

# RTL-2000



WEDDING BAND TURNING CENTER

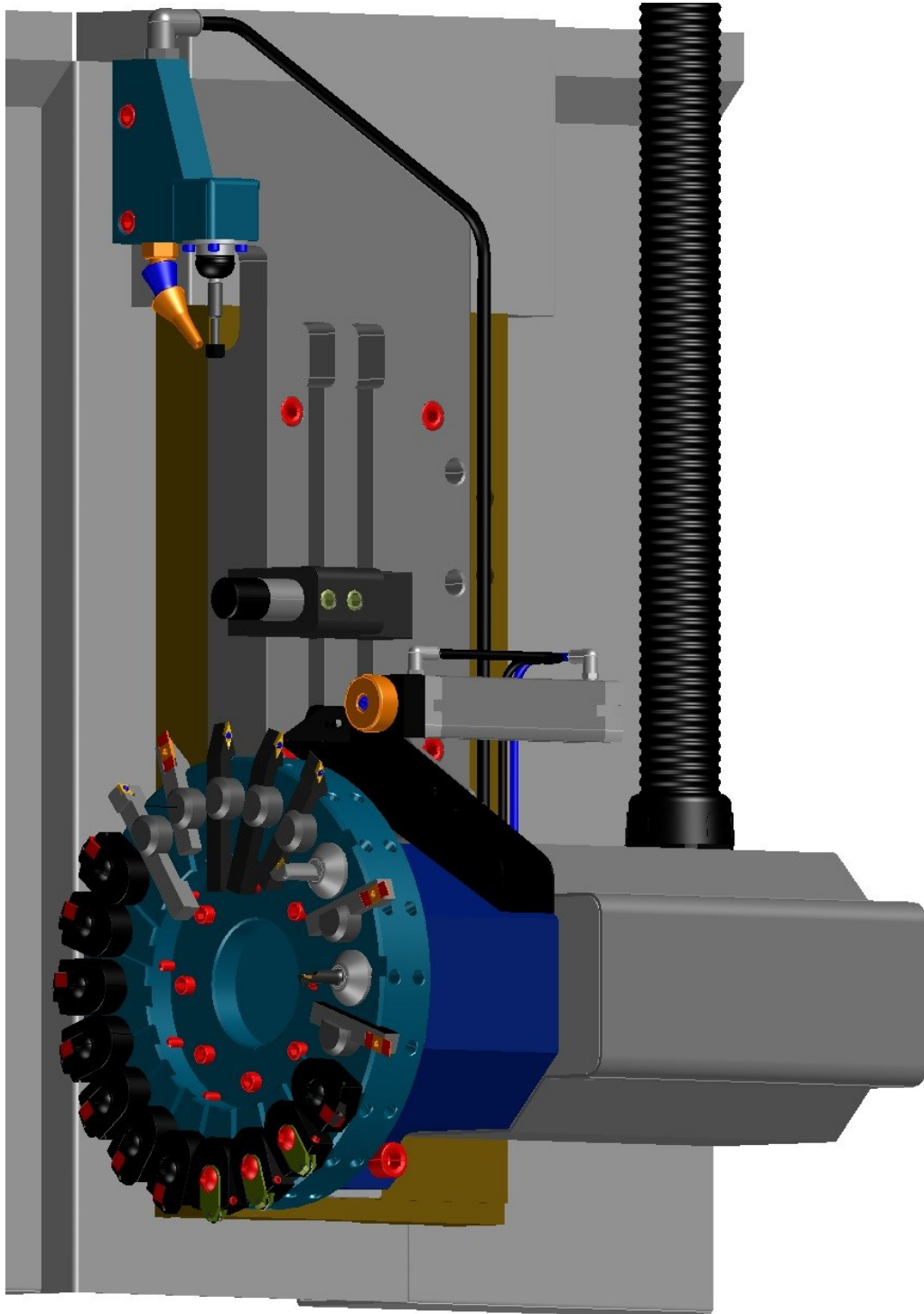
# RTL-2000 TURNING CENTER

Unique, in compact size, available tools and with 2 axes of motion.  
The RTL-2000 is a competitive solution to turned jewelry & band manufacturing.

