Table of Contents

1 Introduction

1.1 Health and Safety

WARNING ! Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

Tool Use and Care

Use clamps or other practical way to secure and support the workpiece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control. Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed. Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally. Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool, may become hazardous when used on another tool.

Service

Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury. When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk or electric shock or injury.

Work Area

Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes. Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

Electrical Safety

Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adaptor plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded. Don't expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W." These cords are rated for outdoor use and reduce the risk of electric shock.

Personal Safety

Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence or drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.
To Avoid Accidental Starting.
Be sure switch is off before plugging in. Carrying tools with your finger on the switch or plugging in tools that have the switch on invites accidents. Remove adjusting keys or switches before turning the tool on. A wrench or a key that is left

attached to a rotating part of the tool may result in personal injury. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations. Use safety equipment. Always wear eye protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

Chip Extraction

When engraving or cutting plastic materials, you are advised to invest in some form of Chip Extraction System. This is used to ensure that the partials, some of which are very fine and can be toxic if inhaled, do not end up being discharged into the atmosphere.

Warning

Do not disassemble, repair, or modify. Doing so may lead to fire or abnormal operation resulting in injury. Ground the unit with the ground wire. Failure to do so may result in risk of electrocution in the event of a mechanical problem.
Do not use with any electrical power supply that does not meet the ratings displayed on the unit. Use with any other power supply may lead to fire or electrocution.
Do not use while in an abnormal state (i.e., emitting smoke, burning odour, unusual noise, or the like). Doing so may result in fire or electrocution. Immediately switch off the power, unplug the power cord from the electrical outlet, and contact your authorized U-MARQ dealer or service centre.
Use only with the power cord included with this product. Use with other than the included power cord may lead to fire or electrocution.
Do not use with a damaged power cord or plug, or with a loose electrical outlet. Doing so may lead to fire, electrical shock, or electrocution.
Do not damage or modify the electrical power cord, subject it to excessive bending, twisting, pulling, binding, or pinching, or place any object or weight on it. Doing so may damage the electrical power cord, leading to fire, electrical shock, or electrocution.
When not in use for extended periods, unplug the power-cord plug from the electrical outlet. Failure to do so may result in danger of electrical shock, electrocution, or fire due to deterioration of electrical insulation.
When unplugging the electrical power cord from the power outlet, grasp the plug, not the cord. Unplugging by pulling the cord may damage it, leading to fire, electrical shock, or electrocution.
Do not attempt to unplug the power cord plug with wet hands. Doing so may result in electrical shock or electrocution.
Do not allow liquids, metal objects or flammable's inside the machine. Such materials can cause fire.
Install on a stable surface. Failure to do so may result in the unit tipping over, leading to injury.
When you're finished, wash your hands to rinse away all cuttings.
Please use a vacuum cleaner to remove cutting dust. Do not use any blower like airbrush. Otherwise, dust spread in the air may harm your health.
Use a commercially available brush to remove metal cuttings. Attempting to use a vacuum cleaner to take up metal cuttings may cause fire in the vacuum cleaner.
Do not carelessly insert the hands while in operation. Doing so may result in injury.
Do not touch the tip of the blade with your fingers. Doing so may result in injury.
Fasten the spindle, tool, and material securely in place. Otherwise they may come loose during cutting, resulting in injury.
Do not operate beyond capacity or subject the tool to undue force. The tool may break or fly off in a random direction.
If cutting beyond capacity is mistakenly started, immediately turn off the EMERGENCY STOP switch.
Wear dust goggles and mask during use. Cutting dust may scatter, causing bodily injury.
Switch off the machine and unplug the power cord from the electrical outlet before performing cleaning or maintenance. Failure to do so may result in injury or electrical shock.
Do not wear gloves, a necktie or wide sleeved clothing. They may become caught in the tool, resulting in injury.
Do not touch the tool immediately after cutting operating stops. The tool may have become hot due to friction heat and may cause burns if touched.
Do not operate if a spindle cover is cracked or broken. If the spindle cover is cracked, contact you local U-MARQ Dealer immediately for repairs.
Do not touch the spindle motor immediately after a cutting operation has ended. Doing so may result in burns.

WARNING
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

END

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First edition, first revision: January 2006, second revision December 2006, third revision January 2008, fourth revision January 2009.

END

1.3 Introduction

Hardware Compliance

For USA
FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE
STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Unauthorized changes or modification to this system can void the users authority to operate this equipment.

The I/O cables between this equipment and the computer device must be shielded.

For Canada
CLASS A NOTICE
This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
CLASSE A AVIS
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

CE
U-MARQ Ltd
20 Darin Court, Crownhill, Milton Keynes, MK8 0AD, United Kingdom.
MODEL NAME : See the MODEL given on the rating plate.
RELEVANT DIRECTIVE : EC MACHINERY DIRECTIVE (98/37/EC)
EC LOW VOLTAGE DIRECTIVE (73/23/EEC)
EC ELECTROMAGNETIC COMPATIBILITY DIRECTIVE (89/336/EEC)

WARNING
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

The I/O cables between this equipment and the computer device must be shielded.

END

Congratulations on your purchase of a U-MARQ GEM-CX4 Engraving Machine. The U-MARQ GEM-CX4 Engraving Machine and Software, have been optimised to make it possible to start producing truly spectacular engraved items, in the shortest possible time. Use this Tutorial to get you up and running, the concept and procedures that you learn from this manual will allow you to develop your own techniques, as a quick start guide, it is not possible to cover every aspect of engraving but it gives you a starting point.
There are no catches in engraving just simple methods that need to be followed.. This Quick Start Guide will help you to understand and get the best out of your new investment.

Good luck from the U-MARQ development team.

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E-mail : sale@u-marq.com

For a list of all our World Wide Distributors, visit our website.

Website. www.u-marq.com

2 Getting Started

2.1 Getting Started

What's In The Box

Unpack your Engraving Machine and check the contents against the enclosed packing list.

Important Before You Start

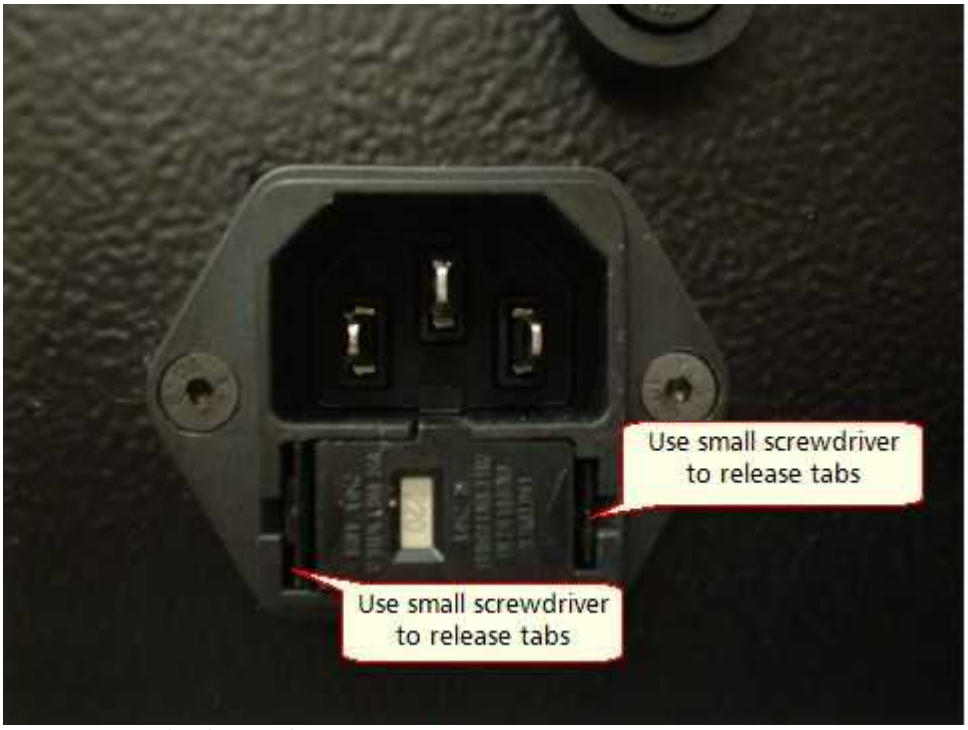
Main Voltage

Before connecting your GEM Engraving Machine to the Mains Electricity Supply, you need to check that the voltage is set correctly for your country. All U-MARQ Engraving4 Engraving Machines when shipped from the UK are set at 220 volts.
220 volts for most European Countries.
110 volts for the United States and some other Countries.

Note : If in doubt consult a Qualified Electrician, your Electricity Supplier, or U-MARQ Dealer.

Changing Voltage

You may have to change the voltage for your country, when you receive your U-MARQ Engraving4 Engraving Machine.



Mains Input and Voltage Selector

To check the set voltage, look at the back of your GEM Engraving machine, below the power point is the fuse. This will be set to either 220 volts or 110 volt, ensure it is set correctly for your Country.

Fuse and Voltage Selector

If you need to change the fuse setting remove the fuse holder using the clips. Remove the grey fuse holder from the

black surround, using two small screwdrivers to release the clips. Rotate the grey fuse holder and set at the required voltage, then replace into the black holder ensuring that the correct voltage setting is showing in the window. Replace into the fuse holder.

Note : Before using your new machine please ensure that the "Z" axis locking ring is at its upper most position and the head is allowed to float. For transit the head should always be locked in the down position, see page.

2.2 System Requirements

System Requirements Windows XP

Minimum

2.6 GHz Pentium 4 PC with Windows XP, fitted with 512 Mb RAM, 100Mb free Hard Disk space, Display adapter supporting 256 colours, 3 USB Ports, CD- ROM drive, Mouse.

Recommended

2.0 GHz Dual Core PC with Windows XP, fitted with 1Gb RAM, 100Mb free Hard Disk space, Display adapter supporting 256 colours, 3 USB Ports, CD-ROM drive, Mouse and an Internet connection.

System Requirements Windows Vista

Minimum

2 GHz Dual Core PC with Windows Vista 32/64 bit, fitted with 1Gb Mb RAM, 100Mb free Hard Disk space, Display adapter supporting 256 colours, 3 USB Ports, CD- ROM drive, Mouse.

Recommended

2.6 GHz Dual Core Processor PC with Windows Vista 32/64 bit, fitted with 4Gb RAM, 100Mb free Hard Disk space, Display adapter supporting 256 colours, 3 USB Ports, CD-ROM drive, Mouse and an Internet connection.

Note : The U-MARQ Engraving Software will only install on Windows XP or Vista 32/64bit. Windows XP must have service packs 1 and 2 installed.

2.3 USB to Serial

USB to Serial Converter

If you do not have a Serial Port on your Computer to connect your new U-MARQ Engraving Machine to, you will have to fit a USB to Serial Converter. In every GEM-FX4 Toolbox you will find a USB to Serial Converter, see Figure1, this is the only type that we recommend and support.

Connecting Your USB to Serial Converter

To connect your USB to Serial Converter, to use with your U-MARQ Engraving Machine, plug one end of the supplied Serial Lead, connector into the connector on the USB to Serial Converter. Plug the other end of the Serial Lead into the serial socket on the rear of the U-MARQ Engraving Machine and the other end of the USB to Serial Converter should by plugged into your computer. Now follow the instructions in the next paragraph.

Find Which Com Port in Windows XP and Vista

1 In Windows select "Start", "Settings" then "Control Panel", from Control Panel Double Click On "Performance and Maintenance", the "System".
2 Now select the "Hardware Tab", from there select "Device Manager".
3 Next Click On the + sign next to Ports (COM & LPT), all the installed Ports will be listed.
4 You should have one that says USB High Serial Port (COM xxx), were xxx is the COM Port number. This will be the COM port Number that the U-MARQ Engraving Machine is attached to and this is the one you should enable in the Engraving Software.

Your U-MARQ Engraving Machine, should now be successfully connected to your Computer.

Note : We only recommend and support the Easysync USB to Serial converter, supplied with your GEM Engraving Machine. We have tested other brands and without exception these allocate a different Port, each time they are disconnected and then reconnected. This makes Technical Support on communication between the Engraving Machine and the PC almost impossible.

2.4 Software Installation Windows XP

Software Installation for your U-MARQ Engraving Machine in Windows XP

How to

1 Turn on your computer.
2 Insert software disk provided into your CD drive on the computer, the Installation Menu should appear.
3 You will be presented with the main installation screen, Click On "Next".
4 If you agree with the terms and conditions of the agreement, Click On "'I agree" to highlight the marker, then Click On "Next".
5 Enter your user information in boxes provided, by Clicking in white boxes and typing. Please ensure you enter information in both boxes.
6 When complete Click On "Next".
7 Then Click On "Next".
8 Then Click On "Next".
9 You are now ready to install the software. Click On "Install'.

The software will now be installed on your computer, a progress bar is shown. You will then get a message that the Engraving Software has been installed successfully.

10 Click On "Finish".

You can now plug the purple coloured Dongle into a USB port on your PC. When installation is complete shutdown your PC, then turn the PC back on again.

Note : If your auto-run has been disabled, click on RUN select your CD-ROM drive and select AUTORUN. EXE.

2.5 Software Installation Windows Vista

Software Installation for your U-MARQ Engraving Machine in Windows Vista

How to

1 Turn on your computer.
2 Insert software disk provided into your CD drive on the computer, the Installation Menu should appear.
3 You will be presented with the main installation screen, Click On "Next".
4 If you agree with the terms and conditions of the agreement, Click On "'I agree" to highlight the marker, then Click On "Next".
5 Enter your user information in boxes provided, by Clicking in white boxes and typing. Please ensure you enter information in both boxes.
6 When complete Click On "Next".

7 Then Click On "Next".
8 Then Click On "Next".
9 You are now ready to install the software. Click On "Install'.

The software will now be installed on your computer, a progress bar is shown. You will then get a message that the Engraving Software has been installed successfully.

10 Click On "Finish".

You can now plug the purple coloured Dongle into a USB port on your PC. When installation is complete shutdown your PC, then turn the PC back on again.

Note : Depending on your version of Vista you may be asked to confirm you have Administrator Right to install programs.

2.6 Setting Up Software for the U-MARQ Serial Controller

Setting up your U-MARQ Engraving Machine Fitted with a Serial Controller

How to

Setting Up and Launching the Universal Engraving Software for the GEM-CX4.

If you have purchased the Inside/Outside Ring Engraving attachment for your GEM-CX4, you need to select the GEM-CX4 Plus driver on setup. If you have not purchased the Inside/Outside Ring Engraving Attachment, you need to install the GEM-CX4 driver on setup.

1 If you are running Windows Vista Place you cursor (mouse) over the GEM-CX Engraving icon which should be on your desktop and right click with the mouse button Click on run as administrator with your left mouse button – click on allow. If you are running Windows XP Double Click on the GEM-CX Engraving icon, this launches the GEM-CX Engraving Software. You will now see the Device Selector screen, Click On "GEM-CX4 Plus", if you have purchased an Inside Ring Engraving Attachment with your GEM-CX4 Engraving Machine., if not select "GEM-CX4".

2 You now have to select the Output Device, Select "Stepper Controller", then Click On "OK", the Com Port Selector will now appear.

3 Select the Com Port you have connected your GEM-CX4 Engraving Machine to, then Click On "OK".

Device Selector

Com Port Selector

4 Now the Machine Set-up menu will appear, these setting are correct so just Click On "OK". You are now in the GEM-CX4 Engraving Softwares main screen.

Congratulations you have installed the U-MARQ Engraving Software and Setup your Engraving Machine. You are now ready to start Engraving for Profit.

Note : COM1 or COM2 is the normal setting for your serial port on your PC. If however you are using a USB to Serial connector see additional Information 12.

2.7 Engraving Machines

In the next few pages we will give you various pictorials, this will allow you to identify the components that make up your Engraving Machine.

GEM-CX4 Engraving Machine

The front view of the GEM-CX4 Engraving Machine showing the main controls.

Note : Before shipping please ensure the flatbed is removed and stowed separately.

2.8 Chip Extraction

Extracting Plastic Chips

When engraving or cutting plastic materials, you are advised to invest in some form of Chip Extraction System. This is used to ensure that the partials, some of which are very fine and can be toxic if inhaled, do not end up being discharged into the atmosphere. The results of not using a recognised form of fitted extraction unit fitted with the appropriate filters may also cause ingress of fine dust into your engraving machines spindle, linear rails and bearings. This can reducing their useful life considerably and affects your machine warranty.

Chip Extraction Spindle Fitting

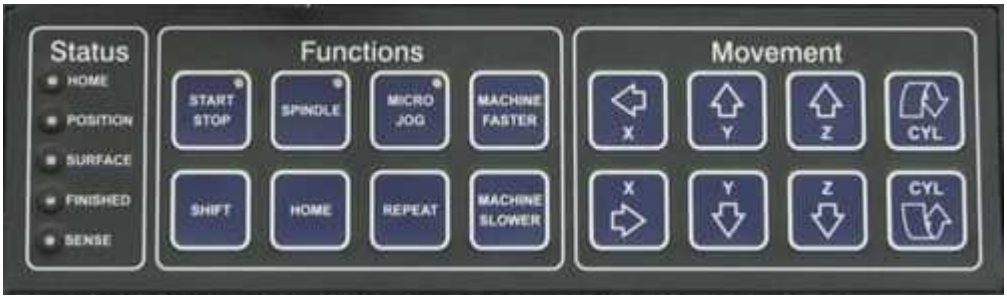
Industrial Chip Extractor Unit

Note: U-MARQ sell specially manufactured industrial chip extraction units that meet Health and Safety requirements. Please contact our Milton Keynes office or go online to www.u-marq.com for more details.

2.9 Controller Keypad

U-MARQ Engraving Machines Keypad

The Keypad is used to control all the electronic movements and function.



Keypad Functions

The U-MARQ Engraving Machine Keypad allows you to view the operational status of your Engraving Machine. It is also used to control the movement of the machine, when not engraving. Below are some explanations of its operation.

Status Indicators

Home

The Home indicator, is illuminated "Green" when the GEM-RX4 Engraving Machine at its home position and flashes whilst moving to its home position.

Position

The Position indicator, is illuminated "Yellow" when the GEM-RX4 Engraving Machine requires its set-up position to be set.

Surface

The Surface indicator is Illuminated "Red" when the GEM-RX4 Engraving Machine requires its surface position to be set.

Sense
This indicator is not used and is for future use.

Function Keys

Start / Stop
Start Stop indicator is Illuminated "Green" when job is sent to the GEM-RX4 Engraving Machine. This indicates you need to press this button to start the machining sequence.

Home
Pressing Home sends the GEM-RX4 Engraving Machine to its Home Position (top left). Also flushes all previous positioning information from machines memory.

Repeat
Press to Repeat job stored in GEM-RX4 Engraving Machines memory, only the last job is available.

Spindle
Press to start spindle(this requires the Start / Stop to be light to be lit). The Spindle Button is lit "Red" when the Spindle on, this is usually handled by the GEM-RX4 Engraving Software.

Machine Faster
Pressing this key increases the speed of the feed rates of the machine.

Machine Slower
Pressing this key decreases the feed rate on the machine.

All other keys are unused
.

Machine Movement Keys
Pressing these keys, moves the machine axis in the direction as indicated on the button. Requires "Start / Stop" Button to be lit.

Note : The U-MARQ Engraving Software and the Machine Driver need to be installed and running, for the controller to function.

3 Dialogue Boxes and Icons

3.1 AutoLayout

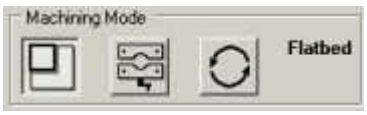
When using your Engraving Software, you will be accessing various Dialogue Boxes and Icons to enter Text, Speeds, Dimensions etc.

AutoLayout

AutoLayout can be launched from the Main Toolbar using the Auto Layout Icon or the Text Menu.

This part describes Dialogue Boxes and Icons in the AutoLayout.

Machining Modes

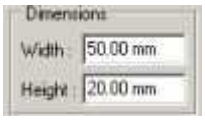


In Flat Bed Mode, you will be asked to enter the height and width of the object to be engraved.

In Centre Vice Mode you will be asked to enter the height and width of you plate or engraving area.

In Cylindrical Mode, you will be asked to enter the diameter of the object you wish to engrave.

Dimensions



This is where you enter the dimensions of the plate to be engraved.

Fonts

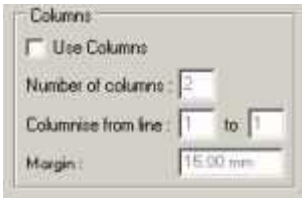
This is where you select the from the list box, the font you wish to use on your layout.

Options

This is Where you can select the Spacing between lines of text and any Italicisation to apply to the selected font.

Columns

In the Autolayout dialogue box you can automatically generate text in columns. For more details see the Universal Engraving Reference Manual.



Functions

Scanning

The Scanning function allows you to acquire logos directly from a scanner.

Measure

Allows you to measure the Workspace using the "X" "Y" axes of the Universal Engraving Machine.

Import Logo

Allows you to import files into your drawing in EPS (Adobe Illustrator) and HPGL formats from other sources.

Text Entry

This is the main Text Entry box, to enter a new line press Return. You can see the line that you are at present on and the number of character in that line, at the bottom of the Text Entry box.

Note : The above functions may vary within different versions of U-MARQ Engraving Software. The above are only examples and by no means a full list of all functions.

3.2 Opening Dialogue

From the Opening Form you can select direct entry into some of the most often used Standard Engraving Software functions.

New Drawing

Selecting New Drawing, opens a blank drawing form. You then specify what type of object you wish to engrave, Flat Bed, Centre Vice or Cylindrical.

AutoLayout

Selecting AutoLayout, allows you to set up a Plate and engraving quickly and simply, using text and or logos.

Template

Selecting Template, allows you to open a drawing saved as a template. Commonly used for Scrolls, Pet Tags, etc.

Open

Selecting Open, allows quick access to previously saved drawings.

Cancel

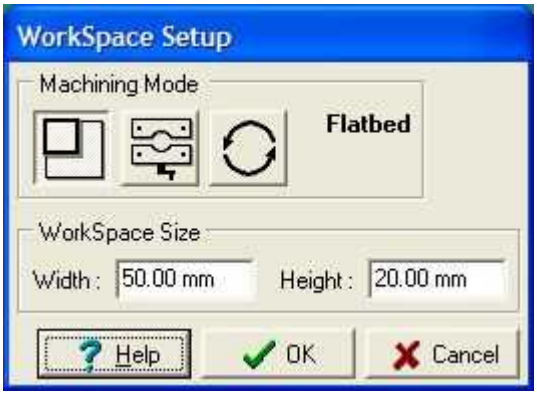
Selecting Cancel, closes the Opening Form and presents you with blank drawing.

You can disable the Opening Dialogue by checking "Don't show this again". If you wish to then re-enable the Opening Dialogue you can do so in the Options Menu.

END

3.3 Workspace Setup

Workspace Setup (Flat Bed)

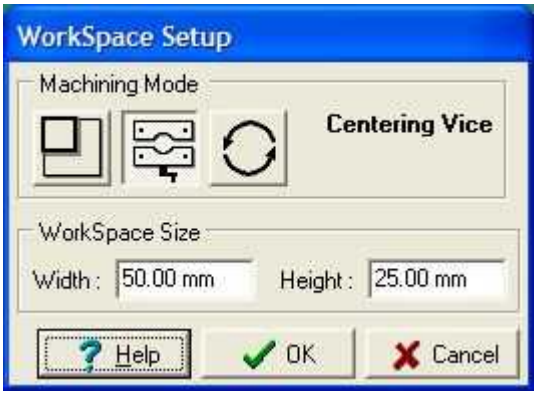


The Workspace Dialogue Box with Flat Bed selected.

Workspace Size

The Workspace Size, is the size of the plate you wish to engrave. This can be entered in the Workspace Size Dialogue Box.

Workspace Setup (Centre Vice)

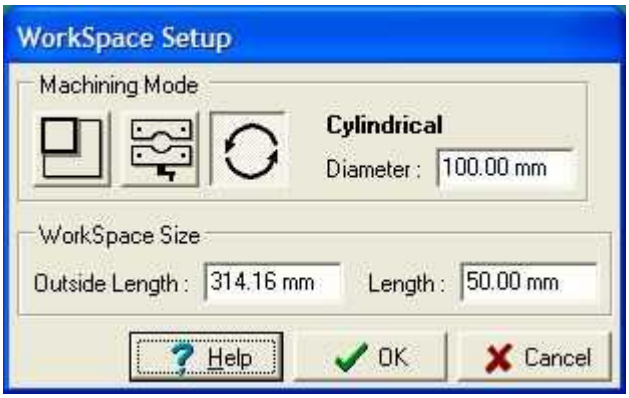


The Workspace Dialogue Box with Centre Vice selected.

