

What's Different with Mastercam X

General Interface

- Toolbars
 - More functions on the screen at one time
 - Users controls what options they want at their fingertips
 - History / MRU bar
 - Drop-down button bars
 - Dockable or Floating Toolbar placement
 - Easily Customizable based on each users preference including.
 - Large or small buttons

- Ribbon Bars
 - Consistent interface
 - Efficient use of space
 - Combine multiple functions for easier use
 - Active only when needed
 - Hard-locking for repetitive tasks
 - Learning mode for new users
 - Hot-keys and shortcuts
 - Configurable MRU (Most Recently Used) drop-down to select previously used values

- Customization
 - Toolbars
 - Portable from machine to machine
 - Standardize all computers
 - Toolbar States
 - An interface based on any users preferences
 - Assigned to Machine Definitions
 - Task specific layout
 - Key Mapping
 - Map any function
 - Default Keymap file matches V-9
 - Use any combination of Alt, Control, Alt-Control, Shift-Alt, Shift-Control, Shift-Alt-Control, F1 through F12
 - Hundreds of different possibilities
 - Multiple key maps support multiple users
 - Match hot keys from any CAD or CAM system
 - Right-click menu
 - Customizable
 - Place any function available for Toolbars on the right mouse button
 - Nested fly-outs – 50 items per column, 10 columns wide

- Drop-down Main Menus
 - Familiar Layout ease the trans
 - Text with Icon to help learning curve
 - All options always available
- Help
 - Multi-media familiarization video
 - “How do I get here” options guide you to specific menus
 - Updated quick reference card
 - Version 9 to X map
 - Transition guide
 - Installation Guide
 - Access to reference manual
 - Automatic updates
 - Learning mode
 - Zip2Go tm – Multi-function archiving utility. Gathers and archives files needed for Tech Support with e-mail component
- Status Bar
 - Customization
 - Turn off what you don’t use
 - Set the order up the way you like it
 - Visual feedback
 - Change entity attributes on the fly
 - 2D / 3D mode
 - Combine C and T planes into an improved Planes option.
- Configuration
 - Streamlined interaction
 - Easier, better organization
- Operations Manager
 - Both Solids and Toolpaths
 - Always on
 - Doesn’t obscure geometry
 - Quick toggle visibility with Alt-O
 - Product sensitive menus based on available licenses
- General Selection
 - Quick selection options
 - Pre-selection
 - Vector select
 - Verify Select toggle
 - Integrated Solid Selection
 - Override locks
 - Masking – Only / All
 - Visual and quick

- Maintain Mask
 - Mask on or Off
 - New options
 - Save custom masks for future use
 - Intelligent entity sensitive selection
- AutoCursor
 - Customizable
 - Ribbon bar layout for ease of use
 - Doubles as Cursor Tracking
 - Axis-locking controls
 - Controls
 - Visual cues on the cursor helps users place objects
 - Customize what trigger points
 - New automatically recognized trigger options
 - Angular with a value
 - Tangent from an established point
 - Perpendicular to or from
 - Nearest
 - Horizontal / Vertical
- Files
 - Solids import now included free of charge.
 - Unified File, Open / Save dialog boxes – includes all file types
 - STEP converter included
 - NET hooks
 - EPS converter included
 - Integrated project directory functionality
 - Common Printing / Plotting interface
- Edit
 - Cut, Copy, Paste geometry between parts
 - Unlimited Undo / Redo
- Analyze
 - Change entities on the fly
 - Change multiple entity attributes at once
- Config
 - New layout
 - Multiple users
- Editor
 - Programming language specific Intelli-sense and code completion for VBScript and Post Processor development
 - Multiple file type recognition with syntax highlighting

- New external Communications option
 - Over a hundred Machine configuration files available to get you started
- New .NET API for custom integrated user application development
- Improved Nesting
 - Separated Toolpath nesting from Geometry nesting and simplified parameter pages
 - Moved infrequently used parameters to a nesting config dialog
 - Easy access to batch nesting (MCLINK.INI) via a toolbar button
 - Added the ability to import multiple external MCX files into toolpath nesting
 - Improvements to Rectangular nesting including: ability to save defaults, nest to different layers, save scrap etc.

System Requirements

- Operating system
 - o Windows 2000
 - o Windows XP – Pro and Home, XP Pro recommended
 - o .NET 1.1 Framework
 - o DirectX version 9.0c
- Graphics
 - o 64 MB Open-GL compatible card at full acceleration
 - o 128 MB for working with large models or shaded Solids and Surfaces
 - o 1280x1024 recommend resolution, 1024X768 minimum resolution
- Memory
 - o 512MB minimum system ram recommended
- Hard Disk Space
 - o 1 GB of free space recommended if everything is installed
- Mouse
 - o 2 button minimum
 - o 3 button or 2 button with mouse wheel recommended
- Network protocol
 - o Nethasp requires TCP/IP
- Additional Support
 - o Spaceball – all models
 - o Dual monitors

CAD changes

- 2 Billion Levels
- Simplified view management
 - o Improved View Manager
 - o Planes options
 - o Improved / simplified WCS

