

# 40 Taper VMC Belted & Inline Spindle Vertical Linear Way Machining Center Pricing

Effective September 1, 2008



MACHINE MODEL BELTED & INLINE SPINDLE		VMC16 (IL)	VMC20 (IL)	VMC22 (IL)	VMC25 (IL)	VMC30 (IL)
Standard Travel (XYZ")		30 x 16 x 20"	30 x 20 x 26"	40 x 22 x 26"	50 x 25 x 24"	50 x 30 x 24"
Extended Travel Option (XYZ")		30 x 16 x 26"	40 x 20 x 26"	N/A	60 x 25 x 24"	60 x 30 x 24"
Spindle Taper		#40	#40	#40	#40	#40
ATC Type	Standard	24 Arm	24 Arm	24 Arm	24 Arm	24 Arm
	Option 1	N/A	N/A	40 Arm	40 Arm	40 Arm
Linear Roller Ways – Standard		X, Y, Z: 35 mm		X, Y: 35 mm Z: 45 mm	X: 35 mm Y, Z: 45 mm	
Horsepower GE FANUC Belted Spindles 1 min/30 min		Single Speed 19/15 hp 14/11 kw	Two Speed 26/20 hp 19/15 kw		Two Speed High Torque (HT) 26/20 HP 19/15 kw	
Horsepower GE FANUC Inline Spindles 1 min/30 min		Two Speed 24/15 HP 18/11 kw		Two Speed 35/25 HP 26/19 kw		
Spindle Size		70 mm	70 mm	70 mm	70 mm	70 mm

## MACHINE FEATURES

- Two Year Parts Warranty
- Swivel Operator's Station
- Massive Heavily Ribbed Machine Tool Grade Cast Iron Construction
- Precision Ground Table, Rail and Rail Block Mounting Surfaces
- Inverted Rail to Table Design Keeps Bearing Blocks Centered Under Spindle
- Heavy Duty Enclosure with Work Light and Overhead Loading Capability
- Wide Side Doors for Cleaning or Large Parts That Can Extend Through
- Precision Ground Double Anchored Ball Screws With Dampening Couplings
- Air Purged 70mm Spindle Cartridge Assembly
- Roller Type Linear Ways
- 24 Pocket or Optional 40 Pocket Arm Style ATC
- Inline (IL) Models Have Spindle Chiller System (Standard)
- Chip Auger with Optional Conveyor
- Flood Coolant System with 6 Adjustable Nozzles
- Automatic Lubrication System with Low Lube Fault
- 8000 RPM Spindle Belted with 15,000 RPM Option
- Optional 10,000 or 15,000 RPM Inline Spindle
- High Speed 1600 IPM Rapid Traverse Rates; 60" X Axis Travel Have 1200 IPM
- Operator's Air Blast Hose & Chip Washdown Hose
- End of Cycle Light & LCD Hour Meter
- High Torque AC Digital Servo Drives
- All Axes Laser Calibrated and Ballbar Inspected
- Spindle Taper Blow-out and Tool Release Push Button

## GE FANUC 0i-MC CONTROL FEATURES

- ManualGuide™ Conversational Programming System
- Dynamic Graphic Display
- 256 Kb Program Storage
- Macro Executor
- 10.4" Color LCD Display
- Scaling, Rotation & Mirror Imaging
- PCMCIA Slot
- Electronic Handwheel
- 8ms Block Processing Speed (4ms with AICC Option)
- Manuals on CD ROM (Bound Manuals are Optional)
- RS232 Port with DNC Capability
- Ethernet Port