Workspace Size

The Workspace Size, is the size of the plate you wish to engrave. This can be entered in the Workspace Size Dialogue Box

Workspace Setup (Cylindrical)



The Diameter, is the diameter of the rotary object you wish to engrave. You can also enter an engraving area on the rotary object, in the Workspace Size Dialogue Box.

END

.

4 Engraving

4.1 Choosing Cutters

About Cutters

The tools used for rotary engraving are generally referred to as "cutters." Cutters are manufactured from different materials and are produced in a variety of configurations specific for certain applications and materials. Most engraving cutters are "half-round" tools which means the blank is split or halved on centre producing a "single-lip" tool which is one of having only one cutting edge. This configuration affords a significant amount of clearance and allows the tool to run at relatively high speeds to maximize material removal and produce good finishes. Some cutters are also made as "quarter-round" tools which allow even greater clearance, but they are inherently weaker and are recommended for specific applications. The majority of the engraving machines used in the awards and engraving industry have spindles that use "top-loading" cutters. These are cutters that are inserted into the spindle from the top and are typically held in place by means of a threaded knob. This arrangement allows for easy cutter adjustments and changes. Top-loading cutters are most commonly available in 1/8", 11/64", ¼", 4mm, and 6mm shank diameters. Cuter lengths vary to accommodate machine spindles and accessories (burnishing attachments, vacuum chip removers, etc.). Some machines, particularly industrial ones, utilize collet spindles. The cutter is inserted into the top or the bottom (usually the bottom) of the spindle and is held in place by a collet. A collet is a segmented, clamping device somewhat similar to a drill chuck. By means of a "drawbar," the collet segments are tightened against the shank of the tool, holding it securely in place. This arrangement is more rigid and precise than the top loading spindle, but does not offer the ease of cutter change and adjustment.

Most engraving cutters are manufactured from carbide or high speed steel (HSS). Carbide is an extremely hard and abrasion resistant material and is recommended for the majority of engraving applications due to its toughness and durability. Generally speaking, carbide cutters will outlast HSS cutters by a factor of 5-10 times depending on the material being cut.
Cutters manufactured from high speed steel do not have the hardness or strength of carbide. Therefore, they become dull more quickly than carbide tools. On the other hand, high speed steel cutters are not as brittle as carbide, and tend to be the best choice when making deep, fine cuts in metal such as those required for making seal dies.

Engraving Cutters

Diamond Cutters
The most common engraving tool used in the trophy and awards industry is the diamond graver which is a non-rotating, diamond-tipped tool that is used to scratch lettering into metal - usually brass or aluminum. It consists of a steel shank which has a diamond set in one end that is ground and lapped to a conical point. It is used without a depth nose and, as downward spindle pressure is applied, the point penetrates the surface of the metal and scribes a fine line as the character is formed. Diamond gravers are not available in different tip sizes so we are limited to a rather fine, delicate line of about ten thousandths (.010) in width. A common practice used to enhance the effect of scratch engraving is to trace the letters two or three times. This tends to broaden the stroke and smooth it out. The use of multiple line fonts is also a good way to add dimension to this type of engraving and the lettering can be blackened with oxidizer to give it contrast.

Burnishing Cutters
Burnishing is a method of engraving on metals that tends to bridge the gap between scratch engraving and rotary engraving. It is capable of producing wider line widths than a diamond graver without having to rout deeply into the metal. It is a surface marking technique that is generally done on coated metals. It is most commonly used to produce decorative effects on trophy and plaque plates. The tool used for burnishing is called a "burnisher" which is a rotating tool that is used in a motorized spindle. It is usually a carbide or carbide tipped-tool that is ground with four facets that form a cutting edge to the desired tip size. A burnisher is not a cutter. Its function is to remove the surface coating from the material and expose the bare metal.

Rotary Carbide Cutters
Rotary engraving is a term that is commonly applied to the type of engraving done on plastics and metals where we cut into the surface of the material. As the name implies, it is done with a rotating cutting tool in a motorized spindle. The rotary cutter is generally a single-flute tool (one with only one cutting edge) that works much like a router bit and

produces a cut of specified depth and width. Depending upon how they are made and sharpened, rotary cutters can be used to engrave a wide variety of materials with plastic and metal being the most common.

END

4.2 Engraving Using Nose Cone

A Nose Cone is a tool for regulating the depth of the engraving cut. It allows you to Deep Engrave material that may not be perfectly flat, by using a Nose Cone a constant depth of cut is maintained.

Nose Cone and Vernier

It is important when using the Nose Cone to ensure that the nose cone and cutter are flush with each other, (i.e. the bottom of the Nose Cone is level with the bottom of the cutter) when setting up the job. To do this lower the Nose Cone to the surface of the material, then lower in the cutter so that it touches the surface of the material and tighten the screw on the brass cutter knob.
To control the depth of cut turn the Nose Cone anti-clockwise. This reveals the tip of the cutter out of the bottom of the Nose Cone. The Nose Cone dial has 25 grooves, with one groove corresponding to an engraving depth of 0.0254 mm (0.001”). For example to engrave to a depth of 0.3mm turn 12 clicks anti-clockwise The precise number of clicks required changes, with the type of material to be engraved. Experience will teach you the ideal number required. As a guide, start with a small number of clicks, it is then possible to increase the depth. This is method is preferable to cutting too deep.

Repeating a Job 73

Note : The principals outlined above apply to all U-MARQ Engraving Machines when deep engraving using a nose cone.

4.3 Engraving a Trophy Plate

Engraving a Trophy Plate

This chapter describes how to engrave a simple Trophy Plate.

Left click "File" on the Main Menu Bar, then left click "New".
You will now see the Opening Form Dialogue Box. Left click on "Auto Layout". The Auto Layout screen will be shown (see Figure 1).

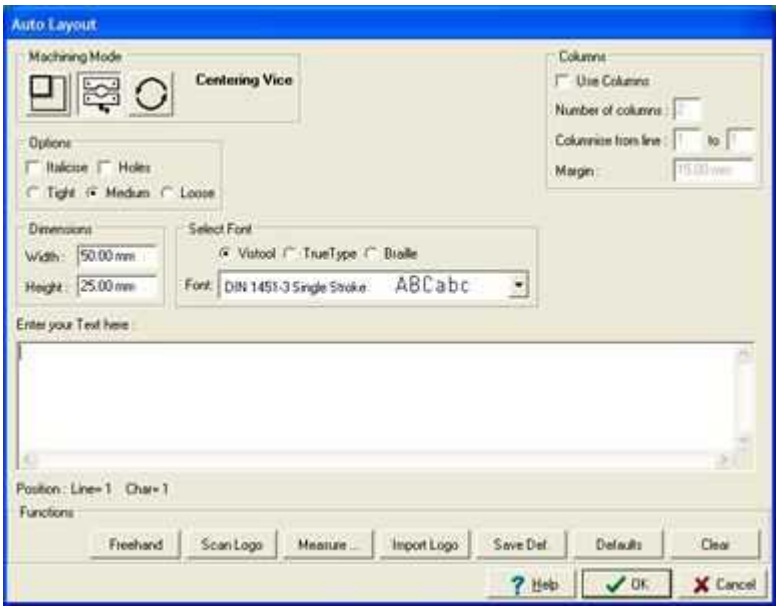


Figure 1 This Dialogue Box may vary slightly depending on the model and options installed on your machine.

1 As we are engraving a flat trophy plate held within the centre vice, Left Click on the Centre Vice Icon in the Machine Mode Box, as Figure 1.
2 Enter the dimensions of your plate, in the Dimensions Box .
3 To select the font you wish to use, Left Click On the Fonts Box and scroll through the list until you find the one you wish to use, Left Click on its name.
4 Left click in the white space under the Enter your Text here Box and type in your text. Pressing "Enter" at the end of each line. When you are finished left click on "OK" to proceed, you will see your plate ready to be engraved, on screen, see figure 2.

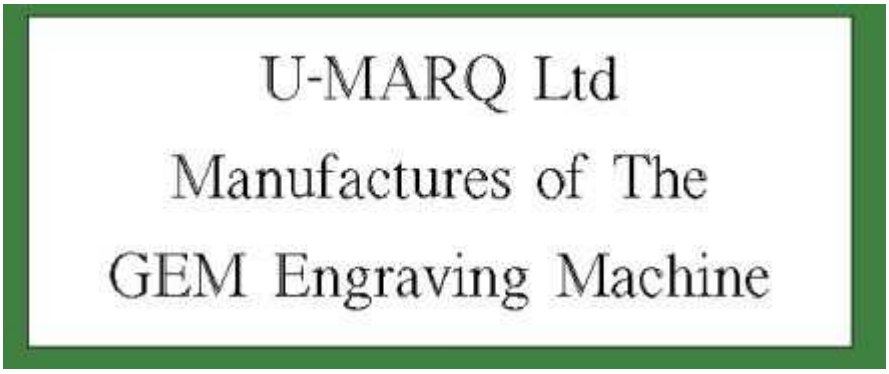


Figure 2

Sending the Job to Your Engraving Machine

5 Left Click on Production from the Main Menu Bar, then Left Click "Engrave". Or you can use the Engrave icon on the Toolbar.
6 You will now see a Dialogue Box called Processes, change your Process by Clicking On the arrow and selecting "Diamond Drag", then Click On "OK".
7 You will now be asked to confirm that you wish to download the job to your Engraving Machine, Click On "Yes".
8 You will now get a Dialogue Box, confirming that the job has been processed by your Engraving Machine and is ready to engrave. Click On "OK".
9 On your Engraving Machine you will notice that the "Start / Stop" Button is now lit. This indicates that the job has been downloaded to the machine.

Engraving Your Plate

10 Remove the protective cover from the trophy plate and place firmly in the centre vice.

Figure 3

11 Screw the ‘Light touch’ anti-clockwise into the top of the spindle shaft. DO NOT OVER-TIGHTEN - hand tight only.
12 Press "Start" on the key pad, the machine head moves to the centre of the trophy plate. Press "Start" again the machine moves to its first cut position.
13 Lower the spindle shaft using the "Z Down" key until it is between 10 - 20 mm above the surface of the plate.
14 Insert the diamond cutter through the hole in the top of the light touch, until the diamond touches the trophy plate, see Figure 3.
15 Gently tighten up grub screw on the light-touch with allen key provided. The press "Start" on the keypad to engrave.
16 When the engraving has finished Press "Home" on the Keypad, the cutter head will move to the top left position.

Repeating a Job 73

Congratulations! you have completed engraving your first Trophy Plate.

When engraving with a diamond it is possible to use either the Light Touch or the Brass Cutter Knob, Which you use depends on the type of material and the required finish, you may wish to experiment on some scrap material first.

Hint: *If you find the engraving is too faint, try using the brass cutter knob instead of the light touch.*

Note: If you turn an object blue by, selecting then Left Clicking On the blue square bottom of your screen, it becomes a design object and is not engraved.

4.4 Engraving a Pet Tag

Pet Tag Templates

All U-MARQ Engraving software has template set-up for Pet Tags.

How to

1 Open a new drawing Left click "File" then "New", in the "Opening Form", Left Click On "Template".
2 Navigate through your computer to the Pet Tags folder. If you are using the U-MARQ range of pet tags select the "Pet Tags U-MARQ" folder if you are using other makes try the "Pet Tags" folder.
3 You will now be able to select the template you wish to use, and Click On "Open".
4 Once you have chosen the template you require, in this example "Bone", it will now be on your screen, see Figure 1.

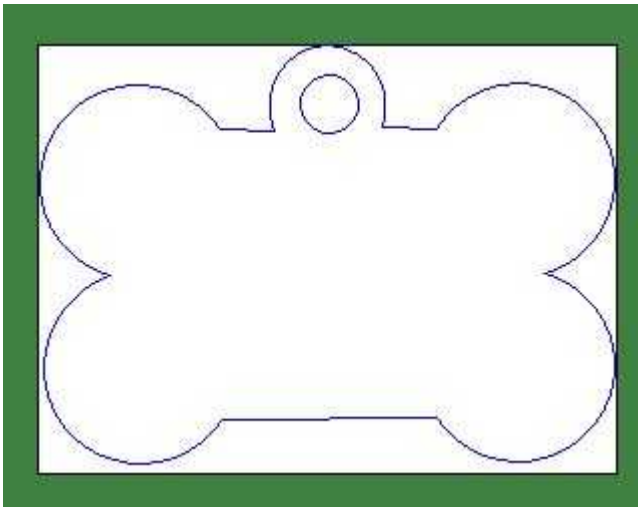


Figure 1

5 Now select "AutoLayout" from the menu bar, select "Centre Vice" , select your Font, enter your Text and Click On "OK" see Figure 2.

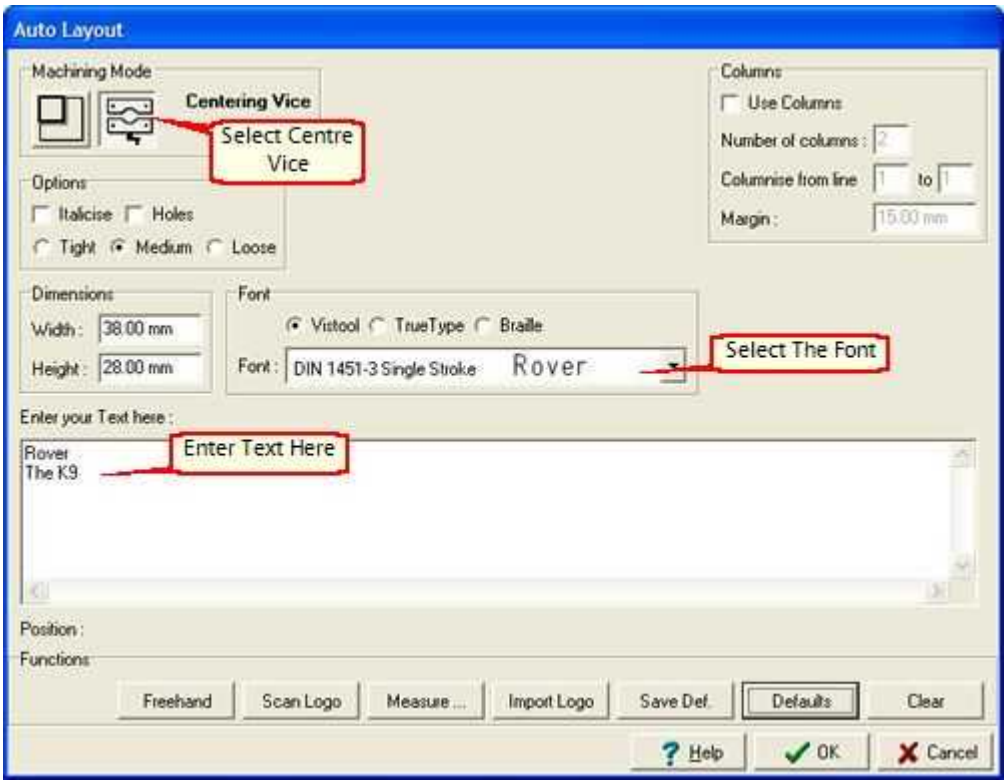


Figure 2

6 You will now have the outline of the pet tag with the text on it. If you are happy with the layout you are now ready to engrave, see Figure 3.

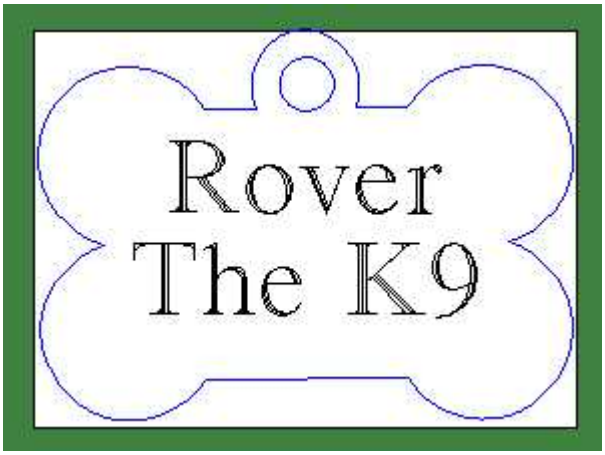


Figure 3

Sending the Job to Your Engraving Machine

7 Left Click on Production from the Main Menu Bar, then Left Click "Engrave". Or you can use the Engrave icon on the Toolbar.
8 You will now see a Dialogue Box called Processes, change your Process by Clicking On the arrow and selecting "Diamond Drag", then Click On "OK".
8 You will now be asked to confirm that you wish to download the job to your Engraving Machine, Click On "Yes".
8 You will now get a Dialogue Box, confirming that the job has been processed by your Engraving Machine and is

ready to engrave. Click On "OK".

10 On your Engraving Machine you will notice that the "Start / Stop" Button is now lit. This indicates that the job has been downloaded to the machine.

Engraving Your Pet Tag

Figure 4

11 Screw the ‘Light touch’ anti-clockwise into the top of the spindle shaft. DO NOT OVER-TIGHTEN - hand tight only.

12 Press "Start" on the key pad, the machine head moves to the centre of the Pet Tag. Press "Start" again the machine moves to its first cut position.

13 Lower the spindle shaft using the "Z Down" key until it is between 10 - 20 mm above the surface of the plate.

14 Insert the diamond cutter through the hole in the top of the light touch, until the diamond touches the trophy plate, see Figure 4.

15 Gently tighten up grub screw on the light-touch with allen key provided. The press "Start" on the keypad to engrave.

16 When the engraving has finished Press "Home" on the Keypad, the cutter head will move to the top left position.

When engraving with a diamond it is possible to use either the Light Touch or the Brass Cutter Knob, Which you use depends on the type of material and the required finish, you may wish to experiment on some scrap material first.

Repeating a Job 73

Hint: *If you find the engraving is too faint, try using the brass cutter knob instead of the light touch.*

Note : The outline of the Pet Tag is in blue, this is a special Design Layer and is not engraved.

4.5 Engraving a Laminated Plastic Label

Engraving a Laminated Plastic Label

This chapter describes how to engrave a simple Laminated Plastic Label.

Left click "File" on the Main Menu Bar, then left click "New".
You will now see the Opening Form Dialogue Box. Left click on "Auto Layout". The Auto Layout screen will be shown (see Figure 1).

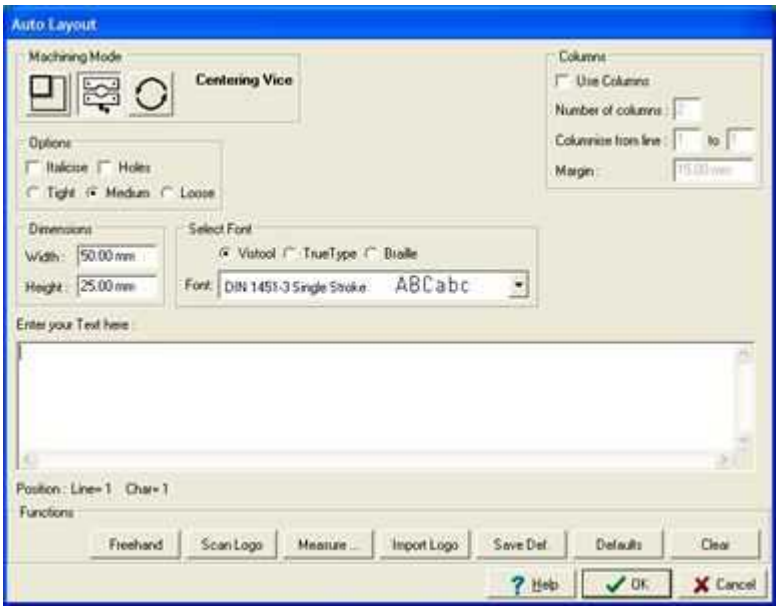


Figure 1 This Dialogue Box may vary slightly depending on the model and options installed on your machine.

1 As we are engraving a plastic laminated plate held within the centre vice, Left Click on the Centre Vice Icon in the Machine Mode Box, as Figure 1.
2 Enter the dimensions of your plate, in the Dimensions Box .
3 To select the font you wish to use, Left Click On the Fonts Box and scroll through the list until you find the one you wish to use, Left Click on its name.
4 Left click in the white space under the Enter your Text here Box and type in your text. Pressing "Enter" at the end of each line. When you are finished left click on "OK" to proceed, you will see your plate ready to be engraved, on screen, see figure 2.

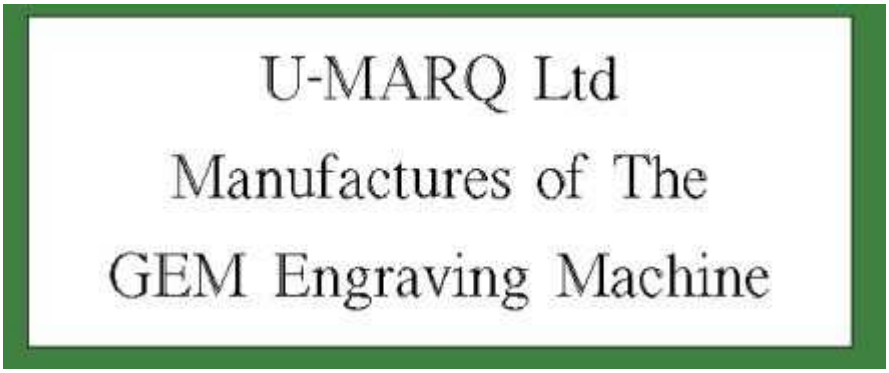


Figure 2

Sending the Job to Your Engraving Machine

5 Left Click on Production from the Main Menu Bar, then Left Click "Engrave". Or you can use the Engrave icon on the Toolbar.
6 You will now see a Dialogue Box called Processes, change your Process by Clicking On the arrow and selecting "Engraving Plastic Using Nose Cone", then Click On "OK".
7 You will now be asked to confirm that you wish to download the job to your Engraving Machine, Click On "Yes".
8 You will now get a Dialogue Box, confirming that the job has been processed by your Engraving Machine and is ready to engrave. Click On "OK".
9 On your Engraving Machine you will notice that the "Start / Stop" Button is now lit. This indicates that the job has been downloaded to the machine.

Engraving Your Plate

Put your Standard Jigs onto your Engraving Engraving Machine, then place your laminate plate you wish to engrave, in the centre, see Figure 3.

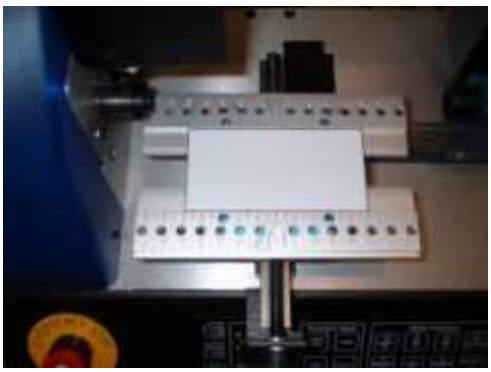


Figure 3

10 Screw the Brass Cutter Knob anti-clockwise into the top of the spindle shaft. DO NOT OVER-TIGHTEN - hand tight only.
11 Screw your nose-cone onto the spindle shaft, turning anti-clockwise. Stop when you hear clicks.
12 Press the "Start / Stop" Button on the Keypad. The machine will move to the middle of the job. If necessary move the head of the machine using the Direction Keys visually until the cutter is in the centre of the laminate plate.

Figure 4

13 When you are satisfied, Press the "Start / Stop" Button again. The machine now moves to the first cut of the engraving. Using the Z Down Key, lower the nose cone until it just touches the surface of the material.
14 Insert the carbide cutter through the hole in the top of the brass cutter knob, until the it touches the surface of the laminate plate, see Figure 4.
15 Gently tighten up grub screw on the brass cutter knob, with allen key provided. Turn the nose cone around four or five clicks in an anti-clockwise direction. This gives you the cutting depth, by revealing the cutter tip. With time you will learn how many clicks to go for various material types.

Figure 5

16 Press the "Start / Stop" Button on the Keypad. The Engraving Machine will start to engrave your Plate, see Figure 5.
17 When the engraving has finished Press "Home" on the keypad. The Engraving Machine will move to its top left position.

Repeating a Job 73

Congratulations! you have completed engraving your first Plastic Label.

Chip Extraction

When engraving or cutting plastic materials, you are advised to invest in some form of Chip Extraction System. This is used to ensure that the partials, some of which are very fine and can be toxic if inhaled, do not end up being discharged into the atmosphere. The results of not using a recognised form of fitted extraction unit fitted with the appropriate filters may also cause ingress of fine dust into your engraving machines spindle, linear rails and bearings. This can reducing their useful life considerably and affects your machine warranty.

Note : If you turn an object blue by, selecting then Left Clicking On the blue square bottom of your screen, it becomes a design object and is not engraved.

4.6 Engraving a Brass Plate

Engraving a Brass Plate

Engraving a Brass Plate can be achieved using the same method as Engraving a Laminated Plastic Plate, see Engraving a Laminated Plastic Label 32

To protect the surface of the brass from scratching, apply a vinyl mask onto the face of the brass. Scratches are caused by two things, swarf trapped under the nose cone, or a nose cone that is damaged.

