RADONIX
CNC Controller manufacturer

2024 Catalog

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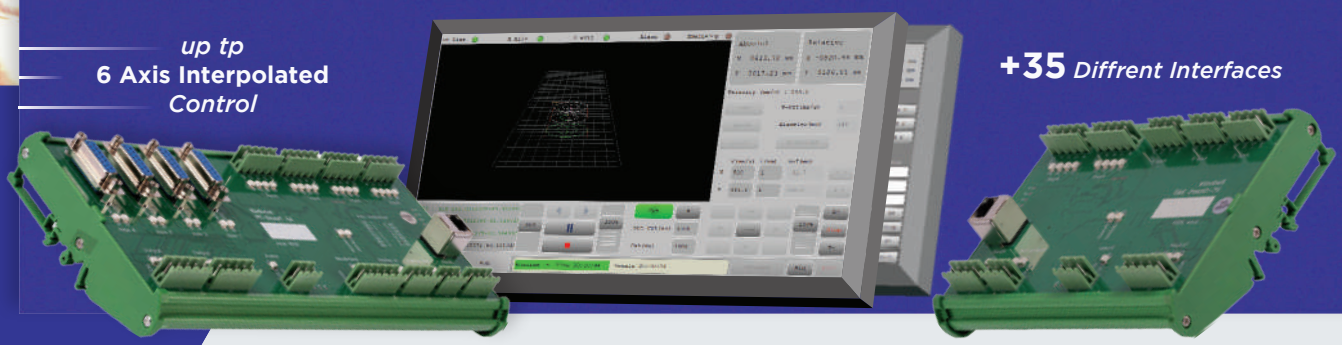
up tp
6 Axis Interpolated
Control



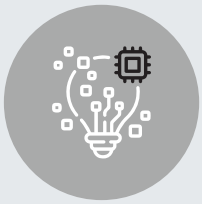
+35 *Diffrent Interfaces*

JUST A BIT ABOUT US

18 Years of Industry Experience

Radonix proudly stands as one of the few companies in the Middle East with CNC industrial control unit design technology. In this context, the Radonix Group has leveraged this potential to develop products that currently form the main platform of the control section of many CNCs in the country and are even used in several foreign countries.

OUR MISSON



Revolutionizing CNC Technology

We redefine CNC control systems with cutting-edge, reliable solutions that drive precision and efficiency for manufacturers worldwide.

Commitment to Excellence

Our durable and high-performance CNC solutions prioritize customer satisfaction, ensuring long-term success and a meaningful global impact.

Driving Innovation for Growth

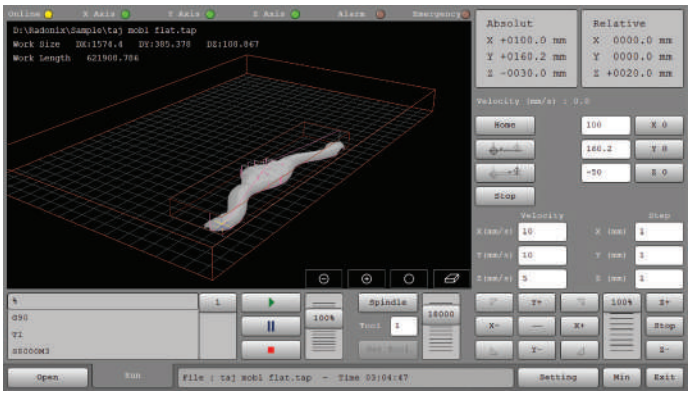
By investing in continuous research and development, we deliver technologies that empower industries to adapt, excel, and stay ahead in a competitive market.

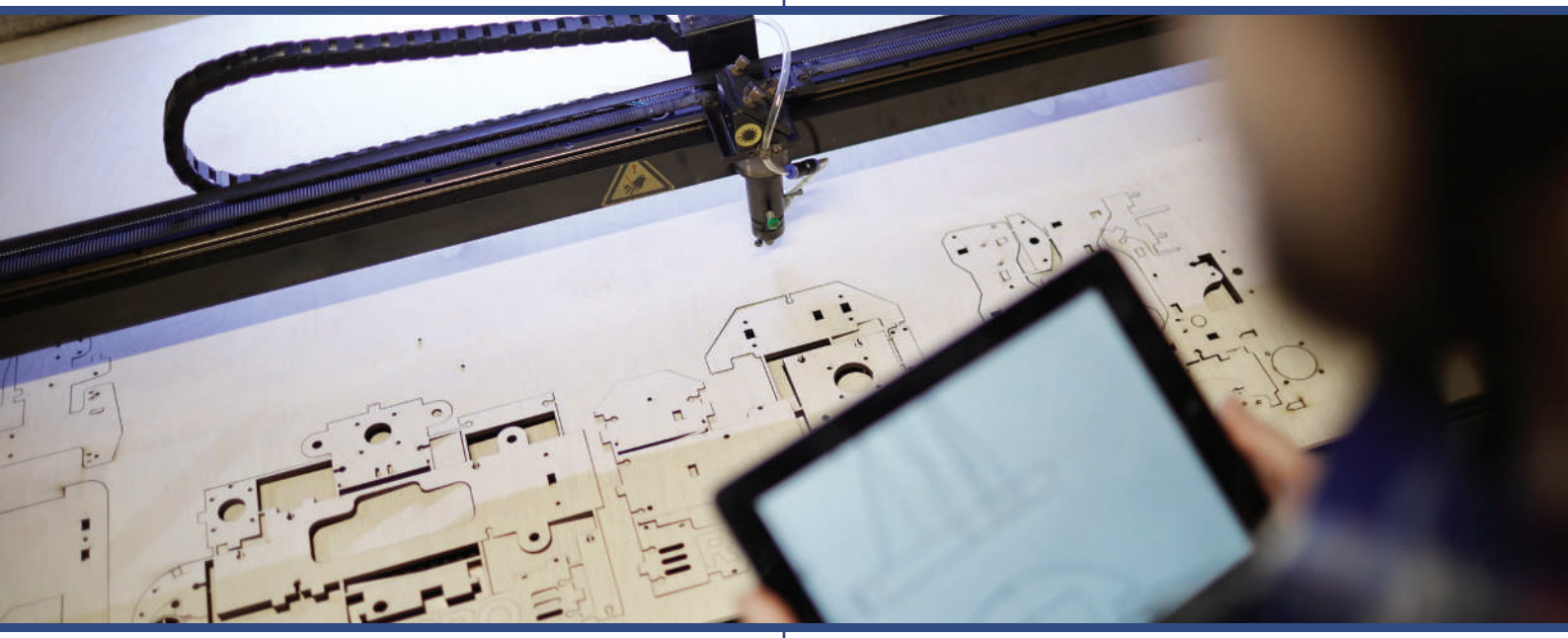
Precision in Motion, Affordable Automation, Seamless Control

Software

CAM-Pro

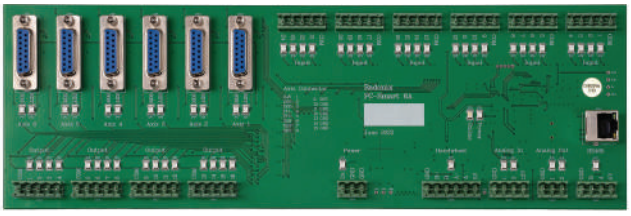
Radonix CAM-Pro is an advanced CAM software solution designed to enhance the operational efficiency and precision of CNC machines across various industrial sectors. This software is notable for its adaptability, supporting over **35 different CNC machine types**, each with tailored interfaces to meet specific industry requirements.





PC-Smart and LAN Series

Radonix's PC-Smart and PC-Pro LAN series controllers are designed for precise CNC machine control, offering models 3AS, 4A, and 6A in each series to accommodate various axis requirements.
Offer versatile solutions for industrial applications, supporting multi-axis operations (up to 6 axes) across routers, cutting systems like plasma and laser, glass cutters, wood turning, jewelry design, sewing, engraving, hot wire applications, hammering, and punching.



PC-Smart 6A

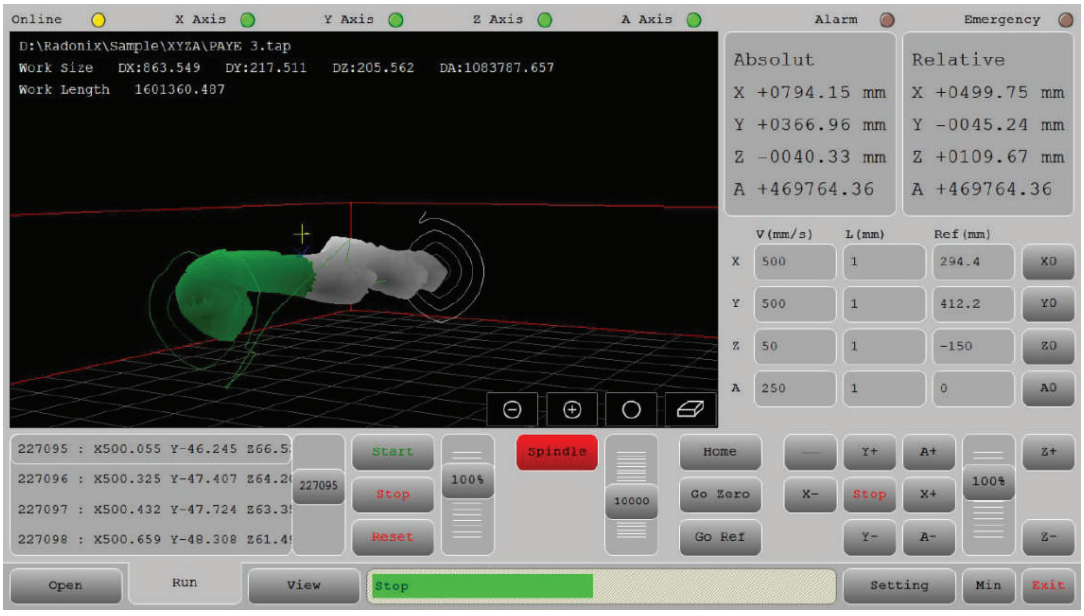
Hardware

Software

Radonix CAM-Pro

Radonix CAM-Pro is an advanced CAM (Computer-Aided Manufacturing) software solution designed to enhance the operational efficiency and precision of CNC (Computer Numerical Control) machines across various industrial sectors. This software is notable for its adaptability, supporting over 35 different CNC machine types, each with tailored interfaces to meet specific industry requirements.

Customizable User Interfaces	Over 35 interfaces optimized for specific CNC machines such as milling machines lathes, laser cutters, plasma cutters, and wood routers. Interface customizations designed to meet the unique operational needs of each machine type.
Multi-Axis Coordination	Supports programming and control for up to 6 axes simultaneously. Ideal for complex machining tasks that require precise multi-dimensional movement.
Advanced File Compatibility	Seamless support for industry-standard file formats like G-Code and DXF. Compatibility with popular CAD (Computer-Aided Design) software outputs.
Real-Time Monitoring and Control	Provides real-time status indicators for machine connectivity and operations across all axes. Integrated alarm systems and emergency stop functionalities to enhance safety and operational control.
Precision Toolpath Visualization	3D visualization tools display toolpath and machine operations in real time. Allows for pre-emptive adjustments and accuracy checks before and during the cutting process.
Detailed Position and Velocity Controls	Full control over the tool's position, movement, and velocity, with settings for both absolute and relative coordinates.
Spindle and Tool Management	Comprehensive control over spindle speeds and tool changes to optimize machining processes for various materials and operations.



Wood Working

Router

Lathe

Engraving

Saw Machines

Doors and Windows

Engineered to optimize the performance of a variety of woodworking machines, our control cards ensure that both simple and complex woodworking operations are executed with the highest level of accuracy.

Key Features:

- Supports both rotary and inline tool change mechanisms to accommodate versatile machining operations.
- Optimized for disk tools, enhancing efficiency in cutting and carving processes.
- Features an A-axis controlled by G-code, crucial for complex operations involving rotational movements around the X-axis.
- Enables the parametric execution of two-dimensional files without generating G-code, simplifying the workflow.
- Allows operators to view the final workpiece in 3D, aiding in precision and planning.
- Provides the option to set the material removal direction as forward, backward, or both, offering greater control over the machining process.
- Enables operators to adjust critical settings such as the initial diameter of the workpiece and the tool's advancement with each pass.
- Facilitates parametric adjustments to achieve better surface finishes, typically involving minimal material removal in the final stages.
- The controller sends precise pulses and direction signals to the A-axis, ensuring accurate alignment with G-code instructions for intricate designs.

Wood Working

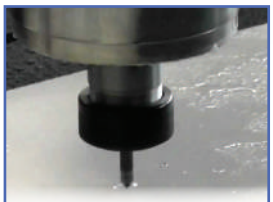
Related Interfaces Name

- ***Click on the interface name to navigate to the corresponding page for detailed information.***

1 Router	XYZ Router	XYZ Router TC
	XYZA Router	XYZABC Router
2 Lathe	XZ Woodturning	XZA Woodturning
	XYZA Router	
3 Engraving	XYZ Router	XYZ Router TC
	XYZA Router	
4 Saw Machines	XYC Router	
5 Doors and Windows	XYZ Router	XYZ Router TC

* For each machine type, you can select a specific interface tailored to both the requirements of the task and your individual preferences.

Stone and Marble Working



Router

Lathe

Engraving

Water jet

Designed to enhance precision and efficiency in the stone and marble industry, Radonix CNC controllers and interfaces provide advanced functionalities tailored for intricate and robust operations. Leveraging cutting-edge technology, our systems support a wide range of applications, including carving, engraving, and cutting, ensuring seamless integration into both traditional and modern workflows.

Key Features:

- ***Automatic Z-Axis Height Control:*** Achieve consistent and precise cuts by maintaining optimal nozzle-to-surface distance, regardless of material thickness or irregularities.
- ***Real-Time Adjustable Parameters:*** Operators can modify cutting parameters such as speed, pressure, and abrasive flow in real time, ensuring adaptability to different material types and project requirements.
- ***Eco-Friendly Operations:*** Water Jet Interface utilizes water and natural abrasives, providing a sustainable solution for industries prioritizing environmental responsibility.
- ***Enhanced Workflow Efficiency:*** Features like material misalignment correction and the ability to select and sequence parts from larger design files streamline production, reducing setup time and material waste.
- ***3D Visualization:*** Enables operators to preview the final workpiece, ensuring accuracy in complex designs and reducing errors.
- ***Tool Compatibility:*** Supports a variety of tools and cutting systems, including rotary and inline tool change mechanisms, to accommodate diverse operational needs.
- ***Parametric Adjustments:*** Operators can fine-tune settings such as the material removal direction (forward, backward, or both) and optimize surface finishes with reduced material removal during the final stage.
- ***Advanced Safety Features:*** Integrated safety mechanisms enhance operator protection while ensuring precise control over high-pressure cutting processes.

Stone and Marble Working

Related Interfaces Name

- ***Click on the interface name to navigate to the corresponding page for detailed information.***

1 Router

- XYZ Router
- XYZ Router TC
- XYC Router
- XYZABC Router
- XYC Band Saw

2 Lathe

- XZ Woodturning
- XZA Woodturning

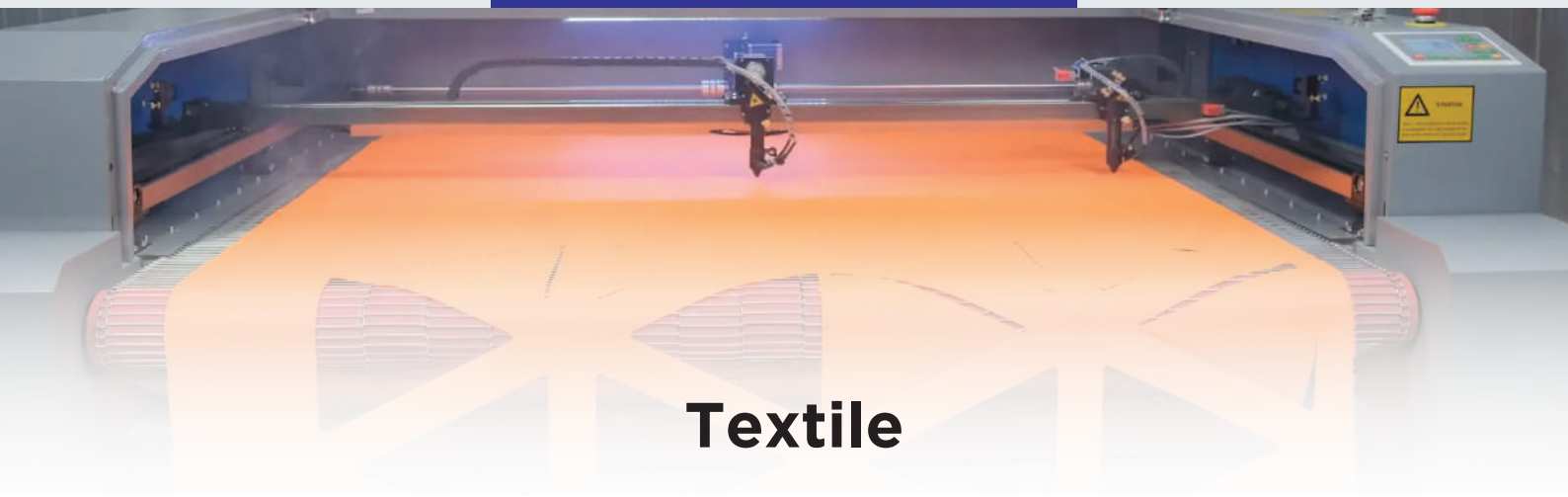
3 Engraving

- XYC Router
- XYZA Router
- XYZC GE

4 Water jet

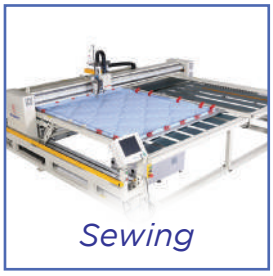
- XYC Router

* For each machine type, you can select a specific interface tailored to both the requirements of the task and your individual preferences.



