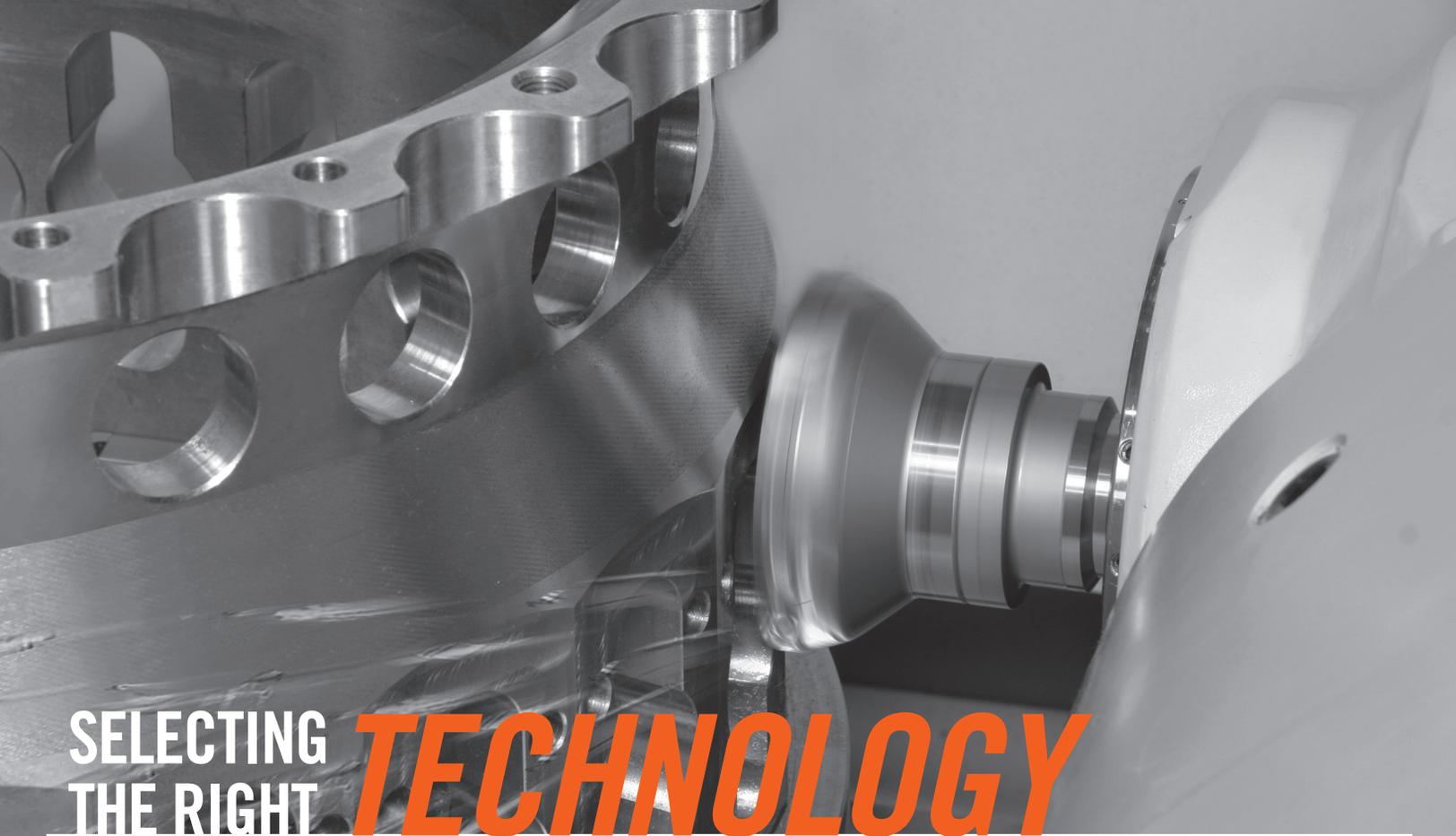


DISCOVER THE BEST
**5-AXIS MACHINING
AND MULTI-TASKING**
SOLUTION FOR YOUR APPLICATION

MACHINE SELECTION GUIDE FOR COMPLEX PART PROCESSING

Mazak



SELECTING THE RIGHT **TECHNOLOGY**

MEANS EVERYTHING

MAZAK OFFERS THE INDUSTRY'S most advanced and comprehensive selection of 5-axis and Multi-Tasking machine configurations to give you the best cost of ownership as well as endless part-processing possibilities. However, it's important that you only invest in the technology and capabilities that apply to your specific applications.

