



FM 200/5AX *linear*

High-Speed, High-Precision 5-Axis Machining Center Equipped with Linear Motors



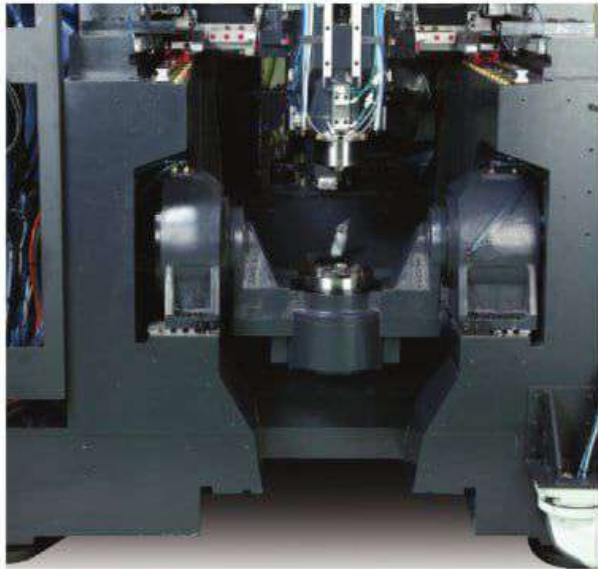
Doosan Machine Tools

Optimal Solutions for the Future

Structure

Linear axes are driven by linear motors to provide super-high travel speed and reliability. The mineral casting bed delivers excellent stability and surface roughness.

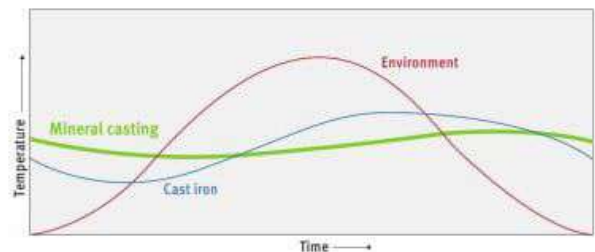
High Stability Bed



- The mineral casting* bed provides excellent vibration isolation and thermal stability.

* Mineral Casting: A next-generation, environmentally-friendly casting material composed of minerals and resin. Mineral castings can absorb vibration at a rate ten times higher than that of iron castings. The mineral casting bed can extend tool life and is highly resistant to corrosion.

Thermal conductivity curve

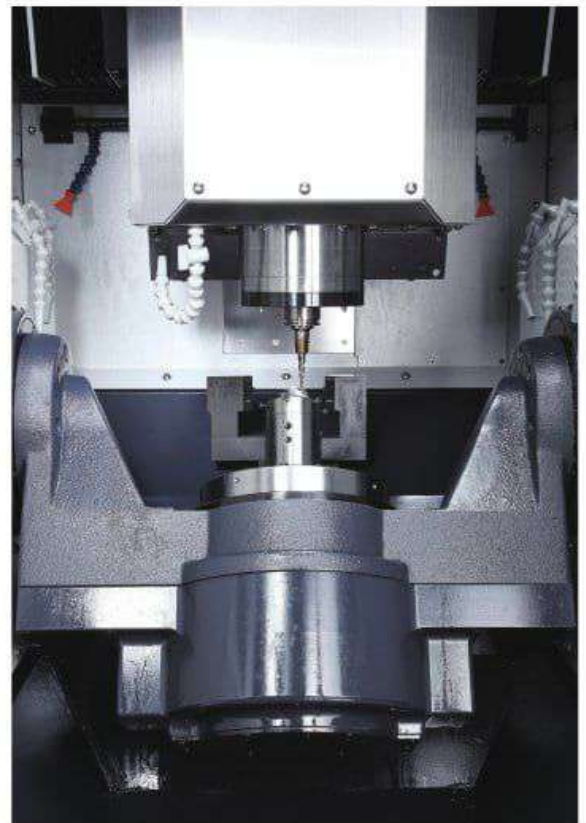
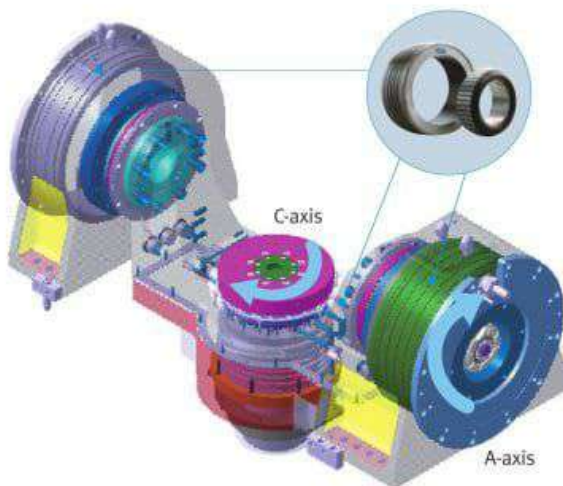


Mineral casting
Cast iron

↑ **25 times**
Thermal Stability higher by
25 times

Rotary Table

- Equipped with a direct drive motor to deliver high speed and rapid acceleration / deceleration.
- The motor is cooled with a Water Cooling System.



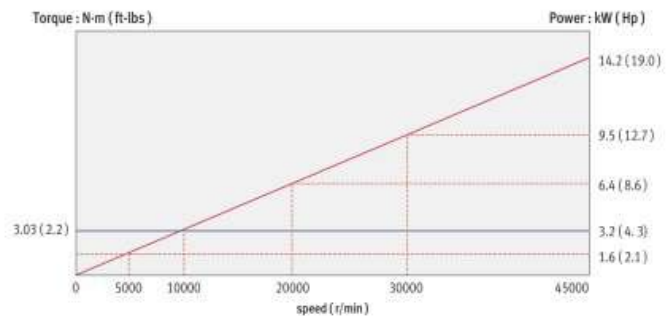
Super-high Speed Spindle

Spindle speed of 45,000 r/min is the highest of its class in Korea.
Spindle vibration has been minimized to maximize stability.