Textile

Cutting



Sewing

From high-precision cutting to advanced sewing functionalities, Radonix systems ensure efficiency, accuracy, and reliability, meeting the diverse needs of the textile industry.

Key Features:

- ***Enhanced Cutting Efficiency:*** Designed to execute two-dimensional designs with exceptional precision, our controllers support various textile materials, ensuring clean and accurate cuts for even the most intricate patterns.
- ***Advanced Sewing Capabilities:*** Radonix systems support both single-axis and dual-motor sewing machines, enabling seamless execution of 2D design files (DXF) without the need for G-code. This simplifies the workflow and enhances productivity.
- ***Thread Breakage Control:*** Equipped with thread tension control sensors, our systems monitor and maintain consistent stitching quality by immediately detecting and addressing thread breakages.
- ***Customizable Stitching Options:*** Automatic stitching repetition at the start and end of lines ensures durability and precision.
  - Adjustable stitch pitch maintains consistent quality, even when sewing speed varies along the path.
  - Custom dimensions for designs can be automatically adjusted, making the system ideal for quilting machines and other specialized applications.
- ***High-Performance Nesting:*** Advanced algorithms optimize material usage by arranging parts efficiently on the fabric, minimizing waste and reducing production costs.
- ***Parametric Workflow Support:*** Parametric design execution allows for rapid adjustments to accommodate variations in fabric type, thickness, and application, ensuring optimal performance across a range of textile processes.
- ***Automation for Quilting Machines:*** Specialized features include auto-adjustment of patterns to fit quilt dimensions, ensuring uniformity and high-quality results across batches.

- **Applications: Fabric cutting for garment manufacturing, Embroidery and decorative stitching, Quilting for bedding and upholstery, Pattern creation and repetitive stitching tasks.**

Textile

Related Interfaces Name

- ***Click on the interface name to navigate to the corresponding page for detailed information.***

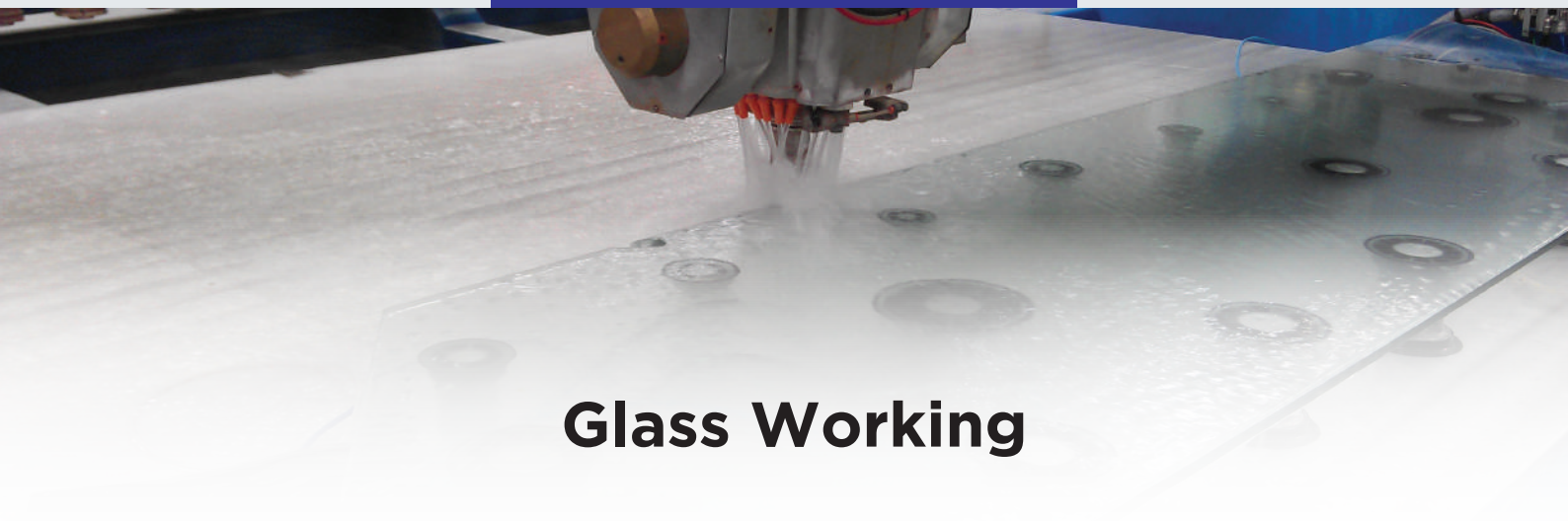
1 Cutting

XY Cutter	XYZ Cutter
XYC SGCut	XYC Router

2 Sewing

XYRS Sewing	XY Sewing

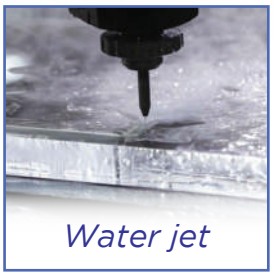
* For each machine type, you can select a specific interface tailored to both the requirements of the task and your individual preferences.



Glass Working

Cutting

Engraving



Water jet

Radonix CNC controllers and interfaces are tailored for the glass working industry, encompassing cutting, engraving, and water jet applications. Designed for high precision and efficiency, our systems ensure seamless operation across a variety of processes.

Key Features:

- ***Tangent Movement and C-Axis Integration:*** Supports intricate cutting paths and complex shapes, ensuring precision for advanced designs.
- ***Auto Reference and Alignment:*** Automatically detects the zero point and aligns designs with the workpiece, reducing setup time and potential errors.
- ***Automatic Pressure Regulation:*** Ensures consistent tool pressure during glass cutting, minimizing the risk of breakage and improving cut quality.
- ***Rotary Z-Axis Support:*** Facilitates advanced operations, accommodating specialized applications requiring rotational adjustments.
- ***Seamless Material Handling:*** Features such as integrated loading tables and conveyor systems streamline operations and improve productivity.
- ***Direct DXF Execution:*** Eliminates the need for G-code by allowing direct execution of design files, simplifying the workflow.
- ***Real-Time Design Editing:*** Enables operators to adjust scale, rotation, and orientation of designs within the software, enhancing flexibility and accuracy.
- ***Multi-Axis Water Jet Cutting:*** Provides precise control for intricate cuts, including angled and bevelled edges, leveraging eco-friendly water jet technology.
- ***Smart Height Control:*** Maintains optimal nozzle-to-surface distance during operations, ensuring consistent quality across all material types.
- ***Material Misalignment Correction:*** Automatically adjusts for alignment issues, particularly for heavy or irregular glass sheets, ensuring accuracy and reducing material waste.

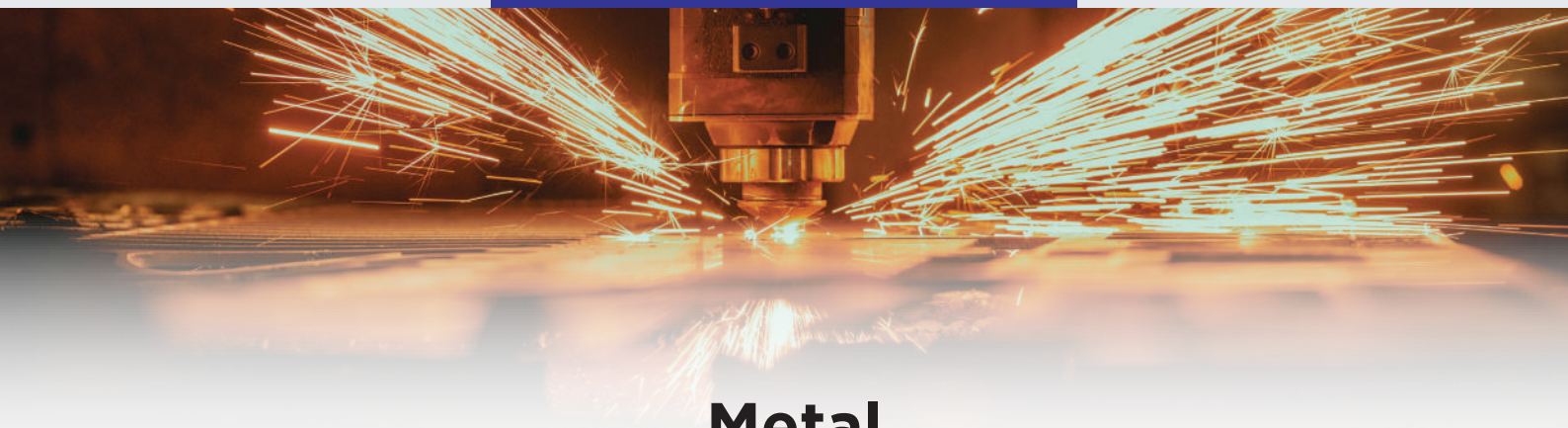
Glass Working

Related Interfaces Name

- ***Click on the interface name to navigate to the corresponding page for detailed information.***

1	Cutting	XYC SGCut	XYC Router
2	Engraving	XYC Router	XYZC GE
3	Water jet	XY Cutter	XYZ Cutter

* For each machine type, you can select a specific interface tailored to both the requirements of the task and your individual preferences.



Metal

Laser Cut

Flame Cut

Plasma Cut

Wire Cut

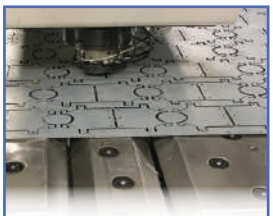
Pipe Cut

Water jet

Drilling

Milling

Lathe



Punch

Hammering

Radonix CNC controllers and interfaces deliver precision, flexibility, and efficiency for a diverse range of metalworking applications, including cutting, drilling, milling, punching, hammering, and more. With advanced features tailored to industry-specific requirements, our systems ensure seamless operation and optimal performance across various metalworking processes.

Key Features

1. **Comprehensive Cutting Support:**
   - Compatible with plasma, laser, flame, waterjet, and pipe cutting systems.
   - Direct execution of DXF files without G-code conversion simplifies workflows.
   - Intelligent Torch Height Control (THC) ensures consistent cutting quality by adapting to surface irregularities.
   - Supports cylindrical and flat pattern execution, ideal for pipes and heavy sheets.
2. **Precision Drilling and Milling:**
   - XYZ interface provides graphical visualization of drilling paths, tool management, and pre-execution simulation.
   - Supports DXF and G-code files for versatile design execution.
   - Hydraulic clamp support and intelligent safety alerts enhance operational reliability.
   - Real-time adjustment of speed and depth ensures precision for complex drilling tasks.
3. **Advanced Hammering Capabilities:**
   - Automatic and manual surface scanning for accurate hammering execution.
   - Supports dual rotation modes: around the X-axis (bowl shape) and Y-axis (tray shape).
   - Features include adjustable hammer stroke distances, overlap hammering, and partial execution of designs.
   - Compatible with pneumatic and servo hammers for flexibility across applications.
4. **High-Performance Punching:**
   - Compatible with servo, hydraulic, and pneumatic systems.
   - Automatic tool-changing systems increase efficiency and reduce downtime.
   - Workpiece repositioning systems enable execution of oversized designs beyond table dimensions.
   - Integration with Metalix software ensures smooth design-to-production workflows.
5. **Rotary and Pipe Cutting Solutions:**
   - Pipe cutting interfaces utilize rotary and linear axes to enable 360-degree cuts with precision.
   - Dynamic Diameter parameter allows adaptation to varying pipe sizes.
   - Smart height control ensures consistent torch-to-surface distance during cutting.
6. **Laser and Profile Cutting:**
   - Profile Laser Cut system supports complex 4-axis motion control for intricate profiles.
   - Advanced motion precision ensures clean and efficient execution on various materials.
7. **Automated Features for Enhanced Productivity:**
   - Automatic workpiece displacement for executing large designs.
   - Adaptive features such as design alignment, scaling, rotating, and flipping within the software.
   - Pre-set pauses before, during, and after operations streamline workflow management.
   - Demo execution allows testing without activating cutting outputs.
8. **Customizable Interfaces:**
   - Integration with various motor types, including servo, hydraulic, and crank systems.
   - Real-time operational feedback through advanced visualization tools.
   - Flexible parameters for adjusting cutting, drilling, and hammering processes.

Metal

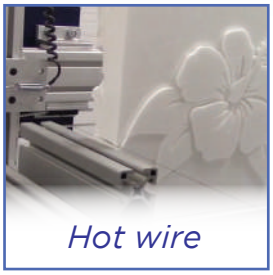
Related Interfaces Name

- ***Click on the interface name to navigate to the corresponding page for detailed information.***

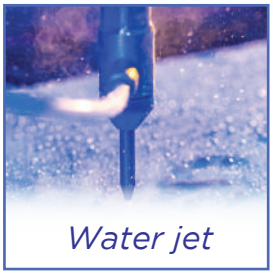
1	Laser Cut	XY Cutter	XYZ Cutter
		XYZA ProfileCut	XY FastCut
2	Flame Cut	XY Cutter	XYZ Cutter
3	Plasma Cut	XYZ Plasma	XYZ Plasma Pipe
		XYZA ProfileCut	
4	Wire Cut	XY Cutter	XYZ Cutter
5	Pipe Cut	XY Cutter	XYZ Cutter
		XYZ Plasma Pipe	XY Pipe Cutter
6	Water jet	XY Cutter	XYZ Cutter
		XYZ WaterJet	
7	Drilling	XYZ SimpleDrill	
8	Milling	XZ Ring	XYZABC Router
9	Lathe	XZ Woodturning	
10	Punch	XY Punch	
11	Hammering	XYAC Hammer	XYBCU Hammer

* For each machine type, you can select a specific interface tailored to both the requirements of the task and your individual preferences.

Plastic & Composite



Hot wire



Water jet

Pipe Cut

Radonix CNC controllers and interfaces are tailored to meet the specific needs of the plastic and composite industry, ensuring high precision and efficiency in processes like hot wire cutting, molding, water jet cutting, and pipe cutting. With cutting-edge technology,

Key Features:

- Integrated **RadPS** software eliminates the need for manual G-code conversion, streamlining the transition from design to production.
- Automatic pause insertion at the end of cutting lines prevents wire overheating and ensures the accuracy of intricate designs.
- Supports advanced hot wire cutting applications, ideal for creating custom shapes and ceiling panels with exceptional precision.
- Water jet cutting capabilities include real-time adjustable parameters, automatic abrasive feeder control, and eco-friendly operation with water and natural abrasives.
- Pipe cutting interfaces feature dynamic diameter settings, enabling precision 360-degree cuts for various pipe sizes and materials.
- Smart height control in cutting systems ensures consistent torch-to-surface distance for superior quality.
- Advanced molding capabilities allow for precise control over material-specific parameters, enhancing the quality and reducing waste in mold production.
- Remote operation is supported with devices like Xbox controllers and keyboards, making it easier for operators to manage the system.
- Pre-configured inputs and outputs eliminate the need for complex programming, reducing setup time and ensuring seamless operation.
- Real-time monitoring and 3D visualization of G-code provide operators with detailed insights and the ability to make adjustments during pre-execution.
- The system includes Radonix PC Test and Radonix PC Calibrator tools for easy installation, calibration, and testing.
- Comprehensive support for a variety of CNC processes ensures adaptability across diverse applications in the plastic and composite industry.

