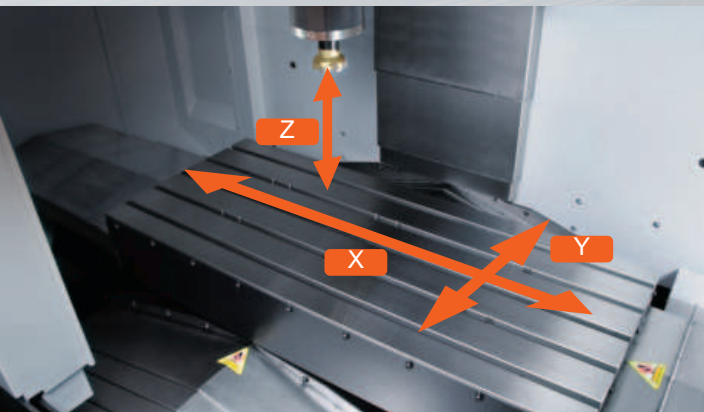
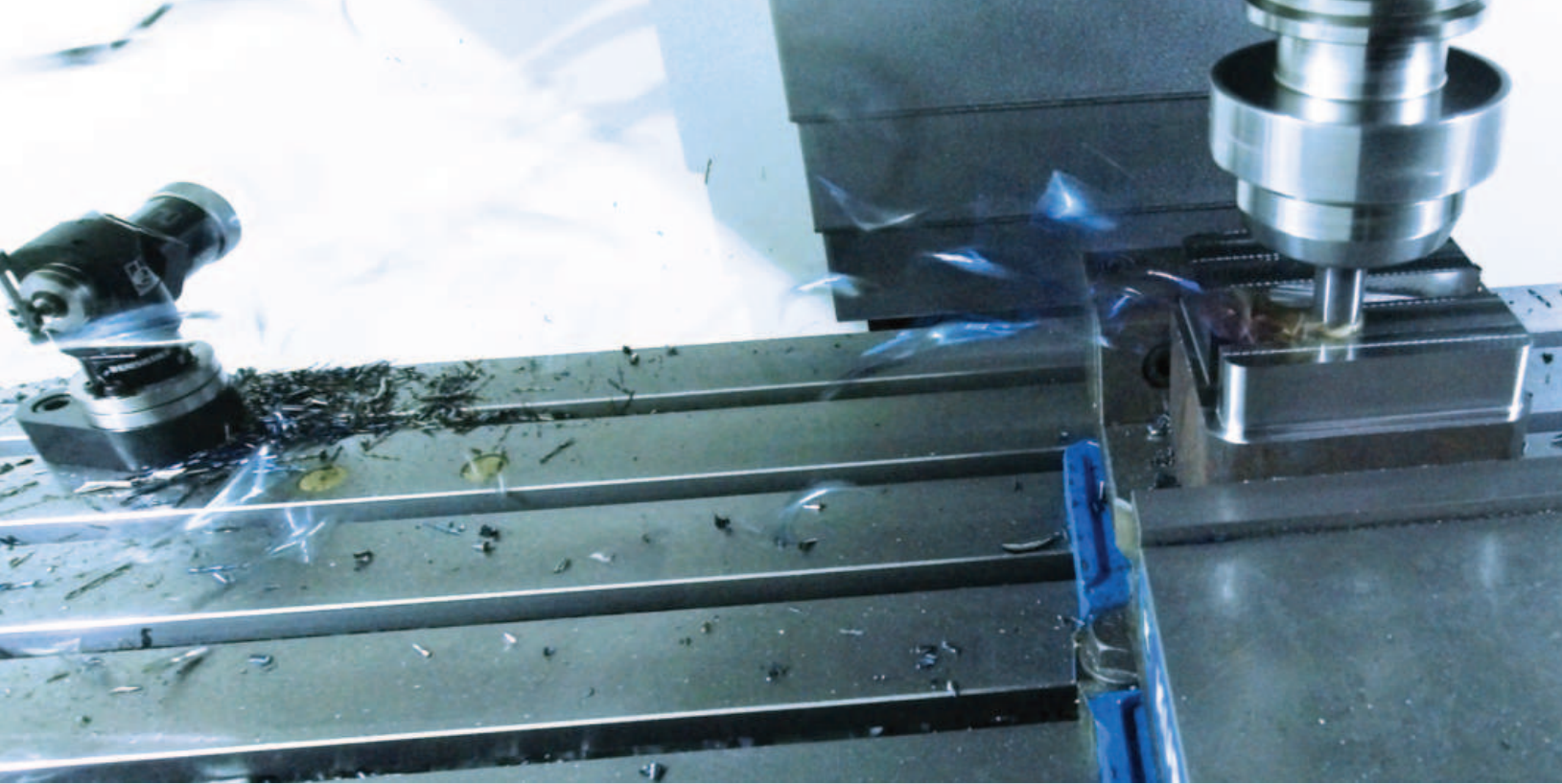


Mazak

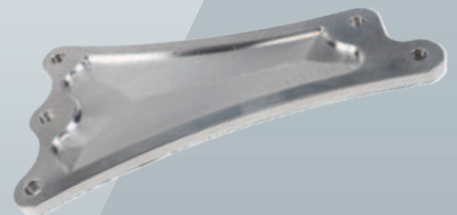
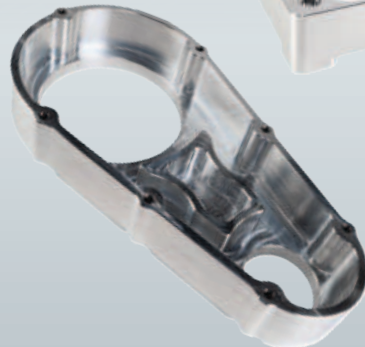
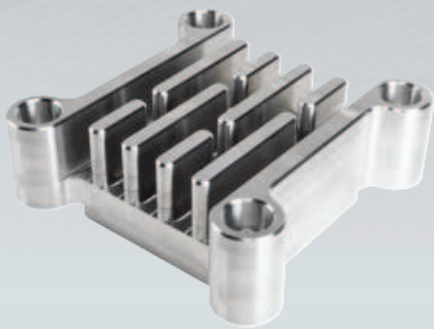
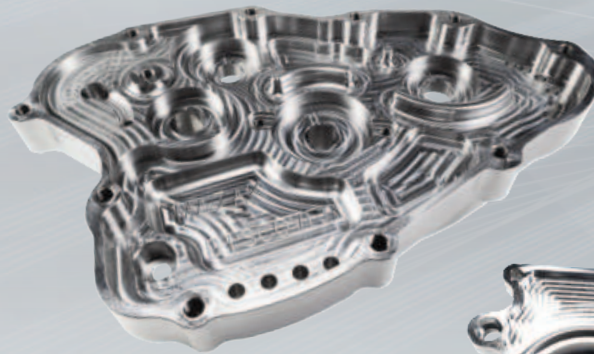
# VC-EZ

SERIES





### Sample Workpieces



## Affordability and Performance

Expanding the Mazak legacy of dependable, high-quality vertical machining centers, the VC-Ez Series of machines delivers high performance and accuracy with unparalleled value. Designed and built in Kentucky, VC-Ez machines are optimized for simple operation as well as fast and easy installation, enhanced ergonomics, stable and reliable part processing with long-term reliability.

*Hybrid MX Roller Guideway Systems on all linear axes*

*Pre-tensioned ballscrew system with support at each end*

*Thermal Shield technology ensures continuously stable machine accuracy*

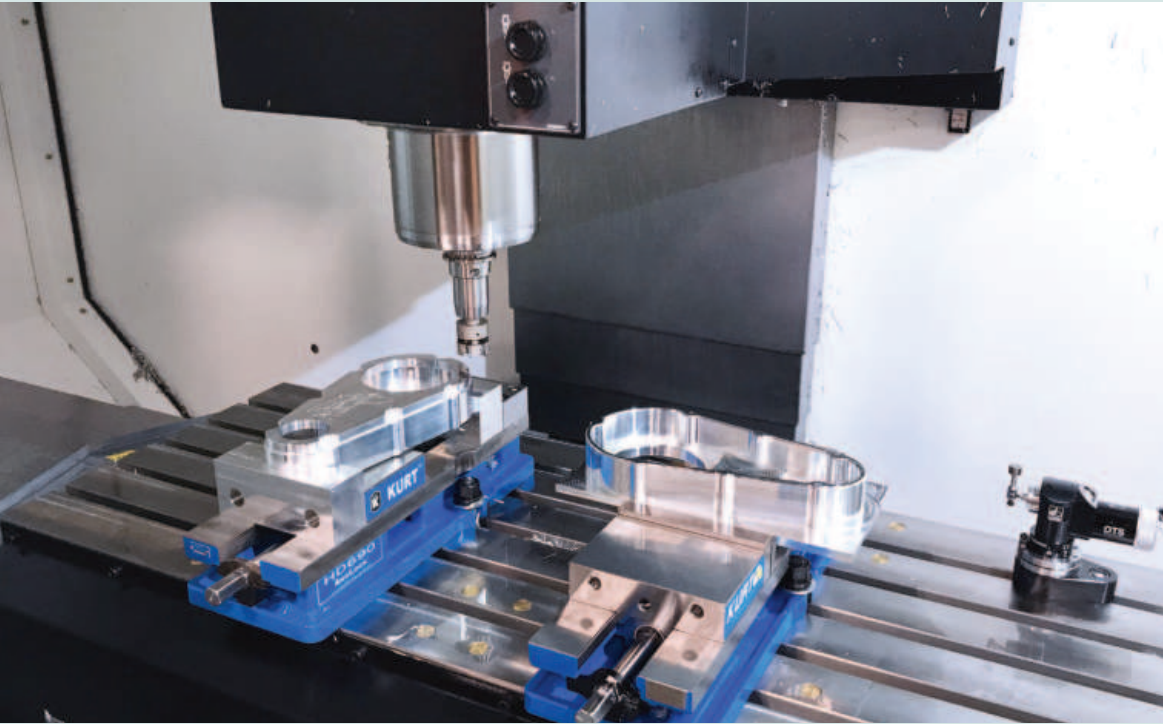
*Compact designs that focus on ease of use and maintainability*



