

RH33

3 Axis CNC Bed Mill



STANDARD FEATURES

- Milltronics 8200-B Series CNC control
- 12" LCD color display
- Solid model graphic display
- 1 GB program storage memory
- DXF file import
- Networking
- Solid Box Way Construction
- 8000 RPM spindle
- X/Y axis metal way cover construction
- Auto lubrication
- CT40
- 24/15 HP 2 speed spindle motor
- Spindle load meter
- Spindle air purge
- Flood Coolant
- Rigid tapping
- LCD hour meter
- One year warranty

SPECIFICATIONS

CAPACITY:

X axis travel	78" (2000 mm)
Y axis travel	33" (840 mm)
Z axis travel	28" (710 mm)
Table size	86" x 32" (2185 mm x 810 mm)
Allowable table load	3500 lbs. (1600 kg)
T-Slot size	.71" (18 mm)

SPINDLE:

Spindle gage line to table distance	4"-32" (100-810 mm)
Column to spindle center	34" (860 mm)
Spindle taper	ISO No. 40
Spindle speed (Std)	8,000 RPM
Spindle speed (Opt)	15,000 RPM
AC spindle motor (Std)	24/15 HP (18/11 kW) 2 Speed Delta/WYE
AC spindle motor (Opt)	35/25 HP (26/18 kW) 2 Speed Delta/WYE
Spindle torque (Std w/8,000 RPM)	250 ft-lbs(339 N.m)
Spindle torque (Opt w/8,000 RPM)	365 ft-lbs(495 N.m)

OPTIONAL AUTOMATIC TOOL CHANGER:

ATC Type	Carousel
Number of tools	24
Tool shank	CT40
Pull stud	MAS 60° Retention Knob Style CT-Flange 40 Taper
Max. tool diameter	3.5" (80 mm)
Max. tool length	10" (250 mm)
Max. tool weight	15 lbs. (7 kg)

MOTION:

X/Y,Z axis rapid traverse rate	800/600 IPM (20/15 m/min)
Max. cutting feed rate	300 IPM (7.6 m/min)
Positioning accuracy	+/- 0.00039" (+/- 0.010 mm)
Repeatability	0.0002" (0.005 mm)
Axis thrust force X/Y,Z	3000/4000 lbs. (1360/1800 kg)

GENERAL:

Machine Height	113" (2870 mm)
Floor Space Required (W x D)	238" x 162" (6045 x 4115 mm)
Machine Weight	15,000 lbs. (6800 kg)
Power required w/24/15 HP	30 KVA / 80 amps
Power required w/35/25 HP	48 KVA / 125 amps
Voltage required	208-240 Volts / 3 Phase

Milltronics USA reserves the right to incorporate any modifications or improvements in machines and machine specifications that it considers necessary, but are not documented within this quotation. Milltronics is not responsible for misprints or typographical errors. Proposal is valid for 30 days after presentation.

CONSTRUCTION

*** BASE, COLUMN AND SADDLE:**

The base, column, and saddle are composed of Meehanite cast iron, which includes very high dampening characteristics. The one piece base casting and column are stress relieved to ensure machine geometry is maintained throughout the life. Spacing of the solid box ways ensure optimal support for the table and saddle in full travel of each axis. Heavily ribbed castings provide superior dampening for high speed machining and aggressive milling. The mating surface of the base and column are hand scraped to optimize fit and machine geometry. The 86" x 32" machine table is fully ground and hardened.

*** WAY SURFACES:**

The Y & Z-axis are hardened and ground square box ways with turcite on all axes. The ways are spaced to eliminate table pitch and deformation. Four oversized box way surfaces for the Y axis provide superior support of the saddle and table. The way surfaces on all three axes utilize gibs with easy adjustment to maximize rigidity and maintain geometry throughout the life of the machine tool.