Plastic & Composite

Related Interfaces Name

- ***Click on the interface name to navigate to the corresponding page for detailed information.***

1 Hot wire

- XY HotWire

2 Water jet

- XYZ WaterJet
- XY Cutter
- XYZ Cutter

3 Pipe Cut

- XY Pipe Cutter

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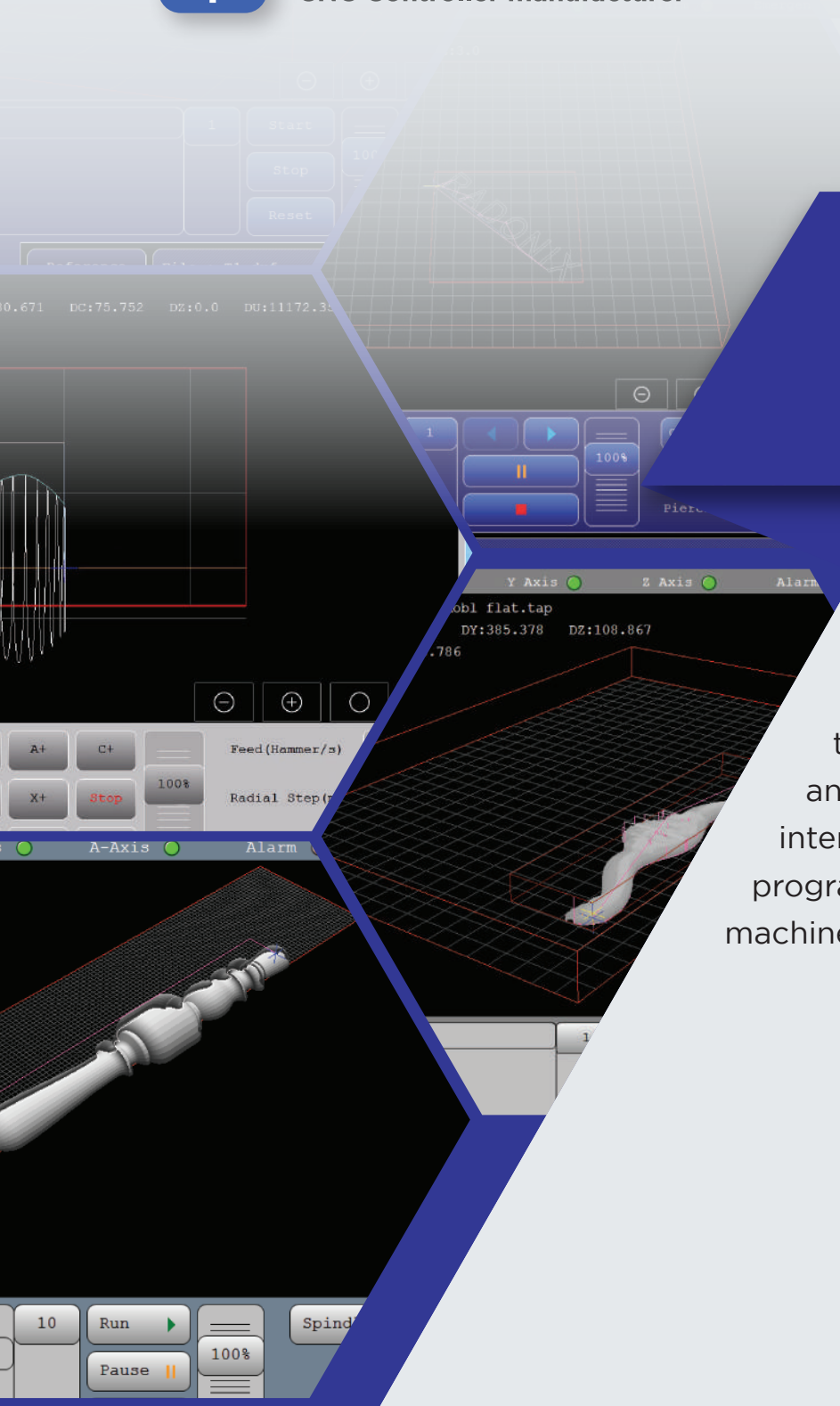
RADONIX
CNC Controller manufacturer

Interfaces



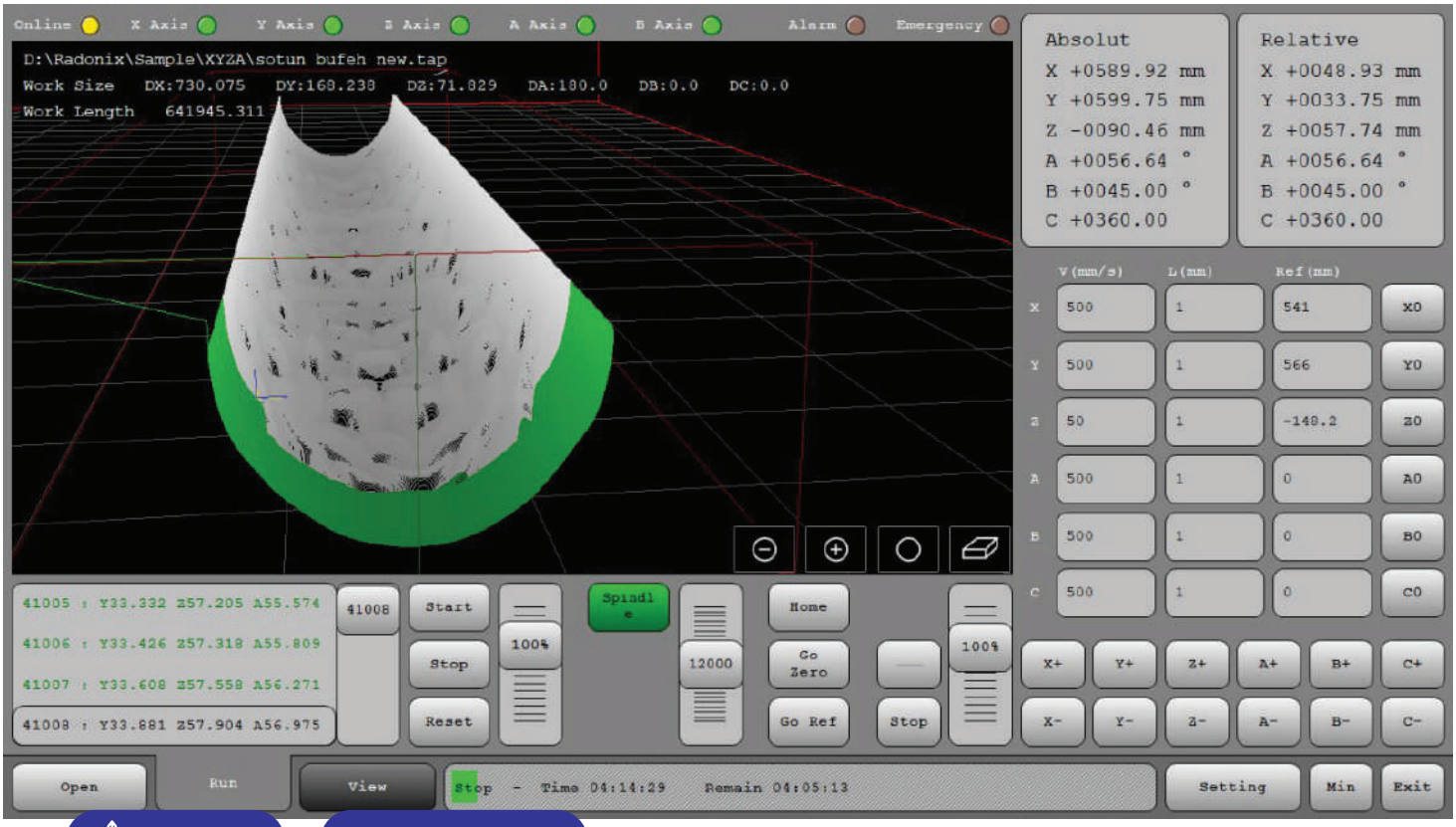
The CNC controller serves as the primary interface between the Radonix Cam-Pro application and the user. Through this interface, users interact with the program to control their CNC machines.

Interface Name:

XYZABC Router

Used for:

6-Axis Router machine



6 Axis

Router

The CNC interface you're referring to is highly versatile, capable of controlling machinery across a range of complex applications that require up to 6-axis coordination. This capability makes it suitable for a diverse array of machine types, **from 5-axis and 6-axis woodworking machines to sophisticated robotic arms and other multi-axis equipment**. Such an interface is designed to enhance precision and flexibility in operations, accommodating the intricate movements necessary for advanced manufacturing tasks.

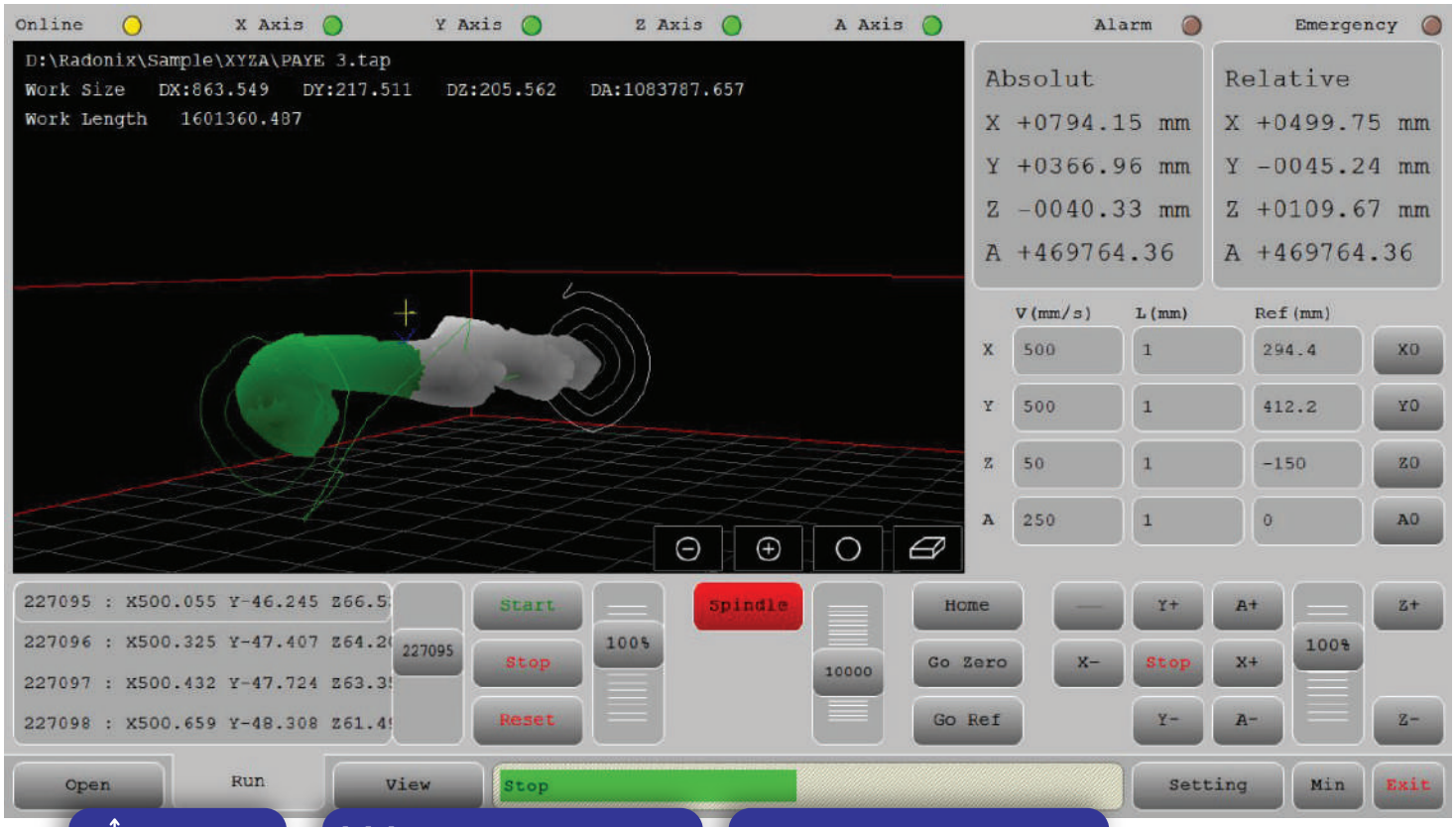
The ability to handle multiple axes simultaneously allows this interface to support various configurations and complex motion sequences, making it an essential tool in industries where detailed and precision-oriented tasks are critical. This could include applications in automotive manufacturing, aerospace component fabrication, and intricate woodworking, among others. The interface's robust design and comprehensive control options ensure that it can meet the demands of sophisticated machinery, providing seamless integration and streamlined operation across different platforms and machine types. This adaptability and control precision significantly boost productivity and efficiency in high-tech manufacturing environments.

Interface Name:

XYZA Router

Used for:

Rotary machine



4 Axis | Router, Lathe | Multi Head 4 Axis

The XYZA Router interface serves as an advanced user interface for four-axis CNC machines. In these machines, the X, Y, and Z axes are used for three-dimensional movements, while the fourth axis, called the rotary axis (or axis A), adds rotational movement.

Additionally, the interface allows for control of digital outputs during G-code execution via M-codes. Complementary features, such as connecting an Xbox controller and keyboard as remote controllers, automatic parking position adjustment, defining up to six reference points for the start of the workpiece, and easy and precise control of the machine, facilitate operation for users. All inputs and outputs are pre-configured by default, eliminating the need for additional programming. The interface is also customizable in appearance to suit industrial needs and the branding of CNC machine manufacturers.

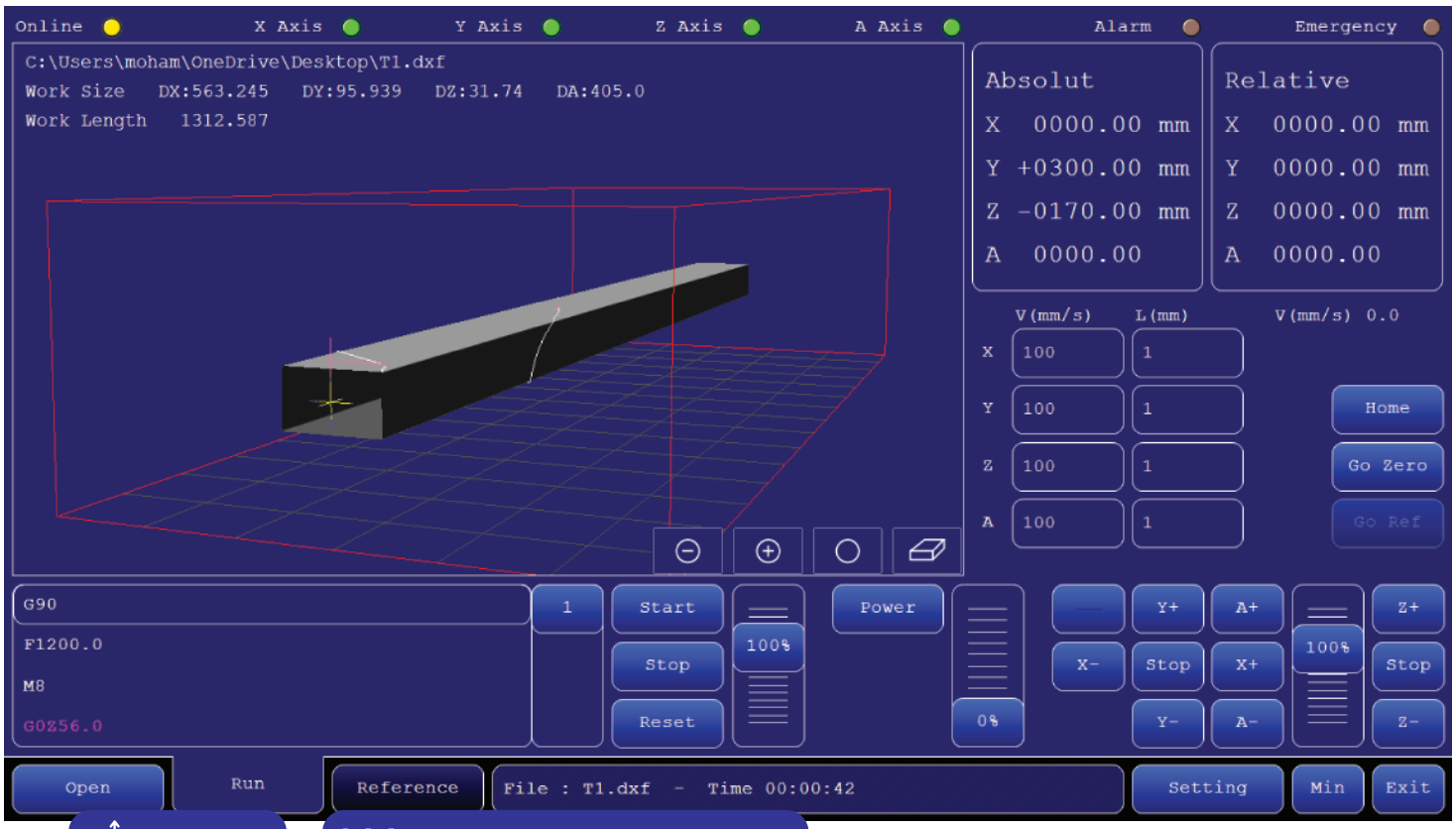
A significant advantage of Radonix software and interfaces is their ability to install, set up, and display 3D G-code, as well as perform various configurations such as defining digital inputs and outputs, speed and acceleration settings, and other related parameters. These settings can even be adjusted in testing and G-code simulation mode without requiring hardware. This feature allows users to gain an initial understanding of the performance and operation of Radonix controllers before deployment, significantly simplifying the setup and configuration process.

