

Machine Model	HM35
Travel	51 x 34.5 x 25"
Spindle Horsepower <i>1 minute / 30 minutes</i>	24/15 HP <i>18/11 kw</i>
Optional Horsepower	2 Speed 24/15 or 35/25 HP
Tool Changer	30 Pocket Double Arm
Table Fixturing Options	Angle Plate – 90° Indexing Table - Fully Programmable Table
MACHINE FEATURES	CONTROL FEATURES
<ul style="list-style-type: none"> • Two Year Parts Warranty • Massive Heavily Ribbed Cast Iron Construction • Hardened and Ground Square Box Ways with Turcite • Precision Ground Table Surface • Heavy Duty #40 Taper, 5 Bearing, 70mm, 8000 RPM, 5.75" Air Purged Spindle Cartridge Assembly • Air Blast Hose and Wash Down Hose • Spindle Blow Out and Tool Release Push Button • Automatic Metered Lubrication with Low Lube Fault • Ground 40 mm Ball Screws, Double Nut, Double Anchored • Full Metal Enclosure with Work Lights • Dual Chip Auger System • Retractable High Speed Double Arm 30 Pocket ATC • Metal Way Covers on All Axes • Front Mounted Auxiliary Operators Station • Six Nozzle High Volume Flood Coolant System • Front Panel Mounted Electronic Handwheel & Handwheel Controlled Program Execution • Programming & Machine Manuals in Electronic Format • Networking Option Includes 30 Days Phone Support • LCD Hour Meter • Rigid Tap • Single Spare "M" Function with CNC "Wait" Channel 	<ul style="list-style-type: none"> • PC-based 7200 CNC includes 12 MB Parts Storage Memory • LCD Active Matrix Color Display • Conversational plus G & M Code Programming including Coordinate Rotating, Scaling, Mirror Image, Thread Mill Engraving, Helical Interpolation, Auto Routines, & User definable Macros with Trig Assist, & Irregular Pocket Clearing • 3-D Part and Wire Frame Tool Path Graphics on Series 7200 Plus Solid Modeling Graphics on Series 8200 • 3.5" Floppy Drive / RS-232 with DNC Buffer (7200 CNC Only) • High Speed Processor (7200 Series 1200 Block/Sec) • Optional Four and Five Axis Simultaneous Interpolation Software and Interface • High Torque AC Digital Servo Drives • High Torque Closed Loop Vector Spindle Drive System • All Axes Laser Calibrated and Ballbar Inspected • Spindle Load Meter • Auxiliary Keyboard Port for PC Keyboard • Large Program Management Software (Allows Editing of 10 MB Files) • End of Cycle Light • Auto DXF File Import
PERFORMANCE PACKAGE	
Upgrade to Two Speed 24/15 HP Wye/Delta Spindle Drive System	
Remote Handwheel Unit Mounted in Front of Machine	
Second Work Light	
Edit Key Lock-out Switch	
Offline FastCAM Software for Programming and Training	
<i>Items may be purchased separately</i>	
8200 CONTROL PACKAGE – Purchase as a Complete Package Only and Includes all the following:	
<ul style="list-style-type: none"> • Solid State Non-Volatile Memory Upgrade to 1 GB • Enhanced CPU Increases Block Processing Speed from 1200 to 2000 bps • Solid Model Graphics Functionality • USB Connectivity in lieu of 3.5" Floppy Disk Drive • High Speed Performance with Enhanced Jerk Control and Look Ahead • MT Connect Compliant 	
3.5" Floppy Drive is replaced by USB. Do not combine with 256 MB Program Storage and Multi Format Flash Card Reader from other accessories. FastCAM Software replaced with 8200 Software. RS-232 Data transfer not available on 8200 control.	

