

ML – Combination Large Swing Lathe

Effective June 1, 2011



Machine Model		ML35/80	ML40/80
Swing Over Bed		36.25" 920 mm	39.7" 1010 mm
Spindle Horsepower 1 minute / 30 minutes		35/25 26/18 kw	35/25 26/18 kw
Optional Spindle Horsepower 1 minute / 30 minutes		44/30 33/22 kw	44/30 33/22 kw
BED LENGTHS – SELECT STANDARD OR OPTIONAL AS AN ACCESSORY			
Bed Length	80" 2 m	Standard	Standard
	120" 3 m	Optional	Optional
	160" 4 m	Optional	Optional
	200" 5 m	Optional	Optional
	240" 6 m	Optional	Optional
SPINDLE BORES – SELECT STANDARD OR OPTIONAL AS AN ACCESSORY			
Spindle Bore	6.02" 153 mm	Standard	Standard
	10" 254 mm	Optional	Optional
	14" 355 mm	Optional	Optional
MACHINE FEATURES		CONTROL FEATURES	
<ul style="list-style-type: none"> • Two Year Parts Warranty • Fully Ground Solid Ways with Turcite Surfaces with Unique Square Box Ways on Bed for Long Life • Automatic Metered Lubrication with Low Lube Fault • Flood Coolant Pump with Nozzle • Chuck Guard with Safety Switch • Heavy Duty Metal Enclosure with Sliding Front Door • Door Interlock Safety Switch • Chip Drawer Containment System (Optional Conveyor) • Gap Bed Design – Contact Factory for Information • All Axes Laser Calibrated and Ballbar Inspected • High Torque AC Digital Servo Drives • Tail Stock with Safety Switch & Adjustable Quill • Handwheel Controlled Program Execution • Programming & Machine Manuals in Electronic Format • Automatic Shifting Spindle with High Torque Gear Box 		<ul style="list-style-type: none"> • PC-based 7200 T CNC includes 12 MB Parts Storage Memory • 12" LCD Active Matrix Color • 3.5" Floppy Drive / RS-232 with DNC Buffer • 1200 Block/Sec High Speed Processor • Auxiliary Keyboard Port for PC Keyboard • Turning, Facing, Grooving, Tapping and Boring Cycles • Conversational plus G & M Code Programming with Tool Path Graphics Constant Surface and Feed/Rev. (IPR) with Threading Cycles, Rigid Tap Cycle and Thread Chasing Feature • Dual Electronic Handwheel for Teach, Manual or Automatic Operation • Large Program Management Software (Allows Editing of 10 MB Files) • LCD Hour Meter • User Defined Macros with Trig Help • Spindle Load Meter • Pattern Repeat, Chamfering, Radius Programming Assist with Handwheel Teach Mode 	
CONVENIENCE PACKAGE			
End of Cycle Light			
Single Spare "M" Function and CNC "Wait" Channel			
Edit Key Lock-out Switch			
Steady Rest, Roller Type 1.9"-11.8" 50 -300 mm			
Follow Rest, Brass Tips 1.1" - 7.8" 30 - 200 mm			
Off-line LatheCAM Software for Programming and Training			
<i>Items may be purchased separately</i>			
PERFORMANCE PACKAGE			
Tail Stock Latch and Auto-Position			
Remote Handheld Electronic Handwheel			
Upgrade to 44/30 HP 33/22 kw Spindle Drive System			
Work Lamp			
<i>Items may be purchased separately</i>			
CONTROL ACCESSORIES			
Upgrade to Solid State Non-Volatile Memory 256 MB Flash Card			Optional
Multi Format Flash Card Reader			Optional
Auto Import of DXF Files Conversion Software			Optional
Networking Option includes 30 Days Phone Support <i>Recommend 256 MB Option</i>			Optional

