

Model Z1

# DESKTOP CARD ISSUANCE SYSTEM



**OPERATOR MANUAL**

Revision 2.02



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# Chapter 1 – Introduction

## 1.1 Packing List

The machine is delivered in a carton box with handles on both sides for an easy transportation.

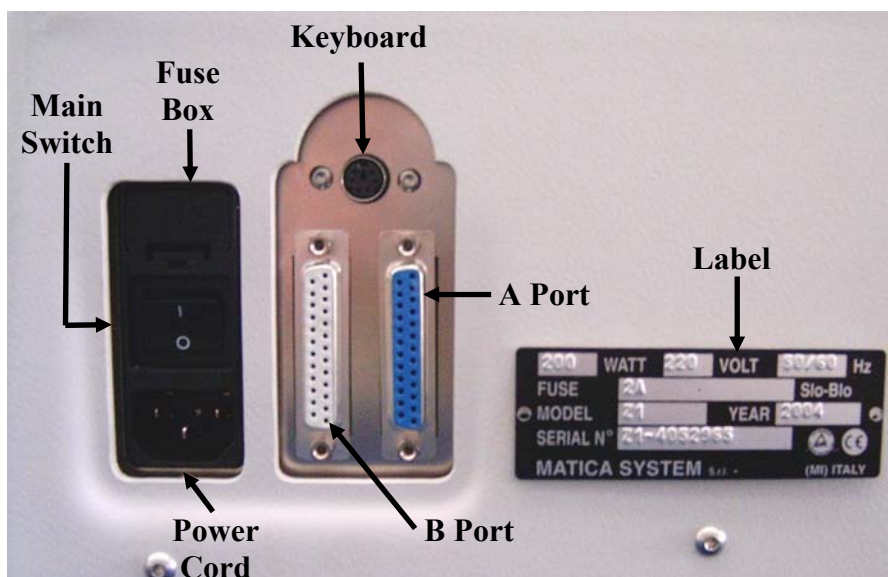
The packaged weight is 21 Kg.

The machine weight is 17 Kg.

1. Open the box and check the packing list:
  - Power cord
  - Interface cable
  - Operator manual
  - Keyboard (as optional)
2. Remove the top cushion
3. Pick up the machine and put in a table

## 1.2 Installation

- Make a visible check inside the machine.
- Verify that the voltage marked on the machine label corresponds with your country voltage supply
- Connect the power cord
- Connect the keyboard (if delivered)
- Power on the machine



## 1.3 Console

The Z1 console is made by:

1. LCD display (2 lines per 40 characters)



2. Three function keys:

- key CLEAR used to clear the error condition
- key SET used to unlock the embosser drum when a punch error occurred
- key PAUSE used to enter in pause mode

Pressing PAUSE the RED LED will blink. Now use key CLEAR to have a “Step to Step” motor motion. When finished, press PAUSE key and CLEAR key again.

3. Two colors LED with the following meaning:

- GREEN color when the machine is READY
- RED color when the machine is in ALARM
- GREEN + RED (YELLOW) when the machine is BUSY



## 1.4 Configuration

The Z1 embosser machine is provided with the following features:

- Loader
- Embossing module

## 1.5 Power On

Powering on the machine, the LCD display will show:

```
E01-          POWER-ON          Ver. Z1-1.09
      PRESS CLEAR or ESC to CONTINUE
```

Press CLEAR on the console (or ESC on the keyboard) to restore the machine and the LCD display will show:

```
MATICA EMOSSER Z1
      READY
```

## Chapter 2 – Keyboard Operating Mode

### 2.1 OFF LINE mode keyboard function

The Z1 embosser is equipped with a very powerful keyboard operating mode. Using the keyboard is possible to:

- Create and store up to 10 formats with fixed and variable data
- Edit text based on the 10 stored formats
- Run the embossing of single or multiple cards
- Run several Card Tests which allow an easy control of the machine status
- Change the LCD mode to control
  1. Power supply level
  2. Free memory to store the formats
  3. All the sensors status (real time change)
  4. The absolute motors position
  5. The data serial line analyzer
- Fully configure the Z1 (password needed)

#### 2.1.1 Emboss a card

Assuming that format\_0 is the default format stored into the machine, press F1 to enter the Off Line mode and the LCD will show:

```
Format 0  FORMAT_0
01  -----
```

now you can type Numeric data:

```
Format 0  FORMAT_0
01      1234567890-----
```

Press *Enter* to go to next line and type a name

```
01      1234567890-----
02      MATICA SYSTEM-----
```

Press *Enter* to go to next line and type the telephone number:

```
02      MATICA SYSTEM-----
03      TEL. 0039 0233261027-----
```

Press F10 and Z1 will load a new card (in case that no card is already in the clamp), emboss and unload it.