SPINDLE CONFIGURATIONS		
Specify Tool Holder CT40		Standard
Optional Tool Holder BT40 or DIN 69871		Optional
Two Chip Buckets for Dual Auger System		Optional
Coolant Through Spindle – 300 PSI Low Pressure System <i>Only Available With Full Enclosure Option – Requires the Use of ANSI Style Retention Knobs</i>		Optional
Coolant Through Spindle – 700 PSI Complete System <i>Only Available With Full Enclosure Option – Requires the Use of ANSI Style Retention Knobs</i>		Optional
Coolant Through Spindle Ready Kit (Includes Drawbar Assembly for ANSI Style Retention Knobs and Rotary Coupling. Does Not Include Pumps or External Coolant Tank.)		Optional
Spindle Chiller Loop for Spindle Cooling (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.)		Optional
Upgrade to Two-Speed 35/25 HP (26/18 kw) Wye/Delta Spindle Drive System <i>Requires Purchase of Performance Package</i>		Optional
Upgrade to 15,000 RPM Ceramic Duplex Bearing Spindle <i>Recommend Two Speed</i>		Optional
FIXTURING ACCESSORIES		
90° Angle Plate – 24.8" 630mm Sq.		Optional
Horizontal Indexing Table – 23.6" 600 mm Square 90° Locking		Optional
Horizontal Rotary Table – 20" 510 mm Square 4 th Axis Contouring		Optional
4 th Axis Servo Amplifier & Motor (Electrics only) <i>Included with Rotary Table Accessory</i>		Optional
OTHER ACCESSORIES		
Upgrade to Solid State Non-Volatile Memory 256 MB Flash Card – 7200 Controls only		Optional
Programmable Spray Mist <i>On/Off</i>		Optional
Spare "M" Functions – Block of 4 (Maximum 2 Blocks – Price is For Each Block)		Optional
Work Offset Probing with Macros		Optional
Contact Tool Offset Probing with Macros (<i>Contact Factory</i>)		Optional
Combo Pack – Contact & Work Tool Offset Probing with Macros		Optional
Laser Tool Setter (<i>Contact Factory</i>)		Optional
Digiscan Digitizing 3-D Software, Probe, Manuals - <i>Not available with 8200 Control Package</i>		Optional
RS-232 Cable, 50' 15 Meters		Optional
Printed Programming Manual (Electronic Format Standard)		Optional
Printed Machine Manual (Electronic Format Standard)		Optional
Power Requirements 208-240 VAC, 50 – 60 hz, 3Ø		Standard
380-480 Transformer (Reduces Voltage to 208-240) <i>Factory Recommended Sizes. Consult Local Electrical Codes for Proper Transformer Sizing.</i>	With 24 HP 20 kVA	Optional
	With 35 HP 40 kVA	Optional
UL/CUL Compliance		Optional
CE Code <i>Required for European Union Countries</i>		Optional
Export Handling Fee		Consult Factory
Crating Charge		Consult Factory
Two Year Parts Warranty ^{<i>See Note</i>}		Standard
Factory Start-up and Training On Site, U.S. only		Optional
Training at Milltronics (<i>Includes Lunches, Training, Materials and Manual</i>)		Optional
<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 FCA Waconia, Minnesota USA; Prices do not include taxes, duties, transportation, insurance, rigging or start-up. Milltronics reserves the right to amend or change without notice without incurring obligation; not responsible for typographical errors. Consult Written Warranty Statement for Details of Two Year Parts Warranty All sales of equipment, parts, software and service are subject to Milltronics' Standard Terms and Conditions of Sale.</i></p>		

