

# USER MANUAL

# P05

## INTEGRATED MARKING PROGRAM



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This manual corresponds to the 2.10 version of the program.

**Some screenshots may be different from those displayed in the program.**

## 1. General characteristics of the program

The P05 standard marking program is integrated in a Control Unit, or in the main board of the machine (viewed on an LCD screen). It is used to:

- program files for marking:
  - set text
  - variable text:
    - . dates (using various set or customized formats)
    - . counters (incrementation, decrementation)
  - logos

## 2. Program functions

### ■ Customization

- multilingual: program language selection
- "Supervisor" mode / "Operator" mode (access rights to certain functions or entry fields for text or coordinates)
- units (cm or inches)

### ■ Type of block

- marking:
  - linear (choice of the angle)
  - radial
- logos
- pilots a rotating third axis (DP3500/DP4500) for marking on circular parts

### ■ Functions within the blocks

- delay between blocks (DELAY)
- marking of simple geometric shapes:
  - circles
  - lines

## ■ Character styles

- marking effects:
  - normal
  - inverted
  - mirror
  - reflected
- alignment
- compression / expansion
- inclination
- spacing between characters

## ■ Marking management

- standard marking:
  - marking N parts
  - infinite marking
- independent marking

## ■ Adjustable settings

- customized speeds for marking and movement
- force (depth)
- date and time (CCU clock)
- variables:
  - 10 numeric counters which can be reset each time there is a change in year, month, day, time, shift
  - 10 alphanumeric variables
  - shift codes (Q) set according to the day of the week (up to 5 shifts per day)
  - date and time based on CCU system, using the keywords:
    - . DD - MM - YYYY - YY - Y - hh - mm - ss - WW - CCC
    - . m (mark first digit of the minutes)
    - . customized formats DS (day/week), JS (day/month), MS (month) et YS (year)
- choose a character font

## ■ Various functions

- display available memory
- download logos (LO3 - PLT format)
- transfer marking files between PC and the machine (Backup / Restore)
- simulate marking file (no marking on part)
- off-limits management
- set time for changing "day of the year" (CCC) code
- date and time display
- change orientation of screen display
- standard international font

## ■ User memory

Available memory is 512 kB.

Several hundred files may be saved, depending on their size.

Maximum:

- 100 blocks per file
- 255 characters per block

## ■ Exchange of files via USB key

It is possible to import and export certain files via USB key (FAT32 file system only):

- marking file
- logos
- character font

Files must be located in the root directory of the file tree structure on the USB key. Do not place them in directories.

## 3. Character encoding

### ■ Introduction

The previous marking programs used "8 bit" fonts, which could only contain  $2^8 = 256$  characters. The font change was necessary for each language, display and marking were impossible for languages including over 256 characters.

Marking and display fonts used in the P05 program are "16 bit" programs, which may contain up to  $2^{16} = 65536$  characters (less in practical terms, certain are reserved). These fonts are based on the setup of the characters of the ISO/IEC 10646 standard, in the Basic Multilingual Plan. This standard, which specifies a set of universal characters (Universal Character Set), also defines other characters (over 1.1 million). These are not generated by the P05 program and must therefore not be used.

The 16 bit fonts are used to manage new languages and increase compatibility with the actual operating systems (Windows, Unix...). However, numerous materials and applications still use 8 bit fonts. In order to have the best possible compatibility with these materials, the characters emitted and received by the program (files or character strings) are encoded in UTF-8 (UCS Transformation Format, 8 bits). UTF-8 is used to represent the 16 bit characters by using 8 bit codes. This font does not allow old 8 bit systems to manage 16 bit characters, but it allows to manipulate the acceptable data and to transmit them with no loss of information.

### ■ UTF-8 encoding

UTF-8 was designed to be compatible with specific software initially foreseen for the processing of one-byte characters. Each 16 bit character is encoded on a chain of 1 to 4 bytes.

UTF-8 is normalised in the RFC-3629 (UTF-8, a transformation format of ISO 10646). Encoding is also defined in the 17 technical report of the Unicode standard. It is part of the standard on Chapter 3 "Compliance" and is approved by the International Standard Organization (ISO), the Internet Engineering Task Force (IETF) as well as most of the national standardization organizations.

## Encoding

The numbered characters from 0 to 127 are encoded on 1 byte(s) whose most significant bit is always 0. The characters with a number greater than 127 are encoded over several bytes. In this case, the most significant bits of the first byte form a series of 1 as long as the number of bytes used to encode the character, the following bytes having 10 as the most significant bit.

### Definition of the number of bytes used

UTF-8 binary representation	Meaning
0xxxxxxx	1 byte coding 1 to 7 bits (from 0 to 127)
110xxxxx 10xxxxxx	2 bytes coding 8 to 11 bits (from 128 to 2047)
1110xxxx 10xxxxxx 10xxxxxx	3 bytes coding 12 to 16 bits (from 2048 to 65535)
11110xxx 10xxxxxx 10xxxxxx 10xxxxxx	4 bytes coding 17 to 21 bits (from 65536 to 2097151)

This idea could be applied up to 6 bytes but UTF-8 sets the limit to 4. This idea also allows the use of more bytes than needed to code a character but the UTF-8 forbids it.

**Note: The UTF-8 representation over 4 bytes corresponds to a character code greater than 65535, which must not be used with the P05 program.**

### Example:

#### Example of the UTF-8 encoding

Character	Character number	UTF-8 binary encoding
A	65	01000001
é	233	11000011 10101001
	8364	11100010 10000010 10101100

In any UTF-8 character string, any 0 most significant bit byte encodes a US-ASCII character on a byte. The characters whose codes are included between 0 and 127 are therefore represented the same way as in ASCII (non-accentuated, capital and small letters, numbers and some frequent initials).

### ■ Practical consequences

The old systems using the ASCII 8 bit fonts may communicate with the P05 program, which uses 16 bit fonts. To allow this interoperability, 2 methods are possible:

- The ASCII and UCS tables are common for the characters numbered from 0 to 127. For these characters, compatibility is guaranteed.
- For other characters, UTF-8 encoding is used to specify the 16 bit character code by using the sequences of several 8 bit "characters", which can be managed by 8 bit systems.

### Using the P05 program

As long as the program doesn't exchange data with the exterior, it uses the 16 native bit fonts. The user can benefit from extended linguistic support.



## Manual editing of the marking files

The marking files (.tml files) in TML format (Technifor Marking Language) are saved in UTF-8 format. This format is automatically recognized when a file is opened with Note Pad (notepad.exe) in Windows (2000 or more recent).

For an exact display, select a compatible display font, such as "Arial Unicode MS".

When saving, make sure the UTF-8 format is well selected (especially when creating a new file).

## Data reception/emission (RS232, telnet)

The characters received must be encoded in UTF-8. Characters emitted are encoded in UTF-8.

If a device sends to the machine characters in ASCII encoding, they are only recognized if their codes are included between 0 and 127. In this manner, this device may correctly receive the characters whose codes are included between 0 and 127.

To use other characters, these must be encoded in UTF-8.

For example: To send the "é" character, the device cannot use the ASCII encoding of the Latin 1 character page which assigns this character the code 130.

It must use UCS encoding which assigns it the code 133. In UTF-8, the code is written as follows:

11000011 10101001

It must thus send 2 bytes: 195 - 169

## DataMatrix

This format only allows the encoding of character strings of 8 bits. The internal strings of the program are thus converted in UTF-8 before being encoded in DataMatrix, which enables encoding of all 16 bit characters to be managed. The size of the DataMatrix needed for this encoding is greater than 8 bit character encoding as several 8 bit characters are needed to carry out UTF-8 encoding of a 16 bit character.

When the encoded characters have ASCII or UCS codes between 0 and 127, DataMatrix encoding is made in the classic way and the size of the DataMatrix generated is the same.

## Unicode

Unicode is an international standard which defines a set of universal characters, as in the ISO/IEC 10646 standard. The Unicode character codes correspond to those in the ISO/IEC 10646 standard and the Unicode standard includes the ISO/IEC 10646 completely as a sub-set.

The Unicode standard adds to the ISO/IEC 10646 standard a representation model and complete word processing, by assigning to each character a set of standardized or informative properties and by accurately describing the semantic relations which may exist between several successive characters of a text. It also standardizes the processing algorithms which preserve semantics of transformed texts to a maximum, while spreading interoperability of the representation of these texts on heterogeneous systems.

This allows, for example, to specify the meaning of a text, so that two characters may be associated and form one, etc...

Unicode management is complex and is not currently implemented in the P05 program. In the future, certain Unicode rules will be added to the software, therefore allowing a partial support of Unicode according to needs.

## 4. Starting-up the program

Check that the power cable is connected.

Turning on the CCU or the machine will launch the marking program.

A presentation screen will appear for a few seconds, followed by the main menu screen.

LOADING - PLEASE WAIT



LOADING - PLEASE WAIT

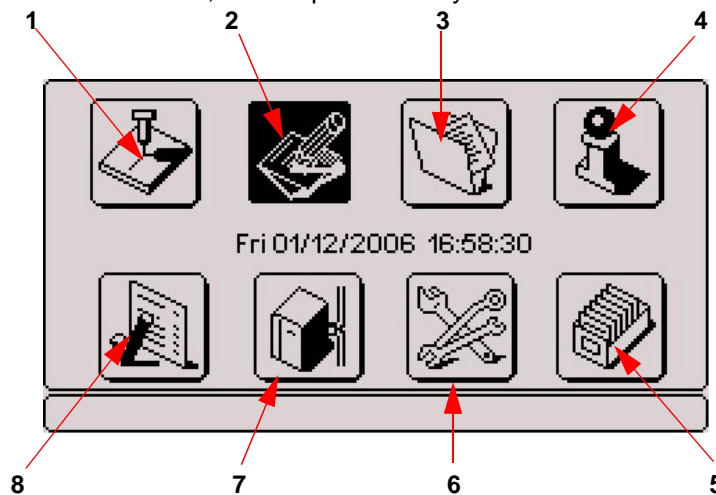


Turn off the machine before any intervention.

## 5. The different program menus

### ■ Main menu

The main menu is composed of 8 menus, each represented by an icon.



- 1 : "Marking" menu
- 2 : "Edit file" menu
- 3 : "Marking file management" menu
- 4 : "System info" menu
- 5 : "File management" menu
- 6 : "Machine configuration" menu
- 7 : "Communication" menu
- 8 : "Variables" menu

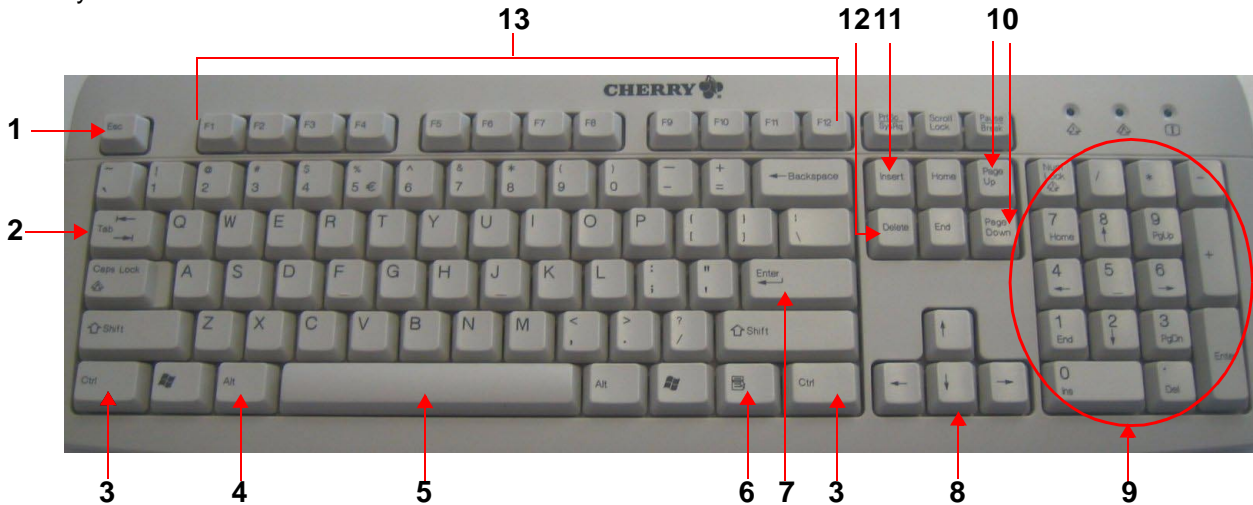
## 6. Functions of the keys used





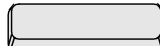


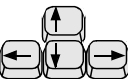





The keyboard is used to access the different menus and program functions and to enter the information needed for marking.

Use the Tab key or the Left - Right arrows to select the desired menu. The negative image of the selected icon will appear. Validate by pressing Enter.

# Introduction

The keys most often used are:



1	Escape		Return to previous screen
2	Tab		Access to various menus or tabs used to prepare a block
3	Ctrl		Access to certain shortcuts using the keyboard
4	Alt		Access to certain shortcuts using the keyboard
5	Space		Activation / deactivation of the blocks, multi-selection of files to import/export
6	Context menu		Gives access to the sub-menu bar in the "Edit file" menu, return to "Edit" mode, travel from one part of the screen to the other within certain menus
7	Enter		Validation of the entered data, modifying a data entry zone, activation / deactivation of the radio button
8	Up - Down - Left - Right arrows		Move the cursor to different data entry areas setting the stylus position in the "Stylus movement" function (F3)
9	Numeric keypad		Entering numeric values, incrementation / decrementation of numeric values with the +/- keys, setting the stylus position in the "Stylus movement" function (F3)
10	Page Up - Page Down		Travel from one block to another during editing, setting the initial angle on the rotary device in the (F3) function "Stylus movement", skipping pages in some menus
11	Insert		Insertion of an empty block in a marking file before the selected block, insertion of a key word in the "Text" field
12	Delete		Deletion of a block from a marking file
13	Function keys		Shortcuts to some functions in the program

## ■ Functions with shortcuts

Certain functions can be obtained using a keyboard shortcut:

- Ctrl + Alt + I: display in reverse video - See page(s) 81
- Ctrl + Alt + F: screen rotated 180° - See page(s) 81
- Ctrl + Alt + A/Q: more or less contrast on the screen - See page(s) 81
- Ctrl + Alt + R: exit slave mode - See page(s) 94
- Ctrl + P: pause after a block - See page(s) 47
- Insert: insertion of an empty block in a marking file before the selected block - See page(s) 54
- Delete: deletion of a block from a marking file - See page(s) 55
- F2: marking preview - See page(s) 49
- F3: stylus movement - See page(s) 52
- F4: simulation of the current block - See page(s) 47
- F5: add a block at the end of the file - See page(s) 54
- F7: copy a block - See page(s) 55
- F8: view 1/3/5 blocks - See page(s) 48 - 49
- F9: simulate marking file (no marking on part) - See page(s) 47
- F10: file marked - See page(s) 46
- F11: save selected file - See page(s) 56
- F12: properties of the file - See page(s) 57

## 7. Use of graphic elements

Certain elements concerning graphic data are found at several points in the program. The entry mode for each is as follows:



Incrementation / decrementation of the percentage using the +/- keys on the numeric keypad



Incrementation / decrementation of the values using the +/- keys on the numeric keypad or by manually typing them after pressing the Enter key



Radio button: activation / deactivation using the Enter key. It is possible to select just one at a time



Scrolldown icon menu. Press Enter to scrolldown, then on the Up - Down arrows of the keyboard to navigate.



Scrolldown text menu. Press Enter to scrolldown, then on the Up - Down arrows of the keyboard to navigate.



Open text entry field. Press Enter to move to this field.

## 8. Definition of a marking file

A marking file contains all the data to be marked on a part.

It may be composed of one or several lines.

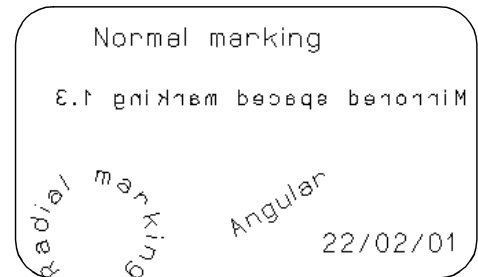
In Pro-Pen jargon, a marking file is composed of marking blocks.

A marking block may contain alphanumeric text, a logo, a line, a square...

A marking file can contain anywhere from 1 to 100 marking blocks.

The marking file used to create this plate contains 5 marking blocks.

The following pages describe the preparation of various types of marking blocks.



## 9. Creating a marking file

To create a new marking file, use the arrows to select the "Edit file". Validate by pressing Enter.

Select the "Create a new file" icon. Validate by pressing Enter.

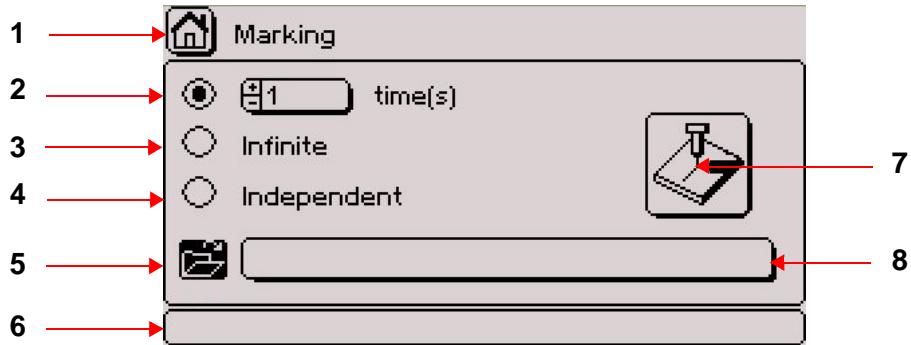
An empty block will appear. Press Enter to enter data. See: "Preparing a marking block".

# "Marking" menu

Select this menu from the main menu, represented by the icon:



The screen below appears:



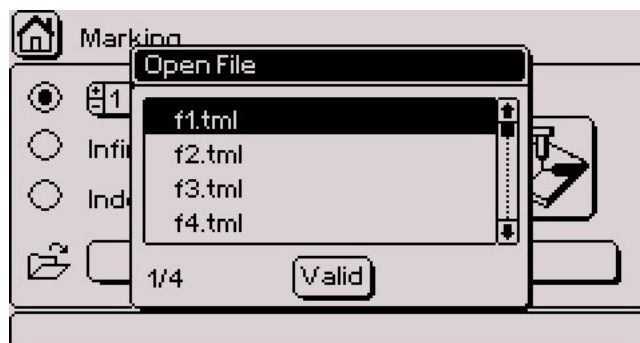
- 1 : Icon used to return to the main menu, followed by the name of the menu. This icon appears several times in the program.
- 2 : Marking "N times"
- 3 : "Infinite" marking
- 4 : "Independent" marking
- 5 : Open file.
- 6 : Pop-up help associated with the current function. This field is always present.
- 7 : "Start marking" icon
- 8 : Name of the file to be opened

## 1. Marking "N times"

Used to mark the same marking file a set number of times

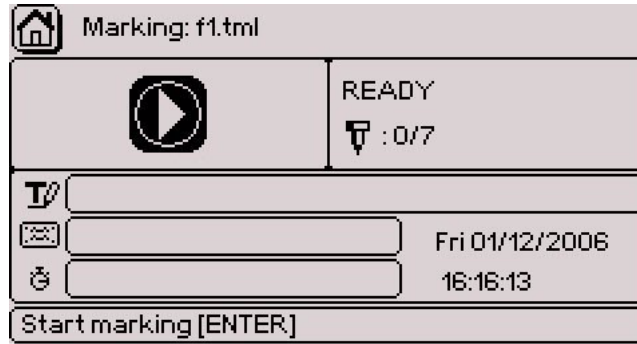
Select the number of markings requested. The default value is 1.

Use the arrows to select the "Open" icon. Validate by pressing Enter. Choose the file to be marked. Validate by pressing Enter.



# "Marking" menu

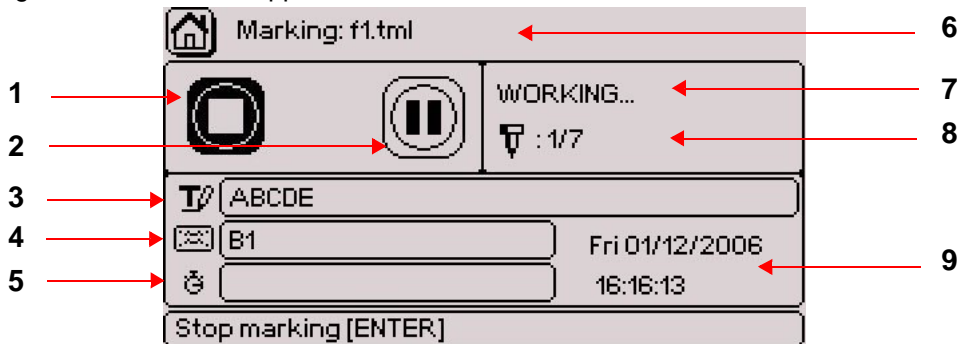
Move to the "Start marking" icon. Validate by pressing Enter. The screen below appears:



This screen provides information concerning the file to be marked and the status of the marking. The cursor is positioned on the "Start marking" icon. Validate by pressing Enter.

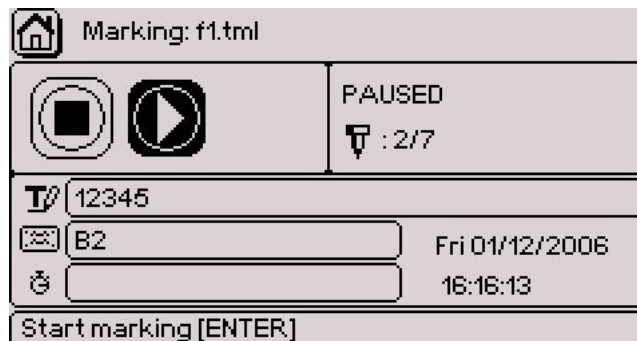
Note: Triggering the marking can be also carried out by closing the "Start marking" contact present on the appropriate connector of the machine. For more information, consult the manual of the machine in question.

During marking, the screen below appears:



- 1 : "Stop marking" icon
- 2 : "Pause during marking" icon
- 3 : Text for the block being marked
- 4 : Name of the block being marked
- 5 : Marking time. Appears once the markings are completed.
- 6 : Name of the file being marked
- 7 : Status of marking
- 8 : Number of markings carried out in relation to the total number of markings to be done
- 9 : Current time and date

To pause marking, place the cursor on the corresponding icon. Validate by pressing Enter. Marking is interrupted. The screen below appears:

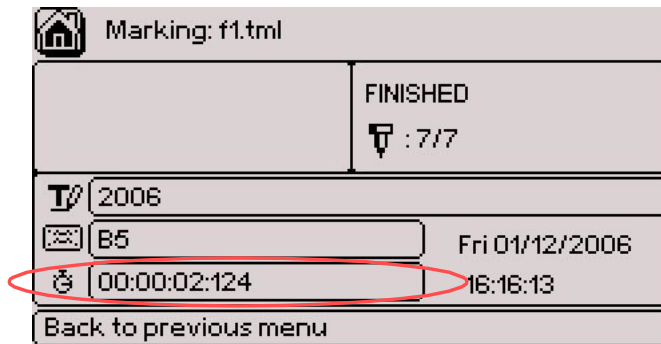


The cursor is located on the "Restart marking" icon. To restart marking, press Enter.

To stop marking, place the cursor on the "Stop marking" icon. Validate by pressing Enter. Marking is stopped.

# "Marking" menu

At the end of the marking, the screen indicates the marking time.

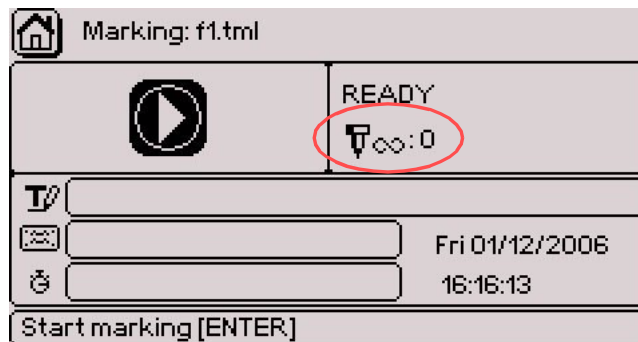


## 2. "Infinite" marking

It is a marking mode similar to "N times" except that the marking is repeated infinitely.

Select the file to be opened using the up/down keys To access the "Infinite" option, use the Up - Down arrows on the keyboard. Validate by pressing Enter.

Move to the "Start marking" icon. Validate by pressing Enter. The screen below appears:



The "Infinite" symbol appears next to the number of markings carried out.

Once one marking is completed, press Enter to launch the next marking.

To pause marking or stop the marking in progress: See: "Marking "N times"". "

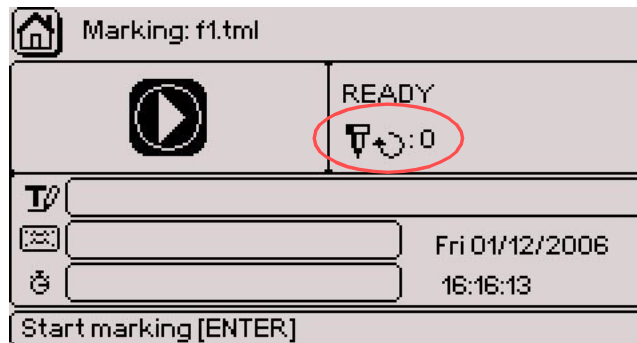


## 3. "Independent" marking

Used to obtain markings identical to those in "Infinite" mode, the only difference being that when the machine is switched back on after an interruption during marking (reset, power outage...) marking is resumed by clicking on "Start marking". The keyboard doesn't have to be connected to resume marking.

Select the file to be opened using the up/down keys To access the "Independent" option, use the Up - Down arrows on the keyboard. Validate by pressing Enter.

Move to the "Start marking" icon. Validate by pressing Enter. The screen below appears:



The "Independent" symbol appears next to the number of markings carried out.

Once one marking is completed, press Enter to launch the next marking.

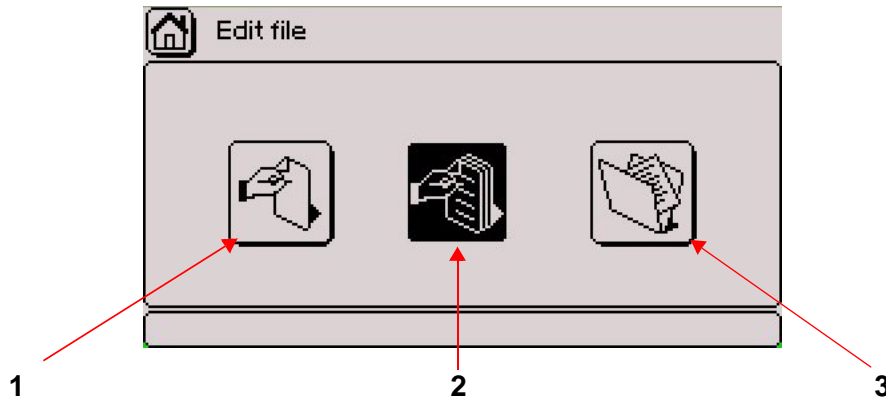
To pause marking or stop the marking in progress: See: "Marking "N times"".

# "Edit file" menu

Select this menu from the main menu, represented by the icon:



The screen below appears:



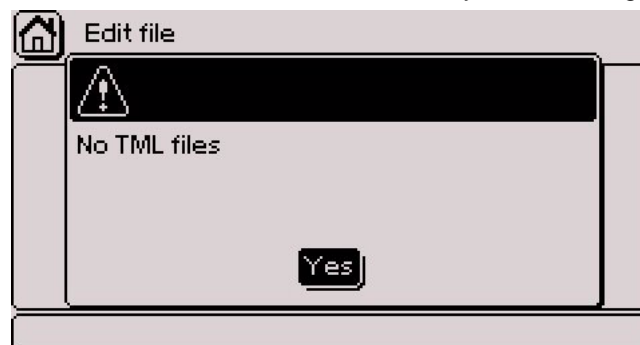
- 1 : Create a new marking file
- 2 : Open the last file used
- 3 : Open an existing file

## ■ Create a new marking file

Gives access to an "empty" marking file to prepare marking blocks. See: "Preparing a marking block".

## ■ Open the last file used

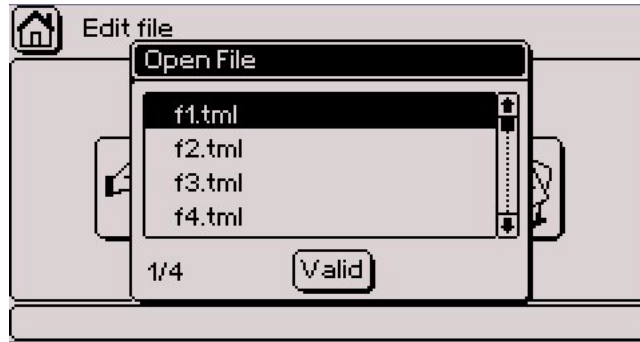
Used to directly open the last file used. If there is no file in memory, the following message appears:



Go to "Create a new file" to prepare blocks for a new file.

## ■ Open an existing file

Used to open a specific file. The screen below appears:



Choose the file to be opened using the Up - Down arrows. Validate by pressing Enter.

## 1. Preparing a marking block

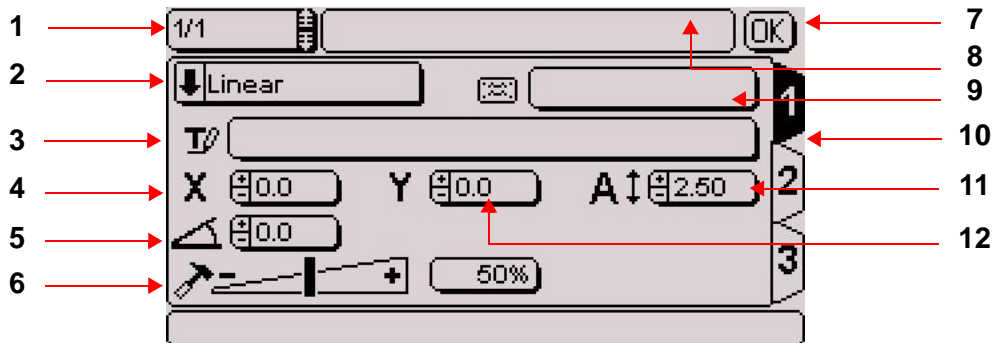
	<b>To access the sub-menu bar at the top of the screen, press the Context menu key on the keyboard. See: ""Edit" menu sub-menus"</b>
---	--

When a file is created, an empty block appears on the screen.




## TAB 1:

Press Enter to prepare the block. The first data entry screen appears (tab 1).



- 1 : Block number
- 2 : Type of marking
- 3 : Text to be marked
- 4 : X coordinate
- 5 : Text angle
- 6 : Marking force
- 7 : Save block and return to previous screen
- 8 : File name
- 9 : Block name (label)
- 10 : Number of the data entry screen (tab)
- 11 : Character size
- 12 : Y coordinate

	<p><b>At any time during the preparation of a block:</b></p> <ul style="list-style-type: none"> <li>• Press the Page Up - Page Down arrows on the keyboard to move from one block to another in a marking file. The cursor appears on the same data entry block as the one for the block in progress except that it's the next block.</li> <li>• Press the Tab key to move from one tab to another within the same block.</li> </ul>
---	--

### ■ Block number

Each block is identified by a number. This number evolves automatically when blocks are added or deleted.

The first number indicates the number of the selected block. The second number corresponds to the total number of blocks in the file.

Press the Page Up - Page Down arrows on the keyboard to move from one block to another in a marking file.

### ■ File name

The name of the file appears in this field if it has been saved. While preparing a new file, this field is empty.

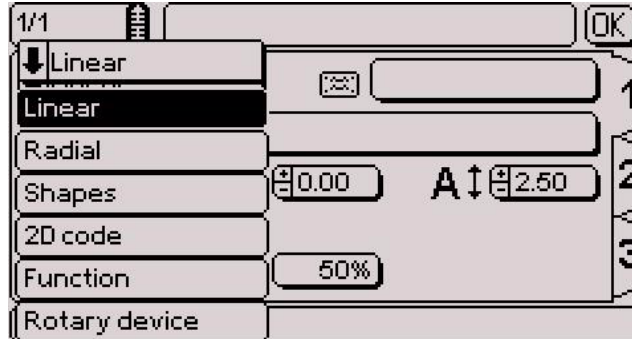
### ■ Block name (label)

Used to name each marking block. This optional, free access data entry field can be used to add information about the block or instructions for the operator which will be displayed during the marking of the block in question.

