



## User Manual

### **M10** *Jewel* Machine

Electronic Engraving Machine

First Contact



Before installing and using this machine, you must read this user guide carefully.  
Keep it in a safe place, in case you need to refer to it later.

GravoTechMarking SAS reserves the right to modify the information contained in this document without notice.

TYPE OF MACHINE	:	<b>M10 JEWEL Electronic Engraving Machine</b>
MANUFACTURER	:	<b>GRAVOTECH MARKING SAS</b> <b>BP 15 - Z.I. - 10600 LA CHAPELLE SAINT LUC - FRANCE</b>

Importer's address

This publication and its contents are proprietary to GravoTech Marking SAS (trademark Gravograph), and are intended solely for the contractual use of GravoTech Marking SAS customers.

While reasonable efforts have been made to assure the accuracy of this manual, GravoTech Marking SAS shall not be liable for errors contained herein or for incidental or consequential damage in connection with the furnishing, performance, or use of this material.

GravoTech Marking SAS reserves the right to revise this manual and make changes from time to time without any obligation by GravoTech Marking SAS to notify anybody of such revision or changes.

GravoTech Marking SAS can not be held liable for any problems arising out of the application or use of any products, circuits, or software described herein. Neither does it convey a license under its patent rights nor the patent rights of third parties.

GravoTech Marking SAS provides no warranties whatsoever on any software used in connection with a Gravograph Laser Engraving System, express or implied. Neither does it guarantee software compatibility with any off-the-shelf software package or any software program that has not been written by GravoTech Marking SAS.

Intended use of this system must be followed within the guidelines of this manual. In no event will GravoTech Marking SAS be liable for any damages caused, in whole or in part, by customer, or for any economic loss, physical injury, lost revenue, lost profits, lost savings or other indirect, incidental, special or consequential damages incurred by any person, even if GravoTech Marking SAS has been advised of the possibility of such damages or claims.

Gravograph is a registered trademark of GravoTech Marking SAS.

Windows is a registered trademark of Microsoft Corporation.

(c) GravoTech Marking SAS, 2012  
All Rights Reserved.



**GRAVOGRAPH**

# Summary

<b>Information about regulations .....</b>	<b>5</b>
Conformity Standards.....	5
Electrical security.....	5
<b>Presentation.....</b>	<b>6</b>
Introduction .....	6
Contra-indications .....	6
Stages of unpacking.....	7
Unpacking - Contents of package.....	8
<b>Description.....</b>	<b>10</b>
Front view of the machine.....	10
Engraving table.....	10
Chuck.....	10
Rear view of the machine.....	11
Engraving machine connections.....	11
Control panel of the machine.....	12
<b>Installation .....</b>	<b>13</b>
Physical installation advice .....	13
Electric installation advice .....	13
Electrical connections of the machine .....	14
Connecting the <b>M10 JEWEL</b> machine to a PC.....	15
Switching the machine on .....	17
Problems .....	17
Switching the machine off .....	17
Switching on again.....	17
Make the <b>M10 JEWEL</b> machine ready to engrave with GravoStyle.....	18
<b>Engraving.....</b>	<b>19</b>
Inside engraving.....	20
Positioning a <b>thin ring</b> onto the jaws and <b>Inside Engraving</b> .....	21
Positioning a <b>wide ring</b> onto the jaws and <b>Inside Engraving</b> .....	23
Positioning a <b>thin bracelet</b> onto the jaws and <b>Inside Engraving</b> .....	25
Positioning a <b>wide bracelet</b> onto the jaws and <b>Inside Engraving</b> .....	28
Outside engraving.....	31
Positioning a <b>ring</b> onto the jaws and <b>Outside Engraving</b> .....	32
Positioning a <b>thin bracelet</b> onto the jaws and <b>Outside Engraving</b> .....	35
Positioning a <b>wide bracelet</b> onto the jaws and <b>Outside Engraving</b> .....	38
<b>General maintenance .....</b>	<b>41</b>
Adjusting the machine (reference points) .....	41
To adjust the M10 JEWEL machine on the X,Y axis for an inside engraving of a ring .....	42
To adjust the M10 JEWEL machine on the X,Y axis for an inside engraving of a bracelet .....	43
To adjust the M10 JEWEL machine on the X,Y axis for an outside engraving of a ring .....	44
To adjust the M10 JEWEL machine on the X,Y axis for an outside engraving of a bracelet.....	45
To adjust the M10 JEWEL on the Z axis.....	46

<b>Technical characteristics .....</b>	<b>47</b>
Physical characteristics .....	47
Electrical characteristics.....	48
Engraving softwares characteristics .....	48
Optional accessories.....	48
 <b>Appendices.....</b>	 <b>49</b>
Gravograph Machines - Soft setup.....	49

---

## Information about regulations

---

### Conformity standards

This hardware was designed and build in conformity with the relevant EC marking and EEC directives :

- "Machine Security" Directive 2006/42/EE
- "Electromagnetic compatibility" Directive 2004/108/EC
- "Low Voltage" Directive 2006/95/EC



**The modification or transformation of this equipment, the adaptation and installation of accessories not recommended by GRAVOTECH MARKING SAS, the installation of this equipment in a manufacturing process, the piloting by a robot, the connection to an external automaton, modify the characteristics of this material and can make it not compliant with the European Directives it is subjected. These modifications voids the responsibility of the manufacturer.  
In this case, the person who fits the machine and the equipment is responsible for the EC compliance of the final work station.**

### Electrical security

This hardware complies with standards EN 60204-1 and EN 60950-1.

The different fuses of the machine comply with the IEC 127-2 norm (International Electric Committee).

The different security levels the input/output answer are indicated for each connector in the chapter «Rear view of the machine». Two security levels are possible :

- Dangerous voltage (power supply, accessories, plugs ...).
- Very low security voltage.

### Machine security

This hardware is in conformity with the norm EN ISO12100-1 and EN ISO12100-2.

### Electromagnetic compatibility

This hardware is in conformity with electromagnetic compatibility norms:

- EN 55022 - classe B ; EN 61000-3-2 ; EN 61000-3-3 (emission in residential, commercial, and light industrial environment)
- EN 61000-6-2 (immunity in industrial environment)

All the cables used with this hardware must be in conformity with the electronic compatibility standards, norm EN 55022 - class B.

---

### Electrical security

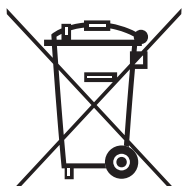


**This material is «class 1». The mains plug MUST always be connected to a neutral socket and comply with the regulations in force in the country of installation. If you do not have a plug of this type, have one installed by an approved electrician. Under no circumstances should you depart from this instruction.**

The manufacturer bears no responsibility towards any user where alterations have been carried out contrary to the manufacturer's specifications, notably with respect to electrical/electronic elements.



**Any operation, other than those mentioned here, must only be carried out by an approved Gravograph technician.  
Do not take the machine apart to repair or clean it : this will void your guarantee.**



**This symbol indicates that once this equipment has reached the end of its useful life, it must not be disposed of with non-sorted municipal waste, in accordance with the European Directive 2002/96/EC.**

**The equipment must be disposed of at an appropriate collection point for processing, sorting, and recycling of Waste Electrical and Electronic Equipment (DEEE).**

**The elements which compose Electrical and Electronic Equipment may contain substances which have harmful effects on the environment or on human health.**

**By following these instructions, you are helping the environment, contributing to the preservation of our natural resources, and protecting human health.**

---

## Presentation

---

### Introduction

Thank you for purchasing the **M10 JEWEL** machine and for your confidence in our knowledge in the field of the engraving. Thanks to its innovative design and with its performance results, the **M10 JEWEL** machine combines flexibility and full featured performance without sacrificing simplicity, ease of use, or ease of maintenance.



**To begin with, we highly recommend that this entire manual be read before attempting to use the M10 JEWEL machine. The manual includes important information about safety, assembly, use, and maintenance of the M10 JEWEL machine.**



**The machine must never be handled without an adult present. Keep the machine, wires and cables out of children's reach.**

**The M10 JEWEL engraving machine is a high performance machine :  
All dispositions contributing to the safety of use must imperatively be respected.**

---

### Contra-indications



**This machine is only designed for inside and outside engraving bracelets or rings and must never be used for other applications.**

**Do not use this machine in explosive environment.**



**This machine is only designed for one user. Do not let several people use the machine simultaneously.**

- If the machine is not to be used for a long period, unplug the electricity supply and cover the machine (packaging, cover, lid...)
- Do not move the engraving head by hand unless mechanical block of the machine as described in the paragraph "Mechanical block" of this manual's "Installing" chapter.
- Do not spill any liquids onto the machine (drinks, cleaning fluids...) unless when recommended by GRAVOTECH MARKING SAS (example : lubrication).
- The machine should never be used with anything other than Gravograph accessories and tools.
- Never hold the material to be engraved in your hands. Only use the Gravograph clamping systems designed for your machine.
- Make sure that the material is well clamped before starting to engrave.
- Do not take the engraving material out of the machine during engraving.
- If the engraving must be stopped, use the function key provided for this purpose on the keyboard of the machine.



**To avoid any risks of being crushed by the machine during engraving, stay clear of the chuck and the diamond tip.**

## Stages of unpacking



Before opening the cardboard box, check that it is the right way up.

1. Open the box.
2. Take out the machine with the inside box using the two handles.



3. Take out the accessories:



Make sure that no components are missing from the packaging. If any part has been forgotten please get in touch with your GRAVOGRAPH dealer.



Keep all the packaging materials so that you can move your machine in total safety. This packing was conceived to guarantee the protection of the machine during its transport (for a return in repair for example). This packaging is in conformity with European recycling standards.

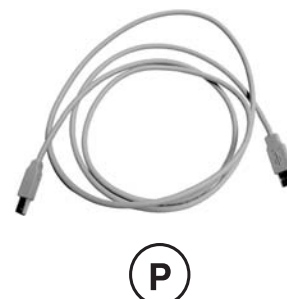
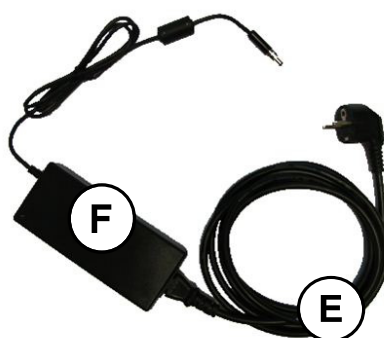
## Unpacking - Contents of package



**Check the condition of the packaging when you receive it. If there are any signs of damage, inform the carrier and your GRAVOGRAPH dealer immediately by recorded delivery, specifying the exact nature of the problem.**

### Content of package

- A. A M10 JEWEL engraving machine
- C. User instructions (on CD)
- D. An accessories drawer
- E. One mains cable for the external power supply (F)
- F. One external power supply
- G. One USB cable



### Content of the accessories drawer

#### - Inside Engraving:

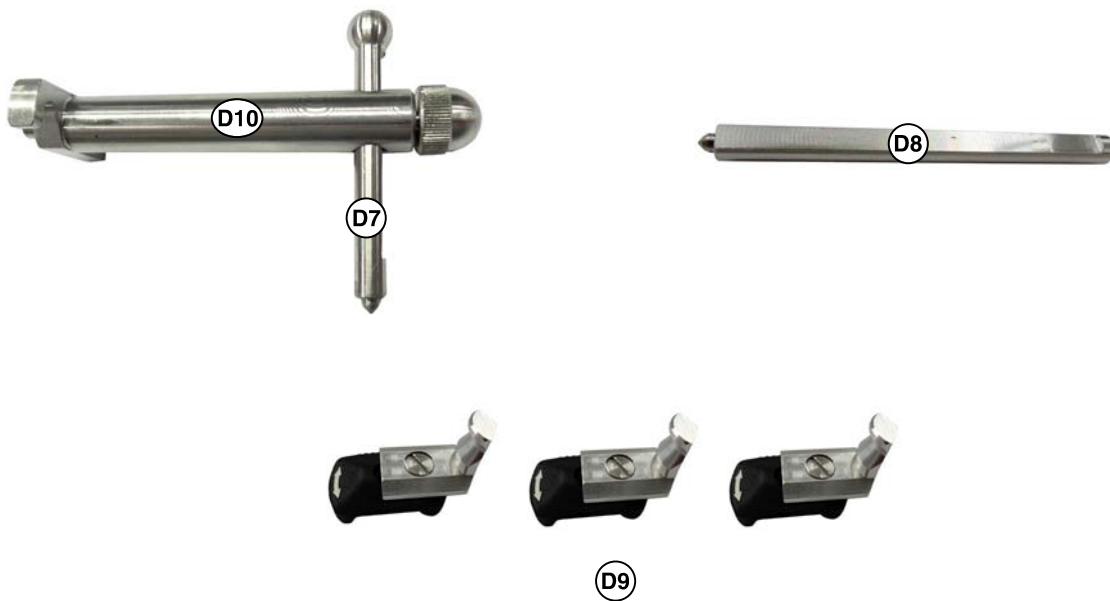
- D1. A diamond tip for rings
- D2. An adjustable diamond tip for bracelets
- D3. 3 rings/bracelets jaws
- D5. One short allen key
- D6. Two reference rings :
  - Interior diameter of 21 mm
  - Width of 3 mm
- D11. A reference bracelet:
  - Interior diameter of 70 mm
  - Width of 10 mm





**- Outside Engraving :**

- D7. A diamond tip for bracelets
- D8. A diamond tip for rings (longer)
- D9. 3 rings/outside engraving jaws
- D10. An adjustable diamond tip holder for outside engraving (for D7 and D8)



---

## Description

The **M10 JEWEL** machine is a machine for engraving bracelets, wedding rings and rings.

It has a keyboard for controlling the machine.

Files to be engraved are transferred from the computer to the machine by the intermediary of a cable which is plugged into the USB port on the **M10 JEWEL** machine.

The actual engraving process is controlled by a diamond tip.

The object to be engraved is held in place by 3 jaws (J1) fitted onto the chuck (J) with concentric fastening (consult your GRAVOGRAPH dealer to find out about the various types of jaws available).



The M10 JEWEL machine cover a maximum engraving surface area of 9.8"x 0.6" (250 x 15 mm).

---

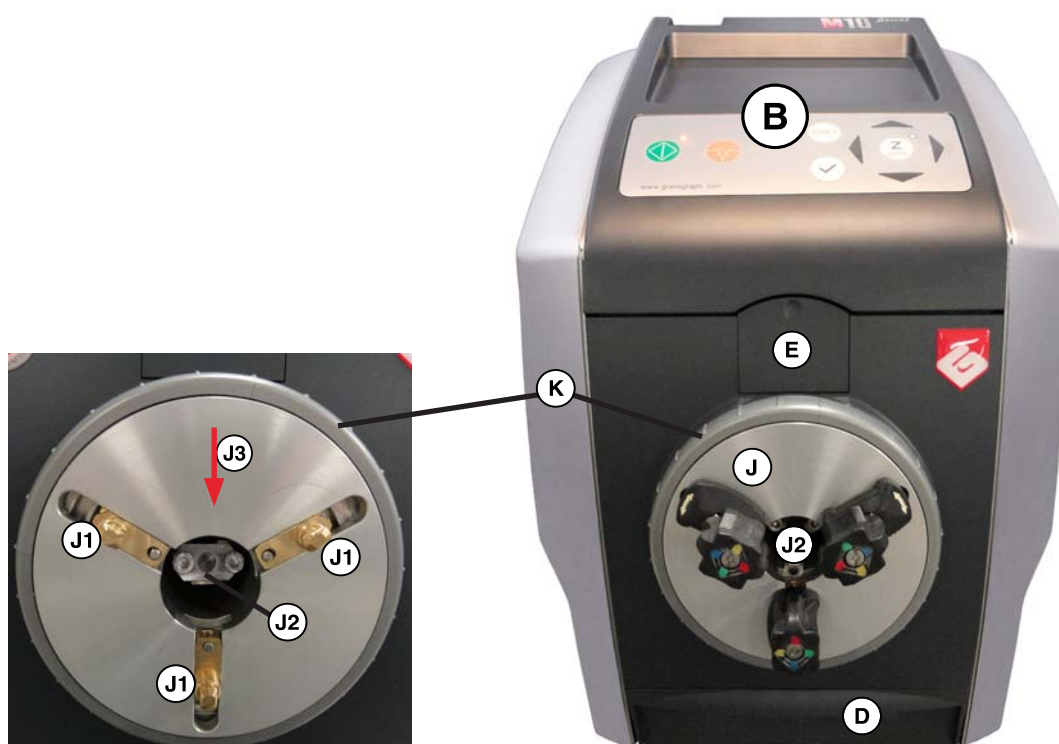
## Front view of the machine

### Engraving table

- A. Base
- B. Control panel (flexible 9-key control keyboard)
- D. Accessories drawer
- E. Location for the **outside engraving diamond tips**
- J. Chuck (concentric fastening)
- K. Tightening ring

### Chuck

- J1. Location for 3 jaws
- J2. Location for the **inside engraving diamond tips**
- J3. Directional arrow



## Rear view of the machine

- L. Main stop button (On/Off)

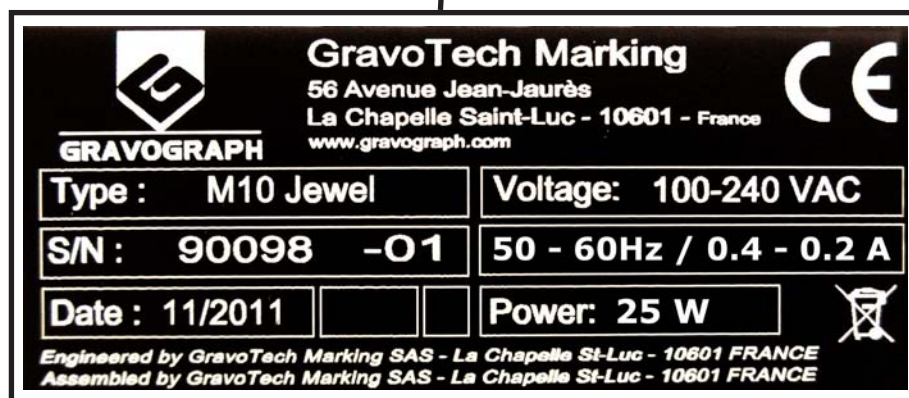
## Engraving machine connections:



Each connection responds to one of the following security levels :




- Dangerous voltage.
- Very low security level.

- N1 - External power supply 24V - 30W - Very low security level  
G - USB slot - Very low security level



Control panel of the machine



-  L1 If the LED is lit, the  key is activated
-  L2 If the LED is lit, the machine is switched on



---

## Installing



Before carrying out the following operations, make sure the machine is switched off and unplugged, switch (L) to position 0.

