Ring Engraving Attachment

Important Before You Start

GEM-RX and GEM-RX4 Ring Engraving Attachment.

It has been brought to our attention, that some users are attaching and removing the "Ring Engraving Attachment", without locking the Chuck using the spanner provided with the original purchase of the machine. This can cause excess strain to be put on the cylindrical gears, leading the premature failure. Always use the Spanner provided and do not over tighten, see Figure 1.

Use the spanner to take the pressure off the Rotary Gear, when attaching or removing the Ring Chuck.

Ring Chuck
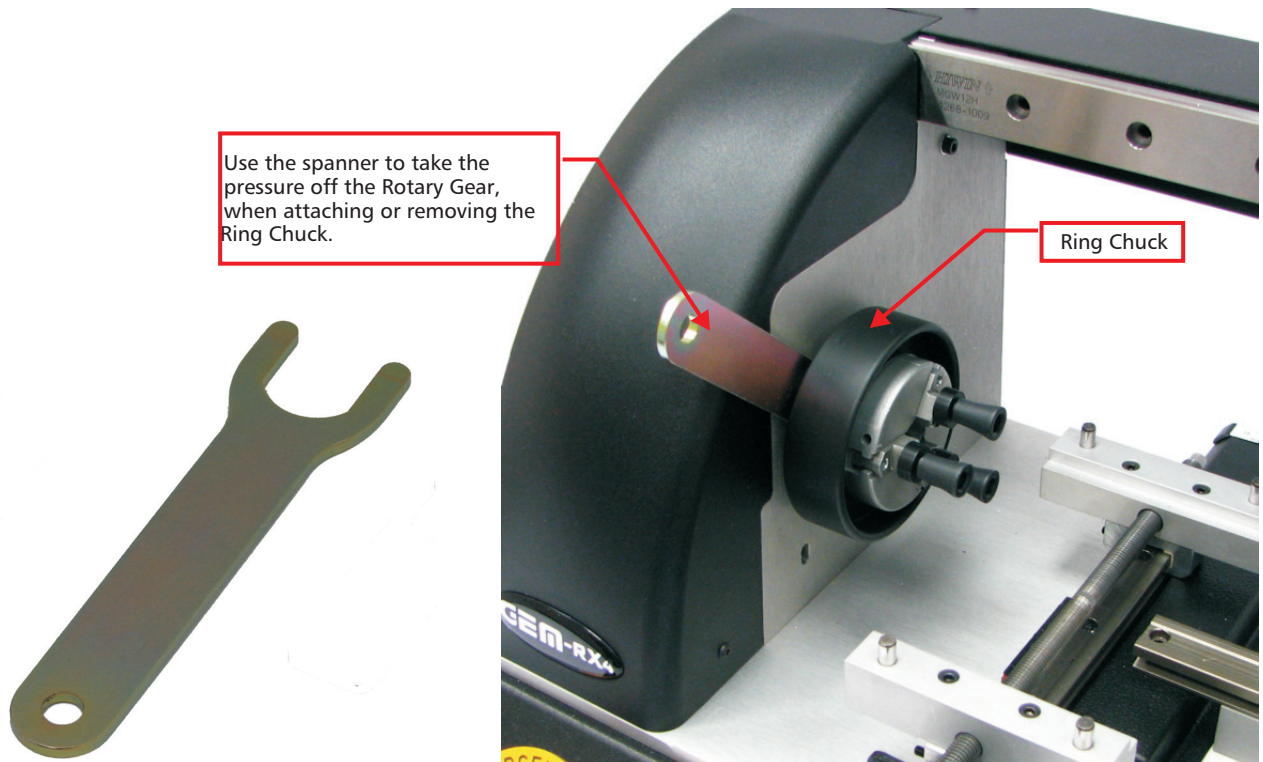
Figure 1   Figure 2

The Spanner is attached to the two flats on the cylindrical mounting, see Figure 2.

If you do not follow the above instructions, your GEM Engraving Machine may sustain serious damage to Cylindrical Gears and need to be returned to the factory to have the damage repaired.

Note : Not following the above procedure may invalidate you machines warranty.

Inside Ring Engraving

Your new GEM-RX4 Engraving Machine has the ability to engrave on the inside of rings, using the Ring Engraving Attachment, this can be purchased separately, consult your Dealer.

