallet changer	●	●
	6 pallet changer	○	○
Tool magazine	40 tool drum type magazine	●	●
	60 tool drum type magazine	○	○
	80 tool chain type magazine	○	○
	120 tool chain type magazine	○	○
	160 tool chain type magazine	○	○
	180 tool Rack magazine (TOOL HIVE)	○	○
	204 tool Rack magazine (TOOL HIVE)	○	○
	240 tool Rack magazine (TOOL HIVE)	○	○
	288 tool Rack magazine (TOOL HIVE)	○	○
	312 tool Rack magazine (TOOL HIVE)	○	○
Set up	Automatic tool length measurement & tool breakage detection	●	●
	Laser milling tool measurement system (RENISHAW / NC4)	○	○
	Tool breakage detection (detection in ATC area)	○	○
	Magazine operation panel for tool ID	●	●
	Mazak monitoring system B (OMP60)	○	○
	Remote manual pulse generator	○	○
Automation	Mist collector	○	○
	Hydraulic power supply through pallet for fixtures (NC rotary table, NC rotary table (with scale), DDM table)	○	○
	Hydraulic power supply from top of machine for fixtures (2 ports / 2 pallets)	○	○
	Preparation for PALLETECH	○	○
	Automatic power ON / OFF + warm up operation	●	●
Coolant / chip disposal	Flood coolant	●	●
	Coolant through spindle (0.8 MPa) (120 PSI)	●	●
	Coolant through spindle (1.5 MPa, 3.5 MPa) (220 PSI, 508 PSI)	○	○
	Preparation for coolant through spindle (7.0 MPa) (1000 PSI)	○	○
	Niagara coolant	●	●
	Secondary coolant filter for aluminum	○	○
	Hand held coolant nozzle (for workpiece washing on pallet changer)	○	○
	Oil skimmer (RB-200)	○	○
	Magnetic separator for cast iron	○	○
	Preparation for chip conveyor (rear discharge , CONSEP 2000)	●	●
	Chip conveyor (rear discharge , CONSEP 2000)	○	○
High accuracy	Ball screw core cooling (X-, Y-, Z-axes)	●	●
	Chiller unit	●	●
	Hydraulic unit temperature control	○	○
	Coolant temperature control	○	○
	Scale feedback (X-, Y-, Z-axes)	○	○

* including pallet weight

Standard and Optional Equipment

		● : Standard ○ : Option – : N / A	
		HCN-5000/50	HCN-5000/50S
Spindle	10000 rpm (No.50)	●	●
	10000 rpm (BBT-50, HSK-A100)	○	○
Table	1° indexing table	●	●
	0.0001°× 3600000 NC rotary table	○	○
	0.0001°× 3600000 NC rotary table (with scale)	○	○
	0.0001°× 3600000 DDM table	○	○
	Table load capacity 500 kg (1102 lbs)*	●	●
	Table load capacity 700 kg (1543 lbs)*	○	○
	A-axis table	–	○
Pallet	500 mm × 500 mm (19.69" × 19.69") tapped pallet without edge locator	●	●
	500 mm × 500 mm (19.69" × 19.69") tapped pallet with edge locator and center bore	○	○
	630 mm × 630 mm (24.8" × 24.8") tapped pallet without edge locator	○	○
	630 mm × 630 mm (24.8" × 24.8") tapped pallet with edge locator and center bore	○	○
	630 mm × 500 mm (24.8" × 19.69") tapped pallet without edge locator	○	○
	630 mm × 500 mm (24.8" × 19.69") tapped pallet with edge locator and center bore	○	○
Pallet changer	2 Pallet changer	●	–
	6 Tool magazine	○	–
Tool magazine	43 tool drum type magazine	●	●
	80 tool chain type magazine	○	○
	120 tool chain type magazine	○	○
	160 tool chain type magazine	○	○
	180 tool Rack magazine (TOOL HIVE)	○	○
	204 tool Rack magazine (TOOL HIVE)	○	○
	240 tool Rack magazine (TOOL HIVE)	○	○
	288 tool Rack magazine (TOOL HIVE)	○	○
	312 tool Rack magazine (TOOL HIVE)	○	○
	348 tool Rack magazine (TOOL HIVE)	○	○
Set up	Automatic tool length measurement & tool breakage detection	●	●
	Laser milling tool measurement system (RENISHAW / NC4)	○	○
	Tool breakage detection (detection in ATC area)	○	○
	Magazine operation panel for tool ID	●	●
	Mazak monitoring system B (OMP60)	○	○
	Remote manual pulse generator	○	○
Automation	Mist collector	○	○
	Hydraulic power supply through pallet for fixtures (NC rotary table, NC rotary table (with scale), DDM table)	○	○
	Hydraulic power supply from top of machine for fixtures (2 ports / 2 pallets)	○	–
	Preparation for PALLETECH	○	–
	Automatic power ON / OFF + warm up operation	●	●
Coolant / chip disposal	Flood coolant	●	●
	Coolant through spindle (0.8 MPa) (120 PSI)	●	●
	Coolant through spindle (1.5 MPa, 3.5 MPa) (220 PSI, 508 PSI)	○	○
	Preparation for coolant through spindle (7.0 MPa) (1000 PSI)	○	○
	Niagara coolant	●	●
	Secondary coolant filter for aluminum	○	○
	Hand held coolant nozzle (for workpiece washing on pallet changer)	○	○
	Oil skimmer (RB-200)	○	○
	Magnetic separator for cast iron	○	○
	Preparation for chip conveyor (rear discharge, CONSEP 2000)	●	●
	Chip conveyor (rear discharge, CONSEP 2000)	○	○
High accuracy	Ball screw core cooling (X-, Y-, Z-axes)	●	●
	Chiller unit	●	●
	Hydraulic unit temperature control	○	○
	Coolant temperature control	○	○
	Scale feedback (X-, Y-, Z-axes)	○	○