To help you identify the most relevant and cost-effective Mazak manufacturing solution for your capital investment, we developed the Four Quadrant Machine Selection Guide, which makes it easy to decide what equipment is going to make you the most competitive and profitable.

WHAT IS BEST COST OF OWNERSHIP?

A manufacturing system with the best cost of ownership is one that offers the highest possible performance for your exact needs at the lowest possible operating and downtime costs — all while being backed by the best support and engineering resources available.



THE FOUR QUADRANTS

Whether you need a single-table machine, pallet changing or Multi-Tasking technology, the Four Quadrant Machine Selection Guide will help you choose the best possible solution to boost your productivity and shorten your lead times. Each Quadrant represents a different machine capability level, from traditional simultaneous 5-axis machining to more complex 5-axis operations involving turning and automation.



QUADRANT 1

Single-Table Machines
Without Turning Capabilities

Parts with Less Complex Geometries



QUADRANT 3

Single-Table Machines
With Turning Capabilities

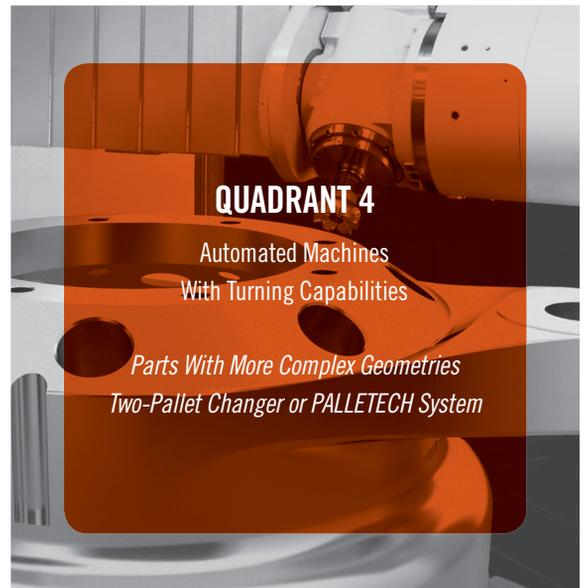
Parts with More Complex Geometries



QUADRANT 2

Automated Machines
Without Turning Capabilities

*Parts With Less Complex Geometries
Two-Pallet Changer or PALLETECH System*



QUADRANT 4

Automated Machines
With Turning Capabilities

*Parts With More Complex Geometries
Two-Pallet Changer or PALLETECH System*

THINGS TO THINK ABOUT

Before reviewing the Four Quadrant Machine Selection Guide, you will want to consider several key decision-making factors, including but not limited to how different 5-axis and Multi-Tasking platforms will play into your current and future part-processing requirements as well as overall business growth plan.

- **ARE YOU PROCESSING** complex parts and require a machine pallet size between 630 mm and 1,000 mm?
- **CONSIDER THE SIZE** of your facility. Is workspace an issue?
- **WOULD MULTI-TASKING** capability allow you to increase your part-processing versatility and shorten your cycle times? Or do you need to keep these operations separate?
- **DO YOU NEED** to reduce part inaccuracies that result from moving parts across multiple workstations?
- **WOULD A PALLET CHANGER** potentially improve your part cycle times?
- **DO YOU REQUIRE** periodic access to your workpiece and a pallet changer would make this difficult?
- **DO YOUR PART SIZES** affect the viability of adding a pallet changer to your process?
- **ARE YOU PRODUCING** large volumes of parts and require increased spindle utilization?
- **IS COMPLETELY AUTOMATED** manufacturing a goal for your business?

QUADRANTS 1 & 2

SIMULTANEOUS 5-AXIS MACHINES *WITHOUT* TURNING CAPABILITIES

Quadrants 1 and 2 feature VORTEX 5-axis vertical machining centers without turning capabilities, making them a lower initial investment for shops and a better fit for parts with less complex geometries, when compared to machines with turning.