Interface Name:

XYZA Profile Cut

Used for:

Profile Cutting Machine



4 Axis

Cutter, Laser, Plasma

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Additionally, the interface allows for control of digital outputs during G-code execution via M-codes. Complementary features, such as connecting an Xbox controller and keyboard as remote controllers, automatic parking position adjustment, defining up to six reference points for the start of the workpiece, and easy and precise control of the machine, facilitate operation for users. All inputs and outputs are pre-configured by default, eliminating the need for additional programming. The interface is also customizable in appearance to suit industrial needs and the branding of CNC machine manufacturers.

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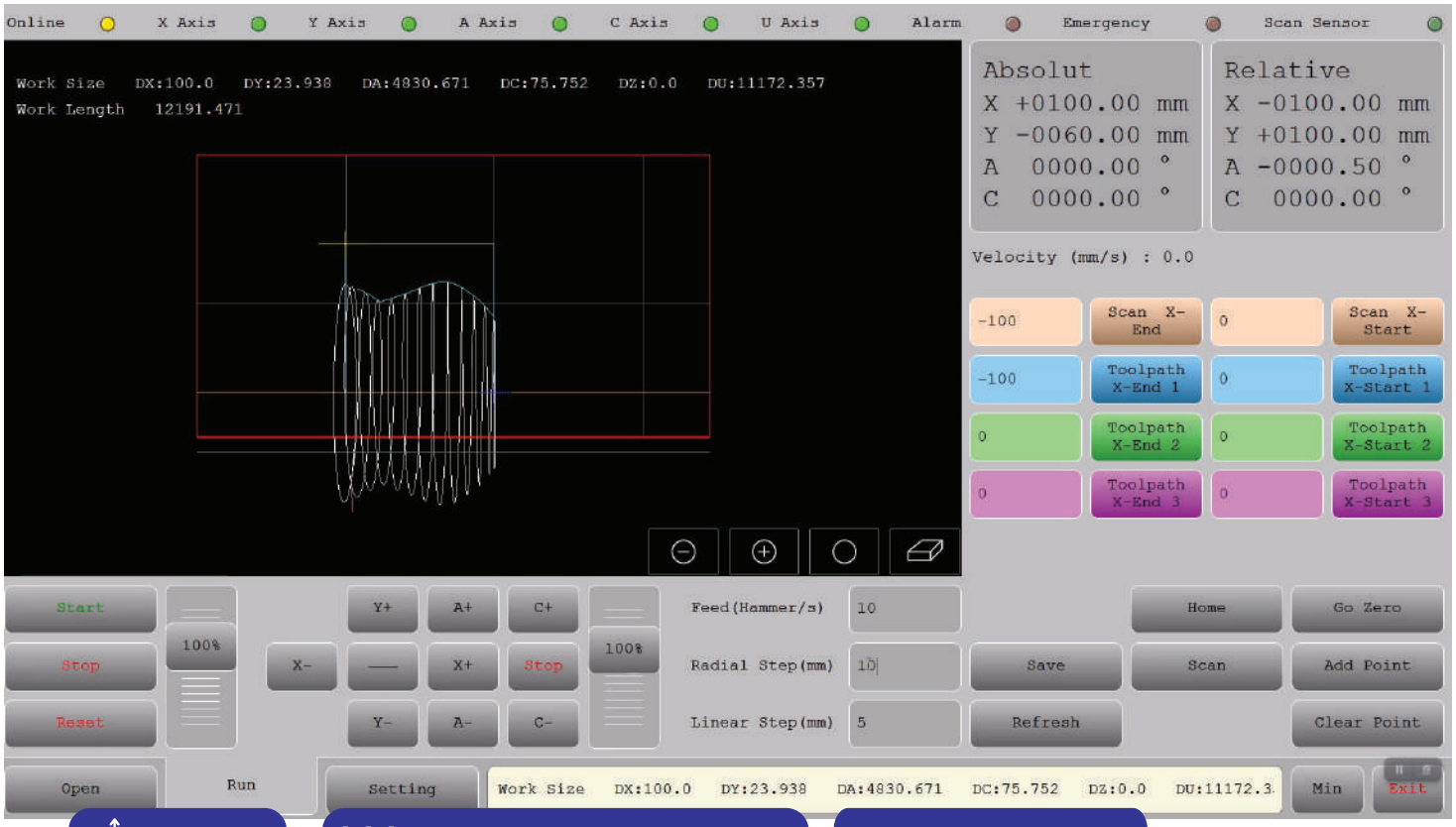
Interface Name:

XYAC Hammer

Used for:

Hammering Machine



4 Axis | **Router, Hammering** | **Surface Scan**

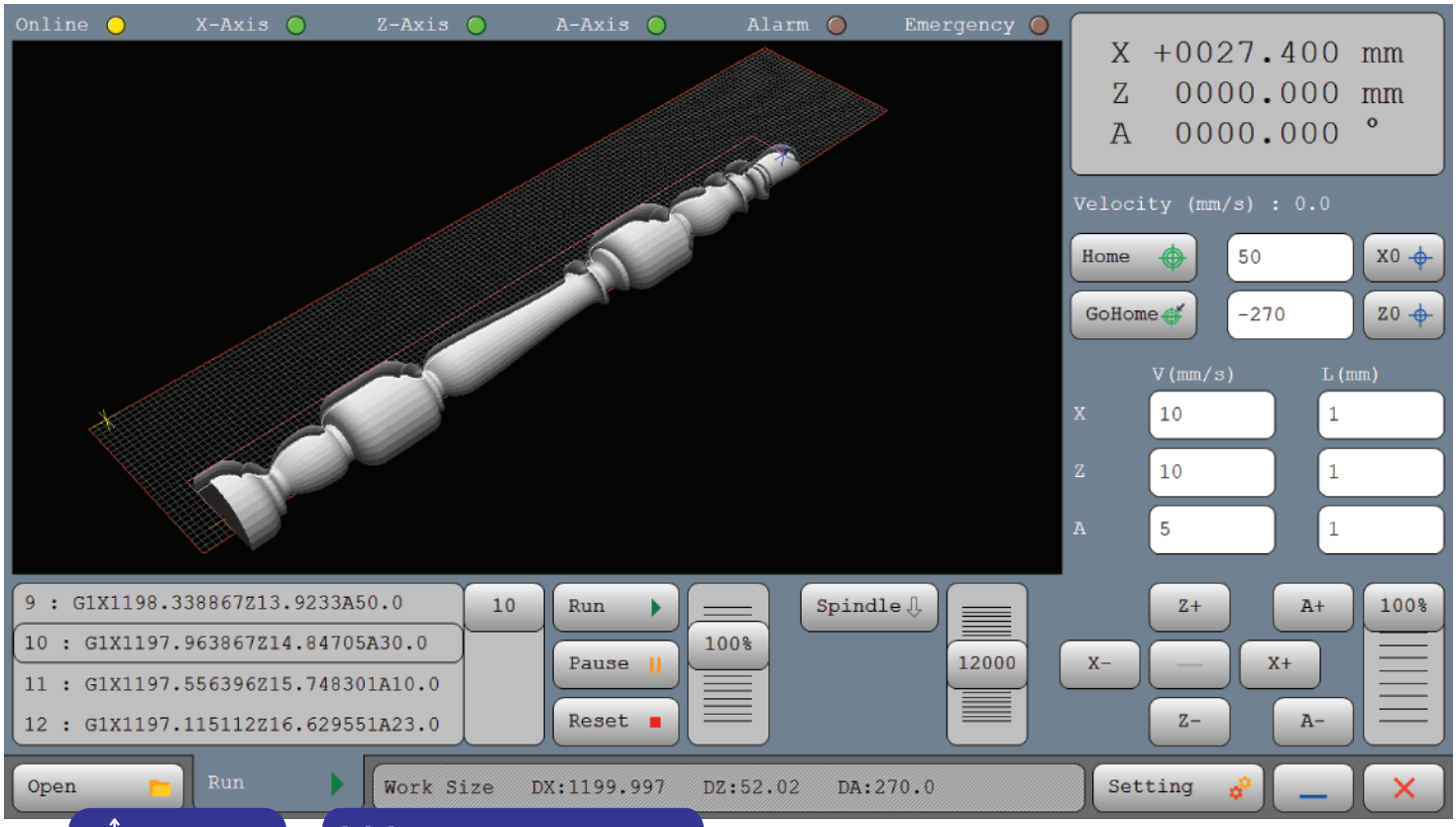
The system offers both automatic and manual scanning of hammering surfaces and allows for the execution of designs in two rotation axis modes: around X (like a bowl) and around Y (like a tray). It displays the scanned container shape in 3D and enables adjustments to the hammer strike distance in both directions, controlling the spacing between consecutive strikes and between rows. Additionally, the system automatically adds hammering overlap at the beginning and end of the path (Overlap). It also allows for executing specific parts of the hammering by limiting the start and end points or sections of the container. The system supports both pneumatic and servo hammers.

Interface Name:

XZA Wood Turning

Used for:

Wood turning Machine



3 Axis

Router, Lathe

The XZA-Woodturning machine incorporates an A-axis, which is controlled via G-code. This axis is essential for complex operations and allows for rotational movements around the X-axis. In this setup, the A-axis functions as a pivotal component in controlling how the workpiece is manipulated, enabling precise angular cuts and detailed profiling.

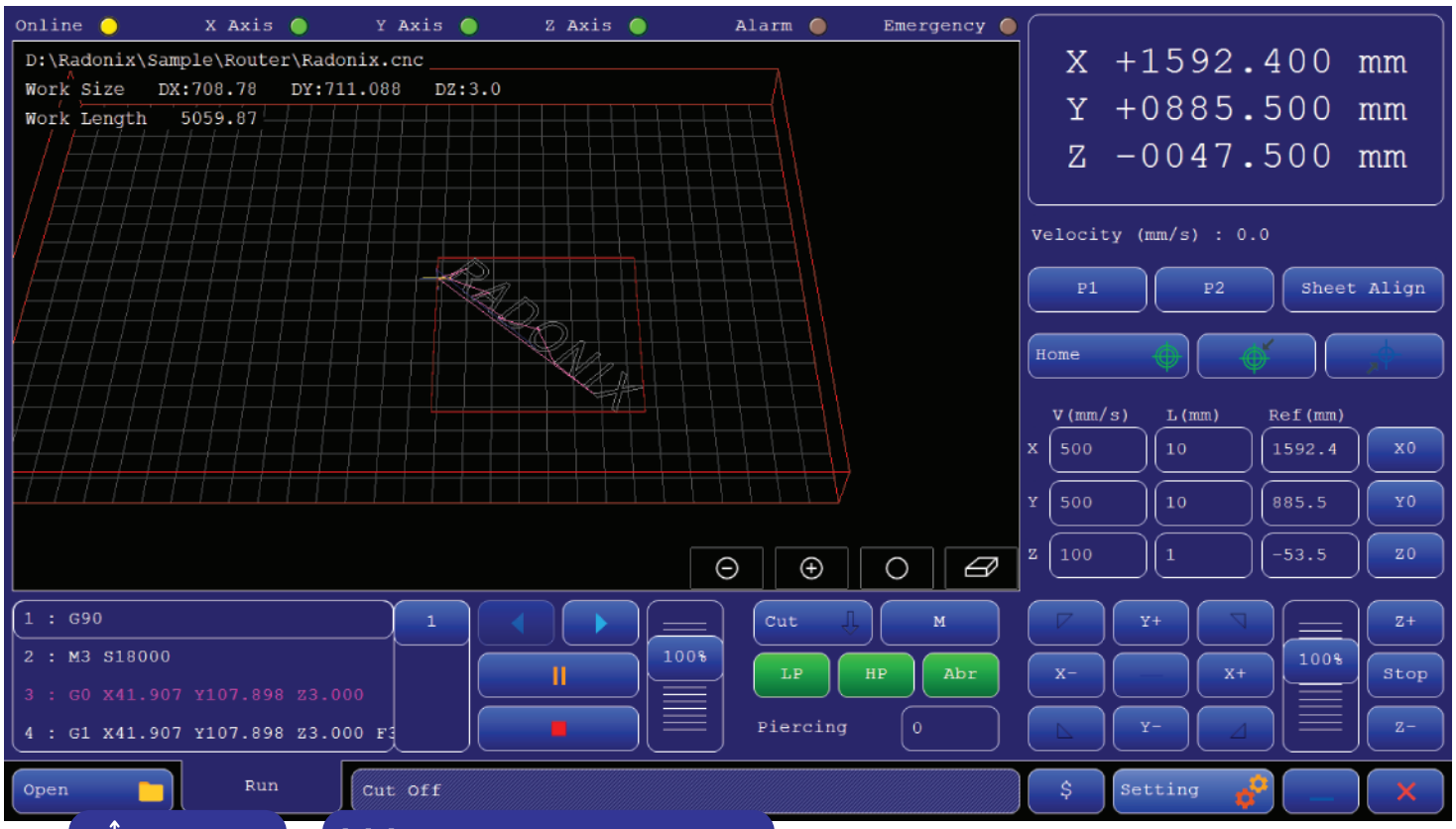
In this machine, the controller plays a critical role by sending pulses and direction signals to the A-axis. This allows for exact control over the rotation, aligning the movements meticulously with the G-code instructions to produce precise and intricate designs.

Interface Name:

XYZ Water Jet

Used for:

Water jet



3 Axis

Cutter, Water Jet

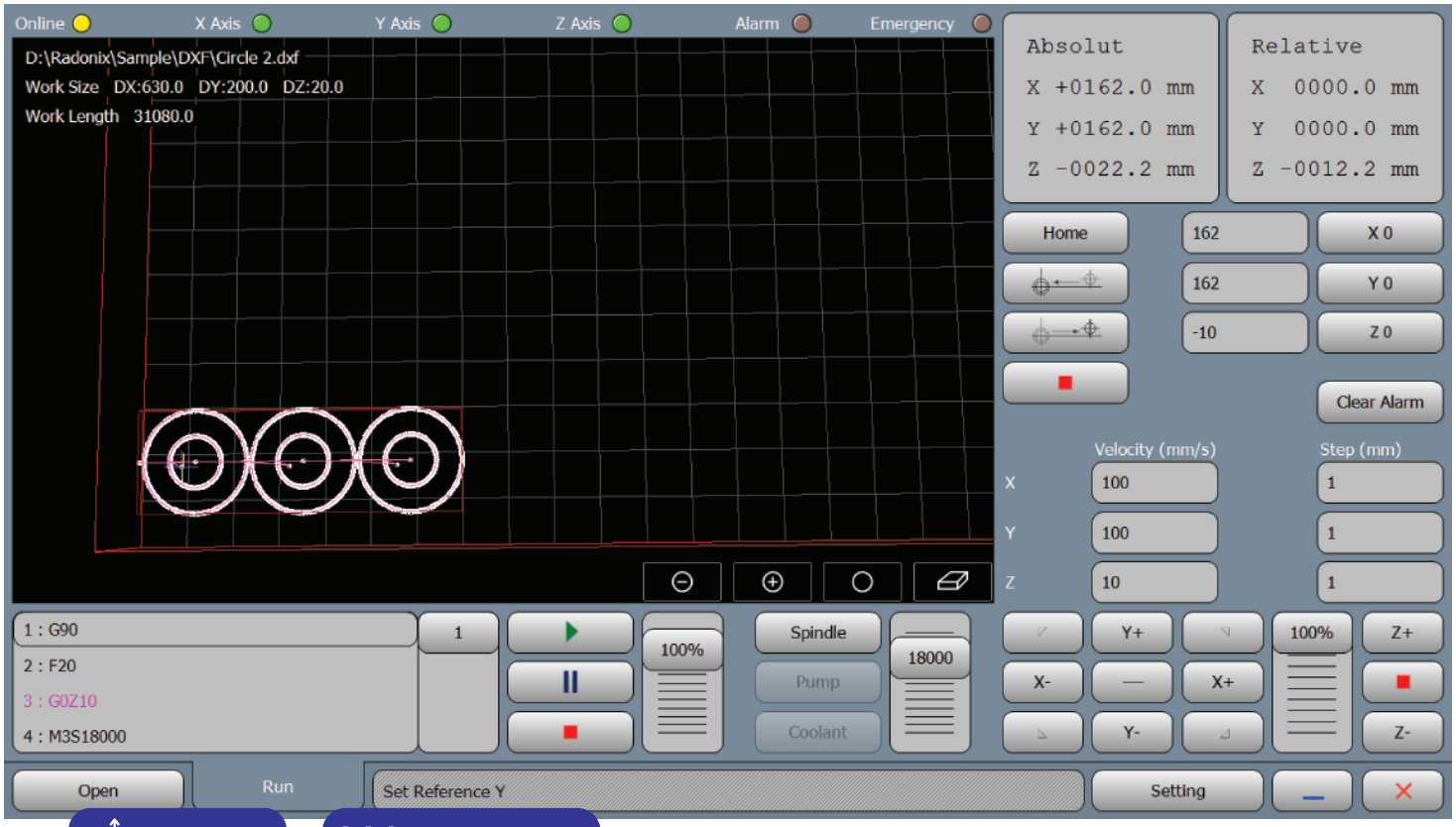
The Radonix XYZ Water Jet Interface revolutionizes industrial CNC cutting with its advanced multi-axis precision that allows for intricate cuts and exact angles across various materials. Integrating direct CAD compatibility, the interface streamlines workflows by eliminating manual G-code generation, ensuring efficiency and accuracy. Equipped with real-time adjustable cutting parameters and safety features, the Radonix interface enhances both operator safety and material utilization. This eco-friendly system uses water and natural abrasives, making it a sustainable choice for industries requiring the highest quality in precision cutting, from aerospace to fine arts