*** SPINDLE:**

The 8000 rpm 70 mm spindle or optional 15,000 rpm cartridge style spindle is standard CT40. The permanently greased spindle bearings require no maintenance. The 70 mm spindle bearings provide superior rigidity. The 15,000 rpm spindle includes ceramic bearings to help prevent thermal growth. The 8000 rpm and 15,000 rpm spindle is driven by a 24/15 HP (18/11 kW) 2 speed Delta/WYE AC servo motor. Rigid tapping is standard. Spindle air purge keeps the spindle bearings free of foreign contamination.

*** BALL SCREWS AND AXIS DRIVES:**

Each axis is driven using a high precision, fully ground ball screw. Each ball screw is supported on each end using angular contact thrust bearings and are perfectly centered between the way surfaces. The Y axis ball screw is belt driven with AC servo type drive motors, while the Z and X axis ball screws are directly driven.

*** OPTIONAL AUTOMATIC TOOL CHANGER:**

The 24 pocket carousel ATC provides reliable tool changes.

*** LUBRICATION:**

Automatic lubrication is provided to the way surfaces and ball screws with oil to eliminate wear. Way oil is delivered by metered valves, which precisely control the volume. A low oil-level alarm warns the user preventing possible damage to the way surfaces and ball screws.

*** REMOVABLE TABLE CHIP GUARD:**

The table chip guard is conveniently designed to allow the operator to easily remove the guarding. This convenience offers the best solution to chip and coolant containment in normal working conditions, and when an oversized work piece needs machining the guarding is easily removed allowing oversized parts to hang over the table.

*** EDIT KEY:**

The edit key enables protection of programs as well as parameters of the 8200-B CNC control. Removal of the key limits a user from loading programs and parameters such as work coordinates and tool offsets. With the edit key in the off position the data in the CNC control is available for editing.

STANDARD EQUIPMENT IN BASE PRICE

- Milltronics 8200-B CNC
- 12" Color LCD display
- Ethernet Connection
- USB Port
- Auxiliary Keyboard jack with keyboard
- Offline FastCAM software for programming
- User Definable Custom Macros
- Feedrate and Spindle speed overrides
- Spindle load meter
- Edit key lock-out switch
- LCD hour meter
- Tri-color end of cycle warning light
- Single spare "M" function with CNC wait channel
- Rigid tapping
- Spindle orientation
- Remote Handwheel (MPG)
- Work lamp
- 8000 RPM 70 mm spindle
- 24/15 HP (18/11 kW) spindle motor
- High precision spindle with angular contact bearings
- Cartridge spindle design
- Spindle Air Purge
- One piece Meehanite cast iron base
- Fully ground 86" x 32" table
- Fully Ground Box Ways on Y & Z axis
- AC Servo motors on all axes
- 50 mm double nut ball screws on all axes
- Double anchored ball screws
- 800/600 IPM Rapid Traverse rate
- Matched AC Servo Amplifiers on all axes
- Telescopic metal way covers on X and Y axis
- Table chip guard
- Flood coolant system
- Coolant drip pan
- Rear splash guards
- Automatic metered way oil lubrication
- Instruction manual, parts list, and electrical drawings
- UL certified
- Operator and maintenance manuals

RH33 with 8200-B Series CNC Control

PRICE IS F.C.A. Waconia, MN USA

OPTIONAL ACCESSORIES:

Spindle Options:

RH33-755 70 mm 15,000 rpm spindle with ceramic bearings

Horsepower Upgrade:

RH33-763 35/25 HP (26/18 kW) Spindle motor 2 speed Delta/WYE

Coolant:

8168-8 Programmable spray mist

9322-18 Programmable air blast

Rotary Tables:

VM-664 Milltronics M-170 (6.7") Rotary Table including the servo motor, servo amplifier and cables

VM-667 Milltronics M-200 (7.8") Rotary Table including the servo motor, servo amplifier and cables

VM-673 Milltronics M-250 (10") Rotary Table including the servo motor, servo amplifier and cables

VM-681 Milltronics M-320 (12.5") Rotary Table including the servo motor, servo amplifier and cables

