

HMC - Horizontal Machining Center Pricing

Effective September 1, 2008



MACHINE MODEL		HMC20IL
Travel		30 x 34 x 20"
Extended Travel Base Price		\$104,980
Extended Travels X, Y, Z		40 x 34 x 20
Spindle Taper		#40
Spindle Type / Size		Inline / 70mm
Spindle Horsepower	30 minutes/ continuous	Two Speed 24/15 HP <i>18/11 kw</i>
Spindle Taper		#40
Spindle Type		Belted, 70mm
Tool Changer, Retractable		24 Pocket Double Arm
Spindle RPM		8000 or Optional 15,000
Way Type		35mm Rollerways
Table Fixturing Options		Angle Plate 90° Indexing Table Fully Programmable Table
MACHINE FEATURES		
<ul style="list-style-type: none"> • Massive Heavily Ribbed Cast Iron Construction • 35mm Roller Type Linear Ways • Precision Ground Table Surface • Heavy Duty #40 Taper, Inline, 70mm, 10,000 (15,000 option) RPM, Air Purged Spindle Cartridge • Air Blast Hose and Wash Down Hose • Spindle Blow Out and Tool Release Push Button • Automatic Metered Lubrication with Low Lube Fault • Precision Ground Ball Screws, Double Nut, Double Anchored • Chip Auger System • Full Metal Enclosure with Work Lights • Retractable High Speed Double Arm 24 Pocket ATC • Metal Way Covers on All Axes • Front Mounted Auxiliary Operators Station • Six Nozzle High Volume Flood Coolant System • Two Year Parts Warranty • LCD Hour Meter • End of Cycle Light • Remote Handwheel Unit Mounted in Front of Machine • Chip Buckets for Auger Chip Removal System • Inverted Rail Design keeps Bearing Blocks Centered • All Axes Laser Calibrated & Ballbar Inspected 		
FANUC Oi CONTROL FEATURES		
<ul style="list-style-type: none"> • ManualGuide™ Conversational Programming System • Dynamic Graphic Display • 256 Kb Program Storage • 10.4" color LCD Display • PCMCIA slot • Scaling, Rotation, & Mirror Image • Remote Electronics Handwheel • 8ms block processing speed (4ms with AICC option) • Manuals on CD ROM (bound manuals are optional) • RS232 port with DNC capability • Ethernet port • Macro Executor 		
ACCESSORY PRICING		
GE Fanuc Control Options		
Data Server with 256 Mb Memory Storage		
AICC 4 M/Sec Block Rate		
SPINDLE ACCESSORIES		
Specify Tool Holder CT40		
Optional Tool Holder BT40 or DIN 69871		
Coolant Through Spindle – 300 PSI Low Pressure System Includes Drawbar Assembly, Ansi Retention Knobs and Rotary Coupling		
SPINDLE ACCESSORIES CONTINUED		

Coolant Through Spindle – 700 PSI High Pressure System Includes Drawbar Assembly, ANSI Style Retention Knobs & Rotary Coupling	
Coolant Through Spindle Ready Kit <i>Includes drawbar assembly for ANSI Style Retention Knobs and rotary coupling. Does not include pumps or external coolant tank.</i>	
Programmable Air Blast Through Spindle <i>Requires purchase of Coolant Through Spindle Ready Kit</i>	
Spindle Chiller Loop for Spindle Cooling <i>Allows for the spindle cooling without flood. If combined with flood, converts the flood to two nozzles. Recommended where coolant is not used or head growth is a concern.</i>	
Upgrade to 15,000 RPM Ceramic Duplex Bearing Spindle	
FIXTURING ACCESSORIES	
90° Angle Plate – 24.8" 630mm Sq.	
Horizontal Indexing Table – 23.6" 600 mm Square 90° Locking	
Horizontal Rotary Table – 20" 510 mm Square 4 th Axis Contouring and Locking	
4 th Axis Servo Amplifier & Motor (Electrics only) Included <i>with Rotary Table Accessory</i>	
OTHER ACCESSORIES	
Coolant Tank Oil Skimmer	
Programmable Spray Mist On/Off	
Programmable Air	
Spare “M” Functions – Block of 4 Maximum 2 blocks; <i>price is for each block</i>	
Chip Buckets for Augers (<i>Requires two at \$400 each</i>)	
Chip Wash Down System	
Electrical Cabinet AC unite (Required for shops executing 90° F/32° C	
Work Offset Probing with Macros	
Contact Tool Offset Probing with Macros (<i>Contact Factory</i>)	
Combo Pack – Contact & Work Tool Offset Probing with Macros	
Laser Tool Setter (<i>Contact Factory</i>)	
Digiscan Digitizing 3-D Software, Probe, Manuals	
RS-232 Cable, 50' 15 Meters	
Additional Programming Manual	
Programming Manual in Electronic Format on CD	
Additional Machine Manual	
Voltage 208-240 Three Phase	
Voltage 208-240 Single Phase	
Transformer for 400-440V, 34 KVA	
UL/CUL Compliance	
CE Code (<i>Required for European Union Countries</i>)	
International Packaging	
Extended Parts Warranty from One to Two Years	
On Site Machine Installation, USA Only, Training May be Purchased Separately from Fanuc if Required	
<p><i>Terms within USA: Cash or terms with approved credit; down payment due with order. Terms outside USA: Cash or approved Letter of Credit F.O.B Waconia, Minnesota USA; Prices do not include taxes, duties, transportation, rigging or start-up. Milltronics reserves the right to amend or change without notice without incurring obligation. All sales of equipment, parts, software and service are subject to Milltronics' Standard Terms and Conditions of Sale.</i></p>	