- Delivers the highest speed (45,000 r/min) in its class (HSK E40)
- Spindle vibration at maximum speed has been further reduced to improve stability.
- The motor & bearings are cooled with a water cooling system

Spindle power-torque diagram



Tool Magazine



The 24 tool stations (standard) increase productivity while the direct drive, servo-driven ATC realizes reliability.

Simplified Operation Panel



The ergonomically designed operation panel (by Heidenhain) equipped with a 19" screen provides excellent operator convenience.

Tool Length Measuring System std.



The laser tool length measuring system guarantees precision accuracy during super-high speed cutting.

Linear Motor



Linear axes driven by linear motors deliver super-high speed and guarantee machining accuracy. (water cooling)

Machine Specifications

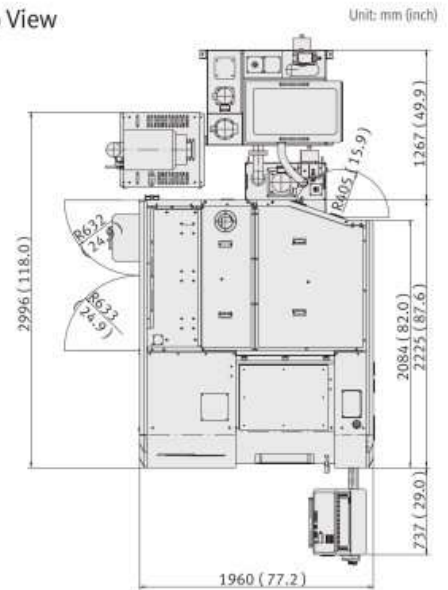
Description		Unit	FM 200/5AX linear
Travel	Travel distance	X-axis	mm (inch) 200 (7.9)
		Y-axis	mm (inch) 340 (13.4)
		Z-axis	mm (inch) 300 (11.8)
		A-axis	deg 140 (-10 ~ +130)
		C-axis	deg 360
	Distance from spindle nose to table top	mm (inch)	110 (4.3)
Feedrate	Rapid traverse rate	X-axis	m/min (ipm) 50 (1968.5)
		Y-axis	m/min (ipm) 50 (1968.5)
		Z-axis	m/min (ipm) 50 (1968.5)
		A-axis	rpm 100
		C-axis	rpm 200
	Cutting feedrate	m/min (ipm)	20 (787.4)
Table	Table size	mm (inch)	ø 200 (7.9)
	Table loading capacity	kg (lb)	15 (33.1)
	Table type	-	TAP TABLE
Spindle	Max. spindle speed	r/min	45000
	Spindle taper	-	HSK E40
	Max. spindle torque	N·m (ft·lbs)	3.03 (2.2)
Automatic tool changer	Type of tool shank	-	HSK E40
	Tool storage capacity	ea	24
	Max. tool diameter	Continuous	mm (inch) 50 (2.0)
		Near port empty	mm (inch) 50 (2.0)
	Max. tool length	mm (inch)	180 (7.1)
	Max. tool weight	kg (lb)	1 (2.2)
	Method of tool selection	-	FIXED
	Tool change time (tool-to-tool)	s	8
	Tool change time (chip-to-chip)	s	10
	Tool change time (chip-to-chip)	s	10
Motor	Spindle motor power	kW (Hp)	14.2 (19.0)
	Coolant pump motor power	kW (Hp)	1.1 (1.5)
Power source	Electric power supply	kVA	66.4
	Compressed air supply	Mpa (psi)	0.55 (79.8)
Tank capacity	Coolant pump capacity	L (galon)	200 (52.8)
	Lubrication tank capacity	L (galon)	5 (1.3)
Machine size	Height	mm (inch)	2375 (93.5)
	Length	mm (inch)	2249 (88.5)
	Width	mm (inch)	1972 (77.6)
	Weight	kg (lb)	6500 (14329.8)
Controller		HEIDENHAIN iTNC 530	

Recommended operating environment

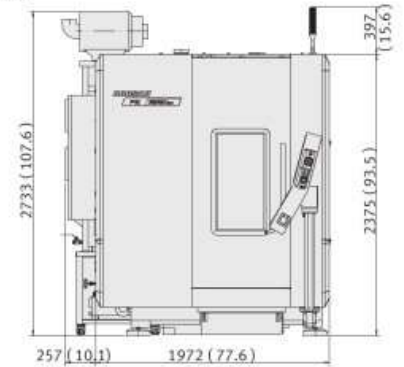
Ambient temperature : 20±1.5℃
 Temperature change rate : < 0.4℃/h
 < ±1.5℃/24h
 RH : 20~80%

External Dimensions

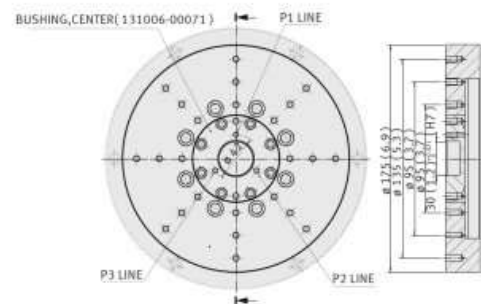
Top View



Front View



Table



<http://www.doosaninfracore.com/machinetools/>

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- The specifications and information above-mentioned may be changed without prior notice.
 - For more details, please contact Doosan.

