Mazak

# VC-500A/5X
# VC-500C/2PC

# VC-500A/5X and VC-500C/2PC


VC-500C/2PC

## Quality, Innovation and Value
### Without Sacrificing Performance

The VC-500A/5X and the VC-500C/2PC vertical machining centers combine innovation, quality and performance to provide productivity improvements for a variety of applications. Each of these models employs technology that is sure to increase the capabilities of your operation.

**Machine Configurations:**

- VC-500A/5X
  A full 5-axis vertical machining center with a 4th/5th rotary trunnion table. This model utilizes the powerful MAZATROL SmoothX CNC to increase machine performance for challenging 5-axis contoured applications.
- VC-500C/2PC
  This dual-table 40x20 vertical machining center is designed to be compact, yet highly productive. Its non-lift rotary 2 pallet changer includes a central operator loading area for efficiency. This model uses the MAZATROL SmoothG CNC for enhanced processing capabilities.

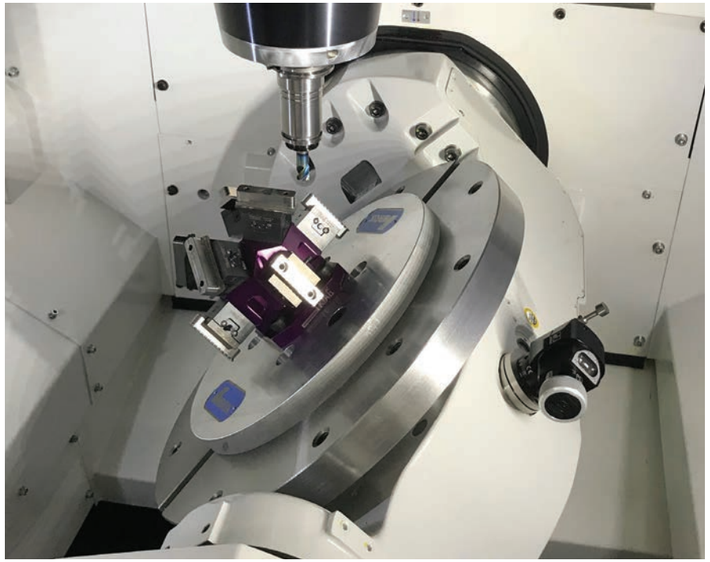
# High Productivity

The VC-500A/5X and VC-500C/2PC provide the perfect balance of advanced technology and minimized operational costs. The machines feature several new and innovative technologies that deliver increased productivity, precision, performance and value to today's shops.

## Top 10 Technological Advantages

1. Innovative small footprint conserves valuable shop floor space and allows for fast and easy machine installation.
2. Extremely rigid base provides stability and vibration damping.
3. Robust high-performance spindles offered in various speed/torque configurations.
4. Mazak MX Hybrid Roller Guide System delivers durability, reliability and long-term accuracy.
5. Mazak MAZATROL Smooth CNCs provide fast and easy MAZATROL conversational and EIA/ISO programming.
6. Affordable 5-axis capability for contoured and five-face machining.
7. Two-pallet changer further boosts machine utilization and efficiency.
8. Large-capacity tool magazines with automatic tool changers extend uninterrupted, continuous machine operation.
9. Simple and efficient chip management helps reduce downtime.
10. Seamless automation integration options increase uptime and lights-out production.


VC-500A/5X



VC-500A/5X

MAZATROL SmoothX Control


VC-500C/2PC

# Machine Design

The Mazak Kentucky factory uses a production-on-demand approach for manufacturing agility that reacts quickly to current market trends, so all machines are built to incorporate the latest, most-innovative technology.

Most vertical machining centers require large amounts of floor space, even if they cut relatively small parts. The VC-500A/5X and VC-500C/2PC easily fit into most shops, and can be up and running quickly with very little initial setup effort. These machines handle the same range of part sizes while conserving valuable shop floor real estate and boosting shop productivity.

Extremely rigid and stable cast-iron components – in a design verified by FEA analysis results – yield superior base castings. Machine configurations include 3-axis with pallet changer and 5-axis rotary/tilt table.

The VC-500A/5X with **5-axis rotary/tilt table** provides affordable full simultaneous 5-axis machining and five-face machining capability to process complex parts cost effectively.

The **3-axis configuration** of the VC-500C/2PC is ideal for basic workpiece geometries and provides effective part processing with quick, simple job setups. Its **2-pallet changer** increases spindle utilization and enables continuous uninterrupted production. As a form of simple and efficient automation, turntable-style pallet changing enables operators to load, unload and inspect parts on one pallet while the machine continues to work uninterrupted on parts fixtured on the other pallet, enhancing productivity.


VC-500C/2PC

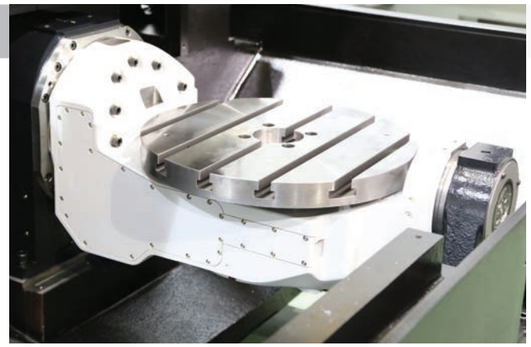
VC-500C/2PC Section View

## TRUNNION TABLE

The full simultaneous 5-axis VC-500A/5X features a trunnion-style tilt/rotary table that delivers fast and accurate positioning. The table's high-precision roller gears further enhance speed, strength and reliability.