## ■ Type of marking

This field defines the type of marking to be carried out in the block being prepared. Certain types of marking involve new data entry fields.

To access this data entry field, use the arrows on the keyboard. Validate by pressing Enter. The screen below appears:



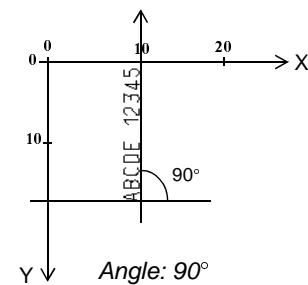
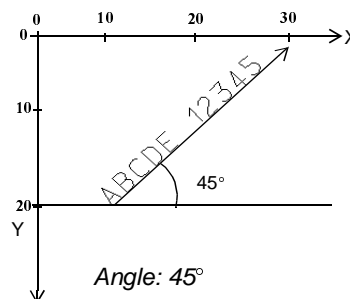
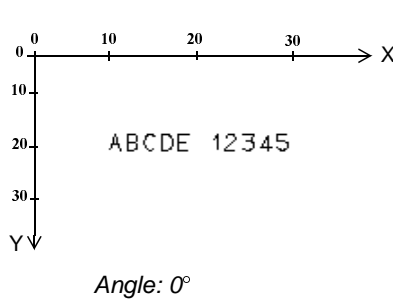
Select the desired type of marking using the Up - Down arrows. Linear marking is selected by default.

## Linear marking

Used to mark straight lines of text at an angle.

To obtain a marking parallel to the X axis, set the angle at 0° in the corresponding (5) field.

To obtain a marking parallel to the Y axis, set the angle at 90°.

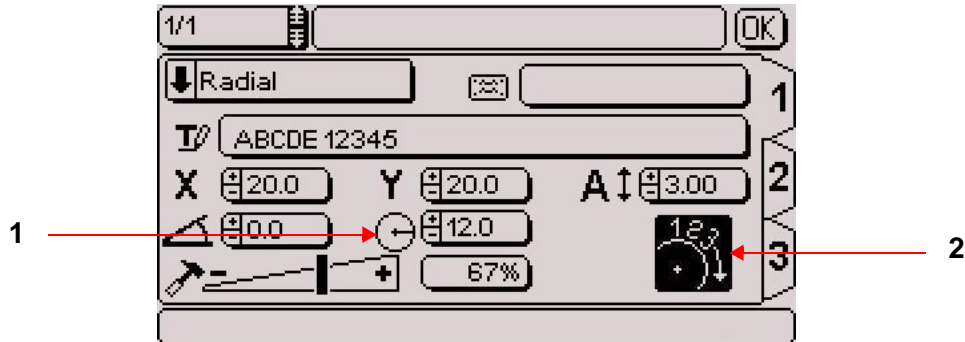


## Radial marking

Used to obtain texts along the circumference of a circle. When this type of marking is selected, a new field (1) for entering the circle radius value appears on the screen.

The angle value in degrees corresponds to the positioning angle of the marking on the circle. The X-Y coordinates correspond to the center of the base circle for the marking.

A new icon (2), used to choose the marking direction, appears at the bottom right side of the screen.



- 1 : "Radius" field
- 2 : Marking direction icon

## Clockwise marking / counter-clockwise marking

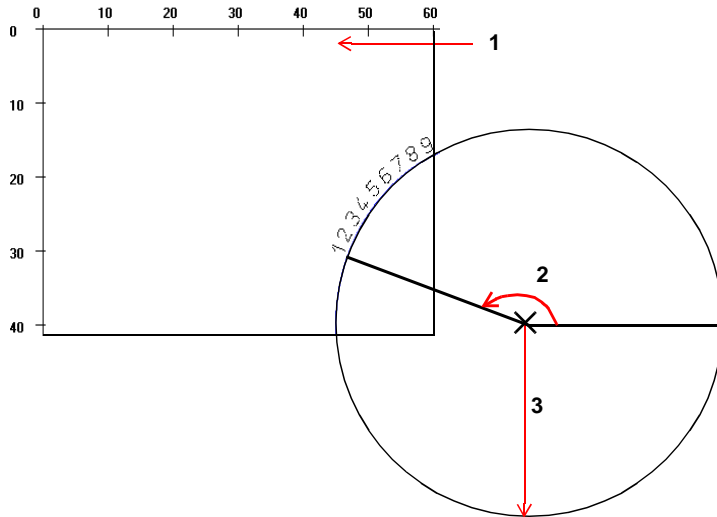
In radial marking mode, select the marking direction icon with the arrows in order to select clockwise or counter-clockwise marking. Clockwise marking is selected by default.

Initial angle	Clockwise marking	Counter-clockwise marking
Angle: 90° Centering		
Angle: 270° Centering		

## Special situation

It is possible that the center of the circle is located outside the marking zone. In this case, the X and Y coordinates are superior or inferior to the marking area. Check that the text to be marked is within the marking area.

Example of a circle outside the marking area:

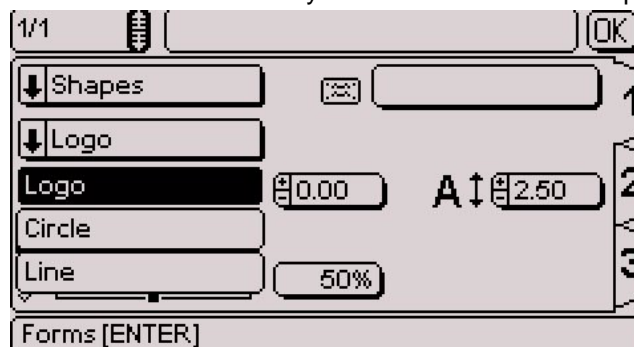


- 1 : Marking area: 60 mm (2.362 in) x 40 mm (1.575 in)
- 2 : Angle: 160°
- 3 : Radius: 50 mm (1.969 in)

## Shapes (pneumatic version only)

Used to mark logos, lines, circles...

When the "Shapes" type of marking is selected, choose the desired type of shape. Position the cursor on the "Types of shapes" field. Press Enter to access the entry field. The screen below appears:

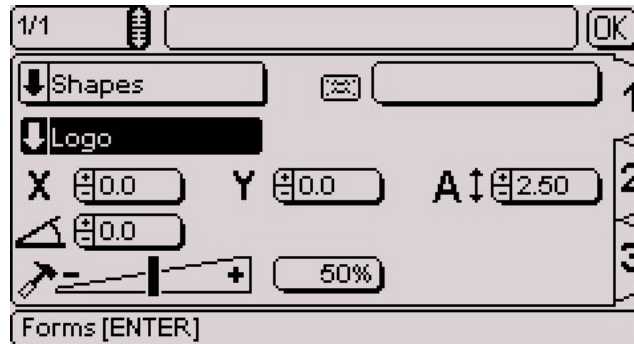


Select the type of shape using the Up - Down arrows. Validate by pressing Enter.

## • Logos

Used to mark the logos saved in the CCU.

The screen below appears:



To select the logo to be marked, go to tab 2. Position the cursor on the "Logo" field. Press Enter to access the entry field. The screen below appears:

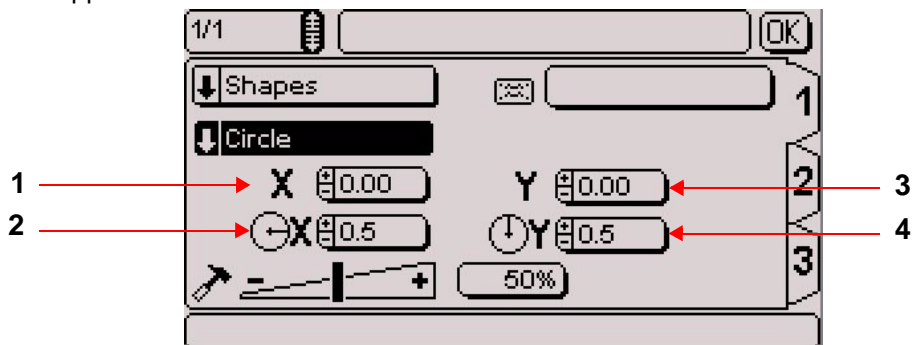


Select the logo using the Up - Down arrows. Validate by pressing Enter.

## • Circles

Used to mark circles, ellipses, circle arcs.

The screen below appears:



- 1 : X coordinate
- 2 : Radius in X
- 3 : Y coordinate
- 4 : Radius in Y

Select the circle's radius in X and Y.

To trace a circle, the radius in X and Y values must be identical.

To trace an ellipse, the radius in X and Y values must be different.

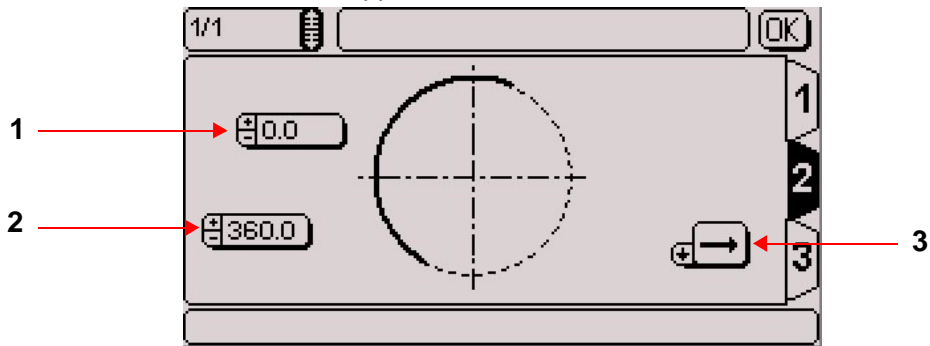
Vertical ellipse: radius in X < radius in Y

Horizontal ellipse: radius in X > radius in Y



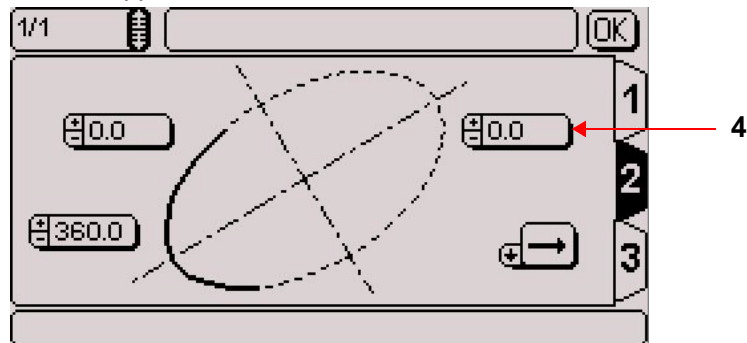
# "Edit file" menu

Once all these fields are filled, use the keyboard's Tab key or arrows to switch to tab 2 in order to proceed with the preparation of the block. The screen below appears:



- 1 : Initial angle (degrees)
- 2 : End angle (degrees)
- 3 : Marking direction

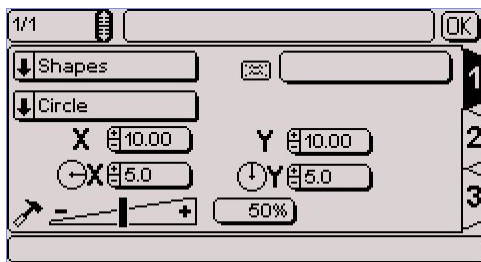
To mark an ellipse, an additional field appears on the screen.



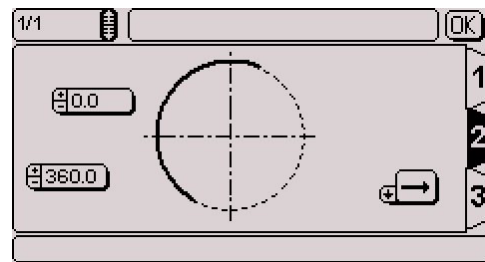
- 4 : Inclination (angle in degrees)

Sample instructions for obtaining a circle:

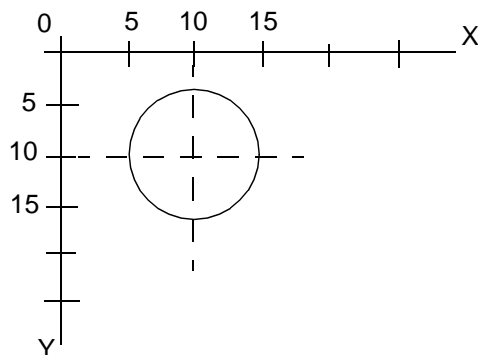
TAB 1:



TAB 2:



Marking obtained:

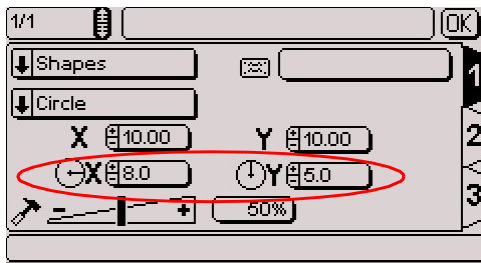


X = 10 mm  
 Y = 10 mm  
 Radius in X = 5 mm  
 Radius in Y = 5 mm

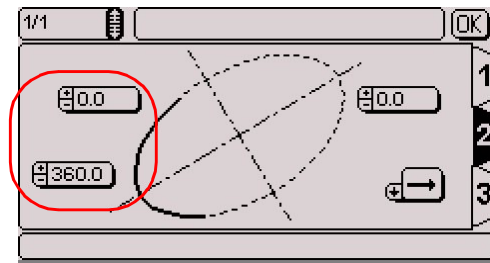
# "Edit file" menu

Sample instructions for obtaining a horizontal oval:

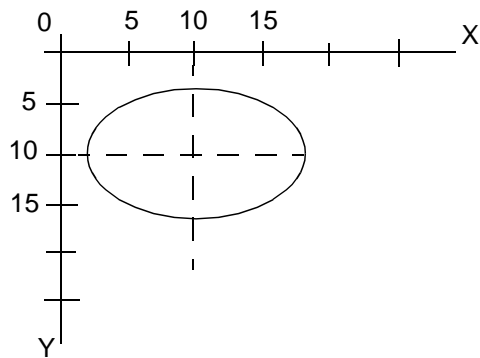
TAB 1:



TAB 2:



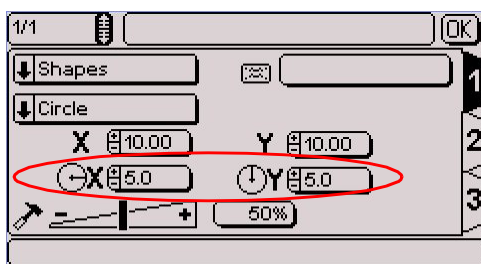
Marking obtained:



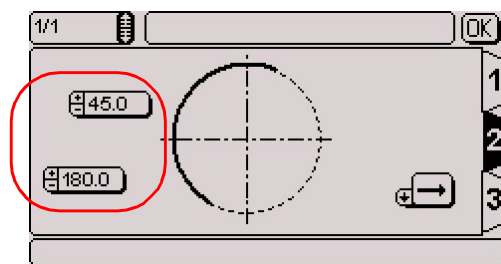
X = 10 mm  
Y = 10 mm  
Radius in X = 8 mm  
Radius in Y = 5 mm

Sample instructions for obtaining a curved line:

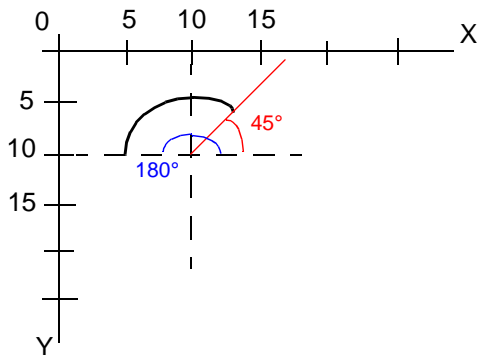
TAB 1:



TAB 2:



Marking obtained:

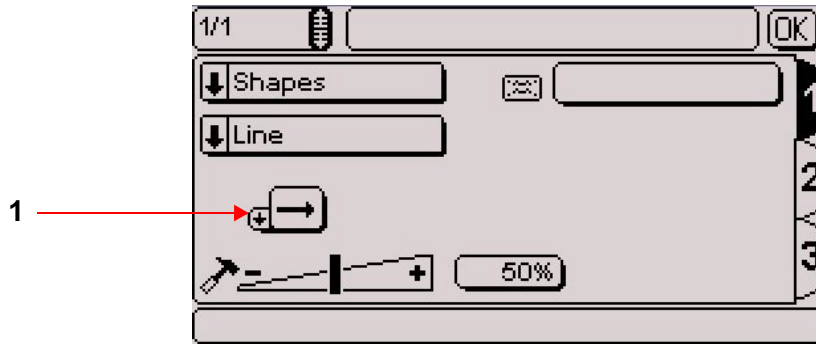


X = 10 mm  
Y = 10 mm  
Radius in X = 5 mm  
Radius in Y = 5 mm  
Initial angle: 45°  
End angle: 180°

## • Lines

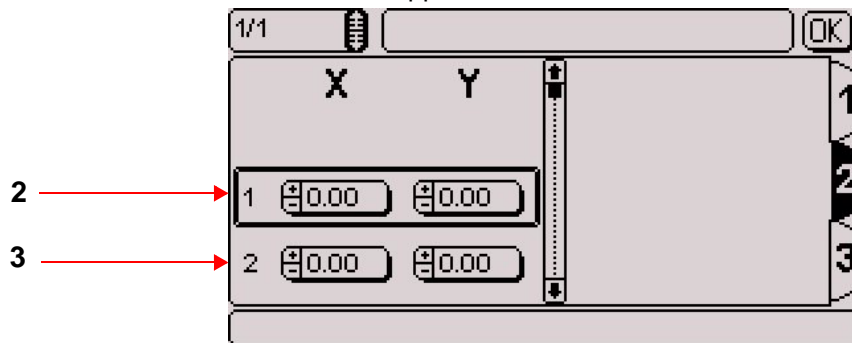
Used to mark one or several lines.

The screen below appears:



1 : Marking direction

Once all these fields are filled, use the keyboard's Tab key or arrows to switch to tab 2 in order to proceed with the preparation of the block. The screen below appears:



2 : X-Y coordinates of point 1.

3 : X-Y coordinates of point 2.

It is possible to choose up to 16 points to establish one or several lines.

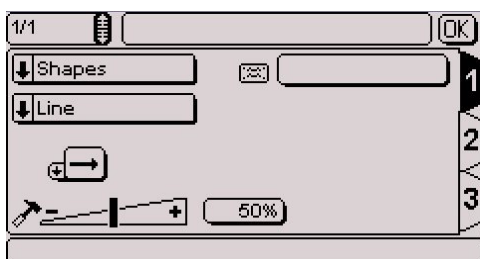
To insert a point below the selected point, press the Insert key on the keyboard.

To add a point at the end of the list, press the F5 key on the keyboard.

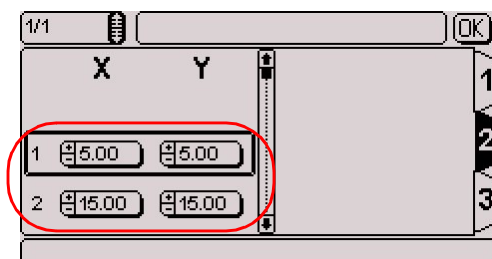
To delete a point, press the Delete key on the keyboard.

Sample instructions for obtaining a slanted line:

TAB 1:



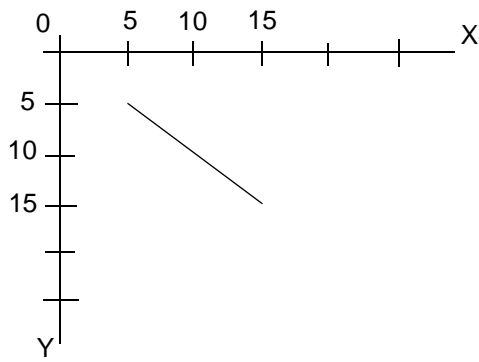
TAB 2:



# "Edit file" menu

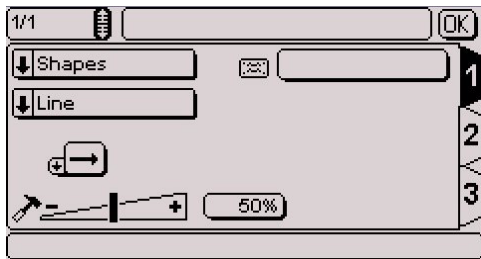
C

Marking obtained:

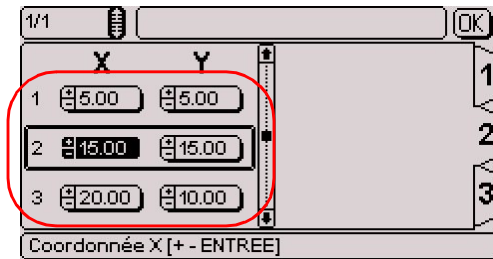


Sample instructions for obtaining a series of lines:

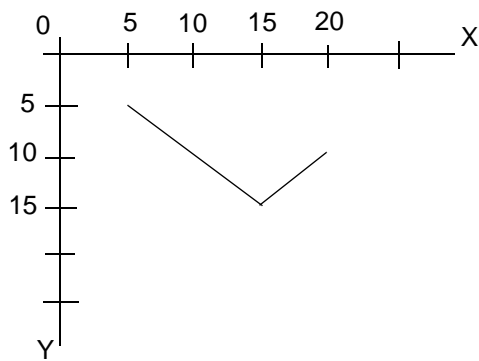
TAB 1:



TAB 2:



Marking obtained:



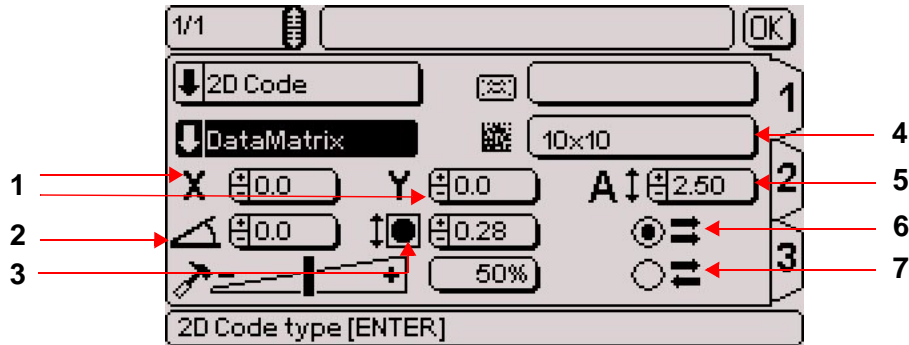
## 2D code (optional)

Used to mark DataMatrix codes.

When the "2D code" marking type is selected, choose the desired type of code. Position the cursor on the "Code types" field. Press Enter to access the entry field.

### • DataMatrix

The screen below appears:

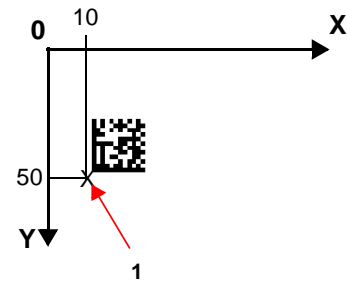


- 1 : X-Y coordinates
- 2 : Angle in degrees
- 3 : Cell size
- 4 : Matrix format
- 5 : Size of the DataMatrix code (height)
- 6 : One way marking
- 7 : Return marking

### Position and size of the DataMatrix code:

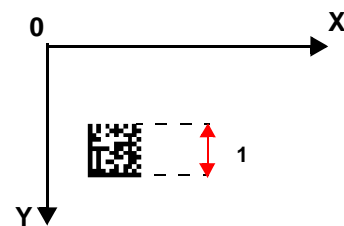
X-Y coordinates: The values entered in the X and Y fields determine the start position of the DataMatrix marking.

- 1 : The X represents the start marking point (X-Y coordinates).



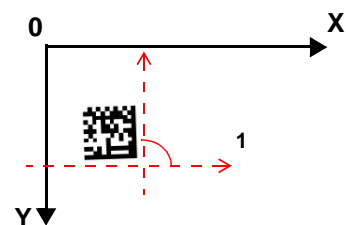
Size: The value entered in this field defines the height of the DataMatrix code. This value automatically adapts itself according to the size of the cells and the matrix format.

- 1 : Size of the DataMatrix code



Angle: The value entered in this field defines the angle in degrees along which the DataMatrix code is marked.

- 1 : Angle in degrees



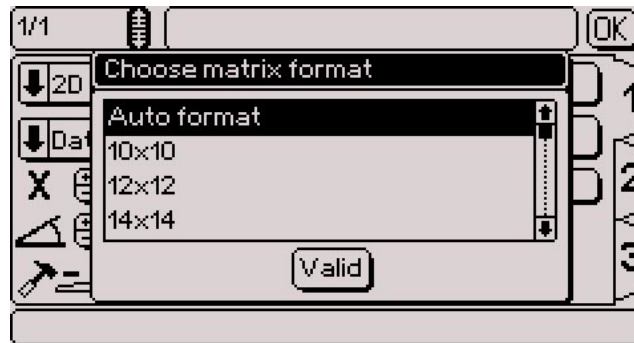
## Note

To maintain a high marking quality, the angle value must be a multiple of 90° (0°, 90°, 180°, 270°).

## Matrix format:

Defines the number of lines and columns contained in the DataMatrix code. Several pre-defined formats are available.

Position the cursor on the "Matrix format" using the arrows. Validate by pressing Enter. The screen below appears:



Select the desired matrix format using the arrows. Validate by pressing Enter.

Choose "Auto" format to have the program calculate automatically the number of lines and columns necessary to encode the text to be marked.

When the matrix format selected does not allow the representation of the text to mark, a warning symbol appears in the lower right corner of the screen.



## Cell size:

To know the height of the cells which make up the code, divide the size of the code by the number of lines in the format selected.

### Example 1:

Size of the DataMatrix code: 10 mm (0.394 in)

Matrix format: 20 x 20

=> cell size: 10 mm (0.394 in)/20 = 0.5 mm (0.02 in)

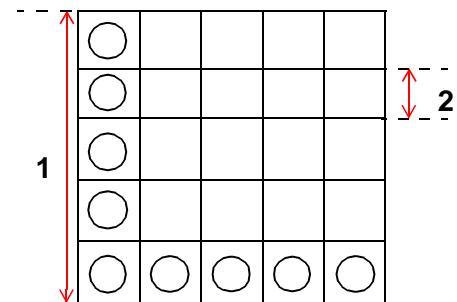
### Example 2:

If:

- cell = 0.67 mm (0.026 in)

- format: 20\*20

Size of the DataMatrix code: 0.67 mm (0.026 in) x 20 = 13.4 mm (0.528 in)



1 : Size of the DataMatrix code

2 : Height of a cell in the DataMatrix code

The size of the cells automatically adapts itself according to the size of the DataMatrix code and the matrix format.

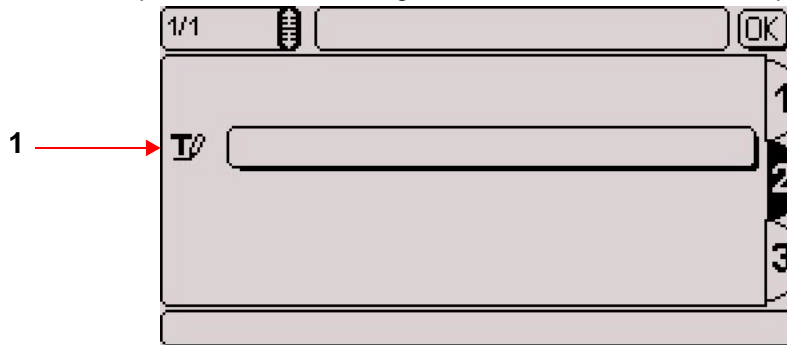
## One way marking / return marking:

One way marking: The stylus always restarts from the left at the beginning of each line. It favors the regularity of marking ahead of the speed.

Return marking: The stylus marks the first line of the code from left to right, then the second from right to left, etc... It favors the marking speed.

Select one box or the other. Validate by pressing Enter.

To enter other information specific to DataMatrix, go to tab 2 . The screen below appears:



1 : Text to be marked

## Text to be marked:

Insert the text to be encoded in DataMatrix.

The processing of non-printable 04 - 29 - 30 characters is authorized (U\_ID). To insert them, use the corresponding ASCII codes.

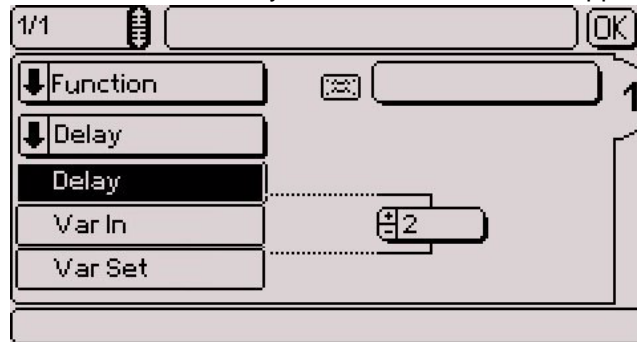
In the event of missing or too long text in relation to the size of the code selected, a warning symbol appears in the lower right corner of the screen.



## Function

Gives access to certain automated functions.

When the "Function" marking type is selected, choose the desired type of function. Position the cursor on the "Function types" field. Press Enter to access the entry field. The screen below appears:

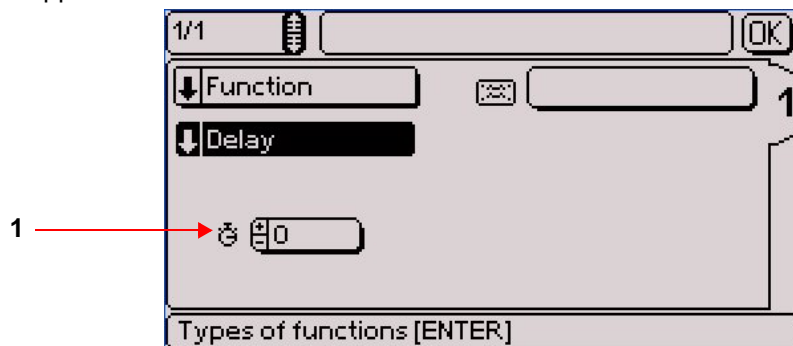


Select the function type using the Up - Down arrows. Validate by pressing Enter.

### • Delay

This instruction is used to program a pause between the marking of two consecutive marking blocks. The time is expressed in milliseconds.

The screen below appears:



1 : Pause time in milliseconds

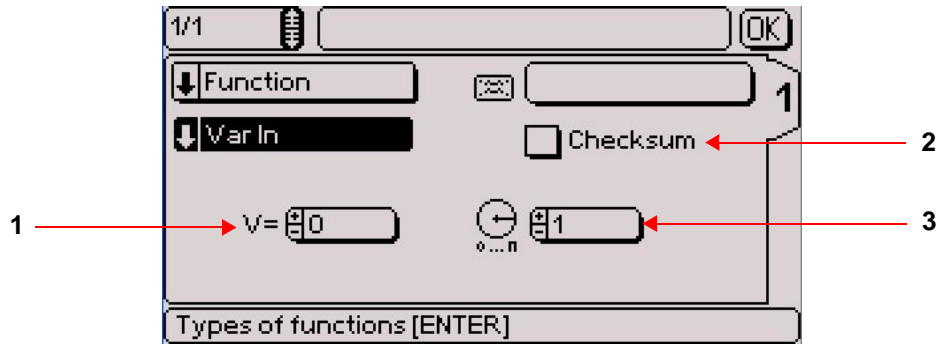
The machine waits the time shown before going on to the following block.



- **Var in**

Allows the reception in a variable of a new character string received via the RS232 communication.

The screen below appears:



1 : Number of the variable in which is memorized the character string

2 : Checksum

3 : Batch: number of markings to be carried out with this variable before proposing to re-program the variable

**Note: The "Raw data" box must be ticked in the "Communication" menu - "Serial management". See page(s) 92**

Select the number of the variable in which is memorized the character string received.

Choose the number of markings that have to be made before the reception of the following data:

- 1: data reception required at each marking.
- 0: data reception required once at the first marking (even if the file is to be marked several times).

During the marking of a "Var in" block, the machine emits an data acquisition request (U<CR>) on the RS232 communication and expects an answer from the connected peripheral.

The peripheral must answer by a series of bytes ending by <CR>.

The machine answers V<CR> if successful or T<CR> if failed.

