

# TTC – Twin Table Machining Center Pricing

*The Machine That Never Stops!*

Effective September 1, 2008 Rev. A



	TTC24IL	TTC40IL	TTC40ILXP
Standard Travel of Each Table, XYZ	23 x 25 x 20"	42 x 40 x 29"	42 x 40 x 29"
Spindle Taper, Size and RPM	#40, 70 mm, 10,000, Opt 15,000		#50, 90mm, 8000RPM
Horsepower Fanuc 1 minute / 30 minutes	26/20 HTP 19/18 kw Two Speed High Torque		
Optional Horsepower 1 minute / 30 minutes	35/25 HP 26/19 kw Two Speed		
Spindle Drive System	In-line Spindle/Motor Assembly		
Tool Changer	24 Pocket Double Arm Opt 40 Pocket Double Arm	40 Pocket Double Arm	32 Pocket Double Arm

## MACHINE FEATURES

<ul style="list-style-type: none"> <li>• Two Year Parts Warranty</li> <li>• Heavily Ribbed Cast Iron Construction</li> <li>• Linear Roller Way Design with Metal Way Cover on X</li> <li>• Precision Ground High Speed Ball Screws and Table Surface</li> <li>• Double Tables with Dual Part Load Areas</li> <li>• Automatic Metered Lubrication on Y &amp; Z (X, X<sup>1</sup> Grease)</li> <li>• High Torque Fast Ramp AC Digital Servo Drives</li> <li>• #40 10,000 RPM, Inline Air Purged Spindle Optional 15,000 RPM (not on TTC40XP)</li> <li>• #50 8000 RPM, Inline Air Purged Spindle on TTC40XP</li> <li>• Spindle Taper Blow-out with Tool Release Push Button</li> <li>• BIG-PLUS Spindle Nose (40 Taper Only)</li> <li>• Full Metal Enclosure with Automatic Doors and Work Lamp</li> <li>• Chip Conveyor</li> <li>• Six Nozzle High Volume Multi-Height Flood Control System</li> </ul>	<ul style="list-style-type: none"> <li>• Dual Table Software Control for Doors and Double Table</li> <li>• Double Arm Style ATC</li> <li>• High Torque Spindle Drive System</li> <li>• High Torque AC Digital Servo Drives</li> <li>• End of Cycle Light</li> <li>• Rigid Tap</li> <li>• Dual Table Ready Switch and E-stop</li> <li>• LCD Hour Meter</li> <li>• All Axes Laser Calibrated and Ballbar Inspected</li> <li>• Dual Chip Wash Down System with Dual Hoses</li> <li>• Dual Air Blast Hose</li> <li>• Spindle Chiller</li> </ul>
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## GE FANUC 32i CONTROL FEATURES

<ul style="list-style-type: none"> <li>• ManualGuide™ Conversational Programming System</li> <li>• Dynamic Graphic Display</li> <li>• 512 Kb Program Storage</li> <li>• Macro Executor</li> <li>• 10.4" Color LCD Display</li> </ul>	<ul style="list-style-type: none"> <li>• PCMCIA Slot</li> <li>• Electronic Handwheel</li> <li>• 8ms Block Processing Speed (4ms with AICC Option)</li> <li>• Manuals on CD ROM (Bound Manuals are Optional)</li> <li>• RS232 Port with DNC Capability</li> <li>• Ethernet Port</li> </ul>
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## PERFORMANCE UPGRADE OPTIONS

	TTC24IL	TTC40IL	TTC40ILXP
Upgrade to 15,000 RPM Ceramic Bearing Spindle from 10,000 RM			

## GE FANUC CONTROL OPTIONS

Data Server with 256 MB Parts Storage			
AICC – 4ms Block Processing			
Remote Electronic Handwheel			

## SPINDLE CONFIGURATIONS

Specify Tool Holder CT-40 or CT-50			
Optional Tool Holder BT-40 or DIN 69871 or BT-50			
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>			
ZF Automatic Shift Gearbox for “XP” (Offers 3 Speed Ranges in Conjunction With 2 Speed Spindle Motor)			
Flood Pan Tank Oil Skimmer			
Programming Air Blast			
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>			