Loading The Correct Machine Driver

To use the Inside Ring Engraving Attachment with you GEM-RX4 Engraver, you need to ensure you have the correct Machine Driver Loaded the U-MARQ GEM-RX4 Plus. Click on "Production" on the Main Menu Bar, the first entry will tell you the Machine Driver that is loaded,. If this shows any other driver that U-MARQ GEM-RX4 Plus, you will have to install the GEM-RX4 Plus Driver.

1   First you have to close the existing Drive., On the Tray icon bar at the bottom left of your screen, you will see the Vismec icon, see below. Right Click on this and select "Terminate", if you have your GEM-RX4 Engraving Machine switched on the keyboard lights will come on indicating that the machine is in Stand By Mode and will not operate.
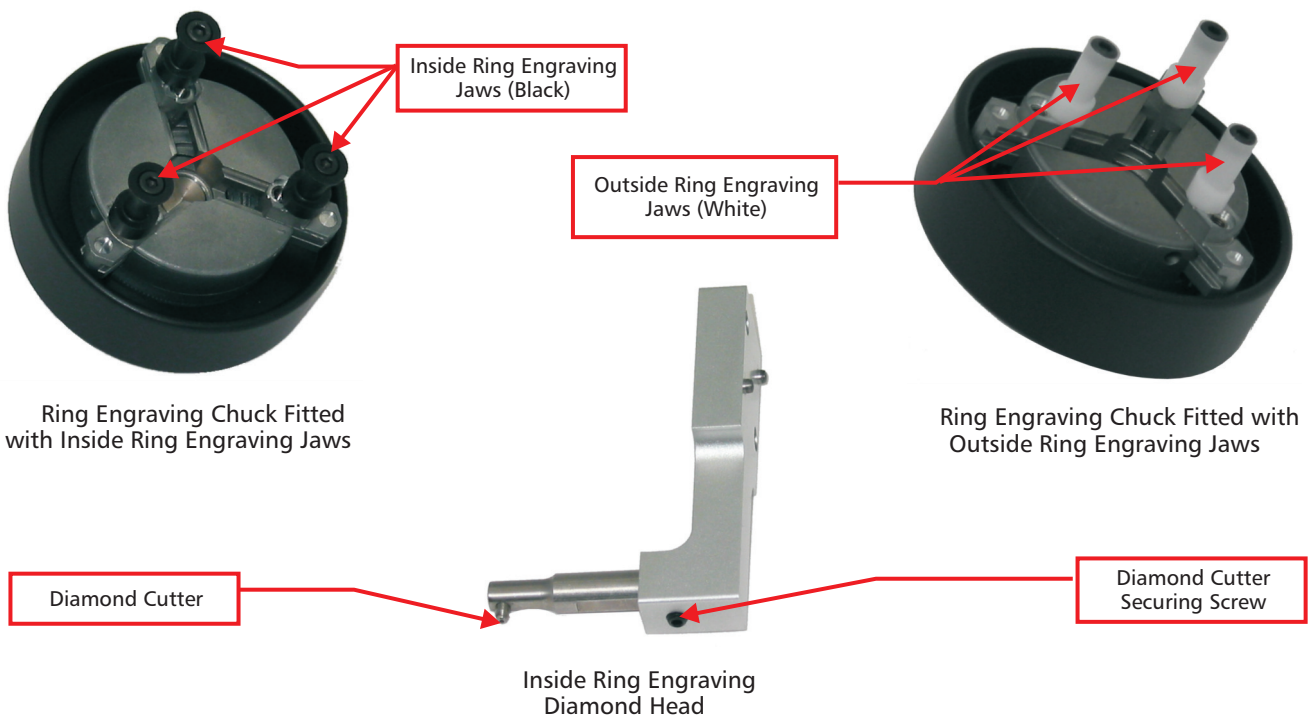
 Vismec icon

2   To load the correct Driver is easy, first with your GEM-RX4 Engraving Machine On and ensure that all leads are correctly connected. On the Main Menu Bar Click on "Wizards", select "New Device", you will now have the Driver Listing on your screen, select U-MARQ GEM-RX4 Plus, Click on "OK".