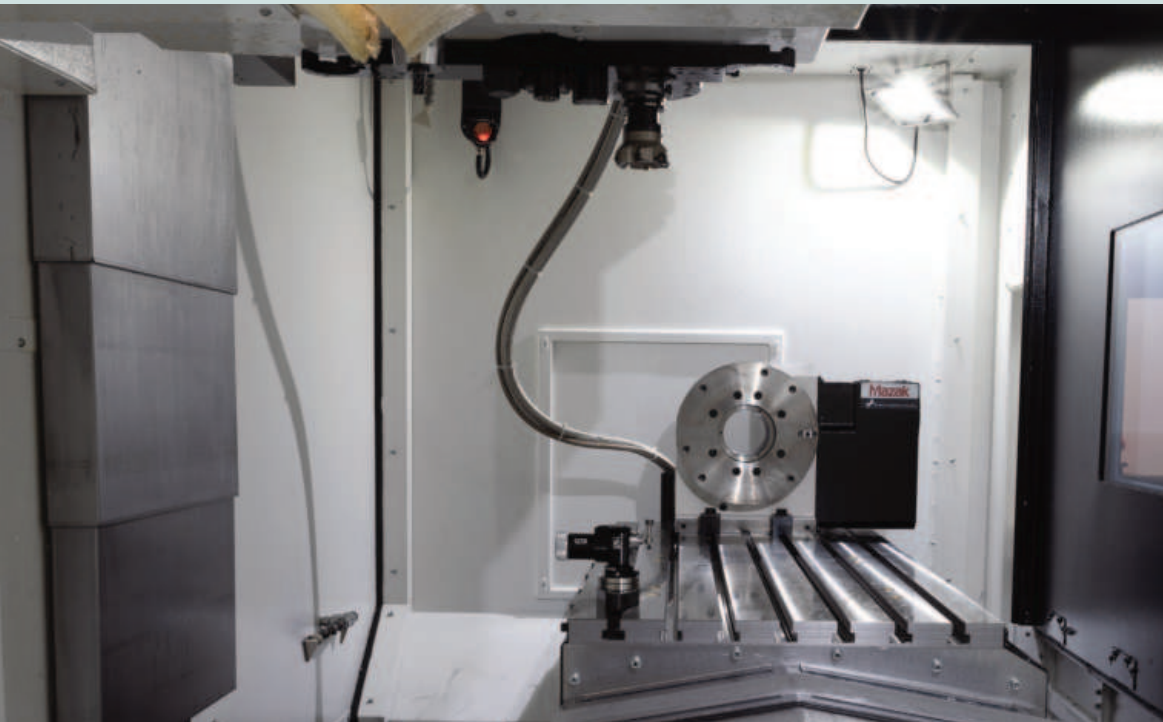
VC-Ez 20 with MAZATROL SmoothEz

# VC-EZ SERIES

# Highly Productivity Vertical Machining Centers



VC-Ez 16  
VC-Ez 20 CAT 40



VC-Ez 26  
VC-Ez 32 CAT 40



VC-Ez 16



VC-Ez 20

●:Standard ○:Option

Model	rpm		Table size	Rapid rates X, Y, Z axis	Tool magazine (standard/optional)
	12,000 min <sup>-1</sup>	15,000 min <sup>-1</sup>			
VC-Ez 16	●	○	37.40" X 14.17"	1,417 ipm	30 / 50
VC-Ez 20	●	○	49.21" X 19.37"	1,654 ipm	30 / 50



VC-Ez 26



VC-Ez 32

●:Standard ○:Option

Model	rpm		Table size	Rapid rates X, Y, Z axis	Tool magazine (standard/optional)
	12,000 min <sup>-1</sup>	15,000 min <sup>-1</sup>			
VC Ez 26	●	○	55.12" X 24.02"	1,417 ipm	30 / 50
VC Ez 32	●	○	64.17" X 28.35"	1,259 ipm	30 / 50

# Higher Productivity

Precision, accuracy and rigidity by design

## Spindles

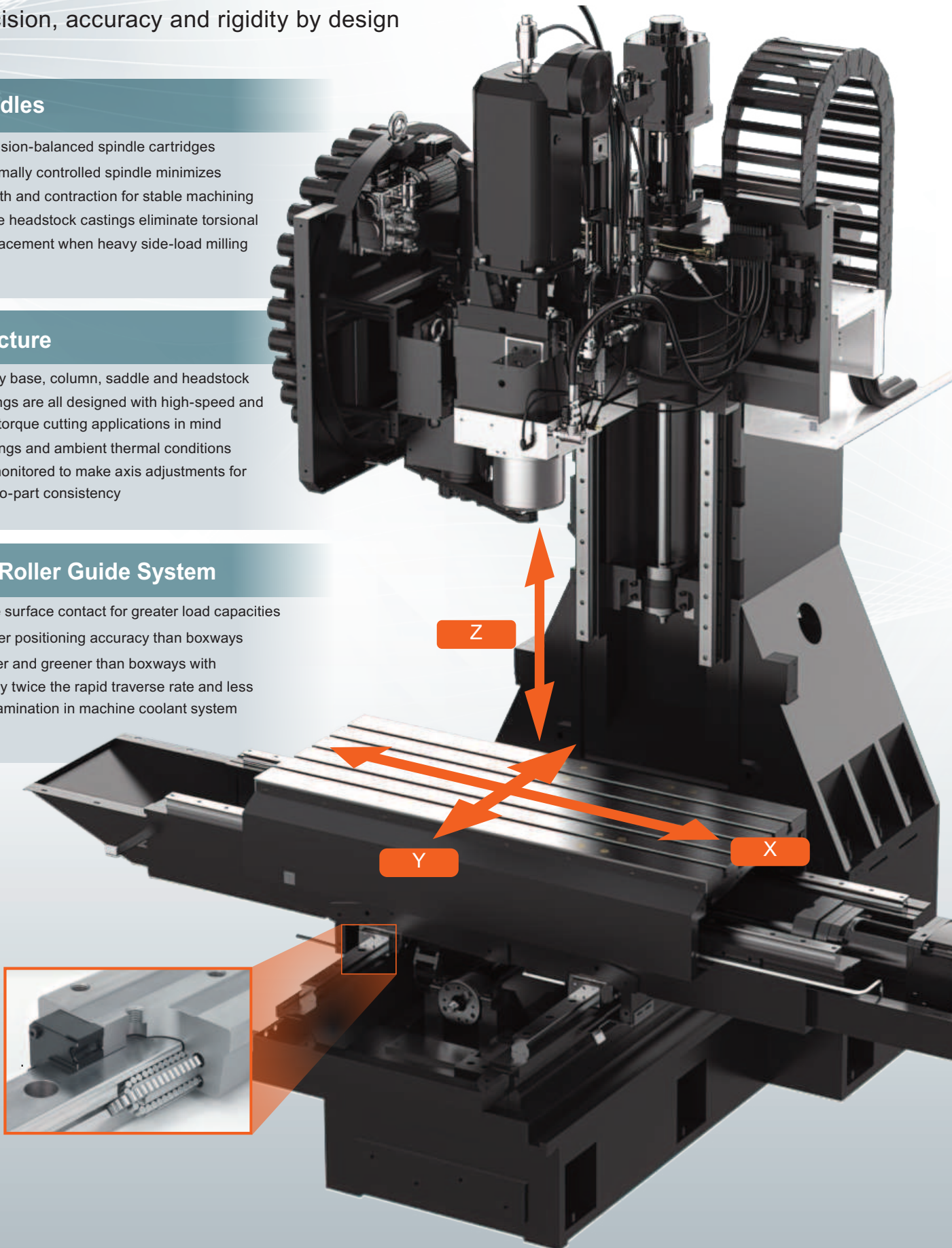
- Precision-balanced spindle cartridges
- Thermally controlled spindle minimizes growth and contraction for stable machining
- Large headstock castings eliminate torsional displacement when heavy side-load milling