---

### Physical installation advice

- Put the Gravograph machine onto a stable flat, clean surface **with mini. sizes of 270 x 225mm**.  
Make sure the machine is well-ventilated.
- Normal lighting is sufficient to use the machine.
- Clear the work surface so that you can
  - easily and quickly access all external parts of the machine,
  - quickly gain access, in case of necessity, the general shutdown button (L) of the machine,
  - make sure that all moving parts of the machine have enough room to move freely,
  - avoid any accidental unplugging of the cables.



The machine's power supply cable being used as a sectioning device, it must be easily accessible and the wall plug must be installed near the machine and must also be easily accessible.

- Protect Gravograph equipment against :
  - Moisture (rain, snow, condensation...),
  - Heat (direct sunlight, heating...),
  - Brusque temperature changes,
  - Dust (exhaust pipe),
  - Liquid splashes, spillages on the electronic rack, cables and connections, and any other part of the machine; unless recommended by GRAVOTECH MARKING SAS (ex. : lubrication),
  - Vibrations,
  - Electric or electronic radiation.

---

### Electric installation advice



This material is «class 1». The mains plug **MUST** always be connected to a neutral socket and comply with the regulations in force in the country of installation. If you do not have a plug of this type, have one installed by an approved electrician. Under no circumstances should you depart from this instruction.

In order to avoid outside interference, the user is advised to carry out the following points.

- Plug the Gravograph machine into a mains line, avoiding having several machines on the same line (several plugs on the same line or using a multi-plug).

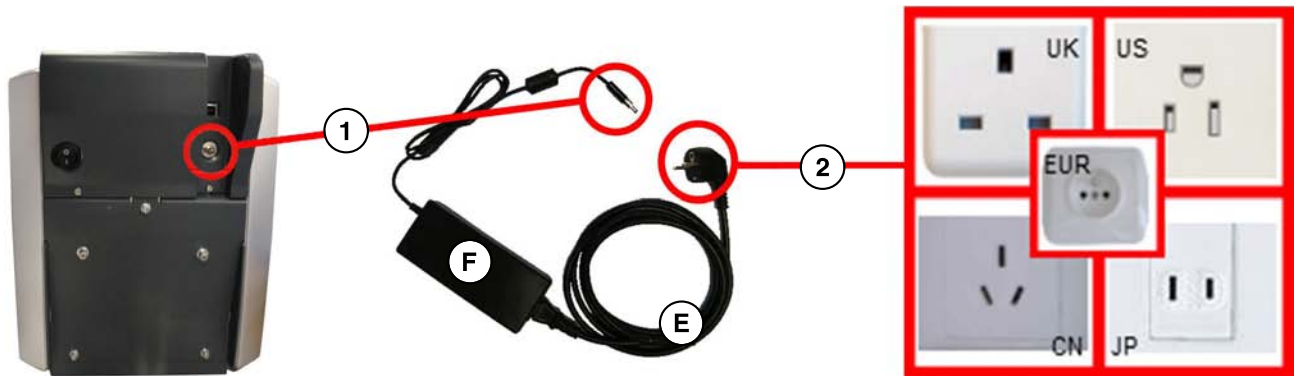
**Exception :**      **If other things are connected to the machine (such as a machine and the computer which pilots it), the machines should be connected to the same mains line.**

- Avoid using the same line to supply inductive or capacitive machines as well as the Gravograph machine (motors, electrosuices, chargers...)
- Avoid using a manual or automatic commutator on the same mains line as the Gravograph machine (relay, temporiser, programmer, automatic circuit interrupter, automatic interrupter...).
- Check that machines surrounding your Gravograph machine are in conformity to the norms of radioelectric perturbation emissions (consult the technical leaflet of each machine). If they are not in conformity, place them as far away as possible from the Gravograph machine.
- Only use Gravograph accessories.

## Electrical connections of the machine

Position yourself behind the machine.

1. Plug power supply cord of the external power supply (F) of the machine into the External power supply connection of the M10 JEWEL machine.



2. Plug power supply cord (E) into the external power supply (F) of the machine and then into the mains socket.



To cut off the mains supply to your machine in the case of severe problems, unplug the mains cable (E) or switch off the machine with the main stop button (L) at the side of the machine. Make sure that you can reach them easily.



## Connecting the M10 JEWEL machine to a PC



The computer and the M10 JEWEL Machine must both be switched off.



As PCs and the Windows® graphical environment are in widespread use in the IT sector, we have used these products as the basis for defining the installation and operating procedure for the M10 JEWEL machine.

If you don't have equipment which is compatible and you encounter some problems of installation or use, contact your Gravograph agent.

### Connection cables

- Use Gravograph connection cables (consult your Gravograph distributor for the products available).

These cables are adapted for the machines to which they will be connected.

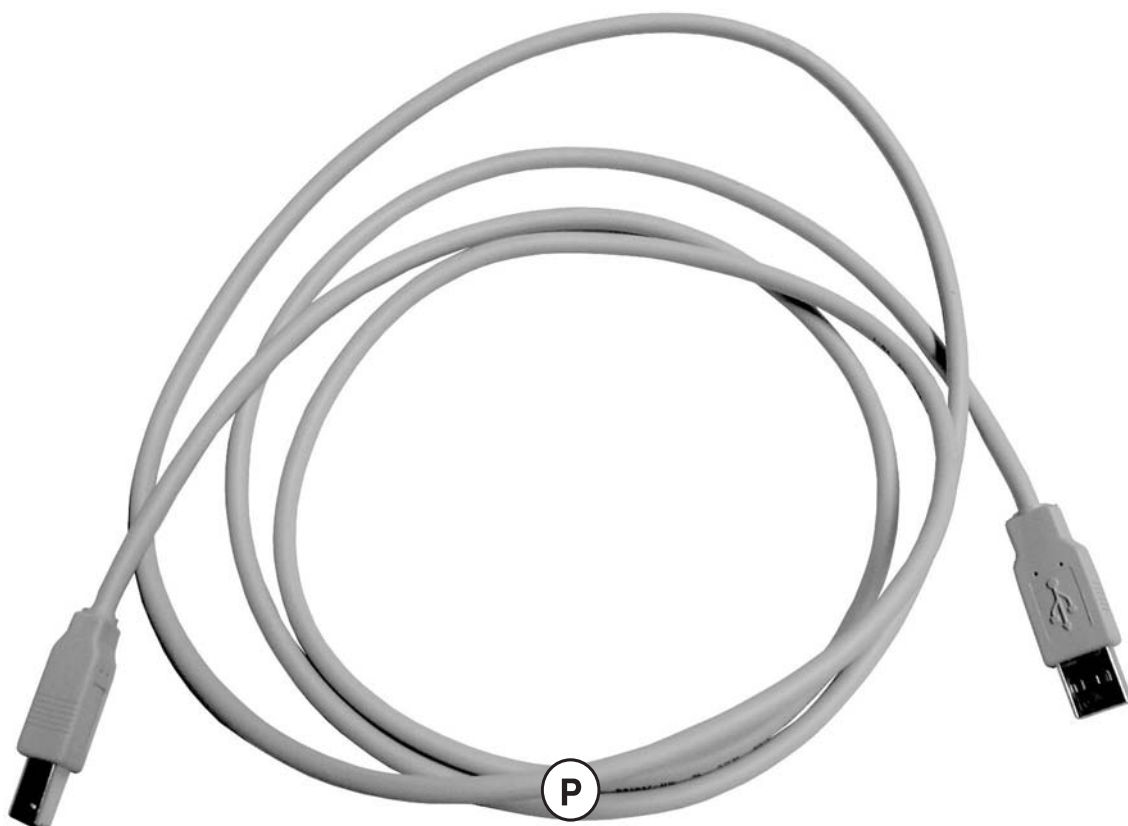
They must be in conformity with the electromagnetic compatibility standards, norm EN 55022 - class B and protect from external electric «attacks» (conform to the norms of immunity and CEM susceptibility).

- Do not use cables which are too long. Keep the machines as close as possible and use a short a cable as possible.
- Separate the mains cable and the transmission cable (avoid connecting the transmission and mains cables to the same socket, etc ...).

**Follow the connection procedure depending on the connection cable supplied with the M10 JEWEL machine.**

The machine is delivered with the following cables :

- USB cable (P)



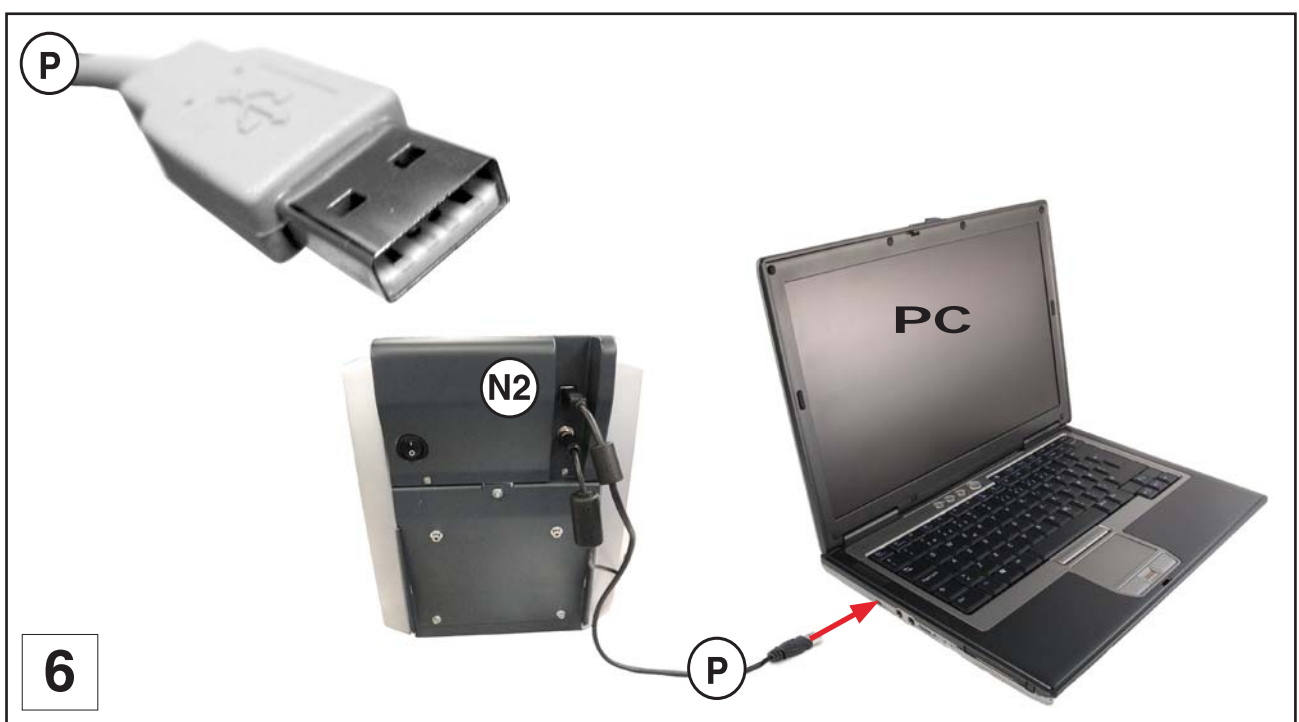


## Connecting the M10 JEWEL machine/PC via an USB link

1. Plug the USB cable (P) into the USB port (N2) of the machine (pict. 1).



2. Plug the USB cable (P) into the USB port of the PC.  
Refer to the installation manual of the computer for the USB port (1.1).



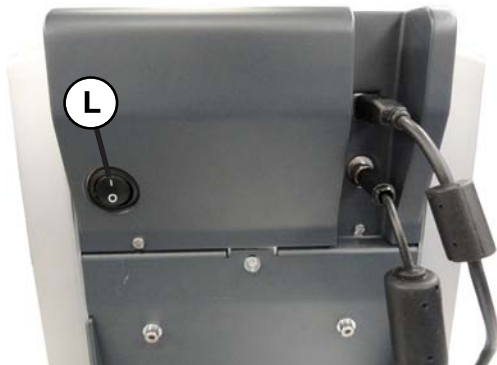


---

## Switching the machine on

Switch on the machine main stop button (L) to position I.

After few seconds, the machine will emit a short "beep". The LED (L2) is lit.



Leave the machine plugged in even if it is not in constant use.

---

## Problems

If one of the operational signs is absent (for example : the LED (L2) is not lit), check the following points :

- Are the two ends of the mains cable correctly connected ?
- Is the mains plug connected ? Is it live ?



If the machine does not come on, before calling a technician, please check power connections to the mains socket.

---

## Switching the machine off

Switch the main stop button (L) to position O.

Switch off the machine for the following reasons :

- if you are leaving the workstation (end of the day, for example),
- physical damage (fall, fire, liquids coming into machine...),
- mechanical/electrical/electronic faults, leading to a possible breakdown,
- in case of major problem or mechanical block of the machine,
- to reboot,
- for external cleaning.

---

## Switching on again

If the machine or the programme which runs it crashes you may have to reboot the machine.

If this happens, switch the machine off. Wait 30 seconds and switch it on again.



Respect this rule. This time allows any electric shock to the machine, possibly damaging the power supply, to be avoided.

---

**Make the M10 JEWEL machine ready to engrave with GravoStyle (Version 7 mini.)**

**1. Check that your computer has the minimum required configuration :**

Computer	Minimum configuration	Recommended configuration
<b>Microprocessor</b>	Dual Core	Quad Core
<b>Frequency</b>	2.7 GHz	2.4 GHz
<b>Memory</b>	2 GB	4 GB
<b>Internal hard-drive</b>	3 GB available	6 GB available
<b>Internal DVD reader</b>	16X DVD-ROM	16X DVD-ROM
<b>Mouse</b>	2 buttons Windows compatible	2 buttons + scroll wheel Windows compatible
<b>Keyboard</b>	Windows compatible	Windows compatible
<b>Ports</b>	2 USB ports available: <ul style="list-style-type: none"> <li>• Dongle</li> <li>• Machine</li> </ul>	4 USB ports available: <ul style="list-style-type: none"> <li>• Dongle</li> <li>• Machine 1</li> <li>• Machine 2</li> <li>• Machine 3</li> </ul>
<b>Graphic card</b>	NVIDIA or ATI <u>Radeon</u> 512 MB	NVIDIA or ATI <u>Radeon</u> DX10 compatible 1 GB
<b>Monitor</b>	17" - 1024 * 768 pixels	22" - 1280 * 1024 pixels
<b>Peripherals</b>		Printer Twain scanner

Operating Systems	32 bits version	64 bits version
Windows 7 SP1 	COMPATIBLE	COMPATIBLE
Windows Vista SP2 	COMPATIBLE	COMPATIBLE
Windows XP SP3 	COMPATIBLE	COMPATIBLE
Windows 2000 	<b>NOT COMPATIBLE</b>	Does not exist
Windows 98 	<b>NOT COMPATIBLE</b>	Does not exist

**2. See the chapter "Make a Gravograph rotary machine ready to engrave" in the appendix "Gravograph Machines Soft setup" in order to install the GT Smartstream 3.xx driver and the Gravostyle 7 engraving software on your PC.**

Then add the M10 JEWEL machine in the "Installed printer list" of the GravoStyle 7 engraving software.

## Engraving

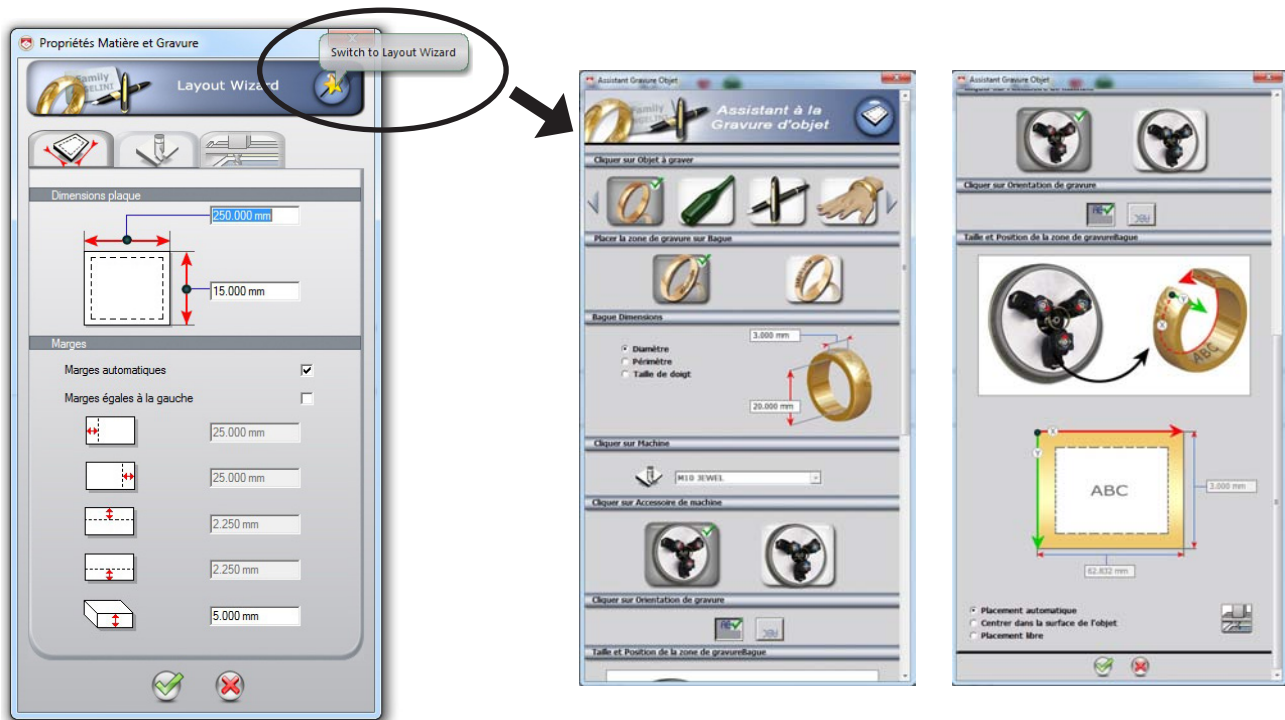
You have just created a composition with your engraving software.

