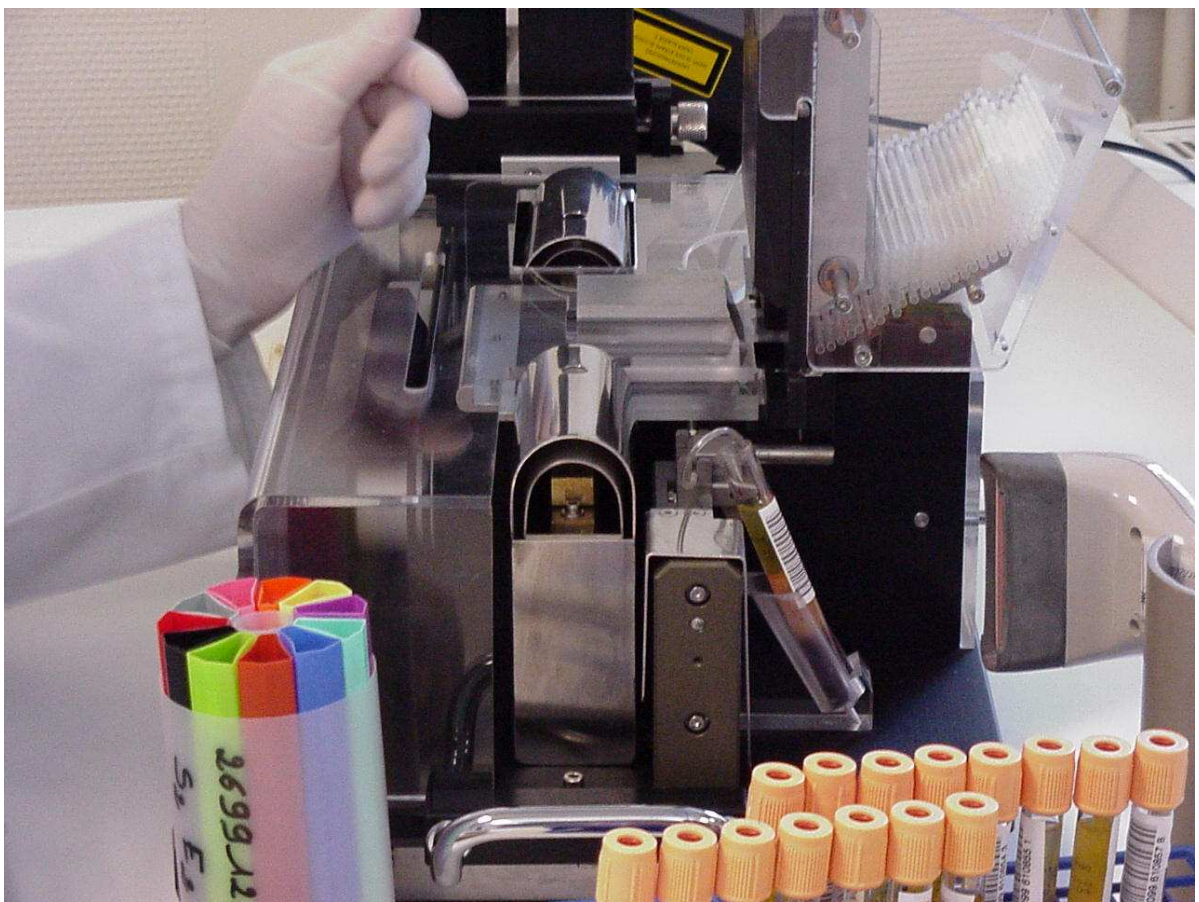


# USER'S MANUAL



# MAPI SYSTEM

(DOMINO A400 WITHOUT BIOTEC 2000)

## CONTENTS

### 1 – STARTING AND STOPPING THE MAPI SYSTEM

- 1-1 PRESENTATION
- 1-2 STARTUP PROCEDURE
- 1-3 SHUT DOWN PROCEDURE

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- 2-2 BAR CODE READER
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- 2-4 MAPI BENCH

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### 4 – ELECTRICAL PLANS

- 4-1 SYSTEM WIRING PLAN
- 4-2 BOX ELECTRICAL DIAGRAM

### 5 – TECHNICAL NOTICE

### 6 - APPENDICES

## 1- STARTING AND STOPPING

### 1-1 PRESENTATION

1-1-1 PERSONNEL CONCERNED

1-1-2 MATERIALS AND PRODUCTS USED

### 1-2 STARTING

1-2-1 STARTING THE DOMINO PRINTER

1-2-2 STARTING THE BOX AND THE MACHINE

1-2-3 STARTING THE COMPUTER COMPONENT

### 1-3 STOPPING

1-3-1 STOPPING THE DOMINO PRINTER

1-3-2 STOPPING THE COMPUTER COMPONENT

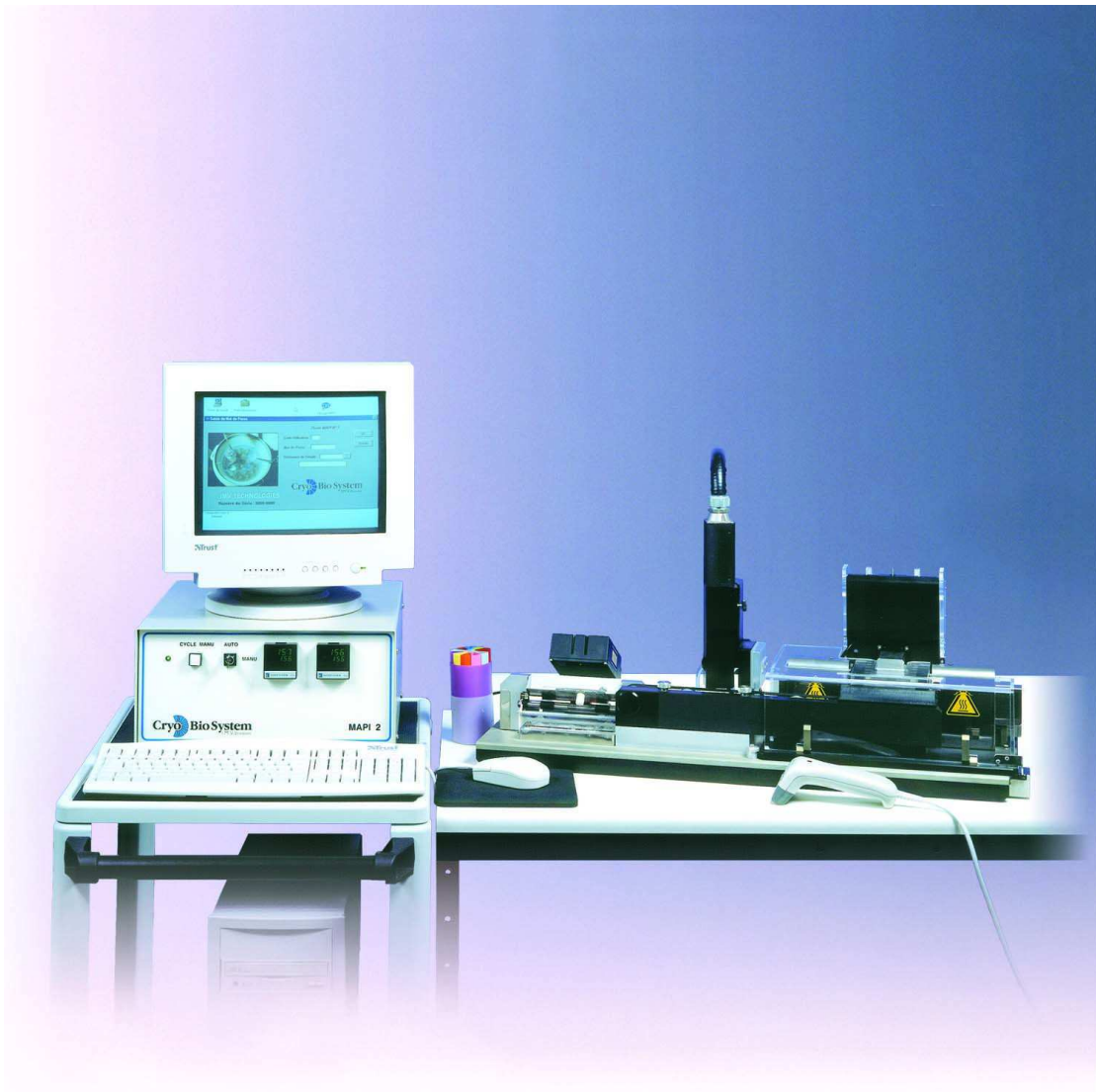
1-3-3 STOPPING THE BOX AND THE MACHINE

## 1-1 PRESENTATION

The MAPI SYSTEM was created to meet the requirements of blood transfusion serum sample banks. The functions of filling, welding, printing and CBS straw printing verification (re-reading of the bar code by a scanner) are carried out by the semi-automatic robot.

The robot is piloted by software developed for Windows graphic environments – 95, 98 and NT – and makes it possible to:

- Condition products in straws for storage in nitrogen.
- Print the ID, the user want, on the straw.



1-1-1 PERSONNEL CONCERNED: All personnel working on biorepository.

1-1-2 MATERIALS AND PRODUCTS USED:

A- CONSUMABLES:

- ↳ Transparent CBS™ straws with white jacket and coloured Plug.
- ↳ Plastic nozzles with flexible tube
- ↳ Solvent: WASH DOMINO \*
- ↳ Ink: DOMINO BRK 0101 RX INK \*\*
- ↳ Diluter: MAKE-UP DOMINO \*\*

\* *Contains BUTANONE ⇒ Inflammable.*

\*\* *Highly inflammable, irritates the eyes and the respiratory tracts.*

\*/\*\* *See user information in DOMINO manual*

B- MATERIALS:

- ↳ MAPI CBS SYSTEM: For filling straws
- ↳ Drive computer technology:
  - PENTIUM II processor MMX
  - COLOUR SCREEN
  - KEYBOARD
  - MOUSE
  - NETWORK INTERFACE CARD
  - CARD FOR ADDITIONAL SERIAL PORTS
  - WINDOWS 98
- ↳ Printer: DOMINO CODEBOX 3 INKJET
- ↳ Bar code reader identification: DL 65 or DLC 6065 M
- ↳ Scanner: LEUZE BCL 40

## 1-2 STARTUP PROCEDURE

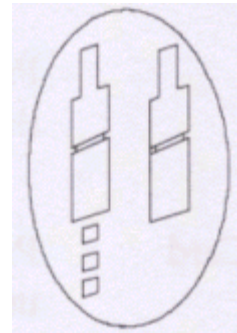
Press the ON button on the control strip grouping all the power leads. The red indicator on the strip lights up:

- ↪ The bar code reader beeps and starts to blink
- ↪ The printer is activated and starts to warm up the ink (blinking orange indicator)
- ↪ The control box switches on and the welding jaw temperature increases
- ↪ The scanner is activated and the machine is on standby

### 1-2-1 STARTING THE PRINTER:

Wait for the blinking orange indicator of the heating element to disappear and the “PRINTER STANDBY” message to be displayed:

↪ Press down the button representing the inkjet for five seconds: →

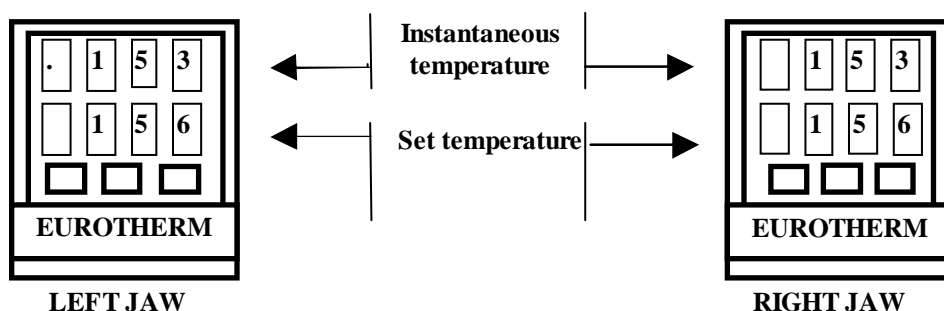


The “STARTUP SEQUENCE” message now appears. When this internal operation is complete the printer displays “PRINTER READY”. Printing may now begin.

If an indicator (red or orange, blinking or continuous) lights up and error message appears, please refer to the printer technical documentation supplied at installation.

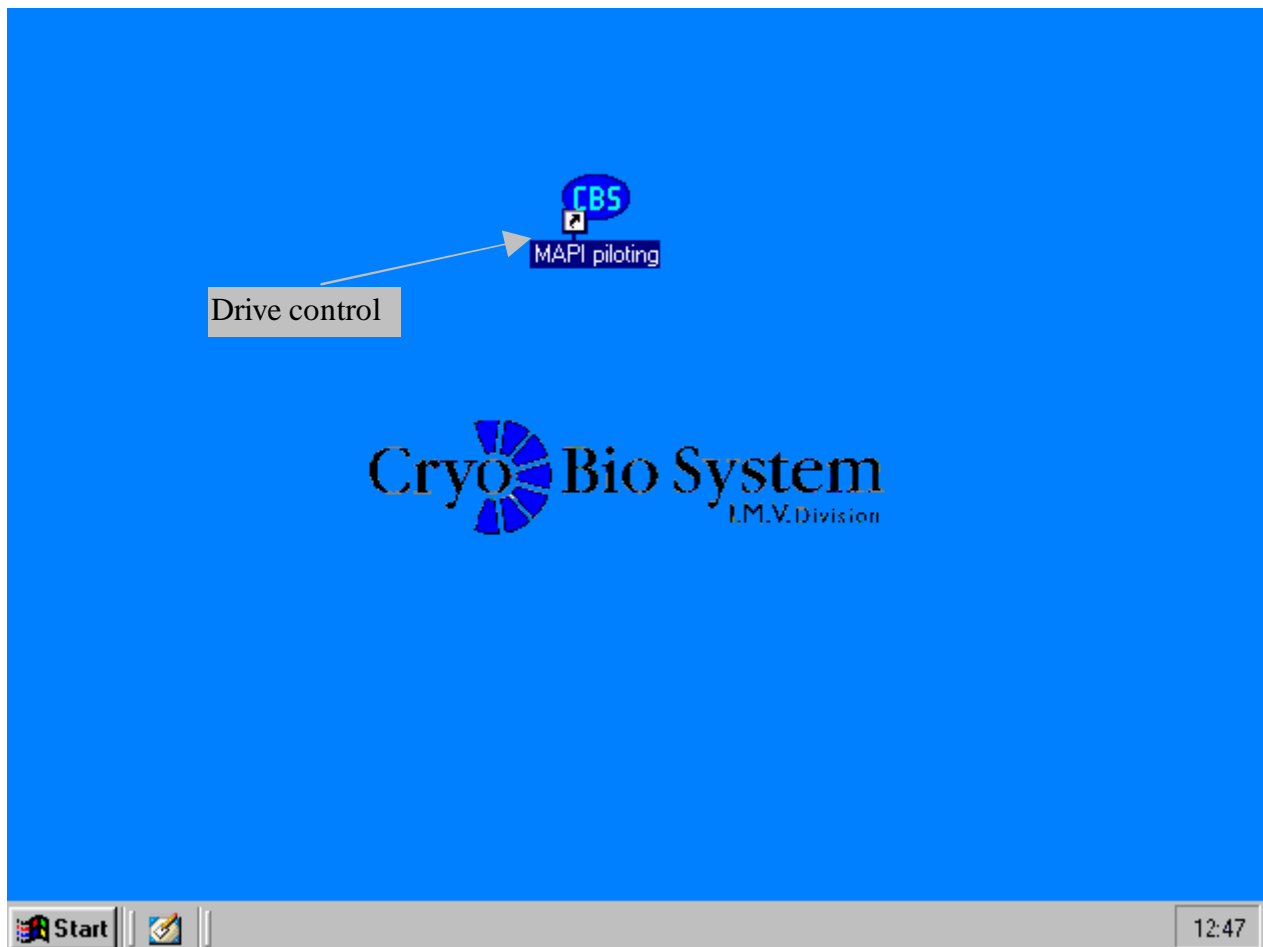
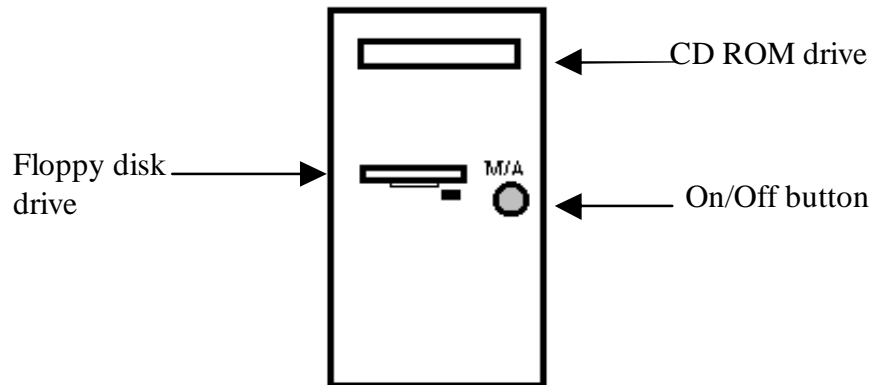
### 1-2-2 STARTING THE BOX AND THE MACHINE:

The temperature of the welding jaws is controlled by the two indicators on the box. The temperature displayed below the indicators is the **set temperature** to be attained for correct sealing. The temperature displayed above is the **instantaneous temperature** of the jaws. A normal cycle cannot be launched until the temperature is at least 156° C.



## 1-2-3 STARTING THE COMPUTER COMPONENT:

Press the ON button of the central unit (front side). Both the central unit and the screen light up. Windows 98 starts up. If a Windows password has been created, enter the password and click on "OK". Connection to the network is established and Windows stands by on the general page on which the "MAPI PILOTING" icon can be seen.





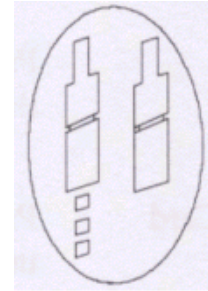
## 1-3 SHUTDOWN PROCEDURE

The stop procedure is carried out in such a way as to allow the system to start up again without incident. This involves making sure that the printer and the computer component are switched off.

### 1-3-1 STOPPING THE PRINTER

When in use, the printer displays the "PRINTER READY" message and a green indicator is lit up on the control panel.

⇒ Press down the button representing the inkjet for five seconds: →

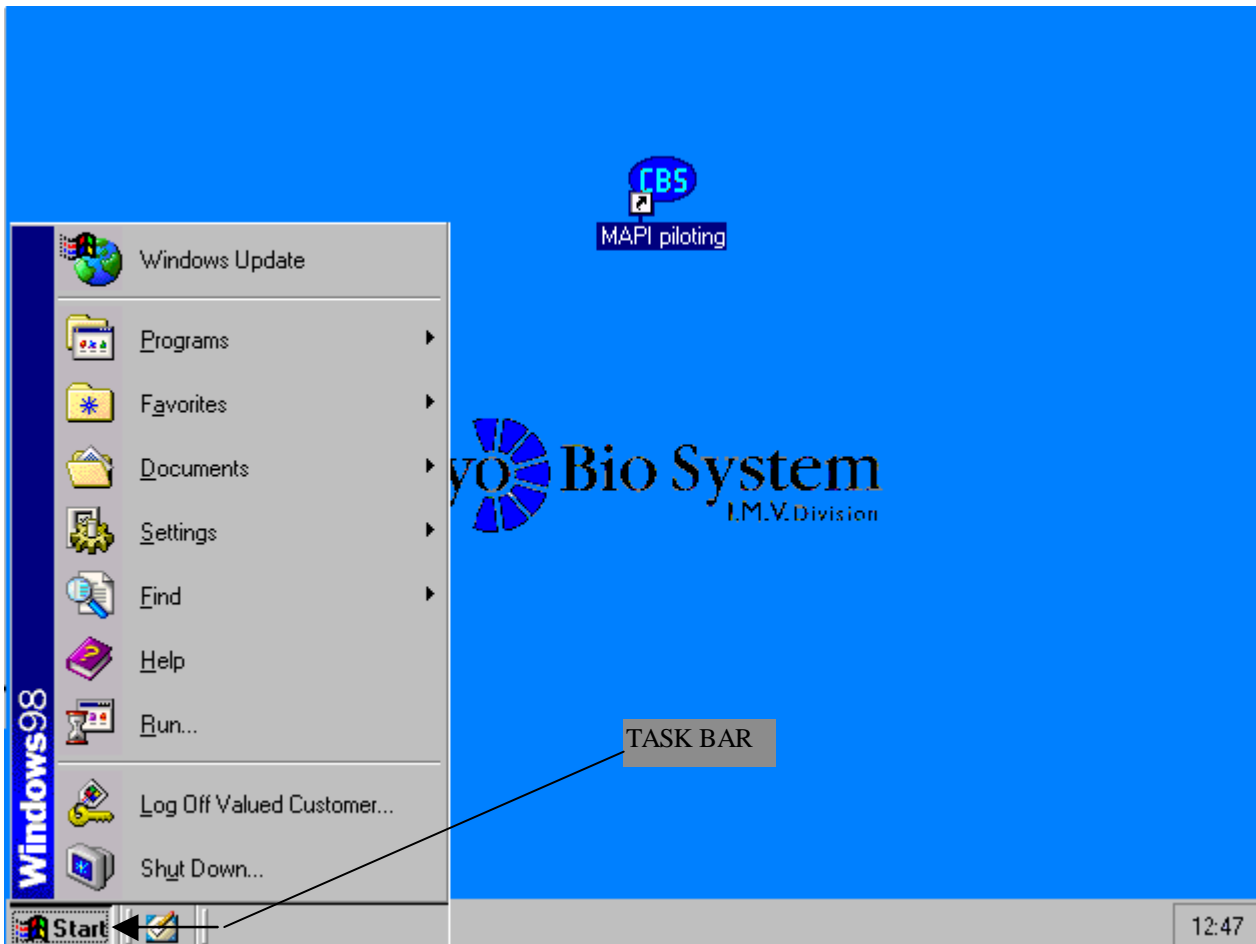


The "SHUTDOWN SEQUENCE" message now appears. Once this internal operation, which lasts about 3 minutes, is completed, the printer displays "PUMP OFF".

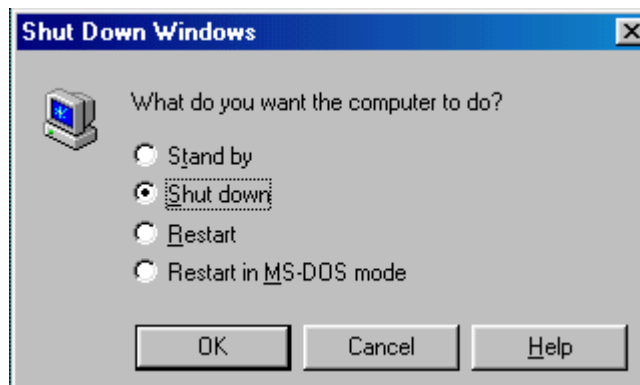
### 1-3-2 STOPPING THE CPU

Once the control software has been exited, the general Windows page appears. To switch off the CPU, just click on "START" on the task bar.





The window giving access to the stop procedure is displayed. Click on “SHUTDOWN” and the following window appears:



Check that the "SHUTDOWN" option is ticked, click on “YES” and wait for the computer component to shut down completely.

### 1-3-3 STOPPING THE BOX AND THE MACHINE

After preparing the printer for shutdown and switching off the computer component, just switch off the general control strip in order to shut down the entire system.



## 2 – COMPONENTS OF THE SYSTEM

### 2-1 DOMINO PRINTER

- 2-1-1 PRESENTATION
- 2-1-2 CHANGING THE CONSUMABLES
- 2-1-3 PRINTING AND ADJUSTMENTS
- 2-1-4 CONFIGURATION OF THE ELECTRONIC CARDS

### 2-2 INPUT BAR CODE READER

- 2-2-1 PRESENTATION AND CONNECTION
- 2-2-2 CONFIGURATION

### 2-3 SCANNER

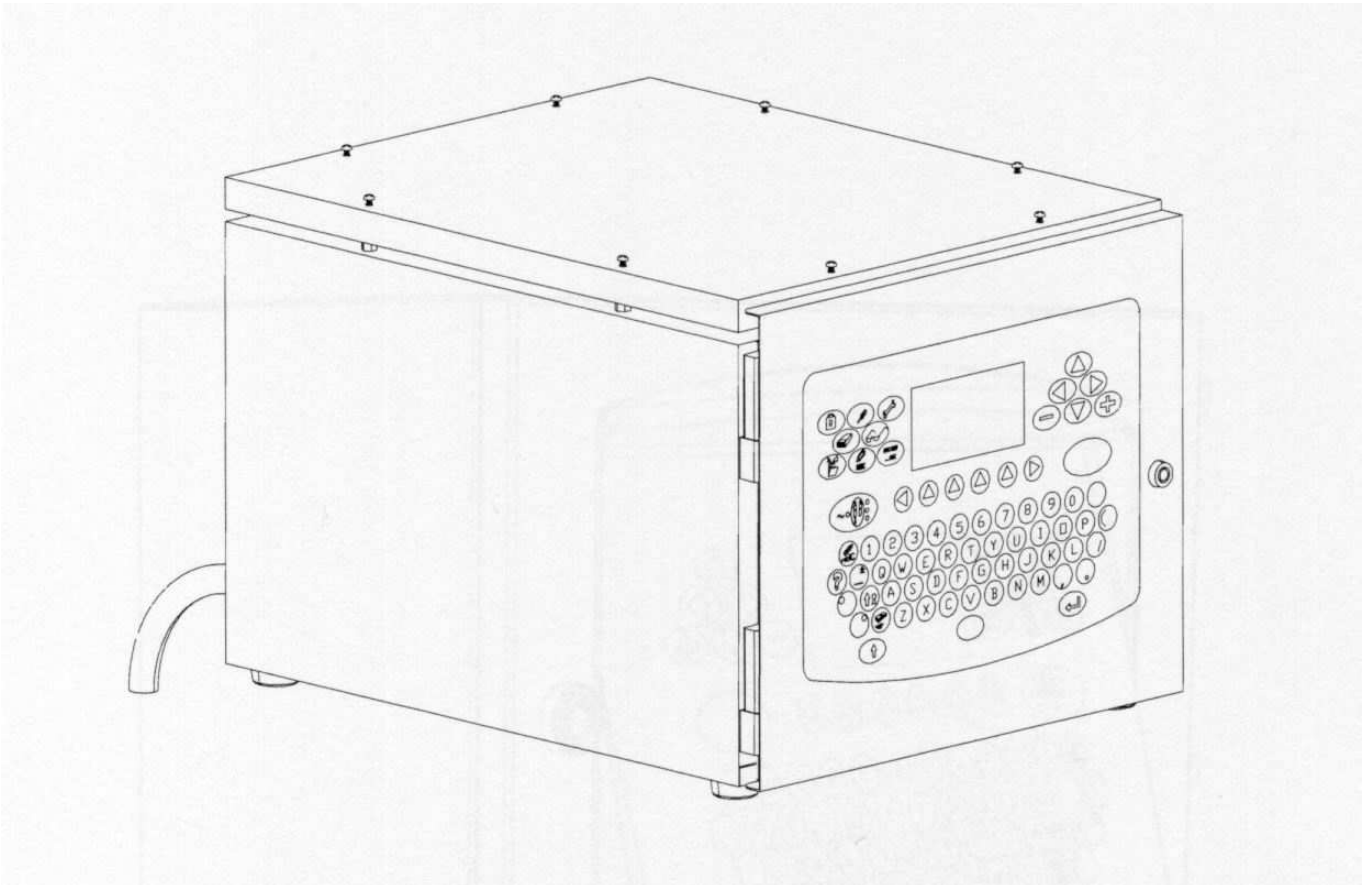
- 2-3-1 DESCRIPTION

### 2-4 MAPI PAILLASSE

- 2-4-1 PLAN OF THE PAILLASSE
- 2-4-2 DRILLING TEMPLATE FOR POSITIONING THE MACHINE

2-1 DOMINO PRINTER

*A 400*



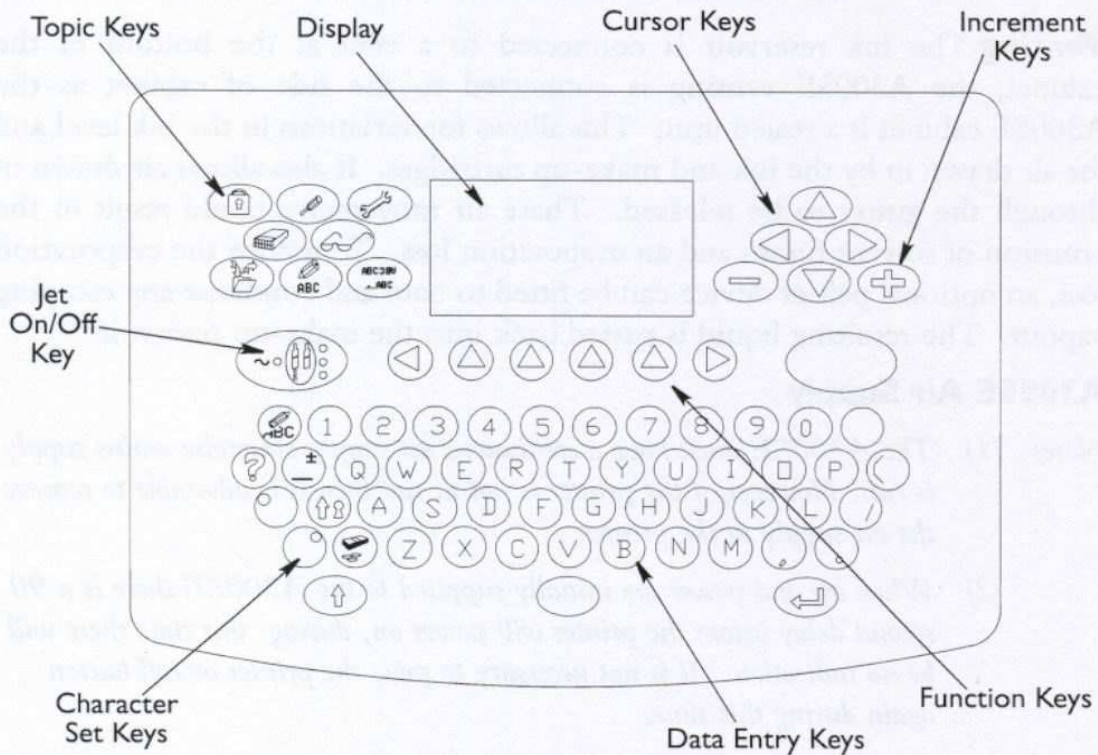
## 2-1-1 PRESENTATION

### Control Panel

The printer is controlled exclusively through the front panel. There are two types of keys:

- Permanent keys with fixed functions (these form the majority of keys)
- Function keys with functions which can change under software control.