WORK HOLDING							
12" 300mm Manual 3 Jaw Chuck, Mounted – 4.95" Bore A1-11 Adaptor Plate					Optional		
16" 400mm Manual 3 Jaw Chuck, Mounted – 5.35" Bore A2-11 Adaptor Plate					Optional		
20" 500mm Manual 3 Jaw Chuck, Mounted – 7.48" Bore A2-11 Adaptor Plate					Optional		
25" 635mm Manual 3 Jaw Chuck, Mounted – 9.92" Bore A2-11 Adaptor Plate					Optional		
20" 500mm Manual 3 Jaw Chuck Mounted – 7.48" Bore A2-11 Direct Mount					Optional		
25" 635mm Manual 3 Jaw Chuck Mounted – 10.75" Bore A2-15 Direct Mount					Optional		
16" 400mm Independent 4 Jaw Chuck Mounted – 6.5" Bore A2-11 Direct Mount					Optional		
20" 500mm Independent 4 Jaw Chuck Mounted – 6.5" Bore A2-11 Direct Mount					Optional		
24" 610mm Independent 4 Jaw Chuck Mounted – 10.5" Bore A2-15 Direct Mount					Optional		
Other Manual Chucks					Consult Factory		
15" 380mm 3 Jaw Hydraulic Chuck – 3.75" Bar Capacity A1-11 Mount <i>Used on 4" bore machines</i>					Optional		
15" 380mm 3 Jaw Hydraulic Chuck – 4.625" Bar Capacity A2-11 Mount <i>Used on 6" bore machines</i>					Optional		
24" 600mm, 3 Jaw Hydraulic Chuck – 3.75" Bar Capacity A1-11 Mount <i>Used on 4" bore machines</i>					Optional		
24" 600mm 3 Jaw Hydraulic Chuck – 4.625" Bar Capacity A2-11 Mount <i>Used on 6" bore machines</i>					Optional		
Rear Mounted Chuck Flange					6" 153 mm Bore	Optional	
			10" 254 mm Bore	Optional	14" 355 mm Bore	Optional	
Hydraulic Tail Stock Option – <i>Purchased with Hydraulic Chuck Option</i>					Optional		
Hydraulic Tail Stock Option – <i>Purchased without Hydraulic Chuck Option</i>					Optional		
TOOLING							
Tooling Riser Block (No Tooling) – Specify Tooling Type or Height <i>Will require machining on site</i>					Optional		
Super Dorian Tool Post & Riser Block, 1.5" 40 mm <i>No tool holders included</i>					Optional		
Automatic 1" 25mm 8 Station Turret (<i>must specify metric</i>) Includes 1 Boring Bar Holder & 1 Axial Holder(<i>Can be mounted in front or rear – specify</i>) BTP-80 Turret Body					Optional		
Automatic 1" 25mm 12 Station Turret (<i>must specify metric</i>) Includes 1 Boring Bar Holder & 1 Axial Holder(<i>Can mount in front or rear - specify</i>) BTP-100 Turret Body					Optional		
Automatic 1 ½" 38mm 8 Station Turret (<i>must specify metric</i>) Includes 1 Boring Bar Holder & 1 Axial Holder(<i>Can mount in front or rear - specify</i>) BTP-125 Turret Body					Optional		
Automatic 1 ½" 38mm 8 Station Turret (<i>must specify metric</i>) Includes 1 Boring Bar Holder & 1 Axial Holder(<i>Can mount in front or rear - specify</i>) BTP-160 Turret Body <i>Use of this turret may require a tail stock extension when attempting to face a part while using the tail stock center</i>					Optional		
Metric 25, 32 or 38 mm Turret Face to Replace 1", 1.25" and 1.5" Turret Face					Optional		
1.5" Boring Bar Holder For 1" 25 mm Turret					Optional		
2" Boring Bar Holder For 1.25" & 1.5" 32 & 38 mm BTP-125 Turret					Optional		
2.5" Boring Bar Holder For 1.5" 38mm BTP-160 Turret					Optional		
1" 25mm Axial Tool Holder For 1" 25 mm Turret					Optional		
1.5" 38 mm Axial Tool Holder For 1.5" 38 mm Turret BTP-125 Turret					Optional		
1.5" 38 mm Axial Tool Holder For 1.5" 38 mm BTP-160 Turret					Optional		
Optional Roller Steady Rest: 9.8" – 17.7" 250 mm - 450 mm (ML35 Only)					Optional		
Optional Roller Steady Rest: 9.8" – 19.6" 250 mm - 500 mm (ML40 Only)					Optional		
VDI Upgrade for Turrets <i>No tool holders</i>					Optional		
LIVE TOOLING – Contact Distributor for Application							
Spindle Orient (<i>Required with Live Tooling</i>)					Optional		
Baruffaldi TBMA Live Tooling, Servo Turret, 8 Station, S6, 10 minute Live Tooling Duty Cycle Rating (Rear Mounted) <i>No tooling supplied with Live Tool Turret, Fixed or Rotating</i>			VDI 50, 12 HP – Model 200		Optional		
Spindle Brake (<i>Required with Live Tooling</i>)					Optional		
Standard Axial Holder VDI 50					Optional		
Standard Radial Holder VDI 50					Optional		
OTHER ACCESSORIES							
Spare "M" Functions – Block of 4 <i>Maximum 2 blocks; price is for each block</i>					Optional		
Chip Conveyor		80"	Optional	120"	Optional	200"	Optional
				160"	Optional	240"	Optional
Chip Bucket for Chip Conveyor					Optional		