**Key specifications for the trunnion-style table include:**

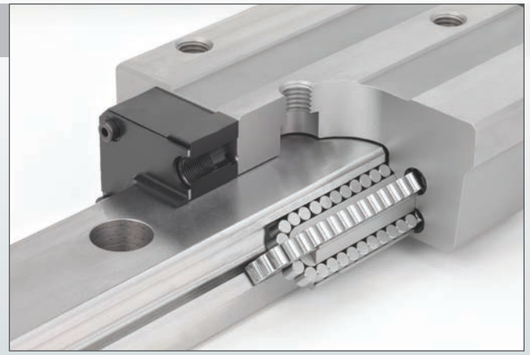
- Rotation range of +110/-110 degrees in the B axis and 360 degrees in the C axis
- Maximum workpiece sizes up to 19.68" (500 mm) in diameter and 12" (305 mm) high and weighing as much 441 lb (200 kg)
- Indexing accuracy of ±4 seconds in B and C axes
- Repeatability of ±1 second in B and C axes
- Positioning speeds up to 50 min$^{1}$ (300 deg/sec) in the B axis and 40 min$^{1}$ (240 deg/sec) in C



## ROLLER GUIDE SYSTEM

The Mazak MX Hybrid Roller Guide System on the VC-500A/5X and VC-500C/2PC allows for faster speeds and higher accuracy, leading to improvements in overall machine productivity and profitability. Compared with traditional ball guides and boxways, the Mazak MX Hybrid Roller Guide System provides clear advantages:

- More surface contact for large load capacities and better damping
- Better distribution load points via an X-shaped design that can apply a load in four directions
- Higher positioning accuracy than boxways, with no stick and slip
- Faster and greener than boxways, with nearly twice the rapid traverse rate and less risk of contamination in the machine's coolant system



MX Hybrid Roller Guide

# Machine Design

## SPINDLE POWER AND SPEEDS

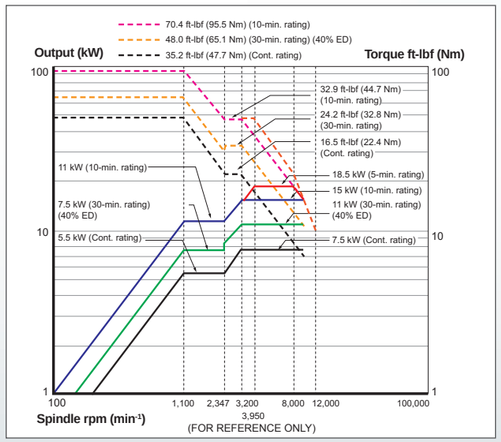
With powerful, rigid spindles, the VC-500A/5X and VC-500C/2PC achieve high productivity and maintain exceptional accuracy. Standard spindles deliver unbeatable metal removal rates for all common materials, including steels, aluminums and cast irons. Mazak also offers other maximum spindle speeds so shops can match spindle performance to specific part-machining needs.

### Spindle Options

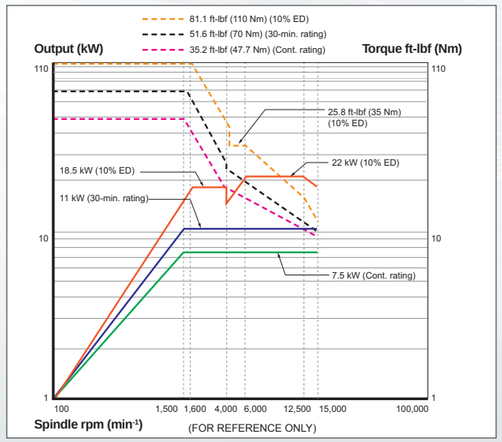
- 12,000 rpm standard on both models
- 15,000 rpm and 20,000 rpm options

Spindle

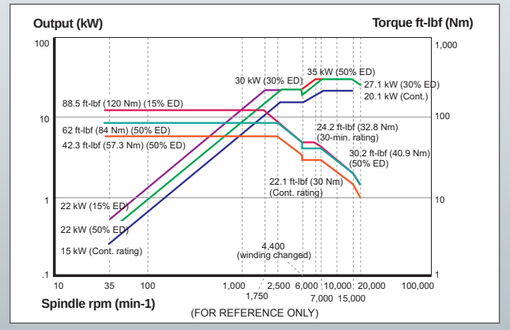
**Output-torque diagram 40-12,000 min-1**




**Output-torque diagram 40-15,000 min-1**



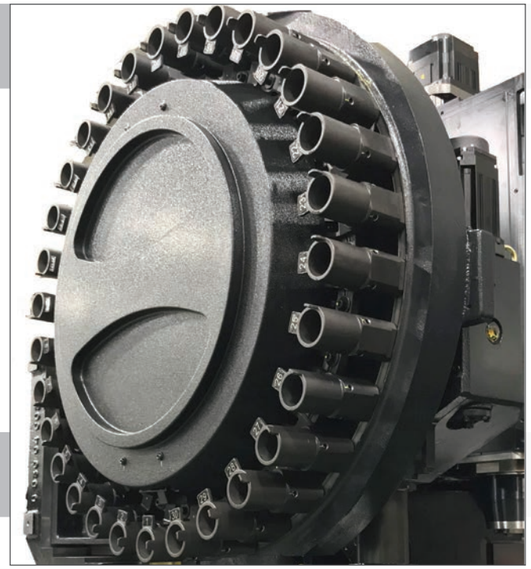

**Output-torque diagram 40-20,000 min-1**




## AUTOMATIC TOOL CHANGERS AND TOOL STORAGE

For part-production versatility, the VC-500A/5X and VC-500C/2PC feature servo-driven automatic tool changers (ATC) that quickly exchange tools and get back in the cut, significantly reducing non-cut time.