3   You now will be asked to select the Com Port that your GEM-RX4 Engraving Machine is connected to,. Select the correct port from the drop down list, normally COM 1 or 2.

4   The Machine Setup Dialogue Box now pops up, select "OK" to accept the defaults.

5   You will now see the Opening Dialogue Box, select "New Drawing". Then Click on the "Centring Vice" option,. Your GEM-RX4 Engraving Machine will now Home.

Note : If your GEM-RX4 Engraving Machine does not fire up and Home, it is likely that you have selected the wrong Com Port. For full fault finding procedure see Trouble Shooting, Page 117.

The Inside Ring Engraving Kit

Check to ensure you have the items above before you attempt to engrave inside rings.

Inside Ring Engraving Jaws (Black)

Outside Ring Engraving Jaws (White)

Ring Engraving Chuck Fitted with Inside Ring Engraving Jaws

Ring Engraving Chuck Fitted with Outside Ring Engraving Jaws

Diamond Cutter

Diamond Cutter Securing Screw

Inside Ring Engraving Diamond Head

To setup your GEM-RX4 Engraving Machine for inside ring engraving follow the steps below, the GEM-RX4 Engraver should be switched off for safety.

1   Make sure the GEM-RX4 Engraving Machine is in its Home position, Engraving Head to the right..

2   Attach the Inside Ring Diamond Head to the Spindle Housing using the two thumb screws provided, see Figure 1.

3   Remove the Pen Holding attachment, if fitted from the Head Stock using the spanners provided.

4   Ensure that the Vice Jaws are fully opened, remove all Jigs and the Tail Stock from the GEM-RX4 Engraving Machine.

5   Fit the Ring Engraving Chuck, by screwing it in place of the Pen Holder, make sure you have the Inside Ring Engraving Jaws fitted, (these are Black), see Figure 2. When fitting the Chuck, please ensure that you use the Spanner provided to hold the driven part of the Head Stock and only tighten the Chuck **FINGER TIGHT**. Over tightening may damage the Drive Stock Gears and make the Chuck difficult to remove.
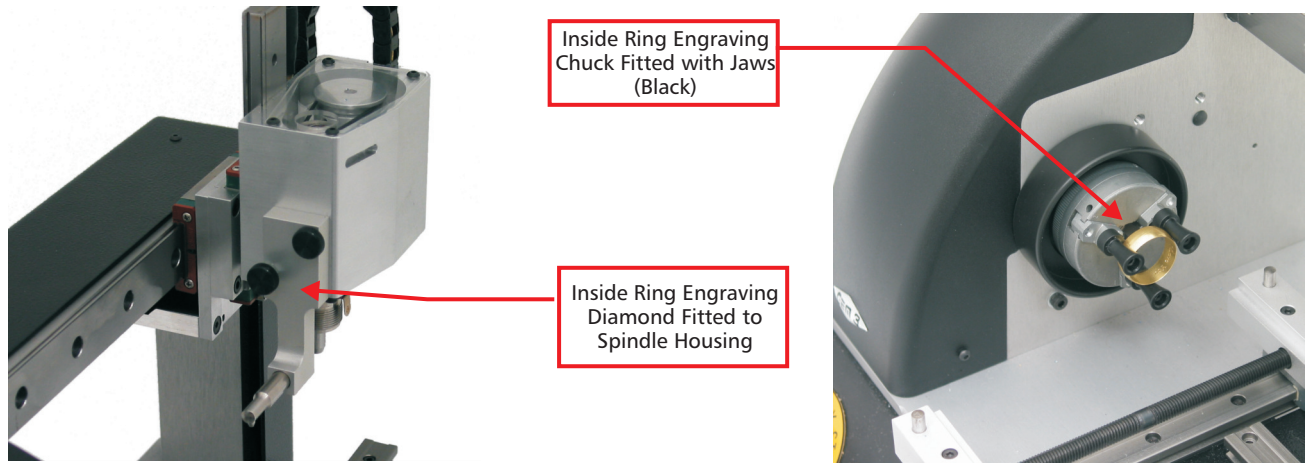
Inside Ring Engraving Chuck Fitted with Jaws (Black)

Inside Ring Engraving Diamond Fitted to Spindle Housing

Figure 1

Figure 2

6   Now switch on the GEM-RX4 Engraving Machine and launch the GEM-RX4 Engraving software. The GEM-RX4   Engraving Machine will now move to its Home position.