OTHER ACCESSORIES CONT.

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) 80 kVA <i>Factory recommended sizes. Consult local electrical codes for proper transformer sizing</i>	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

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, MN 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.

Live Tooling Capability – The Milltronics 7200 T CNC supports live tooling without contouring. Therefore, the main spindle is programmed to a position and cannot be moving while live tooling is in operation.

Programmable resolution: 1/2", Positioning accuracy: +/- 6 degree minutes (0.088"), Contact Factory for additional specifications.

ML Combination Large Swing Lathe Specifications



Effective June 1, 2011

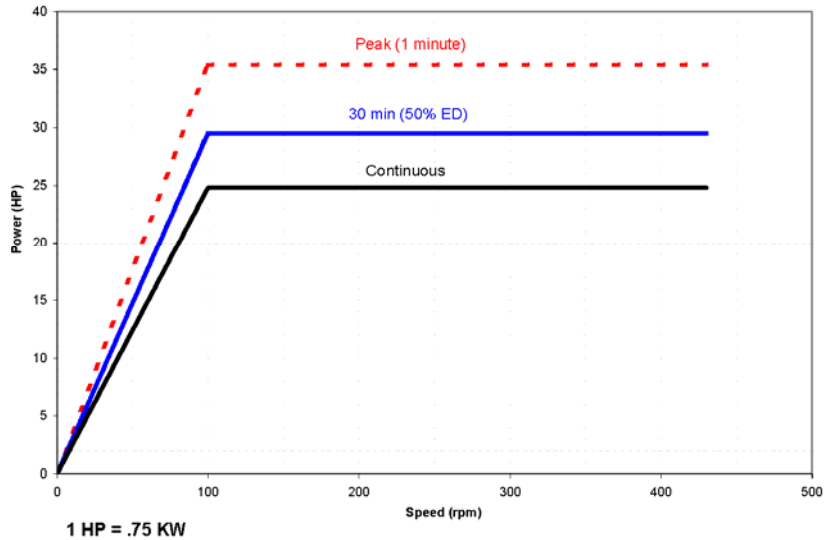
Machine Model	ML35/80	ML40/80
Control Type	Centurion 7200 T	Centurion 7200 T
Functions	Dual Handwheel, Handwheel Teach, Conversational G/M Code, Manual or Automatic Operation of Spindle RPM and Coolant	
CAPACITY		
Swing Over Bed	36.2" <i>920 mm</i>	39.7" <i>1010 mm</i>
Swing Over Gap	45" <i>1150 mm</i> (dia.)	50" <i>1280 mm</i> (dia.)
<i>Contact factory for limitations</i>	14.6" <i>372 mm</i> Gap	14.6" <i>372 mm</i> Gap
Swing Over Cross Slide	21.6" <i>550 mm</i>	26.6" <i>676 mm</i>
Cross Slide Tool Holder Mounting Surface	T-Slots	T-Slots
Cross Slide "T" Slots	18 mm	18 mm
Travel (X Axis) Cross Slide	19" <i>480 mm</i>	21" <i>550 mm</i>
Travel (Z Axis) with tailstock 80" Bed	87" <i>2210 mm</i>	87" <i>2210 mm</i>
Travel (Z Axis) with tailstock 120" Bed	120" <i>3000 mm</i>	120" <i>3000 mm</i>
Travel (Z Axis) with tailstock 160" Bed	160" <i>4000 mm</i>	160" <i>4000 mm</i>
Travel (Z Axis) with tailstock 200" Bed	200" <i>5000 mm</i>	200" <i>5000 mm</i>
Travel (Z Axis) with tailstock 240" Bed	240" <i>6000 mm</i>	240" <i>6000 mm</i>
Z Cutting Length with Turret	Consult factory	Consult factory
Center Distance 80" Bed	86" <i>2200 mm</i>	80" <i>2000 mm</i>
Center Distance 120" Bed	126" <i>3200 mm</i>	120" <i>3000 mm</i>