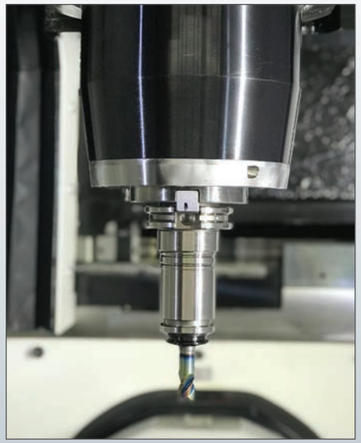
- 30-tool ATC standard
- 40 and 60-tool ATC options



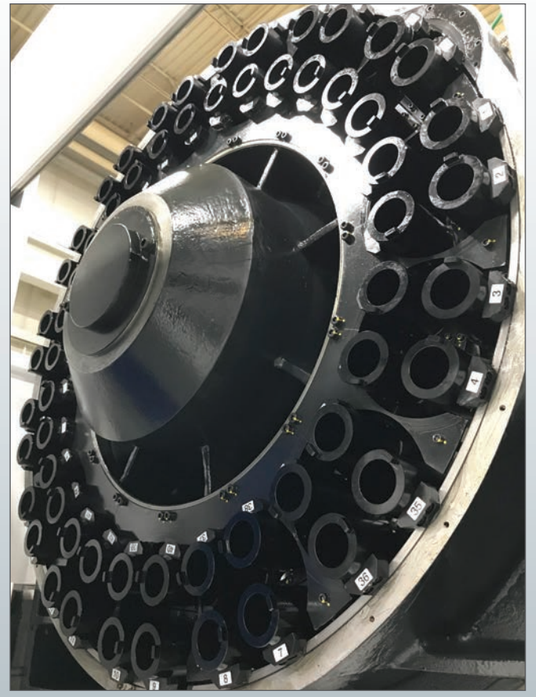
30-Tool Magazine

## TURRET-STYLE 60-TOOL MAGAZINE OPTION

Mazak's unique turret-style tool magazine incorporates 15 four-position tool units for a 60-tool storage capacity. The ample capacity allows for continuous production, helps reduce setup time and ensures enough tooling to process complex workpieces or stock redundant tooling.



Spindle



60-Tool Magazine

# High Accuracy

With Mazak's rigid machine base structure, advanced spindle/motor design and MAZATROL Smooth CNC submicron machine movement, the VC-500A/5X and VC-500C/2PC provide extremely high part accuracy and surface finishes. As with all the machines built at the Mazak Kentucky iSMART Factory™, Mazak closely monitors the manufacture and assembly of these machines to guarantee consistent precision and performance.

To further ensure the highest precision possible over extended hours of operation, Intelligent Machine functions minimize detrimental vibration and heat when machining.


## ACTIVE VIBRATION CONTROL

Mazak's ACTIVE VIBRATION CONTROL function effectively reduces vibration for high-accuracy positioning in all axes and shorter machining cycle times. It also curbs the effects of vibration on the cutting tool for longer tool life and exceptional part surface finishes.

## INTELLIGENT THERMAL SHIELD

Mazak designs its machine tools to create the least amount of heat possible. The THERMAL SHIELD function accounts for any thermal change within the machine or any ambient changes within the manufacturing environment that could influence machine performance.

### Mazak iSMART Factory

The Mazak iSMART Factory encompasses complete digital integration, with state-of-the-art equipment, automation and advanced manufacturing practices. It hinges on the free flow and sharing of data in terms of process control and operation monitoring to ensure the highest quality standards and the utmost production consistency from one machine to the next.



# Ergonomics

## DESIGNED FOR UNSURPASSED EASE OF OPERATION

### OUTSTANDING ACCESSIBILITY

Operators have excellent access to the table from the front of the machine thanks to large door openings that enable convenient workpiece loading/unloading and machine setup.

### WELL-LIT WORKING ENVIRONMENT

Multi-LED lighting deployed strategically throughout the work envelope gives operators an easy view of the entirety of the cutting area.

### EASE OF MAINTENANCE

The single external maintenance panel for the VC-500A/5X and VC-500C/2PC is easy to access, and cables are easy to identify by color, which reduces time required for maintenance.

### ERGONOMIC ATC LOADING

The high-capacity tool magazines used in the automatic tool changer (ATC) feature a carousel design that puts every tool pocket well within the operator's reach for fast, easy loading.

# MAZATROL SmoothG Control

The MAZATROL SmoothG CNC optimizes programming on the VC-500C/2PC and makes it easy to generate programs for processing complex parts through off-centerline machining as well as angled drilling, milling and tapping. The control incorporates a wide variety of advanced programming functions to offer complete ease of use and ensure high-speed, high-accuracy machining performance.


## Features and functions of the MAZATROL SmoothG control include:

- **VARIABLE ACCELERATION CONTROL** calculates optimal acceleration for a combination of axes.
- **Virtual Machining** allows operators to verify part programs prior to initiating cutting.
- **SMOOTH Monitor** for equipment monitoring and utilization analysis.
- **Quick EIA** plots toolpaths prior to running programs and checks for any interferences in those paths.
- **Quick MAZATROL** allows for the direct import of 3D CAD models into the CNC and extracts coordinates from models to simplify machine programming.
- **3D Assist** enables operators to import workpiece coordinates from directly 3D CAD data to a MAZATROL program without the need to input coordinate values, reducing errors and time spent checking programs.
- **High-Gain Feed Forward Control** boosts machining speed and accuracy.
- **SMOOTH CAM RS** simulates SMOOTH controls on a remote PC.
- **INTELLIGENT POCKET MILLING** engages a high-efficiency toolpath when milling part cavities.
- **SMOOTH CORNER CONTROL** makes cutter path adjustments to help shorten cycle times.
- **EIA/ISO and conversational programming capabilities**.