<b>ACCESSORY PRICING</b>		
<b>GE FANUC CONTROL OPTIONS</b>		
Data Server with 256 MB Parts Storage		
AICC – 4ms Block Processing		
Remote Electronic Handwheel		
<b>MACHINE MODEL</b>	<b>VMC20 (IL)</b>	<b>VMC 22, 25, 30 (IL)</b>
<b>PERFORMANCE OPTIONS – Belted Spindle Machines</b>		
Upgrade Standard 8000 RPM 70mm Spindle to Ceramic Bearing 70mm 15,000 RPM Spindle <i>Consider Inline Spindle(IL)</i>		
<b>PERFORMANCE OPTIONS – Inline Spindles</b>		
Upgrade Standard Belted 70mm 8000 RPM Spindle to Inline 70mm Big Plus 10,000 RPM Spindle (IL), Includes Spindle Chiller		
Upgrade Standard Belted 70mm 8000 RPM Spindle to Inline 70mm Big Plus Ceramic Bearing 15,000 RPM Spindle (IL), Includes Spindle Chiller		
<b>SPINDLE CONFIGURATIONS #40 – Standard spindle on all models is CT type</b>		
#40 BT Type		
Coolant Through Spindle – 300-PSI <b>Low Pressure</b> System – <i>Includes drawbar assembly for ANSI retention knobs and rotary coupling.</i>		
Coolant Through Spindle – 700 PSI <b>High Pressure</b> System – <i>Includes drawbar assembly for ANSI retention knobs and rotary coupling.</i>		
Coolant Through Spindle Ready Kit - <i>Includes drawbar assembly for ANSI retention knobs and rotary coupling. Does not include pumps or external coolant tank.</i>		
<b>AUTOMATIC TOOL CHANGER</b>		
Upgrade from 24 Pocket ARM ATC to 40 Arm ATC (VMC25 & VMC30 only)		
<b>GRAPHITE AND ABRASIVE MATERIAL ACCESSORIES</b>		
Pressurized Air/Oil Purge System for Ball Screws and Bearing Blocks		
Torit Vacuum System <i>Consider environmental noise</i>		
Dust Collection System Including Guard and Hose		
<b>THERMAL CONTROL SYSTEM</b>		
Spindle Chiller Loop – <i>This is standard on all Inline models (IL)</i>		

<b>MACHINE MODEL</b>			
<b>ROTARY TABLE ACCESSORIES</b>			
Rotary Tables <i>Includes 4<sup>th</sup> axis amp &amp; motor</i> <i>Application may require riser</i>	6.5" (165 mm)		
	9.0" (228 mm)		
	10.0" (254 mm)		
	C5 Collet Table		
Rotary Table Tail Stock 6.5"	6.5" (165 mm)	1,200	9.0" (228 mm)
4 <sup>th</sup> Axis Servo Amplifier & Motor (Electrics only) – <i>Included with Rotary Table Accessory</i>			
<b>OTHER ACCESSORIES</b>			
Programmable Air Blast			
Coolant Tank Oil Skimmer			
Automatic Door Opener			
Spray Mist <i>Programmable On/Off</i>			
Chip Washdown System			
Chip Conveyor in Lieu of Chip Auger			
Chip Bucket for Auger or Conveyor			
Riser Block – Consider Extended Z Travel on VMC16	Column 4" <i>100 mm Not Removable</i>		
	Column 6" <i>150 mm Not Removable</i>		
Contact Tool Offset Probing with Macros			
Work Offset Probing with Macros			
Combo Pack – Contact & Work Tool Offset Probing with Macros			
Laser Tool Setter			
Electrical Cabinet A/C Unit – <i>Recommended in shops exceeding 90° F / 32° C</i>			
RS-232 Cable, 50' 15 Meters			
Bound Programming, Maintenance or Operational Manual(s) - <i>each</i>			
Additional Machine Manual			
Fanuc Power Requirements 208-240 VAC, 50 – 60 hz, 3Ø			
380-480 Transformer (Reduces Voltage to 208-240) <i>Factory recommended sizes. Consult local electrical codes for proper transformer sizing.</i>	20 kVA		
	40 kVA		
UL/CUL Compliance			
CE Code <i>Required for European Union Countries</i>			
International Packaging			
Two Year Parts Warranty - <i>See written warranty statement for details</i>			
On Site Factory Installation, U.S. only <i>Does not include airfare – Training available through Fanuc</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, MN 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; not responsible for typographical errors. All sales of equipment, parts, software and service are subject to Milltronics' Standard Terms and Conditions of Sale.*