The single-table machines in Quadrant 1 are less of an investment than those in Quadrant 2 with automation. However, adding a two-pallet changer or PALLETECH System to your operations greatly increases equipment utilization and allows for off cycle part setup and unattended operation.

5-AXIS MACHINING WITHOUT TURNING FOR PARTS WITH LESS COMPLEX GEOMETRIES



SINGLE TABLE

1

CAPABILITIES

- Lower Initial Investment
- Increased Work Area Access
- Larger Machining Zones

MACHINES

- VORTEX 630V/6S
- VORTEX 1060V/8S
- VORTEX 1550V/10S



2

CAPABILITIES

- Two-Pallet Changer or PALLETECH System
- Increased Machine Utilization
- Off Cycle Part Setup
- Unattended Operations
- High-Volume Part Production

MACHINES

- VORTEX 630V/6
- VORTEX 1060V/8
- VORTEX 1550V/10



AUTOMATION

TWO-PALLET CHANGER

Two-pallet changers increase spindle utilization and make for continuous uninterrupted production. This simple and efficient automation feature enhances productivity by allowing operators to load, unload and inspect parts on one pallet, while the machine continues to work uninterrupted on parts fixtured on the other pallet.

PALLETECH SYSTEM

A pre-engineered solution that offers fully automated unattended production. Available in single, double and triple level pallet stocker configurations, the system's modular construction allows it to grow its capabilities as workpiece complexity and job volumes increase. PALLETECH accommodates up to 16 machines, 6 to 240 pallets and as many as 8 loading stations.

QUADRANTS 3 & 4

SIMULTANEOUS 5-AXIS MACHINES *WITH* TURNING CAPABILITIES

Quadrants 3 and 4 feature INTEGREX i and e V-Series machines that are complete fusions of a 5-axis machining centers and vertical turning centers, allowing for Multi-Tasking operations. These machines result in fewer setups, more complex part-processing versatility and improved throughput, when compared to machines without turning.

The single-table machines in Quadrant 3 are less of an investment than those in Quadrant 4 with automation. However, adding a two-pallet changer or PALLETECH System to your operations greatly increases equipment utilization and allows for off cycle part setup and unattended operation.

5-AXIS MACHINING WITH TURNING MULTI-TASKING FOR PARTS WITH MORE COMPLEX GEOMETRIES

3

CAPABILITIES

- Increased Work Area Access
- Larger Machining Zones
- Fewer Setups
- Elimination of Stacked Tolerances
- Consolidate Milling and Turning Processes

MACHINES

- INTEGREX i-630V/6S
- INTEGREX e-1060V/8S
- INTEGREX e-1550V/10S



SINGLE TABLE



4

CAPABILITIES

- Two-Pallet Changer or PALLETECH System
- Increased Machine Utilization
- Off Cycle Part Setup
- Unattended Operations
- High-Volume Part Production
- Consolidate Milling and Turning Processes

MACHINES

- INTEGREX i-630V/6
- INTEGREX e-1060V/8
- INTEGREX e-1550V/10



AUTOMATION



CONTACT YOUR MAZAK REPRESENTATIVE

Now that you've identified the type of technology and capabilities that best fit your application and business needs, you're ready to contact your local Mazak representative.

Visit MAZAKUSA.COM/DISTRIBUTORS to identify your representative today.

QUADRANT 1



SINGLE TABLE WITHOUT TURNING

- Lower Initial Investment (No Added Cost for Automation)
- Larger Work Area Access for Easier Part Checking
- Increased Machining Zone

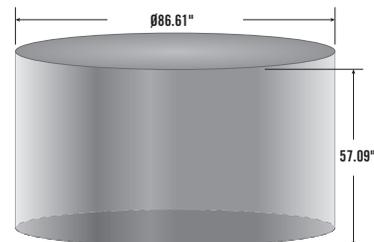
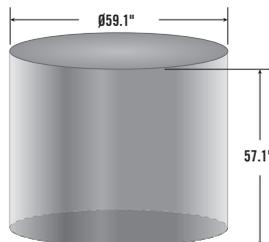
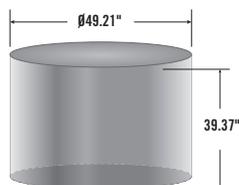