If an error occurred during the cycle, the LCD display will show:

```
E02 - OUT OF CARD
      PRESS CLEAR or ESC TO CLEAR
```

Press CLEAR or ESC and the embosser will try to recovery the error condition.  
If the display error is 'OUT OF CARD' or 'CARD MISFEED', the embosser will try to load the card until it works out.  
In case that different errors occurred, the card will be unload and NOT repeat (unless it's different specified in the machine configuration).

## 2.1.2 Keyboard Function during the Text Editing and the Format Editing

These are the keys and function available during the 'Text Editing' mode:

**ESC** Press 'ESC' on the keyboard or 'CLEAR' key on the console to restore the error status.

During any function press ESC to return to the editing mode

↑↓←→	use the arrows to move around the text
<b>Home</b>	moves the cursor to line 1 / column 1
<b>End</b>	moves the cursor to the last line 1 / column 1
<b>Enter</b>	moves the cursor to the next line 1 / column 1
<b>Back Space</b>	deletes the character at the left of the cursor and shift the text
<b>Del</b>	delete the character on the cursor and shift the text
<b>Ins</b>	set and reset the insert mode status
<b>F8</b>	clear the full text in editing mode

The following functions are available only during the format editing mode:

<b>Shift+Enter</b>	insert a new line below the current one, shifting the other lines
<b>Shift+Del</b>	delete the current line shifting up the other ones

## 2.1.3 F1 – Off Line

**F1** Press F1 to enter and exit from the OFF LINE Editing mode: this won't clear the current editing.

The following functions are available exclusively in Off Line Editing.

Z1 embosser machine can receive data even during the Off Line editing mode, so practically it is **always in ON LINE**.

The Off Line mode have the priority respect the On Line, this means that entering a new text during the On Line embossing, the card will be embossed as soon as the current one is finished, without waiting the end of the On Line buffer.

### 2.1.4 F2 – Format Selection

**F2** Press F2 to select the needed format:

```

SELECT FORMAT
NUMBER: 0      NAME: FORMAT_0
    
```

Type the needed format number (from 0 to 9) and then Enter to gain access directly to the editing mode.

←→ Use the arrows to scroll the available formats and then Enter to confirm

**ESC** Return to the editing mode

If the selected format don't exist the LCD display will show:

```

THE SELECT FORMAT DON'T EXIST
PRESS F3 TO CREATE NEW, OR F1 TO EXIT
    
```

### 2.1.5 F3 – Edit Format

**F3** Press F3 to select the format that has to be create or modified:

```

EDIT FORMAT
NUMBER: 0      NAME: FORMAT_0
    
```

←→ Use the arrows to select the needed format that has to be created or modified and then Enter to confirm

Creating a new format the LCD will show the empty buffer:

```

01
02
    
```

If the format already exists, the LCD will show:

```

F0 FN=FORMAT_0 U0      01
Y070 X060 F0 CI10     02
    
```

Now is it possible to edit the format following the rule explain in the next chapter.

**F3** Press F3 to store and exit from the format editing procedure.

In case of syntax error the LCD will show the appropriate message like:

```

FORMAT NUMBER ERROR
PRESS ESC TO EXIT
    
```

Press **ESC** and the cursor will stop were the error is detected ; correct the error and press **F3** again.

**ESC** Press **ESC** to exit the format creation.

## 2.1.6 F5 – Card Test

**F5** Press F5 to run the Card Test

```
CARD TEST
CARD TEST NUMBER ? 0
```

Select one of the following Card Test and press ENTER:

- 0 To emboss SETUP information
- 1 To emboss four L's on a card (use it to set embossing alignment)
- 2 To emboss character (use it to verify embossing height)
- 3 To emboss all the drum characters, firmware version and end embosser serial number
- 4 To emboss Alexander Hamilton test card
- 5 To emboss an eight lines test card

If the Card Test is made with a free input lines these can be edited as a common format.

**F10** Press F10 or F11 to emboss the Card Test, then F1 to exit from it.

## 2.1.7 F8 – Clear Text

**F8** Press F8 to clear the full text in editing mode.

## 2.1.8 F9 – Machine Restore

**F9** Press F9 to unload the current card and restore the machine.

## 2.1.9 F10 – Emboss One Card

**F10** Press F10 to emboss one card.

During the embossing cycle it's possible to edit the next card.

