

Best Built

Computerized Engraving System

UT – RING, Ring Engraver

Instruction Manual



Inside and outside ring engraving



BEST BUILT

Jewelry Equipment

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Guide to the manual

This manual has been produced to serve as a guide for users of the UT-RING.

Read it carefully; it is essential if you wish to operate your machine safely and efficiently

The contents of the manual are divided into sections relation to:

- Safety Instructions**
- UT-RING Specifications**
- UT-RING accessories provided**
- UT-RING basic**
- Using vise**
- Exchanging tool**
- Installation**
- Outside/inside ring engraving**
- Engraver Settings**
- Supported G-Code**

Safety Instructions

- **Make sure that all tools and work holding equipment are tight before running the spindle or moving the slides**
- **All maintenance and repair work should be done with the power off. If any work requires power ON, extreme care should be taken.**
- **Keep the machine always clean and keep away the tools from getting damaged.**
- **Avoid direct eye exposure to laser beam when laser pointer is on and never stare into the beam for long time.**

UT-RING Specifications

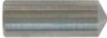











Power Input	100V ~ 240V, 50 / 60Hz
Power Consumption	12W
External Dimension	260mm(W) × 290mm(H) × 260mm(D)
Maximum Engraving Area	Rotary: 40mm(X) Cylinder Outside Diameter: 33mm Cylinder Inside Diameter: 14~33mm
Weight	17Kg
Mechanical Resolution	0.005mm (X,Y) 0.00125mm (Z)
Feedrate	1 – 36mm/sec (XY) 1 – 18mm/sec (Z)
Interface	USB (Full compliance with the USB Specification v1.1)
Instructions	HPGL / G-Code
Operation Temperature	4 - 40 °C
Operation Humidity	30 - 85 %
Accessory	Laser Pointer (Red, Maximum 5mW, 650~670nm Class IIIa Type)
Usage	Engraving on metal surface

✓ Product specifications are subject to change without notice.

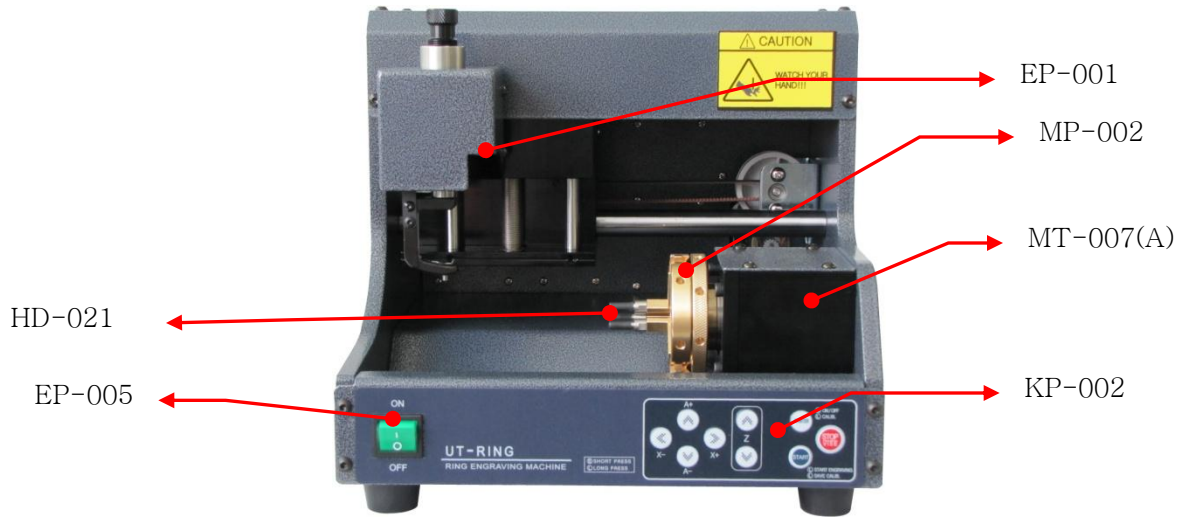
UT-RING Accessories Provided

To ensure trouble-free working with UT-RING, it is advisable to always have certain spare parts on hand. UT-RING is supplied with a full range of accessories. The accessories provided are all that is necessary to carry out the operations for which the machine is designed.

