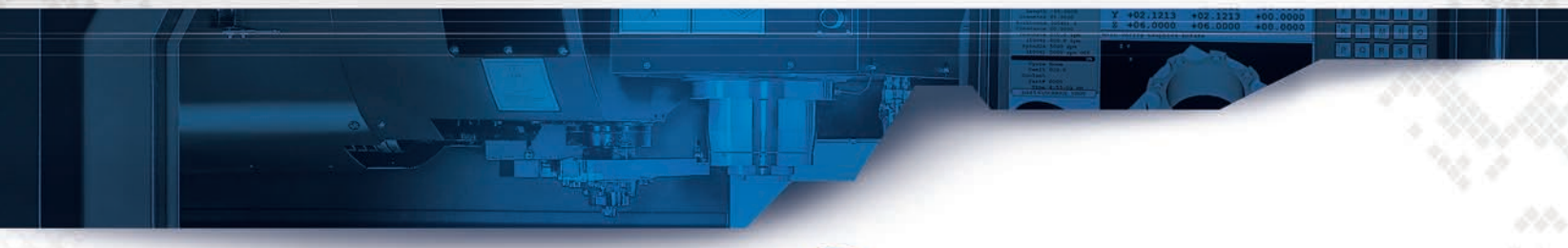
VMIL

VM INLINE SERIES.
PERFORMANCE AND PRECISION,
REINVENTED.



MILLTRONICS USA
LET'S INVENT

WHY MILLTRONICS? 10 REASONS.

1. EASY TO USE CONTROL

The Milltronics CNC control is straightforward and easy-to-use. Whether you choose Conversational programming, industry standard G&M code or use a CAD/CAM system, the 9000 CNC gives you the flexibility to use the most efficient program for each part.

2. MADE RIGHT

Using a machine design process that is ISO 9001 certified, Milltronics starts with FEA analysis and designs accurate, rigid and reliable machines built to last. There are no shortcuts taken here.

3. SUPERIOR COMPONENTS

Milltronics partners with top suppliers such as Yaskawa, Kenturn, Hiwin® and Grundfos. You can judge a machine tool builder by the company it keeps.

4. UPGRADEABLE

Milltronics controls are designed, built and supported by Milltronics. They are also designed to be upgradeable. With Milltronics CNC controls, you don't have to miss out on new software or hardware advancements as time marches on.

5. AVAILABILITY

We recognize that sometimes you need a machine fast. We work hard to make sure we have our most popular models in stock for quick shipment.

6. FASTEST LEARNING CURVE

Because Milltronics machines are so easy to learn and use, you'll be making chips quicker. And don't confuse easy with simple – the 9000 CNC is packed with advanced features and capabilities. Conversational programming, on screen help, intuitive menus, color graphics and prompted tool settings will help the operator train faster and become productive sooner.

7. SERVICE NETWORK

Support is a core value to Milltronics, and according to customer surveys Milltronics and our distributor network offer the best service and support in the industry. We do what it takes to provide reliable full life-cycle support you need to make great products.

8. COMPLETE SOLUTION

Milltronics offers 50 different models of milling and turning machines for toolroom and production environments. The lineup includes toolroom mills and lathes, general purpose and high performance vertical machining centers, CNC lathes, bridge mills and horizontal boring mills. Our versatile product line offers something for everyone.

9. GLOBAL AMERICAN COMPANY

Milltronics is part of the Hurco Companies Machine Tool Group. We are publically traded with solid financials, we're in it for the long haul.

10. MORE FOR YOUR MONEY

Finally, Milltronics offers better built machines with more standard features for the price. We are continually working with our distribution partners innovating new ways to seamlessly surround manufacturers and machine shop owners with the reliable products they need.

VMIL SERIES, IT'S AL

BOUT PERFORMANCE.

INLINE SPINDLES FEATURE:

- Made of chromoly alloy for longer wear and corrosion prevention
- ABEC 7 precision class angular contact bearings
- Permanently grease packed
- Air purged top and bottom to prevent contamination
- Precision balanced for long life

FASTER SPINDLE ACCELERATION AND DECELERATION

24/15 HP

- Zero to 10,000 RPM in 2 seconds
- 10,000 RPM to zero in 3.5 seconds

35/25 HP

- Zero to 10,000 RPM in 2 seconds
- 10,000 RPM to zero in 4.3 seconds

INLINE SPINDLES: A DISTINCT PERFORMANCE ADVANTAGE

Milltronics VM IL Series feature inline spindles for improved performance at higher RPM's by eliminating pulleys and belts. The inline spindles are designed with a direct coupling from the spindle to the motor. This design features reduced inertia, vibration and generation of heat in the head. Resulting benefits include improved spindle acceleration time, part tolerances and finishes and longer tool life.

9000 CNC

9000 CNC: THE NEW STANDARD OF CONTROL.

Milltronics is constantly refining our controls to simplify operation, shorten setup times and to provide set features to reduce cycle times. The 9000 Series CNC is our newest and upgraded control offered on VM Series machining centers. It features 120 GB disk storage, 4GB memory, mid-travel tactile keys and an enlarged 15" LCD touch screen. It's a Windows®-based platform and offers all the user-friendly features that Milltronics CNC controls are known for and more.

INTUITIVE

With its conversational programming, on screen help, intuitive menus, color graphics and prompted tool settings, the 9000 CNC helps new operators train faster and become more productive sooner. The 9000 CNC makes it the one machine in the shop that everyone can operate.

EFFICIENT

The 9000 CNC is packed with features that allow quick and confident operation of the CNC:

- **Solid modeling graphics allows the operator to see a completed part prior to cutting.**
- **Mid program restart allows the operator to start anywhere in a program by verifying the graphics and then switching to Run Mode. It's simple – no need for G&M code expertise!**
- **Handwheel run allows the operator to run a program in a controlled mode where motion only occurs while the handwheel is turning. This feature allows operators to verify programs with total control and complete confidence.**
- **The 9000 CNC features a dual-core processor and high speed motion control that is capable of executing 3,000 blocks per second. Execute the most demanding programs in the shortest time.**
- **The 9000 CNC is equipped with a 120 GB solid state drive, 4 GB RAM memory, USB ports and Ethernet connectivity.**

PRODUCTIVE

The 9000 CNC allows operators to run parts programmed conversationally or toolpaths generated by a CAM system. Coupled with a super-fast motion control system, feature packed CNC and interface designed to expedite setup and operation, the 9000 CNC is the solution to helping your operator make parts faster and better.

PERFORMANCE & SPECIFICATIONS

Essentials

Processor	Intel® Core i5-3610ME
Instruction Set	64-bit

Performance

Number of Cores	2
Processor Base Frequency	2.7 GHz
Max Turbo Frequency	3.3 GHz

Memory Specifications

System Memory Installed	4 GB
Disk Storage	120 GB

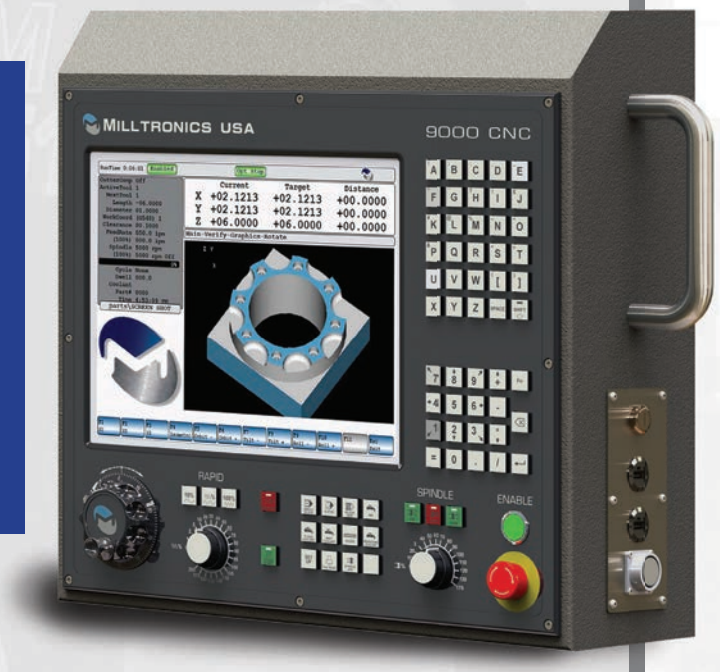
Graphics Specifications

GPU Core Speed	600MHz
Memory	1024

Operating System

Primary OS	Windows® Embedded 7
Real Time Extension	IntervalZero RTX

The new Milltronics 9000 CNC control is Windows® based and features a 15" color LCD touch screen.

