

Small character
ink-jet printing



S7 Supra



S7 Mega

S7 Range



S7 Sigma



A19620 C

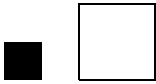
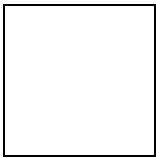


A DOVER COMPANY

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1 Ink jet printing

Ink jet printing enables contact-free marking or dating of items.

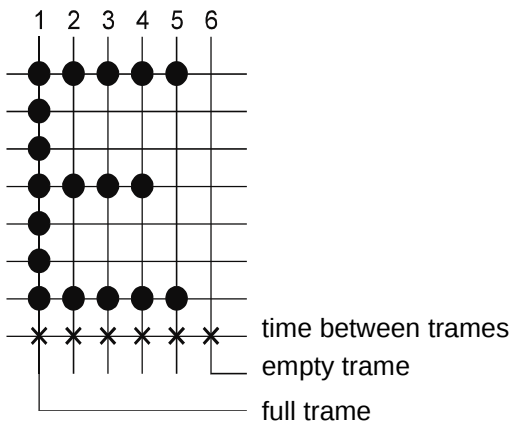
The principle used by IMAJE printers is the "deflected continuous jet" with dot-matrix type characters.

1.1 Dot-matrix characters

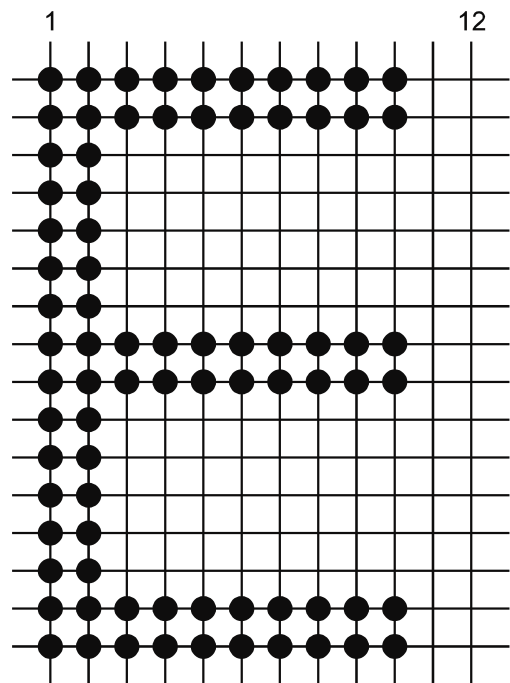
Each symbol (letter, digit, punctuation mark, etc.) is contained within a rectangular area known as the "matrix", divided into columns known as "trames" and defined by height and width.

Example : 7 x 6 matrix - 16 x 12 matrix.

The first digit is the number of dots per trame and the second digit is the number of trames per matrix.



7 x 6 matrix



16 x 12 matrix

1.2 Deflected continuous ink jet

The printer head is supplied with pressurized ink.

The ink arrives in a cannon (2) with a hole "nozzle" (3) through which the ink is ejected to form a jet.

The ink jet is modulated by a piezo-electric resonator (1) to form calibrated and equidistant droplets.

The droplets not used for printing are recuperated in a gutter (6) to be re-used.

The droplets used for printing are polarized electrically by a charge electrode (4) and then deflected from their initial path by two deflector plates (5) to produce the required symbol. The deflection of a droplet depends on its polarization value.

The droplets are deposited on the item to be printed. A character is formed frame by frame; these frames may be full, partial or empty. Moving the object perpendicularly to the deflection plane enables the frames to be offset from each other.

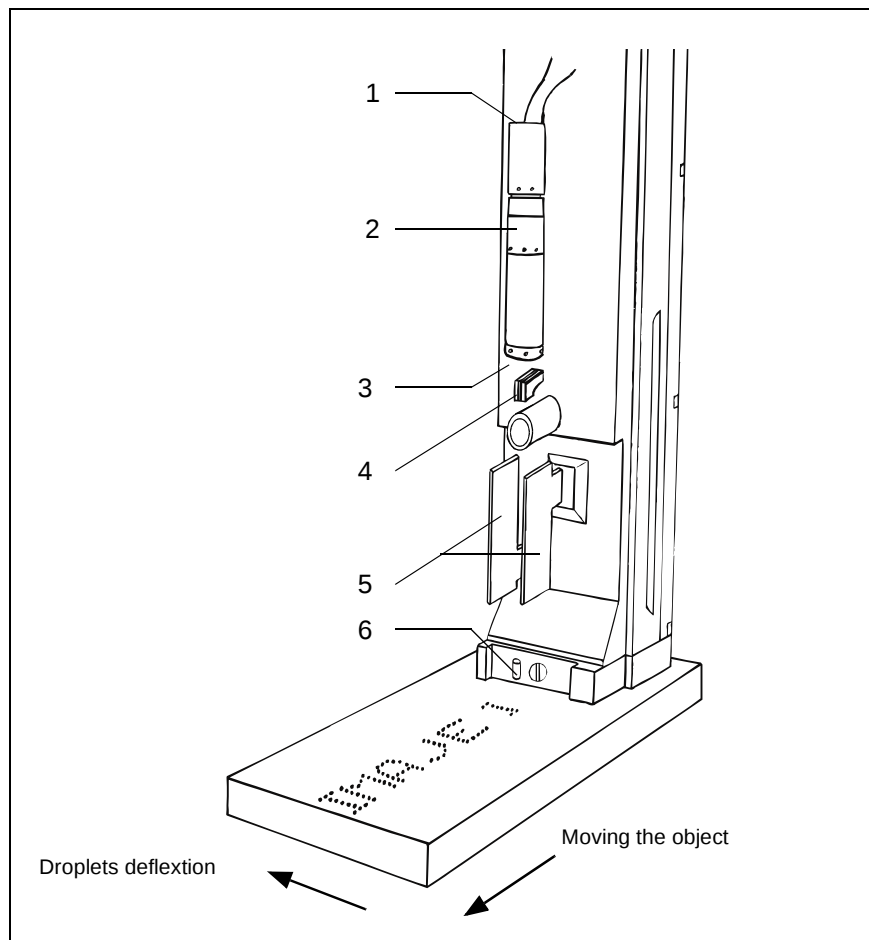
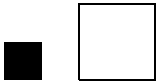
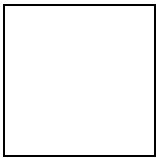


Figure 1



2 Preparing the printer

2.1 Initialization

Some of the functions or values contained in the printer must be initialized the first time the machine is used. They will then be stored in memory.

This is used to choose the language for operator dialog, to adjust the clock and to configure the link between the printer and another device.

2.2 Functions depending on the type of printer

Some functions may or may not be present depending on the type of printer (SIGMA, MEGA, SUPRA).

3 Editing a message

3.1 Message

A "message" is anything printed by a head. The message may consist of letters and digits of various alphabets and styles, and even ideograms and drawings.

Once created, each message is stored in memory to be printed or modified when required.

3.2 Font

A "font" is the graphic style of a character. The same character may be printed in different fonts.

Example :

A or A or  (bar code) or  (datamatrix code)

Each character thus defined may be stretched.

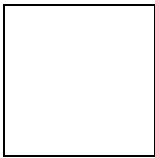
Example :

  
Bolderization: 1 2 3

Similarly, adjustable spaces may be inserted between characters; this is known as the "tabulation".

3.3 Variables

A "variable" is an element which varies with time, such as a time or date stamp, or a counter function.

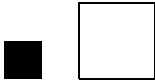


3.4 Parameters

In order for the printed message to satisfy your requirements, the printing parameters must be set; i.e. the printer must be adapted to the production line.

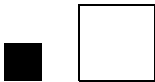
Because of this, the printing speed must be adjusted according to the movement speed of the item to be marked and the printing direction must be selected according to the reading direction.

In the same way, the variable parameters (counter and time and date functions) must be set to be updated as required.



4 Editing symbols

Editing symbols means the creation of characters, signs, drawings or logos and storing them in memory for later use.



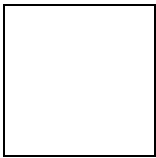
5 Production

Now that your printer is ready (initialized) and the messages are programmed, you can start production. Simply switch on the printer and select the message to be printed.

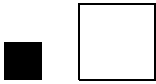
A self-diagnostic function may be used at any time to provide information on the printer status, stated plainly in the operator's language.

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Introduction to the printer



1 Overall view

The illustration below gives an overall view of the printer to enable you to identify the different parts of the unit.

- | | |
|---|-------------------------------|
| 1 | Extension cassette |
| 2 | Ink and additive cartridges |
| 3 | Print head |
| 4 | Umbilical |
| 5 | Terminal |
| 6 | Printer body |
| 7 | Industrial interface cassette |

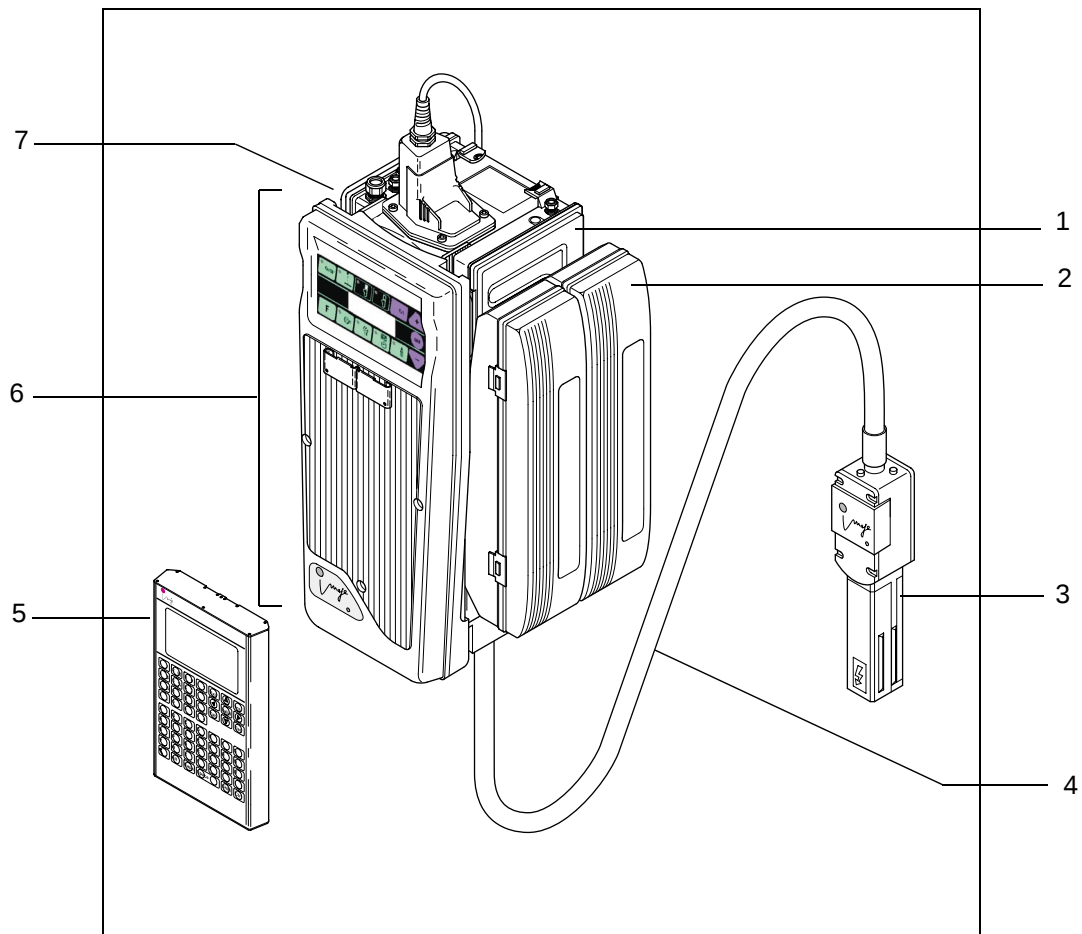
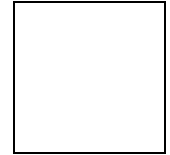


Figure 1



2 The printer body

This controls the electrical and hydraulic supply to the print head, it handles dialogue with the operator and makes it possible to connect up to the outside environment.

The body incorporates the Industrial Interface cassette, the ink and additive cartridges, the Operator Interface and the electrical and hydraulic control modules.

NOTE

The Extension cassette provides a means of extending the printer features.

The printer body can be moved by means of the two holding points which can be accessed above the Operator Interface beneath the "S7 SIGMA, MEGA, ..." label.

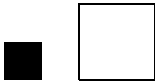
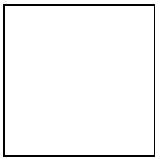
2.1 The ink and additive cartridges

There are two models of ink and additive cartridge.

- Small capacity of 0.42 l.
- Large capacity of 0.8 l.

2.2 The operator interface

The operator interface has a keypad with function keys illustrated by pictograms and a 128 x 32 pixel graphic display.



3 The print head

Various different types of head are available depending on your printer type:

- Straight or angled head.
- Single or twin-jet G type head.
- Single or twin-jet M type head.

This means that between 1 and 8 lines of symbols can be printed depending on the head and fonts used.

The type (G or M) depends on the application in use and is recognised by different size sub-assembly electrodes.

For all types of head, the removable cover is opened and closed as shown in figure 1.

Figure 1 : Opening and closing the print head cover

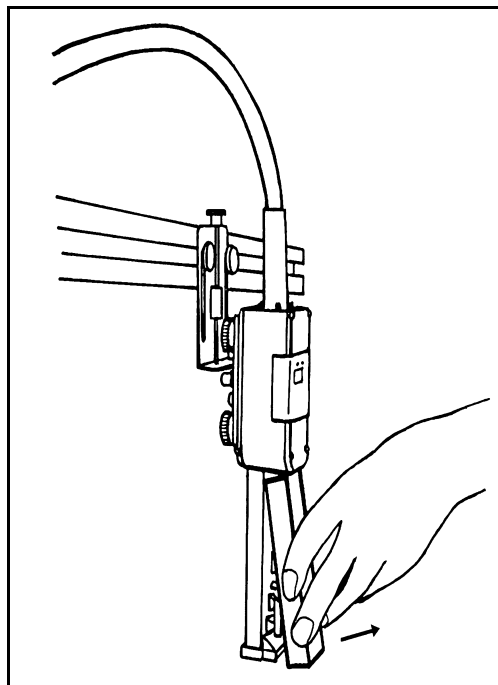
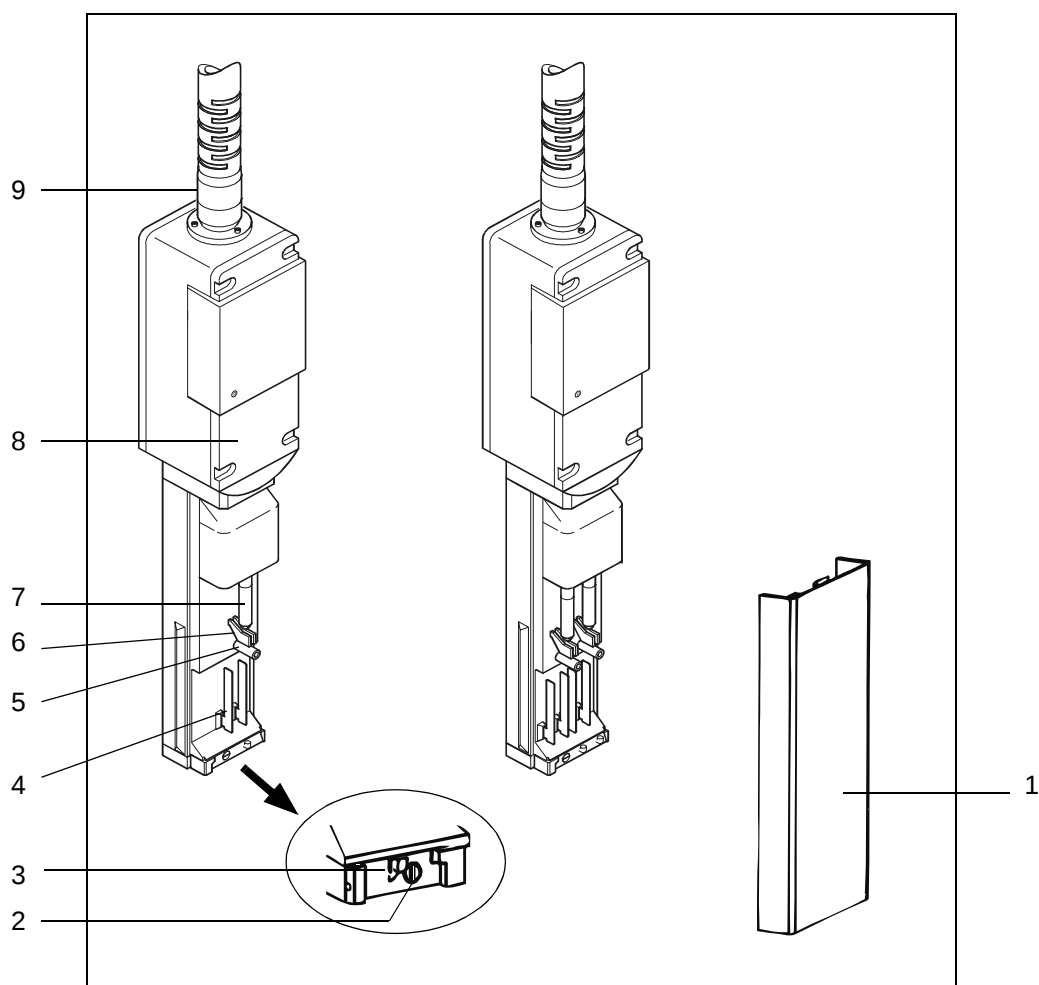
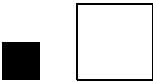
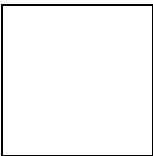


Figure 1

Figure 2 : Single and twin-jet heads, covers removed

- | | |
|---|---------------------|
| 1 | Removable cover |
| 2 | Recuperation tap |
| 3 | Recuperation gutter |
| 4 | Deflection plates |
| 5 | Detection electrode |
| 6 | Charge electrode |
| 7 | Cannon |
| 8 | Top front cover |
| 9 | Umbilical |

**Figure 2**



4 The Terminal

The keyboard has 59 keys and is fully sealed against dust and water. It can be cleaned by applying the cleaning solution used in the printer.

The display consists of a large liquid crystal screen which is used to display messages in WYSIWYG format (what you see is what you get) and for providing help messages for programming and maintenance.

The Terminal is both tough and user-friendly, and is therefore very well suited for use in an industrial environment. Four types of terminal are available: a "standard" Latin terminal and Chinese, Arabic and Hebrew terminals.

Figure 1 : Standard terminal



Figure 1

5 The Industrial Interface cassette

There are two models of Industrial Interface cassettes, depending on your printer type:

- The Simple Industrial Interface cassette is used for standard connections: photocells, tachometers and external alarms.
- The Complete Industrial Interface cassette is used both for standard connections and also for connections associated with various functions: reversing the direction of the message, initialising the counter, message selection (Parallel Interface, Message Increment), etc.

NOTE

**The printer cannot operate correctly if the Industrial Interface cassette is not in position.
It is essential that this cassette is connected or disconnected after the printer has been switched off, when the ON/OFF message has cleared from the operator interface.**

- | | |
|---|--|
| 1 | Cassette |
| 2 | Identification icon for Simple Industrial Interface cassette |
| 3 | Identification icon for Complete Industrial Interface cassette |

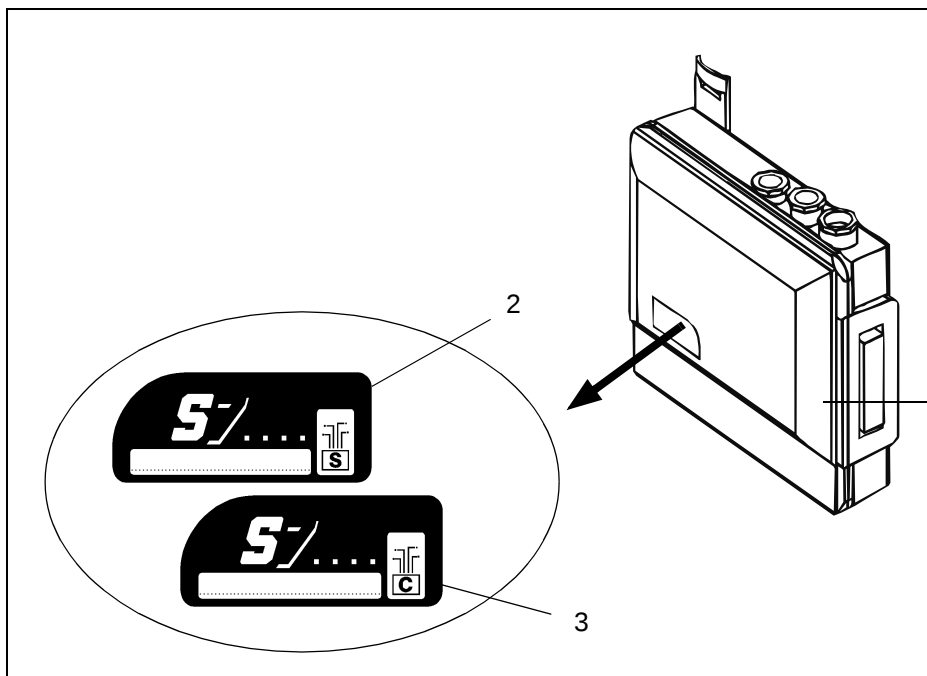
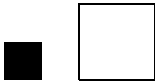
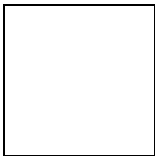


Figure 1



6 The Extension cassette

The Extension Cassette can be used for other printing possibilities, fonts and character generators.

It is in fact an extension of the printer, an extension of memory, functions and printing possibilities. In this case it must remain connected to the printer all the time.

This cassette can also be used for backing up the library of messages and associated data. This back-up can be re-loaded in another printer with the same configuration. The cassette is only connected to the machine for message transfer operations.

This cassette can also be used to drive the printer from a controller or PC using a serial link.

Depending on the type of cassette fitted to your printer, you can use:

- CurvePrint fonts
- an RS232/V24 serial link, capable of current loop operation
- an RS422 serial link

WARNING

It is essential that the Extension cassette is connected or disconnected after the printer has been switched off, when the ON/OFF message has cleared from the operator interface.

-
- | | |
|---|--|
| 1 | Extension Cassette |
| 2 | Identification icon for the Extension cassette |
-

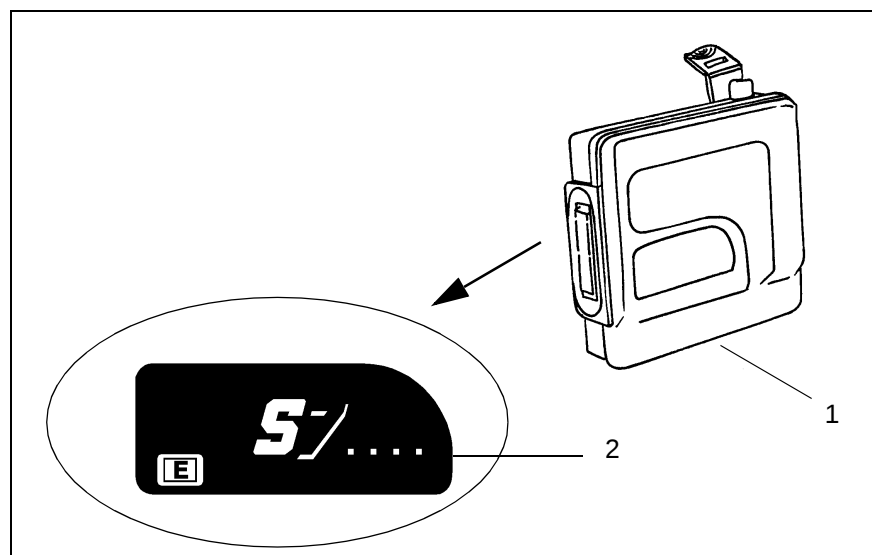


Figure 1

7 The head pressurisation accessory and the head drying kit

The printer is systematically shipped with these kits if the ink used is slow or medium-drying (see Figure 1).

