

QUICK TURN NEXUS 500 AND 550

PROCESS LONG, LARGE PARTS AT FULL FORCE

Perfect for the oil and gas and heavy equipment industries, the QUICK TURN NEXUS (QTN) 500 and 550 CNC turning centers get aggressive when it comes to productively processing long, large parts from titanium, Inconel®, nickel-base superalloys and other challenging materials.

Big on speed, power and precision, these machines also pack extreme versatility in that they are available in 2-axis and Multi-Tasking configurations, which include on and off-centerline milling and drilling as well as several spindle bore sizes for large-diameter turning.

With such a diverse range of high-performance capabilities, QTN 500 and 550 machines make it easy to find the perfect technology fit for your heavy-duty manufacturing requirements, whether it's processing pipe or cutting specialty threads.

MACHINE CONFIGURATIONS

- QTN 500
- QTN 500 M
- QTN 500 MY
- QTN 550
- QTN 550 M
- QTN 550 MY

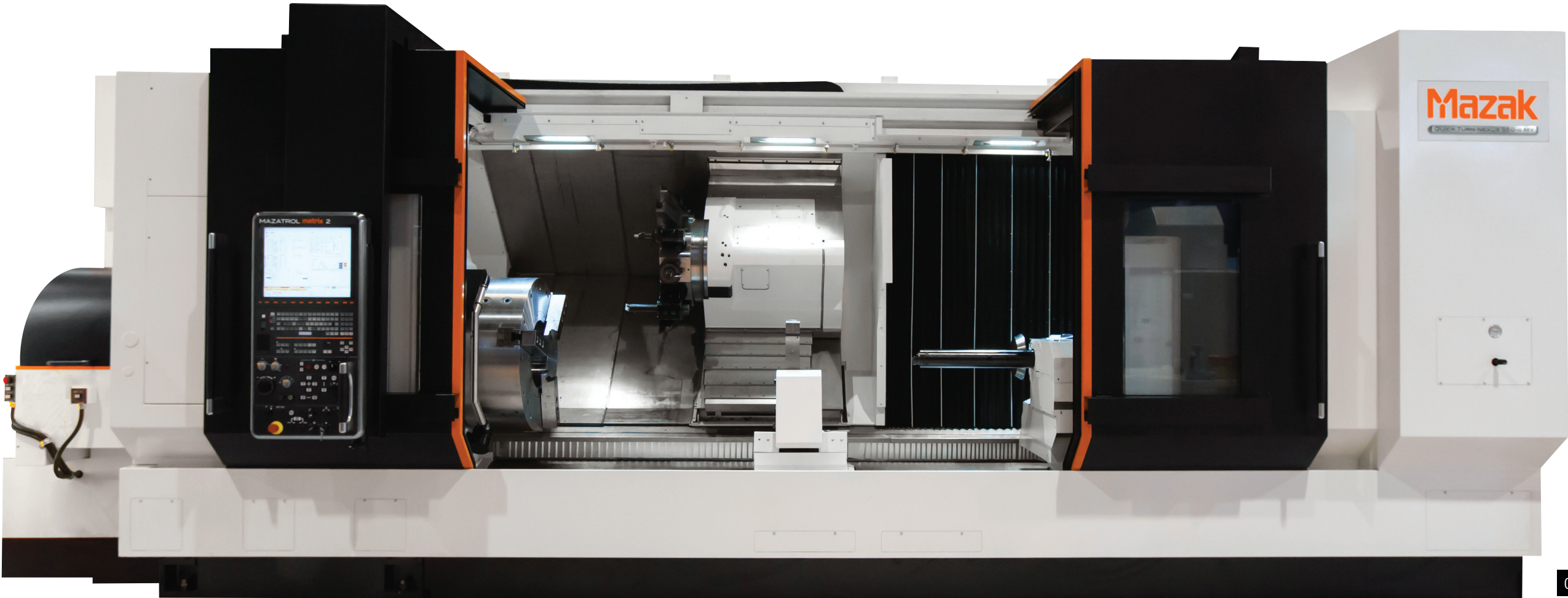
M = Upper Turret with Rotary Milling
Y = Y-axis Capability
LBB = Long Boring Bar*

*Available tailstock option for all machines.

IT TAKES ALL TYPES

Success in heavy-duty large part manufacturing means having the right machine with the highest possible performance for your exact needs at the lowest possible operating costs. That's why we offer the QTN 500 and 550 in several different configurations and with a variety of productive features.