VM-810 Milltronics TS-A135 Tail Stock – *For M-170 Rotary Table*

VM-811 Milltronics TS-A160 Tail Stock – *For M-200 Rotary Table*

VM-812 Milltronics TS-B185 Tail Stock – *For M-250 Rotary Table*

VM-813 Milltronics TS-B210 Tail Stock – *For M-320 Rotary Table*

VM-840 7" Manual 3-Jaw chuck with adaptor mounting plate – *For M-170 and M-200 Rotary Tables – Use with Milltronics rotary tables only*

VM-841 9" Manual 3-Jaw chuck with adaptor mounting plate
– *For M-250 Rotary Table – Use with Milltronics rotary tables only*

VM-842 12" Manual 3-Jaw chuck with adaptor mounting plate
– *For M-320 Rotary Table – Use with Milltronics rotary tables only*

RH33-655 Tsudakoma RNE-160R (6") Rotary Table including the servo motor, servo amplifier, and cables

RH33-661 Tsudakoma RNE-200R (8") Rotary Table including the servo motor, Servo amplifier, and cables

RH33-670 Tsudakoma RNE-250R (10") Rotary Table including the servo motor, Servo amplifier and cables

VM-651 4th Axis electrics package including a 1 kW servo motor, amplifier and cables

VM-653 4th& 5th Axis electrics package including 1 kW servo motors, amplifiers and cables

RH-630 Tsudakoma TL-135M Tails Stock for RNE-160R Table

RH-631 Tsudakoma TL-160M Tail Stock for RNE-200R & RNE-250R Tables

Probing:

MM-902 Renishaw OMI-2T interface including the Renishaw OMP40-2 Optical Spindle probe w/ macros and the Renishaw OTS contact tool setter w/ macros

MM-904 Renishaw OMI-2T interface including the Renishaw OMP40-2 Optical Spindle probe w/ macros

5167 Renishaw OMI-2T interface including the Renishaw OTS contact tool setter w/ macros

5174 Renishaw NC4-F300 non-contact laser tool setter

Additional Machine Accessories:

RH33-822 24 pocket Carousel ATC with Electronic Orient

RH33-825 24Pkt Swing Arm ATC Assembly (*requires purchase of full enclosure*)

RH33-602 Full Enclosure Assembly

9999-303 BT Style Tooling

4558 4" (100 mm) Column Riser

8908-4 Spare "M" Functions – *Block of 4*

9999-410 Printed programming manual

9999-329 Printed machine manual

Training:

9999-257 Factory machine installation including on-site training
U.S. Only - *Includes airfare and all expenses*

9999-256 Training at Milltronics

Export Packaging:

