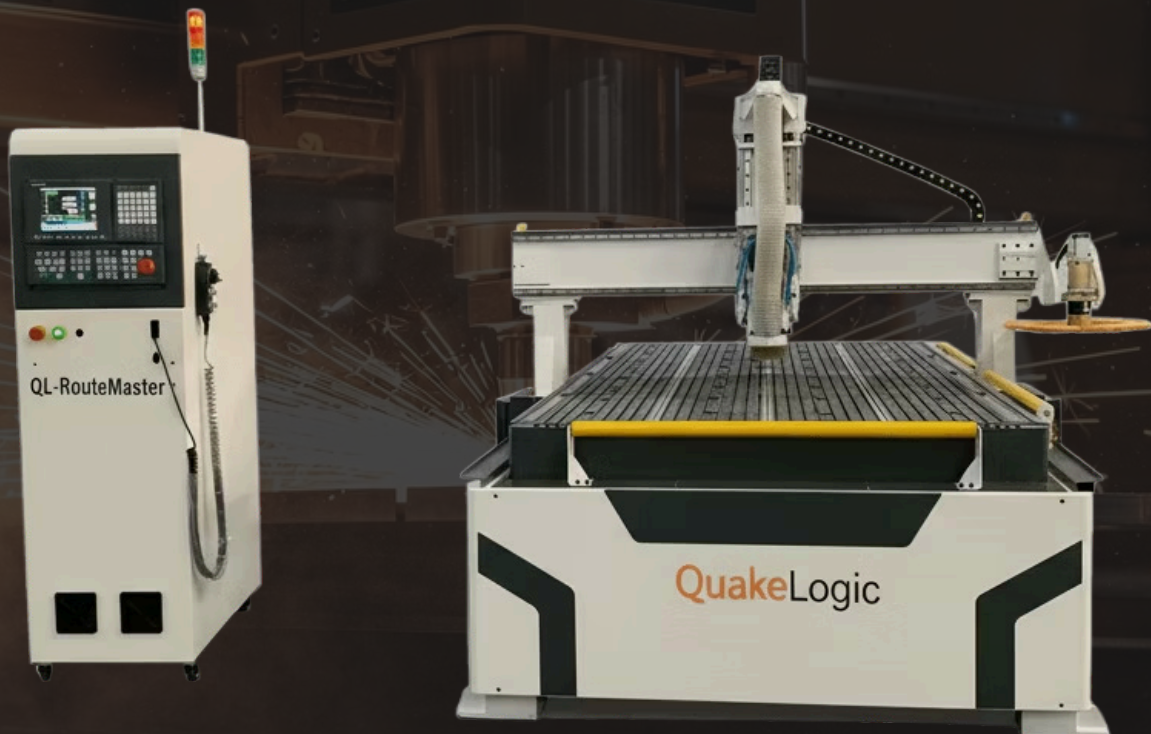




QL-RouteMaster ATC CNC Router Cutting System

QuakeLogic Inc. manufactures and delivers the **QuakeLogic QL-RouteMaster ATC CNC Router Cutting System**, engineered and configured to **meet or exceed all mandatory technical, functional, safety, delivery, installation, commissioning, training, warranty, and contractual requirements** of **Solicitation No. FA812526Q0029** and the accompanying CNC Router Cutting System item description.



Precision Work Envelope, Speed & Accuracy Specifications

The **QL-RouteMaster ATC** is designed for reliable, repeatable CNC routing performance across demanding production environments. The motion platform delivers exceptional accuracy and consistent results across the full working envelope, ensuring precision machining for complex routing operations, sheet material processing, and multi-piece production runs.

Our engineering team has optimized the mechanical structure, linear motion systems, and servo control architecture to maintain **stable accuracy under continuous operation**, minimizing thermal drift and mechanical deflection. The system's rigid construction and advanced motion control algorithms ensure that accuracy specifications are maintained throughout extended production cycles.



1

Work Area

≥ 60 in × 140 in minimum effective cutting area

2

Z-Axis Clearance

≥ 5 in vertical clearance for tool access and material thickness

3

Cutting Speed

≥ 1200 in/min sustained cutting feed rate capability

4

Rapid Traverse

≥ 2300 in/min rapid positioning speed for cycle time optimization

5

Repeatability

±0.005 in or better positioning repeatability across full envelope

These performance specifications enable the QL-RouteMaster ATC to handle a wide range of materials including aluminum, composites, plastics, wood, and non-ferrous metals with consistent quality and throughput. The combination of generous work envelope, high traverse speeds, and tight repeatability tolerances makes this system ideal for both prototype development and production manufacturing environments where dimensional accuracy and process reliability are critical mission requirements.

