Compuprint 6314/6414

User Manual

rel. -002

Safety Instructions

Never use the printer, if the mains values do not correspond to those given on the rating plate of the printer. The rating plate is located inside the printer.

The printer must be used only in environments corresponding to the instructions given in this manual.

Do not operate the printer parts, unless it is indicated inside this manual. Any intervention on the printer must be performed strictly following the given instructions.

If the printer smokes, is particularly hot or produces unusual noise or smell, turn off the printer immediately and remove the power cord. Do not use the printer and call Customer Service.

When moving the printer, hold it only at its base. Do not raise the printer holding it at the side grip, because the printer cover may open, the printer fall harming the user and/or damaging the printer itself.

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Contents

1 INTRODUCTION

Our new offer now includes a new line of thermal and thermal transfer printers that can provide the best solution for every labeling need.
Highly responsive to our customers' needs, we have introduced an unique innovation in the field of thermal technology. The installation of memory units makes it possible to increase printer speed.
As a result, you no longer have to buy a new printer if your printing needs change.
Another exclusive system permits the operator to change the head simply and quickly, avoiding wasteful downtime. CPG printers are also the best investment thanks to their robust and compact design, key features when space is limited.
CPG thermal technology is ideal for anyone who wants to introduce or expand their own barcode applications in virtually any field: tracking progress on the production line; tracking outflows, shipping and receiving, and inventory in the warehouse; labeling of test tubes in medical and pharmaceutical laboratories; code labeling of property, documents, invoices, and delivery notes in administrative offices.

1.1 Warnings And Special Information

For your safety and to protect valuable equipment, it is very important that you read and comply with all information highlighted under special headings:

WARNING! **Conditions that could harm you as well as damage the equipment.**
IMPORTANT! **Information vital to proper operation of the printer.**
NOTE! **Information and helpful tips about printer operation.**

1.2 Important Warranty Information

Printer Warranty

CPG International warrants to purchaser that under normal use and service, this printer (excluding the thermal print head) purchased hereunder shall be free from defects in material and workmanship for a period of ninety (90) days from the date of shipment from CPG International.
Consumable items such as media and ribbons are not covered under this warranty. This warranty does not cover equipment or parts that have been misused, altered, or used for purposes other than those for which they were manufactured. This warranty also does not cover loss, shipping damage, damage resulting from accident or damages resulting from unauthorized service.

Thermal Print Head

CPG International warrants the print head for a period of ninety (90) days, or 1,000,000 linear inches (Thermal Transfer/Direct Thermal) of use, whichever comes first. The warranty does not cover print heads that have been misused, damaged due to improper cleaning, or damaged due to use of improper ribbons or media.

Supplies

To reorder CPG International supplies, you can complete the reorder form that comes with your printer, or call your local CPG International office.

1.3 Features

- Thermal transfer and Direct thermal printing.
- Supports over 17 types of bar codes.
- Download forms, fonts and graphics to printer memory.
- High-resolution print head for sharp graphics and text.
- Optional Built-in label rewinder for label Peel-Off operation.
- Label Taken Sensor for detecting removal of labels in Peel-Off or Tear-Off modes.
- Peel-Off mode for peeling off labels one at a time, before printing the next label.
- Tear-Off mode for positioning the label at the tear-off position and detecting its removal before printing the next label.
- Tear-Off Strip mode for printing a specified number of labels and positioning the last label at the tear-off position.
- 8MB DRAM memory.
- 4MB Flash memory.

The printer can be connected to communicate with the host via RS-232 and USB ver 2.00, Centronics® -compatible parallel, IEEE® 1284 compliant parallel, and, optional connections of Ethernet® 10/100 Base-T.

The interface cables needed to connect the printer to the host device is supplied by the user.

1.4 Thermal Printer Technology

Quiet and fast, with excellent print quality, your multifunction thermal printer uses an inline thermal print head. The operation of a thermal printer is different from that of a line-matrix or laser printer. The thermal printer uses a print head with heating elements and special paper or ribbon.

1.4.1 The Printing Process

The thermal print head allows two modes of operation:

- **Direct Thermal**
  During direct thermal printing, the thermal print head selectively heats small, rectangular thermal dots. When these contact the coated thermal paper, the dyes and developers in the coating react to the heat and develop an image. This mode of printing is generally used for short-term labeling applications.
- **Thermal Transfer**
  During thermal transfer printing, the heated thermal dots contact a thermal ribbon. The heat reacts with the ribbon and bonds the image to the paper. This method is used especially for abrasive, long-storage applications and for specialized applications, such as in extreme environmental conditions or where tamper-proofing is required.

1.5 Thermal Consumables

1.5.1 Media Selection

Since there are two print modes of operation, there are two kinds of thermal media:

- Direct thermal media.
- Thermal transfer media.

Direct thermal media is paper coated with special chemicals that act as an accelerator, acceptor dye and binder. During direct thermal mode, the heat from the thermal print head contacts the paper and causes a chemical reaction to take place.

There is a wide range thermal transfer media available, such as film or synthetic paper substitutes that are excellent in their ability to transfer an image (print quality) and others in scratch resistance (long storage). Most of these media options can be die-cut for easy label applications.

NOTE!

The term “media” used in this manual refers to all the different kinds of paper or tag stock that can be used in the printer.

1.5.2 Ribbons

CPG International offers a range of ribbons that have been specifically engineered to enhance printing capabilities and to prevent premature print head wear. Therefore, it is strongly recommended that you use a CPG International Thermal Ribbon in your printer.

1.6 Thermal Features

1.6.1 Emulations

Your thermal printer has the standard CZL emulation which provides direct compatibility with Zebra printers. In addition, the printer has co-resident: CDL emulation which provides direct compatibility with Datamax printers and CPL emulation.

1.6.2 Hardware Options

Ask your authorized representative about the following options, which can enhance the versatility of your printer.

- **Fonts**
  A selection of fonts is available to extend the capabilities of the standard resident fonts.
- **Media Cutter**
  The cutter is used to automatically cut printed media when the media exits the printer.
- **Media Catcher Tray**
  Used with the Media Cutter option to catch the cut media and collect it away from the Media Cutter Assembly.
- **Peel Option**
  The Peel Option is used to peel adhesive labels from the liner.
- **Powered Rewind Option**
  Used to automatically rewind the printed label and liner back on a roll for use at a later time.
- **Network Interface Card (NIC) Servers**
  Allows the user to attach the printer to a LAN (Local Area Network) rather than attaching it directly to a host system. NIC servers support Ethernet only. NIC servers are available as an internally installed, mounted inside the printer with the 10/100Base-T (UTP) connection only.

1.7 Setting Up The Printer

1.7.1 Unpacking The Printer

The printer is shipped in a carton and protective bag. Keep all packing material in case you need to move or re-ship the printer. Avoid touching the electrical connectors to prevent electrostatic discharge damage while setting up the printer.

WARNING!

The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the print head or electronic components used in this device.

WARNING!

Damage to the printer interface connector may result from placing the printer on its backside during unpacking or handling.

Fig. 1 – The 6314-6414 printer

1.7.2 Check List

Your thermal printer kit contains the items listed below.
- The thermal printer.
- AC Power cord.
- User's Manual.
- Quick Reference Manual.
- Software Starter Kit CD.
- Ribbon Take-Up Core (mounted in printer).

NOTE!

If any items are missing, contact your dealer for replacement parts.

1.8 Installation

The following sections will guide you through the installation of the printer.

- Place the printer in a suitable location on a flat level surface that allows easy access to all sides of the printer. The printer should never be operated while resting on its side or upside down.
- Check that the printer power switch is in the OFF (O) position.

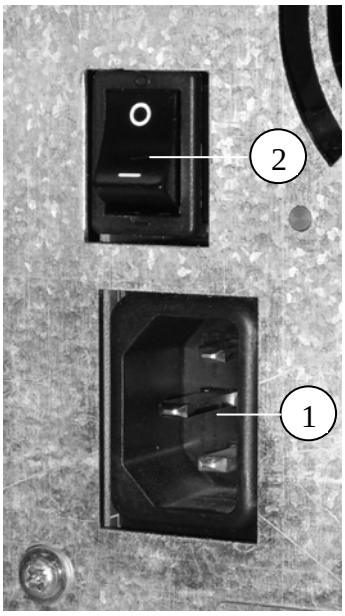

Fig. 2 – Power inlet and ON/OFF switch

Legend:
1) AC Power Receptacle
2) ON/OFF Power Switch

- Attach Interface (Fig. 3):
  A. Parallel Interface
  Attach a suitable parallel printer cable from the computer to the Centronics® interface connector at the back of the printer. Snap the bail locks to the Centronics connector to secure the interface cable to the printer.

  B. Serial Interface
  Attach a suitable serial printer cable from the computer to the DB-9 RS-232 Serial interface connector at the back of the printer. For additional information on serial cable wiring, refer to “Serial Port Wiring” section on page 76.

  C. USB Interface
  Attach a suitable USB cable from the computer to the USB interface connector at the back of the printer.

NOTE!

The printer supports simultaneous connection of all available interfaces using the AUTOMATIC feature. The AUTOMATIC feature is described on page 64.

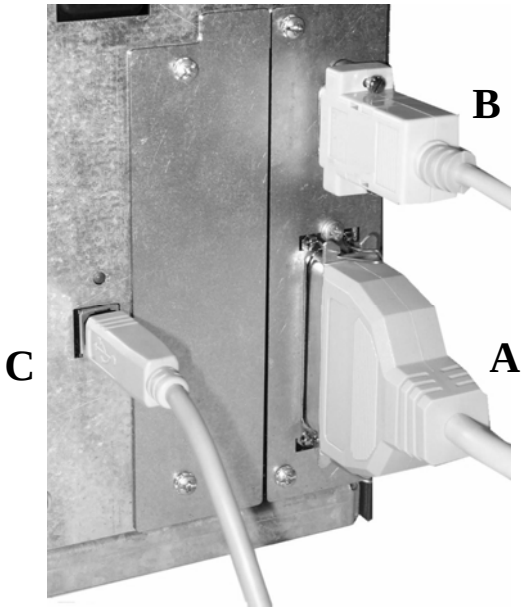

Fig. 3 – Printer Interfaces

- Attach the AC power cord to the AC power receptacle in the rear of the printer (Fig. 4).

Fig. 4 – Connection of power cord and ON/OFF switch

1.9 Installing The Print Head

WARNING!

When the print head is already installed in the printer, it is fixed with a plastic latch.

Before using the printer cut this latch.

1.9.1 Installing The Print Head

WARNING!

Make sure that the printer is turned off before installing the print head.

The first step in setting up the printer is to install the thermal print head, if this has not already been done.
Please follow the instructions below:

- Turn off the printer.
- Open the label loading area lifting the cover on the right side of the printer.
- Lift the print head group with the corresponding lever (see Fig. 5).

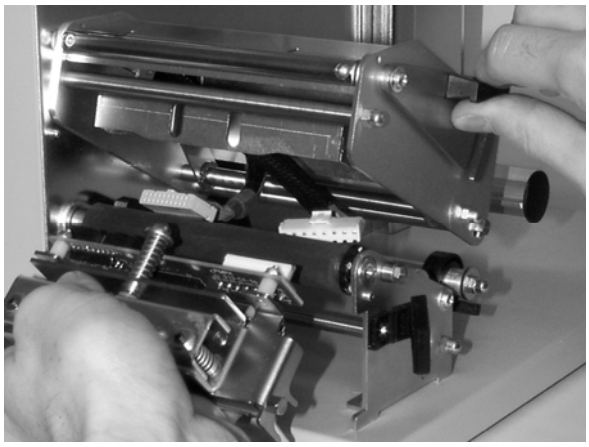

Fig. 5 – Lifting the print head group

- Place the print head next to the connection cables.
- Attach all cables to the corresponding connectors (see Fig. 6).

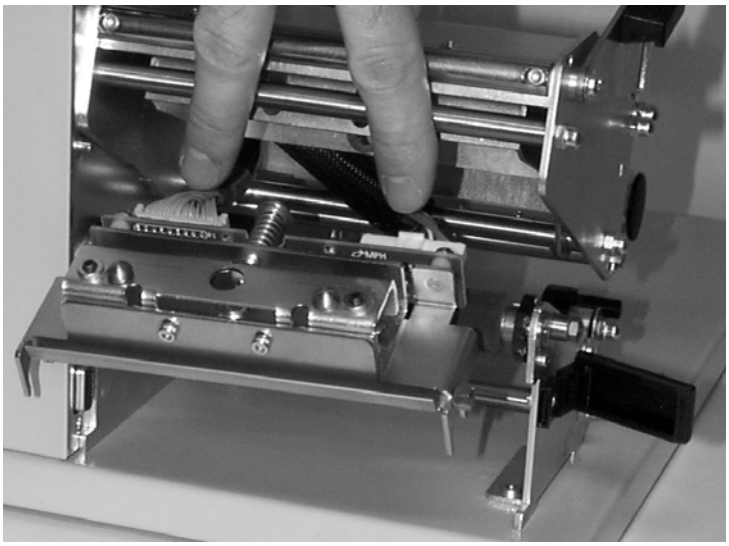

Fig. 6 – Connecting the print head

- Insert the guide pin in the corresponding hole on the print head group (see Fig. 7).

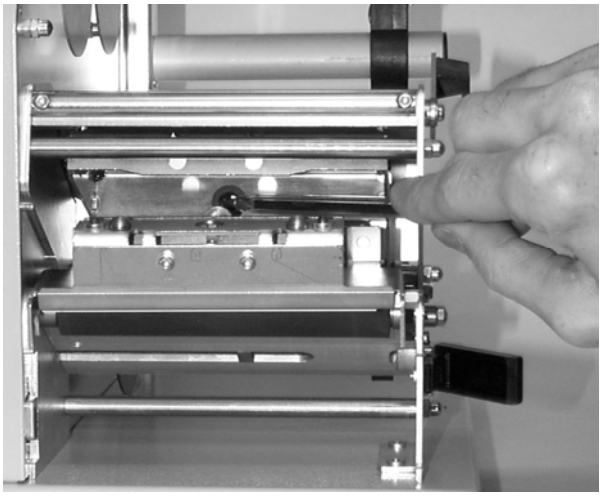

Fig. 7 – Guide hole

- Push the print head in and match the two markers on the top of the print head with the guide holes on the print head group (see Fig. 8).