If successful, the character string is stocked in the specified variable.

If failed, the machine waits for new data transmission.

The data acquisition has succeeded when the checksum received is equal to the checksum calculated or when the checksum is not used.

The checksum is added at the end of the message. It is represented by 2 consecutive characters (0 to F, in hexadecimal mode).

The emitter calculates the checksum based on the useful data in the transmitted message.

The receiver also calculates the checksum based on the useful data transmitted, and compares this new checksum to the one received.

The checksum is calculated using an "exclusive Or" (XOR) between all the characters contained in the useful part of the message.

- emission checksum = "character 1 emitted" XOR "character 2 emitted" XOR ... "character n emitted"
- receiving checksum = "character 1 received" XOR "character 2 received" XOR ... "character n received"

## Example

Given the message "ABCD":

Checksum calculation: 65 XOR 66 XOR 67 XOR 68

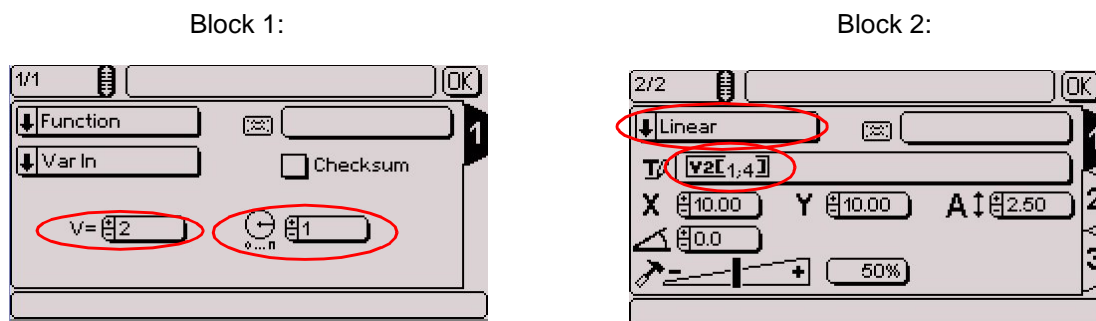
Calculation	Characters	Decimal	Binary	Result
	A	65	01000001	
XOR	B	66	01000010	
XOR	C	67	01000011	00000011
XOR	D	68	01000100	01000000
				00000100

The result of the message ABCD is: 00000100 in binary, or 04 in hexadecimal mode.

The emitter sends the message ABCD04.

## Var in: Use of a marking file

Example:



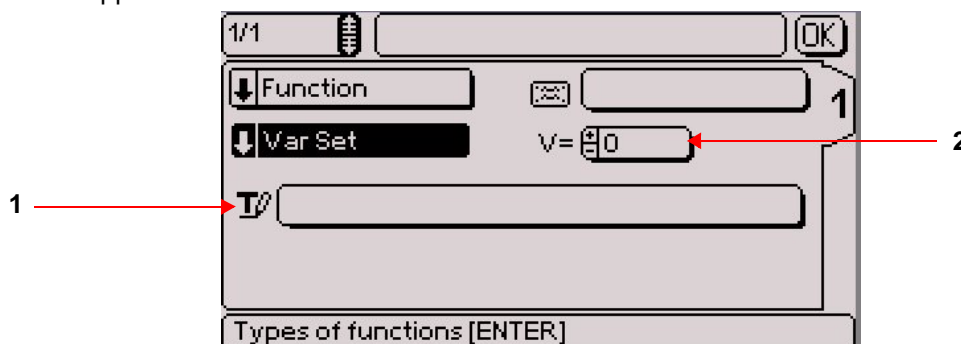
The text is saved in variable V2. Only the character string included between characters 1 and 4 is marked. See: "Splitting a variable:"

A request for data acquisition is necessary each time the file is marked because the batch is set at 1.

### • Var set

Used to memorize a character string in a variable.

The screen below appears:

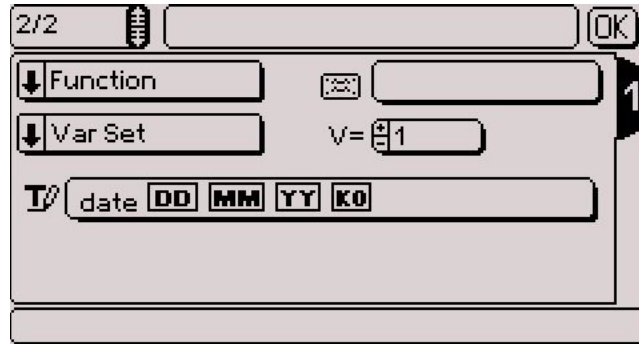


1 : Entering text in a selected variable

2 : V: number of the variable in which the "Text" field is saved, from V0 to V9

The "Text" field may contain set text, key words (date, hour...), the content of a counter, etc...

Example:



To mark the memorized content in the V1 variable, create a linear marking block containing the keyword V1. See: "Key words"

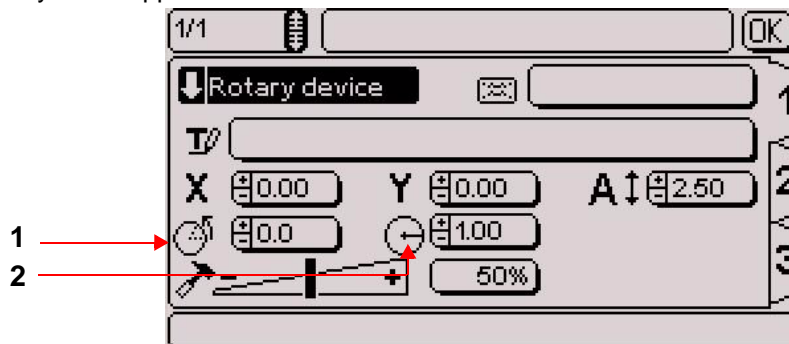
Marking obtained: date 05 11 07 001

## Rotary device (optional)

Used to mark cylindrical parts thanks to a rotary marking device.

This block type is viewed on the screen only if the device is installed on the machine.

Two new data entry fields appear on the screen.



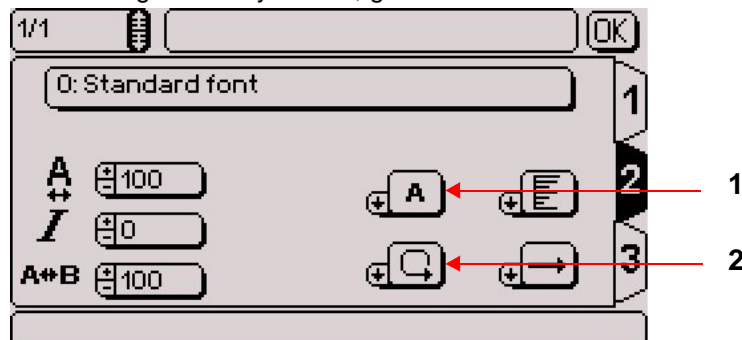
1 : Initial angle (degrees)

2 : Part radius (degrees)

**Initial angle:** Used to define the reference angle of the marking on the rotary device. Depending on the alignment selected, the marking will be left or right aligned or centered in relation with this angle.

**Part radius:** Used to adapt the marking to the type of part underway.

To enter the other information concerning the rotary device, go to tab 2. The screen below appears:


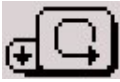
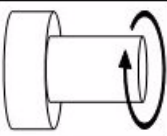
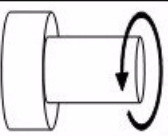
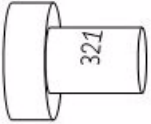
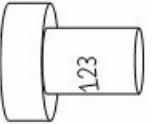
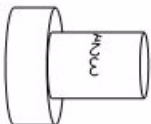
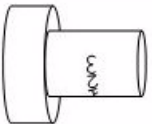
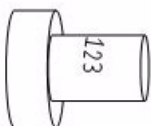
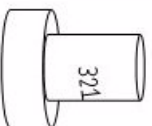
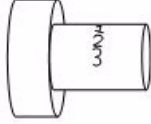
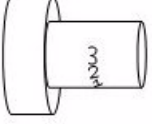


1 : Writing direction on the rotary device

2 : Rotary device rotation direction

Writing direction on the rotary device: Used to determine character orientation.

**Rotary device positioned on the origin side**

	Clockwise	Counter-clockwise
		
		
A		
V		
A		
A		

Rotary device rotation direction: clockwise / counter-clockwise  
Counter-clockwise direction selected by default.

## ■ Text to be marked

Enter the text to be marked in the appropriate block. The text may be composed of:

- capital / lower case letters
- numbers
- key words

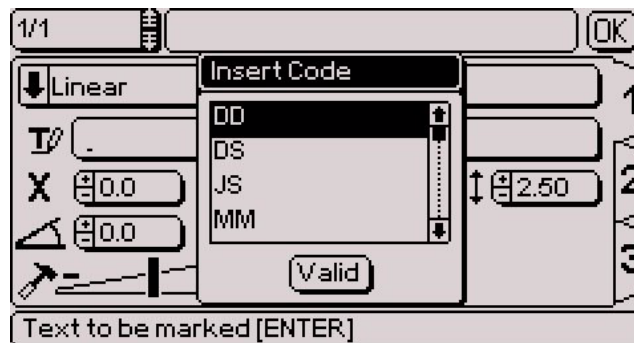
The maximum number of characters per block is 255.  
The characters that can be marked depend on the font.

## Key words

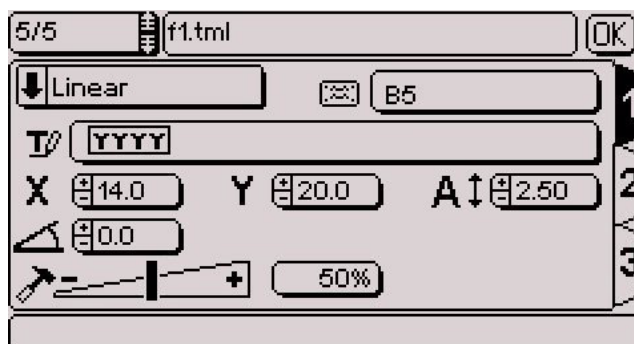
Key words are codes interpreted by the program. They are not actually marked but rather "saved" before marking.

It is possible to define several keywords in the same text area.

To enter a keyword, press the Insert key on the keyboard in the "Text" area. The list of keywords appears. Select the desired keyword using the Up - Down arrows or by typing the first letter of the keyword to be inserted. Validate by pressing Enter.

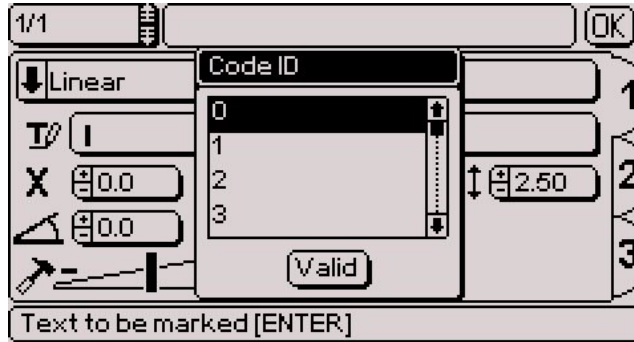


The keywords are indivisible units. When a keyword is inserted, it appears in a frame, it is impossible to delete part of a keyword. Each keyword is considered a single character.



# "Edit file" menu

For Kn - Vn keywords, a second window appears to select the variable number.



## Splitting a variable:

A portion of the contents of a variable may be selected and marked.

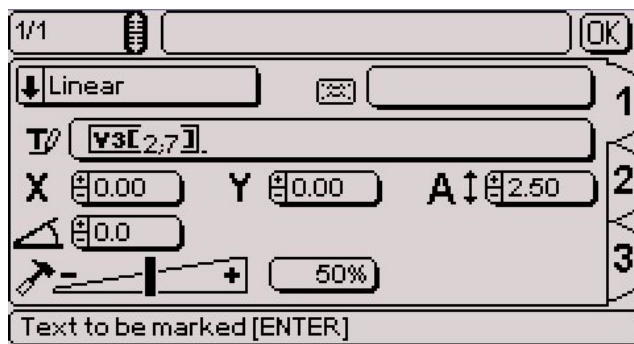
When a variable is inserted in text, the screen below appears:



To mark all the content of the variable, leave the brackets empty.

To mark part of the content of the variable, indicate between brackets the first and last character to take into account, separated by a semi-colon (;).

Example:



Contents of variable V3: ABCDEFGHIJ

Marking obtained: BCDEFG

The 0 number represents the end of the variable.

Example: V3[4;0]

Marking obtained: DEFGHIJ

It is possible to mark the content of a variable from right to left.

Example 1: V3[5;1]

Marking obtained: EDCBA

Example 2: V3[0;4]

Marking obtained: JIHGFED

## List of key words

Key words	Definition	Marking
DD	number of the day in the month (from 01 to 31)	09 - for the 9th day in the month
MM	month number (01 to 12)	05 - for the month of May
YYYY	year in 4 digit(s)	2007
YY	year in 2 digit(s)	07
Y	year in 1 digit(s)	7
hh	hours (00 to 23)	12 - for <b>12</b> h 28 min 35 sec
mm	minutes (00 to 59)	28 - for 12 h <b>28</b> min 35 sec
m	first number for block of ten minutes (1 to 5)	2 - for 12 h <b>28</b> min 35 sec
ss	seconds (00 to 59)	35 - for 12 h 28 min <b>35</b> sec
WW	week number (01 to 53)	01 - for January 3 2001
CCC	number of the day in the year (001 to 366)	028 - for January 28 2001
HS	time interpretation code	
DS	interpretation code for the day of the week	
JS	interpretation code for the day of the month	
MS	interpretation code for the month	
YS	interpretation code for the year	See: ""Variables" menu"
Kn	interpretation code for the counters (K0 to K9)	
Q	interpretation code for shifts according to time block	
Vn	interpretation code for variables	
Vm	last text marked	

### ■ X-Y coordinates

The X-Y coordinates determine the position of the text in the marking zone. They are given:

- in millimeters or in inches, depending on the unit chosen
- with an accuracy of 0.1 mm (0.01 in) in manual entry mode (0.5 mm (0.02 in) with the +/- keys on the numeric keypad)
- in absolute value with relation to the origin

The coordinates can be entered either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

### ■ Character size

The "Size" field defines the actual height, in either millimeters or inches, of characters marked in capital letters.

The size can range from 0.5 mm (0.02 in) to 100 mm (3.937 in). The accuracy is to 0.01 mm (0.01 in) in manual entry mode (0.1 mm (0.01 in) with the +/- keys on the numeric keypad).

The default value is 2.5 mm (0.10 in).

## ■ Text angle

Used to define the angle at which the text is marked. See: "Linear marking".

The default value is 0°.

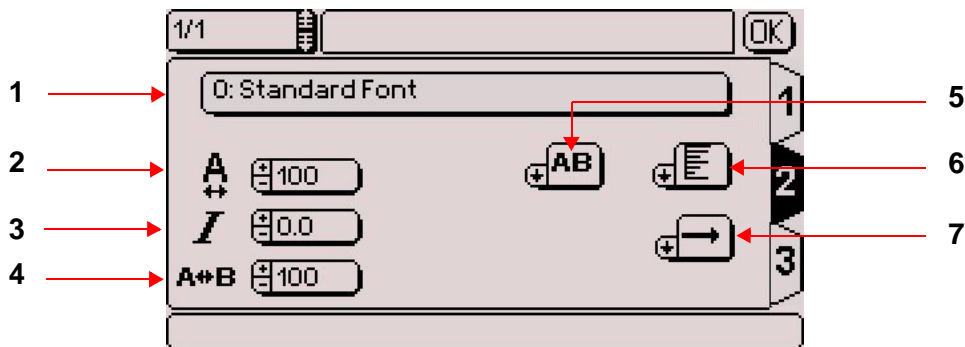
## ■ Marking force

The width and depth of the marked line varies with the defined value.

The higher the force, the deeper the mark. This value is expressed as a percent. The default value of the "Force" area varies according to the machine's configuration.

### TAB 2:

Once all these fields are filled, use the keyboard's Tab key or arrows to switch to tab 2 in order to proceed with the preparation of the block. The tab number appears in reverse video.



- 1 : Character font
- 2 : Compression
- 3 : Inclination
- 4 : Spacing
- 5 : Marking effects
- 6 : Alignment
- 7 : Marking direction

## ■ Character fonts

The various fonts saved are identified by a number followed by their name. Go to the font area to select the character font to be used in the marking block being prepared.

By default, the program uses a standard font:

- # 0 - continuous stroke - for pneumatic machines
- # 3 - dot by dot - for electromagnetic machines



## ■ Compression

Used to modify character width without modifying height. The compression factor modifies the space between characters. This value is expressed as a percent. It must be between 25% and 300%, with increments of 5%. The default value is 100%.

Example:

Compression 50%:                     $\longrightarrow$  ABCDE  
Compression 100%:                 $\longrightarrow$  ABCDE  
Compression 150%:                 $\longrightarrow$  ABCDE

## ■ Inclination

Used to determine the value, in degrees, of the inclination angle of the characters in relation to the vertical. It must be between  $-85^\circ$  and  $+85^\circ$ , with increments of  $5^\circ$ . If the value is positive, the characters slant to the right. If the value is negative, the characters slant to the left. The default value is  $0^\circ$ .

Example:

Inclination  $-30^\circ$ :                 $\longrightarrow$  ABCDE  
Inclination  $0^\circ$ :                     $\longrightarrow$  ABCDE  
Inclination  $+30^\circ$ :                 $\longrightarrow$  ABCDE

## ■ Spacing

Used to modify the inter-character spacing, without changing their width or height. This value is expressed as a percent. It must be between 25% and 300%, with increments of 5%. The default value is 100%.

Example:

Spacing 50%:                         $\longrightarrow$  ABCDE  
Spacing 100%:                        $\longrightarrow$  ABCDE  
Spacing 150%:                        $\longrightarrow$  ABCDE

## ■ Marking effects

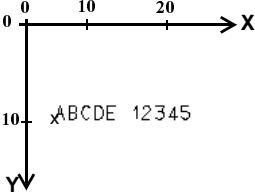
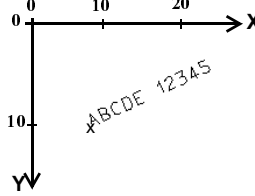
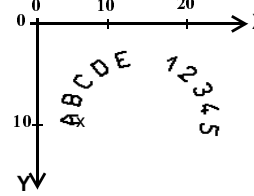
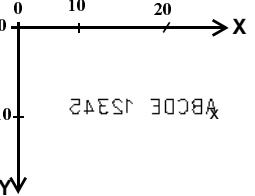
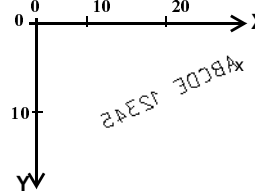
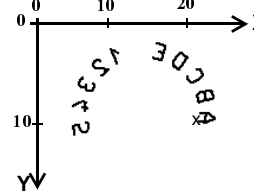
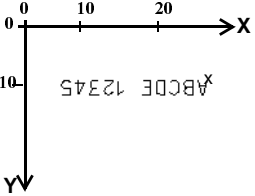
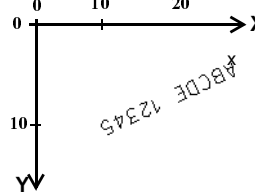

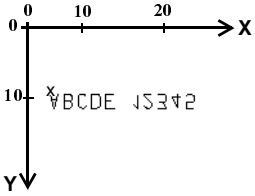
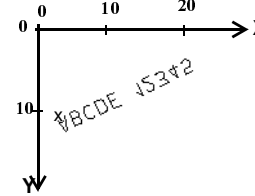
Several marking directions are proposed in order to adapt marking to the specificities of certain parts.

In radial mode, only the normal and mirror effects are available.

# "Edit file" menu

C

Marking obtained:

Marking effects	Result		
	Linear marking Angle: 0°	Linear marking Angle: 35°	Radial marking Centering Angle: 90°
Normal			
Mirror: symmetry along Y			
Inverted: symmetry along X-Y			
Reflected: symmetry along X			

The X represents the start marking point (X-Y coordinates).

## ■ Alignment

Used to align the text to the left, right or center.

In case of left alignment to, the value of X corresponds to the beginning of the text to be marked.

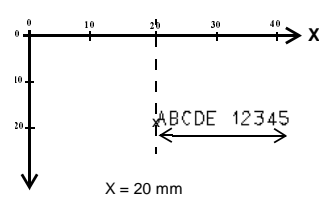
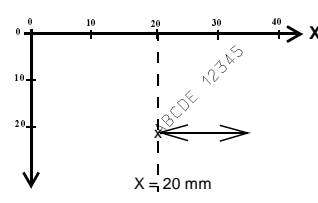
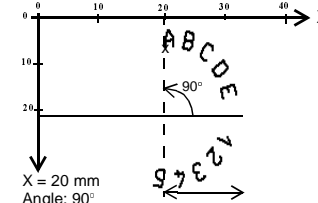
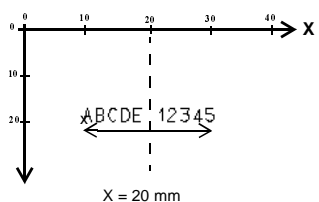
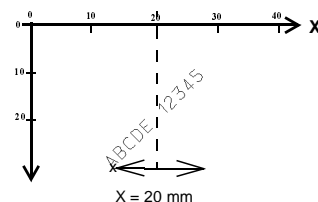
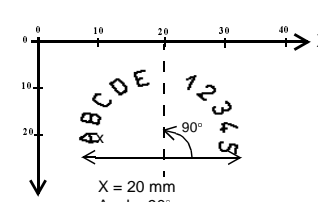
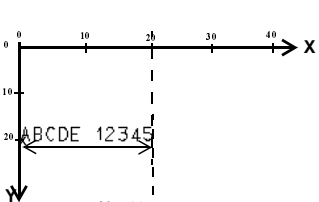
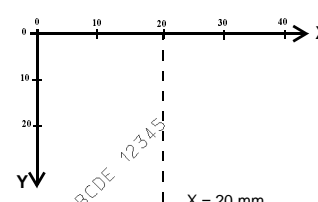
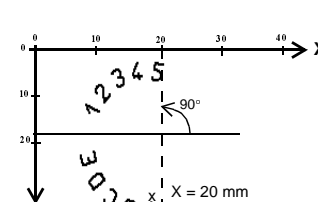
In case the text is centered, the value of X corresponds to the center of the text to be marked.

In case of right alignment, the value of X corresponds to the end of the text to be marked.

In radial mode, text justification is done in relation to the start angle.

By default, the text is aligned to the left.

### Examples

Alignment	Result		
	Linear marking Angle: 0°	Linear marking Angle: 45°	Radial marking Clockwise marking
Left alignment			
Centering			
Right alignment			

The X represents the start marking point (X-Y coordinates).



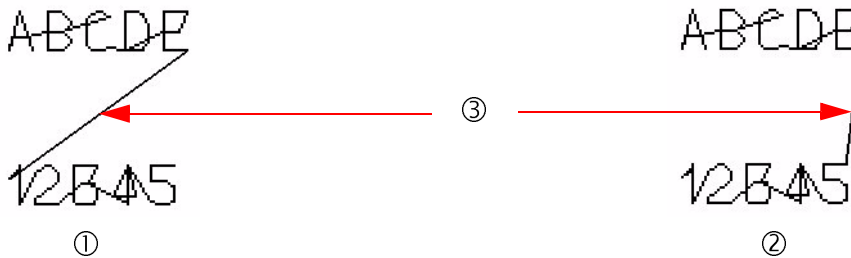
The text to be marked may become off-limits if the X or Y value, or the character size, is too large. To correct this anomaly, reduce or increase one or the other of these values.

## ■ Marking direction

Used to choose the movement direction of the stylus during marking, from left to right or from right to left. This function is used to optimize marking time and must not be confused with the direction of writing (marking effects).

The default marking direction is from left to right.

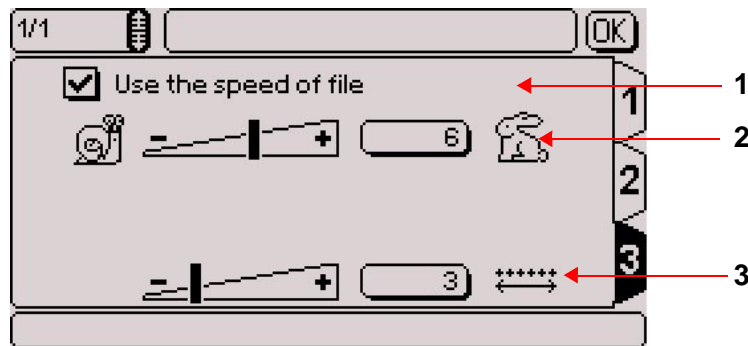
In the following example, the marking direction from right to left reduces the movements of the stylus between the first block and the second one.



- 1 : Marking direction from left to right for the 2 blocks
- 2 : Marking direction from right to left for the second block
- 3 : Segments of movement of the stylus

### TAB 3:

Once all these fields are filled, use the keyboard's Tab key or arrows to switch to tab 3 in order to proceed with the preparation of the block.



- 1 : File speed option
- 2 : Marking speed
- 3 : Dot density per millimeter (electromagnetic version only)

### ■ File speed option

If this option is activated, the speeds chosen for the file in the sub-menu "File - Properties" are applied to the block.

When the option is activated, it is impossible to modify the values on screen. To customize the speeds in the block, deactivate this option by pressing Enter.

This option is activated by default.

To choose the speeds of the file: See: "Properties of the file (F12)"

### ■ Marking speed

Used to determine the speed of the stylus.

This value must be between 1 and 10. The default value is 6. From 1 to 7, speed increases with an optimum quality of marking. From 8 to 10, quality gradually decreases in order to privilege speed. The faster the marking, the lower the quality. A very high quality marking requires a slow marking speed.

## ■ Dot density per millimeter (electromagnetic version only)

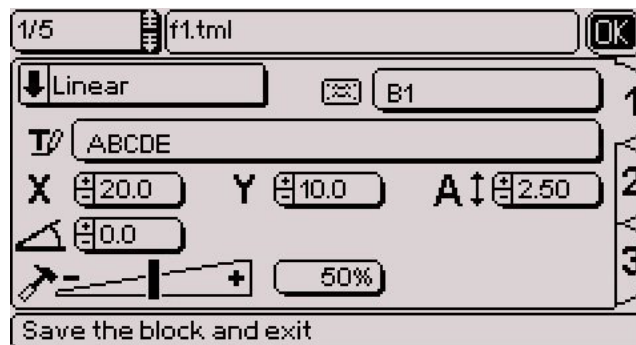
Used to define the number of dots per millimeter produced by the stylus, in electromagnetic.


The higher the density, the closer the dots are to each other. The default value is 3.

The density also depends on the speed selected. As speed increases, the density of dots per millimeter becomes limited.

## 2. "Edit" menu sub-menus

Once the preparation of the block is complete, move to the "OK" button using the keyboard's arrow keys or press Esc to validate the block and exit.



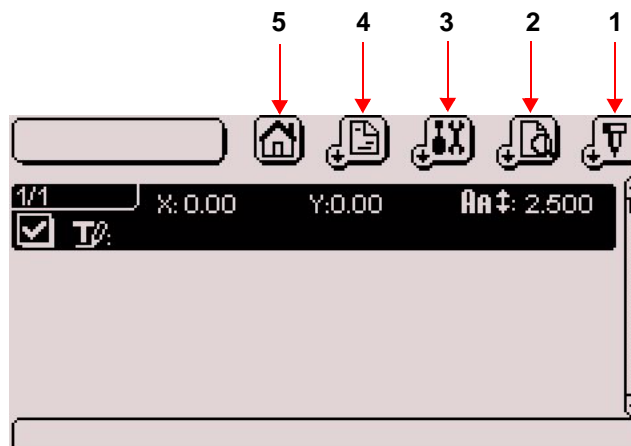
The program returns to the marking file and the sub-menus can then be accessible using the Context menu key on the keyboard.  They are used to edit the file in progress.

To switch from one menu to another, use the Left - Right arrows.

To scroll a menu, press Enter or the Down arrow. If the functions are not fully displayed in the sub-menu, the description is shown in the pop-up help bar at the bottom of the screen.

To close a menu, press the Up arrow.

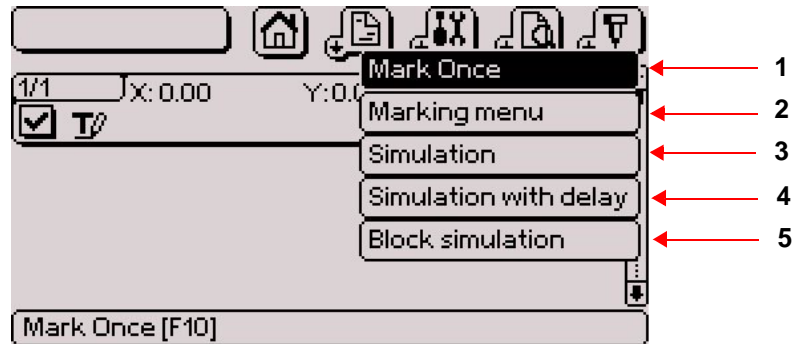
To return to the blocks and leave the sub-menus, press the Context menu key on the keyboard.



- 1 : "Marking" sub-menu
- 2 : "View" sub-menu
- 3 : "Edit" sub-menu
- 4 : "File" sub-menu
- 5 : Back to the previous menu

## ■ "Marking" sub-menu

Used to access certain functions of the "Marking" menu directly from the file.



- 1 : Marking a file
- 2 : Access to the "Marking" menu
- 3 : Marking simulation
- 4 : Marking simulation with pause
- 5 : Simulation of the current block

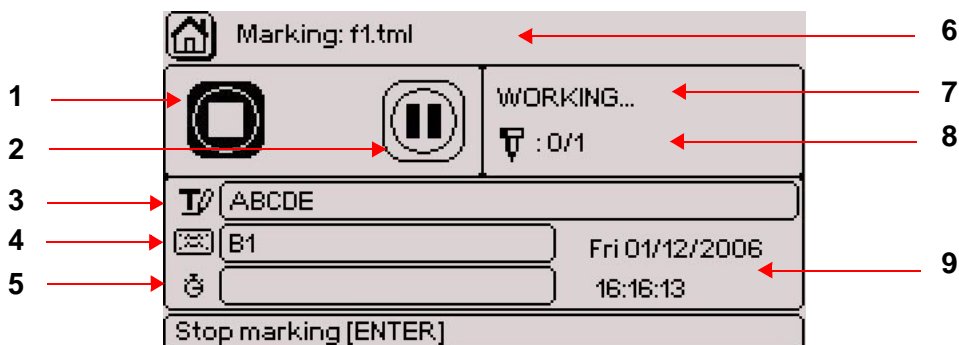
## Marking a file (F10)

Used to mark the file in progress "one time".

The screen below appears:



Press Enter to launch the marking cycle. During the marking of each block, the corresponding characteristics are shown on the screen.



- 1 : "Stop marking" icon
- 2 : "Pause during marking" icon
- 3 : Text for the block being marked
- 4 : Name of the block being marked
- 5 : Marking time. Appears once the markings are completed.
- 6 : Name of the file being marked
- 7 : Status of marking
- 8 : Number of markings carried out in relation to the total number of markings to be done
- 9 : Current time and date

In addition to the information relative to the block being marked, this screen indicates the marking status, the number of markings performed and the total duration of marking.

It is possible to pause during marking or to stop the latter by moving onto the corresponding icons. See: "Marking "N times"".

## Access to the "Marking" menu

Used to access the complete "Marking" menu. See: ""Marking" menu".

## Simulation (F9)

Used to simulate the marking file. Simulation consists in performing the marking without activating the stylus.

Simulation is carried out as a "one time" marking. See: "Marking a file (F10)".

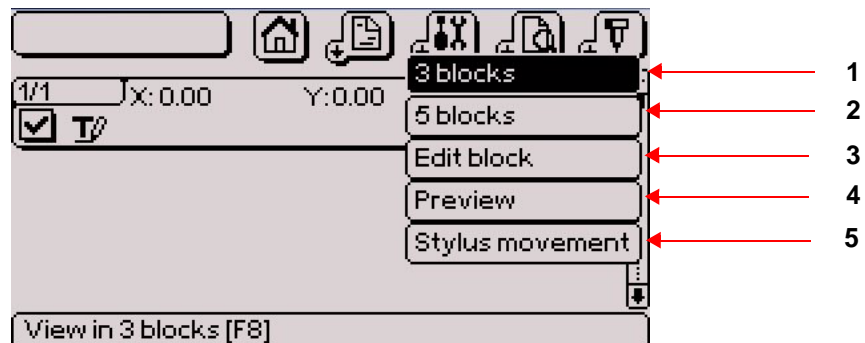
## Marking simulation with pause

This function is identical to the marking simulation, with a pause after each block. To continue the simulation after each block, press Enter.