### 1. Switch on the machine and wait a few seconds.

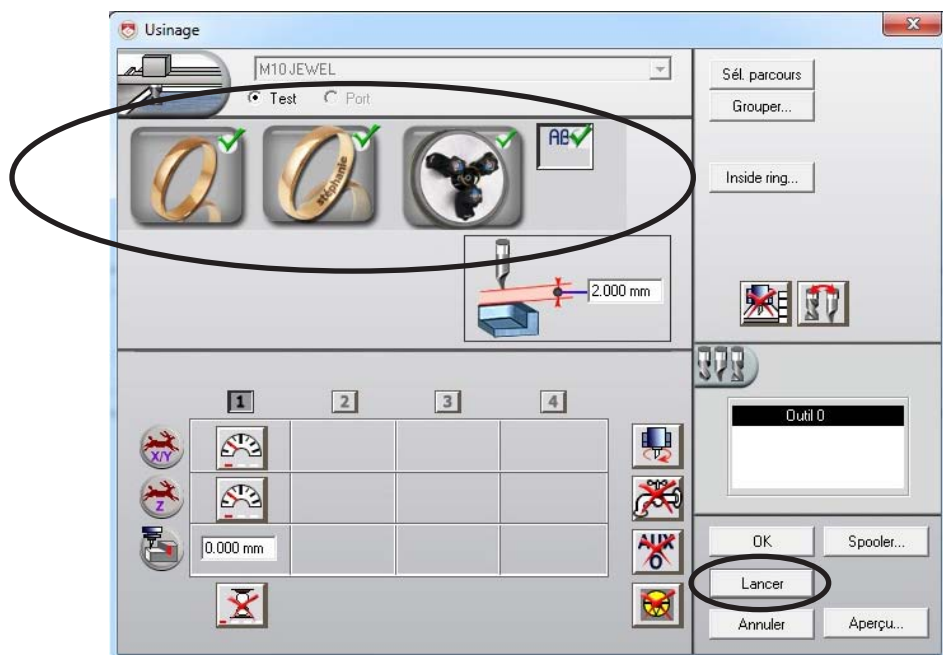
The machine is ready to receive a file as indicated by the computer :



You can choose between inside engraving and outside engraving and between bracelet and ring (1) . Use "Layout Wizard", the engraving assistant of GravoStyle 7 :



### 2. In the engraving programme, make sure that you have indicated the good engraving parameters, the good machine parameters, the Z speed and the engraving orientation :



### 3. transfer the composition to the M10 JEWEL machine using the key (Launch).

## Inside Engraving

For the Inside Engraving, 4 engraving montages are possible according to the sizes of the object to be engraved :

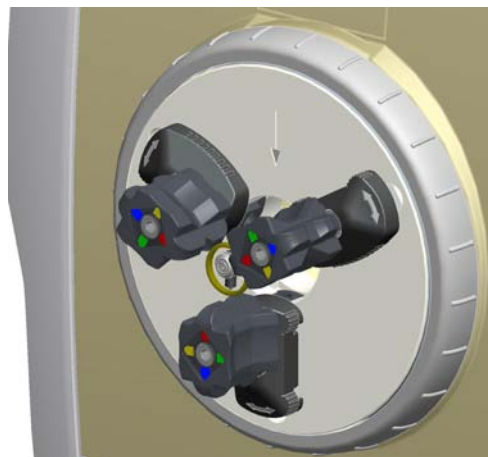
### Thin ring - Inside Engraving

(width : 1.5 to 4 mm)  
(engraving diameter : 12 to 25 mm)

Diamond tip (D1) for rings mounted in the center of the chuck.

The 3 rings/bracelets jaws (D3) mounted on Red position.

Fine ring montage procedure - Inside Engraving described pages 21-22.



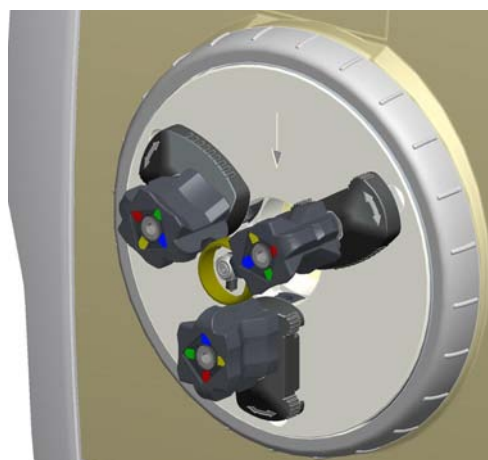
### Wide ring - Inside Engraving

(width : 4 to 8 mm)  
(engraving diameter : 12,5 to 25 mm)

Diamond tip (D1) for rings mounted in the center of the chuck.

The 3 rings/bracelets jaws (D3) mounted on Blue position.

Wide ring montage procedure - Inside Engraving described pages 23-24.



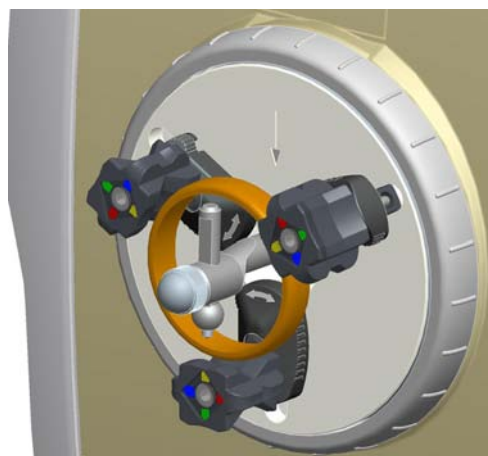
### Thin bracelet - Inside Engraving

(width : 3 to 12 mm)  
(engraving diameter : 45 to 74 mm)

Diamond tip (D2) (adjustable) for bracelets mounted in the center of the chuck.

The 3 rings/bracelets jaws (D3) mounted on Yellow position.

Fine Bracelet montage procedure - Inside Engraving described pages 25-27.



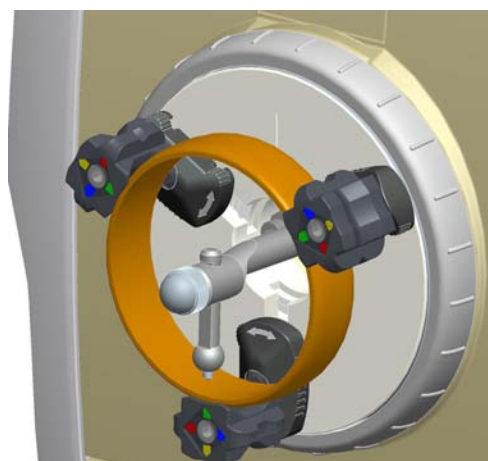
### Wide bracelet - Inside Engraving

(width : 11 to 20 mm)  
(engraving diameter : 45 to 74 mm)

Diamond tip (D2) (adjustable) for bracelets mounted in the center of the chuck.

The 3 rings/bracelets jaws (D3) mounted on Green position.

Wide Bracelet montage procedure - Inside Engraving described pages 28-30.

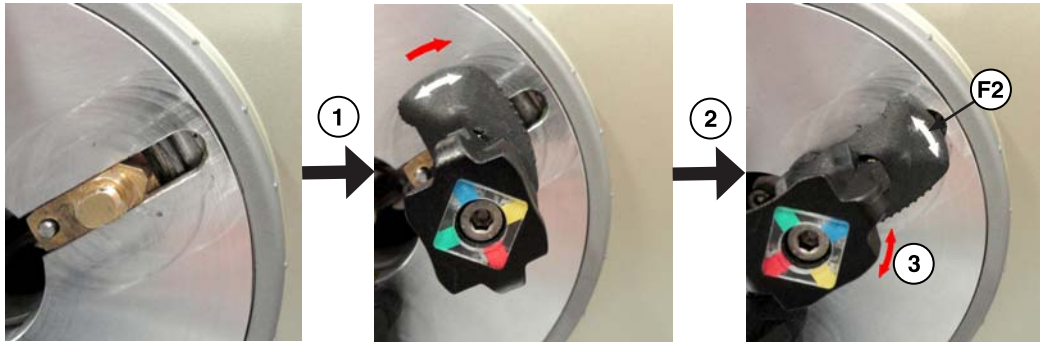




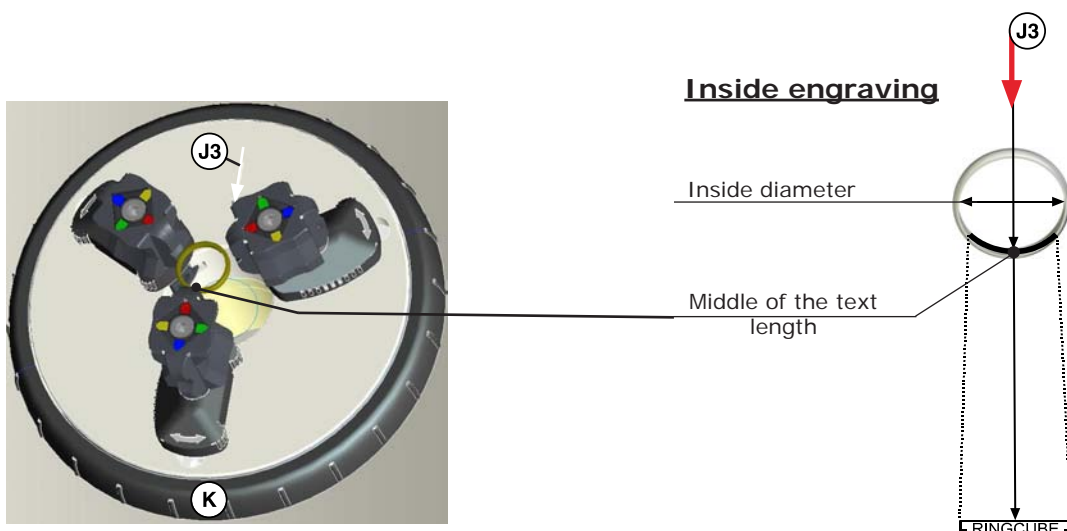
## Positioning a thin ring onto the jaws and Inside Engraving



1. Place the 3 ring/bracelet jaws (D3) in position (the white arrows (F2) must be apart from the zone of tightening) onto the chuck, (1) and (2), and then position the red marks to the chuck center (3).



2. Mark the middle of the text length to be engraved on the Inside of the ring :



3. Place the ring so that the mark is at the bottom and is aligned with the directional arrow (J3)
4. Using the tightening ring (K) of the chuck, fasten the ring firmly in place so it will remain immobile during engraving

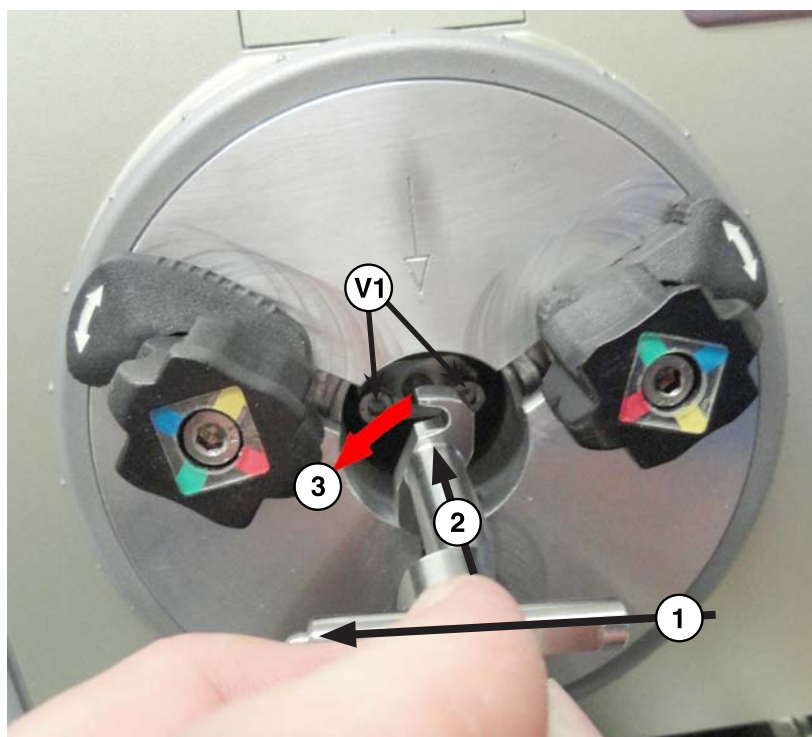
Proper fastening contributes towards reducing machine noise and vibrations during engraving.



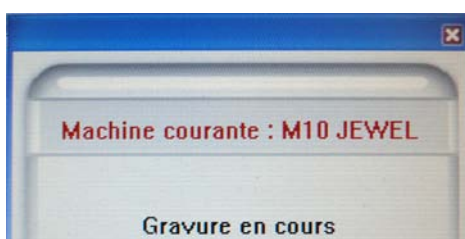
Check that the object is properly fastened so it does not pop out during engraving and that no object poses an obstacle to the movable parts' movements.



5. Loosen the 2 screws (V1) (in the center of the chuck) slightly



6. Turn the diamond tip (D1) (for rings) at 90° (the tip on the left) (1). Insert it (2) and turn it at 90° (3) in the anti-clockwise direction (the tip is directed downwards) . Tighten the 2 screws (V1) to immobilize it.
7. Touch (START) on the control panel of the machine, to start the engraving.



For your own personal safety and to avoid any risks of being crushed by the machine during engraving, do not stand near the tools.

In the event of a problem, touch (PAUSE) to stop the engraving process

The machine will momentarily pause.

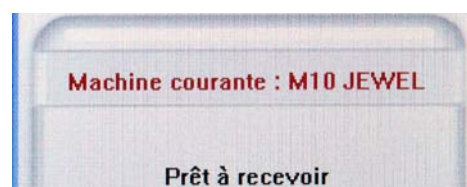


To continue with the rest of the engraving, touch (START)

To stop engraving completely, touch one of the arrows of the joystick.

**Engraving is finished, when the machine is ready to receive a new file :**

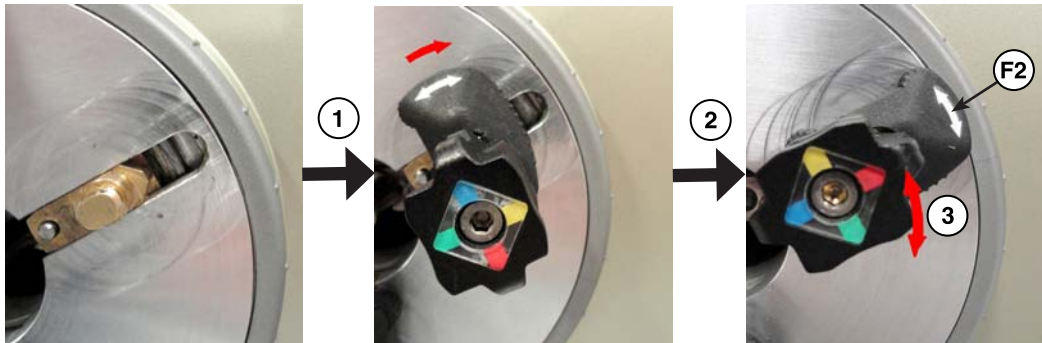
You can remove the ring, or launch again the engraving process for a better result.



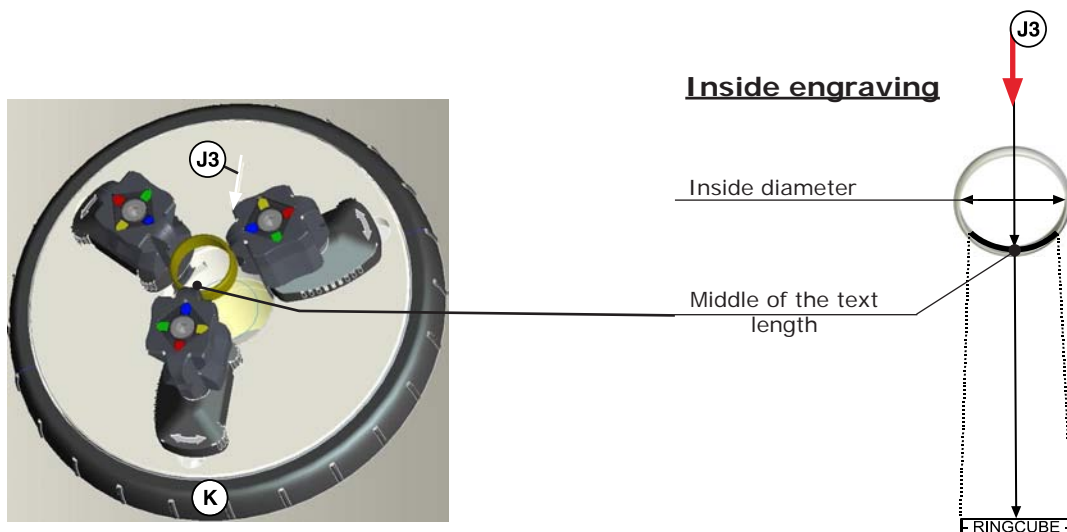
## Positioning a wide ring onto the jaws and Inside Engraving



1. Place the 3 ring/bracelet jaws (D3) in position (the white arrows (F2) must be apart from the zone of tightening) onto the chuck, (1) and (2), and then position the blue marks to the chuck center (3).



2. Mark the middle of the text length to be engraved on the Inside of the ring :



3. Place the ring so that the mark is at the bottom and is aligned with the directional arrow (J3)
4. Using the tightening ring (K) of the chuck, fasten the ring firmly in place so it will remain immobile during engraving

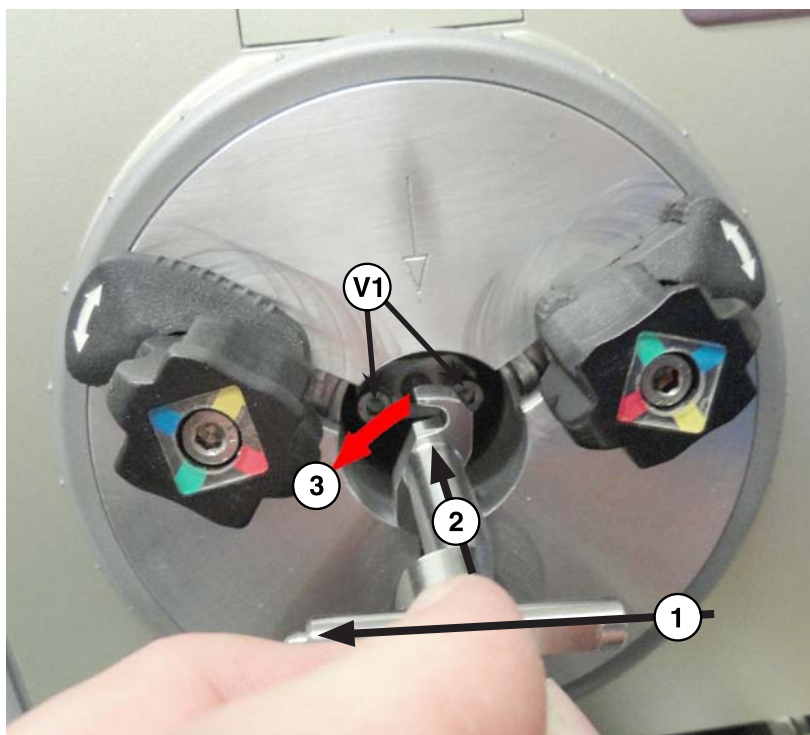
Proper fastening contributes towards reducing machine noise and vibrations during engraving.