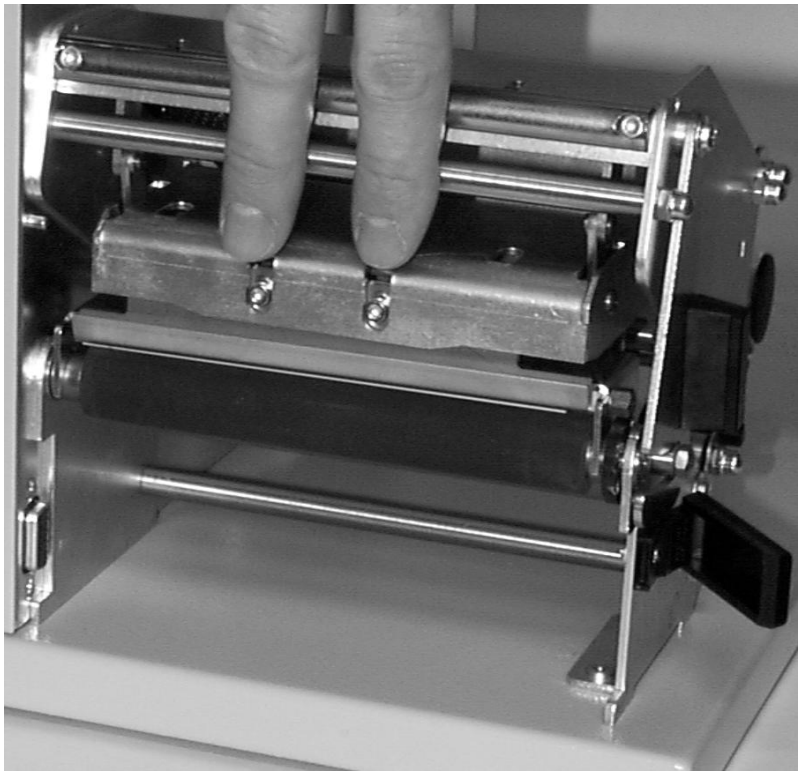

Fig. 8 – Front guide markers on the print head

- Close the print head group.

2 OPERATION

2.1 Using The Printer

2.1.1 Controls And Indicators

Fig. 9 – Controls and indicators

All printer controls and indicators, except for the power switch, are located on the front panel of the printer. The power switch is located on the left hand panel at the rear of the printer.

The Control Panel is located at the top left of the printer. The panel has a back-lighted Liquid-Crystal Display (LCD) with 2 rows of 16-characters each.

The Control Panel also contains the printer control keys. A summary of each key's function is provided on the following pages. Detailed descriptions of key functionality are provided in Chapter 3.

2.1.2 Powering The Printer On

When all cables have been connected and the labels and ribbon have been loaded as described below, the printer is ready to be powered on.

The power switch is located on the back side near the power cable socket.

When powering the printer on, the display shows the message *starting…* and all three LED's light up. After a few seconds, the *Check* LED's turn off, while the *Ready* remains lit together with the *Power* LED; the display shows the *ON LINE* message.

2.2 Loading Media And Ribbon

The term "media" used in this manual refers to all the different kinds of paper, label, or tag stock material that can be printed on by the printer. This section explains how to load roll media, fanfold media, and transfer ribbon. Your thermal printer can print on continuous paper, adhesive backed labels or non-adhesive tags packaged in roll or fanfold form.

WARNING!

DO NOT TOUCH the print head or the electronic components under the Print Head Assembly. The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the print head or electronic components used in this device.

IMPORTANT!

Adhesive backed labels that DO NOT lay flat on the backing liner may jam the printer. This can cause the label to peel off the liner. The exposed edges may stick to the label guides and rollers inside the printer.
If you run out of labels while printing, do not turn the power switch to the OFF position while reloading labels. Lost data may result.

2.2.1 Loading Labels Inside The Printer

You can open the label loading area by lifting the hinged media cover on the right side of the Printer. Fig. 10 is affixed on the inside of the cover and illustrates the various parts of the printer involved in labels and ribbon handling.

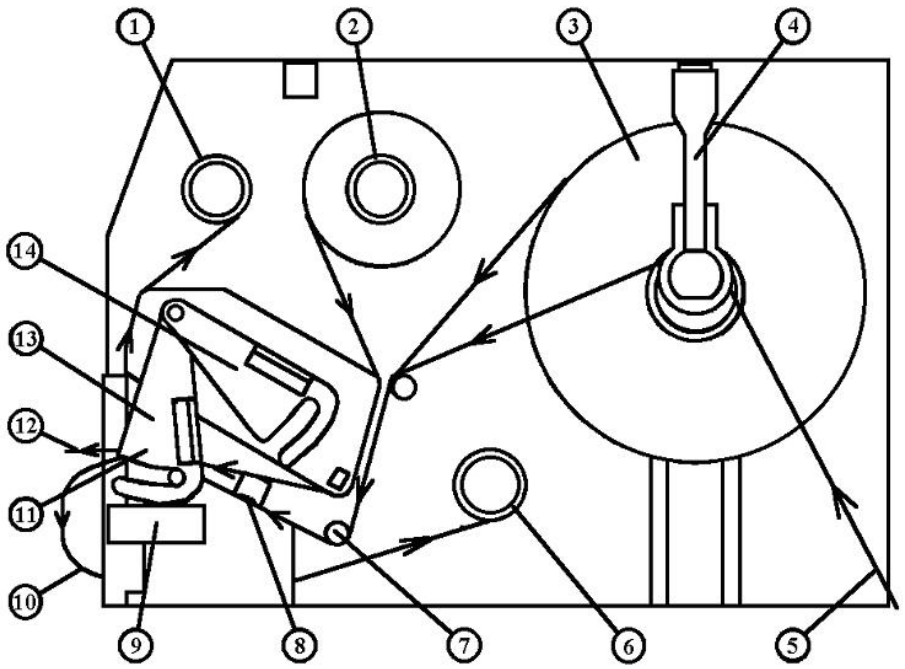

Fig. 10 – Paper and ribbon handling scheme

Legend:

1) Ribbon rewinder
2) Ribbon unwinder
3) Paper unwinder
4) Paper roll lock lever
5) External paper way
6) Paper rewinder
7) Paper guide
8) Paper sensor group
9) Fastener for front option devices
10) Paper rewinding way
11) Print head lock lever (CLOSE)
12) Paper exit front
13) Print head lock lever
14) Print head lock lever (OPEN)

To install the labels roll, proceed as follows:

- Move the label roll lock lever (4) to the horizontal position and move it towards the external end of the roll shaft, according to the width of the roll that will be installed.

- Move the print head lock lever (11) to the open position (14) (see Fig. 11).

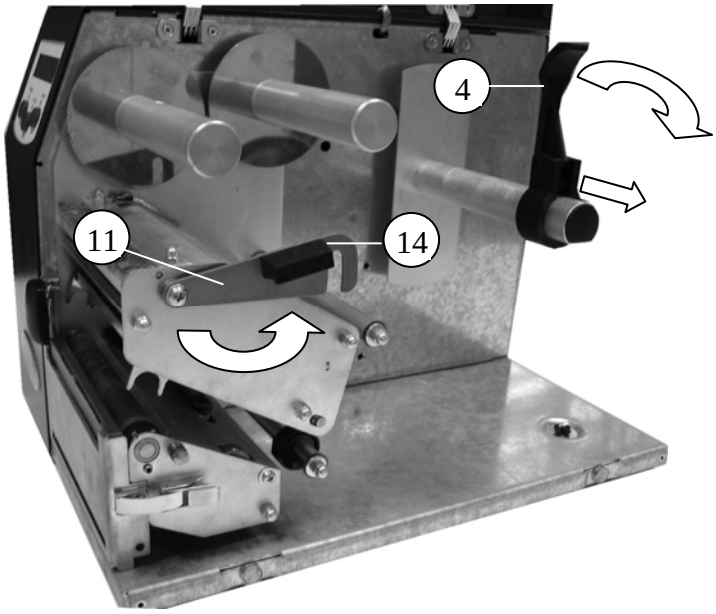

Fig. 11 – Preliminary steps in loading label roll

- Insert the label roll (3) onto the corresponding roll shaft.

- Move the label roll lock lever (4) to the vertical position. Be careful not to block the movement of the label roll itself.

- Then pass the free end of the label roll over the first media roller and under the second one, on which the paper guide (7) is installed, then between the two sides of the paper sensor (see Fig. 12), and finally under the print head group through the label output (12).

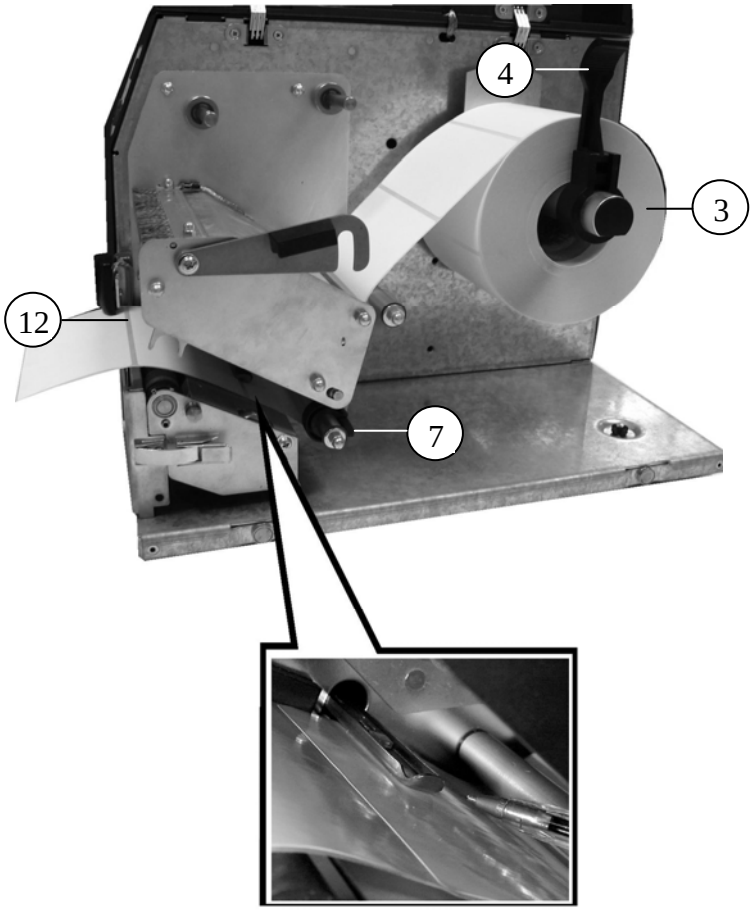

Fig. 12 – Label roll insertion and detail of paper path/sensor

- Move the print head lock lever (11) to the closed position (13) (see Fig. 13).

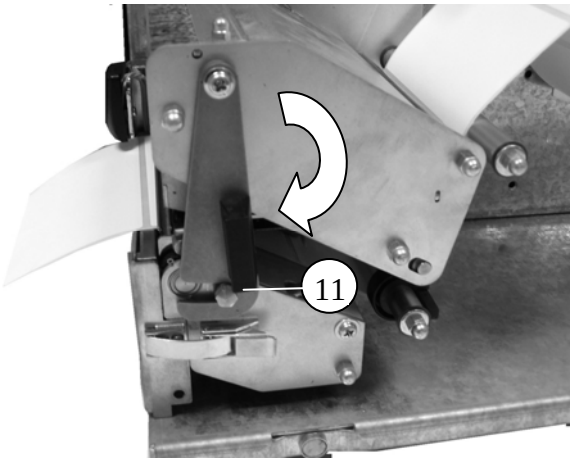

Fig. 13 – Closing the print head assembly

- Slide the paper guide (7) into the printer until it touches the edge of the labels without blocking their movement, as shown in Fig. 14.

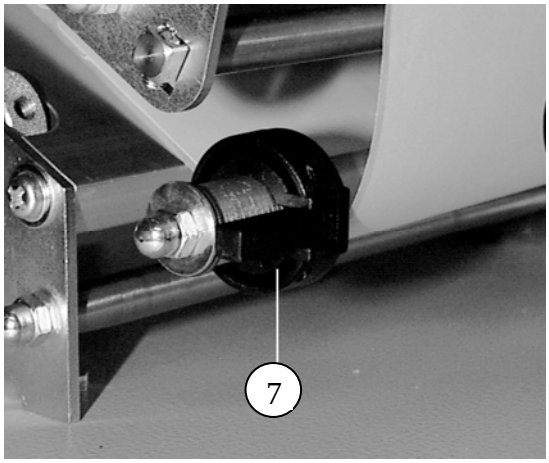

Fig. 14 – Detail of the paper guide

- Close the loading area.
-

2.2.2 Loading Labels From Outside The Printer

If the label roll does not meet specifications or if the labels are on a continuous form, they are loaded from outside the 6314/6414 printer (if a continuous form is used, they are stacked), and their free end is fed through the rear paper input slot (see Fig. 15).

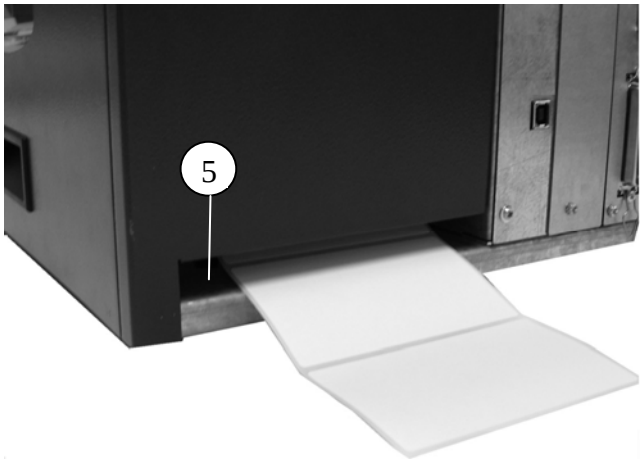

Fig. 15 – Rear paper input slot

For correct operation of the printer, perform the following steps after opening the label loading area and studying the figure mounted inside the cover (see Fig. 10 on page 19):

- Move the print head lock lever (11) to the open position (14) (see Fig. 11 on page 20).