The process you are required to chose is Engraving Brass Using Nose Cone. This will engrave in two passes over the material surface, to achieve a good finish, see Figure 1.

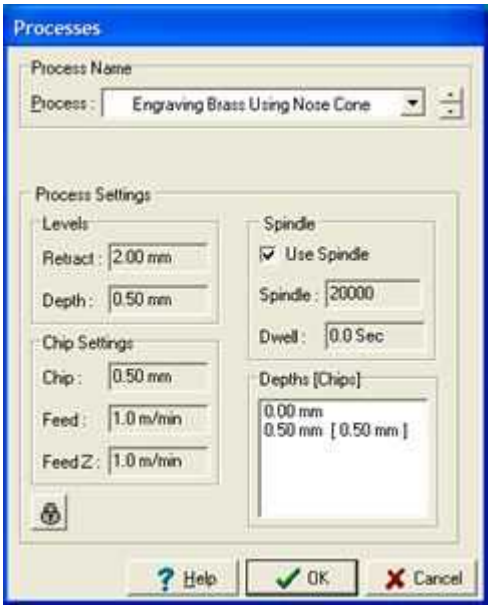


Figure 1

Congratulations! you have completed engraving your first Brass Plate.

Repeating a Job 73

Note : If you turn an object blue by, selecting then Left Clicking On the blue square bottom of your screen, it becomes a design object and is not engraved.

4.7 Engraving a Multipule Plate

Using your Engraving Machine, you can easily engrave a matrix of plates, either with the same or different text.

Duplicate Workspace

The Duplicate Workspace function allows you to compose a single plate, with text logo's etc., then duplicate it a selected number of times. This is very useful if you have multiple plates of the same size to engrave, with the same or similar designs on them.

How to

1 Compose your drawing on the correct size of a single plate. Then using Auto Layout compose the single plate, just as you would for any simple Flatbed job, see Figure 1.

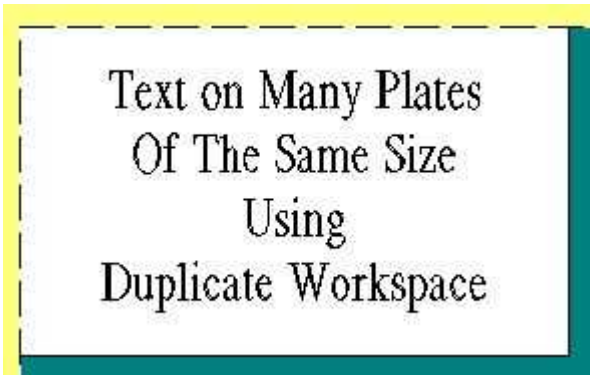


Figure 1

2 Select Duplicate Workspace from the Edit Menu. You can then select how many copies you require in the "X" and "Y" directions. Say in this case 3 in the "X" and 2 in the "Y" direction, Click On "OK".

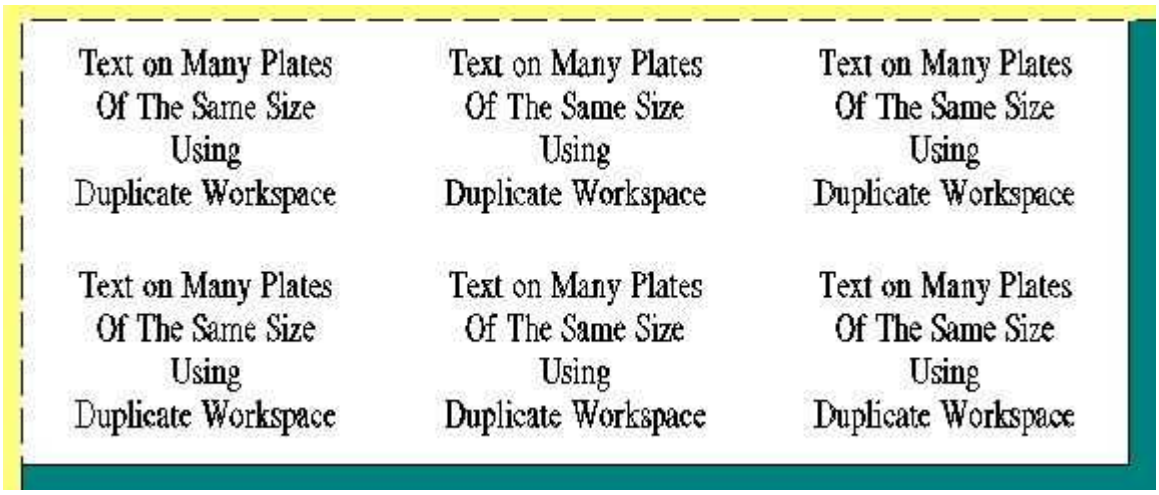


Figure 2

3 You should now have 3 in the "X" and 2 in the "Y" direction of the original text, on the screen, see Figure 2.
4 You can now edit each individual plate if necessary, by selecting the text line you wish to change then Right Clicking and selecting "Standard Text Editor".

Repeating a Job 73

Chip Extraction

When engraving or cutting plastic materials, you are advised to invest in some form of Chip Extraction System. This is used to ensure that the partials, some of which are very fine and can be toxic if inhaled, do not end up being discharged into the atmosphere. The results of not using a recognised form of fitted extraction unit fitted with the appropriate filters may also cause ingress of fine dust into your engraving machines spindle, linear rails and bearings. This can reducing their useful life considerably and affects your machine warranty.

Note : When using the Duplicate Workspace function. Make sure you do not try to duplicate more plates, than you have room on your machine bed to engrave.

4.8 Engraving a Pen Single Line

Sometimes it is easier to use the centre vice to engrave a pen or other circular objects if you have only one line of text, or your machine has not cylindrical capabilities..

How to

1 To engrave a pen, Left click on Text, move cursor to Auto Layout, or select the Auto Layout icon on the Toolbar. The Auto Layout Dialogue Box will appear, select the Centre Vice Option if it is not already selected, see Figure 1.

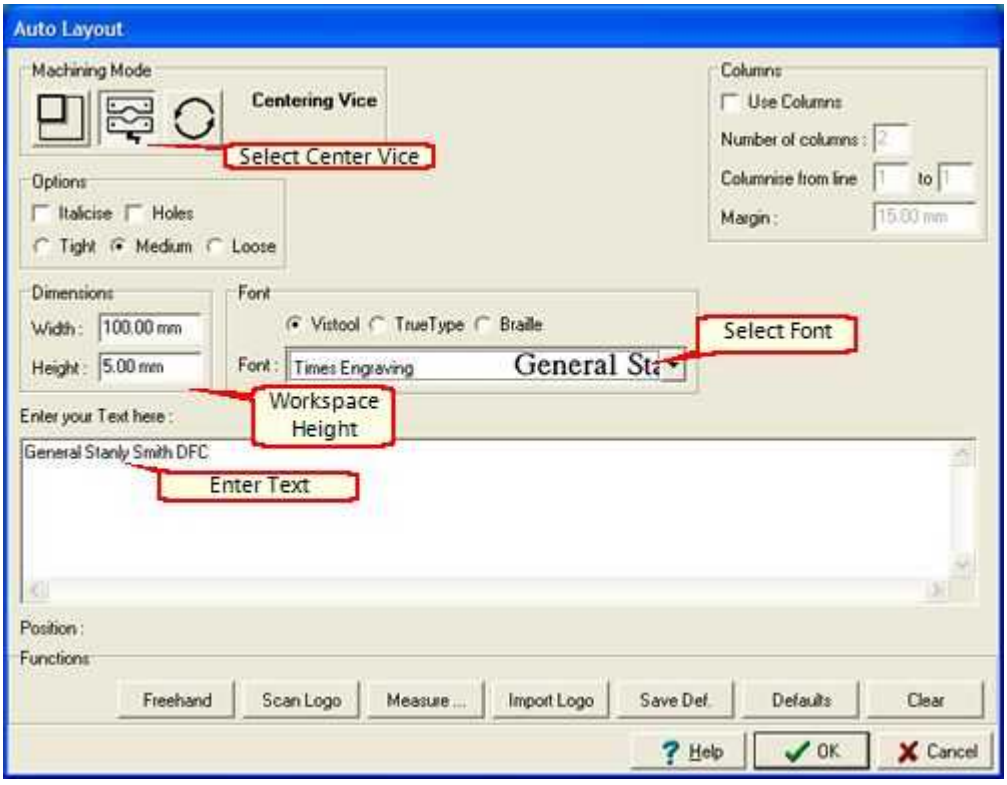


Figure 1

2 Select your Font, Enter your Text, maximum Workspace height should be 5mm and Width should be the maximum width of the available engraving area on the pen. All other parameters should be exactly as for any other flat item, see Figure 1. Click On "Ok".

You should now have a drawing similar to Figure 2.

Figure 2

3 If you are satisfied with the layout of the pen, we can now proceed to send the job to the Universal-300 Engraving Machine. If however you are unhappy with the layout, and would like to change any aspect, see Edit Layout 74.

4 To send the job to the Universal-300 Engraving Machine, Click On "Production" then Click On "Engrave".

5 You will now have the now familiar Processes Dialogue Box, see Figure 3. Change by Clicking On then selecting "Diamond Drag Curved Items", the Click On "OK".

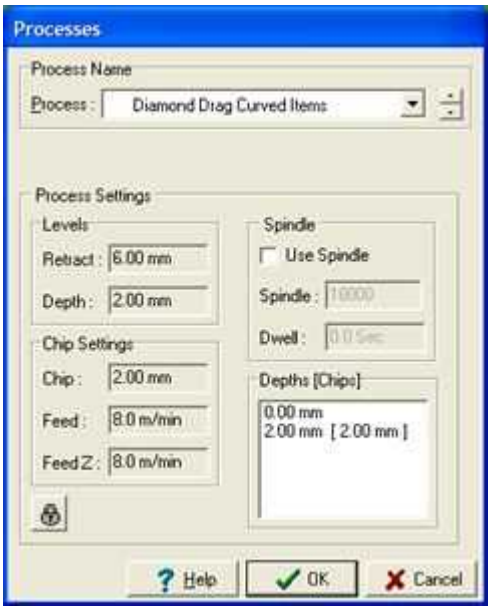


Figure 3

5 You will now be asked to confirm that you wish to send the job to your Universal-300 Engraving Machine, Click On "OK". You will now have a screen that confirms the job has been sent to your Universal-300 Engraving Machine, Click On "OK".

Figure 4

6 Now put your pen jigs onto your Universal-300 machine as shown, and place your pen into the jaws, see Figure 4.

7 Screw the Light Touch without the diamond fitted, anti-clockwise into the top of the spindle shaft. DO NOT OVER-TIGHTEN - hand tight only.
8 Press the "Start/Stop" Button on the Keypad. The machine head moves to the centre of the engraving area of the pen, if it is not move the pen to the left or right to align correctly.
10 Then Press the "Start/Stop" Button again the machine moves to its first cut position, surface. Lower the spindle shaft using the "Z Down" Button until it is between 10 - 20 mm above the surface of the pen.
11 Insert the diamond cutter through the hole in the top of the Light Touch until the diamond touches the pen.
12 Gently tighten up grub screw on the Light Touch with allen key provided. Press the "Start/Stop" Button on the Keypad, the Universal-300 Engraving Machine will now start engraving your pen.

When the pen has finished being engraved, the cutter will return to the centre position. Now inspect the engraving

without removing the pen, to make sure it has been engraved correctly. If the engraving is not deep enough you can go over it again by following the Repeat Job procedure.

Repeating a Job 73

Hint: *If you find the engraving is too faint, try using the brass cutter knob instead of the light touch.*

Note : You may find it necessary with some pens to engrave then with the spindle running. If so select "Diamond Drag Rotated". If in doubt contact the supplier of the pen.

4.9 Engraving a Pen Muli Line

Engraving a Pen

This Chapter will take you through engraving a pen on a GEM-RX4. The steps are identical on the GEM-VX4, CX4 and Universal just the mounting of the pen in the machine is slightly different.

1 Left Click On "File", then Click On "New". You will see the Opening Form Dialogue Box, Left Click On "Auto Layout".
2 The Auto Layout Dialogue Box will be shown, as we are engraving a pen select Cylindrical by Clicking On the Cylindrical Icon using the Left Mouse Button.

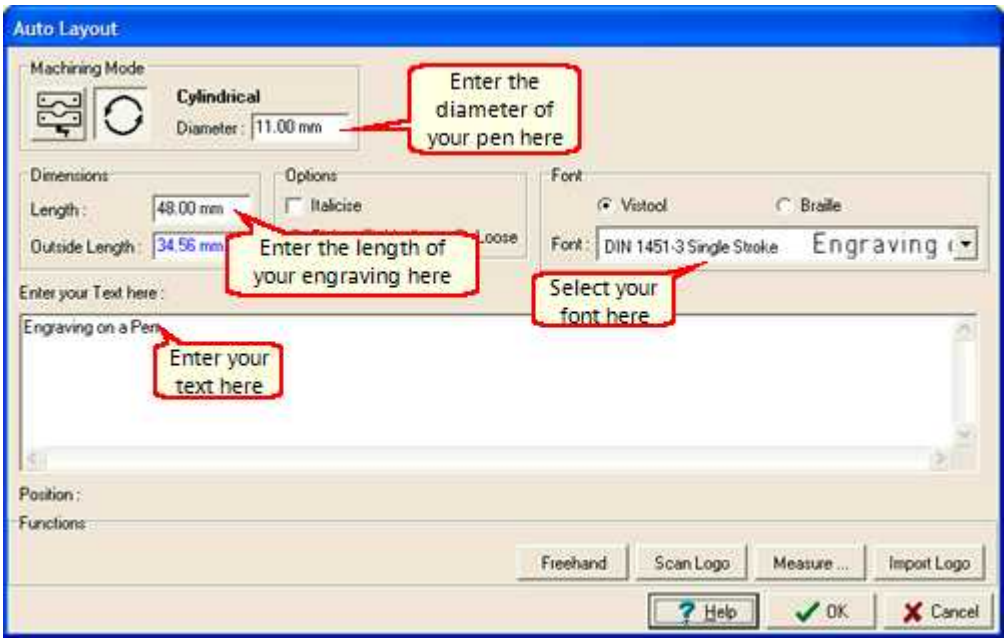


Figure 1

3 You now need to enter the Diameter of the pen, also enter the dimensions of the area you wish to engrave. Not the dimensions of the whole item.
4 Select the Font you wish to use, by Left Clicking On the arrow on the Fonts Box, see Figure 4 and scroll through the list until you find the Font you wish to use then Left click on its name, see Figure 1.
5 Now Left Click in the Enter your Text here Box and type in your text. Pressing "Enter" at the end of each line. When you are finished Left Click On "OK".
6 You will see the Text is now on screen and is ready to engrave, the white area represents the limits of your engraving area. You can adjust your Text to suit the engraving area if you wish.
7 Left Click On "Production" on the Main Menu Bar then Click On "Engrave".
8 You will now see the Processes Dialogue Box, change your process by clicking on the arrow and selecting "Diamond Drag" by Left Clicking, see Figure 2.

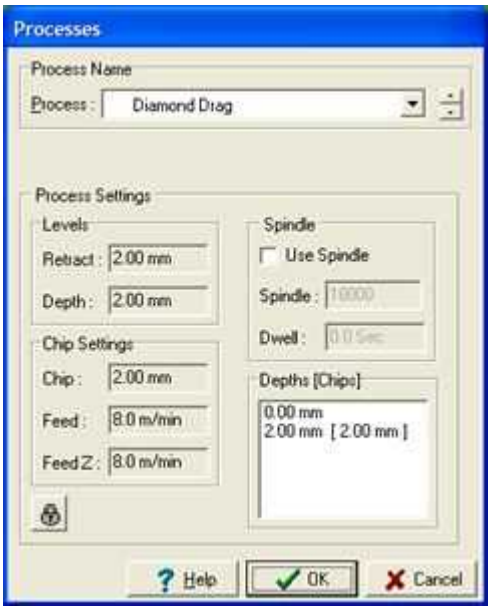


Figure 2

9 You will now be given an opportunity, to Cancel sending the job to your GEM-RX4 Engraving Machine. You do not wish to do this, so Left Click On "Yes" to continue.

10 You will now see a Dialogue Box, informing you that the job has been sent to your GEM-RX4 Engraving Machine and has been processed.

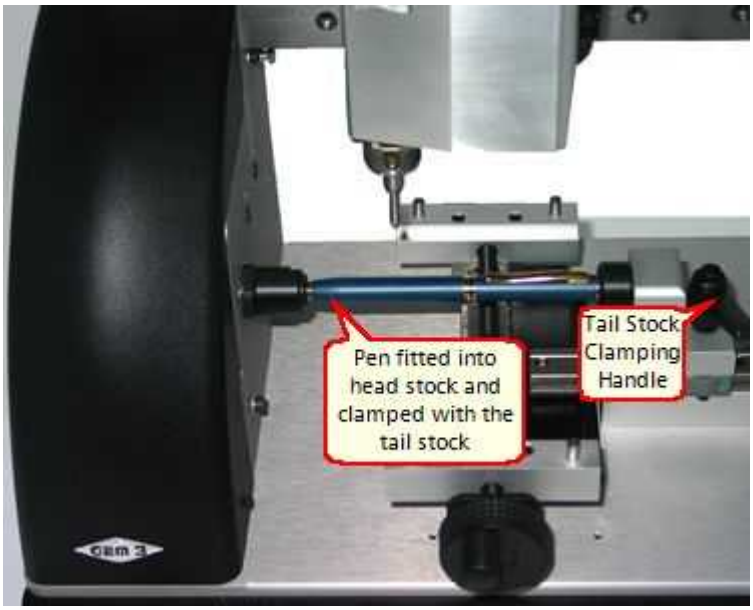


Figure 3

11 On your GEM-RX4 Engraving Machine Keypad, you will notice that the "Start / Stop" Button is lit. This indicates that the job has been downloaded and is ready to engrave.

12 Put your pen to be engraved into your GEM-RX4 Engraving Machine, see Figure 3.

13 Screw the Light-touch anti-clockwise, into the top of the spindle shaft. DO NOT OVER-TIGHTEN - hand tight only. Press Start / Stop on the Keypad. The machine will move to the middle of the pen. It may now be necessary to move the head of the GEM-RX4 Engraving Machine, to the Centre of the actual engraving area. This is done using the direction keys on the Keypad.

14 After you have moved (jogged) the head of the GEM-RX4 Engraving Machine to the centre of the actual engraving area.
15 When you are satisfied that the engraving head is in the centre of the engraving area, press "Start / Stop".
16 The GEM-RX4 Engraving Machine, will now moves to the first cut of the engraving. Using the "Z Down" Key on the Keypad, Lower the head of cutter until it just touches the surface of the pen.
17 Now Press the "Start / Stop" Button on the Keypad. The GEM-RX4 Engraving Machine will now start engraving the pen.
18 When the engraving has finished Press "Home"on the Keypad.

Congratulations you have just completed Engraving a Pen.

When the pen has finished being engraved, the cutter will return to the centre position. Now inspect the engraving without removing the pen, to make sure it has been engraved correctly. If the engraving is not deep enough you can go over it again by following the Repeat Job procedure.

Repeating a Job 73

Hint: *If you find the engraving is too faint, try using the brass cutter knob instead of the light touch.*

Note : You may find it necessary with some pens to engrave then with the spindle running. If so select "Diamond Drag Rotated". If in doubt contact the supplier of the pen.

4.10 Engraving Using Disk Text

Engraving Using Disk Text

Disc Text is used as its name implies to engrave items like Dog Tags, Watch Backs, Medals etc.

How to

1 Left Click On "File", then Click On "New". You will see the "Opening Form" Dialogue Box, Left Click On "New Drawing".
2 Left Click On the "Centre Vice", then Click On "OK".
3 From the Main Menu Bar Left Click On "Text", then select "Disc Text".
4 You will now see the "Disc Text" Dialogue Box. Enter your text in the Text Box provided, see Figure 1.

Figure 1

5 To change the Parameters for your Disc, Left Click On the relevant portion and enter the new data. "Diameter" enter the diameter of your disc. "Margin" enter any margin required between the text and edge of disc. "Cap Height" enter the text height. "Arc" choose whether you want to enter an Upper Arc or Lower Arc, by Checking the appropriate Box. "Font Style" Left Click On the arrow and select your desired font.
6 When satisfied with your set-up Click On "OK".

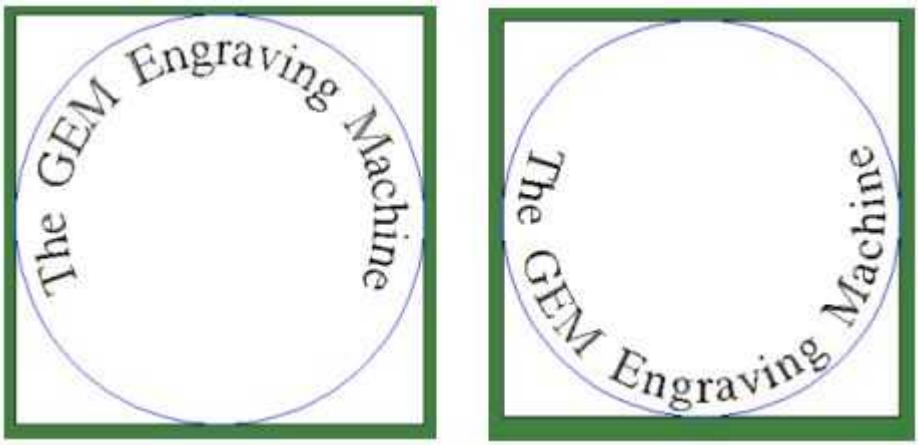


Figure 2

Your Disc Text layout will now be on the screen. The job on the left in, Figure 2 has been setup using the Upper Arc setting. The job on the right in, Figure 2 has been setup using the Lower Arc setting.

You are now ready to engrave the job.

7 From the Main Menu Bar Left Click On "Production", then Click On "Engrave".
8 From the Processes Dialogue Box, choose the process relevant to the material being engraved. In this example

select "Diamond Drag", then Left Click On "OK".

9 You now are asked if you wish to send your job to the Engraving Machine, Click On "Yes".

10 You will now be given an opportunity, to Cancel sending the job to your Engraving Machine. You do not wish to do this, so Left Click On "Yes" to continue.

11 You will now see a Dialogue Box, informing you that the job has been sent to your Engraving Machine and has been processed.

12 On your Engraving Machine Keypad, you will notice that the "Start / Stop" Button is lit. This indicates that the job has been downloaded and is ready to engrave.

13 The Engraving Machine, will now moves to the first cut of the engraving. Using the "Z Down" Key on the Keypad, Lower the head of cutter until it just touches the surface of the disk.

17 Now Press the "Start / Stop" Button on the Keypad. The Engraving Machine will now start engraving the disk.

18 When the engraving has finished Press "Home"on the Keypad.

Congratulations you have completed your first engraving using Disc Text.

Repeating the Job. 73

Note : It is important when using the Nose Cone with a Carbide Cutter or a Diamond Cutter, to ensure that the "Z" axis locking ring is at its upper most position.

4.11 Engraving Scrolls

Engraving Scrolls

You can engraving Scrolls on your Engraving Machine. The standard Scroll layouts, are provided in Template format.

How to

1 Left Click On "File" Click On "'New". From the Opening Form, Left Click On "Template".
2 Navigate through the file system, you are looking for Scrolls folder.
3 One you have navigated to the Scrolls Folder, Left Clicking on the Scroll Menu.SDT and Clicking On "Open" will allow you to see a visual representation of all the Scroll Templates, see Figure 1.

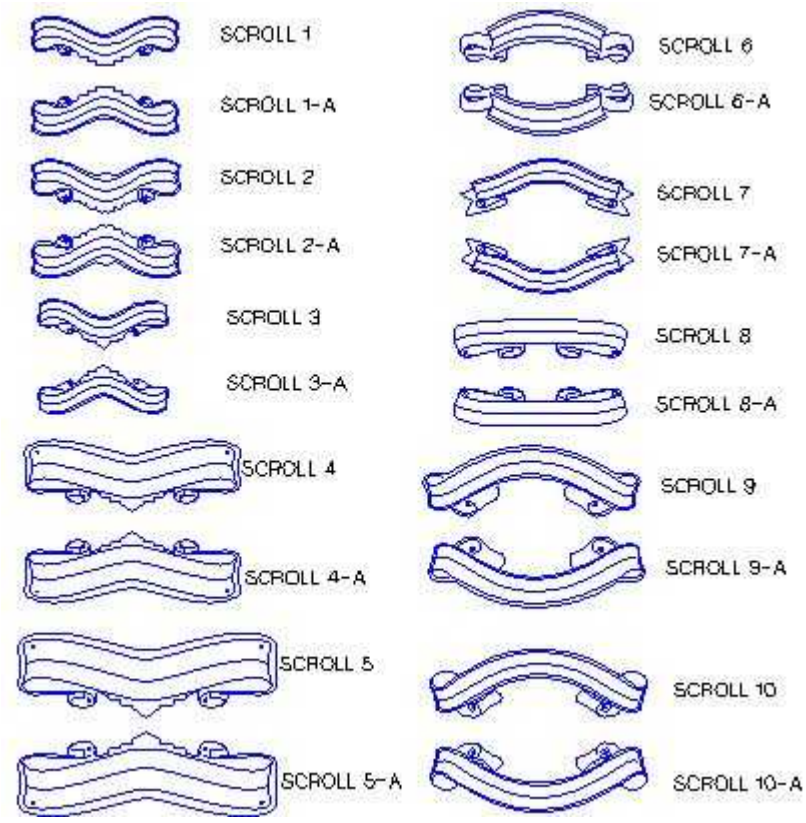


Figure 1

4 Once you have chosen you desired scroll, Left Click On "File" Left Click On "'New from Template", select the scroll number you require.
5 You will now see the Scroll you have selected on screen with sample text on it, see Figure 2.