- For simple or complex bands up to 32mm diameter x 20mm wide
- 2 axes of simultaneous motion. (X & Z)
- 20 position servo driven turret
- Gang slide for additional tools or accessories
- Probing capabilities for part inspection
- Control connectivity through Ethernet, USB and RS232
- High speed servo system for fast rapid motion and accurate high speed contouring of complex surfaces
- Up to 4Gb of program memory
- World class components for easy maintenance
- World Class support for anywhere you do business



## RTL-2000 AXIS MOTION



With 2 axes of motion, (X & Z) The RTL-2000 is a dedicated turning machine designed to produce turned bands with speed and efficiency.

The unique to Ringtech 20 position turret provide ample positions for profiling, diamond form tools and mill grain tools for rolling designs into the ring profile.

# RTL 2000 DESIGN

The RTL –2000 is an extremely precise, high speed, vertical format lathe.

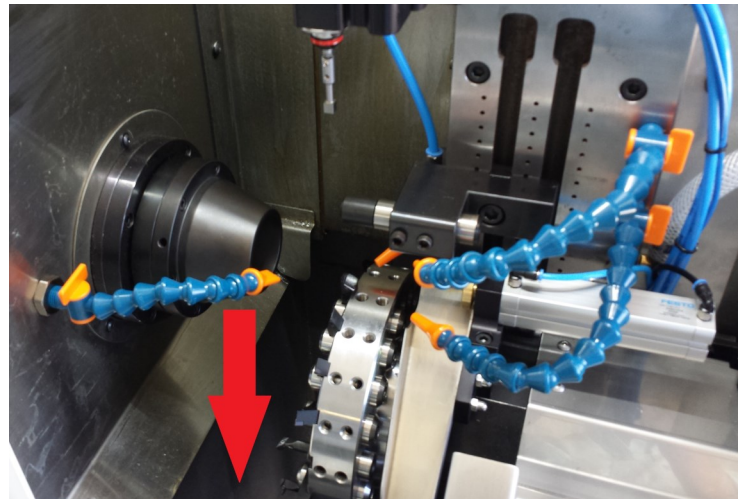
Designed for the rigors of high volume production in the aerospace, job shop and medical industries. This design is ideal for production jewelry manufacturing.

## VERTICAL DESIGN

The vertical design allows metal chips to flow down into the chip collection area.

Easy cleanout of chips eases change over of materials so that mixed metal is minimized.

Ergonomic location of the machine table allows easy access to tooling and ease of use for the operator when changing tools or loading & unloading tubing or ring blanks.



## EXTREME ACCURACY

High accuracy is a result of the combination of machine components and servo systems working together to position the machine.

We use aged meehanite castings for machine construction, oversized headstock castings for spindle location, and NSK linear rails and ball screws for motion delivery.

Coupled with the Fagor DDS Sercos (fiber optically linked) servo system, this provides speed and tolerance control when creating domed ring profiles.  
(Eliminates lines and reduces polishing)

High accuracy provides accurate ring to ring weight when high volumes are the goal.





# RTL-2000 DESIGN

## HIGH SPEED

1000 block look ahead and huge program storage capacity allows fast efficient machining of complex parts with the RTL-2000.

High speeds reduce cycle times and lower costs per ring.

Speed is critical in the production of wedding bands.

Our methods lower the production time of finished bands making them instantly ready for polishing.

Our Ringtech Software is the key to fast and efficient programming.

20 M/Min Rapids

0-6000rpm in 1.5 sec



## SPACE EFFICIENT

The RTL-2000 lathe is unique to any industry. The compact format provides an easy to operate, ergonomic platform able to fit into most any shop floor space.

This feature-rich turning center concentrates tremendous manufacturing capacity in a very small 61"x48" footprint (1.5m x 1.2m)



# STATE OF THE ART CNC CONTROL

Fagor CNC controls allow customization beyond belief.

This is **THE** difference in how RingTech can integrate the machine control and user interface into a complete easy to use package.

## THE MAN MACHINE INTERFACE



The Fagor 8055i control has an integrated easy to use interface.

All machine operations can be accessed from an easy to read, well laid out panel.

Programmable buttons allow easy selection of machine operations and functions.