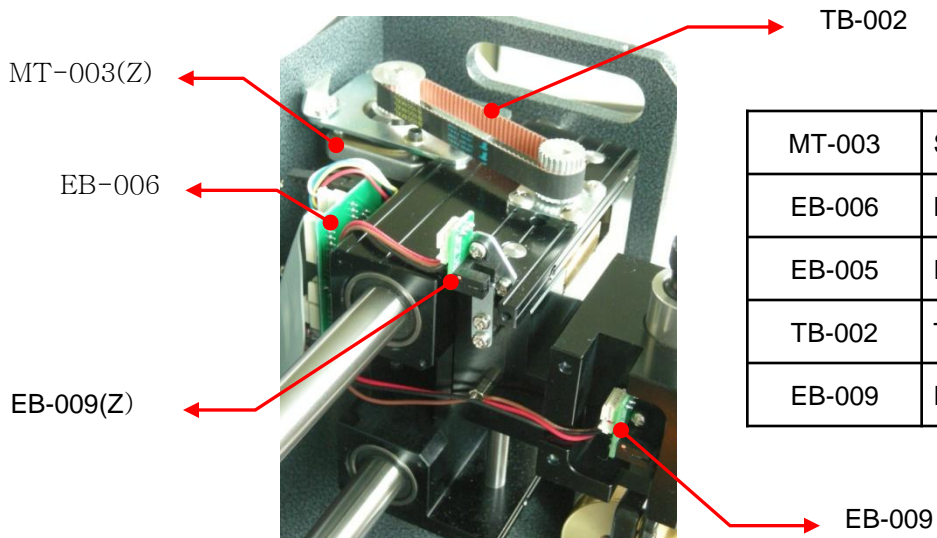
Figure	Name	Code	Qty.	
	Engraving Tool		1EA	
	Wrench		1EA	1.5mm To exchange tool
	Chuck Finger (Flat)		3EA	To hold ring to engrave outside
	Chuck Finger (Round)		3EA	To hold a ring that is round on its outside for inside engraving
	Chuck Handle		2EA	
	AC Adapter		1 EA	DC24V / 1A  5.5x2.1mm
	USB Cable		1 EA	
	S/W CD		1 EA	
	Instruction Manual		1 EA	

✓ Accessory items are subject to change without notice.

UT-RING Basic

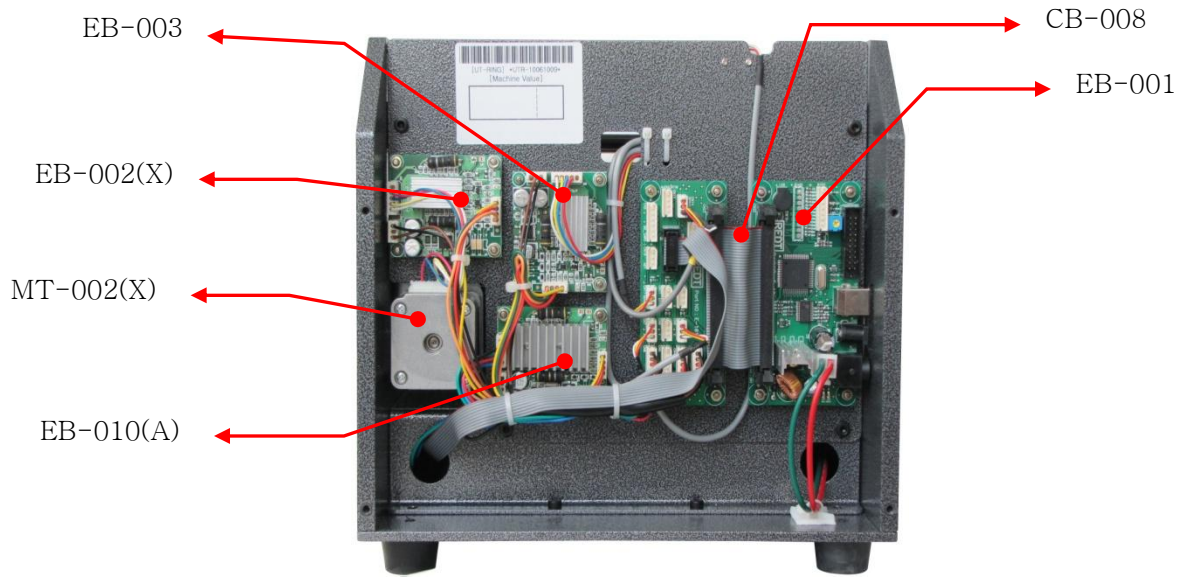


HD-021	Chuck Finger
EP-005	Power Switch
EP-001	Laser Pointer
MP-002	Chuck
MT-007	Step Motor (A)
KP-002	key panel