The head pressurisation accessory is also recommended within dusty and humid environments. Clean air supply maintains a constant hygrometry in the print head for the best performances with slow and medium-drying inks.

The blower is used for drying the head electrodes quickly whenever cleaning has been carried out with slow and medium-drying inks.

Figure 1 : Printer, head pressurisation accessory and drying kit

- | | |
|---|-------------------------------|
| 1 | Blower |
| 2 | Head pressurisation accessory |

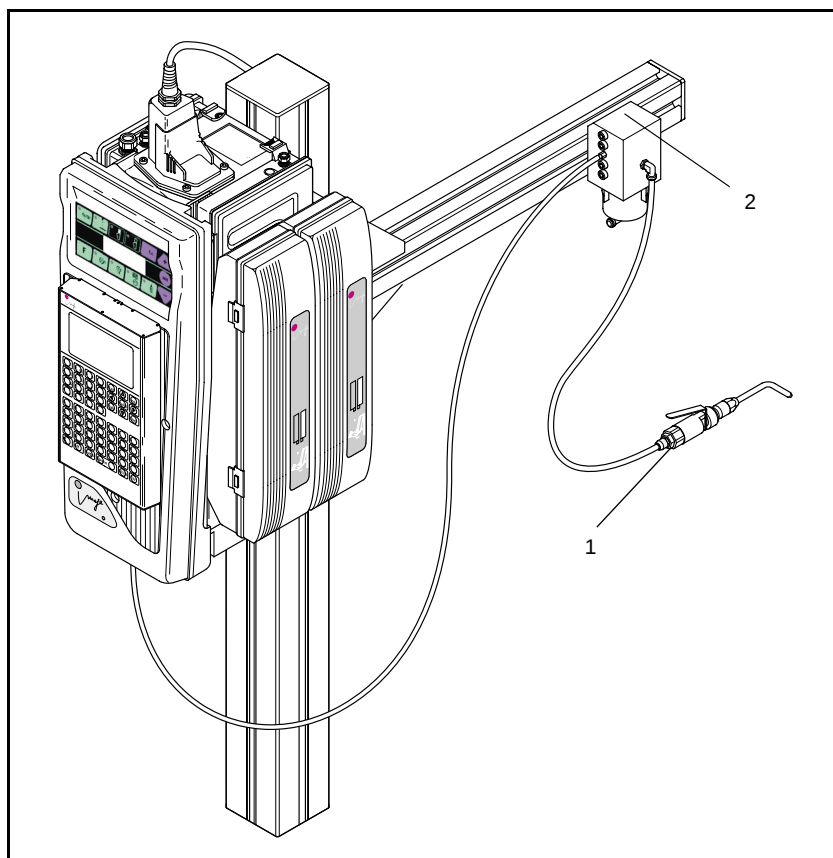
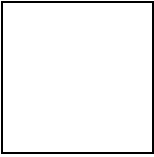


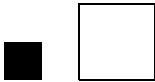
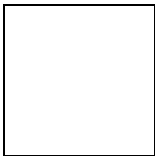
Figure 1



NOTES

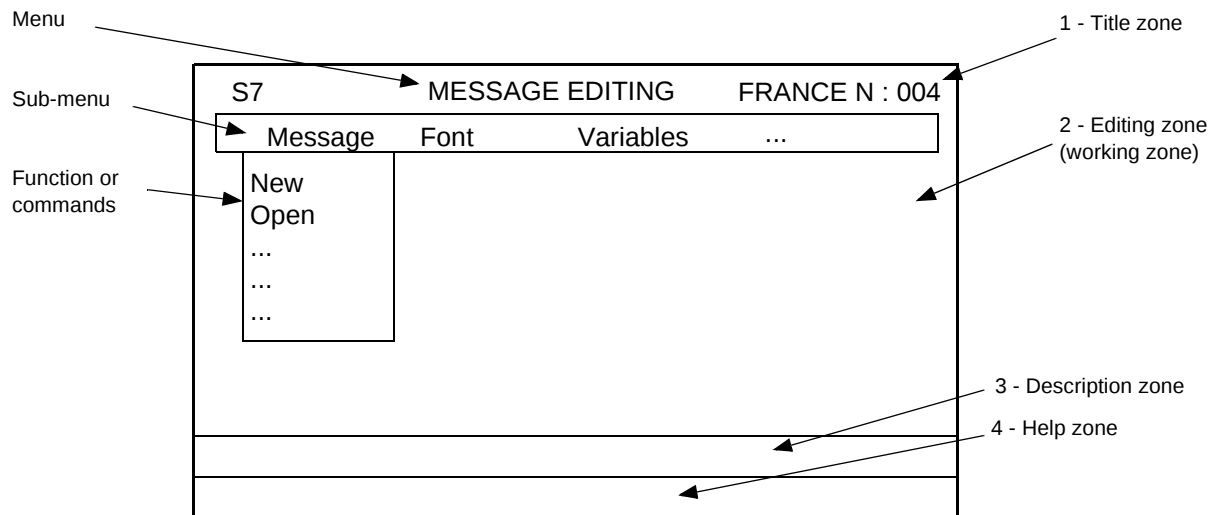
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1 Terminal Operating principle

1.1 Description of the screen



1 - Title zone

This zone contains the name of the current menu (not for the ideographic languages) and the number and title of the message on which you are working.

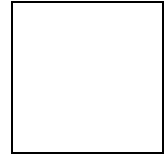
2 - Editing zone

At the top of this zone, there is a bar showing all the sub-menus available in the selected menu. This bar is always displayed. A function or command box is shown for each sub-menu when validated.

A function or command can then be selected and validated, and the box is cleared from the screen to leave the working area free.

NOTE

The sub-menus and functions cannot be accessed when they are shown in dotted-line form.
The sub-menu and functions selected are displayed in white against a black background.



3 - Description zone

Describes the function indicated.

This zone doesn't exist for ideographic languages.

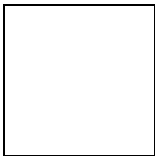
4 - Help zone

Describes the operations to be performed.

Describes the components of a message in the **MESSAGE EDITING** menu: font, date and time stamp, bar code, tabulation, etc.

Display pictograms:

-  : upper case (for latin alphabet) or upper character of a key (for Chinese, Arabic or Hebrew characters),
-  : tab mode,
- For Chinese, Arabic and Hebrew terminals a symbol indicates that the keyboard is in non-Latin character mode.
Example: in the case of an Arabic terminal, Arabic character mode  .



1.2 Use of the keyboard

1.2.1 Appearance of the keyboard

The keyboard includes:

- the letters of the alphabet, the standard numerical keypad,
- Chinese, Arabic and Hebrew characters for the corresponding terminals,
- number of symbols (%, \$, &, €, etc.) - does not apply to Chinese terminals,
- editing keys with the four arrows and the following keys:    ...

1.2.2 Using the keys



This key is used to go back through previous menus up to the main menu. If the  key is not pressed, no change will be taken into account.



This key is used to validate a selection or menu and to save work in progress.



This key is used to toggle between upper and lower case letters for latin alphabet. In upper case mode, a symbol is shown at the bottom right of the screen: ↑↑.

If you use Chinese, Arabic or Hebrew characters this key alternates between the top character and the bottom character for each key.

When upper case letters are activated, a pictogram appears at the bottom-right of the screen : ↑↑.



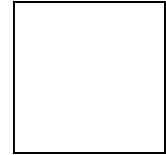
This key is used in "Message editing" to select one of the following modes:

- **Insert:** the cursor becomes vertical and modifications are inserted within the message without overwriting the contents.
- **Type-over:** the cursor becomes horizontal and the content of the message is modified by writing over the characters pointed by the cursor.



This key is used to delete the item at the cursor position (trame, character or variable) in the type over mode.

In insert mode, the character to the right of the cursor is deleted.



This key  is used to return to the beginning of the message starting from any position.

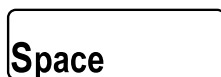


This key provides quick access to the various menus using the upper case initial letter for the menu title, e.g.   for "Font".

NOTE

Upper case letters can also be used for direct access to functions or commands; e.g. "O" for Open.

These fast accesses are only possible with languages which use the Latin alphabet.



This key is used to insert an empty space in the font selected in Message editing mode.

This key is also used for making choices in the various dialog boxes which you will come across while using the printer. In this respect, the  key serves the same purpose.



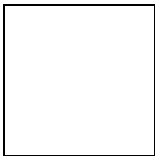
These keys are to go to the message end from any position. You can also use them to reach the last item of a list (e.g. library, font, etc.).



This key combination is used to move back to the start of the message library list page by page.



This key combination is used to move through to the end of the message library list page by page.



Use of the Terminal



and



These key combinations are used to adjust the contrast of the display.

Does not apply to the standard terminal.

These keys change from the Latin alphabet to Chinese, Arabic or Hebrew characters and vice versa.



In non-Latin character mode a pictogram is displayed in the help zone. Example :in the case of an Arabic terminal, in Arabic character mode:

εA .



- a) In MESSAGE EDITING mode, this key is used for toggling between character and frame modes. In frame mode, a symbol is shown at the bottom right of the screen .

In frame mode:

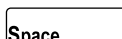
- Pressing the  key inserts tabulations. These tabulations are composed of a number of frames programmed in the **MESSAGE EDITING** menu, under the Font, Tabulation function. When the cursor is placed in front of a tabulation, the help zone shows "tabulation x" where x is the number of frames for this tabulation. Frames can be inserted one by one by pressing the  key, and can be deleted by pressing the  key. The cursor can be moved one point upwards towards the top of the message by pressing the  key, and one point downwards by pressing the  key. The lines of the message therefore do not have a fixed position as is shown on the example below.

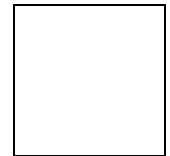
LINE POSITIONING DOT PER DOT

This frame mode cannot be used with rapid multiline algorithms.

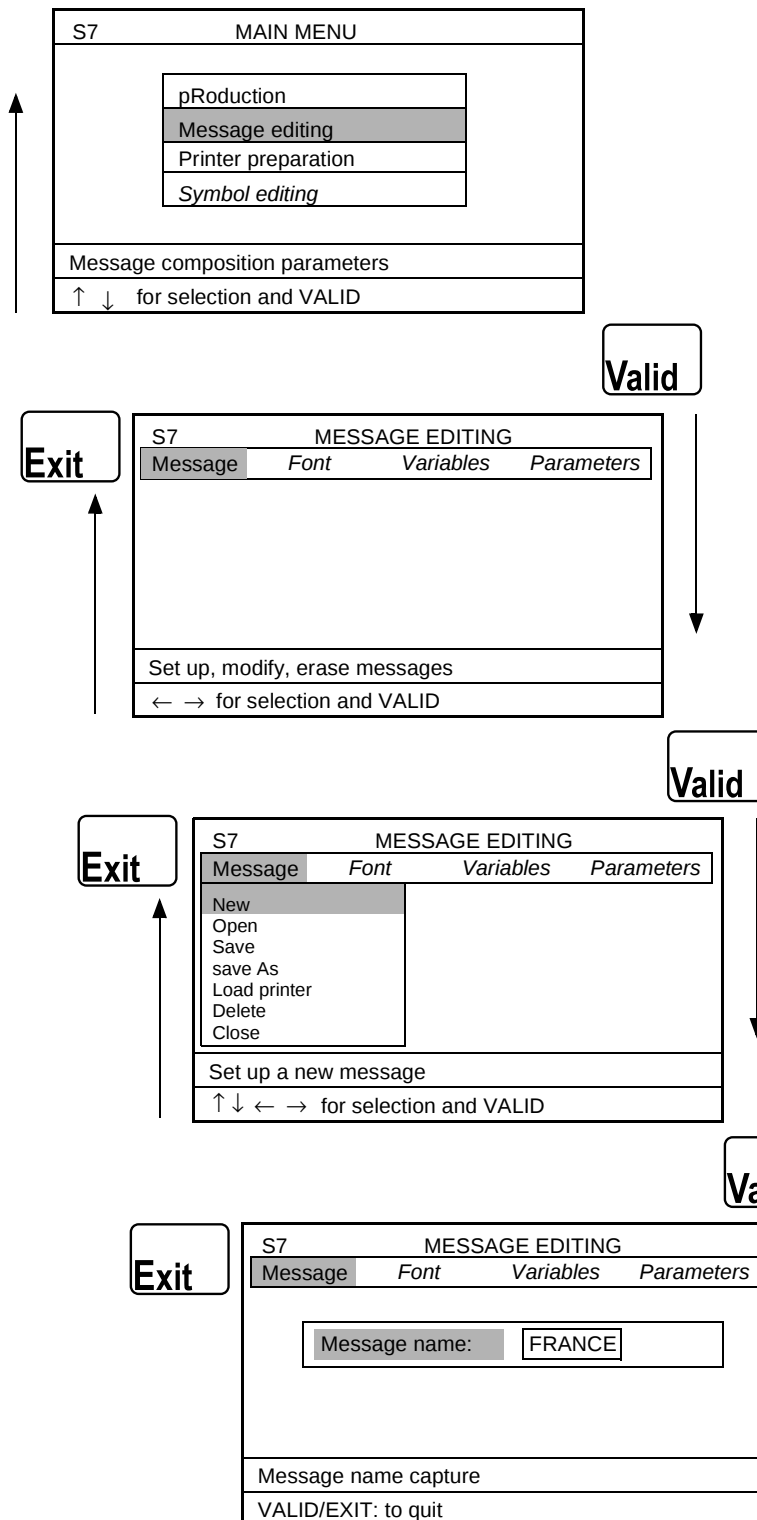
In character mode:

Normal editing mode conditions apply, and pressing the arrow keys moves the cursor character by character and line by line.

- b) This key is also used for making choices in the various dialog boxes which you will come across while using the printer. In this respect, the  key serves the same purpose.



1.3 How to access the function or command you require

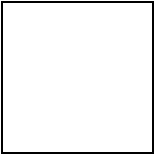


Several menus are shown for you to choose from. Select the one you want.

You are offered another choice.

Continue, step by step, until you come to the function or command required (three levels at the most).

The various stages remain displayed. Specific help is provided at the bottom of the page for each successive stage. This is the principle used for the pull-down menus you will be using with this printer.



1.4 How to select a message

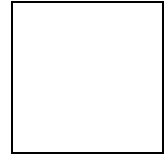
S7		PRODUCTION	
Printer	Message	Status	mAint.
Mode: Name-Number		Select:	
	IMAJE	001	
	CYBERG	002	
	FRANCE	003	
			
	TEST	009	
← : Mode, → : Selection			
↑, ↓, shift ↑, shift ↓, home, shift home			

A message can be selected by its number, which is the "Number-name" mode. It can also be selected by name, which is the "Name number" mode.

The instructions at the bottom of the screen are for access to the change of mode and for choice of message and indicate the different keys for moving in the library.

The "Name number" selection mode can be used for searching for a message with only a few contiguous letters. The printer will then provide a list on the basis of these characters, in alphanumerical order.

With the "Number name" selection it is possible to position in the library or choose a message by inputting a three figure number in "Select".

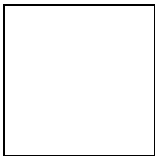


1.5 Introduction to the menus

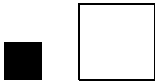
S7	MAIN MENU
pRoduction Message editing Printer preparation <i>Symbole editing</i>	
Printer status/Message selection	
↑ ↓ for selection and VALID	

The main menu is divided into four subsidiary menus:

- **PRODUCTION:** the operator interface is fully suited to everyday use of the printer and the PRODUCTION menu completes the picture.
- **MESSAGE EDITING:** the MESSAGE EDITING menu contains all the functions that are used for creating messages, modifying them and setting their parameters.
- **PRINTER PREPARATION:** the PRINTER PREPARATION menu contains all the functions used for initialising the printer when it is used for the first time.
- **SYMBOL EDITING:** the SYMBOL EDITING menu contains all the functions and commands used to create and modify symbols, logos and drawings.
This menu is only present on S7 MEGA and SUPRA printers.



Use of the Terminal



2 How the menus, sub-menus, functions or commands are organised

The order in which the items are treated in this chapter is the same as the order in which they are presented on the printer screen.

The functions in italics are not available for all types of printer.

PRODUCTION

Printer	Message	Status	mAint.
Start-up printer sHut-down printer Jet start jEt stop Manual print	Select message <i>sAve library</i> <i>Load library</i> Display/init counters		Jet maintenance Fault override List of faults Exchange date Software version

MESSAGE EDITING

Message	Font	Variables	Parameters
New Open Save save As Load printer Delete Close	select Font Select symbols Bolderization Tabulation barCodes	Counter Hour Date <i>Autodating table</i> Postdate Shift code External	Message Counter Postdate Barcode

PRINTER PREPARATION

Initialization	Options	Access codes
Message Printer View <i>Jet alignment</i>	Machine options Totalizer	

SYMBOL EDITING

Symbol	Size
New Open Save save As Delete Close	<i>Symbol size</i>

3 PRODUCTION Menu

S7	PRODUCTION		
Printer	Message	Status	mAint.

The operator interface is fully suited to everyday use of the printer and the **PRODUCTION** menu completes the picture.

The active message appears on the screen with all the variable items which are updated every second.

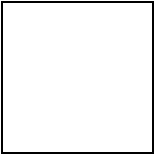
3.1 Printer

Printer
Start-up printer
sHut-down printer
Jet start
jEt stop
Manual print

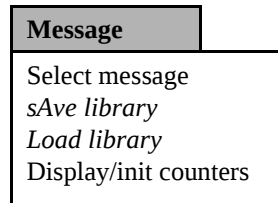
The PRINTER submenu is used to start up or shut down the printer as well as to start or stop the jets.

It can also be used to perform a print test.

The printer is usually started up and shut down from the operator interface using the  key.



3.2 Message

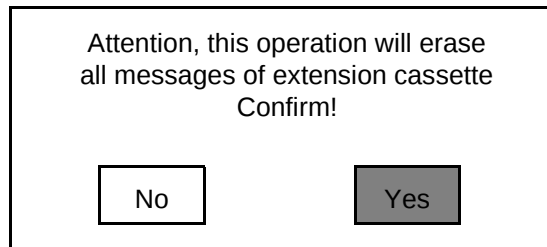


3.2.1 Select message

When this function choice is validated, a dialog box presents you with the list of all the messages which are stored in the printer's memory. Use the arrows and the **Valid** key to select the message you wish to print.

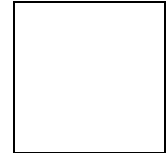
3.2.2 sAve library

This function is used to save the command module's message library in an extension cassette. It is only available for S7 Mega and Supra printers. A warning message is displayed to indicate that this operation will delete all messages present in the cassette. The operation must be confirmed twice.



CAUTION

- 1) Messages you create with the extension cassette connected are saved in the extension cassette.
 - 2) If the memory in the command module is empty and you use the save function, the extension cassette will be empty.
-



3.2.3 Load library

The "Load library" function copies the message library from an extension cassette into the command module.

It is only available for S7 Mega and Supra printers.

REMARK

**The memory in the command module is smaller than the memory in the extension cassette.
If the storage content in the cassette exceeds the capacity of the command module, no data is copied.**

Example: transferring data between two printers.

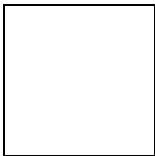
- 1) Take the extension cassette out of printer 1 (the one containing the data you want to retrieve).
- 2) Connect the cassette to printer 2 (the one you want to copy the data to).
- 3) Copy the data using the "Load library" function.
- 4) Take the cassette out of printer 2 and reinsert the original cassette.
- 5) If you would like to copy the new data onto the original cassette, use the "sAve library" function.

CAUTION

It is essential that the Extension cassette is connected or disconnected after the printer has been switched off, when the ON/OFF message has cleared from the operator interface.

3.2.4 Display/init counters

This command allows you to display the value of the counters and reset them to their starting value if necessary.



3.3 Status

Status
Ink M.status: Ready Jet status: Ready Ref P: + 2.39 Acc P: + 2.43 Tamp P: - 0.09 T° C: 20 Jet speed 1: 20.00 m/s

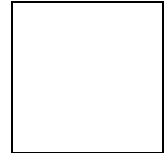
This sub-menu is used to display the machine status and operating parameters in real time:

- **Ink M.status:**
Shows whether the ink circuit is in service or not.
- **Jet status:**
Shows whether the jet is in service and ready to print or not.
- **Ref P:**
Shows the reference pressure setting in the ink circuit.
- **Acc P:**
Shows the actual pressure in the ink circuit.
- **Tamp P:**
Shows the drop in pressure at the inlet gutter.
- **T°C:**
Shows the printer operating temperature.
- **Jet speed 1:**
Shows the speed of jet number 1. (With a twin-jet machine the speed parameter shown is for jet no 2).
- **Display/acknowledgement of faults and alarms:**
When faults or alarms occur, they are displayed in clear text in a dialog box.

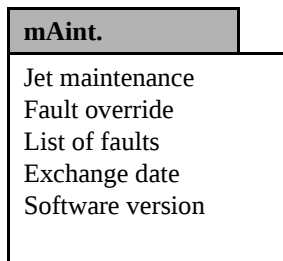
85 Default	01/01
Jet vacuum	
Restart jet, check gutter function	
↑ ↓ : list, VALID: acknowledge	

The figure at the top right indicates the number of faults.
A recommendation is displayed as to how to correct the fault.

To acknowledge, press **Valid**.



3.4 mAint

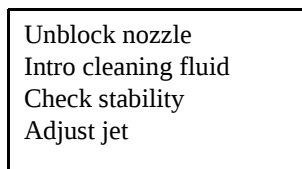


This menu provides all the functions necessary for jet maintenance. They can also be called via the operator interface.

The terminal can be used when the printer is out of reach.

You can also use this submenu to call up information on fault and module replacement histories as well as on the software version.

3.4.1 Jet maintenance

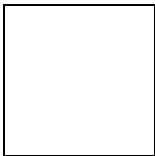


To execute any of these functions, follow the instructions displayed on the screen. For further details, see the section USE OF THE OPERATOR INTERFACE. The procedures associated with these functions are described in the section ROUTINE MAINTENANCE.

3.4.2 Fault override

Cover fault	Allowed
Drain fault	Allowed

You can use this function to deactivate open cover control and/or control jet recuperation, i.e. no supervision of these faults is performed. Whenever the printer is stopped, this function goes back to its initial value.



3.4.3 List of faults

When this function is selected and validated, a dialog box is displayed giving the list of the last thirty faults and alarms in the order in which they occurred.

For each fault or alarm, it is possible to show the last ten printer operating parameter values prior to the fault or alarm occurring.

3.4.4 Exchange date

This function is used to call up or enter the replacement dates of ink management modules (Ink M.), print management modules (Print M.), power supply modules (Power M.) and command modules (Cmde M.). A counter displays the number of hours of operation for Ink M. and Print M. and the number of hours during which power has been supplied to Power M. and Cmde M.