## Structure

- Heavy base, column, saddle and headstock castings are all designed with high-speed and high-torque cutting applications in mind
- Castings and ambient thermal conditions are monitored to make axis adjustments for part-to-part consistency

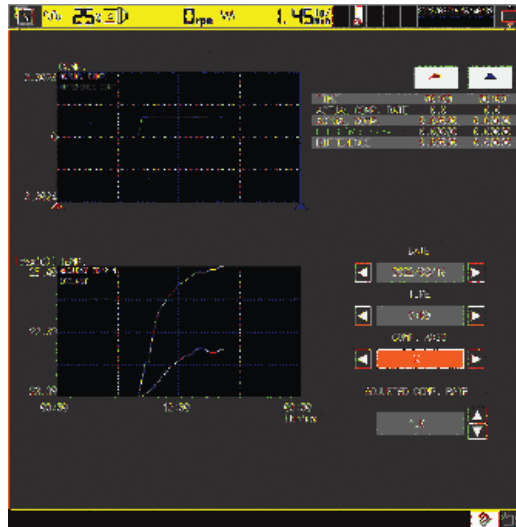
## MX Roller Guide System

- More surface contact for greater load capacities
- Higher positioning accuracy than boxways
- Faster and greener than boxways with nearly twice the rapid traverse rate and less contamination in machine coolant system



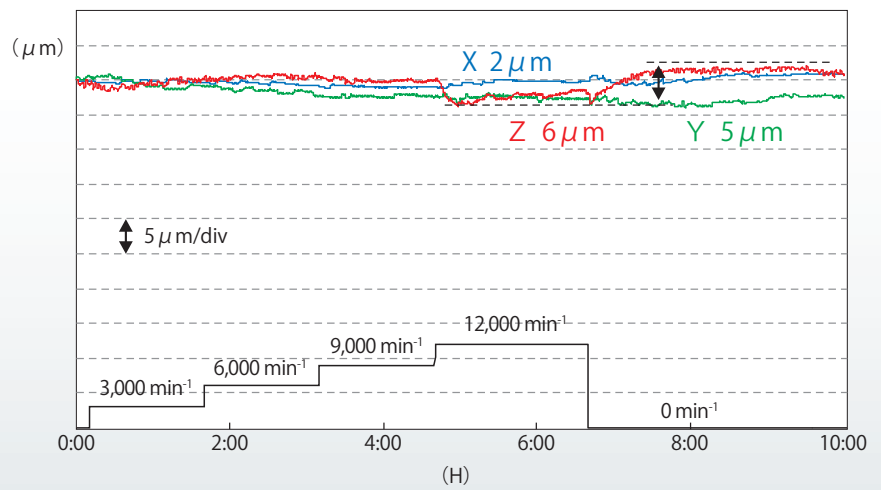
## Thermal Displacement Control

In addition to environmental changes such as increases or decreases in room temperature, operations such as spindle start/stop create sudden expansions and contractions in the spindle. Being able to monitor and react to thermal disruption provides stable machining accuracy that can be maintained over long periods of time.

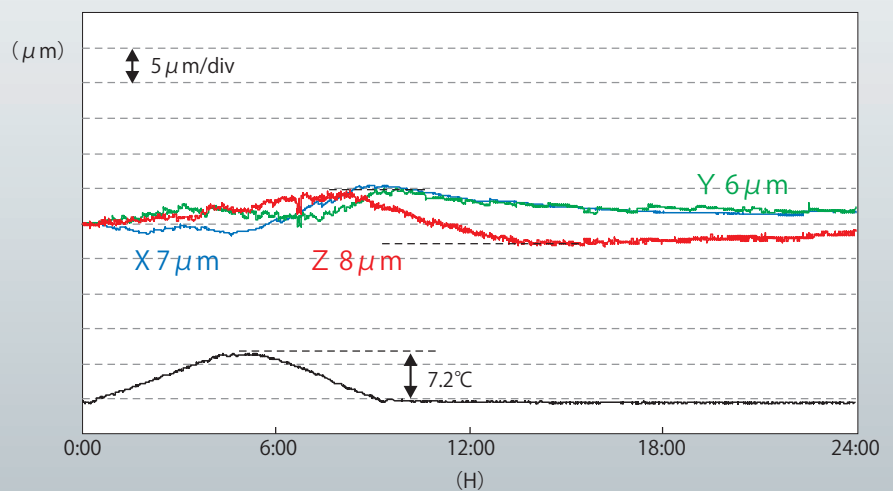


### Example of compensation with Thermal Shield

Spindle speed acceleration test  
(68°F/20°C constant temp.)

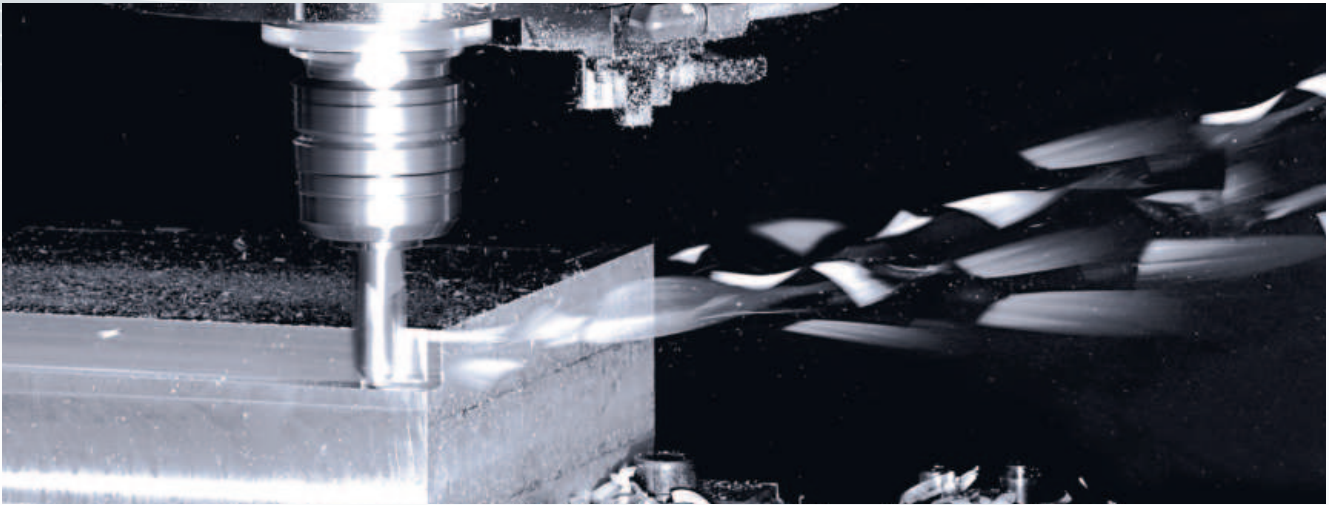


Environmental change test  
(45°F/7.2°C change)



# High-Performance Spindles

High-speed cutting for greater productivity with CAT 40 spindles

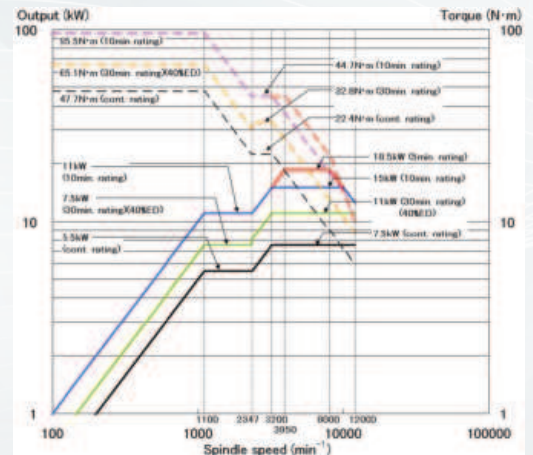


**Spindle output: 25 hp/18.5 kw (standard)**

CAT 40, 12,000 min<sup>-1</sup>

This spindle gives shops the performance they need to achieve high productivity and exceptional accuracy. The standard VC-Ez series spindle delivers unbeatable metal removal rates for most common materials, including steel, aluminum and cast iron. The VC-Ez Series spindles employ the latest technology for the shortest possible acceleration/deceleration times. This air cooled spindle uses grease packed lubrication to reduce maintenance and oil consumption.

Power/torque chart

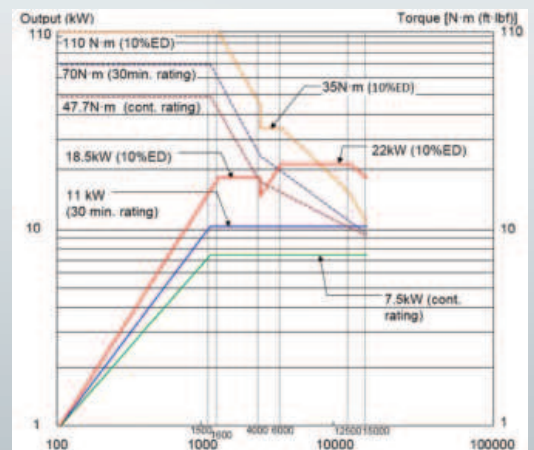


**Spindle output: 29.5 hp/22 kw (optional)**

CAT 40, 15,000 min<sup>-1</sup>

The optional 15,000 min<sup>-1</sup> spindle has an air-oil mist lubrication system design. This design is ideal for mass production and long run, short cycle parts. Designed to give you added flexibility for numerous applications and materials.

