Quick Turn
Universal Series
With our QUICK TURN UNIVERSAL (QTU) Series of CNC turning centers, we have forever changed high-volume small parts production. These machines, while basic in their design, feature innovative technologies that bring high productivity, precision and value to job shops as well as first and second tier automotive suppliers.

The QTU Series offers everything from 2-axis turning to Multi-Tasking solutions with automation. Plus, all of the machines have small footprints with built-in multi-tap transformers to save shops valuable floor space. In terms of workspace size, the Series currently handles maximum part diameters that range from 13.5” to 16.25”.

Such a diverse machine selection also makes it easy to find the perfect technology balance for your manufacturing needs at the lowest possible operating costs, whether you are producing medical devices from aluminum, engine parts from cast iron or electronic enclosures from steel.

**UNMATCHED PRICE-PERFORMANCE RATIO**

Our QTU Series redefines the quality and productivity standards of value-based turning centers and simple Multi-Tasking machines. By innovating the basic elements of a horizontal lathe, we have made it possible for more manufacturers to be able to afford our world-class technology.

- Diverse machine lineup fulfills virtually every small parts turning and milling need
- Second turning spindles add DONE IN ONE® part processing
- Milling turrets with rotary tool spindles provide Multi-Tasking capability
- Y-axis functionality offers movement above and below centerline
- Integral spindle/motor headstocks provide high power and stability
- Integrated direct-drive C-axes offers high-speed, high-accuracy positioning and contouring
- New turret design with integral hydraulic clamp system provides maximum rigidity
- New bed design with low center of gravity supports heavy cutting performance
- Servo-driven, programmable NC tailstocks yield high productivity levels
- Advanced CNC technology offers easy programming and optimized performance
- Easily integrates with various forms of automation to achieve even higher productivity levels

**SIMPLE BUT INNOVATIVE**

**MACHINE CONFIGURATIONS**

- QTU 250
- QTU 250M
- QTU 250MY
- QTU 250MS
- QTU 250MSY
- QTU 350
- QTU 350M
- QTU 350MY
- QTU 350MS
- QTU 350MSY

M = Upper Turret with Rotary Milling
S = Second Spindle
Y = Y-Axis Capability

* QTU 200 machines for smaller part diameters coming soon.
DONE IN ONE OPERATIONS

SECOND TURNING SPINDLES

QTU machines with an “S” designation feature second turning spindles that greatly increase productivity and decrease the cost per part. The added spindle will automatically transfer parts from one chuck to another for secondary operations, which reduces part handling. Part transfer capabilities also allow the machines to process workpieces on both faces or sides via secondary operations such as drilling and tapping.

MULTI-TASKING CAPABILITY

ROTARY TOOL SPINDLES

QTU machines with an “M” designation come with a rotary tool spindle that performs milling, drilling and tapping operations, making it possible to complete several processes in a single machine cycle. Plus, only having to set up one machine to process a workpiece complete results in improved accuracy and a significant time savings for small-to-medium lot sizes.

CENTERLINE MACHINING

Y-AXIS TURRET MOTION

The rigid, precise Y-axis turret motion on the QTU “Y” machine configurations is made possible via a double-slide construction that easily withstands strong cutting forces. Other Y-axis benefits include keyway finishing, off-centerline O.D. drilling and additional tool capacity.

POWERFUL PERFORMANCE

INTEGRAL SPINDLE/MOTOR HEADSTOCKS

While most competitive products employ a belt and drive spindle structure, QTU machines rely on a far superior built-in spindle/motor headstock design that eliminates vibration and provides high reliability. Furthermore, the full-circumference C-axis headstock brake design on QTU machines with Y-axis capability provides high-accuracy spindle positioning to within 0.0001”.

Each headstock gets its power from a variable-speed AC inverter, which eliminates the need for belts and a pulley and provides you with higher machining accuracy in terms of part roundness and finish. QTU spindles are also virtually maintenance free and promote energy efficiency.