The main areas of the front panel are identified in the diagram below.

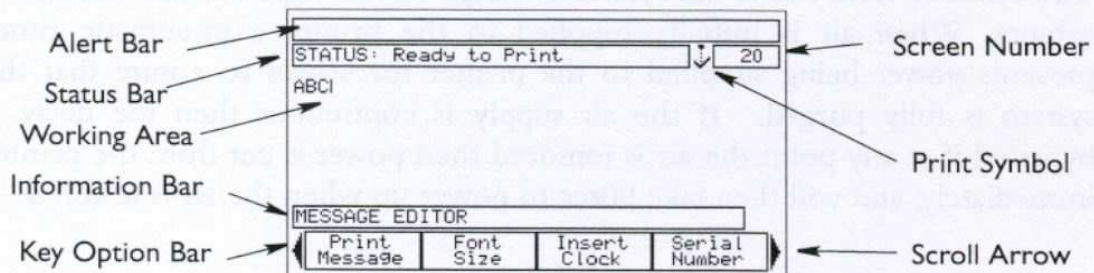


A1006\_1

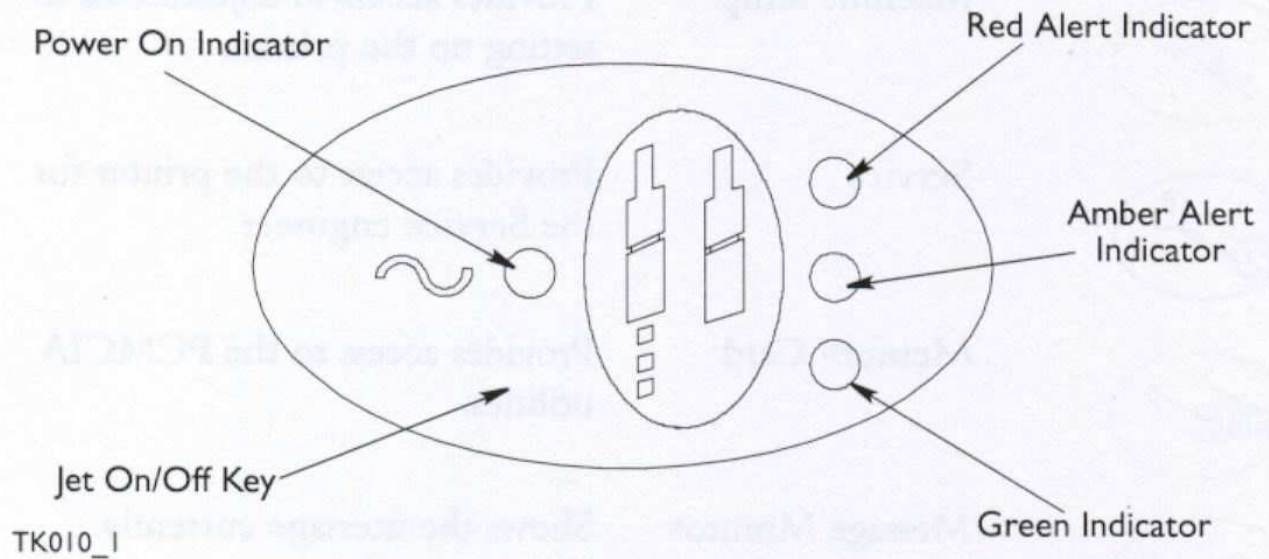
*Front Panel Keyboard Layout*

### Display

The display presentation has the following basic structure.



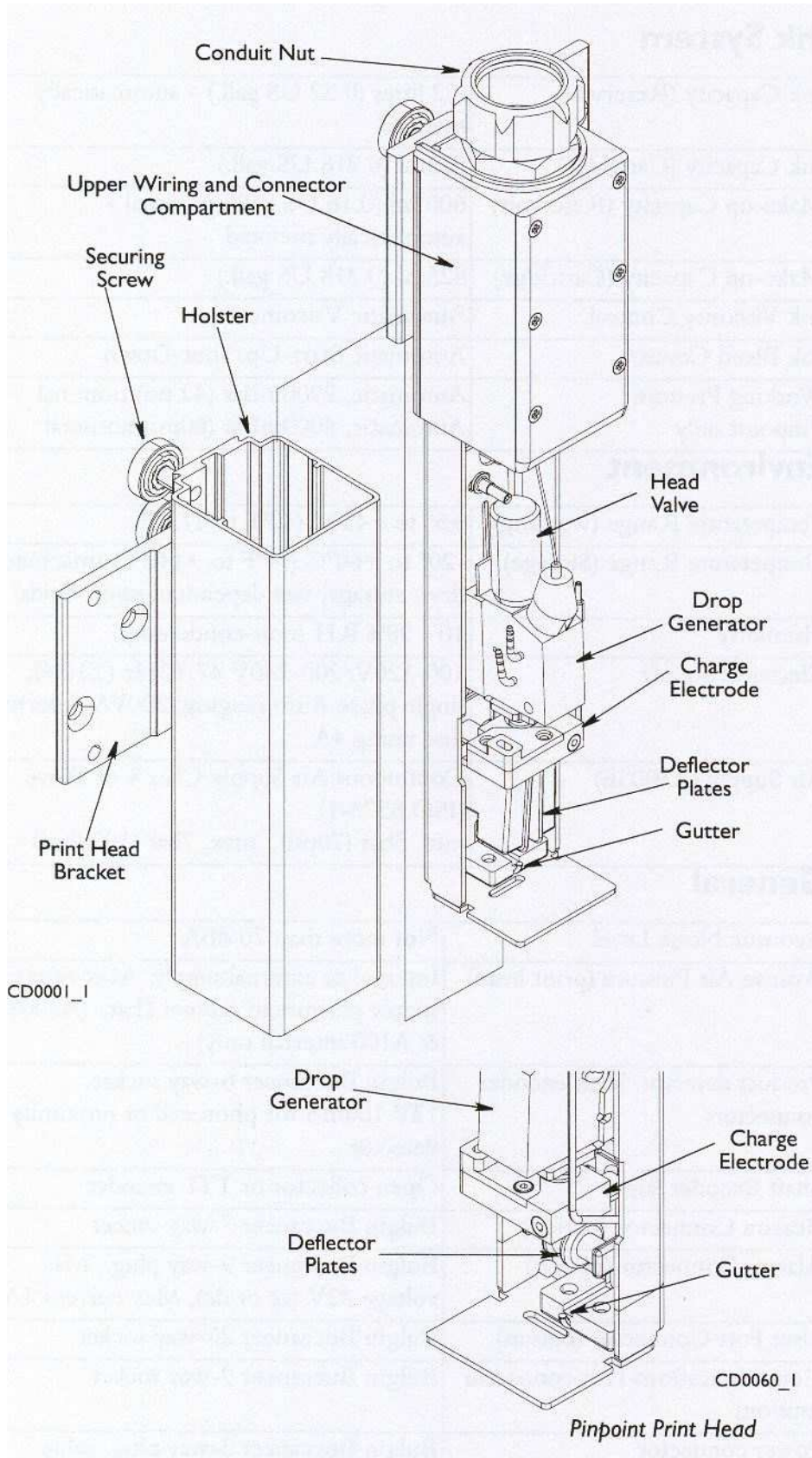
## Jet On/Off Switching



The Jet On/Off switch is pressed to switch on the jet and pressed again to switch off the jet. It is necessary to press the switch for two seconds as a precaution against accidental use. The switch also carries the following indicators:



## PRINTING HEAD





2-1-2 CHANGING CONSUMABLES**INK RESERVOIR REPLACEMENT**

The messages *Ink change needed in less than 24 hours* and, later, *Ink change needed in less than 2 hours* will appear near the end of the reservoir life (if a long-life system is being used, these warnings will appear at 300 hours and 24 hours before the end of reservoir life). Printing will not continue beyond the expiry of the reservoir life.

It is necessary to enter the reservoir quality code of the new reservoir and reset the reservoir replacement alarms, using the following procedure:

- (1) Press the Machine Setup key and enter the password if required.
- (2) Use the key bar scroll keys to find the *Change Resvr* option at the bottom of the screen.
- (3) Press the function key marked by *Change Resvr* and the screen will change to show a prompt requesting input of the Quality Code printed on the label of the new ink reservoir.
- (4) Type in the reservoir quality code.
- (5) Press the function key marked OK.

If the correct code is typed in, the information bar will display "*Quality Code OK - Fit Reservoir*", the reservoir run time will be reset and the alarms cancelled. Proceed to step (6).

If the number is typed inaccurately, it can be corrected by typing in again. If an invalid code number is typed, the number will not be accepted and messages in the information bar will indicate the problem, e.g. *Incorrect ink type*, *Ink out of date*, or *Resvr already used* (an old reservoir number). The offending reservoir should be replaced.

- (6) Shut down the printer using the proper procedure.
- (7) Switch off the printer.

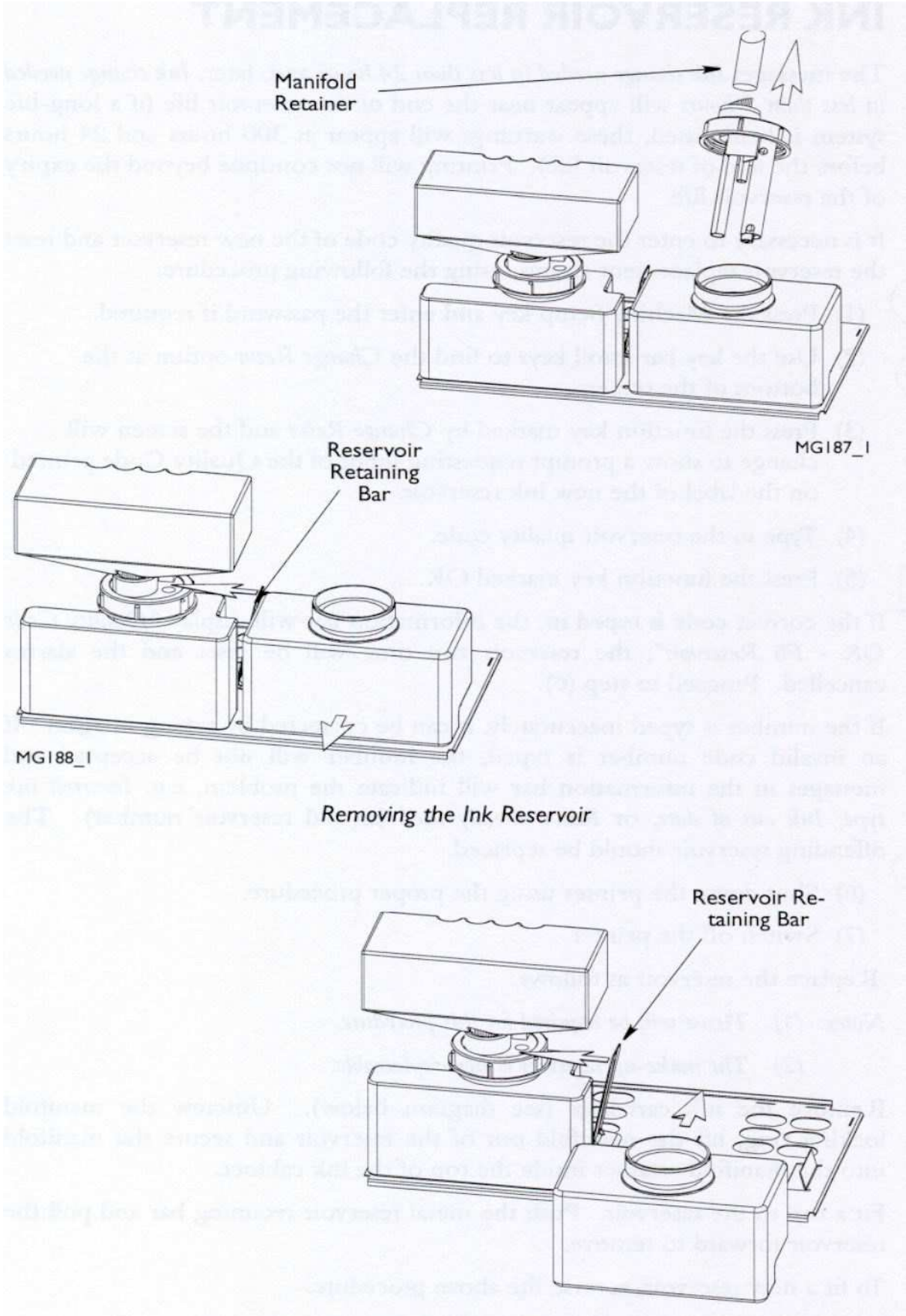
Replace the reservoir as follows.

- Notes: (1) *Tissue will be required for this procedure.*  
(2) *The make-up reservoir is non-replaceable.*

Remove the ink cartridge (see diagram below). Unscrew the manifold locking ring, lift the manifold out of the reservoir and secure the manifold into the manifold retainer inside the top of the ink cabinet.

Fit a cap to the reservoir. Push the metal reservoir retaining bar and pull the reservoir forward to remove.

To fit a new reservoir, reverse the above procedure.





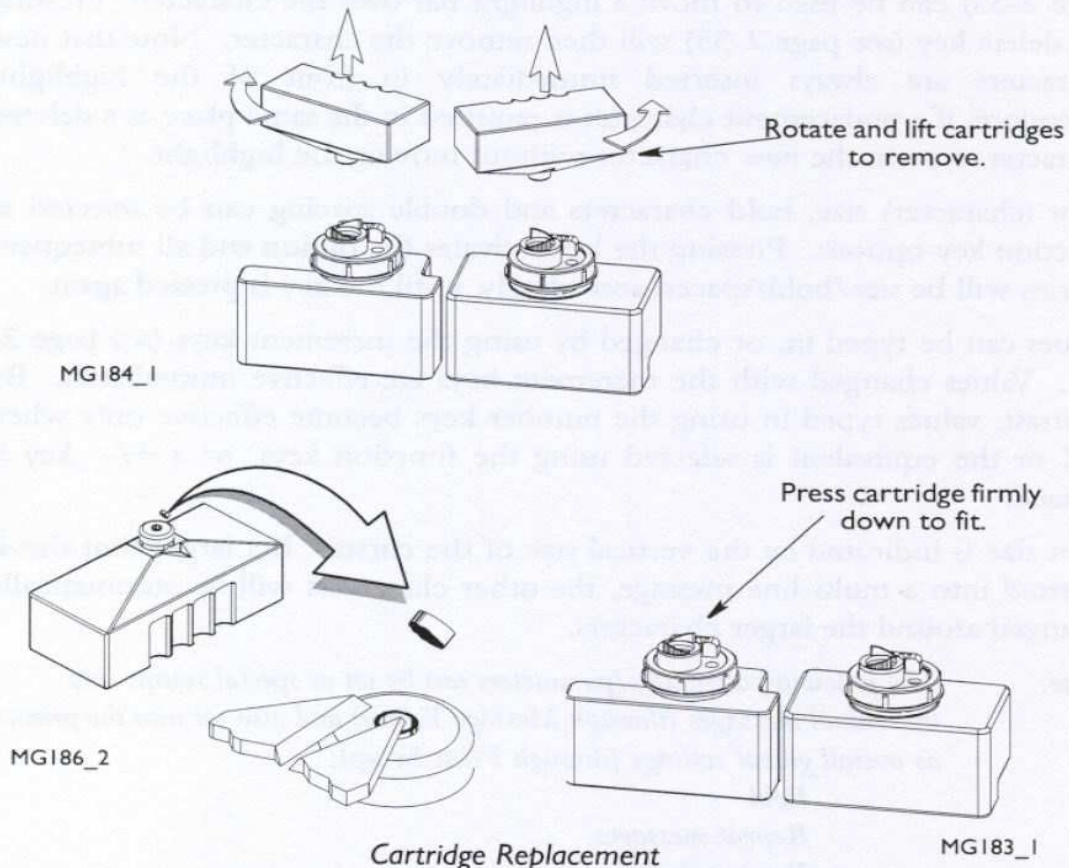
## INK AND MAKE-UP CARTRIDGE REPLACEMENT

*Note: If only small amounts of ink are being used by the printer, it may not be necessary to fit an ink cartridge. Leave the ink manifold seal in place and only fit an ink cartridge when a request appears on the display.*

Messages 'Add Ink Cartridge' or 'Add Make-up Cartridge' will appear on the front panel display when the ink or make-up cartridges need replacing, and the amber alert will illuminate.

The ink cartridge is rotated anti-clockwise and the make-up is rotated clockwise to free them before being lifted away. This mechanism ensures that the cartridges cannot be fitted onto the wrong manifold.

To fit a cartridge, cut off the sealing tab and push on to the correct manifold.

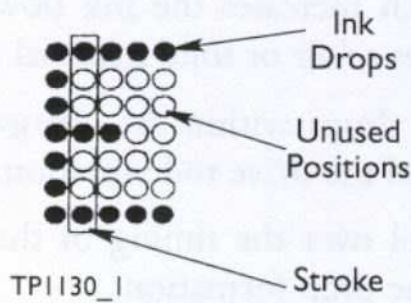


If the make-up cartridge is not replaced, the make-up reservoir will empty and the ink viscosity will eventually go outside limits. Also, head flushing will not be carried out when the printer is shut down and ink may be deposited on the print head components. Thus, although the printer can still be used, head faults may occur.

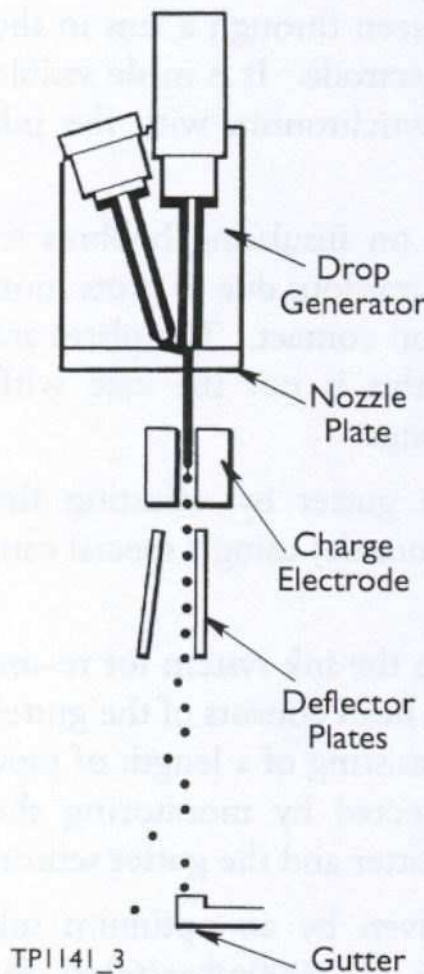
2-1-3 PRINTING AND ADJUSTMENTS

# PRINT HEAD

## General Principles



Each printed character consists of a dot matrix made up of lines, or strokes, of ink drops. The ink drops in each stroke are spaced apart by electronic deflection and the strokes are spaced apart by the movement of the print surface under the head.



Inside the print head, ink is supplied under pressure to the drop generator, and emerges through a small nozzle as a very fine jet. The drop generator contains a drive rod which creates ultrasonic pressure waves in the ink, making the jet break up into a stream of separate drops shortly after leaving the nozzle.

The break-up is adjusted to occur within the charge electrode, where each ink drop is given an electrostatic charge by putting a voltage onto the charge electrode as the drop breaks off. The size of the charge on the ink drop depends upon the voltage on the charge electrode.

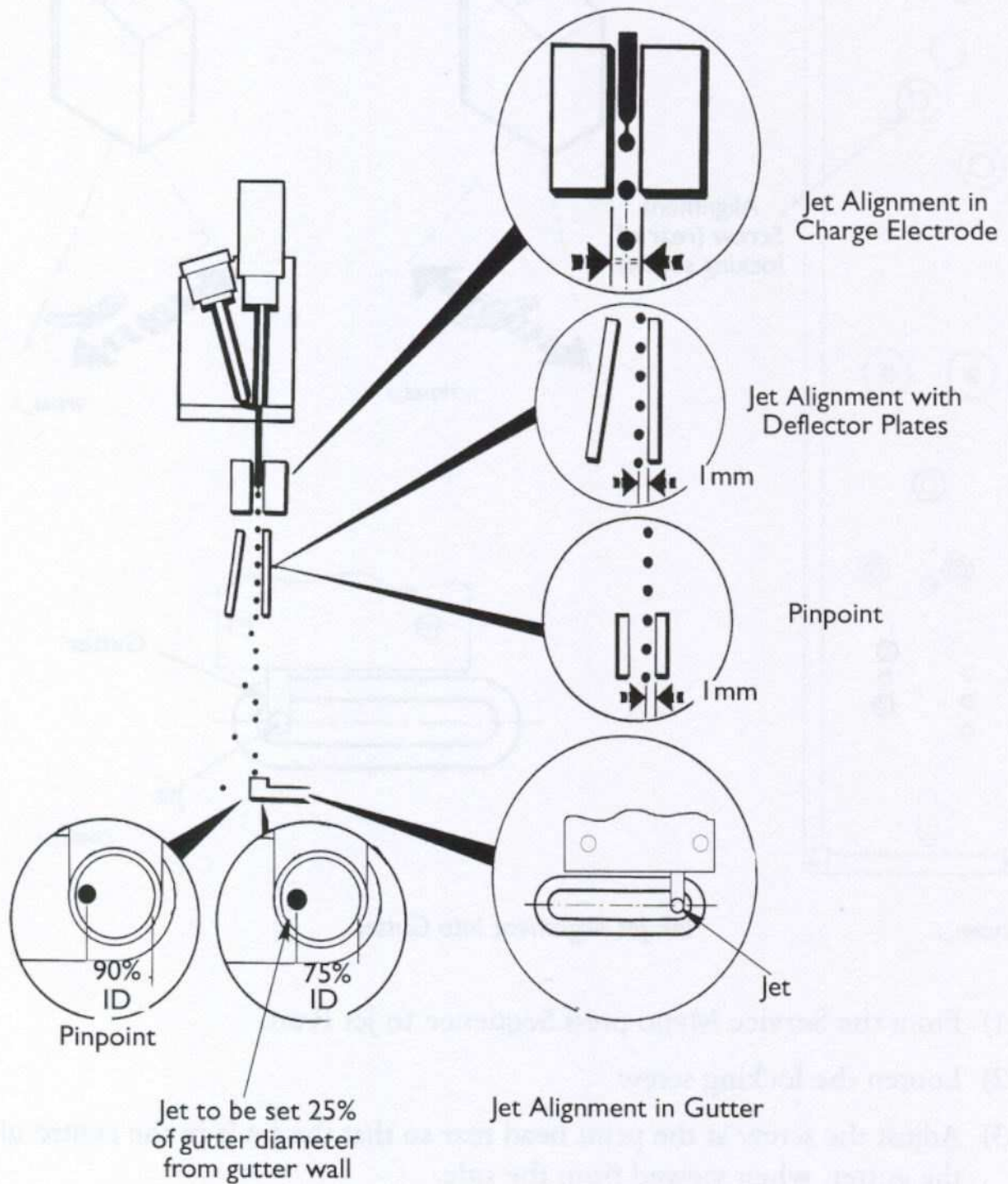
The ink drops then pass through the electrostatic field set up between two high voltage deflector plates. The direction of flight of each charged ink drop is deflected by an amount dependent upon the size of the charge.

Ink drops not required for printing are not given electrostatic charges and are collected in the gutter.



### 9(a). Jet Alignment Checks

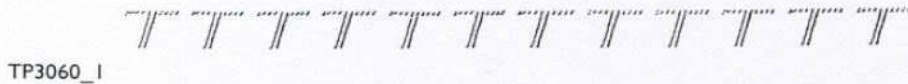
With the jet running, check the position that it enters the gutter as shown in the following diagram. If incorrect, carry out the jet alignment procedure on page 6-16.



## PRINT QUALITY FAULTS

The following are examples of faulty printing. In most cases, further investigations should begin with ensuring that the print head is clean and properly aligned.

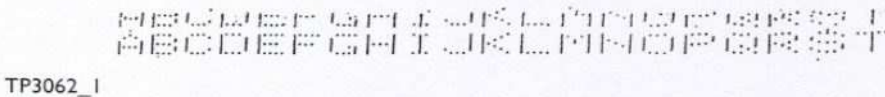
Head not mounted at 90 degrees to direction of product movement.



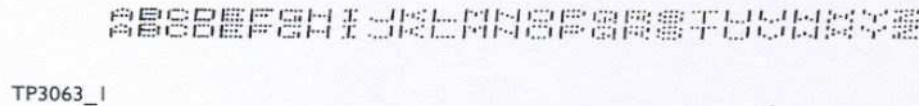
Head too far from print surface.



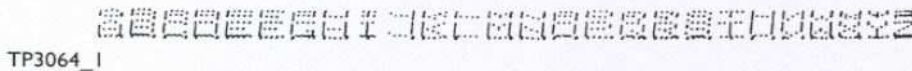
Pressure too low - note missing drops from some characters.



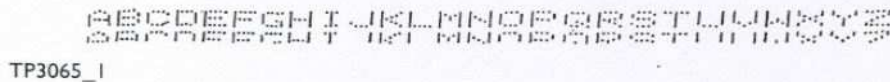
Pressure too high - note drops coalescing on some characters.



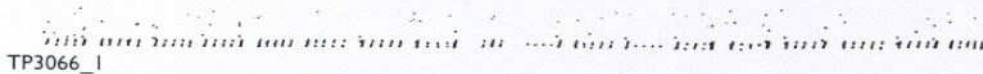
Incorrect break-up - satellites can be seen in the viewer and break-up is not in correct position relative to charge electrode.



Printed drops clipping edge of gutter - jet incorrectly aligned to gutter, or print height too low.



Phase error - see incorrect break-up fault (above).





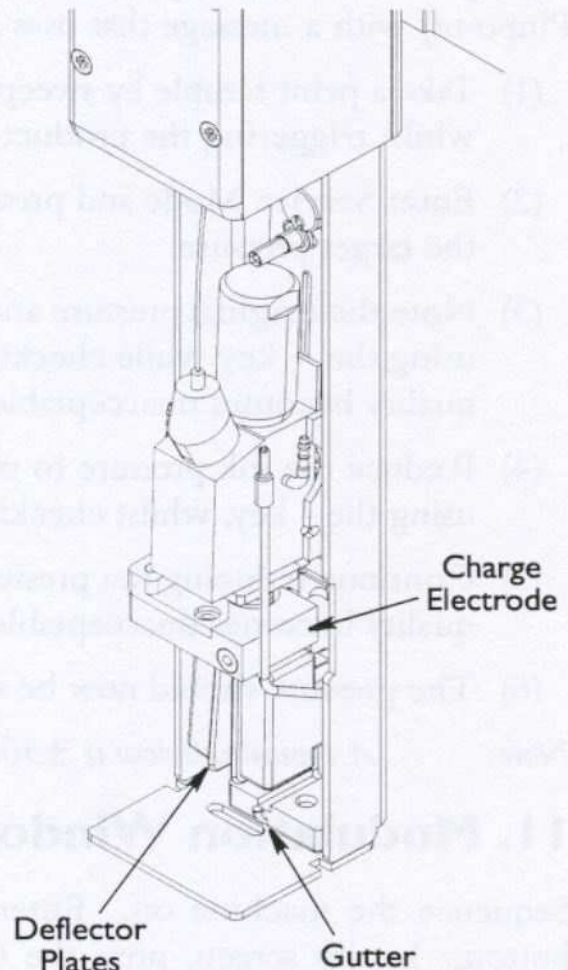
### 13. Print Head Cleaning

The printer must be shut down. Fit the print head into the maintenance holster.

- (1) Wash down the gutter. Dry the wet areas with lint-free tissue.
- (2) If required, also wash down the deflector plates, avoiding wetting the Charge Electrode.