- All functions redesigned
 - o Live entities
 - See what you will get before you finish
 - Edit entities
 - o Lock parameters and reuse multiple times
 - o Powerful more efficient functions
 - 18 line functions in V-9 become 5 in X - simplified
 - Most lines can be created with a single function - efficient

- Combined Trim and Break options into a single easy to use function – Live
 - o Improved Divide
 - o Pick sensitive single and double trimming
- Live entity One-touch filleting
- Xform
 - o Live Preview in Xform functions
 - o New controls to get the right results the first time
 - o All transform options combined in a single function
 - o New Array function
 - Remove selected instances
 - o Quick flip results option
- Surface / Solids toggle in Primitives creation
- Surface creation now available in the base Router product and higher levels (not available in Entry products)
- Solid to 2D boundary
 - o Creates 2D profiles for turning
- New Surface types
 - o Fence Surface
 - o Net Surface - Live
 - Replaces Coons
 - Easy to use
 - Better quality surfaces
 - Coons C-hook available for die-hards.
- Stair and Door geometry creation now fully integrated into the product

CAM changes

- All licensed toolpath options in a single MCX file in a single session
- Unified coordinate systems for CAM applications
- Improved Tool Manager
- Machine Definitions
 - Define the characteristics of your machine to affect how you use X
 - Easier Training of new users
 - Allows you to program to the machines capabilities
 - Machine compatibility checking
 - Customized toolbar states for each machine
 - Avoid mistakes before the shop floor
- Control Definitions
 - GUI interface to simplify common Post changes.
- Update post utility
 - Automatically create new Machine and Control definitions
 - Documents post changes
- Version 9 converters
 - Parts – MC9 to MCX
 - Tools – TL9 to Tools
 - Operations – OP9 to Operations
 - Defaults – DF9 to Defaults
 - Router head definition files (HD9)
 - Added New conversion utility (HD9toGMD.DLL) to convert HD9 files to a component library (GMD) for easy importing into the Machine Definition Manager (MDM)
- All toolpaths in one MCX file
 - No more separate executables to work with.
 - Jump from Mill to Lathe to Router in a moment
 - Backplot all toolpaths from a single product, even Design
- Backplot
 - Easier to use
 - More functionality than ever before
 - Multiple options to isolate areas of interest
 - Verbose information, Cycle times, and Path length summaries
 - VCR style interface
 - Color coded operations slider / progress bar
 - Endpoint display
 - Optional stop parameters
- Verify
 - Easier to use
 - Measurement capabilities

- Support for a Solid as Stock
 - Verbose option
 - Stop option for after each toolpath, not just at tool changes
 - More information to tell you what Toolpath and Tool Number are active
 - Option to show True Threads
 - Option to Hide Tool after each stop
 - Ability to modify the Tool Tolerance for small parts with large tools
- Toolpath Manager
 - Insert options
 - Powerful sorting
 - Powerful selection
 - Regen all dirty without selection
 - Powerful Edit Common Parameters
 - Unlimited Nested Sub-groups for greater organization
 - Machine Group Properties replaces global Job Setup
 - Makes it easy to program for multiple machines
 - Allows different settings for each Machine Group
 - Each Machine Group has it own Tool Library, Operations Library, and Operation Defaults
 - Improved Tool Manager
 - Options to force the Clearance, Retract, and Feed heights to always use the Defaults instead of being modal.
 - Solids can be used for the Stock
 - Stock now supports the WCS and Named Views
 - Safety Zones supports the WCS and Named Views
 - Safety Zones work for all Mill and Router Toolpath types
 - Multiple job setups in each MCX file
 - Multiple stock definitions
 - WCS support of stock
 - Each Machine group can have it's own setup.
- 2D Toolpaths
 - Combine Contour, Pocket, and Drilling Router and Mill Toolpaths
 - Tabs and Break Through are now part of Mill
- Router Multi-Head
 - Support for Router Spindle and Router Piggyback Spindle components in Machine Definition Manager (MDM)
 - Graphic preview window in multi-head selection dialog now distinguishes Router spindle from Router Piggyback Spindle
- Router Block drilling
 - Support for block drill components in Machine Definition Manager (MDM)
 - Ability to enable / disable specific stations on a block

- Exposed tool / hole matching tolerance via the drill block selection dialog
- Integrated Router Aggregate Tooling (Angled head) support
 - Support for Aggregate Tooling in Machine Definition Manager (MDM)
 - Select aggregate tooling inside operation parameters page rather than running a separate C-hook utility after the fact.
 - Easily distinguish aggregate operations in Toolpath Manager
- Surface Toolpaths
 - Gains because of EMM
 - Tapered Tool Support for 3 axis machining
 - Negative “Stock to Leave” greater than the corner radius, including flat cutters.
 - Faster, Better STL machining
 - Gouge free handling of bad surfaces with sharp corners
 - Facing options with in Rough Pocket
 - Improved surface selection management
 - New Pencil Toolpath
 - Single
 - Multi-pass – specific number of passes per side
 - Unlimited pencil finishing
 - Mill Level 2 / and Router Plus
 - Multi Surface Parallel finish
 - Multi Surface Rough Pocket – One Way, Zig-Zag