The Off Line procedure uses up to 4 buffer to store the edited text.

## 2.1.10 F11 – Emboss Multiple Cards

**F11** Press F11 to emboss multiple cards

```
EMBOSSING CARD
HOW MANY CARDS ?
```

Input the number of cards to be embossed and ENTER to confirm.

Then press **F11** to run the embossing cycle.

### **2.1.11 F12 – Machine Configuration**

**F12** Press F12 to enter the Machine Configuration menu.

Input the password and press Enter:

PASSWORD xxxxxx
-----------------

Password list:

- 000000** Operator password which allows the basic setup.
- \*\*\*\*\*** Technical password; call Matica System Technical Support.

## Chapter 3 – Embossing Format

### 3.1 Embossing Format definition

The Embossing Format allows to define the following parameters for each field:

- X and Y coordinate positions
- Font type
- Character spacing
- Variable data
- Fixed data

The format can accept up to 50 fields and it's possible to store up to 10 formats (from 0 to 9) in the EEPROM.

#### 3.1.1 Format Header

The format must begin with format number

- |                |   |
|----------------|---|
| <b>Fn</b>      | Format Number <b>(compulsory)</b><br>The format <b>MUST BEGIN</b> with Fn (n=0 to 9)<br>It's the <b>ONLY</b> necessary parameter for the format header  |
| <b>FN=name</b> | Format Name (8 digits) <b>(is not compulsory)</b><br>The format name can be up to 8 digits. <b>NO SPACES are allowed</b>  |
| <b>U=n</b>     | Unit of Measure <b>(is not compulsory)</b><br>If not specified the system uses the Unit of Measure parameter (Coordinate Type) stored in the setup<br>U0 = STEP<br>U1 = 10/mm<br>U2 = 100/inch<br>U3 = 1000/inch  |
|                | In case of STEP the Z1 embosser uses the following ratio:<br>- one step X = 0,0907 mm → 1/280 inch<br>- one step Y = 0,125 mm   |
| <b>PF=nn</b>   | CO-Print Format <b>(is not compulsory)</b><br>Link the current Embossing format with the CO-Print format <b>Fnn</b> (nn=10 to 19).<br>If not specified the text will be <b>ONLY</b> embossed.<br>Refer to the CO-Print documentation for Printer options. |

### 3.1.2 Format Field Definition

- N=name** Field Name (7 digits) (*is not compulsory*)  
The field name can be up to 7 digits. **NO SPACES are allowed**  
If not specified, the field number (01, 02 ....) will be automatically assigned.
- Ynnn** Vertical Coordinate (**compulsory**)  
Set the embossing field position measured from the top edge of card to the bottom edge of the character.  
The nnn value can be up to 4 digits and it's expressed in the Unit of Measure defined.
- Xnnn** Horizontal Coordinate (**compulsory**)  
Set the embossing field position measured from the left edge of card to the left edge of the character.  
The nnn value can be up to 4 digits and it's expressed in the Unit of Measure defined.
- Editing Y and X coordinate. It's not important the sequence of them (X and Y or Y and X): both ways are accepted.
- Fn** Font Type  
Set the type of character to emboss:  
F0 = Standard Gothic  
F1 = OCR 7B
- If not specified it will be used the same value of previous field. Default is F0.
- CI<sub>nn</sub>** Character per Inch  
Set the characters spacing; common settings are as following:  
CI10 for Standard Gothic  
CI7 for OCR 7B  
CI14 for Master Card
- If not specified it will be used the same value of previous field. Default is CI10.
- CS<sub>nn</sub>** *Character Spacing* (use it in alternative of CI parameter)  
Set the character spacing were nn is the number of steps:  
CS28 for Standard Gothic  
CS40 for OCR 7B  
CS20 for Master Card
- Bnn** Variable Field (**suggested**)  
Define the length of the field (nn= 1 to 32)  
If not specified the field will be set at the maximum length of 32 characters.

**“FIXED DATA”** Fixed Data

A text included between the double quote (“) is considered protected data.

It's possible to combine Variable Field and Fixed Data in order to make an user friendly input mask. For example:

B4 “ “ B4 “ “ B4 “ “ B4      To input the 16 digits of the card number  
B2 “/” B2 “/2000”              To input a data

The total length of field is the sum of the Variable and Fixed data.

The program recognize the beginning of next field as soon as it find out the N= , the Y or the X parameter.

### 3.1.3 Format Sample

☞ NOTE: Use SPACES between the parameters for an easy reading of the formats.