## SmoothG CONTROL SPECIFICATIONS

| | MAZATROL | EIA |
|---|---|---|
| Number of controlled axes | Simultaneous 2 ~ 4 axes | |
| Least input increment | 0.00001 inch, 0.0001 mm, 0.0001º | |
| High-speed, high-precision control | Shape error designation, Smooth corner control, Rapid traverse overlap, Rotary axis shape compensation | Shape error designation, Smooth corner control, Rapid traverse overlap, Rotary axis shape compensation, High-speed machining mode, High-speed smoothing control function |
| Interpolation | Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Cylindrical coordinate interpolation, Polar coordinate interpolation, Synchronized milling spindle tapping* | Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Spiral interpolation, Helical interpolation, Cylindrical coordinate interpolation*, Fine spline interpolation*, NURBS interpolation*, Polar coordinate interpolation*, Synchronized milling spindle tapping* |
| Feed rate | Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution),Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp, Variable acceleration/deceleration control, Constant control for G0 tilting* | Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Inverse time feed, Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp,Time constant changing for G1, Variable acceleration/deceleration control, Constant control for G0 tilting* |
| Program registration | Max. number of programs: 960, Program storage: 2 MB, Program storage expansion: 8 MB*, Program storage expansion: 32 MB* | |
| Control display | Display: 19" touch panel, Resolution: SXGA | |
| Spindle functions | S code output, Spindle speed clamp, Spindle speed override, Spindle speed reaching detection, Multiple position orient, Constant surface speed, Spindle speed command with decimal digits, Synchronized spindle control, Max. speed control for spindle | |
| Tool functions | Tool offset pairs: 4000, T code output for tool number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces) | Tool offset pairs : 4000, T code output for tool number, T code output for group number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces) |
| Miscellaneous functions | M code output, Simultaneous output of multiple M codes | |
| Tool offset functions | Tool position offset, Tool length offset, Tool diameter/tool nose R offset, Tool wear offset | |
| Coordinate system | Machine coordinate system, Work coordinate system, Local coordinate system, Additional work coordinates (300 set) | |
| Machine functions | — | Hobbing*, Shaping function*, Dynamic compensation II* |
| Machine compensation | G0/G1 independent backlash compensation, Pitch error compensation, Volumetric compensation* | |
| Protection functions | Emergency stop, Interlock, Stroke check before travelling, Retraction function for the vertical axis, INTELLIGENT SAFETY SHIELD (manual mode), INTELLIGENT SAFETY SHIELD (automatic mode)*, MAZAK VOICE ADVISER | |
| Automatic operation mode | Memory operation | Memory operation, Tape operation, MDI operation, EtherNet operation* |
| Automatic operation control | Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Machine lock | Optional block skip, Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Restart 2, Collation stop, Machine lock |
| Manual measuring functions | Tool length and tip teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine | Tool length and tip teach, Tool offset teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine |
| Automatic measuring functions | WPC coordinate measurement, Auto tool length measurement, Sensor calibration, Tool eye auto tool measurement, Tool breakage detection, External tool breakage detection* | Auto tool length measurement, Sensor calibration, Tool breakage detection, External tool breakage detection* |
| MDI measurement | Partial auto tool length measurement, Auto tool length measurement, Coordinate measurement | |
| Interface | PROFIBUS-DP*, EtherNet I/P*, CC-Link* | |
| Card interface | SD card interface, USB | |
| EtherNet | 10 M / 100 M / 1 G bps | |

* Option

# MAZATROL SmoothX Control

For highly advanced programming, the MAZATROL SmoothX CNC is the most progressive control available and significantly reduces cycle times, especially in fine-increment programs, for full simultaneous 5-axis machining on the VC-500A/5X.

## Features and functions of the MAZATROL SmoothX control include:

- **VARIABLE ACCELERATION CONTROL** calculates optimal acceleration for a combination of axes.
- **Virtual Machining** allows operators to verify part programs prior to initiating cutting.
- **SMOOTH Monitor** for equipment monitoring and utilization analysis.
- **Quick EIA** plots toolpaths prior to running programs and checks for any interferences in those paths.
- **Quick MAZATROL** allows for the direct import of 3D CAD models into the CNC and extracts coordinates from models to simplify machine programming.
- **3D Assist** enables operators to import workpiece coordinates from directly 3D CAD data to a MAZATROL program without the need to input coordinate values, reducing errors and time spent checking programs.
- **High-Gain Feed Forward Control** boosts machining speed and accuracy.
- **Rapid Overlap** uses arcing motion between programmed stopping points to shorten cycle times.
- **SMOOTH CAM RS** simulates SMOOTH controls on a remote PC.
- **INTELLIGENT POCKET MILLING** engages a high-efficiency toolpath when milling part cavities.
- **SMOOTH CORNER CONTROL** makes cutter path adjustments to help shorten cycle times.
- **EIA/ISO and conversational programming capabilities**.