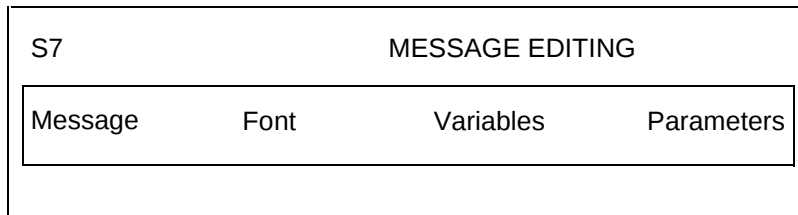
Example for the Ink Module:

Ink M	Counter 000670
Date 1 : 01/07/92	Date 2 : 25/09/94
Date 3 : 10/01/96	Date 4 : 04/02/98

3.4.5 Software version

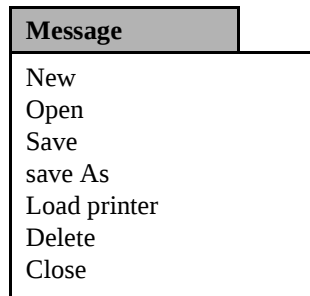
This function is for telling the user which version of the printer, terminal and extension cassette software is in use.

4 MESSAGE EDITING Menu



The **MESSAGE EDITING** menu is used for editing a message together with the associated fonts, variables and parameters. The **FONT**, **VARIABLES** and **PARAMETERS** sub-menus can only be used when a message has been opened (using **NEW** or **OPEN**).

4.1 Message



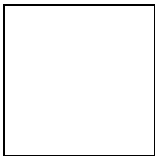
The **MESSAGE** sub-menu enables you to create a new message, to open or copy an existing message, to save a message in memory, to cancel a message from memory, or to transfer a message to the printer to be able to test it in print.

4.1.1 New

The **NEW** command enables you to create a new message. When **NEW** is selected, a dialog box asks you to give a name to your message. The name can contain eight numbers or letters. After validation, a cursor appears at the bottom left of the work zone on the bottom line of your message.

CAUTION

In the case of the **NEW** and **SAVE AS** commands, message names may be entered only in the upper case Latin alphabet.



4.1.2 Open

The OPEN command enables you to enter an existing message in order to modify its content, format or printing parameters. When OPEN is selected, a dialog box shows you the list of messages in memory. A message is searched either by name or by number. Please follow the instructions at the bottom of the screen for the choice of selection type, then for message selection. A message can be searched with only a few letters of its name.

4.1.3 Save

When you have finished creating a message complete with all the parameters and variables, it must be stored in memory for it to be possible to print it at a later stage if required. This is the purpose of the SAVE command. When this function has been completed, your message is still open and remains displayed on the screen. It must be closed using the CLOSE command.

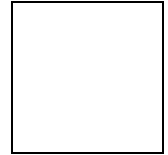
4.1.4 save As

The SAVE AS command is used for saving a new version of an existing message when it has been modified in some way (contents, font, variables or parameters):

- select the original message using OPEN.
- modify this message,
- select SAVE AS,
- a dialog box is displayed showing the message name,
- give the modified message a new name,
- the new name and the new message number are displayed at the top right of the screen,
- RESULT: the old message remains stored in the printer memory together with the new message which has just been created.

NOTE

The message number selected is the first available number in chronological order in the library contents.



4.1.5 Load printer

The command is used for transferring a message which is being edited to the printer, to carry out a print test for example. The message printed will be the current version of the message at the moment it was transferred. The title of the active message on the Operator Interface becomes *****.

NOTE

In this instance, the message is not saved, and if you close without saving the message, it will be lost.

This command makes it possible to carry out print tests while a message is being edited, however it cannot replace the SELECT MESSAGE function on the Operator Interface.

4.1.6 Delete

This command enables you to delete a message from your printer's memory.

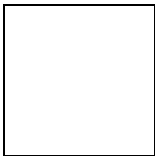
CAUTION

Once a message has been cancelled, it cannot be recovered. The message to be cancelled is selected from the library in a dialog box. As a safeguard, you are prompted to confirm cancelling of the message selected.

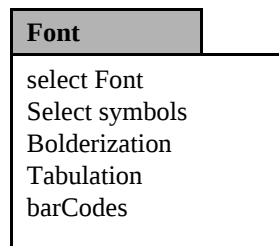
4.1.7 Close

Once you have finished creating or modifying a message you can close it and go back to the main menu or carry out any other action you wish to make.

You can not leave the **MESSAGE EDITING** menu if a message is still open, and the CLOSE command must be used. If you have not already saved the message, a dialog box asks you whether you wish to save it.



4.2 Font



This menu provides you with all tools you need for setting out your messages and obtaining top quality markings. These tools or commands can, in some instances, be used at the same time.

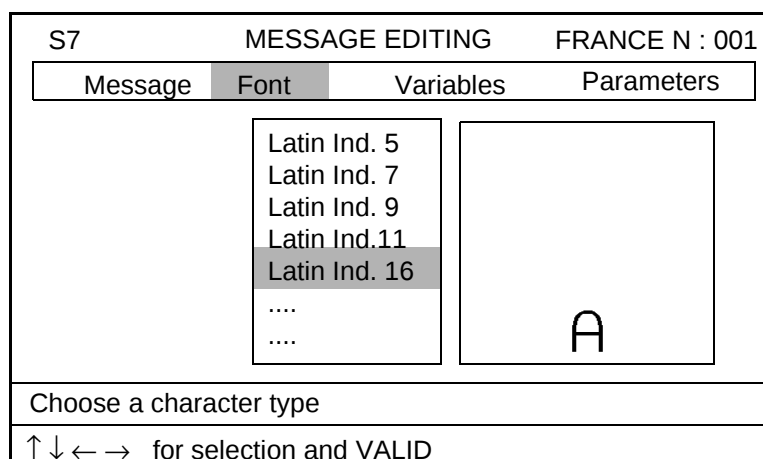
4.2.1 select Font

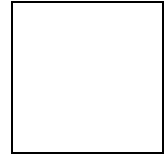
When this selection is validated, a dialog box shows all the fonts available in your printer. The letter "A" is shown in the font selected to enable you to visualise how your selection will appear.

Once a font has been validated, the height of the cursor takes the height of the font selected.

The letters of the Latin alphabet are available in industrial font with matrices 5, 7, 9, 11 and 16 points high in rapid and quality types.

You also have other fonts (Asian, Arabic, etc.) depending on the terminal's language option. These fonts correspond to the keyboard characters for Chinese, Arabic, Hebrew and languages using the Latin alphabet. For other languages (Thai, Korean, etc.) they correspond to the characters selected in the FONT sub-menu, SELECT SYMBOLS function.





With the S7 MEGA and SUPRA printers you also have:

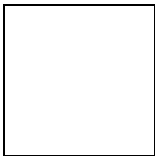
- Industrial Latin matrix 24 and 48 points high.
- Other alphabets: Arabic, Greek, etc.
- Other fonts: new york, ocrb, etc.
- Special fonts: logos.
- All alphabets, fonts and matrix in quality type (head/object distance: 30 mm for a G head; 20 mm for a M head).
- CurvePrint fonts: three types of fonts are available: 1x8, 2x8 and 16 dots, offering heights of 7, 11 and 16 dots.

A special extension cassette is required to use these fonts.

To enable CurvePrint fonts in this menu, the CRV line must be selected in the Algorithm number/MESSAGE function of the PARAMETERS sub-menu.

REMARK

- 1) Once CurvePrint fonts are selected, other fonts are no longer available.**
 - 2) To change from standard mode to Curved mode (and vice versa) the message must be empty.**
 - 3) Bar codes are only permitted for heights of 7, 11 and 16 dots.**
-



Use of the Terminal

- Rapid multiline algorithms:

Type of head	Number of algorithms	Characteristics
G	030	3 lines of 5 points high
	040	3 lines of 7 points high
	041	4 lines of 5 points high
	047	2 lines of 7 points high
	048	2 lines of 5 points high
	050*	4 lines of 7 points high
M	035	3 lines of 5 points high
	036	3 lines of 7 points high
	037	4 lines of 5 points high
	049	2 lines of 5 points high

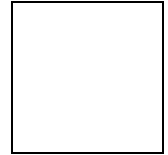
* Single-jet only

IMPORTANT

In order to use a rapid multiline algorithm, the number must be input in the message parameter concerned.

CAUTION

Width of characters superior to 80 rasters will be not display in the vizualisation window.



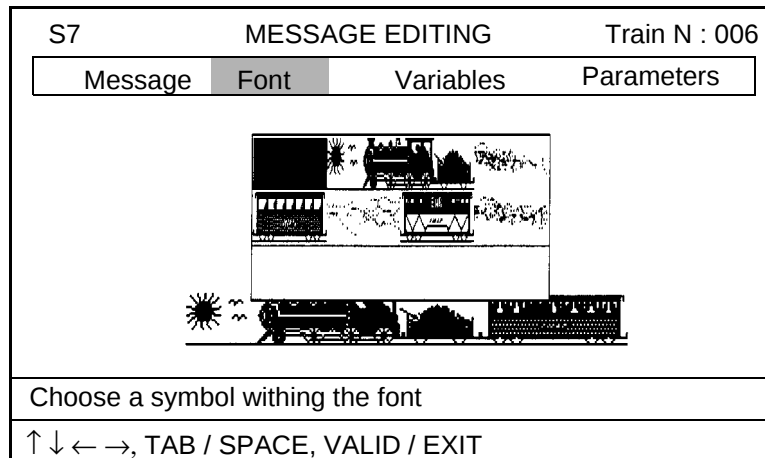
4.2.2 Select symbols

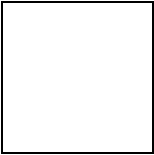
When this function is validated, a dialog box displays all the symbols or characters associated with the font selected. Some fonts cannot be displayed in their entirety, and in this case use the right and left arrows to see all the characters.

A window is available under the font for selecting symbols. The symbol created is then positioned in the message at the cursor position.

This function is very useful if you use special fonts with characters which are not included on the keyboard (e.g.: logo or the characters Ñ and Ö).

It is therefore used for creating messages in Korean, Thai, etc.





4.2.3 Bolderization

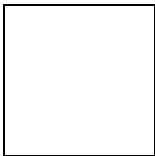
This function is used to print characters you want to stand out in the message in bold, without changing their height. A dialog box asks you to enter the bolderization coefficient required. Coefficients are from 1 to 9, with 9 giving the boldest print (the default value is 1). From now on, all the symbols selected will be written on the screen with the bolderization factors chosen incorporated (what you see on the screen is what you get on the print-out).

S7	MESSAGE EDITING		FRANCE N : 001
Message	Font	Variables	Parameters
Bolderization: 5			
Bolderization capture			
VALID / EXIT : to quit			

4.2.4 Tabulation

This function is used for defining a blank space between two characters or symbols which are not the same as the standard space in the font used. The space normally has the same width as a standard character, but with this command you can set the width yourself (1 to 255 points).

Insertion is performed in the trame mode (select with the key) using the key.



4.2.5 barCodes

4.2.5.1 Composition and insertion in the message

This command enables you to insert up to three codes of different types (bar codes or Datamatrix codes) into the message. A dialog box asks you choose between 3 codes which are identified by their type. Then you move on to a code composition box:

Code 39

Counter
Date
Time
Shiftcode
Postdate
Extern. elemt

Compose the code inserting the fixed or variable elements.

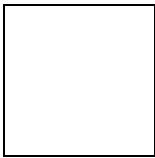
- The fixed elements allowed (digits or letters) can be directly inserted.
- The variable elements are inserted as in the message. The dialog boxes are identical.
- "Extern. elemt" is used to reserve locations within a code for variable characters to be sent over the external RS232/V24 or RS422 link.

REMARK

- 1) In message editing mode, when the cursor is placed in front of a bar code that has already been entered, use the  and  keys simultaneously to display how this bar code was composed.
- 2) At the time of editing a barcode with plain text, which contains external variable zones, it is mandatory to separate these zones with fixed elements.

NOTE

Codes details are set using the **BARCODE** function, in the **PARAMETERS** sub-menu under the **MESSAGE EDITING** menu.



4.2.5.2 Details of each code

Industrial codes

2/5 interleaved

- Used to transcribe numerical characters only into bar code form.
- These characters may be variables (counter, date, ...).
- Max. 32 characters.

The dialog box is as follows:

Counter 2/5 interleaved

Date

Time

Shiftcode

Postdate

Extern. elemt

If check byte

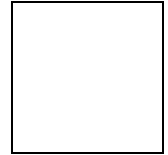
CAUTION

- 1) - With no check byte (☐) the number of characters input must be even.
 - With a check byte (☒) the number of characters input must be odd.
 - 2) If you want to enter the shiftcode in your 2/5 interleaved bar code, only the numerical representation is possible.
 - 3) If you want to enter date and/or postdate data items in your 2/5 interleaved bar code, only the numerical representation of the month is possible.
-

Code 39

- Used to transcribe alphabetic characters, numbers and the following symbols: = . , space \$ / + %.
- These characters may be variables (counter, date, ...).
- Max. 32 characters.
- The check digit is facultative.

The dialog box is identical to the one used for 2/5 interleaved.



Distribution codes

These codes are only available for S7 MEGA and SUPRA printers.

The cursor indicates the bottom of the assembled bar code (bars + numerical translation) irrespective of the position of the translation.

You can print the bars and the plain text using the same jet. Pay attention to the height of the bars and the plain text.

The size of the numerical translation is variable and is that of the current font

The height of the bars can be parameterised.

The translation can be positioned above or below.

By modifying these three parameters you can place the bar code in a large number of different positions in the message.

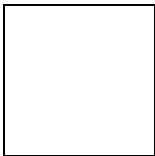
EAN 13, EAN 8, UPCA, UPCE

- Used to transcribe numerical characters only into bar code form.
- These characters may be variables (counter, date, ...).
- 13 characters for EAN 13.
- 8 characters for EAN 8.
- 13 characters for UPCA, the first digit is always equal to 0.
- 8 characters for UPCE, the first digit is always equal to 0.

The dialog box is identical to the one used for 2/5 interleaved.

CAUTION

The last character entered is always considered to be a check byte. If this digit is not correct, this will be indicated by the printer which replaces it with the correct value automatically.



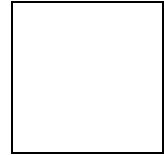
EAN 128 and code 128

The dialog box is as follows:

- Max. 47 characters.
- The character set is subdivided into 4 menus which can be found in **Mode 128** (Code A, Code B, Code C) and **Auxiliary characters**.
- **Code A** : includes all standard upper case letters and numbers, control characters and special characters.
- **Code B** : includes all standard upper and lower case letters and numbers, special characters. **This is the default mode.**
- **Code C**: includes the set of 100 pairs of digits from 00 to 99 and special characters (the characters are entered two by two).
- **Aux. char.:** includes control characters (NUL, SOH, ...) and special characters (FNC1, SHIFT, AI, ...). The contents of the dialog box depend on the selection for Mode 128. Two AI characters framing a data field of any length make the field appear in unencoded parentheses in the plain text.
- These characters may be variables (counter, date, ...).

CAUTION

- 1) The A, B or C reverse video characters appear as codes A, B or C when they appear in the composition.
 - 2) Only mode B is permitted if Optimization is checked in the bar code parameters.
 - 3) The last character entered is always considered to be a check byte.
If this digit is not correct, this will be indicated by the printer which replaces it with the correct value automatically.
-



HIBC

This code had the same characteristics as code 128 mode C.

- The optimisation parameter is not valid.
- There is no default mode.
- The first two characters are in brackets.

The dialogue box is identical to that for EAN 128 / code 128.

Datamatrix code

This code is only available for S7 MEGA and SUPRA printers.

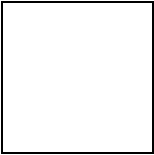
- An ECC200 code is used, with automatic format calculation (square or rectangle).
- The code height can vary from 8 to 24 dots.
- The cell size is programmable: 1 or 2 drops.
- The code can be used to print all types of variable.
- Maximum encoding capacity:

Bolderization	1 drop cell					2 drop cell		
Code height (dots)	9		11	16	24	16		24
Matrix size	8 x 18	8 x 32	10 x 10	16 x 48	24 x 24	8 x 18	8 x 26	12 x 36
Number of encoded numeric characters	10	20	6	98	72	10	20	44
Number of encoded alphanumeric characters	6	13	3	72	52	6	11	31
Number of encoded 8-bit ASCII characters	3	8	1	47	34	3	13	20

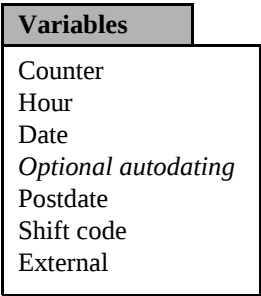
The dialog box is identical to the one used for 2/5 interleaved.

CAUTION

- 1) The resolution of the message is given by the resolution of the Datamatrix code.
- 2) In certain cases it may be necessary to increase the distance between the head and the object in order to avoid the drops being superimposed and enable the code to be read correctly.



4.3 Variables



This menu is used for inserting variable data items into your message.

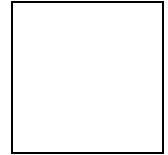
REMINDER	We recommend you to enter the parameters before inserting variables into a message.
-----------------	--

4.3.1 Counter

This menu allows you to insert up to 15 counters into your message one or more times each. The counters can be linked. The initial value of the counter is shown in your message.

NOTE	Counter details are set using the COUNTER function, in the PARAMETERS sub-menu under the MESSAGE EDITING menu.
-------------	---

Counters 3 to 15 are only available for the S7 SUPRA printer.



4.3.2 Hour

This menu is used for inserting time data items into your message.

A dialog box prompts you to compose your "date and time-code" variable by entering details about the time (hour, minutes and seconds) and the separator characters to be used (: / .), in the order you require.

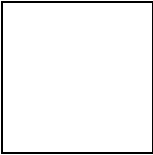
Mode allows you to display AM, PM or a blank in 24 mode.

The composition line displays the time data items as they are set.

NOTE

The printer time is set using the PRINTER function in the INITIALIZATION sub-menu under the PRINTER PREPARATION menu.

S7	MESSAGE EDITING	FRANCE N : 001																			
Message	Font	Variables	Parameters																		
<table border="1"><tr><td>Hours</td><td><u>HH</u></td><td>☐</td></tr><tr><td>Minutes</td><td><u>NN</u></td><td>☐</td></tr><tr><td>Seconds</td><td><u>SS</u></td><td>☐</td></tr><tr><td>Mode</td><td><u>hh</u></td><td>☐</td></tr><tr><td>Separator</td><td></td><td></td></tr><tr><td>Data</td><td></td><td></td></tr></table>				Hours	<u>HH</u>	☐	Minutes	<u>NN</u>	☐	Seconds	<u>SS</u>	☐	Mode	<u>hh</u>	☐	Separator			Data		
Hours	<u>HH</u>	☐																			
Minutes	<u>NN</u>	☐																			
Seconds	<u>SS</u>	☐																			
Mode	<u>hh</u>	☐																			
Separator																					
Data																					
Time composition																					
↑ ↓ , TAB / SPACE, VALID / EXIT																					



4.3.3 Date

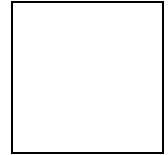
This menu is used for inserting date data items into your message. A dialog box prompts you to compose your "Date" variable using the following details:

Day of the week	X	☐
Day of the month	DD	☐
Day of the year	JJJ	☐
Last figure of the year	y'	☐
Week of the year	ww	☐
Month of the year (Figure)	MM	☐
Month 1 of the year (Letter)	m*m*m	☐
Month 2 of the year (Letter)	m'm'm	☐
Year	yy	☐
Separator		
Composition		

Day of the week (1 for Sunday, can by changed using the MISCELLANEOUS stage, MESSAGE function, in the INITIALIZATION sub-menu under the **PRINTER PREPARATION** menu).
The composition line displays the date data items as they are set.

NOTE

The printer date is set using the **PRINTER** function in the **INITIALIZATION** sub-menu under the **PRINTER PREPARATION** menu.



4.3.4 Optional autodating

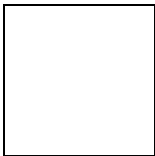
This function is only available for the S7 MEGA and S7 SUPRA printers.

It can be used to insert all time and date variables encoded using the autodating table.

Hours	<u>H</u> *t	☐
Minutes	<u>N</u> *t	☐
Month	<u>M</u> *t	☐
Day of the week	<u>X</u> *t	☐
Day of the month	<u>D</u> *t	☐
Day of the year	<u>J</u> *t	☐
Week of the year	<u>W</u> *t	☐
Year	<u>Y</u> *t	☐
Separator		
Composition		

NOTE

The variables are encoded in the **PRINTER PREPARATION** menu, **INITIALIZATION** sub-menu, **MESSAGE** function.



4.3.5 Postdate

This menu is used for inserting postdate date items in your message.

A dialog box prompts you to compose your "Postdate" variable using the following details:

Postdate 1

PostDay month	☐	<u>D1</u>
PostDay year	☐	<u>J*1</u>
PostDay year programmab.	☐	<u>J*1</u>
PostWeek year	☐	<u>W1</u>
PostMonth year (Figure)	☐	<u>M1</u>
PostMonth 1 year (Letter)	☐	<u>m*1</u>
PostMonth 2 year (Letter)	☐	<u>m'1</u>
Postyear	☐	<u>Y1</u>
Separator		
Composition		

The digit indicates the number of the postdate. Example : D1 means Postday month of Postdate 1.

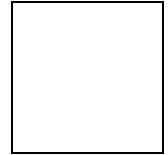
Postdate 2 to 6

These postdates are only available for the S7 MEGA and S7 SUPRA printers.

PostDay of month	☐	<u>D4</u>
PostDay year	☐	<u>J*4</u>
PostDay programmable	☐	<u>J*4</u>
PostDay week (T)	☐	<u>Xt4</u>
PostWeek year	☐	<u>W4</u>
PostMonth year (figure)	☐	<u>M4</u>
PostMonth year (letter;T)	☐	<u>Mt4</u>
PostYear	☐	<u>Y4</u>
Separator		
Composition		

NOTE

The postdates value setting is made using the POSTDATE function in the PARAMETERS sub-menu under the MESSAGE EDITING menu.



4.3.6 Shift code

A dialog box prompts you to choose between three different shift code display options available. Once you have validated your choice, a character (letter of the alphabet or number) is displayed in your message.

NOTE

The details of the shift codes can be set using the MESSAGE function in the INITIALIZATION sub-menu under the PRINTER PREPARATION menu.

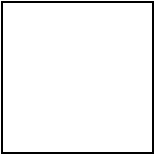
4.3.7 External

This function is used for reserving within a message locations for variable characters for external delivery (RS232/V24 or RS422). Example: weight supplied by scales or information sourced from an automaton or a barcode reader.

If no information is sent by the external link, these reserved locations are shown when printing by the selected display symbol as shown on the screen.

A dialog box can be used to specify the number of locations to be reserved and the screen symbol.

Size (characters nb) :	01
Displayed pattern:	*



4.4 Parameters

Parameters

Message
Counter
Postdate
Barcode

This menu is used for setting the parameters of the variables required for editing messages. It also includes the message parameters which configure the printer for the installation on the production site.

Each of these parameters is shown with a default value. This value can be changed for each message in this menu.