- Advanced gear-driven spindle/motor headstocks provide extreme rigidity
- Spindle through-bore sizes ranging from 7.2" to 14.7" offer machining versatility
- Spindles offer C-axis indexing for high positioning accuracy and contouring
- Massive 15-position drum turrets reduce machine non-cut times in 2-axis operations
- 12-position live tooling capabilities with C-axis control provide Multi-Tasking functionality
- Y-axis capabilities allow for multiple operations on a single machine
- CNC programmable tailstocks provide simple, precise and automatic control of the Z-axis
- Mazak MX Hybrid Roller Guide Systems deliver durability and reliability for long-term accuracy
- Standard tool eye systems automatically detect tool wear and damage
- Optional rear-mounted chucks provide stable support and accurate workholding of long parts
- Optional long boring bar tailstocks achieve deep-hole boring depths in tubing and pipe
- Advanced CNC technology offers easy programming, fast job set up and increased accuracy



QUICK TURN NEXUS 550 MY with LBB

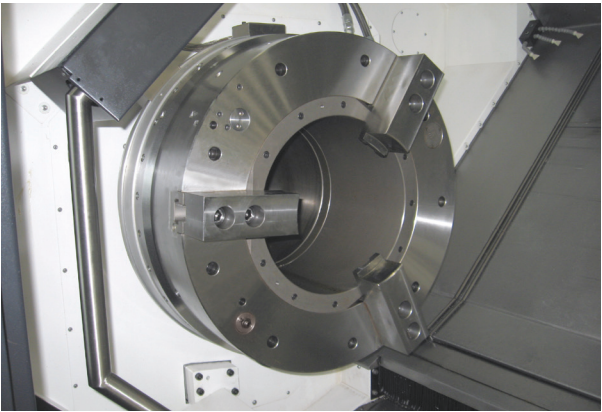
POWER AND RIGIDITY

ADVANCED HEADSTOCK AND SPINDLE DESIGN

QTN 500 and 550 machines feature strong, stable gear-driven spindle/motor headstocks that bring extreme rigidity and excellent torque to heavy metal removal applications.

A broad spindle selection makes it possible to process various part shapes and sizes from a variety of challenging materials. Maximum spindle speeds range from 500 to 1,500 rpm and spindle-bore sizes from 7.2" to 14.7" make for productive large-diameter turning.

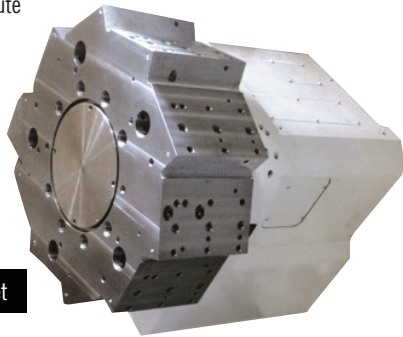
Additional versatility comes from being able to use the spindles for C-axis indexing in 0.0001-degree increments, which results in extremely accurate part positioning and contouring.



EXTREME EFFICIENCY

MASSIVE TURNING TURRET

QTN 500 and 550 2-axis machines use a massive non-lift, servo-driven 15-position drum turret that indexes at extremely high speeds to reduce machine non-cut times. The turret also features the shortest route random tool selection in automatic mode as well as bidirectional tool indexing in manual mode.

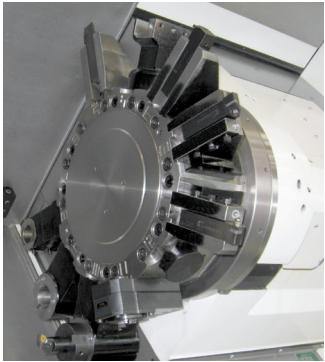


Standard Turret

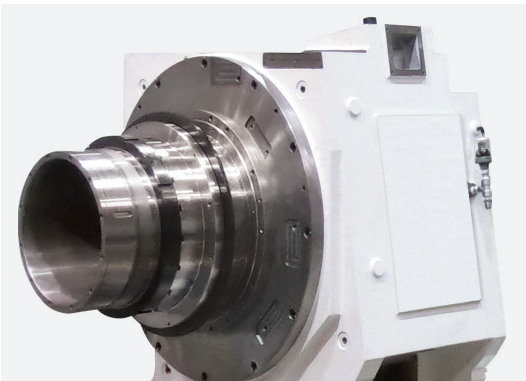
HIGH PRODUCTIVITY

MULTI-TASKING TURRET

QTN 500 and 550 M and MY machines employ an upper turret with live tooling capabilities to perform secondary operations including milling and drilling. The turret allows static and rotary tools with VDI-type shanks to mount in any position. And unlike other designs, it can change tools, together with tool holders, in one operation. The turret also quickly indexes at speeds of 0.4 sec/1 step thanks to a powerful AC servomotor.