7   You will now be presented with the Opening Selection Box, select "New Drawing".

8   You will now be asked the mode you wish to load, select "Inside Ring Engraving", third icon from the left, see Figure 4, then press "OK". You will now see a see the engraving area on a yellow background on the screen.
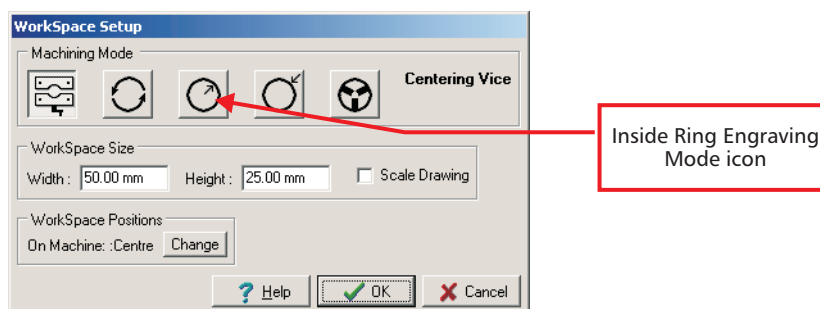
Inside Ring Engraving Mode icon

Figure 4

9   You are now ready to clamp your ring into the Ring Jaws, but first you must measure the width of the ring. This must be carried out accurately, otherwise your design will not be engraved centrally within the ring. The smallest diameter ring you can accommodate is 12 mm and the largest is 32 mm. You are now ready to setup the ring with text etc., in your GEM-RX4 Engraving Software.

12   You should now have a rectangular white Workspace area, on a yellow background on your screen. The workspace area is the equivalent of the inside of the ring unfolded., this makes it easier to place your text, Press "F7" on your keyboard to zoom in to your Workspace.

13   Now select Auto Layout from the Text Menu or Toolbar icon, you will now have the Auto Layout Dialogue Box, see Figure 12 and can start to setup your job**.**

Auto Layout icon

15 In the Auto Layout Dialogue Box, ensure that the Inside Ring mode is selected, third icon from the left. In Diameter enter the diameter of the ring i.e. 22 mm, in the Ring Width enter the width of the ring i.e. 9 mm. In Fonts select the font you require to use, see Notes at the end of this chapter. You can now enter your text i.e. TEXT ON A RING 2005, all these settings are shown in Figure 5, Click On "OK".
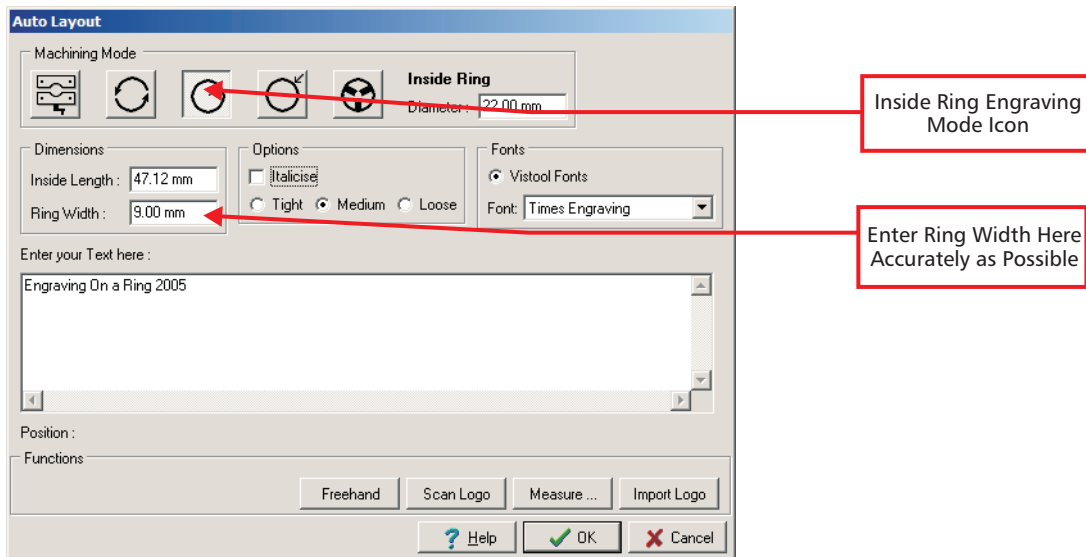