- Then insert the free end of the labels into the rear paper input slot (5). Pass it over the roll shaft, over the first media roller, under the second one on which the paper guide (7) is mounted, and then between the two sides of the paper sensor (see Fig. 12 on page 21), and finally under the print head group and out of the label output (12).

- Move the print head lock lever (11) to the closed position (13).

- Slide the paper guide (7) into the printer until it touches the edge of the labels without blocking their movement, as appears in Fig. 14 on page 22.

- Close the loading area and check that the paper passes unhindered through the rear paper input (5).

2.2.3 Adjusting The Print Head Pressure

When labels less than 118 mm in width are used, the print head does not operate properly because the right part of the print head, which is not covered by the labels, gets in direct contact with the rubber roller and is thus subject to abrasion.
Therefore, the 6314/6414 printer is equipped with a numbered ratchet that can be used to adjust the pressure of the print head on the right side (see Fig. 16).

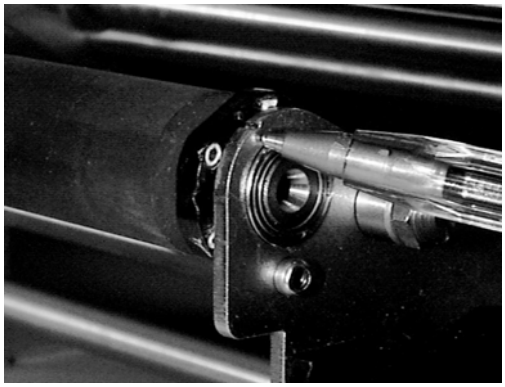

Fig. 16 – The adjustment ratchet at position 0

The pressure decreases as the number on the ratchet increases, and therefore progressively narrower labels require steadily higher numbers. The best adjustment position is the highest possible number compatible with the print quality. The number *0* corresponds to labels with a width of 118 mm.

2.2.4 Loading The Ribbon

When printing by thermal transfer, the ribbon must be loaded as follows, after opening the label loading area and studying the figure on the inner side of the cover (see Fig. 10 on page 19):

- Move the print head lock lever (11) to the open position (14) (see Fig. 11 on page 20).
- Insert the ribbon roll in the new ribbon unwinder (2).
- Insert an empty cardboard core in the printed ribbon rewinder (1).
- Then feed the free end of the ribbon under the first and second media rollers, under the print head, and then onto the cardboard core installed on the printed ribbon rewinder (1), taking care not to block the paper sensor.
- Manually wind the free end of the ribbon onto the printed ribbon rewinder (1) and manually turn it until the ribbon is taut and straight.
- Move the print head lock lever (11) to the closed position (13) as shown in Fig. 17.

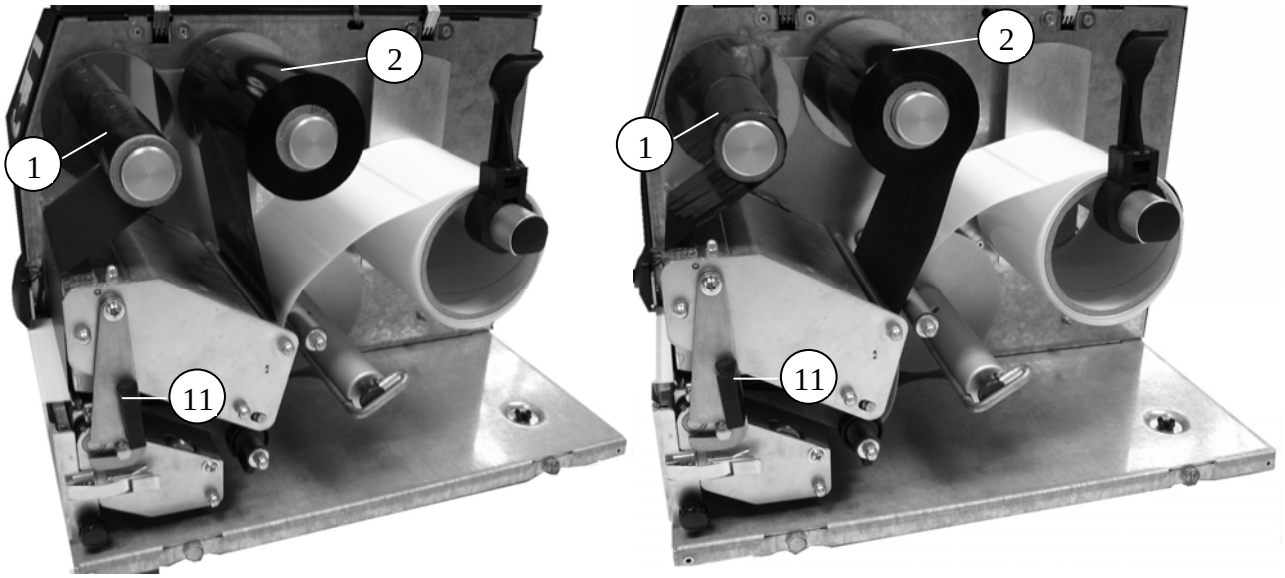

Fig. 17 – Loading of ribbon

- Close the loading area.

2.3 Printer Options

2.3.1 Tear-Off And Tear-Off Strip

Tear Off mode is where each label is printed and then positioned over the tear bar and waits for the user to remove it before the next label is printed.

In Tear-Off Strip mode, labels are printed until the print buffer is empty and then the last label is positioned over the tear bar for removal.

When using Tear-Off or Tear-Off Strip media handling, the user will need to tear the label downward against the tear bar.

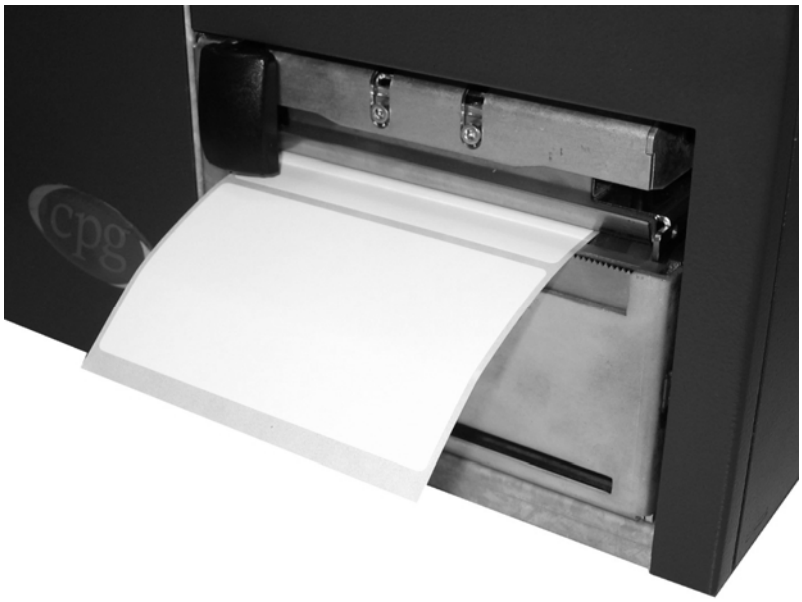

Fig. 18 – Front tear off plate

2.3.2 Label Peel Off (Optional)

The printer can be set up to automatically peel labels off the backing liner and dispense them one at a time while rewinding the liner. This configuration requires routing the liner through the rollers on the Peel/Tear assembly and the use of the printer's internal rewinder.

- Open the media cover.

- Remove the tear bar assembly.

- To install the label peel-off system, remove the two screws on the back of the tear bar assembly and tear blade by rotating the tear off plate. Replace the cutting blade with the peel-off system.

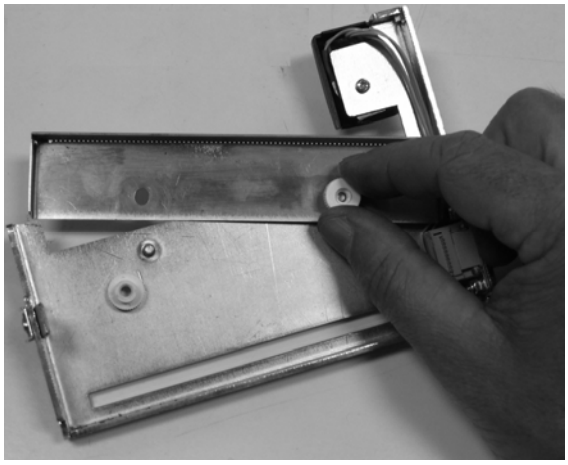

Fig. 19 – Removing the cutting blade

- Thread the liner over the peel bar and then through the slot of the front plate just below the platen roller and into the printer.

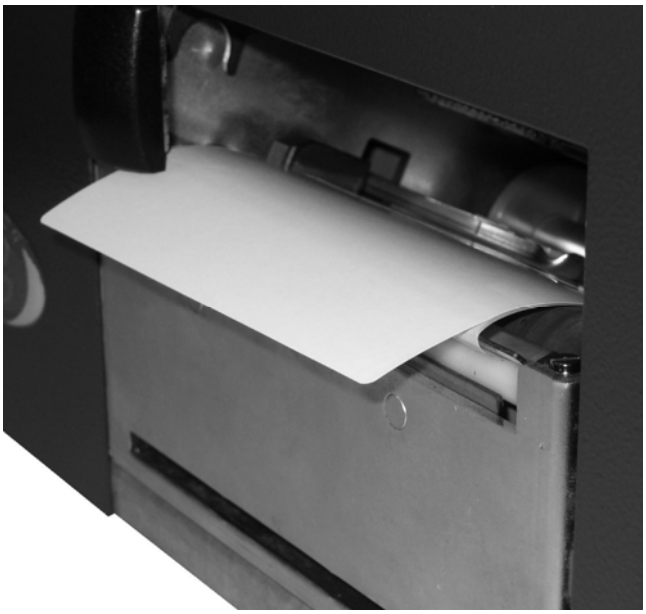

Fig. 20 – Detail of the paper path in the peel-off system

- Manually position the leading edge of the first label to just behind the peel bar of the Peel/Tear assembly.

- Thread the liner counterclockwise around the rewinder, and insert the liner end into one of the slots in the rewinder.

- Rotate the rewinder release lever counterclockwise so it forms a ridge along the rewinder (rotate the rewinder release lever clockwise to remove media.)

- With one hand holding the liner in the slot, rotate the rewinder counterclockwise until the liner is taut on the rewinder spindle. Verify the leading edge of the first label is still behind the tear bar of the Peel/Tear assembly.

- Close the print head.

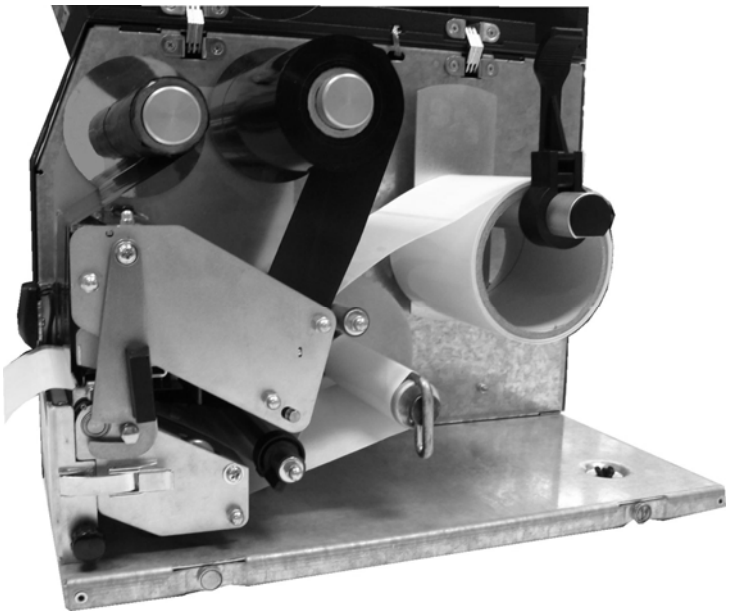

Fig. 21 – Installed peel-off system

- Close the media cover.
- Under the Set Printer Mode in the Enabling And Modes Menu, set the printer to Peel Off Mode.

2.3.3 Label Batch Rewind (Optional)

The label batch rewind option enables you to print media and have it wrap around the rewinder.

To do this, route the media around the front of the media guide, between the paper path guides, and slide the media through the opening below the front plate of the printer.

Adjust the paper path guides on the media guide to the width of the media. Attach the labels to the rewinder as described in Label Peel Off.

Fig. 22 – Detail of the paper path in the rewinder guide

Under the Set Printer Mode in the Enabling And Modes Menu, set the printer to Rewinder Mode.

2.3.4 Installing The Cutter (Optional)

- Set the printer power switch to O (OFF).

- Remove the Peel/Tear Assembly, and replace it with the automatic cutter, taking care that the pin and connector mounted on the side of the printer corresponds to the respective hole and connector on the cutter itself.

