9000 SERIES CONTROL

POWERFUL. INTUITIVE. EFFICIENT. PRODUCTIVE.

MILLTRONICS USA®

MILLTRONICS.COM

888.999.1440

HASSLE-FREE CNC.

Milltronics is dedicated to making sure your CNC experience is truly hassle-free. Based in Waconia, Minnesota, the Milltronics team put together an online pricing system so you could build your own quote. We also developed a new control to make sure the technology of your CNC machine is hassle-free. This brochure highlights the multiple features of the Milltronics 9000 control that will maximize the skills of your operators.

CNC MACHINE PRODUCT LINE-UP

TOOL ROOM MILLS
Milltronics has a long history of building tool room mills that can be run as manual, teach, or full CNC. Popular in tool rooms, job shops, and tool & die, these machines are very flexible and can be used for a wide variety of parts.
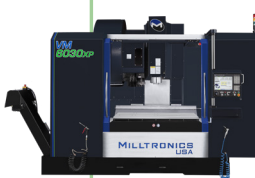
GENERAL PURPOSE VERTICAL MACHINING CENTERS
The VM Series CNC mills offer a great combination of standard features (that the other guys charge extra for) and performance at a great price.

PERFORMANCE IL VERTICAL MACHINING CENTERS
The IL Series machines have inline spindles, roller guides for rigidity, direct-coupled ballscrews for quick response, and dual wound spindles for faster acceleration/deceleration.
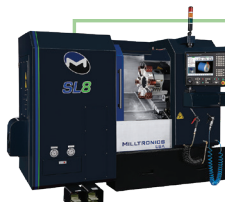
EXTRA POWER VERTICAL MACHINING CENTERS
XP Series VMCs are #50 taper machines built with robust cross rollers and high torque dual speed spindle motors.
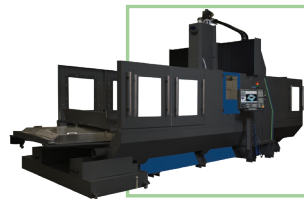
TOOL ROOM COMBO LATHES
The ML Series of combo lathes can be run as manual, teach, or full CNC. They feature easy thread repair and are available in more than 15 sizes.

SLANT BED CNC LATHES
The SL Series CNC lathes feature robust true slant bed castings, roller ways for rigidity, direct coupled ballscrews and more.

BRIDGE MILLS
Between a router and a heavy-duty cast bridge mill, BR Series machines are fast (up to 1,000 IPM) and require no special foundation.

ALL MILLTRONICS CNC MACHINES ARE EQUIPPED WITH THE 9000 SERIES CONTROL FEATURING CONVERSATIONAL AND STANDARD G-CODE PROCESSING.

9000 SERIES CONTROL
THE NEW STANDARD

At Milltronics, we are constantly refining our controls to simplify operation, shorten setup times, and provide features that reduce cycle times. The 9000 Series control features 120 GB disk storage, 4GB memory, up to 10-times better graphic performance, 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, such as the G-code visualization screen.

INTUITIVE

With its conversational programming, on screen help, intuitive menus, color graphics, and prompted tool settings, the 9000 CNC helps new operators get up to speed quickly. The 9000 CNC makes it the one machine in the shop that everyone wants to operate.

EFFICIENT

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

• Solid model graphics allow 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.

POWERFUL

• 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 tool paths generated by a CAM system. Coupled with a super-fast motion control system, feature-packed CNC, and an interface designed to expedite setup and operation, the 9000 CNC is the solution to helping your operator make parts faster and better.

9000 SERIES CONTROL 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

DATA STORAGE	120 GB
SYSTEM MEMORY INSTALLED	4 GB

GRAPHICS SPECIFICATIONS

GPU CORE SPEED	600MHZ
MEMORY	1024 MB

OPERATING SYSTEM

PRIMARY OS	WINDOWS® EMBEDDED 7
REAL TIME EXTENSION	INTERVALZERO RTX

The 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

PROGRAMMING FEATURES

CONVERSATIONAL PROGRAMMING
- ChipBoss™ Software
- DXF & IGES File Import
- Math Function Input Fields
- Custom Conversational Screens
- Speed & Feed Calculator
- Prompting Help Screens
- Concurrent Programming
- Cutter Compensation
- Inch / Metric
- Mirror, Scale & Rotate
- Dwell
- Subprogram Call, Looping & Nesting
- Tapered & Round Walls

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
- Engraving with Serializing

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

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

OPERATIONAL FEATURES

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
- Digital Setup Assistant (DSA)
- 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
- Bi-Directional Turning Cycle
- Milltronics Shop View (MSV)