NOTE	The default value of these parameters is set using the MESSAGE function in the INITIALIZATION sub-menu under the PRINTER PREPARATION menu.
------	--

4.4.1 Message

A dialog box shows all the items which will adapt the message to the printer production site:

Head sense:

Tacho mode:

☐

Tacho division:

0015

Object speed:

0100

Set off:

Object

Unit:

Millimeter

Forward margin:

0003

Return margin:

0003

Repetitive interval:

0002

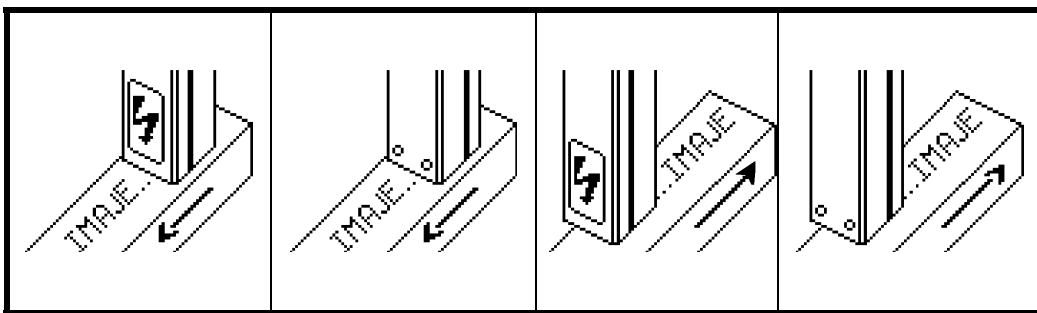
Algorithm number:

000

- **Head sense:**

Parameter programming depends on the installation of the printer on your production chain and the results you require.

The printer proposes to choose the configuration among four which correspond to your application.



NOTE

In each case, reverse the direction of the item to read the message by transparency.

- **Tacho mode:**

Select this function if your installation requires a speed detector or "tacho" which informs the printer about the speed of the product. In this case, you must also define the next function "Tacho division".

CAUTION

Do not tick this box if your installation does not include a tacho.

- **Tacho division:**

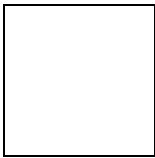
Only use this function if you have already selected "tacho mode".

This step requires you to enter a number to obtain the width of character you wish to be printed.

- **Object speed:**

If the items pass at a constant speed, enter this speed in millimeters per second.

If you are using the "tacho mode", you should enter the maximum speed at which items pass.



- **Set off:**
This function is used for selecting between object mode, repetitive mode and multitop mode.
 - "Object" start mode is for printing a single message per item.
 - "Repetitive" start mode is for continuous printing for as long as the item detector is activated.
 - The "Multitop" activation mode corresponds to the continuous printing of a defined number of messages for a top objet. To set this number, select the submenu INITIALIZATION, function PRINTER, stage MISCELLANEOUS.
- **Unit:**
This function is used to select the unit, millimeter or raster, for setting the print margins and the repeat interval.
- **Forward margin:**
This parameter defines the space between the point of detection of the item and the start of printing (in normal "message direction" mode).
- **Return margin:**
This parameter defines the space between the point of detection of the item and the start of printing (in the reverse "message direction" mode).
- **Repetitive interval:**
This parameter defines the space between two prints in repetitive "start mode".

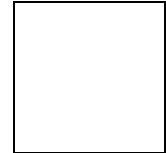
IMPORTANT

**The minimum value of the interval is 9 mm.
The maximum value of the interval is 1400 mm for G head
and 910 mm for M head.**

- **Algorithm number:**
This function is used to parameter a fast multiline algorithm number or to select CurvePrint fonts (CRV). See the select Font sub-section of this section.

NOTE

**The default value for these parameters is set using the
GENERAL PARAMETERS stage, MESSAGE function in the
INITIALIZATION sub-menu under the PRINTER PREPARATION
menu.**



4.4.2 Counter

A dialog box prompts you to select a counter when you have made your selection, you can access the counter parameters and change them if required.

The parameters are as follows:

Counter	1
First figure:	000000000
Last figure:	999999999
Counter step:	01
Batch counter:	000001
Evolution mode:	Inactive
External reset:	A or B input
Activate output:	☐
Zero before figure:	☐
Reinit./top object:	☐
Automatic reset:	☐

NOTE

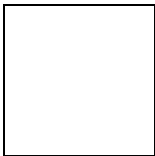
The default value for these parameters is set using the **MESSAGE** function in the **INITIALIZATION** sub-menu under the **PRINTER PREPARATION** menu.

- **Counter** - Indicates the number of the selected counter.
- **First figure** - 000000000 to 999999999
- **Last figure** - 000000000 to 999999999 - When this end value has been printed the counter goes back to the start value.

REMARK

To make the counter move in decreasing order, the start value must be greater than the end value.

- **Counter step** - 00 to 99 - this is the value by which the counter is incremented.
- **Batch counter** - 0000 to 9999 - this is the number of items in a batch. The counter is incremented when the batch value is reached.



- **Evolution mode**

- Inactive : counter does not change.
- Input A/Input B : the counter is incremented in response to data from inputs A or B of the Complete Industrial Interface cassette (only with S7 SUPRA printer).
- Object : the counter is incremented in response to data from the object pulse input.
- Message : the counter is incremented when the printer prints a message.
- Linked : the counter is incremented in response to the overflow of the previous one.

- **External reset** - A or B default. See INPUT/OUTPUT CONNECTIONS section.

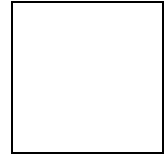
- None : without reset to start value with an input
- A : reset to start value with RAZCPA input
- B : reset to start value with RAZCPB input
- A or B : reset to start value with RAZCPA or RAZCPB input

- **Activate output** - ☒ (yes) or ☐ (no), it is possible to validate an Industrial Interface Cassette output (ETAT) which changes state when the counter reaches its end value.

CAUTION

**The Counting function must not be set to "Tach. puls nb".
See ETAT output, INPUT/OUTPUT CONNECTIONS section.**

- **Zero before figure** - ☒ (yes) or ☐ (no).
- **Reinit/top object** - ☒ (yes) or ☐ (no) - in repeat mode the counter goes back to its start value every time the "item pulse" signal is received.
- **Automatic reset:**
 - ☒ Reset to start value of the counter as soon as the message is no longer active.
 - ☐ The counter keeps the last printed value when the message is no longer active. The initial value can be reset through the Operator Interface or the Terminal.



4.4.3 Postdate

A dialog box prompts you to enter the postdate value in days, weeks or months.

Postdate	1
Duration	0000
Unit	day
<i>Modulus</i>	0365

Modulo: This parameter is used for postdates greater than 365 days, and only affects the **PostDay year programmab.**

The modulus value is modifiable by using the MESSAGE function in the INITIALIZATION sub-menu under the **PRINTER PREPARATION** menu.

Its default value is 365 for postdate 1 and 1000 for postdates 2 to 6.

The date change time common to all postdates can be modified in the **PRINTER PREPARATION** menu, INITIALIZATION sub-menu, PRINTER, Date/hour function.

NOTE

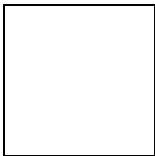
The default value for these postdates is set by using the MESSAGE function in the INITIALIZATION sub-menu under the PRINTER PREPARATION menu.

4.4.4 Barcode

A dialog box appears with a maximum of three code choices (barcodes or Data Matrix code). Interleaved 2 of 5 barcodes are proposed by default. To access the types and settings, select a code not already inserted in the message and confirmed:

Type:	code 39
<i>Plain text:</i>	none
Height:	00
<i>Bolderization:</i>	1
Narrow bar:	1
Narrow space:	1
Wide bar:	2
Wide space:	2
Inverse print:	☐
Check digit:	☐
<i>Optimization:</i>	☐

Use the arrows and the  button to make any necessary settings changes.



Use of the Terminal

- **Type**

Industrial: 2/5 interleaved, code 39.

Distribution : EAN 13, EAN 8, UPCA, UPCE, EAN 128, code 128, HIBC.

Two-dimensional: Datamatrix.

- **Plain text** - only for distribution bar codes - allows you to specify whether the numeric equivalent should be present or absent and, if present, where it should be positioned.

None
Upper
Lower

- **Height:**

Bar code: from 5 to 28 (dots) - limited to the height of the fonts present.

Datamatrix code: 9, 11, 16, 24 dots - Choice from the available heights. If the height is odd, the top line is empty.

- **Bolderization:**

Bar code: used to modify the bar thickness.

Distribution codes: 1 to 9 (raster)

Industrial codes: default value 1

Datamatrix code: cell size: 1 or 2. If value 2 is selected, the code height may not be less than 16 dots.

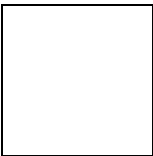
- **Narrow bar** - from 1 to 4 (raster) - the default value is 1 for distribution and Datamatrix codes.
- **Narrow space** - from 1 to 4 (raster) - the default value is 1 for distribution and Datamatrix codes.
- **Wide bar** - from 2 to 9 (raster) - the default value is 2 for distribution and Datamatrix codes.
- **Wide space** - from 2 to 9 (raster) - the default value is 2 for distribution and Datamatrix codes.
- **Inverse print** - enables printing in reverse video - yes ☒ or not ☐.
Except datamatrix.
- **Check digit** - may be present ☒ or not ☐ - if yes, the printer adds the check byte at the end of the bar code itself - only for industrial codes.
- **Optimization** - only for the code 128 - allows the machine to select codes automatically so that the size of the bar codes is as condensed as possible.

For each type of code, a specific dialog box will be displayed, thus limiting access to the modifiable parameters.

The other parameters are displayed in dotted lines.

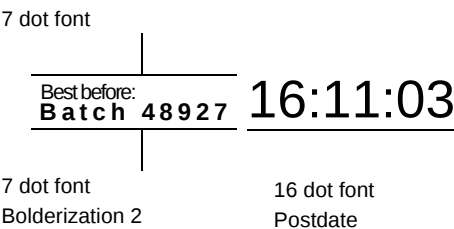
NOTE

The default value of these parameters is set by using the MESSAGE function in the INITIALIZATION sub-menu under the PRINTER PREPARATION menu.

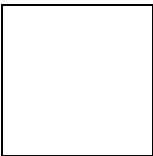


4.5 Example of message programming

Create a message:



PROCEDURE TO BE FOLLOWED FOR THE EXAMPLE GIVEN BELOW	POINTS TO REMEMBER
S7MAIN MENU pRoduction Message editing Printer preparation Symbol editing Printer status/Message selection ↑ ↓ for selection and VALID Choose the MESSAGE EDITING menu by following instructions in the bottom of the screen. S7MESSAGE EDITING MessageFontVariablesParameters Set-up, modify, erase messages ← → for selection and VALID Press Valid to validate the Message sub-menu	All the functions required for creating a message are gathered in the MESSAGE EDITING menu. Message only can be accessed at this point.



Use of the Terminal

S7 MESSAGE EDITING			
Message	Font	Variables	Parameters
New			
Open			
Save			
save As			
Load printer			
Delete			
Close			
Set-up a new message			
↑ ↓ ← → for selection and VALID			

to validate the step **New**.

S7 MESSAGE EDITING			
Message	Font	Variables	Parameters
Message name: TEST			
Message name capture			
VALID/EXIT : to quit			

Provide a title "Test" then to validate.

S7 MESSAGE EDITING TEST N : 006			
Message	Font	Variables	Parameters
Best before:			
Font : Latin Ind. 7			

Type then the message "Best before:".

Type and insert the batch number:

New is used to create a new message.

Please identify the message by giving it a title of a maximum of 8 alphanumeric characters.

A cursor will appear at the bottom right of the screen. The Font, Variables and Parameters commands can now be accessed. The cursor can be moved by using the keys.

The type of character appearing on the screen is what will be printed (WYSIWYG). The font used here is a font "by default", seen in the help zone.

To thicken the characters "Batch 48927" you have to bolderize them.

or then .

S7	MESSAGE EDITING	TEST N : 006
Message	Font	Variables
Best before select Font Select symbols Bolderization Tabulation barCodes		
Choose a character type		
↑ ↓ ← → for selection and VALID		

Choose **Bolderization** with then .

S7	MESSAGE EDITING	TEST N : 006
Message	Font	Variables
Bolderization 1		
Best before: I		
Bolderization capture		
VALID/EXIT : to quit		

Type **2** then .

S7	MESSAGE EDITING	TEST N : 006
Message	Font	Variables
Best before : Batch 48927		
Font : Latin Ind. 7		

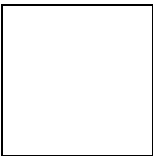
Type Batch 48927.

The function **Bolderization** is under the sub-menu **Font**.

Any character or symbol of any font can be bolderized.

Bolderization is a digit from 1 to 9. The higher the digit the thicker the character will be printed.

What you see on the screen is what you get printed.



Before inserting the postdate in the message, initialize the postdate.

Exit ▶ then Valid.

S7	MESSAGE EDITING	TEST N : 006
Message	Font	Variables
Best before: Batch 48927		Parameters
		Message
		Counter
		Postdate
		Barcode
Modify message parameters		
↑ ↓ ← → for selection and VALID		

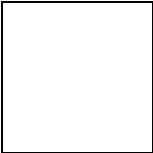
It is advisable to fix the variable parameters before inserting the variable in a message.

Press ▽ to select the **Postdate** line then press Valid. For S7 Mega and Supra, select one of the six postdates then press Valid.

S7	MESSAGE EDITING	TEST N : 006
Message	Font	Variables
Best before: Batch		Parameters
Postdate 1		
Duration 0000		
Unit Day		
Modulus 0365		
Postdate value		
↑ ↓ , TAB/SPACE, VALID/EXIT		

Generally using Tab or Space key allows you to select or insert parameters.

Press Tab or Space, enter the elements which form the postdate and then press Valid.



Choose 16 dot font to print the postdate in higher character than the rest of the message. then or then .

S7		MESSAGE EDITING		TEST N : 006	
Message		Font		Variables	
Best before Batch		select Font			
		Select symbols			
		Bolderization			
		Tabulation			
		barCodes			
Choose a character type					
↑ ↓ ← → for selection and VALID					

.

S7		MESSAGE EDITING		TEST N : 006	
Message		Font		Variables	
Best before Batch		Latin IND. 5			
		Latin IND. 7			
		Latin IND. 9			
		Latin IND. 11			
		Latin IND. 16			
					
					
Choose a character type					
↑ ↓ ← → for selection and VALID					

Choose the Latin Industrial 16 dot font then .

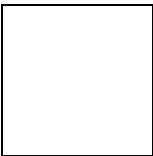
S7		MESSAGE EDITING		TEST N : 006	
Message		Font		Variables	
Best before : Batch 48927					
Font : Latin Ind. 16					

The cursor is high like the selected font.

The different fonts that are available in the printer show up in a dialog box, as well as a character visualization of the selected font.

CAUTION:
The bolderization is still 2
now choose bolderization 1.

If you move the cursor in different zone of the message, it takes the characters height of this zone.



To insert the postdate

Exit then **>** or **<** then **Valid** then **▽** .

S7		MESSAGE EDITING		TEST N : 006	
Message		Font		Variables	
Best before : Batch 48927		Counter			
		Hour			
		Date			
		Autodating table			
		Postdate			
		Shift code			
		External			
Insert a counter					
↑ ↓ ← → for selection and VALID					

Valid . Select postdate 1 then press **Valid** .

S7		MESSAGE EDITING		TEST N : 006	
Message		Font		Variables	
Best before : Batch 48927		PostDay month		☐ <u>D1</u>	
		PostDay year		☐ <u>J*1</u>	
		PostDay year programmab.		☐ <u>J*1</u>	
		PostWeek year		☐ <u>W1</u>	
		PostMonth year (Figure)		☐ <u>M1</u>	
		PostMonth 1 year (Letter)		☐ <u>m*1</u>	
		PostMonth 2 year (Letter)		☐ <u>m'1</u>	
		Postyear		☐ <u>Y1</u>	
		Separator			
		Composition			
Postdate composition					
↑ ↓, TAB/SPACE, VALID/EXIT					

Type **Tab** to validate **Postday Month**, **△** then **Tab** to see separators.

S7		MESSAGE EDITING		TEST N : 006	
Message		Font		Variables	
Best before : Batch 48927		PostDay month		☐ <u>D1</u>	
		PostDay year		☐ <u>J*1</u>	
		PostDay year programmab.		☐ <u>J*1</u>	
		PostWeek year		☐ <u>W1</u>	
		PostMonth year (Figure)		☐ <u>M1</u>	
		PostMonth 1 year (Letter)		☐ <u>m*1</u>	
		PostMonth 2 year (Letter)		☐ <u>m'1</u>	
		Postyear		☐ <u>Y1</u>	
		Separator		☐ <u>D1</u>	
		Composition		☐ <u>:</u>	
Postdate composition					
↑ ↓, TAB/SPACE, VALID/EXIT					

Choose separator **▽** then **Valid** until Postdate composition is over: D1 / M1 / Y1.

Valid to insert the postdate in the message.

For all the dialog boxes, you preselect with the keys and you choose with the **Tab** or **Space** key.

The **Valid** key saves the new selections and choose the dialog box.

All the autodating variables use the same dialog box with the composition line.

S7		MESSAGE EDITING		TEST N : 006	
Message	Font	Variables	Parameters		
Best before : Batch 48927 16:11:03					
Font : Latin Ind. 16					

Exit ▶ or ◀ then Valid .

S7		MESSAGE EDITING		TEST N : 006	
Message	Font	Variables	Parameters		
Best before : Batch 48927 16:11:03					
Message Counter Postdate Barcode					
Modify message parameters					
↑ ↓ ← → for selection and VALID					

Valid .

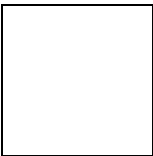
S7		MESSAGE EDITING		TEST N : 006	
Message	Font	Variables	Parameters		
Best before : Batch 48927					
Head sense: Tacho mode: ☐ Tacho division: 0015 Object speed: 0100 Set off: Object Unit: Millimeter Forward margin: 0003 Return margin: 0003 Repetitive interval: 0002 Algorithm number: 000					
Parameters message					
↑ ↓ , TAB/SPACE, VALID/EXIT					

Follow the instructions at the bottom of the screen to adjust the values of the parameters.

The message is created. To print it, you need to adjust the message parameters to adapt it to the printer installation.

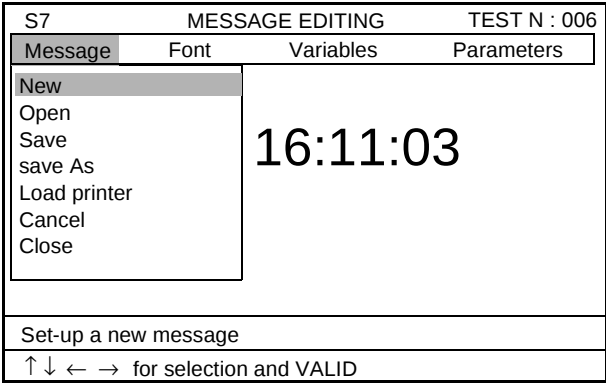
What you see on the screen is what you get printed.

The default values of this parameters are the values inserted by the IMAJE technician at the time of the printer installation in the **PRINTER PREPARATION** menu.

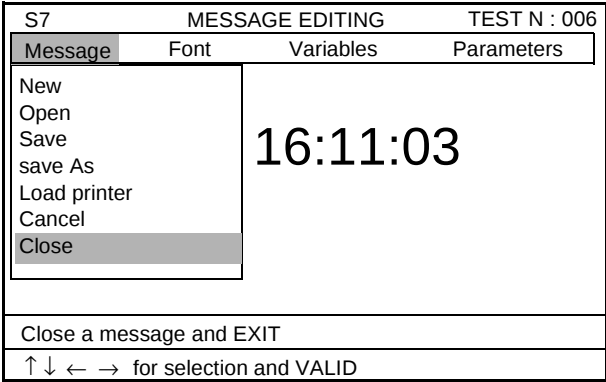


Save a message

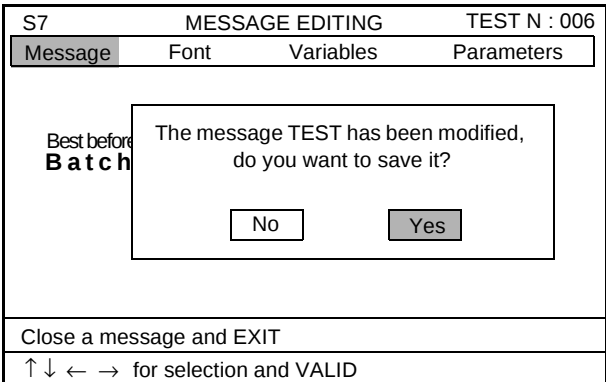
then or then .



.



for close the message.



to **save** this message.

In this sub-menu you can use the "load printer function" to do a printing test of the open message (with the  key of the operator interface, for instance).

It is an useful function when you adjust the message parameters or when you set a message. But with this function you don't save the message.

Follow the instructions of the bottom of the screen to save and close the message
You can print the Test message N: 006 in the library whenever you need. Use the message selection function of the operator interface to print it.

5 PRINTER PREPARATION Menu

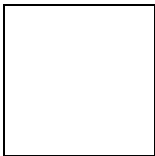
S7	PREPARATION	
Initialization	Options	Access code

The **PRINTER PREPARATION** menu is use for adapting the printer for the production site and marking requirements. It is also used to display the available functions and software version and to program an access code in order to protect the menus against unauthorised access. It therefore play an essential part in the printer installation process.

5.1 Initialization

Initialization
Message
Printer
View
<i>Jet alignment</i>

This sub-menu is used for configuring the printer, i.e. not only message parameters but also language, date and time-code or even the type of ink.



5.1.1 Message

General parameters
Counter
Postdate
Shift code
Barcode
Optional autodating
Miscellaneous

- The **General parameters**, **Counter**, **Postdate**, **Barcode** functions are used to enter the default values of the various message parameters and variables. These values should be defined when the printer is installed. They apply to all messages.
The dialog boxes which appear in this sub-menu are exactly the same as the dialog boxes in PARAMETERS sub-menu of the **MESSAGE EDITING** menu.
- **Optional autodating**: this function encodes time and date information as a code with one to three alphanumeric characters.
It is only available for the S7 Mega and S7 Supra printers.

Hours
Minutes
Day of the week
Days of the year
Days of the months
Weeks
Month of the year
Year
Shift code 2
Shift code 3

NOTE

You can also code the shift codes 2 and 3 in this **Optional autodating**.

Example: Hours coding

Table:	Hours
Field:	1/24
Value:	000 ctrl R : copy

- Field: 1/24 tells you that you are entering the code for the first time. Encoding is performed on 24 fields corresponding to the 24 hours of the day.
- Value: this is the field which you are the process of entering. In this case it is the first one (default value 000).
- ctrl R: copy: allows you to assign the value of a field to all the other fields in a table. When you have entered the value of a field, type .

NOTE

1) The functions for displaying and editing autodatting tables are separate.

When you select a table, you can display the values in the different fields. Use the arrows to move in the table.

To change these values, press the key .

2) If the size of the fields in a table is not uniform (1 to 3 characters) the printed code is the size of the largest field.

- **Shift code:** this function allows you to enter parameters values for the shift code used by all the messages. This value cannot be set separately for each message in the PARAMETERS sub-menu.

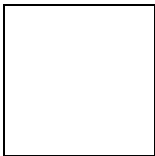
Shift code 1:

Starting time:	00:00
Interval:	08:00
Mode:	AM

Starting time - 00:00 - this is the time a shift starts.

interval - 08:00 - this is how long a shift lasts.

Mode - AM or PM or 24 - this is how the time is displayed.