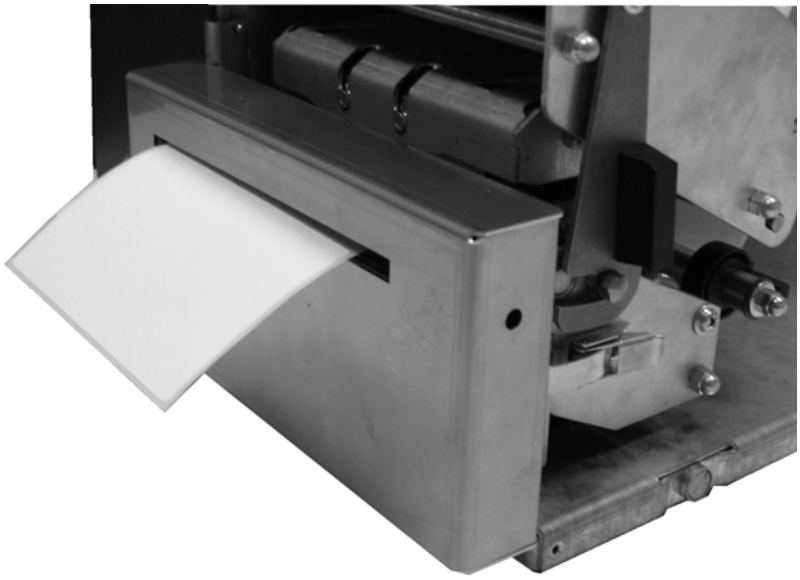

Fig. 23 – The automatic cutter

When powering the printer on, the automatic cutter is automatically enabled and opens for paper insertion. If the cutter is removed, it is automatically disabled.

You can disable the cutter, while it is installed. In this case it simply does not cut.

The automatic cutter cuts after *n* labels, where *n* is the parameter CUT CYCLE in the Configuration Menu under Printer Settings Menu.

2.3.5 Installing The NIC Board (Optional)

How to installing the NIC board (networking interface communication).

- Set the printer power switch to O (OFF).

- To remove the two screw and the optional board mask. Insert the NIC board and to block it by the screw. Insert the LAN cable in the NIC board connector and power on the printer. The NIC board is automatically enabled and available for use.

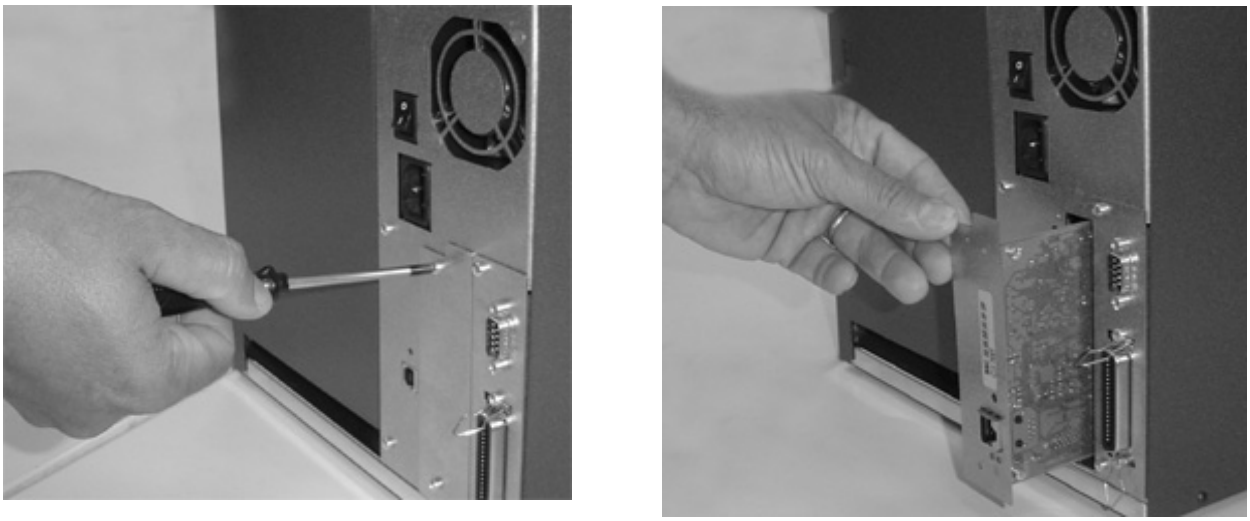

Fig. 24 - Installing NIC board

2.4 Printing Adjustments

2.4.1 Label Variations And The TOF/Paper Out Sensor

Your printer is equipped with a sensor that is used to detect the TOF (Top-of-Form) position as well as a paper out condition. Depending on the type of media used, the sensor will either “see through” the label liner, index hole or notch in the media (Transmissive sensing) or detect a black horizontal stripe on the media with reflective label backing (Reflective sensing).

In either case, the correct option must be selected under the Paper Sensor Mode of the Enabling And Modes Menu of the Configuration Menu.

When Transmissive is selected, the TOF position is based on the trailing edge of the gap, notch, or hole.

When Reflective is selected, the TOF position is based on the leading edge of the black stripe.

A third option, Continuous, is also available under the Paper Sensor Mode. The Continuous option must be selected when continuous media with no gap, notch hole, or black stripe is installed. The TOF will be based on the Max Label Length value set under the Maximum Label Length Selection of the Printer Settings Menu of the Configuration Menu.

Length command is sent via host computer software.

NOTE!

When Gap Sense = Continuous, Calibrate should still be performed to automatically establish the optimum Paperout Threshold value.

2.4.2 Media Sensor Horizontal Adjustment

In order to accurately detect the gap, hole, notch or narrow width black stripe, the Top-of-Form sensor can be moved along the width of the media from the inner media edge to within 65 inches from the maximum media width or the right side.

The position of the sensor is changed by using the knurled dial just behind the Print head Pressure Adjustment ratchet to adjust the sensor to the desired position.

The actual location of the sensor is indicated by the Black Mark on the sensor finger when the print head is in the open position.

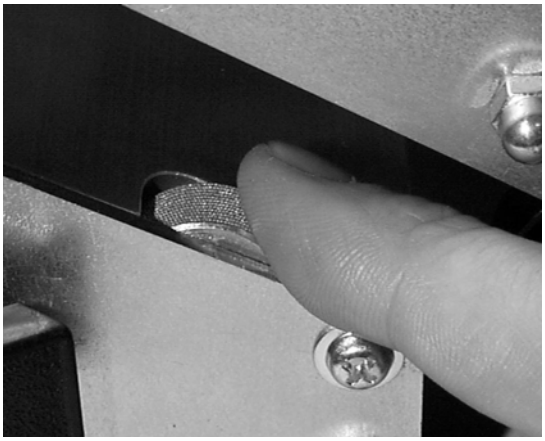

Fig. 25 – Paper sensor adjustment knob

Perform the TOF sensor Calibrate procedure described below whenever a different type of media sensing will be required (Transmissive or Reflective), when installing never-before-tried media, or when the printer is experiencing loss of TOF position. Loss of Top-of-Form is usually followed by a fault message on the LCD, such as “PAPER FAULT” or “PAPER OUT”.

2.4.3 Running The Calibrate Via The Menu

Sequence Of Operations

The printer is equipped with a paper sensor which is necessary for perfect alignment of the paper under the print head.

Sequence of operations necessary for a correct calibration:
- To select what the paper sensor must be calibrate (Transmissive / Reflective).
- Remove paper and **Run No Paper Calibration.**
- Insert paper
- To move the paper sensor, using the appropriate knob, in a label zone where there aren’t any printed logos or bar code etc.
- **Run Automatic Adjustment.**
-

NOTE!

Run No Paper Calibration *function is necessary only:*
1) at the first time we install the printer.
2) when we update the firmware.
3) when the printer come back from the repair center.
See the chapter 3.9 (Diagnostic Menu) for details.

Calibration

Calibration is enabled via the front panel by using the Enter key and navigating through the menu.

NOTE!
Verify that the media installed in the printer matches the Paper Sensor Mode option (Transmissive, Reflective, or Continuous).

Verify that the Media sensor is horizontally positioned to permit sensing of the notch, gap, or black stripe (see “Media Sensor Horizontal Adjustment” on page 31).

- Power On the printer.
- Press the Enter key once to take the printer Off Line.
- Press the Scroll and Esc keys simultaneously together to enter the “CONFIGURATION MENU”.
- Press the Enter key once (FILE MENU).
- Press the Scroll key until “DIAGNOSTICS MENU” is displayed.
- Press the Enter key once.
- Press the Scroll key until “PAPER SENSOR MENU” is displayed.
- Press the Enter key (RUN AUTOMATIC ADJUSTMENT).
- Press the Scroll key until “RUN NO PAPER CALIBRATION” is displayed.
- Press the Enter key; the display will show “REMOVE PAPER….AND PRESS A KEY”
- Remove paper, press a key and wait. At the end of operation the display will show “RUN NO PAPER CALIBRATION”.
- Insert the paper and press the Scroll key until “RUN AUTOMATIC ADJUSTMENT” is displayed.
- Press the Enter key (the printer will display “RUNNING PAPER SENSOR ADJUST” and starts to feed the paper until it detects the gap, notch, hole or Black Mark and then feeds 2 label lengths).
- Wen the printer displays “ADJUSTMENT DONE” or “ADJUST FAILED”, press the Esc key until “ON LINE” is displayed.

If calibration fails to determine the proper values and ends with a fault message displayed “ADJUST FAILED”, you can either try it again or manually change the Gain and/or Threshold values under the Diagnostic menu.

Manual Adjustment
This function enables the printer to calibrate the paper sensor manually. This function is useful in problematic cases (e.g. transparent labels).
Refer to chapter 3 paragraph 3.9.3 (Paper Sensor Control).
Once the correct values are determined and the Max Label Length setting in the Printer Settings Menu is equal to or slightly less than the physical label length, press the Scroll key to advance media and determine if it consistently stops at the correct TOF position each time.

2.5 Cleaning

Depending on the media used, the printer may accumulate residues (media dust, adhesives, etc.) as a by-product of the normal printing process. To maintain top printing quality, these residues should be removed by a periodic cleaning of the printer.

2.5.1 General

Periodic cleaning should be performed on all rollers, guides, and assemblies.
Low pressure air can be used to remove dust in the printer. Isopropyl alcohol and a cotton swab should be used to clean any areas where media dust, adhesives, etc. have accumulated. This general cleaning will insure that all parts are free of residue which may degrade print quality. The media path and print head should be cleaned each time a new roll of media is installed in the printer.

2.5.2 Print Head

As you use your printer, the print head may become dirty resulting in poor print quality. You should clean the print head when replacing the ribbon or installing new media. Clean the print head with the print head Cleaning Pen supplied with the printer. The print head heating elements (light brown area) is most important. Keeping your print head clean will help to maintain its life.

- Open the Media access door and slide the Ribbon to one side.

Fig. 26 – Front of the printer with ribbon pushed to the side

- Gently rub a cotton swab with Isopropyl alcohol across the print head heating elements (light brown area).

Fig. 27 – Front of the printer with the print head being cleaned

- Allow the print head to dry for one minute before reloading the labels.

3 CONFIGURING THE PRINTER

3.1 Control Panel

The printer is equipped with a control panel (see Fig. 28) containing three function keys, three LEDs, and an alphanumeric display (2 lines x 16 characters) for operating messages.

Fig. 28 – Control panel

3.1.1 Function Keys And LEDs

The function of the keys and LEDs are indicated by the words printed next to them.
When the menu mode is enabled, the function of each key is indicated in the Table 1 below.

Function key	Condition
Enter	Pressing this function key, the printer switches between the on line and off line condition. When the printer is switched off line, it finishes the printout of current label and stops printing until it is brought back on line. In menu mode, this key perform the enter function to confirm the current parameters or to pass on the next menu level. In power off condition, if you press this key and hold it while power on the printer, enters the printer communication menu.
Scroll	This key advances the label. In menu mode, this key permits scrolling through the various headings of each menu or the numbers of numerical parameters. In off line mode, pressing this key and Esc key together, enters the printer configuration menu.
Esc	This key is used to cancel the current job and is always enabled. If it is pressed, the printer finishes the printout of current label and cancels the remaining print job. In menu mode, this key performs the esc function. Press it to exit from the menu item without saving the current parameters or to return to the previous menu level. In off line mode, pressing this key and Scroll key together, enters the printer configuration menu.

Table 1 – Function key functions

In addition to the three function key on the front panel of printer, there are three LEDs, which, together with the display, indicate machine status as explained below in Table 2.

LED	Condition
Ready	Lit: the printer is on line. In this condition, the printer is ready to receive and print information, the display shows the ON LINE message. Blinking: the printer is off line. In this condition, the printer stores the received data in its memory, and prints it out when brought back on line. The message OFF LINE appears on the display. Off: the printer is in the off line following a check function (in this case the Check LED flashes) or the printer is in menu mode.
Check	Off: normal operation condition. Blinking: the printer is performing a check due to an error condition (e.g. out of paper). The printer goes off line, the Ready LED turns off and the display shows a blinking error message (e.g. PAPER END).
Power	Lit: normal operating condition. Off: the printed is off or the power cable is not properly connected.

Table 2 – LED functions

3.2 Configuring The Printer

3.2.1 Overview

The configuration process is carried out using the printer configuration keys on the control panel and includes the following:

- Configuring the printer for different host interface options.
- Customizing label formats.
- Checking printer status.
- Running various maintenance tests.

NOTE!

Control codes sent by the host system will override the control panel settings.

Fig. 29 shows the menu map.