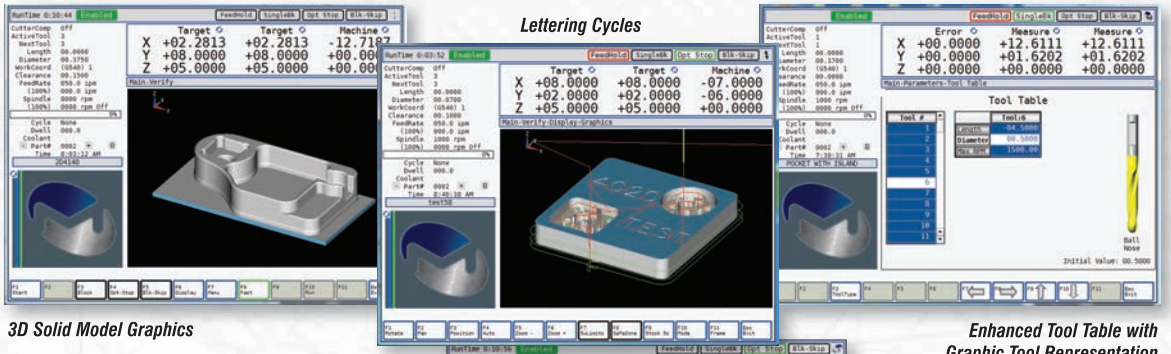


Display

Size	15"
Resolution	1024 x 768
Backlight Type	LED
Touchscreen	Resistive

Operator Panel

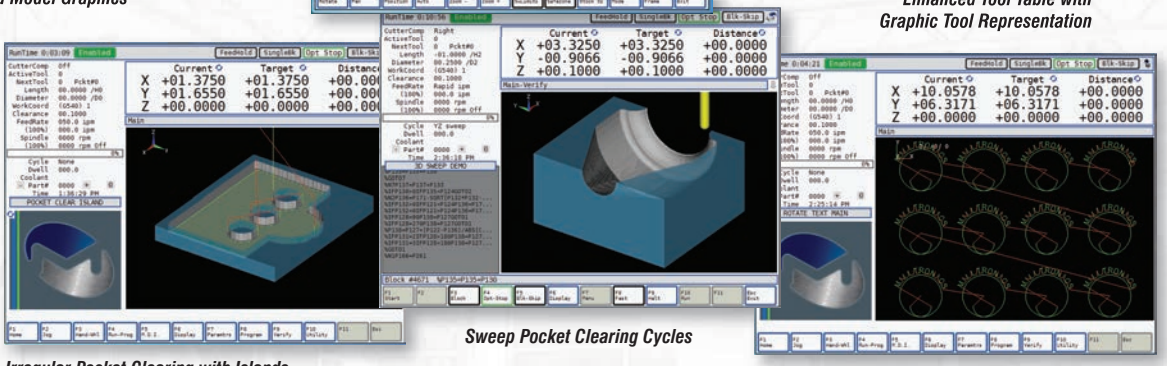
Keypad Type	ABS mid-travel with tactile feedback
Data Transfer	USB ports and Ethernet connectivity



3D Solid Model Graphics

Lettering Cycles

Enhanced Tool Table with Graphic Tool Representation



Irregular Pocket Clearing with Islands

Sweep Pocket Clearing Cycles

Sub-Program Loops for Pattern Repeat Cycles

PROGRAMMING FEATURES

Trig Help Features
- Arc & Line Intersection Find
- Tangent Line & Arc Functions
- 3 Point Arc Generation
- Line Extend Back
- Cartesian & Polar Coordinates
- Corner Chamfering & Rounding

Single Page Auto-Routines
- Bolt Pattern, Drill, Tap & Bore Cycles
- Text Engraving on Arc or Line
- Thread Milling Cycle
- Circular Framing Cycle
- Rectangular Framing Cycle
- Polygon Framing Cycle
- Circular Pocket Cycle
- Rectangular Pocket Cycle
- Polygon Pocket Cycle
- Slot Cycle
- Facing Cycle

Canned Cycles
- Milling Cycles
- Drill, Tap & Bore Cycles
- Custom Drill Cycle
- Rotary Axis Cylindrical Mapping
- 3D Sweep Routine
- Irregular Pocket Clear with Islands

Conversational Programming
- DXF & IGES File Import
- Math Function Input Fields
- Macro Variable Programming
- Custom Conversational Screens
- Speed & Feed Calculator
- Prompting Help Screens

G&M Code Programming
- Macro Programming
- MDI
- EIA / ISO Code (Fanuc™) Compatibility

Programming Features
- Concurrent Programming
- Cutter Compensation
- Inch / Metric
- Mirror, Scale & Rotate
- Dwell
- Subprogram Call, Looping & Nesting
- Tapered & Round Walls
- Engraving with Serializing

Run & Verify Features
- Handwheel Run
- Dry Run
- Block Skip, Optional Stop, Programmable Stop & Single Block
- Multiple Mid Program Start Options
- Mill Away / Jog Away
- Program Halt & Resume
- Tool Load Monitoring
- Tool Breakage Detection with Optional Tool Setter
- Estimated Cycle Time
- 10%, 100% & Variable Rapid Override Select
- Spindle Load Meter
- Fine Tune Feed & Spindle Override
- Machine Status Light
- Programmable Air, Mist & Coolant

Set-Up Features
- Automatic Tool Setting Program
- Single Button Tool / Fixture Offset Entry
- 60 Work Coordinates
- Continuous & Incremental Axis Jog
- Electronic Handwheel(s)
- Optional Probe & Tool Setter
- 199 Tool Diameter Length & Wear Offsets
- DRO Measure
- Safe Zone
- Hot Keys

Control Features
- Optional Four & Five Axis Simultaneous
- 3000 Blocks/Second High Speed Processor
- Absolute / Incremental
- 120 GB Solid State Hard Drive
- 4 GB Ram Memory
- 500 MB Text Editing with Cut, Copy, Move, Search & Replace
- Ball Screw Pitch Error Correction
- True S Curve Acceleration & Jerk Correction
- Feed Forward Error Correction
- Full Language Error Messages
- Backlash Compensation
- Linear, Circular, Helical & Interpolation
- Feed Per Rev, Minute, Inverse Time
- Custom I/O Screens
- Surface Finish Selection (SFS)
- Aux Keyboard Port
- Networking
- Calculator
- Service Diagnostics
- Parts Counter
- Program/Parameter (Edit Key)
- Remote Diagnostics
- Rigid Tapping
- Selectable Corner Accuracy
- Selectable Languages
- Handwheel Scroll through Menus
- 15˝ Color LCD Touch Screen Display
- Automatic Homing
- Two USB Ports
- Hour Meter

Edit Features
- Background Editing
- Cut, Copy, Paste & Move Editing
- Handwheel through Text
- Overwrite & Insert
- Global Find & Replace
- Printout a Program (Fastcam)

Display Features
- 3D Part & Wire Frame Tool Path Graphics
- Color Graphics – Tool Path & Part Profile
- Solid Model Graphics
- Wireframe over Solids
- Transparent Graphics
- Customizable DRO
- User Definable Image Display Window
- User Selectable Graphics in all Planes