Power/torque chart





## Features For High Productivity

### High-Speed ATC

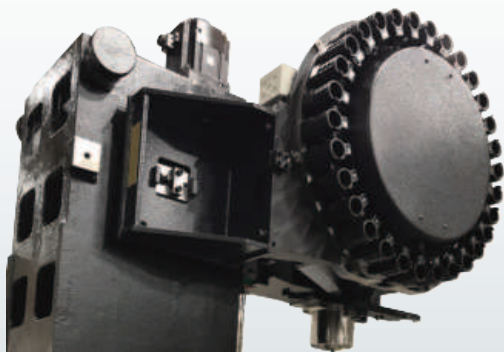


Our high-speed ATC system utilizes a reliable servo-driven cam actuation system that aids in rapid tool change and reducing noncut cycle time. Spindle utilization is also increased through bidirectional rotation of the magazine to the next required tool position, adding productivity to your facility.

Standard tool changer time

Chip to chip – 3.7 seconds

### Tool Magazines



High-capacity CAT 40 tool magazines minimize setup times and add capacity for redundant tooling.

Magazine capacities

Standard 30 tool

Optional 50 tool

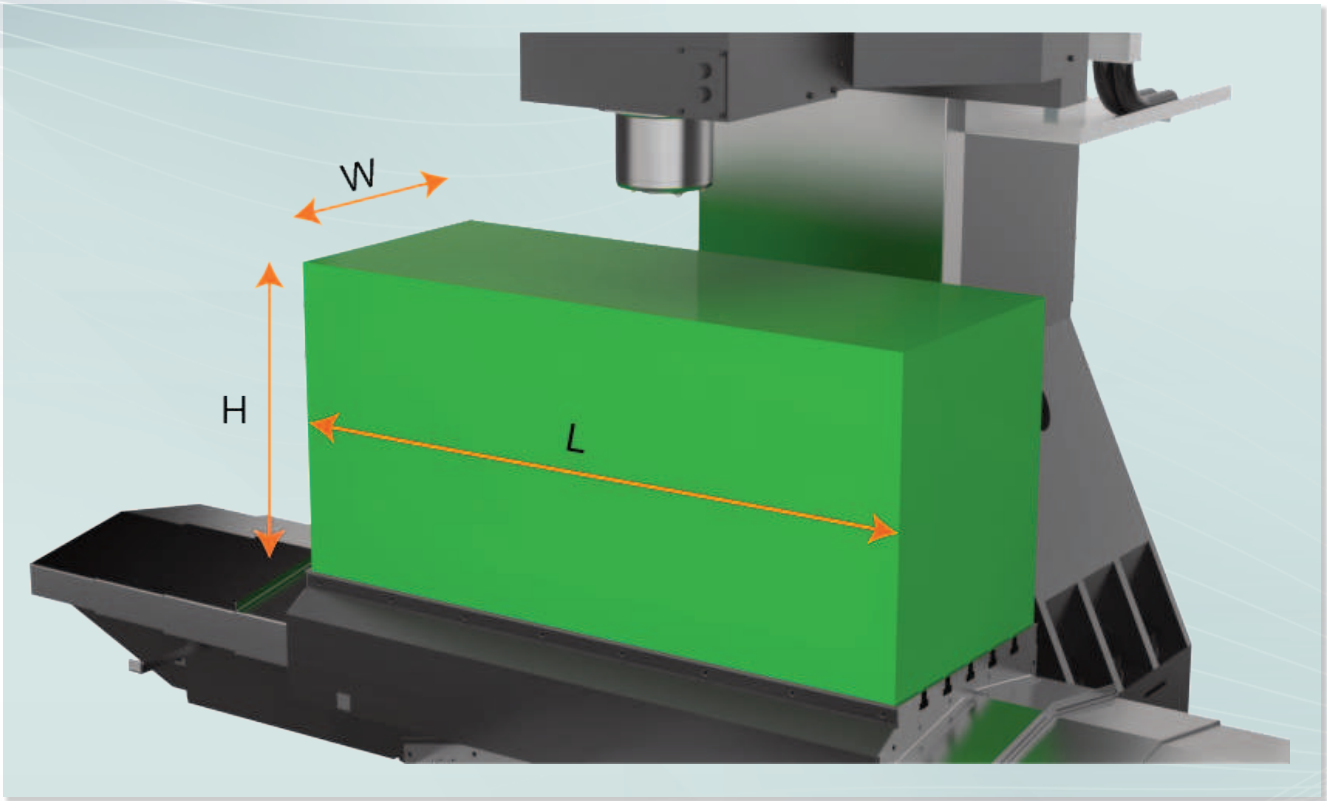


Specifications	VC-Ez 16	VC-Ez 20	VC-Ez 26	VC-Ez 32
Maximum tool length		13.78"/350 mm		
Maximum tool diameter		2.95"/75 mm		
30 Tool Maximum tool diameter with adjacent pockets empty		5.91"/150 mm		
50 Tool Maximum tool diameter with adjacent pockets empty		5.0"/127 mm		

Maximum tool weight of 8kg (17.64 lbs)

# Features For High Productivity

## Large Machining Area



### Machine travel specification

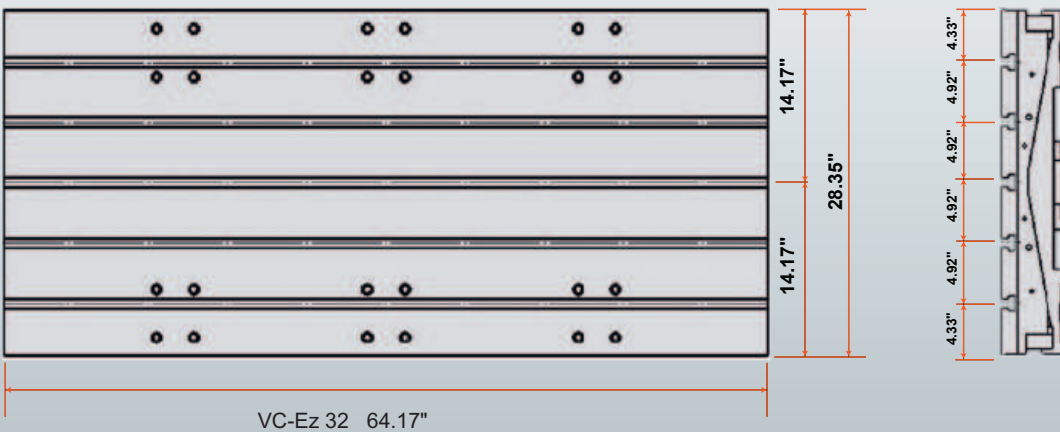
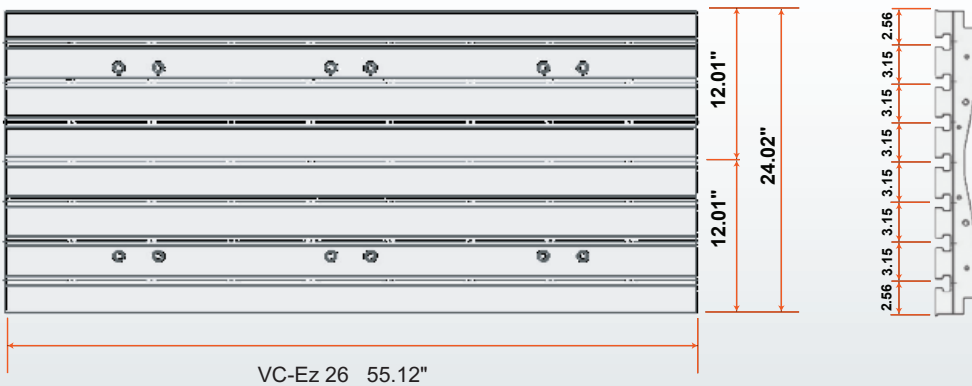
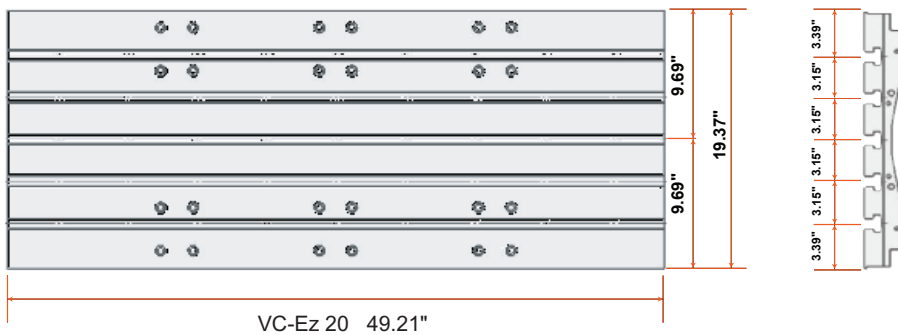
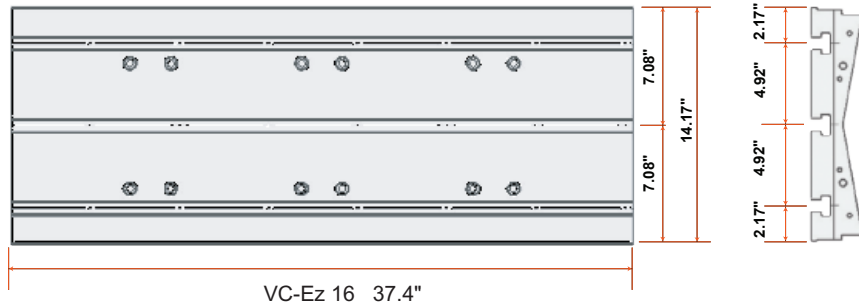
	X-AXIS STROKE	Y-AXIS STROKE	Z-AXIS STROKE
VC-Ez 16	30 in (762mm)	16.14 in (410mm)	20.08 in (510mm)
VC-Ez 20	41.34 in (1050mm)	20.08 in (510mm)	25 in (635mm)
VC-Ez 26	50 in (1270mm)	25.98 in (660mm)	25 in (635mm)
VC-Ez 32	64.17 in (1630mm)	32.08 in (815mm)	30.12 in (765mm)