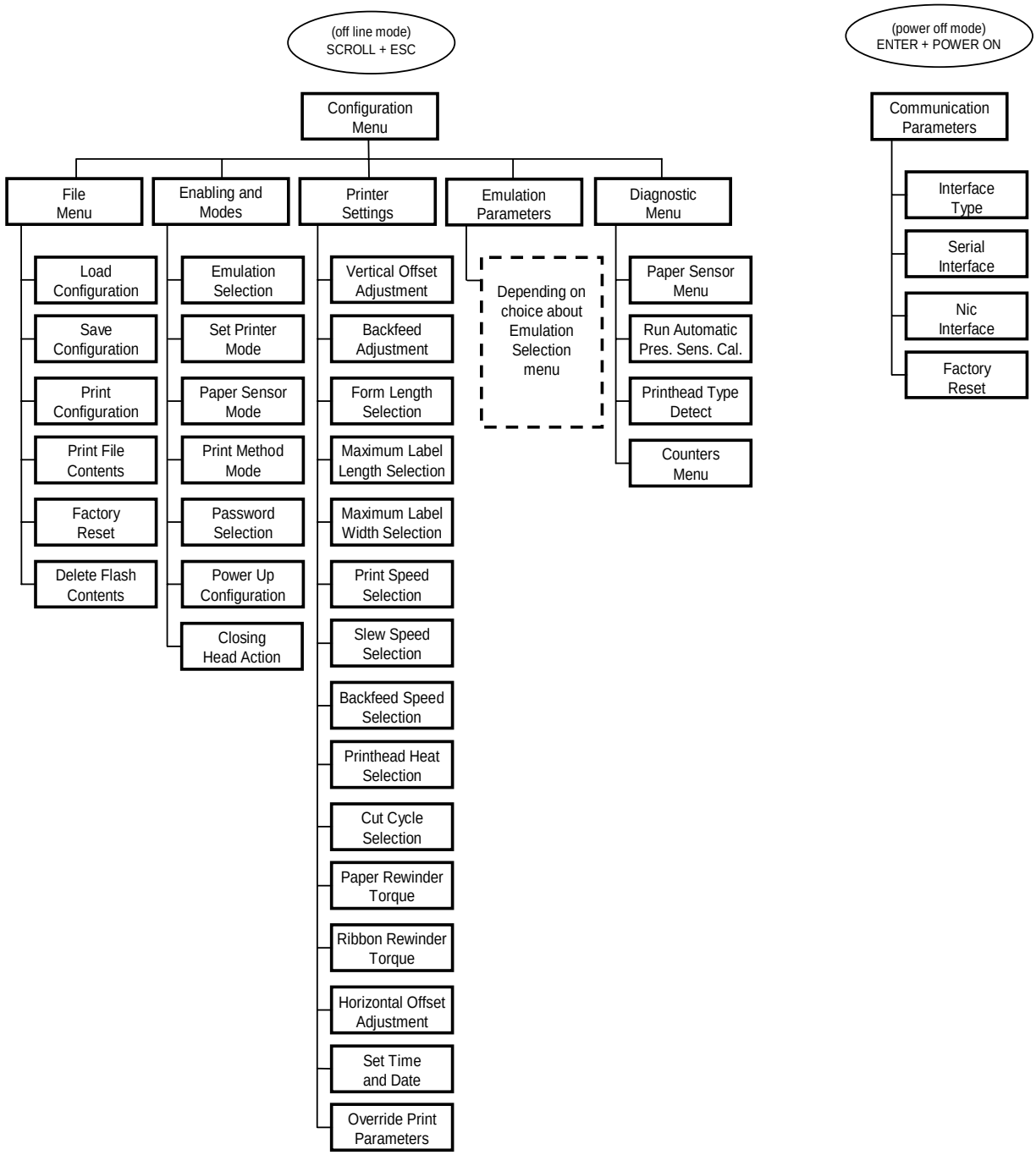

Fig. 29 – Menu Map

3.2.2 Menu Navigation

This section explains how to use the control panel to change individual settings and save them as a customized configuration. For details on the control panel keys and how they work, see “Function Keys And LEDs” on page 37.

Pressing ***Scroll*** and ***Esc*** together enters the printer *CONFIGURATION MENU* (offline mode only) and permits value selection.

Press ***Enter*** and hold it while ***Power On*** the printer. Enters the *COMMUNICATION MENU* and permits value selection.

3.2.3 Setting Printer Configuration Parameters

Configuration parameters are set from the control panel or are retrieved from the printer’s memory. The parameters define how the printer will respond to command and interface signals from the host computer.
The configuration menu structure consists of top-level menus and various parameter selections under each top-level menu.

IMPORTANT NOTES:

1) Many of the selectable configurations refer to printer options or features that may or may not be present in your printer. Selecting an option or feature that is not present will result in no action being performed by the printer.

2) In many settings it is necessary to set some numbers. About this operation to use the following instructions:
- Use the ***Enter*** function key to move to the number you want to modify.
- Scroll through the numerals with the ***Scroll*** function key.
- Confirm with the ***Enter*** function key ***up to the last cursor position***.

For example: the display shows a number “0230 i” and we must change it in 1230. The selected number or character blinks; press the ***Enter*** function key and the 0 numeral blinks; press ***Scroll*** function key and the “1230” appears on the display; press the ***Enter*** function key and the “2” numeral blinks; press the ***Enter*** function key and the numeral “3” blinks; press the ***Enter*** function key and the “0” numeral blinks; press the ***Enter*** function key to confirm the change; the previously selected menu appears on the display. ***During the operation don’t press Esc function key otherwise the changes will be looses.***

3) At the power on, the printer display shows ON LINE or OFF LINE at the first line and the series of 11 characters at the second line.
Each of this characters defines a characteristic of the printer:
- The first = the print density in dots per inch.
- The second = the maxim width of the print head (inch).
- The third and the fourth = the maximum print speed in inch per second.
- The fifth = the type of printer emulation.
- The sixth and the seventh = media type
- The eighth = the active interface
- The ninth, tenth and eleventh = the printhead temperature

Example: 2410Z DT P 30º
2 = print density (2 DPI).
4 = print head width (4 inch).
10 = max. print speed (10 IPS).
Z = type of printer emulation (CZL emulation).
DT = direct thermal (also may be TT = thermal transfer).
P = the active interface is Parallel Port (also may be S = Serial, U = USB, L = LAN).
30º = current print head temperature (when the temperature exceeds 60ºC the character ">" is show on the left of the temperature number …… eg. ">60º")

3.2.4 Moving Within The Configuration Menu

Movement within the configuration menu is controlled by using the appropriate navigation keys. Table 3 shows how to move through the menu system. See "Function Keys And LEDs" on page 37, for more details on the function of the operator panel keys. This example configures the printer for Direct Thermal operation.

Use these basic guidelines to move throughout all the configuration menus.
You can select different options and save them as the power on default.

To configure the printer, it must be offline. If the Ready indicator is lit, press and release the ***Enter*** key to place the printer offline. When the printer is offline, OFFLINE appears on the top line of the LCD. Pressing the ***Scroll*** & ***Esc*** keys together causes the printer to enter the printer configuration menu system and Configuration Menu appears in the LCD.

Step	Press	LCD	Notes
1	Enter	OFFLINE	
2	Scroll & Esc	CONFIGURATION MENU	Allows you to make configuration changes.
3	Enter	FILE MENU	
4	Scroll Until	ENABLING AND MODES	
5	Enter	SET PRINTER MODE	
6	Scroll Until	PRINT METHOD SELECTION	
7	Enter	PRINT MODE DIRECT THERMAL*	Indicates that Direct Thermal print is currently selected.
8	Scroll	PRINT MODE THERMAL TRANSFER	Cycles through the choices.
9	Enter	PRINT MODE THERMAL TRANSFER*	Indicates that Thermal Transfer print is now selected.
10	Esc Until	SAVE CHANGES?	
11	Enter		Saves Changes that you have made.

Table 3 – How to configure the printer to Direct Thermal operation

Changing printer settings, such as print speed or emulation, is referred to as configuration. You can configure the printer through the control panel via the following menus:

- **File Menu**
- **Enabling And Modes**
- **Printer Settings**
- **Emulation Parameters**
- **Diagnostics**

Under each of the above menu headings are subsequent menus that allow you to configure individual items such as print speed, label size and print mode.

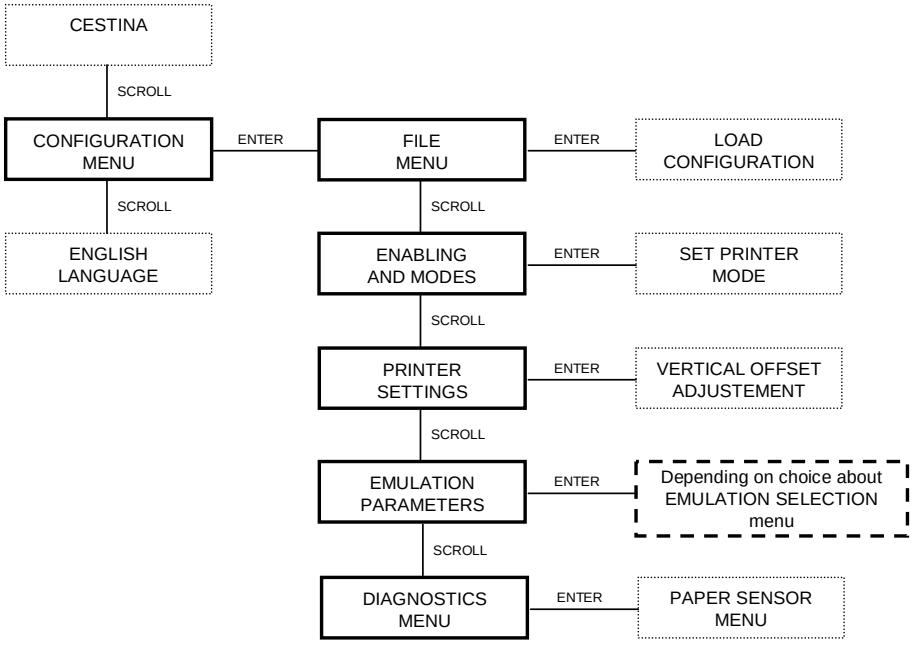

Fig. 30 – Structure of Configuration Menu

3.3 File Menu

This menu contains all the commands for saving and/or loading the configuration in/from the non-volatile memory of the printer.

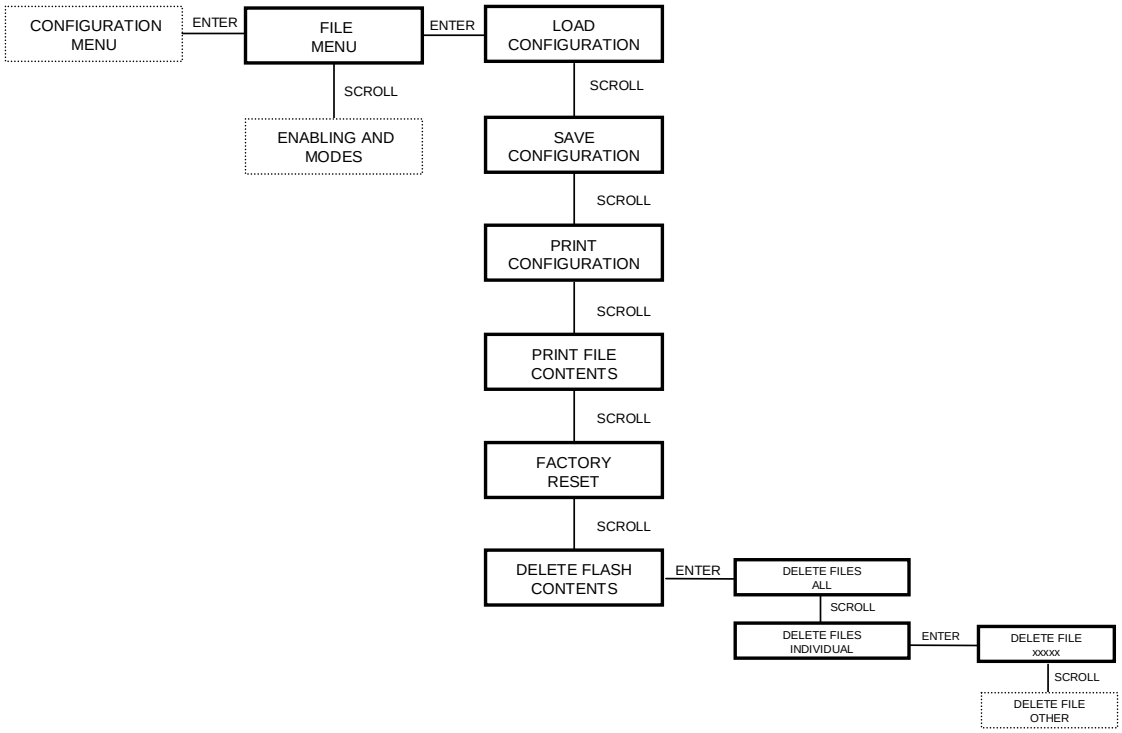

Fig. 31 – Structure of File Menu

LOAD CONFIGURATION This item loads the last configuration saved, which becomes the current one.

SAVE CONFIGURATION This item saves the current configuration in EEPROM non-volatile memory.

PRINT CONFIGURATION This item prints the current configuration of the printer.

PRINT FILE CONTENTS This item prints the current contents of the flash memory.

FACTORY RESET This item resets the printer to factory parameters, which become the current ones and are automatically saved.

DELETE FLASH CONTENTS This item allows you to delete, all or individually, the files presents in the flash contents that have previously been stored on the printer, such as label designs, and fonts or graphics.

3.3.1 Factory Reset Functions

The factory reset function influences the following parameters:

PARAMETERS	***DEFAUL VALUE***
ENABLING AND MODES MENU	
SET PRINTER MODE	TEAR OFF MODE
PAPER SENSOR MODE	TRANSMISSIVE
PRINT METHOD MODE	DIRECT THERMAL
POWER UP STATUS	ON LINE
POWER UP ACTION	NONE
CLOSING HEAD ACTION	NONE
PRINTER SETTINGS MENU	
VERTICAL OFFSET ADJUSTMENT	0 i
BACKFEED ADJUSTMENT	0 i
FORM LENGTH SELECTION	394 i
MAXIMUM LABEL LENGTHSELECTION	3000 i
MAXIMUM LABEL WIDTH SELECTION	409 i
PRINT SPEED SELECTION	4 inch/sec
SLEW SPEED SELECTION	4 inch/sec
BACKFEED SPEED SELECTION	4 inch/sec
PRINTHEAD HEAT SELECTION	12
CUT CYCLE SELECTION	1
PAPER REWINDER TORQUE	4
RIBBON REWINDER TORQUE	4
HORIZ. OFFSET ADJUSTMENT	0 i
OVERRIDE HEAT PARAM	DISABLED
OVERRIDE PRINT SPEED	DISABLED
OVERRIDE SLEW SPEED	DISABLED
OVERRIDE BACKFEED SPEED	DISABLED
OVERRIDE OTHERS PARAM	DISABLED
DATAMAX PARAMETERS	
VERTICAL OFFSET	210 i
BACKFEED OFFSET	210 i
REFERENCE OFFSET	210 i
ROW OFFSET	0 i
COLUMN OFFSET	0 i
SELECT FINAL CHAR	0D
CONTROL CODES	STANDARD CODES
ZEBRA PARAMETERS	
SET FORMAT PREFIX	5E
SET CONTROL PREFIX	7E
RESOLUTION MODE	NOMINAL RESOLUTION

Table 4 – Parameters influenced by factory reset function

3.3.2 Others Parameters

The following parameters are automatically saved in NVM memory and are not influenced by the *factory reset function*:

SELECT LANGUAGE
EMULATION SELECTION
PASSWORD SELECTION
LABEL LENGTH (in CZL emulation)
RESET USER COUNTER

3.4 Enabling and Modes

This menu contains all the items necessary for activating the sensors and optional features, including the operating modes of the printer itself. Its structure is illustrated in the following figure.

