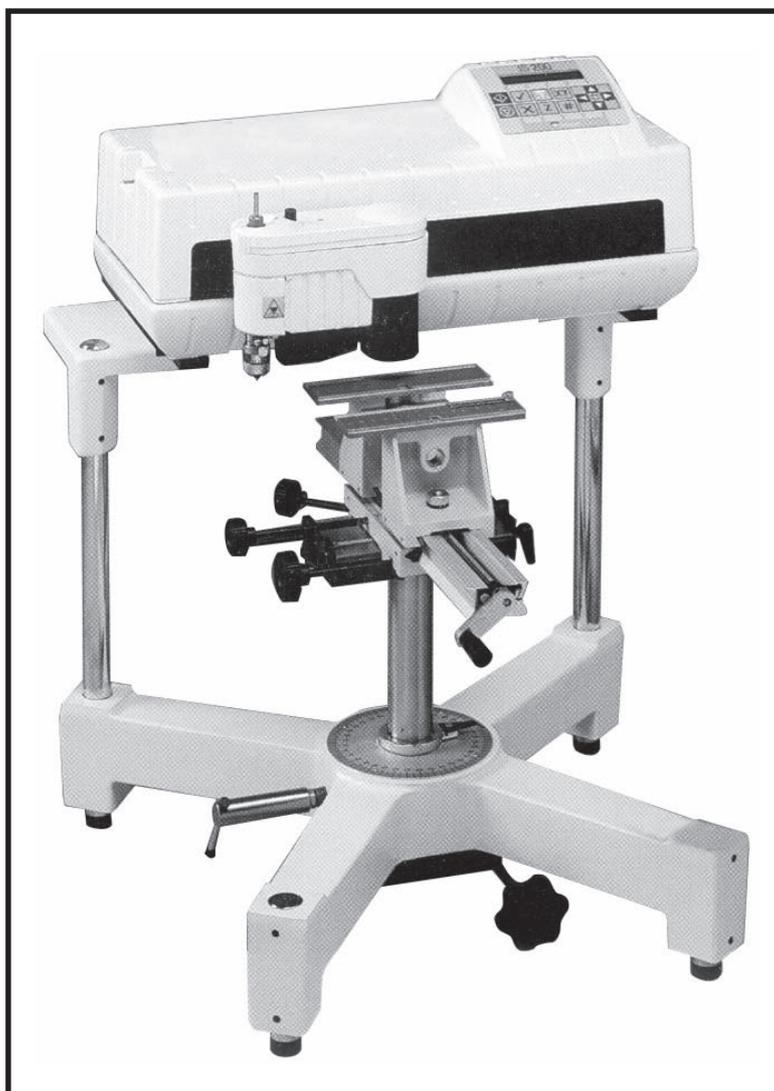




GRAVOGRAPH



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.

This manual should not be used without the IS200 program manual - B5113 701.

(Please read carefully before use)

User manual

IS200 TX machine

First contact

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

TYPE OF MACHINE	:	IS200 TX
MANUFACTURER	:	GRAVOGRAPH INDUSTRIE INTERNATIONALE BP 15 - Z.I. - 10600 LA CHAPELLE SAINT LUC - FRANCE

Importer's address

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GRAVOGRAPH

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Information about regulations

Conformity standards

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

- "Security" Directive 98/37/EEC (22/06/98).
- "Electromagnetic compatibility" Directive 89/336/EEC (03/05/89) (modified)
- "Low voltage" Directive 73/23/EEC (modified)



The modification or transformation of this equipment, the adaptation and installation of accessories not recommended by GRAVOGRAPH, 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 is in conformity with the norms EN 60204-1 and EN 60950.

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 292-1 and EN 292-2.

Electromagnetic compatibility

This hardware is in conformity with electromagnetic compatibility norms:

- EN 50081-1 (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.

Presentation



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

Contra-indications



This machine is only designed for light engraving purposes and must never be used for other applications.

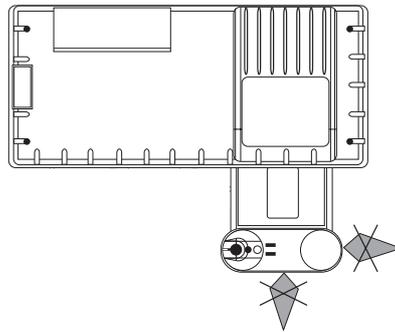
To use this machine, you are advised to wear protective glasses against the chip ejections.

Never use this machine for sawing or drilling.

Do not use this machine for working with wood.

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 (**pict.**) 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 GRAVOGRAPH (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.
- During engraving, do not use this machine without a nose (depth regulating nose or vacuum nose) in order to avoid projections of swarf.
- 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, do not stand near the tools (the travel area of the tool is 225 x 80mm).

Do not lean over the spindle holder.

Ensure that no one is in the travelling area of the moving parts of the machine and that no object will obstruct the travelling of the moving parts.



This sign shown on the tool-holder of the machine shows the danger caused by the rotating spindle during engraving (risks of getting burnt or cut).

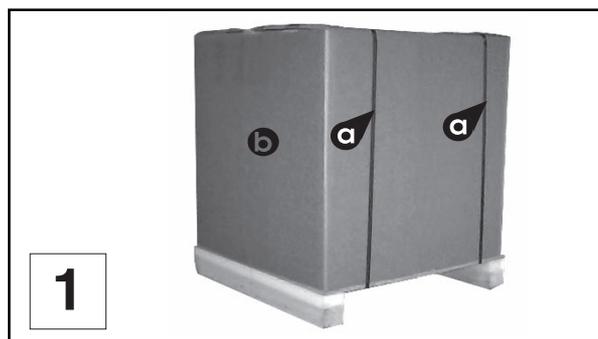
To avoid any risks of getting burnt, the protective belt housing of the tool-holder must be always closed, except when carrying out adjustments.

Stages of unpacking

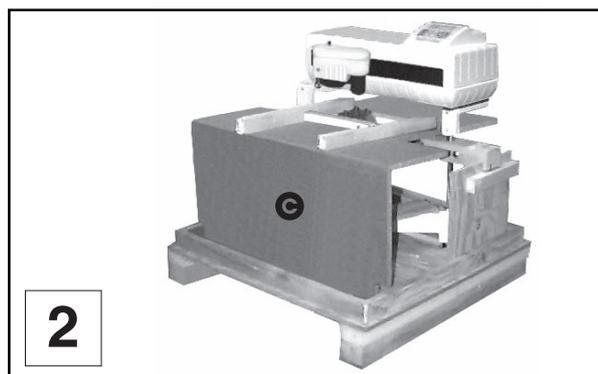


Before opening the cardboard box, check that it is the right way up.

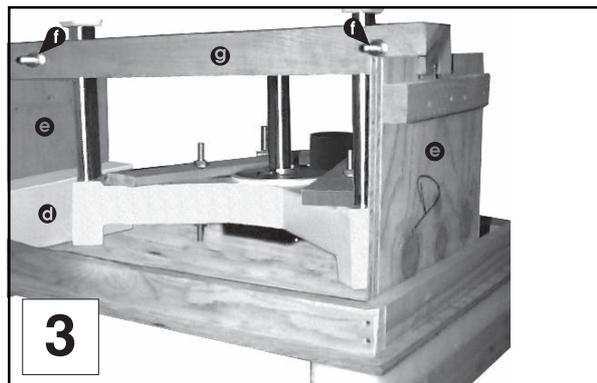
1. Cut the straps **a** (photo 1).
2. Lift the box **b** off vertically.



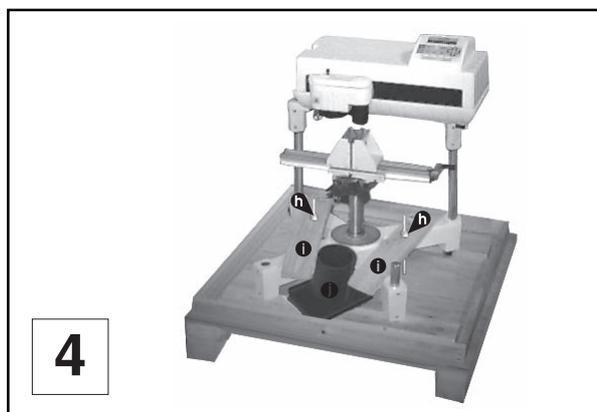
3. Take out the cardboard stand **c** (photo 2).



4. Take out the tool box **d** (photo 3).
5. Loosen the two screws **f** with a 13 key.
6. Take off the two protective bars **g** with the stands **e** (marked G (L) and D (R) for left and right sides).



7. Loosen the screws **h** with a 13 key and take out the slats **i** (photo 4).
8. Take out the protective housing **j**.
9. Take the machine out (get someone to help you).



Always move the machine with 2 people.
Make sure that no components are missing from the package. 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 IS200 TX machine in total safety.

This packaging is in conformity with European recycling standards.

Unpacking - Contents of package

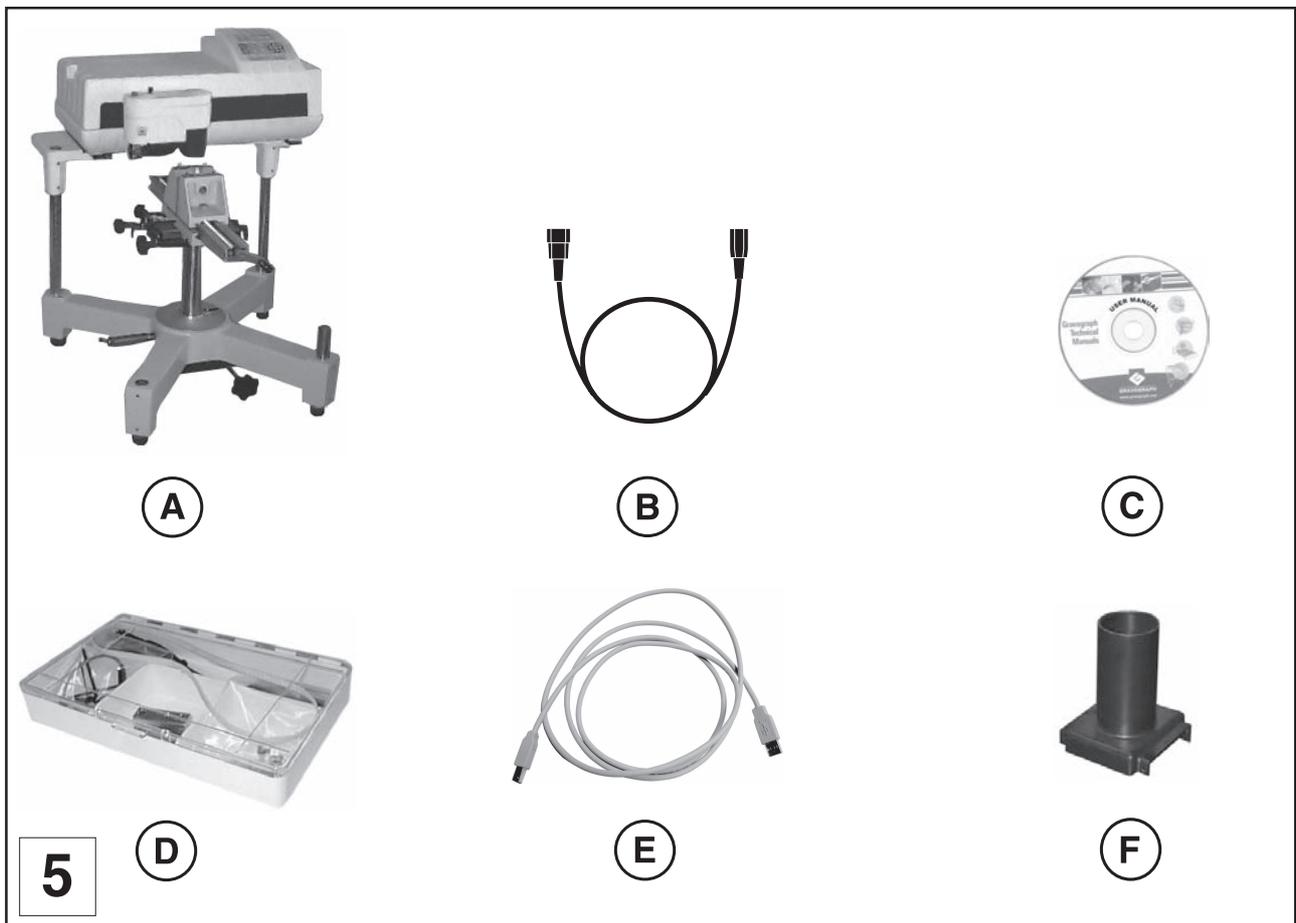


Check the condition of the packaging when you receive it. If there are any signs of damage, inform the carrier and your GRAVOGRAPH dealer immediately by recorded delivery, specifying the exact nature of the problem.