## Simulation of the current block (F4)

Used to carry out a marking simulation of the marking block under preparation. The simulation is carried out for just one block.

## ■ "View" sub-menu



1 : View 3 blocks

2 : View 5 blocks

3 : Edit block

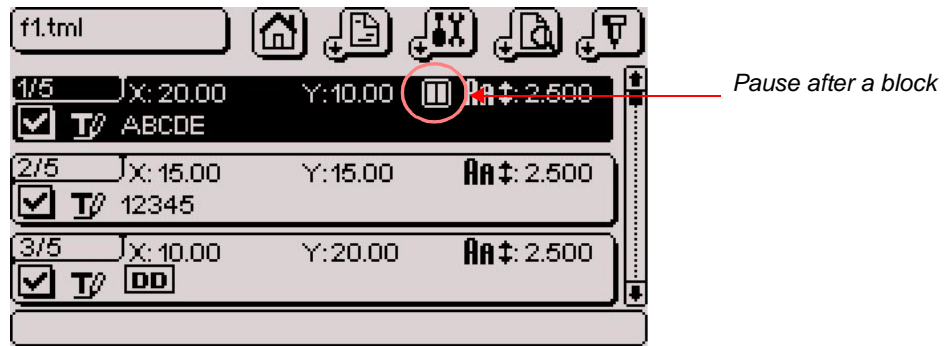
4 : Graphic preview before marking

5 : Stylus movement

In 3/5 blocks display mode, it is possible to insert a pause after a block. When this function is activated, the machine pauses after the block concerned. Press "Start marking" to continue marking.

# "Edit file" menu

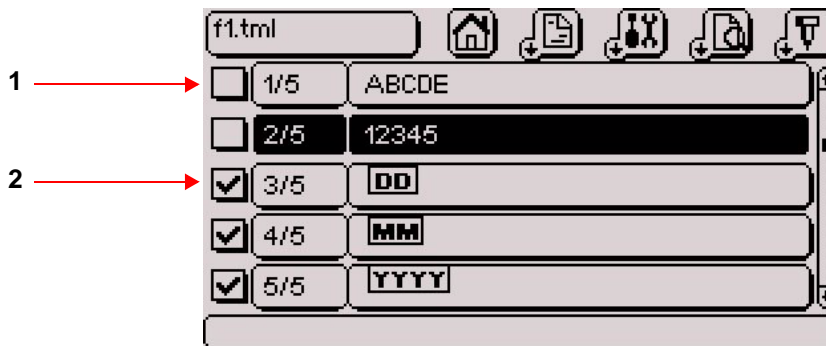
To insert a pause after a block, position the cursor on the block in 3/5 blocks display and simultaneously press Ctrl + P on the keyboard. A symbol is shown:



## Activation / deactivation of the blocks

Used to deactivate a block from a marking file. A deactivated block is not marked.

To deactivate a block, position the cursor on the desired block and press the space bar. A deactivated block is not checked off, an activated block is checked off.



1 : Deactivated block

2 : Activated block

To reactivate the block, repeat the operation.

## View 3 blocks (F8)

Used to view the blocks by groups of 3 on the screen.



The following characteristics are shown:

- block number
- X-Y coordinates
- character size
- text to be marked
- activated block / deactivated block
- pause after block if activated



## View 5 blocks (F8)

Used to view the blocks by groups of 5 on the screen.



The following characteristics are shown:

- block number
- text to be marked
- activated block / deactivated block
- pause after block if activated

In these two viewing modes, to see the details of a specific block, select the Up - Down arrows on the keyboard. Validate by pressing Enter.

## Edit block (F8)

Used to access the details of a block. This function can also be achieved by selecting a block and pressing Enter.

## Graphic preview before marking (F2)

Used to:

- screen preview of all data entered in the marking file.
- view the trajectory of the stylus.

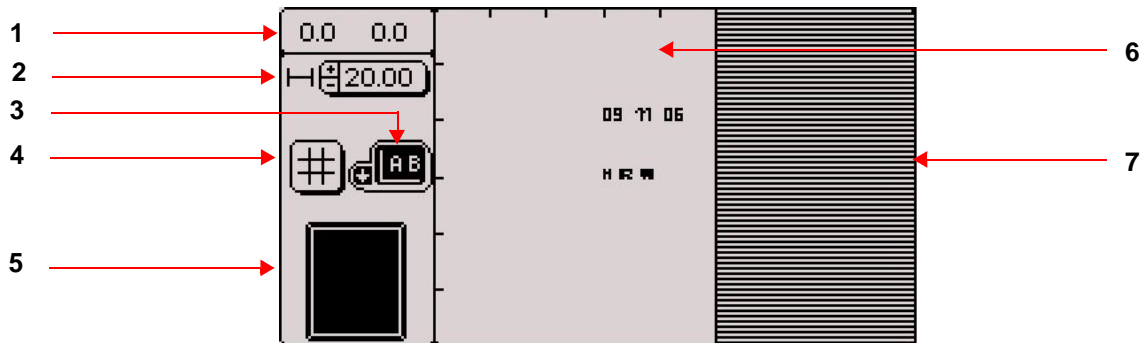
Example of a file:



# "Edit file" menu

Screen preview of the marking file:

Select "Preview" in the "View" sub-menu. The screen below appears:

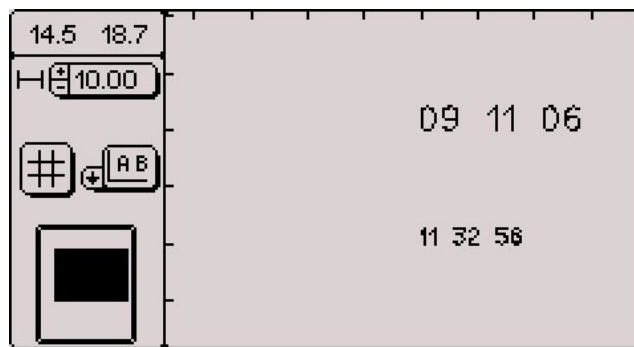


- 1 : X-Y coordinates (top left corner)
- 2 : Scale - Zoom in / zoom out
- 3 : View with or without the stylus trajectory
- 4 : Grid
- 5 : Global view of the marking area
- 6 : Marking zone
- 7 : Off-limits zone

The screen is divided into 2 parts: the control bar on the left and the preview zone on the right. To go from one part to the other, press the Context menu key on the keyboard.

Scale: Select the scale using the +/- keys on the numeric keypad. The selected scale defines the zoom.

Zoom in / zoom out: actual or enlarged view of the marking



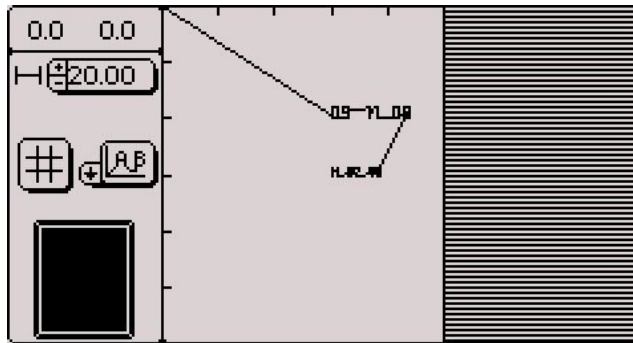
To move when the marking field is not entirely visible, press the Context menu key on the keyboard then move using the arrows.

To regain access to the options on left of the screen, press the Context menu key on the keyboard once more.

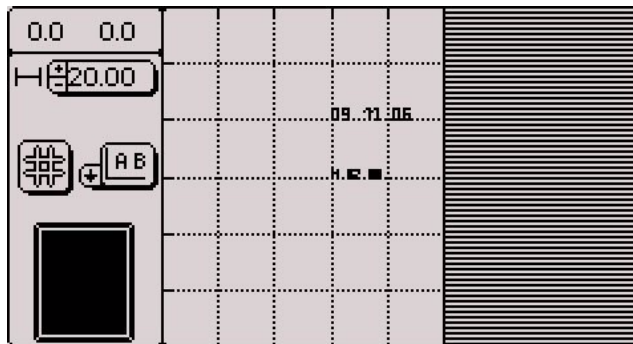
# "Edit file" menu

C

Segments of movement of the stylus: preview of the exact path of the stylus, broken down segment by segment, from the starting point to the end point

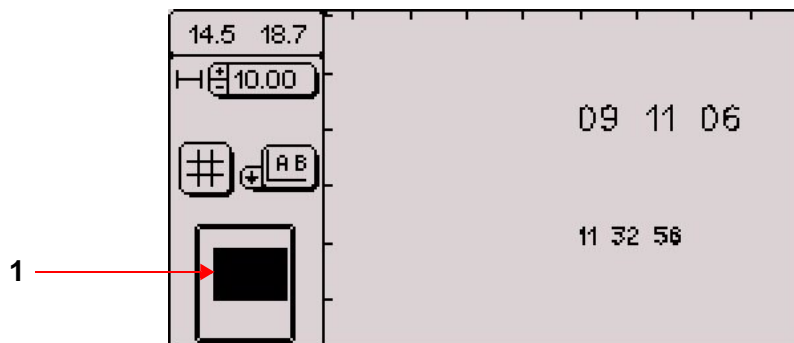


Grid: grid overlaps the marking surface



Global view of the marking area: The black area represents what is visible on the screen.

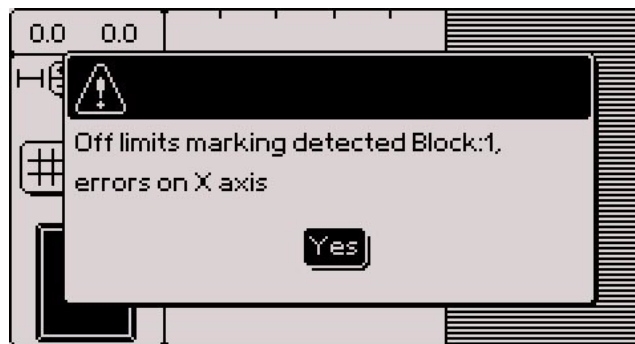
At the 20 mm (0.787 in) scale, the whole marking field is visible on the screen. When the scale increases, only a part of the field is displayed on the screen. This view allows to locate the position within the marking field.



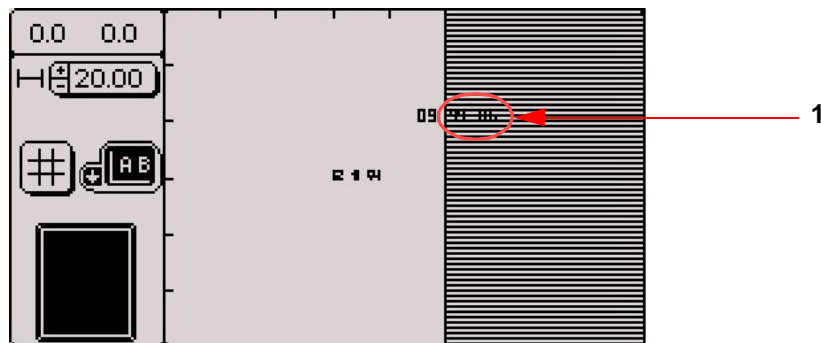
1 : The black square represents the zone displayed on the right of the screen in relation to the entire marking field.

# "Edit file" menu

If the text to be marked is off-limits, a warning message is displayed at the preview, even when the off-limits control is deactivated.



Validate by pressing Enter. The part of the text off-limits is shown in the hatched area.



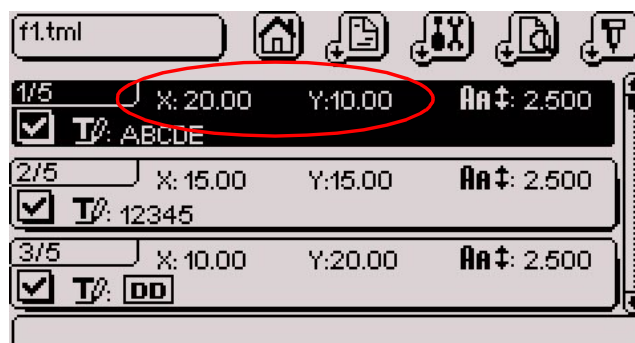
1 : Text off-limits

Return to the marking file and modify the coordinates.

## Stylus movement (F3)

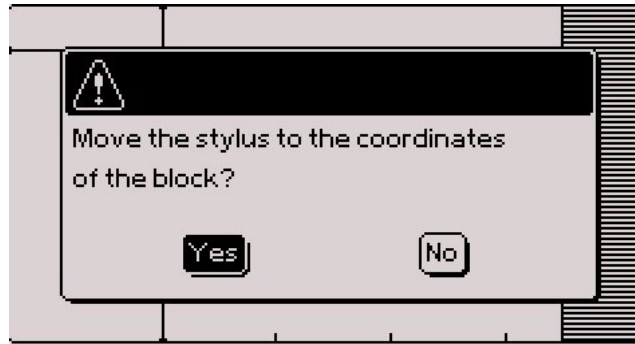
The "dynamic adjustment" function is used to move the stylus above the surface to be marked in order to determine the start marking coordinates.

Position on the chosen block. The screen below appears:



# "Edit file" menu

Press F3 to reach the "Stylus movement" in the "View" submenu. The screen below appears:



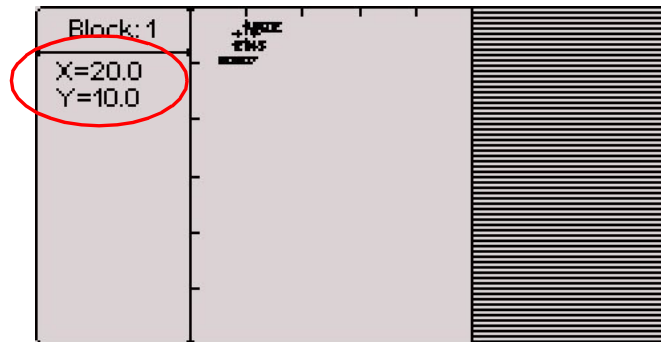
Yes: The stylus moves to the X-Y coordinates of the marking block.

No: Return to previous screen



**Before answering "yes", make sure that no obstacle is in the stylus' trajectory.**

The screen below appears:



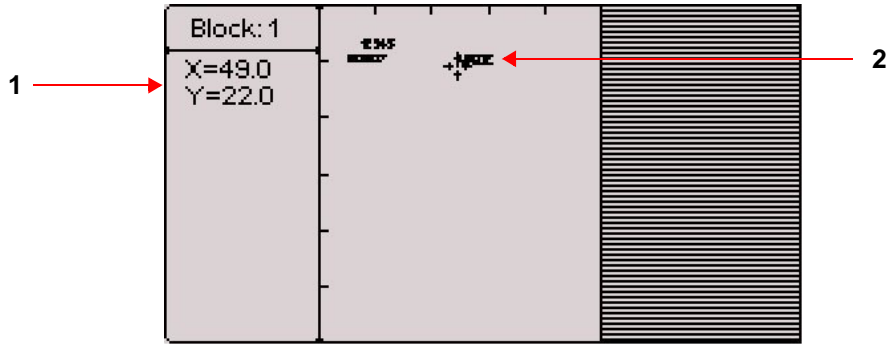
For a "Rotary device" block type, the initial angle is viewed on the display, under the X-Y coordinates.

The stylus moves to the X-Y coordinates of the marking block. In the example, X = 20 and Y = 10.



**To adjust the stylus position, press the Up - Down - Left - Right arrows alternately. The numeric keypad keys can also be used to move the stylus. The 5 key of the numeric key pad brings the stylus back to origin. Page Up - Page Down keys are used to adjust the initial angle of the rotary device.**

Only the block underway moves.



- 1 : New block coordinates
- 2 : Block moved

The movement value is 0.1 mm (0.004 in), along X or Y.

When the correct position is reached, validate by pressing Enter. The program returns in the previous page. The new coordinates appear on the screen.

Esc: return to the file, without saving modifications

## ■ "Edit" sub-menu



- 1 : Add a block at the end of the file
- 2 : Insertion of a block before the selected block
- 3 : Cut the selected block
- 4 : Deleting the selected block
- 5 : Copy the selected block
- 6 : Paste the stored block

### Add a block at the end of the file (F5)

Used to add "empty" marking blocks at the end of a file. The program then automatically updates the numbering.

### Insertion of a block before the selected block (Insert)

Used to insert an "empty" block before the selected block.

Select the block and press Insert on the keyboard or go to the "Edit - Insert" sub-menu. The program then automatically updates the numbering.

## Cut/paste a block (Ctrl + X - Ctrl + V)

Used to move a block within the file.

Select the block to be cut. Simultaneously press the Ctrl + X keys on the keyboard or go to the "Edit - Cut" sub-menu. The block is saved in the memory. Position the cursor on the block after which it must be pasted. Simultaneously press the Ctrl + V keys on the keyboard or go to the "Edit - Paste" sub-menu. The saved block is pasted after the selected block.

## Copy/paste a block (Ctrl + C - Ctrl + V)

Used to copy a block with its characteristics.

Select the block to be copied. Simultaneously press the Ctrl + C keys on the keyboard or go to the "Edit - Copy" sub-menu. The block is saved in the memory. Position the cursor on the block after which it must be pasted. Simultaneously press the Ctrl + V keys on the keyboard or go to the "Edit - Paste" sub-menu. The saved block is pasted after the selected block.

Note:

F7: Used to add a block identical to the selected block. The program copies and inserts this new block after the selected block, then updates the numbering.

## Deleting the selected block (Delete)

Deletes a marking block

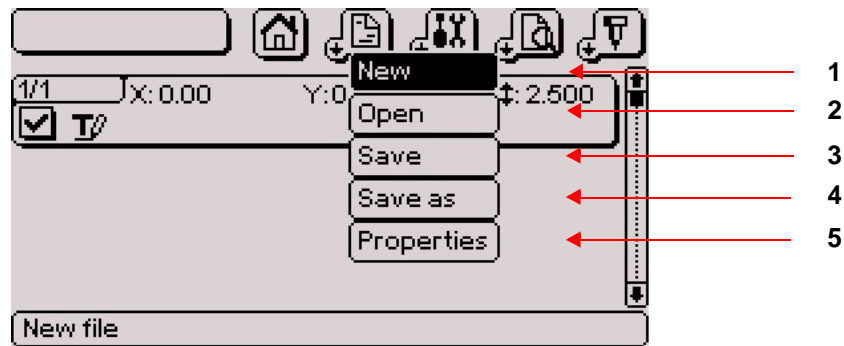
Select the block to be deleted and press Delete on the keyboard or go to the "Edit - Delete" sub-menu.

As a precaution, the program will request confirmation before deleting the marking block.



Select "Yes" with the Left arrow and validate by pressing Enter. The program deletes this block and updates the numbering.

## ■ "File" sub-menu



- 1 : New marking file
- 2 : Open an existing file.
- 3 : Save the file in progress.
- 4 : Save as the file in progress.
- 5 : Properties of the file

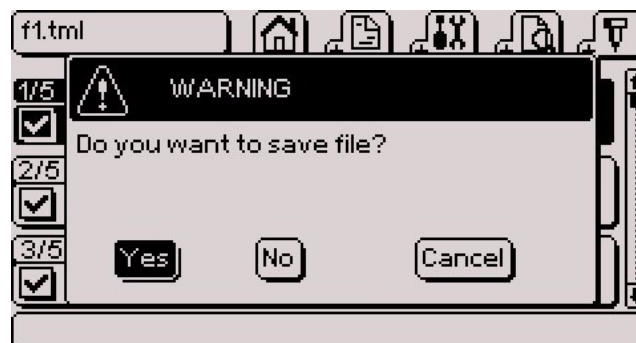
Save the file in progress / save as the file in progress: F11

To save a file under a name, if a file with the same name already exists, the program indicates that this file already exists and requests confirmation of its replacement.



- Yes: Overwrite the existing file and replace it with the new one.
- No: Return to the marking file without validating modifications

For a file that has not been saved or that has been modified, when pressing Esc, the program asks whether it should be saved before exiting.

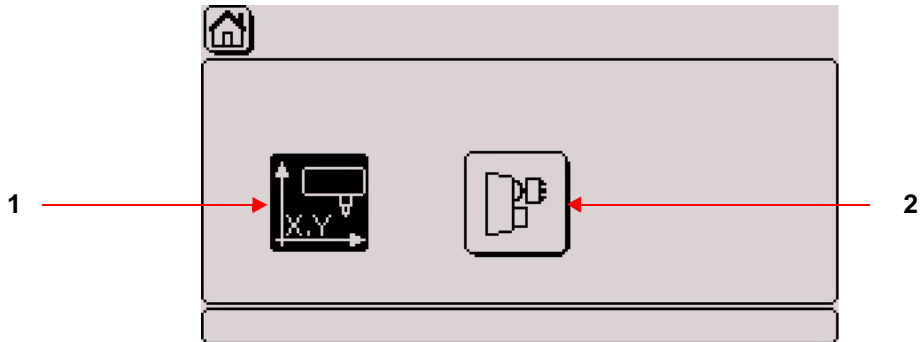


- Yes: Save selected file
- No: Exit the file without saving
- Cancel: Return to the marking file without validating modifications



## Properties of the file (F12)

The screen below appears:



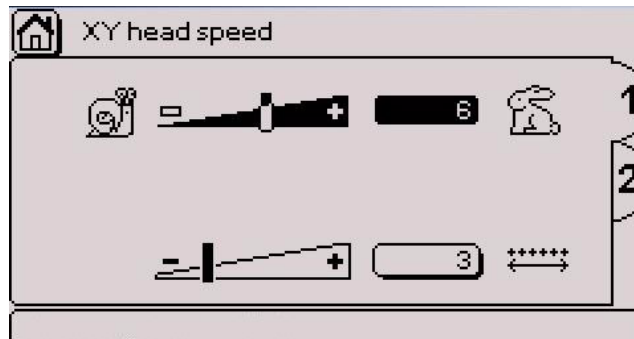
1 : XY head marking speed  
2 : Rotary device speed

- XY head marking speed

### TAB 1:

Used to determine the speeds common to the whole file. These speeds are applied by default to every block on the file.

The screen below appears:

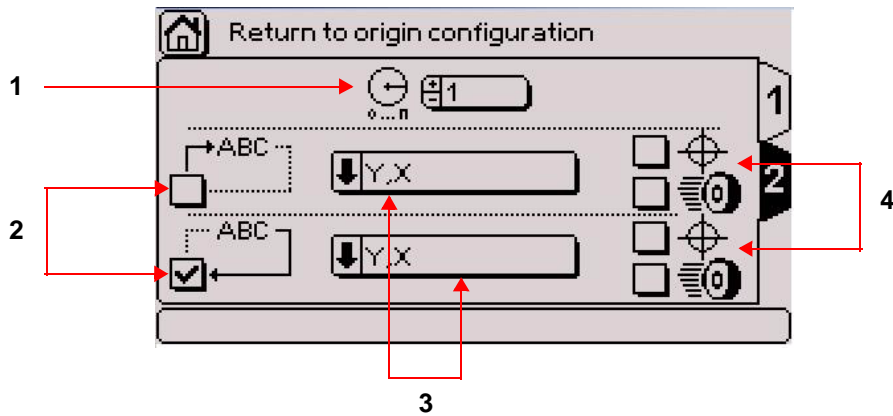


See: "Marking speed", "Dot density per millimeter (electromagnetic version)".

## TAB 2:

Used to configure the return to origin of the stylus.

The screen below appears:



- 1 : Number of markings before return to origin
- 2 : Start/end file origin
- 3 : Return to origin type
- 4 : Accurate mode / fast mode

Number of markings before return to origin: Used to define the number of markings the stylus returns to origin. If the 1 value is selected, the stylus returns to origin after each marking.

If the 0 value is selected, the stylus never returns to origin, except when the machine is turned on.

Start/end file origin: Used to define at which moment the stylus returns to origin in relation to the marking of a file. The origin at the end of a file is selected by default.

Return to origin type: Used to select the stylus' trajectory to return to origin.

- X, Y: following the X then the Y axis
- X & Y: following the X and Y axis at the same time (diagonal) to save cycle time
- Y, X: following the Y then the X axis

Depending on the type of machine, all options are available.

Accurate mode / fast mode: Used to define the accuracy of the return to origin.

Accurate mode: When the origin position is reached (X and Y sensors activated), the stylus leaved this initial position to use once again a slow approaching speed.

=> searching the origin position with accuracy

Fast mode: Origin position is reached in fast speed (X and Y detectors activated) without a to-and-from cycle in slow speed.

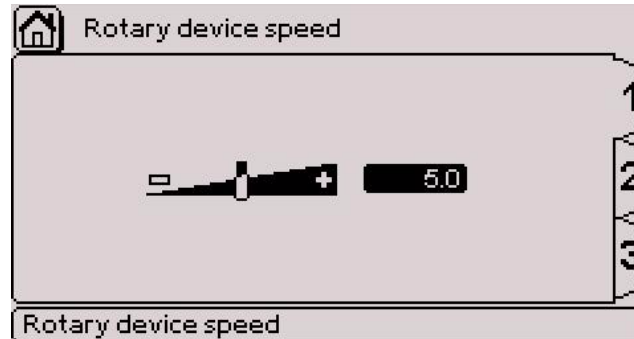
=> origin less accurate but time is saved

- Rotary device speed

**TAB 1:**

Used to determine the movement speed of the rotary device.

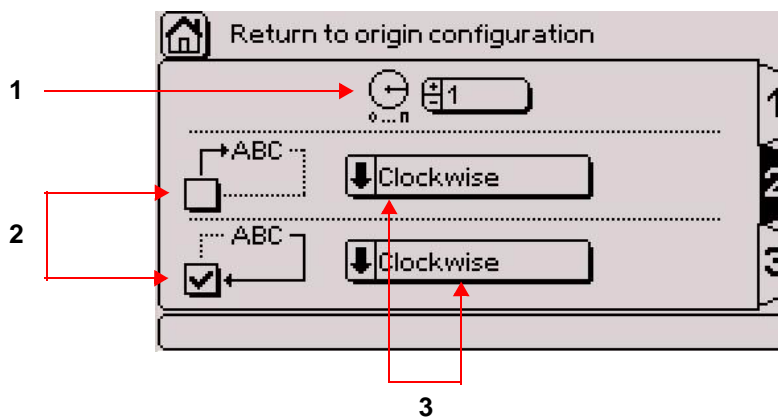
The screen below appears:



**TAB 2:**

Used to configurate the return to origin of the rotary device.

The screen below appears:



- 1 : Number of markings before return to origin
- 2 : Start/end file origin
- 3 : Return to origin type

Number of markings before return to origin: Used to define after how many markings the rotary device returns to origin. If the 1 value is selected, the rotary device returns to origin after each marking.

Start/end file origin: Used to define the moment the rotary device will return to origin in relation to the marking of a file.

The origin at the end of a file is selected by default.

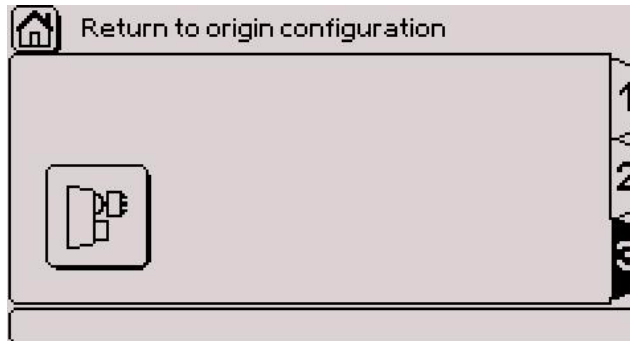
Return to origin type: Used to choose the rotation direction of the rotary device to return to origin.

- clockwise
- counter-clockwise
- fast: shortest travel distance in relation to the current position

## TAB 3:

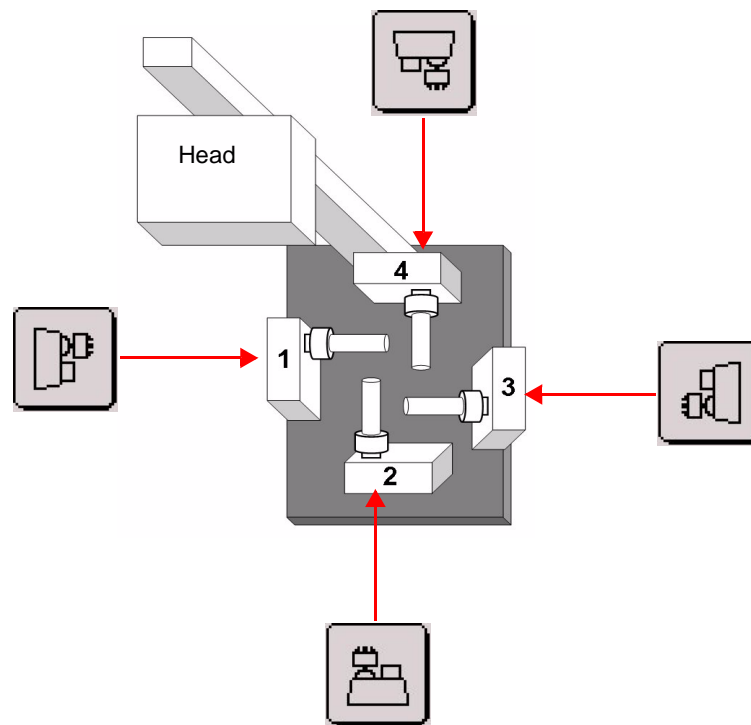
Used to select the rotary device orientation in relation to the marking head.

The screen below appears:



Select the corresponding icon using the arrows. Everytime the Enter key is pressed, the orientation is changed.

Examples



- 1 : Rotary device on the X axis - motor to the left
- 2 : Rotary device on the Y axis - motor at the bottom
- 3 : Rotary device on the X axis - motor to the right
- 4 : Rotary device on the Y axis - motor at the top

Select rotary device orientation corresponding to its installation.



**Correctly select the rotary device position: the configuration selection directly influences the marking's orientation on the part.**

## ■ Back to the previous menu

If the file has not been saved, the program displays the following message:



Yes: Save selected file

No: Exit the file without saving

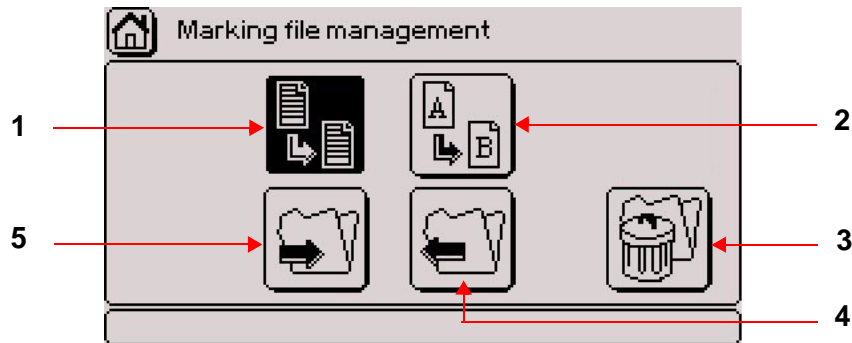
Cancel: Return to the marking file without validating modifications

# "Marking file management" menu

Select this menu from the main menu, represented by the icon:



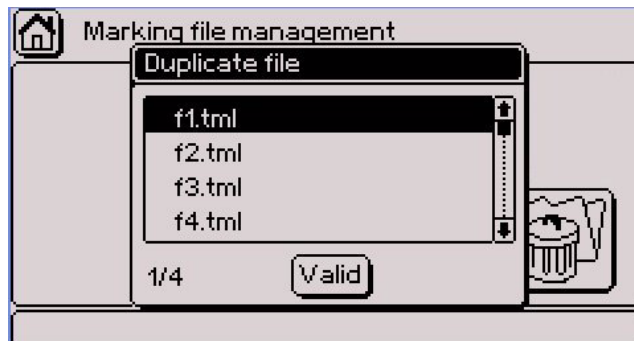
The screen below appears:



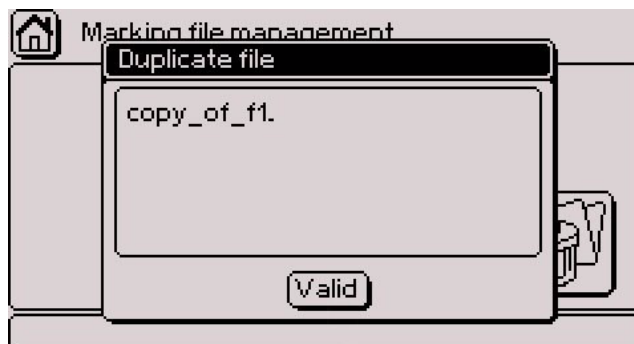
- 1 : Duplicate a file
- 2 : Rename a file
- 3 : Delete a file
- 4 : Export a file
- 5 : Import a file

## 1. Duplicate a file

Select the corresponding icon using the arrows. Validate by pressing Enter.  
The screen below appears:



Select the file using the Up - Down arrows. Validate by pressing Enter.  
The screen below appears:

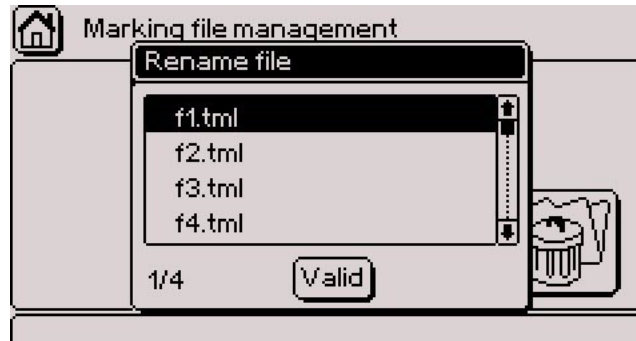


Rename the duplicated file as desired. Validate by pressing Enter. The program displays a confirmation message.