## SmoothX CONTROL SPECIFICATIONS

| | MAZATROL | EIA |
|---|---|---|
| Number of controlled axes | Simultaneous 2 ~ 4 axes | 2 ~ 4 axes, Simultaneous 5 axes[1] |
| Least input increment | 0.00001 inch, 0.0001 mm, 0.0001º | |
| High-speed, high-precision control | Shape error designation, SMOOTH CORNER CONTROL, Rapid traverse overlap, Rotary axis shape compensation | Shape error designation, SMOOTH CORNER CONTROL, Rapid traverse overlap, Rotary axis shape compensation, High-speed machining mode, High-speed smoothing control function, 5-axis spline[1] |
| Interpolation | Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Cylindrical coordinate interpolation, Polar coordinate interpolation, Equal pitch threading[2], Re-threading[1,2], Override threading[1,2], Override variable threading[1,2], Synchronized milling spindle tapping[1] | Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Spiral interpolation, Helical interpolation, Equal pitch threading[2], Variable pitch threading[2], Threading (C-axis interpolation type)[2], Cylindrical coordinate interpolation[1], Fine spline interpolation[1], NURBS interpolation[1], Polar coordinate interpolation*, Re-threading[1,2], Override threading[1,2], Override variable threading[1,2], Synchronized milling spindle tapping[1] |
| Feed rate | Rapid traverse, Cutting feed, Cutting feed (per minute), Dwell (specified time, specified number of rotation), Rapid Cutting feed (per revolution), Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feed rate clamp, Variable acceleration/deceleration control, Constant control for G0 tilting[1] | Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Inverse time feed, Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feed rate clamp, Time constant changing for G1, Variable acceleration/deceleration control, Constant control for G0 tilting[1] |
| Program registration | Max. number of programs: 960, Program storage: 2MB, Program storage expansion[1]: 8MB | |
| Control display | Display: 19" touch panel, Resolution: SXGA | |
| Spindle functions | S code output, Spindle speed clamp, Spindle speed override, Spindle speed reaching detection, Multiple position orient, Constant surface speed, Spindle speed command with decimal digits, Synchronized spindle control, Max. speed control for spindle | |
| Tool functions | Tool offset pairs: 4000, T code output for tool number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)[2] | Tool offset pairs: 4000, T code output for tool number, T code output for group number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)[2] |
| Miscellaneous functions | M code output, Simultaneous output of multiple M codes | |
| Tool offset functions | Tool position offset, Tool length offset, Tool diameter/tool nose R offset, Tool nose shape offset[2], Tool wear offset, Fixed amount offset[2], Simple wear offset[2] | Tool position offset, Tool length offset, Tool diameter/ tool nose R offset, Tool wear offset, Fixed amount offset[2], Simple wear offset[2] |
| Coordinate system | Machine coordinate system, Work coordinate system, Local coordinate system, Additional work coordinates (300 set) | |
| Machine functions | — | Rotary axis pre-filter, Angled surface cutting, Hobbing[1], Shaping function[1], Dynamic compensation II[1], Tool nose point control[1], Tool diameter compensation for 5-axis machining[1], Workpiece positioning error compensation[1] |
| Machine compensation | G0/G1 independent backlash compensation, Pitch error compensation, Geometric deviation compensation, Volumetric compensation[1] | |
| Protection functions | Emergency stop, Interlock, Stroke check before travelling, Retraction function for the vertical axis, INTELLIGENT SAFETY SHIELD (manual mode), INTELLIGENT SAFETY SHIELD (automatic mode), MAZAK VOICE ADVISER | |
| Automatic operation mode | Memory operation | Memory operation, Tape operation, MDI operation, EtherNet operation[1] |
| Automatic operation mode | Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Machine lock | Optional block skip, Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Restart 2, Collation stop, Machine lock |
| Manual measuring functions | Tool length and tip teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine, Tool eye measurement[2] | Tool length and tip teach, Tool offset teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine, Tool eye measurement[2] |
| Automatic measuring functions | WPC coordinate measurement, Automatic tool length measurement, Workpiece measurement[2], Sensor calibration, Tool eye auto tool measurement[2], Tool breakage detection, External tool breakage detection[1] | Automatic tool length measurement, Workpiece measurement[2], Sensor calibration, Tool eye auto tool measurement[2], Tool breakage detection, External tool breakage detection[1] |
| MDI measurement | Partial auto tool length measurement, Auto tool length measurement, Coordinate measurement | |
| Interface | PROFIBUS-DP[1], EtherNet I/P[1], CC-Link[1], USB | |
| Card interface | SD card interface | |
| EtherNet | 10 M/100M/1Gbps | |

[1] Option [2] Machines with turning only

# Fast, Easy and Efficient Programming

With continuously innovative Mazak MAZATROL Smooth CNCs, the VC-500A/5X and VC-500C/2PC are easy, fast and efficient to program. These highly versatile controls allow for both EIA/ISO and conversational programming, while other features and capabilities boost power and functionality.

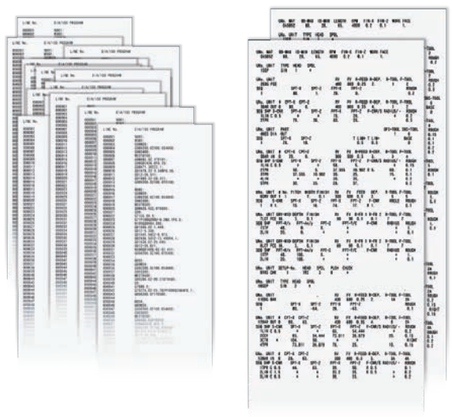
## EIA/ISO COMPATIBILITY

MAZATROL Smooth CNCs use the same EIA/ISO G-codes as other CNC machines. This compatibility enables operators to run programs made for other machine brands.

## CONVERSATIONAL PROGRAMMING

With MAZATROL conversational programming – standard on the Smooth control platform – even inexperienced operators can develop programs for the VC-500A/5X and VC-500C/2PC quickly and easily. Operators answer conversationally displayed questions about the intended workpiece. These include queries about material type, workpiece dimensions and part lengths, among others. Then, according to the input data, MAZATROL Smooth CNCs automatically calculate intersection coordinates and tool index positioning, in addition to optimized cutting conditions and machining processes.

Number of program lines
89% REDUCTION



EIA / ISO language

MAZATROL language

## PROCESS HOME SCREENS

MAZATROL Smooth CNCs streamline data entry and minimize the number of displays to reduce programming times for the VC-500A/5X and VC-500C/2PC. Five different home process screens each display the appropriate data in an easy-to-understand manner. Operators can quickly navigate to additional screen displays.