VORTEX 630V/6S



VORTEX 1060V/8S

	VORTEX 630V/6S	VORTEX 1060V/8S	VORTEX 1550V/10S
Max. Workpiece Dimensions	Ø49.21" x 39.37"	Ø59.1" x 57.1"	Ø86.61" x 57.09"
Pallet Size	24.8" x 24.8" or Ø31.5"	31.5" x 39.37" or Ø39.37"	39.4" x 39.4" or Ø55.12"
Travel X/Y/Z/B/C	56.1" / 41.34" / 41.34" / 150° / 360°	66.73" / 41.73" / 52.95" / 150° / 360°	66.73" / 61.02" / 52.95" / 150° / 360°
Spindle (30 Min. Rating)	10,000 rpm, 50 hp	10,000 rpm, 40 hp (standard) 5,000 rpm (optional)	10,000 rpm, 50hp
Rapid Traverse Rate (X/Y/Z)	2,047 IPM	1,654 IPM	1,653 IPM
Tool Shank	CAT-50 BIG PLUS (standard) CAPTO C8 (optional)	CAT-50 (standard) CAPTO C8 and BIG-PLUS #50 (optional)	CAT-50 BIG PLUS (standard) CAPTO C8 (optional)
Tool Storage Capacity	43 (standard) 80, 120 and 160 (optional)	40 (standard) 80, 120 and 160 (optional)	40 (standard) 80, 120 and 160 (optional)
Floor Space Requirement	211.1" x 274.72"	220.67" x 263.78"	251.36" x 306.69"

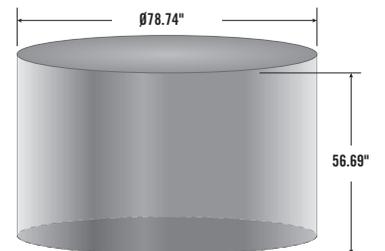
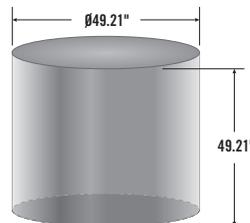
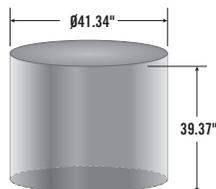


2-PALLET CHANGER/PALLETECH WITHOUT TURNING

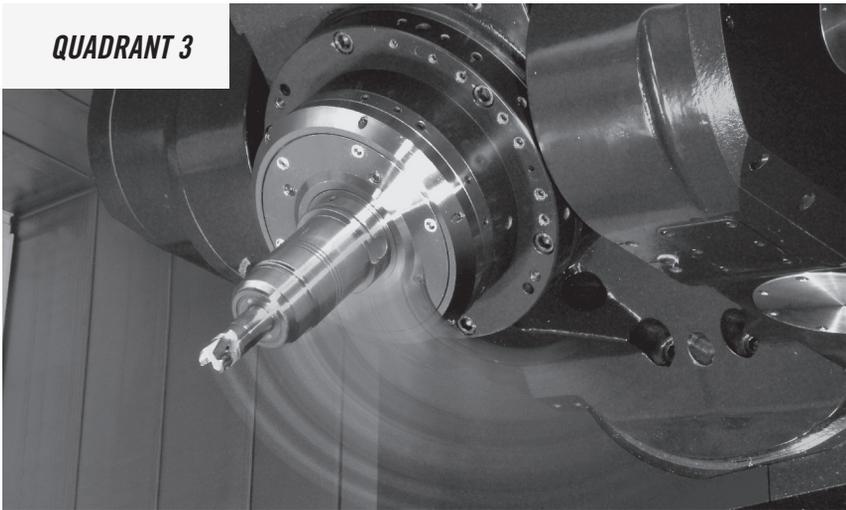
- Two-Pallet or PALLETECH System
- Increased Machine Utilization
- High-Volume Part Production
- Off Cycle Part Setup
- Unattended Operations



