

SL8-II

Slant-Bed Turning Center



STANDARD FEATURES/OPTIONS

- 8" 3-jaw hydraulic chuck w/ foot switch
- 2.59" bar capacity
- 4,000 RPM spindle
- 12 position auto turret with 1" slots
- True slant bed with one-piece base casting
- Linear motion guideways with Roller Type Bearings
- Full enclosure with sliding door
- Flood coolant
- Auto lubrication
- Milltronics 9000 series CNC control
- Part, wire frame & solid model graphics
- Constant Surface Speed (CSS)
- 120 GB solid-state hard drive
- 15" LCD color touch screen display
- Spindle load meter
- LCD hour meter
- Hydraulic tailstock w/ foot switch (option)
- One-year warranty

SPECIFICATIONS

CAPACITY:

X axis travel	8" (203 mm)
Z axis travel	21.7" (550 mm)
Swing over bed	20.7" (525 mm)
Swing over cross slide	11.8" (300 mm)
Max turning diameter	14" (356 mm)
Max turning length	20.7" (525 mm)

SPINDLE:

Spindle nose	A2-6
Draw tube inner diameter	2.59" (66 mm)
Spindle bore diameter	3.2" (79 mm)
Max bar diameter	2.55" (65 mm)
Chuck size	8" (203 mm)
Spindle range	0-4000 RPM
AC spindle motor	22/15 HP (16/11 kW)
Maximum Spindle torque	133 ft-lbs (180 N.m) @ 870 rpm

TURRET:

Number of tools	12
Tooling size	1" x 1" (25 x 25 mm)
Boring bar capacity	1.5" (40 mm)
Tool selection	Bi-directional
Turret Index Time (1 position)	0.6 sec.

TAILSTOCK (OPTION):

Tailstock quill travel	3.46" (88 mm)
Tailstock quill diameter	2.55" (65 mm)
Maximum quill thrust	550 lbs (250 kg)
Tailstock quill taper	MT4

MOTION:

X, Z axis rapid traverse rate	1,181 IPM (30 m/min)
Max. cutting feed rate	400 IPM (10.16 m/min)
X axis ball screw diameter	1.25" (32 mm)
Z axis ball screw diameter	1.25" (32 mm)
Positioning accuracy	.0004" (.010 mm)
Repeatability	.0002" (.005 mm)
Axis thrust force X,Z	1,851 lbs. (8.2 kN)

GENERAL:

Machine Height	72.1" (1,831 mm)
Floor Space Required (W x D)	142.2" (3,612 mm) x 102.6" (2,606 mm)
Machine Weight	8,885 lbs. (4,030 kg)
Power required	17 KVA / 43 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

*** BED, CROSSLIDE AND SADDLE:**

The bed and slide are composed of fine grade cast iron, which possess very high dampening characteristics and provides superior reduction in vibration, allowing for an aggressive turning ability. The 30° bed is a true slant bed and therefore maintains constant distance from the tool tip to the support of the bed, through the entire range of travel. Rigidity is maintained even at the maximum turning diameter. The bed casting is heavily ribbed to preclude deformation under extreme cutting loads and maintaining machine geometry. Additionally, the slant design allows for excellent downward chip flow. Ergonomics of the lathe allow easy access to the spindle and reduction of operator fatigue.

*** WAY SURFACES:**

The X & Z axes are standard with heavy-duty linear roller guide ways. Roller ways have more surface contact between the rail and roller than typical ball ways – this increased surface contact adds 40% more rigidity. The Z-axis guide ways are placed on a 30-degree slant to maintain rigidity. Additionally, the linear roller guide ways are secured in place using wedge-style clamping against a shoulder for maximum straightness.

*** SPINDLE AND HEADSTOCK:**

The fully balanced spindle is driven using a 22/15 HP (16/11 Kw) brushless, AC servo motor. Heavy exterior ribbing on the headstock provides rigidity and increased surface area for heat transfer. The spindle is directly driven by a quiet and efficient Micro-V belt. Two rows of roller bearings are placed up front, with two rows of ABEC Class 7 P4 preloaded angular contact bearings mounted right behind. In back, two additional rows of roller bearings easily take up the drive belt's side load. All bearings are permanently greased for long life and maintenance free operation. Constant surface speed (CSS) function is standard promoting longer tooling life and improved part finish.