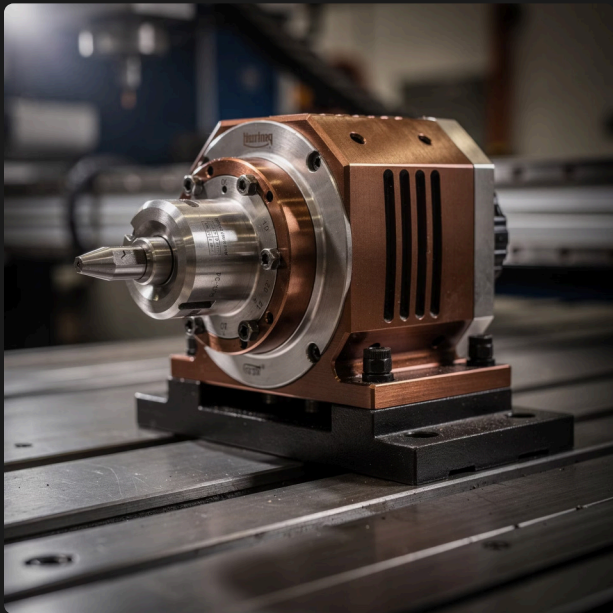
Automatic Tool Changer: Spindle, Tooling & Carousel Configuration



The QL-RouteMaster ATC is built around an integrated automatic tool change platform designed to maximize productivity and minimize manual intervention. The system's 12-position carousel-type tool changer enables rapid tool selection and exchange, dramatically reducing setup time between operations and supporting complex multi-tool machining sequences without operator presence.

High-Performance Spindle

The **≥ 13 HP ATC spindle** provides substantial cutting power for demanding routing applications across ferrous and non-ferrous materials. This power rating ensures adequate torque and speed range for both heavy material removal operations and precision finishing passes. The spindle's thermal management system maintains consistent performance during extended production runs.

Advanced vibration dampening and precision bearing systems ensure smooth operation at variable speeds, contributing to superior surface finish quality and extended tool life.



Spindle Power ≥ 13 HP minimum High-torque capacity for heavy cuts	 Tool Changer 12-position rotary carousel Automatic tool selection and exchange
HSK63 Compatible ISO standard interface Industry-standard tool holder system	 ER40 Collets Wide tool diameter range Versatile workholding capability

The HSK63 tool holder interface ensures secure, repeatable tool mounting with excellent concentricity and pull-stud retention. Combined with ER40 collet compatibility, this configuration supports a comprehensive range of cutting tool diameters and geometries. The automatic tool change cycle executes in seconds, maintaining production momentum and enabling lights-out manufacturing capabilities for qualified operations. This integrated ATC architecture supports fast tool changes, reduced setup time, and [consistent machining repeatability for production workflows](#) in government and defense manufacturing environments.

Vacuum Table, Alignment Systems, Dust Control & Auto Calibration

For secure workholding, clean operation, and consistent setup repeatability, the QL-RouteMaster ATC integrates a comprehensive suite of production-enhancing subsystems. These integrated features work synergistically to reduce operator variability, minimize setup errors, and ensure reliable performance across daily production operations in demanding manufacturing environments.



Vacuum Tabletop System

The full-surface vacuum table provides uniform hold-down force across the entire work envelope, securing sheet materials without mechanical clamps. This eliminates the need for time-consuming fixture setup and enables unobstructed tool access to the full sheet perimeter. The vacuum zones can be independently controlled to accommodate various material sizes and minimize air consumption.



Programmable Dust Boot

The CNC-controlled dust boot automatically follows tool motion, maintaining optimal proximity to the cutting zone while accommodating varying material thicknesses and surface profiles. This intelligent dust extraction system maximizes particle capture efficiency at the source, protecting machine components and maintaining operator visibility throughout the cutting process.



Surface Probe & Tool Sensor

Integrated surface probing and tool length measurement sensors enable automated workpiece and tool geometry verification. The system automatically measures Z-axis material surface position and individual tool lengths, compensating for material thickness variations and tool wear. This eliminates manual touch-off procedures and reduces setup time while improving process reliability.