9999-395 Required for machines shipping outside of North America

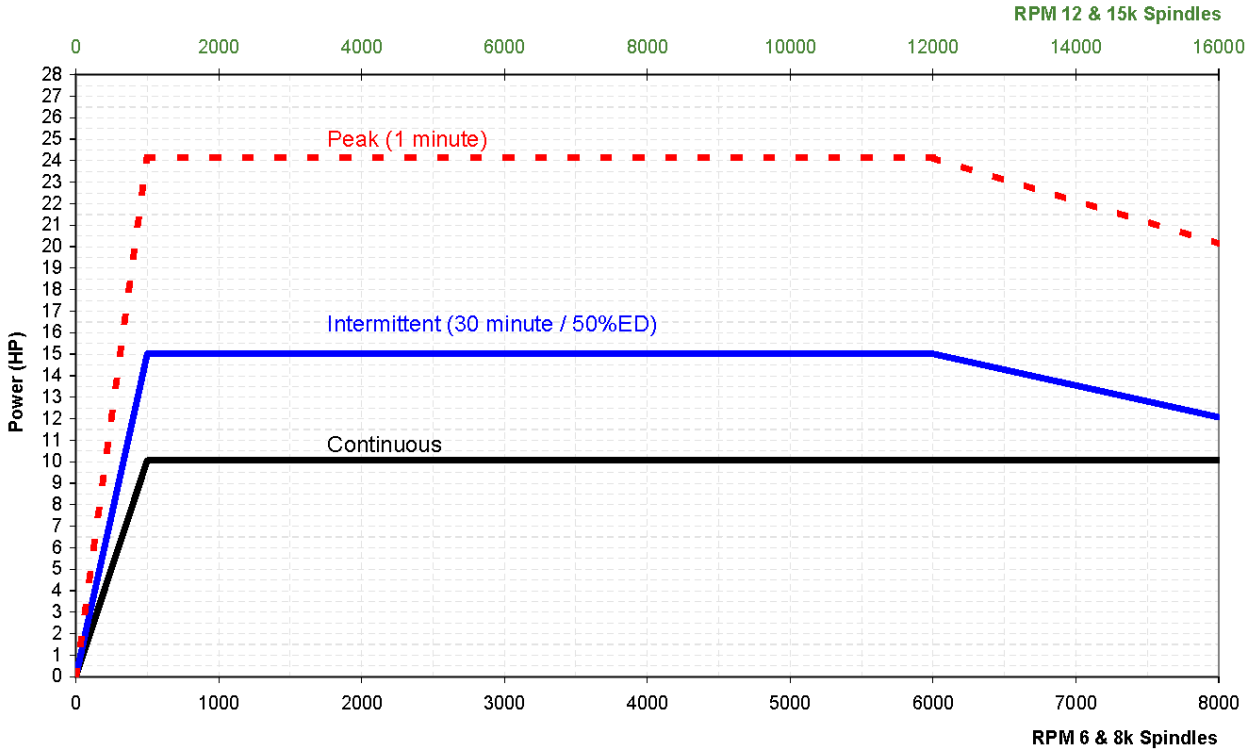
Milltronics 8200-B Series CNC Control Features

- 12" LCD color display
- 2000 blocks/second high speed processor
- Conversational programming
- Fanuc based G&M Code programming
- Inch/Metric Conversion / programming
- Auto routines
- User definable macros with trig assist
- Custom Macro B
- Irregular pocket clearing
- Auto DXF file import
- 3D part and wire frame tool path graphics
- Solid Model Graphic Display
- Optional four and five axis simultaneous interpolation software and interface
- Onboard diagnostics
- Spindle load meter
- Part counter display
- 1 GB parts program memory
- Networking
- USB Port
- Manual pulse generator
- Coordinate rotating
- Scaling
- Mirror image
- Helical interpolation
- Feedrate and Spindle Override
- Tool diameter and length offsets (199 total)
- Tool Load Monitoring
- 60 Work Coordinates (G540-G599)
- G92 Coordinate system setting
- Backlash Compensation
- Ball screw pitch error compensation
- Rigid tapping
- Canned cycles including:
 - Drilling
 - Boring
 - Tapping
 - Facing
 - Pocketing with or without islands
 - Threading
 - Bolt hole pattern
 - 3D Pocket/Sweep
 - Text/Engraving
 - Tangent/Circle Generate
- Subprogram Call-50 nested programs maximum
- MDI
- Background Editing
- Program/Parameter protect