MT-003	Step Motor (Z)
EB-006	Head Board
EB-005	Photo Sensor with PCB
TB-002	Timing Belt(Z)
EB-009	Photo Sensor with PCB

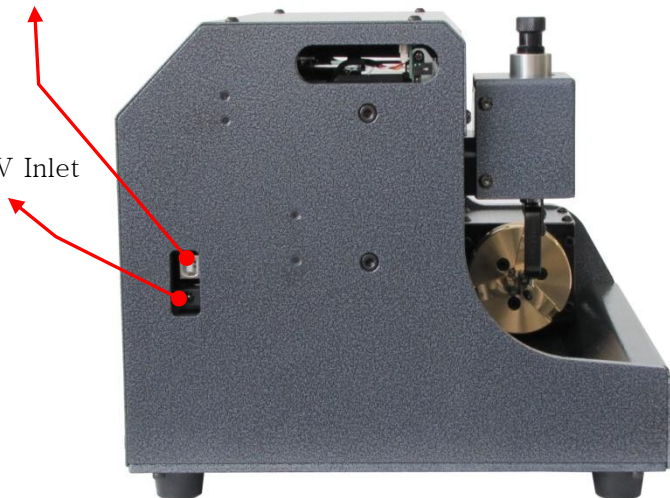
UT-RING Basic



EB-002	Step Motor Driver(X)
MT-002	Step Motor (X,Y)
EB-010	Step Motor Driver(A)
CB-008	50P Head Cable
EB-001	Main Board
EB-003	Step Motor Driver(Z)





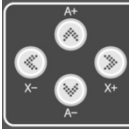
USB connector

DC24V Inlet



UT-RING Basic

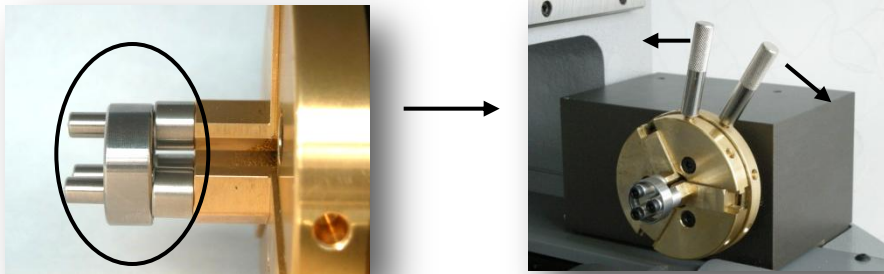
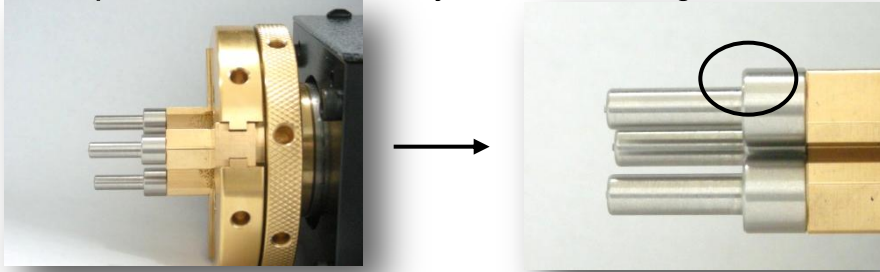


	STOP	On engraving: Stop engraving
	Pointer	Shows laser pointer
	Start	On engraving: Long press – starts engraving
	Save	On setting: Long press – save current set
	Z axis Up / Down	Moves Z axis up and down
	X or A axis Movement	Moves X and A(Rotary) axis.