Contents of package

(pict 5)

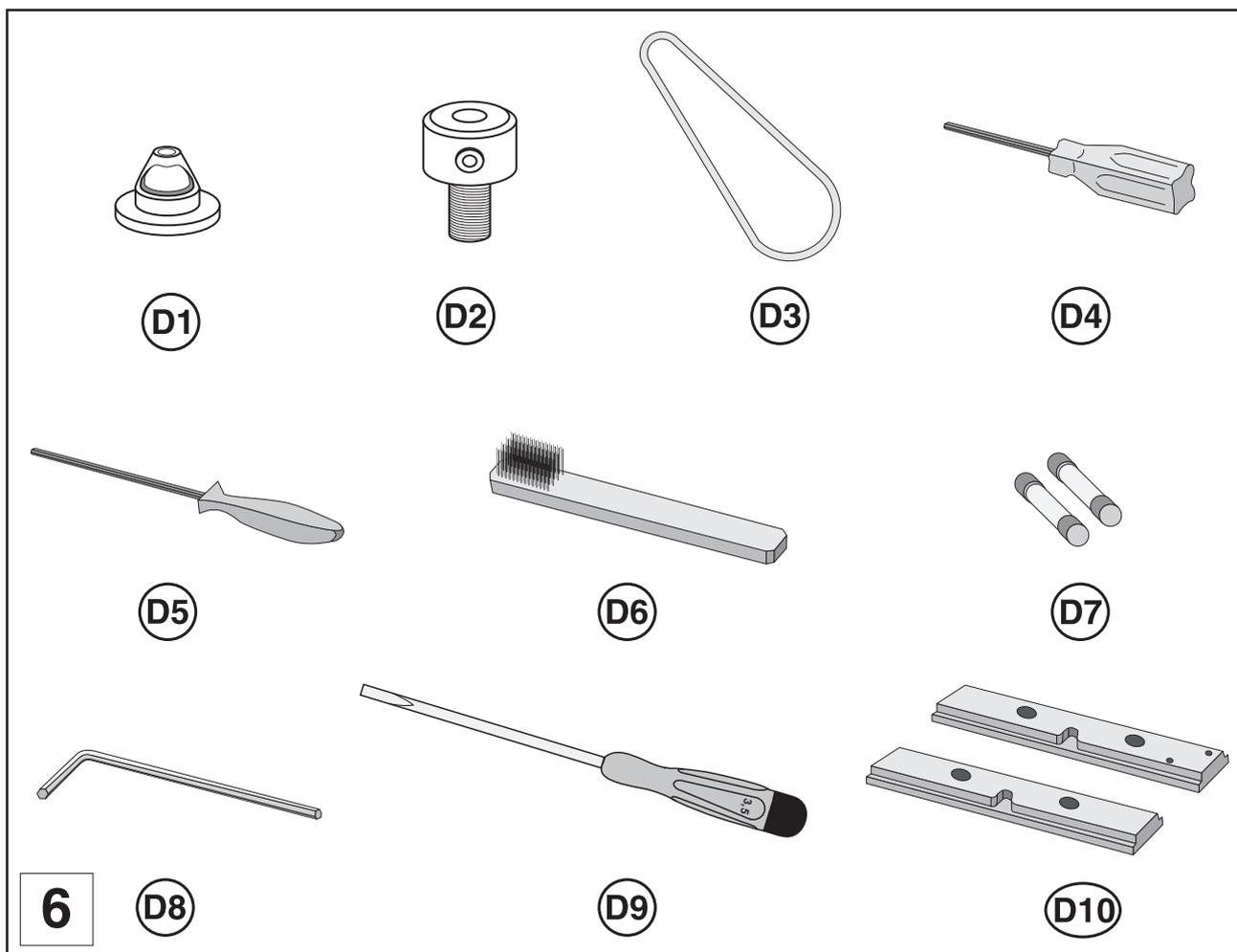
- A. An IS200 TX machine
- B. A power cable
- C. A CD-Rom contains the user manual
- D. A tool box
- E. An USB connection cable
- F. A protective housing for the underside of the TX frame



Contents of tool box

(pict 6)

- D1. a depth-regulating nose
- D2. a cutter knob
- D3. a spindle belt
- D4. a short allen key
- D5. a round allen key
- D6. a brush
- D7. two fuses 2 A T
- D8. an allen key
- D9. a screwdriver (3,5)
- D10. a pair of standards jigs



Description

The IS200 TX machine is an engraving machine.

It has a control panel with a L.C.D. screen connecting the software which is in the machine.

Files to be engraved are transferred from the computer to the machine by the intermediary of a cable which is plugged into one of the two ports on the IS200 TX machine.

The actual engraving process is controlled by the spindle.

The object to be engraved is held in the vice (as standard) or by any other system recommended by GRAVOGRAPH (consult your GRAVOGRAPH dealer for more information on systems available).



The IS200 TX machine has a maximum engraving surface area of 225x80 mm.

Front view of the machine

(pict 7)

G. Control panel

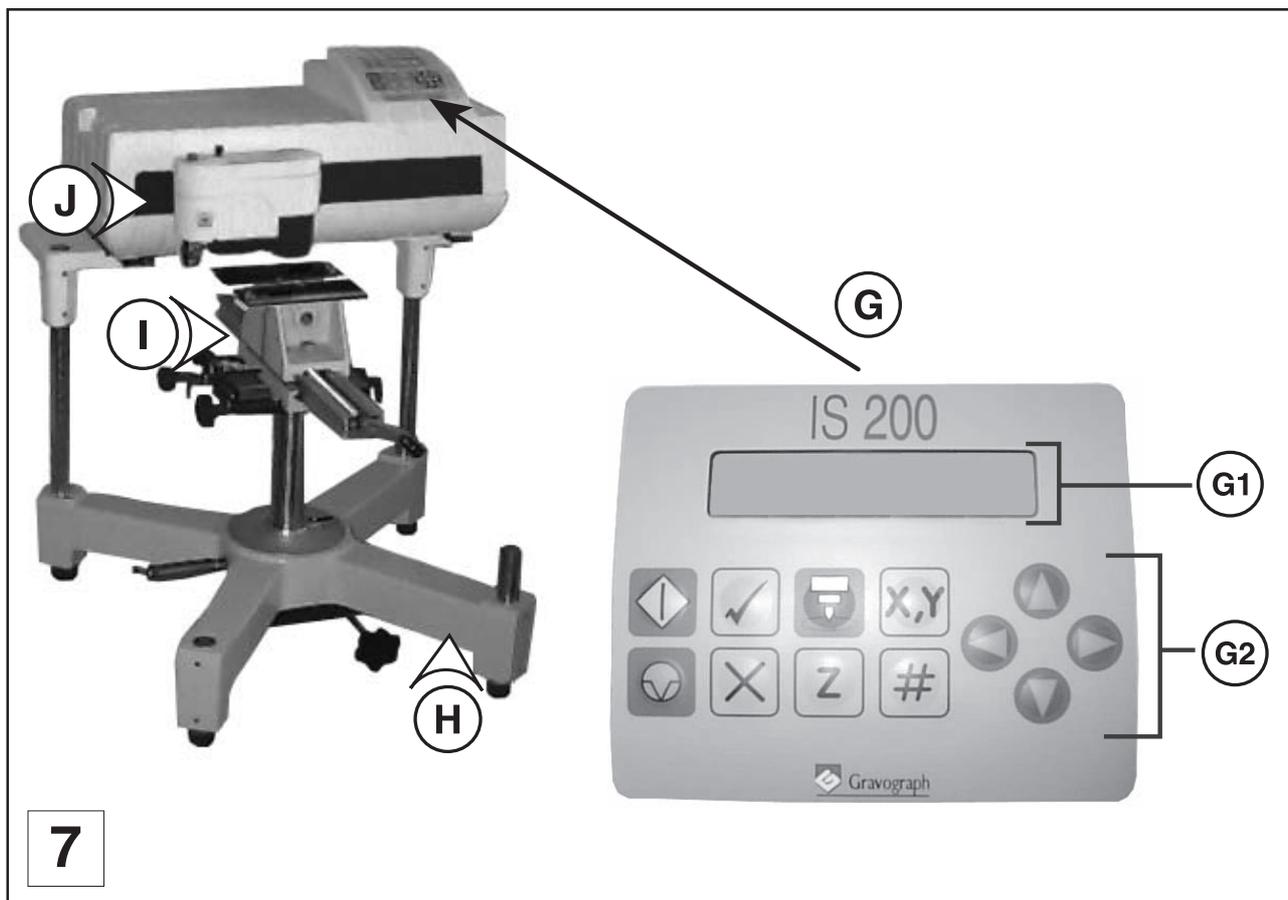
G1. L.C.D. screen

G2. 12-key control keyboard

H. TX base

I. TX vice with pair of jaws

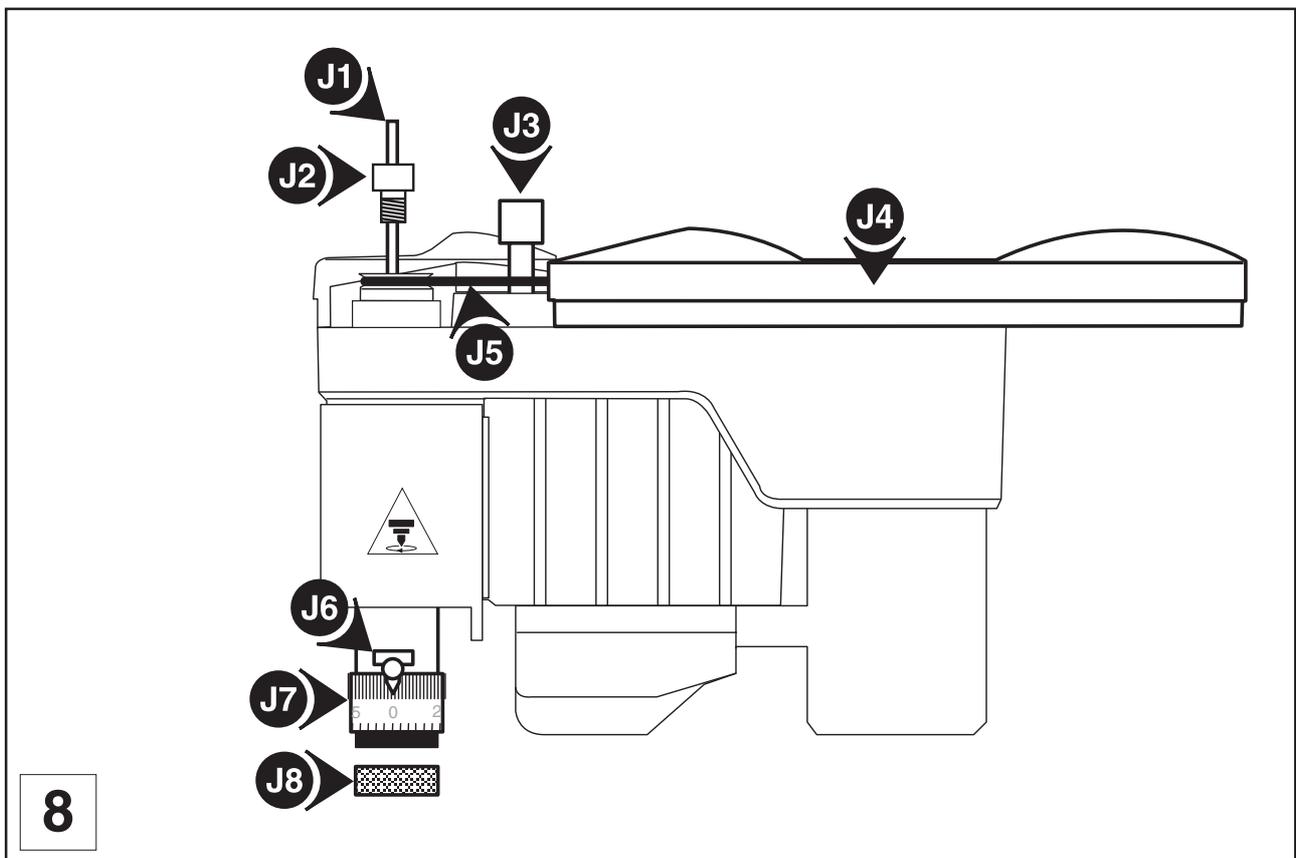
J. Tool holder



Tool holder

(pict 8)