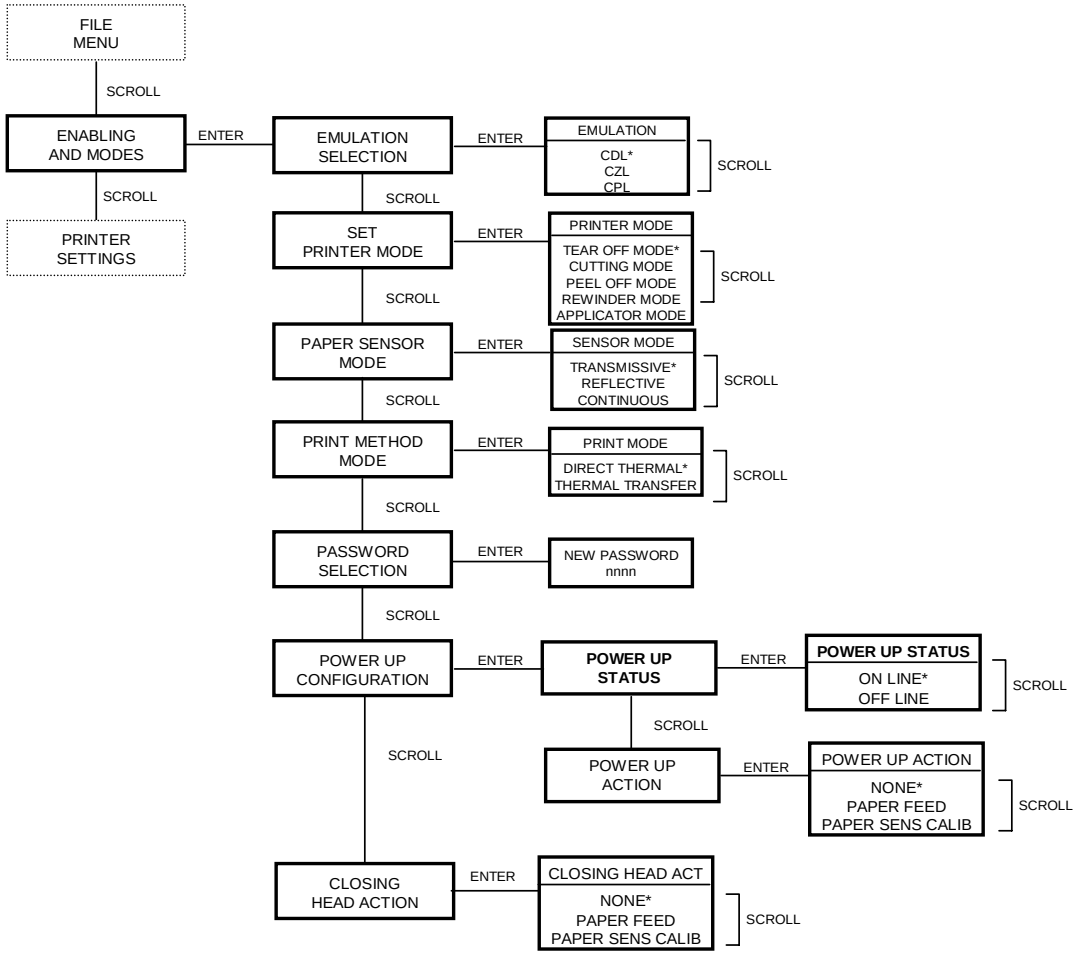

Fig. 32 – Structure of Enabling And Modes Menu

3.4.1 Emulation Selection

This function sets the emulation protocol of the printer. Press ***Enter*** function key to enter the *EMULATION SELECTION* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function:

- ***CDL****
- *CZL*
- *CPL*

3.4.2 Set Printer Mode

This function sets the operating modes of the printer. Press ***Enter*** function key to enter the *PRINTER MODE* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function:

- ***TEAR OFF MODE****:* this item tells the printer, that the tear-off bar is installed. The printed labels will be torn off manually.
- *CUTTING MODE:* this item selects the label cut mode. It enables the optional. *When the cutter is installed, you should confirm that it has been enabled: if not, you must enable it, otherwise it will not work. If the cutter has not been mounted but has been enabled, the machine will switch to check; if it has been installed but not enabled, the cutter does not operate and the machine prints without cutting.*
- *PEEL OFF MODE:* this item selects the label peel-off mode. It enables the rewinder and the *present sensor*.
- *REWINDER MODE:* this item enables the rewinder. The printed labels are thus rolled up.
- *APPLICATOR MODE:* this item provides the connection to an applicator. It enables the paper rewinder and the *present sensor* (a special sensor mounted on the tear bar assembly/peel-off system that detects the presence of a printed label).

3.4.3 Paper Sensor Mode

The printer is equipped with a paper sensor which is necessary for perfect alignment of the paper under the head. This function enables this paper sensor and can operate in three different function modes: in *transmission* mode, in *reflection* mode or in *continuous* mode.
Press ***Enter*** function key to enter the *PAPER SENSOR MODE* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function:

- ***TRANSMISSIVE****:* this item enables the transmission mode and must be used when the labels are marked off by a gap or a hole or more generally when there is an area with a net difference of support transparency between one label and the other.
- *REFLECTIVE:* this item enables the reflection mode and must be used when the support is completely opaque and there is a black tick mark on the back of the support itself.
- *CONTINUOUS* : this item disables the paper sensor and allows the printer to print a label of any length.

3.4.4 Print Method Mode

Press ***Enter*** function key to enter the *PRINT METHOD MODE* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function:

- ***DIRECT THERMAL****:* the direct thermal refers to printing directly on thermal paper. In this case, the heat generated by the head alters the paper, which turns black in correspondence to the printed characters without the need for any ribbon.
- *THERMAL TRANSFER:* the thermal transfer method is performed with a special ribbon, which through the heat generated by the intelligent print head, applies the ink on the paper during printing.

3.4.5 Password Selection

This function allows the creation of a security password to prevent non authorized personnel to change the printer configuration.
Press ***Enter*** function key to enter in the *PASSWORD SELECTION* sub-menu.
NEW PASSWORD nnnn: this item allows you to create a password using a string composed of 4 numerical characters *(nnnn*). Press ***Scroll*** function key to scroll the numbers to be used for the numerical string and then confirm pressing the ***Enter*** function key.
Notes: - insert a string of four "0" character to cancel the password
- all changeable parameters of all menu are dependent on the password.

3.4.6 Power Up Configuration

With this function it is possible to set the printer state and an action that the printer performs automatically after the power up.
Press the ***Enter*** key to select the submenu *POWER UP STATE*.
At this point, pressing the ***Scroll*** key, you pass over to the second submenu *POWER UP ACTION*.
Pressing the ***Enter*** key you select the values for the *POWER UP STATE* submenu.

Power Up State

This function allows the setting of the printer state after the initialization:
- ***ON LINE****: after initializing, the printer turns on line.
- *OFF LINE*: after initializing, the printer turns offline.

Power Up Action

With this function it is possible to select an action that the printer performs automatically, when turning on the printer:
- ***NONE****: the printer does not perform any action.
- *PAPER FEED*: at power on the printer performs a paper feed.
- *PAPER SENSOR CALIBRATION*: at power on the printer calibrates the paper sensor.

3.4.7 Closing Head Action

With this function it is possible to set the printer state and an action that the printer performs automatically after the closing head.
Press the ***Enter*** key to select the *CLOSING HEAD ACT* sub-menu.
Press ***Scroll*** function key to scroll through the various items of this function:
- ***NONE****: the printer does not perform any action.
- *PAPER FEED*: closing the head the printer performs a paper feed.
- *PAPER SENSOR CALIBRATION*: closing the head the printer calibrates the paper sensor.

3.5 Printer Settings

The structure of this menu is illustrated in the following figure. The parameters in this menu correspond to those printing parameters the printer uses as default, if it does not receive any other value from software.

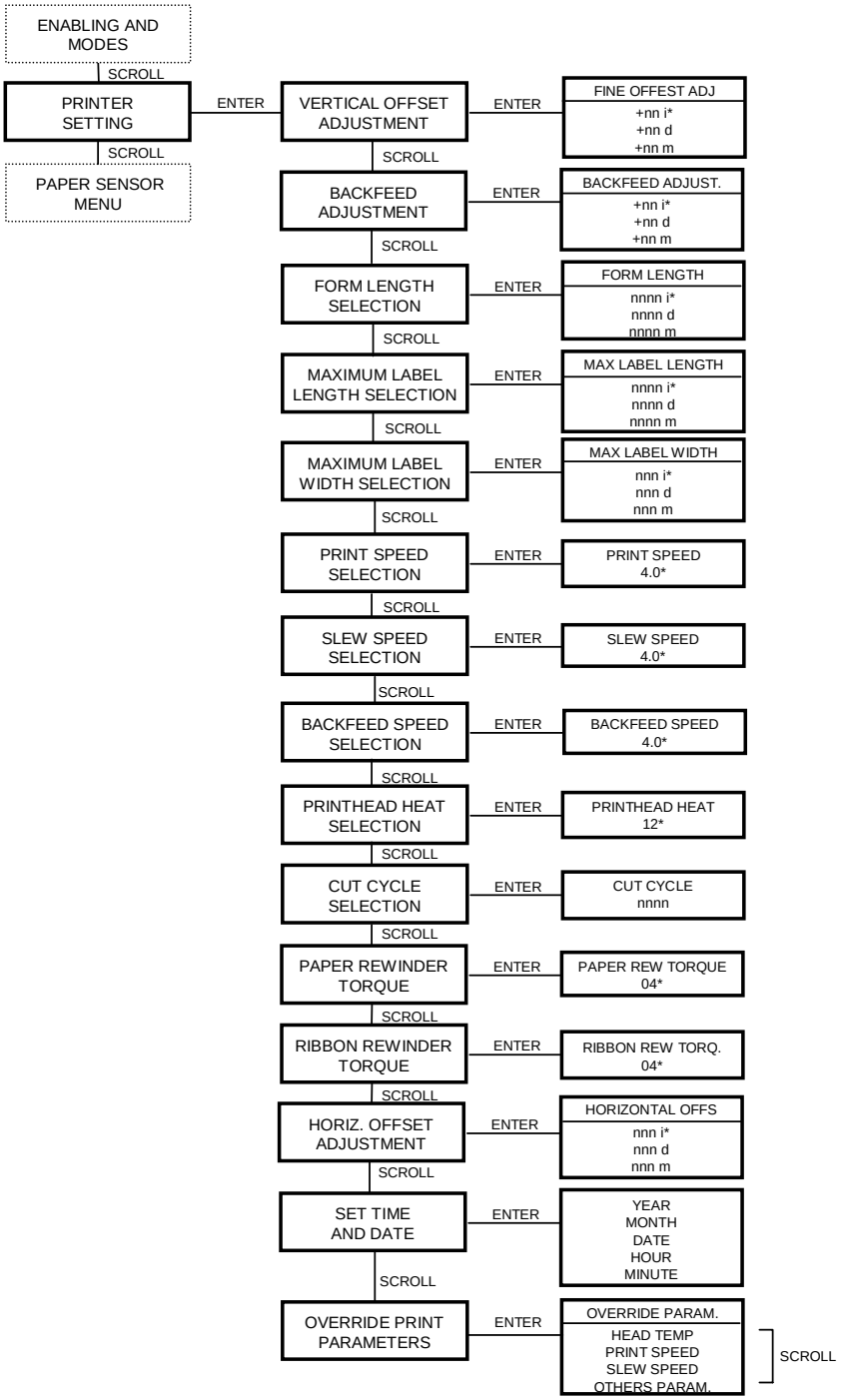

Fig. 33 – Structure of Printer Settings Menu

3.5.1 Vertical Offset Adjustment

This function sets the label edge offset adjustment, setting a “mechanical” offset (both positive and negative) for the paper scroll position under the print head. This can be useful when you replace a previously installed printer or you need to center all text on a pre-printed label without altering the software

Press ***Enter*** function key to enter in the *FINE OFFSET ADJ* sub-menu:

- *nn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.5.2 Backfeed Adjustment

This function sets the backfeed adjustment.

Press ***Enter*** function key to enter in the *BACKFEED ADJUSTM* sub-menu:

- *nn i (d,m):* select the unit of measurement between *i* the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.5.3 Form Length Selection

This function sets the label length. The printer can print on labels that are separated by a reference (gap, black mark or a hole) and on a continuous form. In this case you must inform the printer of the *length of the label to be printed* (in dots, millimeters or inches).

Press ***Enter*** function key to enter in the *FORM LENGTH* sub-menu:

- *nnnn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears. If you select *0000*, you can use labels marked off by a gap or a hole as length reference.