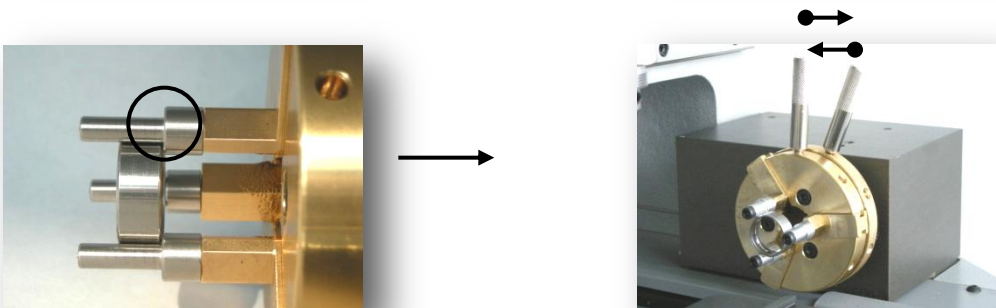
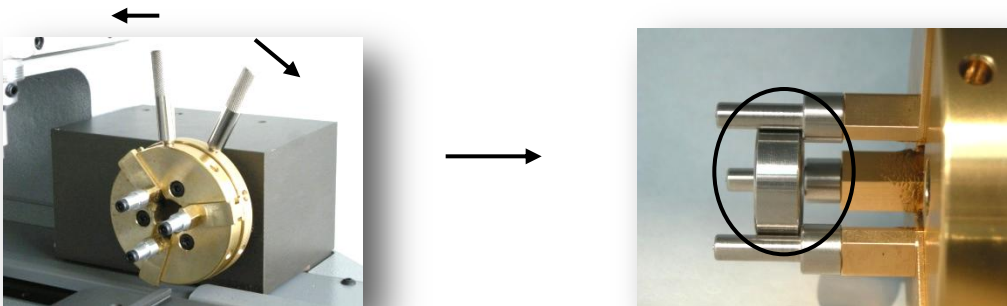
Using Vise

Using Chuck

◆ Use the flat finger chucks to hold your rings. Flat chucks are mainly used for outside ring engraving. Place the ring against the first notch to set at default position. Use the levers provided to hold securely. Do not over tighten.



Use the curved finger chucks for inside ring engraving. Place the ring in the center of the chuck and use the levers provided to hold securely.

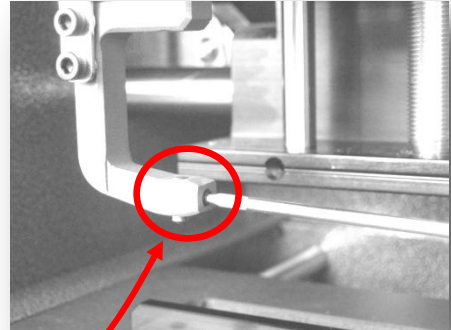


Exchanging Tool

◆ Installing or Replacing the engraving tip.

Use the provided Star shaped screwdriver to loosen or tighten the tip. To remove the tip, turn the **power off** first, then place your finger under the tip. Insert the screwdriver as shown below and turn counter clockwise. One to two turn should be enough to loosen the tip and the tip will slide down easily.

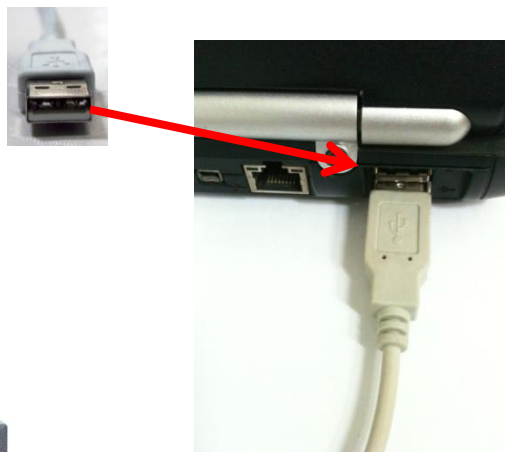
Insert the new tip by sliding it from the below and tighten by turning the screwdriver clockwise. Make sure the tip sticks out about 4-5 mm below the base of the holder.



Installation : Cables and Program



1) The USB cable connection is located left side of the engraver and also the power connection. Plug the other end of the USB cable to your PC and the power adapter to your wall outlet. Make sure to use a surge protector in case of electrical surge.