HMC - Horizontal Machining Center Specifications

Effective September 1, 2008



MACHINE MODEL		HMC20IL
Control Type	Fanuc Oi	
Number of Axes	Up to 4	
CAPACITY		
Table Size	34" x 20" <i>864 x 510 mm</i>	
Option Table Size – Extended Travel	45" x 20" <i>1150 x 510 mm</i>	
Standard Table Travel – X axis	30" <i>760 mm</i>	
Optional Extended Table Travel – X axis	40" <i>1015 mm</i>	
Head Travel – Y axis	34" <i>860 mm</i>	
Saddle Travel – Z axis	20" <i>508 mm</i>	
Spindle Nose to Table Center	5 - 25" <i>125 - 635 mm</i>	
Spindle Center To Table Top	4.5 – 38.5" <i>115 - 975 mm</i>	
<i>Optional Column Risers increase dimensions by 4" 100 mm or 6" 150 mm</i>		
Maximum Table Load with Linear Roller Ways <i>Including Fixturing, Rotary or Indexing Tables</i>	2500 lb <i>1135 kg</i>	
Machine Weight	10,000 lb <i>4545 kg</i>	
T Slots	(5) .63 <i>16 mm</i>	
Ball Screw Grade	C5	
Ball Screw Diameter: X, Y, Z	1.25"	
Ball Screw Pitch: X, Y, Z Lead	10 mm	
Linear Roller Way Size	35 mm	
INLINE SPINDLE		
Standard Horsepower <i>1 minute / 30 minutes</i>	Reference Torque Chart:	Two Speed 24/15 HP <i>18/11 kw</i> 24/15/2/I/M
Spindle Size – Inline Type	70 mm	
Standard Spindle RPM	50 – 10,000	
Optional Spindle RPM Ceramic Bearing <i>Req. Balanced Tooling</i>	100 - 15,000	
Balanced Tooling Requirements	*****For 15,000 RPM Spindle Tools Should be Balanced to 2.5 G's at 15,000 RPM*****	
Tool Holder Type	CT40 or BT40	
COOLANT THROUGH SPINDLE		
Coolant Through Spindle Option (CTS) <i>Requires ANSI Retention Knob</i>	Low Pressure	300 psi <i>21 bar</i>
	High Pressure	700 psi <i>48 bar</i>
High Pressure CTS – Pump Filtration	11 Micron	
High Pressure CTS – Additional Coolant Capacity	118 Gal <i>450 L</i>	
High Pressure CTS – Flow Rate	5 gal/min <i>19 L/min</i>	
High Pressure CTS – Pump HP	5 HP <i>3.7 kw</i>	
AUTOMATIC TOOL CHANGER		
Standard Double Arm ATC – Number of Pockets	24 Retractable	
Tool Changer Time – Tool to Tool	16 Seconds	
Maximum Tool Diameter – <i>Over 4" diameter tool requires adjacent empty pockets</i>	4" <i>100 mm</i> or 5" <i>125 mm</i>	
Maximum Tool Length / Width	9" / 15 lb <i>230 mm / 7 kg</i>	
PERFORMANCE		
Servo Type	Digital, AC Brushless	
Rapid Traverse	1000 ipm <i>25 mpm</i>	
Maximum Feedrate – Part Dependent	500 ipm <i>12.7 mpm</i>	
Positioning Accuracy ^{see note}	±0.0002" <i>.005 mm</i>	
Positioning Repeatability ^{see note}	.00015" <i>.0038 mm</i>	
Contact Tool Offset Probing with Macros	1,900	
Work Offset Probing with Macros	4,900	
Laser Tool Setter	4,900	