*** BALL SCREWS AND AXIS DRIVES:**

Each axis is driven using a high-precision, fully hardened and ground, double-nut, preloaded and stretched ball screws. Each ball screw is supported on each end using angular contact thrust bearings to achieve high rapid traverse rates and thrust. The axis ball screws are directly driven using AC servo type motors, minimizing backlash and lost motion. The 10 mm pitch ball screws provide a high level of accuracy and thrust.

*** TURRET:**

A 12-position automatic turret provides quick, reliable tool changes with hydraulic clamping of the coupling. Turning holders utilize 1" square shank tooling and boring bar holders can accommodate up to 1.5" round shank.. All Square shank tools are clamped by a wedge-style tool holder clamp for superior retention. The bi-directional turret has 0.6 sec indexing time from station to station. Boring bar holders are interchangeable from station-to-station.

*** 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. The bed casting is designed so that waste way lube oil is collected into a separate reservoir helping prevent coolant contamination.

*** TAILSTOCK (OPTION):**

The tailstock is designed to be interference free from the turret, enabling full cutting along the Z-axis travel. The Morse Taper #4 quill is ideal for supporting heavy work pieces. The quill can travel up to 3.46" with activation from the program or by the foot pedal.

*** COOLANT SYSTEM:**

A high-volume coolant pump delivers coolant to the coolant nozzle(s) on each turret station. The 50-gallon (189 liters) coolant tank is separate from the machine bed to prevent thermal transfer and allowing for quick and easy coolant maintenance. A chip screen is inside the coolant tank filtering chips from reaching the coolant tank and pump. The coolant tank are easily removed from the front of the machine to allow for chip removal.

*** CHIP CONVEYOR (OPTION)**

The chip conveyor allows continuous running eliminating down time to remove chips from the machine. Conveyor reverse function allows easy clearing of chip jams in the system. The conveyor can be easily removed from the right-hand side of the machine for maintenance.

STANDARD EQUIPMENT IN BASE PRICE

- Milltronics 9000 Series CNC Control
- 15" Color LCD display
- 4 GB RAM memory
- 120 GB solid state hard drive
- Solid model graphics
- Ethernet connection
- USB ports (2)
- Auto DXF file import
- 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
- Manual pulse generator (on control)
- Work light
- 4000 RPM spindle
- A2-6 spindle nose
- 3.2" spindle bore diameter
- 2.59" draw tube bore diameter
- 8" Hydraulic 3 jaw chuck with soft jaws and foot switch
- 22/15 HP (16/11 kW) Spindle Motor
- Cartridge type spindle design
- High precision spindle bearings
- Linear way roller guides technology on all axes
- 1" square shank 12 station automatic turret
- Tool Holder kit with 12 OD Wedge Clamps, 6 Boring Bar or Drill holders and 2 Axial/Facing work holders. Includes 8 ID Sleeves (3/8-1/2-5/8-3/4-1.0-1.25-MT2-MT3)
- Flood coolant system
- Coolant gun and Air gun
- Door interlock safety switch
- Brushless AC Servo motors directly driving oversized ball screws on all axes
- Double anchored ball screws
- 1,181 IPM Rapid Traverse rate
- Metal way cover construction
- Automatic metered way oil lubrication
- CSS and feed/rev with threading, rigid tapping, and thread chasing cycles
- Instruction manual, parts list, and electrical drawings
- Operator and maintenance manuals
- One year warranty

PRICE FOR MACHINE AS DESCRIBED ABOVE

SL8-II with 9000 Series CNC Control

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

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July 1, 2017

* Prices and specifications are subject to change without notice.

OPTIONAL ACCESSORIES:

Tailstock:

9999-425 Manually positioned, hydraulic programmable quill w/3.46" (88 mm) stroke

Chip Conveyor:

SL8-690 Right discharge lift-up chip conveyor with 43" (1100mm) discharge height.

Barfeed Interface:

SL8-695 For use with 3rd party barfeeder with PLC control

Parts Catcher:

SL8-469 Air operated bucket type parts catcher. Part transferred to enclosed bin mounted outside sliding access door. Kit includes air pressure regulator, dryer, and lubricator. Max part size 5.9" (150 mm) long x 3.0" (76 mm) diameter.