EDIT FEATURES
- Background Editing
- Cut, Copy, Paste & Move Editing
- Handwheel through Text
- Overwrite & Insert
- Global Find & Replace
- Printout a Program (Fastcam)
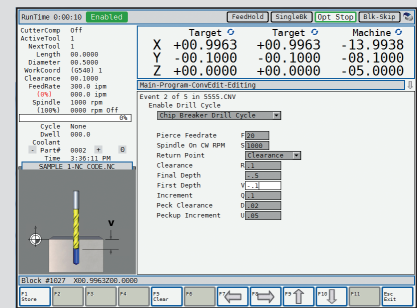
DISPLAY FEATURES
- 3D Part & Wire Frame Tool Path Graphics
- Color Graphics – Tool Path & Part Profile
- Solid Model Graphics
- Wireframe over Solids
- Transparent Graphics
- Customizable DRO
- User Definable Image Display Window
- User Selectable Graphics in all Planes
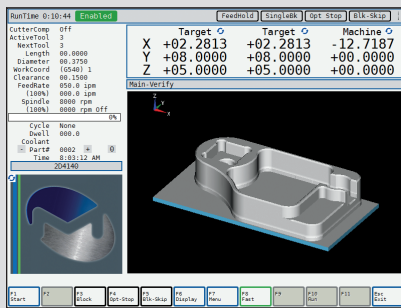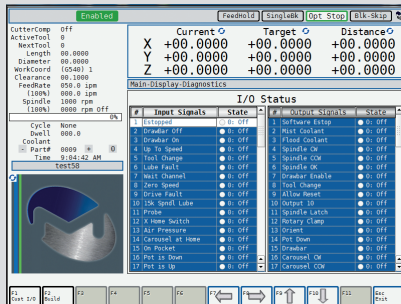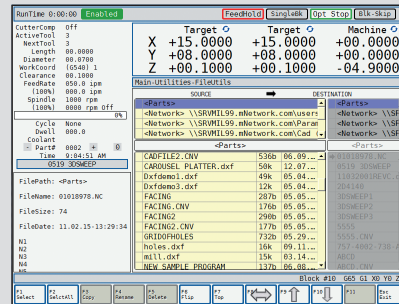

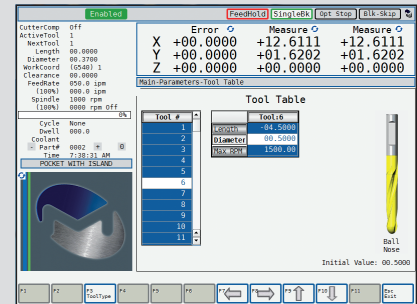3D Solid Model Graphics
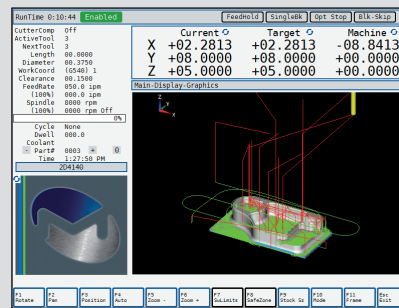
Solid Model with Tool Path Overlay

Context Sensitive Help Screen

Diagnostic Display IO Status

File Utility Screen

Tool Type Display

CHIPBOSS™ SOFTWARE

ChipBoss™ software from Milltronics uses proprietary algorithms to calculate tool paths and control the maximum allowable cutter engagement.

BENEFITS
- Reduced cycle times
- Increased part accuracy
- Extended tool life

ChipBoss™ uses trochoidal milling strategies with deeper depths of cut and smaller step overs:

- Feed rates can be much higher than what conversational users are used to experiencing.
- Reduces the number of times a machine needs to accelerate and decelerate — "less wear and tear"
- Includes "Rest Roughing" — automatically calculates the areas to be machined and uses a smaller cutter to reach those areas that can't be cut with a larger tool, saving even more time.
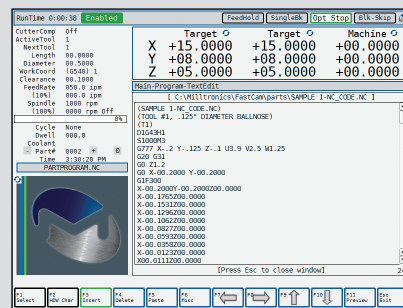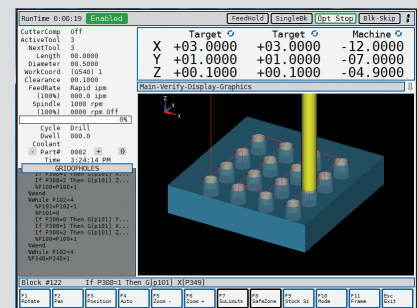

Learn more on YouTube!