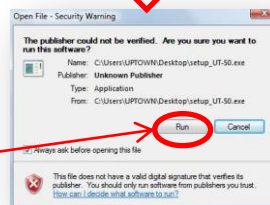


Connect to PC or Laptop

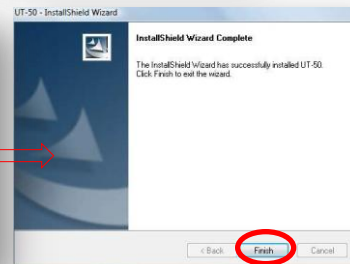
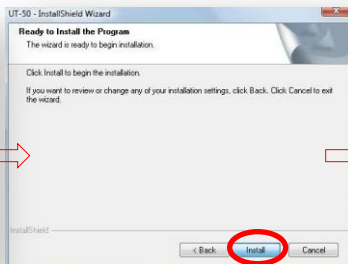
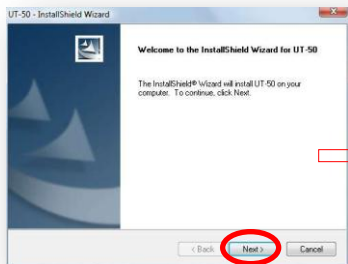


Connect to engraving machine

2) Insert the program CD in your disk drive. Installation should start automatically. If it does not, double click on the CD drive icon and look for (SETUP.EXE) file. Double click on the SET UP.EXE and installation setup should begin.

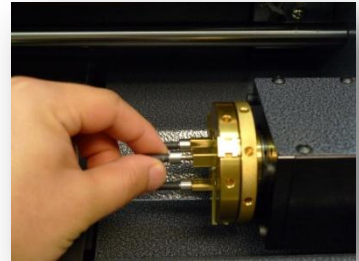


Select Run to proceed to next step.

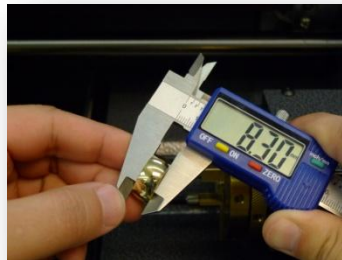


Outside // Inside Ring Engraving: Basic layout information

1) Screw on either the flat or curved ring holders to the attachment. Make sure to tighten by hand.



2) Measure the width and the diameter in millimeter.



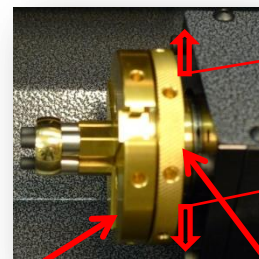
Width



Diameter

3) To place the ring in the vise, hold the outer ring and turn the inner ring away from you. Slide the ring over the chucks and turn the inner ring towards you. Use the (2) steel pins provided to tighten the ring. **Do not over tighten**, it will alter the diameter of the ring or damage the ring.

Outside ring setup



Moves the chucks in.

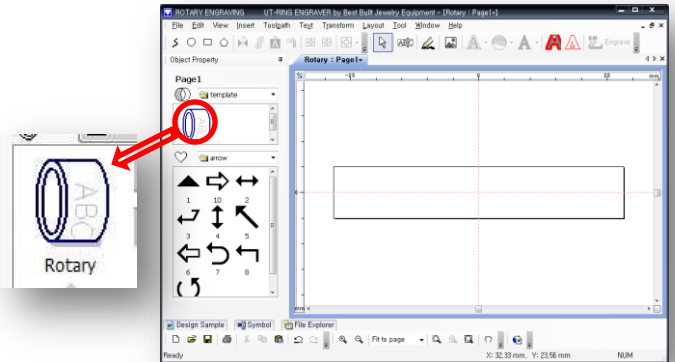
Moves the chucks out.