VM3018IL

MACHINE SPECIFICATIONS

CAPACITY	
Travels	30 x 18 x 22" (762 x 457 x 559 mm)
Table Size	34 x 18" (864 x 457 mm)
Allowable Table Load	3000 lbs. (1360 kg)
T-Slot Size	.71" (18 mm)
SPINDLE	
Spindle Nose To Table Distance	6-28" (152-712 mm)
Column To Spindle Center	23.25" (590 mm)
Spindle Taper	BIG-PLUS® ISO No. 40
Spindle Speed	10,000 RPM
Optional Spindle Speed	15,000 RPM
AC Spindle Motor	24/15 HP (18/11 kW)
Spindle Torque	84 ft-lbs (114 N.m)
Optional Spindle Torque	122 ft-lbs (165 N.m)
AUTOMATIC TOOL CHANGER	
Number of Tools	24 Double Arm
Tool Shank	CT40
Pull Stud	MAS 60° Retention Knob Style CT-Flange
Max. Tool Diameter	3.1" (80 mm)
Max. Tool Length	11.8" (300 mm)
Max. Tool Weight	15 lbs. (7 kg)
MOTION	
XY, Z Axis Rapid Traverse Rate	1200, 1000 IPM (30, 25 m/min)
Max. Cutting Feed Rate	500 IPM (12.7 m/min)
Least Command Increment	0.0001" (0.001 mm)
Positioning Accuracy	+/- 0.0002" (+/- 0.005 mm)
Repeatability	+/- 0.0002" (+/- 0.005 mm)
Axis Thrust Force XY,Z	3425, 6020, 8575 lbs (1554, 2730, 3900 kg)
GENERAL	
Machine Height	119" (3025 mm)
Floor Space Required (W x D)	86 x 106" (2180 x 2685 mm)
Additional Width for Conveyor	29" (736 mm)
Machine Weight	10,700 lbs. (4850 kg)
Power Required	38 KVA / 100 Amps
Voltage Required	208-240 Volts / 3 Phase

VM3018IL machine shown with options

MACHINE OPTIONS

- Coolant through spindle system
- Work offset probing
- 4th axis options
- Auxiliary industrial grade keyboard
- Electronic spindle chiller
- BT style tooling
- 15,000 RPM spindle

MACHINE FEATURES

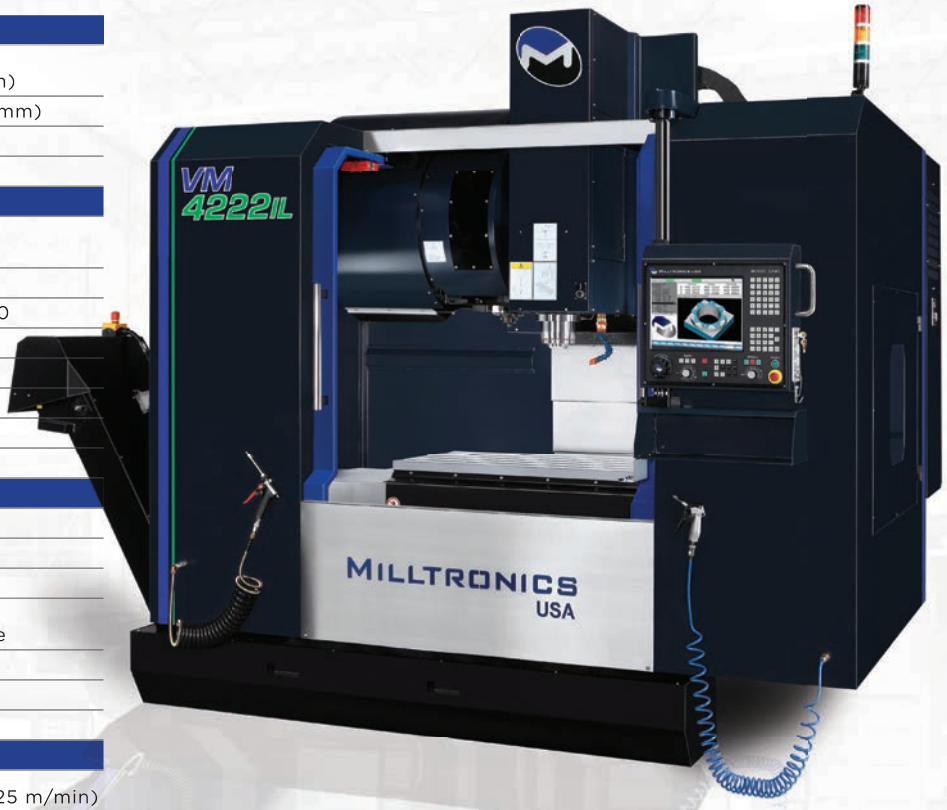
MACHINE STANDARDS

- Heavily ribbed one piece fine grain cast iron construction
- Fully enclosed machine guard with side doors
- 35/45 mm roller linear way technology
- Precision ground supported on both ends ball screws
- Precision ground table surface
- Telescopic metal way covers
- 24 pocket double arm ATC
- BIG-PLUS® dual contact inline spindle
- Automatic positive displacement lubrication system
- High torque AC digital servo drives
- High torque closed loop vector spindle drive system
- Dual work lights
- LCD hour meter
- Spindle taper blow-out and tool release push button
- Single spare “M” function with CNC “wait” channel
- Programmable on/off flood coolant system
- Rigid tap
- Edit key lockout switch
- Spindle load meter
- Feedrate and spindle speed overrides
- Spindle air purge
- End of cycle light
- Chip conveyor chip removal system
- Remote handwheel
- Air gun
- Coolant wash down gun

VM4222IL

MACHINE SPECIFICATIONS

CAPACITY	
Travels	42 x 22 x 24" (1067 x 559 x 610 mm)
Table Size	46 x 22" (1168 x 559 mm)
Allowable Table Load	3000 lbs. (1360 kg)
T-Slot Size	.71" (18 mm)
SPINDLE	
Spindle Nose To Table Distance	5-29" (125-735 mm)
Column To Spindle Center	25.5" (648 mm)
Spindle Taper	BIG-PLUS® ISO No. 40
Standard Spindle Speed	10,000 RPM
Optional Spindle Speed	15,000 RPM
AC Spindle Motor	24/15 HP (18/11 kW)
Spindle Torque	84 ft-lbs (114 N.m)
Optional Spindle Torque	122 ft-lbs (165 N.m)
AUTOMATIC TOOL CHANGER	
Number of Tools	24 Double Arm
Optional Number of Tools	40 Double Arm
Tool Shank	CT40
Pull Stud	MAS 60° Retention Knob Style CT-Flange
Max. Tool Diameter	3.1" (80 mm)
Max. Tool Length	11.8" (300 mm)
Max. Tool Weight	15 lbs. (7 kg)
MOTION	
XY, Z Axis Rapid Traverse Rate	1200, 1000 IPM (30, 25 m/min)
Max. Cutting Feed Rate	500 IPM (12.7 m/min)
Least Command Increment	0.0001" (0.001 mm)
Positioning Accuracy	+/- 0.0001" (+/- 0.003 mm)
Repeatability	+/- 0.0002" (+/- 0.005 mm)
Axis Thrust Force XY,Z	6020, 8575 lbs (2730, 3900 kg)
GENERAL	
Machine Height	121" (3060 mm)
Floor Space Required (W x D)	111 x 116" (2800 x 2935 mm)
Additional Width for Conveyor	29" (736 mm)
Machine Weight	14,775 lbs. (6702 kg)
Power Required	38 KVA / 100 Amps
Voltage Required	208-240 Volts / 3 Phase



VM4222IL machine shown with options

MACHINE OPTIONS

- Coolant through spindle system
- Work offset probing
- 4th axis options
- Auxiliary industrial grade keyboard
- Electronic spindle chiller
- BT style tooling
- 15,000 RPM spindle
- 40 pocket ATC

MACHINE FEATURES

MACHINE STANDARDS

- Heavily ribbed one piece fine grain cast iron construction
- Fully enclosed machine guard with side doors
- 45 mm roller linear way technology
- Precision ground supported on both ends ball screws
- Precision ground table surface
- Telescopic metal way covers
- 24 pocket double arm ATC
- BIG-PLUS® dual contact inline spindle
- Automatic positive displacement lubrication system
- High torque AC digital servo drives
- High torque closed loop vector spindle drive system
- Dual work lights
- LCD hour meter
- Spindle taper blow-out and tool release push button
- Single spare "M" function with CNC "wait" channel
- Programmable on/off flood coolant system
- Rigid tap
- Edit key lockout switch
- Spindle load meter
- Feedrate and spindle speed overrides
- Spindle air purge
- End of cycle light
- Chip conveyor chip removal system
- Remote handwheel
- Air gun
- Coolant wash down gun