- J1. Cutter
- J2. Cutter button
- J3. Pressure knurl on spindle
- J4. Belt housing
- J5. Belt
- J6. Index finger
- J7. Scaled knob
- J8. Nose nut



Vice

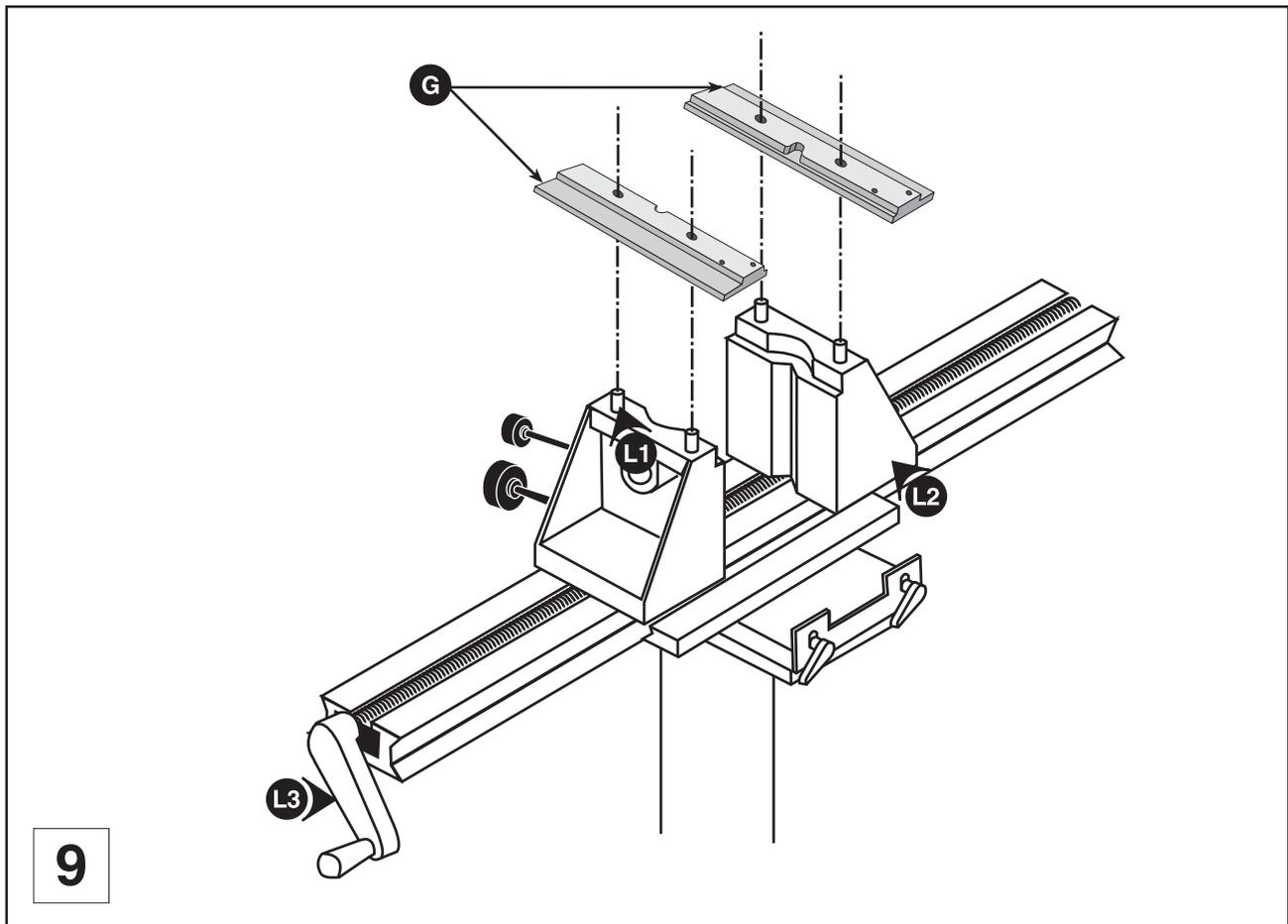
The vice holds the material to be engraved (pict 9).

The IS200 TX machine is supplied with a pair of jigs (G) which should be mounted onto the vice.

1. Open the jaws (L2) by turning the tightening knob (L3) anti-clockwise.

Open them far enough so as to mount the jaws easily.

2. Push the jigs (G) firmly onto the pins (L1) of the jaws (L2).



Rear view of the machine

(pict 10)



Each connection responds to one of the following security levels :
- Dangerous voltage.
- Very low security level.

M. Switch used as an immediate stop

- Switch I/O (ON/OFF) **used as an immediate stop**
- Fuse drawer
- Plug - **Dangerous voltage**

N. Connection socket

N1 : Lid closed

N2 : Lid open :

- PARALLEL : Parallel port - **Very low security level**
- SCREEN : **Do not use**
- SERIAL : USB port - **Very low security level**
- KEYBOARD : Keyboard port - **(not available)** -

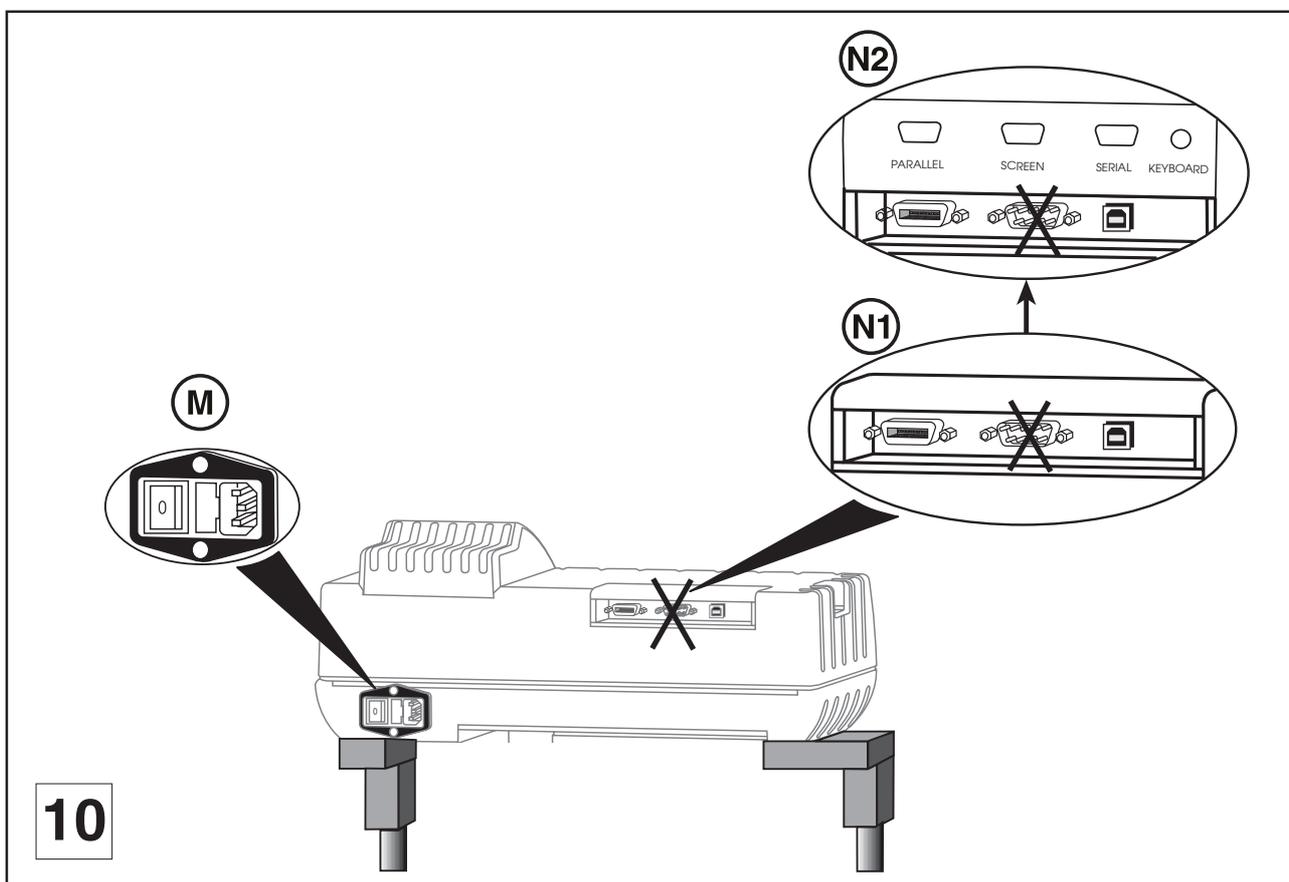


The machine must always be switched off before connecting or disconnecting a cable, the cylinder attachment and the pen attachment (optional accessories), as indicated on label (E1) displayed on the back of the electronic box and of the machine :

(E1)



NE PAS CONNECTER / DECONNECTER
SOUS TENSION
DO NOT CONNECT / DISCONNECT
WHEN THE MACHINE IS ON



Installing



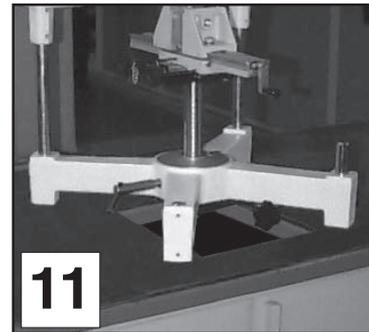
Physical installation and electrical installation (connections) must only be carried out by an approved GRAVOGRAPH technician.

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

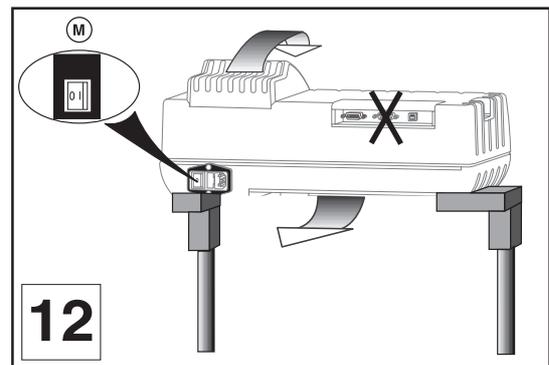
Physical installation advice

- Put the Gravograph machine onto a stable flat, clean surface **with mini. sizes of 510x470 mm.**

If you do not have the tubular TXL stand (optional accessory) this plan should have a hole (**photo 11**) enabling you to insert the protective housing for the vice column (mounting instruction on the next page).



Make sure the back of the machine is well-ventilated, do not put it too close to anything (wall, other machines etc). (diagram 12).



- 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 access, in case of necessity, the stop switch ON/OFF (**M**) at the rear 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.



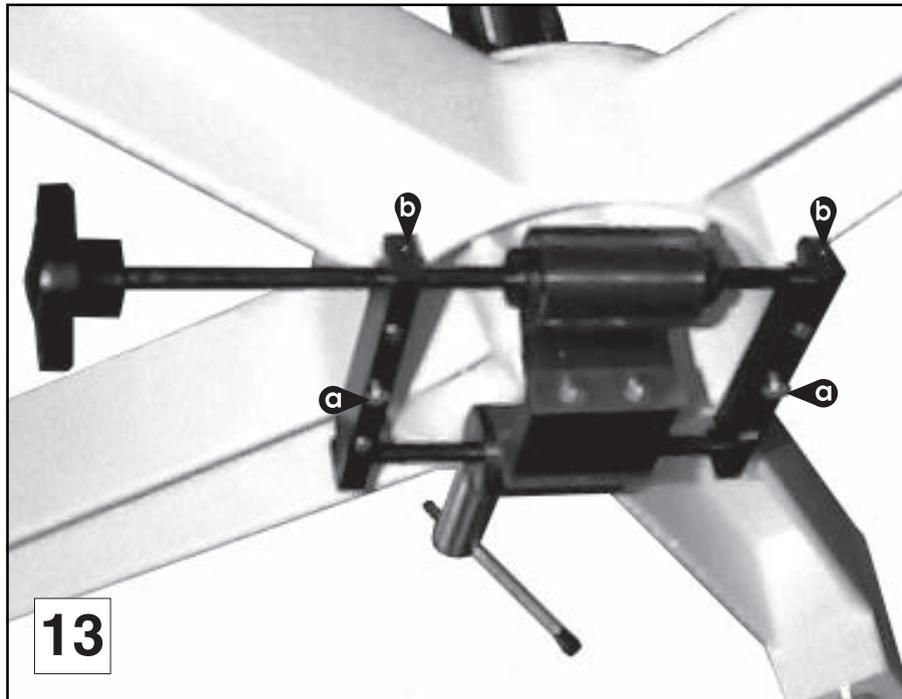
The connectors screws must be very tight to avoid accidental disconnection of the cables while the machine is turned on as this could permanently damage the electronic cards.