Interface Name:

XYZ Simple Drill

Used for:

Drilling Machine



3 Axis

Router

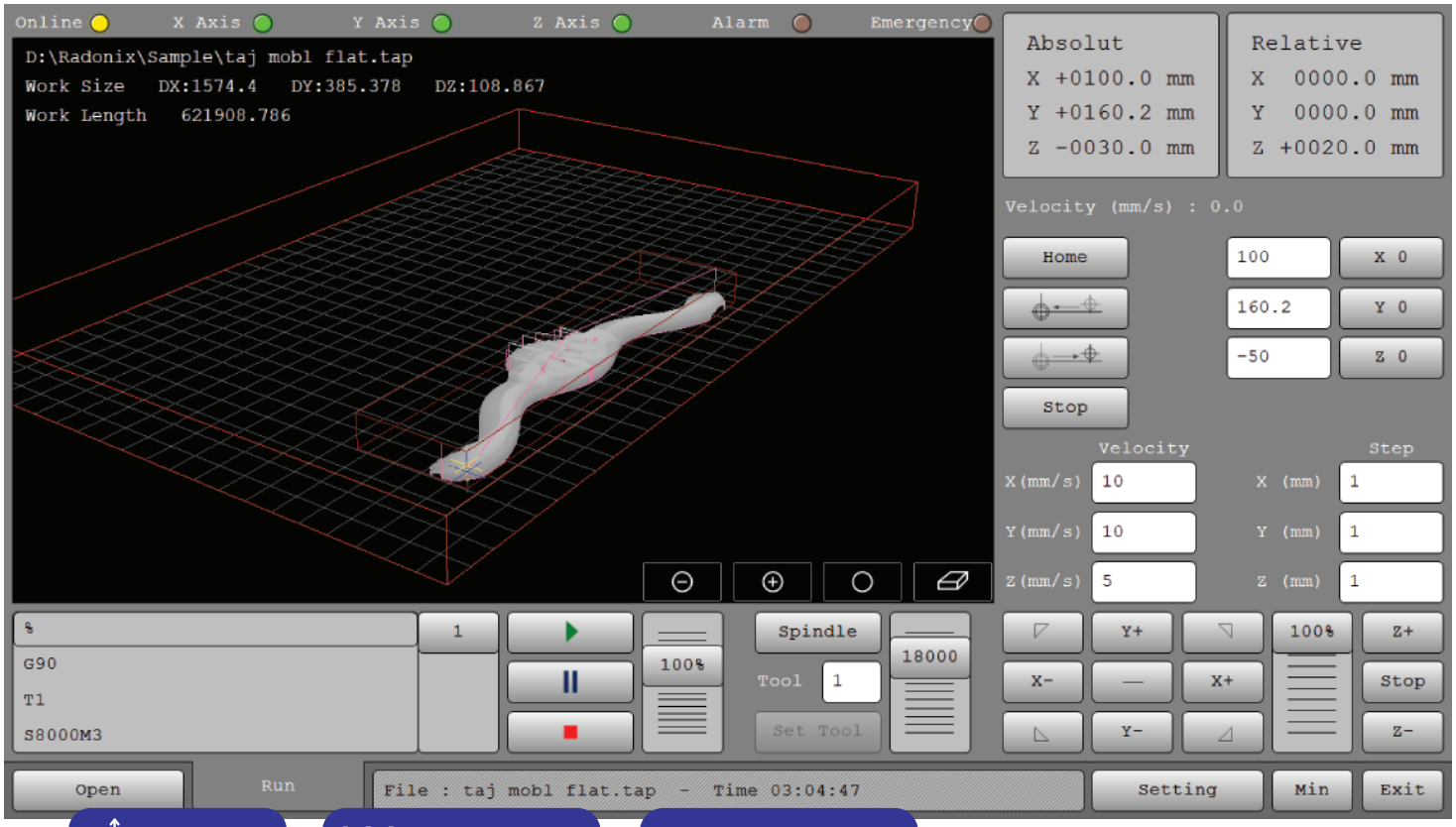
The XYZ Radonix interface for CNC drilling machines combines modern design with advanced features to deliver a professional and efficient user experience. Supporting three axes (X, Y, and Z), it offers graphical visualization of drilling paths and precise control over speed and depth settings. Key features include comprehensive tool management, intelligent safety alerts, pre-execution simulation, and support for hydraulic clamps. With a multilingual user interface and compatibility with DXF and G-code files, the Radonix interface is an ideal choice for both professional and beginner operators across various industries. This system enhances productivity, minimizes errors, and provides detailed operational reports, making it a reliable solution for improving production efficiency.

Interface Name:

XYZ Router TC

Used for:

3-Axis Router Machine with automatic tool changer



3 Axis | Router | Tool Change

The XYZ Router -TC interface serves as a user interface between the operator and advanced software for a three-axis CNC machine, featuring capabilities such as automatic tool change, support for various types of linear and rotary parking systems, and digital output control during G-code execution via M-Code. Complementary features like the ability to connect an XBOX controller and keyboard as remote controllers, automatic park position adjustment, and the definition of up to 6 reference points for work start positions make machine operation easy and precise for operators. All inputs and outputs are pre-configured by default, so no additional programming is required. The interface can also be customized visually to fit the industrial needs and branding of manufacturing companies.

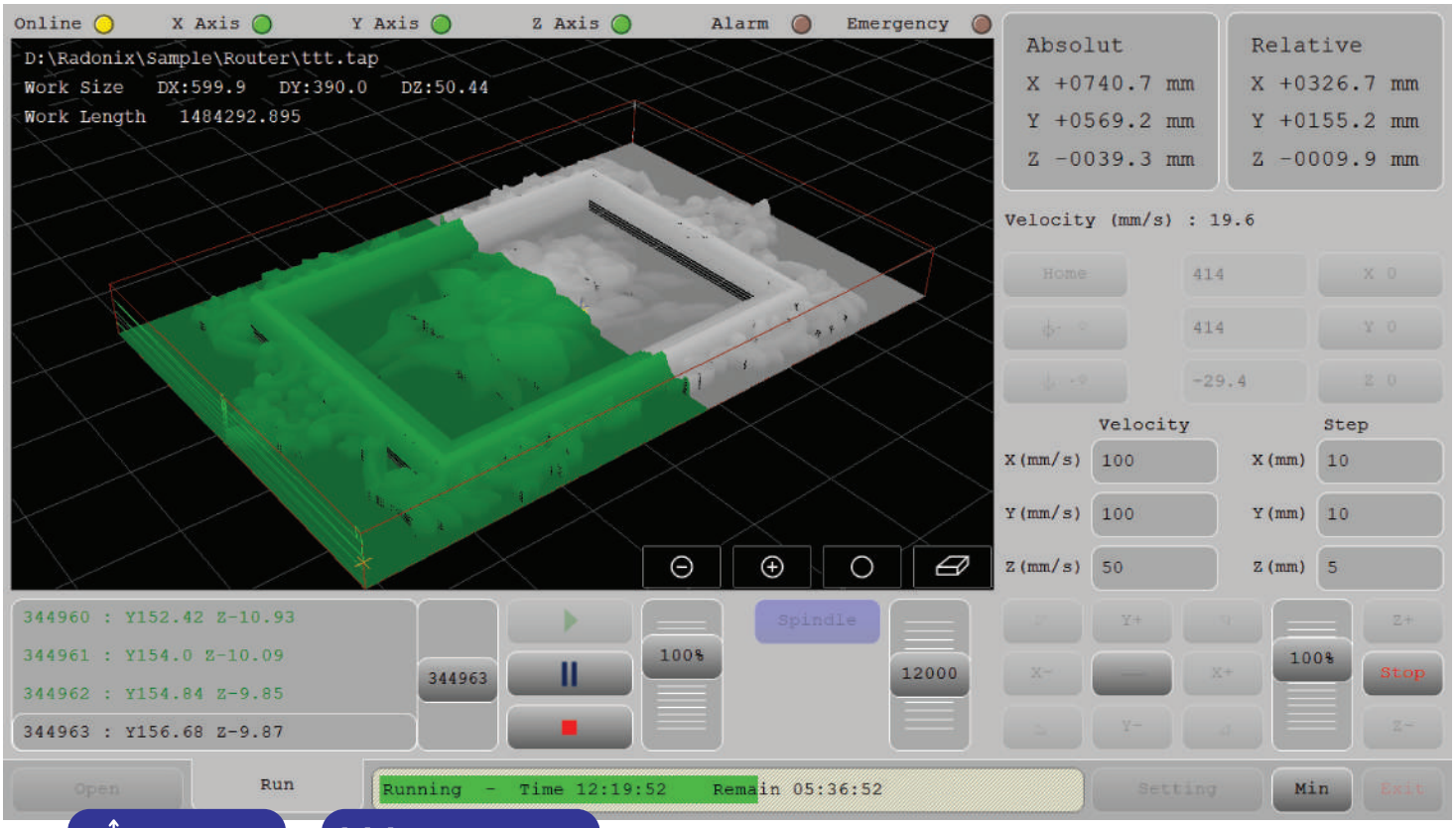
One of the key advantages of Radonix software and interfaces is the ability to install, set up, and display G-code in 3D while performing various settings such as defining digital inputs and outputs, adjusting speed, acceleration, and other related parameters. These settings can even be tested and simulated in G-code mode without requiring hardware. This feature allows users to gain an initial understanding of Radonix controllers' performance and functionality, significantly simplifying the setup and configuration process.

Interface Name:

XYZ Router

Used for:

3-Axis Router Machine



3 Axis

Router

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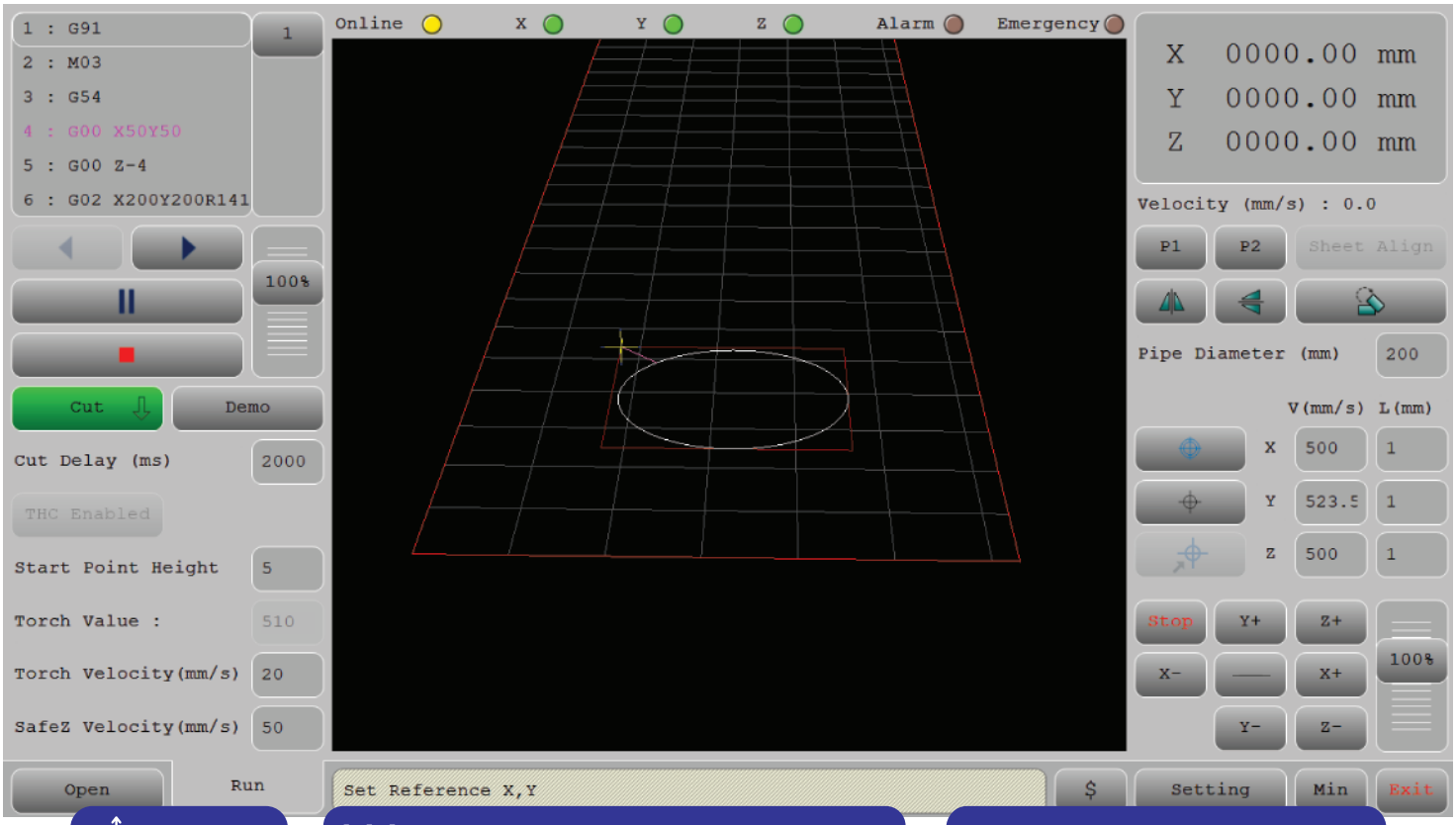
Interface Name:

XYZ Plasme Pipe

Used for:

Plasma Pipe Cutting Machine



3 Axis

Cutter, Plasma, Pipe Cutter

Torch Height Control

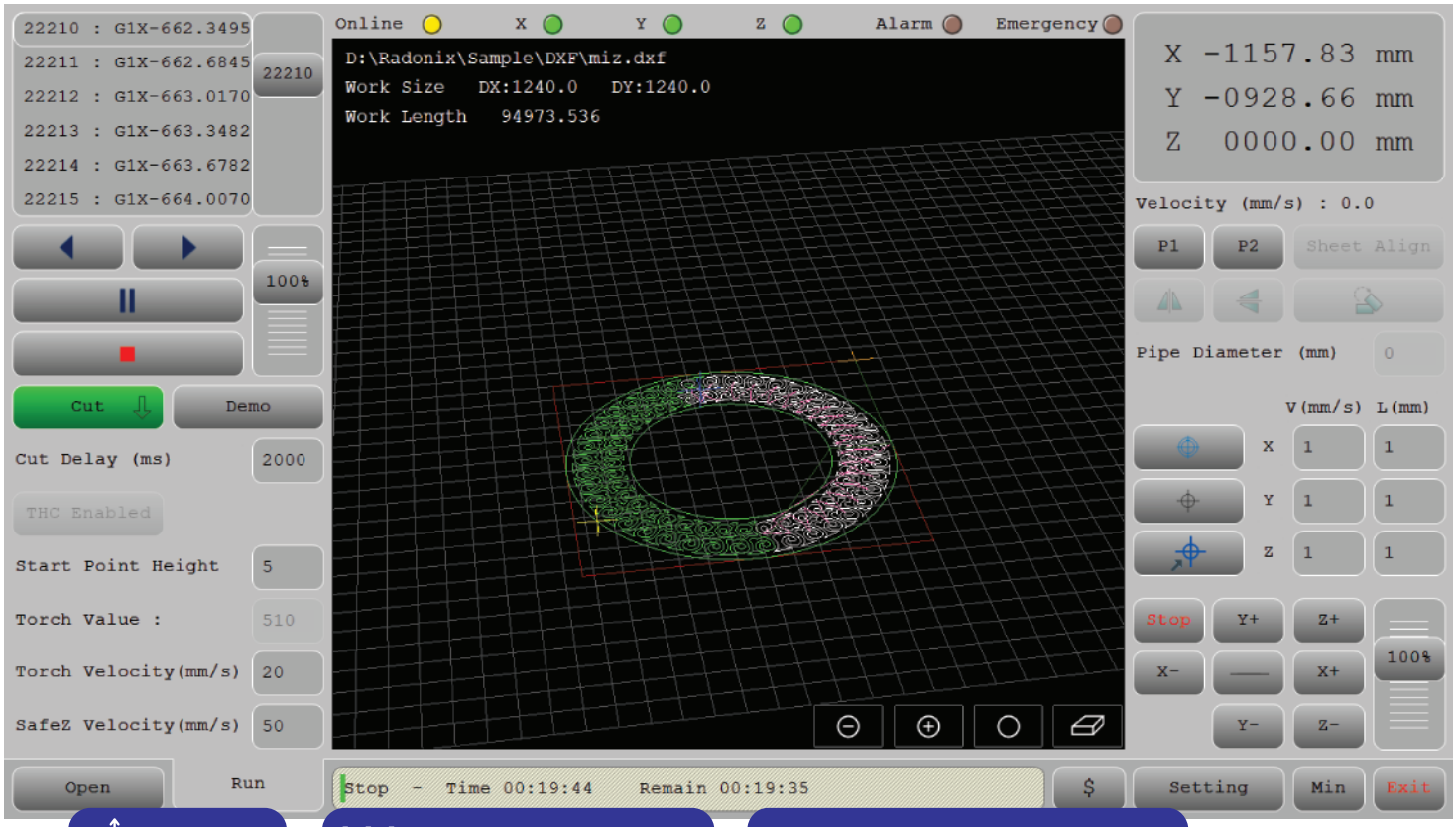
The XYZ-Plasma-Pipe interface is a specialized solution designed for precision plasma cutting of pipes. This interface enables seamless control over the cutting process, ensuring high accuracy and adaptability for various pipe diameters and materials. A key feature of this interface is the Torch Height Control (THC) system, which dynamically adjusts the torch's distance from the pipe surface during the cutting process. This ensures consistent cutting quality by compensating for any pipe irregularities or deviations. With its user-friendly design and advanced features, the XYZ-Plasma-Pipe interface simplifies complex operations, enhances productivity, and guarantees exceptional results for industrial applications requiring precise pipe cutting.