Center Distance 160" Bed	165" <i>4200 mm</i>	160" <i>4000 mm</i>
Center Distance 200" Bed	205" <i>5200 mm</i>	200" <i>5000 mm</i>
Center Distance 240" Bed	244" <i>6200 mm</i>	240" <i>6000 mm</i>
Bed Width	22" <i>560 mm</i>	22" <i>560 mm</i>
Machine Weight 80" Bed <i>Add 2200 lbs 1000 kg for each 40" of extended bed length</i>	23,000 lb <i>10500 kg</i>	24,500 lb <i>11,000 kg</i>
Ball Screw Size – 80" Bed Length	X 40 mm Z 63 mm	X 40 mm Z 63 mm
Ball Screw Size – 160" - 240" Bed Length	X 40 mm Z 80 mm	X 40 mm Z 80 mm
Ball Screw Grade	C5 Precision Ground	C5 Precision Ground
Ball Screw Pitch X axis / Z axis	5 mm / 12 mm	5 mm / 10 mm
Maximum Weight of Part With Chuck and Supported From Center	6600 lb <i>3000 kg</i>	8800 lb <i>4000 kg</i>
SPINDLE		
Spindle Drive System	Two Speed Auto Shift Geared Transmission with Closed Loop Digital Vector Drive System	
Standard Horsepower <i>1 minute / 30 minutes</i>	Two Speed 35/25 HP <i>26/18 kw</i>	Two Speed 35/25 HP <i>26/18 kw</i>
Reference Torque Chart:	35/25/2/L/Y	
Optional Horsepower <i>1 minute / 30 minutes (Performance Package)</i>	Two Speed 44/30 HP <i>33/22 kw</i>	Two Speed 44/30 HP <i>33/22 kw</i>
Reference Torque Chart:	44/30/2/L/Y	
Spindle Programmable Resolution – <i>with Orient Option</i>	0.025 °	0.025 °
Spindle Orient Positioning Accuracy – <i>with Orient Option</i>	± 0.16 °	± 0.16 °
Spindle Speed 6" Spindle Bore <i>*Chuck Size May Limit RPM</i>	10 – 900	10 – 900
Spindle Range 1 – 6" Spindle Bore	10 – 375	10 – 375
Spindle Range 2 – 6" Spindle Bore	10 - 900	10 – 900
Spindle Speed 10" Spindle Bore <i>*See note above</i>	10 - 750	10 - 750
Spindle Range 1 – 10" Spindle Bore	10 - 375	10 - 375
Spindle Range 2 – 10" Spindle Bore	10 - 750	10 - 750
Spindle Speed 14" Spindle Bore <i>*See note above</i>	10 - 500	10 - 500
Spindle Range 1 – 14" Spindle Bore	10 - 375	10 - 375
Spindle Range 2 – 14" Spindle Bore	10 - 500	10 - 500
Standard Spindle Bore	6.02" <i>153 mm</i>	6.02" <i>153 mm</i>
Optional Spindle Bore	10" <i>254 mm</i>	10" <i>254 mm</i>