	VORTEX 630V/6	VORTEX 1060V/8	VORTEX 1550V/10
Max. Workpiece Dimensions	Ø41.34" x 39.37"	Ø49.21" x 49.21"	Ø78.74" x 56.69"
Pallet Size	24.8" x 24.8" or Ø31.5"	31.5" x 39.37" or 39.37"	39.4" x 39.4" or Ø55.12"
Travel X/Y/Z/B/C	56.1" / 41.34" / 41.34" / 150° / 360°	73.82"/41.73"/52.95"/150°/360°	73.82"/61.02"/52.95"/150°/360°
Spindle (30 Min. Rating)	10,000 rpm, 50 hp	10,000 rpm, 40 hp (standard) 5,000 rpm (optional)	10,000 rpm, 50 hp (standard)
Rapid Traverse Rate (X/Y/Z)	2,047 IPM	1,654 IPM	1,653 IPM
Tool Shank	AT-50 BIG PLUS (standard) CAPTO C8 (optional)	CAT-50 (standard) CAPTO C8 and BIG-PLUS #50 (optional)	CAT-50 (standard) CAPTO C8 and BIG PLUS #50 (optional)
Tool Storage Capacity	43 (standard) 80, 120 and 160 (optional)	40 (standard) 80, 120 and 160 (optional)	40 (standard) 80, 120 and 160 (optional)
Floor Space Requirement	195.28" x 291.34"	220.67" x 308.07"	278.27" x 375.98"



QUADRANT 3



SINGLE TABLE WITH TURNING

- Lower Initial Investment (No Added Costs for Automation)
- Larger Work Area Access for Easier Part Checking
- Increased Machining Zone
- No Added Cost for Automation

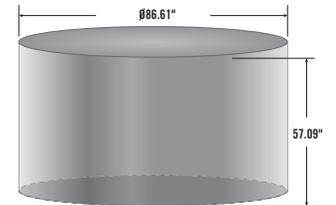
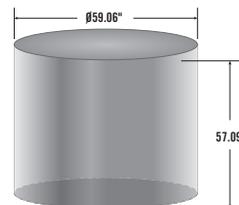
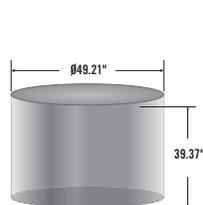