Multi-Tasking Turret



ELIMINATE BACKLASH

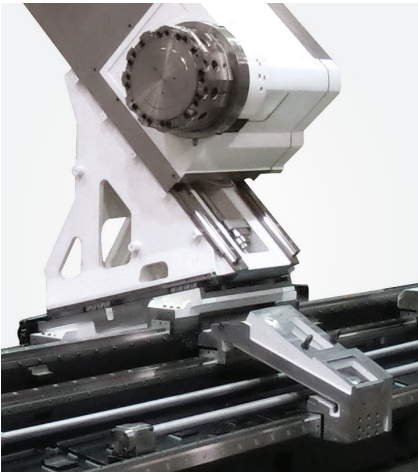
ROLLER GEAR CAM TECHNOLOGY

Both turret types feature unique roller gear cam technology to achieve fast, highly accurate machining performance, especially during C-axis contouring operations. In fact, Mazak engineered this technology to ensure zero backlash, high rigidity and extreme efficiency in heavy-duty, high-production applications.

SMOOTH MOVES

DOUBLE-SLIDE Y-AXIS CONSTRUCTION

QTN 500 and 550 MY configurations deliver a rigid, precise Y-axis motion thanks to a double-slide construction that easily withstands strong cutting forces. With Y-axis capability, these machines can perform multiple operations in a single setup for an overall increase in throughput and part accuracy. Keyway finishing, off-centerline O.D. drilling and additional tool capacity are also benefits of having a Y-axis.



PRECISE SUPPORT

CNC PROGRAMMABLE TAILSTOCK

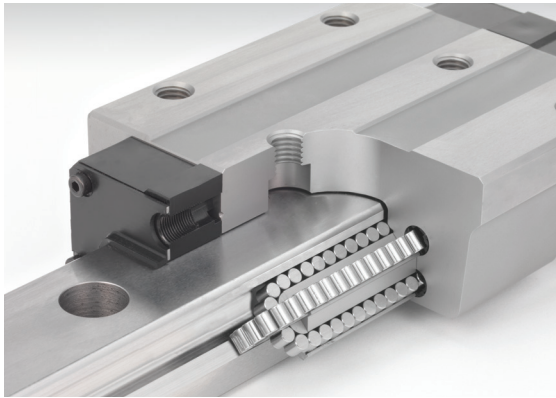
QTN 500 and 550 machines come standard with a CNC programmable ballscrew-driven tailstock that provides simple, precise and automatic control of the Z-axis's directional movement and thrust force settings.

An electronic AC servomotor enables the tailstock to generate consistent holding pressure for supporting long, heavy workpieces and ensuring turning accuracy. Equipped with a built-in center, the tailstock also provides fast, safe movement at low and high speeds.

SPEED AND ACCURACY

INNOVATIVE WAY SYSTEM

Mazak's MX Hybrid Roller Guide System brings high levels of accuracy and durability to QTN 500 and 550 machines. The innovative way system increases vibration damping, extends tool life as well as accelerates/decelerates at fast speeds to shorten cycle times.



TOOL WEAR DETECTION

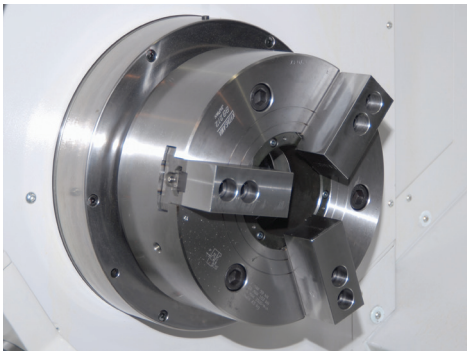
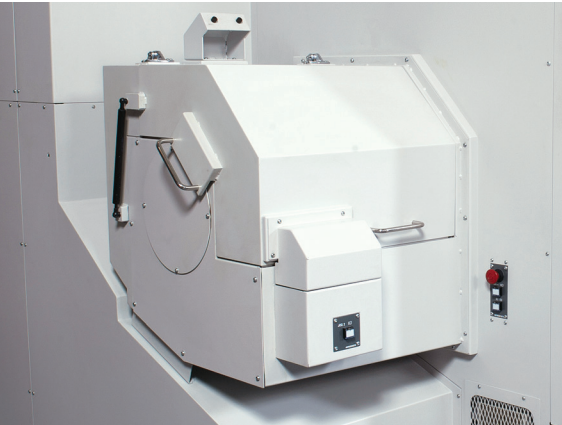
STANDARD TOOL EYE

Each QTN 500 and 550 machine features a standard tool eye that automatically measures tool tip positions to detect for tool wear and damage, ensuring part accuracy during continuous machining operations.

