Standard Machine Specifications

		HCR-5000S	HCR-5000
Stroke	X axis × Y axis × Z axis	730 mm × 730 mm × 730 mm (28.74" × 28.74" × 28.74")	
	A-axis (tilt table)	–90° ~ +135°	
	C-axis (table rotating)	±360°	
Table	Table size	ø630 mm (ø24.80")	500 mm × 500 mm (19.69" × 19.69")
	Table top surface	18 mm (0.709") T-slot × 5	M16 × P2.0 (5/8-11UNC) 20 100 mm (3.937") pitch
	Max. workpiece dimensions (diameter × height)	ø700 mm × 643.6 mm (ø27.56 × 25.34")	
	Table load capacity (evenly distributed)	500 kg (1102 lbs)	
Spindle	Max. spindle speed	12000 rpm	
	Spindle taper	No. 40	
Feedrate	Rapid traverse rate (X, Y, Z axis)*1	60000 mm/min (2362 IPM)	
	Rapid traverse rate (A, C axis)	30 rpm, 50 rpm	
	Cutting feedrate (X, Y, Z axis)*1	1 ~ 60000 mm/min (0.04 ~ 2362 IPM)	
	Cutting feedrate (A, C axis)	1 ~ 30 rpm	
Automatic tool changer	Tool storage capacity	40	
	Max. tool diameter/length (from gauge line)/weight	ø95 mm/400 mm/12 kg (ø3.74"/15.75"/26 lbs)	
	Max. tool diameter (when adjacent pockets empty)	ø170 mm (ø6.69")	
Automatic pallet changer	Number of pallets	-	2
Machine size	Machine height	2841 mm (111.85")	2781 mm (109.49")
	Machine width × length	2762 mm × 5259 mm [ConSep] (108.74" × 207.05")	3137.1 mm × 5863.5 mm [ConSep] (123.51" × 230.85")
	Machine weight	12800 kg (28219 lbs)	14210 kg (31327 lbs)

*1 Limited feedrate with continuous axis movement

Standard and Optional Equipment

●: Standard O: Option –: N / A

		HCR-5000S	HCR-5000
Spindle	12000 min^{-1} (rpm) (CAT No.40)	●	●
	12000 min^{-1} (rpm) (BBT-40, HSK-A63)	O	O
	18000 min^{-1} (rpm) (CAT No. 40, BIG-PLUS No. 40, HSK-A63)	O	O
	25000 min^{-1} (rpm) (HSK-A63)	O	O
	30000 min^{-1} (rpm) (HSK-A63)	O	O
Pallet	500 mm × 500 mm tapped pallet with center bore	O	O
Pallet changer	2-pallet changer	O	●
Tool magazine	40-tool drum type tool magazine (tool storage position: MAZATROL random memory)	–	●
	60-tool drum type tool magazine (tool storage position: MAZATROL random memory)	●	●
	80-tool chain type	O	O
	120-tool chain type	O	O
	160-tool chain type	O	O
	180-tool rack type (TOOL HIVE)	O	O
	204-tool rack type (TOOL HIVE)	O	O
	240-tool rack type (TOOL HIVE)	O	O
	288-tool rack type (TOOL HIVE)	O	O
	312-tool rack type (TOOL HIVE)	O	O
	348-tool rack type (TOOL HIVE)	O	O
Setup	Automatic tool length measurement & tool breakage detection	O	O
	RENISHAW NC 4 laser tool length measurement	O	O
	Tool breakage detection	O	O
	Tool ID magazine operation panel	O	O
	Mazak monitoring system B RMP60	O	O
	Remote manual pulse generator (wired)	O	O

*Pallet weight not included.