Tool Setter:

SL8-517 Renishaw manual tool setter with macros

Work Holding:

SL8-951 Royal Quick Grip, Quick Change Collet chuck. Pull-Back type

SL8-952 Royal Quick Grip, Quick Change Collet chuck. Pull-Back w/Adjustable stop

SL8-955 Smooth Bore Collet for above [3/16" (3mm) to 2.625"(66mm) Range]

SL8-960 Spindle liner (Urethane) for 3 ft bar lengths

SL8-970 Stepped Hard Jaws – Set of three with T-nuts and bolts

Auxiliary Keyboard:

VM-270 Industrial grade QWERTY keyboard (NOTE: Requires one USB slot)

Additional Machine Accessories:

9999-411 Printed programming manual

9999-329 Printed machine manual

Training & Extended Warranty:

9999-420 2nd year extended parts warranty

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

9999-256 Training at Milltronics, per student

Export Packaging:

9999-395 Required for machines shipping outside of North America



MILLTRONICS 9000 CNC SPECIFICATIONS

ESSENTIALS

- Processor Intel® Dual Core i5-3610ME
- Disk Storage 120 GB Solid State Hard Drive
- Instruction Set 64-bit
- Ram Memory 4 GB

PERFORMANCE

- Processor Base Frequency 2.7 GHz
- Max Turbo Frequency 3.3 GHz

GRAPHICS SPECIFICATIONS

- Display 15" Color LCD Resistive Touch Screen (LED Backlit)
1024x768 resolution, driven by a high end 600 MHz Graphics Card featuring an on board GPU and 1G Video Memory