PART STABILITY

OPTIONAL REAR-MOUNTED CHUCKS

Optional rear-mounted chucks are available for all QTN 500 and 550 machines to provide stable support and accurate workholding of long bar and pipe workpieces during machining operations. Rear chuck preparation, which includes an optional interlocked hinged chuck cover, is also available to make it safe and easy for operators to access the rear-mounted chucks for setup and changeover.



DEEP-HOLE BORING

OPTIONAL LONG BORING BAR (LBB) TAILSTOCK

The optional LBB tailstock that is available for all QTN 500 and 550 machines features a bull nose center and extended length boring bar. Such a combination makes it possible to achieve deep-hole boring depths up to 46", which provides a productive edge when processing long, large-diameter tubing and pipe.

EASY PROGRAMMING

MATRIX NEXUS 2 CNC

- QTN 500
- QTN 500 M
- QTN 500 MY
- QTN 550
- QTN 550 M
- QTN 550 MY

The MATRIX NEXUS 2 CNC simplifies operations for parts requiring angled drilling, milling or tapping. With unequalled innovation for conversational programming, the control incorporates a wide variety of advanced features for high-speed, high-accuracy machining and an overall increase in productivity.



ADVANCED FUNCTIONALITY

MATRIX 2 CNC

- All QTN 500 and 550 Configurations with an Optional Long Boring Bar Tailstock

The MATRIX 2 CNC provides extremely fast processing speed, excellent cornering, superior part surface finishes and reduced cycle times. Through advanced hardware and software functionality, the control brings high accuracy and increased productivity to highly complex applications requiring Multi-Tasking operations, full simultaneous 5-axis machining and the incorporation of automation.

MACHINE SPECIFICATIONS

			QUICK TURN NEXUS 500	QUICK TURN NEXUS 550		
Capacity	Chuck Size		21 in	24 in		
	Maximum Swing		46.33 in / 1,177 mm			
	Machining Diameter (Standard)		22.4 in / 570 mm			
	Machining Diameter (Maximum)		26.37 in / 670 mm			
	Bar Work Capacity ¹		7.2 in / 184 mm	10.7 in / 275 mm	12.5 in / 319 mm	14.7 in / 374 mm
	Maximum Support Weight ²	Chuck Work	9,480 lbs / 4,300 kg	13,227 lbs / 6,000 kg		
Shaft Work		6,600 lbs / 3,000 kg	6,613 lbs / 3,000 kg			
Spindle	Spindle Speed ³ (m -1)		1,500	1,000	750	500
	Spindle Nose		A2-15"	A2-20"		
	Spindle Through Hole		7.2 in / 185 mm	10.8 in / 275 mm	12.5 in / 320 mm	14.7 in / 375 mm
	Motor Output (30 min./Cont.)		60/45 kW	60/45 kW	60/45 kW	60/45 kW
	Maximum torque		4,278 ft-lbf / 5,800 Nm	5,163 ft-lbf / 7,000 Nm		
Tailstock	Center Bore		MT No. 6			
	Travel (Tailstock) ⁴	3000u	96.5 in / 2,455 mm			
		4000u	135.5 in / 3,455 mm			
	Maximum thrust		N/A			
Turret	Number of Tools		15 (Outer Position: 10, Inner Position: 5)			
	Tool Size	Outside Turning	1-1/4 x 6 in / 32 x 150 mm			
		Inside Turning	Ø2-1/2 in / 63 mm			
		Rotary Drill	N/A			
		Rotary End Mill	N/A			
		Rotary Tap	N/A			
	Milling Spindle Motor Output (standard/option) (10-min. rating)		N/A			
Milling Spindle Speed (standard/option) (m -1)		N/A				
Feed Axes	Rapid Traverse	X	787 IPM / 20 m/min			
		Z	3000u	945 IPM / 24 m/min		
			4000u	945 IPM / 24 m/min		
	Travel	X	22.75 in / 575 mm			
		Z	3000u	120.875 in / 3,068 mm		
			4000u	164.675 in / 4,190 mm		
Others	Power requirement (Cont./30 min.)		95/115 kVA			
Total Size	Overall Dimensions	Center Height	49.6 in / 1,260 mm			
		Width ⁵	123.7 in / 3,150 mm			
		Height	121.3 in / 3,080 mm			
		Length	3000u	338.3 in / 8,610 mm		
			4000u	379.9 in / 9,650 mm		
	Floor Space Required (Maintenance Area)	3000u	569.4 ft² / 52.9 m²			
		4000u	617.8 ft² / 57.8 m²			
	Machine Weight (with Steady Rest)	4000u	67,380 lbs / 30,563 kg			