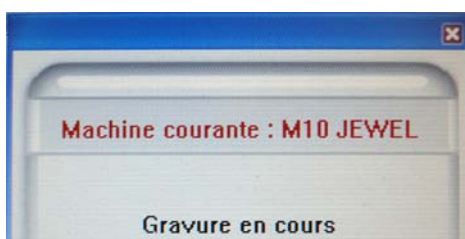
Check that the object is properly fastened so it does not pop out during engraving and that no object poses an obstacle to the movable parts' movements.



5. Loosen the 2 screws (V1) (in the center of the chuck) slightly



6. Turn the diamond tip (D1) (for rings) at 90° (the tip on the left) (1). Insert it (2) and turn it at 90° (3) in the anti-clockwise direction (the tip is directed downwards) . Tighten the 2 screws (V1) to immobilize it.
7. Touch (START) on the control panel of the machine, to start the engraving.



For your own personal safety and to avoid any risks of being crushed by the machine during engraving, do not stand near the tools.

In the event of a problem, touch (PAUSE) to stop the engraving process

The machine will momentarily pause.

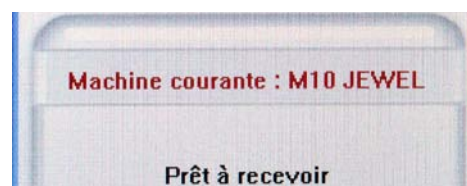


To continue with the rest of the engraving, touch (START)

To stop engraving completely, touch one of the arrows of the joystick.

**Engraving is finished, when the machine is ready to receive a new file:**

You can remove the ring, or launch again the engraving process for a better result.

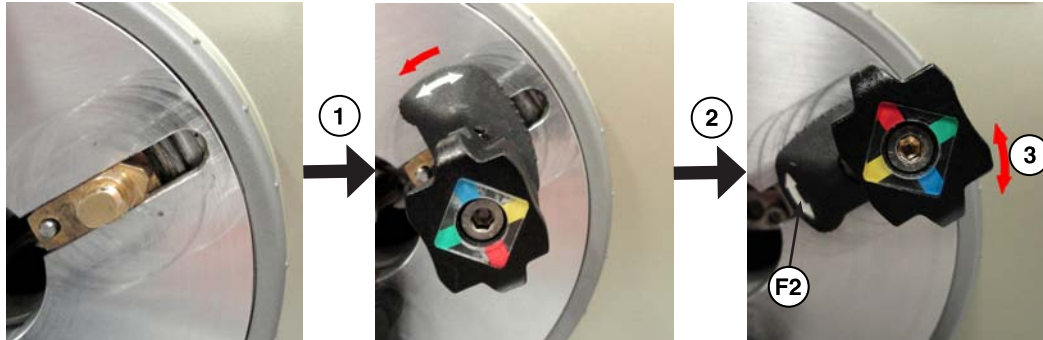




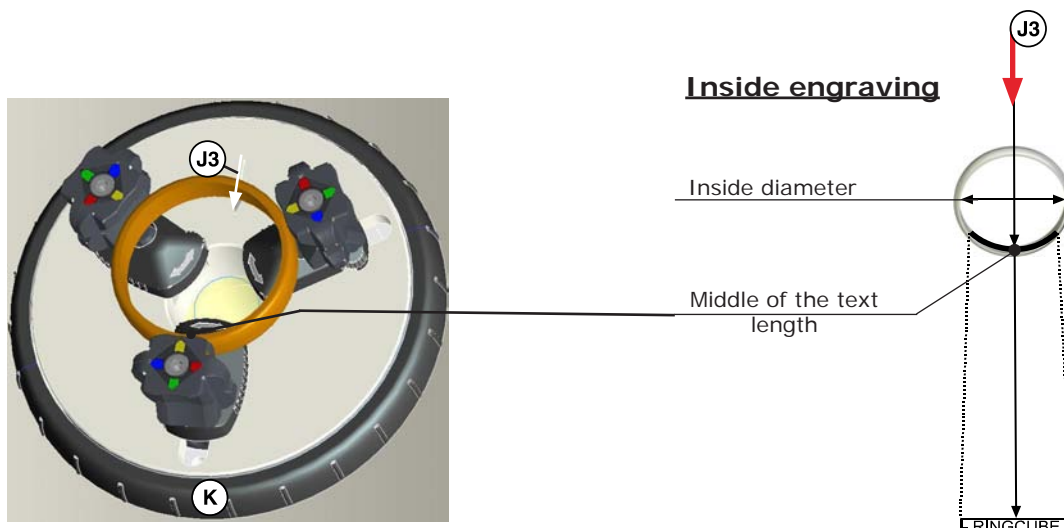
## Positioning a thin bracelet onto the jaws and Inside Engraving



1. Place the 3 ring/bracelet jaws (D3) in position (the white arrows (F2) must be in the chuck center in the zone of tightening) onto the chuck, (1) and (2), and then position the yellow marks to the chuck center (3).



2. Mark the middle of the text length to be engraved on the Inside of the bracelet



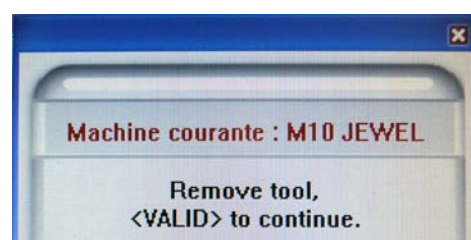
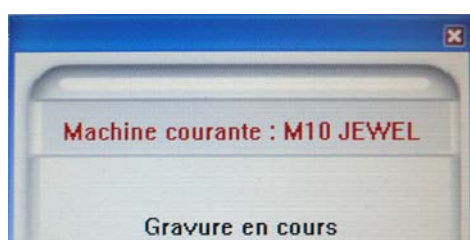
3. Place the bracelet so that the mark is at the bottom and is aligned with the directional arrow (J3).
4. Using the tightening ring (K) of the chuck, fasten the bracelet firmly in place so it will remain immobile during engraving

Proper fastening contributes towards reducing machine noise and vibrations during engraving.



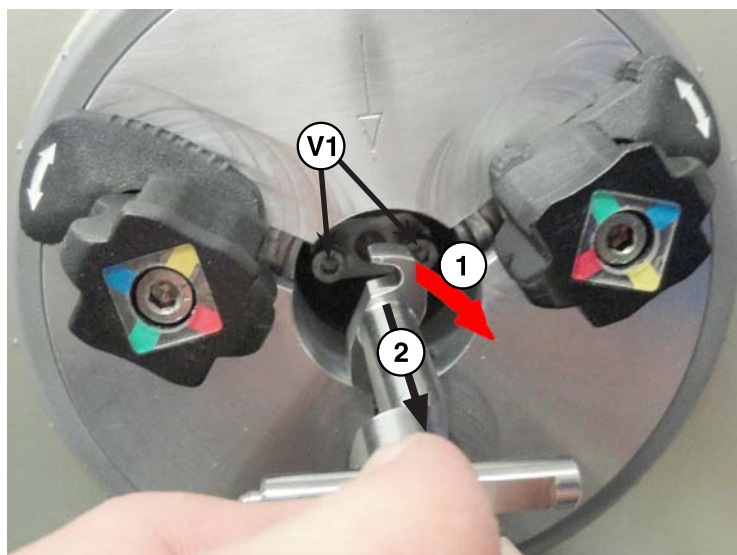
Check that the object is properly fastened so it does not pop out during engraving and that no object poses an obstacle to the movable parts' movements.

5. Touch  (START) on the control panel of the machine and follow the instructions indicated on the screen of the computer :

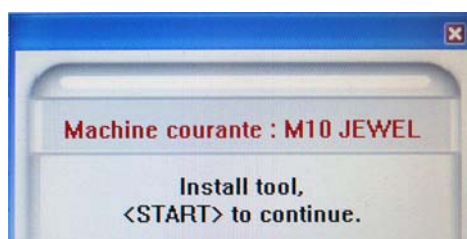




6. Loosen the 2 screws (V1) (in the center of the chuck) slightly. Turn the tool at 90° in the clockwise direction (1) and remove the tool (2).

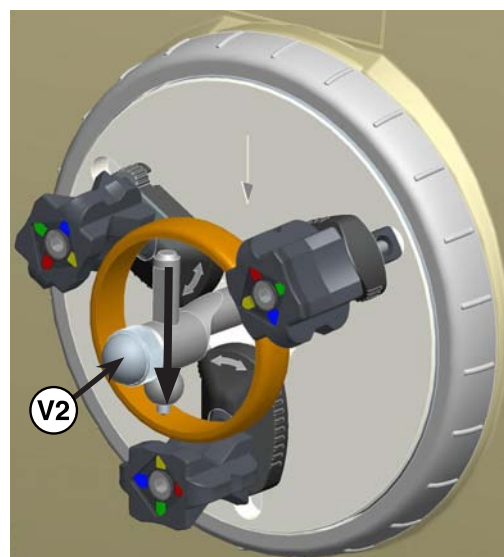
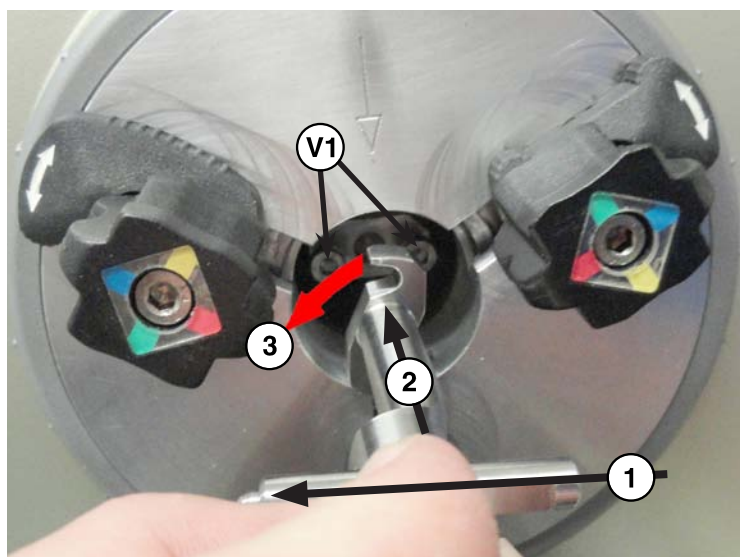


7. Touch  (START) to continue



8. Turn the diamond tip (D2) (for bracelets) at 90° (the tip on the left) (1). Insert it (2) and turn it at 90° (3) in the anti-clockwise direction (the tip is directed downwards) . Tighten the 2 screws (V1) to immobilize it.

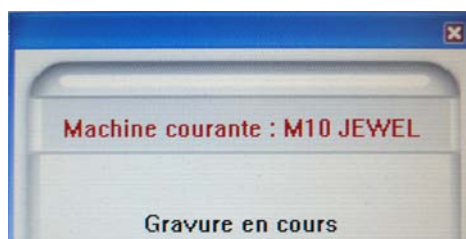
The diamond tip is the material to be engraved exactly where the engraving should start.



9. Lower the diamond tip using the screw (V2) until it touches slightly the bracelet. Tighten the screw (V2).



11. Touch  (START) on the control panel of the machine, to start the engraving.



For your own personal safety and to avoid any risks of being crushed by the machine during engraving, do not stand near the tools.

In the event of a problem, touch  (PAUSE) to stop the engraving process

The machine will momentarily pause.

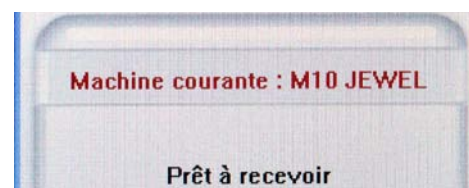


To continue with the rest of the engraving, touch  (START)

To stop engraving completely, touch one of the arrows of the joystick.

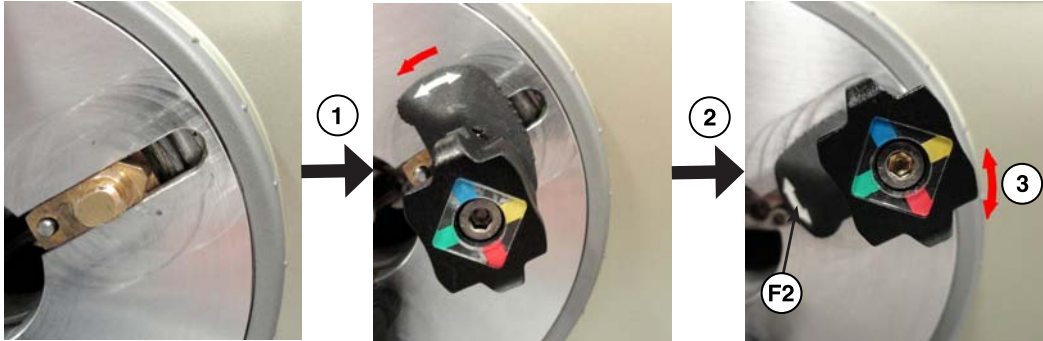
**Engraving is finished, when the machine is ready to receive a new file:**

You can remove the bracelet, or launch again the engraving process for a better result.

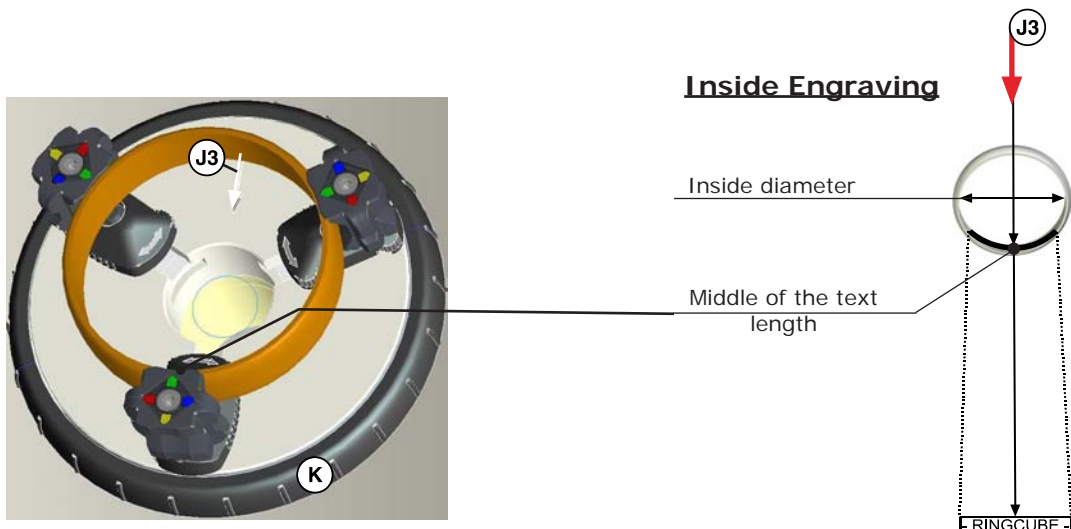


## Positioning a wide bracelet onto the jaws and Inside Engraving

1. Place the 3 ring/bracelet jaws (D3) in position (the white arrows (F2) must be in the chuck center in the zone of tightening) onto the chuck, (1) and (2), and then position the green marks to the chuck center (3).



2. Mark the middle of the text length to be engraved on the Inside of the bracelet



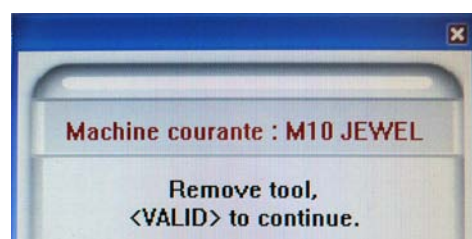
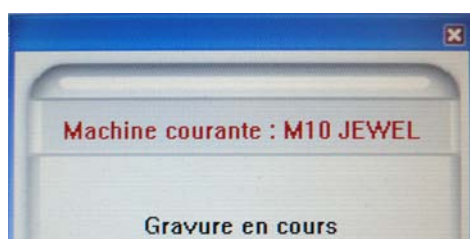
3. Place the bracelet so that the mark is at the bottom and is aligned with the directional arrow (J3).
4. Using the tightening ring (K) of the chuck, fasten the bracelet firmly in place so it will remain immobile during engraving

Proper fastening contributes towards reducing machine noise and vibrations during engraving.



Check that the object is properly fastened so it does not pop out during engraving and that no object poses an obstacle to the movable parts' movements.

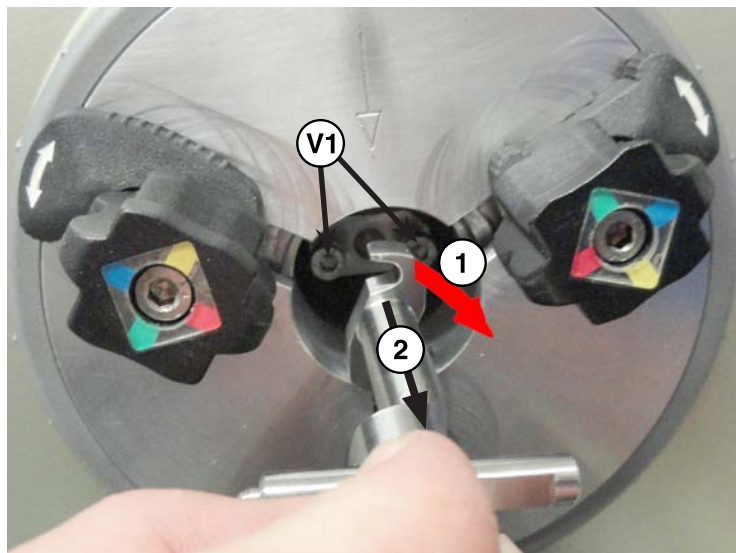
5. Touch  (START) on the control panel of the machine and follow the instructions indicated on the screen of the computer:



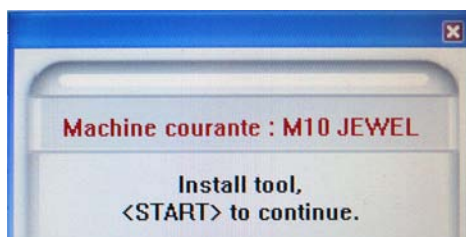




6. Loosen the 2 screws (V1) (in the center of the chuck) slightly. Turn the tool at 90° in the clockwise direction (1) and remove the tool (2).