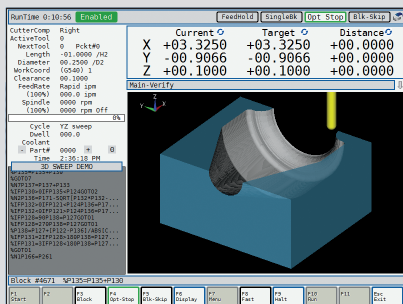# 9000 CONTROL: ON THE CUTTING EDGE.
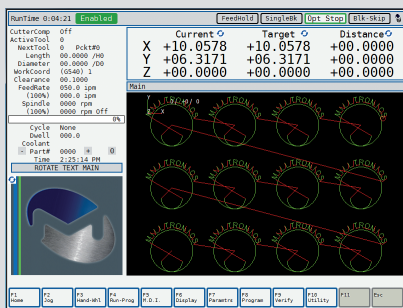
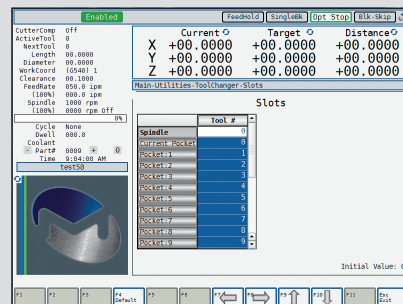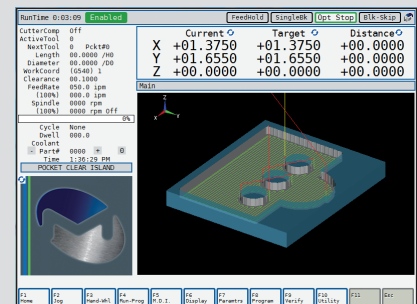Sub-Program Loops for Pattern Repeat Cycles

Text Editor

Grid of Holes

Sweep Pocket Clearing Cycles

Tool Changer Slot Table

Irregular Pocket Clearing with Islands

MILLTRONICS SHOP VIEW

With Milltronics Shop View (MSV), you have instant access to your machine's status including programs, set-ups, digital readout, live snapshots of machine cutting video, spindle load, spindle hours, machine events log, file transfers, alarms and more — even when you're not there!

MSV uses advanced cloud-based monitoring, communication, and diagnostics technology through an internet connection to your machine.

MSV is conveniently hosted in the cloud by Milltronics servers and eliminates the need for extensive IT infrastructure or expertise at your shop. All you need to do is point your PC, tablet, or smart phone to msv.milltronics.com. The MSV platform is hosted on a secure network that users access through a responsive website with end-to-end encryption.

Features

- Industry 4.0 and MTConnect compliant
- Sortable and searchable dashboard list for quick selection
- Machine dashboard shows live data
- Tab view allows enlarged images/videos of screens
- Searchable machine file directory, registry, and event logs
- Machine settings allow a user defined name to be entered to easily identify the program or part running

DIGITAL SETUP ASSISTANT

Digital Set-Up Assistant (DSA) uses Wi-Fi to make a cell phone or tablet an extension of the CNC machine's control. This optional software feature allows an operator to reduce setup time by easily accessing photos of parts and workholding, set-up data, tooling info, and more.

How does DSA improve efficiency?

- Users can easily document part setup instructions for others to reference.
- Stores part-related files grouped as packages for easy recall.
- Packages associated with selected parts are automatically recalled and displayed.
- Part Setup Information is readily available on hand-held device.

| What kind of information does DSA store and display?		How does DSA differ from MSV?	
Automatically Generated	**User Generated**	**Digital Setup Assistant**	**Milltronics Shop View**
• 3D Solid model rendering of finished part	• Textual Notes	Assist in Setting up Parts	View the Status of Machines in your Shop
• Run statistics	• Photos/Images	• Part-Centric Information	• Machine-Centric Information
• Tools used in the part program	• Videos	• Peer-to-Peer Intranet Networking	• Cloud-Based Internet Networking
• Part Program Edit and Run history	• PDFs	• App-Based	• Web-Based

BI-DIRECTIONAL TURNING CYCLE

Milltronics Bi-Direction Conversational Turning:
- Improves productivity by up to 60%
- Increases tool life.
- Improves surface finish.

Improve turning speed and efficiency while taking advantage of the latest insert technology allowing for cutting forward and reverse.

YOUR MILLTRONICS CONTROL ON THE CUTTING EDGE!
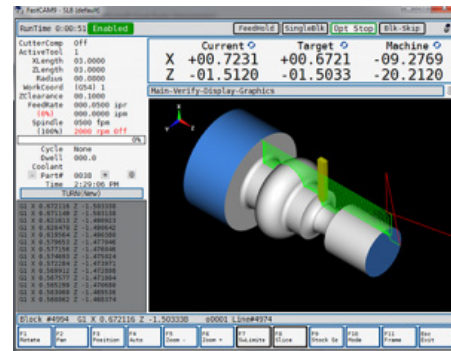
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INGENUITY IS FINDING NEW WAYS

TO SOLVE OLD PROBLEMS.

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