TOOLING VERSATILITY

INNOVATIVE TURRET DESIGN

The new turret design on the QTU machines offers multiple tool configurations with easy changeover. The turret uses a roller gear cam drive system to achieve smooth high-speed, high-accuracy indexing motion as well as eliminate the need for expensive curvic/index couplings.

Without these couplings, it is possible to expand the turret to include up to 24 tools as well as program an infinite number of index positions without having to make any changes on the turret housing. Furthermore, this new turret design features an integral hydraulic clamp system to provide maximum rigidity for an overall superior cutting performance.

FASTER SETUP

NC SERVO-DRIVEN TAILSTOCKS

Each QTU machine has a fully programmable NC servo-driven tailstock that significantly reduces setup times. Through the part program, the tailstock retracts to a known position and its center makes contact with the part with consistent holding pressure. Because of its positive independent drive system, the tailstock can drill holes on a shaft centerline, which adds versatility to the jobs it can process.
RIGID, DURABLE PERFORMANCE

NEW BED DESIGN
QTu machines are available in 20" bed lengths and feature a new bed design with a low center of gravity. Pair this with our exclusive MX Hybrid Roller Guide System and you can sustain accurate cutting performance in heavy material removal applications.

The MX Hybrid Roller Guide System delivers levels of durability and reliability that result in long-term accuracy. It dampens vibration to extend tool life, handles higher load capacities as well as accelerates and decelerates faster to shorter cycle times.

LARGE CAPACITY, LESS INTERFERENCE

UNMATCHED SWING DIAMETER
QTu machines offer a maximum swing diameter of 27.4" over the machine bed, an impressive specification you will not find on other turning centers in this class. The maximum turning diameter for the 2-axis QTu 250 and 350 machines is 16.25", while all of the other machines have a maximum turning diameter of 13.5".

ENHANCED ERGONOMICS

IMPROVED WORKPIECE MONITORING, LESS MAINTENANCE
Driven to further increase the convenience of our products, we took a fresh approach when it came to the ergonomics of our QTu machines. Machine windows are large and interior lighting is bright to provide quick, easy visual access to the work areas during cutting operations.

We also designed our QTu machines to simplify routine maintenance. Items that require daily checking, such as lubrication levels and hydraulic pressure units, are conveniently located in one spot. Furthermore, the one-piece way cover on these machines provides improved chip flow and reduces maintenance downtime.

ECO-FRIENDLY COMPONENTS

EFFICIENT LED LIGHTING, AUTOMATIC SHUTOFF
QTu machines come with several energy efficient features including LED work lights that have lower electrical power consumption and a service life that is 10 times longer than conventional fluorescent lamps.

These lights automatically shut off after a predetermined period of time. When the personnel sensors on our machines detect nearby movement, these lights automatically turn back on. Our CNC displays and optional chip conveyors also feature automatic shutoff.

SMALL FOOTPRINTS

SAVE VALUABLE FLOOR SPACE
QTu machines feature small footprints that keep manufacturers from having to sacrifice valuable floor space in order to achieve high productivity levels.

To further minimize the amount of floor space these machines take up, we outfitted them with built-in multi-tap transformers. An integrated transformer also reduces the electric noise that can sometimes be problematic to a machine’s CNC.
OPTIMIZED MULTI-TASKING PROGRAMMING
MATRIX NEXUS 2 CNC

- QUICK TURN UNIVERSAL 250NY
- QUICK TURN UNIVERSAL 250NS
- QUICK TURN UNIVERSAL 350NY
- QUICK TURN UNIVERSAL 350NS
- QUICK TURN UNIVERSAL 350MS
- QUICK TURN UNIVERSAL 350MSY

The MATRIX NEXUS 2 CNC simplifies Multi-Tasking operations for parts requiring off-centerline machining and angled drilling, milling or tapping. With unequalled innovation for conversational programming, the control incorporates a wide variety of advanced features for increased productivity through high-speed, high-accuracy machining as well as ease of operation.

