

SPEC SHEET – 2012 MIKINI 1610 L

PRECISION LINEAR RAIL CNC MANUAL TOOL CHANGE MACHINING CENTER v3.0

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Dimensions	150cm L x 90cm W x 169cm H			Standard Feature list – included in machine base price	
Machine/enclosure Weight	2000 lbs / 907 KG			Flood coolant – Auto/manual – Chip tray, sump and pump. Plumbed and verified Accessible from front of machine	
Packaged dimensions	167cm L x 100cm w x 185cm H – 2200 Lbs. Truck shippable			Machine tooling trays for tooling and inspection equipment – stainless 300 grade Machine enclosure lighting – Aux relay controlled by default	
X axis Travel	425mm	Worktable max load	500 lbs	Standard Spindle load metering (auto and average) Drive system overload protection – thermal and throughput limited	
Y axis Travel	238mm	Max spindle to column	242mm	Full manual control with stand-alone adjustable rate power fed 4 axis inch/metric DRO Including feed rate calculation and standard spindle control & axis control pendant v2	
Z axis Travel	420mm	Max spindle to table	420mm	Floor standing low silicon grey cast iron machine frame – Meehanite type	
Table Size	760mm x 240mm			High stiffness & strength FEA optimized fully trussed tapered column and machine Structure. Independently stiff regardless of floor condition. No floor anchoring required.	
T Slot Dimension	5/8" slot x 1" foot			Industrial control and safety system with ANZI compliant labeling and LED signal tower.	
Machine Input Power	220 VAC RMS, 20 amps – 200/250 VAC hard min/max Single phase 47-63 hz, balanced & grounded			Pre-Rigged machining center - Fully assembled & verified machine system – shipped in single crate ready for power & operation – no customer rigging or assembly	
Spindle drive power (Std)	2.2KW – 3 HP continuous / constant torque 5 HP peak output – 9KW electrical instant peak (12 HP)			Powder coated CNC manufactured full enclosure with polycarbonate doors Pass through material doors to left and right of table. Stainless steel 300 grade trim	
Spindle drive system (Std)	Mikini Brushless Linear DC SERVO drive 320VDC @ 28A Constant torque - PWM controlled variable frequency Brushless - Thermally and electrically protected			Duty cycle limitations: None – Thermally limited only in typical operations. Geographic limitations : None – Worldwide Installation base, use and support	
Spindle Speed (Std)	250 - 5200 RPM			Optional features and custom configurations	
Spindle Specifications (Std)	R8 Taper - P4 High Speed Bearings - > 0.0075mm TIR			Tooling kits, Optional spindle/axial drives, Rotary axis kit (4 th or 4 th &5 th), 5 th axis output kit, Custom options to suit customer requirements (fixturing, automation, tooling, etc). CAM software Turn key manufacturing systems available on single machines or for machine cluster installations	
Optional High speed spindle	3-HP @ 24,000 RPM AC 400Hz drive-			Axial Drive Motors	NEMA 34 – Servo (750W) or Hybrid micro stepper (300W).
Custom spindle systems	Available. Contact for details.			Axial Drive Controller	Mikini Hybrid step drive or Mikini closed loop BLDC servo
Resolution (control system)	0.001mm			Axial Drive Controller	Mikini Hybrid step drive or Mikini closed loop BLDC servo
Repeatability (machine)	0.007mm (Near achievable precision due to systemic design)			Axial drive thrust	1000 Lb force maximum
Ball screw Specifications	Ground C3 Class (JIS 1192) on ISO/DIN P4 Bearings Zero effective backlash > 0.0001" (Component error less than 8 micron error over 300mm)			Machine control system	Mikini V2.02 manual / CNC machine control system with 4 axis Control - pre-rigged for rotary hardware installation standard. All inputs defined for any PC software &/or control network
Max Feed rate	200 IPM max rapid recommended, 400 IPM machine capacity – drive & control to suit			Signal and Control input	Analog input standard (PC parallel or industrial input) USB PC interface optional for Mach 3. Aux inputs and outputs For customer configuration of automated fixtures, probing, etc
Motion guidance (Way type)	H class linear motion guides on all linear axis (Component linear to 16 micron error over 1 meter) Single shot 15 point lubrication system			CNC Control software	Open source inputs. Mach3 supplied
Operational requirements	AC Power only. No compressed air required			CAM software	Haas/Fanuc std layout. No special post processor typically required
Construction	High tensile 35ksi low silicon grey cast iron (Meehanite Type) - Exceeds SAE G3000 standards. Aged and thermally relieved. CNC machined				
Intended use statement :	Commercial & industrial use device		Bearing design life	5000 hours typical. Structure tested to 10,000 hours operation	