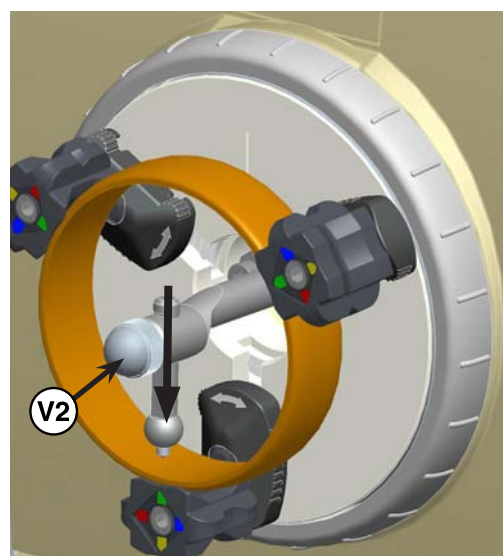
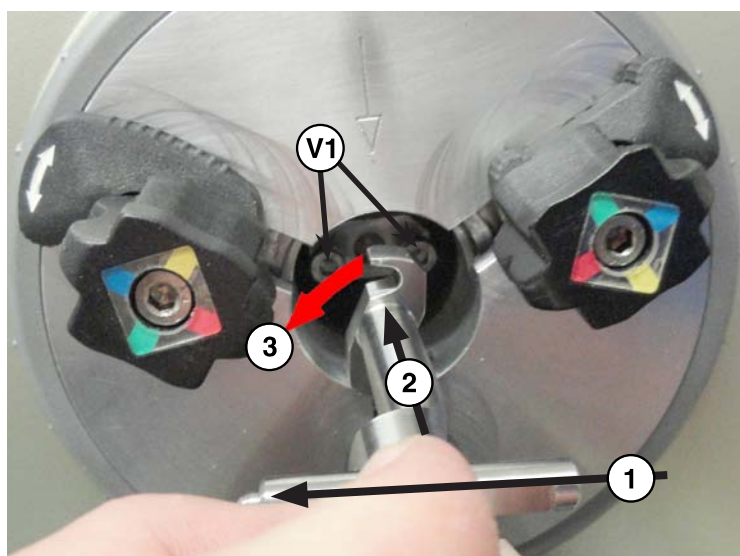


7. Touch  (START) to continue



8. Turn the diamond tip (D2) (for bracelets) at 90° (the tip on the left) (1). Insert it (2) and turn it at 90° (3) in the anti-clockwise direction (the tip is directed downwards) . Tighten the 2 screws (V1) to immobilize it.

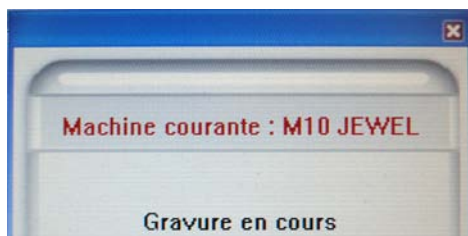
The diamond tip is the material to be engraved exactly where the engraving should start



10. Lower the diamond tip using the screw (V2) until it touches slightly the bracelet. Tighten the screw (V2).



11. Touch  (START) on the control panel of the machine, to start the engraving.



For your own personal safety and to avoid any risks of being crushed by the machine during engraving, do not stand near the tools.

In the event of a problem, touch  (PAUSE) to stop the engraving process

The machine will momentarily pause.

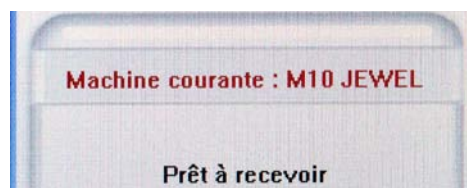


To continue with the rest of the engraving, touch  (START)

To stop engraving completely, touch one of the arrows of the joystick.

**Engraving is finished, when the machine is ready to receive a new file:**

You can remove the bracelet, or launch again the engraving process for a better result.



## Outside Engraving

For the Outside Engraving, 3 engraving montages are possible according to the sizes of the object to be engraved :

### Ring - Outside Engraving

(width : 1.5 to 6 mm)  
(engraving diameter : 13.5 to 25 mm)

Outside engraving diamond tip holder mounted in the location (E) above the chuck and equipped with the diamond tip (D8) for rings.

The 3 rings/Outside engraving (D9) are mounted onto the chuck

Ring montage procedure - Outside Engraving described pages 32-34



### Thin bracelet - Outside Engraving

(width : 3 to 12 mm)  
(engraving diameter : 50 to 80 mm)

Outside engraving diamond tip holder mounted in the location (E) above the chuck and equipped with the diamond tip (D7) for bracelets.

The 3 rings/bracelets jaws (D3) mounted on Yellow position

Fine bracelet montage procedure - Outside Engraving described pages 35-37



### Wide bracelet - Outside Engraving

(width : 12 to 20 mm)  
(engraving diameter : 50 to 80 mm)

Outside engraving diamond tip holder mounted in the location (E) above the chuck and equipped with the diamond tip (D7) for bracelets.

The 3 rings/bracelets jaws (D3) mounted on Green position

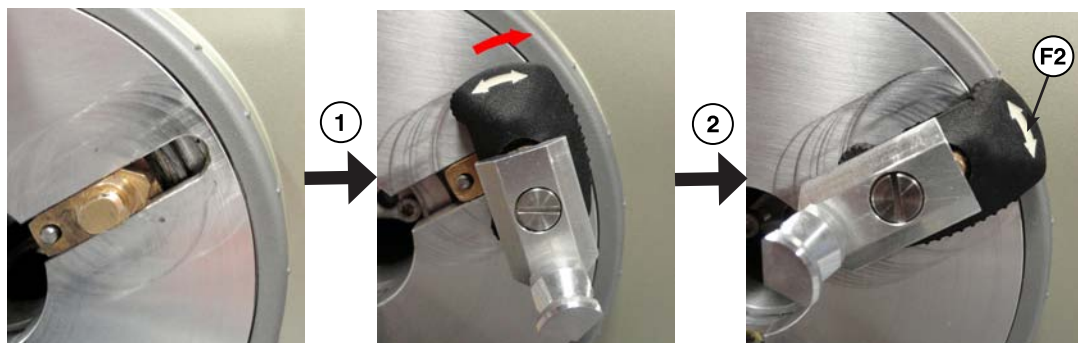
Wide bracelet montage procedure - Outside Engraving described pages 38-40



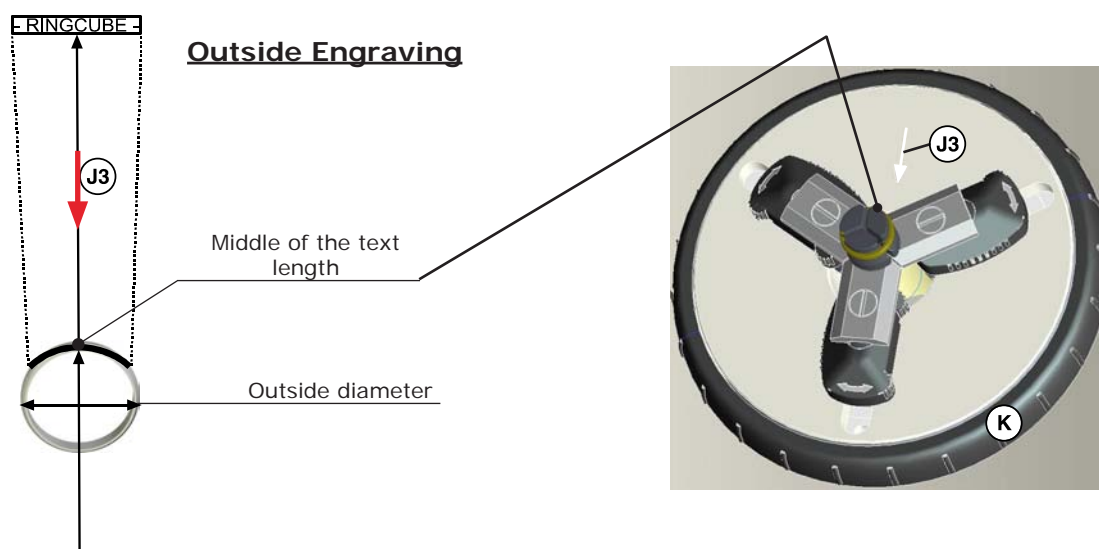
## Positioning a ring onto the jaws and Outside Engraving



1. Place the 3 ring/outside engraving jaws (D9) onto the chuck (1) and (2) (the white arrows (F2) must be apart from the zone of tightening).



2. Mark the middle of the text length to be engraved on the Outside of the ring :



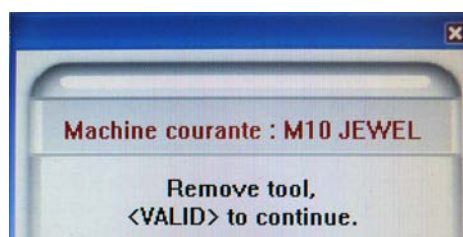
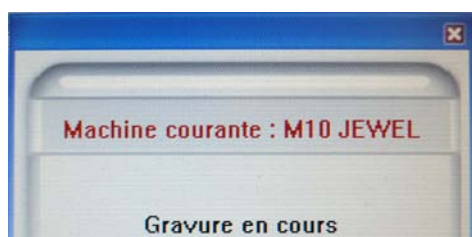
3. Place the ring so that the mark is at the bottom and is aligned with the directional arrow (J3).
4. Using the tightening ring (K) of the chuck, fasten the ring firmly in place so it will remain immobile during engraving.

Proper fastening contributes towards reducing machine noise and vibrations during engraving.



Check that the object is properly fastened so it does not pop out during engraving and that no object poses an obstacle to the movable parts' movements.

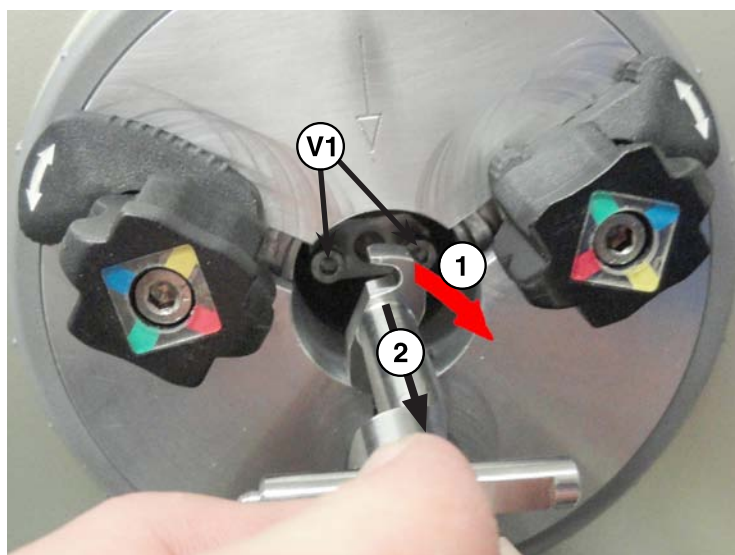
5. Touch  (START) on the control panel of the machine and follow the instructions indicated on the screen of the computer:



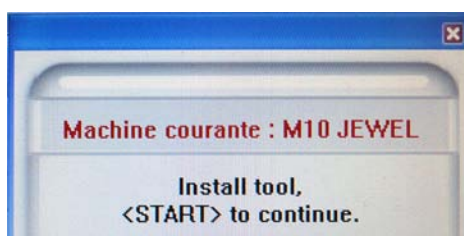




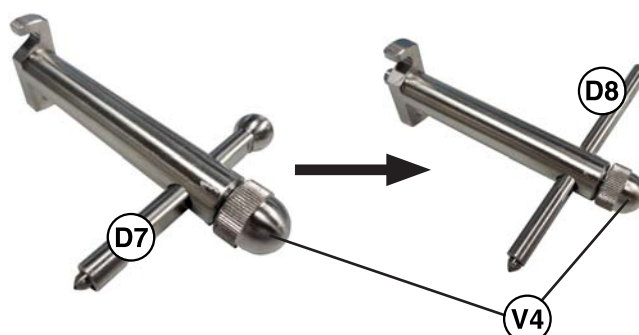
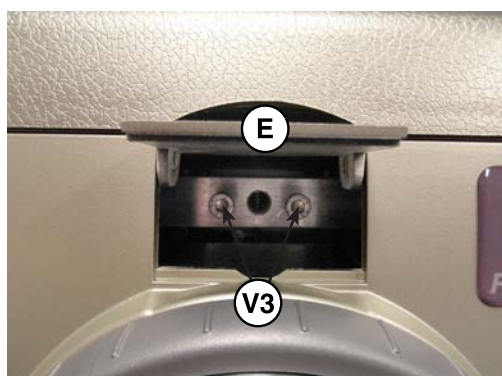
6. Remove any tool which can be present in the center of the chuck : Loosen the 2 screws (V1) (in the center of the chuck) slightly. Turn the tool at 90° in the clockwise direction (1) and remove the tool (2).



7. Touch  (START) to continue

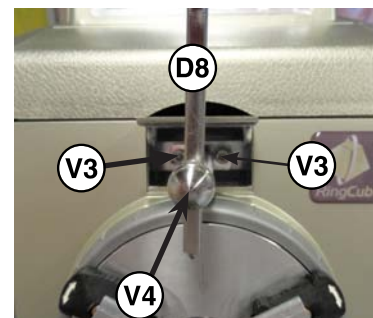
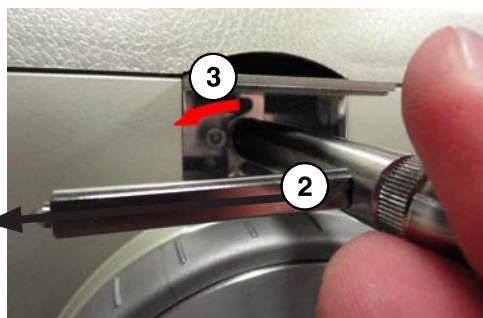
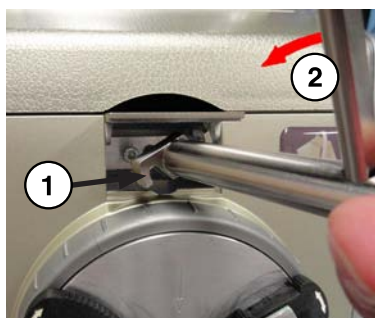


8. Open the trapdoor of the location (E) above the chuck and Loosen the 2 screws (V3) slightly. If necessary, replace the diamond tip (D7) by the diamond tip (D8) on the diamond tip holder for outside engraving and tighten (V4).

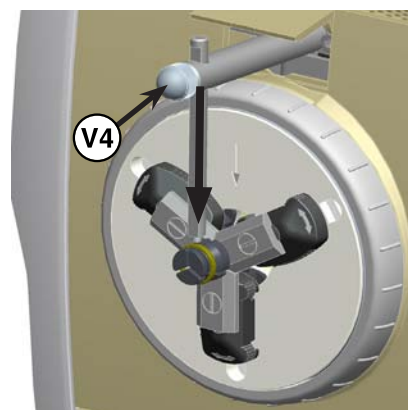


9. Tilt slightly (1) and insert the diamond holder for outside engraving equipped with the diamond tip (D8) for rings in the location. Then turn it at 90° (2) (the tip on the left). Insert it and turn it at 90° (3) in the anti-clockwise direction (the tip is directed downwards). Tighten the 2 screws (V3) to immobilize it.

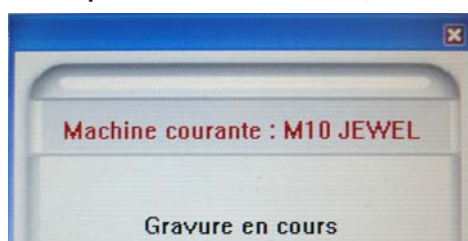
The diamond tip is the material to be engraved exactly where the engraving should start



10. Lower the diamond tip using the screw (V4) until it touches slightly the ring. Tighten the screw (V4).



11. Touch  (START) on the control panel of the machine, to start the engraving.



For your own personal safety and to avoid any risks of being crushed by the machine during engraving, do not stand near the tools.

In the event of a problem, touch  (PAUSE) to stop the engraving process

The machine will momentarily pause.

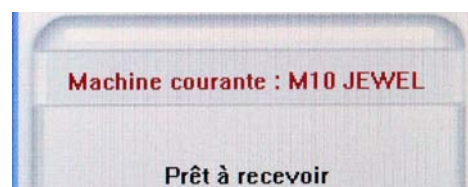


To continue with the rest of the engraving, touch  (START)

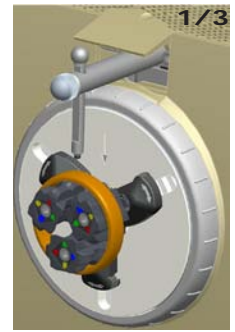
To stop engraving completely, touch one of the arrows of the joystick.

**Engraving is finished, when the machine is ready to receive a new file:**

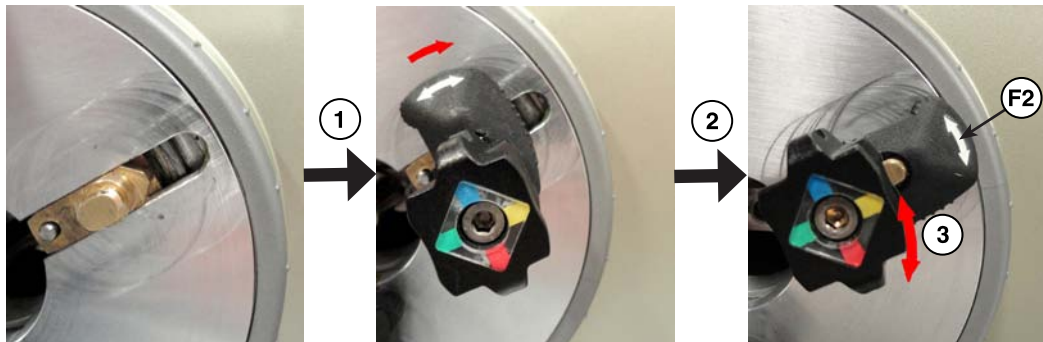
You can remove the ring, or launch again the engraving process for a better result.