Machine Model	ML35/80	ML40/80
Optional Spindle Bore	14" <i>355 mm</i>	14" <i>355 mm</i>
Spindle Nose Type – Standard Bore 6" <i>153 mm</i>	A2-11	A2-11
Spindle Nose Type – Optional Bore 10" <i>254 mm</i>	A2-15	A2-15
Spindle Nose Type – Optional Bore 14" <i>355 mm</i>	A2-20	A2-20
Tailstock Quill Travel	8" <i>200 mm</i>	9" <i>230 mm</i>
Tailstock Quill Diameter	4.92" <i>125 mm</i>	4.92" <i>125 mm</i>
Tailstock Quill Taper	MT6	MT6
TOOLING ACCESSORIES – Contact factory for live tooling Specifications		
Super Dorian Tool Post Option	SD60EA 1.5" <i>40 mm</i>	SD60EA 1.5" <i>40 mm</i>
8 Station Auto Turret Option – 1" <i>Specify if metric is desired</i>	1" x 5" <i>25 x 125 mm</i>	1" x 5" <i>25 x 125 mm</i>
12 Station Auto Turret Option – 1" <i>Specify if metric is desired</i>	1" x 5.5" <i>25 x 140 mm</i>	1" x 5.5" <i>25 x 140 mm</i>
12 Station Auto Turret Option – 1 ¼" <i>Specify if Metric is desired</i>	1.25" x 6" <i>32 x 150 mm</i>	1.25" x 6" <i>32 x 150 mm</i>
8 Station Auto Turret Option – 1 ½" <i>Specify if metric is desired</i>	1.5" x 6" <i>38 x 150 mm</i>	1.5" x 6" <i>38 x 150 mm</i>
Turret Boring Bar Capacity – 1" Turret	1.5" <i>40 mm</i>	1.5" <i>40 mm</i>
Turret Boring Bar Capacity – 1 ¼" & 1 ½" Turret	2" <i>50 mm</i>	2" <i>50 mm</i>
Turret Boring Bar Sleeve – 1" Turret	1.5" dia x 3" <i>40 mm x 76 mm</i>	1.5" dia x 3" <i>40 mm x 76 mm</i>
Turret Boring Bar Sleeve – 1 ½" & 1 ¼" Turret	2" x 3.5" <i>50x88mm</i>	2" x 3.5" <i>50x88mm</i>
Turret Boring Bar Sleeve – BTP-160 Turret	2.5" x 4.875" <i>60 x 124 mm</i>	2.5" x 4.875" <i>60 x 124 mm</i>
Steady Rest <i>Roller Type- Convenience Package</i>	1.9 - 11.8" <i>50 - 300 mm</i>	1.9 - 11.8" <i>50 - 300 mm</i>
Optional Steady Rest <i>Roller Type</i>	9.8 - 17.7" <i>250 - 450 mm</i>	9.8 - 19.6" <i>250 - 500 mm</i>
Follow Rest <i>Brass Tip - Convenience Package</i>	1.1 - 7.8" <i>30 - 200 mm</i>	1.1 - 7.8" <i>30 - 200 mm</i>
PERFORMANCE		
Servo Type	AC	AC
Rapid Traverse XZ	500 ipm <i>12.7 mpm</i>	500 ipm <i>12.7 mpm</i>
Maximum Feedrate	100 ipm <i>2540 mmpm</i>	100 ipm <i>2540 mmpm</i>
Position Accuracy <i>See note</i>	± .00025" <i>0.0063 mm</i>	± .00025" <i>0.0063 mm</i>
Repeatability <i>See note</i>	0.00039" <i>0.010 mm</i>	0.00039" <i>0.010 mm</i>
Resolution	0.00004" <i>0.001 mm</i>	0.00004" <i>0.001 mm</i>
Thrust, Machine Duty Rating	X: 6700 lb <i>3000 kg</i> Z: 6700 lb <i>3000 kg</i>	X: 6700 lb <i>3000 kg</i> Z: 6700 lb <i>3000 kg</i>
MISCELLANEOUS		
Flood Coolant Capacity – 80" Bed	90 gal <i>340 L</i>	90 gal <i>340 L</i>
Flood Coolant Capacity – 120" Bed	85 gal <i>320 L</i>	85 gal <i>320 L</i>
Flood Coolant Capacity – 160" Bed	110 gal <i>420 L</i>	110 gal <i>420 L</i>
Flood Coolant Capacity – 200" Bed	140 gal <i>530 L</i>	140 gal <i>530 L</i>
Flood Coolant Capacity – 240" Bed	150 gal <i>564 L</i>	150 gal <i>564 L</i>
Way Surface	Hardened and Ground Square Box Turcite Ways	
Power 208-240 VAC, 50-60hz, 3Ø	125 amps 48 KVA	125 amps 48 KVA
400-440 VAC	Requires Transformer	Requires Transformer
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>Measurements performed with Renishaw laser and ballbar systems. Measurements are linear over entire travel, and 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>		