## 2. Rename a file

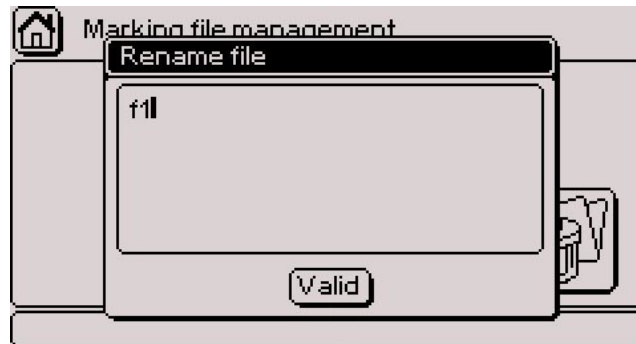
Select the corresponding icon using the arrows. Validate by pressing Enter.

The screen below appears:



Select the file using the Up - Down arrows. Validate by pressing Enter.

The screen below appears:



Rename the file as desired. Validate by pressing Enter. The program displays a confirmation message.

## 3. Delete a file

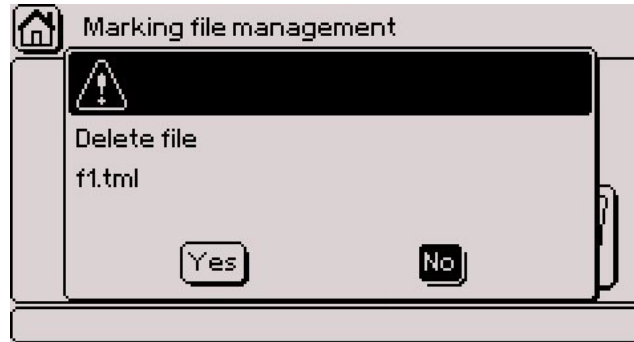
Select the corresponding icon using the arrows. Validate by pressing Enter.

The screen below appears:



Select the file using the Up - Down arrows. Validate by pressing Enter.

The screen below appears:



Yes: Deleting the file - The program displays a confirmation message.  
No: Return to the menu without deleting the file

## 4. Export a file

Used to export a file, to a PC or another marking machine for example, by downloading it onto a USB key.

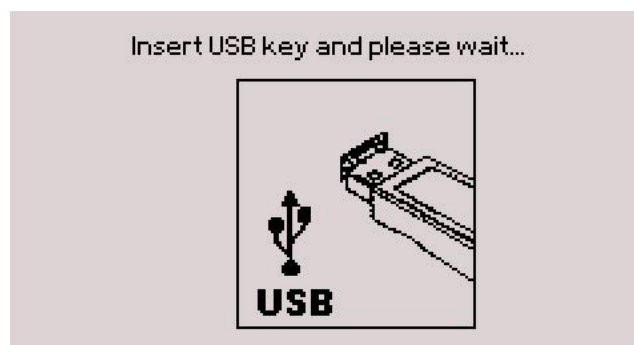
Select the corresponding icon using the arrows. Validate by pressing Enter.

The screen below appears:



Select the file using the Up - Down arrows. Validate by pressing Enter.  
To select several files, position on each desired file and press the Space bar. Validate by pressing Enter.  
To select all files, press the Ctrl + A keys on the keyboard. Validate by pressing Enter.

The screen below appears:



Insert a USB key into the USB port for download.

The program displays a confirmation message.

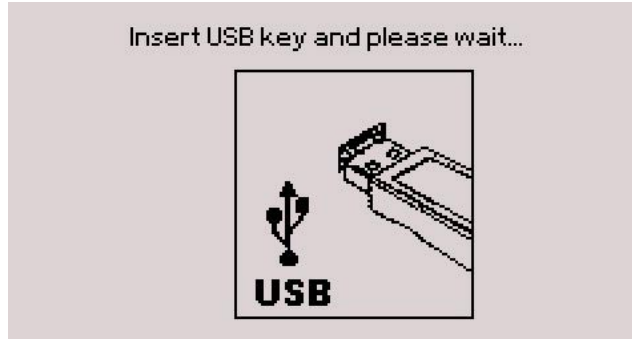


## 5. Import a file

Used to import a file, from a PC or another marking machine for example, by downloading it from a USB key.

Select the corresponding icon using the arrows. Validate by pressing Enter.

The screen below appears:



Insert a USB key into the USB port for download. The screen below appears:



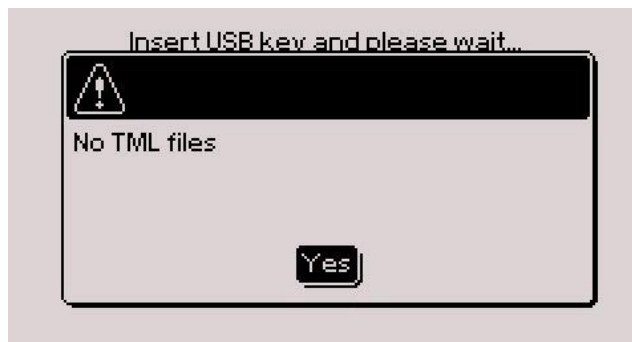
Select the file using the Up - Down arrows. Validate by pressing Enter.

To select several files, position on each desired file and press the Space bar. Validate by pressing Enter.

To select all files, press the Ctrl + A keys on the keyboard. Validate by pressing Enter.

The program displays a confirmation message.

If no file with the TML format is present, the following message is displayed:



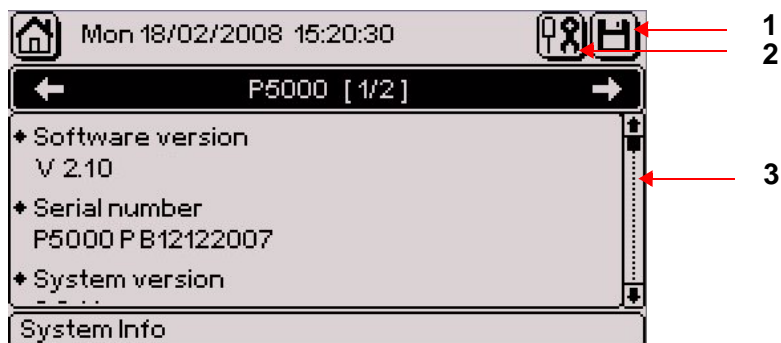
Validate by pressing Enter. The program returns to the previous menu. Check the content of the key and try again.

# "System info" menu

Select this menu from the main menu, represented by the icon:



This menu contains technical information that can be communicated to the distributor or the technical support in case of problem. It is made of several tabs, containing the characteristics of the Control Unit, of the marking head and of the eventual accessories installed.



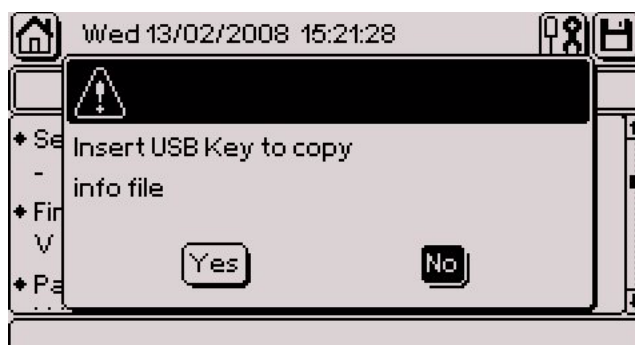
- 1 : "Save" icon
- 2 : Maintenance
- 3 : Scroll bar

To go from one tab to another, use the Left - Right arrows of the keyboard.

To scroll through the information, use the Up - Down arrows on the keyboard. To reach directly the beginning or the end of the list, use the Home - End keys of the keyboard.

To access the icons at the top of the screen, press on the Context menu key of the keyboard.

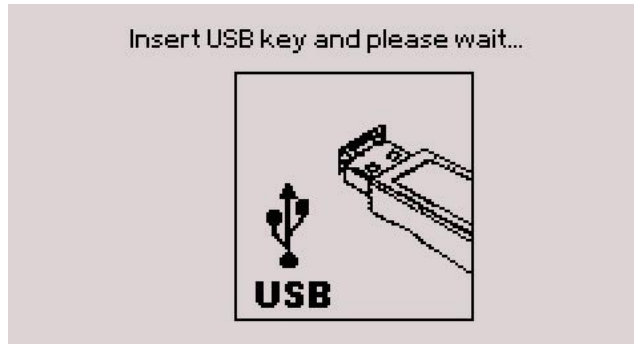
To save this information on a USB key in order to communicate them to the distributor or the technical support, select the "Save" icon using the arrows. The screen below appears:



No: Return to previous screen

# "System info" menu

Yes: The screen below appears:



Insert a USB key into the USB port for download.

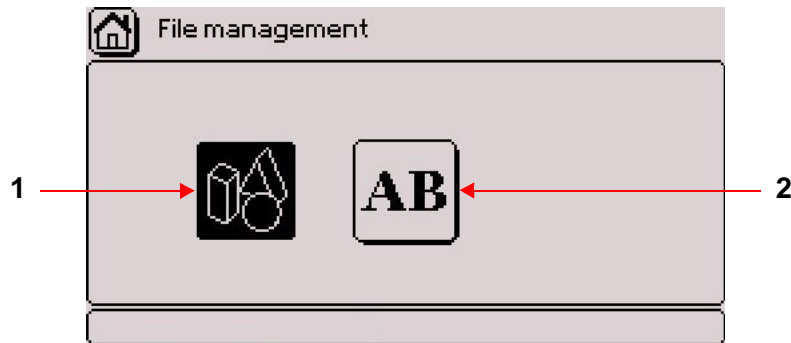
## **Maintenance**

MENU UNDER CONSTRUCTION

Select this menu from the main menu, represented by the icon:



The screen below appears:



- 1 : Logo management
- 2 : Font management

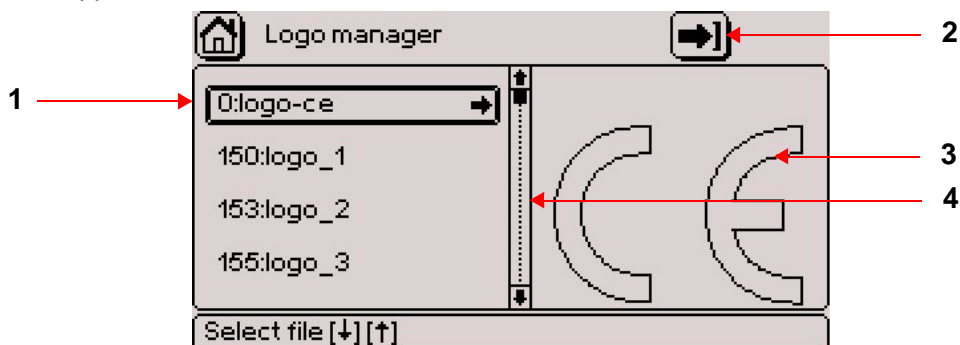
## 1. Logo management

This list indicates the available logos. Each logo is identified by a number. Logos are programmed in the CCU board. The standard configuration comes with 2 logo(s).

If other logos were ordered, they will also appear in this list.

Logos have the LO3 format.

The screen below appears:



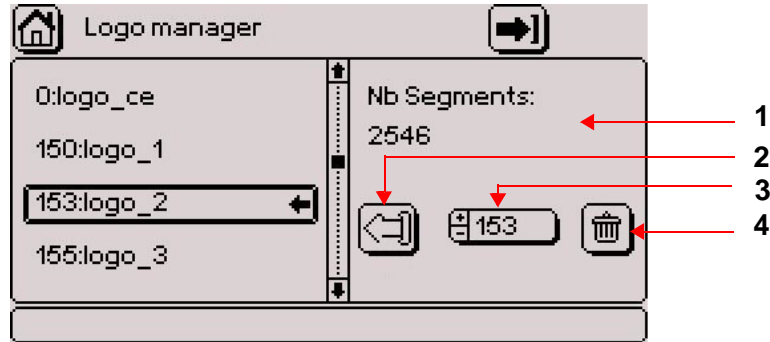
- 1 : List of available logos
- 2 : Import a logo
- 3 : Preview of the selected logo
- 4 : Scroll bar

To exit the list of logos and access the "Import a logo" icon, press the Context menu key on the keyboard.

To scroll through the logos, use the Up - Down arrows on the keyboard. The corresponding logo is shown on the right-hand side.

After selecting the desired logo, press the Right arrow on the keyboard to access the functions available for this logo.

The screen below appears:



- 1 : Number of logo segments
- 2 : Export a logo
- 3 : Re-index a logo
- 4 : Delete a logo

## ■ Number of logo segments

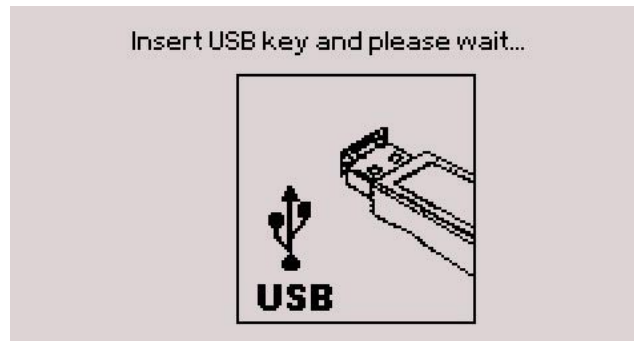
Indicates the number of lines included in the vector plotting of the logo.

## ■ Export a logo (LO3 format)

Used to export a logo, to a PC or another marking machine for example, by downloading it onto a USB key.

Select the corresponding icon using the arrows. Validate by pressing Enter.

The screen below appears:



Insert a USB key into the USB port for download.

The program displays a confirmation message.

## ■ Re-index a logo

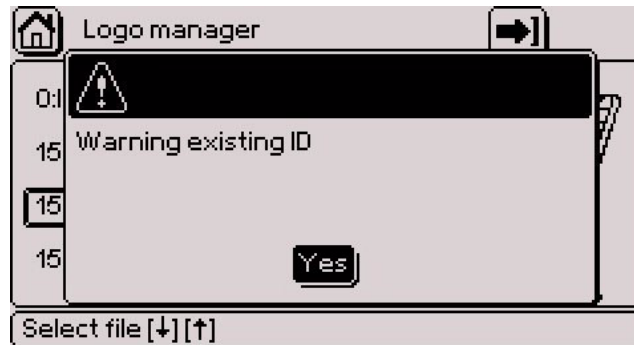
Used to change the number of a logo but not its name.

Select the corresponding icon using the arrows. Entry can be made either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

By returning to the list of logos using the Left arrow, the logo number is updated.

If the number given to the logo is already assigned, the following message is displayed:

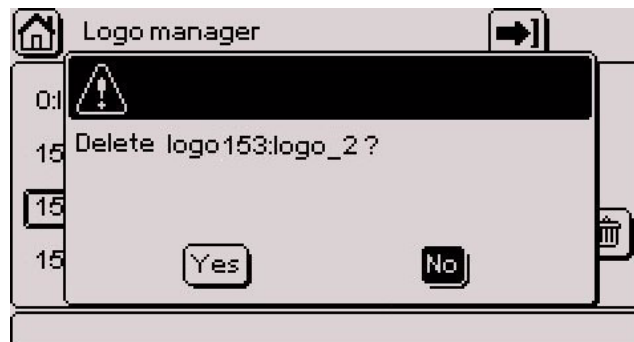


The logo keeps its current number. Try again by assigning a number that is not already used.

## ■ Delete a logo

Select the corresponding icon using the arrows. Validate by pressing Enter.

The screen below appears:



Yes: Deleting the logo

No: Return to the previous screen without deleting the logo

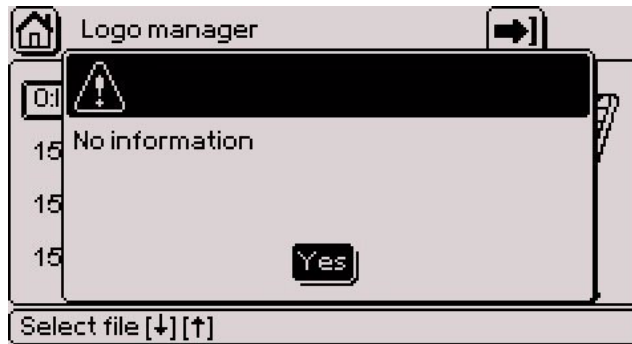
Cancel: Return to the previous screen without deleting the logo

## Note

The standard configuration logos bear a number between 0 and 99. The additional logos bear a number starting from 100.

The standard configuration logos cannot be exported, re-indexed nor deleted. No function regarding these logos is available.

In this case, when pressing the Right arrow, the screen below is shown:



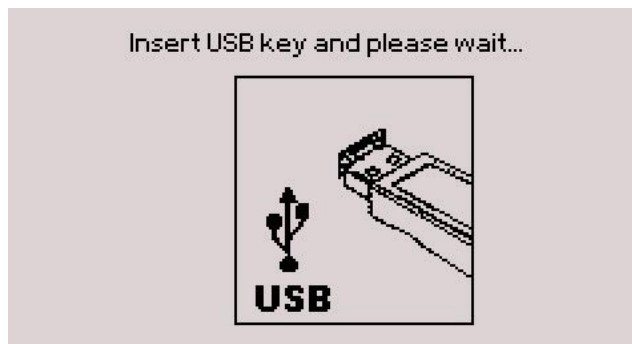
Only the additional logos can be modified.

## ■ Import a logo

Used to import a logo, from a PC or another marking machine for example, by downloading it from a USB key.

To exit the list of logos and access the "Import a logo" icon, press the Context menu key on the keyboard. Select the arrow in the top right corner of the screen. Validate by pressing Enter.

The screen below appears:



Insert a USB key into the USB port for download. The screen below appears:



Select the logo using the Up - Down arrows. Validate by pressing Enter.

To select several files, position on each desired file and press the Space bar. Validate by pressing Enter.

To select all files, press the Ctrl + A keys on the keyboard. Validate by pressing Enter.

The program displays a confirmation message.

By default, number 255 is assigned to the imported logo. If several logos are imported, this value decrements (254, etc..).

If no file with the LO3 - PLT format is present, the following message is displayed:



Validate by pressing Enter. The program returns in the previous page. Check the content of the key and try again.

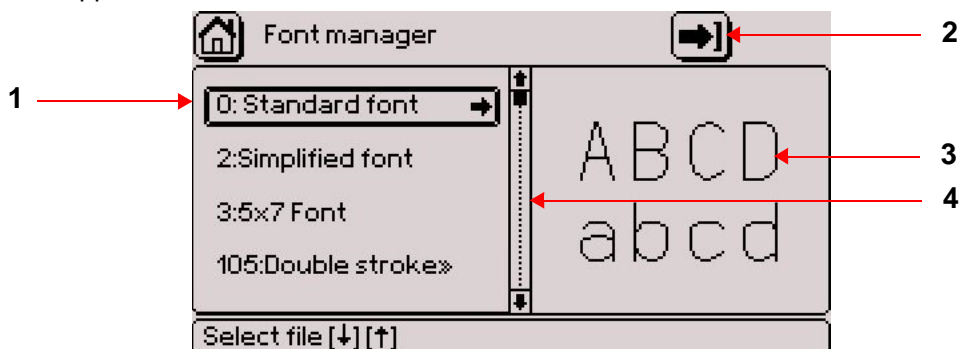
## 2. Font management

This list indicates the fonts available in memory. Each font is identified by a number. Character fonts are programmed in the CCU board. The standard configuration comes with 3 fonts (pneumatic version).

If other fonts were ordered, they will also appear in this list.

Fonts have the PO3 format.

The screen below appears:



- 1 : List of available fonts
- 2 : Import a font
- 3 : Preview of the selected font
- 4 : Scroll bar

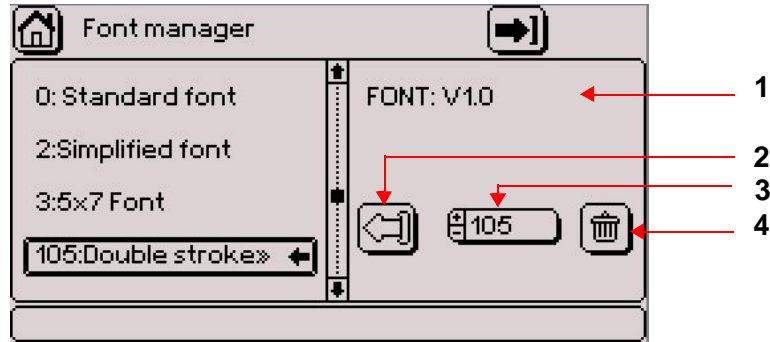
To exit the list of fonts and access the "Import a font" icon, press the Context menu key on the keyboard.

To scroll through the fonts, use the Up - Down arrows on the keyboard. The corresponding font is shown on the right-hand side.

After selecting the desired font, press the Right arrow on the keyboard to access the functions available for this font.



The screen below appears:



- 1 : Font version
- 2 : Export a font
- 3 : Re-index a font
- 4 : Delete a font

## ■ Font version

Indicates the version of the font selected.

## ■ Export a font (PO3 format)

MENU UNDER CONSTRUCTION

## ■ Re-index a font

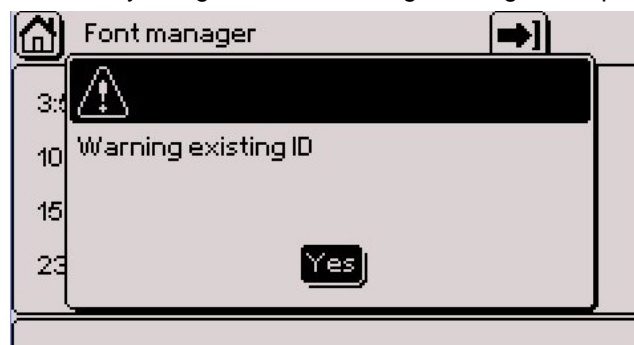
Used to change the number of a font but not its name.

Select the corresponding icon using the arrows. Entry can be made either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

By returning to the list of fonts using the Left arrow, the font number is updated.

If the number given to the font is already assigned, the following message is displayed:

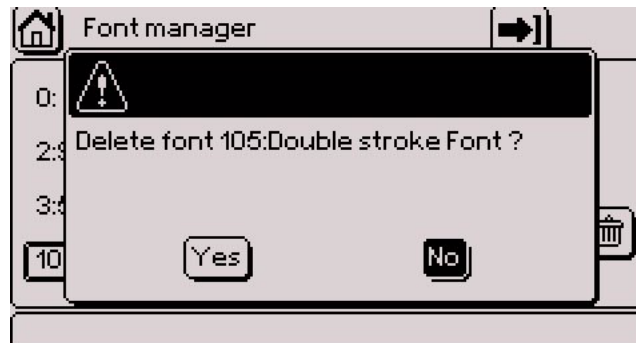


The font keeps its current number. Try again by assigning a number that is not already used.

## ■ Delete a font

Select the corresponding icon using the arrows. Validate by pressing Enter.

The screen below appears:



Yes: Deleting the font

No: Return to the previous screen without deleting the font

Cancel: Return to the previous screen without deleting the font

Note

The standard configuration fonts bear a number between 0 and 99. The additional fonts bear a number starting from 100.

The standard configuration fonts cannot be exported, re-indexed nor deleted. No function regarding these fonts is available. Only the font's version is indicated.

In this case, when pressing the Right arrow, the screen below is shown:



Only the additional fonts can be modified.

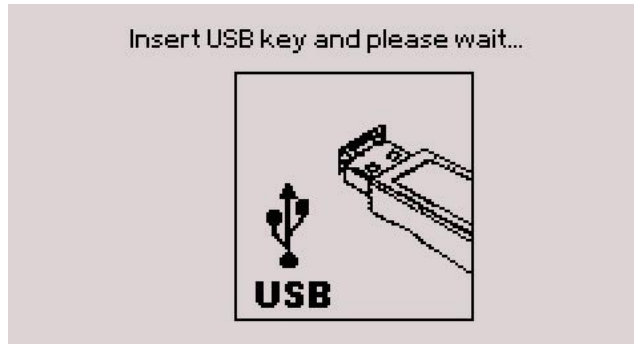
## ■ Import a font

Used to import a font, from a PC or another marking machine for example, by downloading it from a USB key.

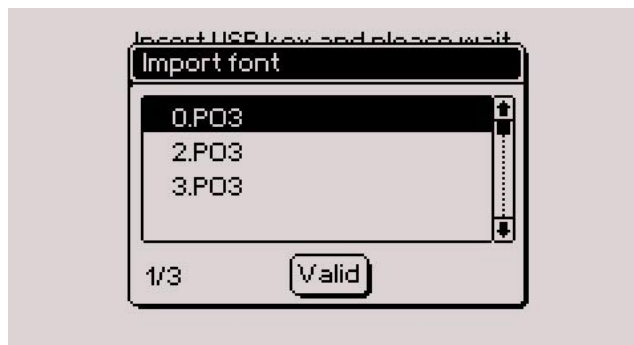
To exit the list of fonts and access the "Import a font" icon, press the Context menu key on the keyboard. Select the arrow in the top right corner of the screen. Validate by pressing Enter.

# "File management" menu

The screen below appears:



Insert a USB key into the USB port for download. The screen below appears:



Select the font using the Up - Down arrows. Validate by pressing Enter.

To select several files, position on each desired file and press the Space bar. Validate by pressing Enter.

To select all files, press the Ctrl + A keys on the keyboard. Validate by pressing Enter.

The program displays a confirmation message.

By default, number 255 is assigned to the imported font. If several fonts are imported, this value decrements (254, etc...).

If no file with the PO3 format is present, the following message is displayed:



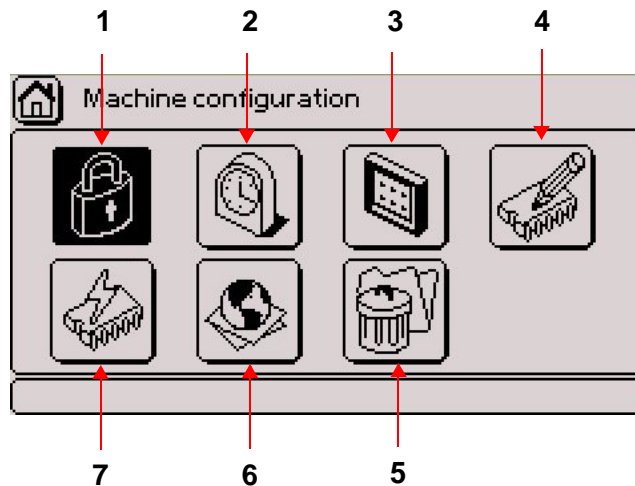
Validate by pressing Enter. The program returns in the previous page. Check the content of the key and try again.

# "Machine configuration" menu

Select this menu from the main menu, represented by the icon:



The screen below appears:



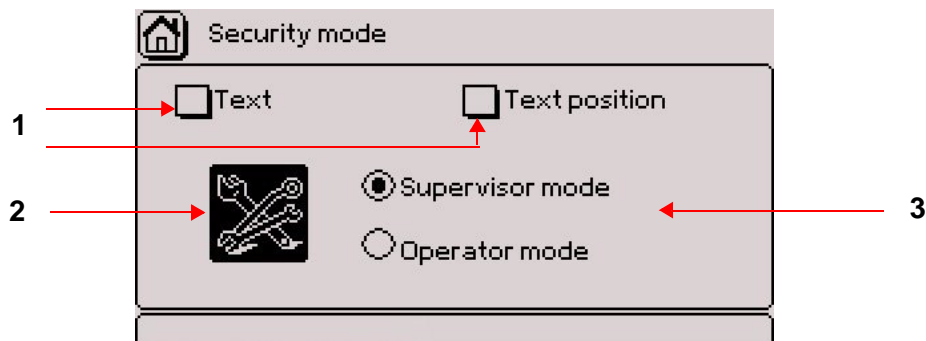
- 1 : Security mode
- 2 : Time and date settings
- 3 : Display settings
- 4 : Machine parameters
- 5 : Deleting all the files (reset)
- 6 : Language
- 7 : Update

## 1. Security mode

Used to:

- change the password.
- select either "Supervisor" or "Operator" mode for the operating mode of the program.
- define the modifiable parameters in "Operator" mode.

The screen below appears:



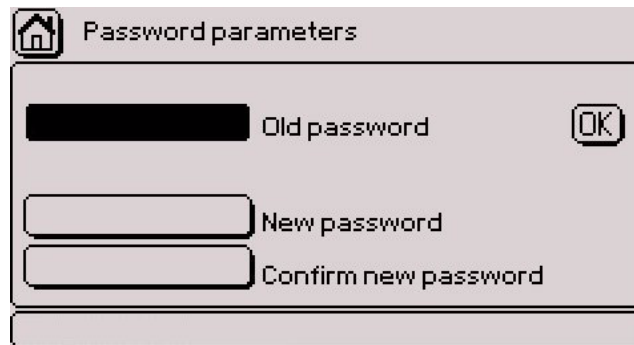
- 1 : Modifiable parameters in "Operator" mode
- 2 : Setting the password
- 3 : Operating mode

## ■ Password

Switching from "Operator" mode to "Supervisor" mode is protected by a password. The password configured by default is 12345. This password can only be changed under the "Supervisor" operating mode. It may contain a maximum of 8 alphanumeric characters.

To change the password, select the password configuration icon.

The screen below appears:

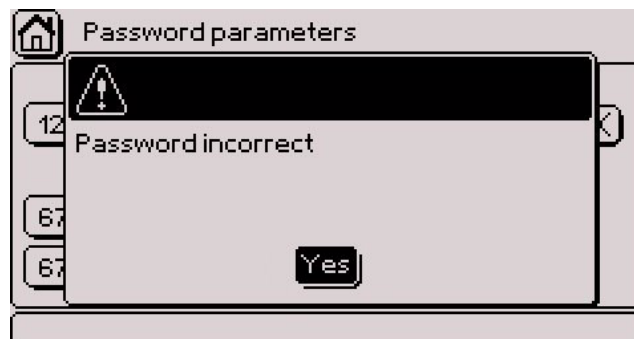


Press Enter to access the entry field. Enter the current password. Validate by pressing Enter.

Enter the new password. For confirmation, enter the new password again.

The cursor is positioned on the "OK" button. Validate by pressing Enter.

This message warns that an incorrect password was entered. The cursor is positioned on the "Yes" button. Validate by pressing Enter. The program returns to the main menu. Re-enter the password.