HARDWARE
- Simultaneous control of up to 3 axes and continuous control of second spindles
- A 20GB hard disk offers increased program storage capacity
- High-speed CPU and large 12.1” CNC display supports multiple functions
- EIA/ISO and conversational programming offers versatility and user-friendly operation
- Sub-micron input and nano control delivers high-accuracy machining

SOFTWARE
- Intelligent Thermal Shield provides heat displacement control for improved stability
- Active Vibration Control reduces vibration for high-accuracy positioning
- Intelligent Safety Shield offers safe operation during machine setup and manual operation
- Mazak Voice Adviser provides verbal support for machine setup and safety
- SMART Functions streamline data entry and reduce programming time
- Virtual machining provides convenient program and interference checks

EASY PROGRAMMING, FAST JOB SETUP
SMART CNC

- QUICK TURN UNIVERSAL 250
- QUICK TURN UNIVERSAL 250M
- QUICK TURN UNIVERSAL 350
- QUICK TURN UNIVERSAL 350M

The SMART CNC makes it possible for inexperienced operators to quickly and easily develop machining programs as well as achieve fast job setup. Programming time is 75 percent faster when compared with machines using EIA/ISO systems, which is especially effective when machining basic workpiece geometries that require simple turning, milling, drilling and tapping operations.

HARDWARE
- Control of up to 4 axes and 2 spindles
- EIA/ISO and conversational programming for versatility and user-friendly operation
- Accommodates up to 512 programs
- Capacity for 128 tool offset groups, 54 work offset groups and 500 alarm histories
- QWERTY keyboard provides same data input method as a PC

SOFTWARE
- Intelligent Thermal Shield provides heat displacement control for improved stability
- Intelligent Maintenance Support prevents unexpected machine downtime
- SMART menu keys minimize required programming screens and key presses
**COMPLETE TURNKEY SYSTEMS**

**EASY AUTOMATION INTEGRATION**

We understand the significant competitive advantages that come with having the right type of automation for your manufacturing facility.

We designed the QTU machines to easily integrate with different levels of automation, including bar feeders, gantry loaders and robots for unsupervised loading and unloading of workpieces.

You can also reduce operator part handling by using an automated parts catcher with a QTU machine. The catcher accepts parts that have been parted off at the spindle and loads them onto the conveyor that moves them to the exterior of the machine.

For QTU machines performing heavy metal-removal operations, our high-pressure Super Flow coolant system allows for efficient chip evacuation.

**QUICK CHANGEOVERS**

**GR100 SERIES GANTRY LOADERS**

Our GR100 gantry loaders represent a simple, affordable way to automate parts loading on our QTU machines. These loaders, which offer quick changeover times, also bring speed and accuracy to shops experiencing an upswing in high-volume jobs.

*Two-Position Hand with Three-Jaw Chuck*

Made for use with the QTU 250 and 350 2-axis models as well as those with the “M” and “MY” designations, our GR100 gantry loaders with two-position hands and three-jaw chuck grippers accommodate parts up to 7.09” in diameter, 4.50” in length and up to 11 lb x 2.

*Three-Position Hand with Three-Jaw Chuck*

Made for use with the QTU 250 and 350 models featuring the “MS” and “MSY” designations, our GR100 gantry loaders with three-position hands and three-jaw chuck grippers accommodate parts up to 7.09” in diameter, 3.94” in length and up to 11 lb x 2.

**Conveyor Types**

Each GR100 gantry loader comes standard with a pitch feed workpiece conveyor system where pallets move from the rear to the front of the conveyor, and the robot arm picks up the workpieces from their pallets in order. An optional two-pallet changer makes continuous part production possible. Operators can load parts on one pallet, while the gantry loader services the other.

**OUR CUSTOMIZED APPROACH**

Having installed countless, highly effective automation systems for manufacturers across North America, we have the experience and expertise to envision, design and implement an automation system that will boost your shop’s productivity and overall bottom line.

Through our own capabilities and partnerships with other industry leaders, we can provide you with a tailored automation solution that fits your unique needs, whether it involves a bar feeder, gantry loader, articulated robot, PALLETECH System or all of the above.

Our expert applications engineers will also help you create and implement software solutions that will ensure maximum return on your automation investment, from user interfaces to scheduling functions to production monitoring.