INTEGREX i-630V/6S



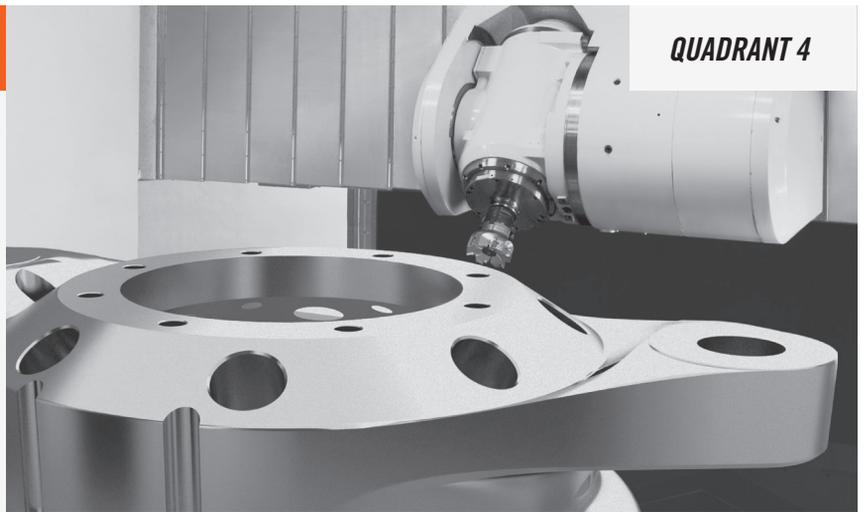
INTEGREX e-1060V/8S

	INTEGREX i-630V/6S	INTEGREX e-1060V/8S	INTEGREX e-1550V/10S
Maximum Workpiece Dimensions	Ø49.21" x 39.37"	Ø59.06" x 57.09"	Ø86.61" x 57.09"
Pallet Size	24.8" x 24.8" x Ø31.5"	31.5" x 31.5" or 39.4" x 39.4" or Ø39.4"	39.4" x 39.4" or Ø55.12"
Travel X/Y/Z/B/C	56.1" / 41.34" / 41.34" / 150° / 360°	66.73"/41.73"/52.95"/150°/360°	66.73" / 61.02" / 52.95" / 150° / 360°
Turning Spindle (30 Min. Rating)	550 rpm, 50 hp	500 rpm, 40 hp (standard) 300 rpm (optional)	300 rpm, 40 hp
Milling Spindle (30 Min. Rating)	10,000 rpm, 40 hp (standard) 15,000 (optional)	10,000 rpm, 40 hp (standard) 5,000 rpm (optional)	10,000 rpm, 40 hp (standard) 5,000 (optional)
Rapid Traverse Rate	2,047 IPM	1,653 IPM	1,653 IPM
Tool Shank	CAT-50 (standard) HSK A100 (optional)	CAT-50 (standard) CAPTO C8 and BIG PLUS #50 (optional)	CAT-50 (standard) CAPTO C8 and BIG PLUS #50 (optional)
Tool Storage Capacity	43 (standard) 80, 120 and 160 (optional)	40 (standard) 80, 120 and 160 (optional)	40 (standard) 80, 120 and 160 (optional)
Floor Space Requirement	211.1" x 274.2"	220.67" x 263.78"	251.36" x 306.69"



2-PALLET CHANGER/PALLETECH WITH TURNING

- Two-Pallet or PALLETECH System
- Increased Machine Utilization
- High-Volume Part Production
- Off Cycle Part Setup
- Unattended Operations



INTEGREX i-630V/6

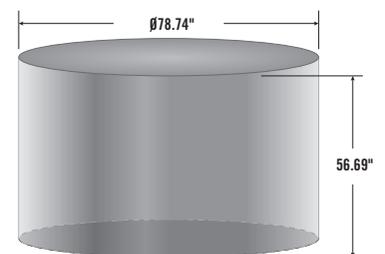
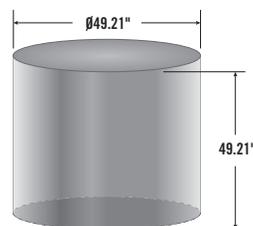
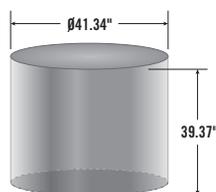


INTEGREX e-1060V/8



INTEGREX e-1550V/10

	INTEGREX i-630V/6	INTEGREX e-1060V/8	INTEGREX e-1550V/10
Maximum Workpiece Dimensions	Ø41.34" x 39.37"	Ø49.21" x 49.21"	Ø78.74" x 56.69"
Pallet Size	24.8" x 24.8" or Ø31.5"	31.5" x 31.5" or 39.4" x 39.4" or Ø39.4"	39.4" x 39.4" or Ø55.12"
Travel X/Y/Z/B/C	56.1" / 41.34" / 41.34" / 150° / 360°	73.82" / 41.73" / 52.95" / 150° / 360°	73.82" / 61.02" / 52.95" / 150° / 360°
Turning Spindle (30 Min. Rating)	550 rpm, 50 hp	500 rpm, 40 hp (standard) 300 rpm (optional)	300 rpm, 40 hp
Milling Spindle (30 Min. Rating)	10,000 rpm, 40 hp (standard) 15,000 (optional)	10,000 rpm, 40 hp (standard) 5,000 rpm (optional)	10,000 rpm, 40 hp (standard) 5,000 rpm (optional)
Rapid Traverse Rate	2,047 IPM	1,653 IPM	1,653 IPM
Tool Shank	CAT-50 (standard) HSK A100 (optional)	CAT-50 (standard) CAPTO C8 and BIG PLUS #50 (optional)	CAT-50 (standard) CAPTO C8 and BIG PLUS #50 (optional)
Tool Storage Capacity	43 (standard) 80, 120 and 160 (optional)	40 (standard) 80, 120 and 160 (optional)	40 (standard) 80, 120 and 160 (optional)
Floor Space Requirement	211.1" x 303.3"	209" x 299"	278.27" x 375.98"