**Switching from "Supervisor" mode to "Operator" mode is not protected by a password. Obtain the password before switching mode.**

## ■ "Supervisor" mode

Used to:

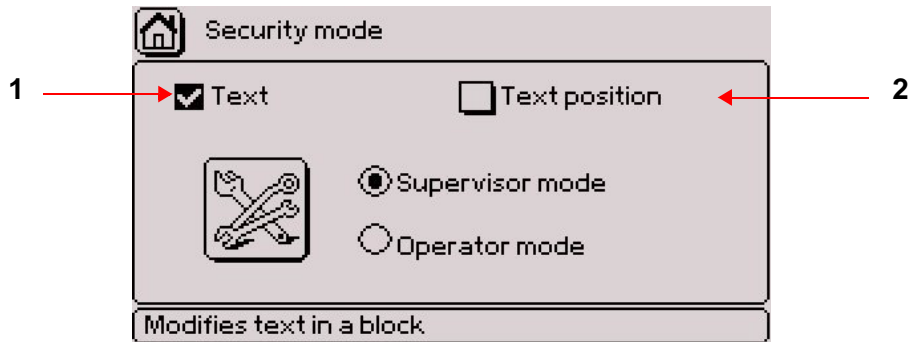
- access to all functions in the program.
- select the functions authorized in the "Operator" operating mode.

Position the cursor on this operating mode using the arrow keys and press Enter to select it.

# "Machine configuration" menu

Select the functions authorized in the "Operator" operating mode using the arrow keys. Validate by pressing Enter.

- Text: checking off the box means the "Text" field of a block can be modified.
- Text position: checking off the box means the X-Y coordinates of the text of a block can be modified.



- 1 : Activated parameter
- 2 : Deactivated parameter

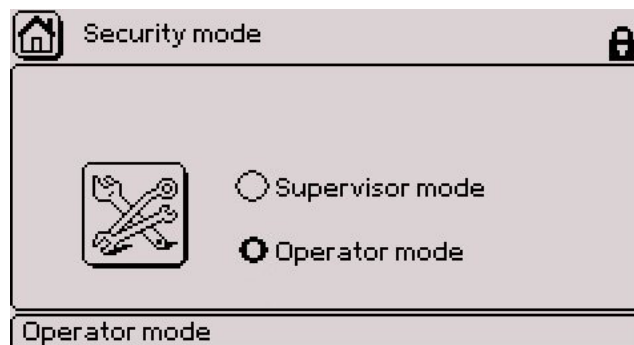
If no parameter is activated, it is not possible to modify or save the marking files in "Operator" mode.

## ■ "Operator" mode

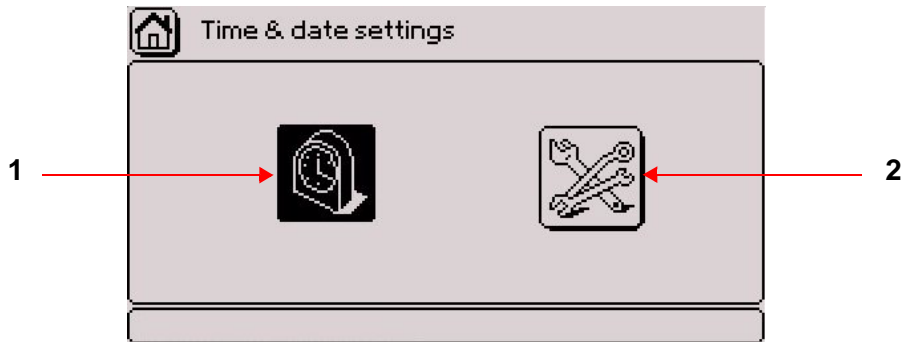
Functions accessible in "Operator" mode:

- "Marking" menu
- open the last file used.
- open an existing file.
- modification of the "Text" field of a block (if authorized)
- modification of the X-Y coordinates of the text of a block (if authorized)
- stylus movement (F3)
- "System info" menu
- security mode ("Machine configuration" menu)

In "Operator" mode, a padlock is displayed in the top right corner of the screen:



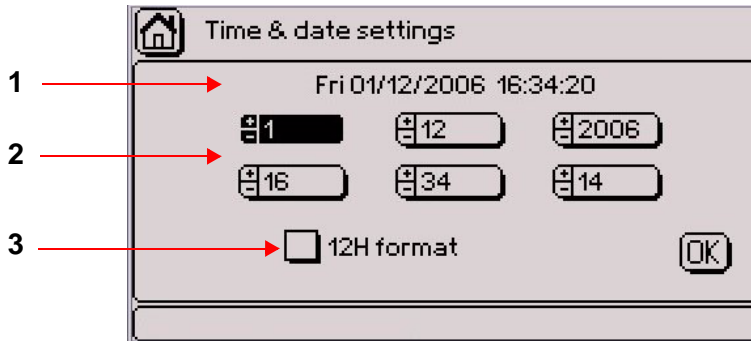
## 2. Time and date settings



- 1 : Time and date settings
- 2 : Setting the clock

### ■ Time and date settings

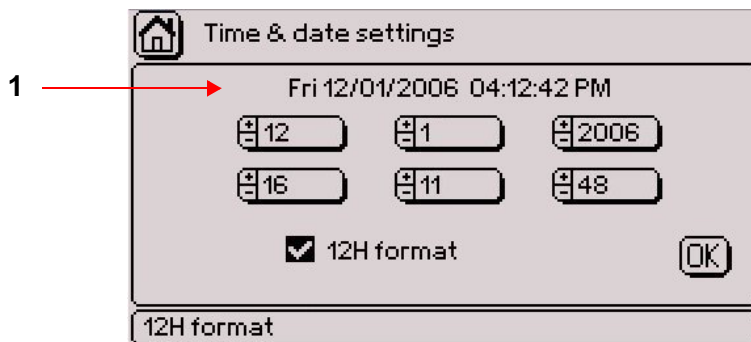
Used to set the machine's internal clock. The screen below appears:



- 1 : Current time and date
- 2 : Time and date modification fields
- 3 : Viewing time in 12h format

To modify the time or date, use the +/- keys on the numeric keypad.

Viewing time in 12h format: Use the Up - Down arrows to select this parameter. To activate the corresponding box, press Enter.

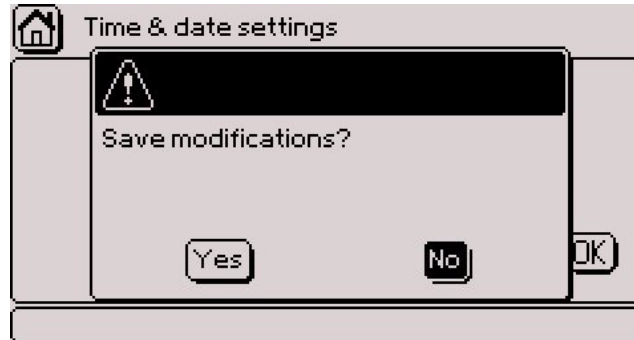


- 1 : Current time and date - 12h format (AM/PM)

# "Machine configuration" menu

To save the selected parameters, select the "OK" button in the lower right corner using the arrow keys. Validate by pressing Enter.

The screen below appears:



Yes: Back to the previous screen after saving the parameters

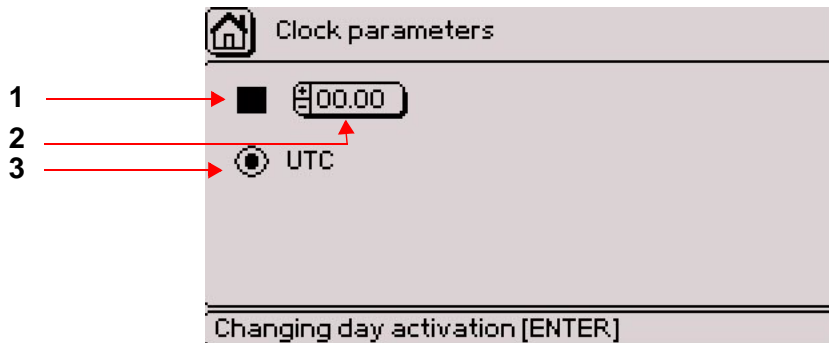
No: Return to previous screen

## ■ Setting the clock

Used to:

- select the time for the change of day of the year (key word CCC)
- determine the time when the daylight saving time will be changed.

The screen below appears:



1 : Activation of the change of day

2 : Time of change of day

3 : Universal time

### Activation of the change of day

To activate or deactivate this function, position the cursor on the corresponding box. Validate by pressing Enter.

Go to the "Time" field using the arrows. Select the time at which the number of the day in the year increases.

Entry can be made either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

### Universal time

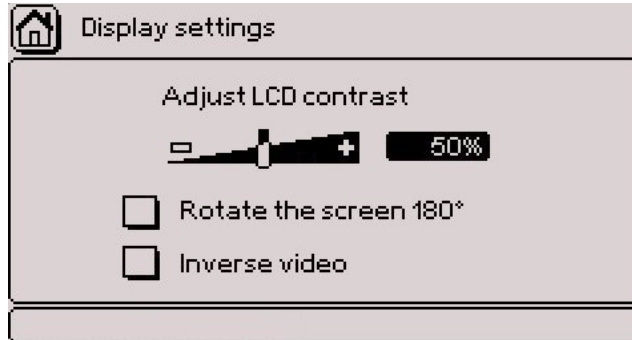
When the box is ticked, there is no change when the daylight saving time changes.



## 3. Display settings

Used to:

- adjust the contrast of the screen.
- rotate the screen by 180°.
- view the screen in reverse video.



### ■ Contrast

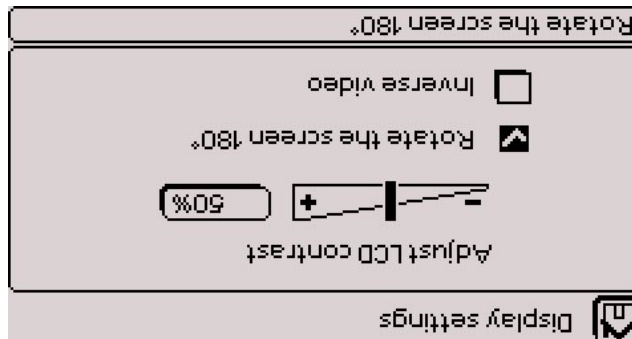
To adjust the contrast, use the +/- keys on the numeric keypad. Shortcut: Ctrl + Alt + A/Q.

This value is expressed as a percent. The default value is 50%.

### ■ Screen rotated 180°

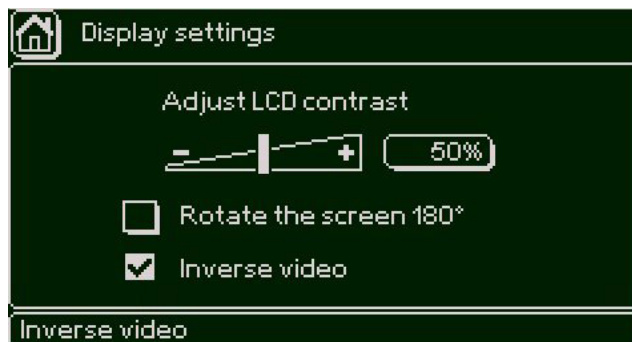
Some applications require a 180° screen rotation.

Use the Up - Down arrows to select this parameter. To activate the corresponding box, press Enter. Shortcut: Ctrl + Alt + F.



### ■ Display in reverse video

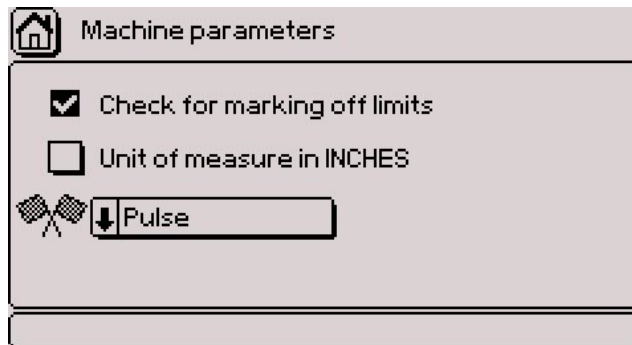
View of the screen in reverse video: Use the Up - Down arrows to select this parameter. To activate the corresponding box, press Enter. Shortcut: Ctrl + Alt + I.



## 4. Machine parameters

Used to:

- select the "Off-limits control" option.
- convert the units into inches.
- select the type of marking end.



### ■ Off-limits control

This option is activated by default.

If the marking is off-limits, the program sends an error message.

The calculation time is extended and the total cycle time is longer.

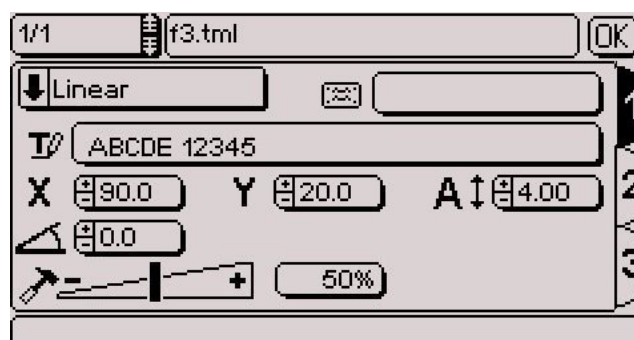
When the off-limits control is deactivated, the stylus may run into the mechanical stop if the text is too long or if the coordinates are incorrect. However, calculation of the marking coordinates is faster, therefore the total cycle time is shorter.



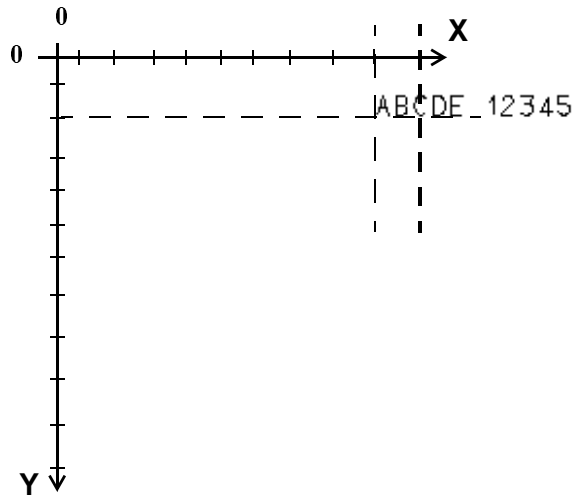
**Use the off-limits control when preparing or updating a marking file, then deactivate this option.**

### Example of an off-limit marking along X:

Marking file



# "Machine configuration" menu

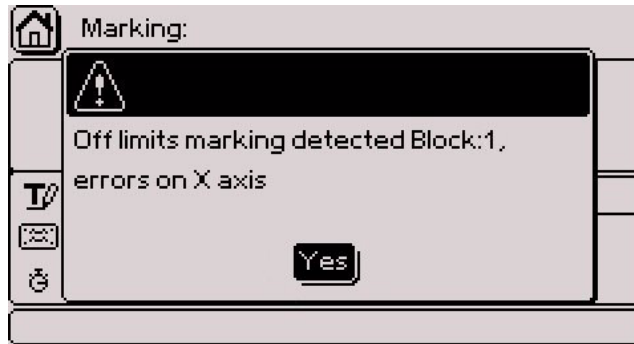


Travel distance of the machine:  
X = 100 mm (3.937 in)  
Y = 110 mm (4.331 in)

Coordinates of the text to be marked:  
X = 90 mm (3.543 in)  
Y = 20 mm (0.787 in)

Character size: 4 mm (0.157 in)

Error message

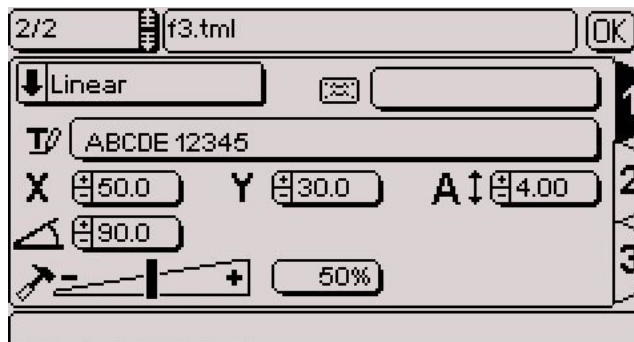


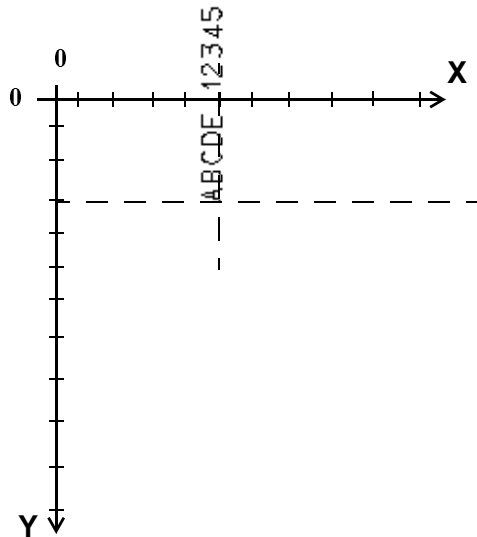
The cursor is positioned on the "Yes" button. Validate by pressing Enter. Marking is cancelled.

For this example, change the X value, the character size, or reduce the text to be marked.

## Example of an off-limit marking along Y:

Marking file





Travel distance of the machine:

X = 100 mm (3.937 in)

Y = 110 mm (4.331 in)

Coordinates of the text to be marked:

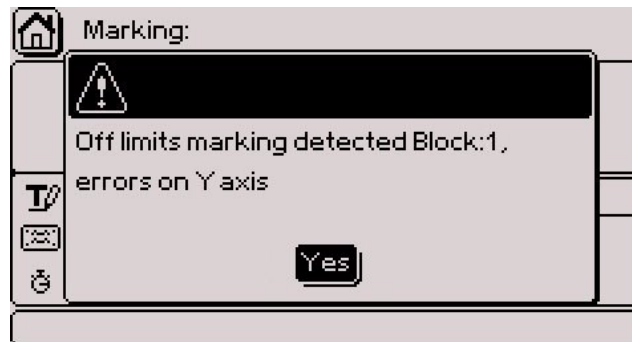
X = 50 mm (1.969 in)

Y = 30 mm (1.181 in)

Angle: 90°

Character size: 4 mm (0.157 in)

Error message



The cursor is positioned on the "Yes" button. Validate by pressing Enter. Marking is cancelled.

For this example, change the Y value, or the character size.

## ■ Conversion of the units into inches

The marking program works in both millimeters and inches. All values pertaining to length are expressed in the chosen unit. To switch from millimeters to inches, position the cursor on the corresponding box. Validate by pressing Enter.

Changing from mm to inches automatically converts all values contained in the marking files.

## ■ End marking type

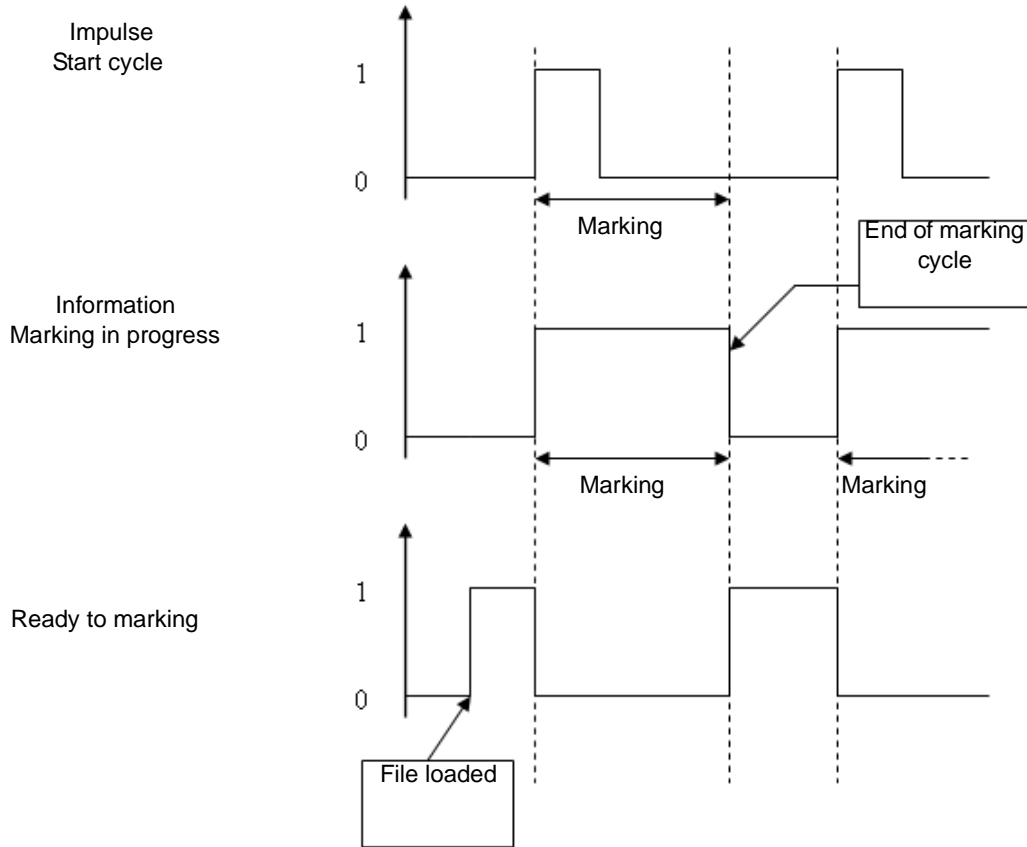
Used to select the communication signals during marking.

3 modes are available:

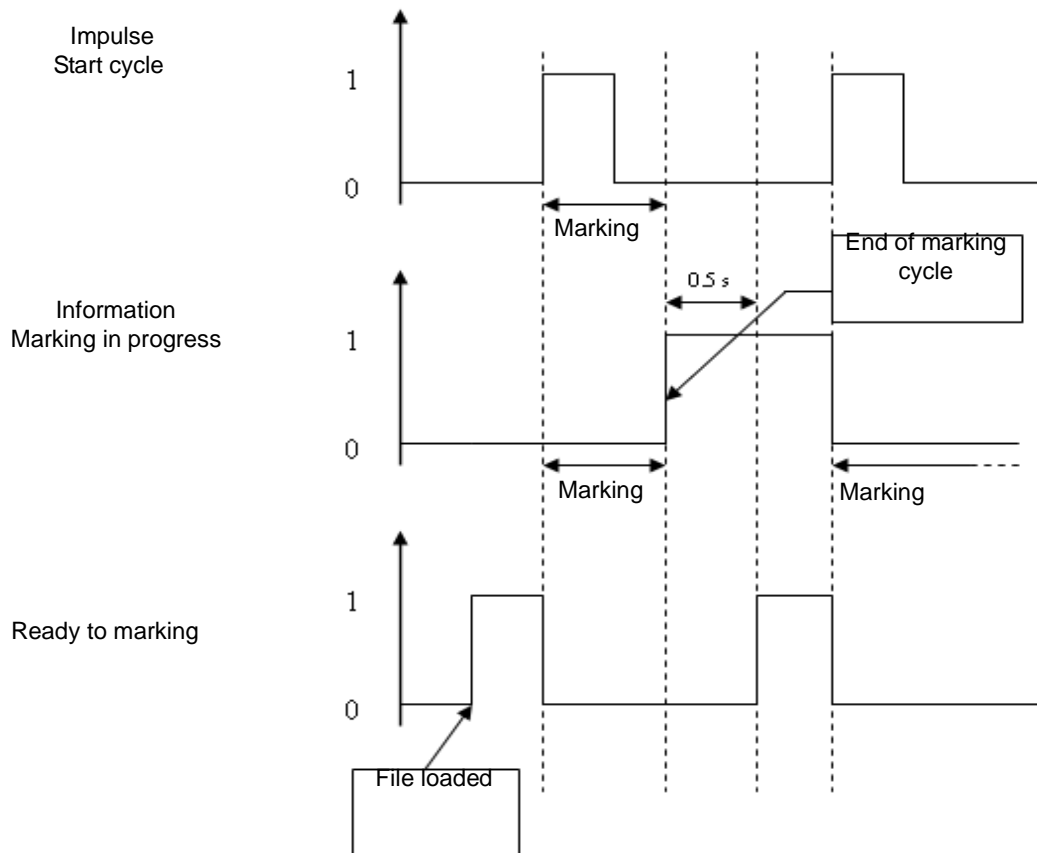
- in-process mode
- maintained mode
- pulse mode

# "Machine configuration" menu

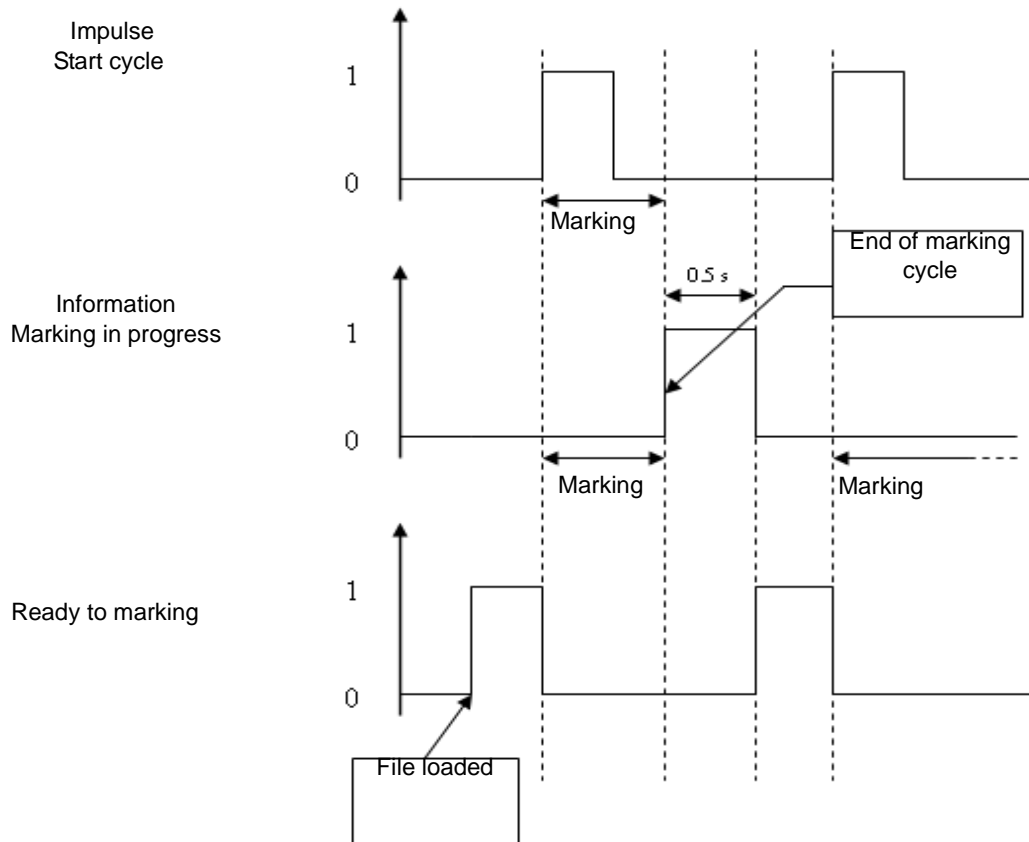
• In-process mode:



• Maintained mode:



- Pulse mode:



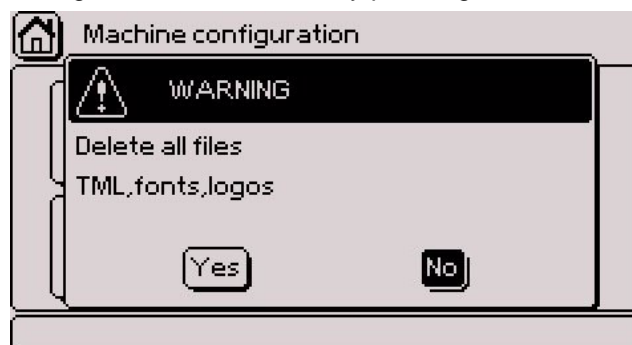
## Note

To use TAG3500, the pulse mode must always be selected.

## 5. Deleting all the files (reset)

Used to delete the saved files all at once: marking files, fonts, logos...

Select the corresponding icon using the arrows. Validate by pressing Enter. The screen below appears:



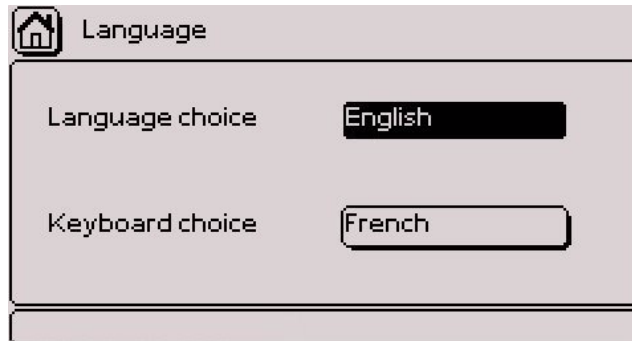
Yes: Deleting all the files (reset)

No: Return to previous screen

## 6. Language

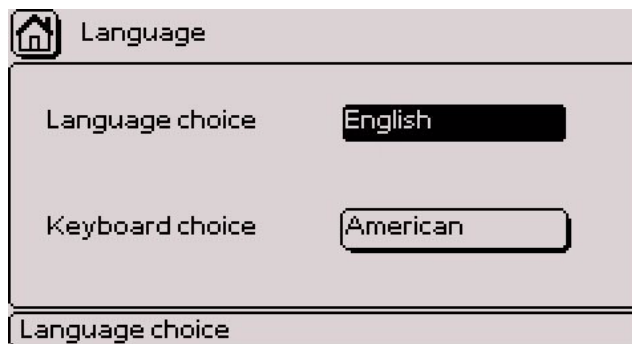
Used to translate the program in different languages.

The language of the program and the language of the keyboard are chosen separately.



Press Enter to access the entry field. Select the desired language using the arrow keys. Validate by pressing Enter.

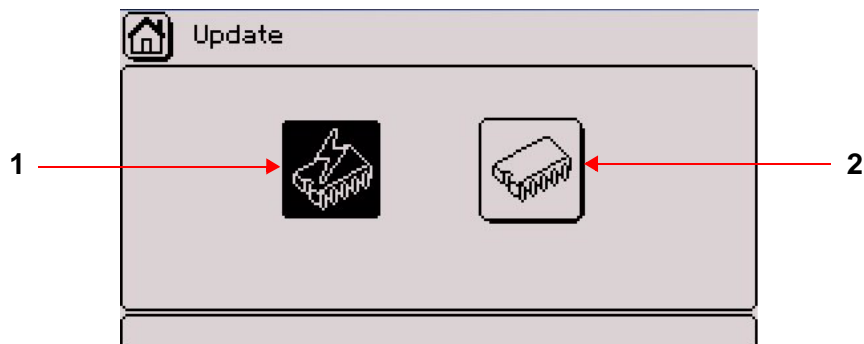
Example of a screen in English



The program adapts the keys of the keyboard to the keyboard language selected.

## 7. Update

The screen below appears:




1 : Software update  
2 : Power firmware update

# "Machine configuration" menu

## ■ Software update

Used to update the program of the machine.

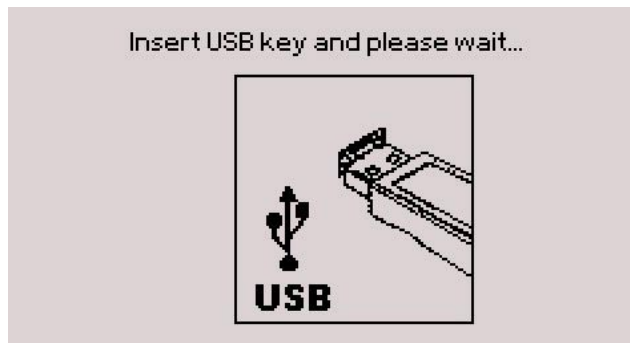
	Before updating, make a backup copy of the files memorized in the machine (files, logos, fonts...).
---	---

Select the corresponding icon using the arrows. Validate by pressing Enter. The screen below appears:

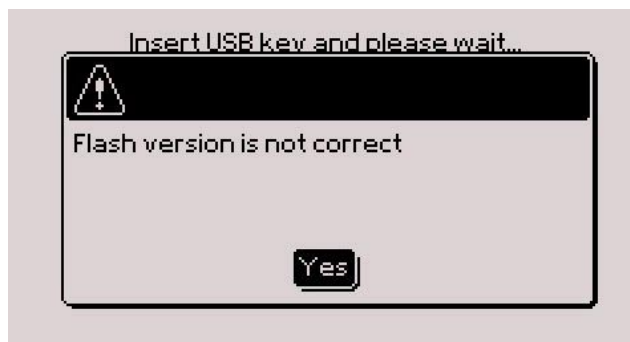


No: Return to previous screen

Yes: The screen below appears:



If several versions of the program are present on the key or if the serial number is incorrect, the following message is displayed:



Validate by pressing Enter. The program returns to the previous menu. Check the content of the key and try again.