Format 0 sample:

```
F0    FN=TestZ1
N=CARDN Y350 X100 F1 B20
N=NAME    Y410 X60 F0
N=TEL    X100Y480 "TEL. " B25
```

Format 1 sample – the most easy format:

```
F1 Y300 X100
```

## Chapter 4 – On Line

### 4.1 Prepare the embosser

When Z1 is linked up to a PC or Host, it's suggested to set the machine in order to make an easier job.

In the menu 'Error Handling' set to Yes the following parameters:

IGNORE OVERF.CHAR (Y-N) :	Y
ILLEGAL CHAR=SPACE (Y-N) :	Y

In this way the machine will emboss whatever is possible to, and it will allow an easier diagnosis in case of problems.

### 4.2 Matica Xon-Xoff Standard Protocol

#### 4.2.1 General Information

At power on, after the restore procedure, the machine send **XON** character (DC1, 11 hex, 17 dec.) to the host.

The host can now send to the machine a message with:

< (060 hex) MESSAGE > (062 hex)

It is possible to send to the machine a TEXT message as well as FORMAT message.

When the machine receives the message it stops the communication by sending the **XOFF** character to the host (DC3, 13 hex, 19 dec.).

When the message is processed and there is no error, the **XON** character is sent again.

The machine can be programmed to accept "<" (60 dec.) or **STX** (02 dec.) as *Start of Message*

The machine can be programmed to accept ">" (62 dec.) or **ETX** (03 dec.) as *End of Message*

For an easy test it is suggested to set the STX and ETX code in Protocol menu as:

VALUE OF STX (nnn) :	060	Set the STX value (060 = <)
VALUE OF ETX (nnn) :	062	Set the ETX value (062 = >)
VALUE OF CR	010	Set the CR value (010)

## 4.2.2 Send a Text

Sending a text is very easy:

< Line 1 **LF** Line 2 **LF** ..... Line n >

For example:

```
< 1234567890/0 [LF]
MATICA SYSTEM [LF]
0039 02 33261027 >
```

## 4.2.3 Send a Format

The syntax format is like the one in Off Line mode.

To send a format it is requested to start the message with the “]” character just after the STX; in this way the machine is able to understand that a Format String is following.

< ] Format-String >

For example:

```
<]F0 FN=TestZ1
N=CARDN Y350 X100 F1 B20
N=NAME Y410 X60 F0
N=TEL X100Y480 “TEL. “ B25 >
```

If a wrong format is sent, the relative error will be shown on the LCD.

The XON will be sent to the host when the operator press the CLEAR button to acknowledge the error.

## 4.3 Install the Windows Driver

The Z series embosser is compatible with the Generic Printer Driver which is available with all Windows versions 3.1/95/98/NT/2000.

The printer driver installation is easy:

- Using Win95, press Start → Setup → Printer to open the Printer folder
- Add Printer
- Select the **Generic / Text Only** printer
- Select the Serial Port **COMx**
- Configure the port as: Baud 9600, 8 bit, 1 stop bit, No Parity, Flux Control **Hardware**
- Give a name to the printer like “Z1 Embosser”
- Select as default printer
- Do not print the test page because it won't be embossed
- Press End and the embosser is ready to be used as a common printer in Windows.

## 4.4 Emboss a card using Windows Notepad

It's possible to use Windows Notepad (available with every version of Windows) to emboss cards. Write a text as the following one:

```
<1234 5678 9000  
MATICA SYSTEM  
VIA PRINTER DRIVER  
>
```

Select now the “Z1 Embosser” printer as default and set to 0.1 cm the page Left Margin. It's very important to remove the left spaces to have the right layout embossed on the card.

☞ NOTE: Using MS Word, the best conditions of working consists in setting the page size at 9 cm horizontal and 6 cm vertical, with all the margins (Top, Bottom, Left, Right) set to 0.1 cm.

## Chapter 5 – Error List

When an error occurred the LCD will show the messages listed below.

Apply the proper procedure to remove the error condition and then press CLEAR to continue (please read carefully the error comments).