- Protect Gravograph equipment against:
 - Moisture (rain, snow, condensation...),
 - Heat (direct sunlight, heating...),
 - Brusque temperature changes,
 - Dust (exhaust pipe),
 - Liquid splashes, spillages,
 - Vibrations,
 - Electric or electronic radiation.

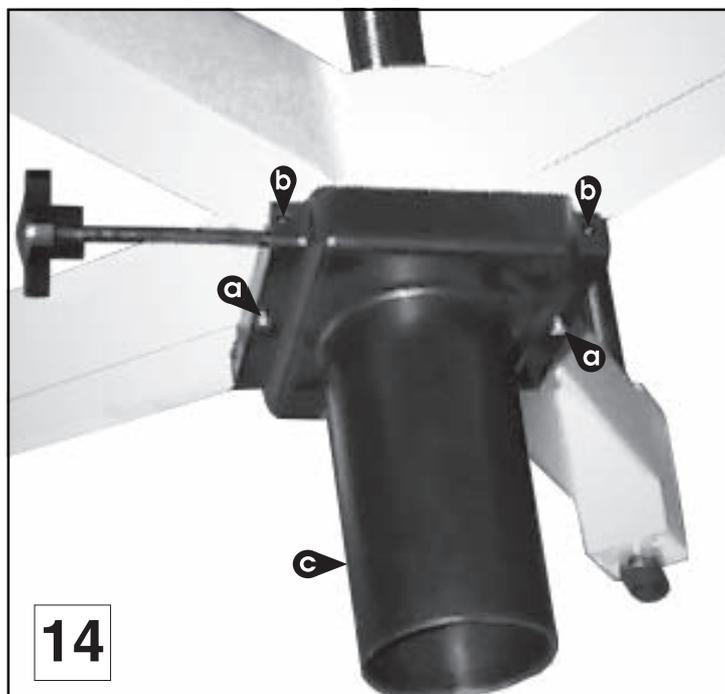
Mounting the protective vice housing

For this operation you need access to the underside of the machine. For this tip the machine with help from another person, or, if the workbench allows, access it directly from the hole (see "Physical installation advice" photo 11).

1. Loosen the two screws **a** (photo 13) and put them safety to one side.



2. Place the housing **c** so that the holes are directly over the two grub screws **b** (photos 13 and 14).



3. Tighten the two screws **a** (photo 14).

If the plate is correctly tightened, noise and vibrations are reduced to a minimum when the machine is engraving.

Electric installation advice

Before connecting any equipment to the machine, earth it in order to protect it against electric surges which can occur during installation.



This material is "class 1". The plug must always be connected to a neutral socket. If you do not have a plug of this type, have one installed by an approved electrician. Never use the machine without a neutral connection.

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 computer or an ISIS console linked to an IS table), 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, electrosluices, 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 (Gravograph relay box, etc ...).



The machine must always be switched off before connecting or disconnecting a cable, the cylinder attachment and the pen attachment (optional accessories) (label E1).

E1



NE PAS CONNECTER / DECONNECTER
SOUS TENSION
DO NOT CONNECT / DISCONNECT
WHEN THE MACHINE IS ON

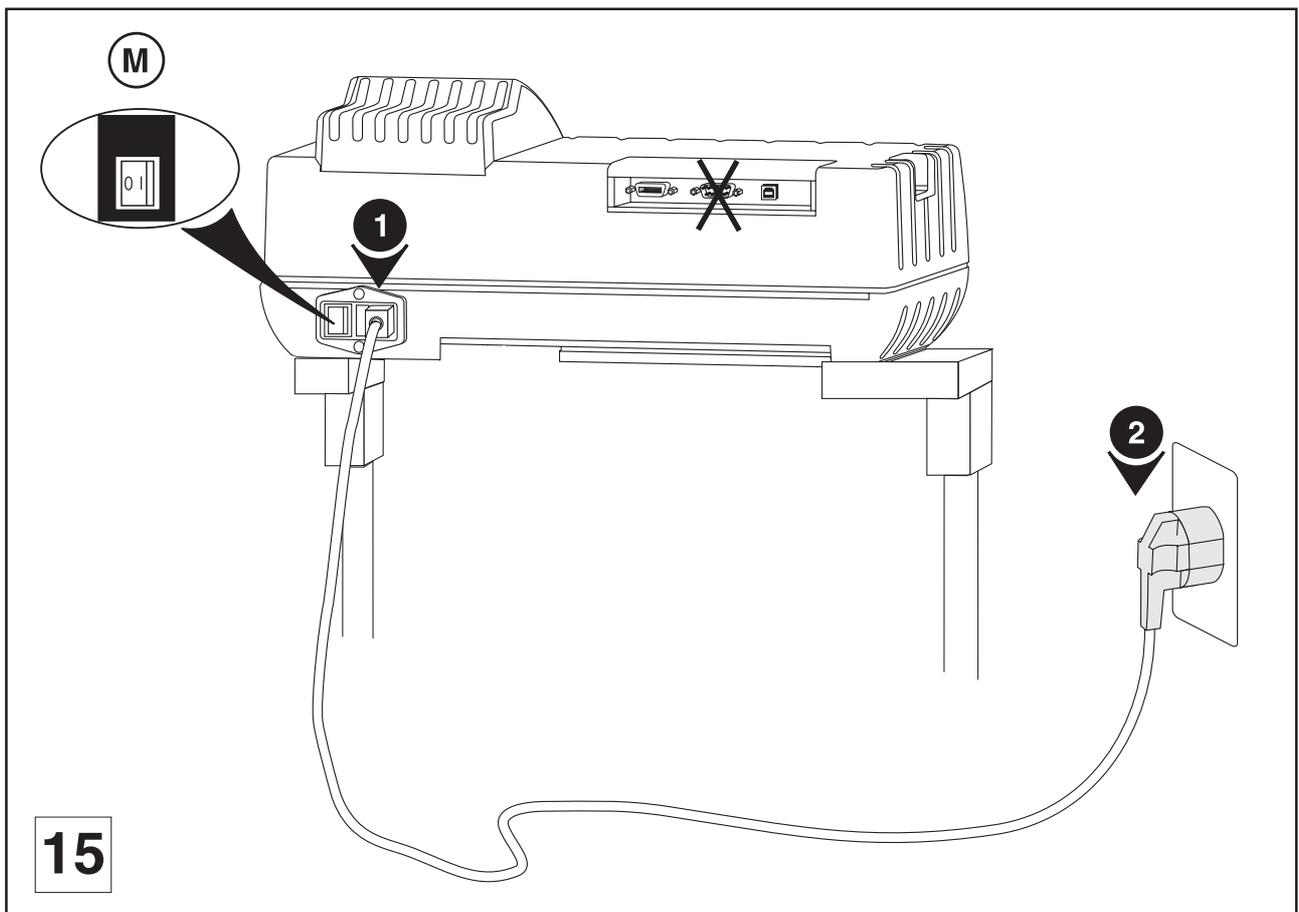
Electrical connections of the machine

Stand behind the machine (Pict 15).

1. Plug the end of the main cable into the socket on the back part of the machine (1).
2. Plug the male end (2) into an earthed wall socket.



To cut off the mains supply to your machine in the case of severe problems, unplug the mains cable or switch off the machine with the stop switch (M) at the rear of the machine. Make sure that you can reach them easily. As the electrical plug acts as a sectioning device, it is important you set up the machine so that you always have easy access to the power cable.



Switching the machine on

Switch on the machine (switch to position I).

When switched on the ventilator of the machine will start.

The following message will be displayed on the L.C.D. screen of the machine :

**Boot Program X.X
RAM: 2M**

The machine will then emit a "beep" and a new message will be displayed :

**<< GRAVOGRAPH >>
VERSION XX.XX**



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

Problems

If one of the operation signs is absent, 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 and also the fuses (see "Changing the fuses").

Switching the machine off

Switch the switch ON/OFF (I) to position 0.

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.

Mechanical block

In the following cases :

- danger for the operator,
- block on the support to be engraved,
- block on an object placed in the work area,

1. **Cut the power supply by switching the switch ON/OFF (I) to position 0.**
2. **Free the tool, without switching the machine on, by manually and slowly moving the tool holder as required.**
3. **Only switch the machine back on after ensuring that the tool's moving area is totally clear.**

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.



You must wait for 30 seconds. This time allows any electric shock to the machine, possibly damaging the power supply, to be avoided.

Setting up transmission between the IS200 TX and a PC type computer



The computer and the IS200 TX machine must be switched OFF.



PC computers and the WINDOWS® graphic environment being very widespread throughout the world, we have based ourselves on these products to define the installation and use procedures of the IS200 TX.

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 are conform to the norms of CEM radio waves 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 transmission cable supplied with the IS200 TX.

The machine is delivered with the following cables :

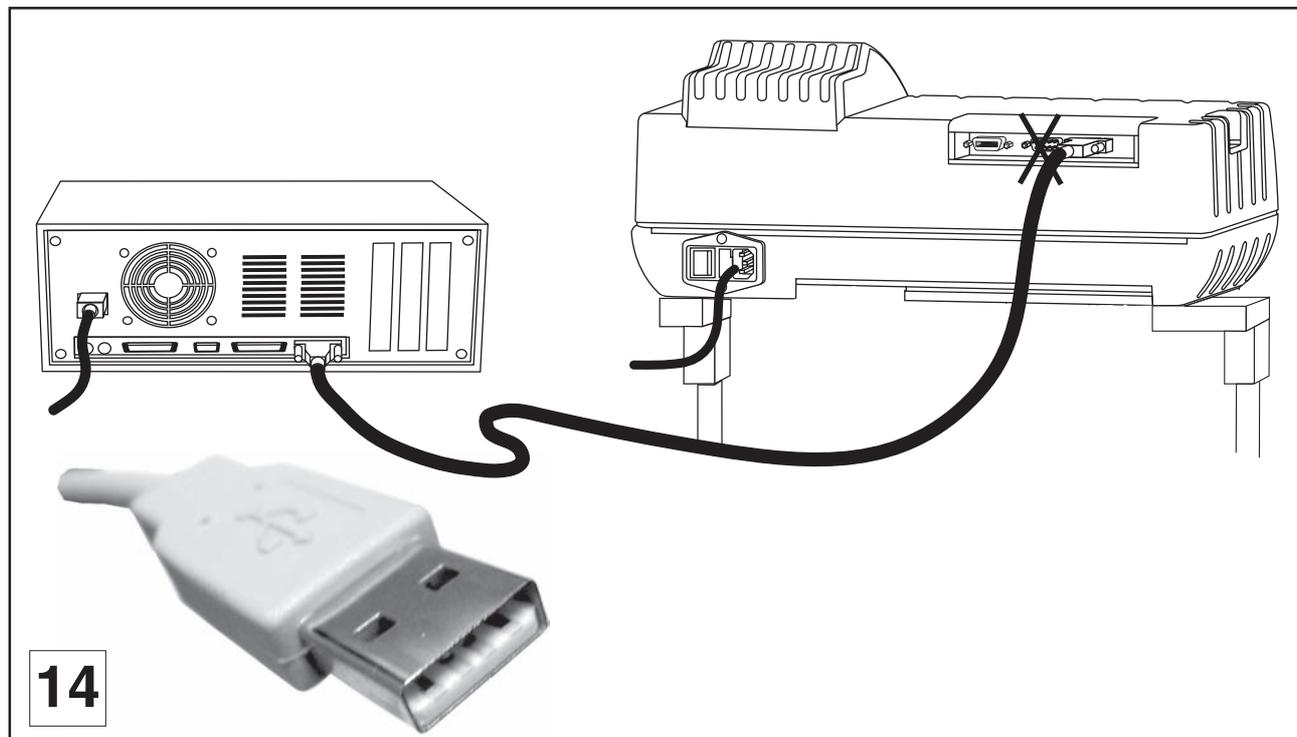
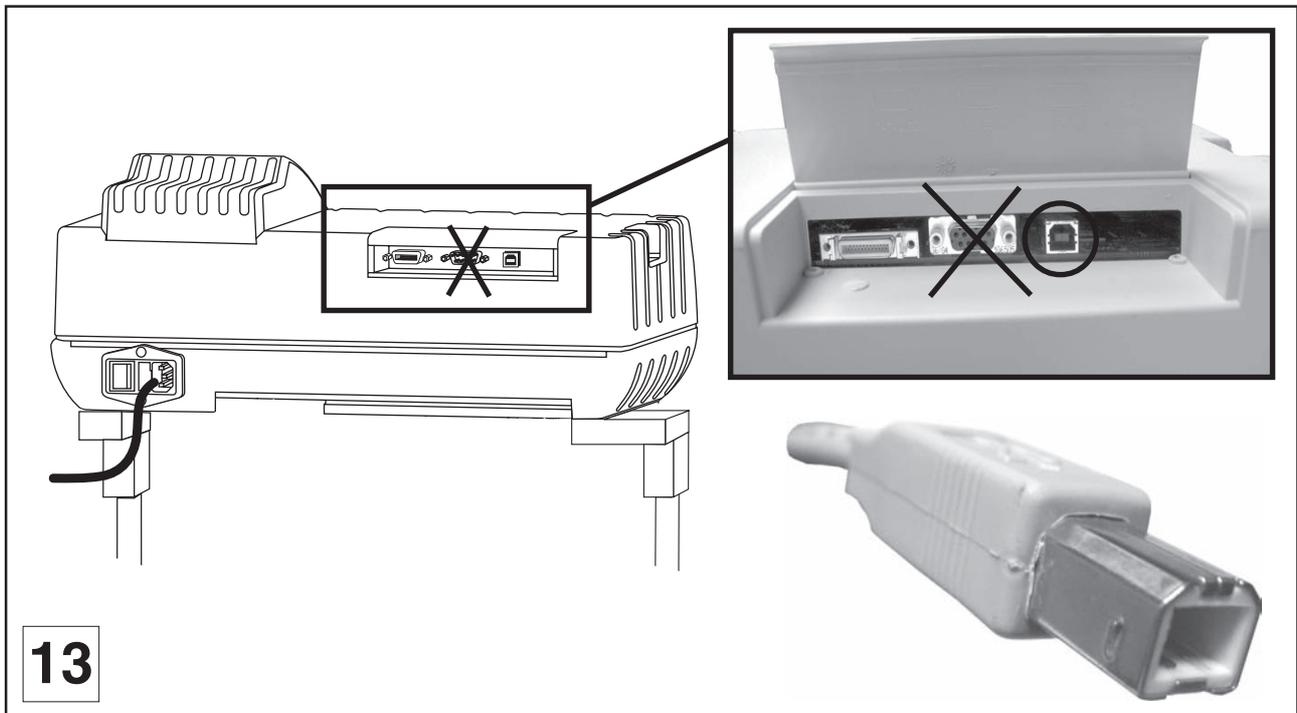
- USB cable