Outer Ring

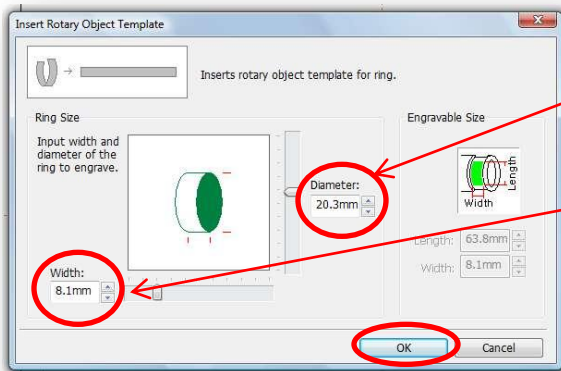
Inner Ring

Outside / Inside Ring Engraving: Basic layout information

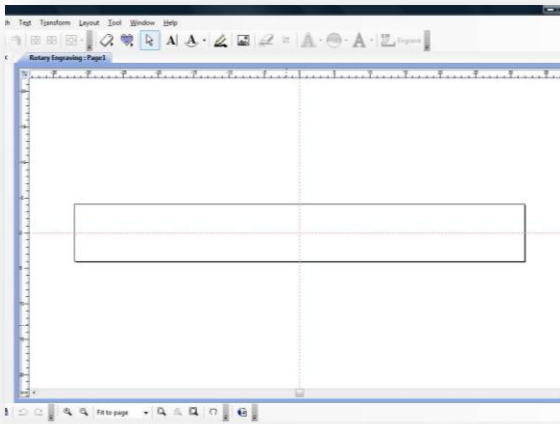
1) To engrave inside or outside the ring, choose the rotary function on the upper left hand corner.



**** To engrave the inside, measure the inside diameter and the width. All steps leading to the output menu is the same as outside ring engraving.**



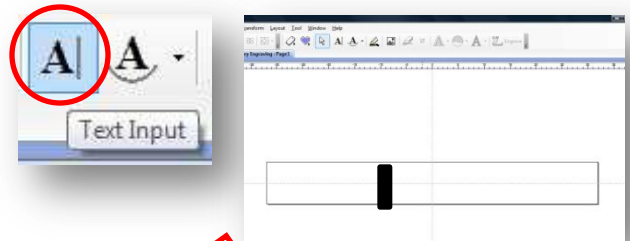
By entering the width and diameter, a template will be drawn according to the measurement.



Click (OK) to proceed to next phase.

Outside / Inside Ring Engraving: Basic layout information

2) Click on Text input icon, left click anywhere on the screen and enter your message or insert drawings.



3) Click on the selection tool and then click the corner nod to resize your message. Your message must fit inside the work area.

4) After resizing your message, you can center it by clicking Center to page icon. Then choose from one of three engraving options.



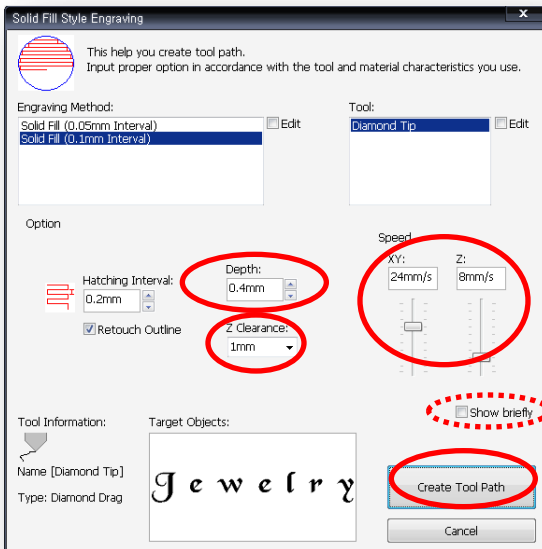
Double line



Hatching Fill

Single line

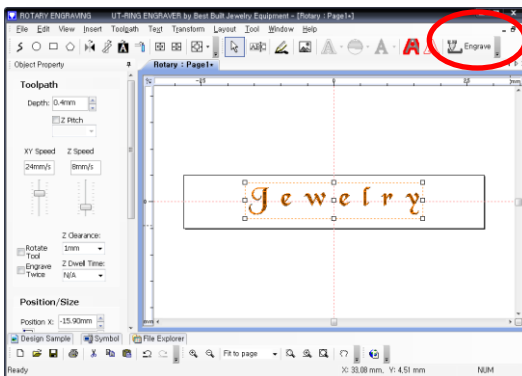
Outside / Inside Ring Engraving: Basic layout information



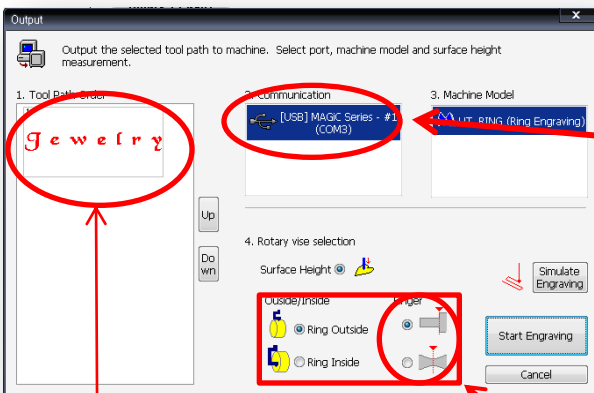
Z Clearance: For uneven surfaces, set the clearance to 4mm or higher.