If the Charge Electrode needs cleaning:

- (3) Undo the securing screw and pull the electrode gently away from its mounting.
- (4) Wet a piece of tissue with wash and draw it through the slot in the Charge Electrode. Any ink residue in the slot will stain the tissue. Wash the rest of the electrode.
- (5) Draw some dry tissue through the slot and dry the rest of the electrode. Ensure that no traces of tissue remain in the slot.
- (6) Refit the Charge Electrode and tighten the securing screw.



Refit the print head into its holster.

CD0002\_1

### 14. Obtain a Print Sample

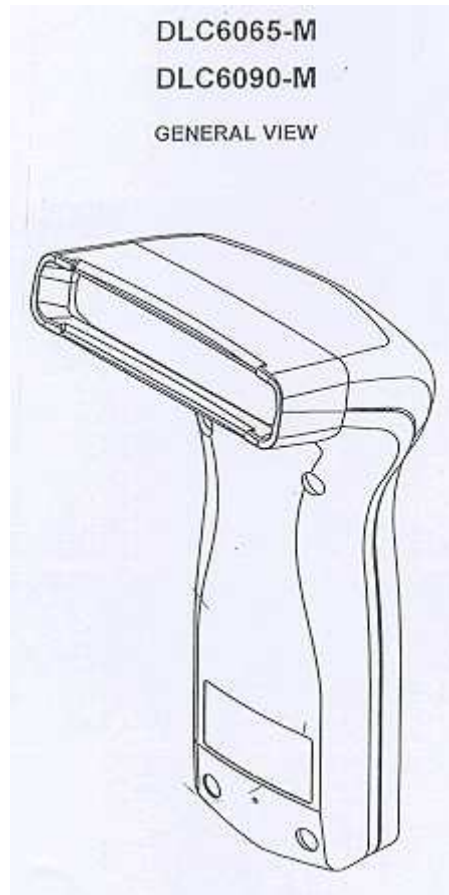
Obtain a print sample (instructions are given on page 10-11) and check the quality of the print. Keep this sample and attach it to the maintenance sheet.

### 15. Airdryer Service (If fitted)

For the relevant information on 2000/4000 hour service, refer to the Airdryer Appendix.

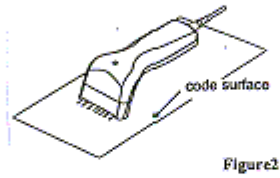
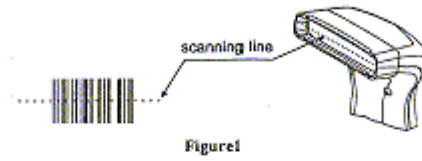


## 2-2 INPUT BAR CODE READER

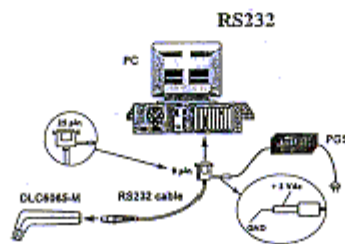


## 2-2-1 PRESENTATION AND CONNECTION

### Using of the DLC6065-M / DLC6090-M



### DLC 6065 Connexion



## 2-2-2 CONFIGURATION

To read with the barcode reader the user must set the configuration. This configuration set the communication speed, the number of data bits,....





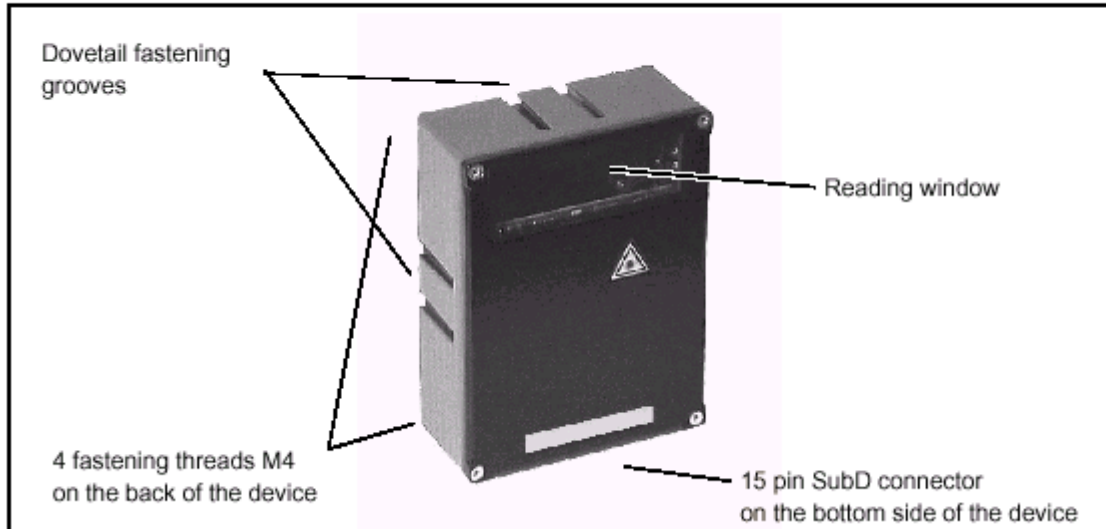
2-3 SCANNER

BCL 40 LEUZE ELECTRONIC



## 2-3-1 DESCRIPTION

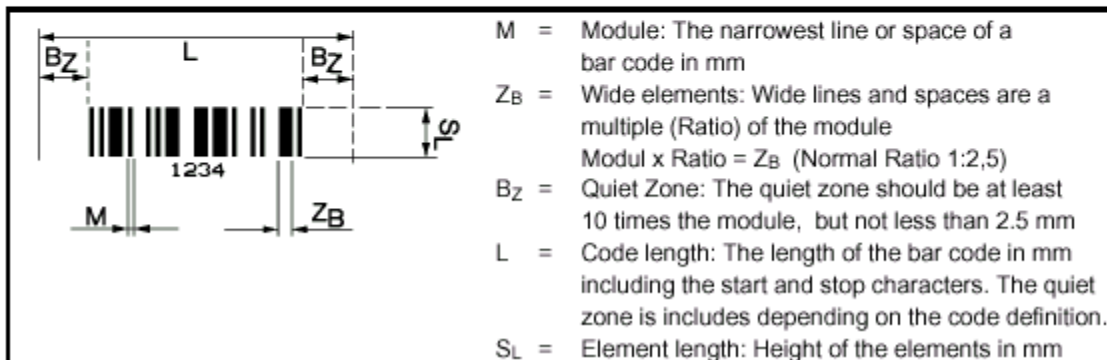
### Device construction BCL 40



### Optical data

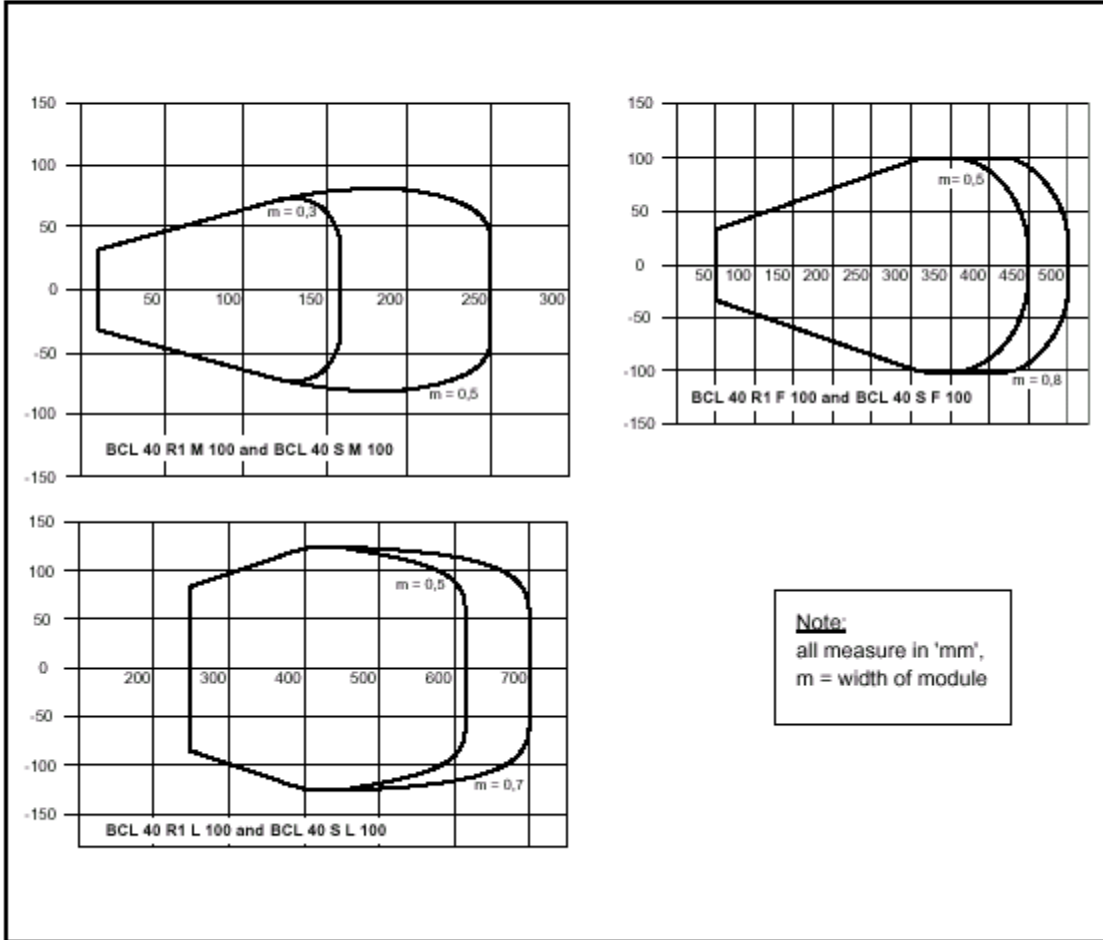
The range at which the bar code can be read by the BCL 40 (the so-called reading field) depends not only on the quality of the printed bar code but also on its dimensions and the incident angle of the scanner beam.

Therefore, above all, the module of a bar code is decisive for the size of the reading field.



- M = Module: The narrowest line or space of a bar code in mm
- Z<sub>B</sub> = Wide elements: Wide lines and spaces are a multiple (Ratio) of the module  
 Modul x Ratio = Z<sub>B</sub> (Normal Ratio 1:2,5)
- B<sub>Z</sub> = Quiet Zone: The quiet zone should be at least 10 times the module, but not less than 2.5 mm
- L = Code length: The length of the bar code in mm including the start and stop characters. The quiet zone is included depending on the code definition.
- S<sub>L</sub> = Element length: Height of the elements in mm

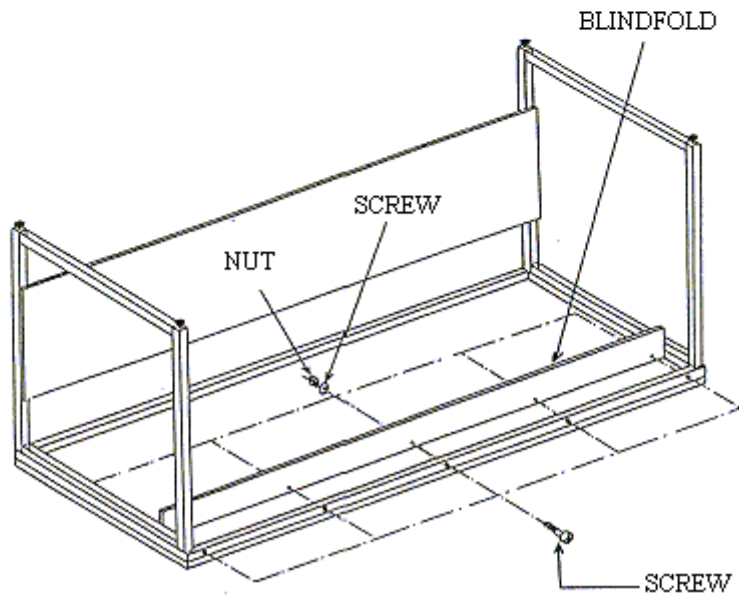
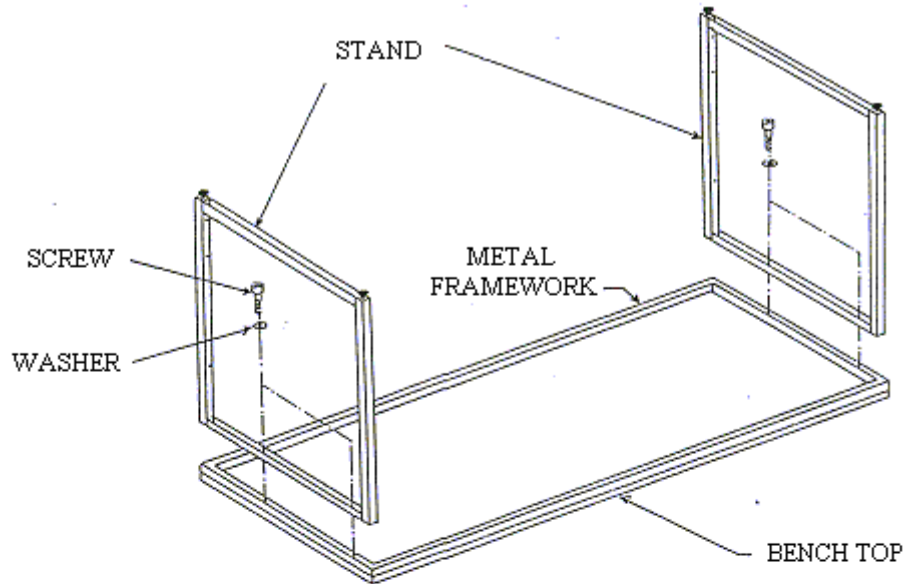
*Please note that the actual scanning curves can vary due to factors such as label material, print quality, reading angle, print contrast, etc.*



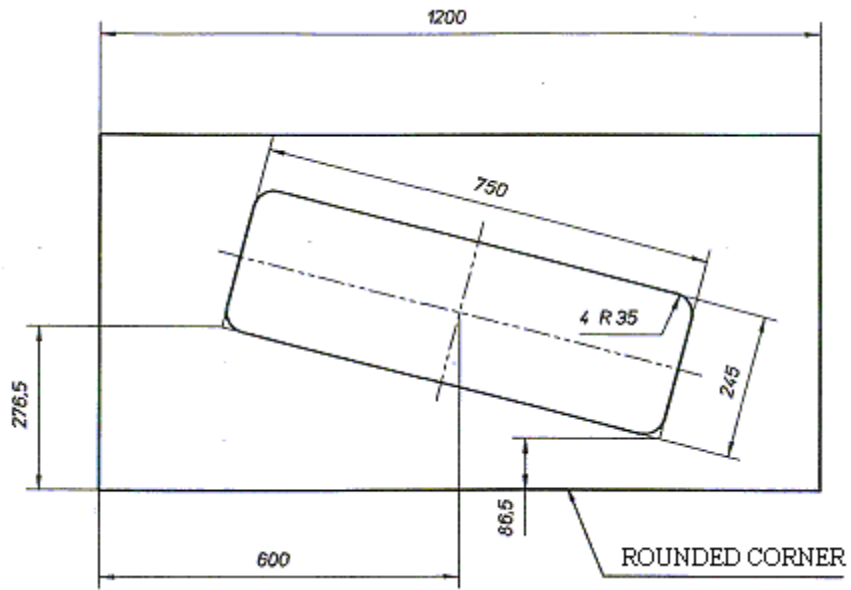


## 2-4 MAPI BENCH

### 2-4-1 PLAN OF BENCH



## 2-4-2 DRILLING TEMPLATE FOR POSITIONING THE MACHINE



## 3 – SOFTWARE NOTICE

### 3-1 LOGIC CONTROLER MENU

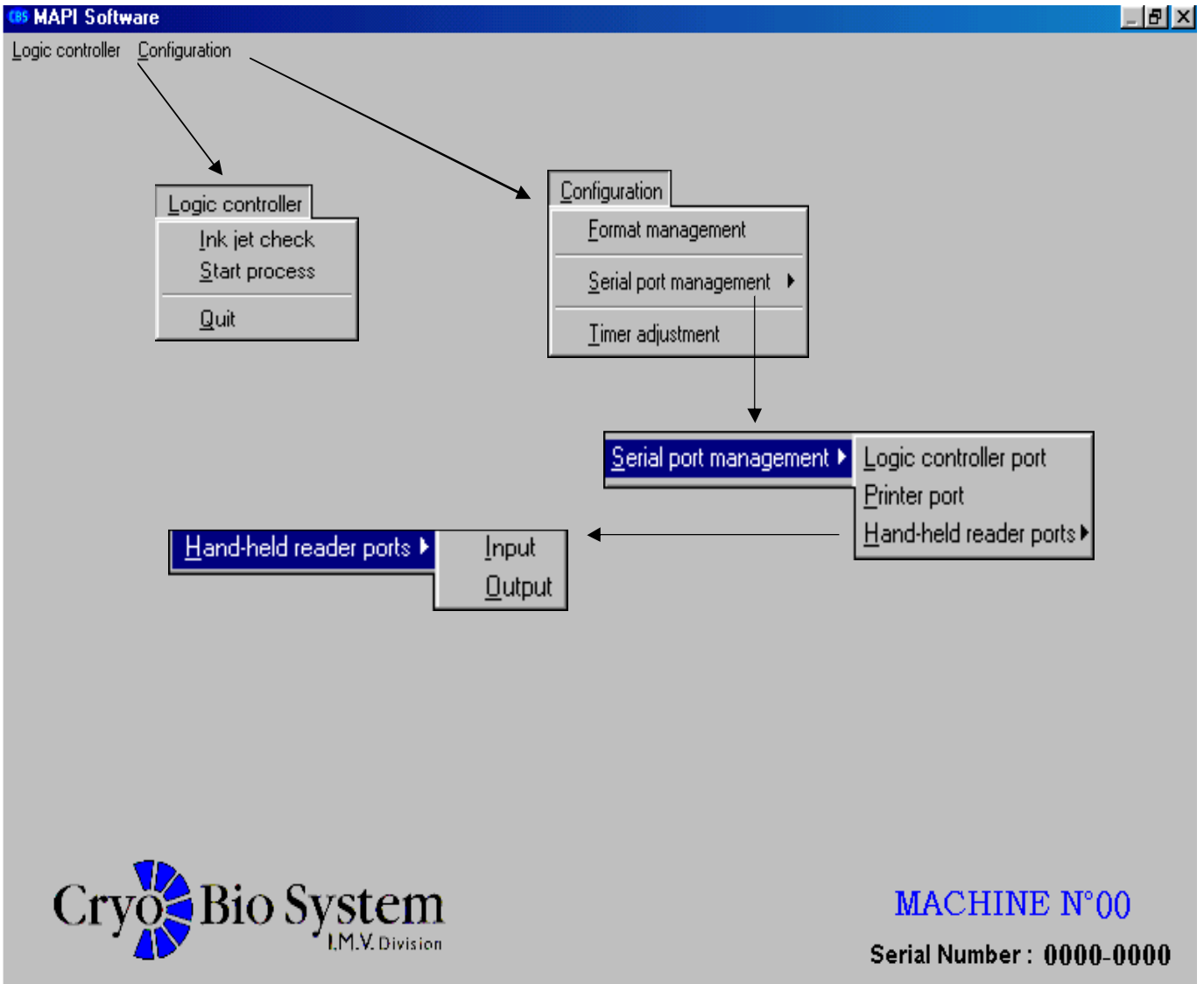
- 3-1-1 INK JET CHECK
- 3-1-2 START PROCESS

### 3-2 CONFIGURATION MENU

- 3-2-1 FORMAT MANAGEMENT
- 3-2-2 SERIEL PORT MANAGEMENT
- 3-2-3 TIMER ADJUSTMENT

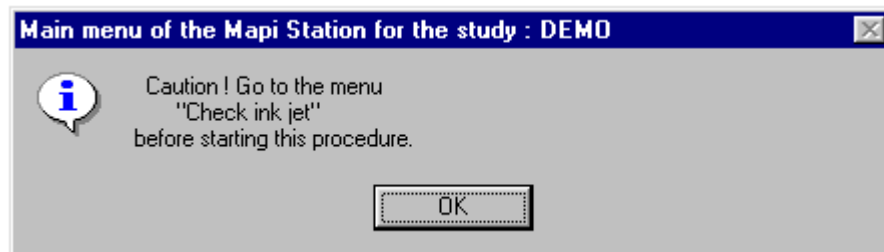
## RUNNING THE SOFTWARE

Double click on the "MAPI PILOTING" icon



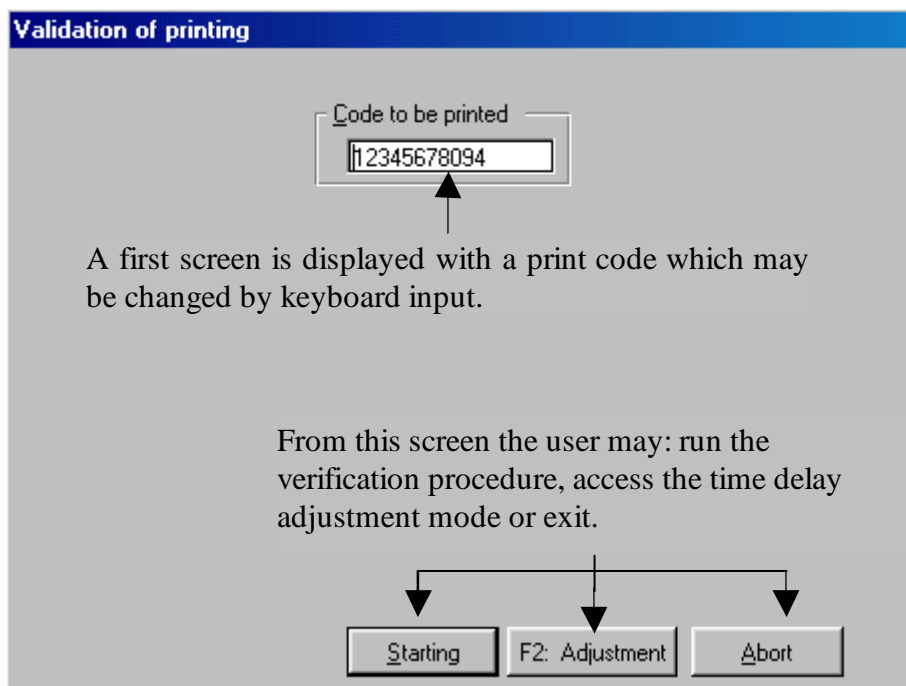
## 3-1 LOGIC CONTROLLER MENU

This step is compulsory before each launch of production in order to ensure that the inkjet printer is working correctly, that the printing is of good quality, that the default format corresponds to that chosen and that the re-reading scanner is functioning properly:



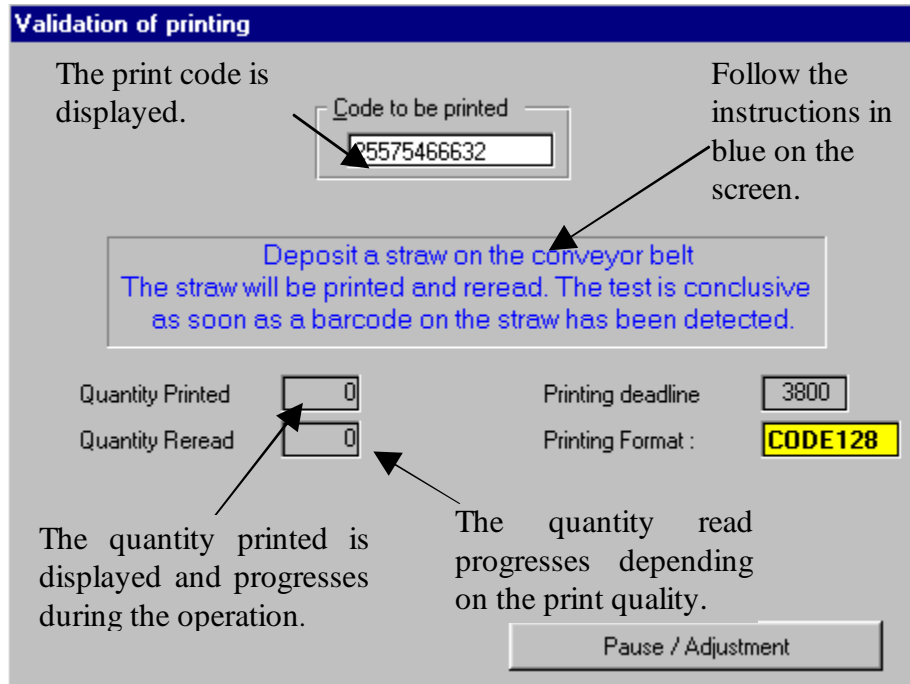
### 3-1-1 INK JET CHECK

After clicking on “Ink jet check”, the following window appears. It is now possible to run the verification with the random code displayed, or to delete this code and replace it with a new one.



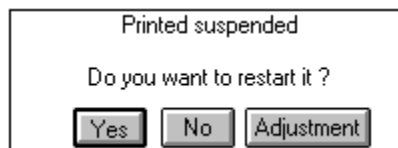
Just click on “starting” to start the inkjet verification operation.

The second inkjet verification window appears and indicates the procedure for carrying out the test. This time both the print code and the information concerning the print time delay are fixed, and the default format is displayed.



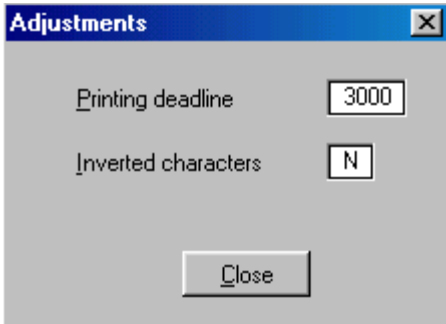
If printing or reading problems occur during the test, the results obtained may show a greater print quantity than read quantity. In all cases, at least one straw must be printed or read in order to validate the test and to proceed to production.

In order to interrupt this operation or reset the printing time delay, click on **Pause / Adjustment** and answer the following question (Printing interrupted: Do you want to start again?):



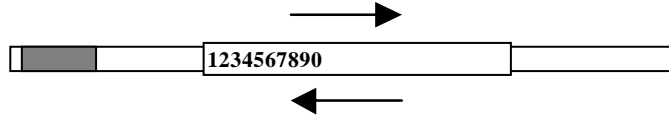
By clicking on “Yes”, the user restarts the operation and must therefore carry it out again for validation. By clicking on “No”, and with a result of at least 1 straw read, the user validates the test, closes the inkjet verification test and may therefore access the other features of the software.

When the “Adjustment” mode is selected before, during or at the end of inkjet verification, the following window is displayed:



Change the value, bearing in mind that:

↳ The greater the value, the more the message on the strip will be moved to the right..



↳ The smaller the value, the more the message on the strip will be moved to the left.

The “INVERTED CHARACTERS” mode allows you to write the message on the straw strip by reversing the order of the fields and the reading direction:

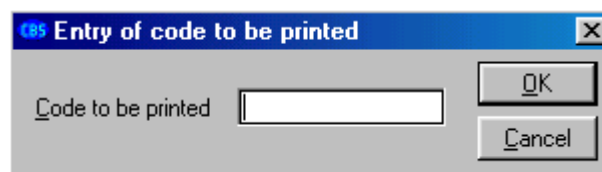


**REMARK:** *It is preferable to validate the Printing deadline during the normal cycle. If the adjustment mode is chosen during the inkjet verification operation, the new value saved will have to be changed during normal cycle production. (Unfilled and unwelded straws are printed when carrying out inkjet verification, thus causing the straw to move at a different speed.)*

### 3-1-2 START PROCESS

This operation allows the user to package sample tubes in straws. The operator can thus recover filled, welded and printed straws. Since no control is carried out on the codes entered. If a special printing format, different from the default format, is used, the operator must make the necessary change (see 2-2-1 FORMAT MANAGEMENT).