		HCR-5000S	HCR-5000
Automation	Robot interface	O	O
	Preparation for MPP	O	-
	Preparation for PALLETECH	-	O
	Automatic power ON/OFF + warm-up operation	●	●
Coolant/ chip disposal	Flood coolant	●	●
	Coolant through spindle 0.8 MPa (116 PSI)	O	O
	Coolant through spindle 1.5 MPa (218 PSI), 3.5 MPa (508 PSI)	O	O
	SUPERFLOW coolant system	O	O
	Niagara coolant	O	O
	Secondary coolant filter for aluminum	O	O
	Hand held coolant nozzle (for cleaning pallet changer)	O	O
	Oil skimmer (RB-200)	O	O
	Mist collector	O	O
	Preparation for chip conveyor (rear disposal, ConSep 2000)	●	●
	Chip conveyor (rear disposal, ConSep 2000)	O	O
High accuracy	Ball screw core cooling (X, Y, Z axis)	●	●
	Chiller unit	●	●
	Coolant temperature control	O	O
	Scale feedback (X, Y, Z axis)	O	O

MAZATROL SmoothX Specifications

	MAZATROL	EIA
Number of controlled axes	Simultaneous 2 ~ 4 axes	Simultaneous 5 axes
Least input increment	0.0001 mm, 0.00001 inch, 0.0001 deg	
High-speed, high-precision control	Shape compensation, Smooth corner control, Rapid traverse overlap, Rotary axis shape compensation	Shape compensation, Smooth corner control, Rapid traverse overlap, Rotary axis shape compensation, High-speed machining mode, High-speed smoothing control, 5-axis spline*
Interpolation	Positioning (interpolation), Positioning (non-interpolation), Linear interpolation, Circular interpolation, Cylindrical interpolation, Polar coordinate interpolation, Synchronous tapping*	Positioning (interpolation), Positioning (non-interpolation), Linear interpolation, Circular interpolation, Spiral interpolation, Helical interpolation, Cylindrical interpolation*, Involute interpolation*, Fine spline interpolation*, NURBS interpolation*, Polar coordinate interpolation*, Synchronous tapping*
Feedrate	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Dwell (time/rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate limitation, Variable acceleration control, G0 slope constant	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Inverse time feed, Dwell (time/rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate limitation, Time constant changing for G1, Variable acceleration control, G0 slope constant*
Program registration	Number of programs: 256 (Standard)/960 (Max.), Program memory: 2MB, Program memory expansion: 8MB*, Program memory expansion: 32MB*	
Control display	Display: 19" touch panel, Resolution: SXGA	
Spindle functions	S code output, Spindle speed limitation, Spindle speed override, Spindle speed reaching detection, Multiple position orient, Constant surface speed, Spindle speed command with decimal digits, Synchronized spindle control, Spindle speed range setting	
Tool functions	Number of tool offset: 4000, T code output for tool number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)	Number of tool offset: 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 wear offset	
Coordinate system	Machine coordinate system, Work coordinate system, Local coordinate system, Additional work coordinates (300 set)	
Machine functions	-	-Rotary axis prefilter, Tilted working plane, Polygonal machining*, Hobbing II*, Shaping function*, Dynamic compensation II*, Tool center point control*, Tool radius compensation for 5-axis machining*, Workpiece positioning error compensation*
Machine compensation	Backlash compensation, Pitch error compensation, Geometric deviation compensation, Volumetric compensation*	
Protection functions	Emergency stop, Interlock, Pre-move stroke check, Barrier, SAFETY SHIELD (manual mode), SAFETY SHIELD (automatic mode),VOICE ADVISER	
Automatic operation mode	Memory operation	Memory operation, Tape operation, MDI operation, EtherNet operation
Automatic operation control	Optional stop, Dry run, Manual handle interruption, MDI interruption, TPS, Restart, Single process, Machine lock	Optional block skip, Optional stop, Dry run, Manual handle interruption, MDI interruption,TPS, Restart, Restart 2, Collation stop, Machine lock
Manual measuring functions	Tool length teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine	Tool length 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, Sensor calibration, Tool breakage detection, External tool breakage detection*	Automatic tool length measurement, Laser tool length/diameter measurement, Sensor calibration, Tool breakage detection, External tool breakage detection*
MDI measurement	Coordinate measurement, Laser measurement	
Interface	PROFIBUS-DP*, EtherNet/IP*, CC-Link*	
Card interface	SD card interface, USB	
EtherNet	10M/100M/1Gbps	

*Option