

The Clock 1200 has a 1200 x 900 (1000) x 830 (1000)mm XYZ working capacity. With pallet dimensions of 630 x 630mm or 630 x 800mm with a 1000kg load. Available as a bi-pallet, multi-pallet or FMS models.

**SPECIFICATION**

**MCM Clock 1200 4/5 Axis**

**Work Area**

X-axis stroke	1200mm
Y-axis stroke	900 / 1000mm (Option for 5th Axis)
Z-axis stroke	830 / 1000mm (Option for 5th Axis)
X/Y/Z axes thrust	1300 daN
X/Y/Z rapid feed speed	75 / 60 / 75m/min
X/Y/Z axes acceleration	5 / 5 / 5m/sec <sup>2</sup>

**Pallet and Rotary Table (4th Continuous Axis)**

Pallet dimensions	630 x 630mm / 630 x 800mm
Max. load allowed on pallet	1000kg
Max. fixture height	1050mm
Max. fixture rotation diameter	1200mm
Max. table rotation speed	20rpm (worm screw transmission) 40rpm (torque motor transmission option)
90 degree rotation time	1,2sec (worm screw transmission) 0,9sec (torque motor transmission)
Min. resolution	0,0001 degrees

**Accuracy (As per ISO 230-2 Standards)**

Accuracy of positioning - linear axis (A)	4µm
Systematic positional deviation - linear axis (M)	3µm
Repeatability - linear axis (R)	3µm
Accuracy of positioning - circular axis (A)	4 arc sec
Systematic positioning deviation - circular axis (M)	2 arc sec
Repeatability - circular axis (R)	3 arc sec

**Spindle**

Tool taper	HSK 100 / ISO50
Max. speed (standard version)	10,000rpm (HSK 100) / 10,000rpm (ISO50)
Max. power (standard version)	70kW
Max. torque (standard version)	418Nm
Accessories included	Variable preloading bearings
Tool taper	HSK 63 / ISO40
Max. speed (standard version)	15,000rpm (HSK 100) / 10,000rpm (ISO50)
Max. power (standard version)	36kW
Max. torque upto (Nm)	214Nm
Accessories included	Variable preloading bearings
<b>Optional Versions</b>	HSK 63 / HSK 100 / ISO50
Max. speed upto	30,000rpm (HSK 63) / 18,000rpm (HSK 100)
Max. power upto	74kW (for HSK 63 spindle at 30,000rpm) 91kW (for ISO50 / HSK 100 spindle at 10,000rpm)
Max. torque upto	55Nm (for HSK 63 spindle at 30,000rpm) 633Nm (for ISO50 / HSK 100 spindle at 10,000rpm)

MCM Clock 1200 4/5 Axis Horizontal Machining Centre

**Tool Magazine**

Type	Modular rack with tool movement system and exchange arm	
Tool taper	HSK 100 / ISO50	HSK 63 / ISO40
Number of tools (standard version)	80	100
Number of tools (optional version - upto )	199-399-599	340-645
Tool mass	30kg	12kg
Max. length	500mm	400mm

Max. diameter	340mm	200mm
Tool changing time	2 sec (HSK 100) / 2,5sec (ISO50)	1,5 sec (HSK63) 2 sec (ISO40)

**Rototilting Table Unit (4th + 5th Continuous Axes)  
Option as an alternative to the Rotary Table Unit**

Pallet dimensions	630 x 630mm
Max. load allowed on the pallet	700kg
Max. equipment height	770mm
Max. tool rotation diameter	900mm
A-axis tilting angle	140 degrees (+35 / - 105)
Max. A axis (tilting) speed	25rpm
A-axis 90 Degrees rotation time	1,2 sec
A-axis min. resolution	0,0001 degrees
Max. B axis (Table) speed	25rpm
B-axis 90 Degrees rotation time	1 sec
B-axis min. resolution	0,0001 degrees

**Coolant Treatment Unit (Basic Version)**

Chip conveyor type	Scrapping type
Total tank capacity	1100 litres
Filter type	Self cleaning (40 microns)
Standard low pressure system	
Flow rate	200litres/min (to be divided into the various machine functions with PLC managed solenoid valves)
Pressure	2 bar
Standard high pressure system	
Flow rate	28 litres/min
Pressure	20 bar
<b>CNC Controls</b>	Fanuc 31iB5 Siemens 840D SL

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