## CONNECTABILITY

With Ethernet, RS232 & USB, programs can be downloaded to a computer, or CAD CAM generated programs can be uploaded into the control.

Fagor WinDNC software allows easy connectivity to a PC.

And direct communication for maintenance and support.

## SPEED

A 1000 block look-ahead capability and high-speed block processing capabilities allow even the most complex programs to run at an optimum speed.

Up to 4Gbytes of memory allow huge programs to be executed.

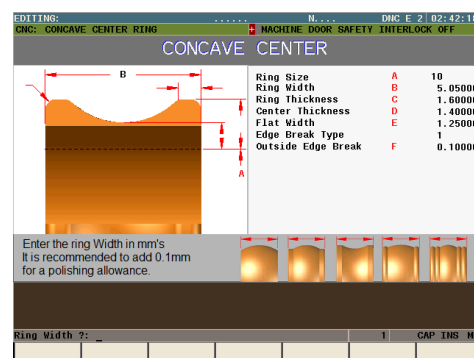
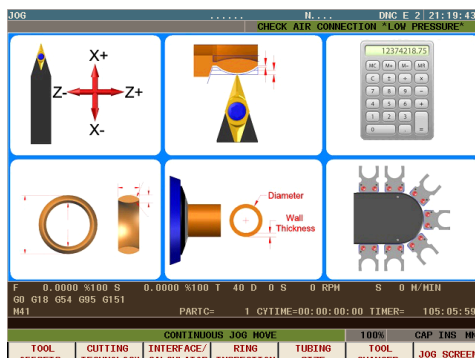


## CUSTOMIZABLE USER INTERFACE

We can develop custom software for specific applications.

Probing sequences to test part integrity, automatic offset and tool life management integrated into the program is at your fingertips, all controlled with an easy to use interface.

We created a complete system of programs and interfaces in multiple languages for our users.



# RINGTURN V6 SOFTWARE

Every Design is based on a few simple questions:

- Ring Size
- Ring Width
- Ring Thickness
- Specific Information for each design
- Type of inside profile