Interface Name:

XYZ Plasma

Used for:

Plasma Cutting Machine



3 Axis

Cutter, Plasma

Torch Height Control

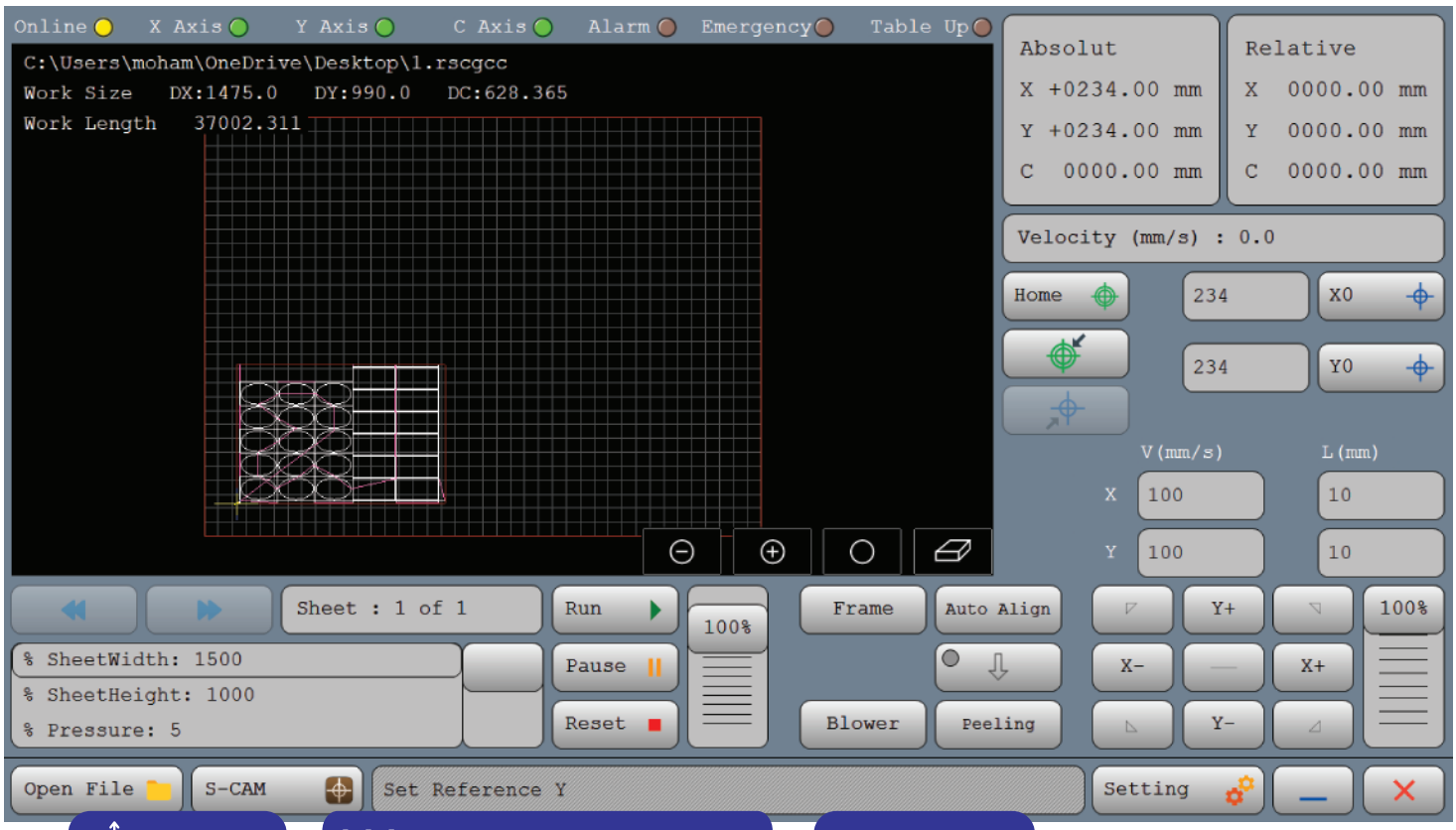
The XYZ Plasma Cutter Interface + THC is specifically designed for plasma cutting machines requiring intelligent height control to adapt the torch's distance to the sheet surface. This interface supports intelligent height control for motors like servo or stepper motors but is not compatible with DC motors. It provides precise and automated adjustments, ensuring superior cutting quality and operational efficiency.

Interface Name:

XYZ SGCut

Used for:

Glass Cutting Machine



3 Axis

Cutter, Glass Cut

Nesting

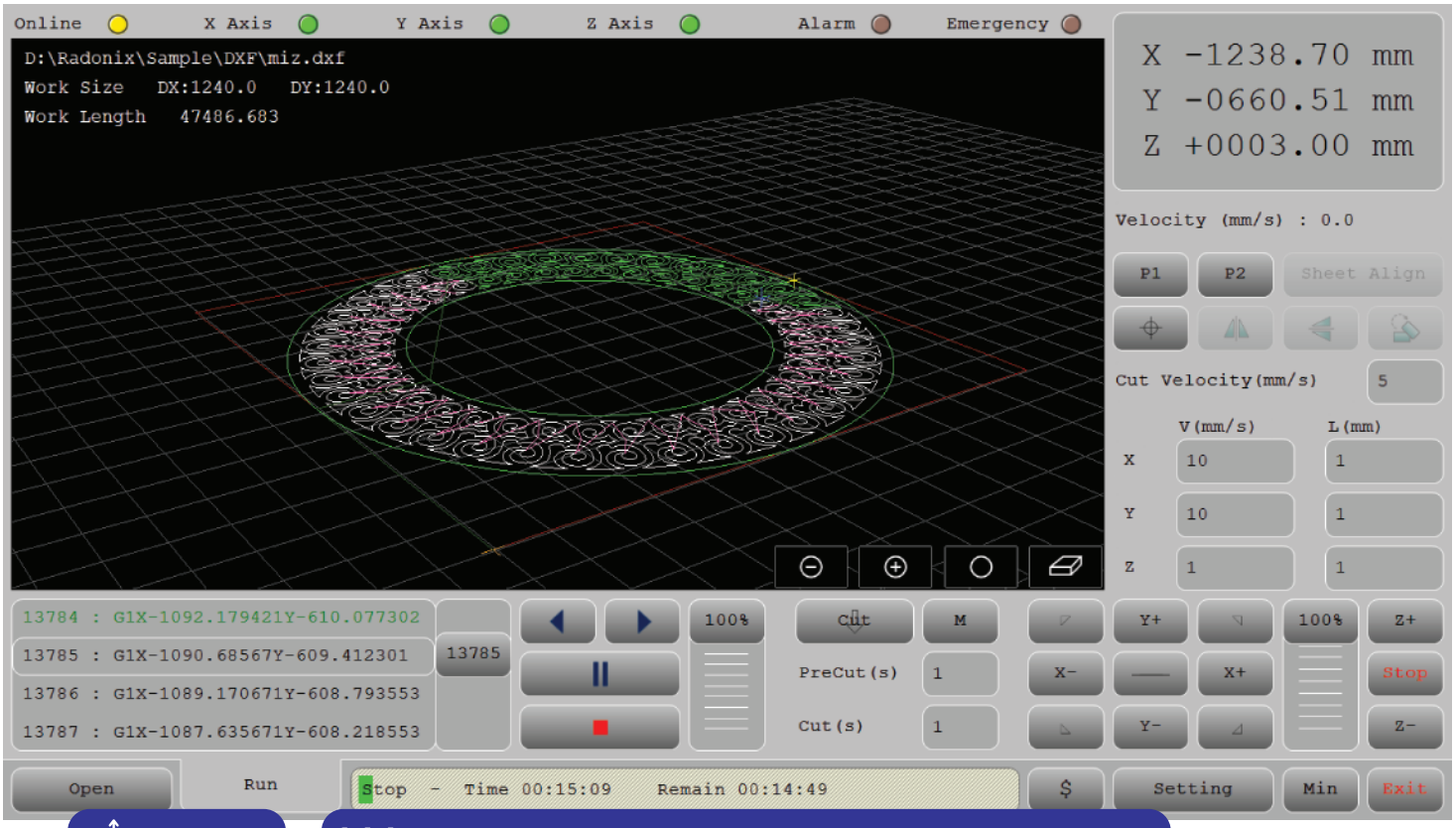
XYC Radonix Interface which support tangent movements and C axis to cutting the glass this interface provided a best environment to managing all things and meet any necessity these options include peeling, blower, jacks and fixture, laser for auto alignment, manual alignment

Interface Name:

XYZ Cutter

Used for:

Cutting Machine



3 Axis

Cutter, Laser, Plasma, Flame Cut, Water Jet

The XYZ-Cutter interface is designed for machines equipped with Z-axis motors, including stepper motors and servo motors.

- Direct execution of design files without the need for conversion to G-Code.
- Selection of parts from a large file, with the ability to define the sequence and direction of cutting for each part individually.
- Design editing within the software using features like Scale, Rotate, and Flip.
- Software-based correction of misalignment for workpieces, especially for heavy sheets.
- Separate pauses before, during, and after cutting.
- Reverse execution of designs and the ability to run demos without activating the cutting output.
- Execution of two-dimensional designs on cylindrical surfaces such as pipes.

Automatic Z-Axis Height Control

The Z-axis height can also be controlled automatically using smart height control, enabling this capability.

Z-Axis Movement During Operation

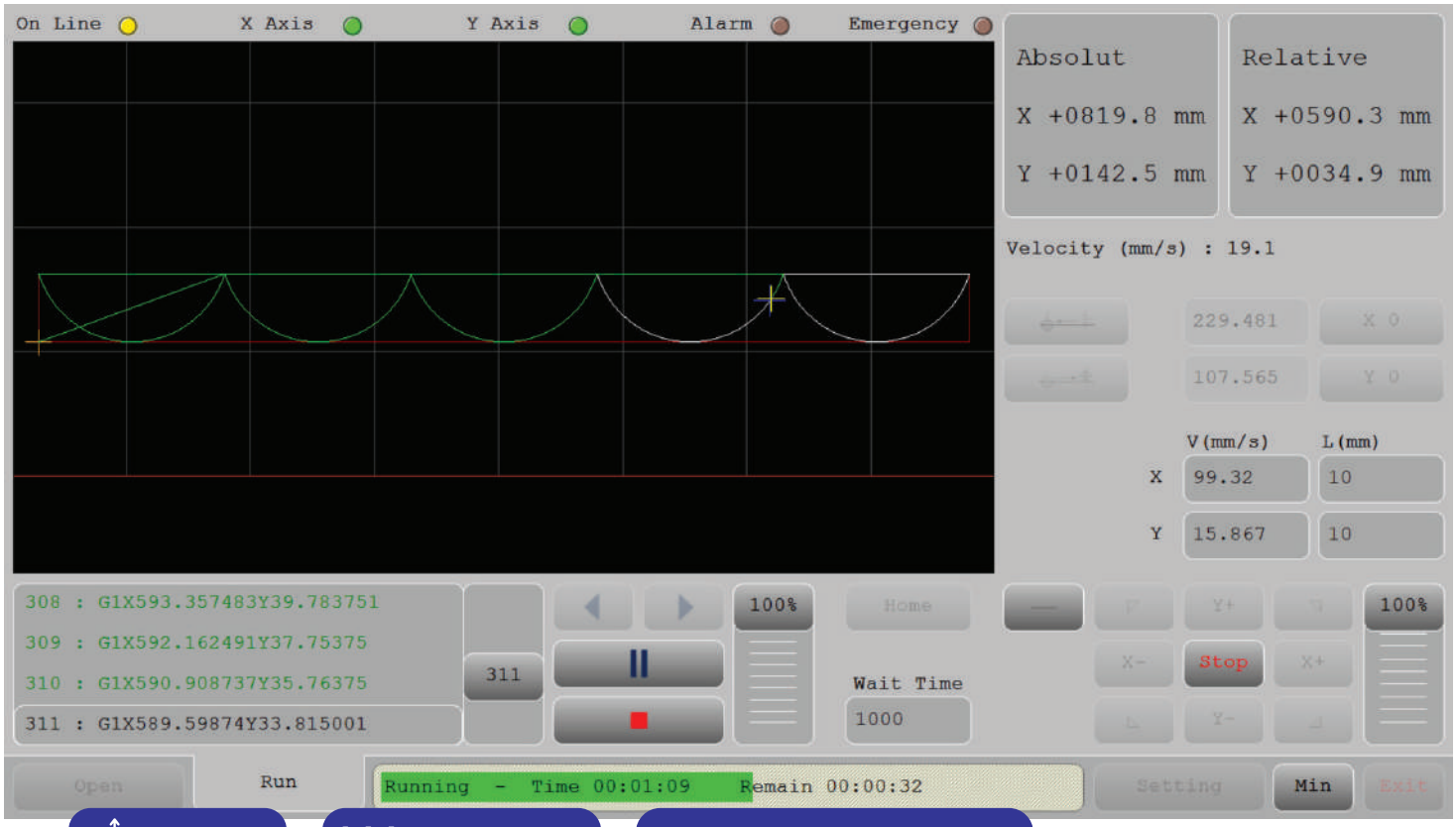
In this interface, the operator can move the machine's Z-axis, which is connected to one or more servo or stepper motors, using physical buttons or designated keys on the interface marked with ***+Z*** and ***-Z***. It should be noted that the Z-axis is not part of the G-Code, so the operator can adjust the Z-axis height—i.e., the distance between the torch tip and the workpiece—during cutting as needed.

Interface Name:

XY Hot Wire

Used for:

Plastic Cutting Machine



2 Axis | Cutter | Analog Heat Control

Hot Wire software is a highly efficient tool designed to optimize the design and construction processes, particularly for professionals working with ceiling panels and custom shapes. Its integration with RadPS, which eliminates the need for manual G-Code conversion, is a significant efficiency booster. This feature likely streamlines the transition from design to production, making it a seamless process.

The automatic addition of pauses at the end of cutting lines is a thoughtful feature that enhances the overall quality of the finished product. It addresses common challenges such as wire overheating and potential inaccuracies during the cutting process, ensuring that each piece is executed with precision. This is particularly crucial when working with intricate designs where every detail matters.