Shift code 2:

It is used for printing cyclical time data over a period longer than one day (in comparison to the Shift code 1).

Starting day:	00
Starting month:	00
Starting time:	00:00
Day interval:	00
Hour interval:	00:00
Mode:	AM

Shift code 3:

It allows you to program the starting time (in AM, PM or 24 mode) and interval for each day of the week.

A copy function allows you to assign the parameters programmed for one day to all the other days of the week.

Day: Monday	
Start time:	00:00
Intervall:	08:00
Mode	AM
ctrl R : copy	

REMARK

Shift codes 2 and 3 are only available for the S7 MEGA and S7 SUPRA printers
The characters used for printing the shift codes 2 and 3 are to be entered into the Optional autodating (see previous item).

- **Miscellaneous**

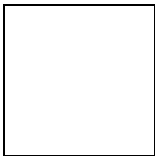
Horiz. resol (1/10):	28
Vert. resol (1/10):	28
Head/obj. distance:	10
Top object mode:	continue
Operation:	Std message
Month language 1:	Français
Month language 2:	Français
1st day of the week:	Sunday
Algo 1 :	001
Algo 2 :	002
Algo 3 :	003
Algo 4 :	004

- **Horiz. resol (1/10): 28 Vert. resol (1/10): 28** these are used for determining the print definition and therefore make it possible to set the actual speed at which items travel. For a G definition head 2.8 pts/mm. For a M definition head 4.5 pts/mm.
- **Head/obj. distance:** 10 or 30 mm for a G head, 8 or 20 mm for a M head.
This is the head item distance depending on the type of head and maximum printing speed.

NOTE

The head/object physical distance should be adjusted according to the ink used, as indicated in the ink data sheet.

- **Top object mode:** continue or stop, is an option.
If the item pulse mode is "Off" printing stops the moment the pulse signal is cut (even if the message has not been completely printed).
With the "Continuous" item pulse mode, printing of the message is completed even if the pulse signal is cut.
- **Operation:**
 - . std message: this is selection of the message to be printed by the operator interface.
 - . mess n° select: this is selection of the message by the "parallel interface" function.
 - . library: this is selection of message by the "message number increment" function.
 - . S7: operation with the Serie 7 printer message structure.
- **Month language 1 and 2:** allows you to choose the printing language of the Months of the year (letter) for the date and the postdate 1. You can thus print this month in two different languages in the same message.
- **First day of week:** choice of first day of the week.
By default: day 1 is for Sunday.
- **Algo 1 to 4:** allows you to enter the numbers of 4 algorithms which will be used by default.



5.1.2 Printer

This menu is useful when the printer is used for the first time and when component parts are changed. In fact the different settings can be used to initialise the machine.

Date/hour
Language
Ink
Head level
Communication
Miscellaneous

- **Date/hour:**

The printer time and date can be set via a dialog box.

Hours:	07	Day:	14
Minutes:	19	Month:	03
Seconds:	20	Year:	94
Mode:	PM		
Shift:	+		
Hour:	20	Minute:	30

Mode: this is how the time is displayed - AM or PM or 24.

Shift: The date change time common to all postdates may be offset by + or - 23:59. This function also applies to "Day of the year" dates in the VARIABLES sub-menu.

- **Language:**

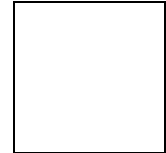
The language used on the operator interface and the terminal can be set via a dialog box.

- **Ink:**

Ink type	7155
Additive	☐
Pump rinsing	☐
Press. one way valve	☐
Air addition	☐
E2	☐

These parameters are selected when the printer is installed by an IMAJE technician.

They should not be altered, as any change could affect the performance of the printer.



- **Head height:**

The actual difference in elevation between the head and the ink circuit on the production site can be set via a dialog box. The value is negative if the head is lower than the printer and positive if it is higher.

- **Communication:**

The serial communications link can be configured via a dialog box.

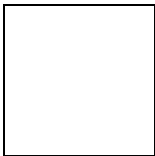
Format: 8 W/O parity 1 stop
Speed: 9600

- **Miscellaneous:**

Alarm relay: Mode 3
Fault relay: Mode 2
Multitop nbr: 0001
Counting: Tach. puls nb
Count value: 00300
Prt spd fault ov.: allowed
Dtop filtering (µs): 0200
Auto start: ☐
Flat PDE (M head) ☐

- **Alarm relay:**

	MACHINE STATUS						
	Power off	Stand by	Start phase	Machine ready to print	Alarm	Consumable alarm	Stop phase
Mode 1	Non activated	Non activated	Non activated	Non activated	Activated	Activated	Non activated
Mode 2	Non activated	Non activated	Activated	Non activated	Activated	Activated	Activated
Mode 3	Non activated	Non activated	Non activated	Non activated	Non activated	Activated	Non activated



Use of the Terminal

- Fault relay:

	MACHINE STATUS					
	Power off	Stand by	Start phase	Machine ready to print	Alarm	Stop phase
Mode 1	Non activated	Non activated	Non activated	Non activated	Activated	Non activated
Mode 2	Non activated	Non activated	Activated	Non activated	Activated	Activated
Mode 3	Non activated	Non activated	Non activated	Activated	Non activated	Non activated

- Multitop nbr:

printing number of message for 1 top object in multitops mode. For mode selection, see the PARAMETERS sub-menu, MESSAGE function.

- Counting:

Off
Tach. puls nb
Fly tim ofst

- Tach. puls nb: Selected by default, this function generates a pulse on the ETAT output on the industrial interface cassette after a certain number of pulses by the tachometer. This value is parameterised in Count value.

CAUTION

**The line Activate output must not be checked.
See ETAT output, INPUT/OUTPUT CONNECTIONS section.**

- Fly tim ofst : this function, in tacho mode, enables the drop flight time to be corrected automatically when the speed of the object to be printed varies. This helps guarantee that the message is correctly positioned.
The print speed must be between 500 and 5500 mm/s.
- **Count value or Offset add (µs):**
The displayed function depends on the Tach. puls nb or fly tim ofst selection. See the Counting function.
 - Count value: enter a number of tacho pulses.
 - Offset add (µs): to compensate for the delay caused by the Dtop trigger chain (cell, opto,etc.) enter an offset value. This value can vary between 0 and 2000 µs.

- **Prt spd fault 0V:**
This function is for inhibiting the "conveyor speed 40" alarm or frame frequency.
- **Dtop filtering (μs) :**
Value ranging from 200 μs to 9999 μs. This filtering corresponds to the minimum amount of time that the object detection signal should reach in order to be processed by the printer.
- **Auto start:**
When this function is selected, the printer starts up as soon as it is switched on, without the use of the  key.
- **Flat PDE (M head):**
This box must always be ticked when the printer is equipped with an M head with a plane phase detection electrode.

5.1.3 Visualization

A dialog box offers the list of the different algorithms available in your printer.

5.1.4 Jet alignment

This function is only available for twin-jet printers

The "Jet alignment" function allows you to align jet writes with one another.
The following window is displayed on the screen.

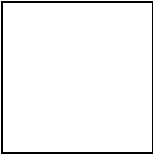


Press the  or  keys at the Terminal to align the jets. Observe the printed result.

A	B	C		A	B	C	(Jet 1)
1	2	3	+/-	1	2	3	(Jet 2)
(Before)				(After)			

CAUTION

This function is not active in Curved mode.



5.2 Options

Options
Machine options
Totalizer

5.2.1 Machine options

A dialog box list all the different printer possible functions.

The functions available are shown in bright letters and the functions which are not available are shown in dotted-line form.

5.2.2 Totalizer

This command displays a counter

Totalizer
Current value: 005231016

This counter increments by one unit each time a message is printed regardless of the triggering mode used. It automatically returns to 0 when it reaches the final value (999999999). It cannot be reset to 0.

5.3 Access codes

Access codes

This function is used to program an access code to protect certain menus against unauthorised access. Enter a code and then select the menus to be protected in the dialog box:

Password	
Production:	☐
Message edition:	☐
Preparation:	☐
Symbols edition:	☐

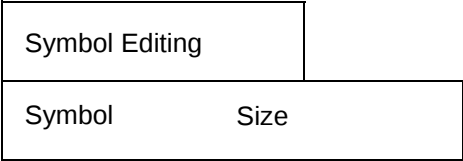
To delete a code, enter three "spaces" instead of the code. If no code is entered, the menus in this window are displayed in dotted-line form.

When a code is entered, the **PREPARATION** menu is automatically checked by the printer and it is displayed in dotted-line form.

NOTE

**The access code is stored in the industrial interface cassette.
Take care when replacing this cassette.**

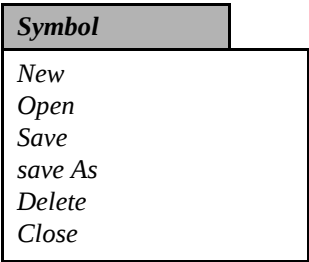
6 SYMBOL EDITING Menu



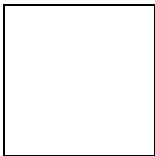
The **SYMBOL EDITING** Menu enables you to create your own symbol or logo.
It is only available for the S7 MEGA and S7 SUPRA printers.

CAUTION	The height of a symbol is defined when it is created. To enable it to be printed, an Image font with at least the same height as the symbol must be present in the printer.
----------------	--

6.1 Symbol



The **SYMBOL** Sub-menu is used for creating a new symbol, for modifying or copying an existing symbol, for storing a symbol in memory or for deleting it.
The menu can be accessed at any time, whether the printer is switched on or off.



6.1.1 New

The **New** command is for creating a new symbol to be lodged in a font. When choosing **New**, a dialog box will ask you for:

- the title of the font (max. 8 characters).
- the number of the font (201 to 255).
- the symbol number (001 to 224).

REMINDER

A font is a group of symbols of the same size.

A second dialog box will ask for the size to be given to the symbols.

- height from 5 to 48 points max. (depending on the algorithms present in the machine).
- width from 1 to 127 points.

6.1.2 Open

The **Open** command is for accessing an existing symbol for modification.

When you select **Open**, a dialog box shows the start of the list of existing symbol fonts. You can scroll through the titles and choose the one which interests you, or display a cursor by pressing the

or bar and enter the title of the font you are looking for.

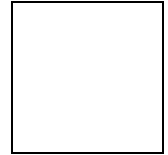
6.1.3 Save

The **Save** command is for saving the symbol created or modified. The command can therefore only be accessed after "**New**" or "**Open**".

6.1.4 save As

The **save As** command is for saving a version modified with an existing symbol without losing the original.

The command can only be accessed after "**New**" or "**Open**".



6.1.5 Delete

This command offers the choice of a Symbol or Symbol font deletion.

Select **Symbol** if you want to delete only one symbol.

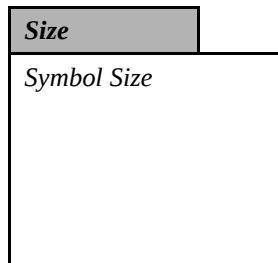
Select **Symbol font** if you want to delete a complete font of symbols.

6.1.6 Close

The **Close** command is for leaving a font in which you have just created or modified a symbol.

When using **Close**, the contents of the font in which you have just been working are saved.

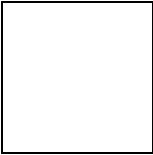
6.2 Size



This command is for modifying the height and width of the symbols defined in a font.

CAUTION

If you reduce the size the symbols drawn will be truncated.
If you increase the size the symbols drawn will be lodged at the bottom left of the definition.



6.3 General rule for creating one or more symbols in a font

To create the font:

- Give the font a name (8 characters).
- Give the font a number (201 to 255).
- Give a number to the symbol in the font (001 to 224).
- Give the symbols a height (5 to 48 points max.)
(depending on the algorithms present in the machine).
- Give the symbols a width (1 to 127 points).

To create the symbol:

- Drawn the symbol.
- Save the symbol.

To create a new symbol:

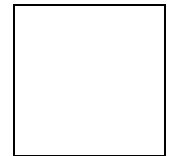
- Recall the font (by name or number).
- Give the new symbol a number.
- Draw the symbol.
- Save.

To close the font:

- The font is saved.

NOTE

You are advised not to use the first symbol number in the font (001). This is reserved for the "space" symbol.



6.4 Drawing a symbol

6.4.1 Screen

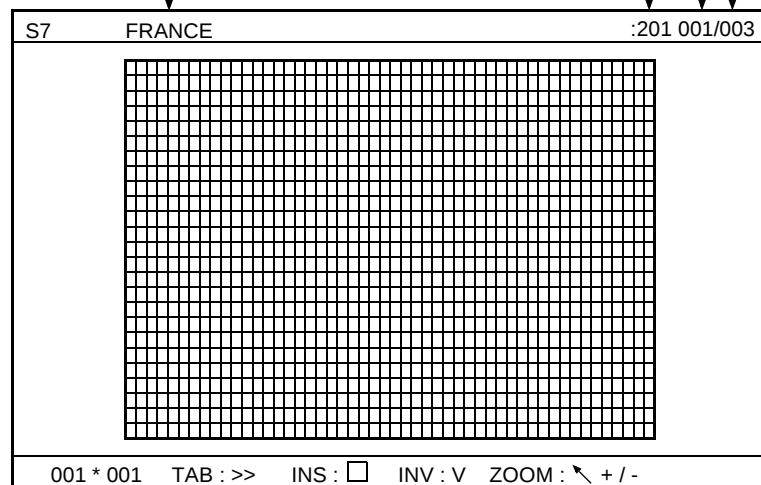
After definition of the name and number of the font, the number and size of the symbol, the printer will display the following screen.

Number of symbols
existing in the font

Symbol number

Number of the font

Name of the font



Details of the cursor in
the grid

Drawing mode:

>> : dot by dot

- : lines

[] : zone

(change with **Tab**)

Dot colour:

■ : black

□ : white

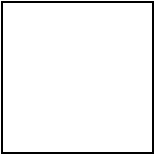
(change with **Ins**)

Reverse video:

(**V** key)

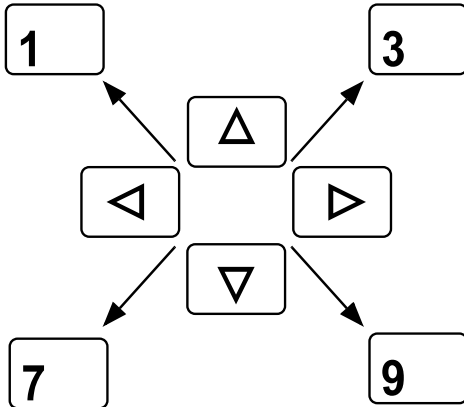
Zoom:

(Simultaneously keys [] and + or [] and -)



6.4.2 Using the keys

In dot by dot mode: >>



The cursor can be position in the drawing grid, in the direction of the arrows.

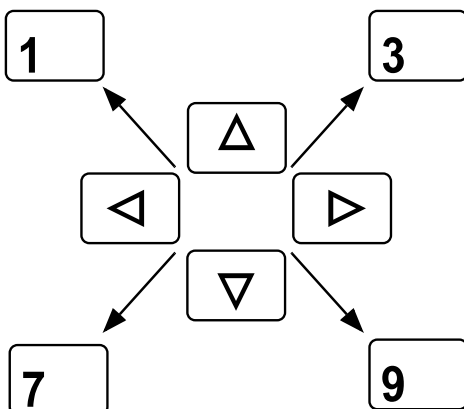


For changing the colour of the dot pointed by the cursor.

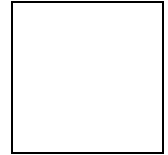
In line mode: —



For selecting the colour of the line (white or black).

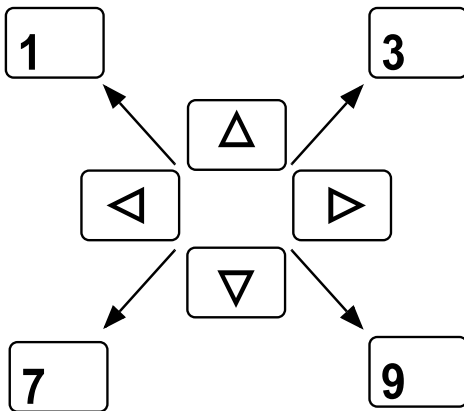


The lines can be traced in the direction of the arrows.



In zone mode:

For selecting the colour of the zone (white or black).



Depress 2 keys repeatedly to define a zone.

6.4.3 Other keys, other functions

- Screening of the symbol at scale 1:

Key .

The symbol is displayed in a window at the top right.

- Zoom :
This function is valid when the cursor is at the bottom left of the screen (coordinate 001 x 001).

Press or key to enlarge or reduce the grid.

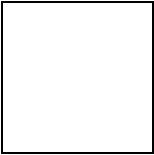
- Home function:

Key to position the cursor at the bottom left of the screen.

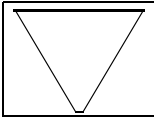
Key to position the cursor at the top right of the screen.

- Delete symbol:

Key with request for confirmation.



6.4.4 Symbol display screen

S7	FRANCE	: 202 003/004
Symbol	Size	
		
Format: 016*016 num: 003/004 ref: 034		
Choice of a symbol in the selected font		
← → ALT ← ALT → selection and VALID		

This screen can be used to display and select a symbol from an existing font in order to enable the shape, size or number to be modified if desired.

format = symbol format: height * width.

num = number of the symbol in the font/number of symbols in the font.

ref = symbol reference in decimals (the reference begins at 32 (\$20)).

Selecting a symbol:

Key  to display the following symbol.

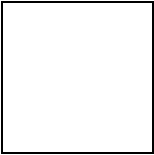
Key  to display the preceding symbol.

Access to edition:

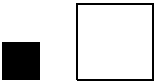
Key .

Contents

1	Description of the Operator Interface	86
1.1	Overall view of the Operator Interface	86
1.2	Overall view of the menus	90
1.3	Operating mode	91
2	MESSAGE	91
3	PARAMETERS	95
4	MAINTENANCE	97

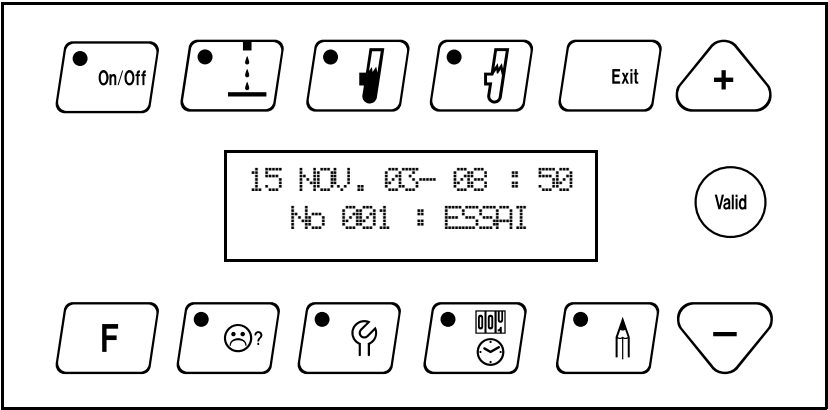


Use of the operator interface



1 Description of the Operator Interface

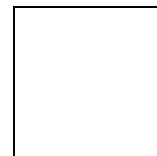
1.1 Overall view of the Operator Interface



The Operator Interface includes:



Two-line liquid crystal display.



User keys



This is to turn the printer on and off.

Turning on the printer also starts up the jet.

In the **PRINTER PREPARATION** menu of the Terminal it is possible to program the printer so that it starts as soon as powered up, without having to press the  switch.

The printer is ready to print when the jet indicator light is non-flashing yellow. Numbers are shown on the screen when the equipment is started up and shut down, these correspond to the successive printer operating and test phases.



Jet key/light:

This indicator light tells you the status of the jet:

- flashing yellow light : jet not ready
- non-flashing yellow light : jet ready
- orange light : jet printing
- light off : jet not in service

This button can be used for a print test.



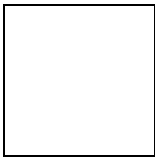
Ink level indicator light:

- flashing red light : low level
- non-flashing red light : cartridge empty



Additive level indicator light:

- flashing red light : low level
- non-flashing red light : cartridge empty



Operating keys



This key is used to leave a menu, back up to the original display. Whatever has not been validated is not taken into account.



Move forward in the menu.

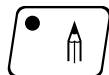


Validates the selection displayed.



Move backward in the menu.

Menu keys



Used to select a message.



Display and reset the counters.

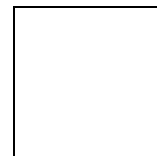


Jet maintenance.



Provides a second function level for the following keys:





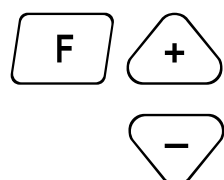
Modification of a message zone (only for latin languages), load and save library.



Setting printer date and time, insertion of an access code.



Printer maintenance.



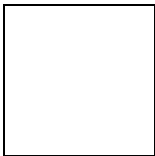
Adjusting the contrast of the display.



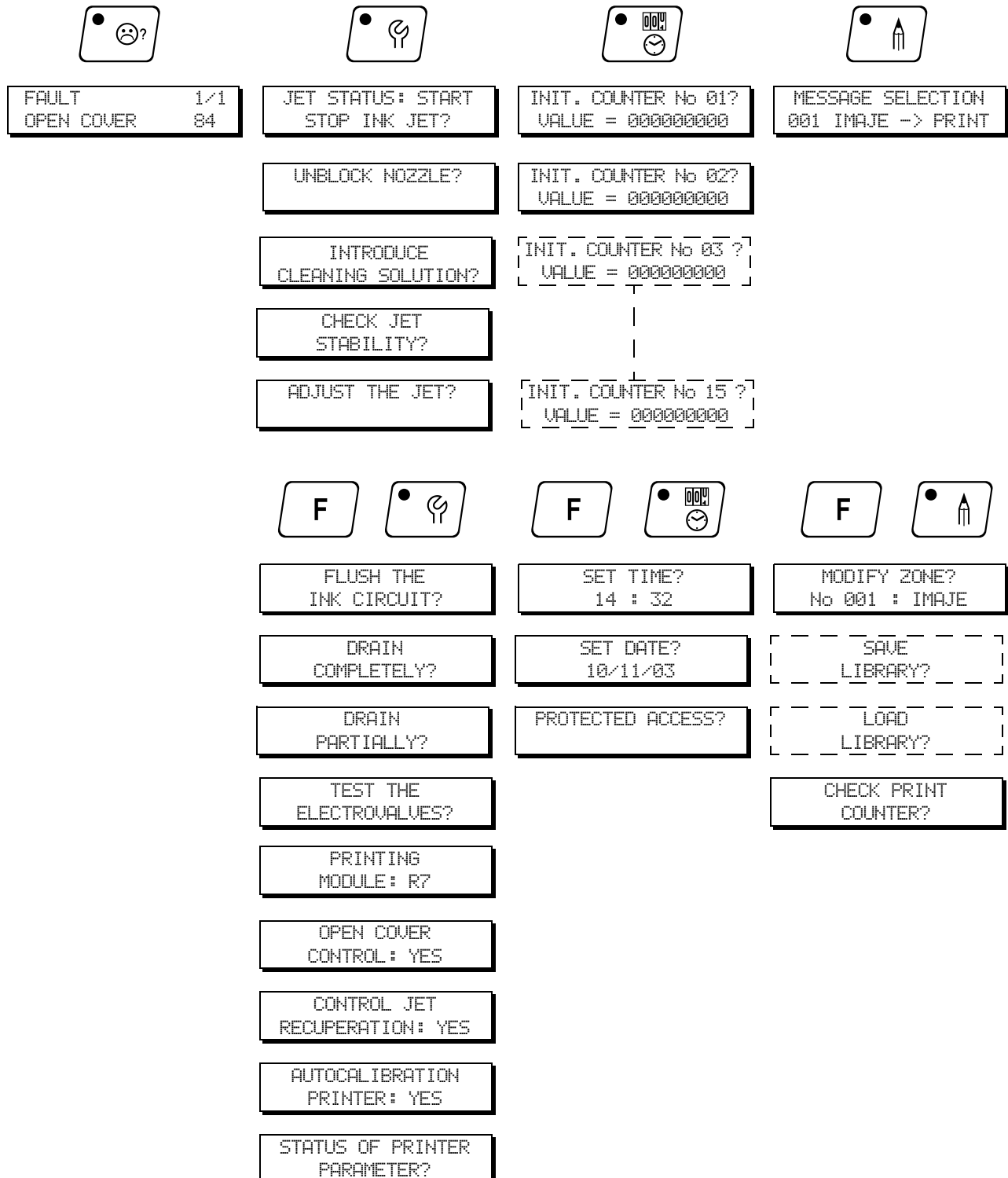
Obtain information on a fault/alarm, clear a fault/alarm.