HM – Horizontal Machining Center Specifications

Effective June 01, 2011

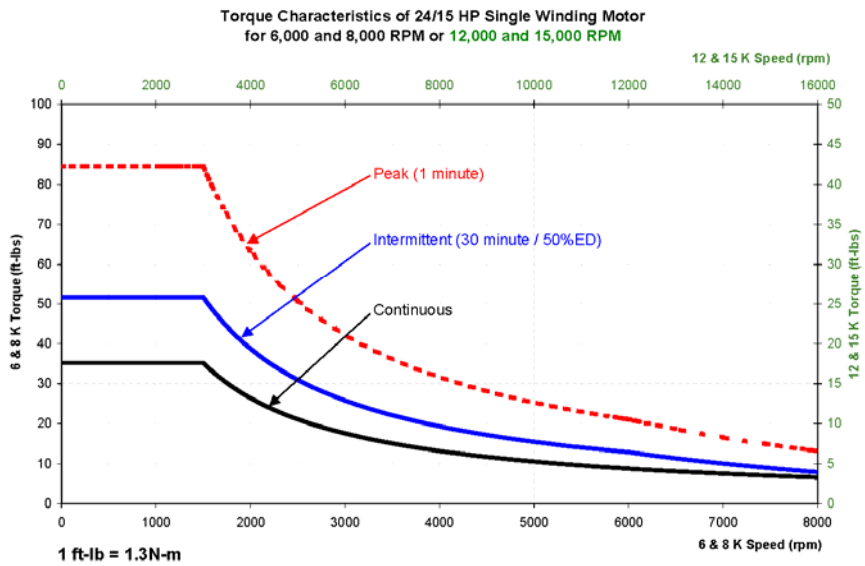
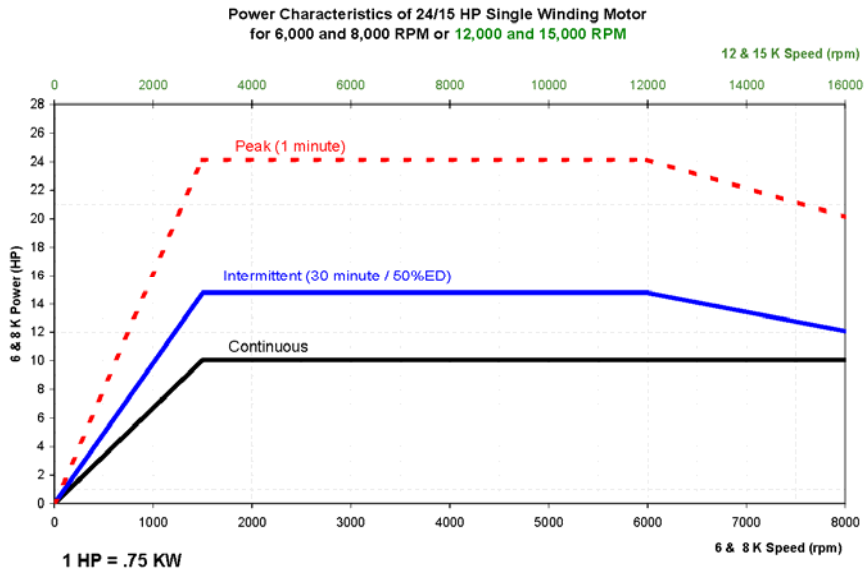