E01- POWER ON	At the power on the machine will show this message. Press CLEAR to continue.
E02- OUT OF CARD	There are no more cards in the hopper; please load some cards.
E03- CARD MISFEED	The card is wrong clamped or is lock. Open the cover and check, maybe the card is bend and the clamp don't pick it well.
E04- X MOTOR ERROR (X-HOME)	During the movement to the hopper position something stop the carriage. Open the cover and check the cause.
E05- Y MOTOR ERROR	Y movement error. Check the card probably is wrong embossed, maybe the card is bend and hit in the drum or the format set a Y coordinate too low.
E06- X MOTOR ERROR (X-END)	During the movement to the unload position or during the embossing something stop the carriage. Check the card probably is wrong embossed. If you heard a <b>loud noise</b> open the cover and remove the card which is pre-feed.
E07- DRUM MOTOR ERROR	Drum movement error. If you heard a <b>loud noise</b> open the cover and check manually if the drum is free to move; if not close the cover and press the <b>Set</b> key which will start the punch-recovery-procedure. Reopen the cover and verify that the drum is free to move, if OK press CLEAR to continue.
E08- PUNCH MOTOR ERROR	The punch cycle is lock. Press the <b>Set</b> key which will start the punch-recovery-procedure. When OK press CLEAR to continue.
E09- X MOTOR ERROR (X-TOTAL)	X movement error during the X total control procedure.
E10- CARD UNLOAD ERROR	The card is not unload or during the unload cycle the Y movement loose steps. The machine try 3 times to unload the card before generating the error.
E11- CARD LOST	The card is missing during the personalization cycle.
E20- FORMAT NUMBER ERROR (F0 to F9)	The format number must be from 0 to 9 for the embossing formats and form 10 to 19 for the Co-print formats.
E21- FORMAT NAME ERROR (8 chars no space)	The Format name is max 8 digit. A SPACE or CR must separate the format name to the next command: F1 FN=TEST1 Y100X100 → OK F1 FN=TEST1Y100X100 → WRONG F1 FN=TEST 1 Y100X100 → WRONG
E22- CARD DIMENSION SYNTAX ERROR	Wrong SX or SY command.
E23- UNIT MEASUREMENT ERROR	Wrong Un command.
E24- FIELD NAME ERROR (7 chars no space)	The Field name is max 7 digit. A SPACE or CR must separate the Field name to the next parameter: N=LINE1 Y100X100 → OK N=LINE1Y100X100 → WRONG N=LINE 1 Y100X100 → WRONG
E25- Y COORDINATE ERROR	Is OK: Y100 X100; Y50 X50; Y050 X050 Is WRONG: Y10 0 X100; Y 50 X50; Y 050 X050
E26- X COORDINATE ERROR	Is OK: Y100 X100; Y50 X50; Y050 X050 Is WRONG: Y100 X10 0; Y50 X 50; Y050 X 050
E27- TOO MANY FIELDS (max 50)	You exceed the maximum number of fields (50 max).
E28- FONT ERROR	Use font 0 (F0) or font 1 (F1).
E29- CHARACTER SPACE ERROR	Wrong Cinn or CSnn parameters.
E30- VARIABLE FIELD SYNTAX	Check the syntax referring to the appropriate Manual chapter.

ERROR	
E31- FIX FIELD SYNTAX ERROR	Check the syntax referring to the appropriate Manual chapter.
E32- FORMAT WITHOUT FIELDS	The format need at least 1 field to be used.
E33- FIELD NOT COMPLETE	Check the field.
E34- FIELD COMMAND ERROR	Command or Parameter wrong.
E35- FORMAT MEMORY OVERFLOW	The format memory is over. Reediting the stored format and remove not needed Spaces in order to reduce the used memory.
E37- FIELD-BUFFER OVERFLOW	You exceed the maximum number of characters.
E38- ILLEGAL CHARACTER	A wrong character is received and cannot be emboss.
E39- PRINTER TIMEOUT	The printer connect to the second port is not ready.
E40- CONFIGURATION LOST	<b>Hardware error</b> : the mechanical parameters of the machine are lost. This can happen when a new version is download.
E41- DRUM LAYOUT LOST	<b>Hardware error</b> : the drum parameters of the machine are lost. This can happen when a new version is download.
E42- COUNTER DATA LOST	<b>Hardware error</b> : the counters data information of the machine are lost. This can happen when a new version is download
E43- WORKING TIME LOST	<b>Hardware error</b> : the working time and counters are lost.
E44- INPUT CONVERSION TABLE DATA LOST	<b>Hardware error</b> : the input conversion table is lost.
E45- FORMAT AREA DATA LOST	<b>Hardware error</b> : the stored format are lost.
E46- RAM ERROR – PRESS CLEAR OR ESC TO CONTINUE	<b>Hardware error</b> : the RAM is defect. Power Off and On the machine again, if the error persist is necessary to change the logic board.
E48- COVER OPEN ERROR	<b>Hardware error</b> : close the cover. If it's closed, check the cover switch.
E63- X-Y OVERFLOW ERROR	You're trying to emboss out of card margins. Verify the Format.