Prior to the design and implementation of your automation solution, we evaluate its impact on your entire operation by performing:

- Statistical process studies,
- Custom demonstrations to evaluate effectiveness,
- Integral machining simulations,
- Complete process simulations,
- Cutting, workholding and CAD/CAM evaluations, and
- Risk assessments to ensure a safe working environment.
# Machine Specifications

## Quick Turn Universal 250
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.40 in / 695 mm
- **Maximum Swinging Diameter**: 16.25 in / 410 mm
- **Maximum Bar Work Capacity**: 2.00 in / 51 mm
- **Maximum Length**: 23.66 in / 598 mm
- **Chuck Size**: 8
- **Maximum Speed**: 4,500 rpm
- **Motor Output**: 20 hp / 15 kW
- **Number of Tools**: 12

## Quick Turn Universal 350
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.40 in / 695 mm
- **Maximum Swinging Diameter**: 16.25 in / 410 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.23 in / 589 mm
- **Chuck Size**: 10
- **Maximum Speed**: 3,500 rpm
- **Motor Output**: 20 hp / 15 kW
- **Number of Tools**: 12

## Quick Turn Universal 250M
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.4 in / 695 mm
- **Maximum Swinging Diameter**: 13.5 in / 340 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.75 in / 605 mm
- **Chuck Size**: N/A
- **Maximum Speed**: 6,000 rpm
- **Motor Output**: 10 hp / 7.5 kW
- **Number of Tools**: 12

## Quick Turn Universal 350M
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.4 in / 695 mm
- **Maximum Swinging Diameter**: 13.5 in / 340 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.75 in / 605 mm
- **Chuck Size**: 6
- **Maximum Speed**: 6,000 rpm
- **Motor Output**: 10 hp / 7.5 kW
- **Number of Tools**: 12

## Quick Turn Universal 250MY
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.4 in / 695 mm
- **Maximum Swinging Diameter**: 13.5 in / 340 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.75 in / 605 mm
- **Chuck Size**: N/A
- **Maximum Speed**: 6,000 rpm
- **Motor Output**: 10 hp / 7.5 kW
- **Number of Tools**: 12

## Quick Turn Universal 350MY
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.4 in / 695 mm
- **Maximum Swinging Diameter**: 13.5 in / 340 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.75 in / 605 mm
- **Chuck Size**: 6
- **Maximum Speed**: 6,000 rpm
- **Motor Output**: 10 hp / 7.5 kW
- **Number of Tools**: 12

## Quick Turn Universal 250MS
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.4 in / 695 mm
- **Maximum Swinging Diameter**: 13.5 in / 340 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.75 in / 605 mm
- **Chuck Size**: N/A
- **Maximum Speed**: 6,000 rpm
- **Motor Output**: 10 hp / 7.5 kW
- **Number of Tools**: 12

## Quick Turn Universal 350MS
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.4 in / 695 mm
- **Maximum Swinging Diameter**: 13.5 in / 340 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.75 in / 605 mm
- **Chuck Size**: 6
- **Maximum Speed**: 6,000 rpm
- **Motor Output**: 10 hp / 7.5 kW
- **Number of Tools**: 12

## Quick Turn Universal 250MSY
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.4 in / 695 mm
- **Maximum Swinging Diameter**: 13.5 in / 340 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.75 in / 605 mm
- **Chuck Size**: N/A
- **Maximum Speed**: 6,000 rpm
- **Motor Output**: 10 hp / 7.5 kW
- **Number of Tools**: 12

## Quick Turn Universal 350MSY
- **Bed Length**: 20 in / 500 mm
- **Maximum Swing**: 27.4 in / 695 mm
- **Maximum Swinging Diameter**: 13.5 in / 340 mm
- **Maximum Bar Work Capacity**: 3.00 in / 76 mm
- **Maximum Length**: 23.75 in / 605 mm
- **Chuck Size**: 6
- **Maximum Speed**: 6,000 rpm
- **Motor Output**: 10 hp / 7.5 kW
- **Number of Tools**: 12

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MACHINE SPECIFICATIONS

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CHUCK REFERENCE TABLE

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