Machine Model	HM35	
Standard Control Type	Milltronics 7200 CNC	
Optional Control Type	Milltronics 8200 CNC	
Number of CNC Axes	Up to 5	
CAPACITY		
Table Size	59 x 26" <i>1500 x 660 mm</i>	
Table Travel X Axis	51" <i>1300 mm</i>	
Head Travel Y Axis	34.5" <i>875 mm</i>	
Saddle Travel Z Axis	25" <i>635 mm</i>	
Spindle Face to Table Center	8.5" – 33.5" <i>215 – 850 mm</i>	
Spindle Center to Table Top	5" – 39.5" <i>125 – 1000 mm</i>	
Maximum Table Load (Including Fixturing Weight)	3500 lb <i>1590 kg</i>	
Machine Weight	24,000 lb <i>11,000 kg</i>	
Machine Table T Slots (# / Width / Spacing)	5 / .71" <i>18 mm / 4.33" 110mm</i>	
Base Width / Saddle Width	33 / 32" <i>835 / 810 mm</i>	
Ball Screw Size	40 mm Double Nut	
Ball Screw Grade	C3, 12 pitch	
SPINDLE		
Specify Tool Holder Type	CT40 or BT40	
Standard Horsepower; <i>1 minute / 30 minutes</i>	24/15 HP <i>18/11 kw</i>	
Reference Torque Chart:	24/15/1/B/Y	
Optional Horsepower; <i>1 minute / 30 minutes – Purchase in Performance Package</i>	Two Speed 24/15 HP <i>18/11 kw</i>	
Reference Torque Chart:	24/15/2/B/Y	
Optional Horsepower; <i>1 minute / 30 minutes – Purchase as an Accessory</i>	35/25 <i>26/18 kw</i> Two Speed WYE/Delta	
Reference Torque Chart:	35/25/2/B/Y	
Standard Spindle - Heavy Duty 70 mm Triplex Steel Bearing Spindle	50 - 8000 RPM	
Optional Spindle - Ceramic Duplex Bearing Spindle <i>Recommend Two Speed Motor</i>	100 - 15,000 RPM	
Balanced Tooling Requirements	Tools Should Be Balanced to 2.5 G's at 15,000 RPM	
COOLANT THROUGH SPINDLE	Low Pressure System	High Pressure System
Coolant Through Spindle Option (CTS) <i>Requires the Use of ANSI Retention Knob</i>	300 psi <i>20 bar</i>	700 psi <i>48 bar</i>
CTS - Pump Filtration	11 Micron	11 Micron
CTS - Additional Coolant Capacity	80 gal <i>300 L</i>	118 gal <i>450 L</i>
CTS- Flow Rate	5 gal/min <i>19 L/min</i>	5 gal/min <i>19 L/min</i>
CTS – Pump HP	5 HP <i>3.7 kw</i>	5 HP <i>3.7 kw</i>
PERFORMANCE		
Servo Type	AC Digital	
Rapid Traverse XYZ	800 ipm <i>20 mpm</i>	
Maximum Feedrate <i>Part Dependent</i>	300 ipm <i>7620 mmpm</i>	
Position Accuracy <i>See note1</i>	±0.00039" <i>.01 mm</i>	
Repeatability <i>See note1</i>	.0002" <i>.005 mm</i>	
Feedback Resolution	.00004" <i>.001 mm</i>	
Thrust, Machine Duty Rating XY, Z	4000 lb <i>1800 kg</i> , 6000 lb <i>2720 kg</i>	
ATC – ARM TYPE		
Number of Pockets	30	
Tool Change Time	20 Seconds	
Maximum Tool Diameter <i>Greater Than 3.3" Diameter Tool Requires Adjacent Empty Pockets</i>	3.3" <i>85 mm</i> or 6.6" <i>170 mm</i>	
Max Tool Length / Weight	9" <i>230 mm</i> 17 lb <i>8 kg</i>	
OPTIONAL ANGLE PLATE		
Face Place Height	24.8" <i>630 mm</i>	