Figure 2

6 Select the text by Left Clicking On it., the text will go Dotty. Right Click On the text whilst it is Dotty, a Selection Dialogue Box will show, select "Basic Text Edit", you will now see and be able to use the Basic Text Editor, see Figure 3.

Figure 3

7 By Left Clicking within the Text box, you can Delete the sample text and enter the text you wish to use. It is possible at this stage to change the Font and Cap Height. Left Click within the relevant area and enter your changes. When you are finished editing Click On "OK".

Figure 4

Your Scroll will now be shown on the screen, read to engrave, see Figure 4.

8 Attach your Standard Jigs to the Engraving Machine and place your scroll onto them. To align the Scroll correctly it is necessary to set a reference position.
9 Move the Engraving Machine head to the centre of the scroll by using the "X" "Y" Keypad controls. The aim is to get the Engraving Machine head over the centre point of the scroll, as indicated on your computer screen. On your computer Left Click On the "Zoom Tool" on the Toolbar, this function allows you select an area to Zoom into.

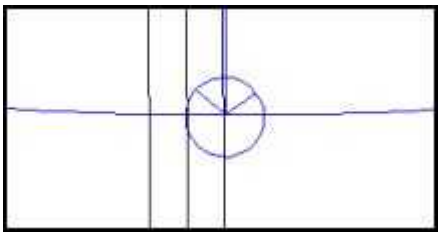


Figure 5

10 Hold down the left mouse button and draw and box around the area central area and release the Left Mouse Button. You will now see an enlarged area, that you just Zoomed Into, see Figure 5.
11 Left Click On "Production" on the Main Menu Bar, then Left Click On "Read Reference Position". Left Click at the bottom of the 'V' within the circle, see Figure 5. You will see that the scroll on screen has bee re-aligned to the correct position on the Machine Bed.
12 Left Click On "Production" from the Main Menu Bar, then Left Click On "Engrave". You will now see the Processes Dialogue Box, with Engraving Scrolls already selected, Click On "OK".
13 You now are asked if you wish to send your job to the Engraving Machine, Click On "Yes". You are now informed that the jobs has been processed by the Engraving Machine and is ready to engrave. Click On "OK".
14 On your Engraving Machine you will notice that the Start / Stop Button is lit. This indicates that the job has been downloaded to the machine. Screw the 'Light-touch' anti-clockwise into the top of the spindle shaft. DO NOT OVER-TIGHTEN - hand tight only.
15 Press "Start / Stop" on the Keypad, The Engraving Machine Head will now move to the centre of the job.
16 Press "Start / Stop" again. The Engraving Machine now moves to the first cut of the engraving. Using the "Z Down" Key, lower the head of cutter, until it just touches the surface of the scroll.
17 When the engraving has finished press "Home" on the Keypad, the Engraving Machine will return to its Home position.

Congratulations you have just engraved your first Scroll.

When engraving with a diamond it is possible to use either the Light Touch or the Brass Cutter Knob, Which you use depends on the type of material and the required finish, you may wish to experiment on some scrap material first.

Repeating the Job 73

Hint: *If you find the engraving is too faint, try using the brass cutter knob instead of the light touch.*

Note : It is important when using the Nose Cone with a Carbide Cutter or a Diamond Cutter, to ensure that the "Z" axis locking ring is at its upper most position.

4.12 Engraving a Tankard

Engraving a Tankard

Engraving a cylindrical object like a Tankard is very similar on the Universal-300 and the GEM-VX4. These examples are on the Universal-300 if you follow them on the GEM-VX4 you just have to remember that the object is held in the chuck from left to right and not front to back.

How to

When setting up a tankard to engrave an image, the area you want to engrave look at it as if it were a piece of paper on the tankard, see Figure 1.

Figure 1

1 To compose the text and or logo, the easiest way to do it is to use Auto Layout. Left click on text, move cursor to Auto Layout and left click, you will now be shown Auto Layout screen.

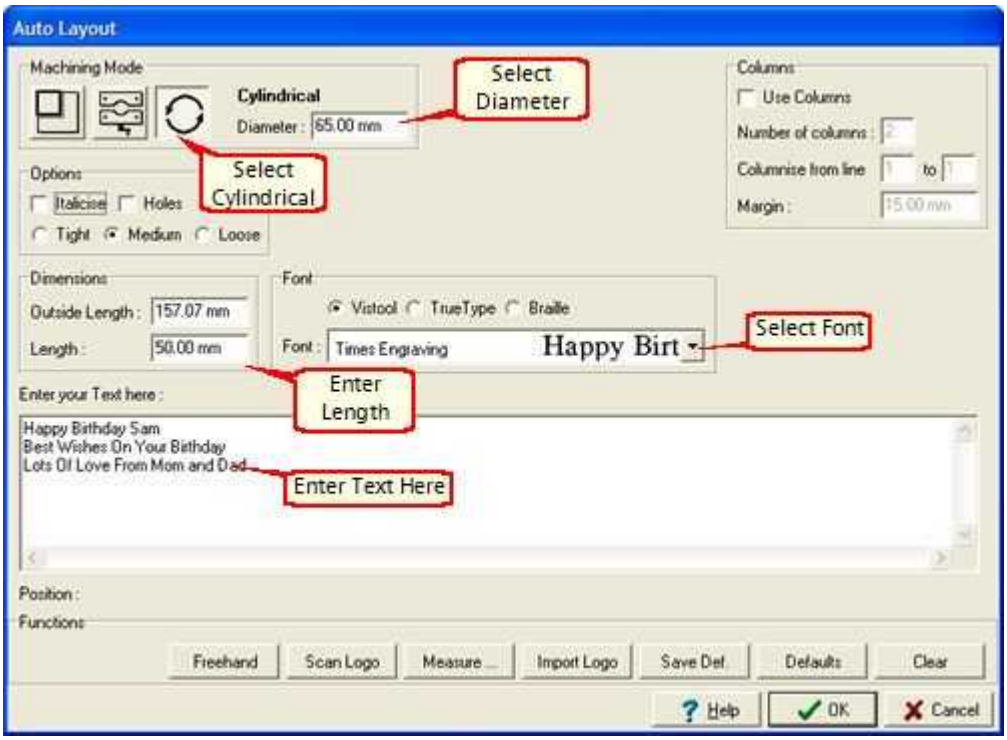


Figure 2

2 Select the Cylindrical Mode and enter the "Diameter" of your Tankard. This should be the average diameter of the Tankard, of the area you wish to engrave.

3 You can now enter the Dimensions and Font in the boxes, see Figure 2. Select the required font, by Clicking On and scrolling through the list, select by left clicking on the name. Then enter the "Width" and "Height", this is the size of imaginary white piece of paper, see Figure 1.

4 Enter your text in text entry box, at the end of each line press "Enter", this will make a new line, see Figure 2. Leave all other entries as they are and Click On "OK".

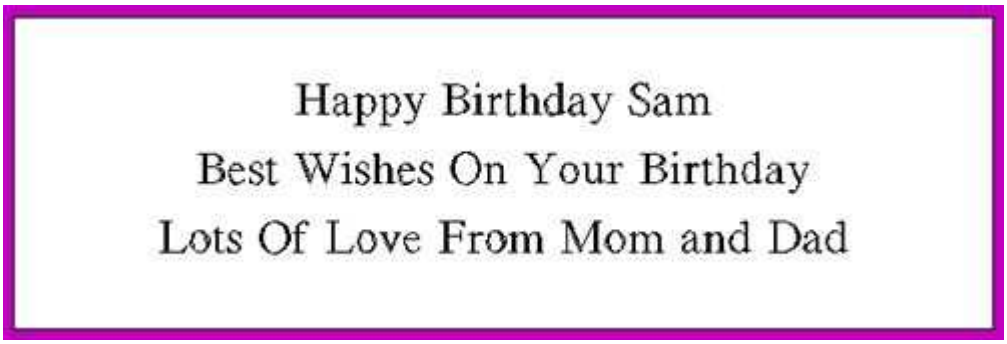


Figure 3

4 You will now have your engraving area with text in it, on the screen. Click on the Zoom Machine Bed, this will show you the Workspace in relation to the work area, see Figure 3.

5 Now is the time to alter your layout, if you are not happy with it. A full description can be found in Editing Layouts 74, this will show you all aspects of layout control.

6 You are now ready to engrave your Tankard., Left Click On "Production" on the "Main Menu". The select "Engrave", you will now have the Processes Dialogue Box. on the screen, select Diamond Drag Curved Items, see Figure 4. Click On "OK" to send the job to your Universal-300 Engraving Machine. You will then get a Dialogue Box confirming that the job has been downloaded.

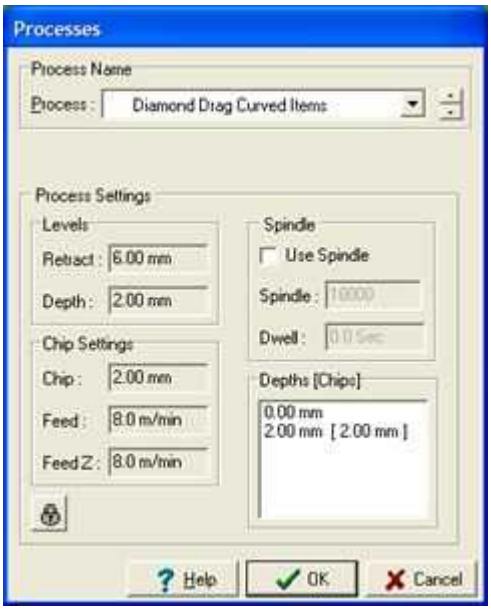


Figure 4

7 Now put the tankard into the vice system, do this using the relevant cup cone for the size of tankard, attaching it to the drive cone. You will also need the face plate attached to the free end spigot.

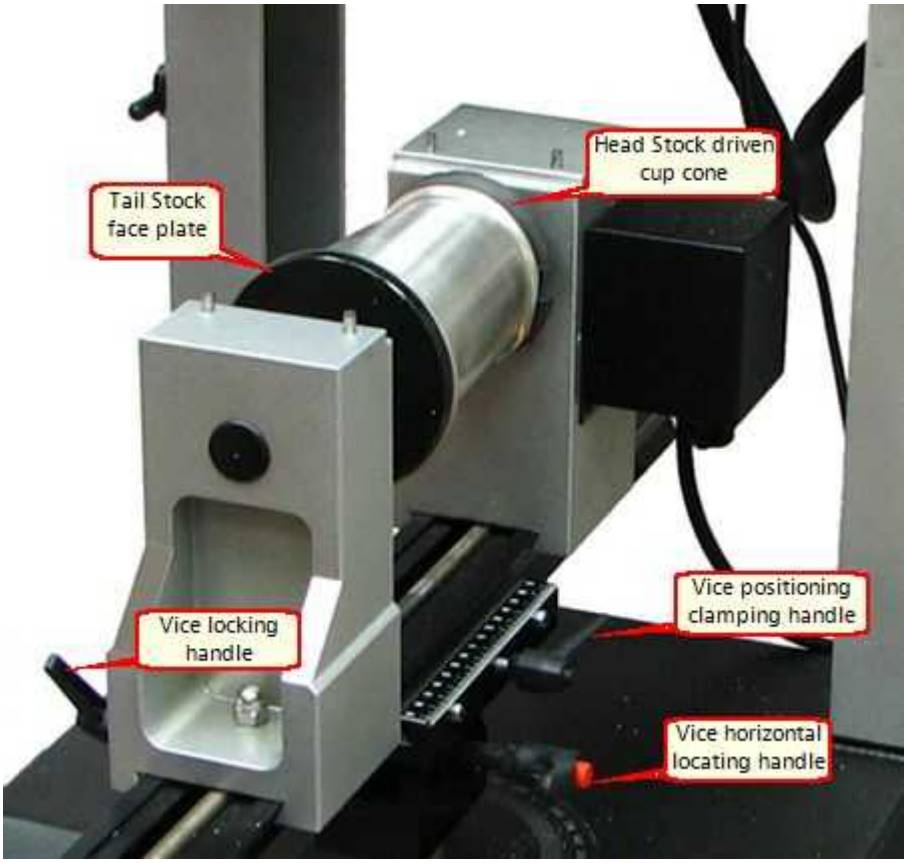


Figure 5

8 These should now be in the vice system, as shown in Figure 5. Insert the tankard into the vice, the vice should only be tightened enough so that the tankard does not slip around, when moved. Over tightening, can damage the tankard and in extreme circumstances the machine.
9 Screw the "Light Touch" without the Diamond Cutter fitted, anti-clockwise into the top of the spindle shaft. DO NOT OVER-TIGHTEN - hand tight only, see Figure 6.

Figure 6

10 Press the "Start/Stop" button on the keypad, the machine head will now move to the centre of the engraving area. If the head is not in the middle of the engraving area, move it up with "Y" up or "Y" down keys on the Keyboard until it is positioned in the middle of the engraving area.
11 Press the "Stop/Start" button on the Keypad, the machine head will now move to its first cut position. Lower the spindle shaft using the "Z" down key on the Keyboard, until it is between 10 - 20 mm above the surface of the Tankard.
12 Insert the diamond cutter through the hole in the top of the Light Touch, until the diamond touches the surface of the tankard. Gently tighten up grub screw on the Light Touch with allen key provided.
13 Now Press the "Start/Stop" Button on the Keypad, to start your Universal-300 Machine engraving.
14 When the machine has finished engraving the machine head will move to the centre of the work space. If you have finished the tankard Press the "Stars/Stop" button on the Keypad. The machine will now Home to the top left corner. Now remove you Tankard.

Congratulations you have just engraved you first Tankard.

When engraving with a diamond it is possible to use either the Light Touch or the Brass Cutter Knob, Which you use depends on the type of material and the required finish, you may wish to experiment on some scrap material first.

Repeating the Job 73

Hint: *If you find the engraving is too faint, try using the brass cutter knob instead of the light touch.*

Note : You can also use the Depth Profile 81 function to engrave tankards.

4.13 Engraving Hip Flask

Engraving a Hip flask is not difficult, it just requires a slightly different approach as it is slightly curved.

How to

1 Select "New Drawing" then "Auto Layout".

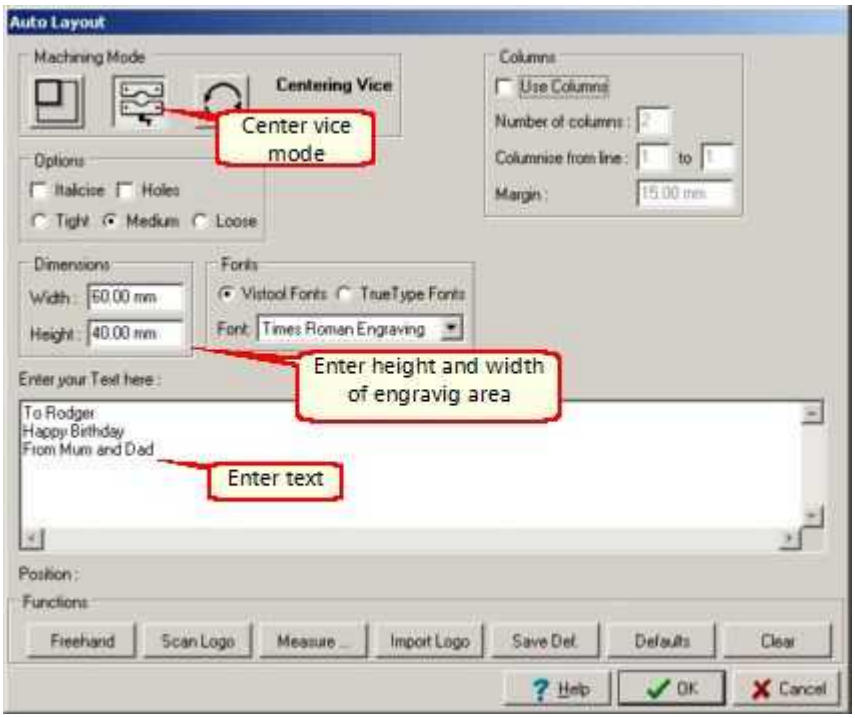


Figure 1

2 You will now have the Auto Layout Dialogue Box on the screen. First select your mode, for a Hip Flask this would be "Centre Voce".
3 Then enter your engraving area in the "Height" and "Width" boxes, select your "Font" and "Text", leave all other settings at the default, see Figure 1.
4 You will now see a screen with your text shown in as a scale image of your engraving area, see Figure 2. Now is the time to alter your layout if you are not happy with it, see Editing Layout 74.
4 You are now ready to engrave your Hip Flask, Left Click On "Production" on the "Main Menu". The select "Engrave", you will now have the Processes Dialogue Box. on the screen, select Diamond Drag Curved Items. Click On "OK" to send the job to your UMARQ Engraving Machine.

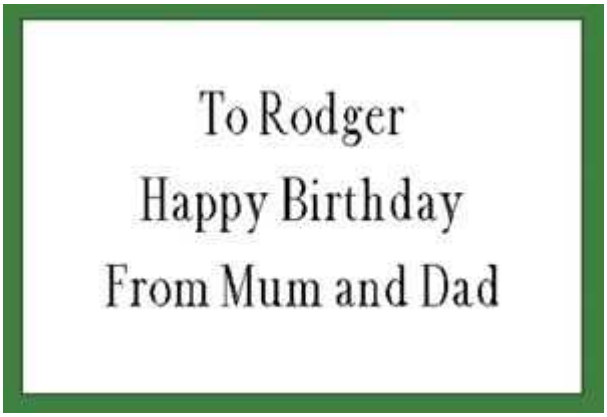


Figure 2

5 You will then get a Dialogue Box confirming that the job has been downloaded.
6 Now place your Hip Flask in you U-MARQ Engraving Machine between the Vice Jaws.
6 Screw the "Light Touch" without the Diamond Cutter fitted, anti-clockwise into the top of the spindle shaft. DO NOT OVER-TIGHTEN - hand tight only.
7 Press the "Start/Stop" button on the keypad, the machine head will now move to the centre of the engraving area. If the head is not in the middle of the engraving area, move it up with "Y" up or "Y" down keys on the Keyboard until it is positioned in the middle of the engraving area.
8 Press the "Stop/Start" button on the Keypad, the machine head will now move to its first cut position. Lower the spindle shaft using the "Z" down key on the Keyboard, until it is between 10 - 20 mm above the surface of the Hip Flask. Insert the diamond cutter through the hole in the top of the Light Touch, until the diamond touches the surface of the Hip Flask. Gently tighten up grub screw on the Light Touch with allen key provided.
9 Now Press the "Start/Stop" Button on the Keypad, to start your U-MARQ Engraving Machine. When the machine has finished engraving the machine head will move to the centre of the work space. If you have finished the Hip Flask, see Figure 7, Press the "Start/Stop" button on the Keypad, your Engraving Machine will now go to its Home position. Remove your Finished Hip Flask.

Congratulations you have just engraved your first Hip Flask.

When engraving with a diamond it is possible to use either the Light Touch or the Brass Cutter Knob, Which you use depends on the type of material and the required finish, you may wish to experiment on some scrap material first.

Repeating the Job 73

Hint: *If you find the engraving is too faint, try using the brass cutter knob instead of the light touch.*

Note : You can also use the Depth Profile 81 function to engrave tankards.

4.14 Engraving Glass

Engraving Glass

When engraving glass, there is no hard and fast rule to achieve the right results. Different cutters give different effects on different types of glass. If you are just engraving a few glasses, the standard 120° Diamond will probably suffice. If you regularly engrave large amount of glass, a Special Glass Engraving Diamond may be required. It is necessary to use some kind of lubrication when engraving glass, this traps the glass dust created and decreases any chipping that would normally occur. A good lubricant for small amounts of glass is a silicone type of spray, for large production runs Glass Oil or water with a small amount of washing up liquid is ideal. Please contact you local Dealer for more information on glass lubricants.

When your glass is engraved try using ‘Rub n Buff’ to give the professional finish, various colours are available.

END

4.15 Engrave Annual Updates

Th U-MARQ Engraving Software has templates to assist you to update existing annuals.

Setting Up Rotary Annuals

How to

1 Click on "File" and select "New from Template" the select "Templates", "Annual Update".
2 Choose "Rotary Annuals" You will now see the workspace with text and a blue cross, see Figure 1.
3 Now enter the diameter of your rotary work piece by Clicking "Tools", "Workspace", Click On the cylindrical icon then enter the diameter Click "OK"., see Figure 2.
4 Now Click On the blue cross to select, then Click On "Centre to Workspace".

Figure 1

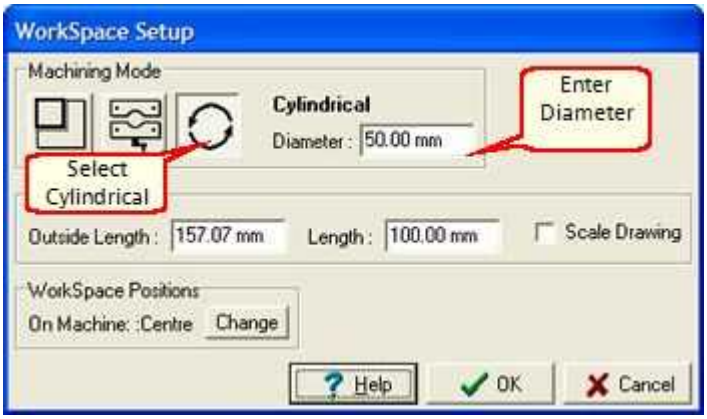


Figure 2

5 Click On the black text and edit the text as required by Clicking On "Text" then "Standard Text Editor" when satisfied Click On "OK". It might be necessary at this point to change the character height.
6 Pick and drag the text to the bottom right portion of the cross by Clicking On the text to select it an then Dragging to the bottom right, see Figure 3.

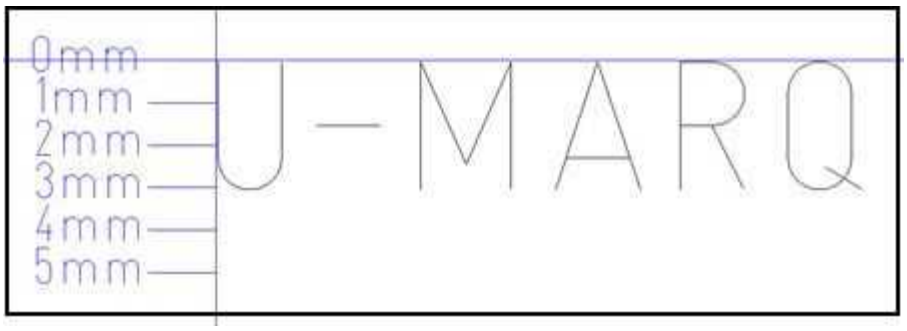


Figure 3

7 Measure the distance between lines on your existing annual. Select the black text on your screen and move it down using the cursor keys the same distance as the measurement.
8 Click On "Production" then "Engrave'" Select the process you are going to use, Click On "OK".
9 Press 'Start/Stop' on the controller. The machine moves to the centre of the job, this will be the middle of the blue cross. Put your job in the vice, placing the extreme bottom left corner of the line already engraved, directly under cutter.
10 When you are satisfied tighten the vice, lower the cutter etc. to the surface and press the "Start / Stop" button.

The engraving will now engrave.

END

4.16 Shading

Shading

When working with logos or designs, you may wish to make them stand out. To achieve this you can use the built in Shading Function in the U-MARQ Engraving Software.

How to

1 You can select an image from the Clipart in the U-MARQ Engraving Software or Import one from another source, see Figure 1.