VM5025IL

MACHINE SPECIFICATIONS

CAPACITY	
Travels	50 x 25 x 24" (1270 x 635 x 610 mm)
Table Size	54 x 25" (1372 x 635 mm)
Allowable Table Load	3000 lbs. (1360 kg)
T-Slot Size	.71" (18 mm)
SPINDLE	
Spindle Nose To Table Distance	6-30" (152-762 mm)
Column To Spindle Center	28.7" (729 mm)
Spindle Taper	BIG-PLUS® ISO No. 40
Standard Spindle Speed	10,000 RPM
Optional Spindle Speed	15,000 RPM
AC Spindle Motor	24/15 HP (18/11 kW)
Optional AC Spindle Motor	35/25 HP (26/18 kW)
Spindle Torque	84 ft-lbs (114 N.m)
Optional Spindle Torque	122 ft-lbs (165 N.m)
AUTOMATIC TOOL CHANGER	
Number of Tools	24 Double Arm
Optional Number of Tools	40 Double Arm
Tool Shank	CT40
Pull Stud	MAS 60° Retention Knob Style CT-Flange
Max. Tool Diameter	3.1" (80 mm)
Max. Tool Length	11.8" (300 mm)
Max. Tool Weight	15 lbs. (7 kg)
MOTION	
XY, Z Axis Rapid Traverse Rate	1000, 787 IPM (25, 20 m/min)
Max. Cutting Feed Rate	500 IPM (12.7 m/min)
Least Command Increment	0.0001" (0.001 mm)
Positioning Accuracy	+/- 0.0002" (+/- 0.005 mm)
Repeatability	+/- 0.0002" (+/- 0.005 mm)
Axis Thrust Force XY,Z	6020, 8575 lbs (2730, 3900 kg)
GENERAL	
Machine Height	122" (3099 mm)
Floor Space Required (W x D)	128" x 103" (3251 x 2616 mm)
Additional Width for Conveyor	166" (4217 mm)
Machine Weight	17,900 lbs. (8120 kg)
Power Required	38 KVA / 100 Amps
Optional Power Required	48 KVA / 125 Amps
Voltage Required	208-240 Volts / 3 Phase

VM5025IL machine shown with options

MACHINE OPTIONS

- Coolant through spindle system
- Work offset probing
- 4th axis options
- Auxiliary industrial grade keyboard
- Electronic spindle chiller
- BT style tooling
- 15,000 RPM spindle
- 40 pocket ATC
- 35/25 HP upgrade

MACHINE FEATURES

MACHINE STANDARDS

- Heavily ribbed one piece fine grain cast iron construction
- Fully enclosed machine guard with side doors
- 45 mm roller linear way technology
- Precision ground supported on both ends ball screws
- Precision ground table surface
- Telescopic metal way covers
- 24 pocket double arm ATC
- BIG-PLUS® dual contact inline spindle
- Automatic positive displacement lubrication system
- High torque AC digital servo drives
- High torque closed loop vector spindle drive system
- Dual work lights
- LCD hour meter
- Spindle taper blow-out and tool release push button
- Single spare “M” function with CNC “wait” channel
- Programmable on/off flood coolant system
- Rigid tap
- Edit key lockout switch
- Spindle load meter
- Feedrate and spindle speed overrides
- Spindle air purge
- End of cycle light
- Chip conveyor chip removal system
- Remote handwheel
- Air gun
- Coolant wash down gun

VM6030IL

MACHINE SPECIFICATIONS

CAPACITY	
Travels	60 x 30 x 24" (1524 x 762 x 610 mm)
Table Size	66 x 30" (1680 x 762 mm)
Allowable Table Load	3000 lbs. (1360 kg)
T-Slot Size	.71" (18 mm)
SPINDLE	
Spindle Nose To Table Distance	4-28" (100-710 mm)
Column To Spindle Center	32.4" (823 mm)
Spindle Taper	BIG-PLUS® ISO No. 40
Standard Spindle Speed	10,000 RPM
Optional Spindle Speed	15,000 RPM
AC Spindle Motor	24/15 HP (18/11 kW)
Optional AC Spindle Motor	35/25 HP (26/18 kW)
Spindle Torque	84 ft-lbs (114 N.m)
Optional Spindle Torque	122 ft-lbs (165 N.m)
AUTOMATIC TOOL CHANGER	
Number of Tools	24 Double Arm
Optional Number of Tools	40 Double Arm
Tool Shank	CT40
Pull Stud	MAS 60° Retention Knob Style CT-Flange
Max. Tool Diameter	3.1" (80 mm)
Max. Tool Length	11.8" (300 mm)
Max. Tool Weight	15 lbs. (7 kg)
MOTION	
XY, Z Axis Rapid Traverse Rate	1000, 787 IPM (25, 20 m/min)
Max. Cutting Feed Rate	500 IPM (12.7 m/min)
Least Command Increment	0.0001" (0.001 mm)
Positioning Accuracy	+/- 0.0002" (+/- 0.005 mm)
Repeatability	+/- 0.0002" (+/- 0.005 mm)
Axis Thrust Force XY, Z	6020, 8575 lbs (2730, 3900 kg)
GENERAL	
Machine Height	123" (3124 mm)
Floor Space Required (W x D)	150 x 115" (3810 x 2921 mm)
Additional Width for Conveyor	188" (4777 mm)
Machine Weight	21,800 lbs. (9900 kg)
Power Required	38 KVA / 100 Amps
Optional Power Required	48 KVA / 125 Amps
Voltage Required	208-240 Volts / 3 Phase

VM6030IL machine shown with options

MACHINE OPTIONS

- Coolant through spindle system
- Work offset probing
- 4th axis options
- Auxiliary industrial grade keyboard
- Electronic spindle chiller
- BT style tooling
- 15,000 RPM spindle
- 40 pocket ATC
- 35/25 HP upgrade