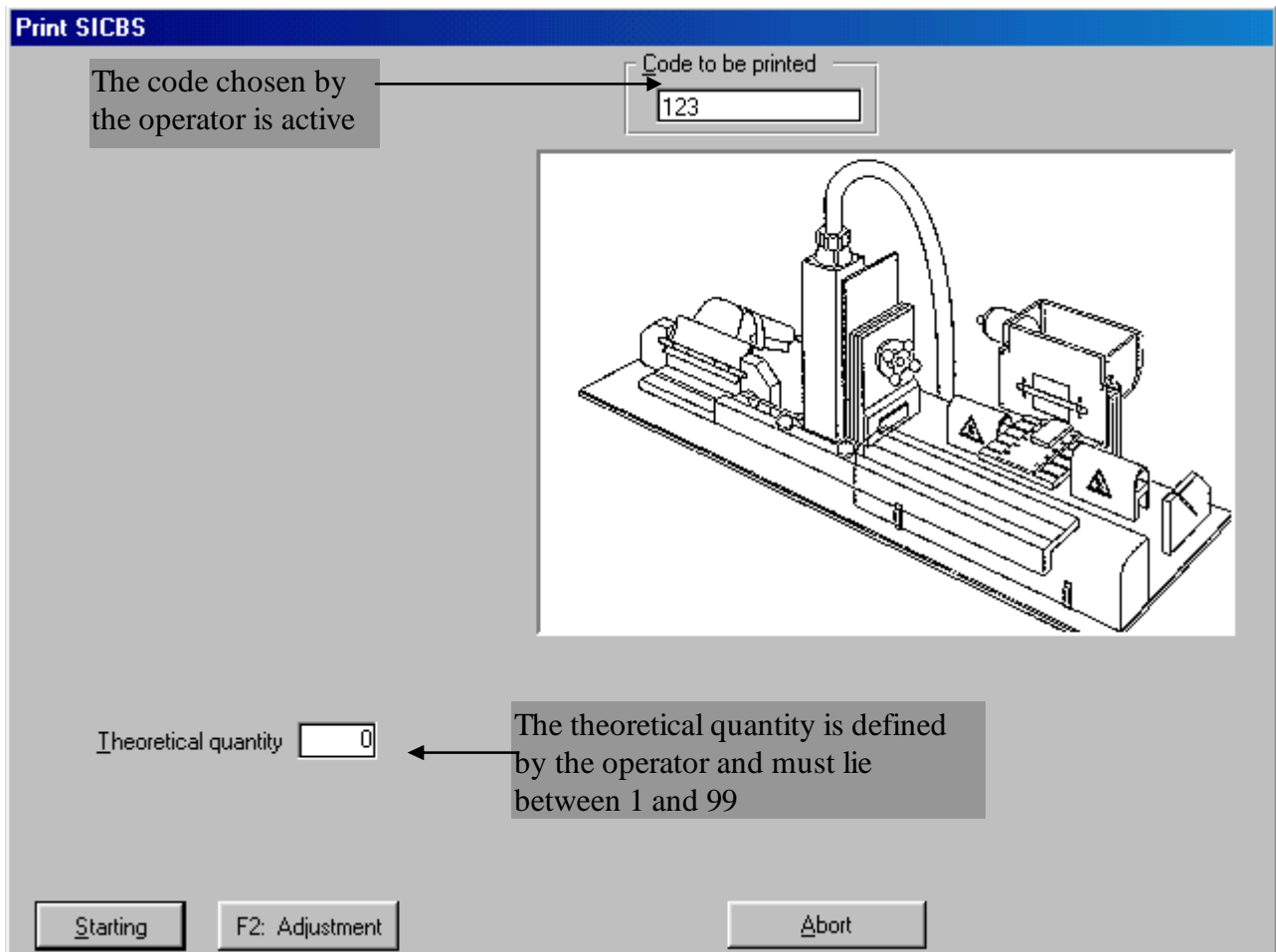
Click on “START PROCESS” to display the window of the code to be printed. The operator enters the code via the bar code reader or the keyboard.



If the operator uses the keyboard to enter the code, a second window appears asking for confirmation of the code to be displayed. Click on OK and the process screen appears.



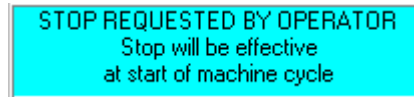
If the operator uses the bar code reader, the code is entered once and the process screen appears directly.



The operator clicks on STARTING and the cycle starts. The printed and reread quantities are displayed and change. A rereading procedure is automatically launched if the number of straws reread is less than that of the number printed. However, the straws cannot be reprinted if it is not possible to reread them during this procedure. The code must therefore be re-entered and the cycle relaunched for the number of missing straws.



The cycle is launched and can be stopped at any time by the operator, by clicking on the “Pause / Adjustment” button, pressing the space bar on the keyboard or opening the protective cover. The pause button or the spacebar of the keyboard stop the machine in “rest” position: the sealing jaws are open. If the machine is stopped by opening the cover it does not go back to rest position and straws may be stuck in between the closed welding jaws and burn. The light switches to red to show that the machine has stopped and the following messages are received:



## RE-READING STAGE

During the production cycle, it may not be possible to read the straws for a variety of reasons:

- Poor printing
- Printing offset
- Reading time overrun

In certain cases, the unread straws may nevertheless be properly printed. In order to save the operator the inconvenience of starting the complete cycle again, the software runs the rereading procedure.

**Validation Cycle**

Code to be printed  
17980508003

The code to be printed during the production in progress remains active

**Stage No. 1: Attempt at rereading with output hand-held reader**  
**For straws that "appear" to be printed correctly.**  
**Put the straws in the reception hopper.**

Follow the instructions displayed on the screen

Theoretical quantity

Quantity Printed

Quantity Reread

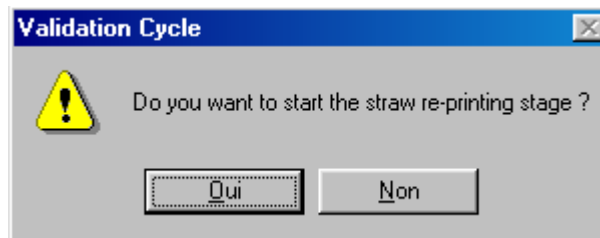
Printing deadline

During production, the theoretical and printed quantities are displayed. The reread quantity is also displayed and progresses according to the straws to be reread. When the total requested has been reread, the cycle stops

If rereading is successful and if the number of straws reread reaches the desired number, the cycle resumes and displays the input screen so that a new code can be printed.

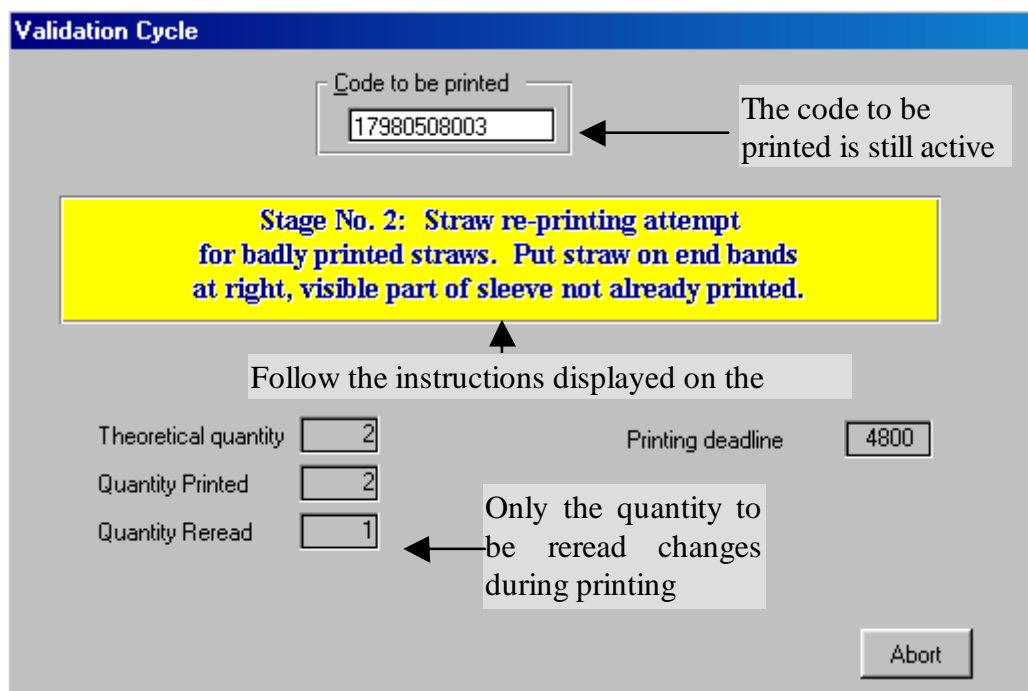
Otherwise, the poorly printed straws cannot be retrieved, in which case it is necessary to abandon the procedure and move to the following code. . The system will register the number of re-read straws as the number of stored straws.

If, at the end of the rereading stage, the straws are still not accepted or printing is still very poor, the operator may run the “re-printing cycle”. Click on “CANCEL” in the rereading screen and the software will automatically display the following window:



The operator replies YES and runs straw reprinting.

## REPRINTING STAGE



The operator follows the instructions and sees the reread quantity increase as the straws are reprinted. When the required number is reached, the cycle resumes and displays the input screen for a new sample tube code.

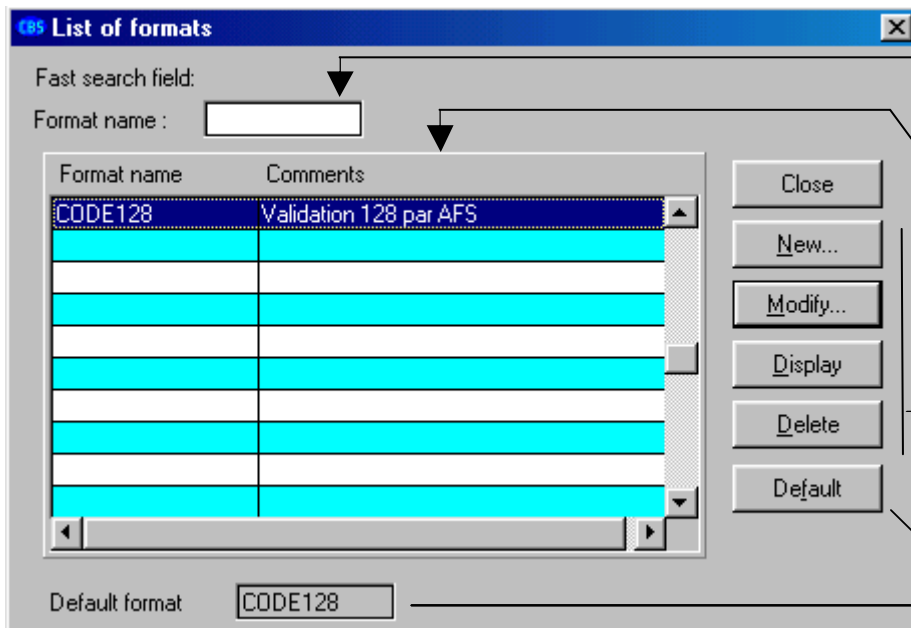
These two stages can be run in a loop as often as the operator judges necessary to remedy the problem.

However, if non-reading persists because printing is offset, the “ADJUSTMENT” mode may be accessed in the same way as with “INKJET CHECK”.

## 3 – 2 CONFIGURATION MENU

### 3-2-1 FORMAT MANAGEMENT

The format is a definable parameter allowing the user to choose the architecture and the content of the message to be printed on the straws. This message is divided into parts called “FIELDS”. A new format is created by associating several fields and by choosing their type.



The name of the format selected appears in this box.

Click on “FORMAT MANAGEMENT” to obtain the list of formats. If a format has already been created, it will be listed.

The format may now be defined, modified, viewed or deleted.

The default option allows you to retain a default format and to apply it to each production cycle.

To create a format, just click on “NEW” to call up the format creation screen:

## FORMAT DEFINITION SCREEN

Format name :  ← The format name must be defined

Comments :  ← Use the comment to detail the format appropriation

Number of blanks between each field:

| Field | Type of field | Details | Style  | Size | Justification |
|-------|---------------|---------|--------|------|---------------|
| 1     |               |         | Normal |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |
|       |               |         |        |      |               |

Record    Insert    Delete    Cancel

### Type of field

Fixed text  
Date  
Counter  
Barcode 2/5  
**Barcode Code 128**

Choose the form of the message to be printed from the list of options

### Style

**Normal**  
Bold

Choose the style

### Justification

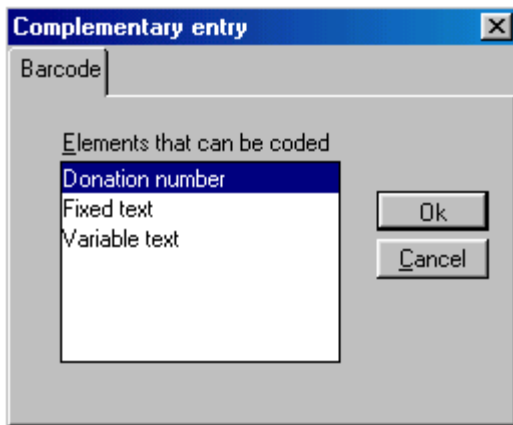
**Centered**  
Right  
Left

Choose the position of the message in its zone

## Types of field available:

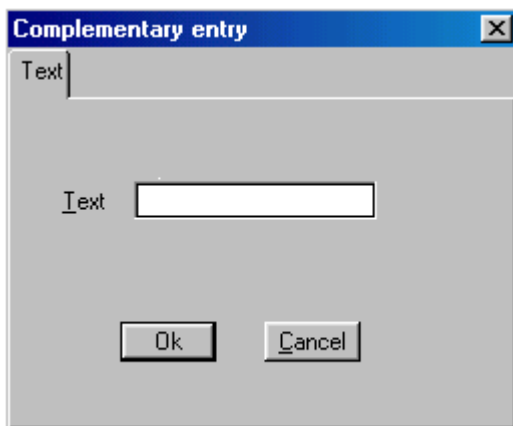
The different types of field are used to define the parameters of the message to be printed. In the case of a donation number field, the system will memorise the bar code reading or the keyboard input and place the number automatically in the message.

When the field type chosen is a bar code, it is necessary to specify what is to be coded:



The user selects one of the options in function of what he/she wishes to see coded in the message.

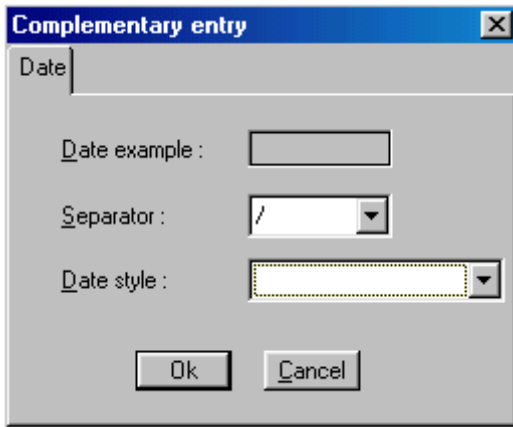
When a text field is chosen, the text must be determined beforehand:



The defined text must not exceed 20 characters. It will be automatically inserted in the message to be printed.

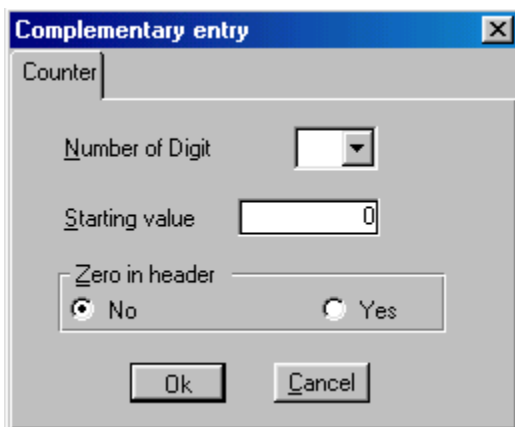


When a date field is chosen, the date must be configured:



In the case of a date field, the separator character between the day, the month and the year must be determined. The date format must also be determined (eg. dd/mm/yy, etc.).

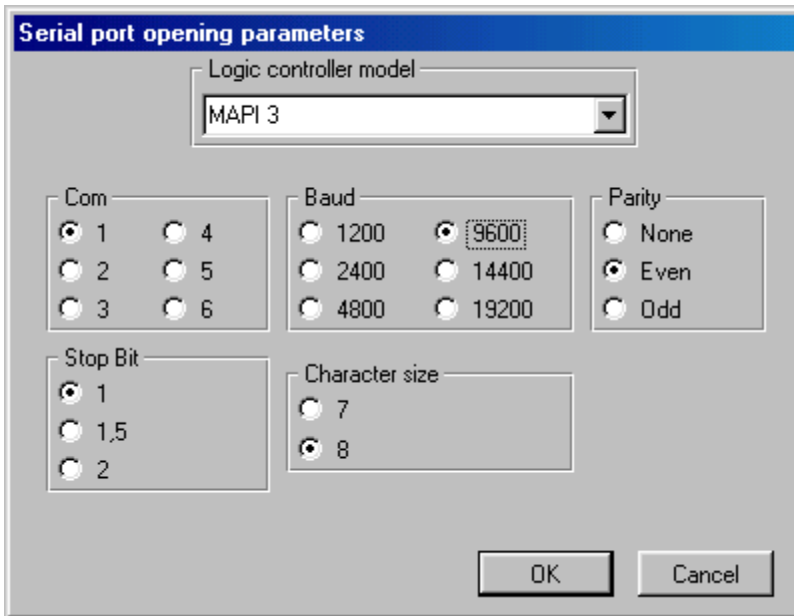
When a meter field is chosen, the form of the meter must be determined:



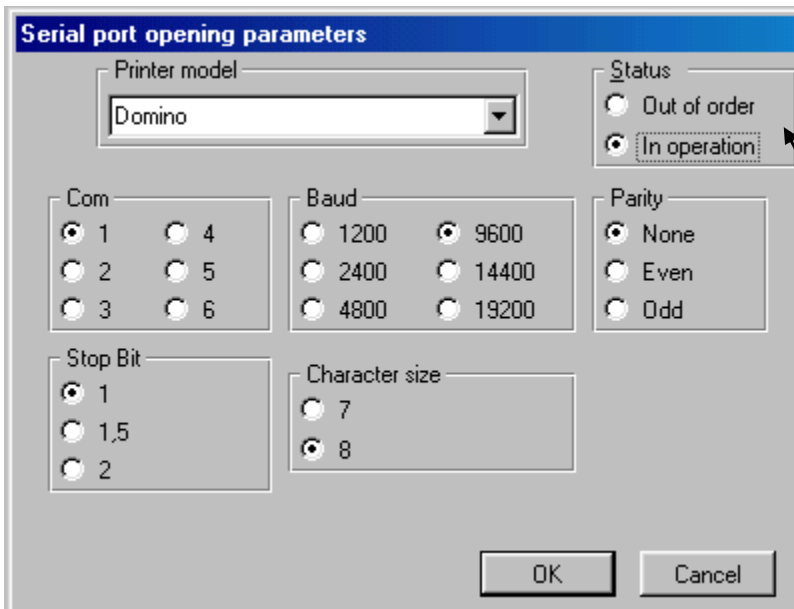
The meter makes it possible to print a sequential number on the straws. In function of the number of straws to be produced, the meter may consist of 1, 2 or 3 digits. It may begin by taking the value 0 at the outset or another value of the user's choice.

## 3-2-2 SERIAL PORTS MANAGEMENT

This menu gives access to the communication functions between the software and the various equipment. It is also possible to test each peripheral to make sure that they are working properly and to switch off certain components in cases when they are not required for operation.



Parameters for the Logic controller



Parameters for the DOMINO printer. Possibilities to change the status of the printer.

**Serial port opening parameters**

Reader model Input: DL 65

Status:  Out of order,  In operation

Com:  1,  2,  3,  4,  5,  6

Baud:  1200,  9600,  2400,  4800,  14400,  19200

Parity:  None,  Even,  Odd

Stop Bit:  1,  1.5,  2

Character size:  7,  8

Connection:  RS 232,  Keyboard

Start characters: STX

End characters: CR LF

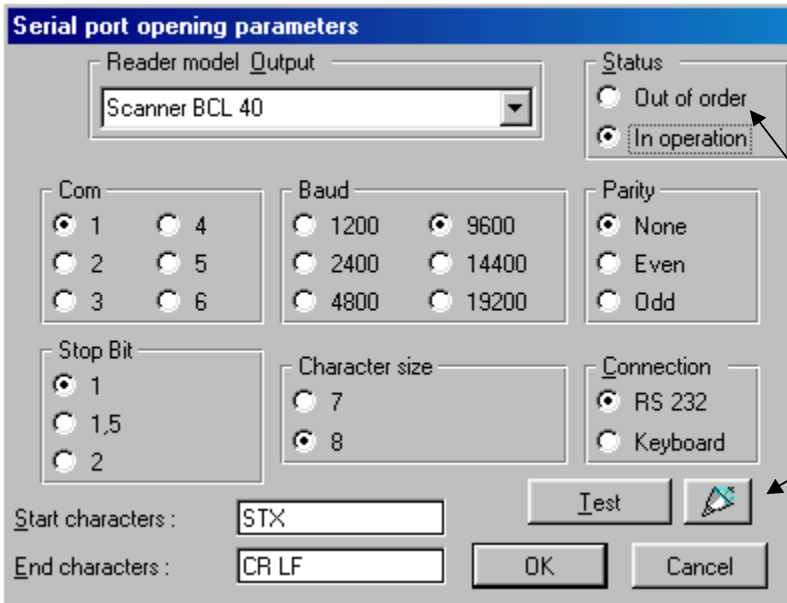
Buttons: Test, OK, Cancel

Parameters for the Input barcode reader. Possibilities to change the status and to test the reader.

## INPUT BAR CODE READER

In the CONNECTED PERIPHERALS window, select the INPUT BARCODE READER line and click on **Test**. This displays the same window as for the scanner and the system waits for the user to read a label with a bar code label.

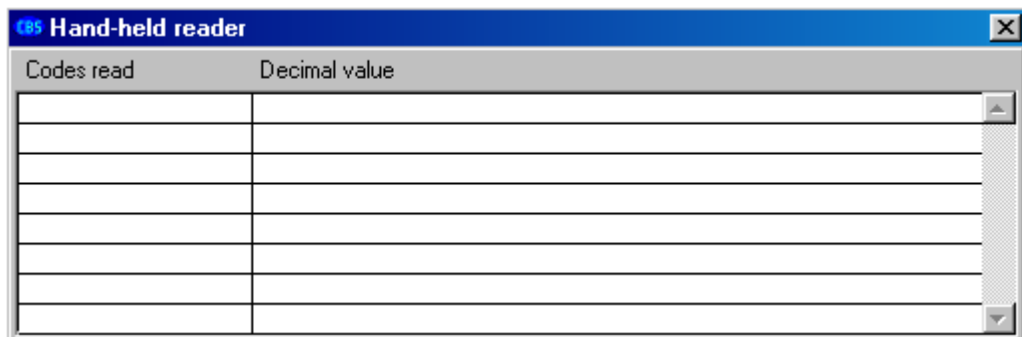
| Codes read   | Decimal value                            |
|--------------|--|
| 117980508003 | 2 49 55 57 56 48 53 48 56 48 48 51 13 10 |
| 117980508003 | 2 49 55 57 56 48 53 48 56 48 48 51 13 10 |
| 117980508003 | 2 49 55 57 56 48 53 48 56 48 48 51 13 10 |
| 117980508003 | 2 49 55 57 56 48 53 48 56 48 48 51 13 10 |
|              |  |
|              |  |
|              |  |



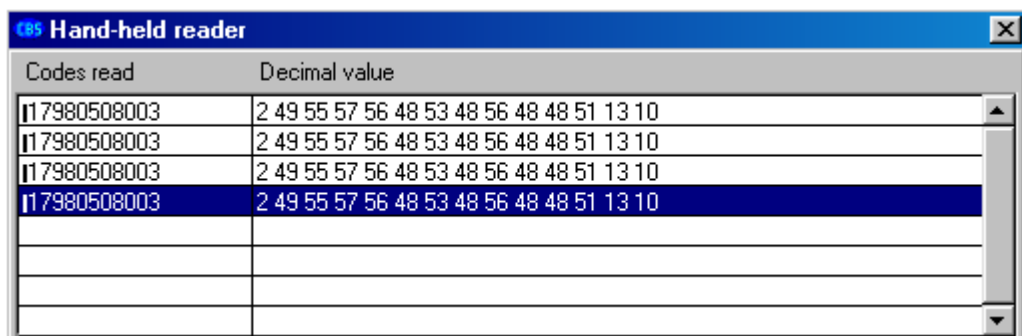
Parameters for the Output scanner. Possibilities to change the status, to configure and to test the scanner.

## REREADING SCANNER TEST

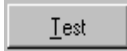

In the same window **CONNECTED PERIPHERALS**, select the **OUTPUT BARCODE READER** line and click on the **Test** button. An empty window appears and the system waits for the user to deposit a straw in the reception hopper in order to carry out reading tests.

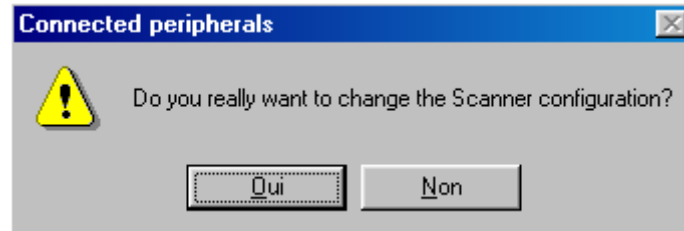


As the straw rotates in the reception hopper, the table fills up as shown below:

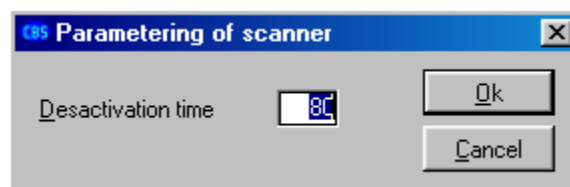


If there is no communication, the table of codes read remains empty.

When the OUTPUT BARCODE READER line is selected, below the  button appears a second button . This button allows the user to load in the scanner the configuration required for reading the straws printed in the MAPI SYSTEM. When you click on the configuration button, the following procedure is obtained:



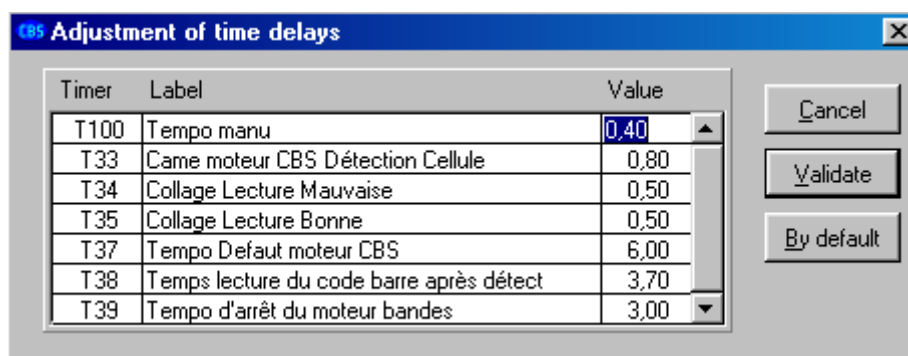
The system asks the user to confirm his/her intention to load the configuration in the scanner.



It only remains to validate the de-activation parameter displayed on the screen and the configuration of the scanner will begin. While this operation is carried out, the screen is blocked and the scanner LED blinks (proof that loading is taking place). Once the operation is completed, the system returns to the CONNECTED PERIPHERALS screen.

### 3-2-3 TIMER ADJUSTEMENT

a window is displayed in which the codes transmitted by the box may be visualised. If the communication between the software and the control box is not active, the window is displayed but remains empty.