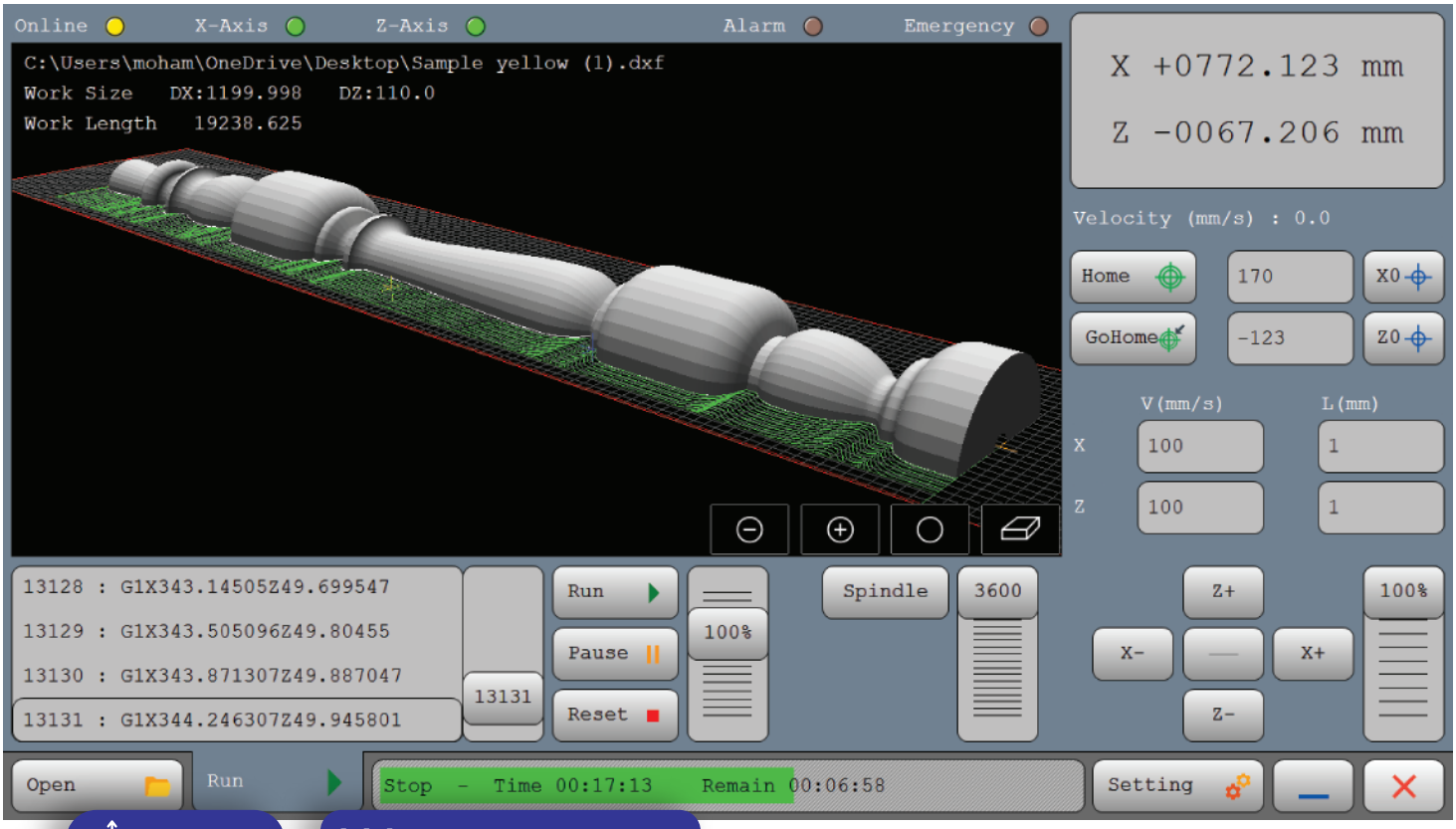
Overall, Hot Wire appears to be tailored for modern design projects where precision and efficiency are paramount. Its user-friendly interface further enhances its appeal by making it accessible to professionals across various levels of expertise. For designers and constructors focusing on detailed and high-quality architectural elements, this software could be a valuable addition to their toolkit.

Interface Name:

XZ Wood Turning

Used for:

Wood Turning Machine



2 Axis

Router, Lathe

The XZ-Lathe or XZ-WoodTurnin* interfaces are specifically designed for woodturning machines. These interfaces are essentially a subset of the Router interfaces and, in most cases, share similarities with them.

- Execution of two-dimensional files in a parametric manner without the need for G-code generation.
- 3D visualization of the final workpiece.
- The ability to select the material removal direction, either in the forward direction, reverse direction, or both.

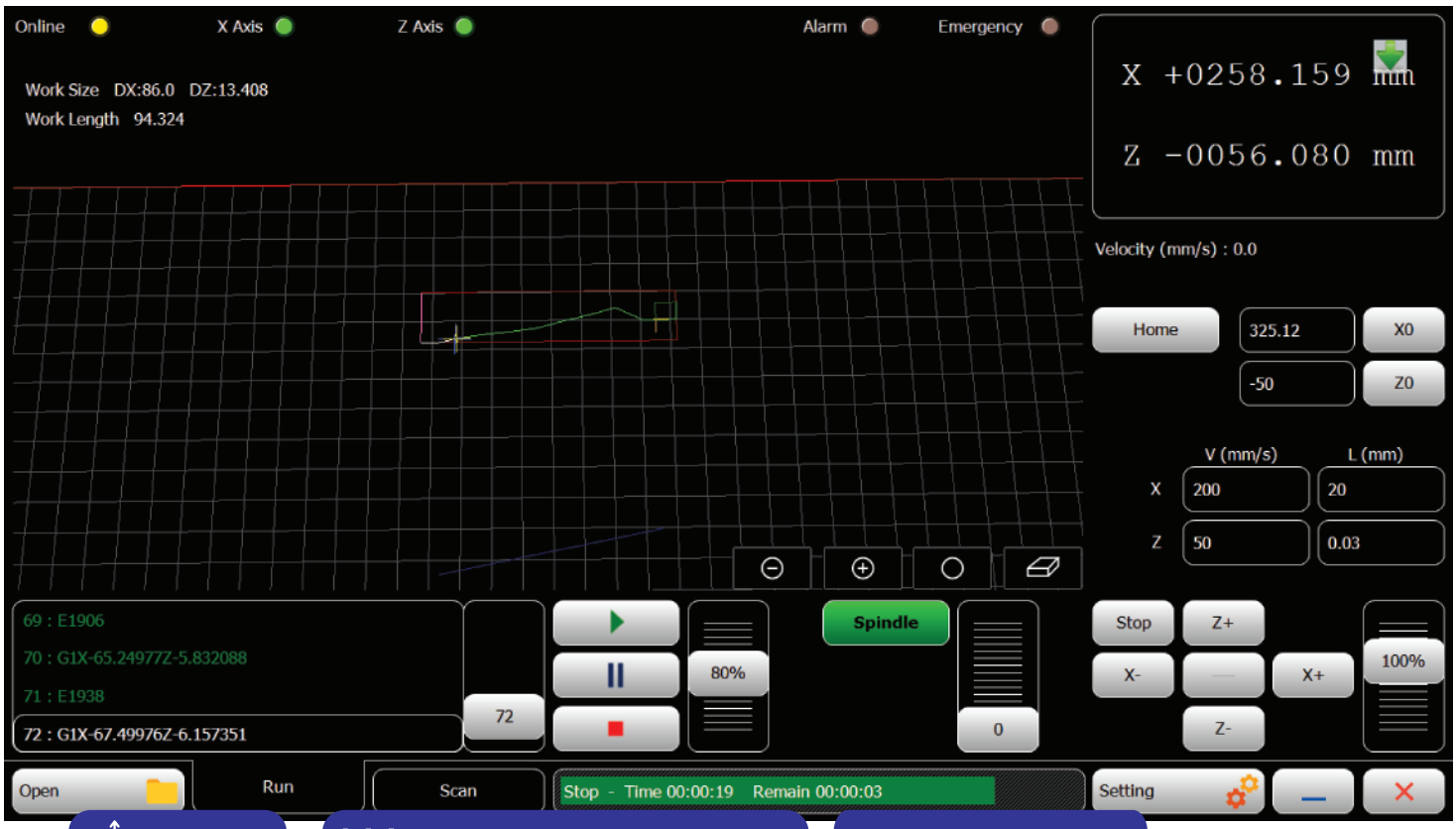
The woodturning interface is designed in such a way that when the operator loads the design at the beginning of the process, they can configure settings related to the initial diameter of the workpiece or the amount of tool advancement for each pass. Another advantage included in this interface is the parametric setting to achieve a better surface quality, which typically involves reduced material removal in the final stage. Depending on the type of tool used, the machine can perform material removal from left to right, right to left, or in both directions.

Interface Name:

XZ Ring

Used for:

Milling



2 Axis

Ping Polish, Milling

Surface Scan

The XZ-Ring CNC interface designed for polishing car rings incorporates advanced features that enhance precision and efficiency in automotive manufacturing. Equipped with a rotary axis controlled by G-code, the system allows for complex and detailed surface finishes on metal rings. It features probes and surface detection technologies capable of assessing the topography of the rings, detecting curves, and identifying any deviations in surface smoothness. This feedback is utilized to adjust the CNC tool paths in real-time, ensuring that each cut is consistent and accurate, irrespective of surface irregularities.

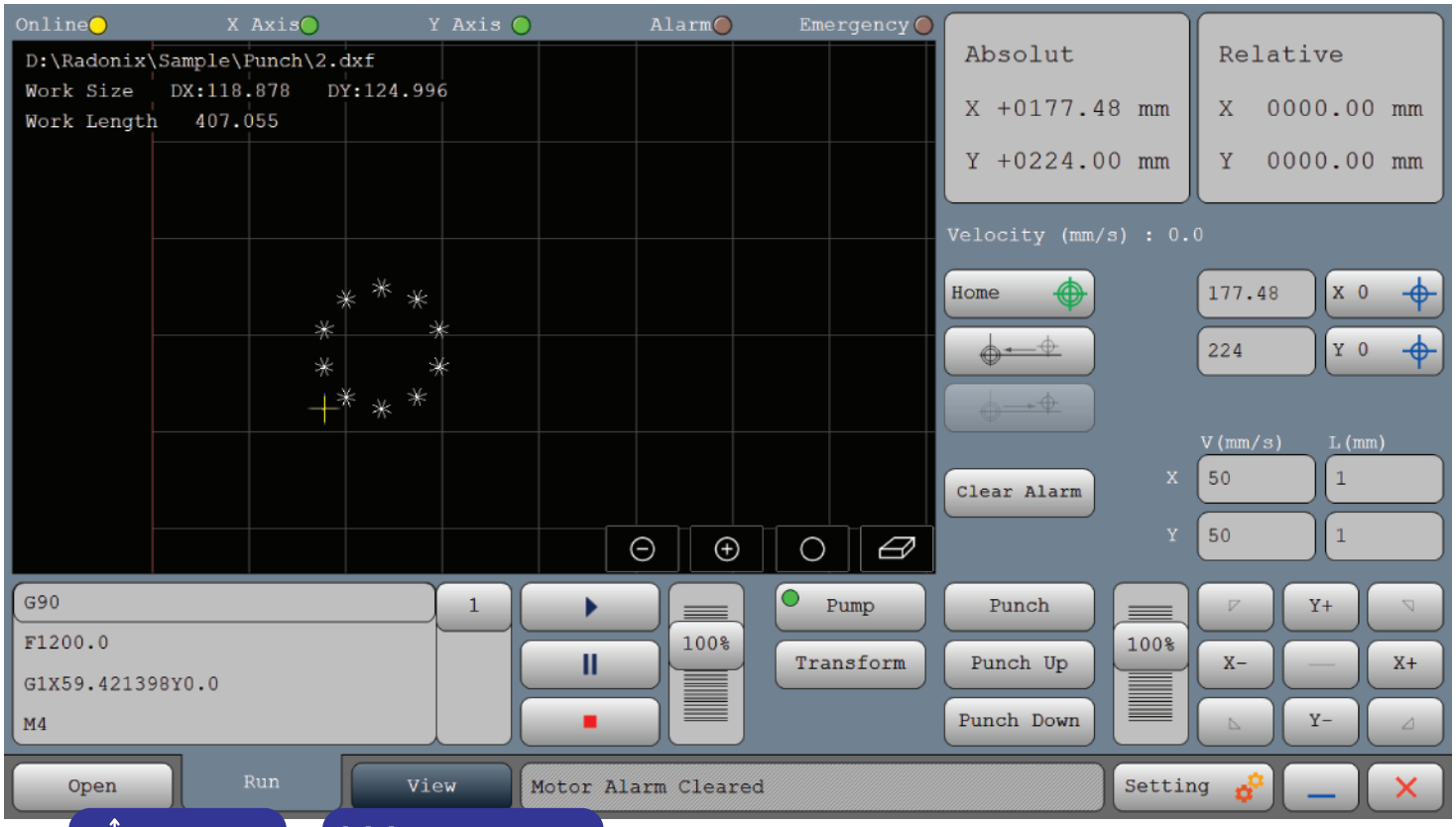
This adaptive approach, facilitated by the interface's integration with diamond tools for polishing, not only increases the aesthetic appeal of car rings but also ensures high-quality finishes crucial for both decorative and functional automotive components.

Interface Name:

XY Punch

Used for:

Punching Machine



2 Axis

Punch

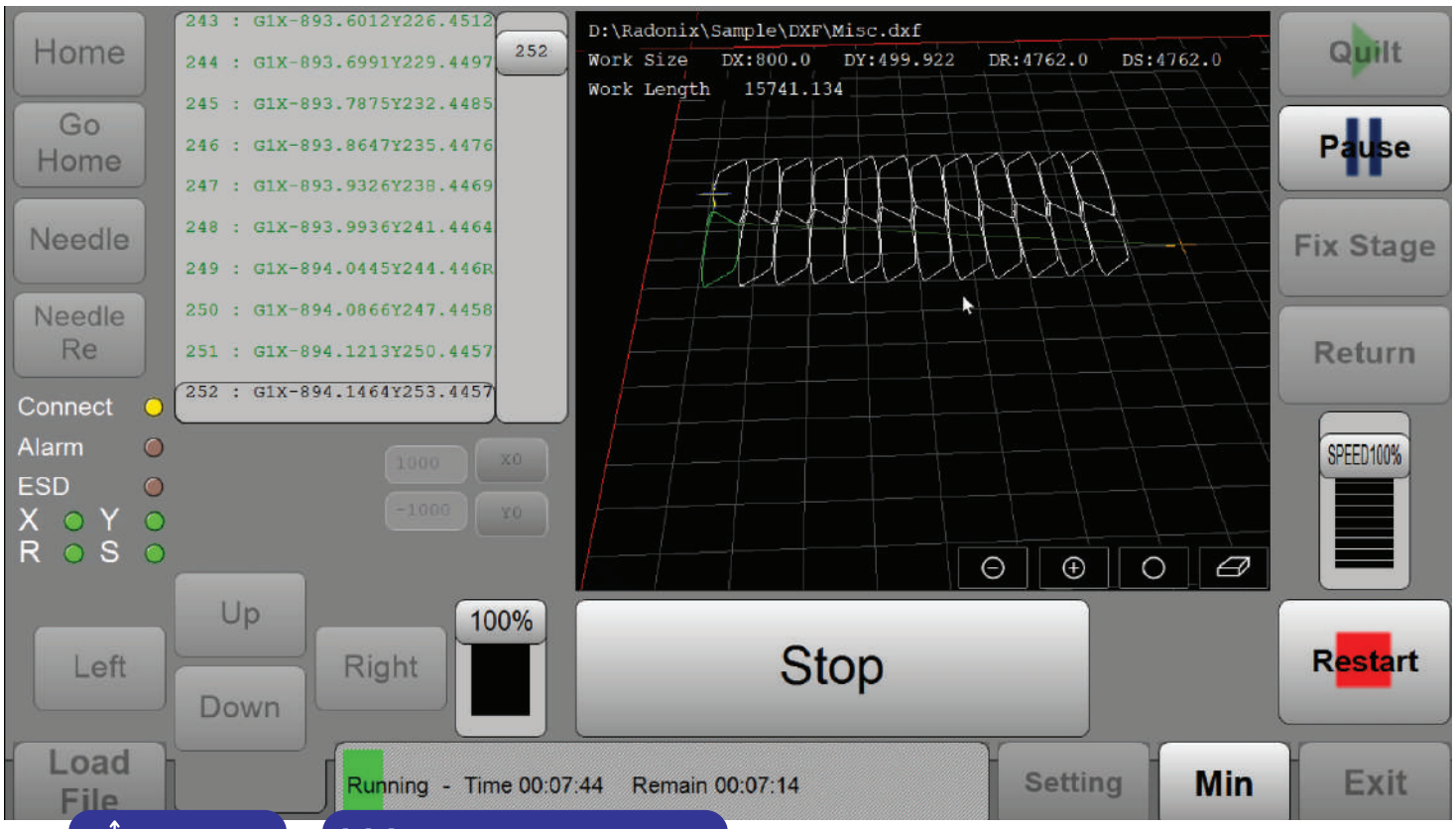
The system supports servo, hydraulic, and crank systems, offering flexibility for various operational needs. It also includes support for automatic tool change systems, enhancing efficiency in tool management. Additionally, the system enables automatic workpiece displacement for executing designs larger than the table dimensions. Furthermore, it supports output files from Metalix software, ensuring seamless integration with design files and enhancing workflow capabilities.