# 40 Taper VMC Belted & Inline Spindle Vertical Linear Way Machining Center Specifications

Effective September 1, 2008

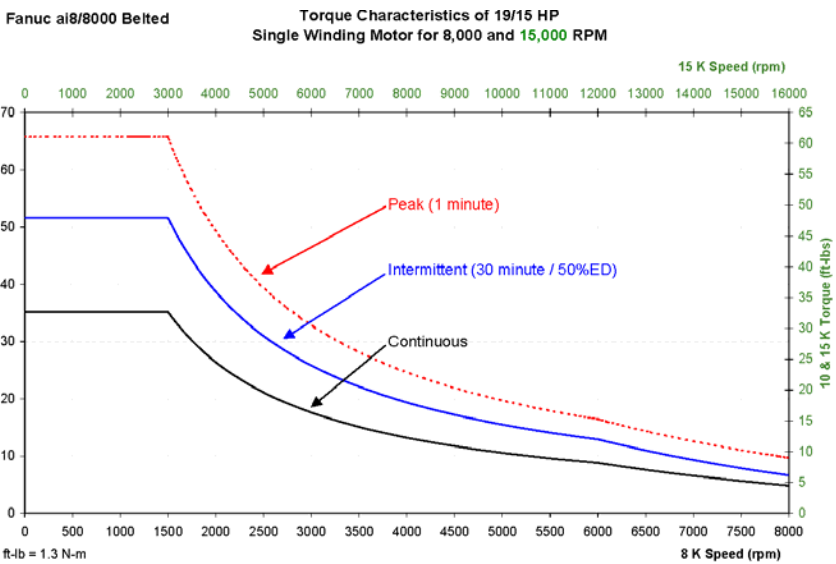
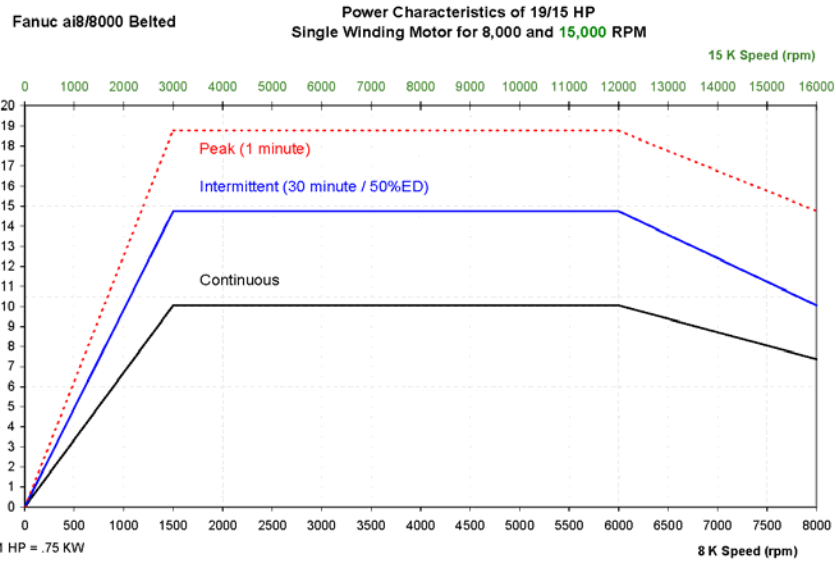