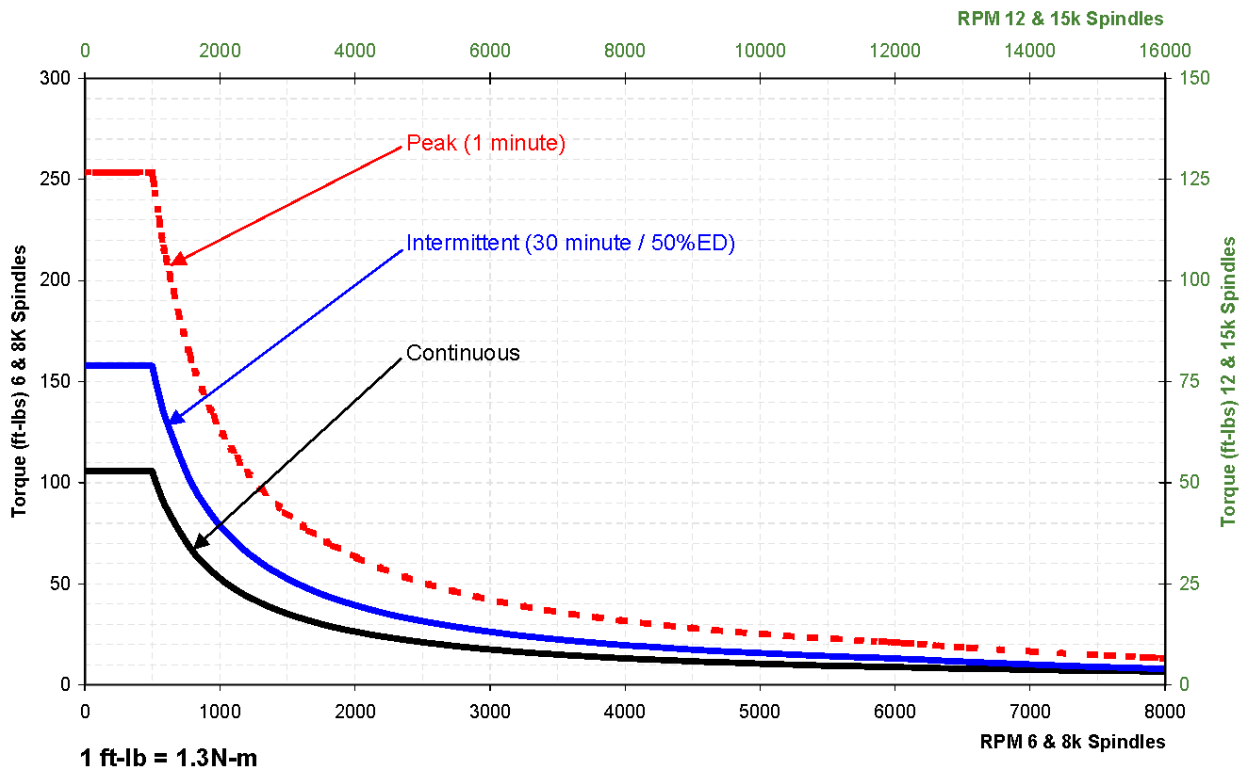
Yaskawa Torque Chart 24/15/2/B/Y – Belted Spindle

Used on: Standard RH33

Power Characteristics of 24/15 HP WYE Delta Motor
for 6,000 and 8,000 RPM or 12,000 and 15,000 RPM



Torque Characteristics of 24/15 HP WYE Delta Motor
for 6,000 and 8,000 RPM or 12,000 and 15,000 RPM