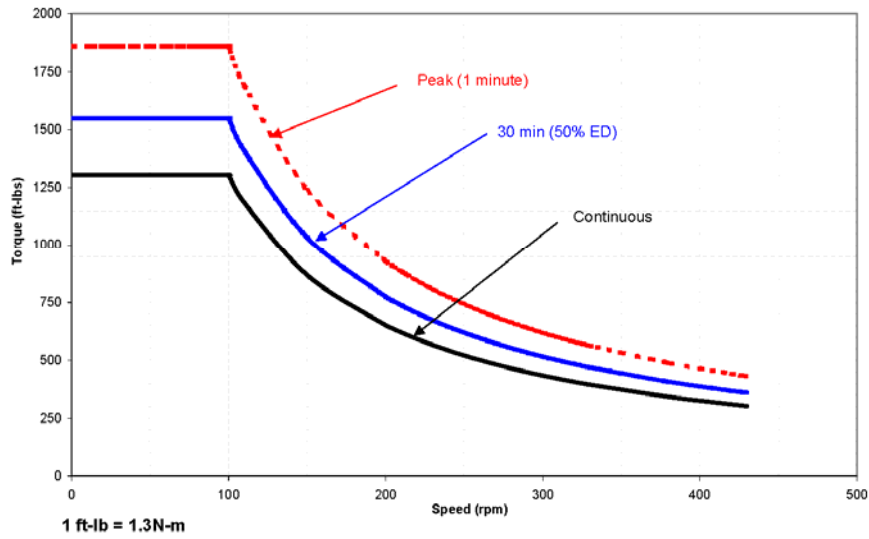
Yaskawa Torque Chart 35/25/2/GL/Y – Low Gear

Used on: Standard ML35, ML40
Optional N/A

Power Characteristics of ML35-40 with 35/25 HP Spindle (LOW gear)



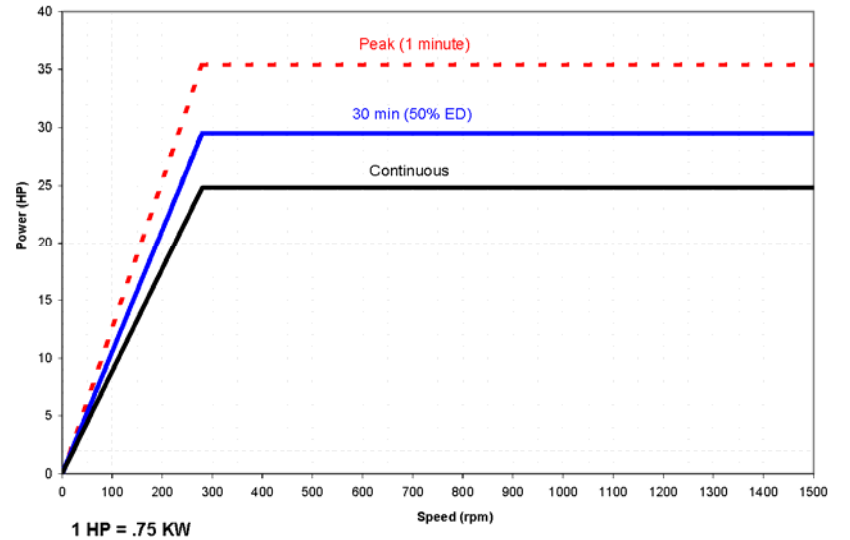
Torque Characteristics of ML35-40 with 35/25 HP Spindle (LOW gear)