### Maximum workpiece specification

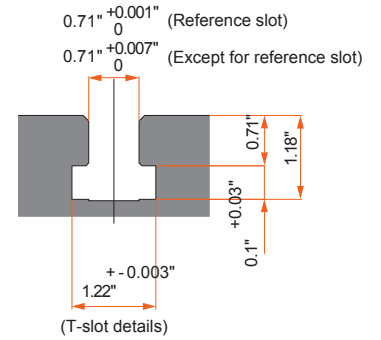
	MAX. LENGTH (L)	MAX. WIDTH (W)	MAX. HEIGHT (H)	MAX MASS
VC-Ez 16	37.4 in (950mm)	14.17 in (360mm)	17.72 in (450mm)	1543lbs (700kgs)
VC-Ez 20	49.21 in (1250mm)	19.37 in (492mm)	22.44 in (570mm)	2204lbs (1000kgs)
VC-Ez 26	55.12 in (1400mm)	24.02 in (610mm)	22.44 in (570mm)	3306lbs (1500kgs)
VC-Ez 32	64.17 in (1630mm)	28.35 in (720mm)	22.44 in (570mm)	4078.5lbs (1850kgs)

# Features for High Productivity

## Table Dimensions



### T-Slot



T-Slot measurement in inches

# Ease of Use

Ergonomic design emphasizes ease of operation and maintainability

## Part loading/unloading

Top door opening allows access to within 3.3" of table center for crane-loading of parts. Machine door opens wider than the table length for ample accessibility.



## Easy tool loading/unloading

The tool clamp/unclamp switch is conveniently placed next to the spindle for ease of tool maintenance.



## 1 Wide door opening

VC-Ez 16:	VC-Ez 20:	VC-Ez 26:	VC-Ez 32:
37.40"	49.21"	55.12"	66.93"



## 2 Ease of maintenance and safety

The centralized placement of commonly checked items facilitates and encourages daily maintenance.



## 3 Table/spindle accessibility

New integrated chip collection system allows for a toe-kick on the entire front of the machine. VC-Ez Series machines have a floor-to-worktable height of only 41.10" and only 32.57" between the machine exterior and the spindle.



**4** Chip drawers

VC-Ez 16, VC-Ez 20, and VC-Ez 26 models come standard with two chip removal drawers on the front of each machine. Operators can pull open these drawers to improve access for manual chip removal requirements. VC-Ez 32 comes standard with a chip auger.



**5** MAZATROL *SMOOTH EZ*  
Adjustable operator panel

MAZATROL SmoothEz CNC operation panel enhances usability. The swivel mount of the CNC control panel allows for rotation toward the work envelope for easy setup and operation.



\*Optional auger shown

**6** Removable covers

Covers are placed on both the left and right sides of the machines for easy chip removal and maintenance.

# Optional Accessories

## Ez Tool Station

VC-Ez Series machines incorporate Mazak's Ez Tool Station to store tools outside the machine, often eliminating the need for separate tool carts.



## NC Rotary Table

A fourth axis rotary table allows for processing multiple operations in one setup.



## Automatic Tool Length Measuring

A plunger style tool length measuring device.



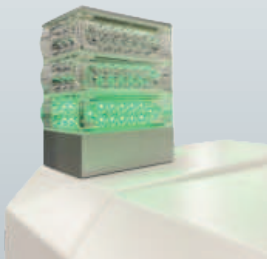
## Programmable Coolant

Programmable coolant nozzles are adjusted from outside the machine to direct the coolant stream to a desired position to optimize chip evacuation while machining.



## Three-Color Status Light

Three colors to indicate the machine's current operating status. Green is normal operation. Yellow is a warning condition. Red is alarm, non-running condition



## Telescopic Air Nozzle

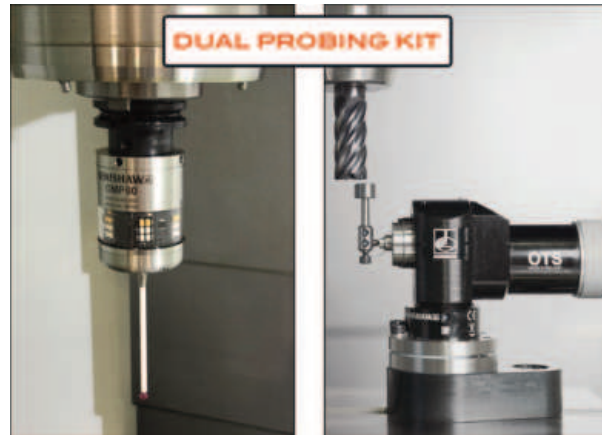
The air nozzle extends when air blast is actuated. The nozzle concentrates air to a desired position optimizing chip evacuation while machining.

(Programmable coolant sold separately)



## Workpiece Touch Probing

Contact-style touch probes decrease setup time while allowing operators to inspect workpieces before removal from the machine.



## Automatic Tool Setter

The addition of a contact tool setter can reduce set-ups by measuring both tool length and diameter. In-process measurements can also be accomplished for unattended part processing.

## Automation

### Custom Solutions

Mazak Automation Systems department can custom design a system that's right for your application. Additional options necessary to integrate automation on your new VC-Ez machine are also available.

- \* robot interface
- \* auto door
- \* electrical and mechanical fixture interface

Various other software options are also available to make sure that your custom system performs at the highest level.

### COBOT

Easy installation and setup makes the COBOT automation cell a great choice for shops looking for unattended operation. This factory-supplied solution ensures that the COBOT and machine work together flawlessly from the start pattern to guide with programming the cobot. This easy-to-access system uses a continuous area monitoring scanner for a safe and open operating environment.



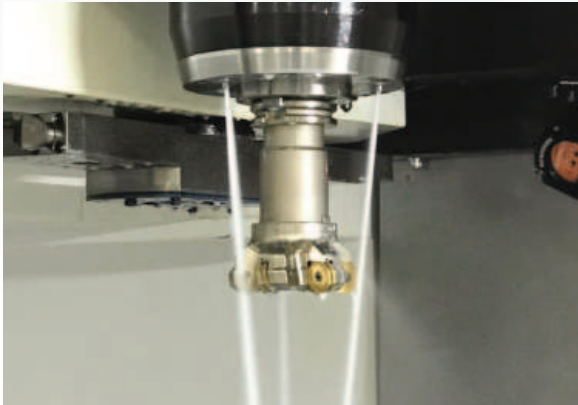
VC-Ez 20 with COBOT Mill-Assist

# Optional Accessories

## Coolant/Chip Removal Options

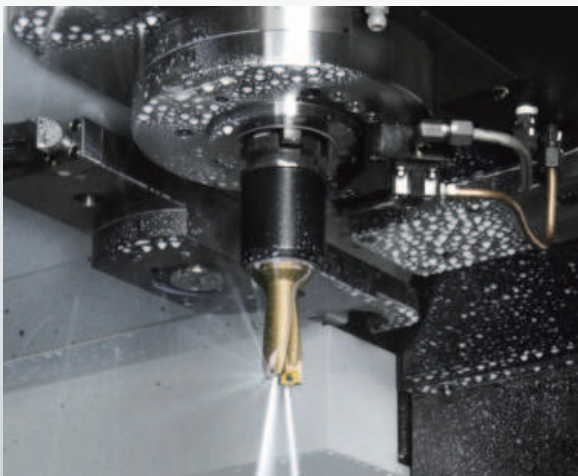
### Flood Coolant

Coolant flows from nozzles in the spindle face, helping to remove chips, reduce temperature and friction on the workpiece. Flood coolant of 64 psi is standard with an option of 100 psi.