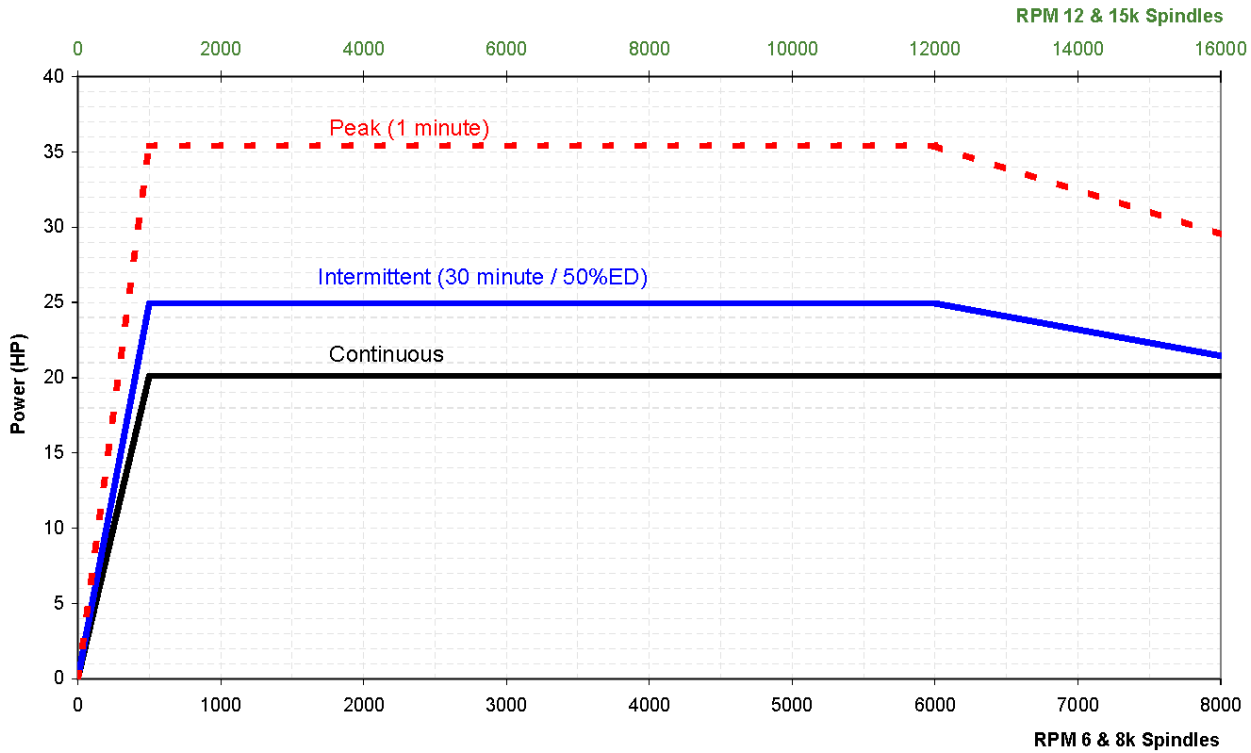


* Prices and specifications are subject to change without notice.

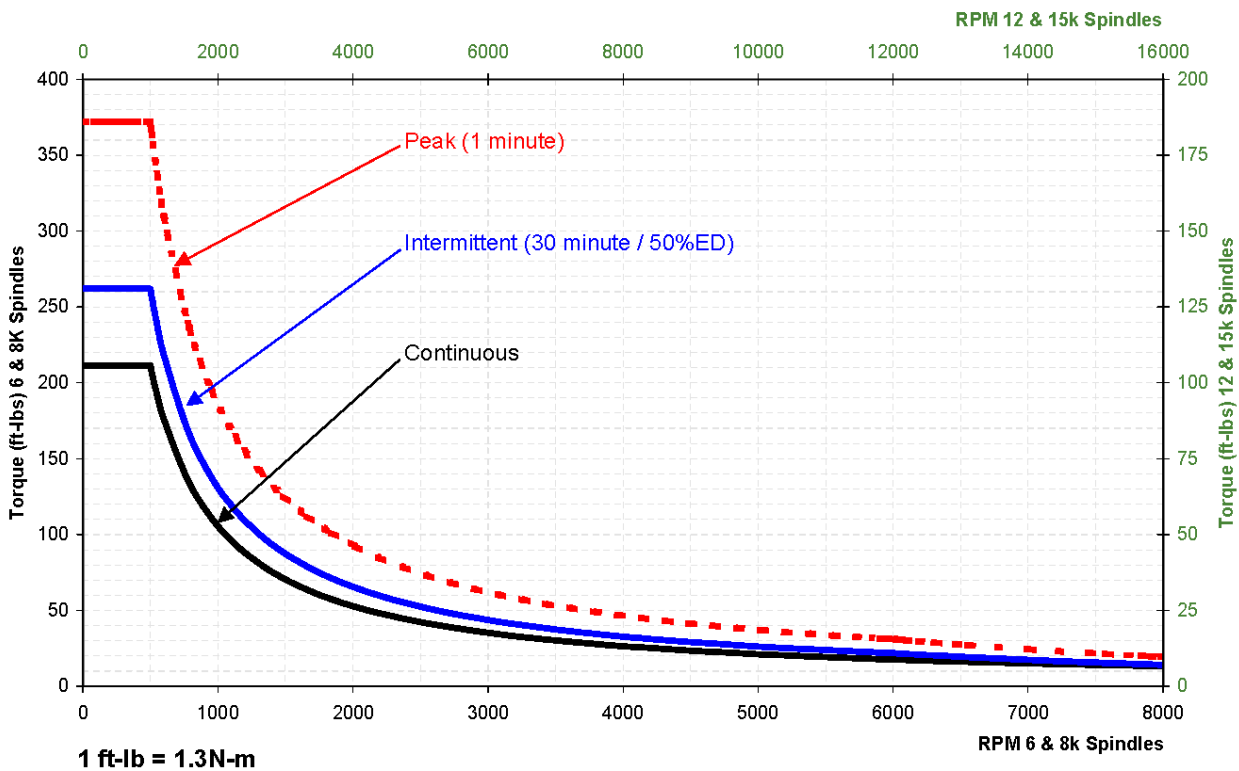
Yaskawa Torque Chart 35/25/2/B/Y – Belted Spindle