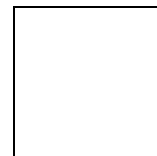
When a fault occurs, the red  indicator glows and when an alarm occurs, the red  indicator flashes.

Push this button to display the fault on the screen in clear text with the figures at the top right showing the number of faults detected in the printer.



1.2 Overall view of the menus





1.3 Operating mode

The operator interface is designed to make everyday use of the printer easier.

Pressing one of the three menu keys , ,  displays the first level of the menu selected and the indicator light on the key remains on for as long as you are in this particular menu.

Use the  or  arrows to select the action you wish to take and press  key to access this step.

To change menu, press the appropriate key.

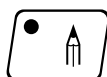
The  key is used to return to the menu you started from.

If no menu is selected, the display shows the date and time on the first line, and the name of the active message for printing on the second line.

Each menu key has a second menu level which can be entered by using the  key.

First press the  key and then the menu key to access this second level.

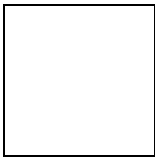
2 MESSAGE



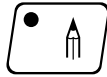
MESSAGE SELECTION
006 FRANCE → PRINT

This key is used to select the message to be printed. Use the arrows to choose the message title from the library.

When the message has been validated, it is active on the display, and a press on the  jet key or input of an item pulse signal starts this message being printed (if you are in Tacho mode, the tachometric pulse generator must be rotating).



Use of the operator interface



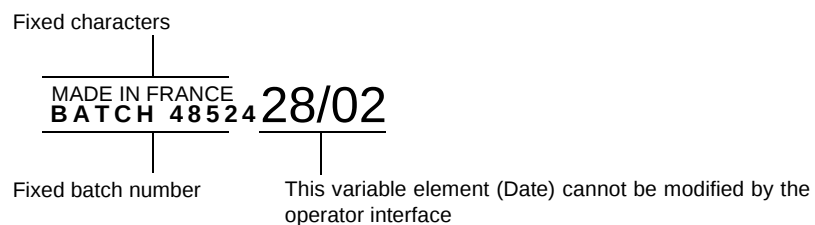
MODIFY ZONE?
No 006 : FRANCE

This function is not useable for printer configured in Chinese, Arabic, Korean and Hebrew.

The message has been programmed via the terminal.

The message is automatically divided into different zones depending on the constant data items it includes. The constant data elements contained in a zone of an active message can be changed from the operator interface (without changing the number of characters).

The example of an active message given below illustrates how this menu is used:



The procedure for changing the batch number is as follows:

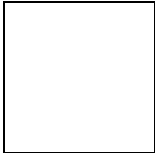


MODIFY ZONE?
No 006 : FRANCE



MODIFY ZONE 01/02
MADE IN FRANCE

This message is made up of two zones:
Zone 1 : MADE IN FRANCE
Zone 2 : **Batch 48524**



x 8



MODIFY ZONE 02/02
BATCH 48524

You want to alter the batch number in zone 2.



MODIFY ZONE 02/02
BATCH 48524

The cursor goes to the beginning of the zone. Use the arrow keys to place the cursor under the character which is to be changed

Cursor



MODIFY ZONE 02/02
BATCH 48524

The cursor is at the item which you want to change.



MODIFY ZONE 02/02
BATCH 48524

The cursor is no longer displayed and the character flashes on and off.

x 4



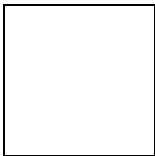
MODIFY ZONE 02/02
BATCH 48924

Now scroll through all the characters in the font being used.
You can select 0, 1, 2 ... A, B ... or a space.

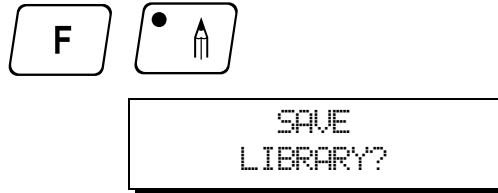


MODIFY ZONE 02/02
BATCH 48924

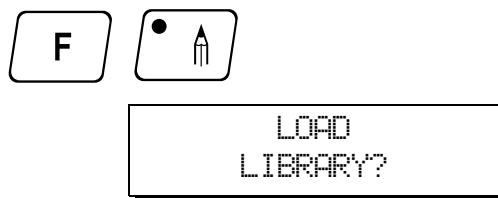
You have just replaced one of the characters, you can move within the zone using the arrows to change other characters.



Use of the operator interface



This feature is used to back up the complete library of messages in a Extension cassette.
A warning message is displayed to indicate that this operation will delete all messages present in the cassette.



A "Load library" feature is used to load the printer with the library already backed up in the Extension cassette.

CAUTION

It is essential that the Extension cassette is connected or disconnected after the printer has been switched off. Not even the ON/OFF should be showing on the display.
These two functions are only available for the S7 MEGA and S7 SUPRA printers.
See the "Use of the Terminal" section for more information.



This command displays a counter.
This counter increments by one unit each time a message is printed regardless of the triggering mode used. It automatically returns to 0 when it reaches the final value (999999999). It cannot be reset to 0.

3 PARAMETERS



INIT. COUNTER No 01?
VALUE = 000000000

This key enables you to see the correct value of the counters and to return them to their initial value by pressing . The initial value is then displayed.



The key allows you to set the printer time and date, and to insert a code to lock access.

Example of setting the time:



SET TIME?
17 : 54

The  indicator light goes on.



SET TIME?
17 : 54

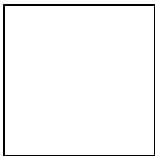


SET TIME?
18 : 54

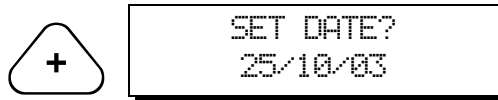
Change the hour using the arrows, then validate.



INSERT MINUTE?
18 : 54



Use of the operator interface

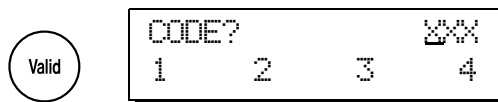


Use the same procedure for setting the day, month and year.

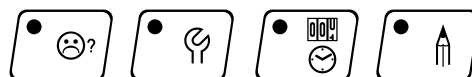
Access lock:



The  indicator light goes on.



1, 2, 3, 4 correspond to the , , ,  key respectively.



Program a 3 digit code using the 4 keys. Each time a key is pressed, the cursor moves forward by one x. After the third digit, the printer prompts you to confirm your code by entering it again.

This code locks access to the following

menus:  + 

 + 
 + 

CAUTION

You will be asked for this access code every time you want to access the protected menus: **DON'T FORGET THE CODE.**

4 MAINTENANCE



This function is associated with jet maintenance.

```
JET STATUS: START
STOP INK JET?
```

In this step, you are going to stop or start up the jet.
The first line shows you whether the jet status is on or off, and on the second line the printer asks whether you want to start up or stop the jet.

```
UNBLOCK NOZZLE?
```

If you validate this function, you will remove the particles which are blocking the nozzle and causing a jet to malfunction or not operate.
Follow the instructions shown on the screen.

```
INTRODUCE
CLEANING SOLUTION?
```

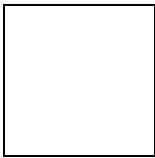
If you validate this function, you will clean the cannon orifice.
Follow the instructions shown on the screen.

```
CHECK JET
STABILITY?
```

If you validate this function, you will check the stability of the jet in the recuperation gutter.
Follow the instructions shown on the screen.

CAUTION

In order to ensure that the printer will start again correctly, carry out the three operations one after the other.
(See DIFFICULT START-UP procedure, ROUTINE MAINTENANCE section).



Use of the operator interface

ADJUST THE JET?

If you validate this function, you will start the jet or jets, fault associated with the jet will no longer be monitored. It will therefore be possible for you to make an adjustment without being interrupted by a fault indication.



FLUSH THE
INK CIRCUIT?

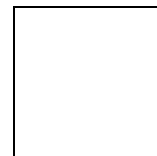
If you validate this function, the printer will carry out a complete drain, and then automatically flush out the ink circuit with the additive.
Follow the instructions on the screen.

DRAIN
COMPLETELY?

If you validate this function, you will drain all the ink out of the printer.

DRAIN
PARTIALLY?

This function enables you to carry a partial drain for carrying out particular maintenance tasks.



TEST THE
ELECTROVALVES?

If you validate this function, the printer will stop and you will control all the electrovalves manually. There are nine electrovalves.

Each time you validate, you are either opening or closing the electrovalve concerned. Check, by ear, whether the valve is operating properly.

When these checks have been completed, the printer goes into stand-by and you will have to start it up again by pressing the  key.

PRINTING
MODULE: R7

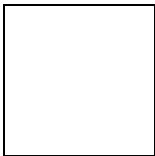
This function allows you to set an updating index for the printing module (R6 or R7). To modify this setting, contact Imaje's technical support.

OPEN COVER
CONTROL: YES

You can override the open cover check, i.e. the check to see whether the cover is open is no longer made. Whenever the printer is stopped, this function goes back to its initial value.

CAUTION

This function should only be used for maintenance purposes, on an exceptional basis.
This function is not available for a M head printer with flat detection electrode.



Use of the operator interface

CONTROL JET
RECUPERATION: YES

You can override the jet recuperation check, i.e. the jet recuperation fault is no longer monitored. Whenever the printer is stopped, this function goes back to its initial value.

CAUTION

This function should only be used for maintenance purposes, on an exceptional basis.

AUTOCALIBRATION
PRINTER: YES

Since the printer can operate with different ink bases, in different positions or in different places, certain parameters have to be entered (ink type, head offset, etc). This "auto-calibration" function is used for validating these parameters.

CAUTION

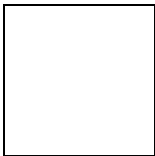
This function is only used by the Image technician when he installs the printer or when he carries out after-sales servicing.

STATUS OF PRINTER
PARAMETER?

This function tells you the pressure, negative pressure and jet speed values together and the version of the software.

Contents

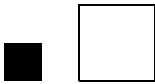
1	Summary table of regular procedures	102
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Routine maintenance

Regular procedures

Regular procedures are frequent operations which have to be performed in order to optimize printer operation.



1 Summary table of regular procedures

Shut-down procedures

Frequency	Operation	Time	Comments
Daily shut-down.	Press  .	8 mins	Should be performed at least once a week.
Before a shut-down lasting between 3 days and 1 week.	Prepare printer head	10 mins	Only applies to twin-jet heads.
Before a shut-down lasting for more than 1 week.	Flush out the printer completely.	40 mins	Should be performed at least every two months in the case of a prolonged shut-down.

Start-up procedures

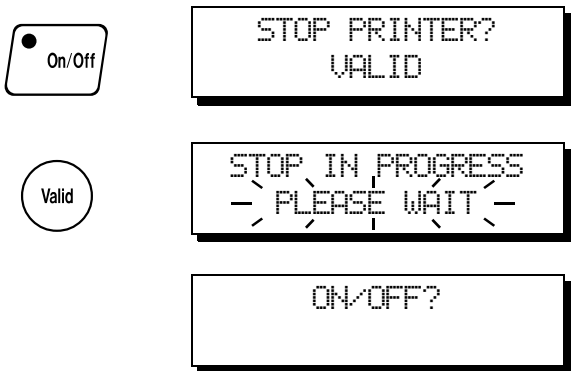
Frequency	Operation	Time	Comments
Daily start-up.	Press  .	2 mins	8 mins after draining or flushing.
Start-up after a shut-down lasting between 3 days and 1 week.		2 mins	Only applies to twin-jet heads.
Start-up after a shut-down lasting for more than 1 week.		8 mins	See procedure chapter 3.3.

Routine maintenance procedures

Frequency	Operation	Time	Comments
When clogging causes the printer to malfunction or to produce poor quality print.	Clean the print head.	3 mins	See "head cleaning procedure" chapter 4.1.
When no jet is present or the jet is uncontrolled.	Complete clean of the print head.	3 mins	See "difficult start-up procedure" chapter 4.2.
When the indicators  or  remain lit up.	Change the cartridge.	1 mins	See "Changing the ink or additive cartridge procedure" chapter 4.3.

2 Shut-down procedures

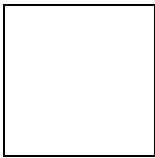
2.1 Daily shut-down



- 1 Position the head on its servicing support.
- 2 Stop the printer with the **jet(s) running**.
- 3 When the printer is stopped, fit the anti-block stopper (if specified on the ink usage specification sheet).

This applies for normal stops at the end of the day.

NOTE	Do not clean the head.
CAUTION	Perform a shutdown of this type at least once per week.



2.2 Before a shut-down lasting between 3 days and 1 week

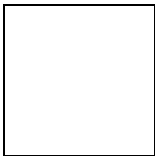
CAUTION

This procedure only concerns printers with a dual-jet head.

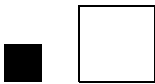
- 1** Position the head on its servicing stand.
- 2** Stop the printer with the **jet(s) running**:
press  .
- 3** After the machine stops, close the recuperation gutter.
- 4** Fit a pad soaked with anti-clogging liquid if specified on the ink usage specification sheet.
Otherwise fit the protection nozzle.

NOTE

Do not clean the head.

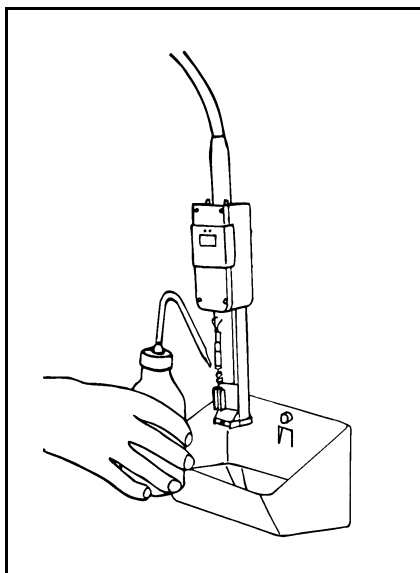


Routine maintenance



3 Start-up procedures

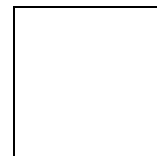
3.1 Daily start-up



- 1** Position the head on its servicing support.
Open the head cover.
- 2** Remove the anti-block stopper (if fitted).
Clean the head if there are traces of ink (see procedure "cleaning the head").
- 3** Press  (or connect only to the main power depending on the start-up configuration).
- 4** Wait approximately 2 minutes.
When the machine is ready, the colour of the jet indicator light is non-flashing yellow.

NOTE

After draining or flushing, the start-up phase lasts for approximately 8 minutes.



3.2 Start-up after a shut-down lasting between 3 days and 1 week

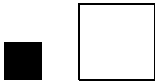
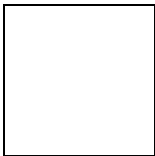
CAUTION

This procedure only concerns printers with a dual-jet head.

- Same procedure as for daily start-up.
- Before start-up, open the recuperation gutter.
- Remove the nozzle protection (if fitted).

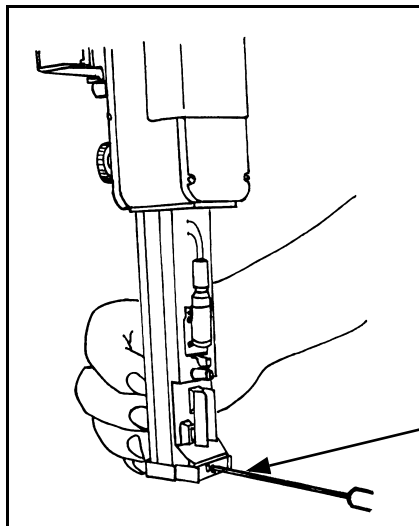
3.3 Start-up after a shut-down lasting for more than 1 week

- With the print head in its servicing support, replace an ink cartridge.
- Open the head cover.
- Open the gutter.
- Remove the anti-clogging pad or the nozzle protection.
- Press , to start the printer.



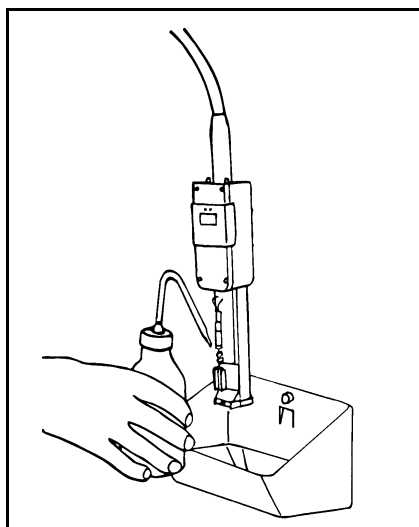
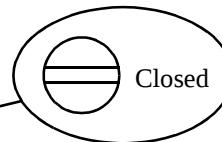
4 Routine maintenance procedures

4.1 Cleaning the head

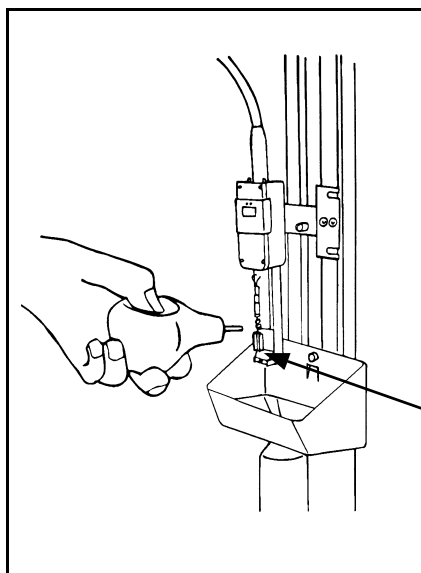


1 Stop the jet and position the head on its servicing support.

2 Close the recuperation gutter.

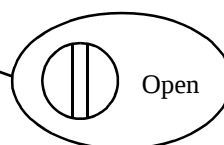


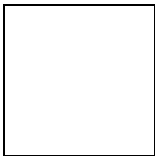
3 Clean the electrodes and the cannon with cleaning solution.



4 Dry carefully (air dryer or drying kit).
(The operation of the drying kit is specified in the ink technical data sheet).

5 Open the gutter and start up the jet again.





4.2 Difficult start-up

You may observe two kinds of problems at jet start-up: no jet is present, or the jet is uncontrolled and the printhead is dirty with ink.

In each case start with a printhead cleaning.

If after a few trials the jet is not OK, you will have to perform the complete procedure for difficult start-up.

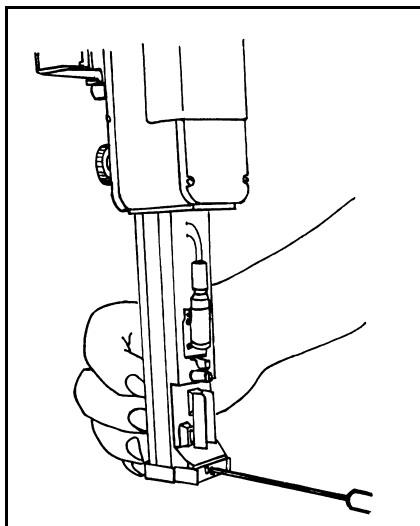
WITH THE OPERATOR INTERFACE

(or with the terminal using the JET MAINTENANCE function in the MAINT sub-menu under the **PRODUCTION** Menu.

CAUTION

In order to ensure that the printer will start again correctly, carry out the three operations one after the other.

When performing these three functions, follow the instructions presented on the screen.



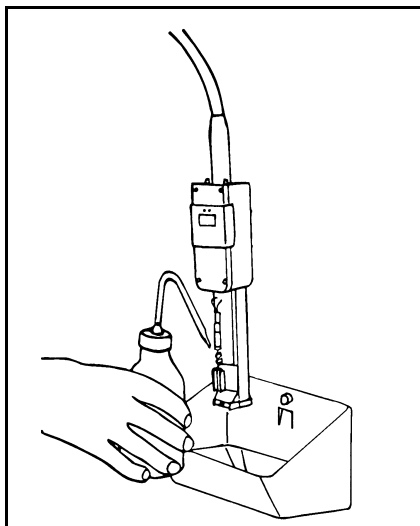
- 1** Position the head on its servicing support.

Select the function:

UNBLOCK NOZZLE?

Spray the nozzle with cleaning solution until the ink comes out the outlet nozzle.

For a dual jet printer, block the nozzle which is operating correctly until the other nozzle is unblocked. To achieve this, use the nozzle protection.



- 2** Validate the next function.

INTRODUCE
CLEANING SOLUTION?

Pour cleaning solution down the cannon for approximately 20 seconds.

- 3** Finally validate the function.

CHECK JET
STABILITY?

Once the jet is stable, stop the stability check and clean the head.

- 4** Once this phase is over, start-up the jet again and inspect the present of the jet in the gutter.

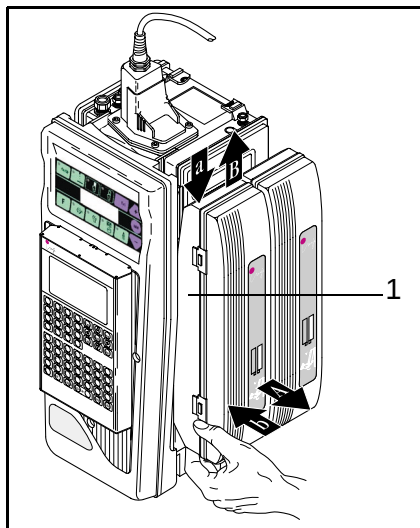
Remove the head cover and clear the defaults.

4.3 Changing the ink or additive cartridge

This operation is used when the indicators  and  remain lit up.

NOTE

The cartridge can not be mistaken because of the duct. This is on the right for the ink and on the left for the additive.