### Process home screens include:

- Programming
- Tool data
- Setup
- Machining
- Maintenance

SmoothX Programming Screen

SmoothX Tool Data Screen

SmoothX Setup Screen

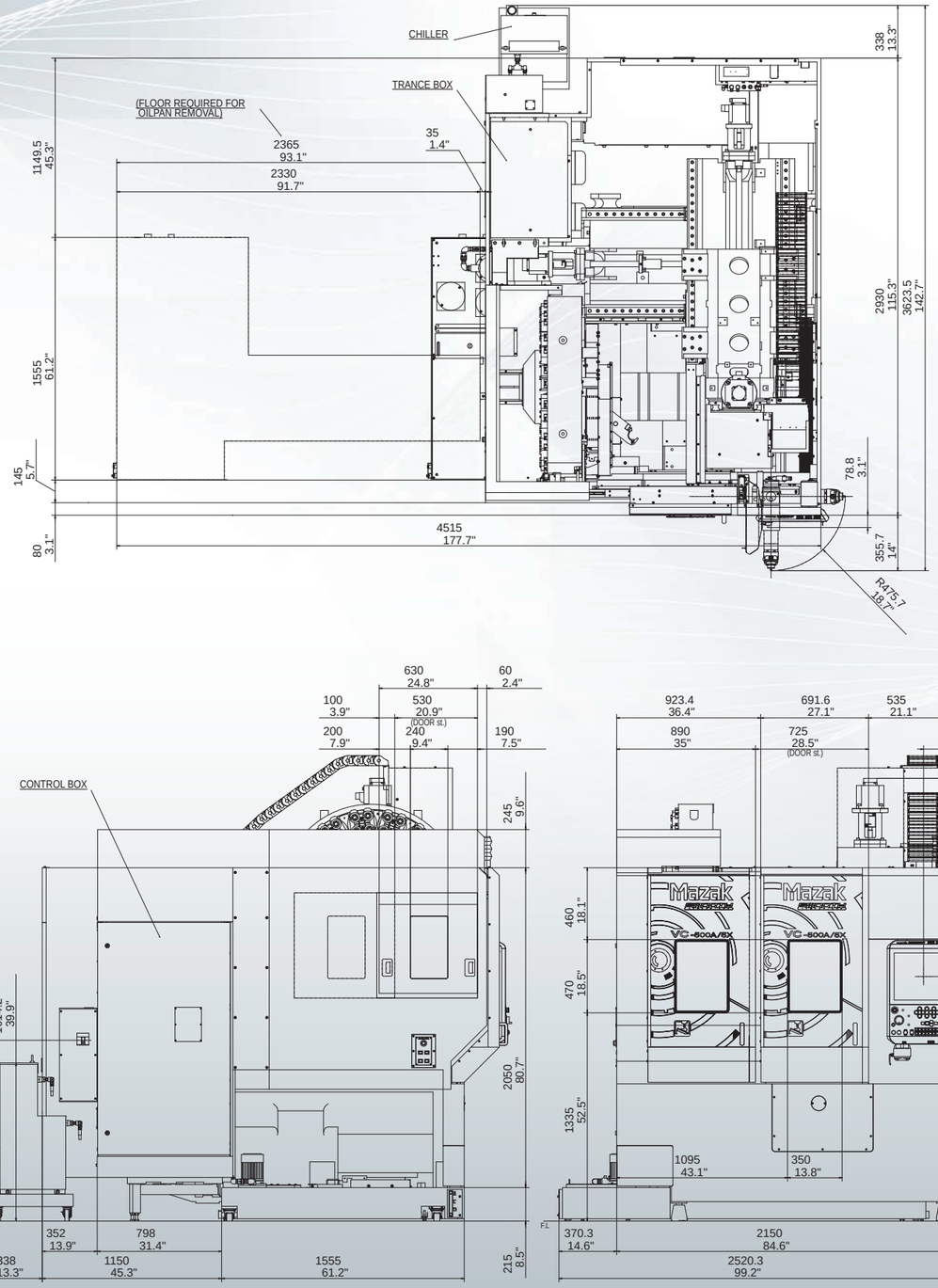
SmoothX Machining Screen

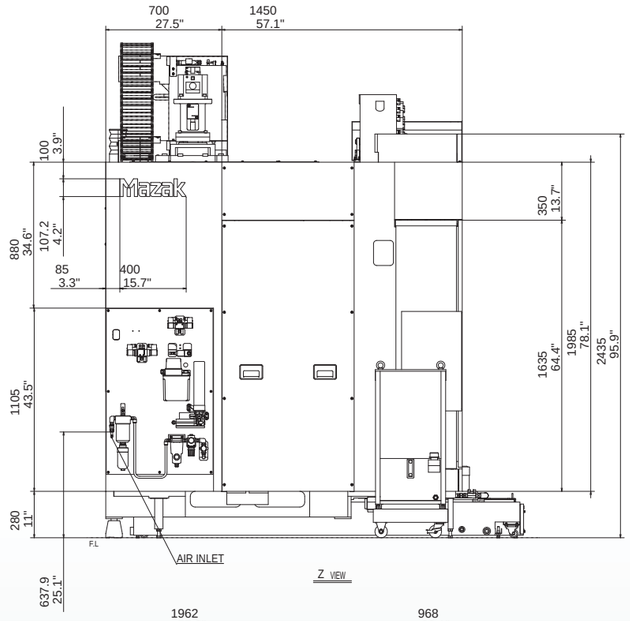
SmoothX Maintenance Screen

# Machine Layout – VC-500A/5X

(FOR REFERENCE ONLY)

Unit: mm (inch)