Used on: Optional RH33

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



LIMITED WARRANTY

Subject to the terms of this Limited Warranty, Milltronics USA, Inc. ("**Milltronics**") warrants to the End User that the Milltronics Machine Tool, Replacement Part or Accessory (each, a "**Product**") for which this Limited Warranty is issued will be free from any Covered Defect during the Warranty Period for the Product.

Milltronics will replace or repair, at its option, a Product with a Covered Defect at no expense to its End User, except that:

(1) End User must pay for all shipping costs (including freight charges, taxes, and insurance), except shipping costs for repaired parts and components or a Replacement Part shipped under this Limited Warranty by Milltronics to End User or an Authorized Distributor.

End User must report to Milltronics in writing any Covered Defect as soon as practicable upon its discovery and in all events prior to the expiration of the Warranty Period for the Product. Milltronics shall have no responsibility with respect to any Covered Defect which is not reported to Milltronics by written notice prior to the expiration of the Warranty Period for the Product. End User must allow Milltronics or an Authorized Distributor to inspect and test the Product during business hours to determine if there is a Covered Defect. At the option of Milltronics, a Product with a Covered Defect will be repaired at End User's location, and should not be returned to Milltronics except upon inspection and testing by Milltronics or, with prior approval of Milltronics, an Authorized Distributor. Upon request, End User must return for repair or replacement, with shipping costs paid by End User, the Product or part(s) or component(s) of a Product with a Covered Defect to Milltronics at the following address: Milltronics USA, Inc., 1400 Mill Lane, Waconia, Minnesota 55387. All parts, components and Products replaced by Milltronics shall become the property of Milltronics.

This Limited Warranty is effective and valid only if the Authorized Distributor from which the Product is purchased (or Milltronics, if it is the seller) is paid in full for the Product, and the End User for that Product executes Milltronics-provided installation acknowledgments and forms upon completion of installation of the Product.

As used in this Limited Warranty:

(a) "**Accessory**" means a new accessory, kit or optional equipment supplied and installed on a Milltronics Machine Tool by Milltronics or an Authorized Distributor at any time *after* the initial installation of that Milltronics Machine Tool.

(b) "**Authorized Distributor**" means a Person authorized by Milltronics to sell and service Milltronics Machine Tools.