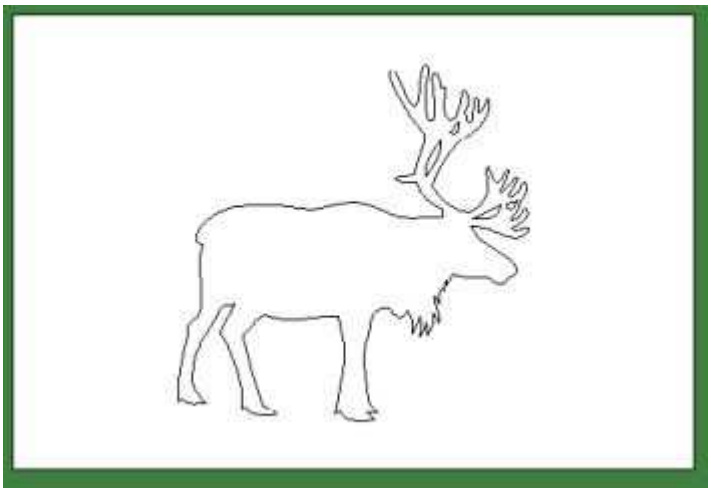


Figure 1

2 Holding the left mouse button drag a box around your logo, it will go Dotty, see Figure 2. From the Main Toolbar select the Shading 45° Icon.

Shading Icons

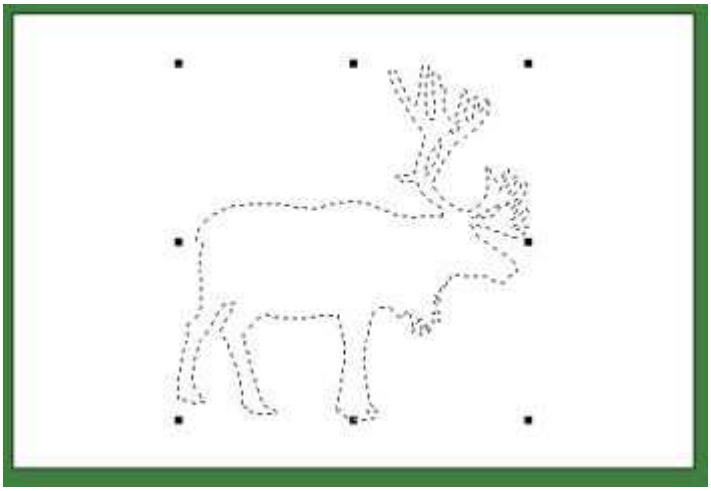


Figure 2

You will now see a Shading Parameters Dialogue Box, this will allow you to alter the level of shading.

3 Holding the Left Mouse Button Down, move the slider to the left to make the Shading appear finer, to the right to make the Shading appear coarser.

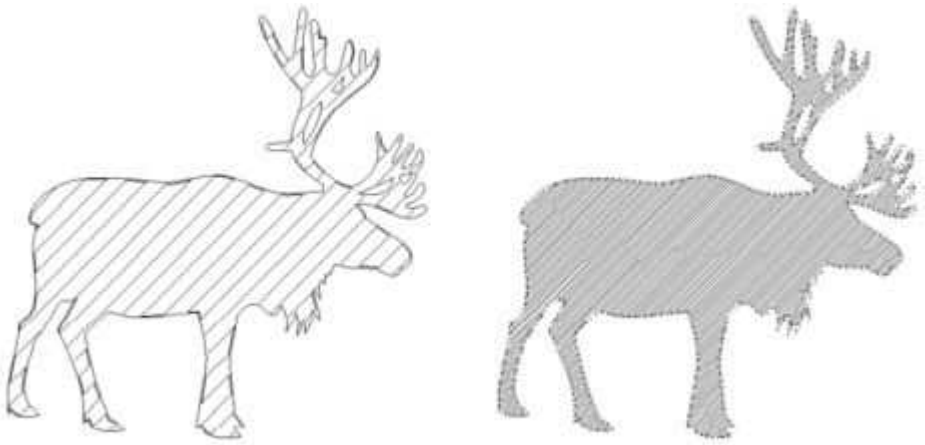


Figure 3

4 Now Left Click On the area of your selected item, you wish to shade. The results are shown in, Figure 3 Left using the midway setting and in, Figure 3 Right using a fine setting.

You can Shade different areas in the same drawing, with different Shading Parameters. Select all parts of a drawing similar to, Figure 4.

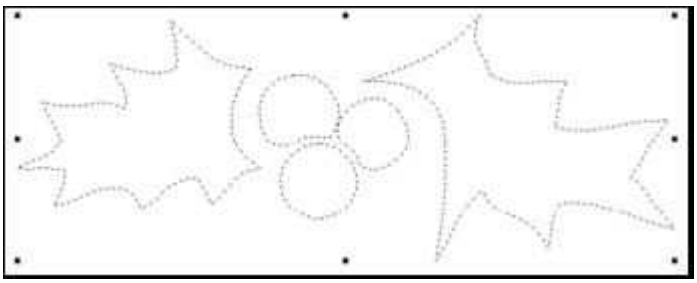


Figure 4

5 Select 45° Shading from the Main Toolbar. Select a Medium Shading from the Shading Parameters Dialogue Box. Click somewhere inside the left hand side leaf of the holly, then on the right hand leaf. See the results in, Figure 5.

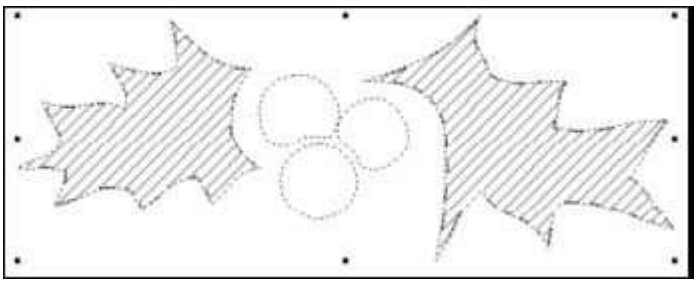


Figure 5

6 You will now have the familiar Shading Parameters Dialogue Box, move the slide towards fine, see Figure 8. Click On "OK", the Click somewhere inside the holly berries. the results should be similar to, Figure 6.

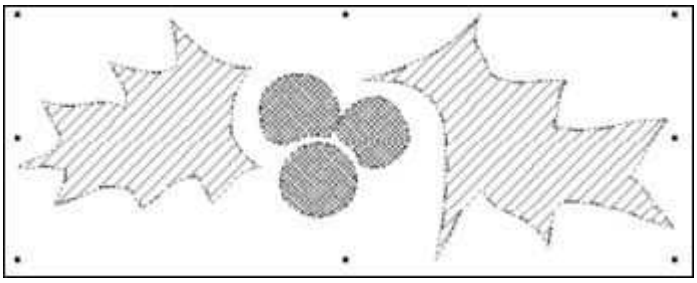


Figure 6

As you can see you can create many interesting effects and designs, to enhance the value of some quite ordinary items by using the unique Shading function, in your U-MARQ Engraving Software.

END

4.17 Importing Files

Importing Files

You can Import Files from other Drawing Programs CorelDRAW, AutoCad, Adobe Illustrator etc, and many other sources.

How to

1 Left Click On "File", then Click On "New".
2 You will see the Opening Form Dialogue Box, Left Click On "New Drawing". Select the Machine Mode, either Centre Vice or Cylindrical.
3 From the Main Menu Bar Click On "File" - "Import". You need to navigate to the Folder where the file you wish to import is kept. Click On the "File Name", then Click On "Open".
4 You will now see the Auto Connect Dialogue Box, Left Click On "Yes". This may take some time, dependent on size of drawing and the speed of your computer.
5 Now Click in the centre position of the Logo in the Workspace.
6 You may find your Logo is larger than require, if so you ca re-size by selecting (the Logo will go Dotty) and then using the Re-size Tool.

Note : For more details on altering layouts, see Editing Layouts.

4.18 Importing Files Using AutoLayout

Importing Files Using AutoLayout

You can Import Files from other Drawing Programs CorelDRAW, AutoCad, Adobe Illustrator etc, and many other sources.

Importing Using Auto Layout

How to

1 Left Click On "File" on the Main Menu Bar, then Click On "'New".
2 You will see the Opening Form Dialogue Box, Left Click On "Auto Layout".
3 The Auto Layout Dialogue Box will be shown. Enter the Height and Width of your engraving area, the Machine Mode you are using i.e. either Centre Vice or Rotary as normal then Left Click On the "Import" Button.
4 You will now see a Dialogue Box that allows you to navigate your way through your computer, to find the file you wish to Import.. You are able to import AI and HPGL (also known as PLT) file format. For this example we are using the Bull found in Clipart - Animals logo. Once you have found the file you are going to Import Left Click On "Open".
5 You will now see the Auto Connect Dialogue Box, Left Click On "Yes". This may take some time, dependent on size of drawing and the speed of your computer.
6 You will now be presented with the 'Auto Layout Logo Dialogue Box. This allows you to Enter the Height of the Logo and the Line that you wish the Logo to be placed on, within your Text Layout. When you are satisfied Left Click On "OK".

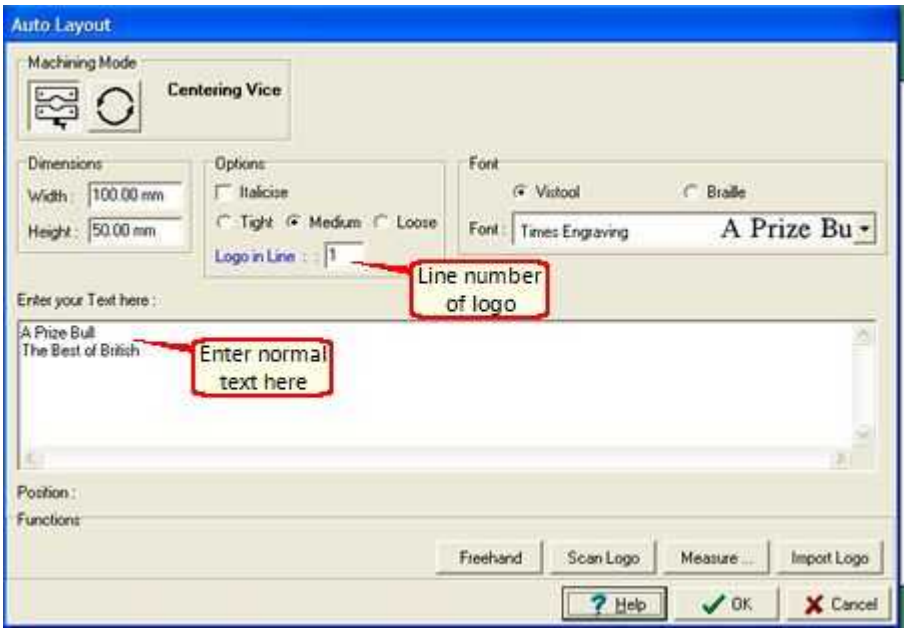


Figure 1

You will now be returned to the Auto Layout Dialogue Box.

7 Enter the text you wish to engrave, within the 'Enter your Text here' area. You will notice the screen has changed slightly to show where the logo is going to be placed. Left click 'OK' to finish, see Figure 1.

Figure 2

You will now see the engraving area with Logo on your screen, ready to engrave, see Figure 2.

Note : The file formats you can import may vary dependant on the version of U-MARQ Engraving Software you are running.

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4.19 Insert Picture

Importing a Picture is very similar to importing any other file, once it has been imported it then has to then be treated differently.

How to

1 Select "New Drawing" and then select "Flatbed Mode". Now Click On the "Insert Picture" icon from the Main Menu Bar.
2 Locate your file in the directories, Clipart Images / Bitmap Pictures / Holly1. Left Click On it to highlight, then Left Click On "Open".

Figure 1

3 You will now have the Size Picture Dialogue Box on your screen. Depending on the size of your plate, you may wish to alter the size of the Picture you are inserting. In this case leave the size at 20 mm, un-check the "Hide Bitmap" box, leave the "Trace Bitmap" checked, see Figure 1, Click On "OK".

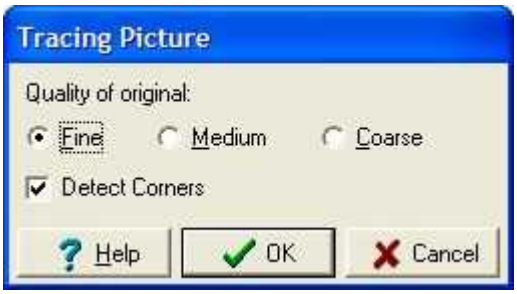


Figure 2

4 Now Click somewhere around the centre of your Workspace, this will be the position that the Picture will be placed, see Figure 3

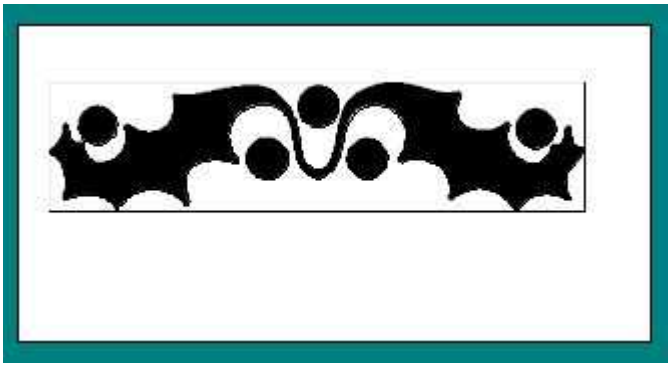


Figure 3

5 The Bitmap will now have been placed in your Workspace, you will now be asked if you wish to "Trace" it see Figure 2, Check Fine and Detect Corners and Click On "OK". If you want to be able to engrave your Bitmap you will need to Trace it, in order to create a vector outline.

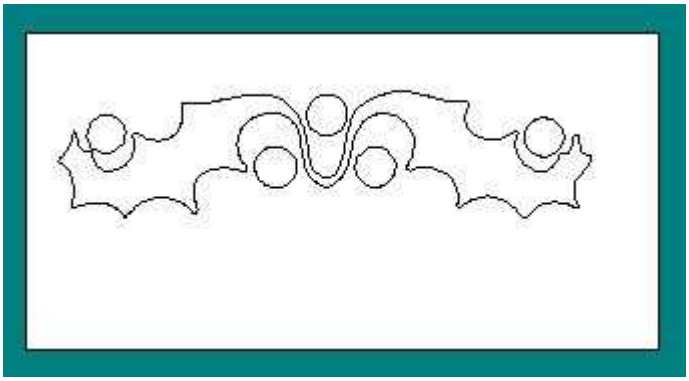


Figure 4

6 You will now have your Workspace with the Traced Bitmap on your screen, see Figure 4. We have left the Bitmap visible to show what the Bitmap image looks like. To show the Vector Trace, you will need to make the Bitmap invisible. To do this select "Bitmap" from the Main Menu Bar, un-check "Show Bitmap". You should now have your Workspace with just the Traced outline showing.
7 You may now re-size and place your vector image on your Workspace and add any Text you require. You can also add Toolpaths or Shading to your vector image before engraving.

You can import files in the following formats

Supported Bitmap File Formats.

Windows BMP Files
TIFF Picture Files
JPEG Picture Files
GIF Picture Files
PNG Picture Files
WMF Picture Files
EMF Picture Files
Exif Picture Files

All the above files can be imported a Traced for use in your engraving.

Note : To use this function on the GEM-RX4 or the GEM-FX4, you must purchase the optional scanning and Logo Generation software upgrade. Please contact you local Dealer for details.

4.20 Measuring a Plate

Measuring a Plate Using the GEM-RX4 Engraving Machine.

You can use your GEM-RX4 Engraving Machine to measure the Size of a Plate or the Engraving Area without using rulers or other mechanical measuring devices.

How to

1 Ensure that you have placed the cutter that you are intending to use during this job, in the Engraving Machine

Spindle.

2 Left Click On "File", then Click On "New", you will see the Opening Form Dialogue Box, Left Click On "'Auto Layout".

3 The Auto Layout Dialogue Box will be shown, as we are doing a Flat Plate held within the centre vice. Left Click On the Centre Vice Icon.

4 Place the plate you wish to engraving on the machine in the centre vice.

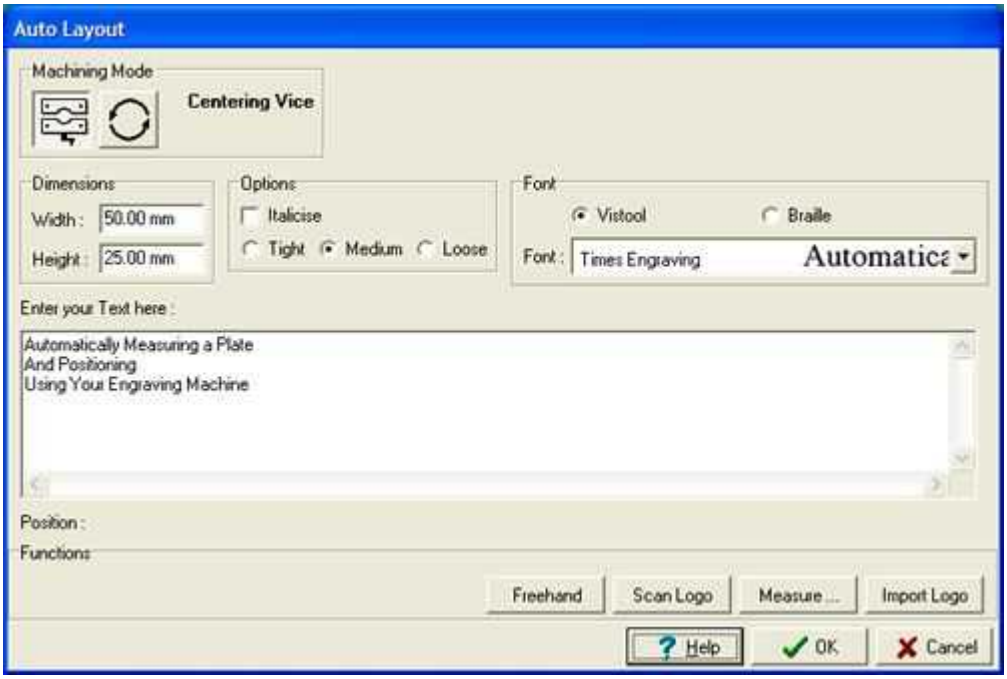


Figure 1

5 To measure the size of your flat plate and its position Left Click On "Measure", see Figure 1. At this stage you do not have to enter any text.

6 You will now be prompted to move the Engraving Machine to one corner of the plate. Press the "Start / Stop" on the Engraving Machine Keypad and ensure that it is lit.

7 Move the cutter to the top left of the plate, using the Keypad "X" "Y" direction Keys. Refering back to your computer Left Click On "Yes".

8 You will now be prompted to move the Engraving Machine, to the diagonal corner of the plate. Using the Engraving Machines "X" "Y" Direction Keys, move the cutter to the bottom right corner of the engraving area. Refering back to your computer and Left Click On "Yes" in the Dialogue Box.

9 You will see in the Auto Layout Dialogue Box, the size has changed, this reflects now the size you have measured using your Engraving Machine. You can now enter your desired text., then Click On "OK", see Figure 1.

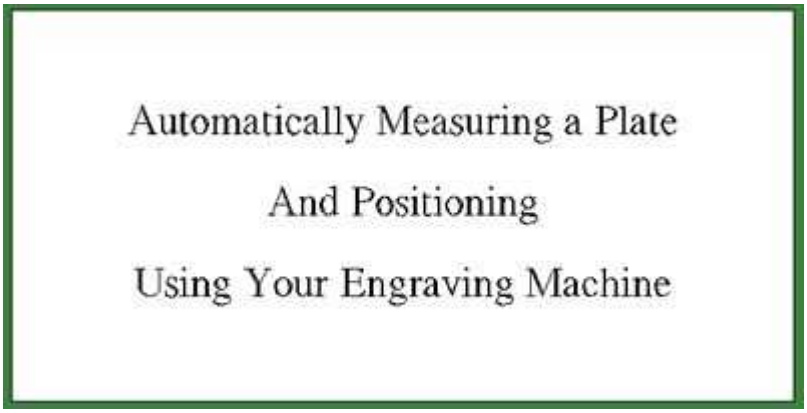


Figure 2

Your Plate is now shown on the screen, see Figure 2.

You can now proceed to engrave your object as normal, refer to the relevant section of this manual for the type of material you are engraving.

Note : It is important when using the Nose Cone with a Carbide Cutter or a Diamond Cutter, to ensure that the "Z" axis locking ring is at its upper most position.

4.21 Engraving Settings

Engraving Settings

Using the Spindle

When engraving you may wish to have the motor running on the spindle, this can give a different finish or effect. To do this is a very simple operation. After setting the surface. Press "Spindle", you will hear and see the spindle turning. Press the "Start / Stop" Button to begin engraving.

Note : It is important when using the Nose Cone with a Carbide Cutter or a Diamond Cutter, to ensure that the "Z" axis locking ring is at its upper most position.

Processes

Within the software it is possible to choose different processes for engraving, these are selected before you commit the job to the machine. Following is brief explanations of these Processes and their uses, see Figure 1.

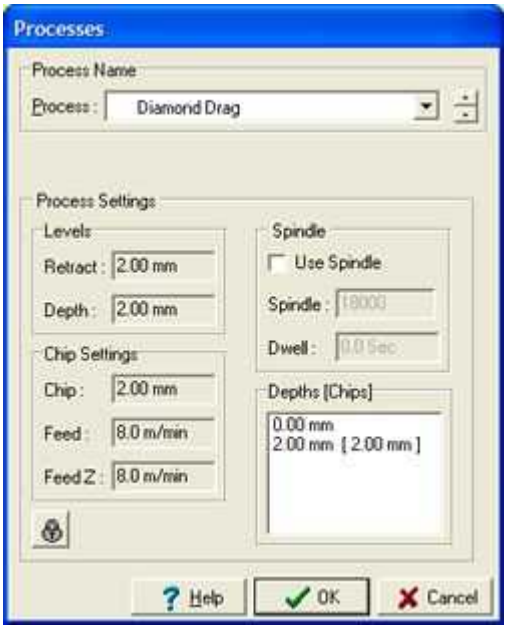


Figure 1

Diamond Drag

Principally used on jewellers brass, trophy aluminium, silver, and gold.

Diamond Drag Curved Items

Principally used on jewellers brass, trophy aluminium, silver, and gold. It is necessary to use this when the object being engraving has a curved surface, eg. Hip flasks.

Diamond Drag Rotated

Principally used with a Burnishing Diamond on jewellers brass, trophy aluminium, silver, gold, and glass.

Engraving Brass with Nose Cone

Used on brass and aluminium. To be used in conjunction with nose cone and carbide cutters.

Engraving Plastic with Nose Cone

Used on plastics and laminates. To be used in conjunction with nose cone and carbide cutters.

Custom Setting

This allows you to set up your own individual process settings, these can be saved with the job they are applied too.

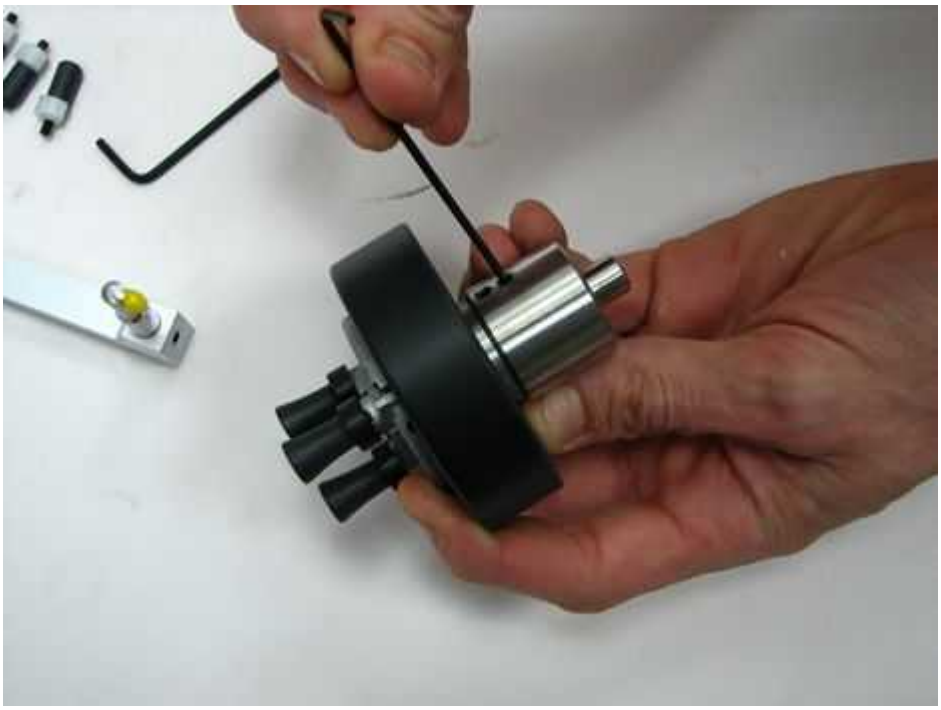
Note : In some of the Processes there is a Dwell. This delays the "Z" axis going down into the material until the Spindle Motor has reach full speed.