### Through-Spindle Coolant

Through-spindle coolant along with ported tooling gives a concentrated flow of coolant for added chip removal, heat dissipation and lubrication. Pressure is offered in three options: 71 psi, 213 psi or 1,000 psi.



### Through-Spindle Air Blast

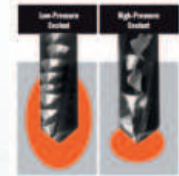
Shop air is funneled through the spindle taper for use with ported tooling. Air pressure at the cutting edge displaces previously cut chips, dramatically improves tool life and surface finish for dry cutting applications.

### Mazak SUPERFLOW 1,000 psi

Using high-pressure coolant and ported tooling boosts productivity while maximizing tool life. Three main factors drive the productivity of increased tool life, repeatable tool wear and cutting condition maximization.

- **HEAT**

Normal flood coolant may fail to reach the shear zone due to high temperatures, while high-pressure coolant ensures delivery to the cutting edge.

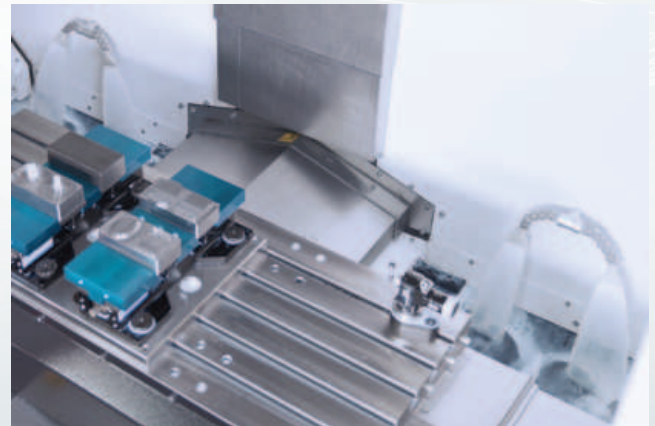


- **CHIP CONTROL**

High-pressure coolant delivered to the cutting zone helps reduce chip size, and safely evacuates chips.

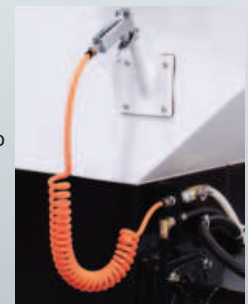
- **LUBRICITY**

Mazak SUPERFLOW forces coolant delivery between the tool and workpiece, improving lubricity, tool life and surface finishes.



### Cover Coolant Including Handheld Coolant Nozzle

Cover coolant disperses cutting chips that accumulate from material removal. Efficient removal of cutting chips extend maintenance periods. This option comes standard with 71 psi and is upgradeable to 213 psi. The included handheld coolant nozzle is ideal for cleaning chips from workpieces and the entire interior of the machine.





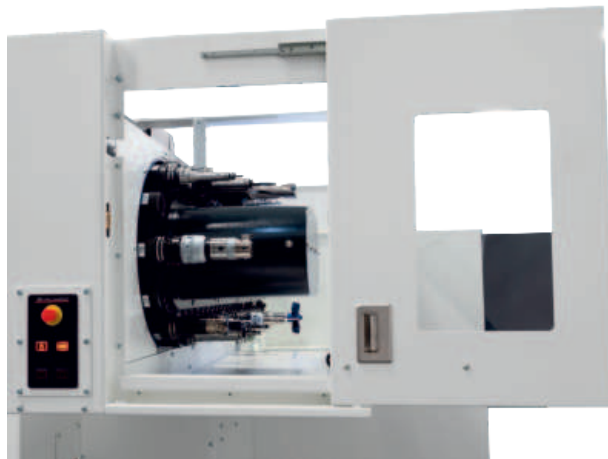
## Mist Collector

Reclaiming the mist generated in VC-Ez Series machines is critical to maintain a healthy and productive machining environment for operators. Systems are sized to each specific model to ensure proper operation. Direct machine mount or free-standing pedestal designs are offered.



## Easy Tool Magazine Access

VC-Ez machines have an optional magazine access door to load and unload tools outside the cutting area. The VC-Ez 32 is equipped with stairs and handrails to provide safe and easy access to the standard tool magazine door.



## Spiral Auger Conveyor

This chip management solution eliminates the need to manually remove chips from the machine. This option is ideal for long chipping material (standard on VC-Ez 32).



## Chip Conveyor (Hinge Type)

Further reduces chip related maintenance interruptions and are ideal for evacuating higher-volume curled iron-based chips.



# MAZATROL SmoothEz Control

An intuitive, 15" capacitive touchscreen HMI coupled with a dual core, 800MHz processor combines unparalleled power with ease of use.

MAZATROL  
**SMOOTH*Ez***



## Five informative process home screens

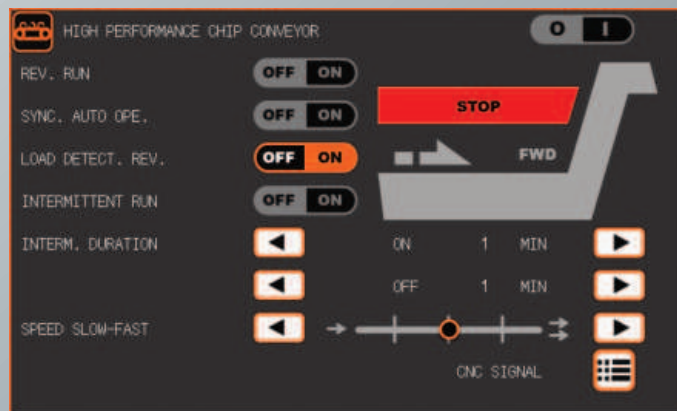
The process home screens were developed to place commonly used functions required for machine operation and maintenance in one convenient location.



## MAZATROL *SMOOTH EZ*

### High performance chip conveyor interface

Our GUI interface gives operators control of their chip management solution. Reducing coolant loss and downtime due to chip related issues creates higher productivity and decreased maintenance.



# Programming

## MAZATROL Interactive programming

MAZATROL interactive programming uses common language, so you can easily create and edit programs simply by entering data from a part drawing. Inexperienced operators can quickly learn to create programs by utilizing preset cutting conditions and automatic tool path creation.



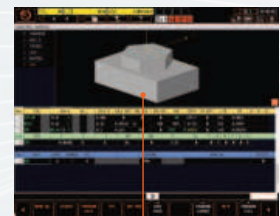
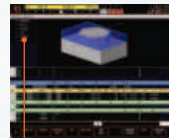
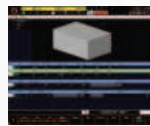
### QUICK MAZATROL

Patent pending

MAZATROL  
**SMOOTH**

### Interactive programming reduces time

QUICK MAZATROL offers the programmer/operator the option to see - in real-time - a 3D model of the finished workpiece as they create the program. This reduces errors that are usually not found until the actual machining has occurred. Once the program has been created, one can easily modify features on the workpiece by simply touching the desired MAZATROL unit and making the edits.



Touching a feature in the UNIT LISTING will highlight the feature in the 3D model and instantaneously take you to the corresponding MAZATROL machining unit in the program. Once there, you can edit the machining unit or navigate freely.

Displays a real-time 3D model of the processed workpiece based on the program.

### SMOOTH CAM AI

Option

SMOOTH  
CAM AI

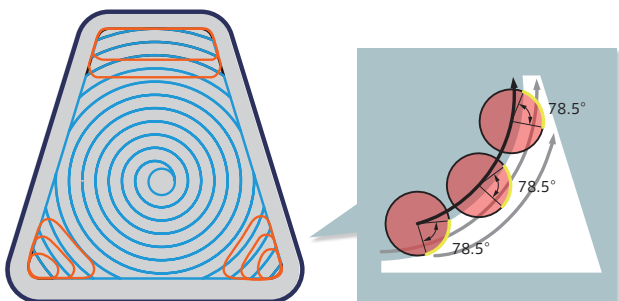
Used for off-line programming and simulation of both EIA/ISO and MAZATROL programs.

- Tool path check (VIEW SURF)
- Interference check, time study (virtual machining)
- SOLID MAZATROL
- DIGITAL TWINS capable



## Intelligent Pocket Milling

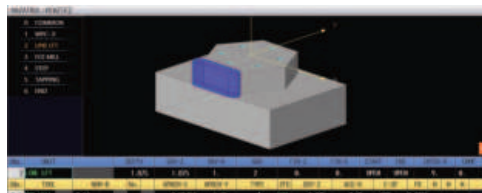
Intelligent Pocket Milling is a MAZATROL pocket machining cycle, which calculates a constant contact angle between the tool edge and the workpiece material. This Intelligent path controls spindle and axis fluctuations, extending tool life and improving machining efficiency especially in hard-to-machine materials.