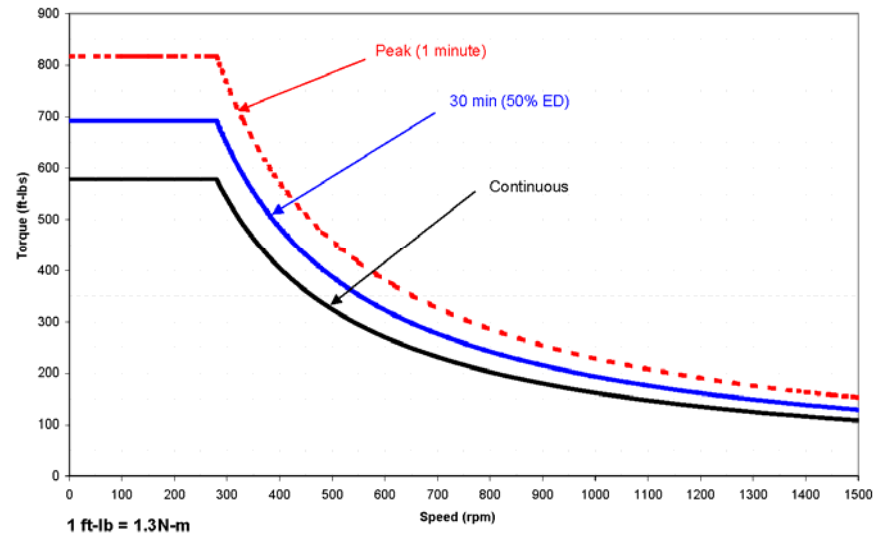
Yaskawa Torque Chart 35/25/2/GL/Y – High Gear

Used on: Standard ML35, ML40
Optional N/A

Power Characteristics of ML35-40 with 35/25 HP Spindle (HIGH gear)



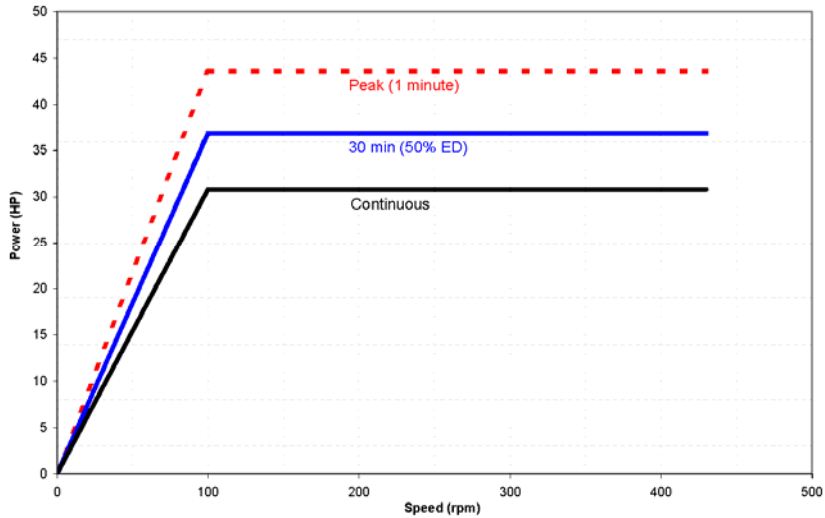
Torque Characteristics of ML35-40 with 44/30hp Spindle (HIGH gear)



Yaskawa Torque Chart 44/30/2/GL/Y – Low Gear

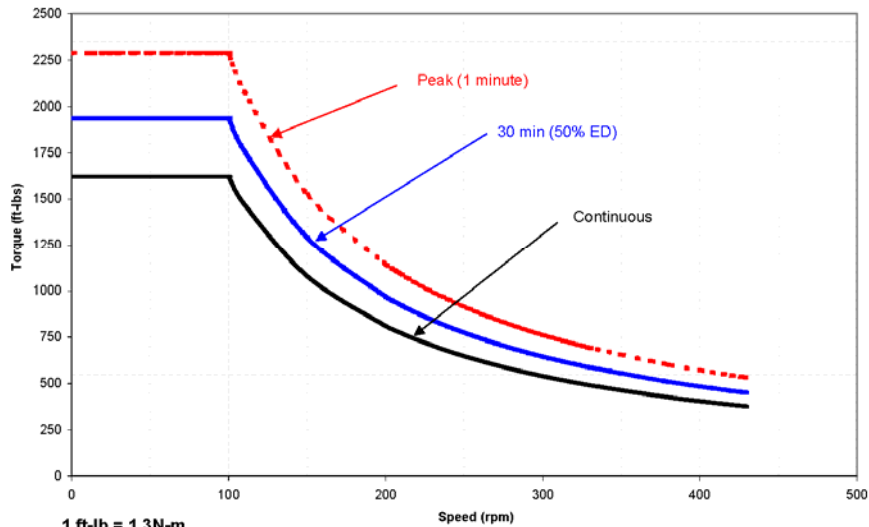
Used on: Standard N/A
Optional ML35, ML40