The key must contain only one updated version of the program.



# "Machine configuration" menu

After inserting the key, the screen switches off for a short period. The screen below appears:

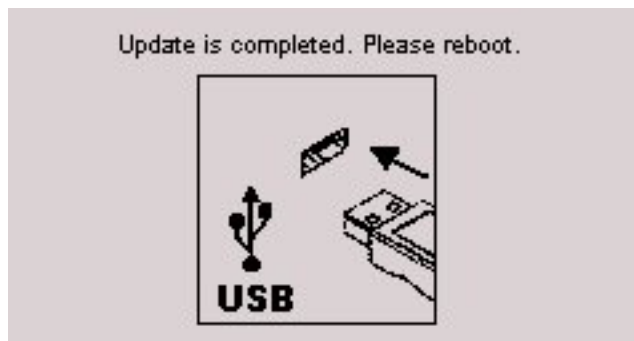


Leave the key inserted during the update.

During the update, the screen below is displayed:

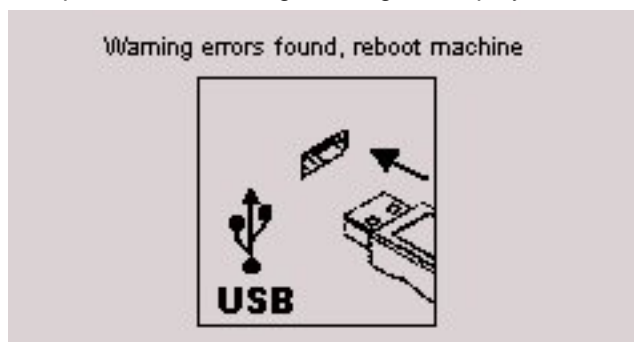


At the end of the update, the screen below appears:



Withdraw the key. Switch off and restart the machine.

If an error is detected during the update, the following message is displayed:



Withdraw the key. Switch off and restart the machine.

Check the content of the key and try again.

## ■ Power firmware update

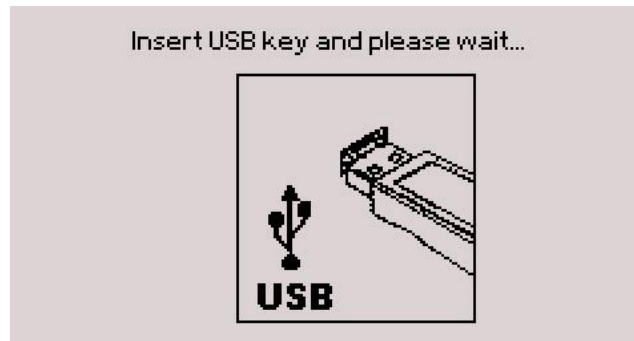
Used to update the power card of the machine and its accessories.

Select the corresponding icon using the arrows. Validate by pressing Enter. The screen below appears:



No: Return to previous screen

Yes: The screen below appears:



Insert a USB key into the USB port for download. The screen below appears:



Select the file corresponding to what is to update (head's power card, rotary device, etc). To select several files, position on each desired file and press the Space bar. Validate by pressing Enter.

Leave the key inserted during the update.



**Do not cut the power or turn off the machine when updating.  
In case of a power outage during updating, complete parametering is necessary in our facilities.**

# "Machine configuration" menu

During the update, the screen below is displayed:



At the end of the update, the screen below appears:



Withdraw the key. Validate by pressing Enter. The machine is turned on and reseted.

If the power driver's version is not compatible, the following message appears:



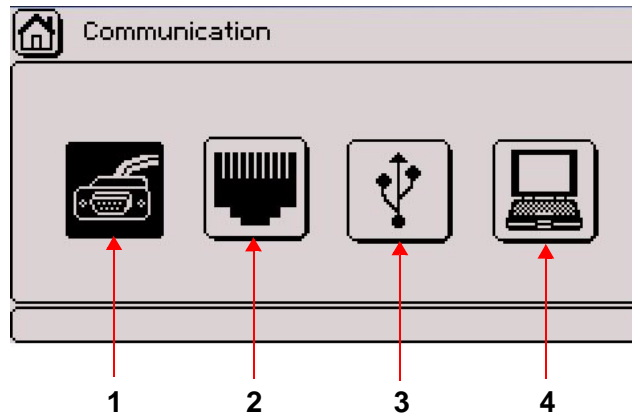
Validate by pressing Enter. The program returns to the previous menu.  
Contact us.

# "Communication" menu

Select this menu from the main menu, represented by the icon:



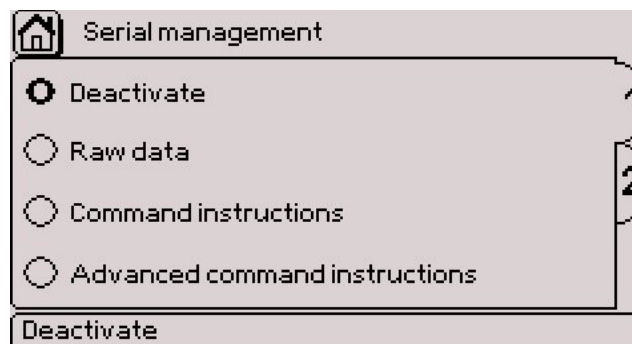
The screen below appears:



- 1 : Serial management
- 2 : Ethernet port management
- 3 : USB port management
- 4 : Slave mode

## 1. Serial management

The screen below appears:



TAB 1:

### ■ Deactivate

Used for port deactivation.

### ■ Raw data

Used to send/receive unprocessed text without the protocol in order to communicate with basic equipment (i.e: bar code reader).

### ■ Command instructions

MENU UNDER CONSTRUCTION

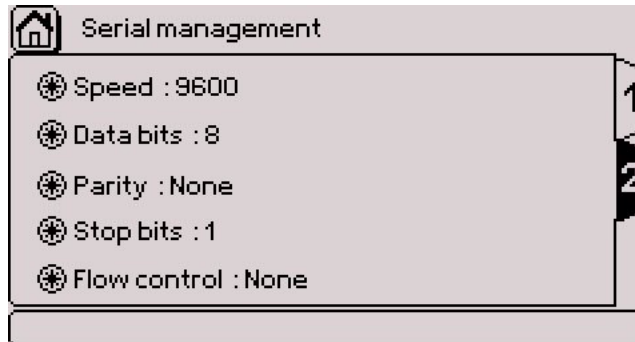
## ■ Advanced command instructions

MENU UNDER CONSTRUCTION

Use the Tab key or the keyboard arrows to go to the 2 tab.

### TAB 2:

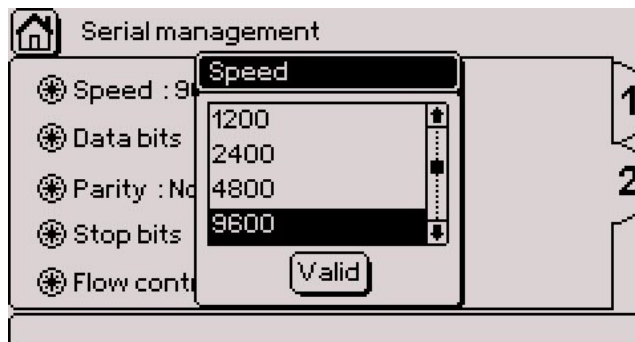
The screen below appears:



This tab is used for port configuration. Use the Up - Down - Left - Right arrows to move to other fields. Press Enter to access the entry field.

For each field, a window containing various possible options opens.

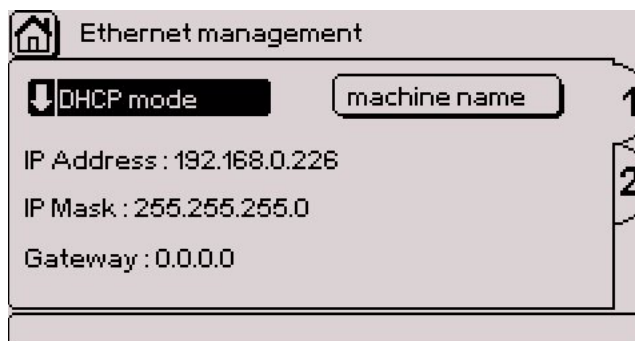
Example: speed - The screen below appears:



Select the desired configuration with the up-down arrows. Validate by pressing Enter. Start over for each area if necessary.

## 2. Ethernet port management

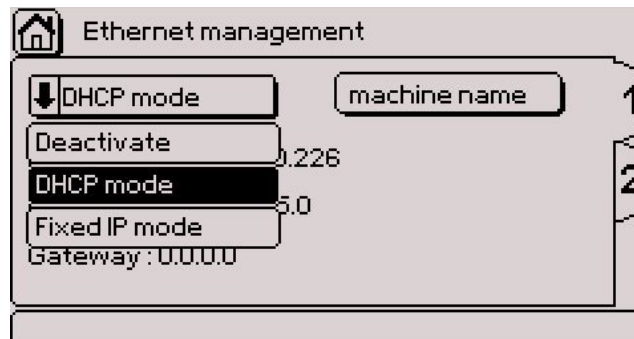
The screen below appears:



## TAB 1:

### ■ Mode

Used to choose the operating mode of the Ethernet port.  
Press Enter to access the entry field. The screen below appears:



### Deactivate

Used for port deactivation.

### DHCP mode

When this mode is activated, the TCP/IP protocol is selected and the machine's IP address is automatically searched when turned on. If a DHCP server exists on the same network as the machine, it can obtain an IP address.

This mode is selected by default.

### Fixed IP mode

When this mode is activated, the machine's IP address is manually entered.

To enter data, move to the "IP Address", "IP Mask" or "Gateway" fields with the arrows. Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

### ■ Name of the machine

Used to name the machine on the network.

Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

Use the Tab key or the keyboard arrows to go to the 2 tab.

## TAB 2:

MENU UNDER CONSTRUCTION

## 3. USB port management

MENU UNDER CONSTRUCTION

## 4. Slave mode

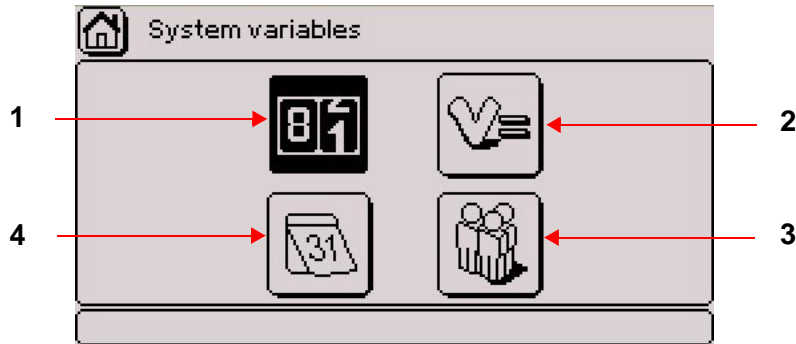
MENU UNDER CONSTRUCTION

# "Variables" menu

Select this menu from the main menu, represented by the icon:



The screen below appears:



- 1 : Configuring counters
- 2 : Configuring variables
- 3 : Configuring shifts
- 4 : Configuring Day/Month/Year format

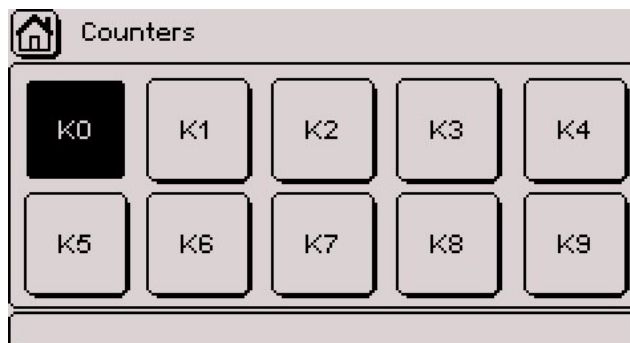
System variables are common to all marking files.

## 1. Configuring counters

Used to define increments/decrements for a serial number. The data is in numeric mode. 10 independent counters are available. Each counter has an 8 digit code.

Identification key words go from K0 to K9.

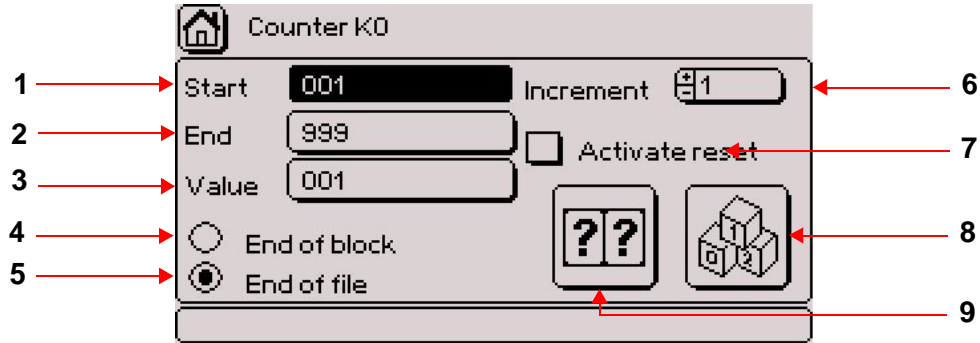
The screen below appears:



Select the desired counter using the arrows. Validate by pressing Enter.

# "Variables" menu

The screen below appears:



- 1 : Indicates start value of counter.
- 2 : Indicates end value of counter.
- 3 : Indicates the counter value during marking.
- 4 : Incrementation of the counter's value at the end of the block
- 5 : Incrementation of the counter's value at the end of the file
- 6 : Indicates the incrementation value.
- 7 : Reset activation
- 8 : Setting the batch number
- 9 : Setting of the counter's reset

To modify the "Start", "End" and "Value" fields, position the cursor on the desired field using the arrows. Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

The number of characters used for the start value also determines the minimum number of characters that will be marked.

Example:

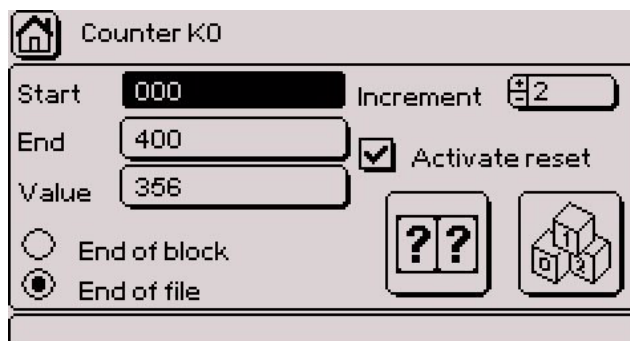
- start value: 1 => increment / decrement: 1, 2, 3, ...999
- start value: 001 => increment / decrement: 001, 002, 003, ...999

To modify the increment: Entry can be made either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

Incrementation of the counter's value at the end of the block / Incrementation of the counter's value at the end of the file: Select one box or the other. Validate by pressing Enter.

Example:





# "Variables" menu

In this situation:

- start value: 000
- end value: 400
- increment / decrement: 2
- next number to be marked: 356
- incrementation of the counter's value at the end of the file

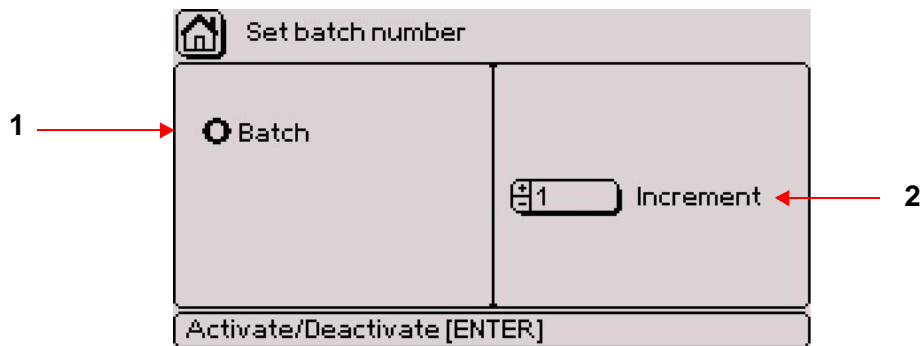
## Note

**Decrement function: The decrement function is activated when an end value inferior to the start value is entered. In this case, the increment value is negative.**

## ■ Setting the batch number

Used to determine the number of parts marked with the same number.

Select the corresponding icon using the arrows. Validate by pressing Enter. The screen below appears:



- 1 : Incrementation by batch  
2 : Indicates the batch number.

## Incrementation by batch

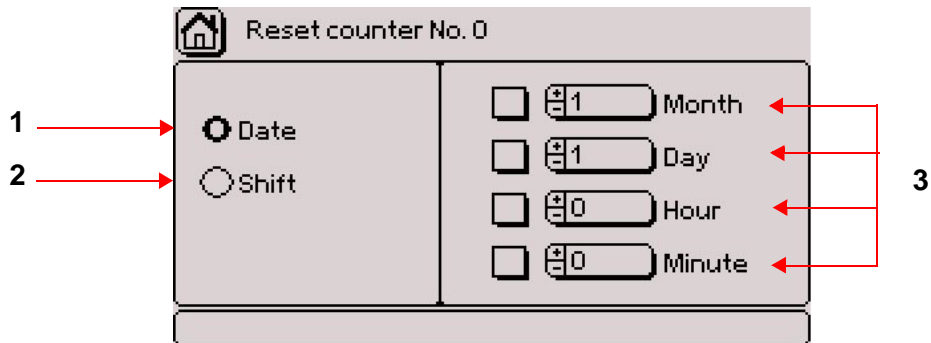
Go to the right part of the screen using the arrows. Select the number of parts to be marked with the same number.

# "Variables" menu

## ■ Setting of the counter's reset

To activate the counter's reset, position the cursor on the corresponding box. Validate by pressing Enter.

Go to the icon of reset setting using the arrows. Validate by pressing Enter. The screen below appears:



1 : Reset on a certain date

2 : Reset with each change of shift

3 : Choice of reset date

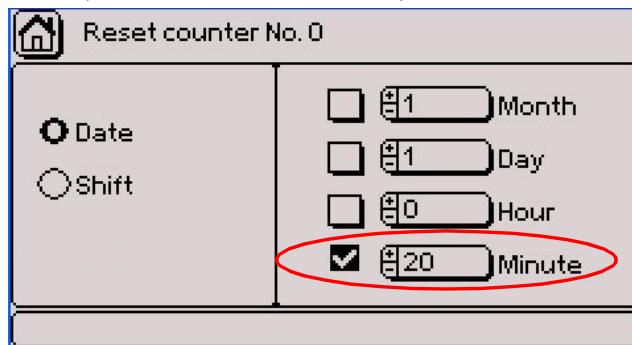
Select the reset type using the arrows. Validate by pressing Enter.

### Reset on a certain date

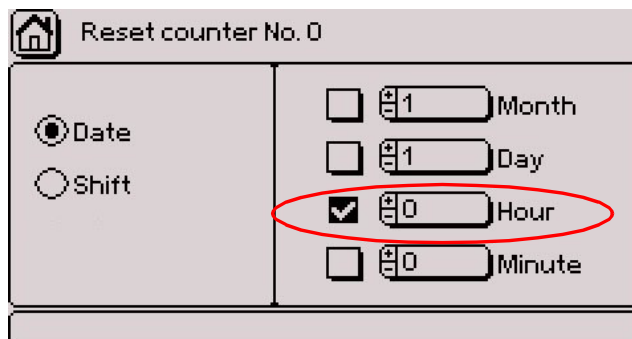
Used to define a time or a date at which the counters must return to their initial value. Resetting a counter to zero will impact all marking files.

Go to the right part of the screen using the arrows. Select the desired boxes. Validate by pressing Enter. Go to the corresponding areas to choose the reset date. Only the ticked boxes are taken into account.

Example 1: Reset every hour at 20 (00h20, 01h20, 2h20, etc...)



Example 2: Reset all days to 00:00



# "Variables" menu

Example 3: Reset to the 1st of each month

Reset counter No. 0

Date  
 Shift

1 Month  
 1 Day  
 0 Hour  
 0 Minute

Example 4: Reset at 00:00 on January 1st (once a year)

Reset counter No. 0

Date  
 Shift

1 Month  
 1 Day  
 0 Hour  
 0 Minute

## Note

If the hours and minutes fields are not filled in, the default value is 0. The value of the seconds is always 0.

To obtain a reset once a year at a predefined date and time, fill in all the fields.

Example: Reset every year on March 29th at 21h40:

Reset counter No. 0

Date  
 Shift

3 Month  
 29 Day  
 21 Hour  
 40 Minute

## Reset with each change of shift

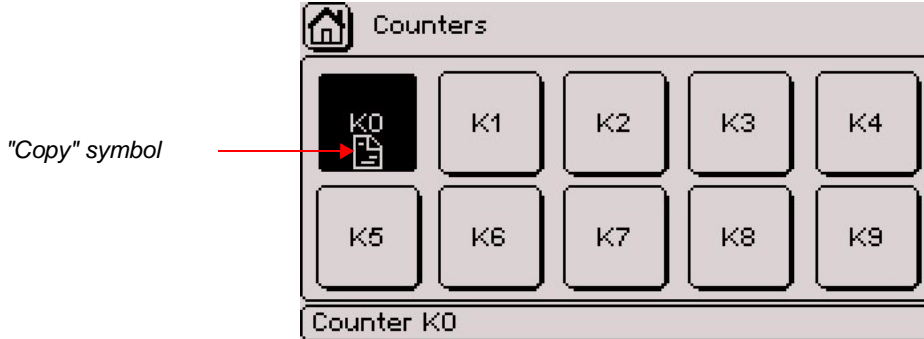
If this type of reset is selected, the counter returns to its initial value with each change of shift.

See: "Configuring shifts "

# "Variables" menu

## Copying the contents of a counter

It is possible to copy all the characteristics from one counter to another. To do this, position the cursor on the counter to be copied and simultaneously press Ctrl + C on the keyboard. A symbol is shown:



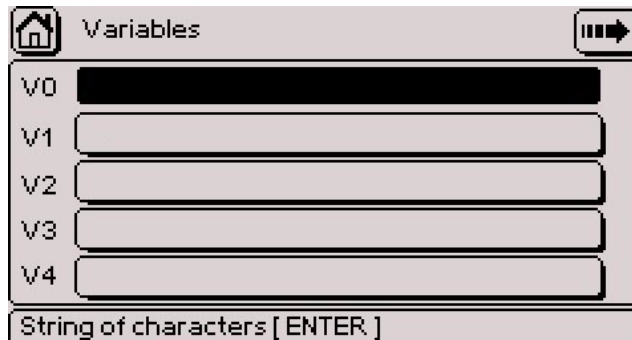
Using the arrows, position the cursor on the counter to which the characteristics must be pasted and simultaneously press Ctrl + V on the keyboard.

## 2. Configuring variables

Used to mark repetitive texts common to several marking files by indicating the variable number in which the text is contained.

Variables are memory blocks (10 in all) of text containing up to 255 characters. They are common to all marking files and are saved in the CCU memory. They are identified by the key words V0 and V9.

The screen below appears:

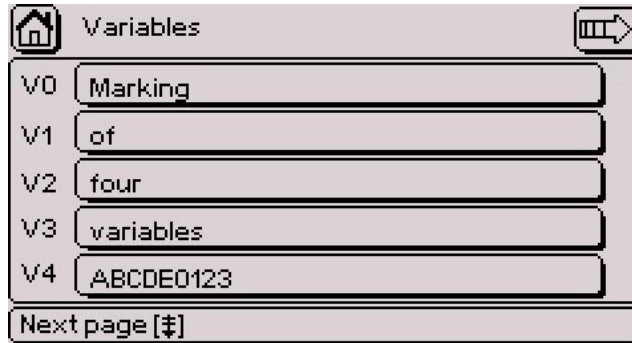


The first 4 fields are displayed. Select the desired variable using the arrow keys. To access the following or previous page, select the arrows in the upper right corner of the screen or press the Page Up - Page Down keys on the keyboard.

Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

# "Variables" menu

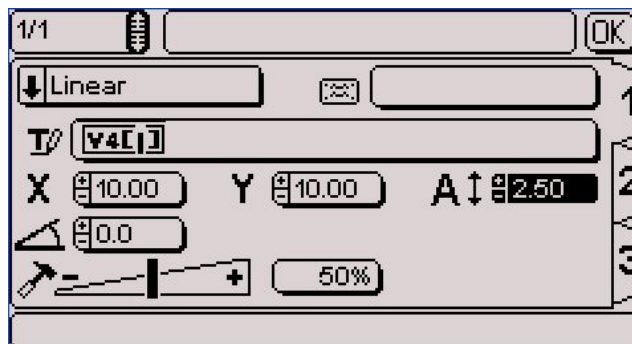
Example:



Code entry fields (maximum: 255 characters)

## ■ Programming within a marking file

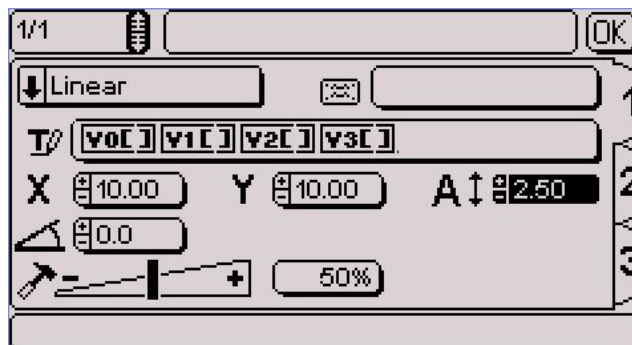
To insert a key word and its number: See: "Text to be marked".



The marking obtained at coordinates X = 10 mm and Y = 10 mm is the contents of variable V4: ABCDE0123.

## ■ Compiling a series of variables

Several variables can be programmed in a single text field.



- contents of V0: Marking
- contents of V1: of
- contents of V2: four
- contents of V3: variables

The marking obtained at coordinates X = 10 mm and Y = 10 mm is "Marking of four variables".

# "Variables" menu

## 3. Configuring shifts

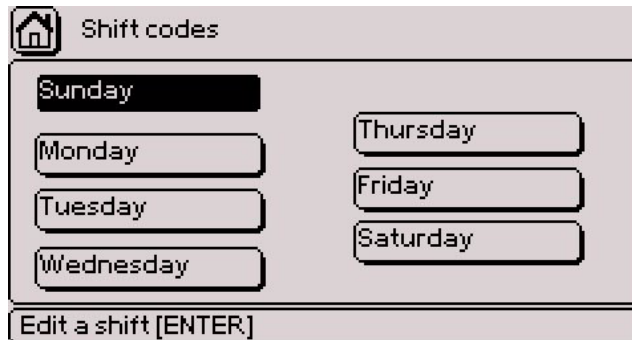
Used to define texts to be marked depending on the day of the week and the time.

Shift configuration is possible for each day of the week with 5 available time slots per day.

The identification keyword is Q.

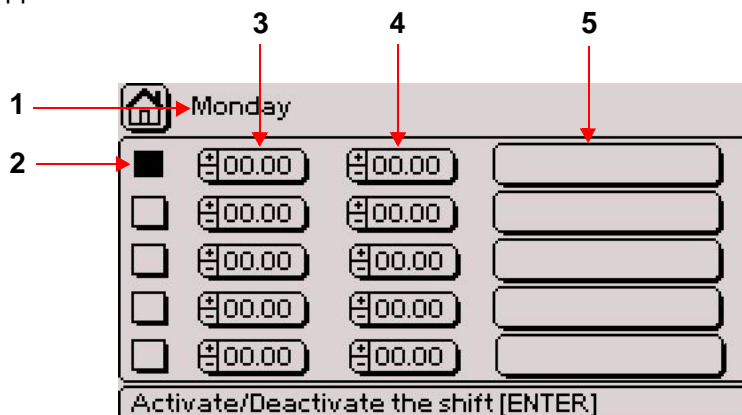
The days and time used correspond to those in the CCU.

The screen below appears:



Select one day of the week using the Up - Down arrows. Validate by pressing Enter.

The screen below appears:



1 : Day of the week

2 : Activation / deactivation of the shift

3 : Starting time of the shift

4 : End time of the shift

5 : Text to be marked during the shift: code entry fields (maximum: 20 characters)

To activate / deactivate a shift, position the cursor on the corresponding box. Validate by pressing Enter.

Go to the "Start time" area using the arrows. Entry can be made either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

Go to the "End time" field using the arrows. Entry can be made either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

Move to the "Text to mark" field using the arrow keys. Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

Repeat the operation for each shift and for each day if necessary.

# "Variables" menu

Example:

☑	06.00	13.59	Morning
☑	14.00	20.00	Shift 2
☑	20.01	23.59	Monday night s»
☐	00.00	00.00	
☐	00.00	00.00	

Activate/Deactivate the shift [ENTER]

Marking carried out on Monday:

- from 06h00 mn 00 s to 13h59 mn 59 s: "Morning"
- from 14h00 mn 00 s to 20h00 mn 59 s: "Shift 2"
- from 20h01 mn 00 s to 23h59 mn 59 s: "Monday evening shift"



**When defining time slots for shifts, be careful that the shifts do not overlap. The end of one shift must not be the same as or later than the beginning of the next shift.**

## ■ Copying the contents of a day of the week

It is possible to copy all the shift codes of one day of the week to another. To do this, position the cursor on the day to be copied and simultaneously press Ctrl + C on the keyboard. A symbol is shown:

"Copy" symbol

Monday

Thursday

Friday

Saturday

Edit a shift [ENTER]

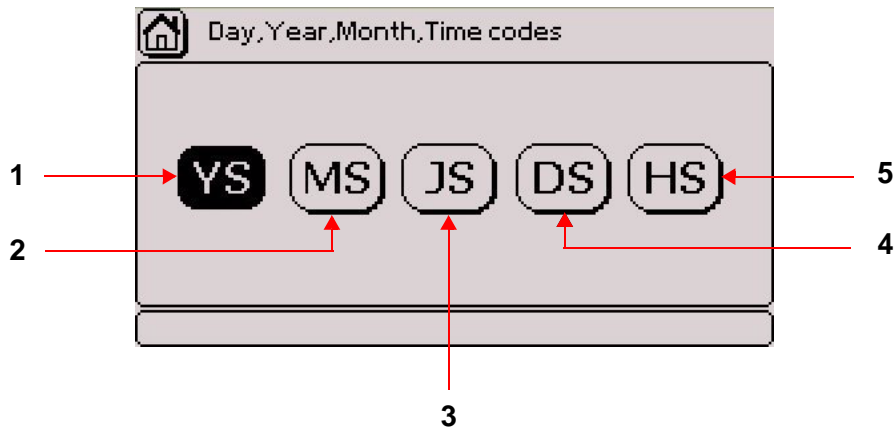
Using the arrows, position the cursor on the day to which the shift codes must be pasted and simultaneously press Ctrl + V on the keyboard.

# "Variables" menu

## 4. Configuring Day/Month/Year format

Used to define customized formats for marking months, years, days of the week and days of the month.

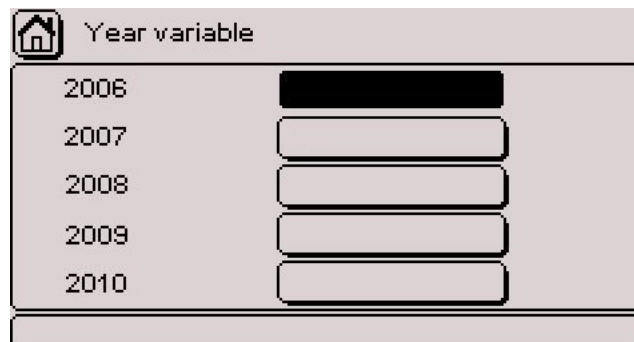
The screen below appears:



- 1 : Year variable (YS)
- 2 : Month variable (MS)
- 3 : Day in the month variable (JS)
- 4 : Day of the week variable (DS)
- 5 : Hour variable (HS)

### ■ Year variable (YS)

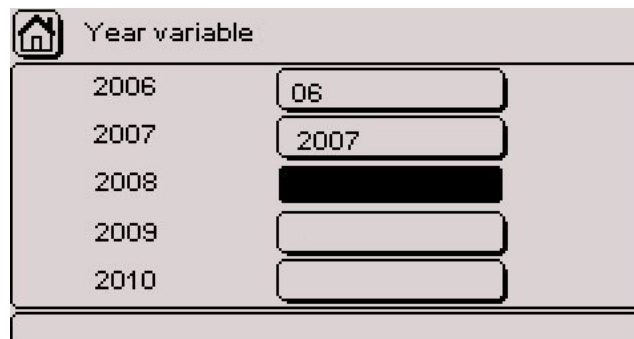
The screen below appears:



The first year that is shown is the current year. 5 years can be programmed. The program then automatically updates the numbering.