4.22 Installing Your Inside Ring Engraver

How to install your GEM-CX4 or Universal-300 Ring Engraving Chuck

1. Make sure you have all the parts necessary to engrave your ring. This should include your chuck, inside diamond drag and your Allan key.

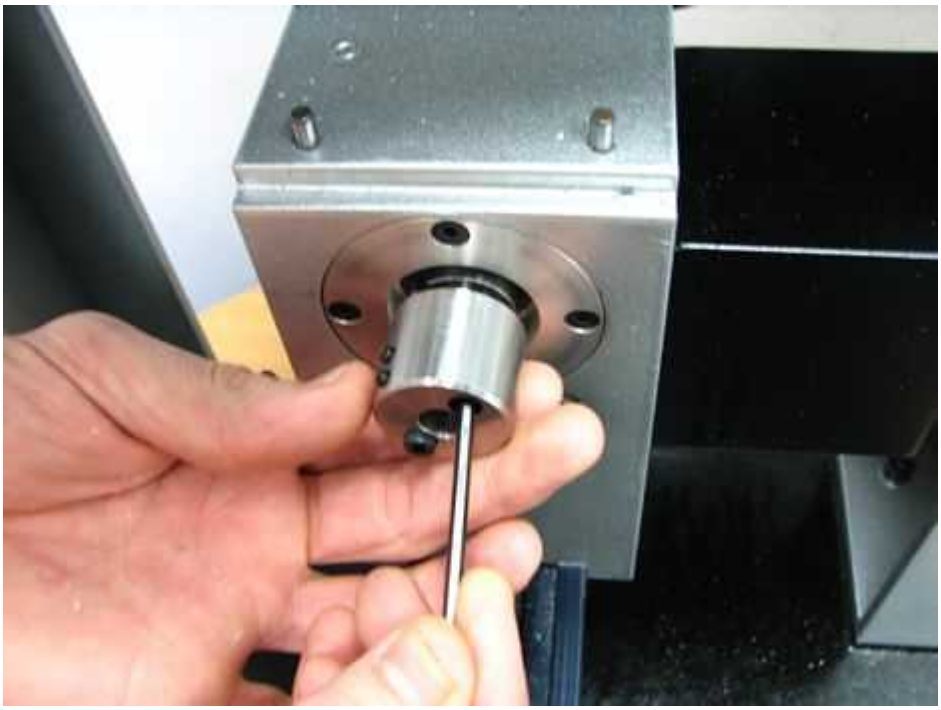
2. Next, using your Allen Key, loosen the Allan screws attached to your inside ring chuck.



3. Now remove the casing that surrounds the dowel on your ring chuck.

4. Locate the correct side of your vice for installation of your ring chuck.

5. Insert the casing that was surrounding your chuck dowel into the vice and tighten the Allan screws.



END

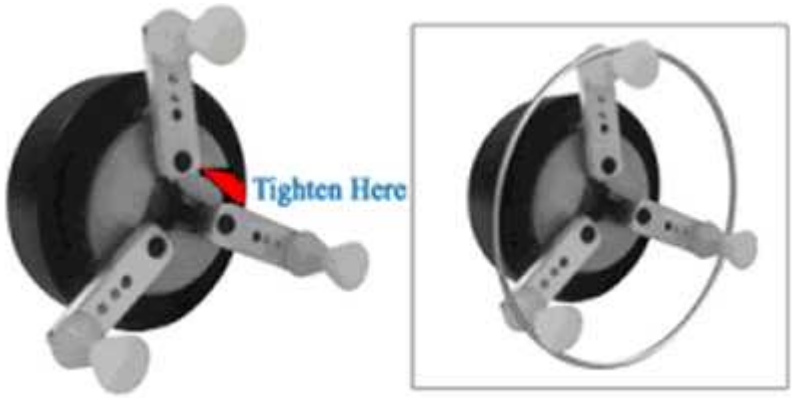
4.23 Fitting The Bangle Attachment

How to install your Bangle Attachment

1 You will first need to make sure that you have purchase the Ring Attachment with your U-MARQ Engraving Machine.

2 Insert your Alan key into the ring pegs on your ring chuck and screw counter clockwise to remove these pegs.

3 After the pegs are removed place your silver extender, with your Bangle Bobbins onto your ring chuck and tighten using your Alan key.



4 The white Bangle Bobbins can be moved to three different levels depending on the diameter of your bangle.

END

4.24 Templates

Templates

All versions of U-MARQ Engraving Software, let you can save jobs as Templates. Templates are very useful, when you have an item that you often have to engrave. Included in your U-MARQ Engraving Software there is a selection of Templates included for you to use, these include Scrolls and Pet Tags and others items. As time goes on more Templates will become available, please consult your Supplier for details.

END

4.25 Repeating a Job

Repeating a Job

To repeat a job on your Engraving Machine, is a simple process. Remove your already engraved item and replace with a new one. Press the "Start / Stop Button", then Press the "Repeat" Button so that the ""Start / Stop" is lit by a green light. Press the "Start / Stop" Button, the machine will start to engrave. All parameters will remain exactly the same, as the original job that was sent down.
A useful point to note, is that you can re-engrave over the same item using this function, if doing so do not remove the object form the vice. It is possible for you to Repeat the Job after pressing "Home", however you will need to reset the surface. This is done in exactly the same way as before using the "Z" Down Key on the Keyboard.

Producing Only Selected Item

It is possible to engrave only a portions of a job, this is accomplished by Selecting the parts of your job you wish to re-engrave, by Left Clicking On it., Then Left Clicking On "Production" on the Main Menu Bar, then Selecting "'Engrave Selected".
Choose your processes as normal and send to the Engraving Machine, as if you where engraving the whole job.

Note : If you turn an object blue by, selecting then Left Clicking On the blue square bottom of your screen, it becomes a design object and is not engraved.

5 Advanced Engraving Techniques

5.1 Editing Layouts

Editing Layouts

Changing Font

If you want to change the Font Style of your text.

1 Left Click On the line you wish to change. If you wish to change more than one line, draw a box around the multiple lines by holding the Left Mouse Button and Dragging, completely over the lines you wish to change. The selected lines will then go Dotty.
2 Whilst the Text is Dotty (selected), navigate the Mouse Cursor over one of the lines of text and Click using the Right Mouse Button and select"Basic Text Edit".

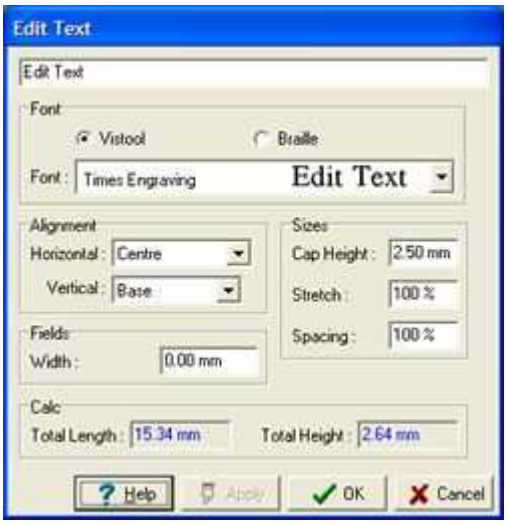


Figure 1

You will now see the Basic Text Edit Dialogue Box, see Figure 1.

3 Left Click on the Font Box arrow and scroll through the fonts list, until you find the desired font. In this example we will change from Frutiger Engraving to Times Engraving, by Left Clicking on the Times Engraving, then Left Click On "OK".

You will now see that the Font Style has changed, from Frutiger Engraving to Times Engraving.

Note : You can Scroll through the Font List either forwards or backwards using the Scrolling Icons.

Resizing Text or Logos

If you wish to re- size your text or image, it is very simple.

1 Select the portion of your work that you wish to re-size. Do this by holding down the Left Mouse Button and Dragging a box around the relevant portion, they will go Dotty.
2 Left Click On the "Re-size" icon, this puts six Re-sizing Handles around the Text.
3 Left Click On one a Black Handle, located at one of the corners, hold down the Left Mouse Button and Drag Outward, this will scale the text to be bigger. You should notice this scales from the centre.

It is possible to Re-size portions separately, just select the text you wish to re-size, instead of the whole text.

Note : You can use the above method to re-size Logos as well as Text.

Changing Line Spacing

If you wish to move lines closer or further apart, you can achieve by one of two methods.

The Automatic Method (only if you have created you text in AutoLayout).

1 Select your text by drawing a box around the multiple lines by holding the Left Mouse Button and Dragging, completely over all the text.
2 Select the Auto Re-Layout Icon from the Main Toolbar.

Figure 2

3 You will now get the Auto Re-Layout Dialogue Box, this gives you the option to change the Line Spacing on your plate, see Figure 2.

In the Option you will see you have three options Tight, Medium and Loose, these refer to the Line Spacing. You will notice one of these options is already Checked, this is the one that was applied when you constructed the plate, using the Auto Layout. If you now select Loose, then Click On "OK", you will see that the Line Spacing has opened out.
4 Now select Tight, then Click On "OK", you will see the Line Spacing will have decreased.

The Manual Method

If you wish to move lines closer or further apart.

5 Left Click On the relevant line, this will then go Dotty. Move the selected line by pressing one of the four Cursor Keys on your computers keyboard, as you press them you will see the line moving on your screen.
If you wish to you can move all objects on your plate in the same way. You are able to move objects Left, Right, Up or Down. Just by selecting then using the Cursor Keys.

Changing Text

If you have made a mistake or wish to change the wording of your text,

6 Left Click On the line of text you wish to change, this will go Dotty.
7 Right Click On the selected line (the Dotty one), you will then have a Dialogue Box select Basic Text Edit You will then be in the by now familiar Basic Text Editor, see Figure 1.

You can now edit your text i.e. correct spelling or add letters or whole words. When you have finished Click On "OK".

Note : You can only change the Text on one line at a time, using this method.

5.2 Cut Outs

Cut Outs in Precious Metals.

The U-MARQ Software allows you do far more than just engrave. You can profile out shapes and designs in many types of material especially gold, silver and most other precious metals. The following is a description of the basics principle used to achieve this type of design.

Profiling a name in a precious metal to use as a necklace.

How to

1 Set up a single line of text in a suitable outline font, i.e. Amerzone and set the text height at 18mm, see Figure 1.

Figure 1

2 make sure your text is selected, then Click On "Production", "Single Toolpath" you will have a dialogue box similar to Figure 2.

Figure 2

3 Enter 1.5mm as the Tool Diameter and select "Outside", Click On "OK".
4 Your text will now have a toolpath applied to the outside, the original will have turned blue, see Figure 3.

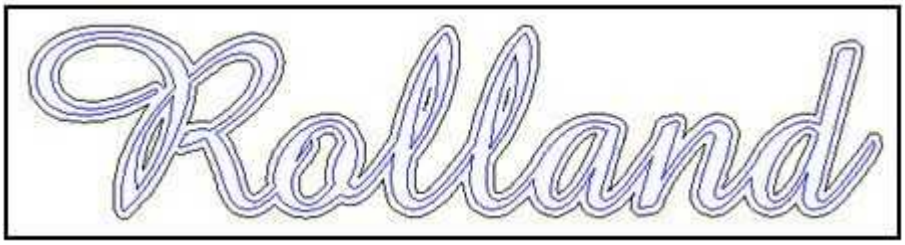


Figure 3

5 We are now going to put two loops on to enable a chain to be attached. Click On the "Circle" icon at the top of the screen. Hold down the left mouse button and drag circle in the white area.
6 Ensure the circle you have just draw is selected, Left click the Resize icon and Click On "Resize", and select 5mm,

see Figure 4.

Figure 4

7 Whilst the circle is still selected Click On "Single Toolpath" again and this time select "Inside" and set the Tool Diameter to 3mm Clock On "OK".
8 You will now see the original circle has turned Blue we now need to change it to Black. Do this by selecting the Blue circle and Clicking On the Left Hand hand Black icon on your Task Bar.
9 The two circles we have created now need to be Combined in to a Face, this will make them one combined object. Select both circles from the arrange menu select "Combine to Faces".

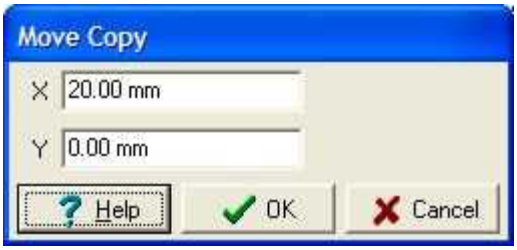


Figure 5

10 As the circles are going to be used to attach a chain you will need to duplicate them. Select the circles, select the "Edit Menu", "Duplicate Single" in the dialogue box put in a small offset i.e. about 20mm, this will stop the duplicated circles being directly over each other, see Figure 5. You should now have a drawing similar to Figure 6.

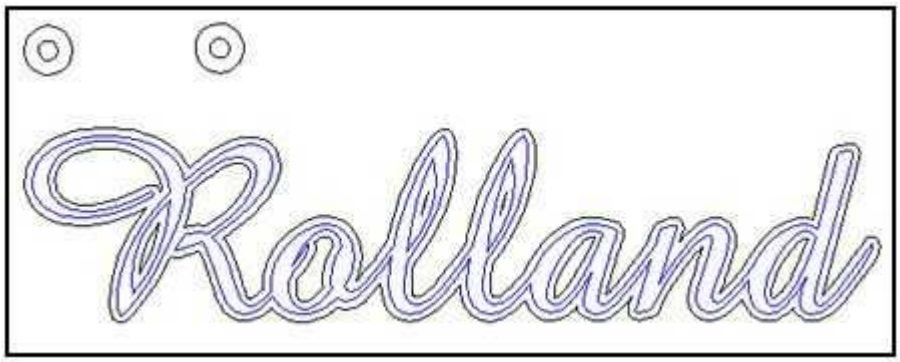


Figure 6

11 We now need to make the main text in to a Face. Select the black part of the text **not the blue,** Click On the "Arrange Menu" then "Combine to Faces".

12 We now need to place the circles in the correct place to form the chain mountings. Select one of the combined circles and drag it into position over the top of the "d", overlapping the outside toolpath, see Figure 7.

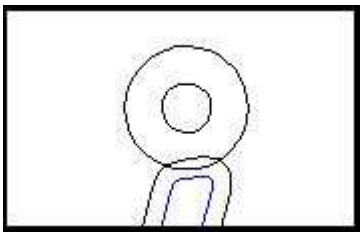


Figure 7

13 Now do the same with the other combined circle over the top of the "R", you should end up with a drawing similar to, Figure 8.

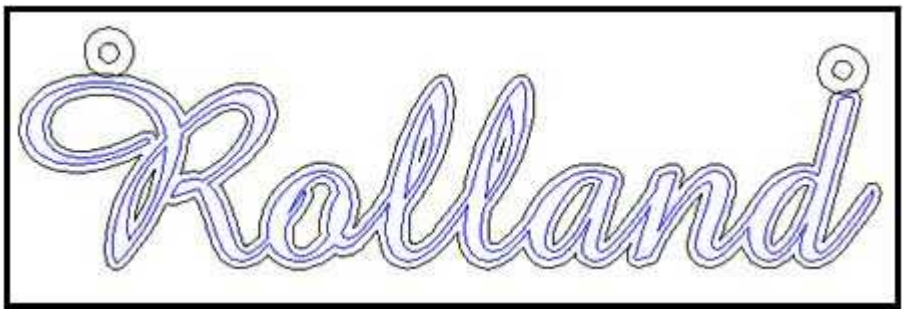


Figure 8

14 We now need to connect the chain mountings (circles) to the main text. Select all of the Black Lines not the Blue, select "Weld Selected" from the toolbar, the red weld icon. You will now have a drawing similar to Figure 9, with the two chain mountings now forming part of the main text.

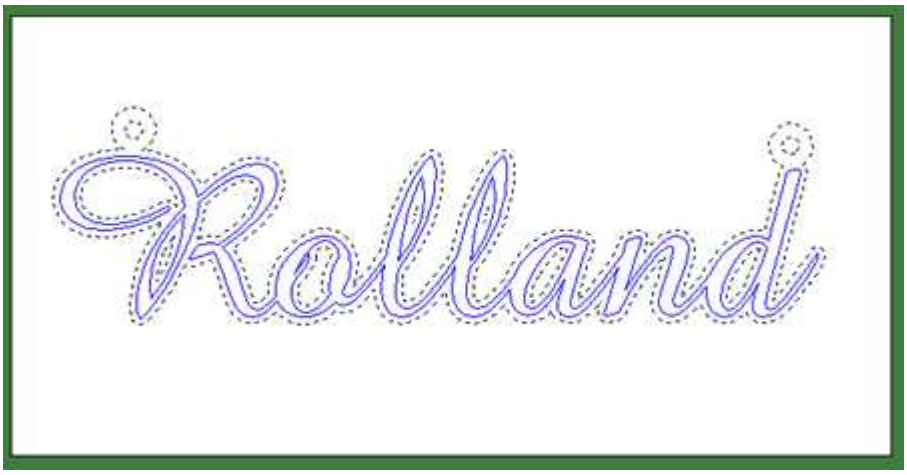


Figure9

Your cut out is now ready to send to your machine.

15 Click On "Production then "Engrave", you will now have the Processes Dialogue box, select "Gold Cutting". The setting for the Gold Cutting should be OK for most types of precious metals, if you need to alter them to take in to account different material properties, see

16 You now treat the job like any other job. We recommend the following method to ensure you do not damage the cutter tip. When the machine is at 'Surface' jog the "Z" axis down until about 10-15mm of the cutter will protrude. Then place the cutter into the brass cutter knob with the cutter tip on the material surface and tighten.

Note : When doing cut outs make sure that your "Z" axis is locked off, not floating and you do not use a

nose cone.

5.3 Tip and Techniques for Cut Outs

Cut Outs in Precious Metals

If you wish to be successful cutting out names and shapes in precious metals, there are some techniques that you should learn and apply.

1 Ensure that you lock the "Z" axis on your machine. This enables you to enter in the 'Processes Dialogue Box' an absolute depth also it will eliminate vibration in the "Z" axis.
2 Always use a sacrifice sheet under the material to be cut. The sacrifice sheet should be of a smooth rigid plastic material, that will adhere to the machine bed using a suitable double sided tape. Another purpose of the sacrifice sheet is to ensure when you break through the back surface of the material, the cutter tip is protected by plunging into a soft plastic material.
3 When setting the depth of cut in the 'Processes Dialogue Box' you should always allow for a small amount (about 10%) of extra depth, to ensure that the material is cut all the way through.
4 In your U-MARQ Engraving Software the processes that are preset are for guidance only and are not suitable for all types of material. Because of the huge amounts of material types that are available, the only way to ensure perfect results every time in by trial and error, see Figure 1.

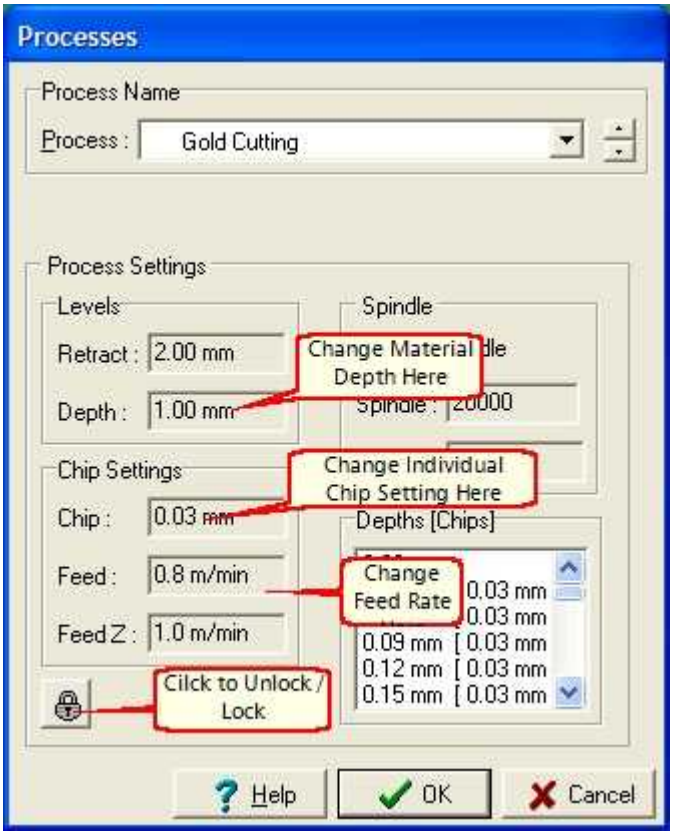


Figure 1

5 Be patient cut outs in precious metals are very lucrative, but are time consuming. It is better for the quality of cut, cutter life and general end results to take a larger number of chips at a slow feed rate, than try and power through material quickly and ruin the piece and cutter.
6 If you wish to cut a shape and engrave on it, always complete the engraving before cutting out.
7 It is usually preferable to use some sort of lubricant/coolant when cutting metals, this helps to give a better finish and extends the life of the cutter. You can use a thin cutting oil or a spray can type of lubricant i.e. WD40 or similar.

You can also use a 'Chip Extractor' connected to a vacuum source it will clear away swarf as you cut,

8 Ensure that your cutter is sharp and in good condition, a blunt cutter will ruin the job.

9 U-MARQ sell a specially ground cutter for cutting out precious metals, (CC-00115) it is designed to give an excellent finish and can be re-sharpened a number of times.

Remember Patience is the key to success when cutting out.

END

5.4 Engraving Using Depth Profile

U-MARQ Engraving Software comes with a unique and innovative function called "Depth Profile". This enables you to engrave on a curved surface either concave or convex with an even depth of cut and automatic compensation for diameter distortion. The "Depth Profile" function also allows you to engrave a job in one operation on surfaces like a Georgian Tankard, a Champagne Flute and conical objects on a machine without tilting the vice.

How to

The philosophy of the "Depth Profile" function is that you take your engraving area and split it into imaginary parts of a circle and pick points on that surface.

1 Place your object to be engraved in your machine i.e. a Georgian Tankard.
2 You now need to measure the largest diameter of your engraving area, i.e. it would be the fifth point in Figure 1 and also the length, this will be between point 1 and 6 in Figure 2.
3 In your U-MARQ Engraving Software select "Cylindrical Mode" and enter your diameter and length you have measured in the appropriate boxes, Click On "OK", see Figure 1.

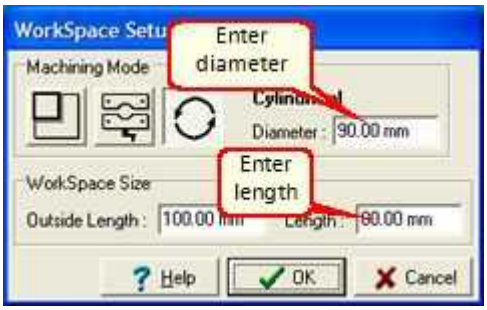


Figure 1

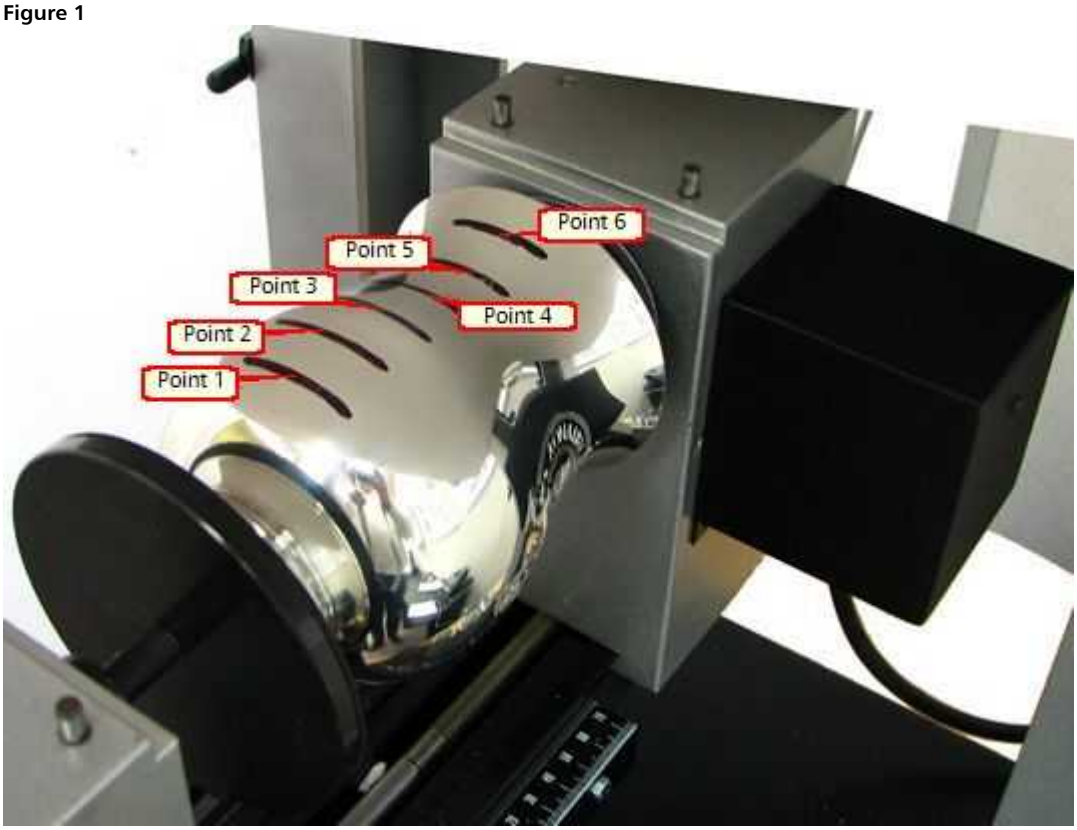


Figure 2

4 Put your cutter in your engraving machine, leaving about 12mm protruding from the bottom.
5 Select "Production" then "Depth Profile From Machine", you will now get a Dialogue Box similar to Figure 3, Please select first point on object. This must be the furthest one from the cylindrical driven end.
5 Then jog your machine to the first point, surface, see Figure 2 using the "X" "Y" and "Z" keys on the keyboard, when satisfied Click On "Yes" to continue.
6 You will now get a Dialogue Box similar to Figure 3, Please select next point on object, select the second point, surface see Figure 2 using the "X" "Y" and "Z" keys on the keyboard, when satisfied Click On "Yes" to continue.