## Line Machining

Previous MAZATROL programs for line machining required the programmer to create multiple units to allow for radial step-over to create the required shape. Our SmoothG control is able to accomplish this in one unit with easy program inputs.

Conventional program screen



## VFC Function

While running a MAZATROL program and changing the speed and/or feed overrides during an operation the operator can press the VFC key and the control then learns the altered cutting conditions and writes those to the current MAZATROL program.



## MAZAK MT TABLET Option MAZATROL SMOOTH<sub>EZ</sub>

The optional MT-Tablet provides a 10" HD display. This Windows 10 IoT based interface allows access to various productivity apps.

- MTConnect®
- MAZAK SMOOTH LINK
- MAZAK Manual Viewer
- MAZAK Program Transfer

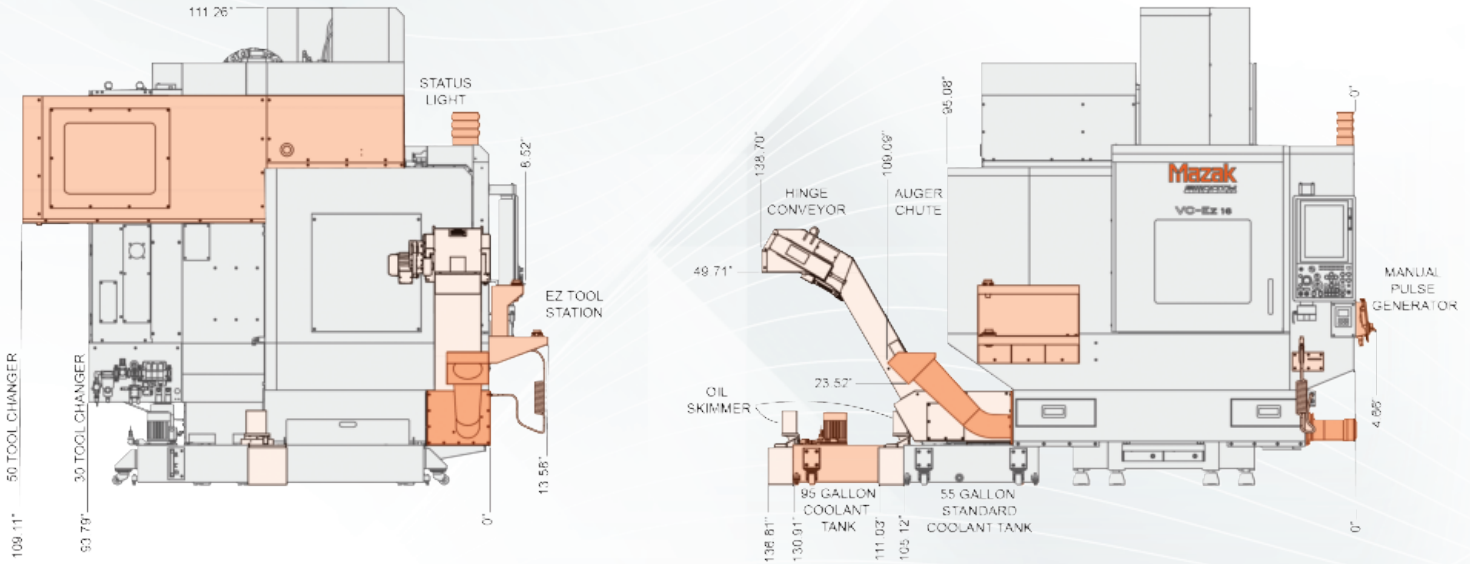
MT TABLET packages contain a one-year subscription to one of three popular CAM softwares.



# External Dimensions – VC-Ez 16, 20 & 26

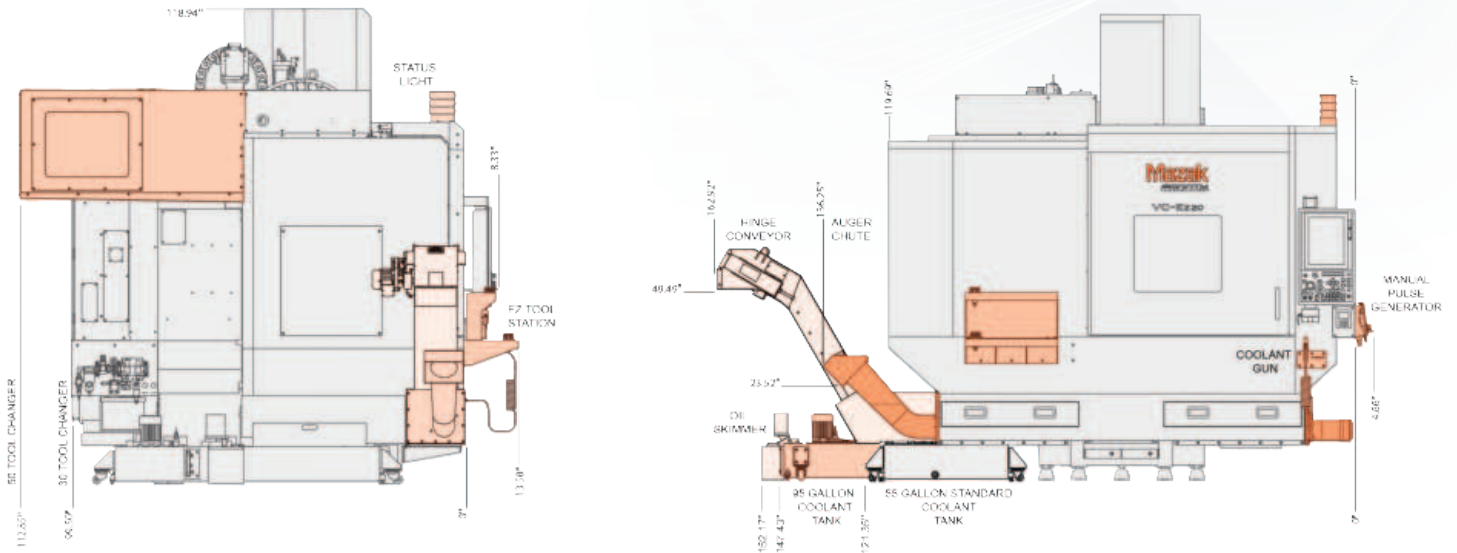
(FOR REFERENCE ONLY)