3.5.4 Maximum Label Length Selection

This function sets the maximum length of the label.
Press ***Enter*** function key to enter in the *MAX LABEL LENGTH* sub-menu:

- *nnnn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.5.5 Maximum Label Width Selection

This function sets the maximum width of the label.
Press ***Enter*** function key to enter in the *MAX LABEL WIDTH* sub-menu:

- *nnn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.5.6 Print Speed Selection

This function sets the print speed.
Press ***Enter*** function key to enter in the *PRINT SPEED* sub-menu:

- *nn:* scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key up to the last cursor position, when the menu item appears. The print speed is indicated in inches per second (ips). The values range between 2 and 10, in steps of 0.5 ips (depending on the model that you have).

3.5.7 Slew Speed Selection

This function sets the slew speed.
Press ***Enter*** function key to enter in the *SLEW SPEED* sub-menu:

- *nn:* scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key up to the last cursor position, when the menu item appears. The slew speed is indicated in inches per second (ips). The value range is between 2 and 10 in steps of 0.5 ips (Depending on the model that you have).

3.5.8 Backfeed Speed Selection

This function sets the backfeed speed.
Press ***Enter*** function key to enter in the *BACKFEED SPEED* sub-menu:
- *nn:* scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key up to the last cursor position, when the menu item appears. The backfeed speed is indicated in inches per second (ips). The value range is between 2 and 10 in steps of 0.5 ips (Depending on the model that you have).

3.5.9 Print Head Heat Selection

This function selects the temperature of the print head that directly affects print quality. The optimal temperature depends on the type of ribbon and support used.
Press ***Enter*** function key to enter in the *PRINTHEAD HEAT* sub-menu:
- *nn:* the temperature can be adjusted with this parameter and with the *Hnn* software commands (a description of which is found in the *Programmer Manual* of the current emulation). Scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key up to the last cursor position, when the menu item appears. The value range is between 01 and 20 (the default value is ***12***).

3.5.10 Cut Cycle Selection

This function sets the label cut cycle. When the cutter is installed and enabled, all labels, or each group of *n* labels, can be cut.
Press ***Enter*** function key to enter in the *CUT CYCLE* sub-menu:
- *nnnn:* scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.5.11 Paper Rewinder Torque

This function selects the label rewinder torque. The printed labels (or the silicon support when the tear bar assembly/peel-off system is used) are rewound with a torque constant commanded motor to guarantee uniform tension.
Press ***Enter*** function key to enter in the *PAPER REW TORQUE* sub-menu:
- *nn:* scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key up to the last cursor position, when the menu item appears. The value range is between 4 and 13.

3.5.12 Ribbon Rewinder Torque

This function selects the ribbon rewinder torque. The used ribbon is rewound with a torque constant commanded motor to guarantee uniform tension.
Press ***Enter*** function key to enter in the *RIBBON REW TORQ.* sub-menu:
- *nn:* scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key up to the last cursor position, when the menu item appears. The value range is between 4 and 13.

3.5.13 Horizontal Offset Adjustment

This function sets the horizontal right shift.
Press ***Enter*** function key to enter in the *HORIZONTAL OFFS* sub-menu:
- *nnn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears. The horizontal right offset value must be positive.

3.5.14 Set Time And Date

With this function it is possible to set the time and the date for the printer, if an RTC (real time clock) is installed. In case this function is selected when this device is not present, the display shows a blinking warning message.
When the system clock is installed, date and time is displayed immediately at power on. Once time and date are set with this function, the printer updates them then automatically.
Press ***Enter*** function key to select the *TIME AND DATE* submenu:
Press ***Enter*** function key to scroll the various items for this function:
- *SET YEAR:* press ***Scroll*** to select the year.
- *SET MONTH*: press ***Scroll*** to select the month, for example 5 for May.
- *SET DATE*: press ***Scroll*** to select the day.
- *SET HOUR*: press ***Scroll*** to select the hour.
- *SET MINUTES*: press ***Scroll*** to select minutes.

Press ***Enter*** function key to return to the *SET TIME AND DATE* submenu.

3.5.15 Override Print Parameters

With this function it is possible to override pre-programmed settings of an existing print job without the need of reprogramming. The available options are:
- *HEAT PARAM*
- *PRINTSPEED*
- *SLEW SPEED*
- *BACKFEED SPEED*
- *OTHERS PARAM.*: includes the emulation parameters

3.6 Emulation Parameters CDL Menu

According to the emulation installed on the printer, it is necessary to set the corresponding emulation parameters, which are different for all the emulations. Therefore the emulation parameters menu differs according to the installed emulation.

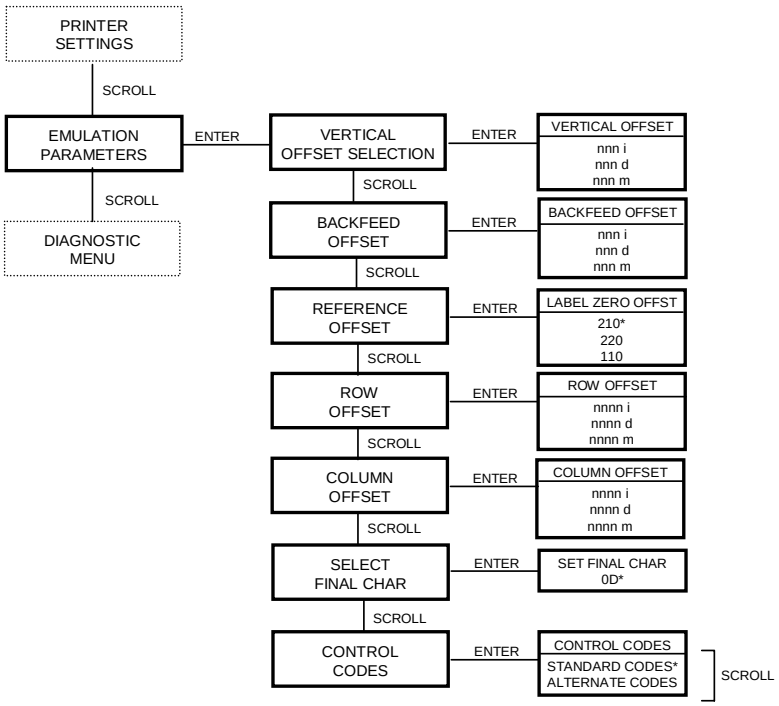

Fig. 34 – Structure of Emulation Parameters CDL Menu

3.6.1 Vertical Offset

This function sets the vertical offset, setting a “mechanical” offset (both positive and negative) for the paper scroll position under the print head. This can be useful when you replace a previously installed printer or you need to center all text on a pre-printed label without altering the software.
Press ***Enter*** function key to enter in the *VERTICAL OFFSET* sub-menu:

- *nnn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.6.2 Backfeed Offset

This function sets the value of the backfeed offset. In some cases the label must exit the print head after having been printed so that the user or a print apply system can more easily remove it or align it with the cutter. To resume printing, the label must *return* to its original position for proper printing. The amount of forward/backward adjustment *(nnn*) is determined by this item and indicates the amount of adjustment with respect to the *REFERENCE OFFSET* item (see 3.6.3 below).
Press ***Enter*** function key to enter in the *BACKFEED OFFSET* sub-menu:

- *nnn i (m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch) and *m* (the values are indicated in tenths of a millimeter) using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.6.3 Reference Offset

This function sets the value of the reference offset.
Press ***Enter*** function key to enter in the *LABEL ZERO OFFSET* sub-menu:

- This item, which refers to three standard printer models, can be set at *210*, 220* or *110, and* sets the zero of reference for offset commands that refer to it. In all cases, the coordinate of line *0* corresponds to the lower edge of the label.

3.6.4 Row Offset

This function sets the value of the row offset. It is possible to move the printout image respect to physical edges of the label through the row offset. By this item (which can be overwritten via software) you can move all the fields in the label *up* with respect to the left lower corner edge of the form.
Press ***Enter*** function key to enter in the *ROW OFFSET* sub-menu:

- *nnnn i (m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch) and *m* (the values are indicated in tenths of a millimeter) using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.6.5 Column Offset

This function sets the value of the column offset. It is possible to move the printout image respect to physical edges of the label through the column offset. By this item (which can be overwritten via software) you can move all the fields in the label *right* with respect to the left lower corner edge of the form.
Press ***Enter*** function key to enter in the *COLUMN OFFSET* sub-menu:
- *nnnn i (m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch) and *m* (the values are indicated in tenths of a millimeter) using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.6.6 Select Final Character

This function (*FINAL CHARACTER*) sets the command terminator. Press ***Enter*** function key to enter in the *SET FINAL CHAR* sub-menu The default value is OD (hex) - carriage return.
Scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key.
The value range is between 0D (hex) and FD (hex)

3.6.7 Control Codes

This function (*CONTROL CODES*) selects the control characters to be used before the commands.
Press ***Enter*** function key to enter in the *CONTROL CODES* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function:
- ***STANDARD CODES****:* the control characters are those set by factory (SOH and STX).
- *ALTERNATE CODES:* the control characters sent are ^ (5EH) and ~ (7EH).

3.7 Emulation Parameters CZL Menu

According to the emulation installed on the printer, it is necessary to set the corresponding emulation parameters, which are different for all the emulations. Therefore the emulation parameters menu differs according to the installed emulation.

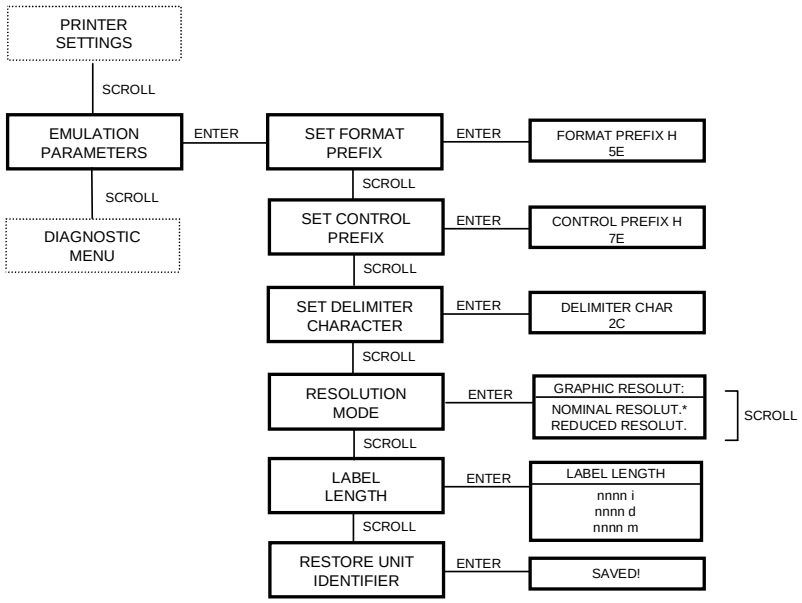

Fig. 35 – Structure of Emulation Parameters CZL Menu

3.7.1 Set Format Prefix

This function (*FORMAT PREFIX*) allows to change the default character ^ (5EH)
Press ***Enter*** function key to enter in the *FORMAT PREFIX H* sub-menu.
Scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key.
The value range is between 2E (hex) and 7E (hex).

3.7.2 Set Control Prefix

This function (*CONTROL PREFIX* H) allows to change the default character ~ (7EH)
Press ***Enter*** function key to enter in the *CONTROL PREFIX H* sub-menu.
Scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key.
The value range is between 2E (hex) and 7E (hex).

3.7.3 Set Delimiter Character

This function (*SET DELIMITER CHARACTER*) allows to change the default character 2C (hex).
Press ***Enter*** function key to enter in the *DELIMITER CHAR* sub-menu.
Scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key.
The available values are: 2C, 3C, 4C, 5C, 6C, 7C (hex).

3.7.4 Resolution Mode

This function selects the print resolution modes.
Press ***Enter*** function key to enter in the *GRAPHIC RESOLUT.* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function:
- ***NOMINAL RESOLUT.****:* this parameter selects the nominal resolution.
- *REDUCED RESOLUT.:* this parameter selects the reduced resolution.

3.7.5 Label Length

This function sets the length of the label.
Press ***Enter*** function key to enter in the *LABEL LENGTH* sub-menu:
- *nnnn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.7.6 Restore Unit Identifier

This function restore the printer unit identifier.
Press ***Enter*** function key to enter in the *SAVED!* sub-menu:
Press ***Enter*** function key to restore the unit identifier code.
The display shows the blinking word “SAVED!”.

3.8 Emulation Parameters CPL Menu

According to the emulation installed on the printer, it is necessary to set the corresponding emulation parameters, which are different for all the emulations. Therefore the emulation parameters menu differs according to the installed emulation.

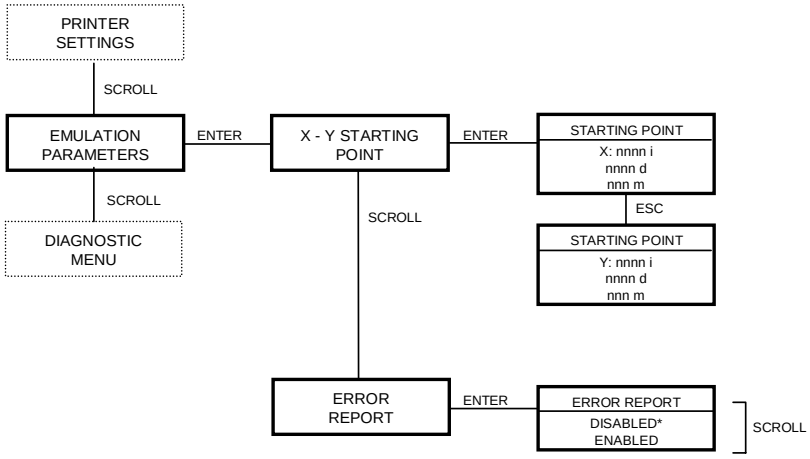

Fig. 36 – Structure of Emulation Parameters CPL Menu

3.8.1 X – Y Starting Point

This function sets the origin of the label.
Press ***Enter*** function key to enter in the *STARTING POINT X* sub-menu:

- *nnnn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

Press ***Esc*** function key to enter in the *STARTING POINT Y* sub-menu:

- *nnnn i (d,m):* select the unit of measurement between *i* (the values are indicated in hundredths of an inch), *m* (the values are indicated in tenths of a millimeter) or *d* (the values are indicated in dots*)* using the ***Scroll*** function key. After having chosen the unit of measurement, use the ***Enter*** function key to move to the number you want to modify, scroll through the numerals with the ***Scroll*** function key, and then confirm with the ***Enter*** function key **up to the last cursor position**, when the menu item appears.