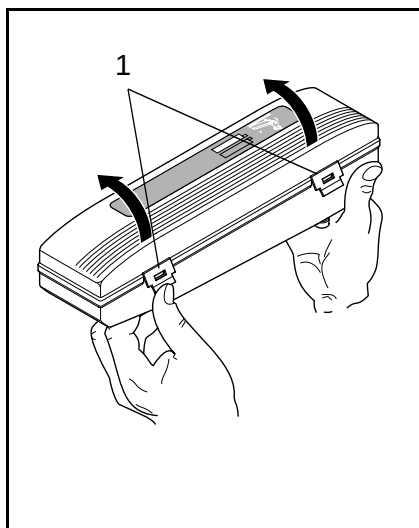


1 Remove the corresponding cartridge holder:

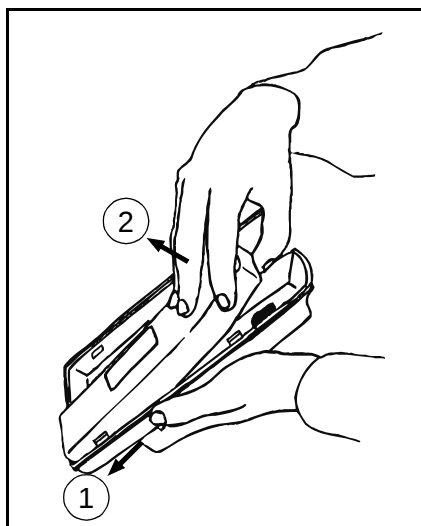
1 Cartridge holder

A-B Removal of the cartridge holder

a-b Replacement of the cartridge holder



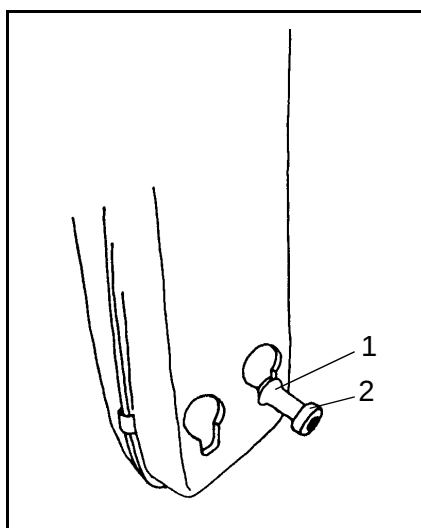
2 Open the cartridge holder by tightening the two side tongues.



- 3** Replace the old cartridge with the new one.

CAUTION

Ensure that the new cartridge is of the same type of ink or additive as the old one (code indicated on the label).

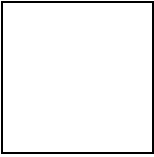


- 4** Replace the new cartridge and check that the duct is correctly positioned.

1 Duct housing

2 Duct

- 5** Replace the cartridge holder, using point 1 in the reverse order.

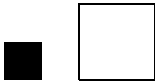
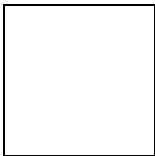


Routine maintenance

NOTES

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1 Introduction

This chapter is a trouble-shooting guide which enables any user to locate the origin of a fault logically and quickly.

Starting with a general identification of the problem, the method passes through a series of checks to narrow the cause down to the defective item involved without any part having to be removed.

This guide list all the possible faults and indicates the action required for resuming normal operation.

The only equipment required can be found in the servicing suitcase.

The adjustment of this section do not involve the removal of any part.

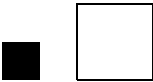
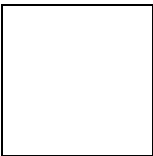
The S7 range Customer catalog provides the part numbers of all the component of your printer.

2 Preliminary checks

All trouble-shooting should start with the preliminary checks. These checks consist of a visual inspection for identifying problems associated with dirty parts, leaks of ink or electrical connections.

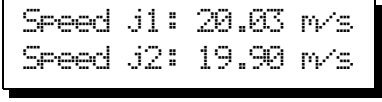
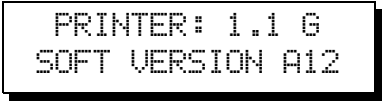
External appearance

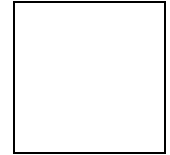
Sub-assembly to be checked	Type of problem looked for
Print Module	• Recuperation tap closed. • Dirty electrodes. • Leakage of ink. NOTE: On a twin-jet head, the left hand jet is the number 1 jet (looking at the front of the head).
Cartridge-holder and Cartridges	• Leak. • Damaged cartridge. • Usage date exceeded (shown on label of cartridge).
Cassettes	• Cassette not connected properly. • Wrong type of cassette. • External accessories not connected properly (industrial interface).
Power supply module	• Mains supply cable not connected properly. • Switch in "O" (off) position.
Terminal and Operator interface	• Impact. • Power failure. • Connection.



3 Checking general operating parameters

3.1 Using the Operator Interface

<u>PRESS</u>	<u>DISPLAY</u>	<u>REMARKS</u>
 		The  indicator light is on.
		
		Pref : Pressure set-point for printer installation.
		Pr : Actual pressure in the ink circuit.
		Pbuffer : Negative pressure at gutter.
		Speed j1 : Software version display.
		Software version display.



3.2 Using the Terminal

In the STATUS sub-menu under the **PRODUCTION** menu, a dialog box tells you the status of the machine and of its operating parameters:

S7		PRODUCTION	
Printer	Message	Status	mAint.
Ink M.status: Ready Jet status: Ready Ref P: + 2.39 Acc P: + 2.43 Tamp P: -0.09 T°C : 20 Jet speed 1: 20.00 m/s			
↑ ↓ : for selection and VALID			

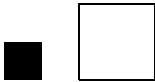
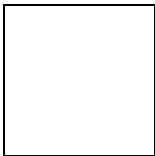
This function provides a real-time indication of the status of the machine and of its operating parameters:

- **Ink M. status:**
Shows whether the ink circuit is in service or not.
- **Jet status:**
Shows whether the jet is in service and ready to print or otherwise.
- **Ref P:**
Shows the ink circuit set-point pressure.
- **Acc P:**
Shows actual ink circuit pressure.
- **Tamp P:**
Shows the negative pressure value at the gutter.
- **T°C:**
Shows the printer operating temperature.
- **Jet speed 1:**
Shows the speed of the jet (with a twin-jet machine the speed parameter shown is for jet no 2).
- **Display/acknowledgement of Faults and Alarms:**
When Faults or Alarms occur, they are displayed in clear text in a dialog box.

85 Default	01/01
Jet vacuum	
Restart jet, check gutter function	
↑ ↓ : list, VALID : acknowledge	

The figure at the top right indicates the number of faults.
A recommendation is displayed as to how to correct the fault

To acknowledge, press **Valid**.



4 Diagnosis help

4.1 Introduction

The tables shown in this chapter consist of two columns under the following headings:

- Problems.
- Remedies.

In the table, each of the problems is identified by a number in bold type.

Each problem may be solved by several "Remedies".

4.2 Example of diagnosis

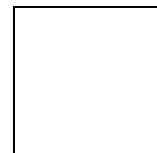
Problems	Actions and remedies
1- Display and screen off.	1a- Check main power supply. 1b- Check the power supply cable and connection. 1c- Change 1.25 A time delay fuse.

The first task the operator has to undertake is to carry out the preliminary checks.

For each of the problems (above example: 1), the operator must then:

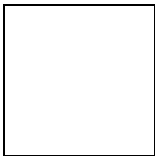
- Apply the first remedy (1a in the above example).
- If the problem persists, the second remedy must be applied (1b in the above example).

Once the problem has been rectified, clear the fault from memory using the  key on the Operator Interface.



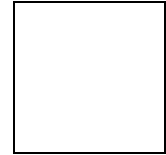
4.3 When the printer is started up

Problems	Remedies
1- Display and screen Off.	1a- Check power supply. 1b- Check the power supply cable and connection. 1c- Change the 1.25 a time delay fuse.
2- Terminal screen off, power to printer on.	2a- Check Terminal connection and cable.
3- Red alarm/fault indicator lights on.	3a- Perform self-diagnosis check by pressing  on the Operator Interface. If a number greater than 01 appears at the top of the screen, check out the other faults with the arrow keys.
4- Data memory.	4a- Stop the printer and start up again. 4b- Check the cassette connections. 4c- Call IMAJE Technical Services.
5- Incorrect data.	5a- Turn off the printer and start again. 5b- Check the connections of the various cassettes. 5c- Call IMAJE Technical Services.

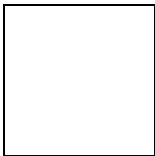


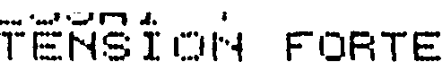
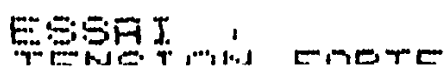
4.4 When printer is in service

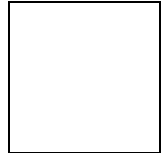
Problems	Actions and remedies
1- Ink level: LOW-50-	1a- Prepare a new ink cartridge.
2- Additive level: LOW-51-	2a- Prepare a new additive cartridge.
3- Ink level: EMPTY-52- or draining cartridge absent.	3a- Replace the ink cartridge.
4- Additive level: EMPTY-53-	4a- Replace the additive cartridge.
5- Cartridge full -54-	5a- During the draining or flushing phase connect another depressed cartridge.
6- Temperature fault -90-	6a- The ambient temperature in the room where the printer is installed is too high and is causing the temperature inside the module to exceed 70°C. Change the installation. 6b- Call IMAJE Technical Services.
7- Cover fault -84-	7a- Close the head cover or ensure it is properly closed. 7b- Check to ensure the detector magnet is inside the cover. 7c- Call IMAJE Technical Services.
8- EHT Fault -86-87-	8a- Clean and dry the head electrodes carefully. 8b- Ensure that the conditions of the environment (humidity, temperature) comply with the specifications given in the technical data sheet for the ink. If they do not comply. 8c- Call IMAJE Technical Services.
9- Recuperation fault -85-	9a- Re-start the jets and check them visually. If one of the jets is unstable, distorted (outside gutter) or missing validate the "Unblock nozzle", "Introduce cleaning solution", "Check jet stability" functions. 9b- If the jets are well inside the gutter but are not being sucked, check the position of the recuperation tap. 9c- Check the machine parameters and contact IMAJE Technical Services.



Problems	Actions and remedies
10- Droplet detection -81-82-	10a- Clean and dry the head electrodes, re-start the jets. 10b- Make sure the ink used in the printer is valid: expiry date (see date shown on cartridge). If the ink is past its use-by date, drain the printer and use a more recent ink cartridge. 10c- Check the general operating parameters of the printer. 10d- Check the break-off point (see chapter 5.2: Adjusting the break-off point). 10e- Call IMAJE Technical Services.
11- Conveyor speed -40-	11a- Reset the "Tacho Division" parameter value on the printer. 11b- Call IMAJE Technical Services.
12- Printing speed -48-	12a- The programmed printing speed is too high for the contents of the message.
13- Concentration alarm -70- Fault -83-	13a- Check the additive cartridge. 13b- Clean the head electrodes with the recuperation tap closed. Allow the printer to clear this fault automatically. 13c- If the alarm persists, fault 83 is indicated. Flush out the printer fully. 13d- Check the printer parameters and contact IMAJE Technical Assistance.
14- Ink module fault 71 to 77	14a- Shut-down the printer, disconnect it and start it up again. 14b- Check the printer parameters and contact IMAJE Technical Service.
15- Machine empty -78-	15a- Change the ink cartridge. 15b- Check the printer parameters and contact IMAJE Technical Service.
16- Electrovalve -60 to 64-	16a- Test the electrovalve concerned manually. 16b- Call IMAJE Technical Assistance.
17- Condenser overflow -79-	17a- Call IMAJE Technical Assistance.



Problems	Actions and remedies
18- Objects not printed and no fault indicated.	18a- Check the contents of the message selected for printing. 18b- Check the "Set-off mode" "Margin" "Print speed" and "Tacho" print parameters. 18c- Perform print test using the  Key. Check photocell and tachometer pulse generator operation and connections.
19- Poor print quality <u>Example 1 :</u>  <u>Example 2 :</u>  <u>Example 3 :</u>  <u>Example 4 :</u> 	19a- Clean the print head (including cover) and ensure that there is nothing obstructing the path of the jet. 19b- Check that the head holders are stable (no vibrations). 19c- Check the distance between the head and the object (examples 1 and 2). 19d- Check that the jets are centred in the recuperation gutters (examples 3 and 4). 19e- The head requires mechanical and/or electronic adjustment. Call IMAJE Technical Services.



4.5 Summary table of faults and alarms

Number	Alarm or Fault	Fault displayed
01 to 03	F	Data memories
04 to 08	F	Data memories
46 - 47	F	Data memories
13 - 17 - 19	F	Data memories
22 - 26	F	Data memories
30 - 31	F	Data memories
09 and 11	A	Time out
10	A	V24 Time out
14	F	V24 Data
15	F	Data
18	F	Algo number not found
21	A	Doubled printing
27	A	Printing library size
28	A	Extension cassette disconnection
32	F	Auto-dating
33	A	Software versions
37	F	Reading/writing industrial interface eeprom
38 - 39	A	Reading/writing control and ink module eeprom
40	A	Conveyor speed
44	A	Corrupted data in extension cassette library
45	A	Function not available
48	F	Algo not available
49	F	Character generator
50 - 52	A/F	Ink level
51 - 53	A/F	Additive level
54	F	Cartridge full on draining
60	A	Ink Elv(u:0)
61	A	Additive Elv(u:1)
62	F	Buffer Elv (u:2)
63	F	Accumulator Elv (u:3)
64	A	Condensor Elv (u:4)
70	A	Concentration high
71	F	Pressure sensor unit.
72	F	Stalling motor
73	F	Ink transfert time out
74	A	Air inflating time out
75	A	Air pocket
76	A	Jet purge time out
77	A	Compression rate
78	F	Machine empty
79	F	Condenser overflow
81 - 82	F	Drop detection (jet 1-2)
83	F	Concentration out of range
84	F	Open cover
85	F	Vacuum fault
86 - 87	F	EHT fault
88	F	Ink module
90	A	Temperature fault
92	F	Pressure servo.
93	F	Gutter closed

5 Adjustments

5.1 Jet in the gutter adjustment

Special tools (service kit):

- Cannon direction tool (ring spanner).
- Bifocal magnifying glass.
- Head cleaning kit.
- Goggles.
- Hex. Allen key, 1.5.
- Tweezers.

To avoid getting ink in the eyes, goggles must be worn during these operations.

PRELIMINARY CHECKS

- 1 - Place the head on the maintenance stand.
- 2 - Make sure that the jet is stable by validating the "Check jet stability?" function.
- 3 - Validate the "Adjust the jet?" function and start up the jet.
- 4 - Check that the recuperation operates correctly.

SETTING THE JET IN THE GUTTER

The operation includes three related settings:

- cannon rotation,
- upper cam rotation,
- lower cam rotation.

In general, this is performed gradually, stopping the jet from time to time to clean the electrodes if necessary.

- 5 - Remove the wire protection plate from the resonator wires and disconnect them.

- 6 - Unfasten the cannon-holder screws (see Figure 1).

- 7 - Bring the jet to point A by tilting the cannon in the cannon-holder with a direction tool placed above.

WARNING: Respect the rotation direction indicate on the figure 1 otherwise to unscrew the cannon nut.

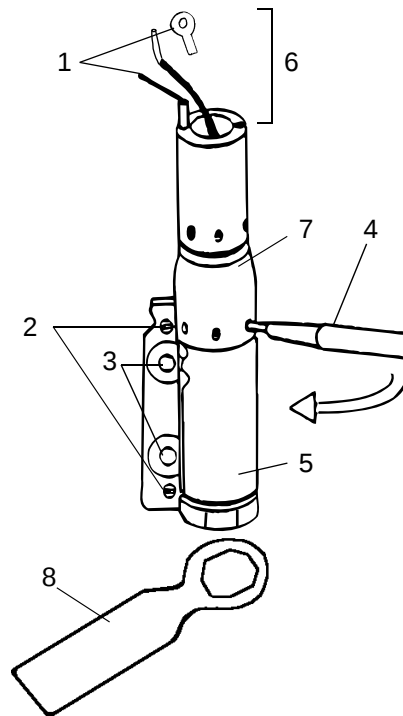


Figure 1 :

- 1 - Wires to be disconnected
- 2 - Cams
- 3 - Screw
- 4 - Direction tool
- 5 - Cannon holder
- 6 - Protective plate position
- 7 - Cannon
- 8 - Ring spanner

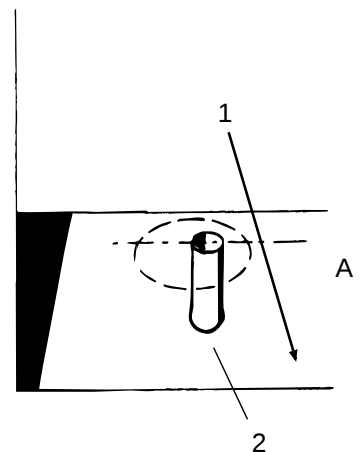


Figure 2 :

- 1 - Jet
- 2 - Gutter

8 - Centre the jet in the charge electrode by sight using the lower cam (see Figure 1).

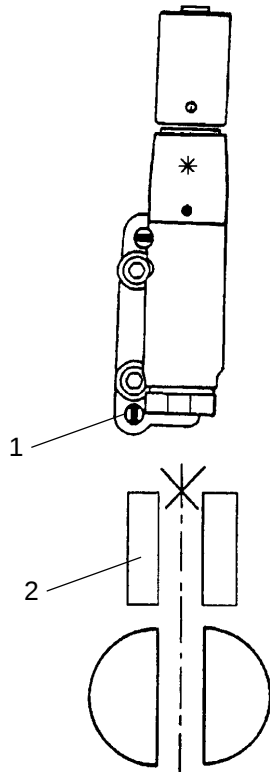


Figure 1 :

- 1 - Lower cam
- 2 - Charge electrode

Do not apply excessive force to the cams. Turn the screw to make the cannon-holder movement easier or stiffer.

9 - Centre the jet in the gutter using the upper cam (see Figure 2).

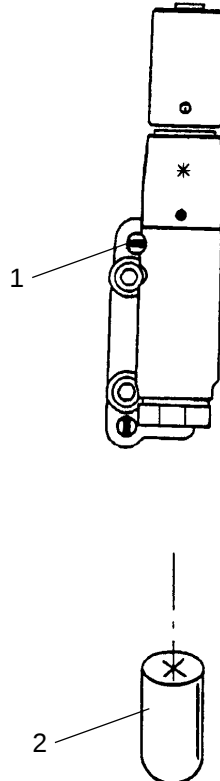


Figure 2 :

- 1 - Upper cam
- 2 - Recuperation gutter

10 - Repeat points 7, 8 and 9 until the jet is centred in the gutter and in the charge electrode.

FINAL OPERATIONS

11 - Tighten the two cannon-holder screws, without forcing them.

12 - Stop the jets.
Clean the head and reconnect the resonator wires. Replace the protective plate. Close the head cover.

13 - Start up the jets.

14 - Check the break-point. Set it if necessary (see Break off point adjustment).

15 - Cancel any faults. Perform continuous printing tests.
Check the cleanliness of the electrodes and the gutter after 10 minutes printing.

CAUTION: On a multi-jet printer, in order for the trame to be connected, each jet must be adjusted in relation to the others.
This setting can be finely tuned only by printing tests.

5.2 Break-off point adjustment

Special tools :

- Bifocal magnifying glass.
- Hex head screwdriver 2 mm.

PREPARATION

1 - Place the head on the maintenance stand.
Start the jet(s) and leave them running for at least 1/2 an hour.

2 - Remove the upper plate and the head cover.

In multi-jet printers, each jet has its own potentiometer (right-hand jet-right-hand potentiometer, etc.).

SETTING

3 - The setting below is performed by looking at the jet through the magnifying glass (see Figures 1 and 2):

- Initialize the operation by turning the potentiometer fully to the left. The jet is continuous.
- Turn it gently to the right until the jet break-point appears in the form shown in 4 on Figure 2.
- Only the shape of the drops after the break point indicate the right adjustment (see Figure 3).

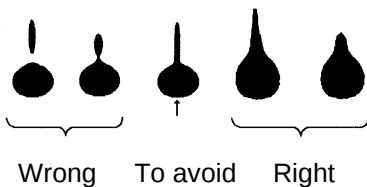


Figure 3 :

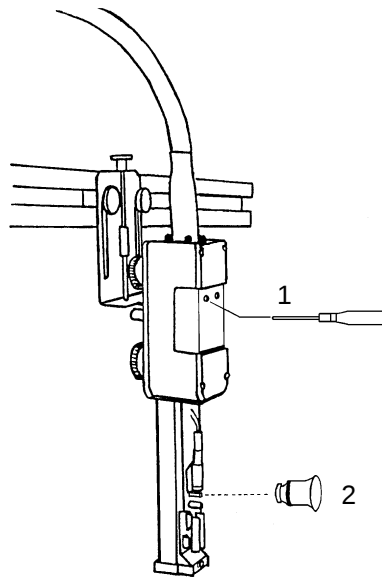


Figure 1 :

- 1 - Potentiometer slot
2 - Magnifying glass

During settings, handle the potentiometer with care to prevent damage.

CHECKS AND TESTS

- 4 - Close the head covers. Clear any faults.
- 5 - Perform some printing tests and repeat the setting if necessary.

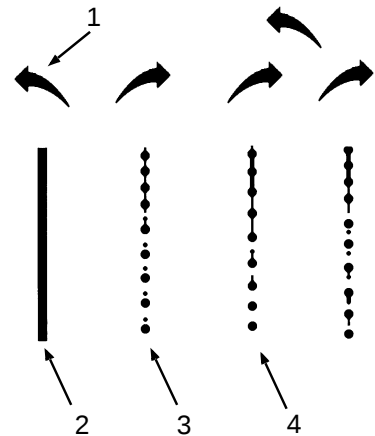
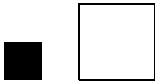
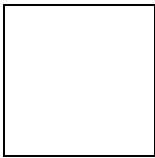


Figure 2 :

- 1 - Potentiometer turns
2 - Jet as seen through magnifying glass
3 - Satellite droplet
4 - CORRECT SETTING

Contents

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4	Consumables and safety	33
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1 Consumables

1.1 Definitions

The term consumables refers to products consumed during printing or used to ensure correct operation of the printer. This includes:

- **Ink:**

Used for printing.

Its formula contains all elements required for:

- stability in the container (expiration date) and in the machine,
- printing performance (adhesion to the identified product and resistance to specific constraints).

It may be delivered in a ready-to-use form or in the form of several components to be mixed.

- **Additive:**

Used to maintain the viscosity (thickness) of the ink.

Its composition corresponds to the needs of the ink during operation.

- **Cleaning solution:**

Used for printer maintenance (head cleaning, etc.).

Its composition is compatible with the ink and additive used.

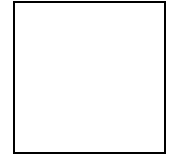
- **Anti-clogging liquid:**

Used only for specific inks.

Its composition prevents ink drying within the cannon when the machine is stopped.

1.2 Units

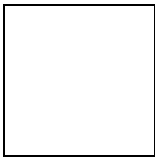
Depending on the type of ink or additive, Imaje offers groups of 4 or 6 units as well as start-up kits including ink and additive.



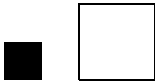
1.3 Labelling

This serves three purposes:

- Identify the supplier, indicating the contact details.
- Inform the user about the product itself:
 - article reference,
 - manufacturing batch number: to be quoted if you need to contact our Technical Support,
 - use before date: limit date up to which the original quality of the product is guaranteed.
- Inform the user about the nature of the special risks related to the substances contained in the ink. ex. flammability, eye irritation, etc.

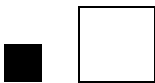


Consumables



2 Consumables and the application

Qualification of the application is the sole responsibility of the customer. In order to assist with this qualification (which covers the ink, ink jet equipment, nature of products, manufacturing process, printing requirement specifications, etc.), Imaje makes a wide range of printers and inks available to its current and potential customers for producing print samples.



3 Consumables and the printer

3.1 Ink usage specification

It is essential to possess this document, available from our sale branches on request.