## OPTIONAL ATC

40 Pocket Double Arm ATC for TT24IL			
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<b>OTHER ACCESSORIES</b>	
Conveyor Option to Deliver Chips From Auger (Out Rear of Machine) to a Conveyor Which Takes Chips to the Side of the Machine	
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	
Programming Manual in Electronic Format on CD	
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>	40 kVA
UL/CUL Compliance	
CE Code <i>Required for European Union Countries</i>	
International Packaging	
Two Year Parts Warranty <i>Consult written warranty statement for details</i>	
On Site Factory Installation, U.S. only <i>Does not include airfare – Training available through Fanuc</i>	
Training at Milltronics <i>Includes lunches, training, materials and manual</i>	
<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, 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.</i></p>	

# TTC - Twin Table Machining Center Specifications

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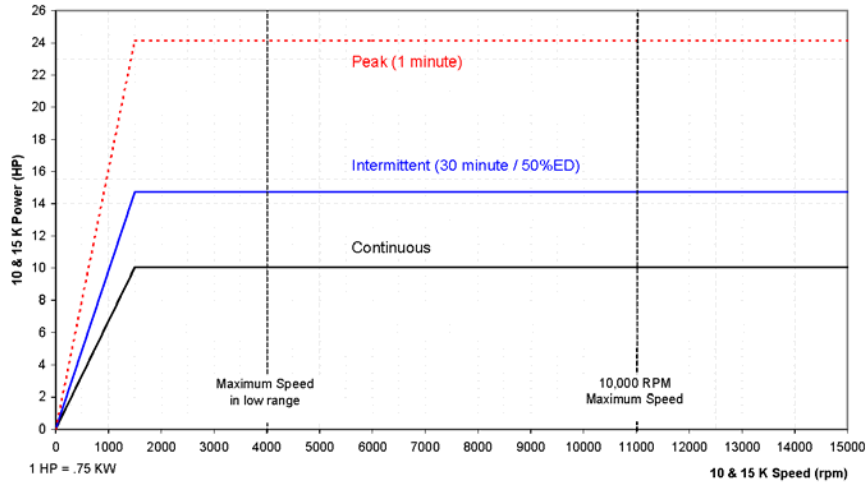
MACHINE MODEL	TTC24IL	TTC40IL
Control Type	GE Fanuc 31i	
Software	Dual Table Control	
Number of Axes	4 (X, X <sup>1</sup> , Y, Z)	
Configuration	Bridge Design with Dual Tables on One Set of Ways	
<b>CAPACITY</b>		
Table Size – Two Tables	24 x 24" <i>610 x 610 mm</i>	40 x 43 <i>1000 x 1100 mm</i>
Table Travel in Work Zone X and X <sup>1</sup> Axes	23" <i>585 mm</i>	42" <i>1066 mm</i>
Saddle Travel - Y Axis	25" <i>635 mm</i>	40" <i>1016 mm</i>
Head Travel - Z Axis	20" <i>510 mm</i>	30" <i>762 mm</i>
Spindle to Table Top	4 - 24" <i>100 – 610 mm</i>	6" -36" <i>152 – 914 mm</i>
Maximum Table Load	1,000 lb <i>455 kg</i>	2,200 lb <i>1,000 kg</i>
Machine Weight	10,000 lb <i>4545 kg</i>	39,600 lb <i>18,000 kg</i>
Hole Matrix of Table Surface	5 T-Slots .63" <i>16mm</i>	T-Slots .63" <i>16mm</i>
Ball Screw Size	1.25" <i>32 mm</i>	2" <i>50 mm</i>
Ball Screw Grade	C5 Precision Ground	C3 Precision Ground
Ball Screw Pitch	16 mm	16 mm
Linear Roller Ways	35 mm Ball	45 mm
<b>SPINDLE – Direct Drive In-line Spindle/Motor Assembly</b>		
Heavy Duty 70 mm Spindle Cartridge Assembly with Duplex Bearing Design (#40, 70mm & #50, 90mm)	CT or Optional BT 40	CT or Optional BT 40 on TTC40IL & CT or Optional BT-50 on TTC40ILXP
FANUC Spindle Horsepower Two Speed <i>1 min/30 min</i>	24/15 HP <i>18/11 kw</i> Reference Torque Chart 24/15/2/I/F	
Standard Duplex Bearing Spindle RPM <i>Requires balanced tooling</i>	50 – 10,000	#40: 50 – 10,000 #50: 50 – 8000
Optional Ceramic Duplex Bearing Spindle RPM <i>Requires balanced tooling</i>	100 - 15,000	#40: 100 - 15,000 #50: N/A
Balanced Tooling Requirements	Tools Should Be Balanced to 2.5 G's at 15,000 RPM	
<b>PERFORMANCE</b>		
Servo Type	AC Digital	AC Digital
Rapid Traverse X, X <sup>1</sup> /Y, Z	1600/1600 ipm <i>40/40 mpm</i>	1000/1500 ipm <i>25/38 mpm</i>
Maximum Feedrate	500 ipm <i>12.7 mpm</i>	500 ipm <i>12.7 mpm</i>
Position Accuracy <i>See note</i>	±0.0002" <i>.005mm</i>	±0.0002" <i>.005mm</i>
Repeatability <i>See note</i>	.00015" <i>.0038mm</i>	.00015" <i>.0038mm</i>
Resolution	.00004" <i>.001mm</i>	.00004" <i>.001mm</i>
Thrust, Machine Duty Rating	X, X <sup>1</sup> : 1,000 lb <i>450 kg</i> Z: 2,000 lb <i>900 kg</i>	X, X <sup>1</sup> : 1,500 lb <i>680 kg</i> Z: 3,000 lb <i>1,360 kg</i>
Table Shuttle Time <i>Side to Side</i>	15 Sec	15 Sec
<b>AUTOMATIC TOOL CHANGER</b>		
Standard ATC for #40 Spindle	24 Pocket Arm	40 Pocket Arm
Optional ATC for #40 Spindle	40 Pocket Arm	N/A
Tool Change Time for #40 Spindle	3.5 Seconds	3.5 Seconds
Standard ATC for #50 Spindle	N/A	32 Pocket Arm
Optional ATC for #50 Spindle	N/A	N/A
Tool Change Time for #50 Spindle	N/A	7.55 Seconds