MACHINE FEATURES

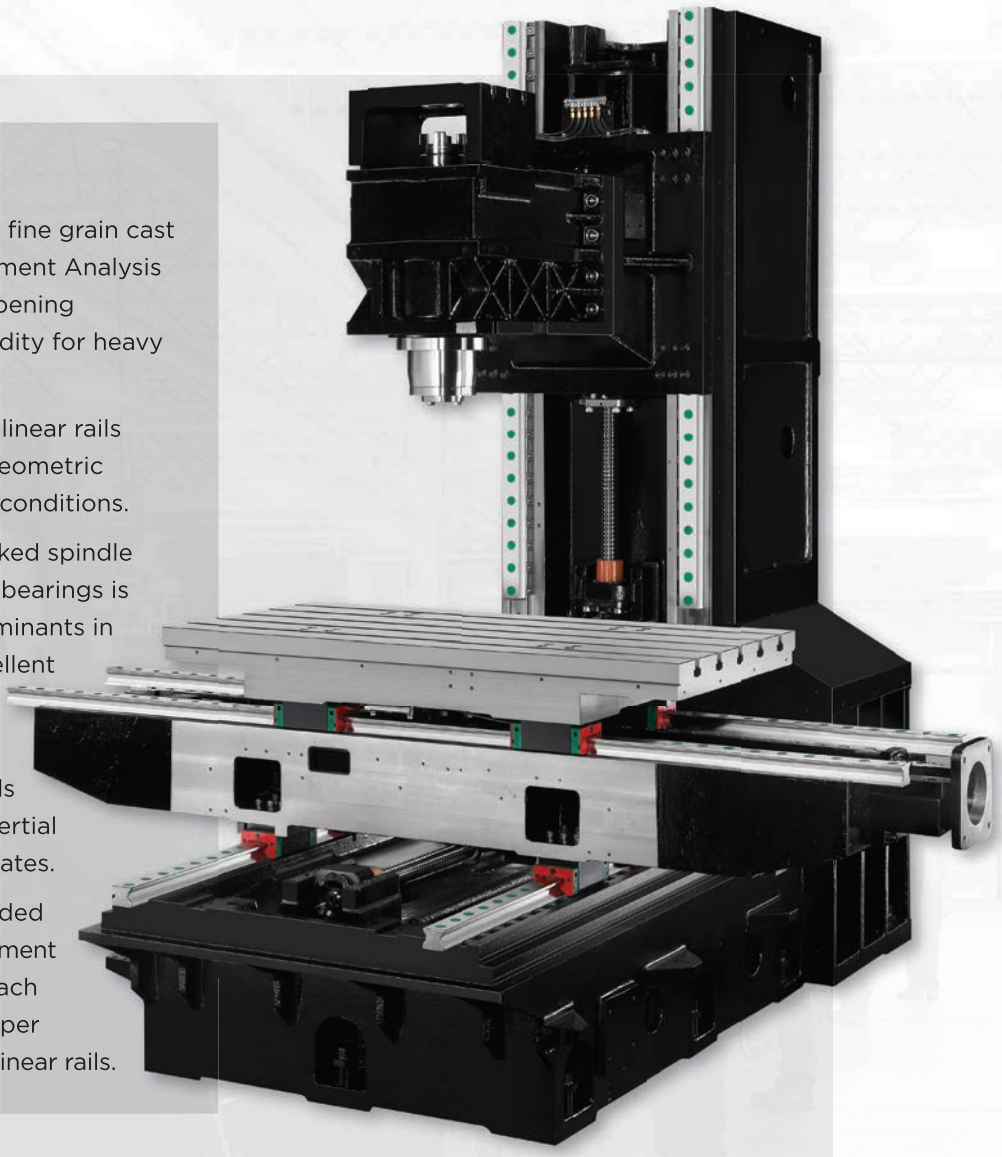
MACHINE STANDARDS

- Heavily ribbed one piece fine grain cast iron construction
- Fully enclosed machine guard with side doors
- 45 mm roller linear way technology
- Precision ground supported on both ends ball screws
- Precision ground table surface
- Telescopic metal way covers
- 24 pocket double arm ATC
- BIG-PLUS® dual contact inline spindle
- Automatic positive displacement lubrication system
- High torque AC digital servo drives
- High torque closed loop vector spindle drive system
- Dual work lights
- LCD hour meter
- Spindle taper blow-out and tool release push button
- Single spare "M" function with CNC "wait" channel
- Programmable on/off flood coolant system
- Rigid tap
- Edit key lockout switch
- Spindle load meter
- Feedrate and spindle speed overrides
- Spindle air purge
- End of cycle light
- Chip conveyor chip removal system
- Remote handwheel
- Air gun
- Coolant wash down gun

QUALITY COMPONENTS

VMIL FRAME

- Heavily ribbed and supported fine grain cast iron optimized with Finite Element Analysis (FEA) provides superior dampening characteristics and added rigidity for heavy machining applications.
- Oversized and widely spaced linear rails increase rigidity and ensure geometric accuracies during heavy load conditions.
- 10,000 RPM inline grease packed spindle cartridge using ABEC Class 7 bearings is air purged to eliminate contaminants in the spindle and provided excellent cutting performance.
- Preloaded and ground ball screws supported at both ends reduces backlash with high inertial loads and fast rapid traverse rates.
- Automatic lubrication is provided by an electric positive displacement pump with metered lines to each lubrication point ensuring proper lubrication of ball screws and linear rails.

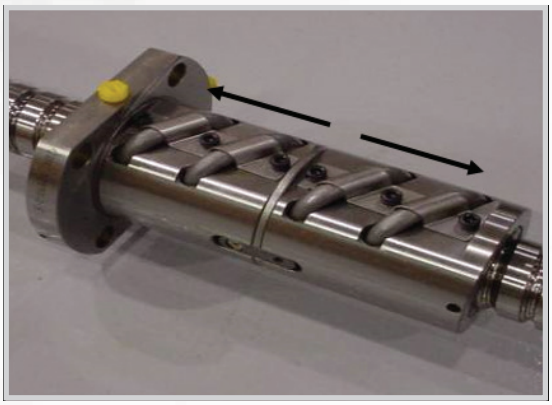


VM4222IL Frame

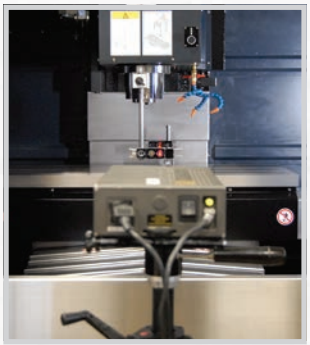
BALL SCREWS AND LINEAR GUIDES

The VM IL Series of machines feature Hiwin® premium grade pre-loaded ball screws, supported at both ends as well as Hiwin® linear motion guides. The ball screws are also pre-tensioned, providing greater rigidity and help to negate the effects of thermal growth.

The linear cross roller guideways provide 40% more rigidity than standard ball ways during heavy cutting with very low friction characteristics. This also helps with the higher feed rates of 3D cutting. Milltronics castings are machined with slot and shoulder for rail. The rail is then wedged with a fastener to ensure straightness and rigidity.



Double nut preloaded ball screw.

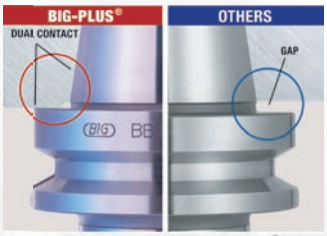


LASER INTERFEROMETER

After assembly, Milltronics VM machines are tested, including the use of a laser interferometer. The laser interferometer provides comprehensive accuracy assessment of machine alignment and any roll-pitch-yaw errors in machine.

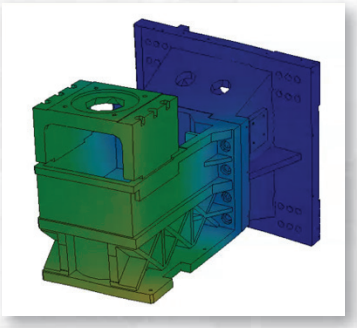
VM INLINE SPINDLES

Milltronics inline spindles feature the BIG-PLUS® Spindle System. While these spindles are fully interchangeable with standard 40 taper tooling for routine cutting applications, the BIG-PLUS® simultaneous taper and flange fit generates greater rigidity and accuracy. This results in increased cutting efficiency and part accuracy, along with better tool life. Cutting applications with heavy side loads, high speeds, or long tools benefit significantly from the dual contact of the BIG-PLUS® design.



BIG-PLUS®
SPINDLE SYSTEM PAT.
DUAL CONTACT
US Patent No. 5352073

BIG-PLUS® greatly improves rigidity by simultaneous fit of taper and face – better heavy or high speed cutting, deep or large diameter boring – also longer tool life.



FINITE ELEMENT ANALYSIS

Finite Element Analysis (FEA) is used to evaluate structural rigidity, torsional stiffness, thermal characteristics and natural frequency to achieve the best frame design. This is critical with today's high velocities and accelerations – machine performance must be carefully optimized in order to maintain party quality.

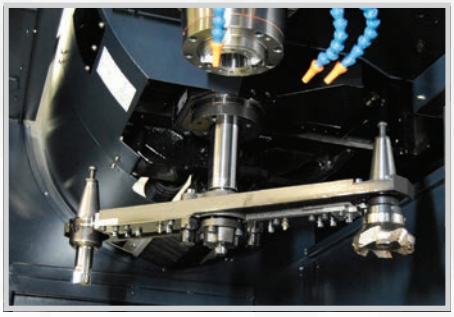
SERVOS AND DRIVES

Milltronics uses state-of-the-art premium servos and drives from Mitsubishi Electric, one of the world's largest manufacturers of motors and drives. Some of the features of the Mitsubishi Electric drives include:

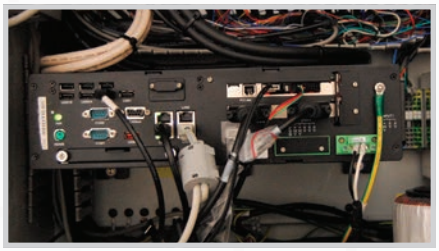
- Mitsubishi Electric Melservo-J3 digital drives .476 millisecond velocity loop frequency response time (2.1 kHz)
- Encoders: 262,144 pulses per revolution
- Enhanced vibration suppression delivers 3G resistance
- Faster speed acceleration and deceleration

SWING ARM ATC

Milltronics uses electric swing arm automatic tool changers on the VM IL Series. The ATC is bi-directional random pot, features 24 stations and is side mounted on the column. An optional 40 station swing arm ATC is offered on select models.



Tool-to-tool change time is 2.5 seconds with the standard swing arm ATC.