MACHINE MODEL	VMC16 (IL)	VMC20 (IL)	VMC22 (IL)	VMC25 (IL)	VMC30 (IL)
Table Size	45" x 16" <i>1150 x 405 mm</i>	34" x 20" <i>864 x 510 mm</i>	45" x 24" <i>1150 x 610 mm</i>	56" x 24" <i>1420 x 610 mm</i>	56" x 24" <i>1420 x 610 mm</i>
Option Table Size – Extended Travel	N/A	45" x 20" <i>1150 x 510 mm</i>	N/A	66" x 26" <i>1680 x 660 mm</i>	66" x 26" <i>1680 x 660 mm</i>
Standard Table Travel X	30" <i>760 mm</i>	30" <i>760 mm</i>	40" <i>1015 mm</i>	50" <i>1270 mm</i>	50" <i>1270 mm</i>
Optional Extended Table Travel – X	N/A	40" <i>1015 mm</i>	N/A	60" <i>1524 mm</i>	60" <i>1524 mm</i>
Saddle Travel Y	16" <i>405 mm</i>	20" <i>508 mm</i>	22" <i>560 mm</i>	25" <i>635 mm</i>	30" <i>760 mm</i>
Head Travel Z	20" <i>508 mm</i>	26" <i>660 mm</i>	26" <i>660 mm</i>	24" <i>610 mm</i>	24" <i>610 mm</i>
Optional Extended Head Travel – Z	26" <i>660 mm</i>	N/A	N/A	N/A	N/A
Throat Distance – Spindle to Column	16" <i>405 mm</i>	21" <i>535 mm</i>	23" <i>580 mm</i>	25" <i>635 mm</i>	30" <i>760 mm</i>
Spindle To Table Top <i>Optional Column Risers increase dimensions by 4" 100 mm or 6" 150 mm</i>	4" - 24" <i>100 - 610 mm</i>	4" - 30" <i>100 - 760 mm</i>	4.25" - 30.25" <i>110 - 770 mm</i>	4" - 28" <i>100 - 710 mm</i>	4" - 28" <i>100 - 710 mm</i>
Spindle To Table Top With Optional Head Travel <i>Optional Column Risers increase dimensions by 4" 100 mm or 6" 150 mm</i>	4" - 30" <i>100 - 760 mm</i>	N/A	N/A	N/A	N/A
Maximum Table Load	1500 lb <i>680 kg</i>	2000 lb <i>910 kg</i>	3000 lb <i>1360 kg</i>	3500 lb <i>1580 kg</i>	3500 lb <i>1580 kg</i>
Machine Weight	9,000 lb <i>4000 kg</i>	10,000 lb <i>4545 kg</i>	16,000 lb <i>7300 kg</i>	19,000 lb <i>8600 kg</i>	20,000 lb <i>9000 kg</i>
T Slots	(5) .63 <i>16 mm</i>	(5) .63 <i>16 mm</i>	(5) .63 <i>16 mm</i>	(5) .63 <i>16 mm</i>	(5) .63 <i>16 mm</i>
Ball Screw Grade	C5	C5	C5	C5	C5
Ball Screw Diameter: X, Y, Z	1.25"	1.25"	1.25"	1.5"	1.5"
Ball Screw Pitch: X, Y, Z Lead	16 mm	16 mm	16 mm	16 mm	16 mm
Linear Way Size – Standard Ball Ways or Optional Roller Ways	X, Y, Z 35 mm	X, Y, Z 35 mm	X, Y 35 mm Z 45 mm	X 35 mm Y, Z 45 mm	X 35 mm Y, Z 45 mm
<b>SPINDLE – #40 BELTED OR INLINE</b>					
Standard GE FANUC Horsepower <i>1 minute / 30 minutes – Belted Spindle</i> Reference Torque Chart:	Single Speed 19/15 HP <i>14/11 kw</i> 19/15/1/B/F	Two Speed 26/20 HP <i>19/15 kw</i> 26/20/2/B/F		Two Speed High Torque 26/20 HTHP <i>19/15 kw</i> 26/20/2/B/FHT	
GE FANUC Horsepower <i>1 min/30 min – Optional Inline Spindle</i> Reference Torque Chart:	Two Speed 24/15 HP <i>18/11 kw</i> 24/15/2/I/F		Two Speed 35/25 HP <i>26/19 kw</i> 35/25/2/I/F		
Standard Spindle Size – Belted and Inline Spindles	70 mm	70 mm	70 mm	70 mm	70 mm
Standard Belted Spindle RPM – Triplex Bearing Design	50 – 8,000	50 – 8,000	50 – 8,000	50 – 8,000	50 – 8,000
Optional Inline Spindle RPM Duplex Bearing Design <i>Req. Balanced Tooling</i>	50-10,000	50-10,000	50-10,000	50-10,000	50-10,000
Optional Belted or Inline Spindle RPM Duplex Ceramic Bearing <i>Req. Balanced Tooling</i>	100 - 15,000	100 - 15,000	100 - 15,000	100 - 15,000	100 - 15,000
Tool Holder Type	CT40 or BT40	CT40 or BT40	CT40 or BT40	CT40 or BT40	CT40 or BT40
Balanced Tool Holder Specification	****For 10,000 & 15,000 RPM Spindles Tools Should Be Balanced to 2.5 G's at 15,000 RPM****				