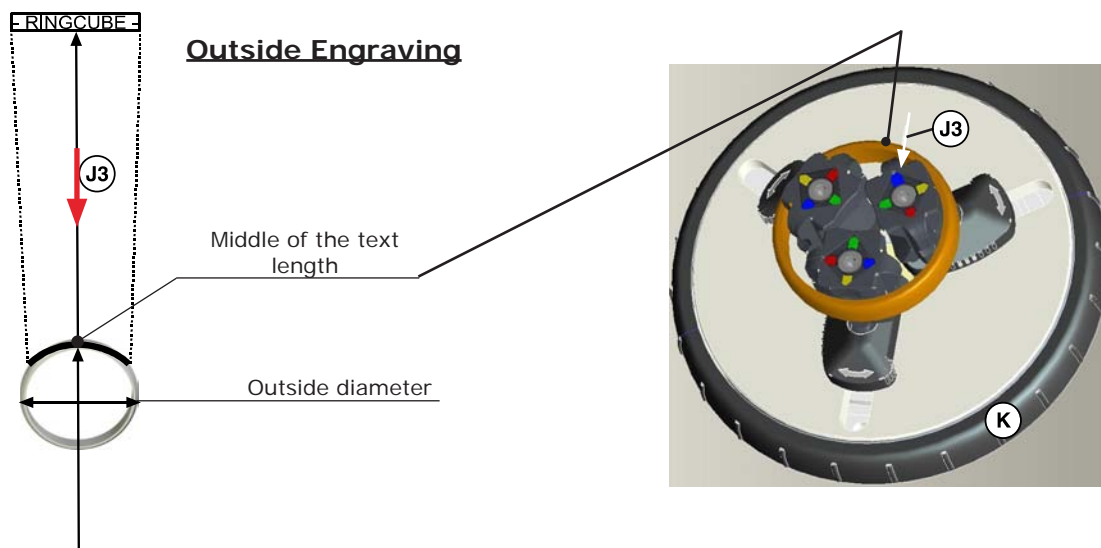
## Positioning a thin bracelet onto the jaws and Outside Engraving



1. Place the 3 ring/bracelet jaws (D3) in position (the white arrows (F2) must be apart from the zone of tightening) onto the chuck, (1) and (2), and then position the yellow marks to the outside of the chuck (3).



2. Mark the middle of the text length to be engraved on the Outside of the bracelet.



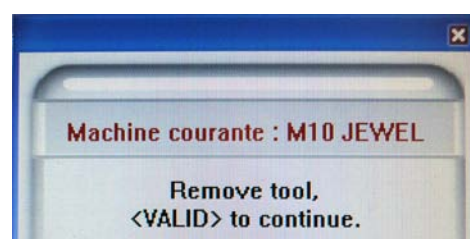
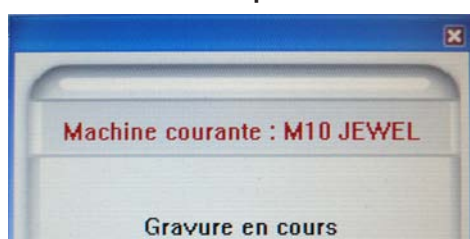
3. Place the bracelet so that the mark is at the bottom and is aligned with the directional arrow (J3).
4. Using the tightening ring (K) of the chuck, fasten the bracelet firmly in place so it will remain immobile during engraving

Proper fastening contributes towards reducing machine noise and vibrations during engraving.



Check that the object is properly fastened so it does not pop out during engraving and that no object poses an obstacle to the movable parts' movements.

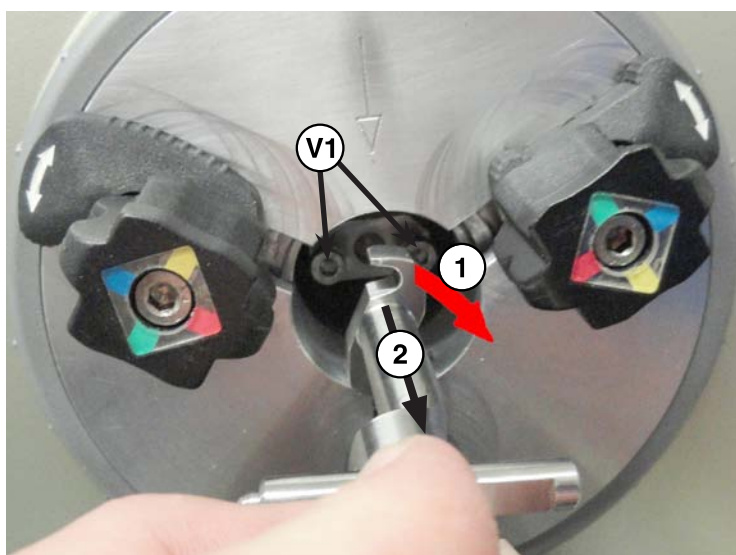
5. Touch  (START) on the control panel of the machine and follow the instructions indicated on the screen of the computer:



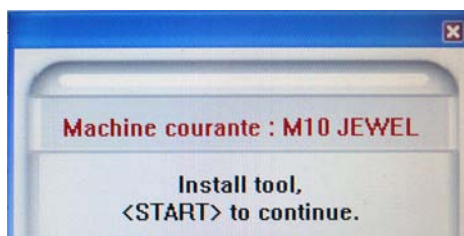




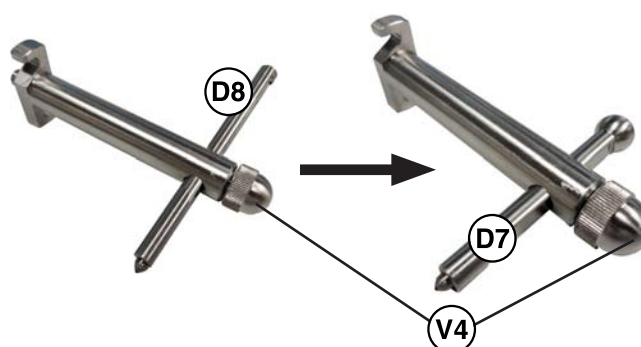
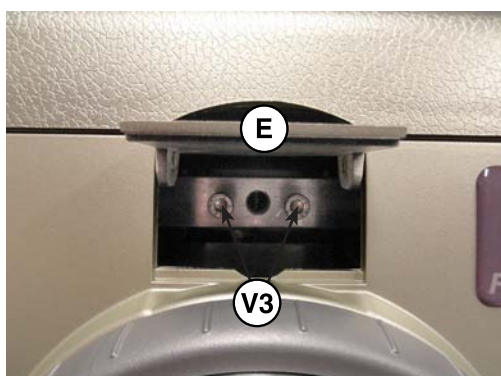
6. Remove any tool which can be present in the center of the chuck : Loosen the 2 screws (V1) (in the center of the chuck) slightly. Turn the tool at 90° in the clockwise direction (1) and remove the tool (2).



7. Touch  (START) to continue.

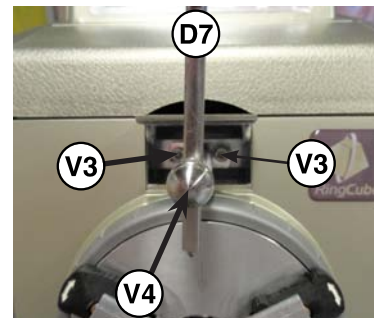
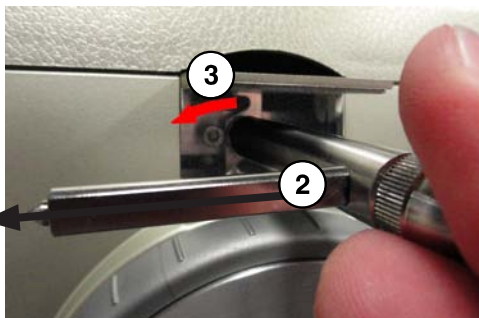
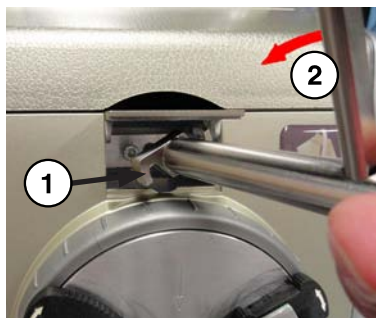


8. Open the trapdoor of the location (E) above the chuck and Loosen the 2 screws (V3) slightly. If necessary, replace the diamond tip (D8) by the diamond tip (D7) on the diamond tip holder for outside engraving and tighten (V4).

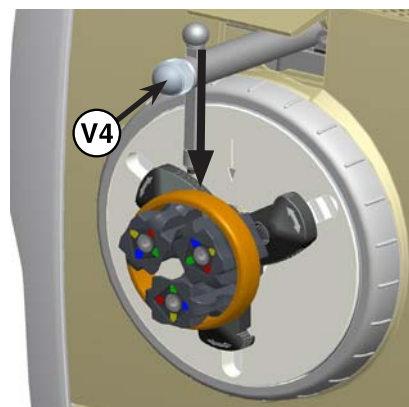


9. Tilt slightly (1) and insert the diamond holder for outside engraving equipped with the diamond tip (D7) for bracelets in the location. Then turn it at 90° (2) (the tip on the left). Insert it and turn it at 90° (3) in the anti-clockwise direction (the tip is directed downwards). Tighten the 2 screws (V3) to immobilize it.

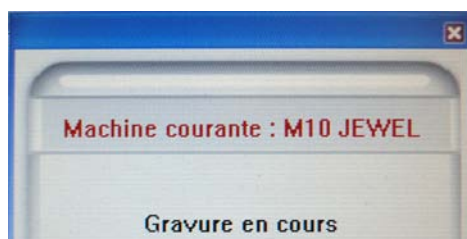
The diamond tip is the material to be engraved exactly where the engraving should start.



10. Lower the diamond tip using the screw (V4) until it touches slightly the bracelet. Tighten the screw (V4).



11. Touch  (START) on the control panel of the machine, to start the engraving.



For your own personal safety and to avoid any risks of being crushed by the machine during engraving, do not stand near the tools.

In the event of a problem, touch  (PAUSE) to stop the engraving process

The machine will momentarily pause.

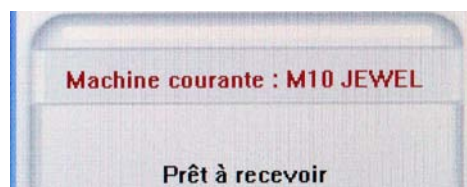


To continue with the rest of the engraving, touch  (START)

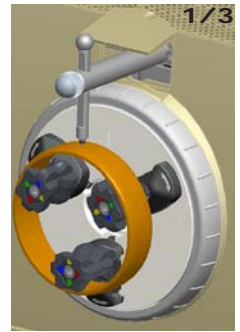
To stop engraving completely, touch one of the arrows of the joystick.

**Engraving is finished, when the machine is ready to receive a new file:**

You can remove the bracelet, or launch again the engraving process for a better result.



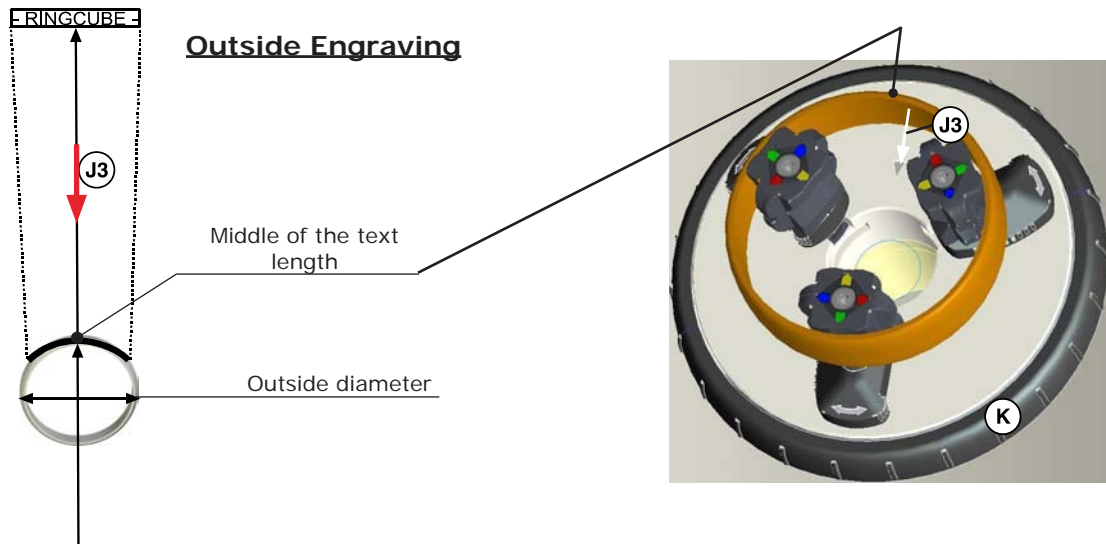
## Positioning a wide bracelet onto the jaws and Outside Engraving



1. Place the 3 ring/bracelet jaws (D3) in position (the white arrows (F2) must be apart from the zone of tightening) onto the chuck, (1) and (2), and then position the green marks to the outside of the chuck (3).



2. Mark the middle of the text length to be engraved on the Outside of the bracelet



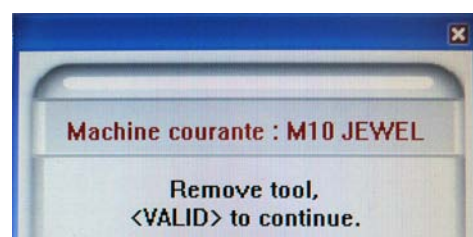
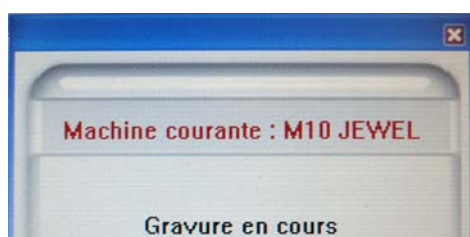
3. Place the bracelet so that the mark is at the bottom and is aligned with the directional arrow (J3).
4. Using the tightening ring (K) of the chuck, fasten the bracelet firmly in place so it will remain immobile during engraving.

Proper fastening contributes towards reducing machine noise and vibrations during engraving.



Check that the object is properly fastened so it does not pop out during engraving and that no object poses an obstacle to the movable parts' movements.

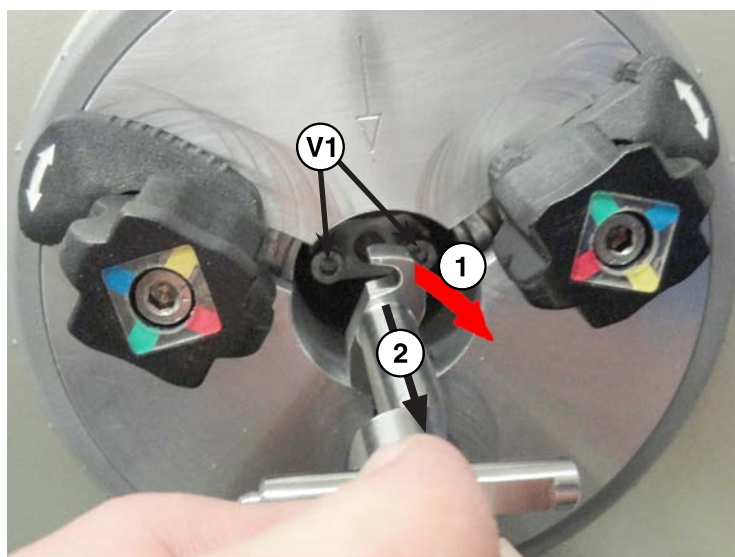
5. Touch  (START) on the control panel of the machine and follow the instructions indicated on the screen of the computer:



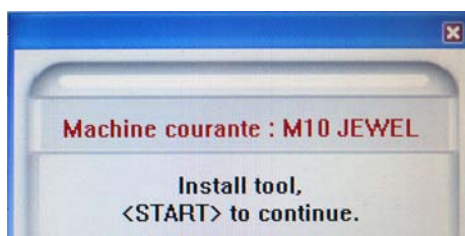




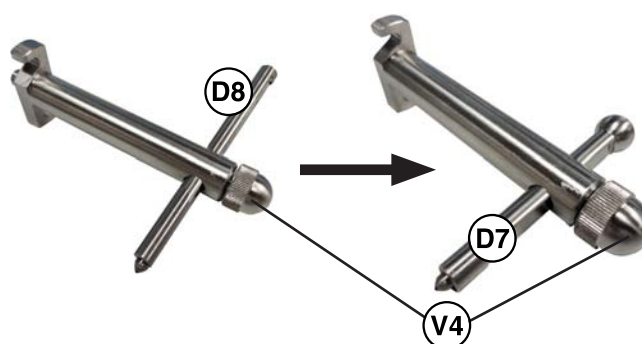
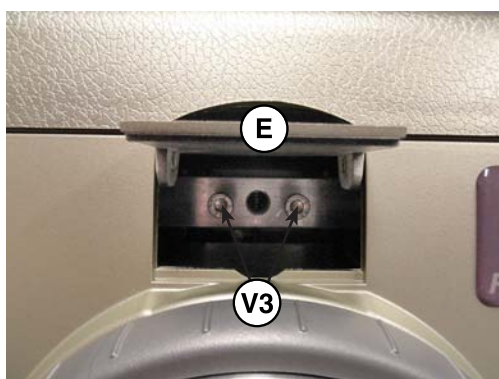
6. Remove any tool which can be present in the center of the chuck : Loosen the 2 screws (V1) (in the center of the chuck) slightly. Turn the tool at 90° in the clockwise direction (1) and remove the tool (2).



7. Touch  (START) to continue

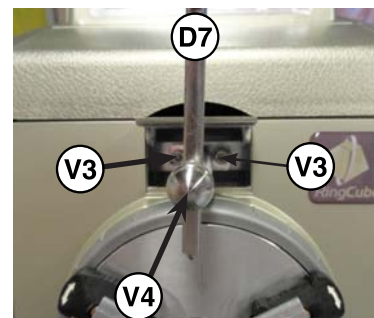
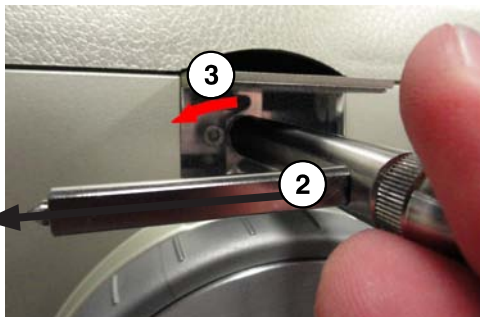
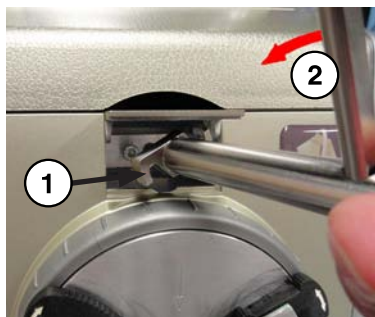


8. Open the trapdoor of the location (E) above the chuck and Loosen the 2 screws (V3) slightly. If necessary, replace the diamond tip (D8) by the diamond tip (D7) on the diamond tip holder for outside engraving and tighten (V4).