Machine Model	HM35
Face Plate Width	24.8" <i>630 mm</i>
Face Plate Hole Matrix	132 Holes on 1.96" <i>50 mm</i> Spacing
Matrix Hole Size	M16
Weight	650 lbs <i>295 kg</i>
OPTIONAL INDEXING TABLE - 90° LOCK	
Table Work Area	23.6 x 23.6" <i>600 x 600 mm</i>
Table Height	11.2" <i>285 mm</i>
T Slots (Number) Width / Spacing	(5) .71" <i>18 mm / 3.93" 100 mm</i>
Table Load Capacity	2300 lb <i>1043 kg</i>
Table Clamping Force	17,000 lb <i>7916 kg</i>
Table Clamping Positions – Number / Degree	4 / 90°
Positioning Accuracy - 90° Clamping Positions	± 4 Degree Seconds
Repeatability - 90° Clamping Positions	± 1 Degree Seconds
Rotary Table Weight	1200 lb <i>550 kg</i>
OPTIONAL ROTARY TABLE – 4th AXIS CONTOURING	
Table Work Area	19.75 x 19.75" <i>500 x 500 mm</i>
Table Height	8" <i>202 mm</i>
T Slots (Number) Width / Spacing	(5) .56" <i>14 mm / 4" 101 mm</i>
Table Load Capacity	2500 lb <i>1135 kg</i>
Table Clamping Torque <i>See Note2</i>	800 lbf-ft <i>360 kgf-m</i>
Table Clamping Positions – Number / Degree	Infinite
Positioning Accuracy	± 20 Arc Seconds
Repeatability – Approach From Same Direction	±10 Arc Seconds
Rotary Table Weight	1,000 lb <i>550 kg</i>
MISCELLANEOUS	
Standard Flood Capacity	80 gal <i>300 L</i>
Drawbar Air Pressure Required	100 psi <i>6.8 bar</i>
Power 208-240 VAC 50-60hz, 3Ø	50 amps 19 KVA
Power 208-240 VAC 50-60hz, 3Ø – <i>With 35 HP Option</i>	100 amps 38 KVA
400-440 VAC	Requires Transformer
Floor Space Requirement	196" x 160" <i>5000 x 4000 mm</i>
Warranty	Parts: Two years or 4200 hours, whichever occurs first, for normal failures. Service: One year or 2100 hours, whichever occurs first, from distributor.
<p><i>Note 1: Measurements performed with Renishaw laser and ballbar systems. Measurements are linear over entire travel. Temperature changes and table loading may affect tolerances. Tolerances are guaranteed over 20" sq. area.</i></p> <p><i>Note 2: For maximum holding torque, load should be placed against the worm drive.</i></p> <p><i>Centurion features covered under separate literature. For machine duty rating, see "Truth in Specifications" on www.milltronics.net. Milltronics reserves the right to amend or change specifications at any time without notice without incurring obligation.</i></p>	

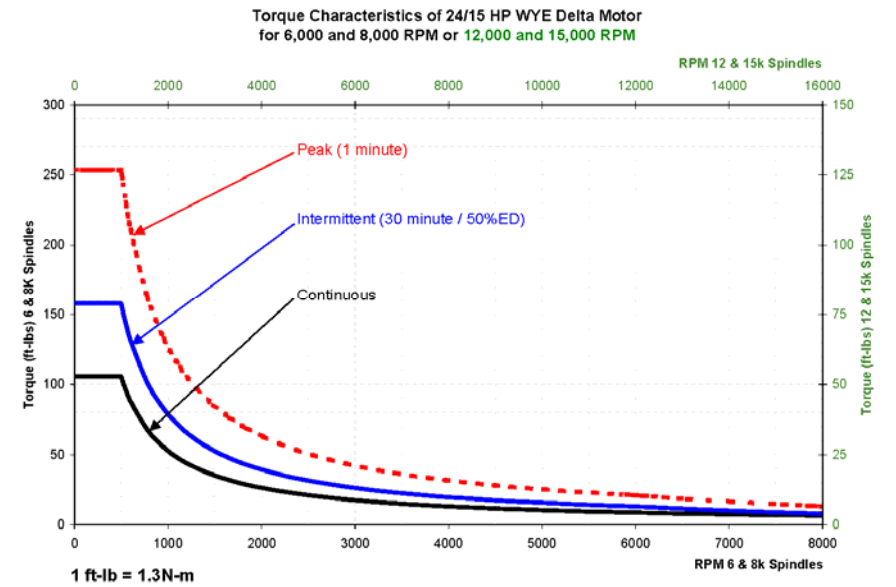
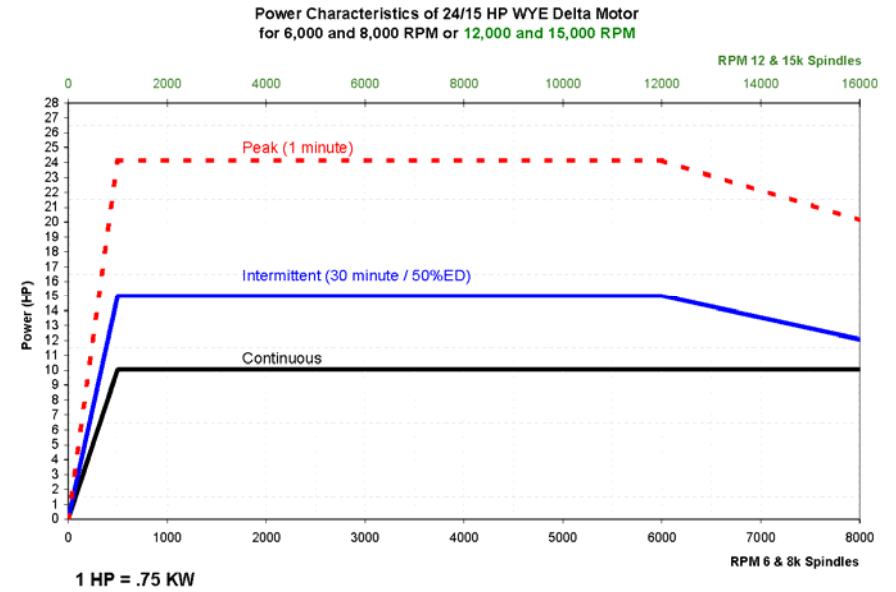
Yaskawa Torque Chart 24/15/1/B/Y – Belted Spindle