PC/IS200 TX connection using the USB port

1. Plug the USB cable into the USB port of the IS200 TX machine (diagram 13).
2. Plug the USB cable into the USB port of the PC.

Refer to the installation manual of the computer for the USB port (1.1 or 2.0).



PC/IS200 TX connection using the parallel port

1. Plug the parallel cable into the parallel port of the IS200 TX machine (diagram 16).

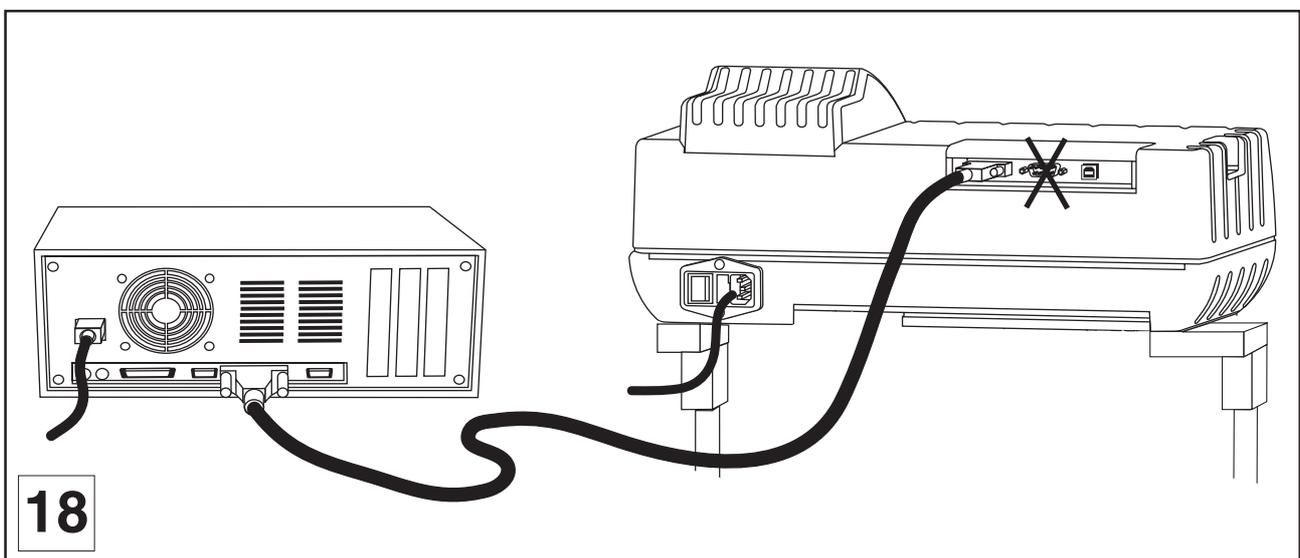
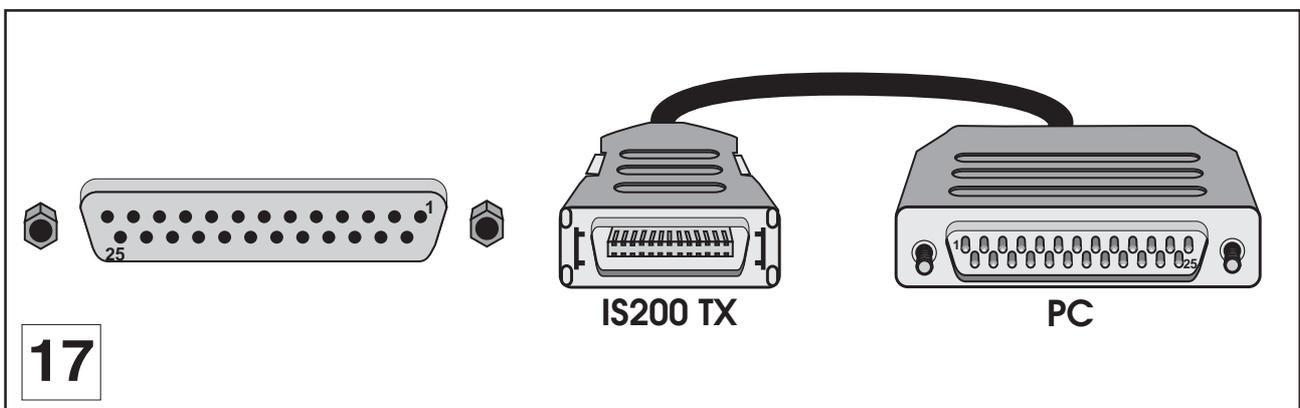
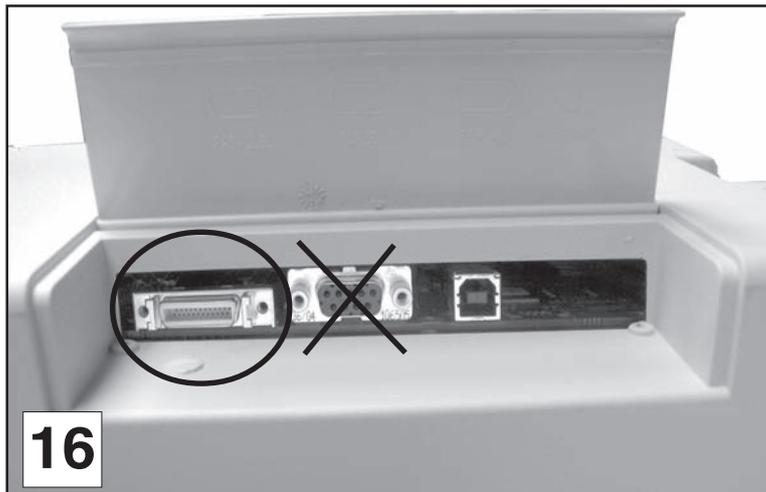
This is a 26-pin Mini-Delta Ribbon connector.

2. Plug the parallel cable into the parallel port of the PC (diagrams 17 and 18).

Refer to the installation manual of the computer for the parallel port.



The connectors screws must be very tight to avoid accidental disconnection of the cables while the machine is turned on as this could permanently damage the electronic cards (label **E1**).



Machine configuration (language)

1. Switch on the IS200 TX machine (switch in position 1).

A first message will be displayed on the screen :

Boot Program X.X
RAM : 2M

A new message will be displayed on the L.C.D. screen of the machine :

<< GRAVOGRAPH >>
VERSION XX.XX

This message will be displayed for about 3 seconds. During that time press



LANGUAGE : ENGLISH
⇅ to modify



If this screen does not appear after having pressed , switch the IS200 TX machine off, wait a few seconds, switch it on again, then start the configuration procedure from the beginning.

2. Select the language desired.

When you receive your IS200 TX machine it is configured to display the messages in English.

To choose the language desired press as many times as necessary.

The selected language is displayed on the screen.

To validate your choice press



Press



The following message is displayed on the L.C.D. screen :

<< GRAVOGRAPH >>
VERSION XX.XX

Wait a few seconds.

The following message is displayed on the screen :

<READY TO RECEIVE>

Press



Release the key when the tool-holder of the IS200 TX machine starts to move.

Press again.

Release the key when the following message appears :

SAVE CONFIGURATION
⇅ to select

Press



The following message appears :

SAVE CONFIGURATION
✓ to confirm

Validate by pressing



SAVE CONFIGURATION
Saving

The message on the screen indicates that the message that you have carried out is being saved. In this way the display language that you have just chosen will be taken into account each time you switch the machine on.

3. Switch the machine off.

Installing the engraving software in Windows

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

PC Computer	Configuration
Microprocessor	Pentium III
Frequency	800 Mhz
Random Access Memory (RAM)	128 Mo
1 internal hard disk	10 Go with 100 Mo free
1 internal CD-ROM drive	x24
1 internal 3 ^{1/2} disk floppy drive	
1 mouse	Windows compatible
1 keyboard	extended (105 keys)
LPT parallel port	1
USB port (1.1 or 2.0)	1
1 graphic board	32000 colors, 16 bits
1 SVGA color monitor	15", 800x600 resolution
Software environment	 Windows XP
	 Internet Explorer 5 (or more)
	 Acrobat Reader 5 (or more)
	 Microsoft Word 2000 (or more)
	 Windows Media Player
	 Polices Arial, Microsoft Sans Serif, Verdana

2. Insert the CD-ROM in the drive and close the drive.

3. Wait until the Installation screen is displayed.



Double-click the CD-ROM icon if the installation is not self-opening.

4. The installation automatically runs : the Progression bar and panel indicate the course of operations.

5. Click to quit the Installation panel.

6. Run GravoStyle : Click its icon on the desktop.



Windows create automatically a virtual USB port as soon as the machine and the PC computer are connected and switched on.

From your engraving software, install a "generic/text only" printer. Then indicate from Windows (printer properties) the virtual USB port created previously by Windows as the destination port of this "generic/text only" printer.

Transfer

You have just created a composition with your engraving software.

Transfer procedure

1. Switch on the IS200 TX machine and wait a few seconds.

The following message will appear on the screen of the machine :

<READY TO RECEIVE>

2. From your engraving software, transfer the composition to the IS200 TX machine

The engraving machine displays the number of bytes received :

**◀▶ To engrave
XXXX bytes received**

The following message is displayed for a few seconds as soon as the transfer is complete :

TRANSFER COMPLETED

Then the following message is displayed :

**<READY TO RECEIVE>
◀▶ To engrave**

The machine is ready to engrave.