*** If the menu is in abbreviated mode, click on show briefly to expand the menu options.*

Click "Create Toolpath" to finish.



Click Engrave to send data over to the output



Indicates your PC is properly connected to the engraver via USB cable.

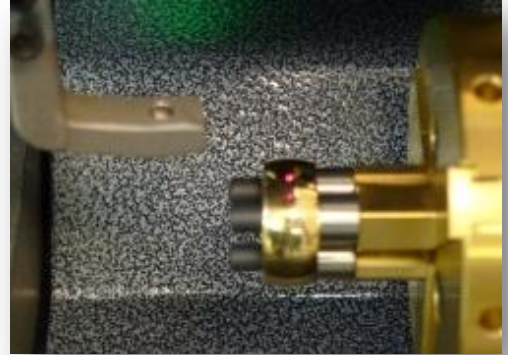
Display should show the message to be engraved.

Choose the ring outside engraving and select the type of holder being used. Selecting the wrong holder will off center the engraving.

Outside / Inside Ring Engraving: Basic layout information

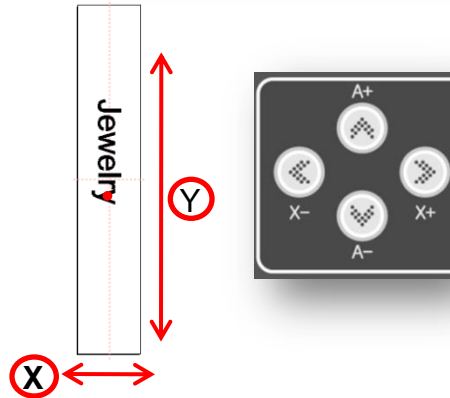
As the data is being transmitted, the engraver will move into position. A laser beam will cast over the engraving object.

Note: Positioning laser is used only for outer surface engraving. It will not turn on for inside ring engraving.



The laser indicates the center of the design. Press X- or X + to view the width of the design. Y- or Y+ to view the length of the design.

- (X-) moves to left and
- (X+) moves to the right.
- (Y-) moves to left and
- (Y+) moves to the right.



In case of misalignment, press (Pointer) then press (X- or X +) to move the work area into the correct position. Press (Pointer) once more to view the work area.

5) Press and hold the start button for 3 seconds or until a long beep sounds.



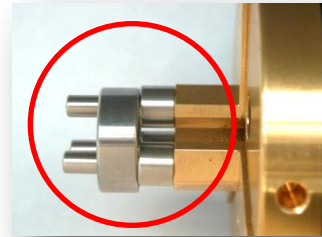
Engraver Settings:

UT-RING positioning and origin setup. Use the tool setting only if the default positioning has been changed.

- Laser Pointer Setting
- Rotary Center Setting (Z Axis)
- Chuck Finger Origin

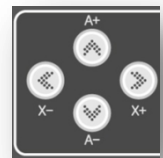
- Laser Pointer Setting

1. Place a sample ring on the rotary vise as shown in the right.



2.  Press and hold the (Pointer) button until a long beep occurs.

3. Engraver will make a cross mark at a random location. Move the laser point over the center of the mark using the directional key pad. Once the pointer is in place, press and hold the start button for 2 seconds or a long beep to set as default position. This will align the laser and the diamond tip.

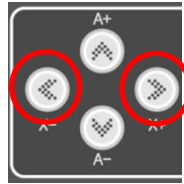


◆ Rotary Center Setting (Z Axis)

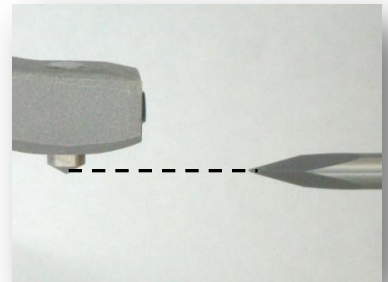
1. Place a needle-like object with a center point and place it on the vise as shown on the left.



2. Press X- or X+ button to move the engraving tip close to the needle-like object.



3. Use the Z axis buttons to adjust the height of the engraving tip to the point of the object. The engraving tip and the point on the centering object should line up as close as possible as illustrated on the right.