Power Characteristics of ML35-40 with 44/30hp Spindle (LOW gear)



1 HP = .75 KW

Torque Characteristics of ML35-40 with 44/30hp Spindle (LOW gear)

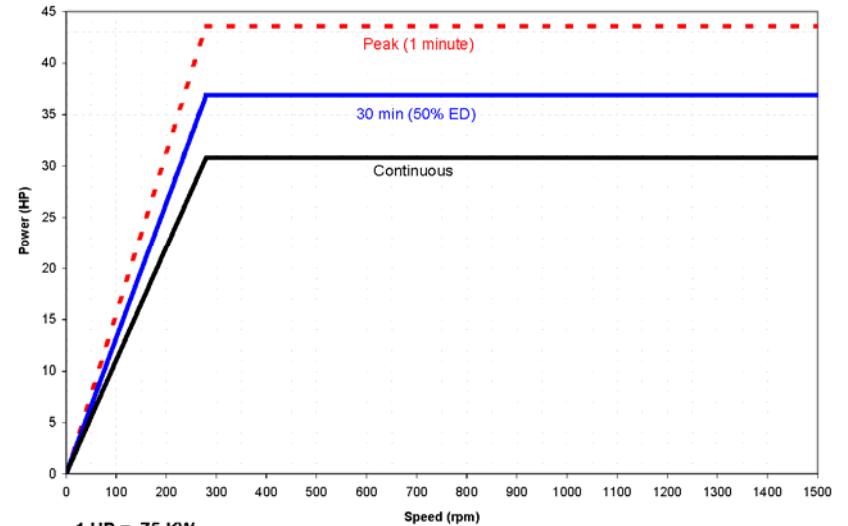


1 ft-lb = 1.3N-m

Yaskawa Torque Chart 44/30/2/GL/Y – High Gear

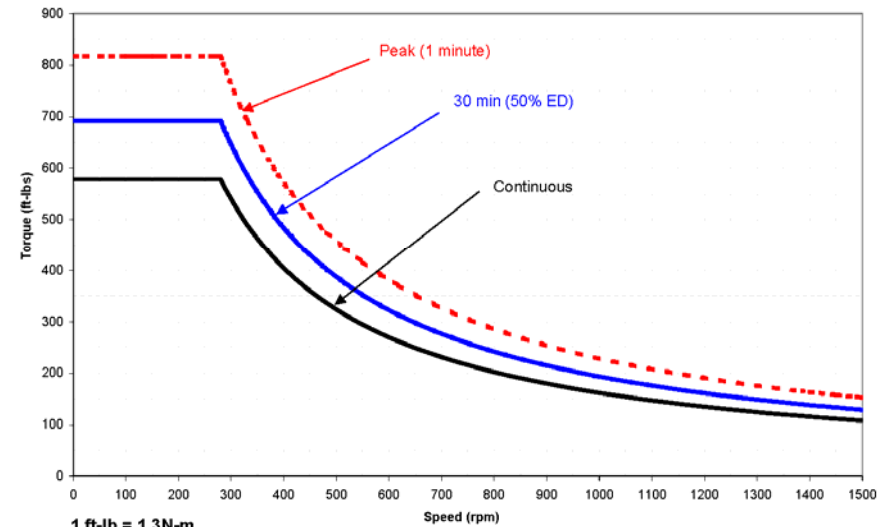
Used on: Standard N/A
Optional ML35, ML40

Power Characteristics of ML35-40 with 44/30hp Spindle (HIGH gear)



1 HP = .75 KW

Torque Characteristics of ML35-40 with 44/30hp Spindle (HIGH gear)



1 ft-lb = 1.3N-m