* including pallet weight

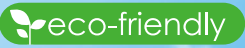
		● : Standard ○ : Option	
		HCN-6000	
Spindle	10000 rpm (No.50)	●	
	10000 rpm (BBT-50, HSK-A100)	○	
	7000 rpm (No.50, BBT-50, HSK-A100)	○	
Table	1° indexing table	●	
	0.0001°× 3600000 NC rotary table	○	
	0.0001°× 3600000 NC rotary table (with scale)	○	
	0.001°× 360000 NC indexing table (without contouring)	○	
Pallet	500 mm × 500 mm (19.69" × 19.69") tapped pallet with edge locator	●	
	500 mm × 500 mm (19.69" × 19.69") tapped pallet with edge locator and center bore	○	
	500 mm × 500 mm (19.69" × 19.69") T-slot pallet with edge locator and center bore	○	
	630 mm × 630 mm (24.8" × 24.8") tapped pallet with edge locator	○	
	630 mm × 630 mm (24.8" × 24.8") tapped pallet with edge locator and center bore	○	
	630 mm × 630 mm (24.8" × 24.8") T-slot pallet with edge locator and center bore	○	
	630 mm × 500 mm (24.8" × 19.69") tapped pallet with edge locator	○	
	630 mm × 500 mm (24.8" × 19.69") tapped pallet with edge locator and center bore	○	
Pallet changer	630 mm × 500 mm (24.8" × 19.69") T-slot pallet with edge locator and center bore	○	
Pallet changer	2 Pallet changer	●	
	6 pallet changer	○	
Tool magazine	43 tool chain type magazine	●	
	60 tool chain type magazine	○	
	80 tool chain type magazine	○	
	120 tool chain type magazine	○	
	160 tool chain type magazine	○	
	180 tool Rack magazine (TOOL HIVE)	○	
	204 tool Rack magazine (TOOL HIVE)	○	
	240 tool Rack magazine (TOOL HIVE)	○	
	288 tool Rack magazine (TOOL HIVE)	○	
	312 tool Rack magazine (TOOL HIVE)	○	
	348 tool Rack magazine (TOOL HIVE)	○	
Set up	Automatic tool length measurement & tool breakage detection	●	
	Laser milling tool measurement system (RENISHAW / NC4)	○	
	Tool breakage detection (detection in ATC area)	○	
	Magazine operation panel for tool ID	●	
	Mazak monitoring system B (OMP60)	○	
	Remote manual pulse generator	○	
Automation	Mist collector	○	
	Hydraulic power supply through pallet for fixtures (NC rotary table, NC indexing table)	○	
	Hydraulic power supply from top of machine for fixtures (2 ports / 2 pallets)	○	
	Preparation for PALLETECH	○	
	Automatic power ON / OFF + warm up operation	●	
Coolant / chip disposal	Flood coolant	●	
	Coolant through spindle (0.8 MPa) (120 PSI)	●	
	Coolant through spindle (1.5 MPa, 3.5 MPa) (220 PSI, 508 PSI)	○	
	Preparation for coolant through spindle (7.0 MPa) (1000 PSI)	○	
	Niagara coolant	●	
	Secondary coolant filter for aluminum	○	
	Hand held coolant nozzle (for workpiece washing on pallet changer)	○	
	Oil skimmer (RB-200)	○	
	Magnetic separator for cast iron	○	
	Preparation for chip conveyor (rear discharge , CONSEP 2000)	●	
	Chip conveyor (rear discharge, CONSEP 2000)	○	
High accuracy	Ball screw core cooling (X-, Y-, Z-axes)	●	
	Chiller unit	●	
	Hydraulic unit temperature control	○	
	Coolant temperature control	○	
	Scale feedback (X-, Y-, Z-axes)	○	