OPERATING SYSTEM

- Primary OS Windows® 7 Embedded

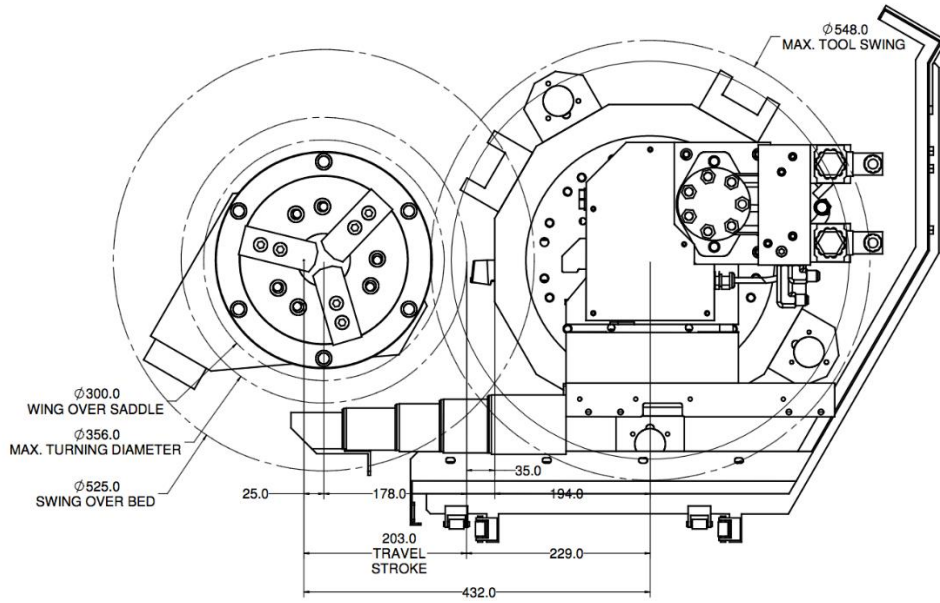
OPERATOR PANEL

- Keypad Type ABS Mid-Travel Keys with Tactile Feedback

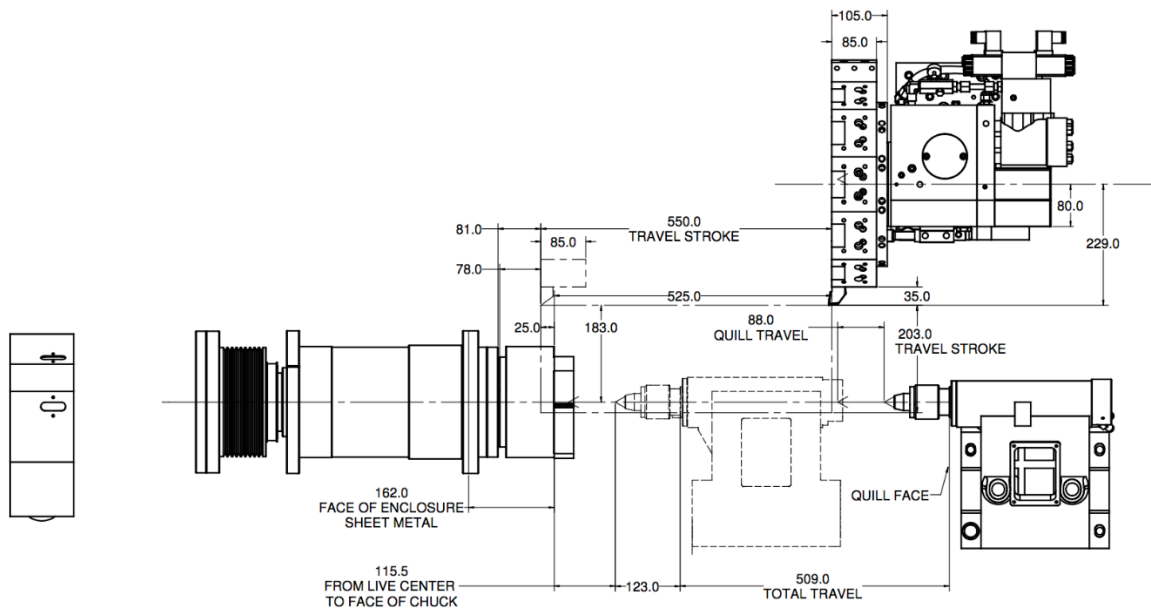
MILLTRONICS 9000 CNC FEATURES

- 15" color LCD touch screen display
- 3000 blocks/second high speed processor
- Conversational programming
- ISO based G&M Code programming
- Inch/Metric Conversion / programming
- User definable macros
- Trig assist
- Custom Macros
- Auto DXF file import
- 3D part and wire frame tool path graphics
- Solid Model Graphic Display
- Onboard diagnostics
- Spindle load meter
- Part counter display
- 120 GB solid state hard drive
- 4 GB Ram Memory
- Networking
- Two USB Ports
- Hour meter
- Manual pulse generator
- Coordinate rotation
- Scaling
- Mirror image
- Feedrate and Spindle Override
- Tool diameter and length offsets (99 total)
- Tool Load Monitoring
- 6 Work Coordinates (G54-G59)
- G92 Coordinate system setting
- Backlash Compensation
- Ball screw pitch error compensation
- Rigid tapping
- Canned cycles including:
 - Drilling
 - Turning
 - Facing
 - Boring
 - Tapping
 - Grooving
 - Threading
 - Tangent/Circle Generate
 - Auto roundcorner/chamfer
- Subprogram Call-50 nested programs maximum
- MDI
- Background Editing
- Program/Parameter protect

-TOOL INTERFERENCE-



- OD TOOL/TAILOSTOCK INTERFERENCE



Horsepower and Torque Chart – SL8 Belted Spindle

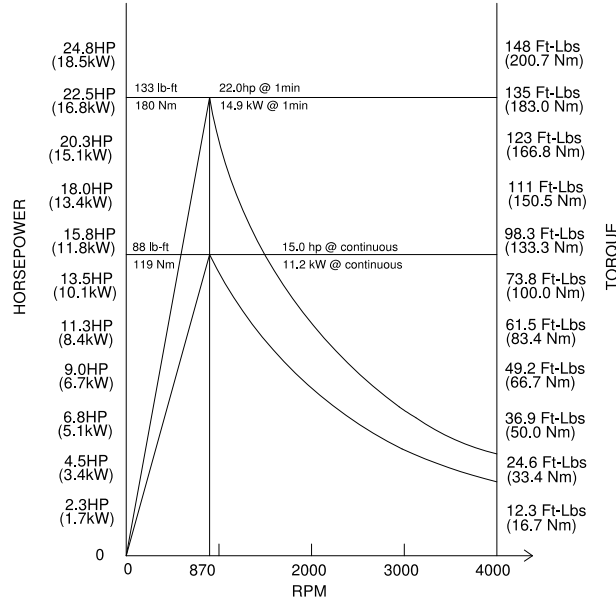
4,000 rpm spindle

ATTACHMENT "C"

PROPRIETARY INFORMATION
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SPINDLE POWER/TORQUE CHART
 SL8, 4000 RPM SPINDLE, 1.67:1

C-1
 757-4002-814



Base Speed 870 RPM, Max. Speed 4000 RPM
 1 Minute Power Rating / Torque Rating = 22 HP / 133ft-lbf

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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