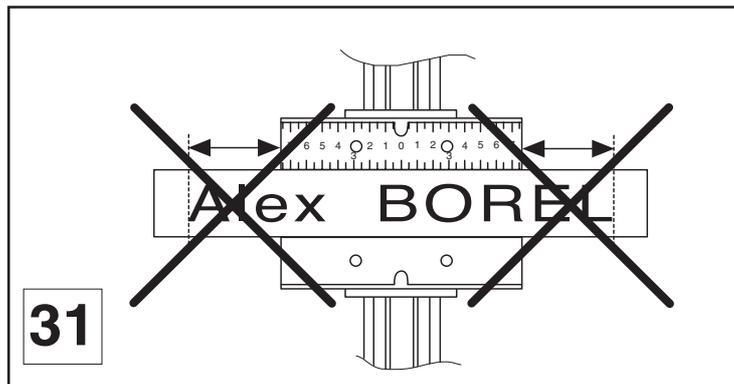
Positioning the plate

Vice

3. Choose the jigs according to the length of the plate (consult your GRAVOGRAPH dealer for more information on the various jigs available).

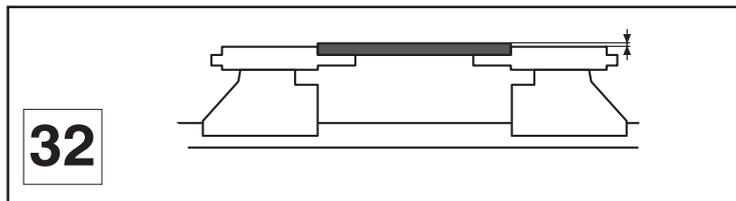
The length of the plate should not exceed the length of the jigs (pict. 31).

See "Clamping the object to be engraved" in the "Physical configuration of the machine" paragraph of chapter "Engraving techniques" in the user manual "IS200 Program".



4. Choose adequate side of the jigs according to the thickness of the plate.

The plate should be slightly higher than the jigs (pict. 32) to avoid that the regulating nose touches the jigs.

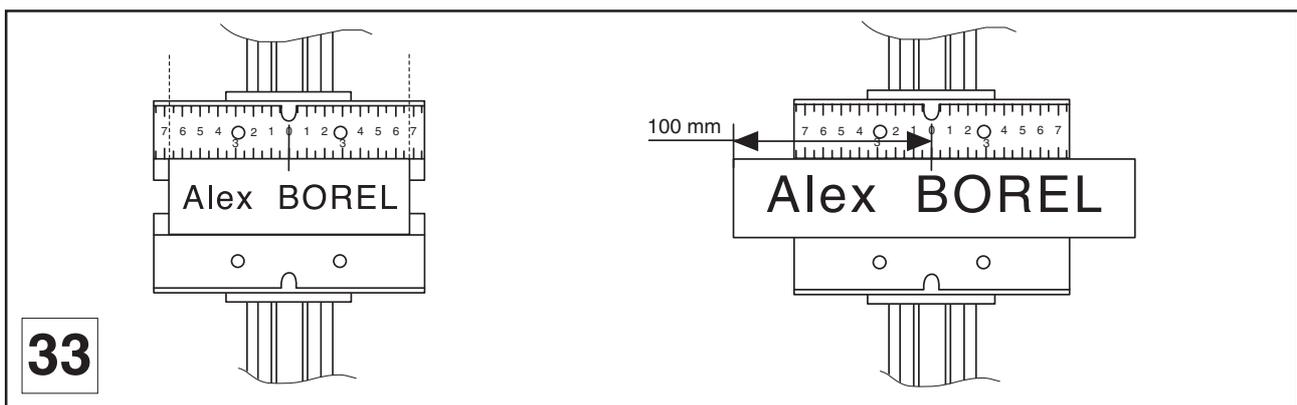


5. Mark the middle of the plate.
6. Centre the plate so that the centre mark is lined up with the 0 on the jig (diagram 33).
7. Using the tightening knob, tighten the plate so that it cannot move during engraving.

If the plate is correctly tightened, noise and vibrations are reduced to a minimum when the machine is engraving.



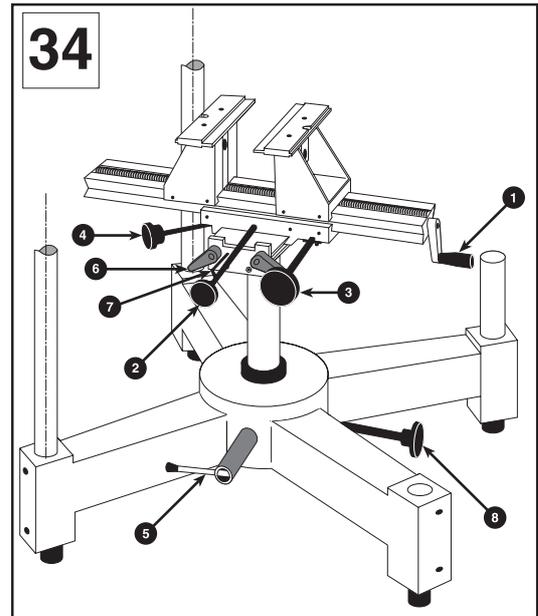
Check that the object is tightened correctly to ensure that it is not ejected during engraving.



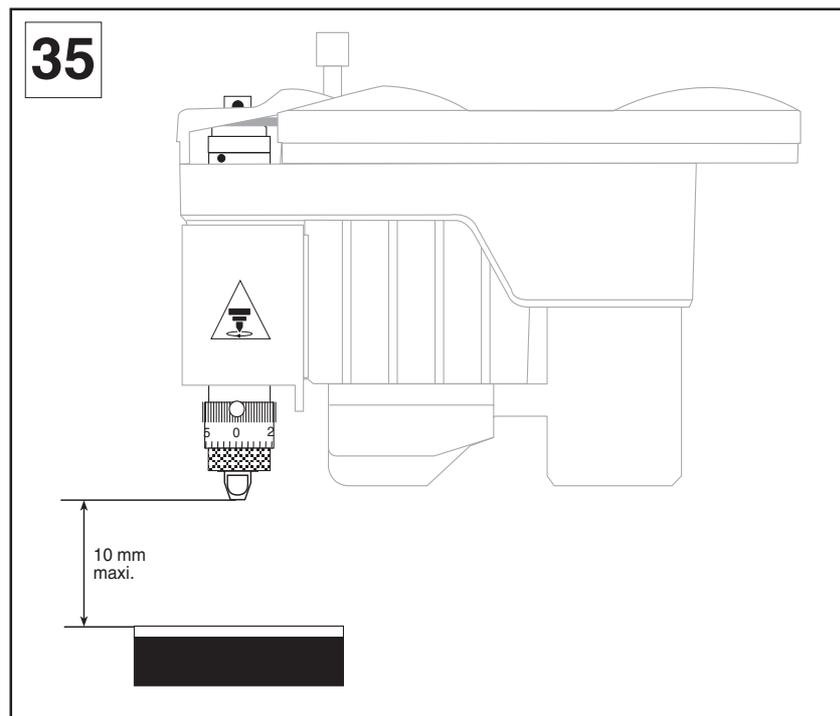
Positioning the TX vice

The vice is movable in all directions (**diagram 34**) :

- Open - close : Turn the handle (1).
- Front - back : Unscrew the button (2) and turn the button (3).
- Left - right : Unscrew the button (4) and push the vice.
- Rotation : Loosen the screw (5).
- Slant : Unscrew the 4 bolts (6) and take out the pin (7).
- Up - down : Loosen the screw (5) and turn the button (8).



Always place the vice so that the object to be engraved is no more than 10 mm below the IS200 TX spindle (**diagram 35**).



Objects to be engraved can either be held in the vice or in the jigs adapted to the shape of the object.

For our simple plate (**diagram 35**) :

- 8. Lift the plate up to less the 10 mm below the spindle with the button (8) after having loosened the screw (5).**
- 9. Using the screw (5) tighten well so that the vice remains in position during engraving.**

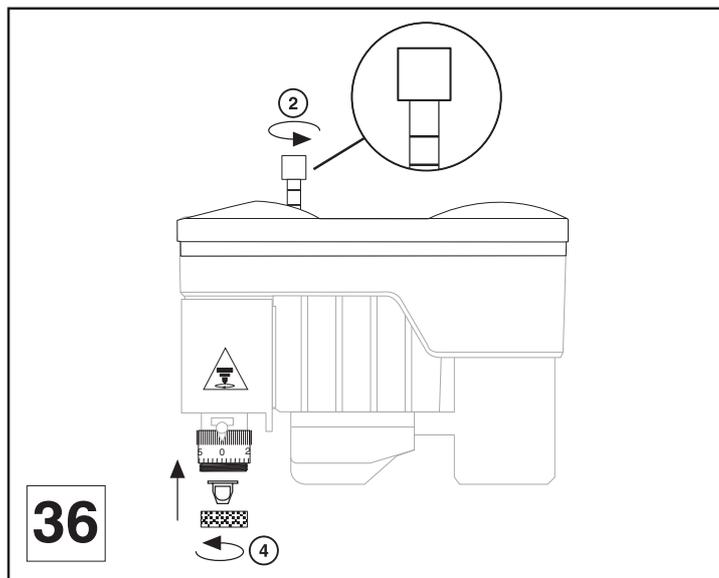
Adjusting the spindle

Setting up the spindle

10. Press the  key and the  key straight after.

The tool holder stops above the material to be engraved exactly where the engraving should start.

11. Set the spindle pressure with the knob (2) (the tightening direction is indicated by the arrow in diagram 36).



To engrave without a nose, the pressure knob (2) must be completely tightened so that the spindle is rigid. To engrave with a nose, the setting depends on the hardness of the material, on the cutter width and on the surface state of the plate selected (if the nose is likely to scratch the object, reduce the pressure).

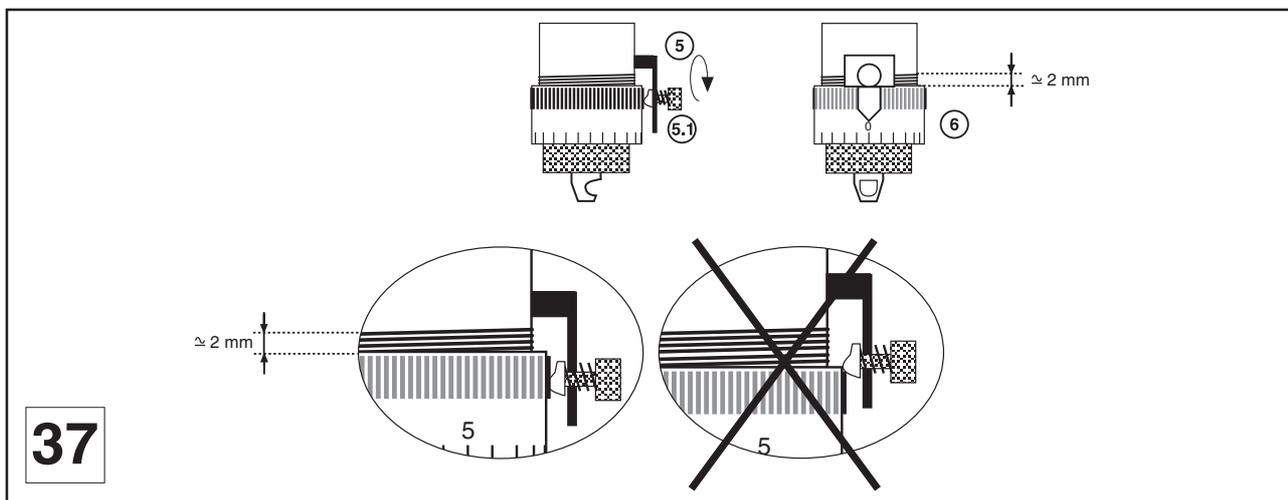


To engrave with a nose, nous vous conseillons to unscrew the pressure knurl on spindle (2) until you can see the second mark (diagram 36).

12. Set the regulating nose (4) in place on the spindle and tighten the nose nut.

13. Unscrew the index finger (5) then unscrew the scaled knob (5.1) (diagram 37).

Line up the 0 of the scaled knob with the index finger (6). The scaled knob should be unscrewed in such a way that the index finger blocks it.



Putting the cutter into the spindle

This plate will be engraved using a conical tool (or conical cutter) made of high speed steel with a 4.36 mm diameter and a 0.50 tip.