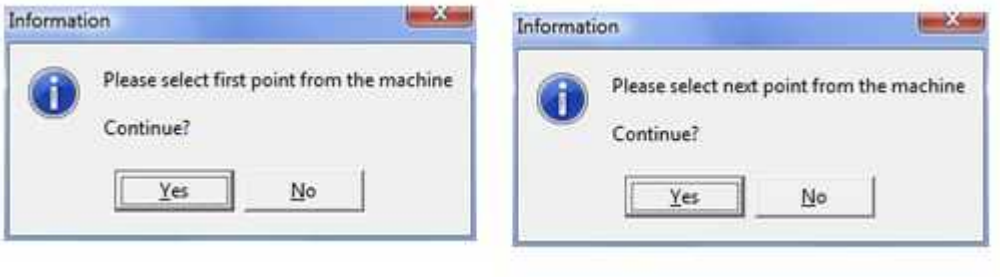


Figure 3

7 Now follow the same procedure until you have selected all six points. After selecting the sixth point (last point) when asked if you wish to Continue? select "No".

You have now created the "Depth Profile" for the Georgian Tankard that you are about to engrave and will have the normal Workspace on your screen.

8 You can now place your text, logo etc. in your Workspace (which corresponds to the six points that you have selected) as you would normally when engraving a Georgian Tankard.

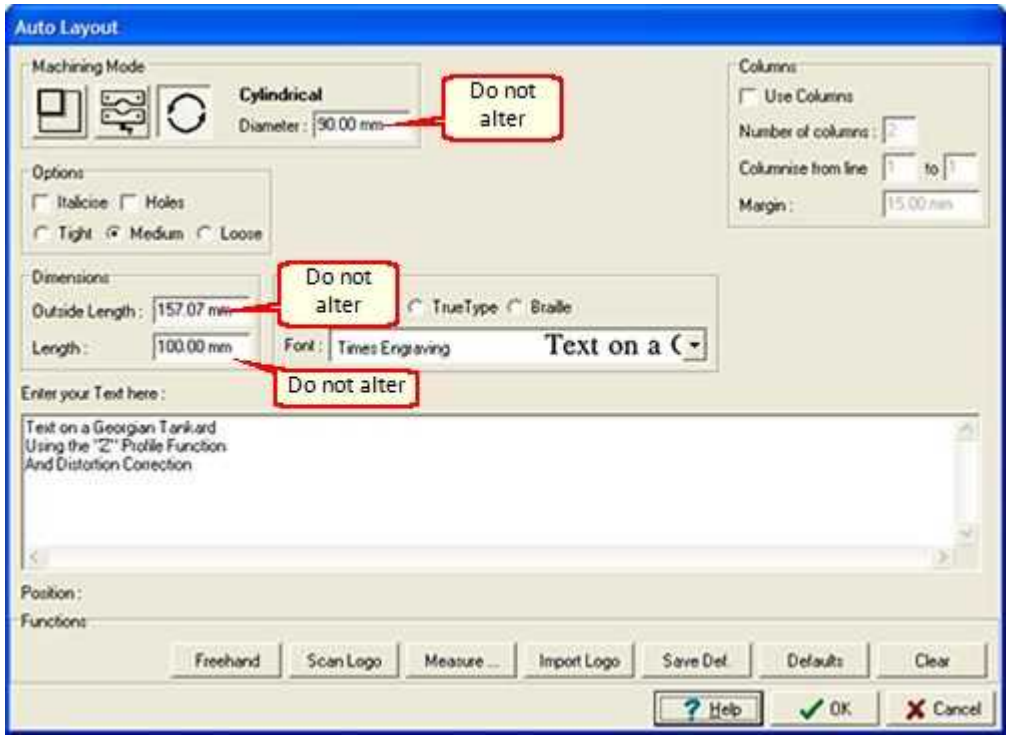


Figure 4

If you are using AutoLayout to enter text when using the "Depth Profile" function do not alter any of the Diameter, Length or Height settings just use the Text inputs, see Figure 4.

If you save the job it will automatically save the "Depth Profile", if you wish to engrave the job without the "Depth Profile" it can be removed by selecting "Production" "Remove "Depth Profile".

9 Left Click On "Production" on the Main Menu Bar then Click On "Engrave".
10 You will now see the Processes Dialogue Box, change your process by clicking on the arrow and selecting "Diamond Drag Curved Items" by Left Clicking, see Figure 5.

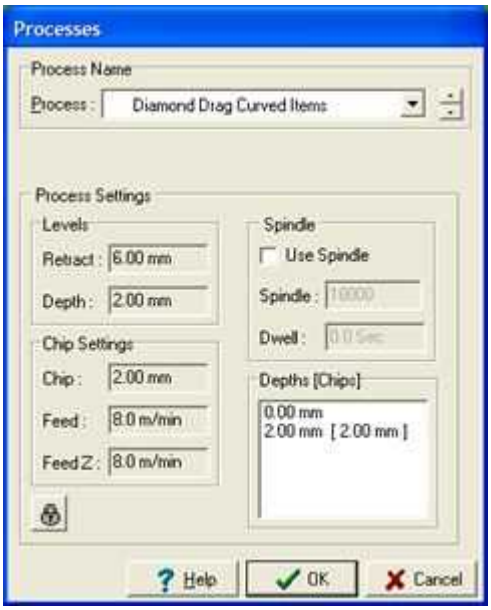


Figure 5

10 You will now be given an opportunity, to Cancel sending the job to your Engraving Machine. You do not wish to do this, so Left Click On "Yes" to continue.
11 You will now see a Dialogue Box, informing you that the job has been sent to your Engraving Machine and has been processed.
12 On your Engraving Machine Keypad, you will notice that the "Start / Stop" Button is lit. This indicates that the job has been downloaded and is ready to engrave.
13 The Engraving Machine, will now moves to the first cut of the engraving. Using the "Z Down" Key on the Keypad, Lower the head of cutter until it just touches the surface of the tankard.
17 Now Press the "Start / Stop" Button on the Keypad. The Engraving Machine will now start engraving the tankard.
18 When the engraving has finished Press "Home"on the Keypad.

Repeating a Job 73

Note : Once you have selected the surfaces using the machine, do not alter the position of the cutter in the holder manually as this would then require the profile to be re-set. If you are engraving a conical object i. e., a normal Tankard and you do not wish to tilt the vice, or have a machine with a fixed vice. You would just select two points and enter the largest diameter of the object.

5.5 Installing the Ring Attachment on the GEM-CX

Installing the inside / outside ring attachment on the GEM-CX machine

How to

1 Open the software and turn the machine on, see Figure 1.

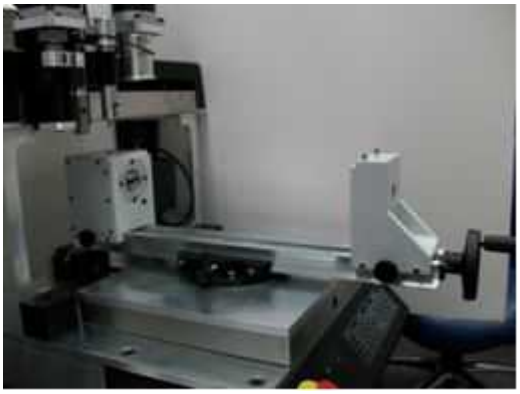


Figure 1

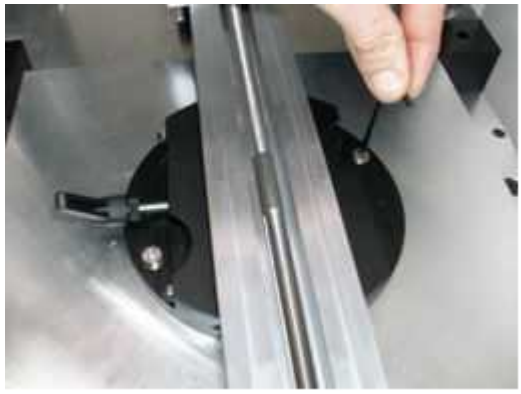


Figure 2

2 With the flat table off and all jigs removed unwind the vice until you can't go any further, undo the 2 allen screws with the allen key provided, see Figure 2.

3 Undo the vice holding handle and pull the vice forward until the back of the vice is at the back of the turntable, see Figure 3 and 4.

Figure 3

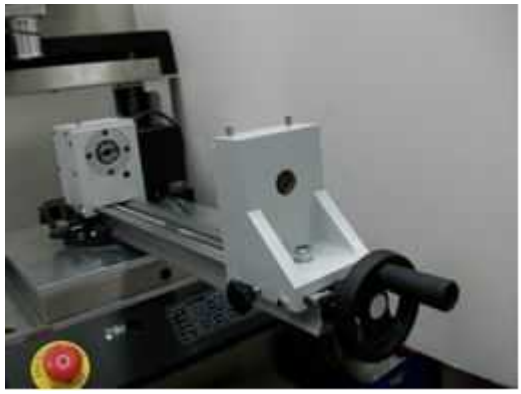


Figure 4

4 Rotate the vice clockwise 90 degrees and slide the vice in, until central on the scale, tighten the 2 allen key screws, see Figure 5 and 6.

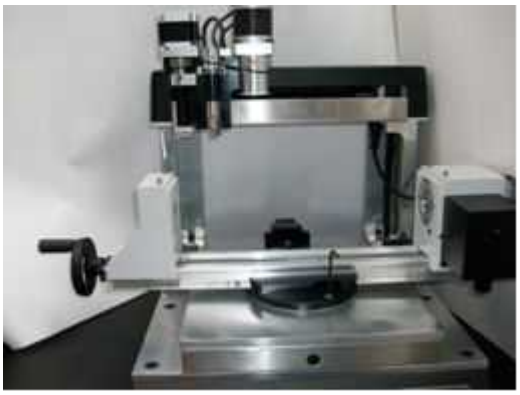


Figure 5

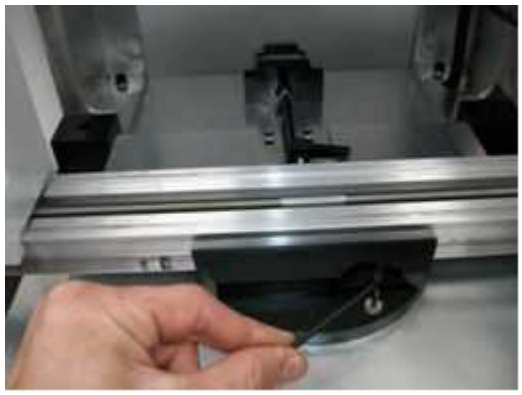


Figure 6

5 Tighten the vice holding handle, see figure 7.

Figure 7

Figure 8

6 On the inside ring attachment undo the 2 allen grub screws and pull the attached bush away from the chuck (inside ring attachment), see Figure 8.

Figure 8

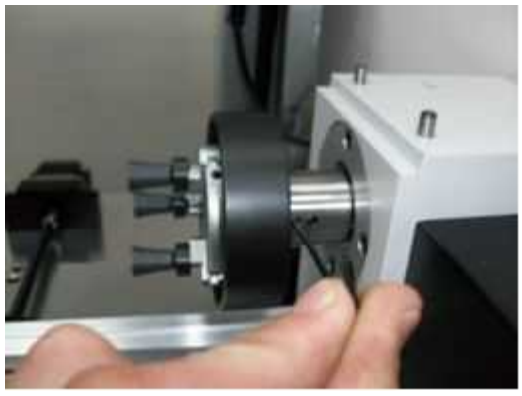


Figure 9

7 Locate the bush into the cylindrical unit and tighten the 2 allen screws, see Figure 8.

8 Insert the ring Attachment into the bush making sure you align the flat edge with the 2 grub screws and tighten the grub screws, see Figure 9.

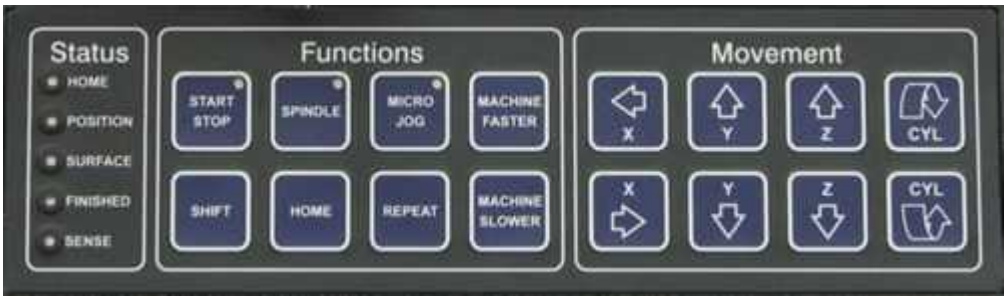


Figure 10

9 Press "Start" on the keypad, the green light should now be on, lower the Z axis until it stops by pressing the "Z Down" button, see Figure 10.

Figure 11

Attach the inside ring L shaped bracket to the right side of the spindle clamp with the allen screw and tighten, See Figure 11. Then then press "Home" on the keypad.

You are now ready to use your Inside / Outside ring attachment.

END

5.6 Using The Inside Ring Attachment on the GEM-CX and the Universal-300

Using the Inside Ring Attachment on the GEM-CX and the Universal-300

How to

The Software

1 Click on "File" New Drawing, see Figure 1, then select "AutoLayout", see Figure 2.

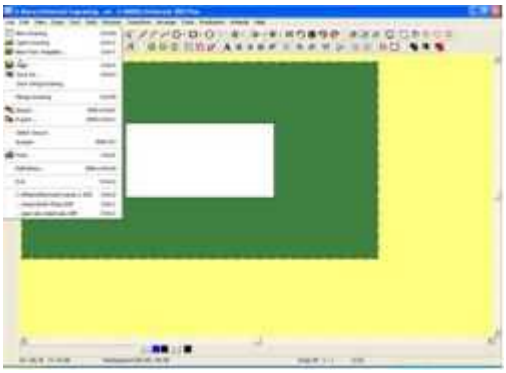


Figure 1

Figure 2

2 Change the machining mode to "Inside Ring". Enter the inside diameter of the ring, then the ring width in the appropriate boxes.

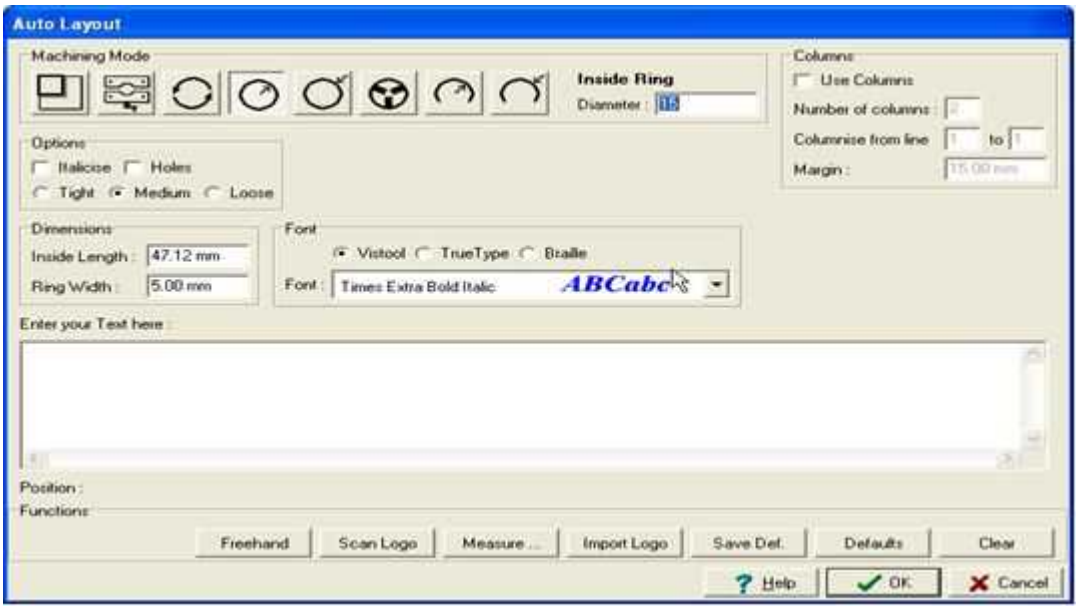


Figure 3

3 Enter your text and select the required Font, Click On "Ok", see Figure 3.
4 you will now have the text on your scree as in Figure 4

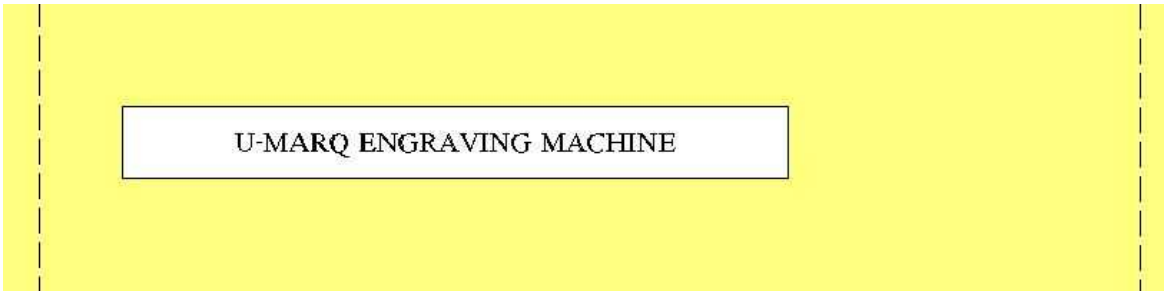


Figure 4

4 Click on "Production" then "Engrave". Select the process for "Inside Ring Engraving" Click On "OK", see Figure 5.

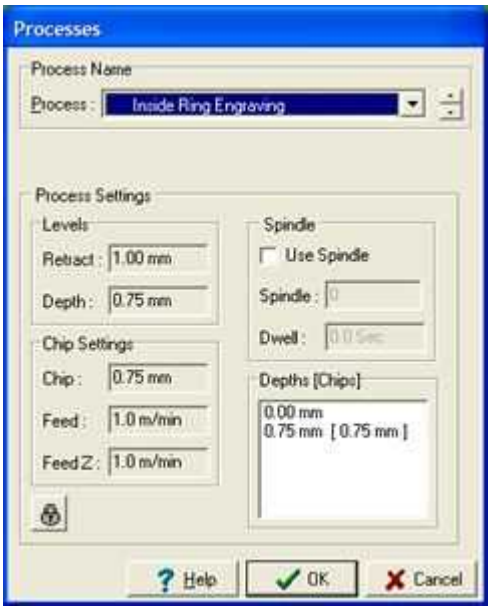


Figure 5

Figure 6

5 You will now have a Dialogue Box similar to Figure 6, Click On "OK".

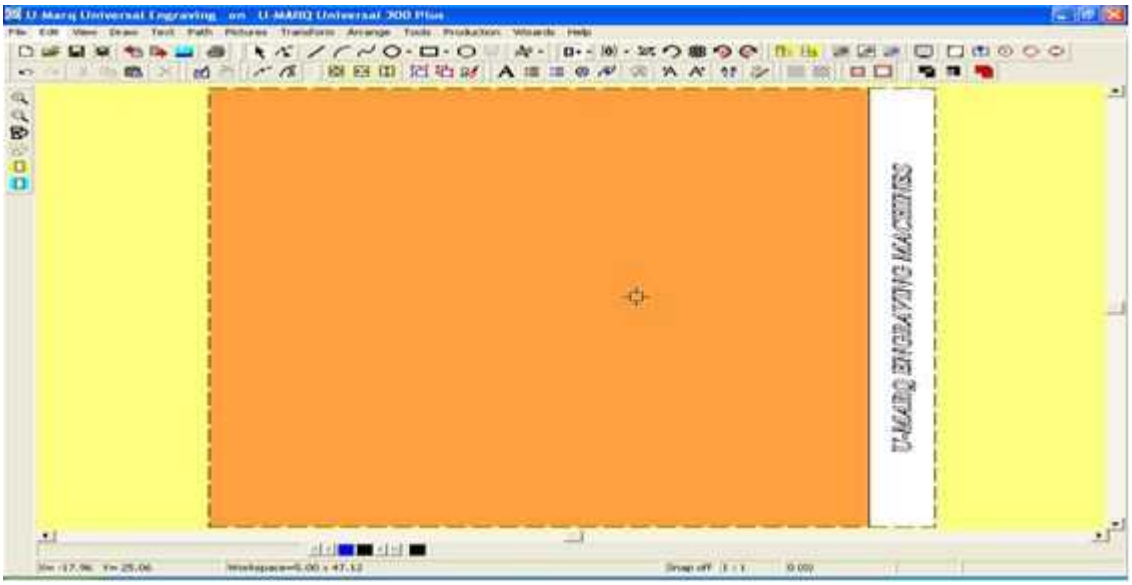


Figure 7

6 Your design will now have been swapped to show how the text will be engraved on the ring, see Figure 7.
7 Now Click On "OK" to download job to the machine.

Setting up the Ring in the Chuck

8 Insert the ring into the ring chuck and locate on the back stops and tighten up using the black section of the chuck, see Figure 8.

Figure 8

Figure 9

9 Press "Start" on the machine controller keypad, see Figure 9. The Position Light will now be illuminated on the right of the keypad.
10 Using the "X" and "Z" keys see Figure 9, align the diamond to the bottom left side of the ring. You can "Press Micro Jog" if you need to move the diamond a small amount.
11 Press "Start" on the machine controller keypad, see Figure 9. The Surface Light will now be illuminated on the right of the keypad.
12 Now lower the diamond onto the surface using the "Z Down Key, then Press "Start" once the job is completed Press "Home".

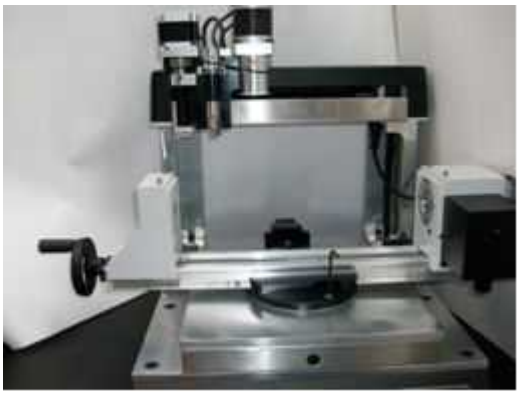
END

5.7 Using The Outside Ring Attachment on the Universal-300 and GEM-CX4

Engraving the Outside of a Ring

How to

1 Set up the Ring Engraving Attachment as for Inside Ring Engraving by turning the vice as in Figures 1 and securing as figure 2.



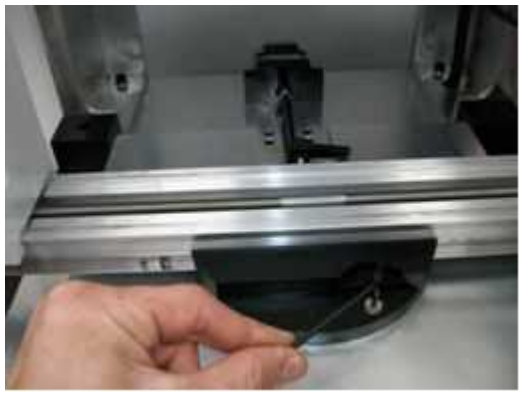


Figure 1

Figure 2

Figure 3

Figure 4

2 Remove the black inside ring clamps and attach the white outside ring clamps to the ring attachment. Then fix the Ring Engraving Chuck to the head stock, see Figure 3.