This sheet informs the user of the operating parameters (viscosity, jet speed, etc.) and the specific printing characteristics (printing speed, head to object distance, etc.) depending on the printer configuration (nozzle size, number of nozzles, etc.) and the chosen ink.

3.2 Consumption

You should be aware that the ink consumption for a given period depends on the number of characters printed per object, the number of objects printed during the period, the font (matrix, bolderization) and the diameter of the nozzle.

The additive consumption primarily depends on the operating time and the ambient temperature.

4 Consumables and safety

The use of our consumables implies the knowledge of some of the associated physical and chemical characteristics, as well as the safety recommendations for storage, handling and use of these products.

All of this information is included on a material safety data sheet (msds), which available up on request from our sales offices.

You should study the msds before starting use.

Foreword:

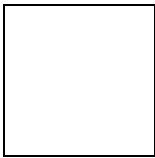
➔ The presentation and authoring rules for the Safety Data Sheets comply with Directive 67/548/EEC and the OSHA (Occupation Safety and Health Administration) nomenclature (through the HCS (Hazard Communication Standard)).

On these sheets, you will find all data concerning:

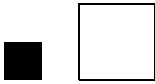
- identification of the preparation and the manufacture,
- the composition and information on the components,
- identification of the hazards,
- first aid,
- fire fighting measures,
- measures to be taken in the event of accidental spillage,
- handling and storage,
- control of exposure / individual protection,
- physical and chemical properties,
- stability and reactivity,
- toxicological information,
- ecological information,
- considerations for disposal,
- information concerning transport,
- regulatory information,
- other information.

For:

- operators and technicians,
- the customer's occupational health and safety department,
- occupational health doctors,
- transport companies,
- the fire department,
- store keepers.



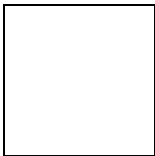
Consumables



5 Consumables, guarantee and responsibility

Our consumables have been specially designed to operate with Imaje printers and give the best results in terms of ease of use and consumption.

The use of consumables other than those proposed by Imaje invalidates the equipment guarantee and any complaints concerning a deterioration of performance leading to production stoppages.



Technical specifications

Physical characteristics

Dimensions : mm (inches)

Weight :

Performances parameters

Printing

Max. speed (according to type of head and to type of printer)

Functions available
(see features on following page)

Operating mode possible

Operating characteristics

Power sources

Ink

Operating limits

Operating temperature

Humidity

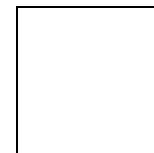
Installation details

Working position of the printer

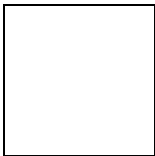
Maximum height offset between head and control module

Compliance with standards

Standard accessories



• Printer body	390x210x80 (15.35x8.27x7.09)
• Print head (straight)	225x45x45 (8.86x1.77x1.77)
• Consumable products cartridge	230x60x35 (9.05x2.36x1.38) (small)-250x55x55 (9.84x2.16x2.16) (large)
• Cassette	140x140x40 (5.51x5.51x1.57)
• Terminal	255x155x35 (10.04x6.1x1.38)
• Complete machine	less than 10 kg (22 lb)
• Cartridge	less than 0.5 kg (1.1 lb) (small) - less than 0,8 kg (1.76 lb) (large)
• Cassettes	less than 0.5 kg (1.1 lb)
• On all items, in all positions. • Up to 4,000 characters per message. • 1 to 4 lines of variable data per jet, 1 or 2 jets per head. • Height from 1.2 to 20 mm (.047 to 0.79 inches) (depending on font and head). • Choice of matrices 5/7/9/11/16/24/48 points high. • Wide selection of fonts (industrial latin, chimney, CurvePrint, etc.). • Possibility of printing characters and graphics of all kinds (bar codes, two-dimensional code, etc.). • Possibility of editing symbols.	
• G head 2.8 pts/mm (71.12 pts/inch) - max. 5.5 m/s (1081.66 ft/mn) • M head 4.5 pts/mm (114.3 pts/inch) - max. 3.7 m/s (727.66 ft/mn)	
• Control via operator interface, terminal, any system equipped with a RS232C asynchronous serial interface V24/RS232C or an RS422 synchronous serial interface or by a parallel interface.	
• Automatic start. • Automatic ink quality regulation.	
• Automatic nozzle unblocking system. • Printer status self-diagnosis. • Automatic drain and flush sequences.	
• 100-120 V 200-240 V AC (automatic selection)Frequency 50 or 60 Hz 40 VA.	
• Quick, medium or slow-drying ink. • Average consumption: Small capacity: 24 million characters/cartridge (G head) and 54.6 million characters/cartridge (M head). Large capacity: 45,7 million characters/cartridge (G head) and 104 million characters/cartridge (M head).	
• + 5°C to + 45°C (40°F to 113°F). (use of certain ink can limit the temperature range, see ink technical data sheets).	
• 0 to 95 % RH without condensation.	
• Vertical.	
• Programmable, between -1,5 m and + 2 m (-60 to 78.75 inches)• Umbilical length 3 m (118 inches).	
• Safety: - standard (auto-certification): EC marking in accordance with the machine directive and the electromagnetic compatibility directive. - Homologations (third party organizations): UL label according to UL 1950, CSA label according to CSA C22.2.950, GS label according to EN 602204 and ZH 1/10*EX-RL/03.85. • Radioelectric: - Emission: EN 55011 class B; FCC class B. - Immunity: IEC 801-2 level 4 (electrostatic discharge)IEC 801-3 level 3 (radiated immunity), IEC 801-4 level 4 (radiated immunity),IEC 801-5 level 3 (surge immunity).	
• Head stand and printer base support. • Photocell: object detector. • Tachometer: speed detector. • External alarm (visual or audible). • Head movement. • Vapour catcher. • Head pressurisation kit (standard on printers with medium or slow-drying ink). • Head drying kit (standard on printers with medium or slow-drying ink).	



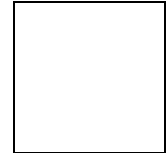
Technical specifications

TERMINAL

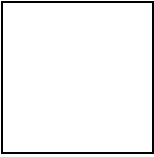
Physical characteristics	Dimensions (mm)	255x55x35 (10.04x6.1x1.38 in)
	Weight (kg)	< 0.5 (1.1 lb)
Type	Standard, Chinese, Arabic, Hebrew.	
Keyboard	59 keys.	
Display	LCD, WYSIWYG, 128 x 240 pixels, up to 8 lines of text or 48 points.	
Interface with printer	Type V24/RS232C asynchronous serial interface.	
Characters displayed	All font types.	
Protection	Keyboard sealed to protect against water splashes and dust.	
	Withstands being dropped from a height of 1 m.	
Printer connections	4-pin connector on control module.	

FEATURES

Fonts	Latin industrial (5, 7, 9, 11, 16, 24, 48 points). Configured language option. New York, Chimney, Arabic, etc. CurvePrint (7, 1x8, 2x8, 11, 16 dots)
Date and time printing	Hour, minute, second.
	Day, month, year, day of the year, day of the week, final year digit, up to 3 shift codes, up to 6 postdates, autodating table.
Counters	Up to 15 different counters per message (these can be chained).
Inputs/Outputs	Item pulse input, two tachometer inputs.
	External alarm/fault outputs.



Symbols editing	Height: Width:	from 5 to 48 points from 1 to 127 points
Algorithm	• Quality, 30 mm (1.18 inches) for G head and 20 mm (0.79 inches) for M head. • Rapid multiline, 10 mm (0.39 inches) for G head and 8 mm (0.31 inches) for M head.	
Bar code	2/5 interlaced, Code 39 EAN 13, EAN 8, UPCA, UPCE, EAN 128, Code 128 with or without plain text, HIBC.	
Datamatrix code	ECC 200	
Extended library	Extension up to 880 messages.	
Serial link	RS232C/V24 that may also work as current loop.	
+	RS422	
Non-doubled printing	A message cannot be printed twice in succession (required for franking parcels for example).	
Parallel interface	Message selection by parallel interface or "message incrementation".	
Input/Output Message number incrementation	The BIB input on high level selects the next message in the library. The BIB input or low level selects the preceding message in the library.	
Programmable output	Programmable output depending on the final value of a counter or the number of tacho pulses programmed.	
Counter incrementation input	The counter incrementation can be made via this input instead of the item pulse.	
Counter initialization input	Reset counters to initial value by pulse on this input.	

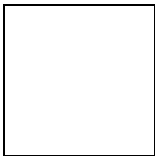


Technical specifications

NOTES

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1 Industrial Interface cassettes

There are two types of Industrial Interface cassettes depending on the configuration of your printer:

- The Simple Industrial Interface cassette, which includes:
 - TOP, TACHY 1, TACHY 2 inputs.
 - Alarm and Fault outputs.
- The complete Industrial Interface cassette which includes the inputs and outputs of the single model, plus the following features:
 - inputs: INH, INVMES, RAZCP A, RAZCP B, INCCP A, INCCP B, INCMES, BIB, D0 to D7,
 - outputs: SYNC, ETAT.

1.1 Connection

Switch off the printer and disconnect the cassette from the body. Remove the top cover after removing the four screws as shown below.

CAUTION

The Industrial Interface cassette must never be connected or disconnected when the power is on.

Figure 1 and 2 : View of the Industrial Interface card and its terminal blocks

- | | |
|---|-------------------|
| 1 | Grommet |
| 2 | Connection strips |

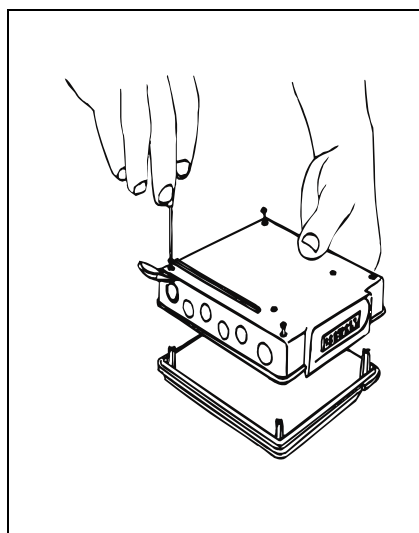


Figure 1

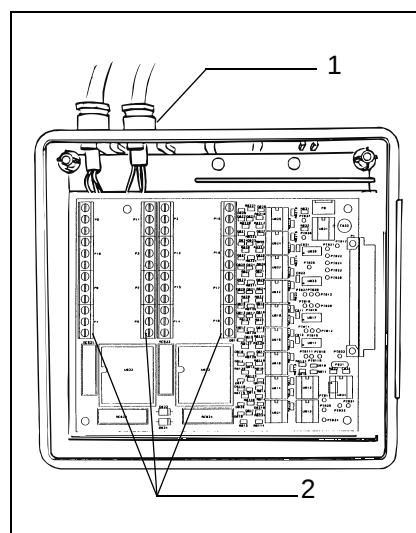
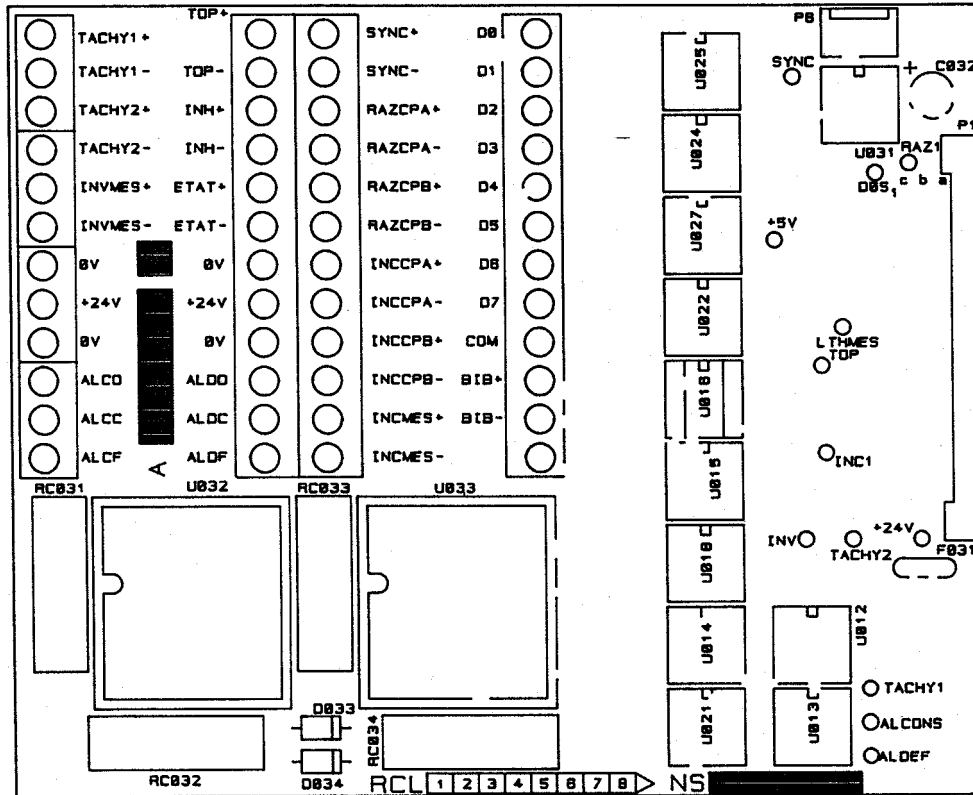


Figure 2

Terminal identification



INPUTS:

INH + Item TOP pulse inhibition
INH -

INVMEs + Message direction reversal
INVMEs -

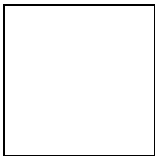
RAZCP A + Reset to initial counter value
RAZCP A -

RAZCP B + Reset to initial counter value
RAZCP B -

INCCP A + Increment of a counter parameter with this input
INCCP A -

INCCP B + Increment of a counter parameter with this input
INCCP B -

INCMES + Message increment
INCMES -



Input/Output connections

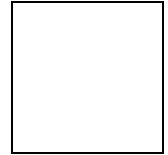
TOP + TOP -	Start print
TACHY1 + TACHY1 -	Tacho 1 input
TACHY2 + TACHY2 -	Tacho 2 input
BIB + BIB -	Message increment or decrement direction
D0 à D7 COM	Parallel interface data

OUTPUTS:

SYNC + SYNC -	Message synchronisation
ALC F ALC O ALC C	Alarm (F = Closed, O = Open, C = Common)
ALD F ALD O ALD C	Fault (F = Closed, O = Open, C = Common)
ETAT + ETAT -	Counter status output

POWER SUPPLY:

0VA	
0VA	
0VA	
0VA	
0VA	
+ 24 V	
+ 24 V	Max. current 300 mA



1.2 Inputs

1.2.1 Input details

The input circuits act as a high speed photocoupler with an isolation voltage of 3 kV.

- Operating voltage between 10 and 24 V.
- Input current regulated within the operating voltage range.
- Max. operating frequency: 6.25 kHz, 200 kHz for the tachometric input.

1.2.2 TOP: object detection cell

• **Purpose:**

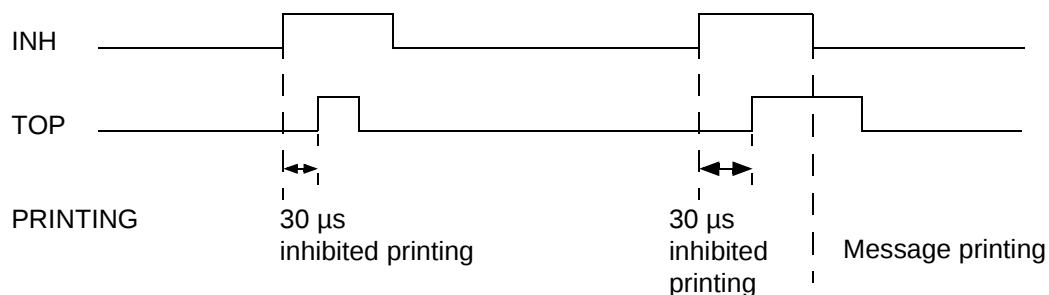
The object detector is connected to the **TOP+** and **TOP-** terminals of the Industrial Interface cassette. When it is activated by an object passing in front of it, the detector sends a signal to the printer to start printing. In order to avoid interference, the **TOP** input is filtered at 200 μ s.

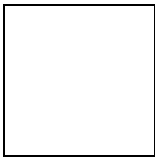
1.2.3 INH: item detector inhibition

• **Purpose:**

The **INH+** and **INH-** terminals on the Industrial Interface cassette are used to inhibit the detection signal.

• **Functioning:**





1.2.4 TACHY 1, TACHY 2: tachometric pulse generator

- **Purpose:**

When the speed of the conveyor is variable, the **TACHY+** and **TACHY-** terminals on the Industrial Interface cassette can be used for connecting up a tachometer for sequencing printing (it makes no difference whether the connection is made on the Tachy 1 or Tachy 2 terminal). Both inputs can be used simultaneously to avoid doubling the frequency of the tachometric signal. These signals on these two inputs must have the same frequency and be in phase quadrature.

1.2.5 INVMES: Message direction reversal

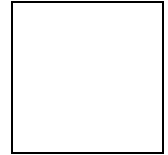
The direction in which a message is printed can be reversed by means of the **INVMES+** and **INVMES-** terminals (forward and reverse printing mode).

1.2.6 RAZCPA, RAZCPB: counter initialization

The counter must be configured for being reset to its initial value via the **RAZCPA** or **RAZCPB** input. A pulse on the input concerned resets the particular counter to its initial value.

1.2.7 INCCP A, INCCP B: counter incrementation

The counter must be configured for being incremented via the **INCCP A** or **INCCP B** input. A pulse on the input concerned increments the counter concerned by its counter interval value.



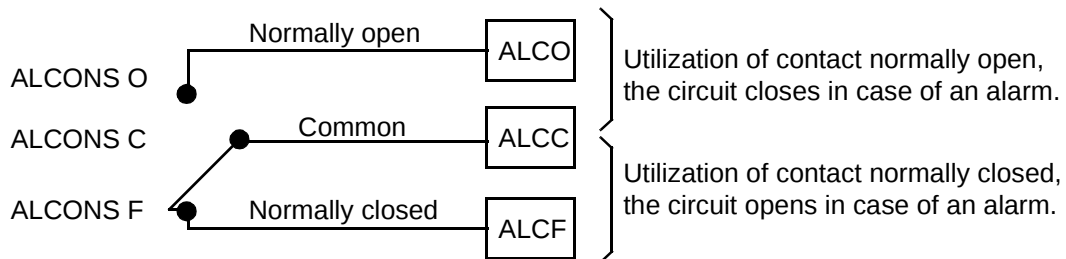
1.3 Outputs

1.3.1 ALC: alarm output

This output is used for announcing a printer malfunction which does not prevent printing. The alarm is activated to attract the operator's attention so that he can then eliminate the cause of the problem.

This output has two types of contact:

- Break (normally open).
- Make (normally closed).



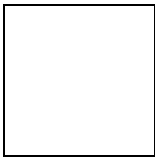
Electrical characteristics of the Alarm outputs:

- Max. voltage: 250 V
- Max. current: 1 A

These are dry potential-free contacts. The contact activates the alarm systems or electrical assemblies directly with the mains supply.

The electrical contacts are protected by RIFA type R.C. cells (0,1 μ F/250 V + 47 Ω).

The operational mode of the alarm output depends on the choice made in the **PRINTER PREPARATION** menu, INITIALIZATION sub-menu, PRINTER function, MISCELLANEOUS stage (see under "PRINTER PREPARATION" Chapter in USE OF THE TERMINAL section).



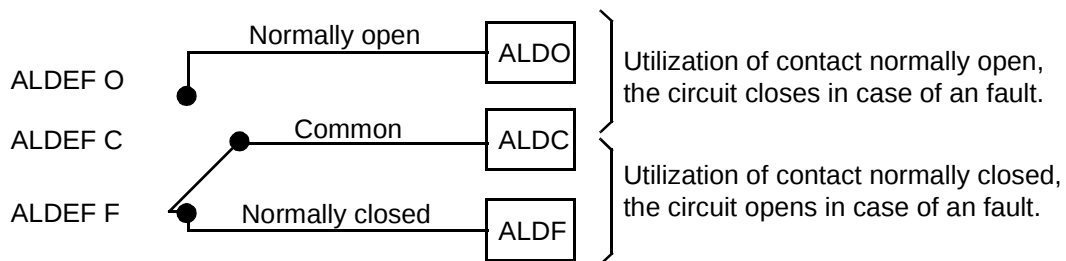
1.3.2 ALDEF: fault output

This output is used for announcing a printer malfunction which prevents printing.

It can also be activated on start-up if the printer is not ready.

This output can be connected to a flashing light or audible alarm and in addition, to the conveyor power supply to halt the production line.

This output has two types of contact: a dry break contact (normally closed) and a dry make contact (normally open)..



The electrical characteristics and the operational mode of the Default outputs are identical to the Alarm outputs (see preceding sub-section).

1.3.3 SYNC: message synchronization

The **SYNC +** and **SYNC -** terminals of the industrial interface cassette are used for providing a calibrated pulse while the message is being printed.

The message synchronization output uses the output characteristics of a high-speed photocoupler with an open collector photo-transistor.

Operating characteristics:

- Maximum output current I_s : 16 mA.
- Maximum operational voltage: 24 V.

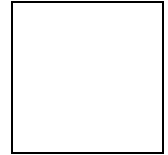
1.3.4 ETAT: print status

This output can only be used if it is configured in the printer:

- (1) In the **PRINTER PREPARATION** menu, **INITIALIZATION** sub-menu, **PRINTER** function, **MISCELLANEOUS** step, **COUNTING** line parameterized for Tach. puls. nb.
- **OR** (2) in the **MESSAGE EDITING** menu, **PARAMETERS** sub-menu, **COUNTER** function, **ACTIVATE OUTPUT** line ☒.

It changes state, depending on the printer configuration, when a certain number of tacho pulses is reached (1) **OR** when the counter reaches its final value (2).

The operating characteristics are exactly the same as for the **SYNC** output.



1.4 Message selection

1.4.1 Message increment

Message selection is made by means of the **BIB** and **INCMES** inputs.

The **BIB** at high level input is used to increment.

The **BIB** at low level input is used to decrement.

Depending on the level of the **BIB** input, each pulse on the **INCMES** input changes the number of the active message for printing. The TOP input starts printing.

NOTE	The printer must be configured for this message selection mode.
-------------	--

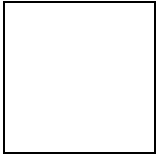
1.4.2 Parallel interface

The **D0, D1, D2, D3, D4, D5, D6, D7** terminals are used for selecting the message number to select for printing.

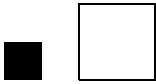
The **INCMES** signal initiates printing of the message selected.

The **SYNC** output is active while the message is being printed.

NOTE	The printer must be configured for this message selection mode.
-------------	--



Input/Output connections



2 Extension Cassette

2.1 Serial link

The Extension cassette makes it possible for you to control the printer from a computer or PC, using a RS232/V24 serial link, that may also work as current loop or RS422 serial link.

2.2 Extended library

When an Extension cassette is used the library contains up to 880 messages.

Update of the manual

- The revision index A corresponds to the first edition of this manual.
- The revision index changes with every modifications.
- The modified pages are mentioned in the following table. This one indicates all updating since the first edition.

Date of edition	Document revision index	Software index	Modified pages
10/1999	A	A10	First edition
05/2001	B	A11	18, 23, 25, 37, 38, 39, 47, 48, 54, 55
09/2002	C	A12	All

Photograph and drawings are not binding. Photo: GINKO. X



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