ITX TECHNOLOGY

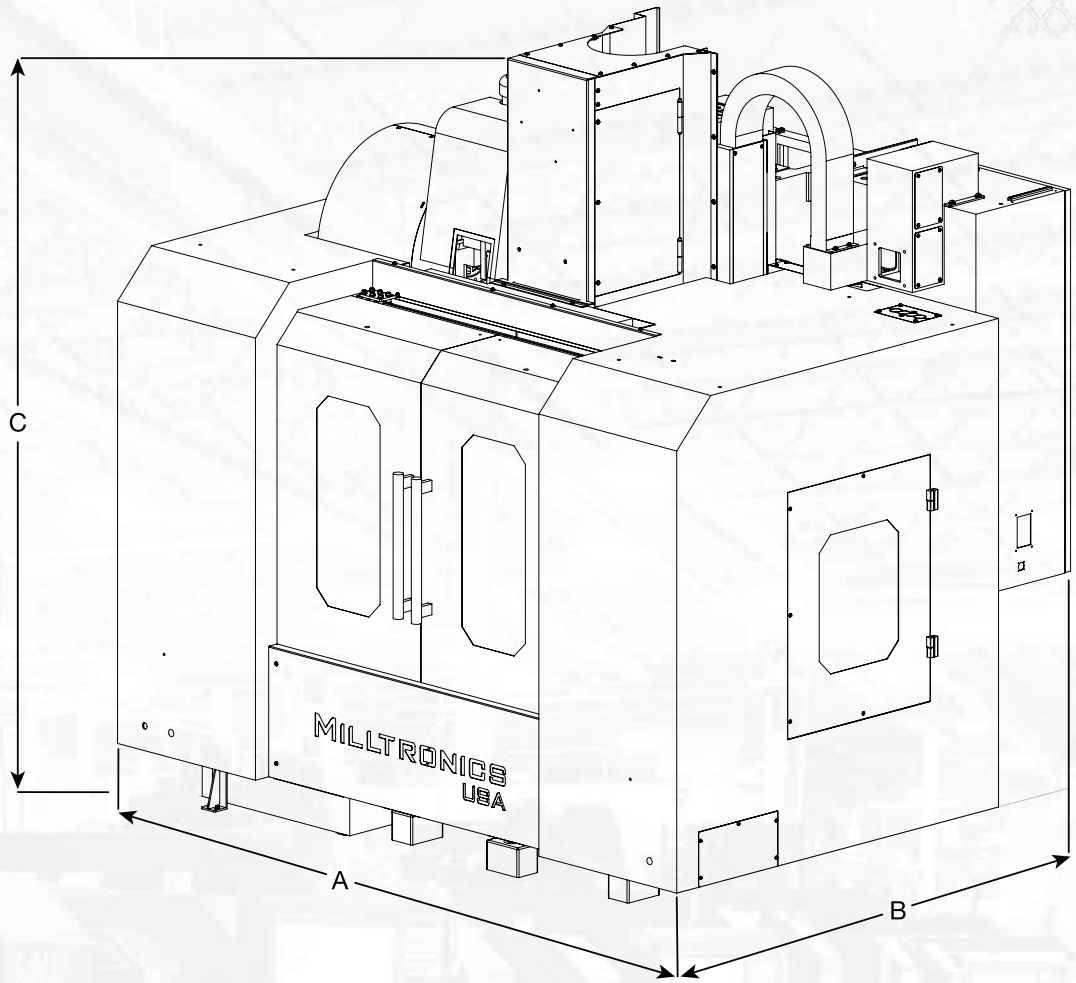
The modular design of the ITX rack provides highly reliable CNC operation as it uses fewer parts and features reduced connections. The CPU module uses less power and runs cooler for dependable operation.

CHIP MANAGEMENT

Milltronics VM IL Series are equipped standard with a coolant ring, wash down system and lift-up chip conveyor. The wash down system features separate Grundfos© pumps for cutting coolant and wash down as well as a generous coolant tank with sight levels.

SPECIFICATIONS

	SPECIFICATIONS	VM3018IL	VM4222IL	VM5025IL	VM6030IL
CAPACITY	TRAVELS	30 x 18 x 22″ (762 x 457 x 559 mm)	42 x 22 x 24″ (1067 x 559 x 610 mm)	50 x 25 x 24″ (1270 x 635 x 610 mm)	60 x 30 x 24″ (1524 x 762 x 610 mm)
	TABLE SIZE	34 x 18″ (864 x 457 mm)	46 x 22″ (1168 x 559 mm)	54 x 25″ (1372 x 635 mm)	66 x 30″ (1676 x 762 mm)
	ALLOWABLE TABLE LOAD	3000 lbs (1360 kg)	3000 lbs (1360 kg)	3000 lbs (1360 kg)	3000 lbs (1360 kg)
	T-SLOT SIZE	71″ (18 mm)	71″ (18 mm)	71″ (18 mm)	71″ (18 mm)
	NUMBER OF T-SLOTS	4	5	6	7
	T-SLOT DISTANCE	3.94″ (100 mm)	3.94″ (100 mm)	3.94″ (100 mm)	3.94″ (100 mm)
SPINDLE	SPINDLE NOSE TO TABLE DISTANCE	6-28″ (152-712 mm)	5-29″ (125-735 mm)	6-30″ (152-762 mm)	4-28″ (100-710 mm)
	COLUMN TO SPINDLE CENTER	23.25″ (590 mm)	25.5″ (648 mm)	28.7″ (729 mm)	32.4″ (823 mm)
	SPINDLE TAPER	BIG-PLUS® ISO No. 40	BIG-PLUS® ISO No. 40	BIG-PLUS® ISO No. 40	BIG-PLUS® ISO No. 40
	STANDARD SPINDLE SPEED	10,000 RPM	10,000 RPM	10,000 RPM	10,000 RPM
	OPTIONAL SPINDLE SPEED	15,000 RPM	15,000 RPM	15,000 RPM	15,000 RPM
	STANDARD AC SPINDLE MOTOR	24/15 HP (18/11 kW)	24/15 HP (18/11 kW)	24/15 HP (18/11 kW)	24/15 HP (18/11 kW)
	OPTIONAL AC SPINDLE MOTOR	– –	– –	35/25 HP (26/18 kW)	35/25 HP (26/18 kW)
	STANDARD SPINDLE TORQUE	84 ft-lbs (114 N.m)	84 ft-lbs (114 N.m)	84 ft-lbs (114 N.m)	84 ft-lbs (114 N.m)
	OPTIONAL SPINDLE TORQUE	–	–	122 ft-lbs (165 N.m)	122 ft-lbs (165 N.m)
ATC	NUMBER OF TOOLS	24 Double Arm	24 Double Arm	24 Double Arm	24 Double Arm
	OPTIONAL NUMBER OF TOOLS	–	40 Double Arm	40 Double Arm	40 Double Arm
	TOOL SHANK	CT40	CT40	CT40	CT40
	PULL STUD	MAS 60° Retention Knob Style CT-Range	MAS 60° Retention Knob Style CT-Range	MAS 60° Retention Knob Style CT-Range	MAS 60° Retention Knob Style CT-Range
	MAXIMUM TOOL DIAMETER	3.1″ (80 mm)	3″ (76 mm)	3.5″ (89 mm)	3.1″ (80 mm)
	MAXIMUM TOOL LENGTH	11.8″ (300 mm)	11.8″ (300 mm)	11.8″ (300 mm)	11.8″ (300 mm)
	MAXIMUM TOOL WEIGHT	15 lbs (7 kg)	15 lbs (7 kg)	15 lbs (7 kg)	15 lbs (7 kg)
MOTION	XY/Z AXIS RAPID TRAVERSE RATE	1200/1000 IPM (30/25 m/min)	1200/1000 IPM (30/25 m/min)	1000/787 IPM (25/20 m/min)	1000/787 IPM (25/20 m/min)
	MAXIMUM CUTTING FEED RATE	500 IPM (12.7 m/min)	500 IPM (12.7 m/min)	500 IPM (12.7 m/min)	500 IPM (12.7 m/min)
	LEAST COMMAND INCREMENT	0.0001″ (0.001 mm)	0.0001″ (0.001 mm)	0.0001″ (0.001 mm)	0.0001″ (0.001 mm)
	POSITIONING ACCURACY	+/- 0.0002″ (+/- 0.005 mm)	+/- 0.0002″ (+/- 0.005 mm)	+/- 0.0002″ (+/- 0.005 mm)	+/- 0.0002″ (+/- 0.005 mm)
	REPEATABILITY	+/- 0.0002″ (+/- 0.005 mm)	+/- 0.0002″ (+/- 0.005 mm)	+/- 0.0002″ (+/- 0.005 mm)	+/- 0.0002″ (+/- 0.005 mm)
	AXIS THRUST FORCE X/Y/Z	3425/6020/8575 lbs (1554/2730/3900 kg)	6020/6020/8575 lbs (2730/2730/3900 kg)	6020/6020/8575 lbs (2730/2730/3900 kg)	6020/6020/8575 lbs (2730/2730/3900 kg)
GENERAL	MACHINE HEIGHT	119″ (3025 mm)	121″ (3060 mm)	122″ (3099 mm)	123″ (3124 mm)
	FLOOR SPACE REQUIRED (W x D)	86 x 106″ (2180 x 2685 mm)	111 x 116″ (2800 x 2935 mm)	128 x 103″ (3251 x 2616 mm)	150 x 115″ (3810 x 2921 mm)
	ADDITIONAL WIDTH FOR CONVEYOR	29″ (736 mm)	29″ (736 mm)	166″ (4217 mm)	188″ (4777 mm)
	MACHINE WEIGHT	10,700 lbs. (4850 kg)	14,775 lbs. (6702 kg)	17,900 lbs. (8120 kg)	21,800 lbs. (9900 kg)
	POWER REQUIRED	38 KVA/100 Amps	38 KVA/100 Amps	38 KVA/100 Amps	38 KVA/100 Amps
	OPTIONAL POWER REQUIRED	–	–	48 KVA/125 Amps	48 KVA/125 Amps
	VOLTAGE REQUIRED	208–240 Volts/3 Phase	208–240 Volts/3 Phase	208–240 Volts/3 Phase	208–240 Volts/3 Phase