## TURNED PROFILES

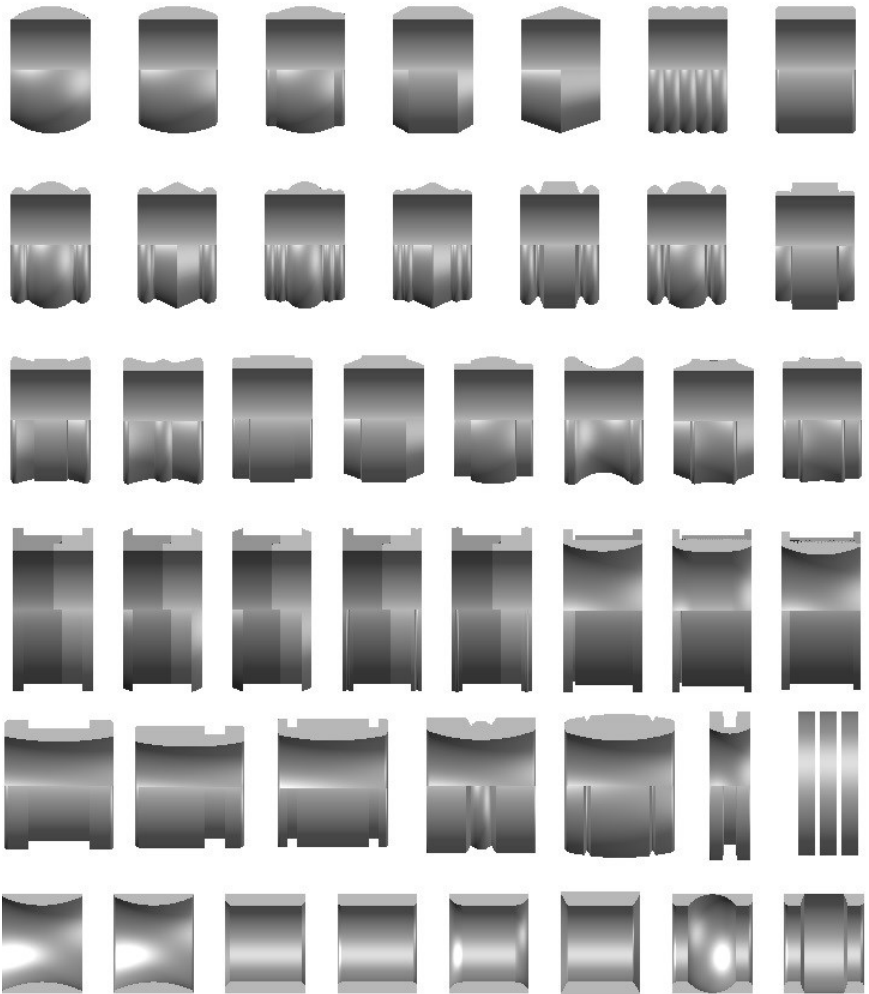
Sample of domed cross sections

There are 22 basic profiles, these profiles can be modified into thousands of different shapes.

8 - 2 piece ring styles for special applications

These shapes can have grooving, form grooving & mill graining added.

We are constantly surprised by our customers ingenuity in developing new variations.



## CUSTOM DESIGNS

RingTech provides instruction to learn the required skills and become self sufficient. Our designers can also create the programming needed for your unique creations.

# MACHINE FEATURES

## 20 POSITION TURRET

The 20 position turret expands the turning capability to allow more tools to be used.

Setup time is reduced as standard tools can be setup and left in position.

Multiple tool types can be used for different materials.

Diamond form tools and mill graining tools can be used.



## BAND CATCHER & CONVEYOR

A programmable part catcher can be integrated into the turret system.

The bands are caught by the band catcher and placed in a chute that moves the band to a conveyor for transport out of the machine.

The part conveyor is automatic and only operates when the band is deposited on the conveyor .



## CUSTOMIZATION

We can customize our equipment to meet your demanding needs, speak with us and find out how we can assist you.



# MACHINE ACCESSORIES

RingTech customizes each machining center to meet the specific needs of each application. Our technical staff can assist customers in choosing the options that best meet the needs of specific work to be done.

The RTL-4000 can be equipped with the following options:

## WORK HOLDING

The RTL-4000 features a unique adaptable spindle that provides rapid change-over for different rings based on required machining operations - changeovers from inside, outside or tube within 2 minutes

Machining blanks or 2 tones requires machining the inside profile of the band and the outside profile in 2 separate operation. The Adaptable spindle allows each operation to be completed in minimal time.



## MATERIAL LOADING

When machining precious metals, a reliable method of material loading is required.

We have developed an 800mm feeder to suit the needs of precious metal manufacturers, combining the advantages of a small footprint and safe reliable operation.



## PROBING SYSTEMS

RingTech's probing system can locate a blank or tube automatically, Set the ring or material diameter, set the reference position and allow error-free machining instantly.

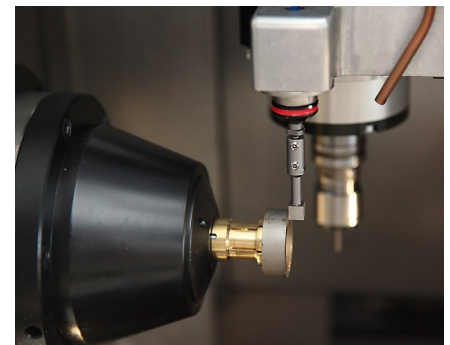
Using a single button, the operator can initiate the probing cycles.

Each type of operation has a unique probing profile.

For blank rings we can detect ring size, width and position.

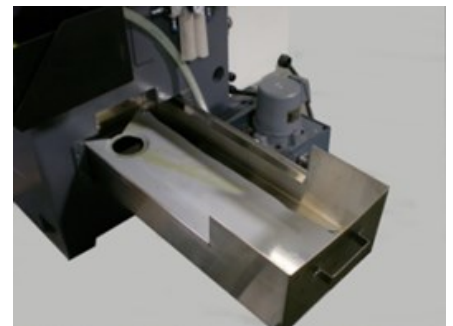
Our software checks these values and eliminates the possibility of machine the wrong sized blank.

This option compliments the Adaptable Spindle Nose option.



## PRECIOUS METAL MANAGEMENT

A problem critical to the jewelry manufacturer is the cost of raw materials. RingTech has created a simple but effective solution to access the chips and reclaim the precious metals for reprocessing.