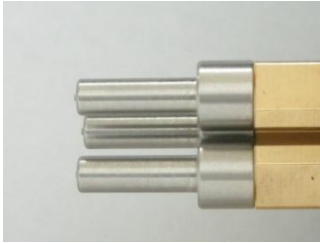
4. Press and hold the start button for 2 secs or a long beep to set the position.



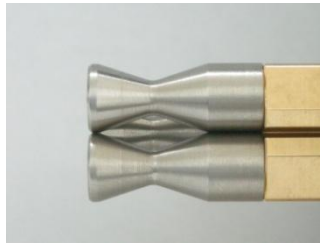
Engraver Settings:

◆ Chuck Finger Origin Settings

1. Place the chuck finger to the ring vise.



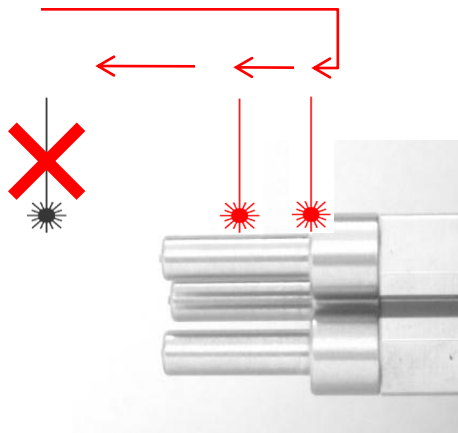
[Default outside ring]



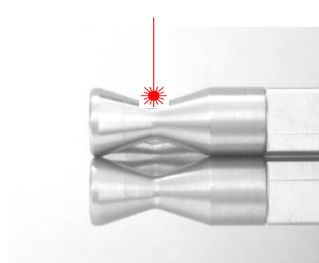
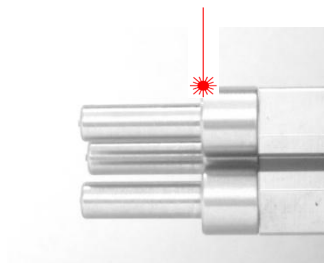
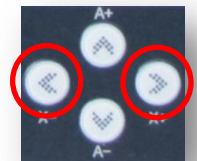
[Default inside ring]

2. Press “Pointer” button to turn on the laser pointer and move to each finger origin position.

Each button press will cycle in sequence of “Flat Finger Origin” -> “Round Finger Origin” -> “Turning it Off”.



3. Use the directional keys to move the beam to the correct position. The illustration below shows the correct position for each chucks.



4. Press the “Start” button and hold for 2 seconds or a long beep to set the position.



Supported G-Code

Code	Meanings	Examples
A	A axis coordinate	A360 (360degree)
X	X axis coordinate	X10 (10mm or 10inch)
Y	Y axis coordinate	Y10 (10mm or 10inch)
Z	Z axis coordinate	Z10 (10mm or 10inch)
I	X distance to center from current position in G02,G03	I10 (10mm distance from current position)
J	Y distance to center from current position in G02,G03	J10 (10mm distance from current position)
F	Feeding Speed in mm/min	F1800 (1800mm/min)
D	Diameter to calculate Feeding Speed of rotary axis(A axis)	D25.5
G00	Rapid Positioning	G00 X100.0 Y100.0 Z100.0
G01	Linear Cut	G01 X10.0 Y10.0 Z10.0 A360
G02	Arc in CW direction	G02 X10 Y10 I-5 J5
G03	Arc in CCW direction	G03 X10 Y10 I-5 J5
G04	Dwell	G04 X1
G20	Inch system selection	G20
G21	Millimeter system selection (Default).	G21
G28	Move to absolute position (in machine coordinate)	G28Z0.
G90	Absolute Coordinate to the machine origin (Default)	G90
G91	Relative Coordinate to the previous position	G91
M02 M30	Quit engraving and pull the vise out	M30
M03 M04	Spindle Rotation	M03
M05	Spindle Off	M05

Code Examples for Ring Engraving with Rotary axis

M03

G00 X0.00 Z15.95 A0.00

F1800 G01 X0.00 Z7.96 A0.00

G01 X0.00 Z7.96 A14.18 F1200

G01 X0.00 Z8.00 A14.31

G01 X0.00 Z8.03 A14.44

G01 X0.00 Z8.07 A14.57

G01 X0.00 Z8.10 A14.70

G01 X0.00 Z8.14 A14.83

.....

G01 X0.00 Z0.00 A0.00

M30



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