Interface Name:

XY Sewing

Used for:

Sewing Machine



2 Axis

Router, Sewing

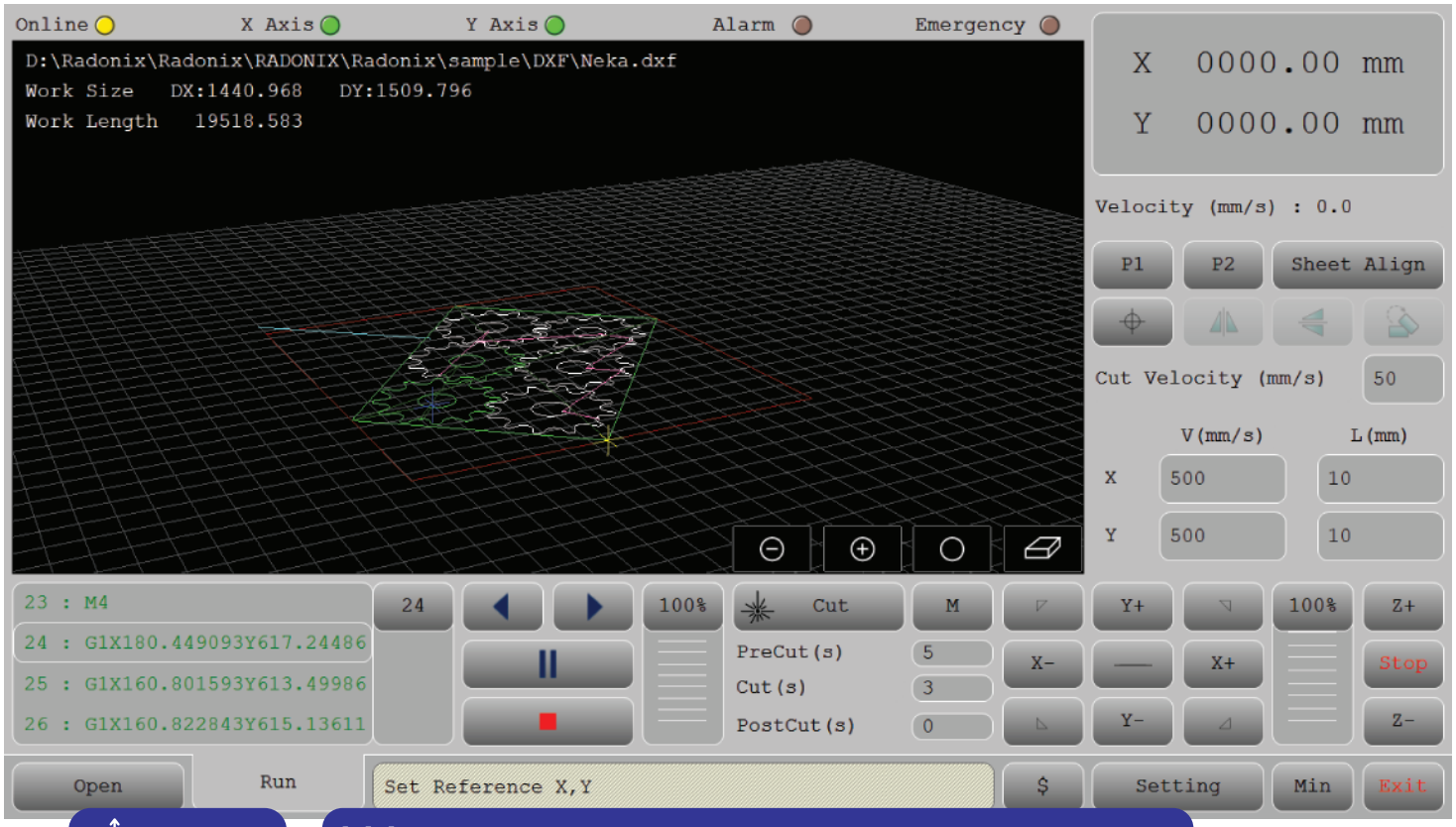
The system supports both single-axis and dual-motor sewing machines. It executes 2D design files (DXF) without the need for jigging, with repeatability capability. It also supports a thread breakage control sensor. The stitching pitch remains constant while changing the sewing speed along the path. The system automatically adds stitching repetition at the beginning and end of lines as desired. Additionally, it automatically adjusts the design to custom dimensions (in quilting machines).

Interface Name:

XY Cutter

Used for:

Cutting machine



2 Axis

Cutter, Laser, Plasma, Flame Cut, Water Jet

CNC cutting machines are typically designed for cutting two-dimensional designs and include two axes, X and Y, used for cutting materials such as metal, wood, plastic, and others. These machines may also feature a Z axis, which adjusts the cutting nozzle's distance from the workpiece surface. However, the Z-axis control in these machines is usually not automated or performed via G-Code; instead, the operator must manually adjust the nozzle's distance. The Z-axis motors can be AC, DC, stepper, or servo motors, and depending on the type and thickness of the materials, the cutting nozzle can be equipped with air gas, plasma, waterjet, laser, etc.

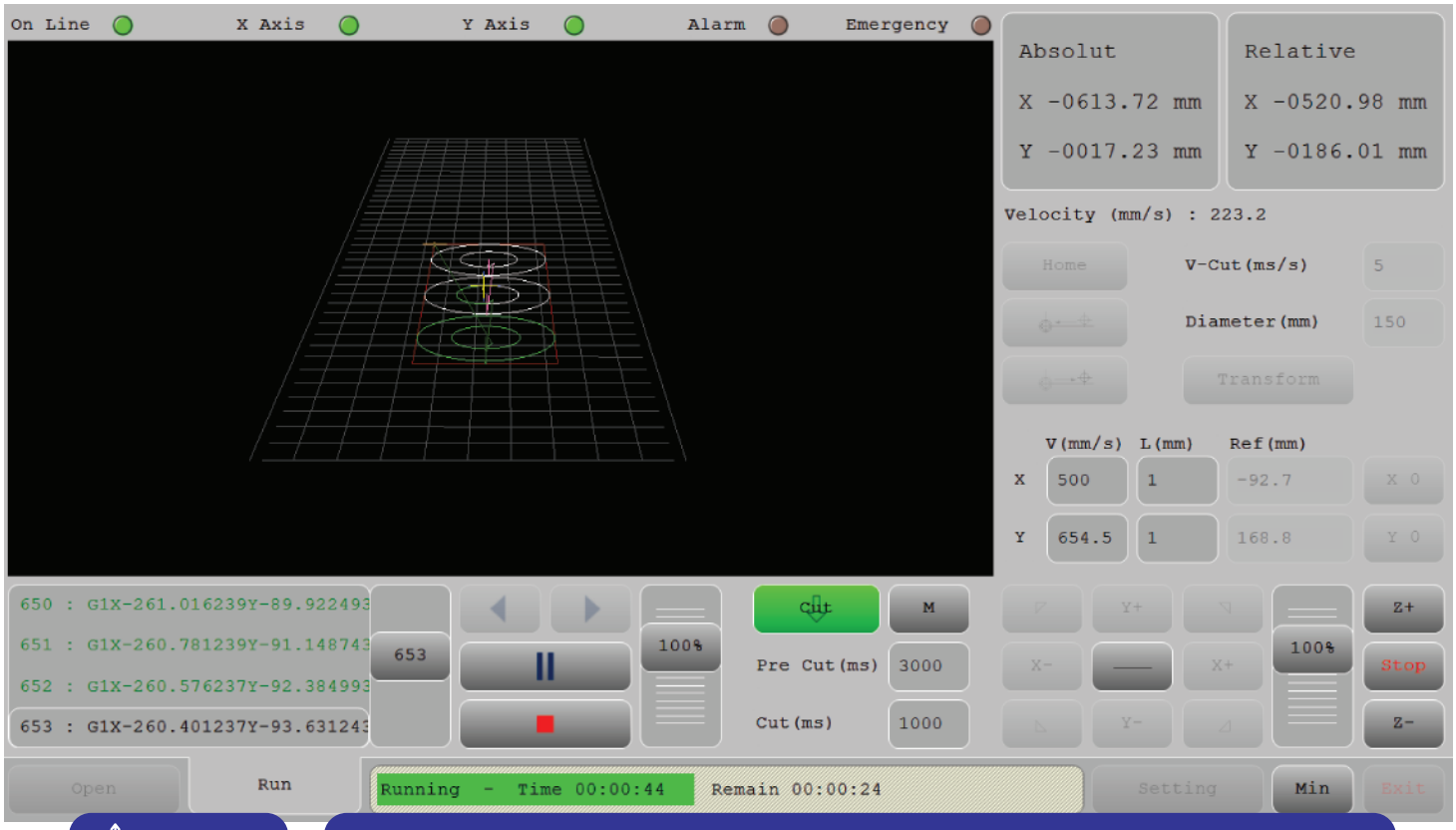
- Direct execution of design files without the need for conversion to G-Code.
- The ability to select individual parts from a large file and define the sequence and direction of cutting for each piece.
- Design editing in the software with features such as Scale, Rotate, and Flip.
- Software-based correction of workpiece misalignment, especially for heavy sheets.
- Separate pauses for before, during, and after cutting.
- Reverse execution of designs and the ability to run demos without activating the cutting output.
- Execution of 2D designs on cylindrical surfaces such as pipes.

Interface Name:

XY Pipe Cutter

Used for:

Pipe Cutting Machine

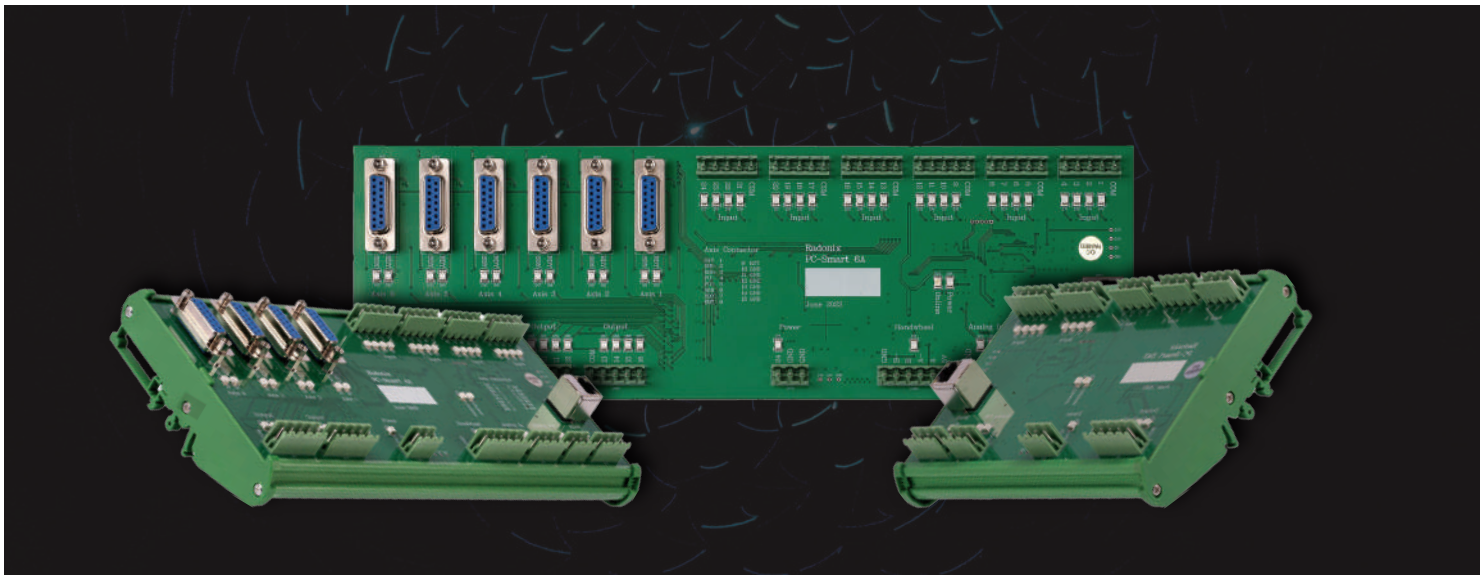


2 Axis

Cutter, Laser, Plasma, Flame Cut, Water Jet, Pipe Cutter

In the XY Pipe-Cutter interface for pipe cutting machines, the X and Y axes are used to move the torch in the two main dimensions. The Z axis is used to adjust the height and control the distance of the torch from the surface of the pipe. In this interface, the Y axis is considered a rotary axis, and a parameter called Diameter is available, which specifies the outer diameter of the pipe in millimeters. This allows the pipe to rotate for performing a full 360-degree cut. Additionally, the Z-axis height can be controlled automatically using smart height control, enabling precise adjustments.

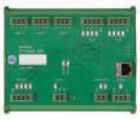
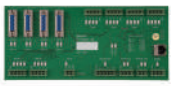
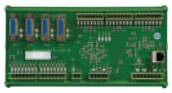
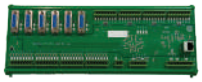
Hardware



Radonix offers two distinct series of CNC controllers

PC-Smart and PC Pro-LAN

both fully compatible with the Radonix CAM-Pro software, enabling seamless integration across various CNC machines.

	Smart Series			Pro-LAN Series	
					
Feature	**3AS**	**4A**	**6A**	**4A**	**6A**
Interpolated and independent Axes	3	4	6	4	6
Digital Isolated NPN inputs	•	•	•	•	•
Digital Inputs (PNP and NPN inputs)	8	16	24	24	32
Digital Outputs (NPN output)	-	-	-	16	32
Digital Outputs (PNP and NPN output)	4	8	16	-	-
Relay Output (with 1 amper current)	•	•	•	-	-
Analog Outputs	2 Protected (0-10 volts)	2 Protected (0-10 volts)	2 Protected (0-10 volts)	2 Protected (0-10 volts)	2 Protected (0-10 volts)
PWM Outputs with adjustable frequency	-	-	-	2	2
Analog Inputs (0-10 Volts)	-	2	2	-	-
Pulse Rate (pulse/sec)	100,000	500,000	500,000	500,000	500,000
pulse Directional	•	•	•	•	•
Acceleration Time (mm/s^2)	50 to 30,000	50 to 30,000	50 to 30,000	50 to 30,000	50 to 30,000
Speed Profile (S-Curve)	•	•	•	•	•
Hardware Buffer Size (block FIFO)	2,000	2,000	2,000	2,000	2,000
PC-Control Unit Data Exchange Time (ms)	20	20	20	20	20
Optocoupler Isolation	•	•	•	•	•
Communication Type : LAN with 100 Mbps (TCP/IP)	•	•	•	•	•
Communication Lenght: More than 20m UTP/50m SFUTP	•	•	•	•	•
Hardware Lock (time locks) With Internal Clock	24	24	24	24	24
Power Consumption	12-24V, 300mA	12-24V, 300mA	12-24V, 300mA	16-32V, 300mA	16-32V, 300mA
Dimensions (Cm)	15x13	25x13	34x13 cm	25x13	34x13 cm
Open Loop Control	•	•	•	•	•
Operating System (windows 7, 8, 10, 11)	•	•	•	•	•
Supported Equipment (Joystick, Remote control, Handwheel)	•	•	•	•	•
Active Axis Count	3	4	6	4	6

Equipments

Radonix Torch Height Controller (THC)

The Torch Height Controller (THC) communicates with the Radonix controller via the RS-485 industrial network. The voltage feedback connected to the THC from the plasma unit can originate either directly from the plasma's output voltage, with a range of 0 to 200 volts, or from the internal isolator board of the plasma unit, which provides a voltage range of 0 to 10 volts.

Radonix Remote-Pro

Command Count	32
Simultaneous Commands	2
Battery Life	6 Month (Normal Usage)
Transceiver Range	30m (Industrial Zone)
Remotes in one Zone	32
Connection Type	USB / Direct Connect

Radonix X4 Expander

The Radonix X4 CNC Controller Board expands from 1 to 4 axes, featuring a common pulse direction source for synchronized movements. It includes 'Servo On' and 'Servo Ready' signals, along with A1 to A4 LED indicators for monitoring axis activation, enabling precise control through software.

Expand Axes	Up to 1 to 4
Input Pulse Type	Line Drive
Output Pulse Type	Line Drive
Digital Input	NPN Isolated Input