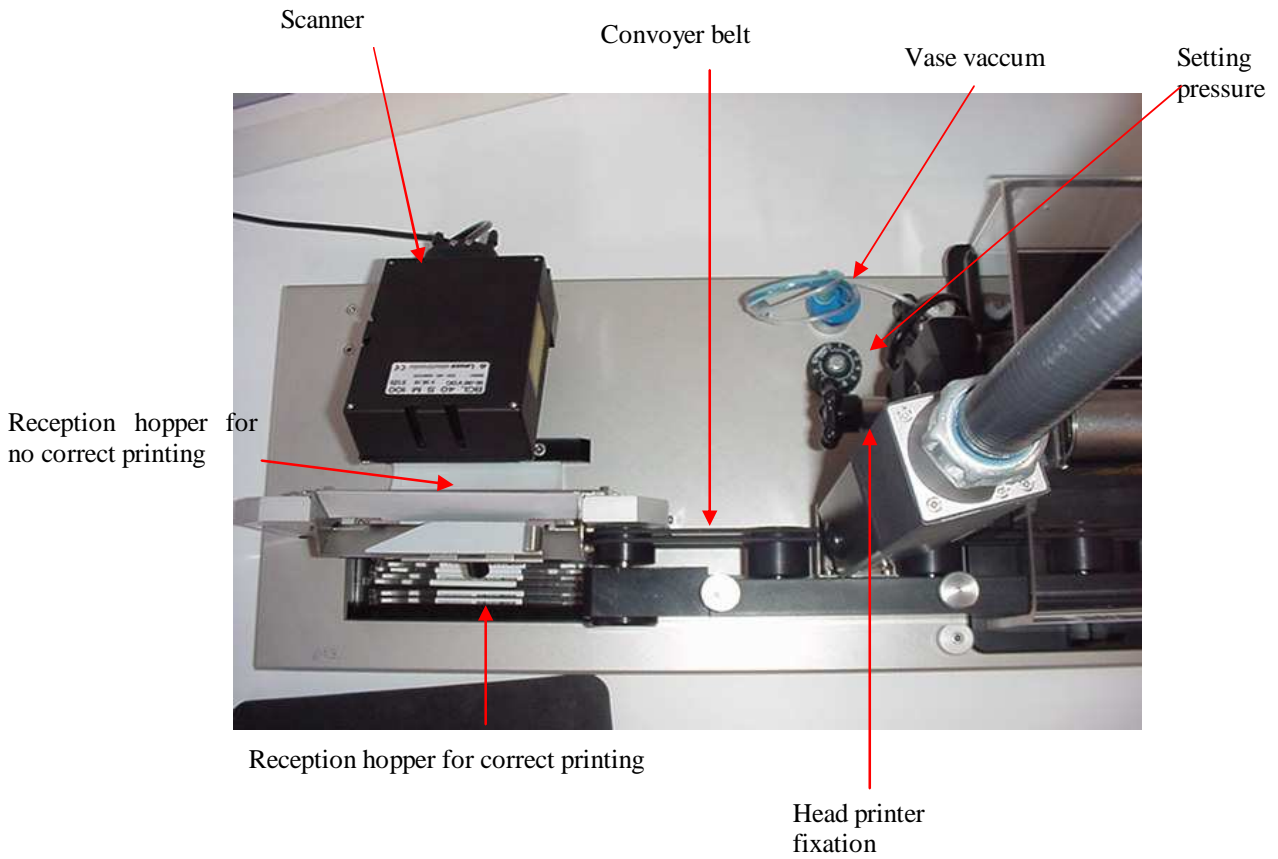
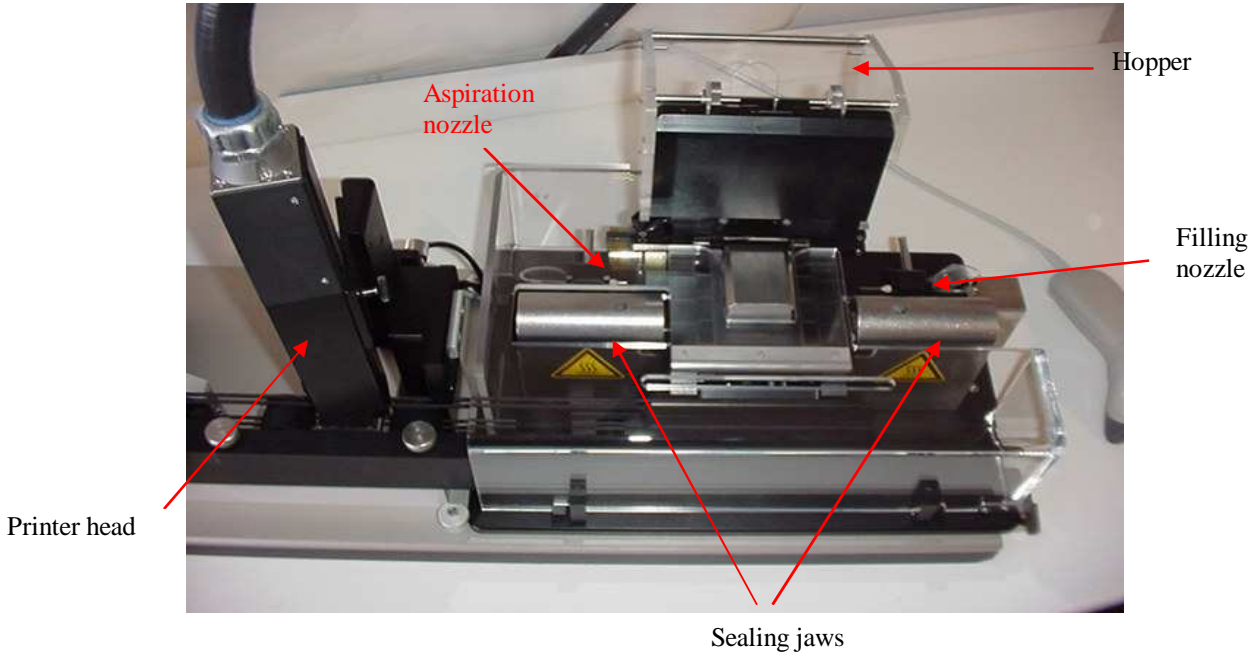


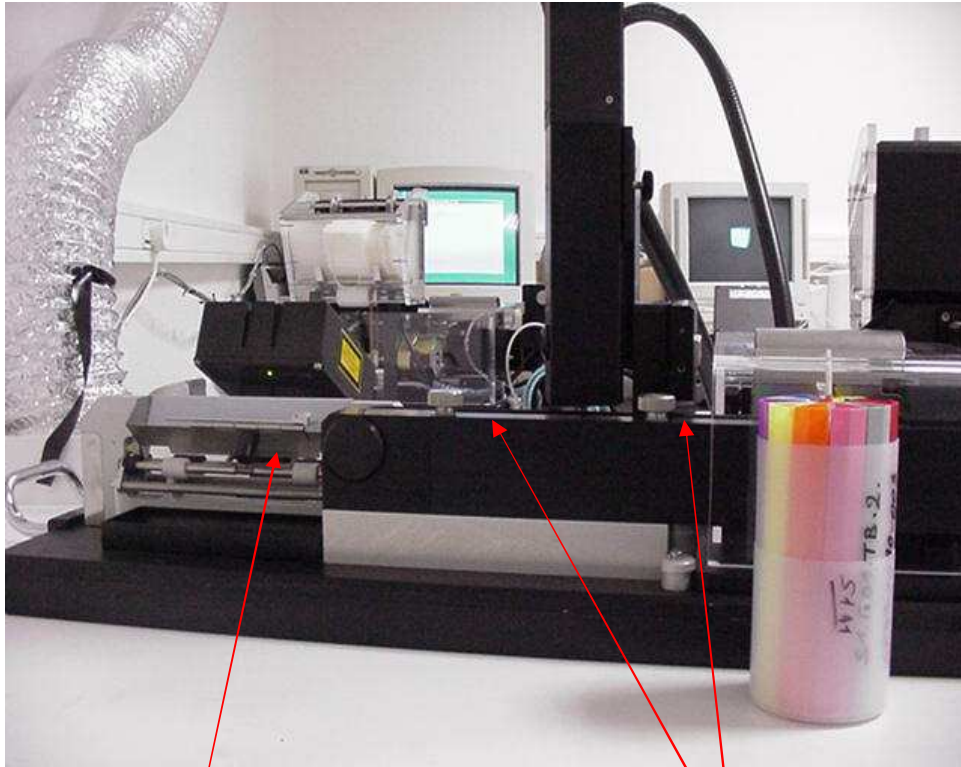
Click on “VALIDATE” to exit this window.

## **5 – TECHNICAL NOTICE**



## *Presentation of the MAPI SYSTEM*

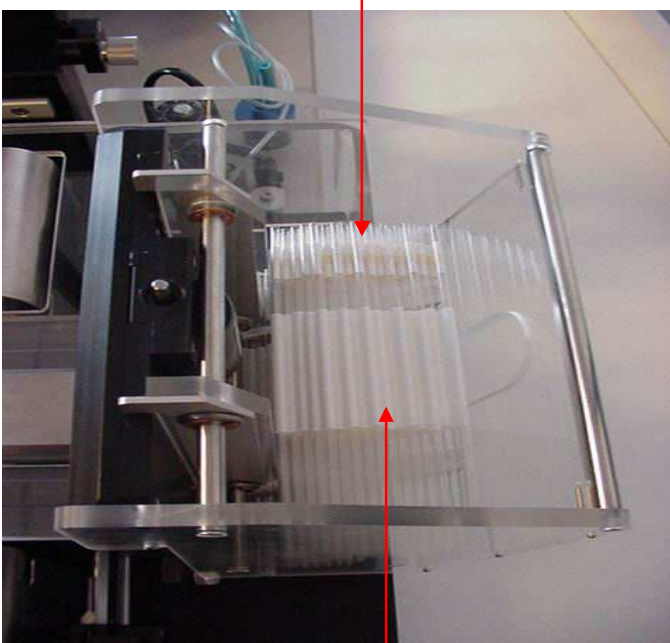




Setting for good fall of straw

Cotton plug

Fixation screws of the conveyor belt



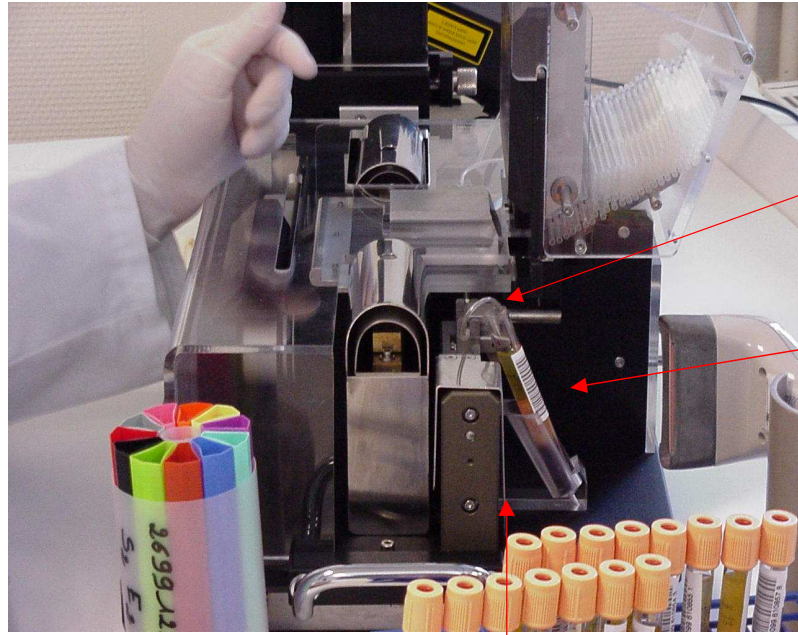
jacket

In order to avoid straw distribution problem:

In the hopper the straws must be place like show in the picture. The cotton plug is always on the left side and all the jacket must be at the right place on the straw.

If these conditions are not right it can happen some distribution problems.

The sample tube is placed like shown on the following picture. The filling nozzle is fix in the filling cursor and in the sample tube.



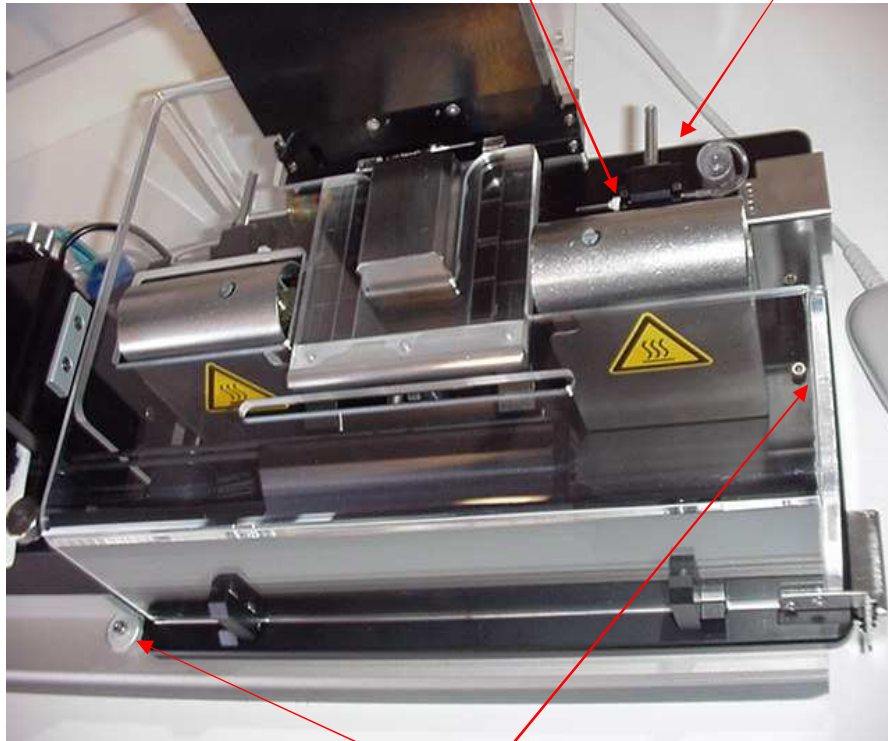
Filling nozzle

Sample tube

Filling cursor

Filling nozzle correctly fix

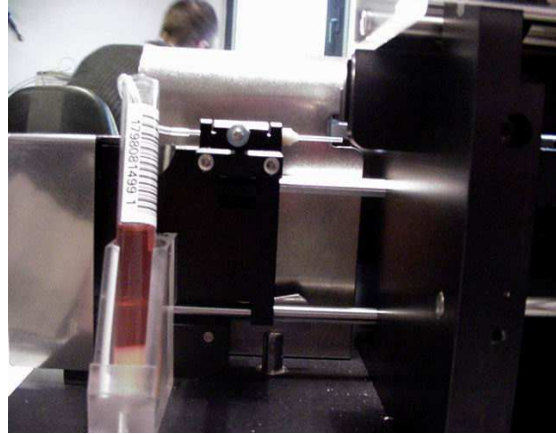
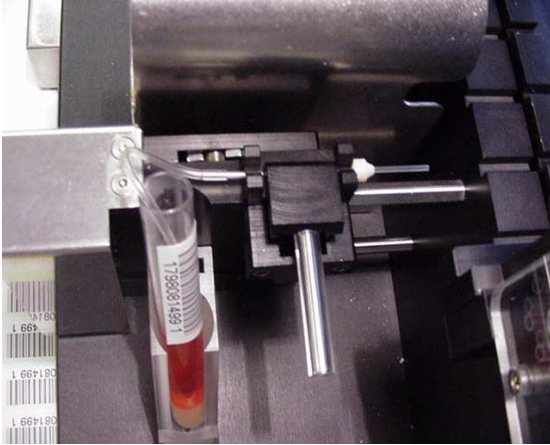
Filling clamp



Fixation screws for top part of the machine

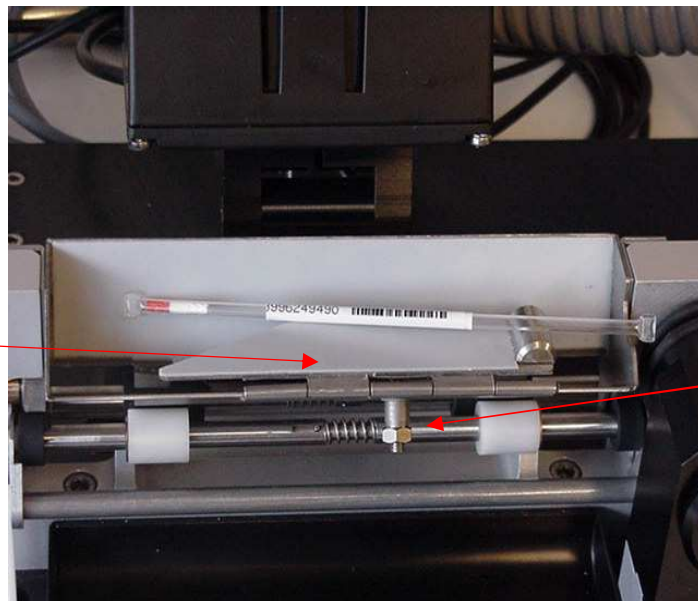


## Correct position of filling nozzle



## Setting the fall in the reception hopper.

Mobil part

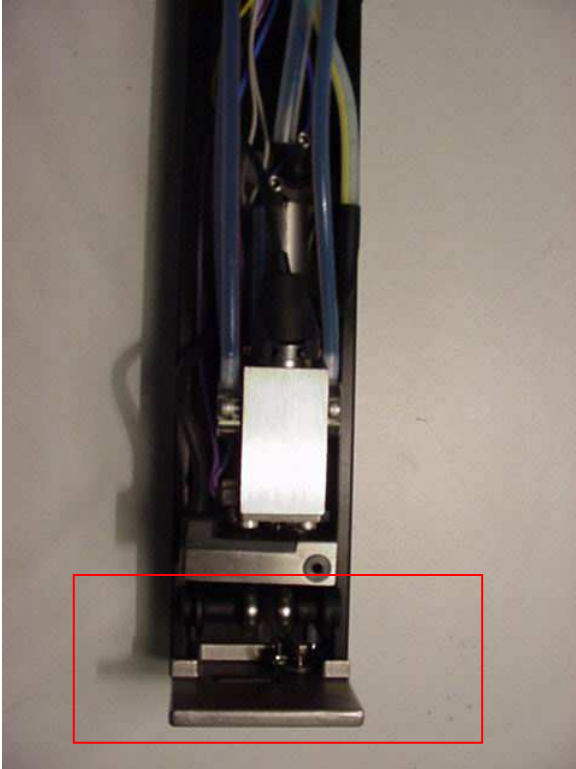


Setting

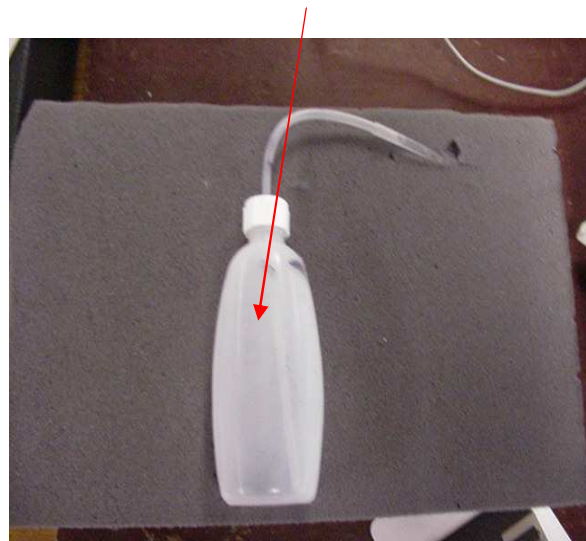
If the straw does not fall correctly in the reception hopper, set the position of the mobil part with the screw.

## CLEANING OPERATION BY WEEK

1) **Cleaning of the printer head , be executed once a week or before prolonged stop of the MAPI.**

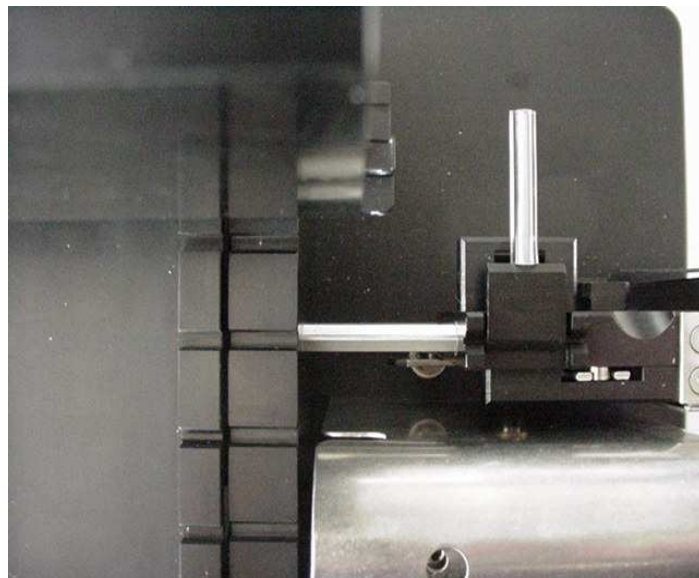


Little bottle with WASH

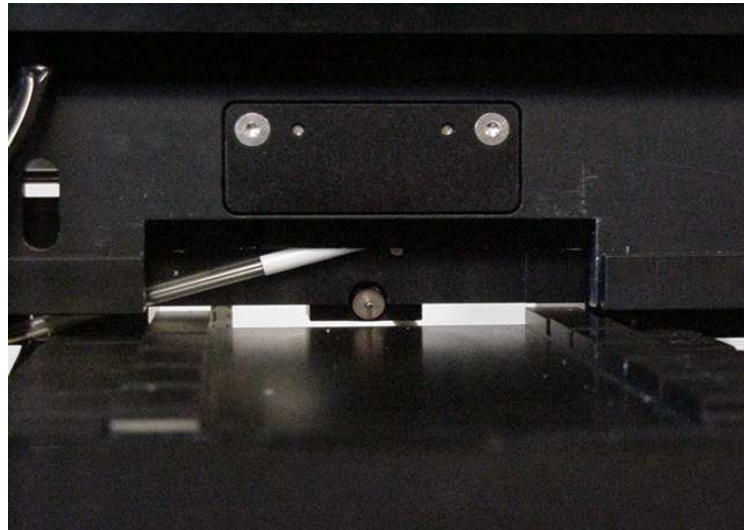


To clean the head of the printer, inject the WASH by the little bottle on the bottom part ( like show on the picture 1 ).

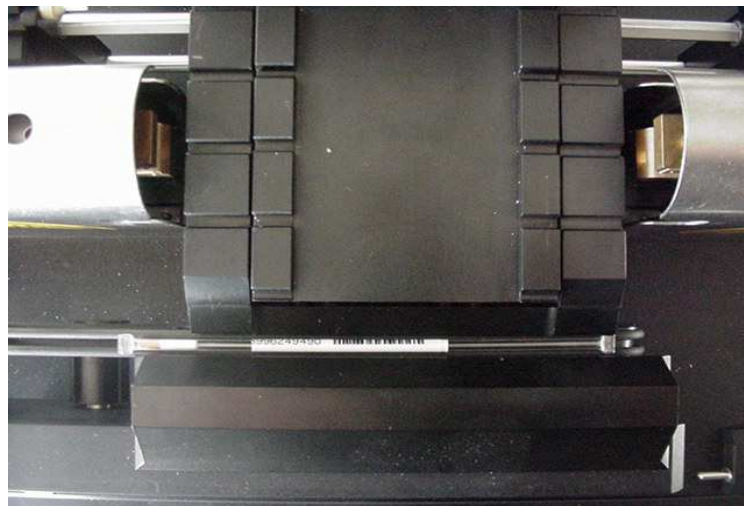
2) **Cleaning the filling part**



It's very important that the axes, the clamp and the platform on the filling side are very clean to have a correct run. To make this, using a liquid for cleaning with dilution of javel. Cleaning of these parts are to be done with a non-corrosive solution or 5% chloride solution. All parts should be dried carefully.

**DISTRIBUTION FAULT**

If the jacket is not on the central position on the straw as distribution fault like shown on the picture may happen. If the jacket is slightly moved to the left or on the right of the straw can fall but after on the platform some problems happen. Two straw can be at same time under the sealing part, ect... The straw may not distributed or straws may accumulate accidently on the platform. Stop the machine, open the cover, lift the press and remove misplaced straws. Resume filling cycle and verify number of filled, printed and stored straws.

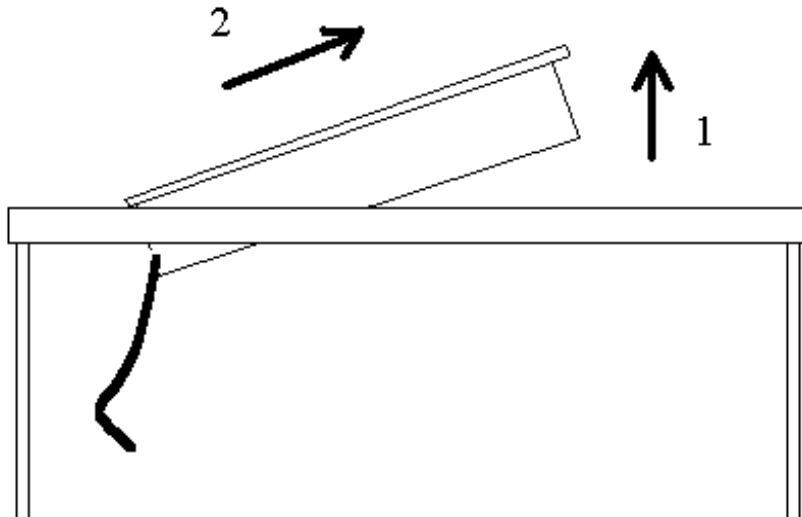
**STRAW STUCK AT THE END OF THE PLATFORM**

As a result of static electricity straws may not fall on the conveyer belt. For this problem the only solution is to push the straw during the cycle, before the next straws arrives.



Remove the machine out of the table

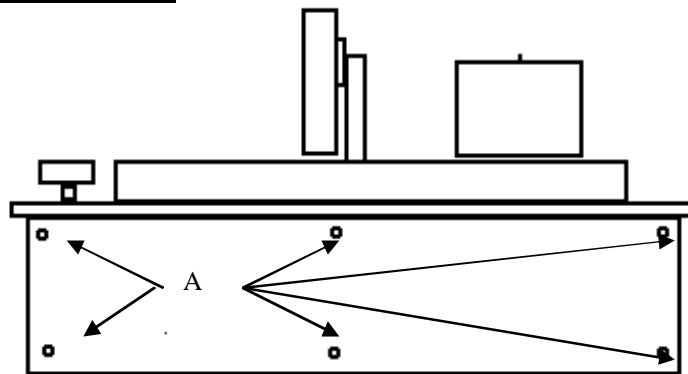
Stop the MAPI in initial end of cycle position (rack in up and advanced position) and switch off power. Remove the machine from the table.



- 1) Lift the right side of the machine.
- 2) Free the machine by lifting the left side..

Place the machine on the table, exercising care with the supply cables, the coder and the scanner. Dismantle the front, rear, left and right casings by removing the 12 screws marked A. ( On the recent model there is no front and back cover.

**Removing the protective casings**



Remove the protective casings under the machine and fastened by screws on each side of the machine.

Withdraw the print head from its sheath, remove the hopper containing the straws and the tube carrier. Depending on the operation to be carried out, tip the machine towards the rear in order to gain access to the mechanical compartment.

## AFTER SALES AND INTERVENTIONS

### 1 STRAW SUPPLY HOPPER

- 1-1 Hopper motor
- 1-2 Roller belt
- 1-3 Straw electro chute
- 1-4 Straw press

### 2 UPPER BLOCK

- 2-1 Upper and lower jaw
- 2-2 Teflon sheet
- 2-3 Air-gap adjustment
- 2-4 Heating cartridge
- 2-5 Thermocouple sensor

### 3 STRAW DRIVE

- 3-1 Drive belt (O-rings, qty 2)
- 3-2 Roller motorisation (roller, pulley, bearings)
- 3-3 Band motor belt
- 3-4 Set of 5 rollers (Ø33)
- 3-5 Set of 2 roller tighteners (Ø18)
- 3-5 Band motor
- 3-6 Encoder

### 4 STRAW RECEPTION HOPPER

- 4-1 Straw drive axis
- 4-2 Straw rotation belt

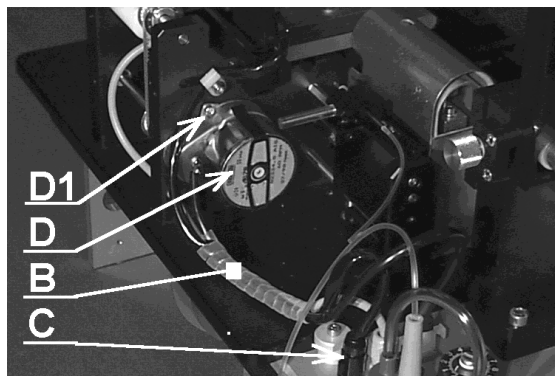
### 5 OTHER ELECTROMECHANICAL COMPONENTS

- 5-1 Cam switch
- 5-2 Cover safety switch
- 5-3 Supply hopper fibre
- 5-4 Straw printing synchro fibre
- 5-6 Ampli detection
- 5-7 Cam motor
- 5-8 Cam motor belt
- 5-9 Vacuum pump
- 5-10 Vacuum + filter
- 5-11 Plexiglass case

## 1 STRAW SUPPLY HOPPER

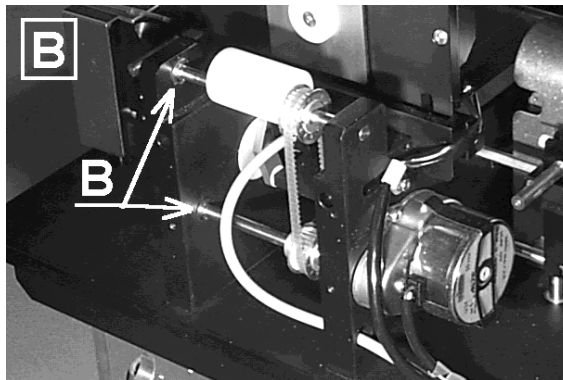
### 1-1 Hopper motor

- A) Remove the rear plexiglass case
- B) Remove the spiral cladding
- C) Disconnect the motor
- D) Remove the screw (D1) of the hopper motor
- E) Repositioning: direct the slot of the axis in relation with the pin of the motor axis; engage the motor, making sure that the pin does not rest on the boring (this would block the motor)
- F) Put back the other parts
- G) Switch on the MAPI and check that the motor is running properly



### 1-2 Roller motorisation belt:

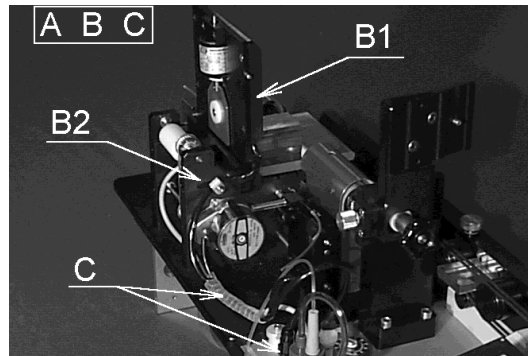
- A) Remove the rear plexiglass case
- B) Release the 2 clips using a screwdriver



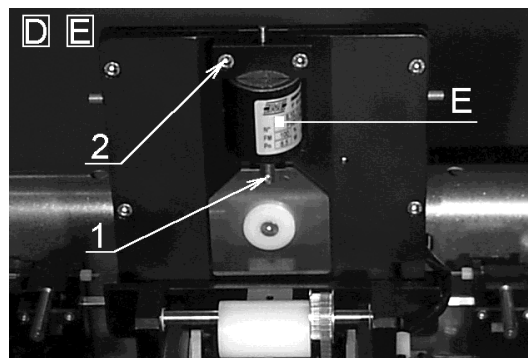
- C) Slide the pulley axis and roller towards the left
- D) Extract the belt and replace it, taking care not to bend or pinch it

## 1-3 Straw electrochute:

- A) Remove the rear plexiglass case.
- B) Remove the screw case B1 and the collar B2
- C) Withdraw the spiral cladding and disconnect the electromagnet

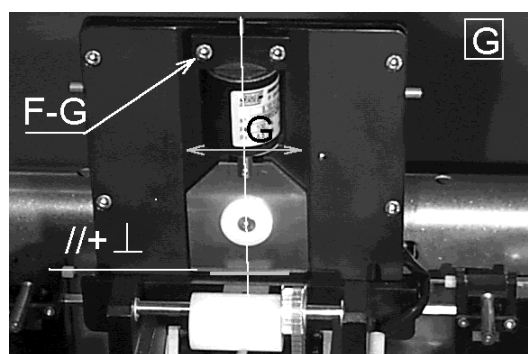


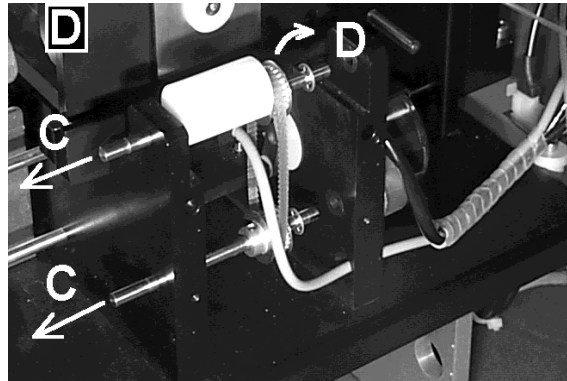
- D) Remove the counting pallet / electromagnetic core liaison screw 1
- E) Remove the two electromagnetic fastening screws. Withdraw the electromagnet and its core



F) Put back the electromagnet and reposition the 2 fastening screws, without tightening them, and then the counting pallet liaison screw

G) Check the horizontality and parallelism of the pallet with the pallet retainer, making use of the electromagnet support. Tighten the two fastening screws





E) Put back the other parts in the opposite direction to when removing them

H) Make sure that the lower face of the pallet is at a tangent to the pallet retainer. If this is not the case, adjust the height using the hub (screw H1)

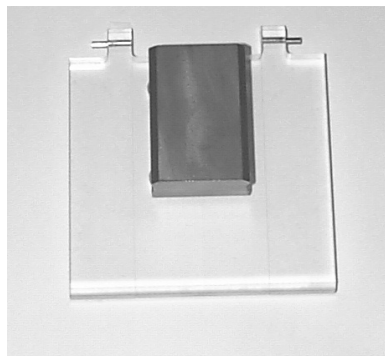
Activate the electromagnet manually by its rod and then let it drop; the sound should be dull and not metallic. if not, readjust the pallet

I) Take a full hopper, activate the electromagnet manually and let it drop. The straws fall one by one

J) Put back the other parts

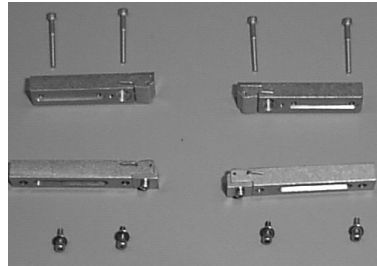
**Note: Brake the screws with LOCTITE 243 thread brake**

## 1-4 Straw press



## 2 UPPER BLOCK

### 2-1 Removing-replacing lower and upper jaws

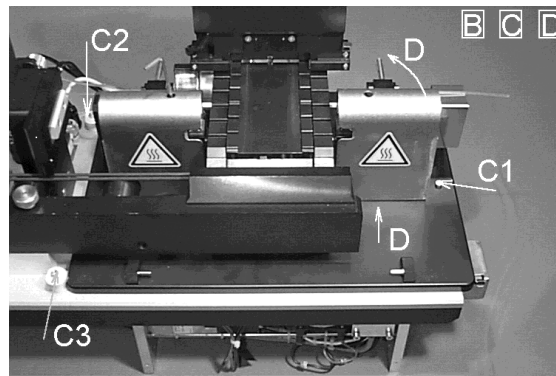


A) Stop the MAPI in the up and advanced position: stop by cam switch. (This stop position is necessary in order to put back the upper block.)