(c) "**Covered Defect**" means a failure of a Product during the Warranty Period to conform in any substantial way during normal use with the performance specifications and standards established by Milltronics for that Product; *provided that* such failure is not caused by or resulting from any of the following: (i) normal wear and tear or deterioration; (ii) inadequate or improper maintenance, such as End User's failure to clean, lubricate, replenish or replace oil, fluids, coolants, lamps, fuses, belts, filters and similar items; (iii) accident, negligence, theft, weather, electrical surges or lightning, fire or any other peril, misuse, abuse, programming error, improper operation or failure to follow fully maintenance and operation instructions provided by Milltronics or a Milltronics technical specialist to End User; (iv) mishandling, improper packaging or any other act which occurs during or in connection with shipment of the Product, or during or in connection with its rigging or installation, unless caused by Milltronics or an Authorized Distributor; and (v) any repair, replacement, modification or alteration of the Product which is not authorized by Milltronics.

(d) "**End User**" means the Person who purchases for its own use directly from Milltronics or an Authorized Distributor the Product for which this Limited Warranty is issued, and, so long as any relocating and reinstallation of the Product is performed by an Authorized Distributor or Milltronics, also any Person who purchases the Product from its initial End User prior to expiration of the Warranty Period for the Product. The term does not include any Person who purchases the Product for resale, lease or other transfer to, or use by, another Person.

(e) "**Milltronics Machine Tool**" means a machine tool manufactured by or for Milltronics, bearing the name "Milltronics" and a "Milltronics" trademark and serial number, and purchased by an End User new directly from Milltronics or an Authorized Distributor, together with any accessory, component, kit or optional equipment installed on that Milltronics Machine Tool by Milltronics or an Authorized Distributor prior to or at the time of initial installation of that Milltronics Machine Tool.

(f) "**Person**" means and includes an individual, partnership, joint venture, corporation, limited liability company, trust or other legal entity.

(g) **“Replacement Part”** means a new or rebuilt genuine part or component bearing a “Milltronics” trademark provided by Milltronics or an Authorized Distributor under this Limited Warranty in replacement of a part or component of a Product.

(h) **“Warranty Period”** means:

(i) for a Milltronics Machine Tool (other than a Tool Room Milltronics Machine Tool), unless a different warranty period is expressly stated in the quotation issued by Milltronics for that Product, a period of One (1) Year Parts and Labor, and for a Milltronics Tool Room Machine Tool, unless a different warranty period is expressly stated in the quotation issued by Milltronics for that Product, a period of One (1) Year Parts, Six (6) Months Labor. These periods begin on the earlier of: (1) the date of the first use of the Milltronics Machine Tool by its initial End User; and (2) the date which is 30 days after shipment by or for Milltronics of the Milltronics Machine Tool to an Authorized Distributor or the End User. (The warranty period may be extended, on exception basis, by a separate warranty extension issued in writing by Milltronics to the End User for a Milltronics Machine Tool);

(ii) for a Replacement Part, a period which is the longer of: (i) the 90 days after the date of its shipment by or for Milltronics to an Authorized Distributor or the End User; and (ii) expiration of the Warranty Period for the Milltronics Machine Tool on which that Replacement Part is installed; and

(iii) for an Accessory, a period which is the longer of: (i) the 90 days after the date of its shipment by or for Milltronics to an Authorized Distributor or the End User; and (ii) expiration of the Warranty Period for the Milltronics Machine Tool on which the Accessory is installed.

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MILLTRONICS USA RESERVATIONS AND MACHINE SHUT DOWN DEVICE ADVISORY

Milltronics USA reserves the right to incorporate any modifications or improvements in machines and machine specifications that it considers necessary, but are not documented within this quotation. Milltronics USA may install on any machine a CNC shut-down timer which requires a password to reactivate the Machine, will cause a machining or turning center to shut down. All purchasers are advised and at purchase shall be deemed to have consented to the installation of a shut-down timer, understanding that Milltronics USA or Authorized Distributor may have or obtain access to the required password to reactivate the machine should this be required in the event of payment default. Milltronics USA is not responsible for misprints or typographical errors in this Proposal. Proposal is valid for 30 days after presentation.

For questions regarding this Limited Warranty, please contact the Authorized Distributor or:

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