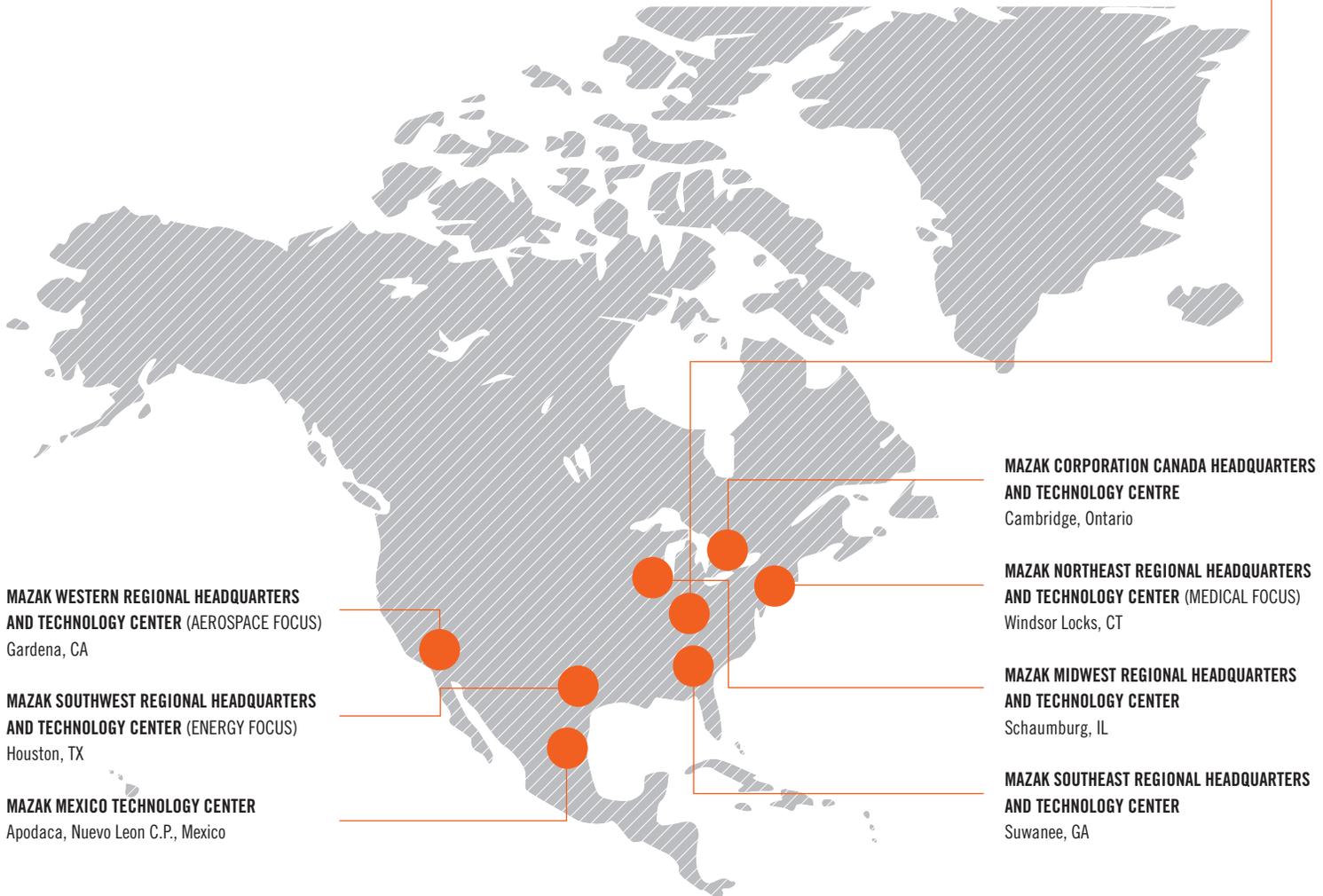


UNMATCHED SUPPORT RESOURCES

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

ADVANCED TECHNOLOGY NETWORK

Our eight Technology Centers throughout North America provide you with 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.



COMPLETE CUSTOMER SUPPORT

Through our Optimum Plus program, we offer the best, most comprehensive customer service in the industry, from machine and CNC control technical support to fast spare parts fulfillment to progressive learning courses.



SINGLE-SOURCE SERVICE

Our machines come with a comprehensive warranty, free technical phone support and software upgrades for the entire life of the product.



PARTS CENTER

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



PROGRESSIVE LEARNING

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



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