<b>MACHINE MODEL</b>	<b>VMC16 (IL)</b>	<b>VMC20 (IL)</b>	<b>VMC22 (IL)</b>	<b>VMC25 (IL)</b>	<b>VMC30 (IL)</b>
<b>COOLANT THROUGH SPINDLE</b>					
Coolant Through Spindle Option <i>Requires ANSI Retention Knob and 70 mm Spindle</i>	300 or 700 psi <i>20 or 48 bar</i>	300 or 700 psi <i>20 or 48 bar</i>	300 or 700 psi <i>20 or 48 bar</i>	300 or 700 psi <i>20 or 48 bar</i>	300 or 700 psi <i>20 or 48 bar</i>
Pump Filtration	11 Micron	11 Micron	11 Micron	11 Micron	11 Micron
Additional Coolant Capacity on 700 psi System	118 Gal <i>450 L</i>	118 Gal <i>450 L</i>	118 Gal <i>450 L</i>	118 Gal <i>450 L</i>	118 Gal <i>450 L</i>
Flow Rate	5 gal/min <i>19 L/min</i>	5 gal/min <i>19 L/min</i>	5 gal/min <i>19 L/min</i>	5 gal/min <i>19 L/min</i>	5 gal/min <i>19 L/min</i>
Pump HP	5 HP <i>3.7 kw</i>	5 HP <i>3.7 kw</i>	5 HP <i>3.7 kw</i>	5 HP <i>3.7 kw</i>	5 HP <i>3.7 kw</i>
<b>AUTOMATIC TOOL CHANGER</b>					
Double Arm ATC – Number of Pockets	24	24	24 or 40	24 or 40	24 or 40
Tool Change Time	3.5 Seconds	3.5 Seconds	3.5 Seconds	3.5 Seconds	3.5 Seconds
Maximum Tool Diameter – <i>Over 4" diameter tool requires adjacent empty pockets</i>	4" <i>75 mm</i> or 5" <i>125 mm</i>	4" <i>75 mm</i> or 5" <i>125 mm</i>	4" <i>75 mm</i> or 5" <i>125 mm</i>	4" <i>75 mm</i> or 5" <i>125 mm</i>	4" <i>75 mm</i> or 5" <i>125 mm</i>
Maximum Tool Length / Width	9" / 15 lb <i>230 mm / 7 kg</i>	9" / 15 lb <i>230 mm / 7 kg</i>	9" / 15 lb <i>230 mm / 7 kg</i>	9" / 15 lb <i>230 mm / 7 kg</i>	9" / 15 lb <i>230 mm / 7 kg</i>
<b>PERFORMANCE</b>					
Rapid Traverse X, Y / Z <i>60" Travel VMC25 &amp; VMC30 limited to 1200 IPM 30 mpm rapids for X axis</i>	1600 / 1200 ipm <i>40 / 30 mpm</i>	1600 / 1200 ipm <i>40 / 30 mpm</i>	1600 / 1200 ipm <i>40 / 30 mpm</i>	1600 / 1200 ipm <i>40 / 30 mpm</i>	1600 / 1200 ipm <i>40 / 30 mpm</i>
Feedrate Range – Part Dependent	.1 - 500 ipm <i>2 - 12.7 mpm</i>	.1 - 500 ipm <i>2 - 12.7 mpm</i>	.1 - 500 ipm <i>2 - 12.7 mpm</i>	.1 - 500 ipm <i>2 - 12.7 mpm</i>	.1 - 500 ipm <i>2 - 12.7 mpm</i>
Positioning Accuracy <sup>See Note</sup>	±0.0002" <i>.005 mm</i>	±0.0002" <i>.005 mm</i>	±0.0002" <i>.005 mm</i>	±0.0002" <i>.005 mm</i>	±0.0002" <i>.005 mm</i>
Positioning Repeatability <sup>See Note</sup>	.00015" <i>.0038 mm</i>	.00015" <i>.0038 mm</i>	.00015" <i>.0038 mm</i>	.00015" <i>.0038 mm</i>	.00015" <i>.0038 mm</i>
<b>MISCELLANEOUS</b>					
Flood Capacity	30 gal. <i>114 L</i>	50 gal. <i>190 L</i>	70 gal. <i>266 L</i>	70 gal. <i>266 L</i>	70 gal. <i>266 L</i>
Optional Electrical Cabinet Air Conditioning Unit	4000 BTU	4000 BTU	4000 BTU	4000 BTU	4000 BTU
Drawbar Air Pressure Required	100 psi <i>6.8 bar</i>	100 psi <i>6.8 bar</i>	100 psi <i>6.8 bar</i>	100 psi <i>6.8 bar</i>	100 psi <i>6.8 bar</i>
Fanuc Power Requirements 208-240 VAC, 50 – 60 hz, 3Ø	60 Amp 23 kVA	60 Amp 23 kVA	60 Amp 23 kVA	100 Amp 38 kVA	100 Amp 38 kVA
Floor Space Requirement – Standard	84" x 82" <i>2130 x 2080 mm</i>	87" x 96" <i>2210 x 2438 mm</i>	125" x 109" <i>3175 x 2770 mm</i>	144" x 113" <i>3660 x 2870 mm</i>	144" x 116" <i>3660 x 2950 mm</i>
Floor Space Requirement – Extended Travel	N/A	87" x 116" <i>2210 x 2946 mm</i>	N/A	192" x 113" <i>4875 x 2870 mm</i>	192" x 116" <i>4875 x 2950 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. For machine duty rating, see "Truth in Specifications" on <a href="http://www.milltronics.net">www.milltronics.net</a>. Milltronics reserves the right to change specifications at any time without incurring obligation.</i></p>					