Figure 5

16 Your Layout will now be on the screen, note the text will be centred from top to bottom and side to side in the horizontal plane, see Figure 6. If you are satisfied with the layout you are now ready to send the job to the GEM-RX4 Engraving Machine. At this stage ensure you have placed the ring in the Chuck and the GEM-RX4 Engraving Machine is switched on. From the Production Menu, select "Engrave", now select "Inside Ring using Diamond, (this automatically sets the Feed Rates, Depths etc, correctly for Ring Engraving), then Click On "OK".

17 You will now have a Dialogue Box popup as in Figure 7, this tell you that the design and ring on the screen is in the wrong orientation and should have it axis swapped, Click On "Yes". This will now give you an exact view of your ring, in the correct orientation with the Ring Engraving Chuck. The job will have been sent to the GEM-RX4 Engraving Machine in the correct orientation, ready to start engraving.
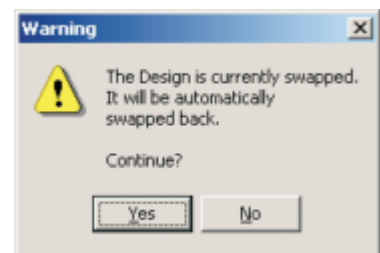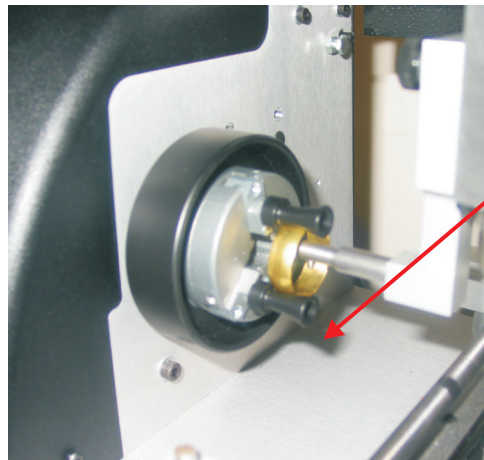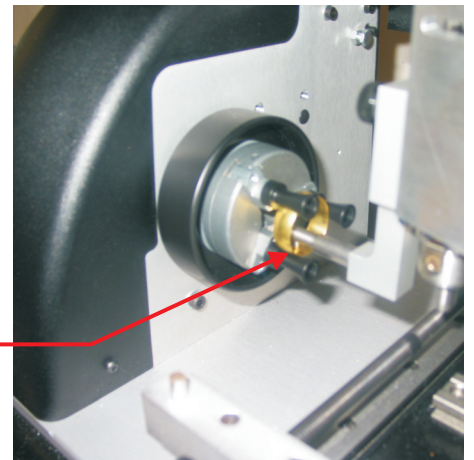

Figure 6

Figure 7

18 If you check the Keyboard of the GEM-RX4 Engraving Machine, you will now have the green Home positioning light and the Start/Stop lights illuminated. Press the "Start/ Stop" button, the Diamond Engraving Head will now automatically move down, then to the left into the outside edge of the ring to be engraved, see Figure 8. The yellow Position Light and the green Start/Stop lights will now be illuminated, this indicates that you should be in the correct position. If you find that the diamond tip is not in the correct position i.e. on the outside edge of the ring, you can use the "X" axis "Move Keys" on the Keypad to adjust the position.

19 When you are happy that the positioning is correct, Press the "Stop/Start" button again, you will now have the blue Surface light and the green Stop/Start lights will now be illuminated, you now need to pick the surface. Using the "Z Down" button on the Keypad (second from right, bottom), jog slowly down to the surface of the ring, see Figure 9. Once you are satisfied you are at the surface Press the "Start/Stop" button, the GEM-RX4 will start engraving the ring. Once the engraving has finished, the Diamond Engraving Head will move to the right and clear the centre of the ring and the red Finish Light will be lit. If you wish to go back over the

engraving, this can be done so long as you have not removed the ring, by Pressing the "Start/Stop" the green light will   illuminate, then pressing "Repeat" and Pressing "Start/Stop", the sequence will start over again.