3 Insert your diamond cutter into the spindle and tighten, see Figure 4.

4 In the Auto Layout dialogue box Select the outside ring engraving mode, see Figure 5.

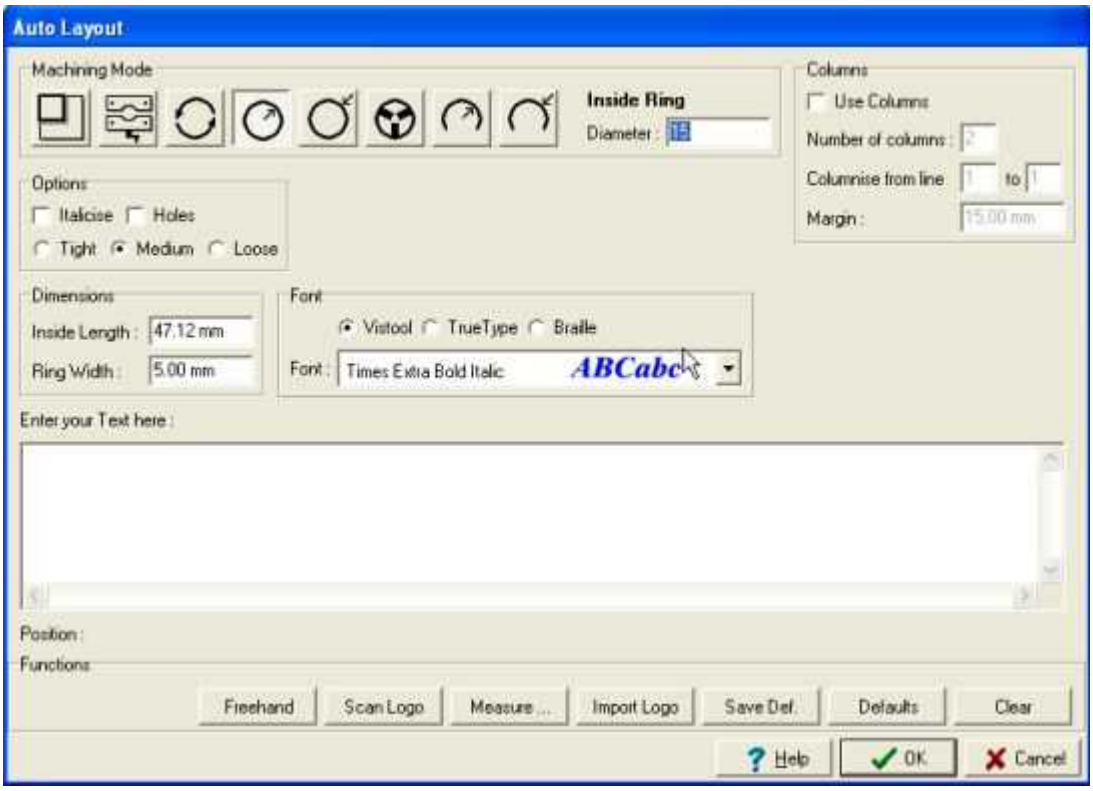
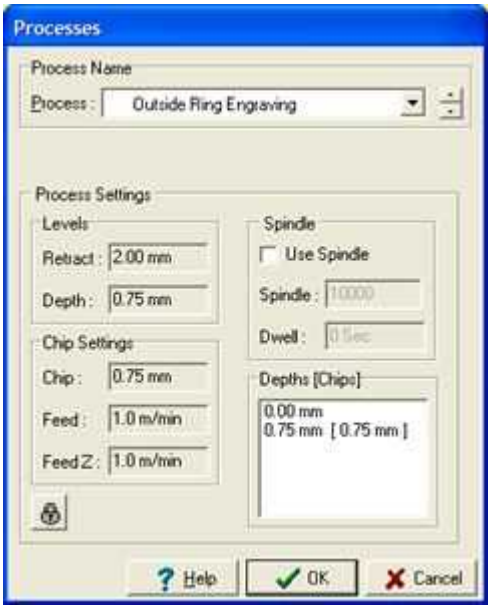


Figure 5

5 Enter the required text and select the font etc, when finished Click On "OK".
6 In Production select "Engrave", you will now have the Processes Dialogue Box, see Figure 6.



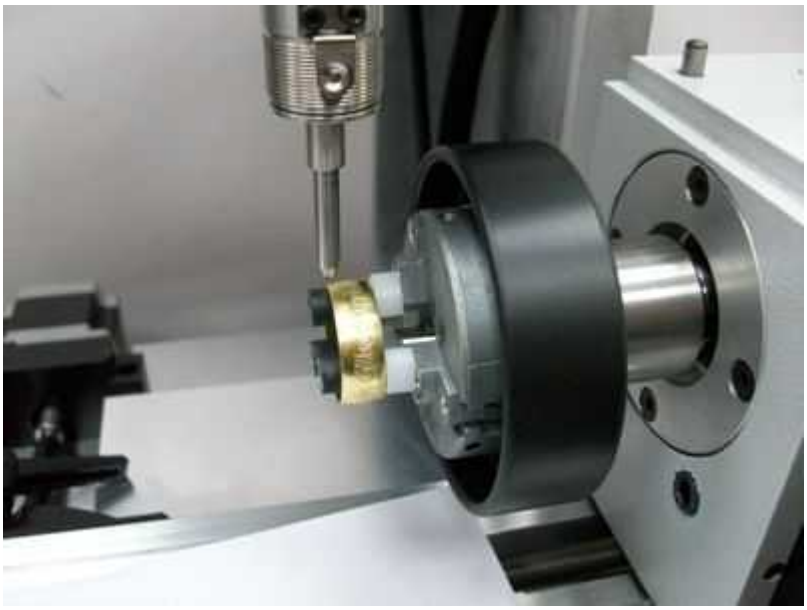


Figure 6 **Figure 7**

4 Select "Outside Ring Engraving", then Click On "OK"
6 Press "Start" on the keypad, the diamond will move over towards the ring.
7 Undo the vice holding handle Slide the vice to the left until the diamond is at the right hand side of the ring.
8 Press the "Z" down button to get the diamond closer to the ring this helps with the alignment. When happy the diamond is position at the right side off the ring, see Figure 7 tighten the vice holding handle.
9 Then proceed as if you were engraving any other item.

END

5.8 Using The Bangle Attachment

The Bangle Attachment is fundamentally the same on all U-MARQ with a cylindrical axis.

How to

Inside Bangles

Using the bangle attachment is the same setup as engraving inside rings, it just requires a change the Machine Mode, Cutter Arm and Mode.

1 Select the correct Mode from the dialogue box, see Figure 1.

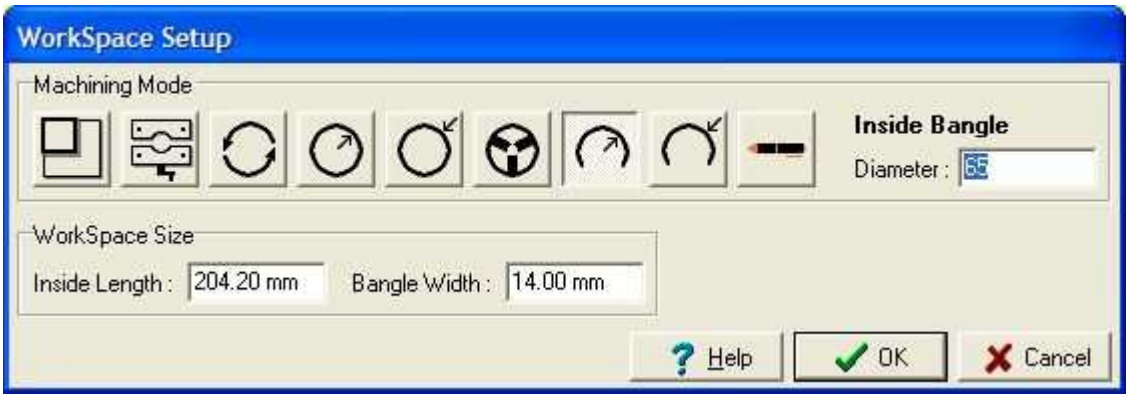


Figure 1

2 Ensure that you have setup the Ring Engraving Chuck with the Bangle Arms and Holders, see Figure 3.
3 Ensure that you have attached the correct Diamond Cutter in the cutter holder, see Figure 2.

Figure 2 **Figure 3**

You are now ready to engrave just follow the same process as we have done for Inside rings.

Outside Bangles

The setup is the same as engraving inside bangles except you use the normal Diamond Cutter held in the Spindle.

END

5.9 Colour Filling After Deep Engraving

Description of Types of Colour Filling after Deep Engraving

Colour filling is a term used within the engraving industry to describe a variety of techniques used to add colour or contrast to engraving. Even though there are a wide variety of engraving materials available in a multitude of colours, thicknesses, and finishes, there are often times when it is desirable to colour the engraving to make it stand out or enhance the overall appearance of the product.

Oxidizing

There are three basic processes or applications that fall under the category of colour filling. The most common, which is used to blacken engraving on brass and aluminium is actually an oxidation process done with a mild acid that blackens the exposed metal upon contact. Since this oxidizing process isn't selective as to where it works, it can only be used on metals that have some kind of coating that is removed in the engraving process. For example, the commercially prepared brass common to the industry is coated with lacquer or some other durable finish. Aluminium can be coated in a similar manner, or it can be anodized. Anodizing is an electro-chemical process that seals the surface of the metal and prevents natural oxidation. When we remove any of these finishes with a diamond graver, burnisher, or a rotary cutter, the exposed areas can be blackened with the oxidation solution without having it affect the rest of the plate.

Oxidizers are available for both brass and aluminium. They are reasonably effective and the only consideration is that it is fresh and free of contaminants. While most oxidizers are supplied with a dauber, this may not be the best way to apply it since you would be continuously putting the dirty applicator back in the solution. A better method is to use cotton swabs and discard them after each use. It is equally important that the engraving be clean and free of any oil or even fingerprints. Since the bare metal goes through a natural oxidation when it is exposed to the air, it is a good idea to oxidize it soon after it is engraved so the full effect of the oxidizer is achieved. Apply the oxidizer liberally to all of the

engraving. It sometimes helps to actually "scrub" it into the letters with the swab. Allow the engraving to darken and when the desired effect is achieved, rinse the plate with water. Rinsing will dilute the acid and stop the oxidation process. If the oxidizer is left on too long, the process will continue and the blackened areas may turn grey and chalky and even flake out of the engraving. After rinsing, blot the plate softly with a cloth or paper towel - don't wipe it because it is possible to rub the black out of the letters. You can make a final clean-up after the plate has dried. If there are any areas that didn't take, you can go back and repeat the process. Oxidized engraving tends to have a dull, lustre less appearance. It is possible to enhance the appearance by applying silicones, spray lubricants, or even furniture polish to the plate but while these methods tend to darken and add gloss to the lettering, their effects usually diminish in a relatively short time.

Paint Stick

Actual colour filling where a fill material is applied into the engraving can only be done on rotary engraved plates with sufficient depth and is usually done with paint or a paint stick. A paint stick looks like a large crayon, is available in a variety of colours, and is simple to use. First, shave the end of the stick with a knife or razor blade to remove any skin that has formed. Next, rub the stick back and forth across the engraving until the letters are filled, and then wipe off the excess with a cloth or paper towel. On some surfaces, the paint stick will leave an oily residue that can stain the surface of the plate. Sometimes alcohol or paint thinner is effective in removing this film, but the easiest way to completely clean the template is to allow it to dry overnight and then wash it using warm water and a non-abrasive cleaner. While this method of filling is easy and reasonably durable, it never gets completely hard and doesn't offer the smooth, glossy appearance that paint does.

Paint Filling

Paint filling, while a little more difficult than other methods, offers the broadest number of options in terms of materials, colours, and applications. For metals and rigid plastics (phenolics and acrylics), it is best to use a fast-drying, oil based enamel to fill and mineral spirits for the cleaning operation. On soft plastics such as flexible engraving stock and other materials that may be affected by caustic solvents, use latex or acrylic paints and water or alcohol for clean-up. Other than this, the procedure essentially the same for both. In addition to the paint, all that's required is an inexpensive brush, an old phone book, and some pieces of stiff paper or cardboard (about the size and weight of a business card).

The engraving should be smooth, free of burrs, and have sufficient depth to hold the paint. As a rule of thumb, with characters up to 1/4" high, engrave to a depth of .010" - .012". On larger characters, it is advisable to go .015" - .020" deep depending on the line width and filling technique used. The paint should be thick enough so that it does not allow the cutter marks to show through after it has dried. Using the brush, apply the paint liberally so that the engraving is completely filled. Immediately after filling, hold one edge of the cardboard so that its straight edge rests against the plate and scrape off the excess paint leaving just a thin film. Allow the plate to dry for several minutes until the paint has started to set-up and the surface can be wiped without disturbing the paint in the engraving. The time varies depending on the paint being used, but 5-10 minutes would be a good starting point.

The next step is the initial clean up of the surface of the plate. Wrap two or three thicknesses of a lint-free cloth tightly around a wood or plastic block and dampen it with thinner. Wipe the surface of the plate lightly, in one direction, until the paint residue is removed. On small plates, an easier method of cleaning is to wipe the plate across the cloth. A widely used and effective alternative to the cloth method is to use pages from a telephone book. Their texture allows them to absorb the thinner, and any problem with lint is virtually eliminated.

There are two key things to remember that can mean the difference between success and failure. One is not to use too much thinner. If the cloth or paper is too wet, thinner will seep into the engraving and attack the paint, ruining the appearance. Secondly, when wiping, do it lightly to prevent the cloth from coming in contact with the paint in the characters.

After the plate has been wiped clean, there may still be haze that requires some additional cleaning. It is best to allow the plate to dry, preferably overnight, and then to do the final clean-up when the paint in the characters has completely set. You may want to use soap and water or a cleaner that will remove any oily residue left by the paint and thinner.

When filling larger letters, it is possible to eliminate most, if not all, of the cleaning and wiping by using an applicator that allows you to apply the paint directly into the engraving. Some systems utilize small plastic squeeze bottles with needle-like nozzles while others are more elaborate mechanical dispensing systems. With either method, paint is squeezed through the fine nozzle directly into the engraved character. With a little practice, it's easy to become adept enough to eliminate the need for major clean-up.

Some of the best sources for small amounts of paint are touch-up paint from the automotive stores, and paint sold at

hobby and art supply stores. Always test the paint before applying it to your finished engraving to make sure it will not affect the plastic.

END

6 The Vismec Controller

6.1 Vismec Controller Software

All U-MARQ Engraving Machines are fitted with either a GEM or a Vismec-CX Control System, dependant on the type of machine. Whichever of the machine you have they all run with the same Vismec Controller Software, the function of which is described below.

Vismec Controller Software

Vismec is the software that runs all U-MARQ Engraving Machines Controllers and sits in your System Tray. There are a few items that can be configured and they will be described here.

Tray icon

Vismec is activated automatically when the U-MARQ Engraving Software is launched and links the Machine Drivers to the Controller Hardware. The Vismec Tray icon has two modes, one when it is connected to the controller and one when it is not. These are shown in Figure 1. In the Left is the Controller Connected icon and the Right is the Controller Disconnected icon. This is how they will appear in your System Tray (which is located at the bottom right of your screen), depending if your controller is communicating with your PC or not.

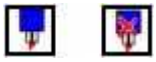


Figure 1

If you pass your mouse cursor over the Vismec Tray icon, it will tell you its present state and the driver that is loaded, i. e., GEM-RX4 Plus, Disconnected, this information can be very useful if you are having connection or driver problems.

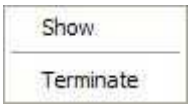


Figure 2

If you Right Click On the Vismec Tray icon which ever state it is in you will see the Dialogue Box as in Figure 2, select "Show", this will bring up the Dialogue Box shown in Figure 3, it is full of useful information.

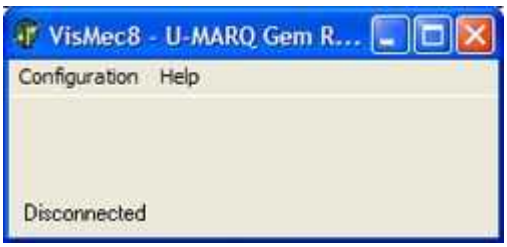


Figure 3

In the header you will see that the name of the version of Vismec is shown and the name of the loaded Driver. At the bottom it shows you the connection status, i.e. in this case Disconnected.

Right. Click on "Configuration", you will see the Dialogue Box. Click On "Info" this gives you some technical specifications on the Driver settings and speeds and is not of any real interest to the End User, but can be useful to a Support Engineer, who may request this information.

Figure 4

Change Com Port

Click On "Change Comport", this will bring up the Dialogue Box shown in Figure 4. If you Click On the "Arrow" on the right of the box, you will see a list of Serial Ports that are fitted to your Computer. If you have fitted one of our recommenced Easysync USB to Serial converters, this will show up as a normal Coms Port in the list. If you are having problems connecting your U-MARQ Engraving Machine to your Computer, this Dialogue Box is your first port of call. You can test to see which of the Coms Ports are connected to your U-MARQ Engraving Machine, by selecting one and Clicking On "OK" then waiting a few second to see if the Disconnected changes to Connected, the Tray Icon should change to Connected and your U-MARQ Engraving Machine will go to its Home Position. If this does not work on your first selection, try then next Port and use the same procedure until you find the correct one.

Update Loader

The Update Loader is a function that should only be used upon instruction by Technical Support.

Update Firmware

From time to time we issue Firmware Updates, these are used to fix bugs and enhance functionality. By Clicking On "Update Firmware" you will be asthmatically be directed to the Folder that contains the latest Firmware. This function should only be used upon the instruction of Technical Support, or using written instructions sent to you by Technical Support. Any other use of this function may render your U-MARQ Engraving Machine unusable.

Help

Click On "Help" you will see two entries License, this should not be accessed unless ask for by Technical Support.

Click On "About" this will bring up the Dialogue Box, you may be asked when contacting Technical Support to access this to confirm your Machine Settings. This can be very useful in diagnosing problems and bringing them to a swift conclusion.

Note : If you accidentally shut Vismec down, the quickest way to re-start it is, from the U-MARQ Engraving Software, select Production from the Main Menu Bar, then Select Device and re-select the driver. Vismec should then re-launch and your U-MARQ Engraving Machine will Home, you can then use it as normal.

END

7 Trouble Shooting and Servicing

7.1 Aligning Cetring Vice

Aligning the Centre Vice

On the Universal-300 and GEM-CX4, you are able to move the Vice System backwards and forwards. If it is necessary to re-align the Vice back to its centre position, follow the steps below.

1 Remove the Flat Bed Table if fitted.
2 Set up a very simple job on your computer as normal, using the "Centre Vice Mode". Click On "Production" then "Configuration" finally "Machine Setup". Check that the "Setup" and "Finish" Points are set to Centre / Centre.
3 You will now have the job on the screen, located in the centre of the Machine Bed. Now we have to send the job to your Universal Engraving Machine. We will not be engraving the job just using it to centre the Vice System.
4 Select "Production" from the Main Menu Bar, then select "Engrave" choose the Process "Diamond Drag", Click On "OK". The job will now be sent to your Universal Engraving Machine.
5 Place the Standard Aluminium Jigs into the Vice, close the Vice Jaws so they are together. Then Press the "Start / Stop" Button on the Keypad, the Universal-300 will now move to its centre position.
6 Place the Light Touch cutter knob and a Diamond Cutter in to the Spindle. Lower the Cutter using the "Z Down Key" on the Keyboard, until it is about 10mm from the top of the Jigs.

7 Undo the vice securing Clamp Handle, so that the Vice Beam can move freely backwards and forwards.
8 Now move the Vice so that the centre point is directly below the tip cutter. This needs to be as done accurately as possible, any error will means that the Vice will not be centred correctly. Incorrect centring of the Vice will the affect the quality of your finished product.
9 Once you are happy that the Vice is central, re-tighten the Vice Clamping Handle and send the machine "Home" using the Keypad.

You can now continue using your Universal-300 Engraving Machine as normal.

Note : It is advisable to carry out this re-calibration occasionally, to check the accuracy of the centre position of the Vice.

7.2 Trouble Shooting Software

Frequently Asked Questions

How do I register extra software packages question?

To unlock the extra font pack or any other software upgrade. Launch the GEM Engraving Software, Click On “Help”, Click On “Register” and enter the code, its case sensitive, Click On “OK”, you should get a message “Code Accepted”. The new functions will not take affect until you close the program down and re-start.

How do I remove the cutter knob question?

Both the brass cutter knob and the light touch work on a reverse thread, to remove turn clockwise, to put on turn anti-clockwise.

What do I do if I want to practice the engraving on the item question?

Use engravers test tape with the diamond cutter and light touch. First put a three layers of tape over the item. Use the diamond cutter in the Light Touch, this will then marks the tape instead of your item.

What is the difference between the diamond cutter and the carbide cutters question?

The diamonds are used primarily to scratch the surface of the material. The carbide cutters deep engraves the job, removing material from the cut, necessary for paint infill.

When importing a bitmap there are parts I don’t want. How do I get rid of them question?

Left Click On the "Ignore Groups" Icon then select the parts you do not need. Now Press "Delete" on your keyboard

I cannot open a customers disc with their artwork on "Why"?

Ensure that the disc is PC compatible and not Apple Mac format, to be certain ask your customer.

I have opened the customers Adobe Illustrator file artwork, and the image is solid, and will not engrave "Why"?

Your customer has saved a bitmap as an adobe illustrator file, contact your customer and tell them you need the image as a vector image. Not a bitmap saved as an Adobe Illustrator image.

END

7.3 Trouble Shooting Hardware

Trouble Shooting

USB to Serial Connection not working properly.	If you having problems connecting a Notebook or other PC to your Universal Engraving Machine because it has no serial connection, you have to use a USB to Serial Converter. This device is plugged into a free USB Port and it creates a virtual serial port on your PC. For further information 12.
Sometimes my Universal Engraving Machine slows down or stops before finishing the job, especially on complicated jobs.	On your PC you should disable any screen savers and all power management. These can affect communications between your PC and your Universal Engraving Machine. If you are in doubt about how to do this, you should consult you PC Supplier.
Universal Engraving Machine runs erratically.	You need to check that you have selected the correct voltage setting for your Country, for more information 11.
The vice is not centred in the "X" axis.	Make sure you have loaded the correct driver for your machine, i.e. Universal-300. If you are in doubt you can check the model from the Serial No. Plate, located on the back of your machine.
The PC will not recognise the Security Device (Dongle).	Ensure that you have not plugged the Dongle into you PC, before you have installed the Standard Engraving Software. If you have you may be able to switch off your PC with the Dongle removed., then switch the PC back on again and replace the Dongle in the USB Port, Windows should then be able to find the correct driver.
The Dongle or Scanner or USB to Serial Port Converter will not work when all plugged in together	On some Computers although you may have 2 or more USB Ports, you may find that when you have some, or all of them populated certain devices plugged into them will not work. The reason for this is that although you may have a number of Ports, they may all share the same internal power source, this will have a current limit. Modern Scanners, USB to Serial Converters, Printers and Dongle take their power from the USB Port, once the current limit is exceeded, they will cease to work correctly. The only solution if this occurs is to obtain a Powered Hub, these plug into the main to give extra current and are available from most Computer Stores.
If Vismec is shut down and needs re-starting and the Universal Engraving Software is still open	If you accidentally shut Vismec down, the quickest way to re-start it is, from the Standard Engraving Software, select Production from the Main Menu Bar, then Select Device and re-select the driver. Vismec should then re-launch and your Universal Engraving Machine will Home, you can then use it as normal.

END

7.4 Live Support

Live Support using the Internet

U-MARQ is always looking to improve its technical support and general customer service. To this end we have developed a Live Support network, using the most up to date software and internet server technologies. If the computer that drives your U-MARQ Engraving Machine is connected to the internet our technical support can take over full control of your PC to diagnose software and hardware problems in a few minutes. This service is free to all REGISTERED USERS of U-MARQ Engraving Software version 8 and above, no mater what age your U-MARQ Engraving Machine is.

For your complete confidence U-MARQ is using ISL this is the most secure remote access product available. It uses industry-standard security technologies to protect data transfer. All data connections are encrypted with SSL of 256-bit end-to-end AES encryption, and above all, end-user applications are digitally signed by means of a VeriSign Certificate, which verifies the connection's integrity. In addition to the communication level, ISL has 3-level encryption and maximum security. Permission is always required from the users computer before any session can start, giving you complete confidence in this innovative service.

To start using Live Support Tel: +44 (0)1908 623522

END

8 Useful Accessories

8.1 Useful Accessories for Your Universal-300

Universal-300 Accessories

Listed below are some useful accessories you can add to your Universal-300 to increase its capacity and versatility.

Jigs

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