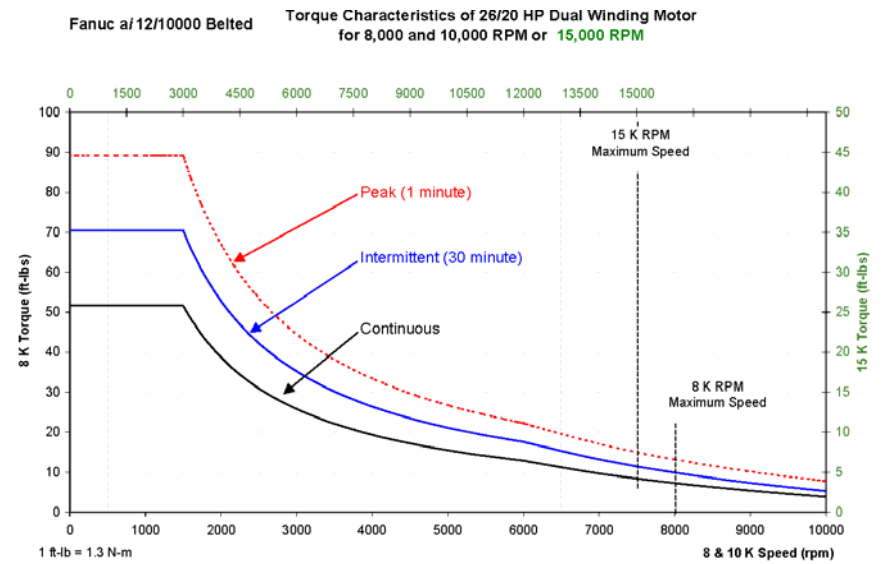
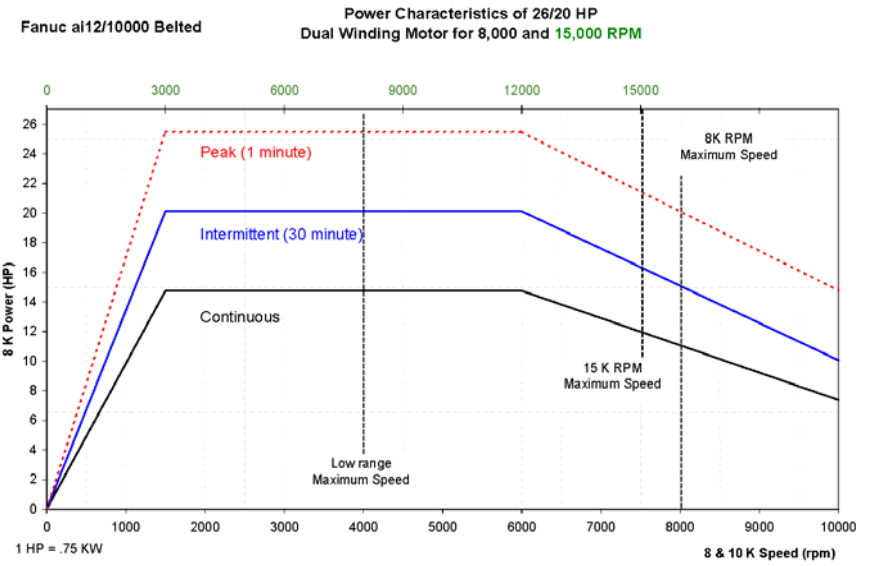
## Fanuc Torque Chart 19/15/1/B/F – Belted Spindle