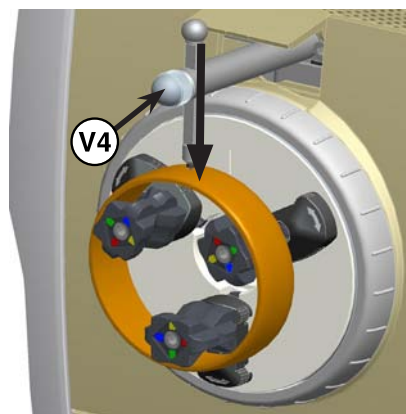


9. Tilt slightly (1) and insert the diamond holder for outside engraving equipped with the diamond tip (D7) for bracelets in the location. Then turn it at 90° (2) (the tip on the left). Insert it and turn it at 90° (3) in the anti-clockwise direction (the tip is directed downwards). Tighten the 2 screws (V3) to immobilize it.

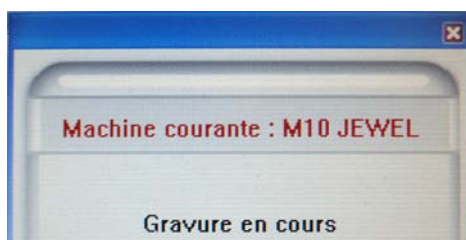
The diamond tip is the material to be engraved exactly where the engraving should start.



10. Lower the diamond tip using the screw (V4) until it touches slightly the bracelet. Tighten the screw (V4).



11. Touch  (START) on the control panel of the machine, to start the engraving.



For your own personal safety and to avoid any risks of being crushed by the machine during engraving, do not stand near the tools.

In the event of a problem, touch  (PAUSE) to stop the engraving process

The machine will momentarily pause.

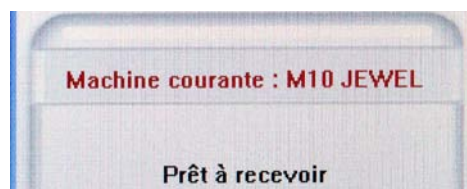


To continue with the rest of the engraving, touch  (START)

To stop engraving completely, touch one of the arrows of the joystick.

**Engraving is finished, when the machine is ready to receive a new file:**

You can remove the bracelet, or launch again the engraving process for a better result.





---

## General maintenance



**Before carrying out any maintenance, unplug the mains supply cable.**

No internal part of the Gravograph machine requires user intervention : general maintenance is limited to external cleaning. If necessary, the user can change the belt or fuses.

If you wish to have the inside of your machine cleaned, contact a Gravograph technician.



**The mains cable should always be replaced if it is damaged in any way : flattened, nicked, cracked etc..., or if there are bare wires.**

---

### Adjusting the machine (reference points)

After it has been used for some while the reference points of the machine can alter slightly (these points are slightly out of line with the clamping system, the Z position at the mechanical stop is above or below its normal position).

The **M10 JEWEL** machine has a very simple adjustment system which can be carried out by an expert user (which enables the machine to be adjusted without having to return it to the distributor).

If you notice that it is out of line in relation to your engraving measurements, adjust the machine.

The **M10 JEWEL** machine has 4 reference points in X,Y and one reference point in Z :

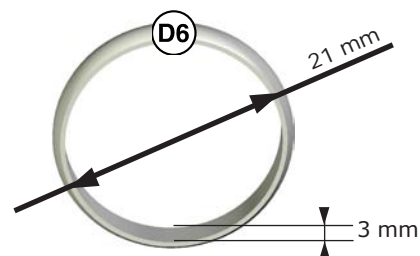
- The reference point in Y for the inside engraving of a ring - Procedure page 42.
- The reference point in Y for the inside engraving of a bracelet - Procedure page 43.
- The reference point in Y for the outside engraving of a ring - Procedure page 44.
- The reference point in Y for the outside engraving of a bracelet - Procedure page 45.
- The reference point in Z - Procedure page 46.

According to your applications, it can not be necessary to adjust all the reference points.

To adjust the M10 JEWEL machine on the Y,X axis for an inside engraving of a ring

To adjust the machine in Y,X you need to transfer a job of an inside engraving on the reference ring (D6) provided with the machine.

1. Transfer the inside engraving composition of the ring to the M10 JEWEL machine using the key (Launch).

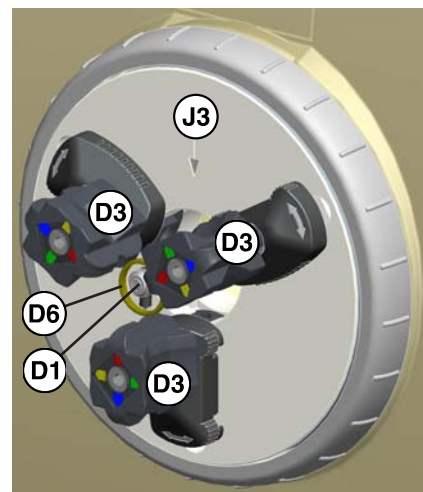


Reference ring (D6)  
Width = 3 mm  
Inside diameter = 21 mm

#### Positioning the reference ring (D6) :



(See the description of the assembly in "Positioning a thin ring onto the jaws and Inside Engraving" page 21).

2. Place the 3 ring/bracelet jaws (D3) in red position-inside engraving as indicated on the opposite picture.
3. Fasten the reference ring (D6) using the jaws of the chuck.
4. Install the diamond tip (D1) for inside engraving to the chuck center.



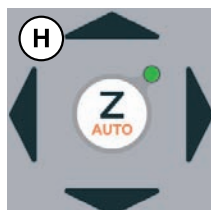
5. Press the  keys simultaneously to select the Y,X machine adjustment for inside engraving of a ring.



The diamond holder moves to detect each limit switch and then stop in the reference point position.

6. Push on  of the joystick (H) and then on  to lower the diamond tip (D1) until it touches slightly the reference ring.



Push again on  of the joystick (H).

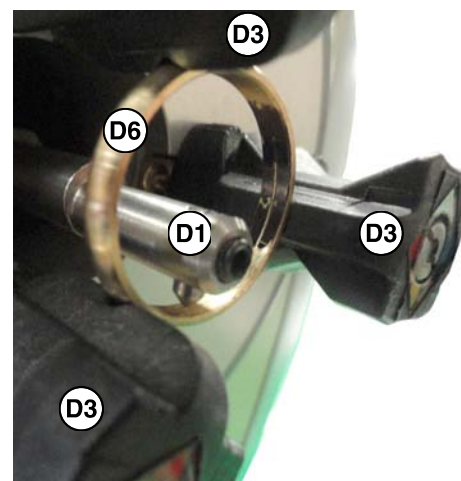
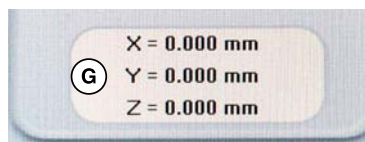
The diamond tip must be in the middle of the width (on the Y axis) of the reference ring (D6), which is 3mm.



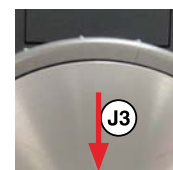
7. Have a look to check that the diamond tip is well in the middle of the width (in Y). If it is not the case, move the diamond tip along the Y axis using the  and  keys to correct it.

For a more precise adjustment, push on

 or  keys to turn the ring, and then to mark it. Then check that the engraving position is in the middle of the reference ring's width. The Y position value indicated on the PC's screen (G) can also help you to have a very precise adjustment.



8. Replace the directional arrow (J3) vertically and pointing downwards using the  and  keys.



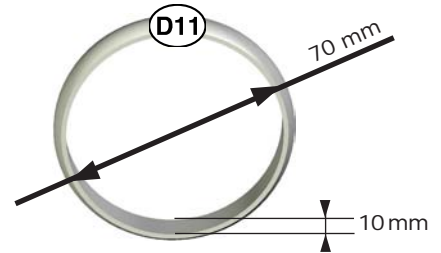
9. Save the position of the zero point on the Y,X axis by pressing the  key.

The diamond tip returns to the origin. The new reference point in Y,X for inside engraving of a ring is memorized by the machine.

To adjust the M10 JEWEL machine on the Y,X axis for an inside engraving of a bracelet

To adjust the machine in Y,X you need to transfer a job of an inside engraving on the reference bracelet (D11) provided with the machine :

1. Transfer the inside engraving composition of the bracelet to the M10 JEWEL machine using the key (Launch).

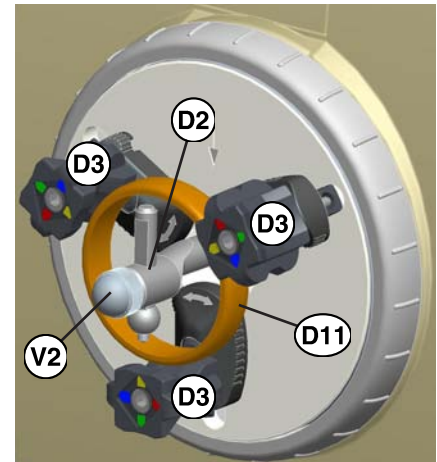



Reference bracelet (D11)  
Width = 10 mm  
Inside diameter = 70 mm

#### Positioning the reference bracelet (D11) :

(See the description of the assembly in "Positioning a thin bracelet onto the jaws and Inside Engraving" page 25).

2. Place the 3 ring/bracelet jaws (D3) in yellow position-inside engraving as indicated on the opposite picture.
3. Fasten the reference bracelet (D11) using the jaws of the chuck.
4. Install the diamond tip (D2) for inside engraving to the chuck center.







5. Press the  keys simultaneously to select the Y,X machine adjustment for inside engraving of a bracelet.

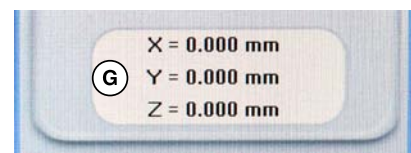
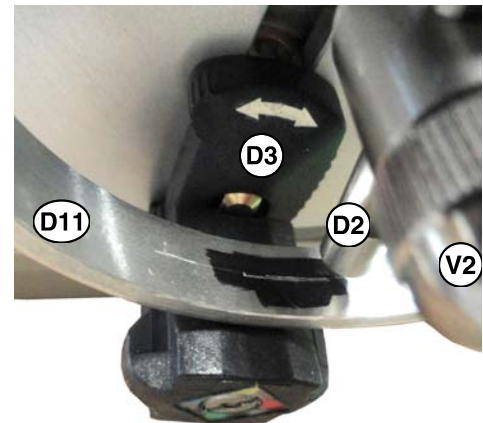
The diamond holder moves to detect each limit switch and then stop in the reference point position.

6. Lower the diamond tip (D2) using the screw (V2) until it touches slightly the reference bracelet.

The diamond tip must be in the middle of the width (on the Y axis) of the reference bracelet (D11), which is 10mm.

7. Have a look to check that the diamond tip is well in the middle of the width (in Y). If it is not the case, move the diamond tip along the Y axis using the  and  keys to correct it.

For a more precise adjustment, push on  or  keys to turn the bracelet, and then to mark it. Then check that the engraving position is in the middle of the reference bracelet's width. The Y position value indicated on the PC's screen (G) can also help you to have a very precise adjustment.



8. Replace the directional arrow (J3) vertically and pointing downwards using the  and  keys.



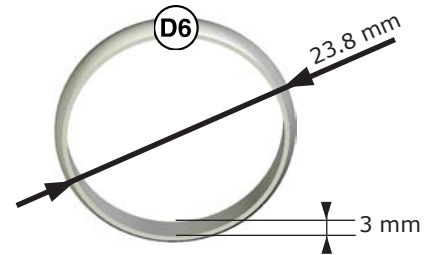
9. Save the position of the zero point on the Y,X axis by pressing the  key.

The diamond tip returns to the origin. The new reference point in Y,X for inside engraving of a bracelet is memorized by the machine.

To adjust the M10 JEWEL machine on the Y,X axis for an outside engraving of a ring

To adjust the machine in Y,X you need to transfer a job of an outside engraving on the reference ring (D6) provided with the machine.

1. Transfer the outside engraving composition of the ring to the M10 JEWEL machine using the key (Launch).

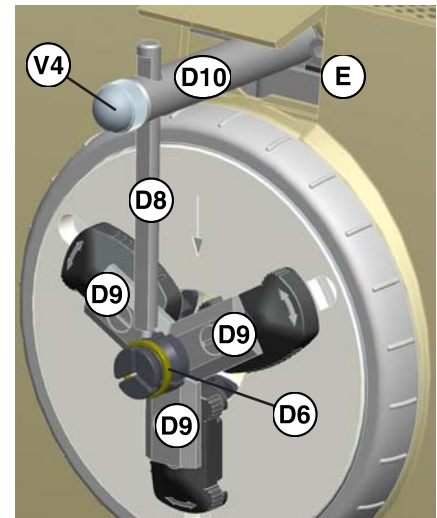


Reference ring (D6)  
Width = 3 mm  
Outside diameter = 23.8 mm

#### Positioning the reference ring (D6) :

(See the description of the assembly in "Positioning a thin ring onto the jaws and Outside Engraving" page 32).

2. Place the 3 ring/outside engraving jaws (D9) in position as indicated on the opposite picture.
3. Fasten the reference ring (D6) using the jaws of the chuck.
4. Install the diamond tip holder for outside engraving (D10) with the diamond tip (D8) in the location (E) over the chuck.







5. Press the  keys simultaneously to select the Y,X machine adjustment for outside engraving of a ring.

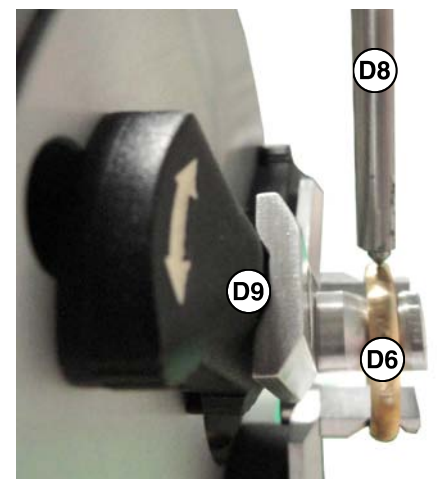
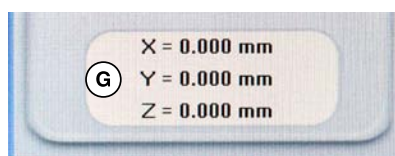
The diamond holder moves to detect each limit switch and then stop in the reference point position.

6. Lower the diamond tip (D8) using the screw (V4) until it touches slightly the reference ring.

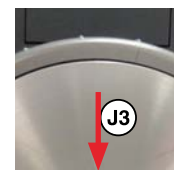
The diamond tip must be in the middle of the width (on the Y axis) of the reference ring (D6), which is 3mm.

7. Have a look to check that the diamond tip is well in the middle of the width (in Y). If it is not the case, move the diamond tip along the Y axis using the  and  keys to correct it.

For a more precise adjustment, push on  or  keys to turn the ring, and then to mark it. Then check that the engraving position is in the middle of the reference ring's width. The Y position value indicated on the PC's screen (G) can also help you to have a very precise adjustment.



8. Replace the directional arrow (J3) vertically and pointing downwards using the  and  keys.



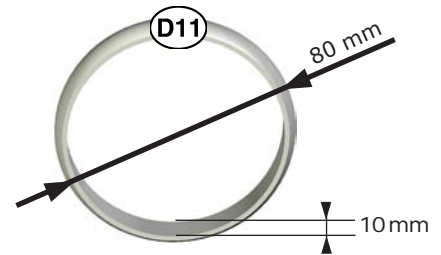
9. Save the position of the zero point on the Y,X axis by pressing the  key.

The diamond tip returns to the origin. The new reference point in Y,X for outside engraving of a ring is memorized by the machine.

To adjust the M10 JEWEL machine on the Y,X axis for an outside engraving of a bracelet

To adjust the machine in Y,X you need to transfer a job of an outside engraving on the reference bracelet (D11) provided with the machine :

1. Transfer the outside engraving composition of the bracelet to the M10 JEWEL machine using the key (Launch).

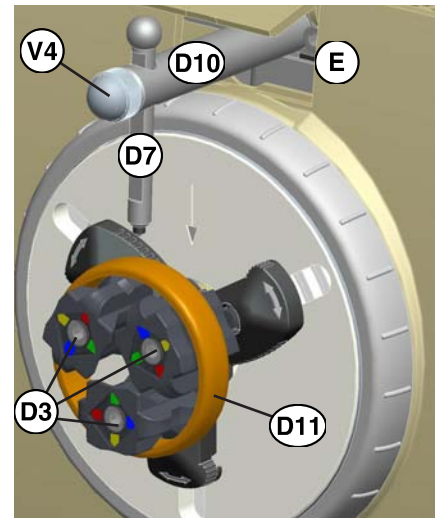



Reference bracelet (D11)  
Width = 10 mm  
Outside diameter = 80 mm

**Positionnement du bracelet de référence (D11) :**

(See the description of the assembly in "Positioning a thin bracelet onto the jaws and Outside Engraving" page 35).

2. Place the 3 ring/bracelet jaws (D3) in yellow position-outside engraving as indicated on the opposite picture.
3. Fasten the reference bracelet (D11) using the jaws of the chuck.
4. Install the diamond tip holder for outside engraving (D10) with the diamond tip (D7) in the location (E) over the chuck.





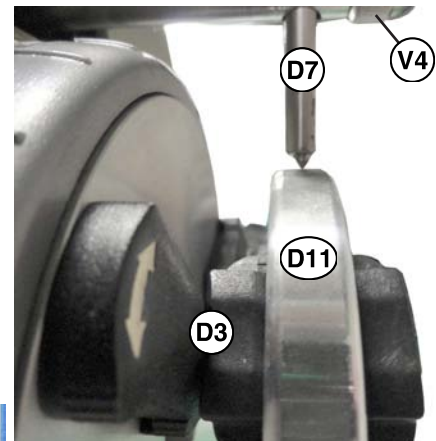
5. Press the   keys simultaneously to select the Y,X machine adjustment for outside engraving of a bracelet.

The diamond holder moves to detect each limit switch and then stop in the reference point position.



6. Lower the diamond tip (D7) using the screw (V4) until it touches slightly the reference bracelet.

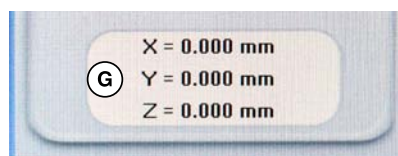
The diamond tip must be in the middle of the width (on the Y axis) of the reference bracelet (D11), which is 10mm.

7. Have a look to check that the diamond tip is well in the middle of the width (in Y). If it is not the case, move the diamond tip along the Y axis using the  and  keys to correct it.



For a more precise adjustment, push on

 or  keys to turn the bracelet, and then to mark it. Then check that the engraving position is in the middle of the reference bracelet's width. The Y position value indicated on the PC's screen (G) can also help you to have a very precise adjustment.