<b>MACHINE MODEL</b>	<b>TTC24IL</b>	<b>TTC40IL</b>
Maximum Tool Diameter #40 Spindle	4" <i>100mm</i>	4" <i>100mm</i>
Maximum Tool Length / Weight #40 Spindle	9" / 15 lb <i>230 mm / 7 kg</i>	9" / 15 lb <i>230 mm / 7 kg</i>
Maximum Tool Diameter #50 Spindle	N/A	5" <i>125mm</i>
Maximum Tool Length / Weight #50 Spindle	N/A	11" / 25 lb <i>360 mm / 17 kg</i>
<b>COOLANT THROUGH SPINDLE</b>		
Coolant Through Spindle Option (CTS) <i>Requires ANSI Style Retention Knobs</i>	300 or 700 psi <i>20 or 48 bar</i>	300 or 700 psi <i>20 or 48 bar</i>
CTS – Pump Filtration	11 Micron	11 Micron
CTS – Additional Coolant Capacity <i>Standard flood tank capacity with 300 psi system</i>	118 gal <i>450 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>
<b>MISCELLANEOUS</b>		
1/4 HP Flood Pump Capacity	40 Gal <i>150 L</i>	40 Gal <i>150 L</i>
Optional Electrical Cabinet Air Conditioning Unit	4000 BTU	4000 BTU
Drawbar Air Pressure Required	100 psi <i>6.8 bar</i>	100 psi <i>6.8 bar</i>
Floor Space Requirement	179" x 108" <i>4550 x 2750 mm</i>	193" x 150" <i>4900 x 3810mm</i>
Fanuc Power Requirements 208-240 VAC, 50 – 60 hz, 3Ø	100 Amp 38 kVA	125 Amp 47 kVA
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 Temperature changes and table loads may affect tolerances. Tolerances are guaranteed over 10" sq. area. Milltronics reserves the right to change specifications at any time without incurring obligation.</i></p>		