MAZATROL SmoothG Specifications

	MAZATROL	EIA
Number of controlled axes	Simultaneous 2 ~ 4 axes	
Least input increment	0.0001 mm, 0.00001", 0.0001°	
High speed, high precision control	Shape error designation, Smooth corner control, Rapid traverse override	Shape error designation, Smooth corner control, Rapid traverse override, Rotational-shape correction, High-speed machining mode, High-speed smoothing control function
Interpolation	Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Synchronized milling spindle tapping*	Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Spiral interpolation, Helical interpolation, Cylindrical coordinate interpolation*, Fine spline interpolation*, NURBS interpolation*, Polar coordinate interpolation*, synchronized milling spindle tapping*
Feedrate	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp, Acceleration / deceleration after compensation, Acceleration / deceleration before compensation, Variable acceleration / deceleration control, Constant control for G0 tilting*	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Inverse time feed, Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp, Acceleration / deceleration after compensation, Acceleration / deceleration before compensation, Time constant changing for G1, Variable acceleration / deceleration control, Constant control for G0 tilting*
Program registration	Max. number of programs : 960, Program storage : 2 MB, Program storage expansion : 8 MB*	
Control display	Display : 19" touch panel, Resolution : SXGA	
Spindle functions	S code output, Spindle speed clamp, Spindle speed override, Spindle speed reaching detection, Multiple position orient, Constant surface speed, Spindle speed command with decimal digits, Synchronized spindle control, Max. speed control for spindle	
Tool functions	Tool offset pairs : 4000, T code output for tool number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)	Tool offset pairs : 4000, T code output for tool number, T code output for group number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)
Miscellaneous functions	M code output, Simultaneous output of multiple M codes	
Tool offset functions	Tool position offset, Tool length offset, Tool diameter / Tool nose R offset, Tool nose shape offset, Tool wear offset	
Coordinate system	Machine coordinate system, Work coordinate system, Local coordinate system, Additional work coordinates (300 set)	
Machine functions	-	Shaping function*, dynamic compensation II*
Machine compensation	G0 / G1 independent backlash compensation, Pitch error compensation	
Protection functions	Emergency stop, Interlock, Stroke check before travelling, Retraction function for the vertical axis, INTELLIGENT SAFETY SHIELD (manual mode), MAZAK VOICE ADVISER	
Automatic operation mode	Memory operation	Memory operation, Tape operation, MDI operation, Ethernet operation*
Automatic operation control	Optional stop, Dry run, Manual handle control, MDI control, TPS, Restart, Machine lock	Optional block skip, Optional stop, Dry run, Manual handle control, MDI control, TPS, Restart, Restart 2, Collation stop, Machine lock
Manual measuring functions	Tool length and tip teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine	Tool length and tip teach, Tool offset teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine
Automatic measuring functions	WPC coordinate measurement, Automatic tool length measurement, Laser tool length / diameter measurement, Touch sensor orientation confirmation, Tool breakage detection, External tool breakage detection	Automatic tool length measurement, Laser tool length / diameter measurement, Touch sensor orientation confirmation, Tool breakage detection, External tool breakage detection
MDI measurement	Partial auto tool length measurement, auto tool length measurement, Coordinate measurement	
Interface	EtherNet, USB, PROFIBUS-DP*, EtherNet I/P*, CC-Link*	
Card interface	SD card interface	

* Option

Environmentally Friendly



Environmental considerations

The environment and our impact on our natural surroundings have always been important concerns of Yamazki Mazak. This is shown by the fact that all factories in Japan where Mazak machine tools are produced are ISO 14001 certified, an international standard confirming that the operation of our production facilities does not adversely affect air, water or land.



The roller guides utilized by all linear axes are lubricated by a grease lubrication system instead of oil. (Spindle bearings are lubricated by an oil-air system). With this system, tramp oil in the coolant is considerably reduced, resulting in a longer coolant service life. Additionally, the work light, the CNC display, and the optional chip conveyor are automatically shut off after a predetermined period for lower power consumption when the machine is in the stand-by state.