Used on: Standard VMC16  
Optional N/A



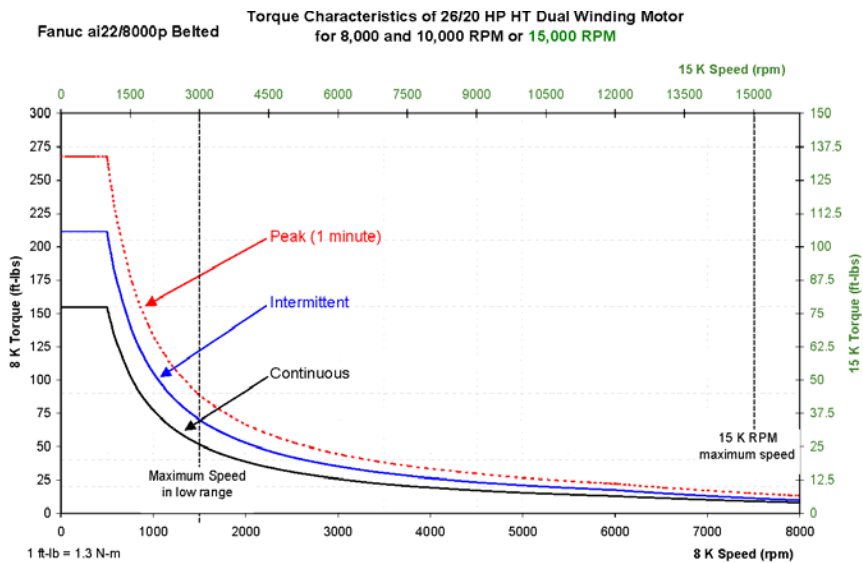
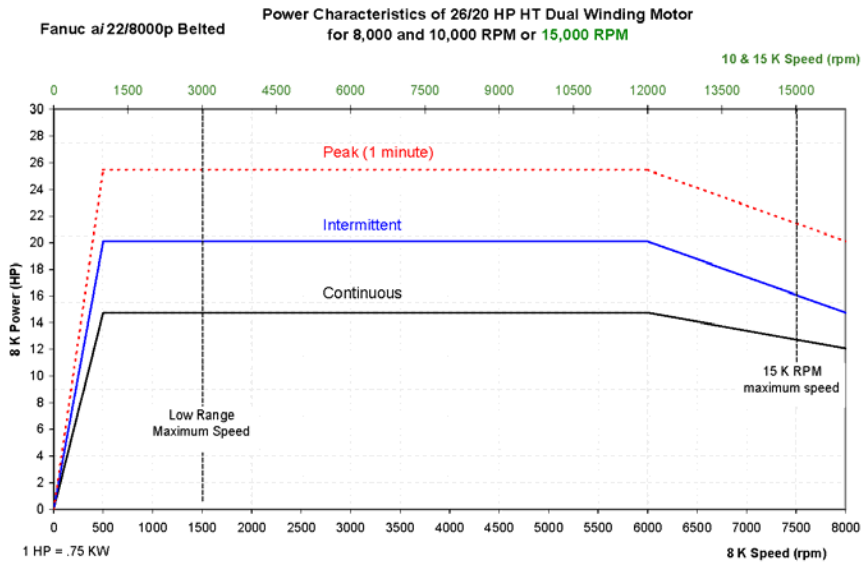
## Fanuc Torque Chart 26/20/2/B/F – Belted Spindle