Figure 8

Diamond Cutter at its First Position, Edge of Ring. Yellow Light on Keyboard On

Diamond Cutter Jogged to the Surface of the Ring. Red Light on Keyboard On

Figure 9

Congratulations you have just engraved your first inside ring !

Note : One of the most important thing when engraving a ring, is to make sure that you measure the ring width as accurately as possible and if necessary Jog the diamond to the outside edge of the ring. This will ensure that the engraving will be placed correctly in the centre of the ring.

Engraving a Ring Avoiding Hallmarks Etc.

Your GEM-RX4 Engraving Machine fitted with the Inside Ring Engraving Attachment, is able to accurately position the engraving to avoid Hallmarks, Makers Marks etc. The technique is very simple and used nothing other than a Black Marker Pen (none permanent).

1   Follow steps 1 to 17 as above, except before placing the ring in the Chuck, place a mark directly over the Hallmark on the outside of the ring, using the Black Marker.

2   If you check the Keyboard of the GEM-RX4 Engraving Machine, you will now have the green Home positioning   light and the Start/Stop lights illuminated.. Press the "Start/ Stop" button, the Diamond Engraving Head will   now automatically move down, then to the left into the centre of the ring to be engraved. The yellow Position   Light and the green Start/Stop lights will now be illuminated.. From the Keypad Press the "Rotate Button", (top   right button), this will rotate the Ring, Stop! when the Black Mark is at the top and opposite the Engraving   Diamond. This indicates that you are at the correct position within the ring and the text will engrave outward   from the centre of this point, in each direction. Press the "Stop/Start" button again, you will now have the blue   Surface light and the green Stop/Start lights will now be illuminated, you now need to pick the surface. Using the   "Z Down" button on the Keypad (second from right, bottom), jog slowly down to the surface of the ring. Once   you are satisfied you are at the surface Press the "Start/Stop" button, the GEM-RX4 will start engraving the ring.   Once the engraving has finished, the Diamond Engraving Head will move to the right and clear the centre of the   ring and the red Finish Light will be lit. If you wish to go back over the engraving, this can be done so long as   you have not removed the ring, by Pressing the "Start/Stop" the green light will illuminate, the pressing "Repeat"   and Pressing "Start/Stop", the sequence will start over again.

Note : When Inside Ring Engraving you will find that some font don't engrave well. Although this is not an exact science and depends on the material, width of ring etc., plain fonts tend to be more successful than very fancy ones.

Outside Ring Engraving

Outside Ring Engraving Jaw are attached in place of the Inside Ring Engraving Jaws, see Figure 10. There is no

special Spindle fitting like the Inside Ring Engraver, you just use the normal Diamond Cutter fitted in the Light-Touch Holder, see Figure 11.

Engraving Chuck Fitted With Outside Ring Engraving Jaws (White)
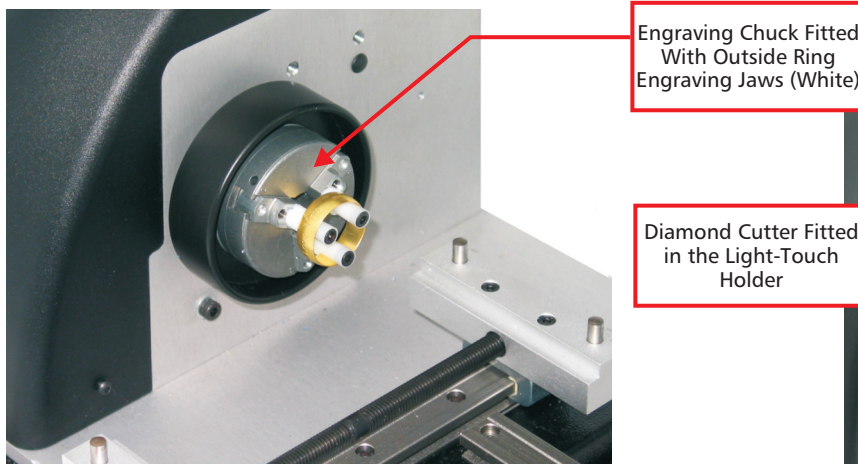
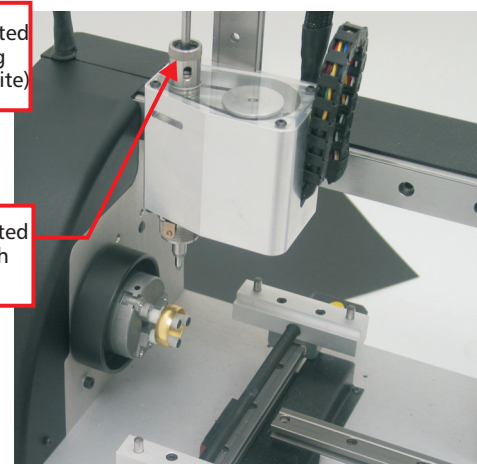Diamond Cutter Fitted in the Light-Touch Holder