## VC-Ez 16

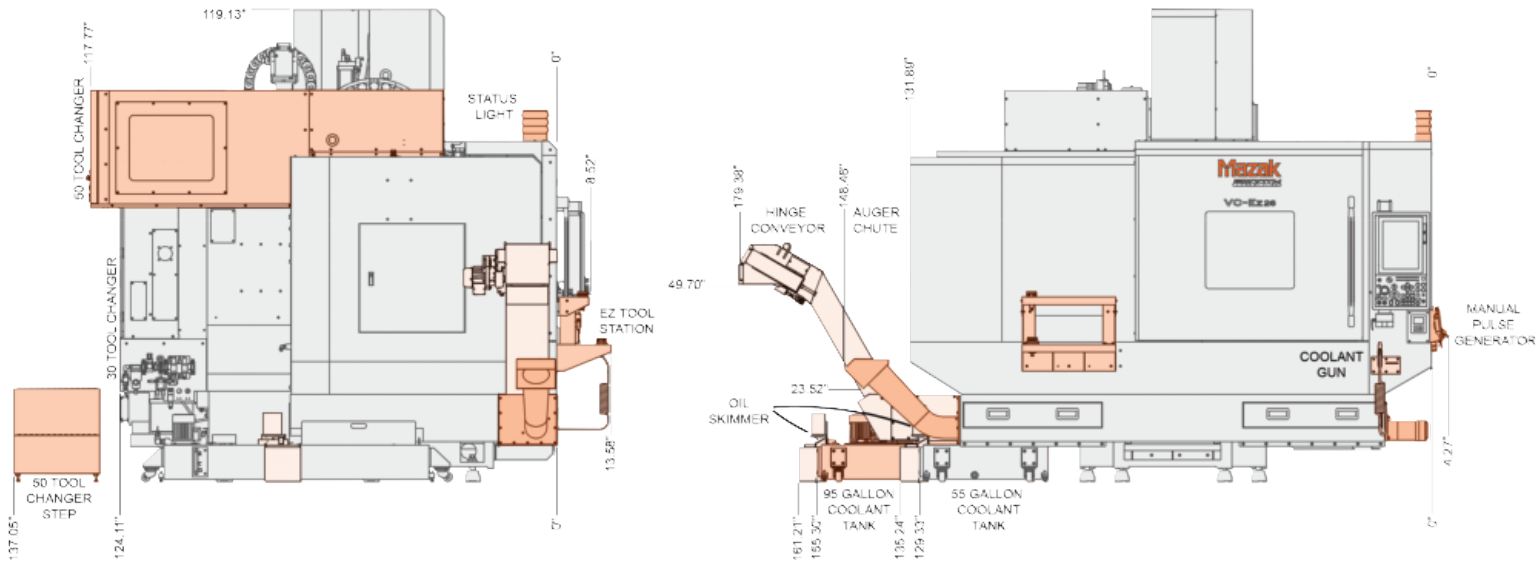


## VC-Ez 20

Orange shaded areas represent optional equipment

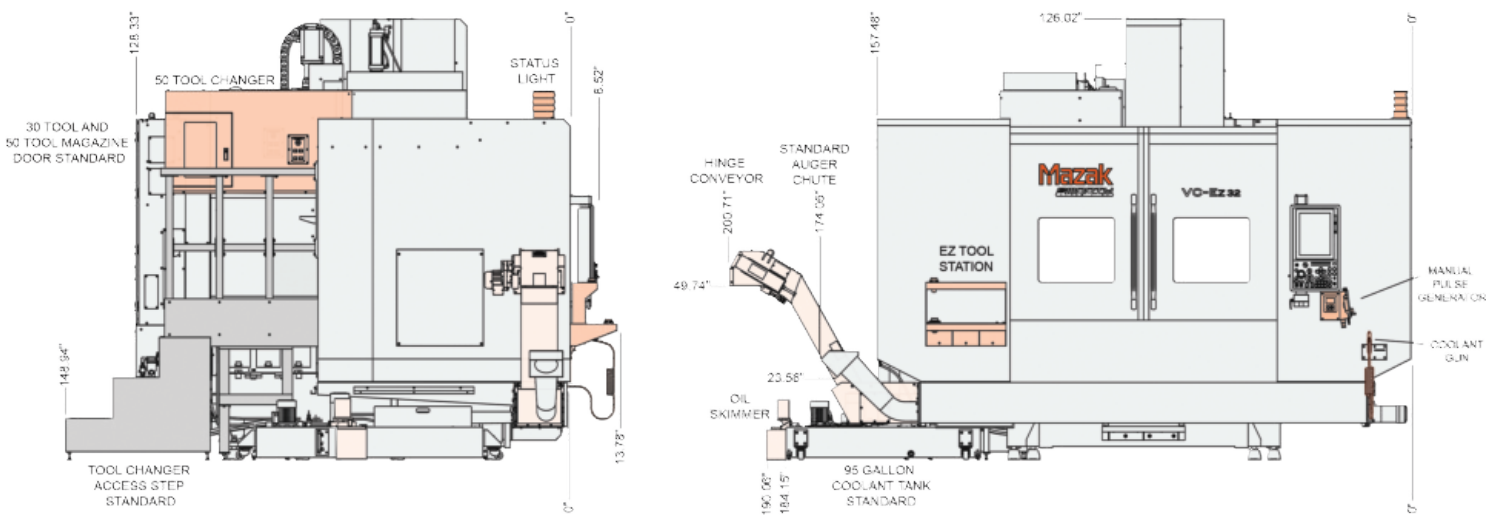


# VC-Ez 26



# VC-Ez 32

Orange shaded areas represent optional equipment



# Machine Specifications – VC-Ez

Capacity	Table width	in (mm)
	Table depth	in (mm)
Table Weight Capacity	Table Weight Capacity	lbs (kg)
Spindle Face to Table Surface	Min - Max	in (mm)
Rapid Rates	Rapid Rates	ipm
Spindle	Spindle Taper	
	Maximum Speed	rpm
	Maximum Speed (Optional Spindle)	rpm
	Motor Output	hp (kw) (5-minute rating)
	Motor Output (Optional Spindle)	hp (kw) (10% ED)
	Torque	ft-lbs (N-m)
	Torque (Optional Spindle)	ft-lbs (N-m)
Magazine	Number of Tools	Standard (Optional)
Feed Axes	Travel (X Axis)	in (mm)
	Travel (Y Axis)	in (mm)
	Travel (Z Axis)	in (mm)
Maximum Tool Diameter	Without adjacent pockets empty	in (mm)
	With adjacent pockets empty	in (mm)
Maximum Tool Length		in (mm)
Maximum Tool Weight		lbs (kg)
Tool Change Time	Tool to tool	sec
Dimensions	Machine Depth	in (mm)
	Machine Width	in (mm)
	Machine Height	in (mm)
	Machine Weight	lbs (kg)



VC-Ez 16	VC-Ez 20	VC-Ez 26	VC-Ez 32
37.40 (950)	49.21 (1,250)	55.12 (1,400)	64.17 (1,630)
14.17 (360)	19.37 (492)	24.02 (610)	28.35 (720)
1,543 lb (700)	2,204 (1,000)	3,306 lb (1,500)	4,078.6 (1,850)
3.93 (100) - 24.01 (610)	3.93 (100) - 28.93 (735)	3.93 (100) - 28.93 (735)	3.93 (100) - 34.05 (865)
1,417	1,654	1,417	1,259
CAT-40			
12,000			
15,000			
25 (18.5)			
29.5 (22)			
70.4 (95.5)			
81 (110)			
30 (50)			
30.00 (762)	41.34 (1,050)	50.00 (1,270)	64.17 (1,630)
16.14 (410)	20.08 (510)	25.98 (660)	32.08 (815)
20.08 (510)	25.00 (635)		30.12 (765)
2.95 (75)			
5.91 (150)			
13.78 (350)			
17.64 (8)			
2.2			
101.7 (2,588)	107.81 (2,738)	119.43 (3,043)	157.48 (4,000)
95.08 (2,415)	119.68 (3,040)	131.89 (3,350)	157.48 (4,000)
111.26 (2,826)	118.94 (3,021)	121.89 (3,096)	126.11 (3,203.3)
10,582 (4,800)	12,786 (5,800)	16,976 (7,700)	24,471 (11,100)

# Mazak MPower



To maximize machine tool investment, Mazak MPower provides the most-comprehensive support in the industry. MPower takes complete customer care to the next level, giving manufacturers the tools they need to achieve their business goals and ensure continued success.

## SINGLE-SOURCE SERVICE

MPower is a single point of contact for any Mazak-related service need, allowing customers to maintain the highest levels of productivity. MPower benefits include:

- Free technical phone support and software updates for the life of every Mazak machine
- Guaranteed phone response to any technical question within one hour through our 24/7 technical phone support system
- Services that include laser calibration to ISO, ANSI and JIS standards, ball bar qualification/analysis, vibration analysis/benchmarking and preventive maintenance plans and programs
- More than 350 factory trained representatives and certified distributor personnel available within 24 hours under most circumstances for onsite service

## TECHNICAL SUPPORT – MACHINE AND CNC

Comprehensive two-year warranties on every Mazak machine tool include local support from a network of Technology and Technical Centers along with expert support through Mazak's Remote Assist Service that:

- Allows technicians to interact with connected devices to communicate and send work instructions to the customer
- Eliminates in-person diagnostic visits to avoid lengthy downtime
- Shortens repair time and reduces costs of in-person field service

## PARTS SUPPORT

Mazak's North American Parts Center provides 24/7 access to more than 500,000 unique part numbers in stock with:

- Average 97% same-day parts shipment and same-day shipping
- Next day deliveries
- Experienced call center part specialists available Monday-Saturday
- Digital connectivity via PartsWeb for pricing and online parts images
- Lifetime CNC parts support

## TRAINING

Take a self-paced course through our MPower On-Demand Learning (MODL) system, schedule an in-person class at one of our Technology or Technical Centers, or sign up for a customized seminar in your shop.

- Select subject matter from more than 100 multi-level courses
- Access essential courses anytime, anywhere
- Custom-tailor training programs, schedule classes to fit your schedules and adapt classes to suit your team's learning level

## SPINDLE AND UNIT REBUILD

Cost-effective Spindle Rebuilding Services are included under the MPower umbrella, raising the bar in efficiency and quality in OEM-factory-certified spindle rebuild services with:

- Support for 2,000 machine tool spindle models and a wide range of horsepower and speeds
- More than 1,000 rebuilt spindles in stock ready for exchange
- Average three to five days spindle rebuild turnaround time

# Mazak Capital Equipment Financing (MCEF)

MCEF is a one-stop choice for manufacturers throughout the United States who want fast, hassle-free, low-cost financing on Mazak equipment. Our knowledge of Mazak's product portfolio results in factory terms that can work to your advantage. Plus, with our direct access to machine specifications, delivery schedules and installation dates, we work to reduce additional paperwork or delays in the approval or shipment process.

## MCEF benefits:

- Provides flexible, timely and competitive financing for companies of all sizes
- Offers a one-stop, seamless purchasing experience with direct access to delivery and installation schedules
- Obtains application approvals quickly (often within 24 hours)
- Creates customized financing programs to meet your specific requirements
- Preserves bank credit lines for working capital for your company's growth

## Mazak Capital Equipment Financing

6850 Industrial Road  
Florence, Kentucky 41042

Phone Number: (859) 342-1311

Toll Free Number: (877) 634-5521

Fax Number: (859) 342-1502

Email: [financing@mazakcorp.com](mailto:financing@mazakcorp.com)

Send confidential files through our  
Secure File Transfer (SFT)



# Mazak

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