Precision Locator Pins

Integrated locator pins enable rapid, repeatable sheet squaring and alignment to the machine coordinate system. This mechanical referencing system ensures consistent part orientation across production batches, eliminating cumulative setup errors and reducing scrap rates. The locator pin system is compatible with standard sheet material sizes and custom fixture plates.




Industrial Dust Collection

The **≥ 6 HP dust collection package** provides powerful airflow sufficient for continuous chip and dust extraction during high-speed routing operations. The system maintains negative pressure within the dust boot enclosure, preventing airborne particulate escape into the work environment. This industrial-grade extraction capability meets OSHA requirements for workplace air quality.



Automatic Calibration

The auto-calibration system performs hands-free machine referencing, establishing accurate home positions for all motion axes without operator intervention. This automated routine ensures consistent coordinate system initialization across power cycles and tool changes, maintaining absolute position accuracy and eliminating a common source of setup errors in manual referencing procedures.

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Integrated System Advantage: The combination of vacuum workholding, automated probing, and intelligent dust control creates a **synergistic production environment** where setup variability is minimized, process reliability is maximized, and operator skill requirements are reduced without compromising quality or capability.

Electrical Configuration, Controls & Turnkey Delivery Package

The QL-RouteMaster ATC is delivered as a complete operational package, engineered for immediate deployment in government and military manufacturing facilities. Every component required for successful installation, commissioning, and sustained operation is included in the base system configuration, eliminating hidden costs and supply chain complexity.

01

Integrated Operator Station

Complete CNC control console with integrated display monitor, featuring intuitive interface for program management, tool path visualization, and real-time process monitoring

02

Crosshair Laser Pointer

Red crosshair positioning laser for visual work offset verification, material alignment confirmation, and manual jog operations

03

30 KVA Transformer

Integrated step-down transformer (480V → 380V, 3-Phase) as specified in FA812526Q0029 requirements, factory-configured and tested

04

FOB Destination Delivery

Fully insured freight to customer facility, with professional rigging and positioning in designated manufacturing area

05

Installation & Commissioning

On-site installation by factory-trained technicians, including power connection verification, machine leveling, calibration, and functional test cycles

06

Operator Training Program

Comprehensive on-site training covering safe operation procedures, setup workflows, ATC system operation, routine maintenance schedules, and basic troubleshooting

Warranty & Documentation

The QL-RouteMaster ATC is backed by a comprehensive warranty provided in strict accordance with **Solicitation No. FA812526Q0029** requirements. All warranty terms, coverage periods, and service commitments meet or exceed the solicitation's minimum standards, ensuring long-term operational reliability and rapid response to service requirements.

Complete technical documentation is included with every system, encompassing operational manuals, electrical schematics, pneumatic diagrams, preventive maintenance schedules, and safety/operating instructions. All documentation meets federal technical manual standards and is provided in both printed and digital formats for ease of reference and archival compliance.

100%

Documentation Complete

All technical manuals included

24/7

Technical Support

Factory assistance available

QuakeLogic Inc. stands ready to deliver the QL-RouteMaster ATC CNC Router Cutting System as a fully compliant, mission-ready solution for Solicitation No. FA812526Q0029. Our commitment to precision manufacturing, regulatory compliance, and customer success ensures seamless integration into critical government and defense production operations.

Advancing Precision with QuakeLogic

Empowering government manufacturing facilities, advanced engineering laboratories, and applied research environments, QuakeLogic Inc. delivers industrial-grade CNC cutting and routing solutions engineered for precision, reliability, and long-term operational stability.

The proposed **QL-RouteMaster ATC CNC Router Cutting System** is purpose-built to support high-throughput sheet processing, precision routing, and repeatable CNC cutting operations across production, institutional, and Government-use applications. The system provides consistent performance for routing and cutting workflows, supported by a high-speed motion platform, an integrated automatic tool change (ATC) configuration, and a safety-focused machine architecture designed for dependable long-duty-cycle operation.

Connect with QuakeLogic — Your Partner in Advanced CNC Cutting & Routing Solutions

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For strategic collaborations, enterprise-level instrumentation solutions, and comprehensive technical inquiries.

Our Unwavering Commitment to Operational Excellence



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Complying with international standards for product reliability, performance, and safety.



Pioneering Industry Leadership

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