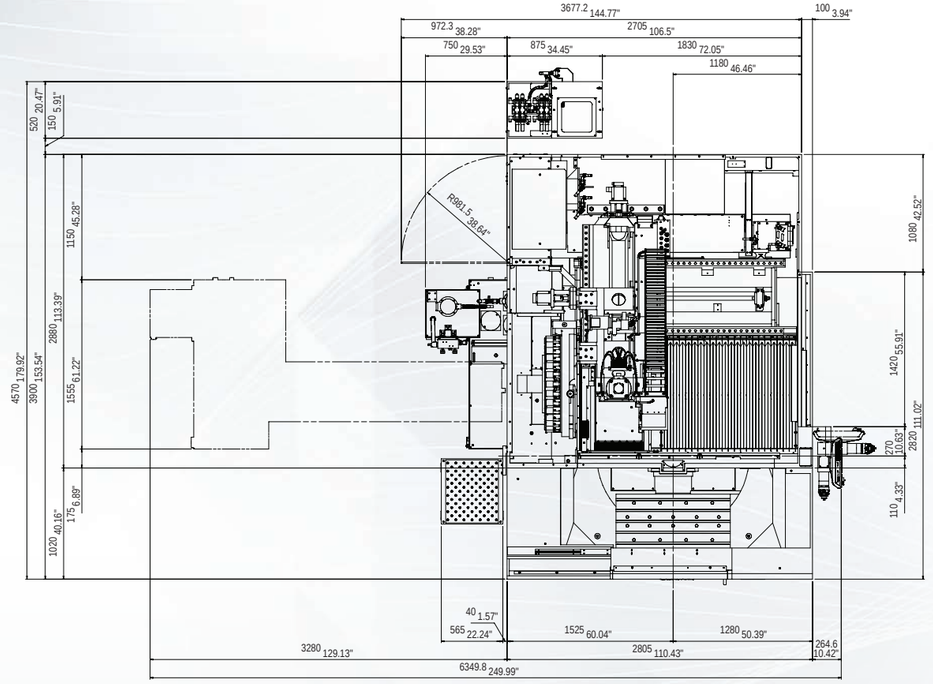


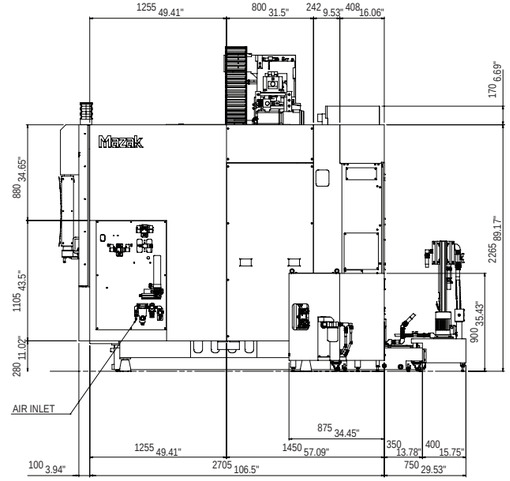



# Machine Layout – VC-500C/2PC

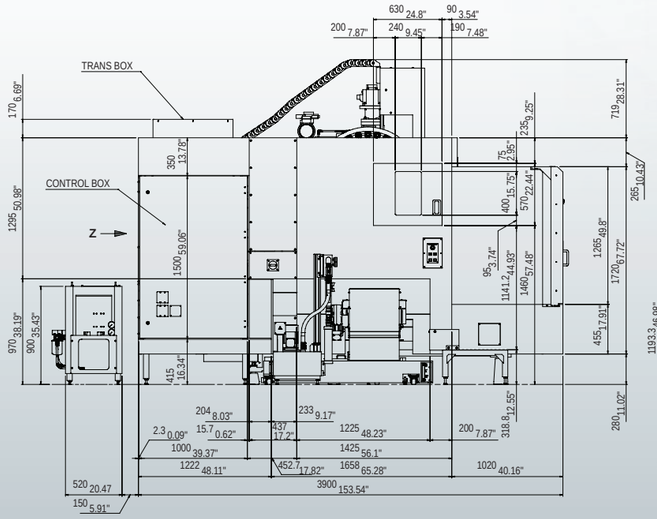
(FOR REFERENCE ONLY)

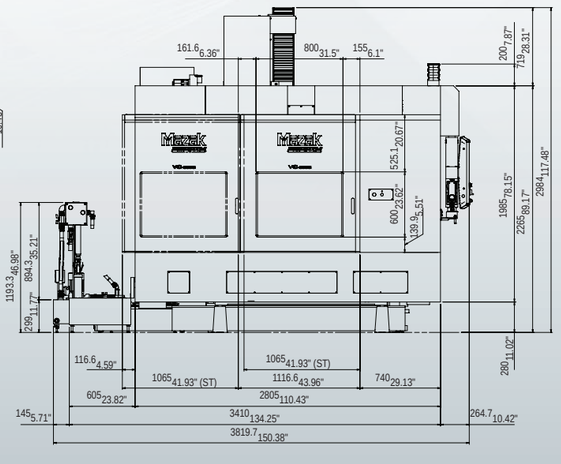
Unit: mm (inch)