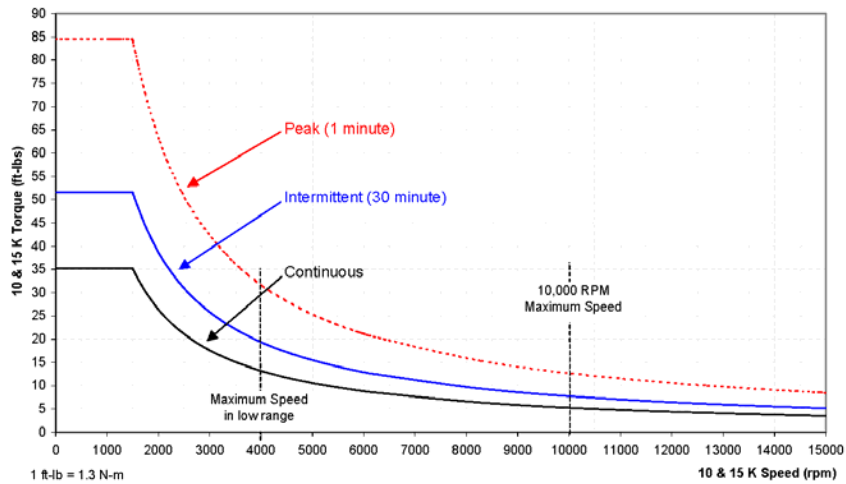
### Fanuc Torque Chart 24/15/2//F – Inline Spindle

Used on: Standard TTC24 IL  
Optional N/A

Fanuc a/8/15000t Inline Power Characteristics of 24/15 HP Dual Winding  
Inline Motor for 10,000 RPM and 15,000 RPM



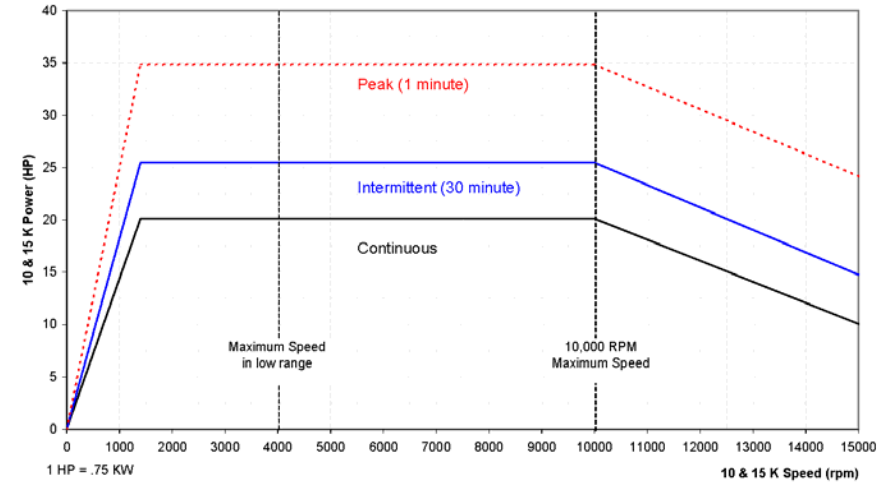
Fanuc a/8/15000t Inline Torque Characteristics of 24/15 HP Dual Winding  
Inline Motor for 10,000 RPM and 15,000 RPM



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

Used on: Standard N/A  
Optional TTC40 IL

Fanuc a/15/15000t Inline Power Characteristics of 35/25 HP Dual Winding  
Inline Motor for 10,000 RPM and 15,000 RPM



Fanuc a/15/15000t Inline Torque Characteristics of 35/25 HP Dual Winding  
Inline Motor for 10,000 RPM and 15,000 RPM