14. Lower the spindle until the depth regulating nose touches the material to be engraved (diagram 39).

Press



ZREF = 0.00 mm
↑ to change

To lower press



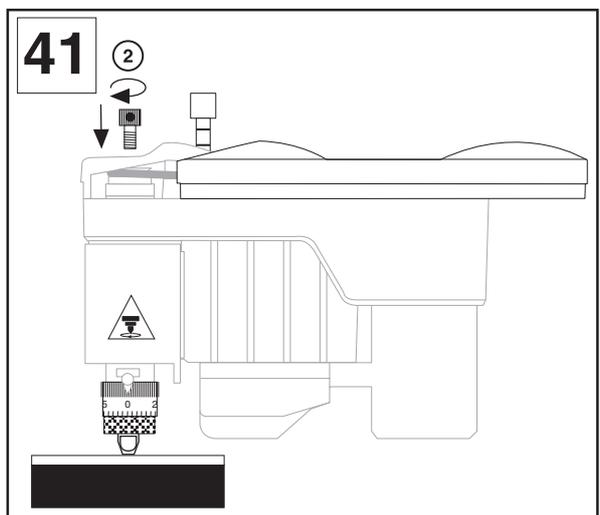
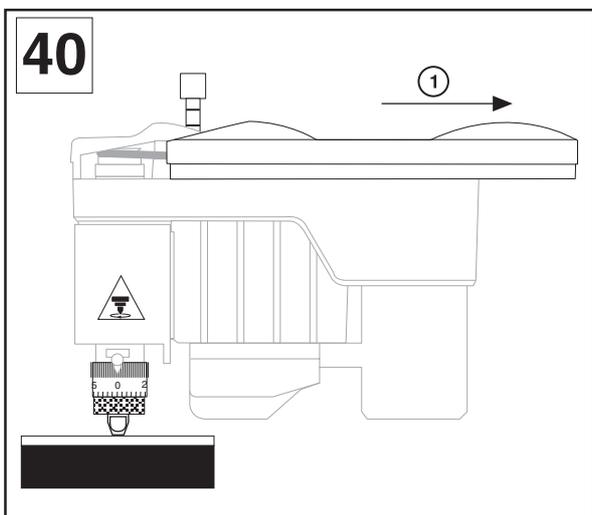
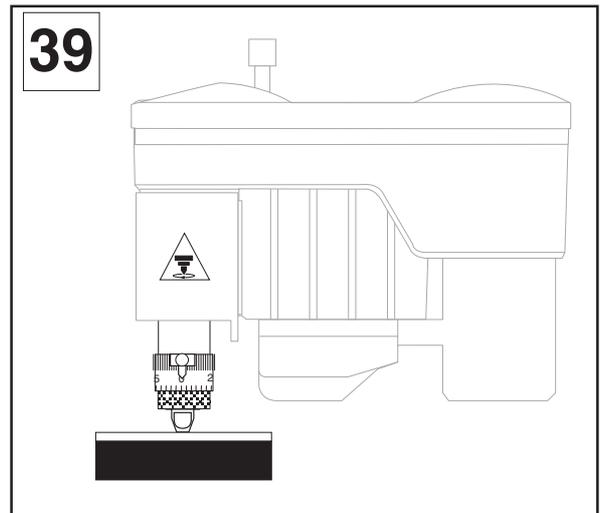
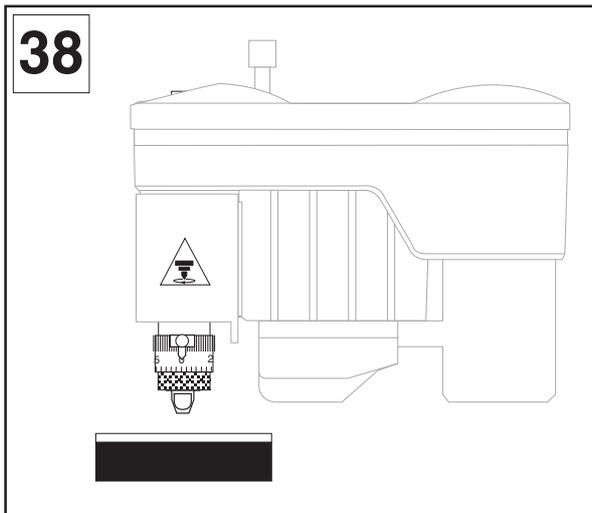
15. Slide belt housing (1) to the right (diagram 40).

16. Screw knob of cutter (2) onto the spindle (diagram 41).

The spindle knob should be tightened anti-clockwise (knob with left-hand thread).

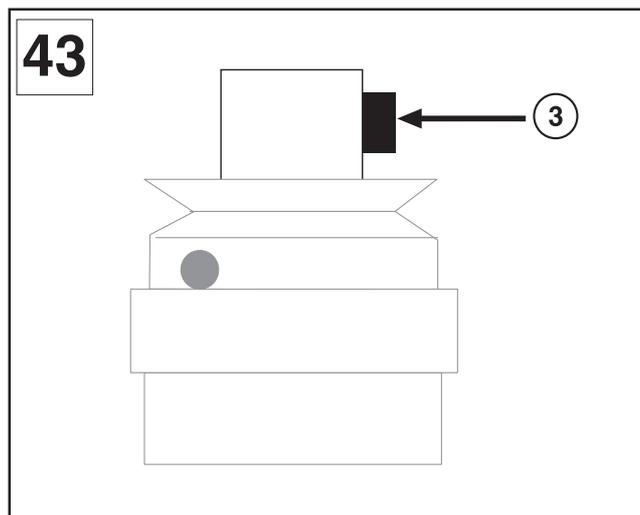
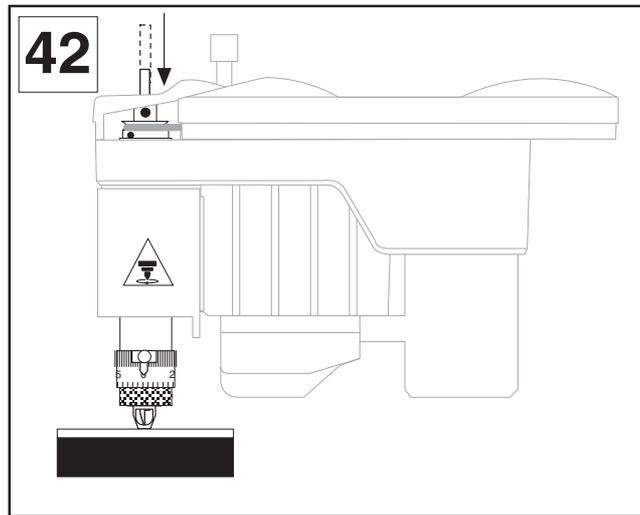


The tool is very sharp and to avoid any risks of getting cut, you are advised to use some kind of protection (gloves) to handle it.



17. Insert the cutter into the button until it is touching slightly (carbide cutters are not very shock resistant) the engraving material (diagram 42). To facilitate the insertion of the cutter, slightly unscrew the screw (3) located on the spindle knob (diagram 43).

Remember to program 0.5 to 1 mm depth to compensate possible flatness faults of the plate.



18. Tighten the screw (3) of the cutter button to lock it into place.



For greater convenience, we advise that you have as many cutter knobs as you have cutters, so you can leave them together and keep the settings for possible jobs to be carried out in the same conditions in the future (same thickness of materials).

For this, you will need to request "the machine configuration save with ZREF" (see "Saving the machine configuration" paragraph of chapter "Basic techniques" in the user manual "IS200 Program").

Setting-up the spindle origin

19. Save the position of the spindle by pressing



The spindle moves up.

Adjusting the tool depth

20. Turn the index finger a few notches to the right to obtain the desired engraving depth (one notch = 0.025 mm) (diagram 44).

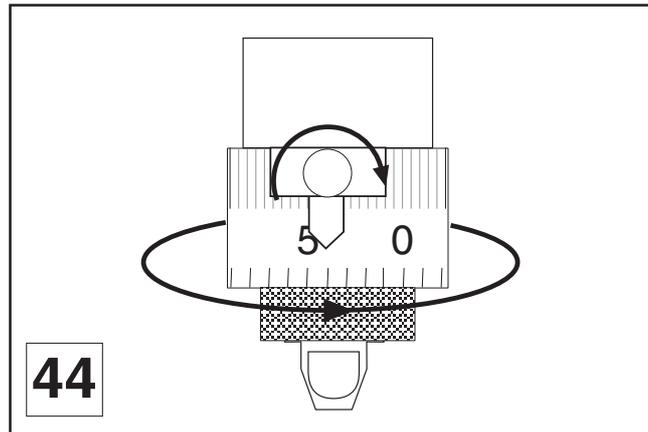
Refer to the table opposite for the number of marks to move the index finger depending on the desired depth and the material used.

21. Tighten the index finger in order to maintain the scaled knob in this position.

22. Push the belt-housing to the left.



To avoid any risks of getting burnt, the protective belt housing of the tool-holder must be always closed, except when carrying out adjustments.



Engraving material	Type of cutter	Engraving depth in mm	Number of marks
Anodisal	Carbide	0,1	4
Silver	Carbide	0,3	12
Chrome	Diamond	0,025	1
Gravometal	Carbide	0,1	4
Gravoply II	Carbide	0,1	4
Stainless Steel	Diamond	0,2	8
Brass	Carbide	0,2	8
Metallex	Carbide	0,1	4
Gold	Carbide	0,3	12
Plastic	Carbide	0,2	8

Starting to engrave



This sign shown on the spindle of the machine shows the danger caused by the rotating spindle during engraving (risks of getting burnt or cut).

To avoid any risks of getting burnt, the belt housing of the tool-holder must be always closed except for when adjusting the tool-holder and changing the spindle belt.

For your own personal safety and to avoid any risks of being crushed by the machine during engraving, do not stand near the tools or lean over the spindle holder (the travel area of the tool is 225x80mm).

Always wear protective glasses against chip ejection.



Before starting the engraving, ensure that the spindle travel area is completely clear.

Ensure that no one is in the travelling area of the moving parts of the machine and that no object will obstruct the travelling of the moving parts.

23. Press START (Engraving Start)



The tool holder moves over to the first point on the engraving and starts to engrave.



To stop engraving (if there is a problem), press PAUSE



The machine will pause.



To continue engraving, press START (Engraving Start)



To stop engraving completely, press one of the arrows on the joystick.



To increase the travel speed of the spindle during engraving,
press the arrow



To reduce the travel speed of the spindle during engraving,
press the arrow



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.

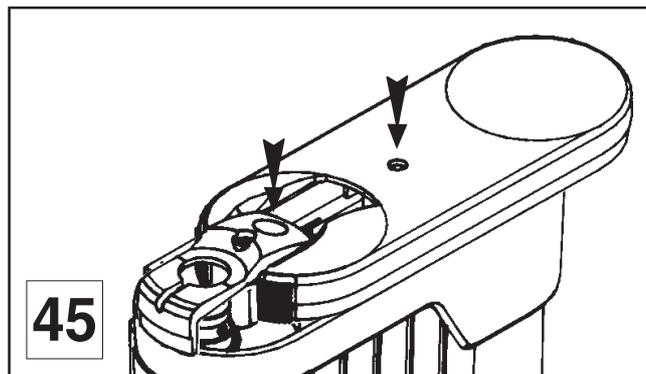


The mains cable should always be replaced if it is damaged in any way : flattened, nicked, cracked etc..., or if there are bare wires.

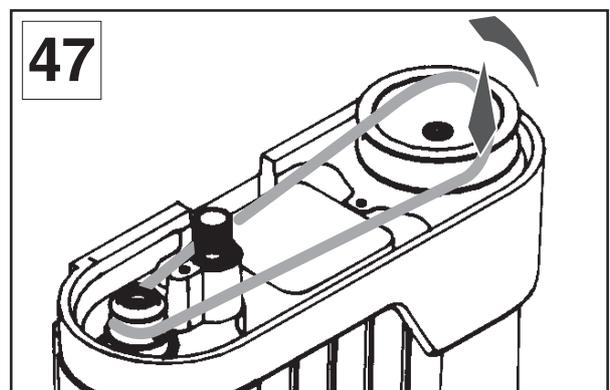
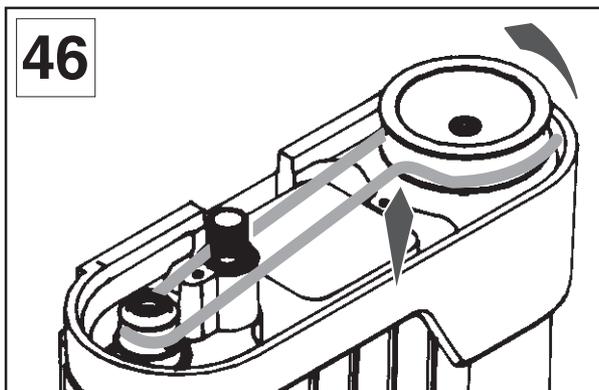
Changing the belt

You will find a spare belt in the machine tool box.