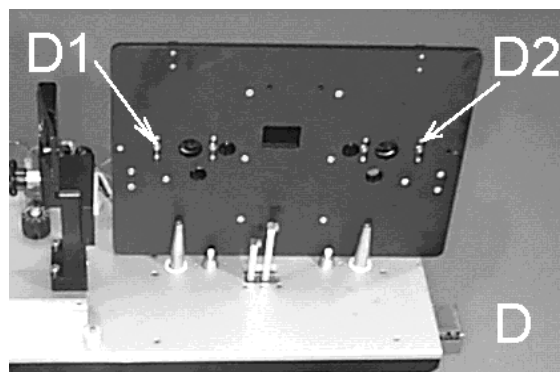
B) Remove the 2 plexiglass cases and the band rail unit

C) Remove the fastening screw C1

- free the two stops C2 and C3



D) Extract the upper block by lifting it vertically and swivelling it 90° backwards on the main plate. (Take care not to bend the optic fibre.)



- Remove the 2 jaw protective cases D1 and D2. (4+4 screws)

E) Put the upper block back into place (pay attention to the position of the levers – see point A)

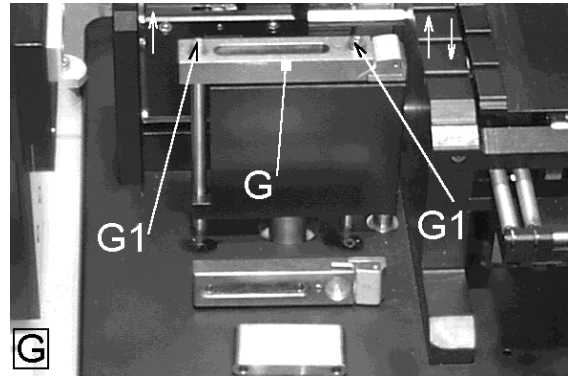
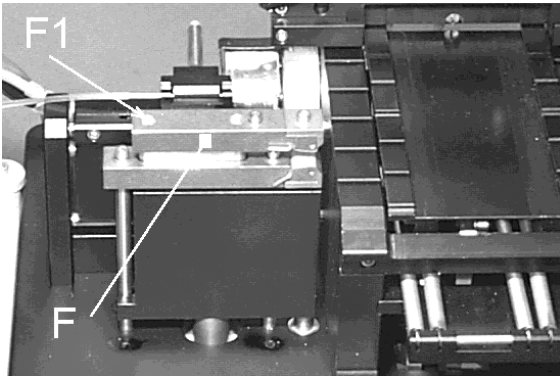
Compress the plug and trolley springs

Reposition the two stops and the fastening screw without tightening them

F) Remove the upper jaw screw F1



G) Remove the 2 fastening screws G1; extract the lower jaw by successive actions on each shank, maintaining the piece on the spring side so as to avoid butting



Depending on the case, change the jaws or the teflon sheets: see §2.2

H) Put back the lower jaw:

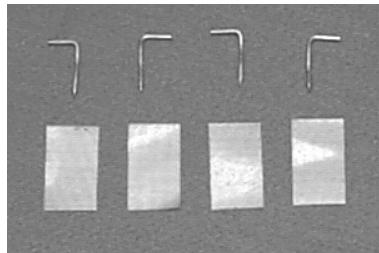
- 1- hold the piece in order to compress the spring
- 2- position the screw on the spring side
- 3- position the opposite screw
- 4- tighten the 2 screws

I) Put back the other pieces in the opposite sense

J) Reposition the upper block, making sure that the rack is in the up and advanced position and that the two roller tappets are properly orientated (see point A)

Proceed to adjust the air-gaps - see §2.3

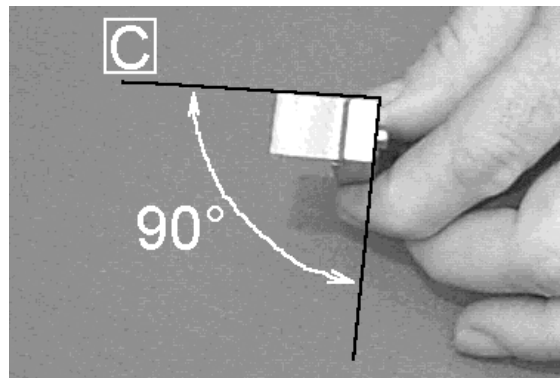
## 2-2 Changing the teflon sheets



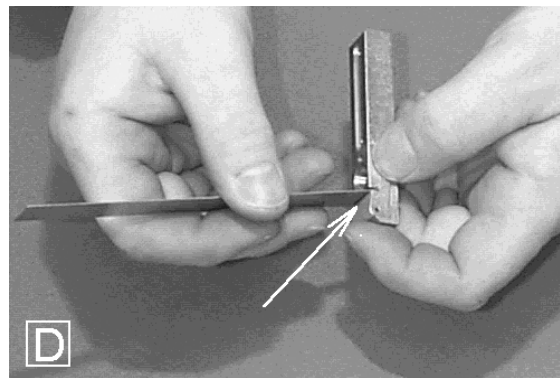
A) Remove the upper and lower jaws

B) Remove the retaining pin B1; unscrew the fastening corner B2; remove the sheet B3

C) Slide a new sheet under the fastening corner, resting against the screw; tighten the corner, making sure that the sheet is perpendicular to the jaw

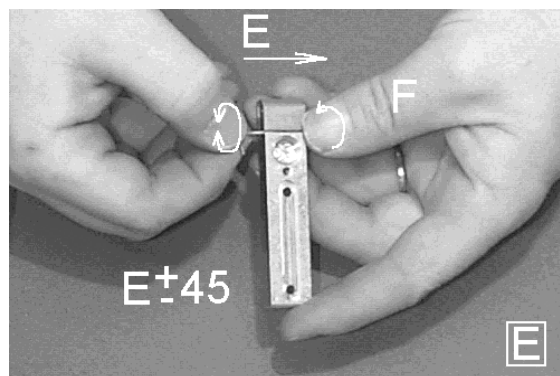


D) Fold the sheet on the jaw and insert it in the slot using the adjusting wedge (thickness 0.35)



E) Hold the sheet tightly and slide the pin by alternate rotations, angles  $\pm 45^\circ$ , making sure that the sheet is aligned with the jaw

(Mount the pins on the user side, Right and Left symmetrical pieces)



F) Turn the needle: max. 2 revs **sense 1** in order to keep the sheet tight: max. detachment of the jaw approx 0.3

G) Proceed in the same way for each jaw; put back all the pieces

H) Readjust the air-gap

## 2-3 Air-gap adjustment

A) Switch on the MAPI and wait about 15 minutes until the jaw temperature is stabilised (156°)

B) Switch to manual mode (electronic box)

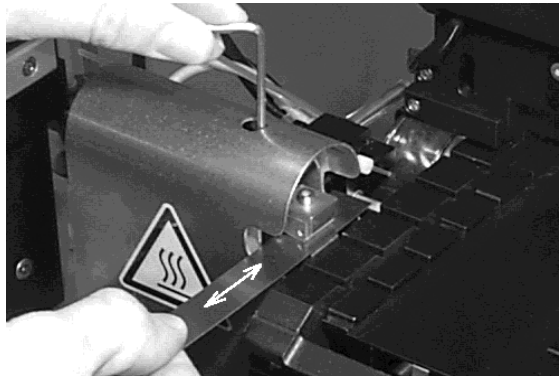
Open the jaws, action on “manual cycle” button

C) Slide the adjusting wedge (thickness 0.35)

-Activate the button mentioned above until the jaws are completely closed

D) Adjust the stop screw until the adjusting wedge is sliding smoothly

Remove the wedge

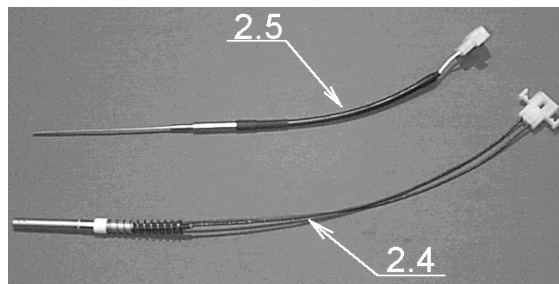


E) Proceed in the same way for the second jaw

***NOTE:*** Depending on necessity, rebrake the adjustment screws with Loctite 270

## 2-4 Removing-replacing the heating cartridge

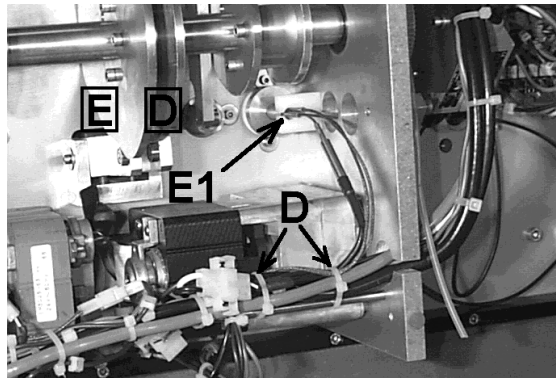
## 2-5 Removing-replacing the thermocouple sensor



A) Stop the MAPI rack in the up and advance position

-Disconnect it from the network

B) Extract it from its table. Remove the front and right side cases and the backplate

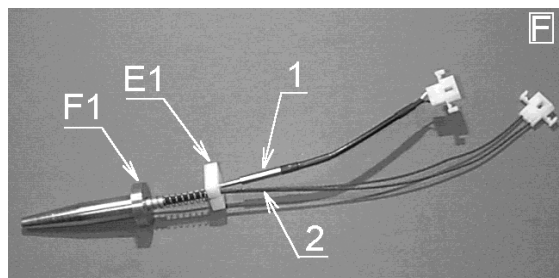


C) Tip the machine backwards

D) Unshrink the heating element and sensor wires, and disconnect them

E) Remove the 2 delrin support fastening screws E1, and then the spark plug, heating element and sensor unit

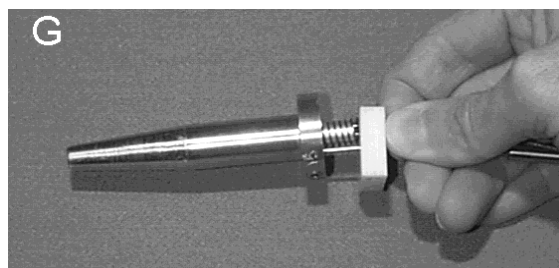
F) Depending on the case



1-Change the sensor: screw F1. Tighten moderately

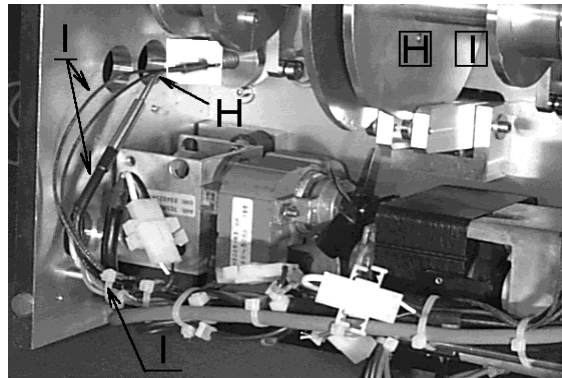
Before repositioning, check its straightness and rectify if necessary: the sensor should slide easily in the delrin support E1

2-Change the fitted heating element (cartridge + ring + tube + spring, etc.)



G) Repositioning the spark plug unit:

Compress the spring using the delrin support and holding it compressed with two fingers; slide the spark plug into its housing, still holding the spring compressed, and put the fastening screws in position

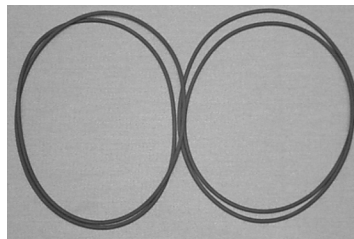


H) Slightly curve the sensor, minimum 5 mm after the delrin support. (Rack in upper and advanced position)

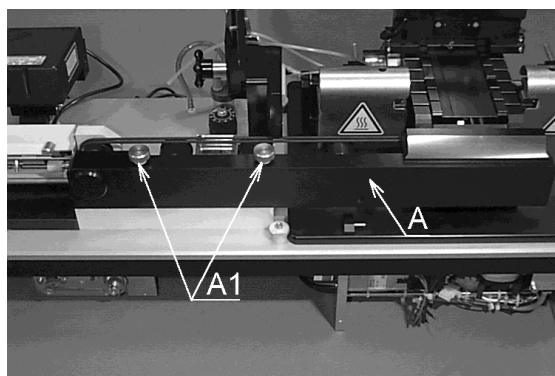
I) Reconnect and shrink the cables, taking care to create sufficient loops for plug clearance without restricting the cables

### 3 STRAW DRIVE

#### 3-1 Changing the drive belts (O rings)



A) Remove the band rail: screw A1



B) Free the worn belts

C) Position the new belts on the motorisation roller

D) Place the band rail ready, engage the belts on the last roller and then on the others.

Reposition the rail in its groove, passing the bands on either side of the rack springs. Adjust the positioning of the bands on each roller and roller-tightener

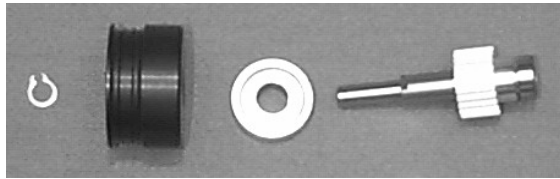
E) Fix the band rail

F) Turn the return roller manually and check that the belts are moving properly

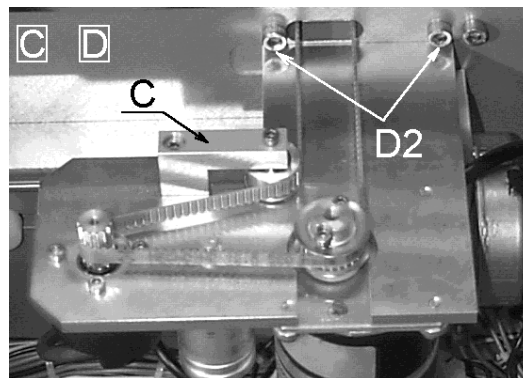
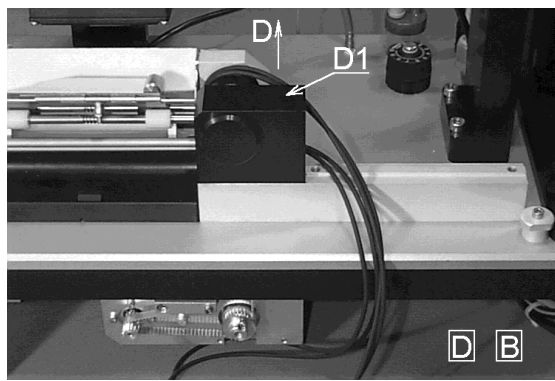




## 3-2 Removing-repositioning the motorisation roller

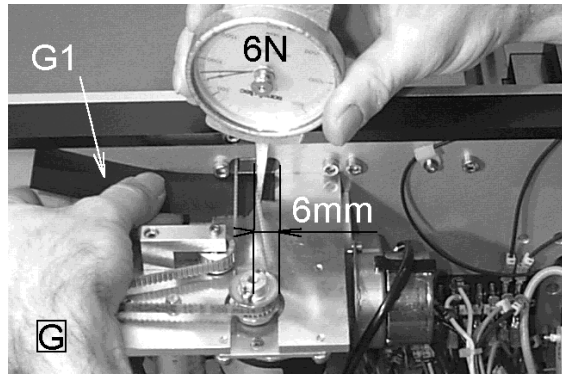


- A) Switch off the MAPI and withdraw it from its table. Remove the front case
- B) Remove the band rail and the O ring belts (see § 3.1)
- C) Slacken the transmission belt and clear it from the pulleys
- D) Remove the support D1: screw D2



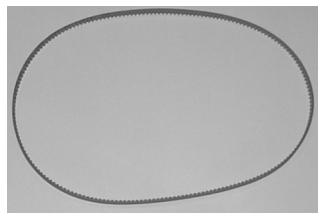
- E) Remove the spring retaining ring E1 and the roller, the lid E2: screw E3 , the spring retaining ring E3 , then axis of pulley and bearings. See diagram....
- F) Put back the pieces in the opposite order to when removing them
- G) Tighten the belt  $F = 6N$  for a deflection 6mm. See photo G. Use a calibre 41.





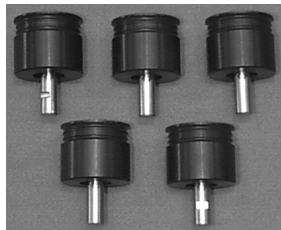
H) Put back the O ring belts and the band rail. See § 3.1

### 3-3 Removing-repositioning the motorisation belt



Proceed as with paragraph 3.1 and 3.2 except for change of motorisation roller

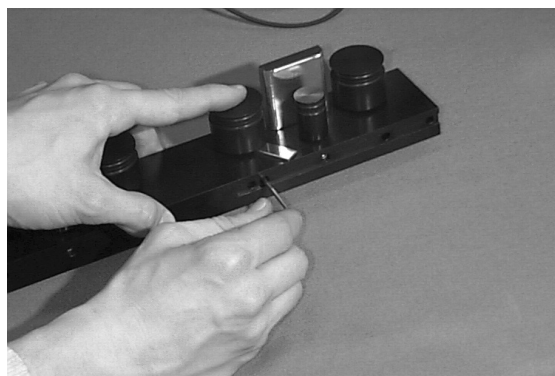
### 3-4 Set of 5 rollers



A) Remove the band rail. See § 3.1

B) Remove all the rollers (fitted), screw B1

C) Reposition the new rollers, sustaining against a wedge thickness 1 (check the orientation of the axis plane)



D) Reposition the band rail. See § 3.1

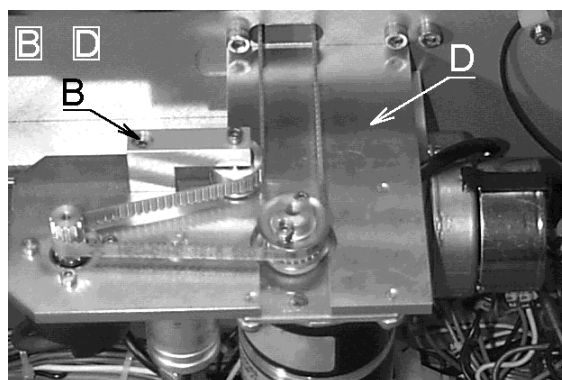
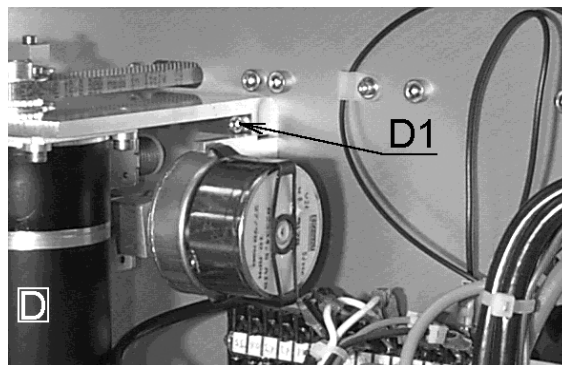
### 3-5 Removing-repositioning the set of 2 roller tighteners

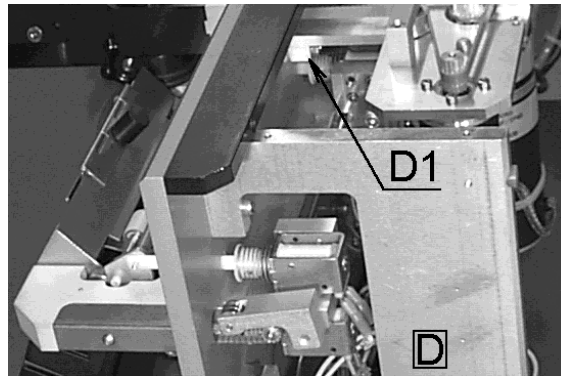


Same procedure as 3.4

### 3-6 Removing-repositioning the band motor

- A) Switch off the MAPI and withdraw it from its table. Remove the front case and the backplate
- B) Slacken the belt
- C) Disconnect the motor and the encoder
- D) Remove the motor support/motor/encoder unit: screw D1





E) Remove the motor, its pulley and the split ring

F) Put back the pieces in the opposite sense. Position the split ring sustained against a wedge, thickness 1

G) Tighten the belt (see paragraph 3.2, G)

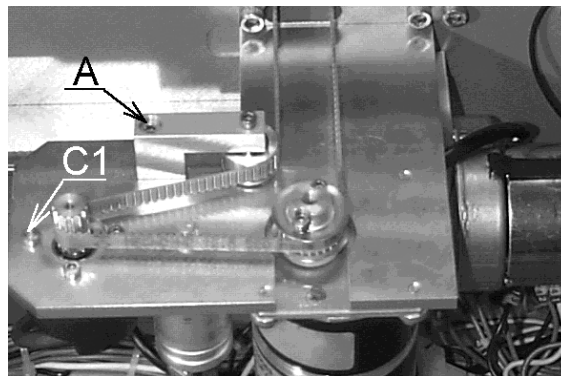
### 3-7 Removing-repositioning the encoder

Same procedure as § 3.2, but removal of the motor support/motor unit is not necessary

A) Slacken the belt

B) Disconnect the encoder

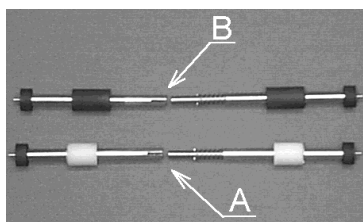
C) Change the encoder (screw C1)



E) Tighten the belt again (see § 3.2 G)

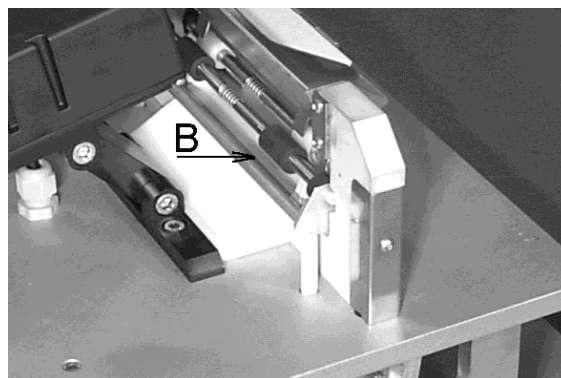
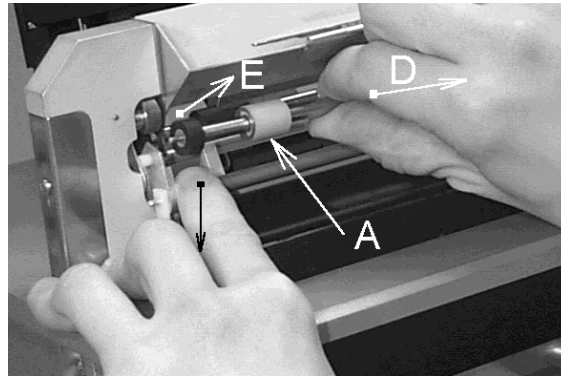
## 4 RECEPTION HOPPER

### 4-1 Straw rotation axis



Removing:

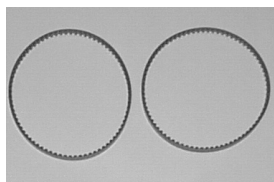
- A) Front roller unit
- B) Rear roller unit
- C) Operate the lower bar to retract the small connecting rods
- D) Compress the roller spring
- E) Clear the end of the axis from its bearing – Withdraw the complete roller axis



Repositioning:

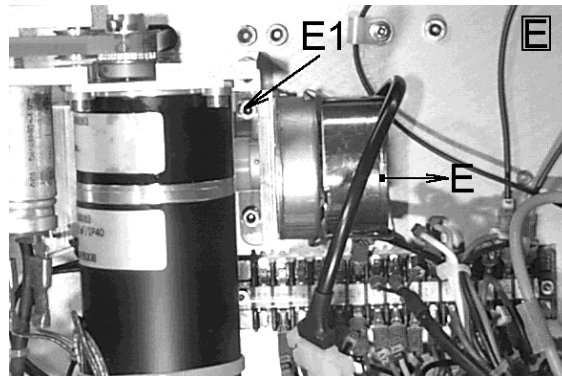
- F) Assemble the 2 half-axes and the spring
- G) Reposition the axis in the opposite direction to when removing it

**4-2 Straw rotation belt**

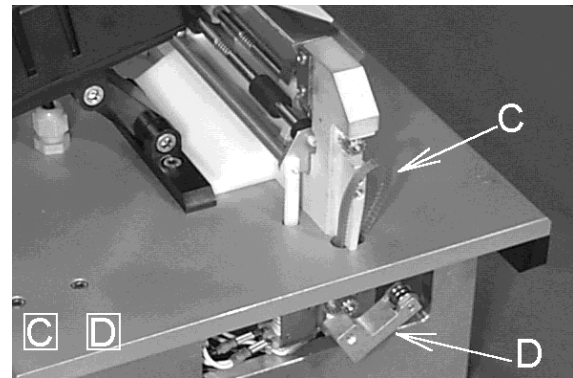
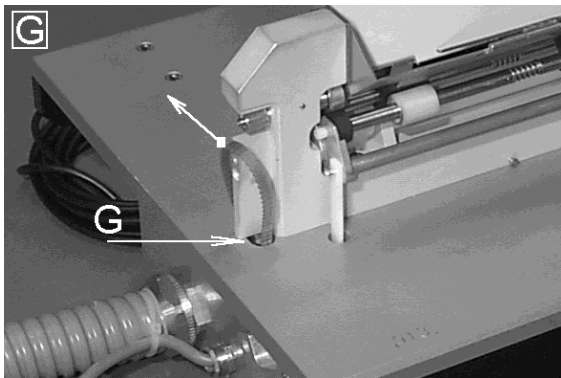