MACHINE MODEL		HMC20IL
Digiscan Digitizing 3-D Software, Probe, Manuals		3,900
RS-232 Cable, 50' 15 Meters		100
Additional Programming Manual		100
Programming Manual in Electronic Format on CD		50
Additional Machine Manual		50
Power Requirements 208-240 VAC, 50 – 60 hz, 3Ø		Standard
Voltage 208-240 Single Phase		N/A
380-480 Transformer (Reduces Voltage to 208-240) – <i>Factory recommended sizes. Consult local electrical codes for proper transformer sizing.</i>	40 KVA	3,000
UL/CUL Code Compliance		1,200
CE Code Required for European Union Countries		1,000
International Packaging		1,000
Two Year Parts Warranty ^{See Note}		Standard
Factory Start-up and Training On Site, U.S. only <i>Does not include airfare</i>		3,400
Training at Milltronics <i>Includes lunches, training, materials and manual</i>		400
Feedback Resolution		.00004" <i>.001 mm</i>
Thrust, Machine Duty Rating		X, Z: 1500 lb <i>680 kg</i> Y: 3300 lb <i>1500 kg</i>
OPTIONAL ANGLE PLATE		
Face Plate Height		19.6" <i>500 mm</i>
Face Plate Width		19.6" <i>500 mm</i>
Face Plate Base Depth		13.7" <i>350 mm</i>
Face Plate Hole Matrix		50 mm
Matrix Hole Size		M12
Weight		375 lbs <i>170 kg</i>
Matrix Hole Size		M16
Weight		650 lbs <i>295 kg</i>
OPTIONAL INDEXING TABLE - 90° LOCK		
Table Work Area – <i>Table surface must be machined for hold down clamps</i>		18.5" <i>470 mm</i> Dia.
Table Height		9.44" <i>240 mm</i>
Table Load Capacity		1550 lbs <i>700 kg</i>
Table Clamping Force		8750 lbs <i>3970 kg</i>
Table Clamping Positions – Number / Degree		4 / 90°
Positioning Accuracy - 90° Clamping Positions		± 4 Arc-seconds
Repeatability - 90° Clamping Positions		± 1 Arc-seconds
Indexing Table Weight		550 lbs <i>250 kg</i>
OPTIONAL ROTARY TABLE – 4th AXIS CONTOURING		
Table Work Area		20" <i>500 mm</i> Sq
Table Height		8" <i>203 mm</i>
T Slots (Number) Width / Spacing		(5) .56 / 4" <i>14 / 100 mm</i>
Table Load Capacity		4,000 lbs <i>1815 kg</i>
Table Clamping Force ^{See Note 2}		800 lbs-ft <i>1085 nm</i>
Table Clamping Positions		Infinite
Positioning Accuracy		± 20 Arc-seconds
Repeatability – <i>Approach from same direction</i>		± 10 Arc-seconds
Rotary Table Weight		1000 lbs <i>550 kg</i>
MISCELLANEOUS		
Flood Capacity		100 gal. <i>375 L</i>
Drawbar Air Pressure Required		100 psi <i>6.8 bar</i>
Optional Electrical Cabinet Air Conditioning		4,000 BTU
Power 208-240 VAC 50-60hz, 3Ø		60 amps 23 kVA
Power 208-240 VAC, Single Phase		Not Recommended
Power 400-440 VAC		Requires Transformer

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Floor Space Requirement – Standard <i>Minimum required with no options</i>		92" x 92" <i>2340 x 2340 mm</i>
Floor Space Requirement – Extended Travel <i>Minimum required with no options</i>		112" x 92" <i>2845 x 2340 mm</i>
Warranty	Parts: Two years or 4200 hours, whichever occurs first on all normal failures. Service: One year or 2100 hours, whichever occurs first, from distributor.	
<p><i>Note: Measurements performed with Renishaw laser and ballbar systems. Measurements are linear over entire travel. Temperature changes and table loads may affect tolerances. Tolerances are guaranteed over 10" sq. area. Centurion features covered under separate literature. For machine duty rating, see "Truth in Specifications" on www.milltronics.net. Milltronics reserves the right to change specifications at any time without incurring obligation.</i></p>		