FOOTPRINT DIMENSIONS

MODEL	A (Width)	B (Depth)	C (Height)
VM3018IL	86″ (2180 mm)	106″ (2685 mm)	119″ (3025 mm)
VM4222IL	111″ (2800 mm)	116″ (2935 mm)	121″ (3060 mm)
VM5025IL	128″ (3251 mm)	103″ (2616 mm)	122″ (3099 mm)
VM6030IL	150″ (3810 mm)	115″ (2921 mm)	123″ (3124 mm)

Note: some options may change floor space requirements.

OPTIONAL ACCESSORIES

- 40 station ATC (available on VM4222IL, VM5025IL and VM6030IL only)
- 300 PSI coolant thru spindle
- Programmable spray mist
- BT tooling
- Spindle chiller
- Rotary tables
- Tool and part probes
- Auxiliary keyboard
- Offline software
- 35/25 HP upgrade (available on VM5025IL and VM6030IL only)
- 15,000 RPM

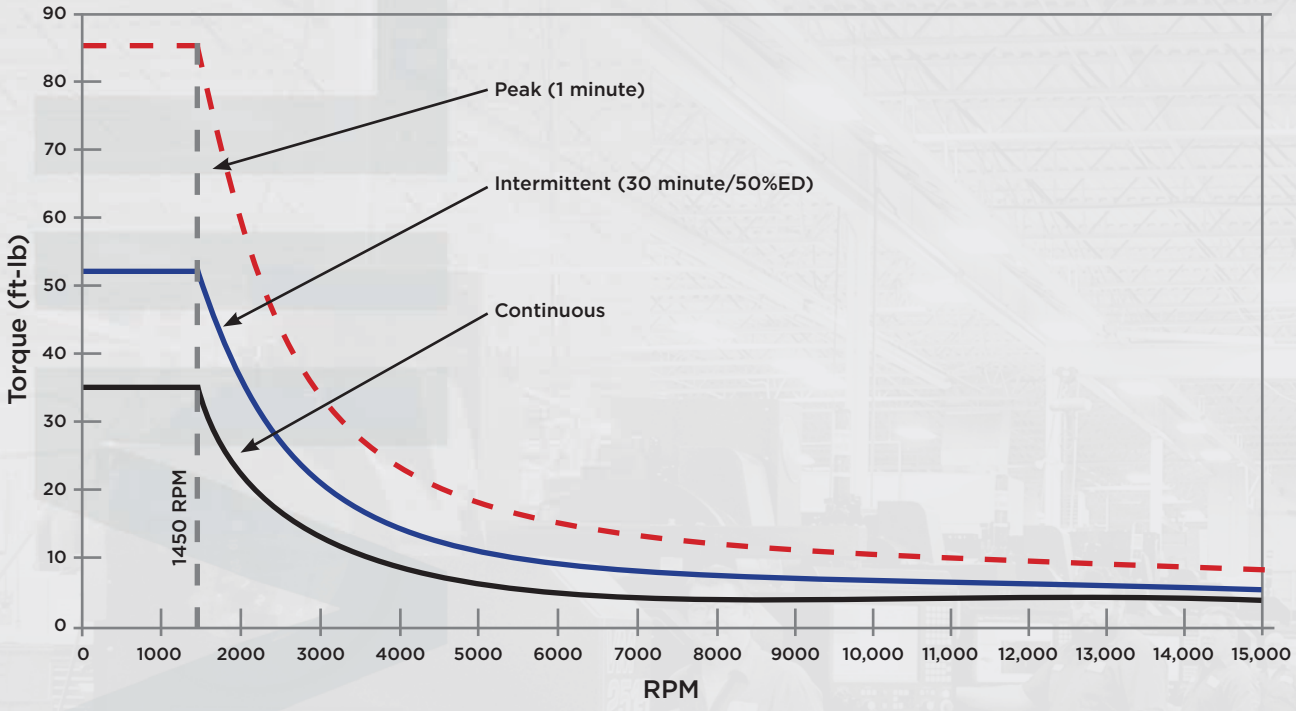
OPTIONAL THERMAL HEAD COMPENSATION

Milltronics offers optional thermal head compensation to significantly increase accuracy due to head casting growth.

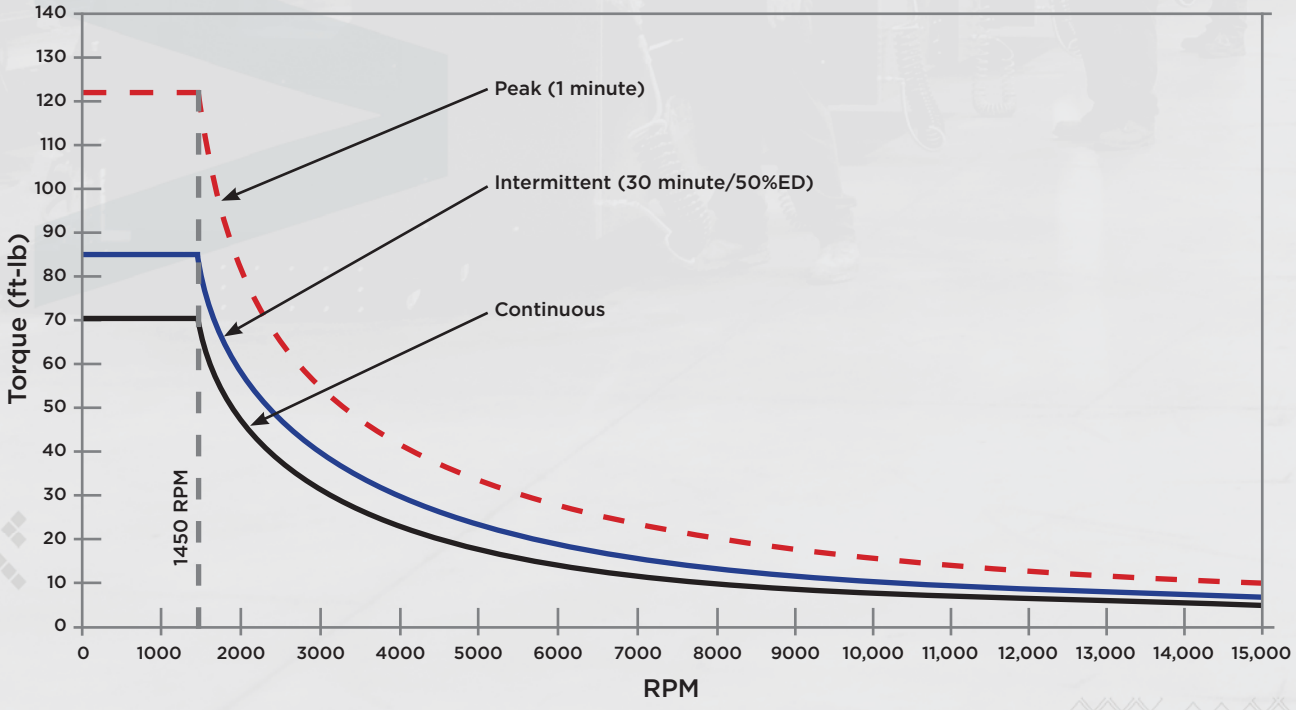
- Uses twin thermal sensors and Milltronics' proprietary algorithms to automatically offset growth in head casting
- Directional compensation in both Y and Z axes
- Works best with linear glass scales for maximum accuracy