Used on: Standard HM35
Optional N/A



Yaskawa Torque Chart 24/15/2/B/Y – Belted Spindle

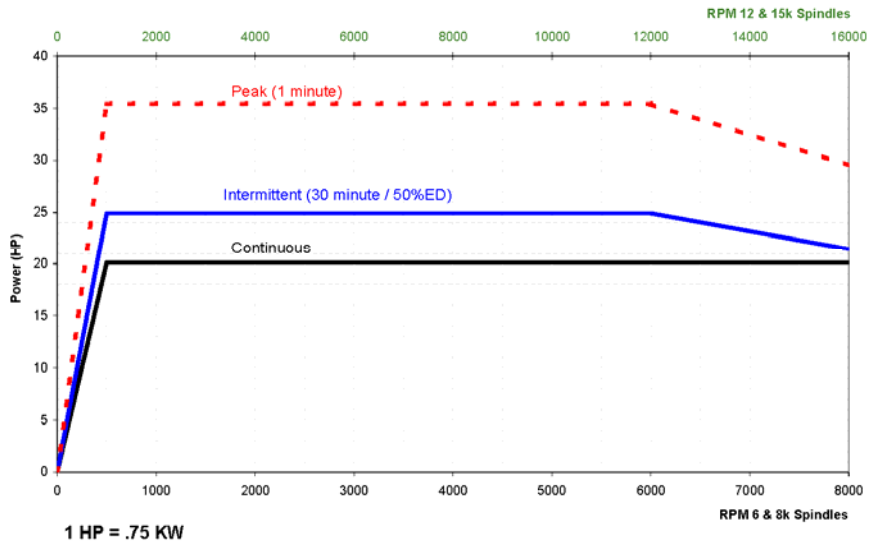
Used on: Standard N/A
Optional HM35



Yaskawa Torque Chart 35/25/2/B/Y – Belted Spindle

Used on: Standard N/A
Optional HM35

Power Characteristics of 35/25 HP WYE Delta Motor
for 6,000 and 8,000 RPM or 12,000 and 15,000 RPM



Torque Characteristics of 35/25 HP WYE Delta Motor
for 6,000 and 8,000 RPM or 12,000 and 15,000 RPM