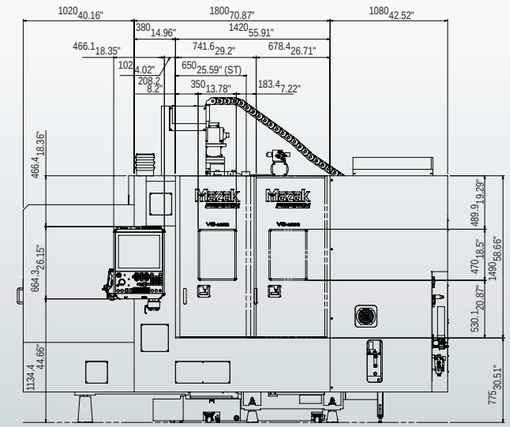



Z VIEW



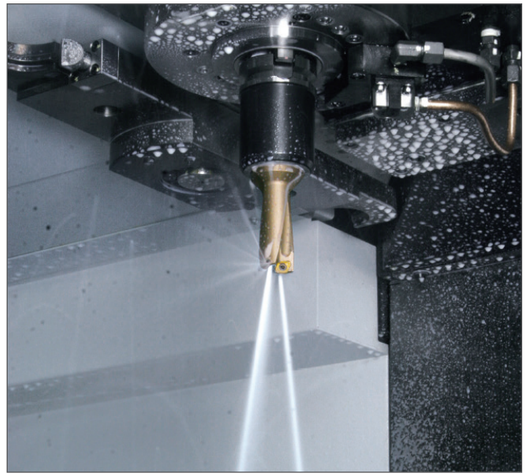
# Machine Specifications

| | | | | VC-500A/5X | VC-500C/2PC |
|---|---|---|---|---|---|
| Travel | X-axis travel | | in (mm) | 21.85 (555) | 39.37 (1,000) |
| | Y-axis travel | | in (mm) | 19.88 (505) | 19.88 (505) |
| | Z-axis travel | | in (mm) | 20.07 (510) | 20.08 (510) |
| | B-axis travel | | degree | +110~-110 | — |
| | C-axis travel | | degree | ±360 | — |
| Table | Spindle nose to table top | Min. | in (mm) | 4.53 (115) to 24.61 (625) | 4.52 (115) |
| | | Max. | in (mm) | 19.69 (500) | 24.60 (625) |
| | Pallet size | | in (mm) | ø19.69 (500) | 19.69 x 41.33 (1,050 x 500) |
| | Max. workpiece size | | in (mm) | ø19.69 x 12 (ø500 x 305) | 19.69 x 39.37 x 12 (500 x 1,000 x 510) |
| | Max. workpiece weight | | lb (kg) | 441 (200) | 1,322 (600) |
| | Table surface height (From the surface of machine base) | | in (mm) | 26.97 (685) | 26.96 (685) |
| Spindle | Spindle connection | | --- | CAT 40, BIG PLUS 40, BT40, HSK-A63 | |
| | Spindle speed standard | | min | 12,000 | |
| | Spindle motor output | 5 min. rating | hp (kW) | 25 (18.5) | |
| | Spindle motor output | 30 min. rating | hp (kW) | 15 (11) | |
| | Spindle motor output | Cont. rating | hp (kW) | 10 (7.5) | |
| | Option 15,000 rpm | 10% ED | hp (kW) | 30 (18.5) | |
| | | 30 min. rating | hp (kW) | 15 (11) | |
| | | Cont. rating | hp (kW) | 10 (7.5) | |
| | Option 20,000 rpm | 15 min. rating | hp (kW) | 47 (35) | |
| | | Cont. rating | hp (kW) | 35 (26) | |
| Rapid traverse | X/Y/Z | | ipm (m/min) | 1,181 (30) | |
| | B/C | | degree° min | 10,800 | — |
| ATC & magazine | Magazine capacity | Standard | tool | 30 | 30 |
| | | Optional | tool | 40, 60 | 40, 60 |
| | Max. tool diameter | With adjacent pockets occupied | in (mm) | 3.15 (80) | 3.15 (80) |
| | | With adjacent pockets empty | in (mm) | 4.92 (125) | 4.92 (125) |
| | Max. tool length (from the guage line) | | in (mm) | 10.23 (260) | 10.23 (260) |
| Machine size | W x L x H | | in (mm) | 99.2 x 118.45 x 118.11 (2,620 x 3,008 x 3,000) | 120.87 x 153.54 x 117.48 (3,070 x 3,900 x 2,984) |
| PC | Pallet change time | | sec | — | 9 |

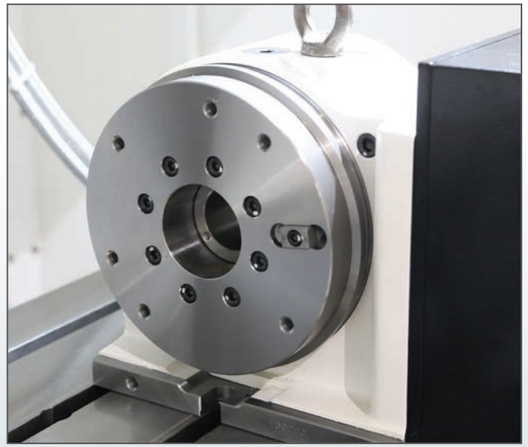
# Optional Equipment

Mazak offers a wide array of options that further enhance machine performance, increase uptime and boost overall operational efficiency.

- **Chip conveyors** to handle a variety of workpiece materials.
- **Rotary table units** provide a 4th axis for a wide variety of workpiece processing strategies.
- **Through-pallet hydraulics** ensure fixture integration.
- **T-slot pallets** increase workholding versatility.
- **Part and tool probe packages** provide in-process workpiece measurement, automatically measure tool length and detect wear/damage.
- **High-power coolant** prolongs tool life with added lubricity and efficient chip evacuation.
- **Mist collector** removes mist made within the machine to maintain a safe work environment.



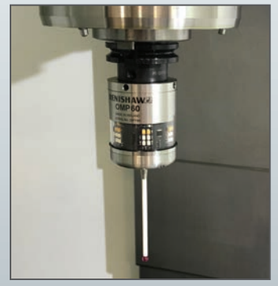
Through-spindle coolant



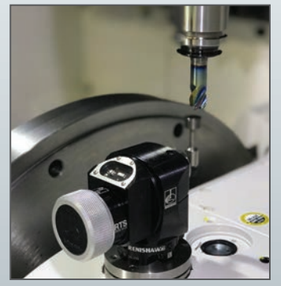
Fourth-axis rotary table

Chip conveyor


Mist collector



Part probe



Tool probe

VC-500A/5X
VC-500C/2PC

Mazak

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