Used on: Standard VMC20, VMC22  
Optional VMC16



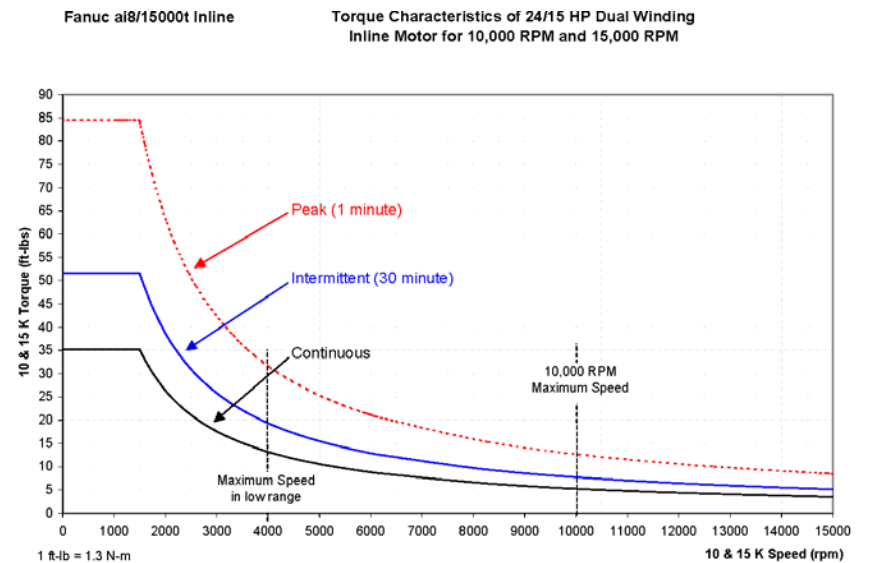
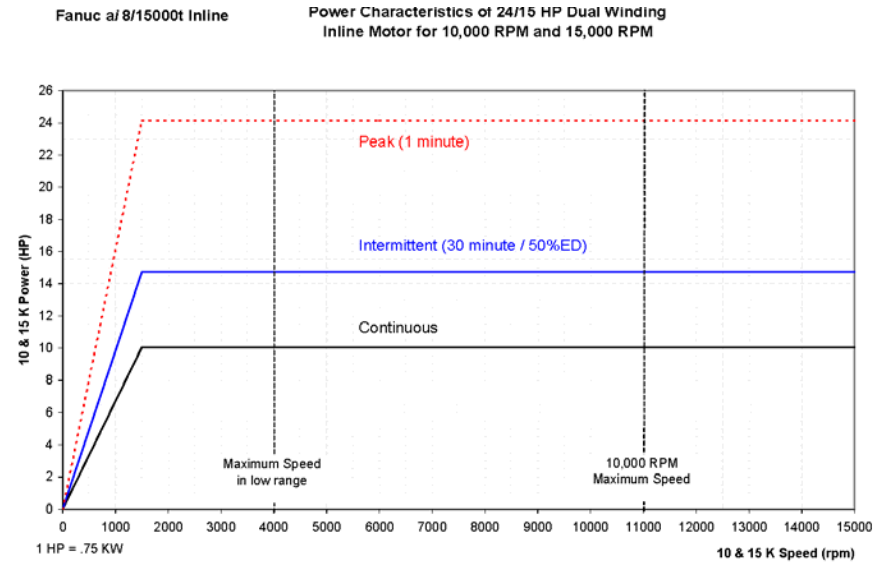
## Fanuc Torque Chart 26/20/2/B/FHT – Belted Spindle

Used on: Standard VMC25, VMC30  
Optional VMC20, VMC22



## Fanuc Torque Chart 24/15/2/I/F – Inline Spindle

Used on: Standard VMC16 IL, VMC20 IL  
Optional N/A



## Fanuc Torque Chart 35/25/2//F – Inline Spindle

Used on: Standard VMC22 IL, VMC25 IL, VMC30 IL  
 Optional N/A