Select the desired field using the arrow keys. Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

Example:



Code entry fields (maximum: 255 characters)



# "Variables" menu

## ■ Month variable (MS)

The screen below appears:

The screenshot shows a screen titled "Month variable" with a home icon on the left and a right arrow icon on the right. The screen contains six input fields arranged in two columns. The first field (row 1) is filled with a black box. The other five fields (rows 2-6) are empty. The fields are numbered 1 through 6.

The first 6 fields are displayed. Select the desired field using the arrow keys. To access the following or previous page, select the arrows in the upper right corner of the screen or press the Page Up - Page Down keys on the keyboard.

Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

Example:

The screenshot shows the same "Month variable" screen. The first three fields contain the following data: "A", "FEB", and "03". The corresponding output fields on the right contain "April", "05 Ma", and "June". The remaining three fields (rows 4-6) are empty.

Code entry fields (maximum: 255 characters)

## ■ Day in the month variable (JS)

The screen below appears:

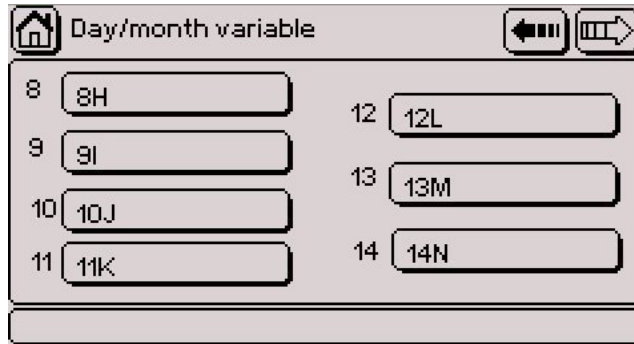
The screenshot shows a screen titled "Day/month variable" with a home icon on the left and a right arrow icon on the right. The screen contains seven input fields arranged in two columns. The first field (row 1) is filled with a black box. The other six fields (rows 2-7) are empty. The fields are numbered 1 through 7.

The first 7 fields are displayed. Select the desired field using the arrow keys. To access the following or previous page, select the arrows in the upper right corner of the screen or press the Page Up - Page Down keys on the keyboard.

Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

# "Variables" menu

Example:

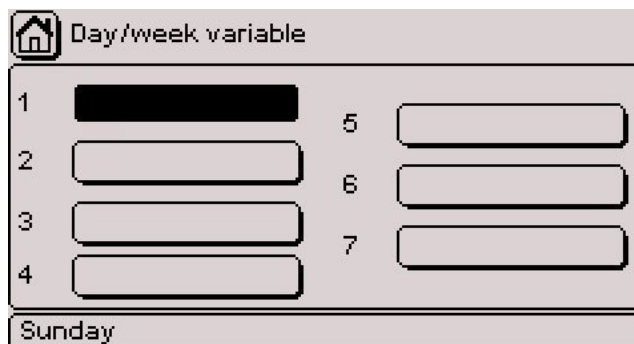


A screenshot of a terminal window titled "Day/month variable". It features a home icon on the left and navigation arrows on the right. The main area contains eight input fields arranged in two columns. The left column has fields numbered 8 through 11, and the right column has fields numbered 12 through 14. Each field contains a two-letter code: 8H, 9I, 10J, 11K, 12L, 13M, and 14N.

Code entry fields (maximum: 255 characters)

## ■ Day of the week variable (DS)

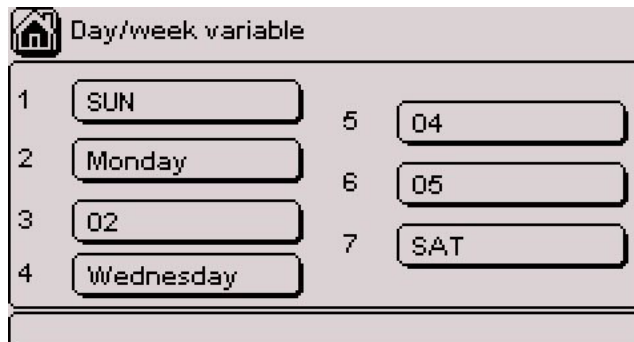
The screen below appears:



A screenshot of a terminal window titled "Day/week variable". It features a home icon on the left and navigation arrows on the right. The main area contains eight input fields arranged in two columns. The left column has fields numbered 1 through 4, and the right column has fields numbered 5 through 7. Field 1 is filled with black, while fields 2, 3, and 4 are empty. Fields 5, 6, and 7 are also empty. Below the input fields, the word "Sunday" is displayed.

Select the desired field using the arrow keys. Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

Example:



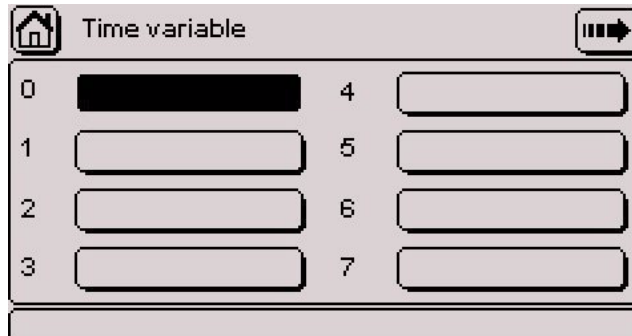
A screenshot of a terminal window titled "Day/week variable". It features a home icon on the left and navigation arrows on the right. The main area contains eight input fields arranged in two columns. The left column has fields numbered 1 through 4, and the right column has fields numbered 5 through 7. Field 1 contains "SUN", field 2 contains "Monday", field 3 contains "02", and field 4 contains "Wednesday". Field 5 contains "04", field 6 contains "05", and field 7 contains "SAT".

Code entry fields (maximum: 255 characters)

# "Variables" menu

## ■ Hour variable (HS)

The screen below appears:

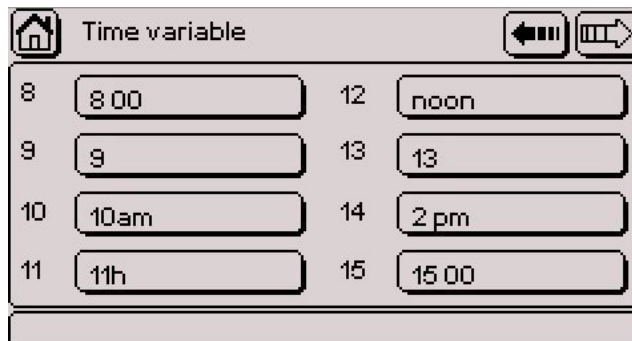


The screenshot shows a screen titled "Time variable" with a home icon on the left and a right arrow icon on the right. The screen displays a list of 7 fields, numbered 0 through 7, arranged in two columns. Field 0 is currently selected and highlighted in black. Fields 1 through 7 are empty input boxes.

The first 7 fields are displayed. Select the desired field using the arrow keys. To access the following or previous page, select the arrows in the upper right corner of the screen or press the Page Up - Page Down keys on the keyboard.

Press Enter to access the entry field. Enter the data. Press Enter to validate the entry.

Example:



The screenshot shows the "Time variable" screen with fields 8 through 15. Field 8 contains "8 00", field 9 contains "9", field 10 contains "10am", field 11 contains "11h", field 12 contains "noon", field 13 contains "13", field 14 contains "2 pm", and field 15 contains "15 00". The screen also shows left and right arrow icons in the upper right corner.

Code entry fields (maximum: 255 characters)

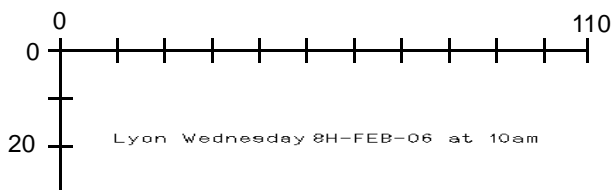
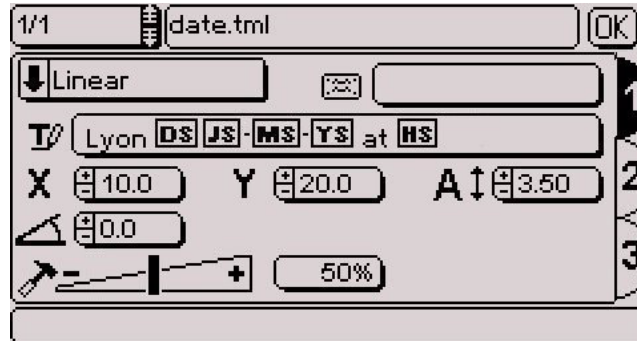
Key words:

- YS for years
- MS for months
- JS for days of the month
- DS for days of the week
- HS for hours

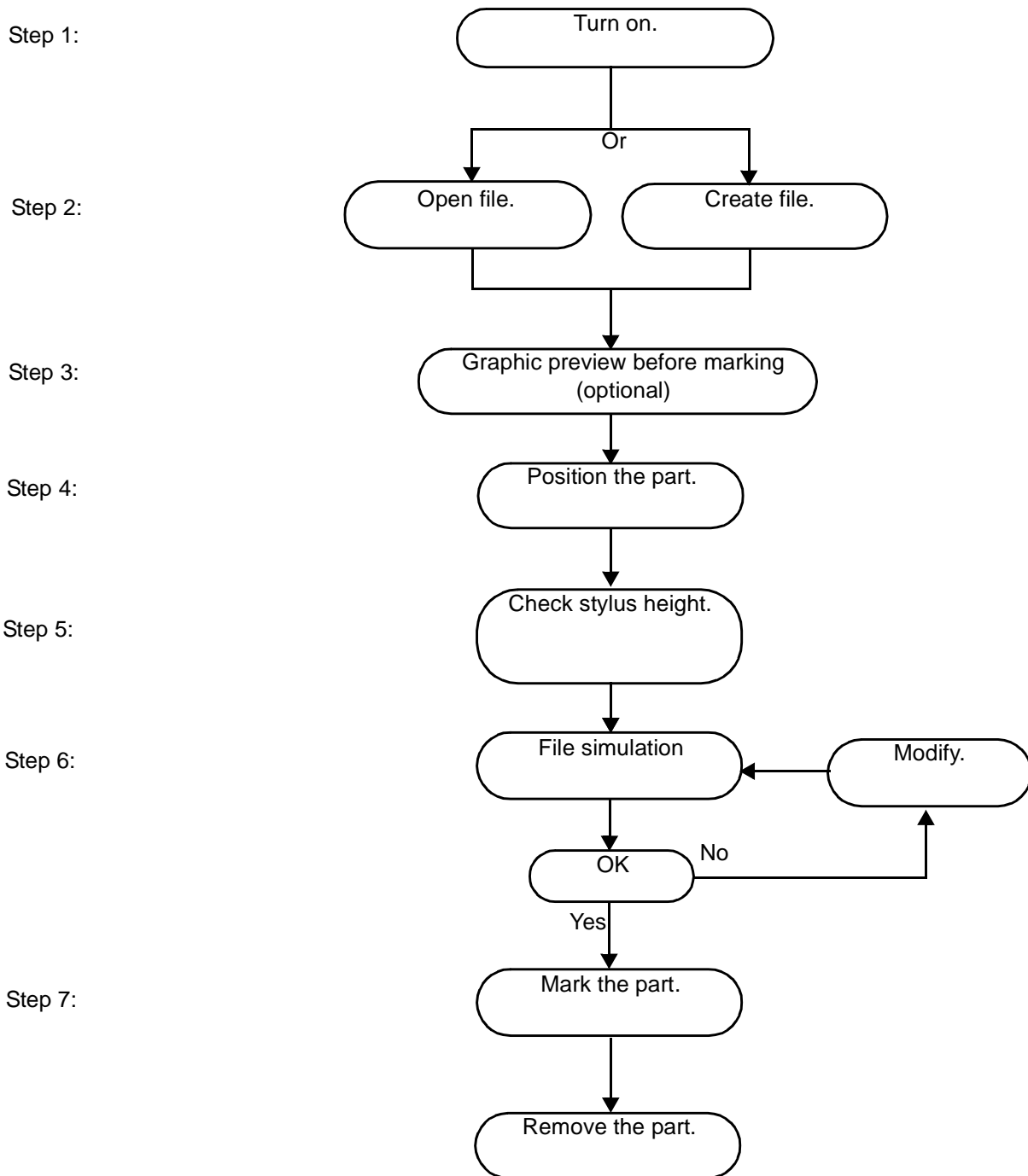
# "Variables" menu

Example based on the previous codes:

Marking file: for a marking executed a Wednesday in February 2006



## 1. Marking process flowchart



**When marking or doing test marking, the stylus must always have a part under it with which to make contact.**

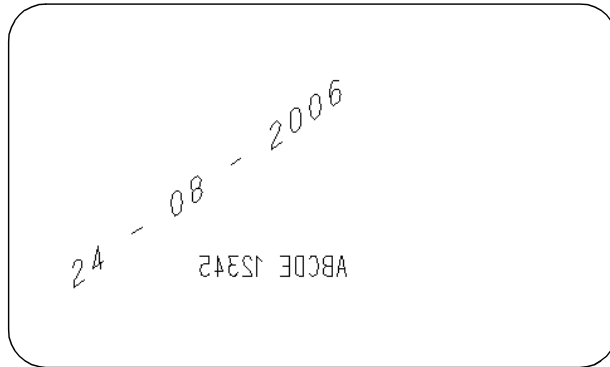
**If it strikes only air, these are the risks:**

- **mechanical deterioration of moving parts**
- **void of the manufacturer's guarantee**

## 2. Initiation to marking

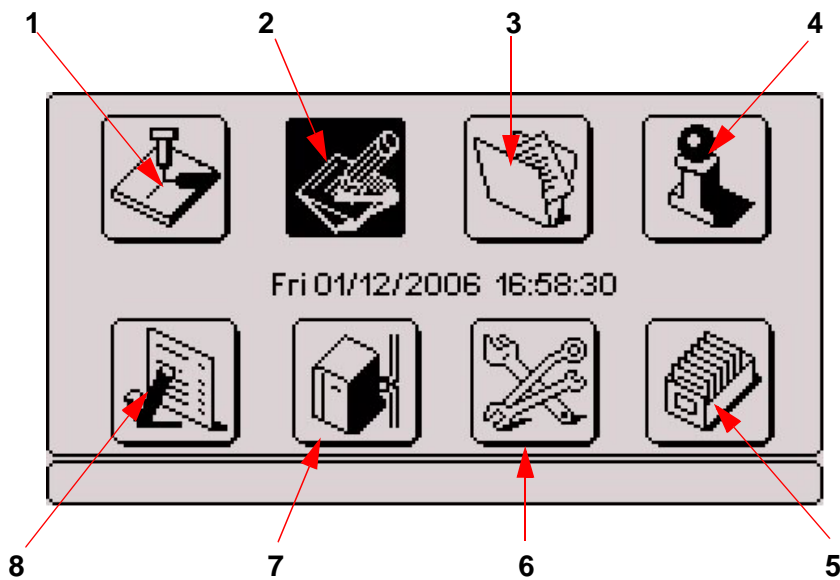
This chapter gives an introduction to the machine and the marking program. Follow the instructions to complete a sample marking before creating other marking files.

For this example, create a file composed of 2 marking blocks. The resulting marking is shown below. A test plate is provided with the machine for carrying out this test marking.



### ■ Step 1: Switching on the machine

Connect the machine to the power supply. After a few seconds, the main menu appears on the screen.

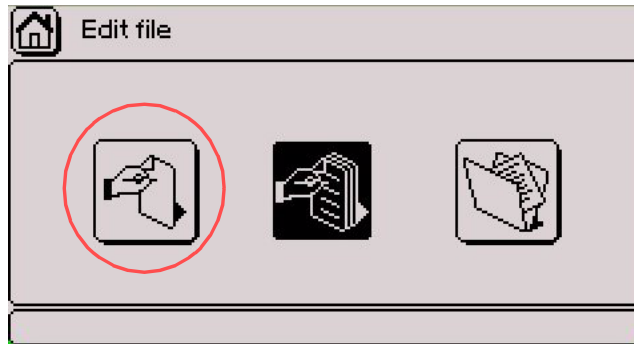


- 1 : "Marking" menu
- 2 : "Edit file" menu
- 3 : "Marking file management" menu
- 4 : "System info" menu
- 5 : "File management" menu
- 6 : "Machine configuration" menu
- 7 : "Communication" menu
- 8 : "Variables" menu

## ■ Step 2: Creating a marking file

To create a new marking file, use the arrows to select the "Edit file". Validate by pressing Enter.

The screen below appears:



Select the "Create a new file" icon. Validate by pressing Enter.

### Creating marking block # 1

When a file is created, an empty block appears on the screen.



Press Enter to prepare the block. The first data entry screen appears (tab 1).

Linear marking is selected by default. Keep this marking mode: no change.

Move to the "Text to mark" field using the arrow keys. Validate by pressing Enter. Press Insert on the keyboard. The key word DD is selected. Validate by pressing Enter. Insert a dash after the key word. Press Insert on the keyboard. Select the key word MM using the Up - Down arrows or by typing the first letter of the key word (m). Validate by pressing Enter. Insert a dash after the key word. Press Insert on the keyboard. Select the key word YYYY using the Up - Down arrows or by typing the first letter of the key word (y). Validate by pressing Enter. Press Enter to validate this field.

The cursor moves to the X field. The coordinates can be entered either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

For this example, enter the value 30.

Move to the Y field using the arrow keys. The coordinates can be entered either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

For this example, enter the value 40.

The size of the text 2.5 is selected by default. Keep this value: no action required.

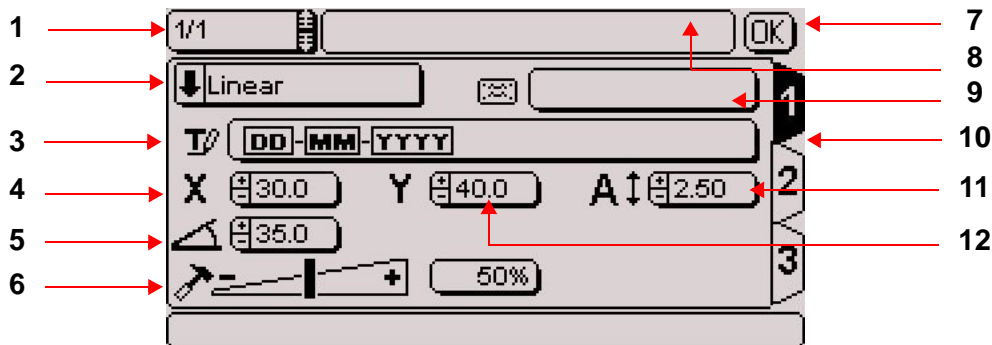
Move to the "Angle" field using the arrow keys. Entry can be made either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

For this example, enter the value 35.

The default value of the "Force" area varies according to the machine's configuration. Keep this value: no action required.

After the entry is complete, the following screen should be displayed:



- 1 : Block number
- 2 : Type of marking
- 3 : Text to be marked
- 4 : X coordinate
- 5 : Text angle
- 6 : Marking force
- 7 : Save block and return to previous screen
- 8 : File name
- 9 : Block name (label)
- 10 : Number of the data entry screen (tab)
- 11 : Character size
- 12 : Y coordinate

Once all these fields are filled, use the keyboard's Tab key or arrows to switch to tab 2 in order to proceed with the preparation of the block.

The font 0 is selected by default. Keep this parameter: no action required.

The compression rate 100 is selected by default. Keep this value: no action required.

The marking effect "Normal" is selected by default. Keep this parameter: no action required.

Move to the "Alignment" field using the arrow keys. Validate by pressing Enter. Select "Centered". Validate by pressing Enter.

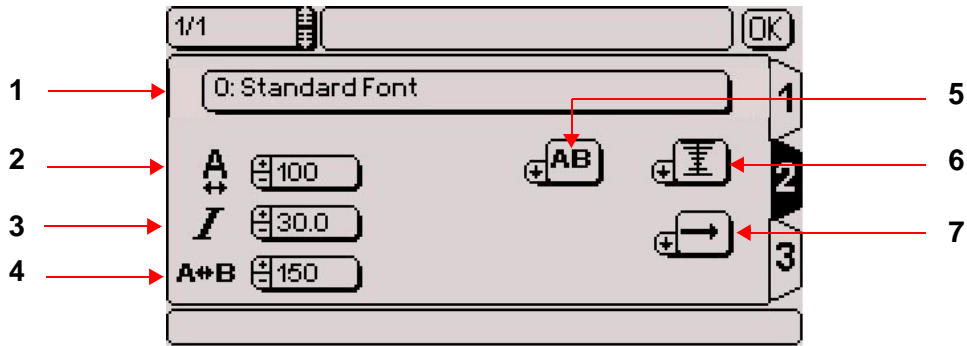
Move to the "Inclination" field using the arrow keys. Select 30 using the +/- keys on the numeric keypad.

Move to the "Spacing" field using the arrow keys. Select 150 using the +/- keys on the numeric keypad.

The default marking direction is from left to right. Keep this parameter: no action required.



After the entry is complete, the following screen should be displayed:

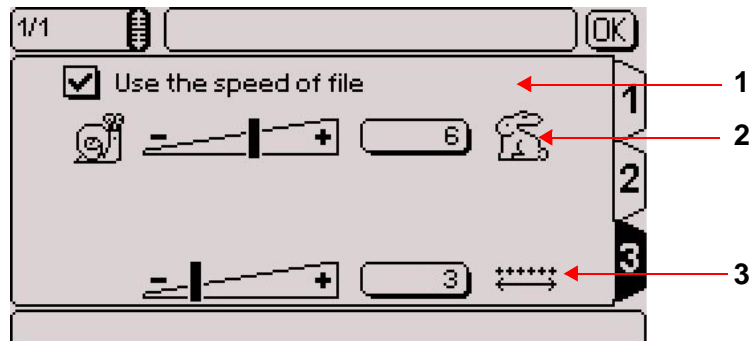


- 1 : Character font
- 2 : Compression
- 3 : Inclination
- 4 : Spacing
- 5 : Marking effects
- 6 : Alignment
- 7 : Marking direction

Once all these fields are filled, use the keyboard's Tab key or arrows to switch to tab 3 in order to proceed with the preparation of the block.

The speed option of the file is activated by default. Keep this parameter: no action required.

After the entry is complete, the following screen should be displayed:



- 1 : File speed option
- 2 : Marking speed
- 3 : Dot density per millimeter (electromagnetic version only)

Creation of block # 1 is finished.

## Creating marking block # 2

Once the preparation of the block is complete, move to the "OK" button using the keyboard's arrow keys or press Esc to validate the block and exit.

The program returns to the marking file and the sub-menus can then be accessible using the Context menu key on the keyboard.



Select the "Edit" sub-menu using the arrow keys. Press the Down key. Select "Add". Validate by pressing Enter.

A second block appears. Position the cursor on this block. Press Enter to prepare the block. The first data entry screen appears (tab 1).

Linear marking is selected by default. Keep this marking mode: no change.

Move to the "Text to mark" field using the arrow keys. Validate by pressing Enter. Enter "ABCDE 12345". Press Enter to validate this field.

The cursor moves to the X field. The coordinates can be entered either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

For this example, enter the value 50.

Move to the Y field using the arrow keys. The coordinates can be entered either by:

- using the +/- keys on the numeric keypad
- pressing Enter then by typing the value directly on the keyboard

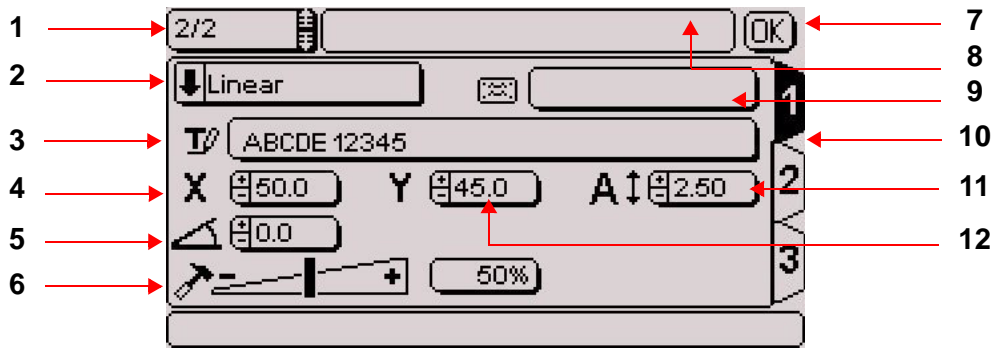
For this example, enter the value 45.

The size of the text 2.5 is selected by default. Keep this value: no action required.

The angle 0 is selected by default. Keep this value: no action required.

The default value of the "Force" area varies according to the machine's configuration. Keep this value: no action required.

After the entry is complete, the following screen should be displayed:



- 1 : Block number
- 2 : Type of marking
- 3 : Text to be marked
- 4 : X coordinate
- 5 : Text angle
- 6 : Marking force
- 7 : Save block and return to previous screen
- 8 : File name
- 9 : Block name (label)
- 10 : Number of the data entry screen (tab)
- 11 : Character size
- 12 : Y coordinate

Once all these fields are filled, use the keyboard's Tab key or arrows to switch to tab 2 in order to proceed with the preparation of the block.

The font 0 is selected by default. Keep this parameter: no action required.

Move to the "Compression" field using the arrow keys. Select 70 using the +/- keys on the numeric keypad.

Move to the "Marking effects" field using the arrow keys. Validate by pressing Enter. Select the "Mirror" effect. Validate by pressing Enter.

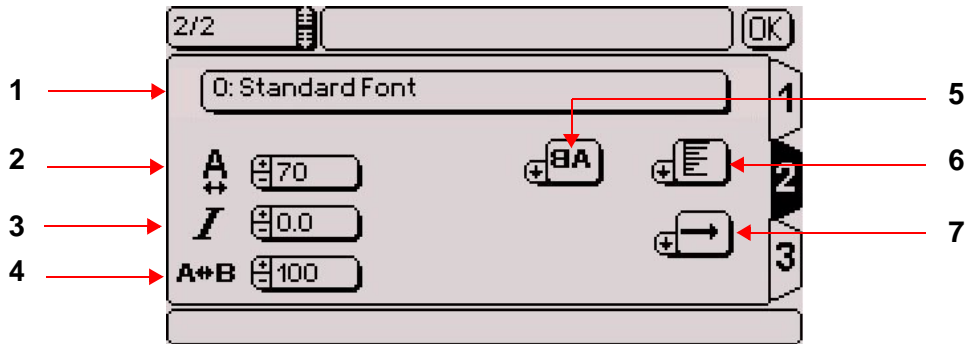
By default, the text is aligned to the left. Keep this parameter: no action required.

The 0 inclination is selected by default. Keep this value: no action required.

The spacing 100 is selected by default. Keep this value: no action required.

The default marking direction is from left to right. Keep this parameter: no action required.

After the entry is complete, the following screen should be displayed:

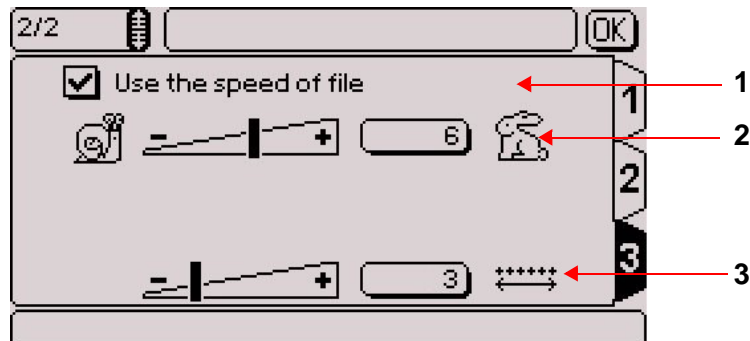


- 1 : Character font
- 2 : Compression
- 3 : Inclination
- 4 : Spacing
- 5 : Marking effects
- 6 : Alignment
- 7 : Marking direction

Once all these fields are filled, use the keyboard's Tab key or arrows to switch to tab 3 in order to proceed with the preparation of the block.

The speed option of the file is activated by default. Keep this parameter: no action required.

After the entry is complete, the following screen should be displayed:



- 1 : File speed option
- 2 : Marking speed
- 3 : Dot density per millimeter (electromagnetic version only)

Creation of block # 2 is finished.

Once the preparation of the block is complete, move to the "OK" button using the keyboard's arrow keys or press Esc to validate the block and exit.

The program returns to the marking file and the sub-menus can then be accessible using the Context menu key on the keyboard. Select the "File" sub-menu using the arrow keys. Press the Down key. Select "Save as". Validate by pressing Enter.

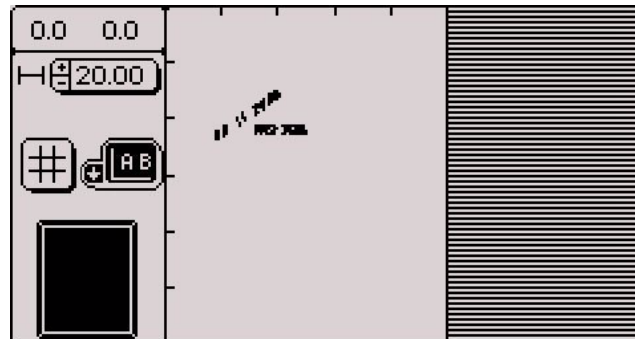
The screen below appears:



Save the marking file created under the name "Test". Validate by pressing Enter. The name of the file is displayed in the top left corner of the screen.

### ■ Step 3: Graphic preview before marking

Press the Context menu key on the keyboard. Select "Preview" in the "View" sub-menu. The screen below appears:



Press Escape to return to the file.

### ■ Step 4: Positioning the plate

Clamp the plate and check that it is firmly held in place.

### ■ Step 5: Adjusting the height of the stylus

See the user manual of the machine.

### ■ Step 6: Marking simulation

Press the Context menu key on the keyboard. Select the "Marking" sub-menu using the arrow keys. Press the Down key. Select "Simulation". Validate by pressing Enter.

Simulation consists in performing the marking without activating the stylus.

The screen below appears:

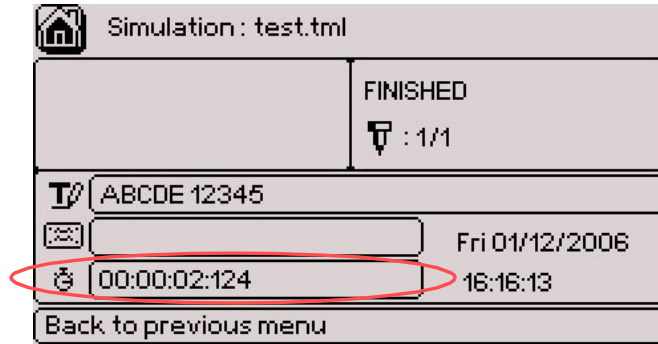


Press Enter to launch the marking simulation. During the marking of each block, the corresponding characteristics are shown on the screen.



It is not possible to pause or to stop a marking simulation.

At the end of the marking, the screen indicates the marking time.



## ■ Step 7: Marking the part

End of simulation: Press Escape to return to the file.

Proceed to marking the texts on a plate.

Press the Context menu key on the keyboard. Select the "Marking" sub-menu using the arrow keys. Press the Down key. Select "Marking". Validate by pressing Enter.

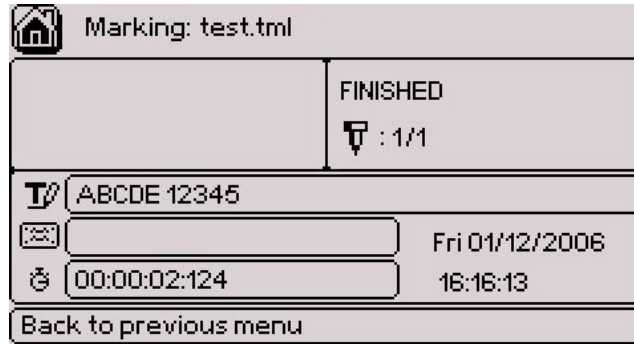
The screen below appears:



Press Enter to launch the marking cycle. During the marking of each block, the corresponding characteristics are shown on the screen.



At the end of the marking, the screen indicates the marking time.



After marking, the stylus returns to the X-Y origins.

Press Escape to return to the file. Press Escape to return to the main menu.



## To contact the Pro-Pen Group



[www.pro-pen.com](http://www.pro-pen.com)

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