- A) Switch off the MAPI and withdraw it from the table
- B) Remove the left side front case and the backplate
- C) Remove the 2 right and left cases of the hopper
- D) Slacken the 2 belts

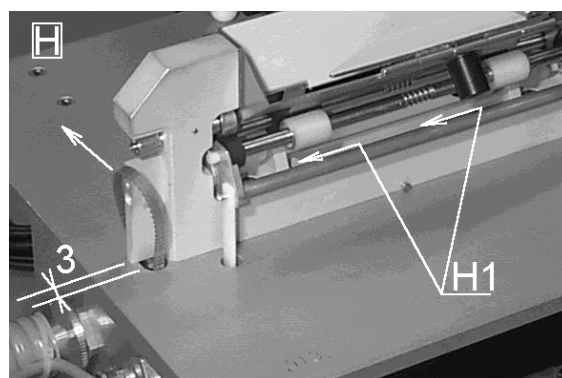
E) Tilt the machine backwards, remove the motor and its support: screw E1



F) Free the 2 belts from the notched pulleys  
Depending on the case:



G) If the machine has a slot for extracting the belt, remove the belts by the top  
H) If not, loosen the 2 hopper fastening screws H1 until the belts can pass through



I) Change the 2 belts

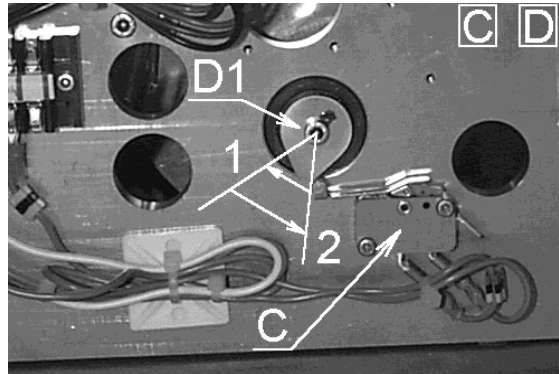
J) Reposition the pieces in the opposite sense to when removing them. Check the orientation of the 2 pulley planes and the attachment when repositioning the motor



**5 OTHER ELECTROMECHANICAL COMPONENTS**

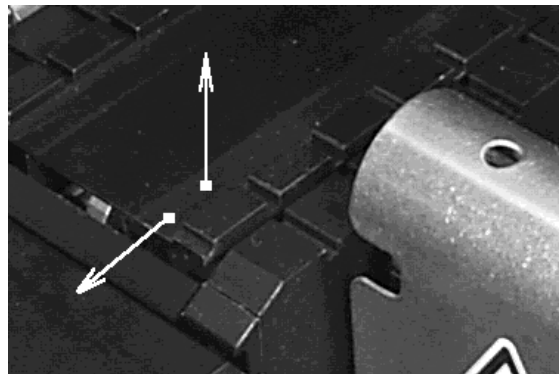
**5-1 Stop cam switch**

- A) Stop the rack MAPI in the upper and advanced position (end of cycle or using the manual cycle button). Switch off the MAPI
- B) Extract the MAPI from the table, remove the front and right side case
- C) Replace the switch C



**Adjusting the cam**

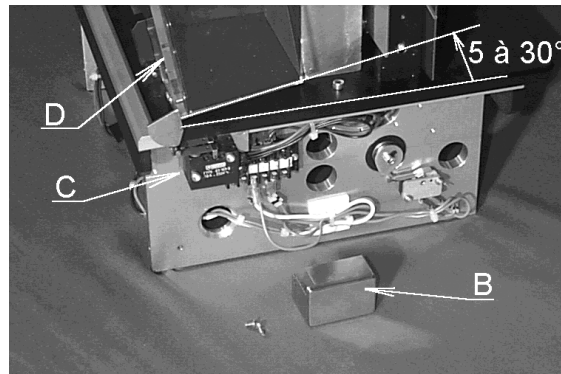
- D) Slightly loosen the cam adjustment screw D1. Turn the cam: direction 1 until the switch is cleared; return in the opposite direction 2 (anti-clockwise) until engagement of the switch. Tighten the screw D1. Carry out a few cycles in automatic mode; check that the rack stop position is correct (top and advanced). Modify the cam if necessary.



**NOTE:** The cam shaft may be operated manually by the motor pulley, by putting the motor brake out of gear.

**5-2 Cover safety switch**

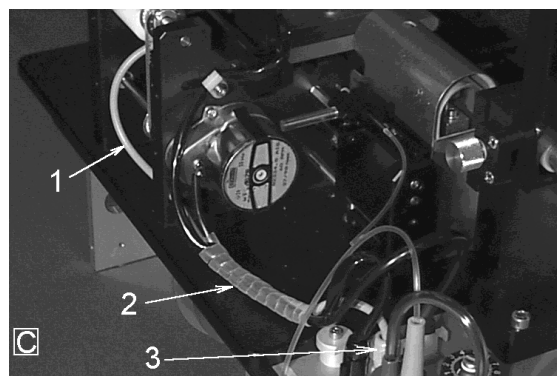
- A) Switch off the MAPI and extract it from the table
- B) Remove the switch case
- C) Change the cover opening safety switch
- D) Check the engagement point at the opening of the cover 5° to 30°. If necessary, modify the adjustment of the right hinge (see § II.5.10)



- E) Carry out a few cycles in automatic mode; check the MAPI stop at the opening of the cover

**5-3 Supply hopper fibre**

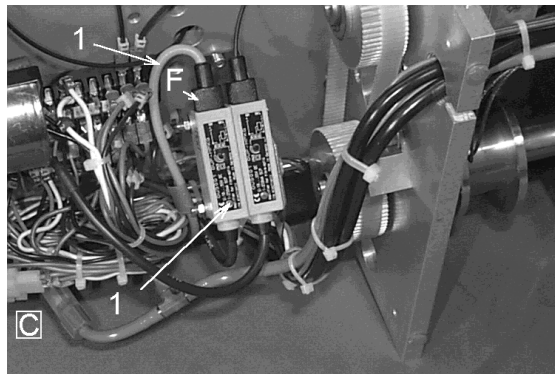
- A) Stop the MAPI, with the rack in the upper advanced position. Switch off the MAPI and extract it from the table
- B) Reposition the front case, the backplate and the rear plexiglass case
- C) Remove the spiral cladding 2; loosen the gland 3



- D) Loosen the fastening screw 4 of the endpiece; withdraw the fibre 1 from its housing
- E) Tilt the machine backwards



F) Disconnect the fibre from its cell and remove it by sliding it in its gland



G) Reposition a new fibre without bending it (risk of damage)

H) Tighten moderately the fastening screw of the endpiece, the extremity of the fibre against a wedge (at a tangent to the hopper support)

I) Check the height of the fibre, modifying it if necessary: place a straw without sheath on the rack, aim by transparency; it must be centred on the fibre. Adjust the support accordingly

J) Check the cell detection threshold: red LED lit up in the presence of a straw (detection on sheath). Adjust the threshold if necessary (see § 5.5)

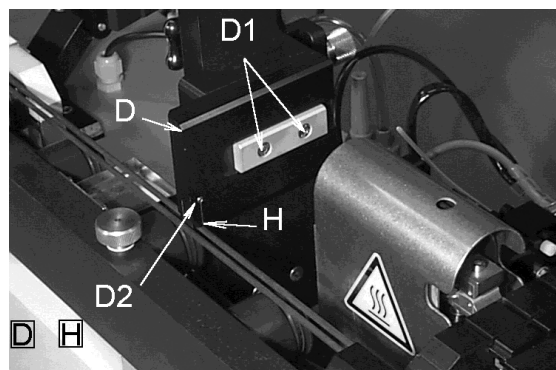
K) Reposition the other pieces

#### 5-4 Synchro-printing fibre

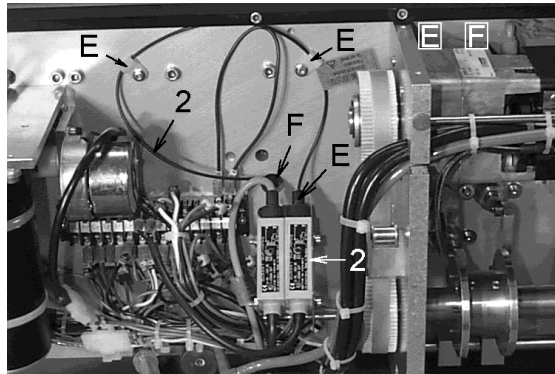
A) Switch off the MAPI. Remove the inkjet head and withdraw it from the table

B) Remove the front case and the backplate

C) Tilt the machine backwards



D) Remove the support: screw D1. Loosen the endpiece fastening screw D2 and remove the fibre



E) Disconnect the fibre 2 from its cell and remove the 2 collars

F) Slide in a new fibre via the platine passage hole until it is resting on its connector

G) Slide the endpiece into its housing sustained against a wedge; tighten the fastening screw moderately

H) Put back the support D, checking the passage of the fibre and taking care not to pinch or bend it. Centre the fibre visually on the interval of the two belts

I) Reconnect the fibre and put back the 2 collars



J) Switch on the MAPI again; place a horizontal weld straw on the belts; translate it using the right roller under the fibre. Detection must be carried out via the weld: illumination of the LED. If necessary check the threshold adjustment (see § 5.5)

K) Place the vertical weld straw (or a measuring rod with lug diameter 1). Bring the weld or the lug under the fibre. Translate the support until detection takes place

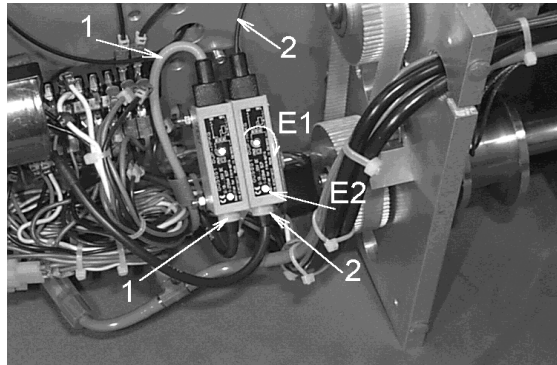
L) Put back the other pieces

## 5-5 Optical fibre ampli

- A) Switch off the MAPI and extract it from its table
- B) Remove the front case and the backplate

Depending on the case, replace:

- C) Fibre ampli 1: supply hopper
- D) Fibre ampli 2: synchro printing



- E) Detection threshold adjustment (potentiometer E1)
  - sense – reduction of sensitivity
  - sense + increase of sensitivity

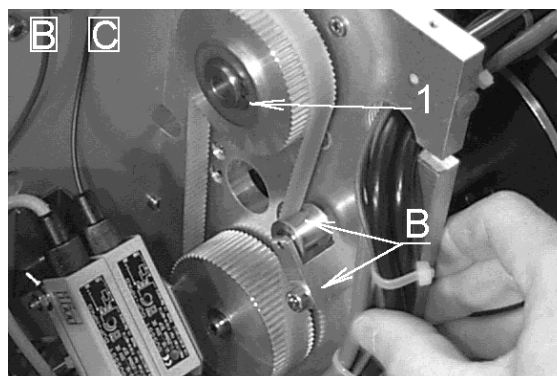
Adjust the potentiometer in the + sense until the LED (E2) lights up: detection threshold. Then increase sensitivity, max. 3.5 to 4 rev. of the potentiometer

### Threshold adjustment:

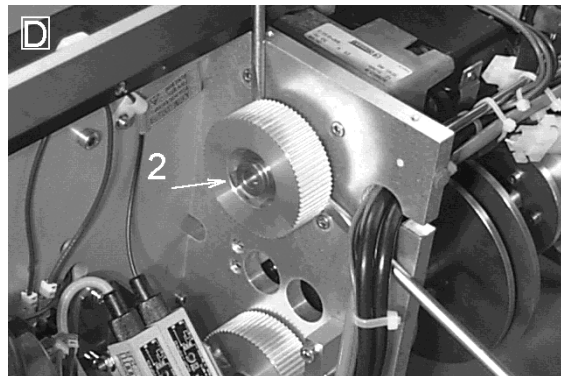
- Supply hopper fibre: detection on straw sheath, rack in upper and advanced position (see § 5.3)
- Synchro-printing fibre: detection threshold on horizontal weld

## 5-6 Cam motor

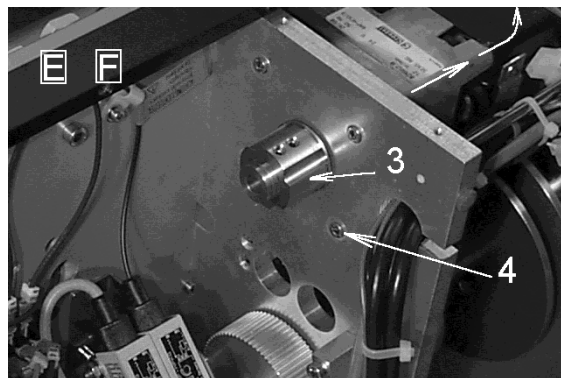
- A) Switch off the MAPI and remove it from its table. Remove the stainless steel front case and the backplates
- B) Loosen the belt and remove it
- C) Remove the retaining ring 1



D) Remove the pulley 2, at the start, using 2 screwdrivers (taking care to rest against the pulley and not the stainless steel hub). Finish manually



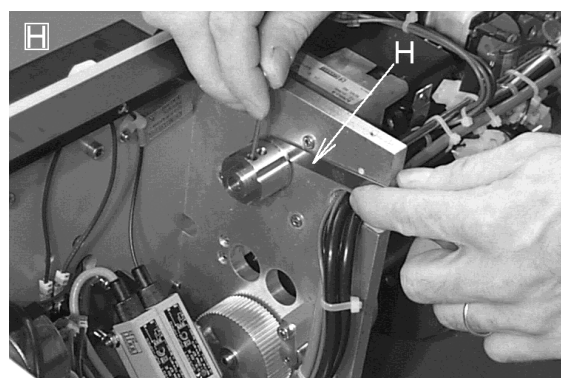
E) Remove the stainless steel hub 3 and then the 4 motor fastening screws 4



F) Tilt the motor in order to extract it. Disconnect it at the Faston clips

G) Reposition the new motor

H) Reposition the stainless steel hub: tighten against wedge, thickness 1

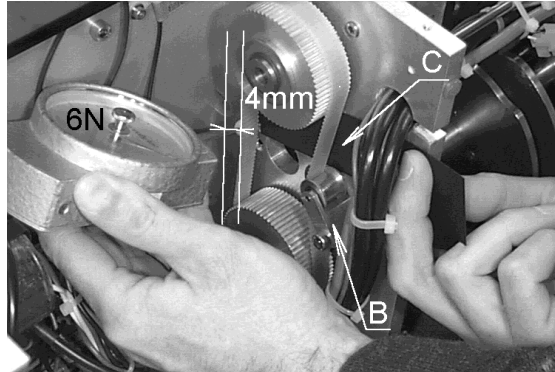


I) Reposition the other pieces in the opposite direction to when removing them

J) Check the belt tension (see § 5.7)

## 5-7 Cam motor belt

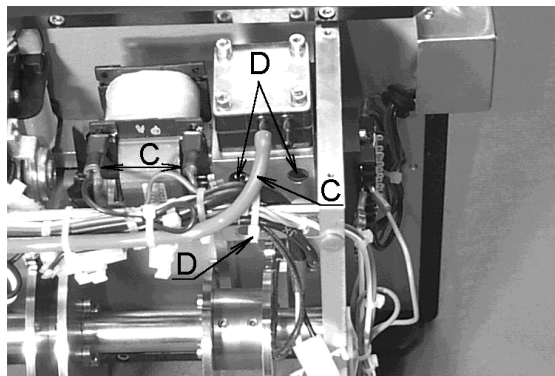
A) Slacken, remove and replace the belt



B) Tighten the belt using the tightener B for a deflection = 4 mm under a strength of 6 N – check with spring balance and calibre C

## 5-8 Vacuum pump

- A) Switch off the MAPI and remove it from its table
- B) Remove the front case and the right backplate
- C) Tilt the machine backwards and disconnect the motor (Faston clips), the suction tube



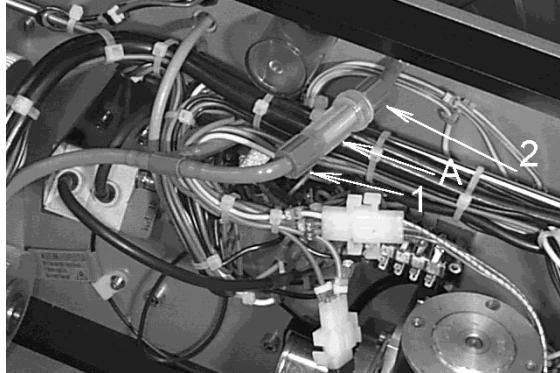
D) Remove/reposition the motor-pump unit: screw D



## **5-9 Vacuum and filter**

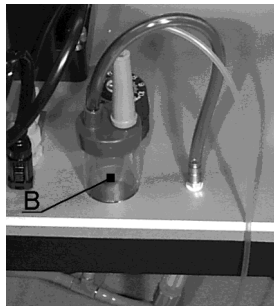
### A) Filter

- 1) Remove the machine from its table



- 2) Remove the rear case
- 3) Change the filter: nut 1 and 2

### B) Vacuum



## **5-10 Plexiglass case set**

### A) Rear case

### B) Front case

- 1) Insert a washer Mu3 at the right hinge
- 2) Approach the right hinge: leave about 1 mm of play in relation to the platine
- 3) Adjust the height of the left hinge so that the front case shuts on the rear case without a gap and without constraint; provide a minimum play with the principal platine
- 4) Adjust the height of the right hinge so as to obtain minimum play with the platine without constraint  
Check that the cover safety switch is functioning correctly (see § II.5.2)



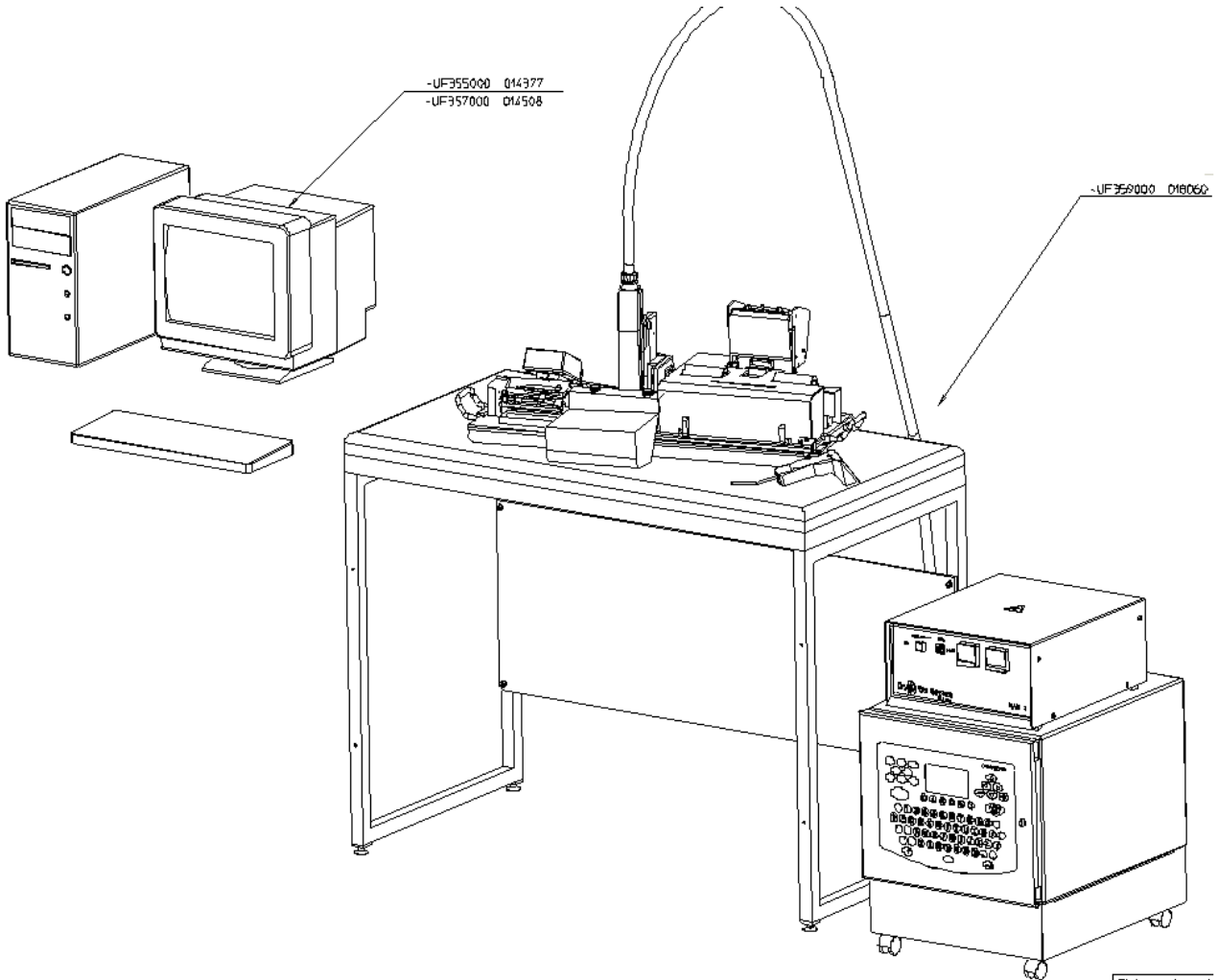
## 5 – PLANS

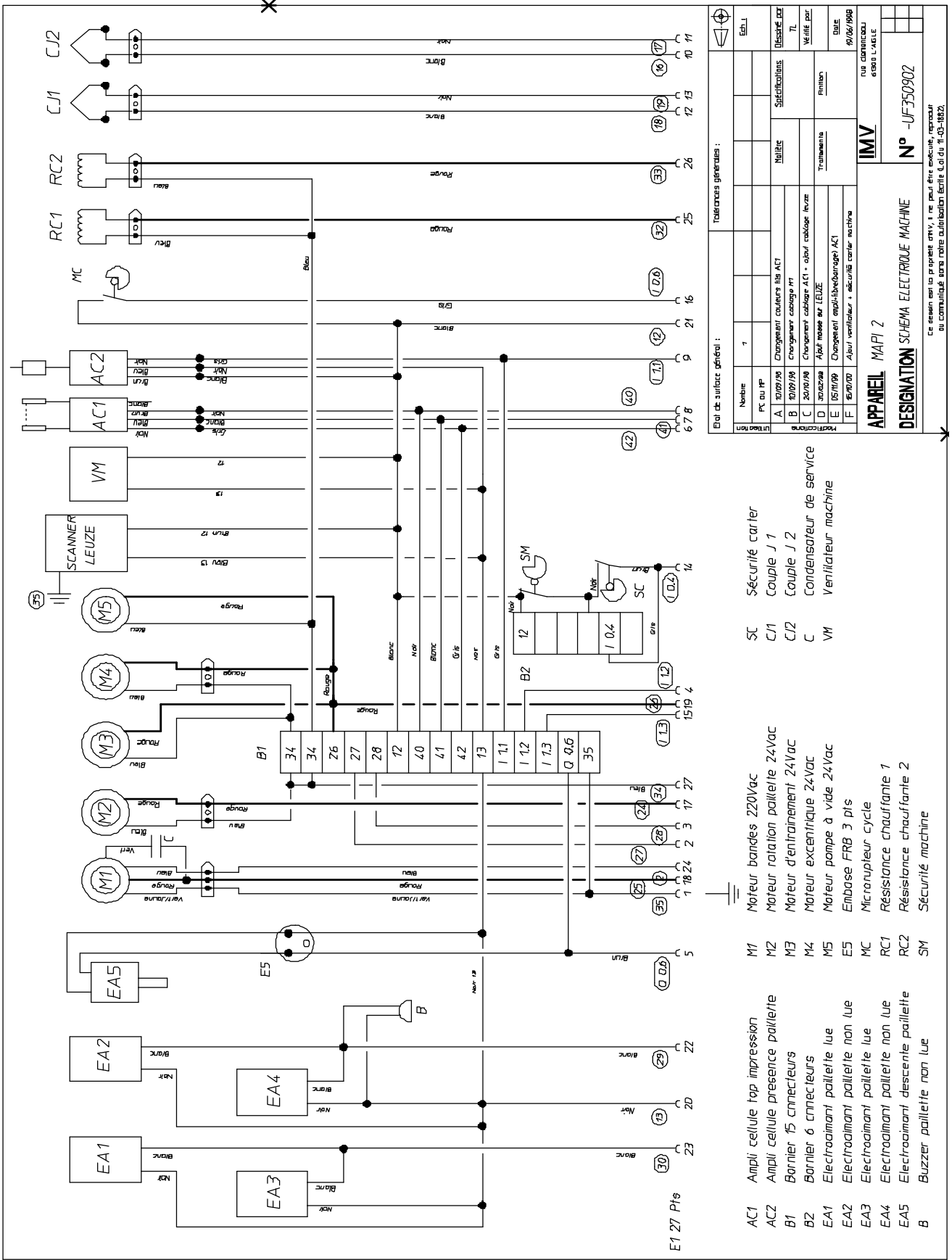
5-1 SYSTEM WIRING PLAN

5-2 ELECTRICAL DIAGRAM OF THE BOX AND THE MACHINE

5-3 MECHANICAL PLANS

## 5-1 SYSTEM WIRING PLAN





Etat de surface général :

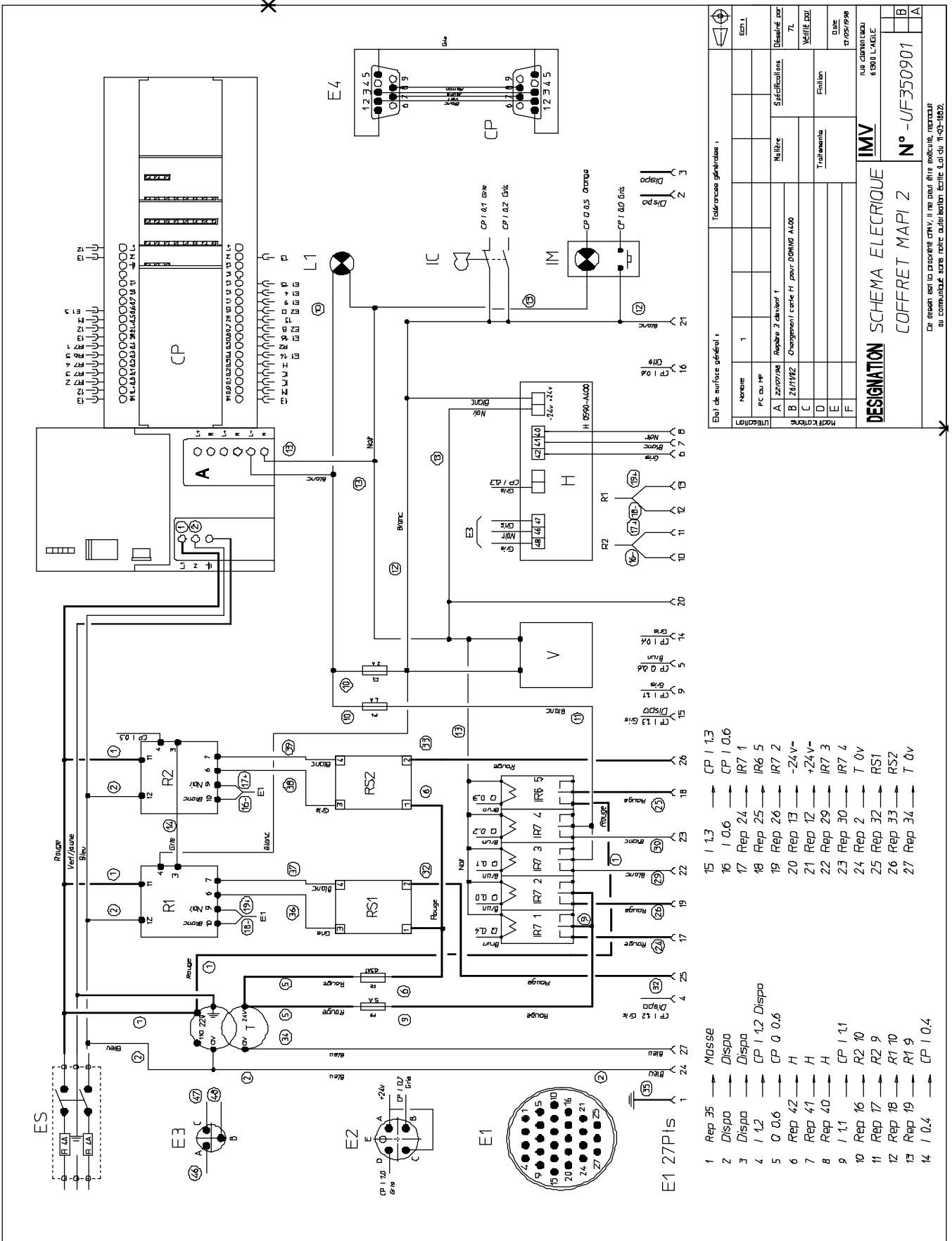
|             |          |  |                |
|-------------|----------|--|----------------|
| Nombre      | 1        | Tolérances générales :                       |                |
| PC du PF    |          |  |                |
| Utilisation |          |  |                |
| A           | 10/09/98 | Changement couleurs des ACT                  | Matrice        |
| B           | 10/09/98 | Changement câblage art                       | Spécifications |
| C           | 20/10/98 | Changement câblage ACT + ajout câblage leuze | Prélimin       |
| D           | 20/10/98 | Ajout message sur LEUZE                      | Travaux        |
| E           | 05/11/99 | Changement ampli/boutonage ACT               |                |
| F           | 16/01/00 | Ajout ventilateur + sécurité carter machine  |                |