TORQUE CHARTS

TORQUE CHARACTERISTICS OF MITSUBISHI 24/15 HP 15,000 RPM HOLLOW SHAFT IN-LINE DELTA/WYE MOTOR

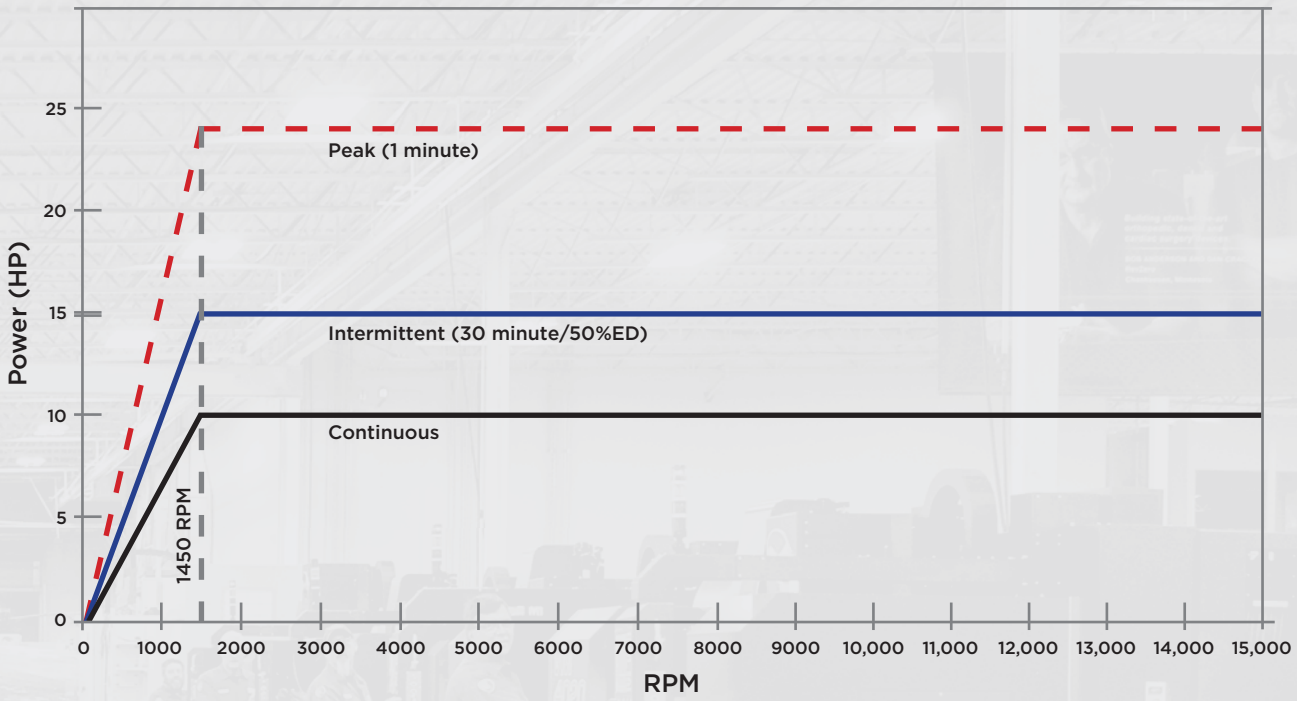


TORQUE CHARACTERISTICS OF MITSUBISHI 35/25 HP 15,000 RPM HOLLOW SHAFT IN-LINE DELTA/WYE MOTOR

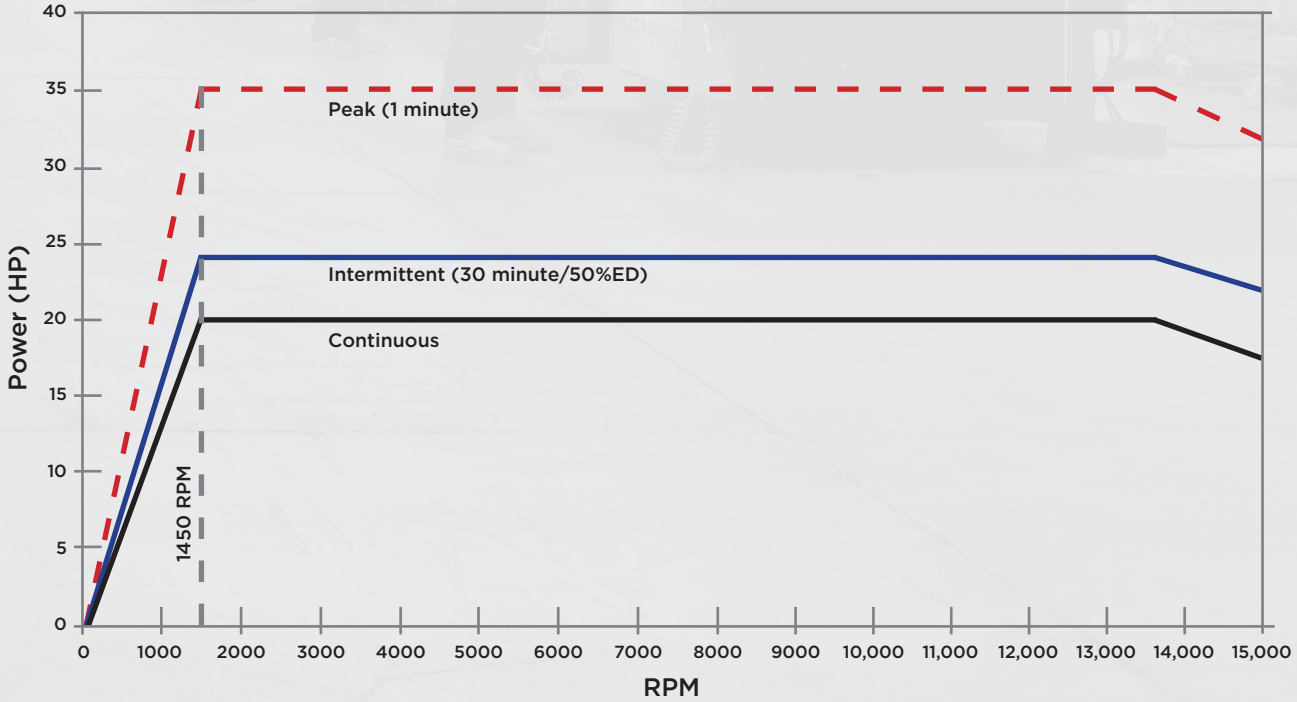


HORSEPOWER CHARTS

POWER CHARACTERISTICS OF MITSUBISHI 24/15 HP 15,000 RPM HOLLOW SHAFT IN-LINE DELTA/WYE MOTOR



POWER CHARACTERISTICS OF MITSUBISHI 35/25 HP 15,000 RPM HOLLOW SHAFT IN-LINE DELTA/WYE MOTOR



WHO WE ARE

Milltronics is a growing manufacturer of CNC machines designed for the metal cutting industry. We manufacture over 50 models of machines and our own CNC. Milltronics is an industry leader in advanced CNC technology, operating out of a 100,000 sq. ft. state-of-the-art facility in a suburb of Minneapolis, Minnesota. We offer customers increased productivity with our innovative concept of a powerful CNC control with an easy-to-use operator interface designed around quality-built machine tools for a global market.
Check out Milltronics full product line and service offering at www.milltronics.com.

MILLTRONICS USA
LET'S INVENT

Milltronics USA, Inc. | 1400 Mill Lane, Waconia, MN 55387 USA | 888-999-1440 | sales@milltronics.com | www.milltronics.com

Rev VMIL 2016-09.1