Figure 10

Figure 11

1   If your Machine is switched off switch it on and launch the GEM-RX4 Engraving software. The GEM-RX4 Engraving Machine will now move to its Home position.

2   You will now be presented with the Opening Selection Box, select "New Drawing".

3   You will now be asked the mode you wish to load, select "Outside Ring Engraving", fourth icon from the left, see Figure 12.
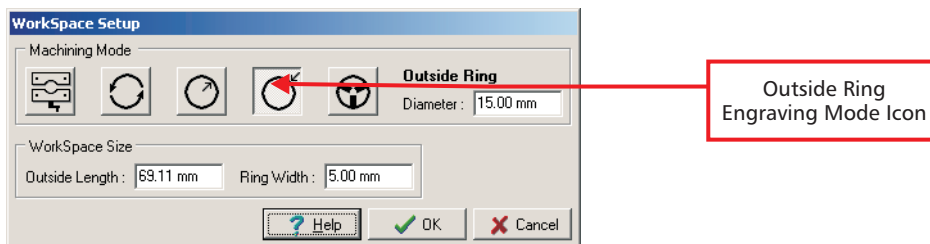

Outside Ring Engraving Mode Icon

Figure 12

4   You are now ready to clamp your ring into the Ring Jaws, but first you must measure the width of the ring. This must be carried out accurately, otherwise your design will not be engraved centrally within the ring. The smallest diameter ring you can accommodate is 15 mm and the largest is 40 mm. You are now ready to setup the ring with text etc., in your GEM-RX4 Engraving Software.

5   You should now have a rectangular white Workspace area, on a yellow background on your screen. The workspace area is the equivalent of the inside of the ring unfolded., this makes it easier to place your text, Press "F7" on your keyboard to zoom in to your Workspace.

6   Now select Auto Layout from the Text Menu or Toolbar icon, you will now have the Auto Layout Dialogue Box, see Figure 13 and can start to setup your job**.**

   Auto Layout icon

7   In the Auto Layout Dialogue Box, ensure that the Inside Ring mode is selected, third icon from the left. In Diameter enter the diameter of the ring i.e. 22 mm, in the Ring Width enter the width of the ring i.e. 9 mm. In Fonts select the font you require to use, see Notes at the end of this chapter. You can now enter your text i.e. I LOVE YOU, using Times Engraving font. When finished Click On "OK".

8   Your Layout will now be on the screen, note the text will be centred from top to bottom and side to side in the horizontal plane, see Figure 14. If you are satisfied with the layout you are now ready to send the job to the GEM-RX4 Engraving Machine. At this stage ensure you have placed the ring in the Chuck and the GEM-RX4 Engraving Machine is switched on. From the Production Menu, select "Engrave", now select "Outside Ring using Diamond, (this automatically sets the Feed Rates, Depths etc, correctly for Ring Engraving), then Click On "OK".