8. Replace the directional arrow (J3) vertically and pointing downwards using the  and  keys.



9. Save the position of the zero point on the Y,X axis by pressing the  key.

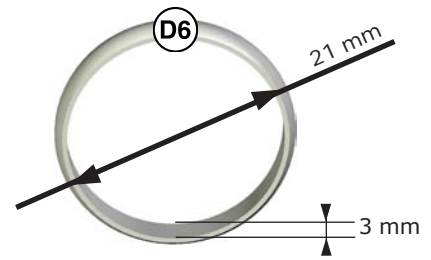
The diamond tip returns to the origin. The new reference point in Y,X for outside engraving of a bracelet is memorized by the machine.



## To adjust the M10 JEWEL machine on the Z axis

To adjust the machine in Z you need to transfer a job of an inside engraving on the reference ring (D6) provided with the machine.

1. Transfer the inside engraving composition of the ring to the M10 JEWEL machine using the key (Launch).

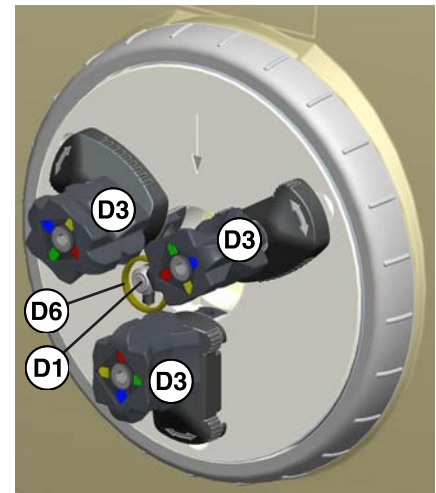


Reference ring (D6)  
Width = 3 mm  
Inside diameter = 21 mm

### Positioning the reference ring (D6) :

(See the description of the assembly in "Positioning a thin ring onto the jaws and Inside Engraving" page 21).

2. Place the 3 ring/bracelet jaws (D3) in red position-inside engraving as indicated on the opposite picture.
3. Fasten the reference ring (D6) using the jaws of the chuck.
4. Install the diamond tip (D1) for inside engraving to the chuck center.



5. Press the keys simultaneously to select the Y,X machine adjustment for inside engraving of a ring.

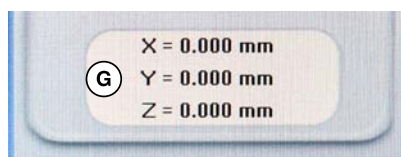
The diamond holder moves to detect each limit switch and then stop in the reference point in Y,X position.

6. Validate .

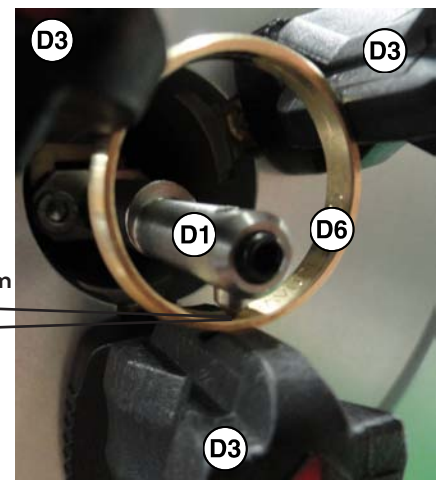
7. Press the keys simultaneously to select the Z machine adjustment.

8. Have a look to check that the diamond tip is lightly into contact with the reference ring. If it is not the case, move the diamond tip along the Z axis using the and keys to correct it.

Adjust with a wedge of 0,05 mm or use the Z position value indicated on the PC's screen (G) which can help you to have a very precise adjustment.



0.05 mm



9. Save the position of the zero point on the Z axis by pressing the key.  
The diamond tip returns to the origin. The new reference point in Z is memorized by the machine.

## Technical Characteristics

Vers 2.0 - 15/11/2011

### Physical characteristics

	M10 Jewel machine
Overall size (w x d x h)	230 x 293 x 290 mm 9 x 11.5 x 11.4 in
Net weight (without accessories)	6,5 kg - 2.9 lb
Package size (w x d x h)	385 x 330 x 490 mm 15.2 x 13 x 19.3 in
Shipping Weight	9 kg - 4.1 lb

### Engraving characteristics

	M10 Jewel machine
Max. engraving area	250 x 15 mm 9.8 x 0.6 in
	<b>INSIDE ENGRAVING</b>
Min. - max. thin ring width (red marks)	1,5 - 4 mm / 0.06 - 0.16 in
Min. - max. wide ring width (blue marks)	4 - 8 mm / 0.16 - 0.32 in
Min. - max. ring engraving diameter	12,5 - 25 mm / 0.49 - 0.98 in
Min. - max. thin bracelet width (yellow marks)	3 - 12 mm / 0.12 - 0.47 in
Min. - max. wide bracelet width (green marks)	11 - 20 mm / 0.43 - 0.79 in
Min. - max. bracelet engraving diameter	45 - 74 mm / 1.77 - 2.91 in
	<b>OUTSIDE ENGRAVING</b>
Min. - max. ring width (aluminium jaws)	1,5 - 6 mm / 0.06 - 0.24 in
Min. - max. ring engraving diameter	13,5 - 25 mm / 0.53 - 0.98 in
Min. - max. thin bracelet width (yellow marks)	3 - 12 mm / 0.12 - 0.47 in
Min. - max. wide bracelet width (green marks)	11 - 20 mm / 0.43 - 0.79 in
Min. - max. bracelet engraving diameter	50 - 80 mm / 1.97 - 3.15 in
Z travel	10 mm - 0.39 in
Z clearance	2.5 mm - 0.1 in
Z AUTO	Yes (Inside <b>Ring Engraving</b> )
Tools diameter	3,17 mm - 1/8 in
Tools type	Diamond
Max. X,Y working speed	5 mm/s - 0.2 in/s
Max. Z working speed	10 mm/s - 0.4 in/s
Max. X,Y,Z off-load speed	10 mm/s - 0.4 in/s
Max. engraving precision	0.05 mm - 0.002 in
Engraving repeatability	< 0.05 mm - 0.002 in

**Sound signal according to standard ISO 11201**

		M10 Jewel machine
Waiting for engraving	L <sub>Aeq</sub> dB (A)	< 60
Nominal engraving	L <sub>Aeq</sub> dB (A)	< 60
Nominal engraving peak	L <sub>p</sub> C <sub>peak</sub> dB (C)	< 81.3

**Environment**

	M10 Jewel machine
Operational temperature	min. +5°C ; + 41°F - max. +40°C ; +104 °F
Stockage temperature	min. -5°C ; + 23°F - max. +45°C ; +113 °F
Degree of relative moisture when in use	20 to 80 %

**Electrical characteristics**

	Power supply (V)	Max. absorbed current (A)	Frequency (Hz)	Absorbed power (W)	Type of protection			Air (bar)	Insulation - Type of service	Electromagnetic compatibility	
					Machine fuses	MEPB fuses	Fuses of the optional rack			Emission	Immunity
M10 Jewel machine	Input : AC 100-240 V	0,4 - 0,2	50-60	25	-----	-----	-----	-----	Classe 1 - S1	Norme EN 55022 Classe B ..... Norms EN 61000-3-2 EN 61000-3-3	Norm EN 61000-6-2 (industrial environment)

**Connections - control panel - Links**

	M10 Jewel machine
Connection to the PC	USB
Control panel	Membrane with raised tactile points
Number of keys	9
Display	No
Power supply connection	Jack

**Engraving softwares characteristics**

	PC engraving software
Engraving software	GravoStyle 7
Operating system (for the engraving software)	Windows XP pack 3 / Windows Vista pack 2 / Windows 7 pack 1
Languages	Fre, Eng, Ger, Ita, Spa, ...
Firmware/OS	>1.57

**Optional accessories**

---





## Appendices

---

### Gravograph Machines - Soft setup

Follow the installation procedure described on the page 18 "**Make the M10 JEWEL machine ready to engrave with GravoStyle (mini. Version 7)**" of this manual. It indicates you the various parts of this appendix which you specifically need for your machine.

# Contents

GRAVOGRAPH MACHINES - SOFT SETUP .....	1
 HOW TO MAKE GRAVOGRAPH MACHINE READY TO ENGRAVE .....	1
 MAKE A GRAVOGRAPH ROTARY MACHINE READY TO ENGRAVE.....	2
 PLUG ONTO USB PORT AN ADDITIONAL GRAVOGRAPH MACHINE .....	5
 LEGAL TERMS .....	7



## Gravograph Machines - Soft setup



### How to make Gravograph machine ready to engrave

**Install physically the machine on workspace, in accordance with Gravograph user manual.**



Locate the power button.

- Button on 0: machine powered off, out of order
- Button on I: machine powered on, ready to engrave



**Make a Gravograph rotary machine ready to engrave**



**Make a Gravograph laser machine ready to engrave**



**Make a Gravograph laser machine ready to engrave with LaserStyle**



**Plug onto USB port an additional Gravograph machine**



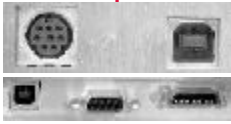
**Make a Gravograph laser machine ready to engrave with a graphical editor**



## Make a Gravograph rotary machine ready to engrave



This operation concerns rotary machines which rear side has these connectors






UC\_Sirius



UC\_K2000

- A. Set up GT Smartstream driver onto your computer.
- B. Set the softlink between PC and engraving machine.  
Make this connection using a cable you plug the connectors
  - either machine USB port and PC USB port
  - or machine serial port and PC COM port
- C. Enable rotary machine in GravoStyle 7 engraving program.


### Setting up GT Smartstream driver



1. Power off your(s) machine(s). Unplug from your PC.
2. Power up PC. Let Windows operating system start 
3. **Run a session as Administrator.**  
A standard user has no right to make a setup in Windows.
4. Have the digital media used to set up your Gravograph engraving program.  
 Explore contents of support iconized as a driver identified by a letter in Computer (for example F: or H:).

GravoStyle 7	<ol style="list-style-type: none"> <li>a. Set GS7 DVD into your PC drive </li> <li>b. <b>Right-click GS7 DVD</b></li> <li>c.  Click <b>Explore</b> command in context menu.</li> </ol>

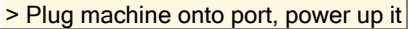
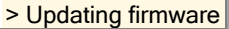
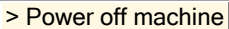
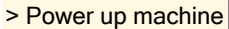











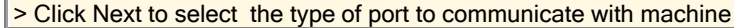




5.  In **.\Driver\GT\_Smartstream** folder double-click  **setup.exe** file.  
Follow the instructions posted by setup wizard.
6. Click the **port used for the connection between your PC and your machine.**  
Click the type of port to communicate with machine
 

☒ **USB** (is default and recommended)  
☐ **Other** for COM port
7. **When the driver and its components have already been set up** on your computer, they are systematically deleted.  

> Deleting current driver...
8.  A message notifies that driver is not Windows certified. To carry on setup in
 

 **Windows Vista**, click **"Install driver anyway"**  
 **Windows XP**, click **Continue**

## Setting softlink between PC and engraving machine







<b>USB connection</b>	<ol style="list-style-type: none"> <li>1. <b>Plug a single machine onto an USB port of your PC.</b> Power up it.   Plug machine onto port, power up it </li> <li>2. The setup wizard checks the <b>compatibility between GT Smartstream 3.xx and machine firmware</b> (embedded program that carries out engraving instructions). <ul style="list-style-type: none"> <li>• When <b>compatibility is ok, the wizard jumps to step 4.</b></li> <li>• Otherwise the last firmware version will be set up. Machine beeps when operation is over.   Updating firmware </li> </ul> </li> <li>3. Power off your engraving machine, then power up again.   Power off machine   Power up machine </li> <li>4. <b>The machine is automatically detected as new device</b> on an USB port of your PC.   Click <b>"Software correctly installed"</b> in <b>Software compatibility wizard of Windows Vista.</b>   In <b>Windows XP Add new detected device wizard</b> asks if devices plugged onto your PC should be checked. <ol style="list-style-type: none"> <li>a.  Click <b>"Not this time."</b>   Click. </li> <li>b. The wizard asks if you expect Windows to set up machine driver.   Click <b>"Install software automatically (recommended)".</b>   Click. </li> <li>c.  A message notifies that driver is not Windows certified.   Click. </li> <li>d.  Click when setup is over.</li> </ol> </li> <li>5. <b>In Start menu or in Control panel double-click Printers:</b> check that your machine is displayed as new GT Smartstream printer  </li> <li>6. <b>Give this printer the name</b> of your engraving machine.</li> </ol>
<b>COM connection</b>	<ol style="list-style-type: none"> <li>1.  Click. Configure your machine as Windows printer in <b>Properties dialog box.</b>   Click Next to select the type of port to communicate with machine </li> <li>2.  Click tab.</li> <li>3. <b>Click COM followed by the number of the port</b> where you plugged the cable that links the PC and the engraving machine.</li> <li>4.  Click tab.</li> <li>5. <b>Give this printer the name</b> of your engraving machine followed by the selected port (for example COM1: or COM2:).</li> <li>6.  Click.</li> <li>7. <b>In Printers</b> check that your machine is displayed as new printer </li> </ol>

## Enabling laser machine in your Gravograph engraving program

### GravoStyle 7

1. Double-click G7 in Start menu to run the program.



2. Click tab
3. Open **Machines**: click **Config. machines** command in **Engraving** menu.
4.  Click **Add machine**.
5.  Click **your machine type**.
6.  Right-click **your rotary machine exact name**.
7.  Click **Add machine** command in context menu.
8. In Installed printer list click printer named exactly like your engraving rotary machine.
9.  Click in **Setup output** dialog box.
10.  Click in **Machine Properties** dialog box.




Your machine is active in installed printer list.





**Plug onto USB port an additional Gravograph machine**

Use MajFirmware.exe tool to control and to configure the parameters of the additional machine, before connecting it onto an USB port of your PC.

 To connect onto USB ports several Gravograph machines , your PC must have at least 4 USB ports free.

 To connect onto USB ports a rotary machine , then a Gravograph laser machine

- A.  First make rotary machine ready to engrave.
- B.  Then make laser machine ready to engrave with LaserStyle.



**Running MajFirmware.exe tool**

- 1. Power off first machine. Unplug from PC.
- 2. **Plug only the additional machine onto an USB port of your PC. Power up it.**
- 3. Run MajFirmware.exe tool **from the digital media used to set up your Gravograph engraving program:**

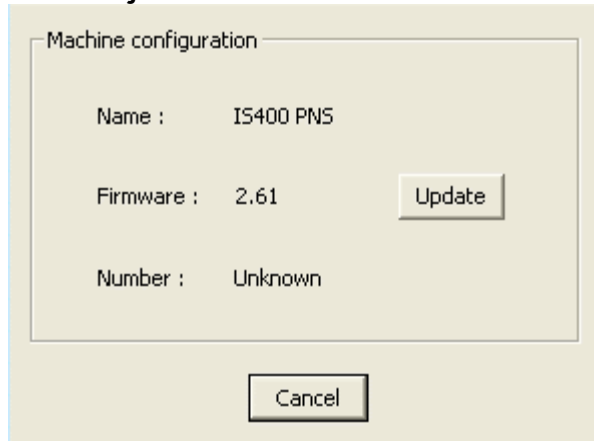
GravoStyle 7	<ul style="list-style-type: none"><li>a. <b>Right-click GS7 DVD</b></li><li>b.  Click <b>Explore</b> command in contextmenu.</li><li>c.  In <b>.\Firmware</b> folder double-click  <b>MajFirmware.exe</b> file.</li></ul>





## Updating additional machine firmware

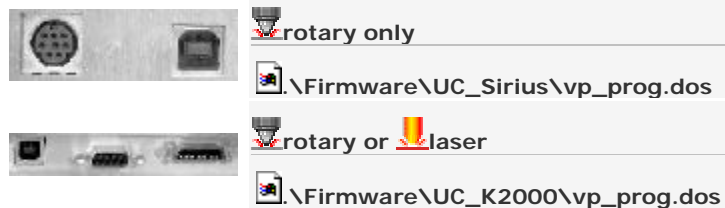
**!** When the driver that matches the additional machine has been already set up on PC check its compatibility with this machine firmware.

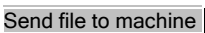

1.  Run MajFirmware.exe tool.



2. Check **Number** parameter. When value is
  - **a number**: firmware and driver are compatible.  Close dialog.
  - **"Unknown"**: firmware and driver are not compatible. **Update firmware.**




- a.  Click opposite **Firmware** parameter.
- b. **Double-click the file** that will update firmware:






- c.  Click to send the file. Machine beeps when operation is over.
- d.  Click.

## Differentiating two same named-machines

The additional machine has the name of a machine formerly set up.

1.  Run MajFirmware.exe tool.
2.  Click opposite **Number** parameter: **type a different number for each additional machine.**  
0 value remains the number of the first machine set up.
3.  Click.

## Legal terms

Software product	<p> <b>Warning</b> This computer program is protected by copyright law and international treaties. Removal, emulation or reverse-engineering of all or any part of the product or protection device constitutes an unauthorized modification to the product and is specifically prohibited. Nothing in this license statement allows you to derive the source or assembly code of files that are provided to you in executable or object forms. Unauthorized reproduction or distribution of this program, or any part of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.</p> <p> <b>Software license</b> GRAVOTECH MARKING SAS grants to you a non-exclusive, non-transferable license and limited to a strictly personal use of the Software, its related documentation and any possible patching software supplied by GRAVOTECH MARKING SAS. The present license does not grant to you the right to distribute the Software.</p> <p> <b>This software documentation is provided to licensed users and may only be used in accordance with the license terms. GRAVOTECH MARKING SAS reserves the right to change the information in this help system without notice. No part of this help system may be copied or decompiled without the written permission of GRAVOTECH MARKING SAS.</b></p>
Publisher	<p><b>GRAVOTECH MARKING SAS</b> <a href="http://www.gravograph.com">http://www.gravograph.com</a></p> <p>Gravograph, Intelligent System, L-Solution, GravoStyle 7, GravoStyle Quick Click, GT Smartstream are either registered trademarks or trademarks of GRAVOTECH MARKING SAS, in the U.S. and/or other countries.</p> <p>Microsoft, Windows 98, Windows NT, Windows ME, Windows 2000, Windows XP, Microsoft Word, WordPad, Internet Explorer, Explorer, HTML Help Viewer, Windows Media Player are either registered trademarks or trademarks Microsoft Corporation, in the U.S. and/or other countries.</p> <p>Adobe, Adobe logo, Acrobat, Acrobat PDF logo, Distiller, Reader, PostScript are either registered trademarks or trademarks of Adobe Systems Incorporated in the U.S. and/or other countries.</p> <p>Pentium is a registered trademark of Intel Corporation.</p> <p>Third-party trademarks, trade names and logos contained herein may be the trademarks of their respective owners.</p> <p>©2001-2012 GRAVOTECH MARKING SAS. All rights reserved.</p>