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 59500 LAULIEUX

APPAREIL MAPI 2  
 DESIGNATION SCHEMA ELECTRIQUE MACHINE N° -UF-350902

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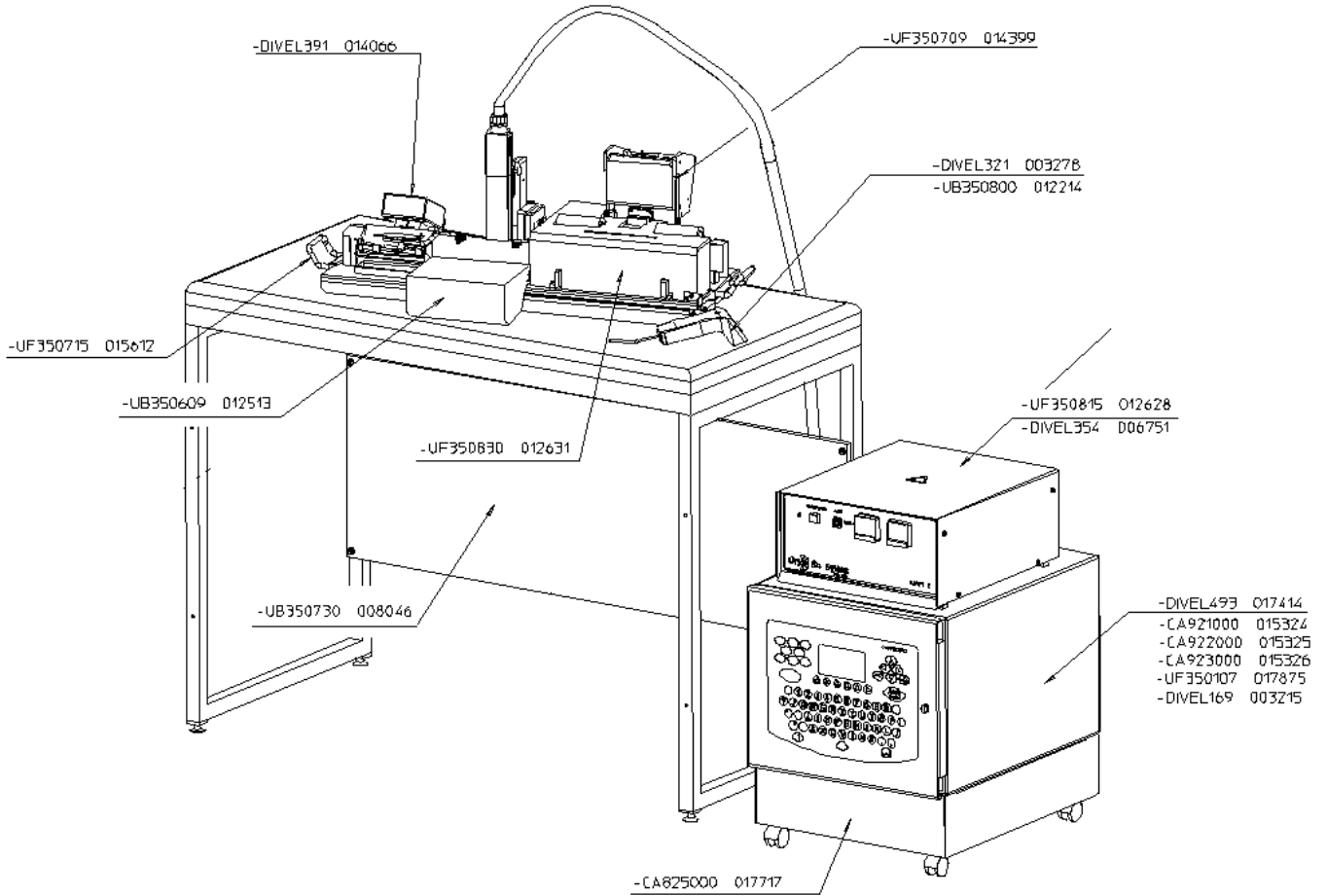
- SC Sécurité carter
- C1 Couple J 1
- C2 Couple J 2
- C Condensateur de service
- VM Ventilateur machine
- M1 Moteur bandes 220Vac
- M2 Moteur rotation palette 24Vac
- M3 Moteur d'entraînement 24Vac
- M4 Moteur excentrique 24Vac
- M5 Moteur pompe à vide 24Vac
- E5 Embase FRB 3 pins
- MC Microrupteur cycle
- RC1 Résistance chauffante 1
- RC2 Résistance chauffante 2
- SM Sécurité machine
- EA1 Ampli cellule top impression
- EA2 Ampli cellule présence palette
- B1 Barrier 15 connecteurs
- B2 Barrier 6 connecteurs
- EA1 Electroaimant palette lue
- EA2 Electroaimant palette non lue
- EA3 Electroaimant palette lue
- EA4 Electroaimant palette non lue
- EA5 Electroaimant descente palette
- B Buzzer palette non lue



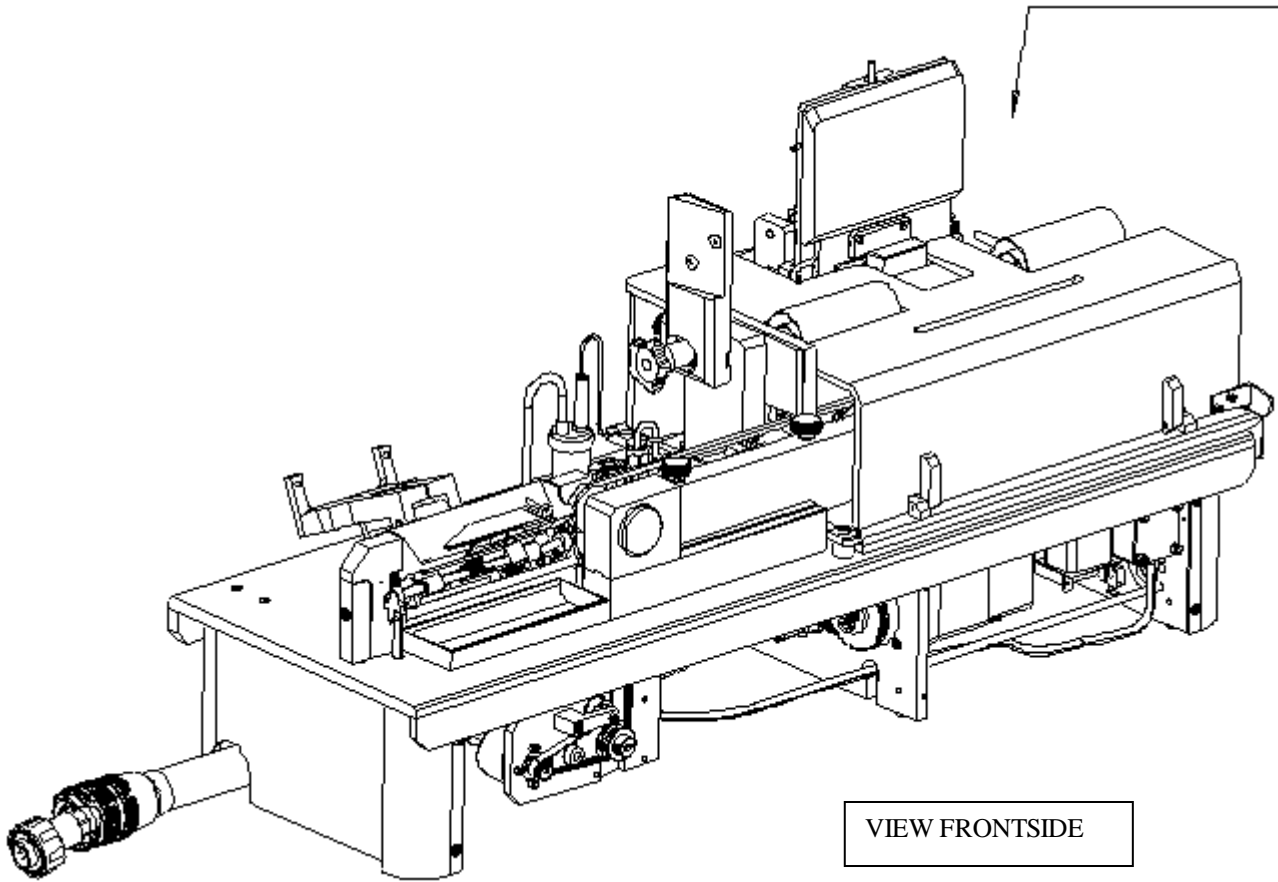
| Etat de surface général :   |          | Tolérance générale :                |                |
|---|----------|-------------------------------------|----------------|
| nombre  | 1        |                                     |                |
| PC ou NP  |          |                                     |                |
| UTILISATION   |          |                                     |                |
| A   | 22/02/98 | Reprise 3 de volume 1               | Nombre         |
| B   | 28/11/92 | Changement carte H pour DOMINO ALDO | Spécifications |
| C   |          |                                     | TL             |
| D   |          |                                     | VÉRIFIÉ PAR    |
| E   |          |                                     | Finaliser      |
| F   |          |                                     | Date           |
|   |          |                                     | 27/02/98       |
| <b>IMV</b>  |          |                                     |                |
| une commande  |          |                                     |                |
| à 0000 L-ALICE  |          |                                     |                |
| <b>DESIGNATION SCHEMA ELECTRIQUE</b>  |          | <b>N° - UF350901</b>                |                |
| <b>COFFRET MAPI 2</b>   |          |                                     |                |
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- 1 Rep 35 → MOSSE
- 2 Dispo → CP I 0,6
- 3 Dispo → IR 1
- 4 I 1,2 → CP I 1,2 Dispo
- 5 0 0,6 → CP 0 0,6
- 6 Rep 42 → H
- 7 Rep 41 → H
- 8 Rep 40 → H
- 9 I 1,1 → CP I 1,1
- 10 Rep 16 → R2 10
- 11 Rep 17 → R2 9
- 12 Rep 18 → R1 10
- 13 Rep 19 → R1 9
- 14 I 0,4 → CP I 0,4
- 15 I 1,3 → CP I 1,3
- 16 I 0,6 → CP I 0,6
- 17 Rep 24 → IR 1
- 18 Rep 25 → IR 6 5
- 19 Rep 26 → IR 7 2
- 20 Rep 13 → -24V-
- 21 Rep 12 → +24V-
- 22 Rep 29 → IR 7 3
- 23 Rep 30 → IR 7 4
- 24 Rep 2 → T 0V
- 25 Rep 32 → RS1
- 26 Rep 33 → RS2
- 27 Rep 34 → T 0V

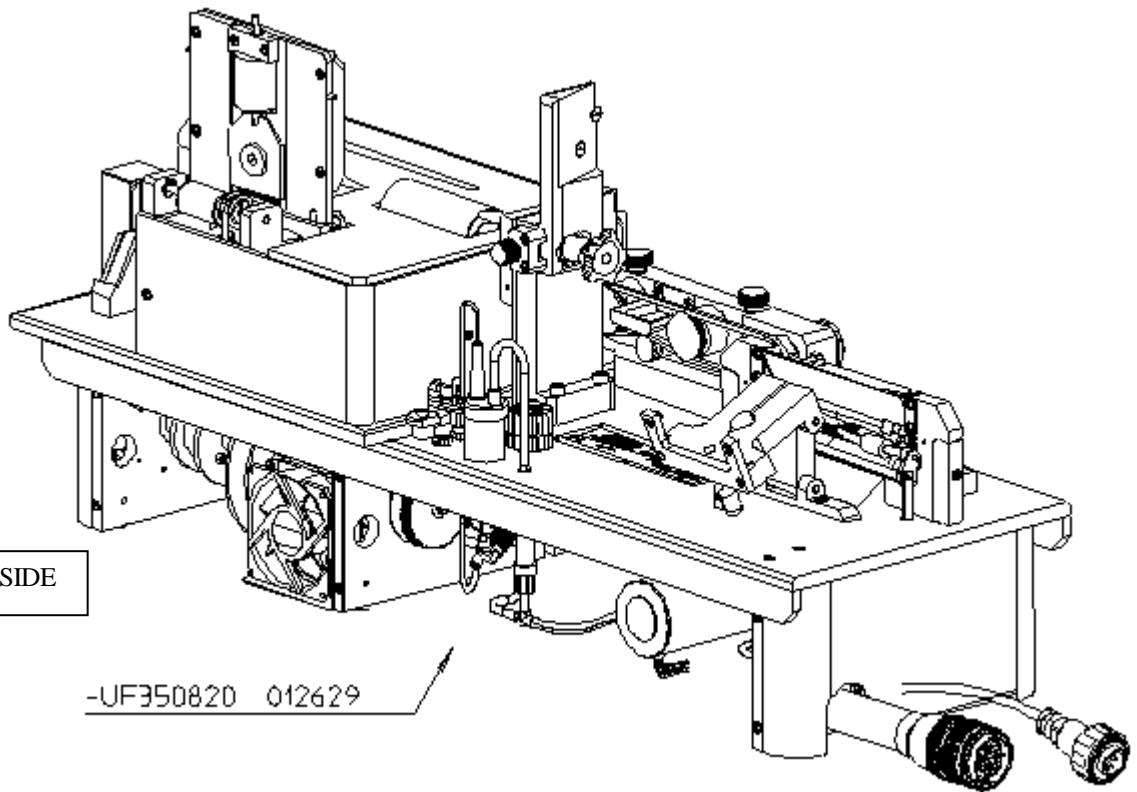
## 5-3 MECHANICAL PLANS



-UF350710 014393



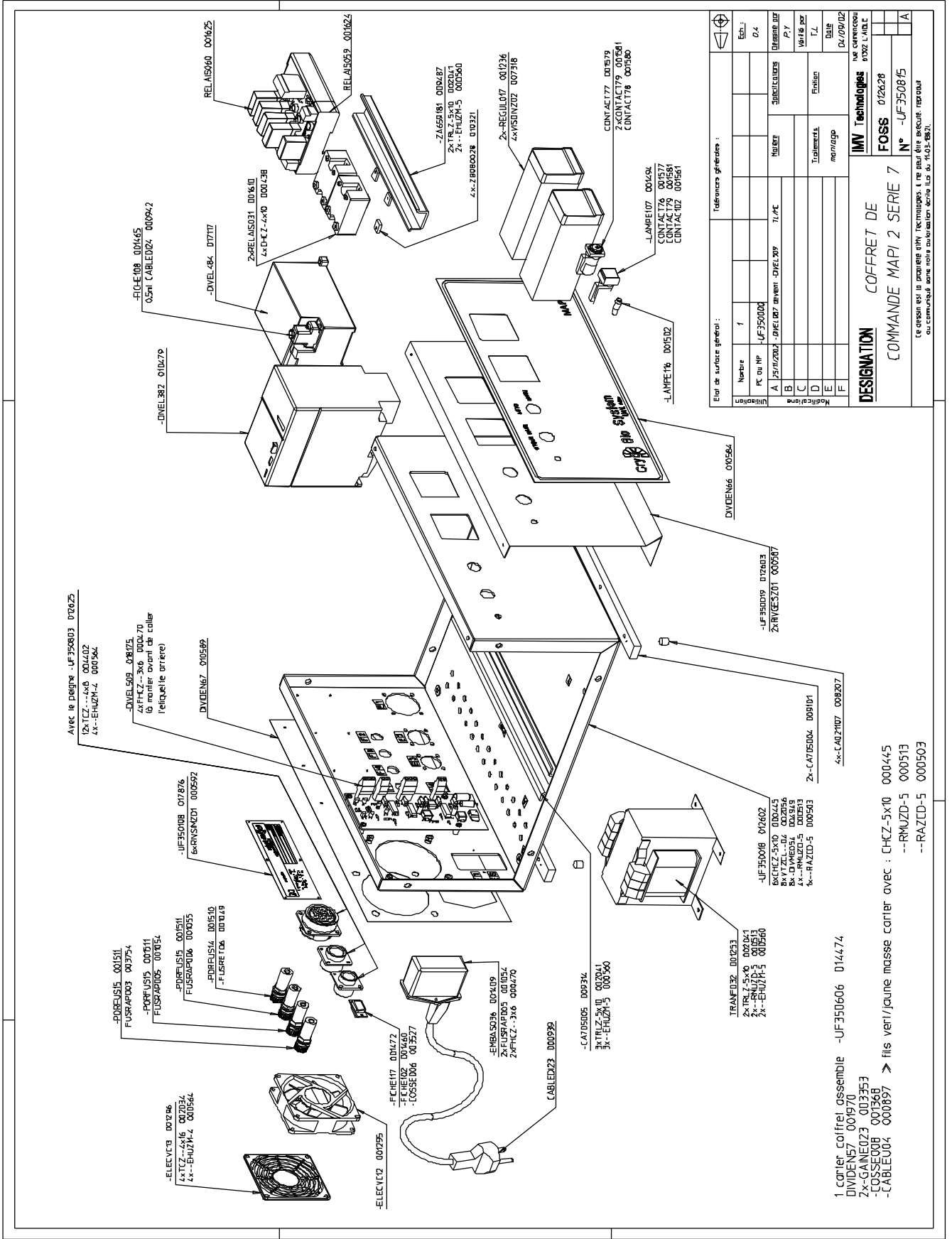
VIEW FRONTSIDE



VIEW BACKSIDE

-UF350820 012629









## **6 - APPENDIX**

## ADJUSTING PRINT QUALITY BY MOVING THE HEAD

### 1) Symptoms:

A correctly printed and legible straw is displayed below:



When the printing head is wrongly adjusted, there are two possibilities:

#### *A) The bottom of the printed message partly disappears:*



...In this case, the printing head is too far advanced towards the operator.

#### *B) The top of the printed message partly disappears:*

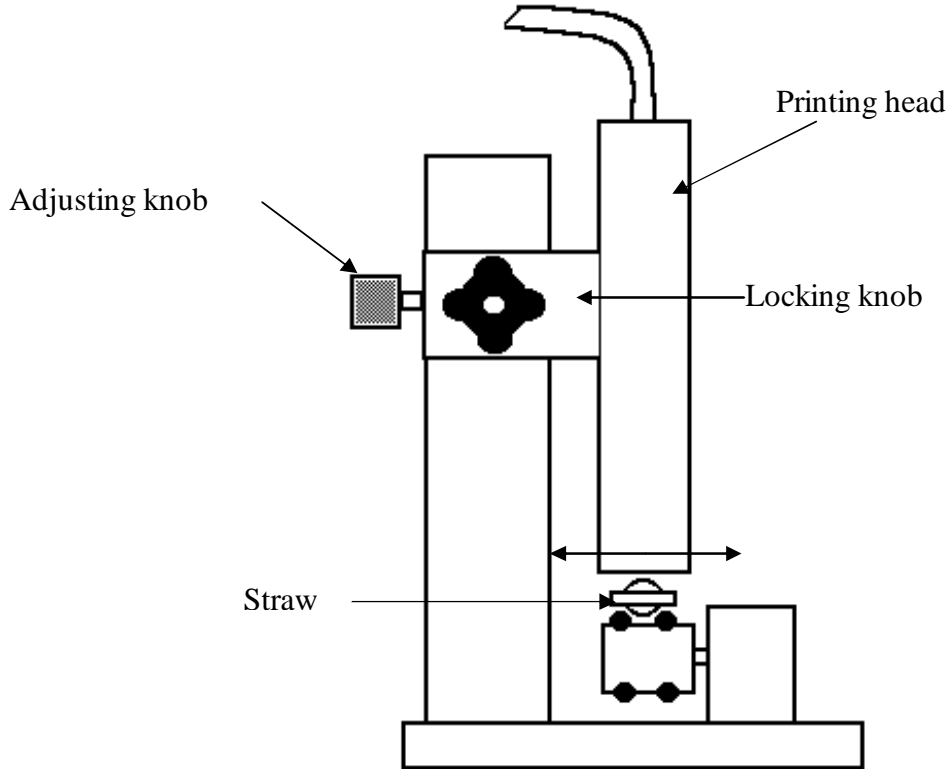


In this case, the printing head is too far back towards the rear of the machine.

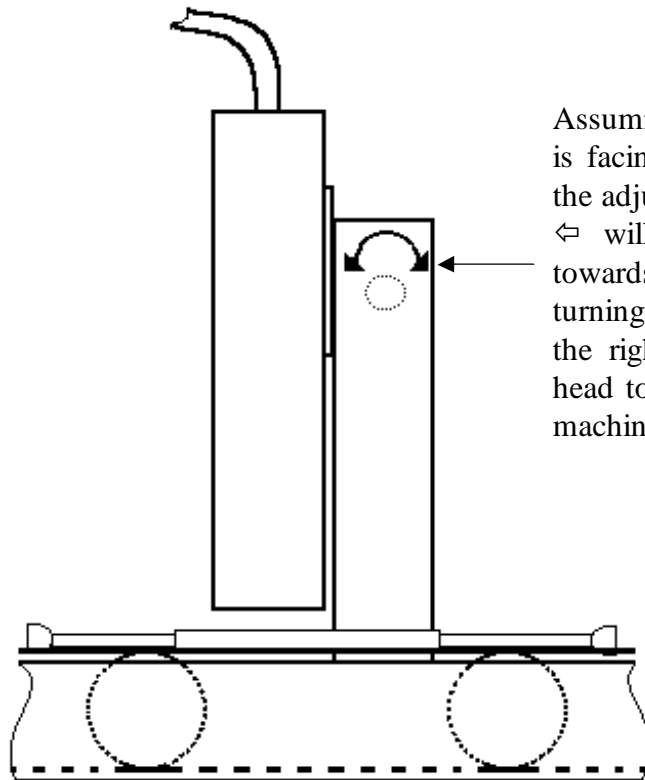
### 2) Adjustments: (see following diagram)

To move the printing head, loosen the locking knob and move the head by turning the adjusting knob. Assuming that the operator is facing the MAPI, the printing head will be retracted by turning the adjusting knob towards the right (correction for case A). If the adjusting knob is turned to the left, the printing head advances towards the operator (case B). The adjusting knob provides very precise movement and only a very small correction is required for good printing. The knob should therefore not be turned by a ¼ turn at each adjustment. Once the adjustment has been made, block the locking knob so that the printing head does not tremble during functioning. Carry out a test run and readjust as often as necessary to ensure good printing.

- Movement direction of the printing head



- Adjustment direction of the adjusting knob

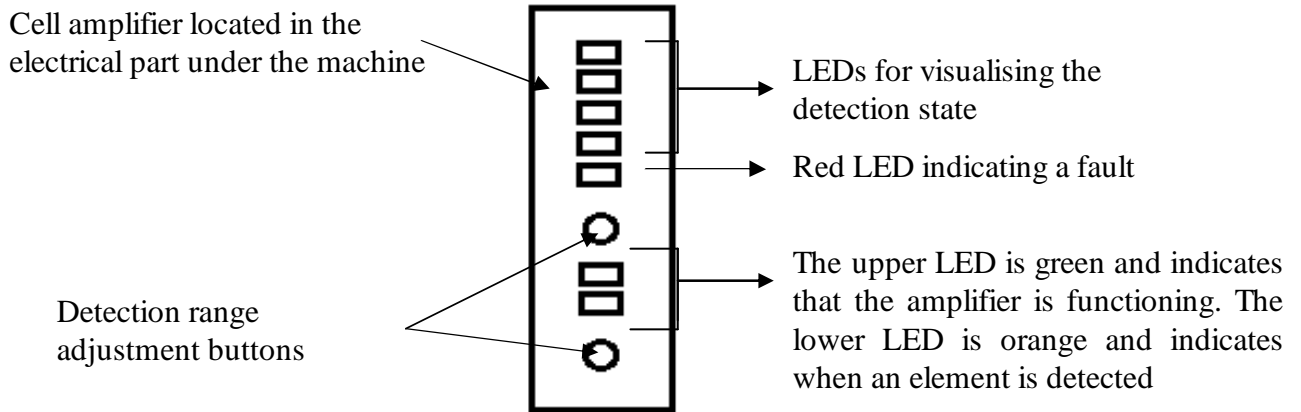


Assuming that the operator is facing the MAPI, turning the adjusting knob to the left ⇐ will advance the head towards him/her, whereas turning the adjusting knob to the right ⇒ will retract the head towards the rear of the machine.



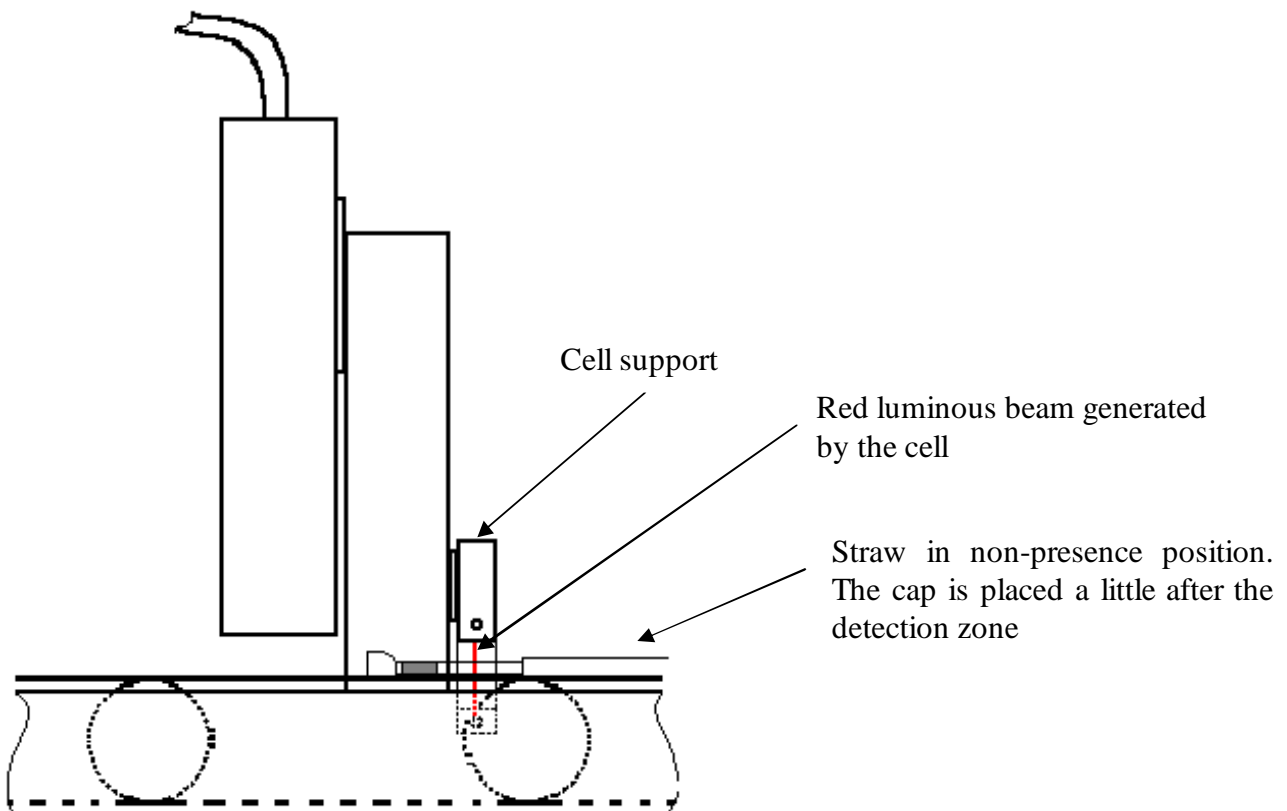
## PRINT DETECTION ADJUSTMENT PROCEDURE

All the electro-mechanical elements of the machine, in particular the detection cell amplifiers, are located in the left part of the bottom of the machine. These two amplifiers are orange in colour and are fixed together. The printing detection cell amplifier is presented below:



### 1) Detection adjustment:

Place a straw under the cell just before the DOMINO printing head. First, adjust the cell on straw non-presence: place the straw under the cell and move it forward so that the straw cap is positioned almost under the printing head.



When the straw is in this position, press the lower button of the amplifier for about 5 seconds in order to start the adjustment mode.

The amplifier LEDs begin to blink, and then only the two LEDs between the buttons blink. The cell now awaits the non-presence and presence adjustments.

A) Non-presence:

The straw positioned before the amplifier must have several LEDs illuminated. Press once on the lower button in order to memorise the non-presence detection of the object.

B) Presence:

Retract the straw so that the cap is located under the detection cell. On the amplifier, all the upper LEDs must be extinguished. Press the lower button of the amplifier once again to validate the adjustment.