9 You will now have a Dialogue Box popup as in Figure 15, this tell you that the design and ring on the screen is in the wrong orientation and should have it axis swapped, Click On "Yes". This will now give you an exact view of your ring, in the correct orientation with the Ring Engraving Chuck. The job will have been sent to the GEM-RX4 in the correct orientation ready to engrave.
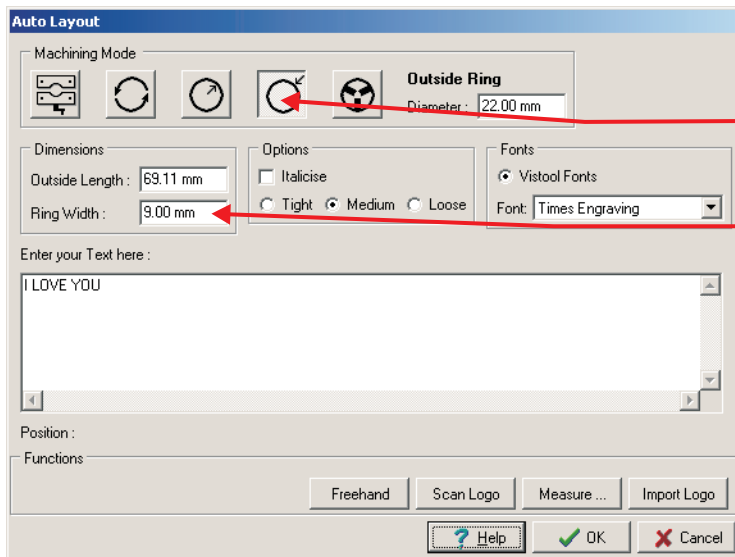
Outside Ring Engraving Mode Icon

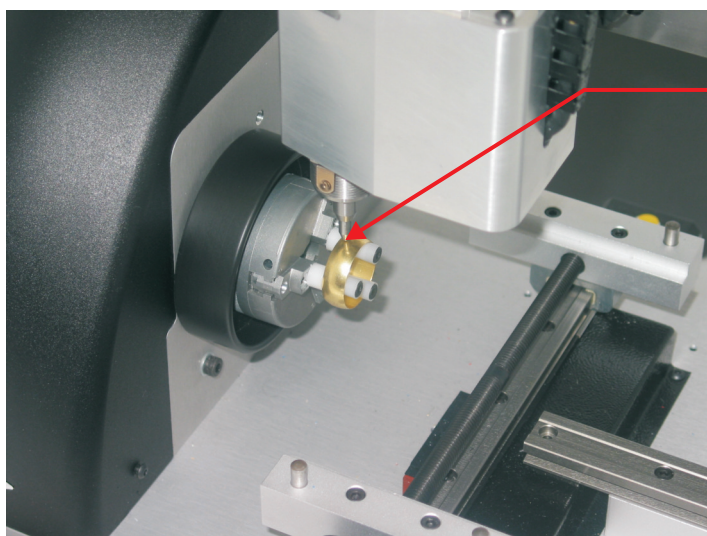Enter Ring Width Here Accurately as Possible

Figure 13

Figure 15

Figure 14

10 If you check the Keyboard of the GEM-RX4 Engraving Machine, you will now have the green Home positioning light and the Start/Stop lights illuminated. Press the "Start/ Stop" button, the Diamond Engraving Head will now automatically move to the left to the outside edge of the ring to be engraved. The yellow Position Light and the green Start/Stop lights will now be illuminated, this indicates that you should be in the correct position. If you find that the diamond tip is not in the correct position i.e. on the outside edge of the ring, you can use the "X" axis "Move Keys" on the Keypad to adjust the position.

Diamond Cutter Jogged to Surface Ready to Start Engraving

Figure 16

11 When you are happy that the positioning is correct, Press the "Stop/Start" button again, you will now have the blue Surface light and the green Stop/Start lights will now be illuminated, you now need to pick the surface. Using the "Z Down" button on the Keypad (second from right, bottom), jog slowly down to the surface of the ring, see Figure 16. Once you are satisfied you are at the surface Press the "Start/Stop" button, the GEM-RX4 will   start engraving the ring. Once the engraving has finished, the Diamond Engraving Head will move to the right   and clear the ring and the red Finish Light will be lit.

<u>Congratulations you have just engraved your first outside of a ring !</u>

Note : One of the most important thing when engraving a ring, is to make sure that you measure the ring width as accurately as possible and if necessary Jog the diamond to the outside edge of the ring. This will ensure that the engraving will be placed correctly in the centre of the ring.