# MACHINE COMPONENTS

The Precision of the RTL 2000 is derived from using only the best components available. All of the systems we use are supported by companies that maintain a global service network.

## SERVO SYSTEMS

FAGOR Automation is a world renowned provider of control solutions. The RTL-2000 uses only FAGOR components in the CNC system, either full fiber optically connected digital servos for the main axis motors and drives, or digital motors and drives for the auxiliary servo driven systems.

## PNEUMATIC SYSTEMS

All of the pneumatic components are sourced from FESTO Corporation, the world leader in automation and integration systems. With Festo's global presence, Ringtech can provide fast parts and service support on all pneumatic systems.

Each system is carefully monitored by proximity switches that check every motion of the pneumatic system. Safety and correct operation of the machine is our utmost priority.

## SLIDE SYSTEMS

The main slide systems use NSK linear slides and ball screws. Each component is lubricated from a central lubrication unit, that times the lubrication to the use of the machine.

These slides together with the CNC control system contribute to the speed and accuracy of the RTL-2000

## ELECTRICAL SYSTEMS

All components used meet CE & UL quality standards. Each voltage circuit is isolated and individually protected.

All relays used are solid state and rated at 50M cycles life. On board diagnostics allow monitoring of each sensor on the machine, this speeds troubleshooting and repair.

## PNEUMATIC SYSTEMS

All components used meet CE & UL quality standards. Each air circuit is activated by a unified solenoid valve system. A faulty valve can be changed in minutes.

All air components are provided by FESTO Corporation a global supply chain company, Spare parts are available in all countries around the world.

| Capacity                      | 27mm                                      | 42mm                                       |
|-------------------------------|---|--|
| X Axis Travel                 | 260mm (10.23’')                           | 260mm (10.23’')                            |
| Z Axis Travel                 | 145mm (5.7’')                             | 145mm (5.7’')                              |
| Axis Speed                    | 20M/min (787’)/min)                       |  |
| Axis Power Rating             | 5.1N/m (45’)/lb)                          |  |
| Workholding                   |   |  |
| Bar / Tube Capacity           | 27mm (1.062’')                            | 42mm (1.562’')                             |
| Collet Types                  | Hardinge 5C<br>Benzinger Inside & Outside | Hardinge 16C<br>Benzinger Inside & Outside |
| Clamping System               | Hydraulic                                 |  |
| Spindle Motor Power           | 5.4Kw (7.4hp)                             |  |
| Spindle RPM                   | 60-6,000rpm in 1.5 sec                    | 50-5000rpm in 2.0 sec                      |
| Precision                     |   |  |
| Positional Repeatability      | 0.0127mm (0.00005’')                      |  |
| Positional Accuracy           | 0.0127mm (0.00005’')                      |  |
| Spindle Runout (TIR)          | 0.0127mm (0.00005’')                      |  |
| Interpolation                 | Plane Selectable X-Y-Z-C                  |  |
| Control Information           |   |  |
| CNC Control                   | FAGOR 8055iT Power                        |  |
| Communication method          | Ethernet, USB, RS232                      |  |
| Drive System                  | Sercos (Fiber optic link)                 |  |
| Turning Tooling               |   |  |
| Gang Tool Center Height       | 42mm (1.653’')                            |  |
| Turret Positions              | 20  | 20   |
| Turning Holder Size           | 3/8’)                                     | 3/8’)                                      |
| Mill Grain Tool Holders       | YES                                       | YES  |
| Posilux Diamond Tool Holders  | YES                                       | YES  |
| Boring / drilling Holder Size | 3/4"                                      | 3/4"                                       |
| Heavy Duty Drilling Positions | 2   | 2  |
| Barstop Positions             | 1   | 1  |
| Miscellaneous                 |   |  |
| Coolant Capacity              | 94 Liters (25 Gallon)                     |  |
| Compressed Air Required       | 1.0 cu.m/ min                             |  |
| Total Power Required          | 440v 3 phase 8Kva                         | 220V transformers available                |
| Machine Dimensions            | 1.55M x 1.22M x 1.8M                      | (61’ x 48’ x 72’)                          |
| Wiegth                        | 1800kg                                    | (3750lb)                                   |

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