

## MAZATROL SMART standard specifications

	MAZATROL	EIA/ISO
Control axis	4 axes (simultaneous 3-axis control)	4 axes (simultaneous 4-axis control)
Least input increment	0.0001 mm, 0.00001 inch, 0.0001"	
Maximum command value	±99999.9999 mm, ±9999.99999 inch, ±99999.9999"	
High accuracy control	Smooth high gain control, scale feedback*, absolute position detection	
Interpolation	Positioning (axis independent type, linear interpolation type), linear interpolation, circular interpolation, synchronized tapping* Thread cutting (equal pitch, variable pitch), polygon machining*, polar coordinate interpolation*, cylindrical interpolation*	
Feed	Rapid feed, cutting feed (per revolution, per minute), cutting feed rate clamp, override (Rapid feed, cutting feed, external override, second override, override cancel) Feedrate automatic acceleration/deceleration (linear type time constant: constant, index acceleration/linear deceleration: selection), dry run	
Program storage size	Number of registered programs: 256, 512* 320 KB	
Display	10.4-inch color TFT	
NC screen display language	Display language (Japanese, English, German, French, Italian, Spanish, Dutch, Norwegian, Swedish, Finnish, Danish, Portuguese, Turkish, Polish, Czech, Romanian, Simplified Chinese, Traditional Chinese, Korean, Slovak, Russian, Hungarian, Bulgarian) One-touch language switching	
Data I/O	USB	
S function	S code output (8-digit binary output, analog output, actual spindle speed binary output), constant surface speed control Spindle speed control (speed clamp, speed attainment/spindle speed displayed), spindle override (0 ~ 150 %)	
T function	T code output (8-digit binary output), tool life management Spare tool change, tool management function (group number)	
Tool offset	Tool nose radius offset, tool nose geometry offset, tool position offset, tool wear offset, tool radius offset	
Registration number of tools	Up to 64 (depending on machine specification)	
Number of tool offset pairs	128 (depending on machine specification)	
M function	M code output (M3-digit), M3-digit 4-pair simultaneous output, secondary auxiliary function (B3-digit output), high speed MSTB interface	
Coordinate system control	MAZATROL coordinate system	Machine coordinate system (machine coordinate system, machine coordinate system shift, travel zero point shift) work coordinate system (work coordinate system, work coordinate system shift)
Manual operation control	Rapid feed, cutting feed, handle feed, zero point return, manual machine control (machine lock, gear shift, barrier cancel) Manual spindle control (spindle start, stop, reverse, jogging)	
Automatic operation control	Memory operation, MDI operation, automatic operation, NC reset, single block, feed hold, single process, optional block skip, optional stop, machine lock, feedrate override, spindle control, dry run, manual handle interruption, tool nose path storage (TPS)	
Background function	During automatic operation (program editing, data I/O, tool path check)	
Machine compensation	Backlash compensation, pitch error compensation, quadrant projection compensation, thermal displacement compensation	
Protection function	Emergency stop, over travel, barrier (stored stroke limit, chuck barrier, table barrier, tool barrier), interlock (cutting start, axis interlock), alarm	
Diagnosis/maintenance	Alarm, monitor (memory, servo, spindle, ladder), programmable logic controller (PLC), alarm menu	
Measurement function	Manual measurement (tool set measurement, C offset measurement, Z offset measurement), automatic measurement (workpiece measurement, Z offset measurement, C offset measurement**), tool nose measurement, external measurement) Measurement quantitative compensation	

\* : Option  
\*\* : available with milling

## Standard machine specifications

	mm (inch)		
	3000U	4000U	
Capacity	Swing over bed	870 mm (34.25")	
	Swing over carriage	840 mm (33.70")	
	Swing over cross slide	450 mm (17.72")	
	Maximum machining diameter	840 mm (33.70")	
Stroke	Distance between centers	3121.2 mm (122.88")	4121.2 mm (162.25")
	X-axis stroke	670 mm (26.375")	
Spindle	Z-axis stroke	3075 (3055 + 20) mm (120.97" (120.22" + 0.75"))	4075 (4055 + 20) mm (160.345" (159.595" + 0.75"))
	Spindle speed (rpm)	3 ~ 1200 min <sup>-1</sup> (rpm)	2 ~ 750 min <sup>-1</sup> (rpm)*
Turret	Type of spindle nose	A1-11	A2-15*
	Spindle bore diameter (mm)	ø118, ø260*, ø320*, ø375* (ø4.64", ø10.23", ø12.59", ø14.76" )	
Turret type	8-station disk + 6-station turret		
Feedrate	Rapid traverse rate X : 12000 mm/min (472 IPM), Z : 12000 mm/min (472 IPM)		
Tailstock	Tailstock quill diameter	ø150 mm (ø5.91")	
	Tailstock quill center	MT5 (built-in center)	
	Tailstock quill travel	160 mm (6.30")	
Motor	Spindle motor (30 min./cont. rating) AC 45 kW (60 HP) / 37 kW (50 HP)		
Power sources	Electric power supply (30 min./cont. rating)	74.6 kVA / 63.0 kVA (spindle motor AC 45 kW (60HP))	
	Air requirements	0.5 MPa (5 kgf/cm <sup>2</sup> ) (72.5 PSI)	
Machine size	Machine height	2306 mm (90.79")	
	Required floor space	3015 mm × 7720 mm (118.70" × 303.94")	3015 mm × 8740 mm (118.70" × 344.09")
	Machine weight	13760 kg ~ 14895 kg (30335 ~ 32837 lbs)	14760 kg ~ 15895 kg (32540 ~ 35042 lbs)

\* : Option

## Standard equipment

- Coolant system, worklight \_\_\_\_\_ 1 set
- Manuals \_\_\_\_\_ 1 set
- Disassembly / adjustment tool \_\_\_\_\_ 1 set
- Splashguard \_\_\_\_\_ 1 set
- Machining condition changing function \_\_\_\_\_ 1 set
- Tool path storage function \_\_\_\_\_ 1 set
- Basic articles \_\_\_\_\_ 1 set
- Built-in tail center \_\_\_\_\_ 1 set
- Standard tooling package \_\_\_\_\_ 1 set

## Optional equipment

- Hydraulic chuck 15", 18"
- Four-jaw independent chuck 18", 20", 24", 28", 30", 32"
- Steady rest
- Tool holder
- Chip conveyor
- Spindle bore diameter 260 mm (10.24") (spindle speed 750 min<sup>-1</sup> (rpm))
- Spindle bore diameter 320 mm (12.60") (spindle speed 500 min<sup>-1</sup> (rpm))
- Spindle bore diameter 375 mm (14.76") (spindle speed 500 min<sup>-1</sup> (rpm))
- Machine status light