1 When not using draw tube.
2 Includes the mass of chuck. Rigidity and supporting force of the work piece holding device is not taken into consideration. Bearing life could be influenced by balance during rotation, machining conditions. The center of gravity of a work piece is within 15.75 in (400 mm) from the spindle nose. This varies depending on chuck specifications.
3 This varies on chuck specifications.
4 In case the machine with a steady rest, tailstock travel is as follows.
5 Excluding operation panel.

QUICK TURN NEXUS 500 M	QUICK TURN NEXUS 550 M				QUICK TURN NEXUS 500 MY	QUICK TURN NEXUS 550 MY			
21 in	24 in				21 in	24 in			
46.33 in / 1,177 mm					46.33 in / 1,177 mm				
15.1 in / 385 mm					15.1 in / 385 mm				
35.7 in / 910 mm					35.7 in / 910 mm				
7.2 in / 184 mm	10.7 in / 275 mm	12.5 in / 319 mm	14.7 in / 374 mm		7.2 in / 184 mm	10.7 in / 275 mm	12.5 in / 319 mm	14.7 in / 374 mm	
9,480 lbs / 4,300 kg	13,227 lbs / 6,000 kg				N/A	13,227 in / 6,000 mm			
6,600 lbs / 3,000 kg	6,613 lbs / 3,000 kg				N/A	6,613 in / 3,000 mm			
1,500	1,000	750	500		1500	1000	750	500	
A2-15"	A2-20"				A2-15"	A2-20"			
7.2 in / 185 mm	10.8 in / 275 mm	12.5 in / 320 mm	14.7 in / 375 mm		7.2 in / 185 mm	10.8 in / 275 mm	12.5 in / 320 mm	14.7 in / 375 mm	
60/45 kW	60/45 kW	60/45 kW	60/45 kW		60/45 kW	60/45 kW	60/45 kW	60/45 kW	
N/A					N/A				
MT No. 6					MT No. 6				
96.5 in / 2,455 mm					96.5 in / 2,455 mm				
135.5 in / 3,455 mm					135.5 in / 3,455 mm				
6,744 lbf / 30,000 N					6,744 lbf / 30,000 N				
12					12				
1-1/4 in / 32 mm					1-1/4 in / 32 mm				
Ø2 in / 50 mm					Ø2 in / 50 mm				
Max: Ø0.98 in / 25 mm					Max: Ø0.98 in / 25 mm				
Max: Ø0.98 in / 25 mm					Max: Ø0.98 in / 25 mm				
Max: M24 (1UNI x 3.0)					Max: M24 (1UNI x 3.0)				
7.5/11 kW					7.5/11 kW				
4,000/3,000					4,000/3,000				
787 IPM / 20 m/min					787 IPM / 20 m/min				
945 IPM / 24 m/min					945 IPM / 24 m/min				
945 IPM / 24 m/min					945 IPM / 24 m/min				
22.75 in / 575 mm					22.75 in / 575 mm				
120.875 in / 3,068 mm					120.875 in / 3,068 mm				
164.675 in / 4,190 mm					164.675 in / 4,190 mm				
95/115 kVA					95/115 kVA				
49.6 in / 1,260 mm					49.6 in / 1,260 mm				
123.7 in / 3,150 mm					123.7 in / 3,150 mm				
121.3 in / 3,080 mm					121.3 in / 3,080 mm				
338.3 in / 8,610 mm					338.3 in / 8,610 mm				
379.9 in / 9,650 mm					379.9 in / 9,650 mm				
569.4 ft² / 52.9 m²					569.4 ft² / 52.9 m²				
617.8 ft² / 57.8 m²					617.8 ft² / 57.8 m²				
67,380 lbs / 30,563 kg					67,380 lbs / 30,563 kg				

WE'VE GOT YOUR BACK

UNMATCHED SERVICE AND SUPPORT RESOURCES

We believe in working closely with each of our customers to increase their productivity, efficiency and equipment utilization, and we are able to do so through our Technology Centers and Optimum Plus total support program.