1. Slide the belt case to the right.
2. Loosen the 2 screws fixing the case, and remove it (pict. 45).



3. Pull the belt off with one hand, and turn the motor pulley with the other (pict. 46).
4. Put the belt in the spindle pulley groove.
5. Put the belt into the pulley groove opening with one hand and turn the pulley with the other (pict. 47).



6. Replace the plastic casing and tighten the two screws fixing the case.
7. Slide the belt-casing to the left.



To avoid any risks of getting burnt, the protective belt housing of the tool-holder must be always closed, except when carrying out adjustments.

Changing the fuses

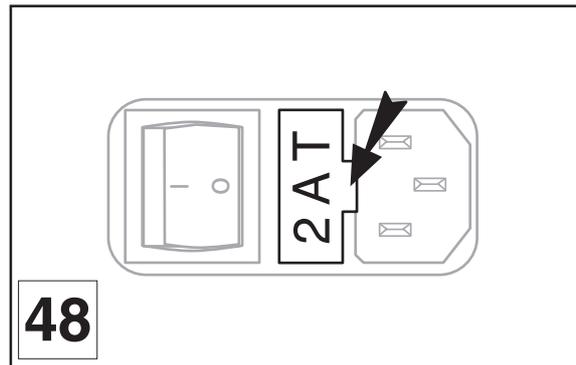
You will find spare fuses in the machine tool box.
The IS200 TX machine is supplied with 1 pair of fuses **2 A T**.
(T necessary for your safety)



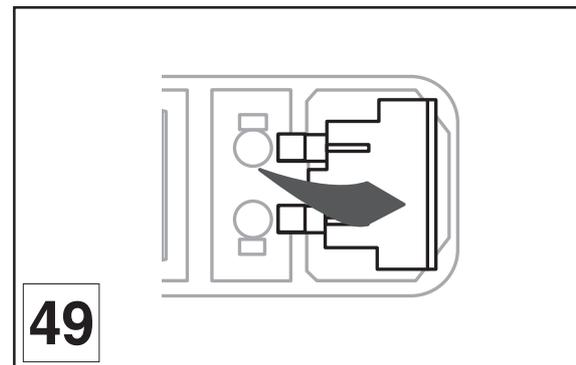
Unplug your machine cable from the mains.

Disconnect the mains cable from the socket at the back of the machine to give easier access.

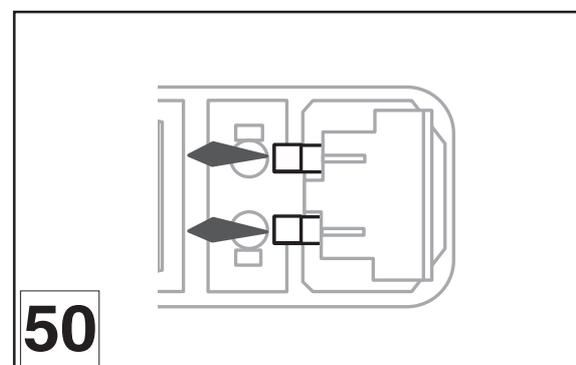
1. Use the tag to pull out the drawer containing the fuses (pict. 48).



2. When the drawer is out, swivel it to the right (pict. 49).



3. Replace the fuse(s) and close the drawer again (pict. 50).



If the new fuse blows without apparent reason, contact an approved GRAVOGRAPH technician.

Adjusting the machine

After a certain period of use the 'O' mark on the IS200 TX can alter slightly (the centre of the engraving area is not quite aligned with the clamping system in the centered position : marks on the TX vice on 0 for front-to-back and left-to-right).

IS200 TX has a very simple adjusting system which can be manipulated by the user (this avoids returning the machine to the distributor).

When the index of the vice are adjusted to 0, if you notice a gap between your measurements when engraving, adjust the machine.

To adjust the machine

1. Switch on the IS200 TX machine.

<<GRAVOGRAPH>>
- VERSION xx.xx -

2. When this message is displayed press

#

Z SCREW = 5.08
↕ to select



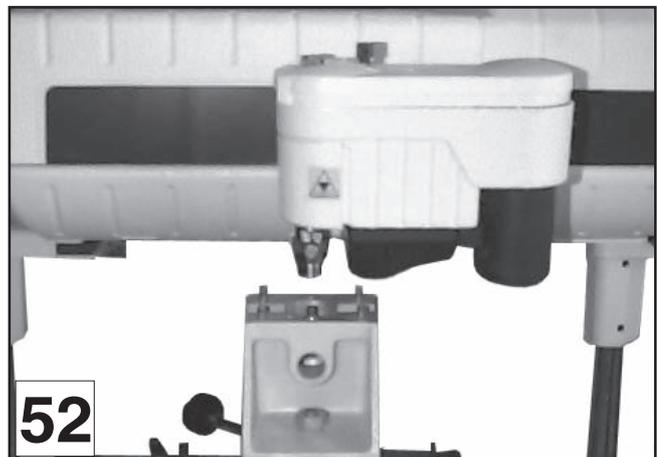
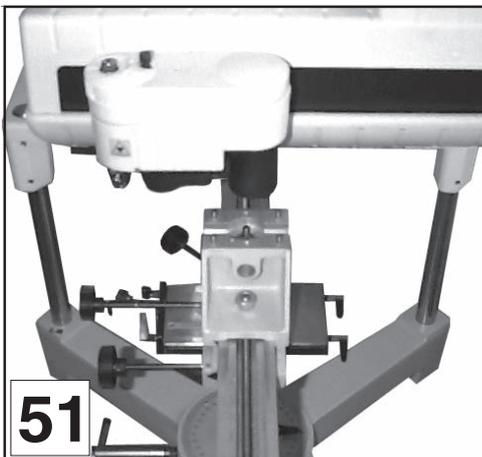
Don't modify this parameter.

3. Validate.

SPINDLE ORIG. ADJUST
✓ to confirm

4. Take off the jigs

5. Put the cutter button between the jaws of the vice and tighten using the tightening button (diagram 51).



6. Push the spindle down until the fixed nut of the nose is about 10 mm away from the button.

Z + -

7. Validate.

The tool-holder moves towards the centre of the vice (diagram 52).

SPINDLE ORIG. ADJUST
↕ to change

8. Place the cutter into the spindle (diagram 53). It should easily slide into the cutter button.
9. If it does not, take the cutter out, adjust the position of the tool-holder using the joystick, and put the cutter in again.

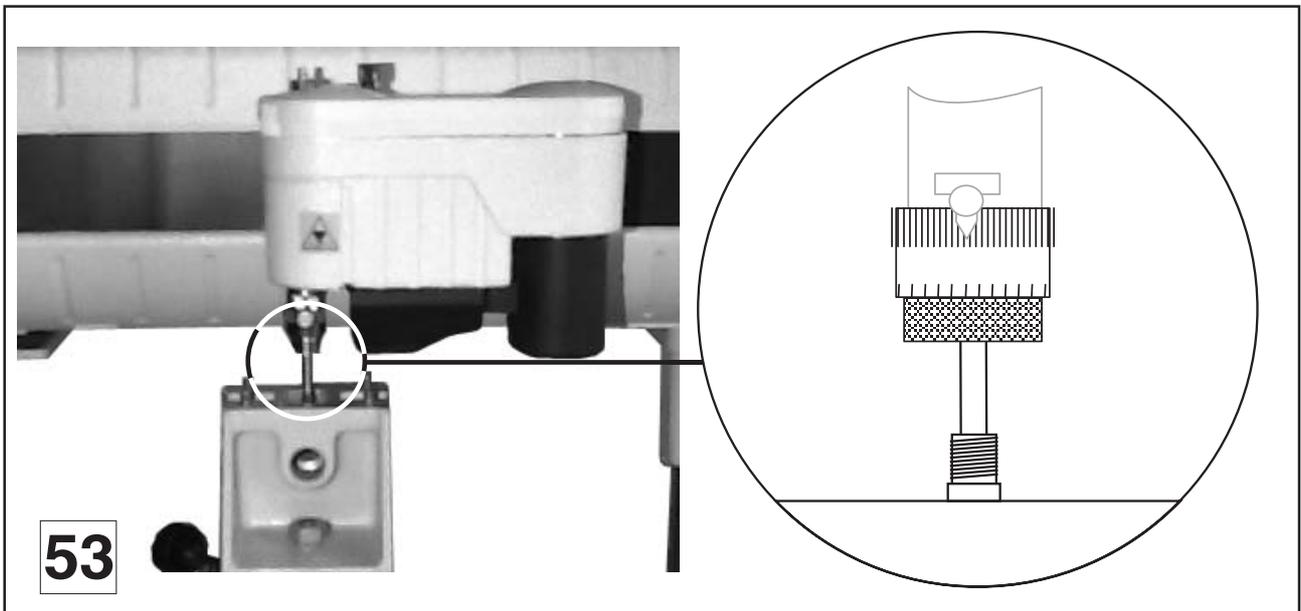
<JOYSTICK>
X= xxx.xx | Y= yyy.yy

10. Repeat steps 8 and 9 until the cutter easily slides in.
11. Once it is correctly adjusted, take the cutter out of the spindle.
12. Raise the spindle as far as it will go.
13. Set the adjustment. Validate twice.



The machine adjustment is recorded by the machine.

SAVE CONFIGURATION
Saving ...



Technical Characteristics

Mechanical Characteristics

Machine

Size	mm	560 x 575 x 650
Net weight	kg	45
Max. engraving area	mm	225 x 80

Packaging

Overall size	mm	740 x 740 x 840
Weight (packaging + machine)	kg	67

Vice

Max. length	mm	- Normal vice position	unlimited x 265 x 240
	mm	- Vice turned 90°	265 x unlimited x 240
Max. weight allowed for the object	kg		10
Max. opening of jaws	mm		290
Height of jaws	mm		76
Spindle and jig clearance	mm		160

Standard spindle

Tool

Type		Rotating, top-loading
Diameter	mm	4.36
	inches	11/64
Max. rotation speed	tr/min.	17000

Spindle displacement speed

Off-load travelling speed	mm/s	27
Working speed up to	mm/s	25

Spindle travel

in Z direction	mm	15
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Max. precision

X	mm	0.012
Y	mm	0.012
Z	mm	0.01

Levelness

X	mm	0.2
Y	mm	0.2

Control panel

Number of keys		12
Type		Membrane with raised tactile points

Display

Number of lines		2
Number of characters/line		20
Type		L.C.D.

Sound signal according to standard ISO 11201

off-load*	LAeq	db(A)	< 60 ± 1
nominal engraving*	LAeq	db(A)	81 ± 2
nominal engraving peak*	Lp Cpeak	db(C)	< 105

Environment according to norm EN60721

Operational temperature	- Min.	°C	+5
	- Max.	°C	+40
Storage temperature	- Min.	°C	-5
	- Max.	°C	+45
Degree of moisture when in use	%		20 to 80

Electrical Characteristics

Machine

Power supply	V \simeq	100 - 240
Max. absorbed current	A	1.3
Frequency	Hz	50 - 60
Output	W	90
Insulation	Class	1
Type of service		S1
Electromagnetic compatibility	Emission: norm EN 50081-1 (residential environment) Immunity: norm EN 61000-6-2 (industrial environment)	
Type of protection		Fuse 5 x 20 mm 2A F1T
Degree of protection		IP40

Spindle motor

Type		Continuous current
Output	W	20
Absorbed current	A	1.1
Speed	tr/min.	5700

Displacement motor

Stepper motor	step/revs	200
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Connexions - Liaisons

Parallel	
USB 1.1 or 2.0	

Engraving software characteristics

Operating system	Windows 2000 / Windows XP
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Optional accessories

Vacuum table

User manual reference		B5243 799 (Fre, Eng, Ger)
Ext. dimensions	mm	270 x 161 x 35
Max. extraction surface	mm	250 x 150
Max. engraving area	mm	225 x 80

Pen attachment

User manual reference		B5118 799 (Fre, Eng, Ger)
Weight	Kg	1.150
Ext. dimensions	mm	270 x 135 x 74
Max. object weight	kg	3
Min.-max. diameter	mm	5 - 15
Max. length	mm	160

TX cylinder attachment

User manual reference		B5213 799 (Fre, Eng, Ger)
Weight	Kg	4.740
Ext. dimensions	mm	745 x 220 x 155
Maximum object weight	kg	6
Min.-max. diameter	mm	20 - 200
Max. length	mm	450

Spindles

Collet		Not available
Diamond		Not available
Rotring		
High frequency		Not available
Pyroengraver		Not available