MAZAK NATIONAL TECHNOLOGY CENTER & CENTER FOR MULTI-TASKING AND MANUFACTURING EXCELLENCE
Florence, KY



Technology Centers

Our eight Technology Centers spread across North America provide easy access to the latest, most advanced manufacturing systems for optimizing your part-production processes. You can also take advantage of each location's industry expertise, training programs and application resources to achieve improved throughput, shorter production lead times and increased profitability.



MAZAK WESTERN REGIONAL HEADQUARTERS AND TECHNOLOGY CENTER (AEROSPACE FOCUS)
Gardena, CA

MAZAK SOUTHWEST REGIONAL HEADQUARTERS AND TECHNOLOGY CENTER (ENERGY FOCUS)
Houston, TX

MAZAK MEXICO TECHNOLOGY CENTER
Monterrey, Mexico

MAZAK CORPORATION CANADA HEADQUARTERS AND TECHNOLOGY CENTRE
Cambridge, Ontario

MAZAK NORTHEAST REGIONAL HEADQUARTERS AND TECHNOLOGY CENTER (MEDICAL FOCUS)
Windsor Locks, CT

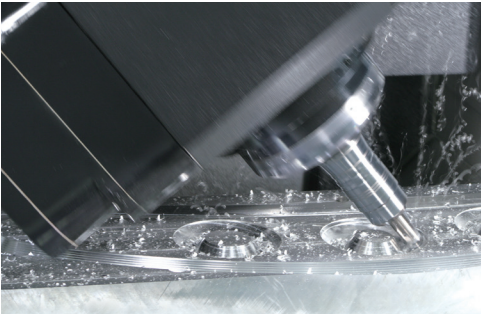
MAZAK MIDWEST REGIONAL HEADQUARTERS AND TECHNOLOGY CENTER
Schaumburg, IL

MAZAK SOUTHEAST REGIONAL HEADQUARTERS AND TECHNOLOGY CENTER
Suwanee, GA

Optimum Plus

This total support program represents our company-wide commitment to helping you maximize the value of your Mazak purchase, achieve the best possible competitive advantage and keep your equipment running smoothly at all times.

The program encompasses five distinct areas to ensure complete customer care.



SINGLE-SOURCE SERVICE

We are your single point of contact for any Mazak-related service need, whether it involves a machine, control, accessory or automation solution.



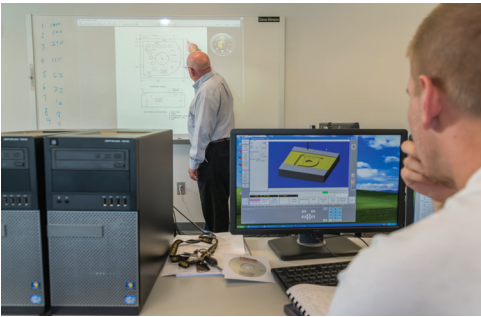
MACHINE & CNC SUPPORT

Every Mazak machine comes with a comprehensive warranty, free technical phone support and software upgrades for the entire life of the product.



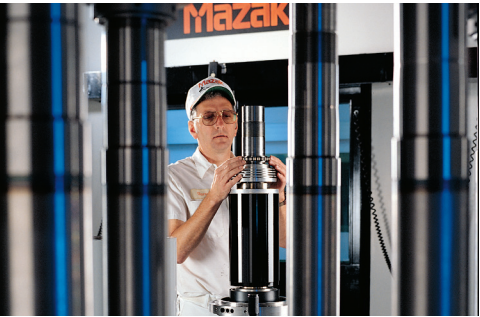
PARTS SUPPORT

We have the industry's largest inventory of spare parts, ensuring 97% same-day shipping on part orders.



PROGRESSIVE LEARNING

We partner with our customers to train them to achieve the highest levels of productivity and profitability.



SPINDLE & UNIT REBUILD

Our industry-leading exchange and rebuild program offers new and remanufactured spindles, index tables, ATC shifters and milling turrets for 24-hour shipment.



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