3.8.2 Error Report

This function allows, if enabled, to print an error report on the label.
Press ***Enter*** function key to enter in the *ERROR REPORT.* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function:

- ***DISABLED.****:* this parameter disables the error report.
- *ENABLED:* this parameter enables the error report.

3.9 Diagnostic Menu

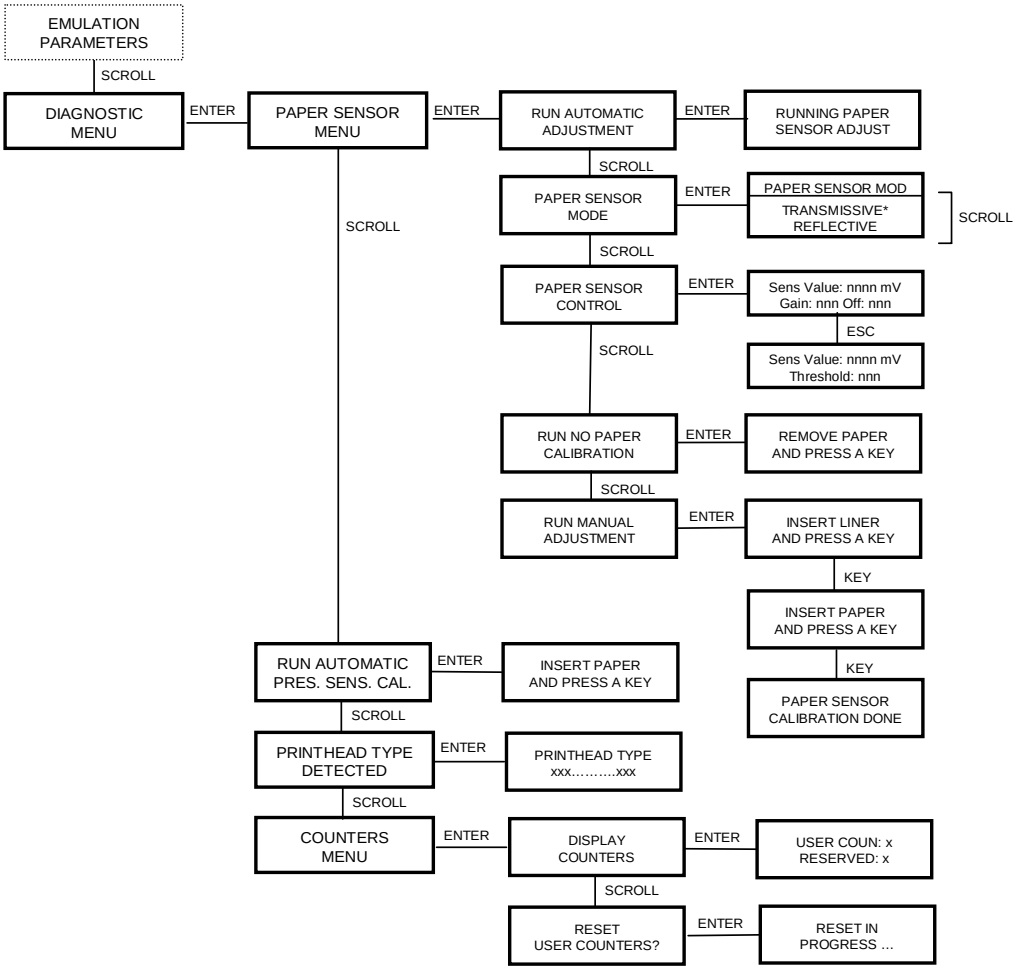

Fig. 37 – Structure of Diagnostic Menu

PAPER SENSOR MENU	This item allows to calibrate the paper sensor and check its functionality.
RUN AUTOMATIC PRES. SENS. CAL.	This item allows to calibrate the present sensor and check its functionality.
PRINTHEAD TYPE DETECT	This item indicates the print head type installed on the printer (intelligent print head or not intelligent print head).
COUNTERS MENU	This item show the quantity of printed labels.

3.9.1 Run Automatic Adjustment

This function enables the printer automatically to adjust the sensitivity of the paper sensor according to the paper used. The paper must be properly installed and the *PAPER SENSOR MODE* item (see 3.9.2 below) must be selected depending on whether the gap or the black tick mark are present. At this point, the printer performs a series of actions, at the end of which, if the calibration sequence is successful, the display shows the blinking message *PAPER SENSOR ADJUSTMENT DONE,* otherwise *FAILED*.

3.9.2 Paper Sensor Mode

This diagnostic function allows the choice of paper sensor.
Press ***Enter*** function key to enter in the *PAPER SENSOR MODE* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function:

- ***TRANSMISSIVE****:* this item enables the transmission mode and must be used when the labels are marked off by a gap or a hole or more generally when there is an area with a net difference of support transparency between one label and the other.
- *REFLECTIVE:* this item enables the reflection mode and must be used when the support is completely opaque and there is a black tick mark on the back of the support itself.

3.9.3 Paper Sensor Control

This function enables the printer to calibrate the paper sensor manually. This function is useful in the case of problematic media (e.g. transparent labels).
Press ***Enter*** function key and display shows: "**Sens Value: nnnn mV**" "**Gain: nnn Off: nnn**".
Press ***Scroll*** function key to change value of "**n**".
Press ***Enter*** function key to change position of "**n**".
Press ***Esc*** function key and display shows: "**Sens Value: nnnn mV**" "**Threshold: nnn**".
Press ***Scroll*** function key to change value of "**n**".
Press ***Enter*** function key to change position of "**n**".
Press ***Esc*** function key to exit.
The value detected by the paper sensor is shown on the first line of the display. To determine the correct adjustment, it is necessary to maximize the difference between the value detected with a gap under the sensor and the value with a label. The value (transmissive sensor) is approximately 1200 when there is a gap, 3300 when there is a label and 500 when there is a paper out condition. In any event, the gap value must be far from that of the *paper out* value (when nothing appears under the sensor). Example: **Gain**: 045 -- **Off**: 059 **Sens Value**: label = 3300 gap = 1260 paper out = 550.
The trheshold value must be the **Sens Value** with label minus 500.
Example: **Sens Value**: 3300**mV** **Threshold**: 280.

3.9.4 Run No Paper Calibration

This function enables the printer to calibrate the paper sensor in paper out condition. This function is necessary to allows a correct automatic sensor adjustment operation.
Press ***Enter*** function key to enter in the *NO PAPER CALIBRATION* function. At the end of operation the display shows *PAPER SENSOR CALIBRATION DONE* or *FAIL*.

3.9.5 Run Manual Adjustment

This function enables the printer to calibrate the paper sensor manually. This function is useful in the case of problematic media (e.g. preprinted labels).
Press ***Enter*** function key and follow the instructions shown on the display.

3.9.6 Run Automatic Present Sensor Calibration

This function enables the printer to calibrate, in automatic mode, the present paper sensor. This function is necessary to allows a correct automatic present sensor adjustment operation.
Press ***Enter*** function key to enter in the *AUTOMATIC PRES. SENS. CAL.* function. At the end of operation the display show *PRESENT SENSOR CALIBRAT. DONE* or *FAIL.*

3.9.7 Printhead Type Detected

This item indicates the print head type installed on the printer (intelligent print head or not intelligent print head).

3.9.8 Counters Menu

Pressing the ***Enter*** function key, when this function is displayed, you gain access to two submenu:
- ***DISPLAY COUNTERS***: press ***Enter*** function key and, on the first line of the display, appears *USER COUN: nn* and in the second line appears *RESERVED: nn.*

The value displayed near the message *USER COUN* shows the quantity of printed labels after the last user reset; *RESERVED,* instead, shows the absolute quantity of printed labels (in meters).
Pressing the ***Scroll*** function key to enter in:
- ***RESET USER COUNTER?***: press ***Enter*** function key and, on the display, appears *RESET IN PROGRESS* for a few second. This selection sets the user counter of the printed labels to zero.

3.10 Communication Parameters Menu

Press ***Enter*** function key and hold it while ***Power On*** the printer to enter in the *COMMUNICATION MENU* and be able to value selection.

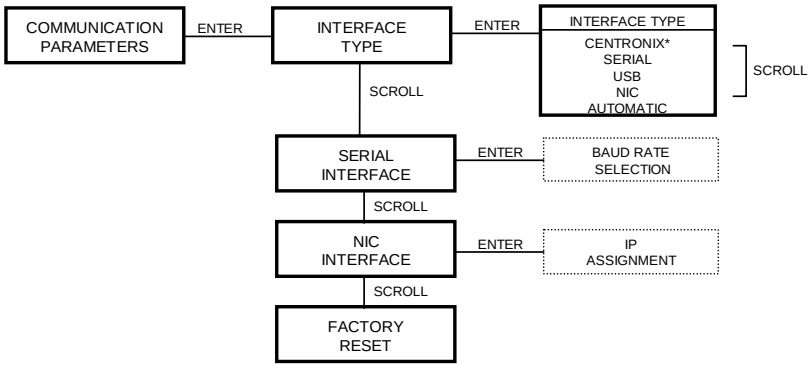

Fig. 38 – Structure of Communication Parameters Menu

SERIAL INTERFACE This item allows you to select the different parameters for the serial port communication.

NIC INTERFACE This item allows you to select the different parameters for the networking port communication.

FACTORY RESET This item resets the printer to factory parameters.

3.11 Serial Interface

The following list describes all menu items in the Serial Port Functions top-level menu.

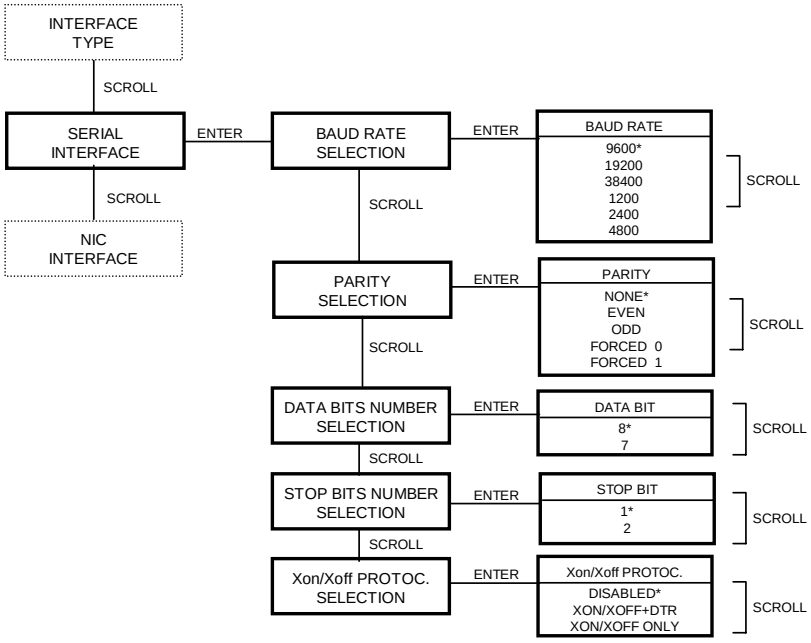

Fig. 39 – Structure of Serial Interface Menu

3.11.1 Baud Rate

This item allows the selection of the different speeds (from 1200 to 38400 baud) for the reception/transmission of data through the serial port of the printer.
Press ***Enter*** function key to enter in the *SELECT BAUD RATE* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function and confirm with ***Enter*** function key:
- *1200* to *38400* bps: the default value is ***9,600****.

3.11.2 Parity

This item allows the selection of the parity check.
Press ***Enter*** function key to enter in the *PARITY* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function and confirm with ***Enter*** function key:
- ***NONE****: Data does not have a parity bit. The parity check is disabled.
- *EVEN*: Parity check is enabled for even parity.
- *ODD*: Parity check is enabled for odd parity.
- *FORCED 0*: Parity check bit is forced to 0 bit.
- *FORCED 1*: Parity check bit is forced to 1 bit.

3.11.3 Data Bits Number

This item allows the selection of the number of data bits: *7* or *8* data bits.
Press ***Enter*** function key to enter in the *DATA BIT* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function and confirm with ***Enter*** function key:
- ***8*:*** the number of data bits is set to 8.
- *7:* the number of data bits is set to 7.

3.11.4 Stop Bits Number

This item allows the selection of the number of stop bits: *1* or *2* stop bits.
Press ***Enter*** function key to enter in the *STOP BIT* sub-menu. Press ***Scroll*** function key to scroll through the various items of this function and confirm with ***Enter*** function key:
- ***1*:*** the number of stop bits is 1.
- *2:* the number of stop bits is 2.

3.11.5 Xon/Xoff Protoc. Selection

This item allows the selection of the handshaking protocol for the serial interface. The selections are as follows:
- **DISABLED*:** the selection of the XON/XOFF protocol is disabled.
- *Xon / Xoff+DTR*: the flow control is performed using the DTR and XON/XOFF protocols.
- *Xon / Xoff ONLY*: the flow control is performed using only the XON/XOFF protocols.

NOTE!

The printer controls the flow of communication from the host by turning the transmission on and off. In some situations, such as when the buffer is full or the timing of signals is too slow or too fast, the printer will tell the host to stop transmission by sending an XOFF character. An XOFF character is sent when the number of empty bytes in the buffer is less than or equal to 25 percent of the buffer size. If the host keeps sending data after an XOFF is sent, the printer firmware will continue to send an XOFF for every 16 characters received. When cleared, the printer will resume receiving data (XON). The data does not have any End of Text codes; XON / XOFF is a non-block protocol.

3.12 NIC Interface

This menu contains all the networking interface communication parameters.

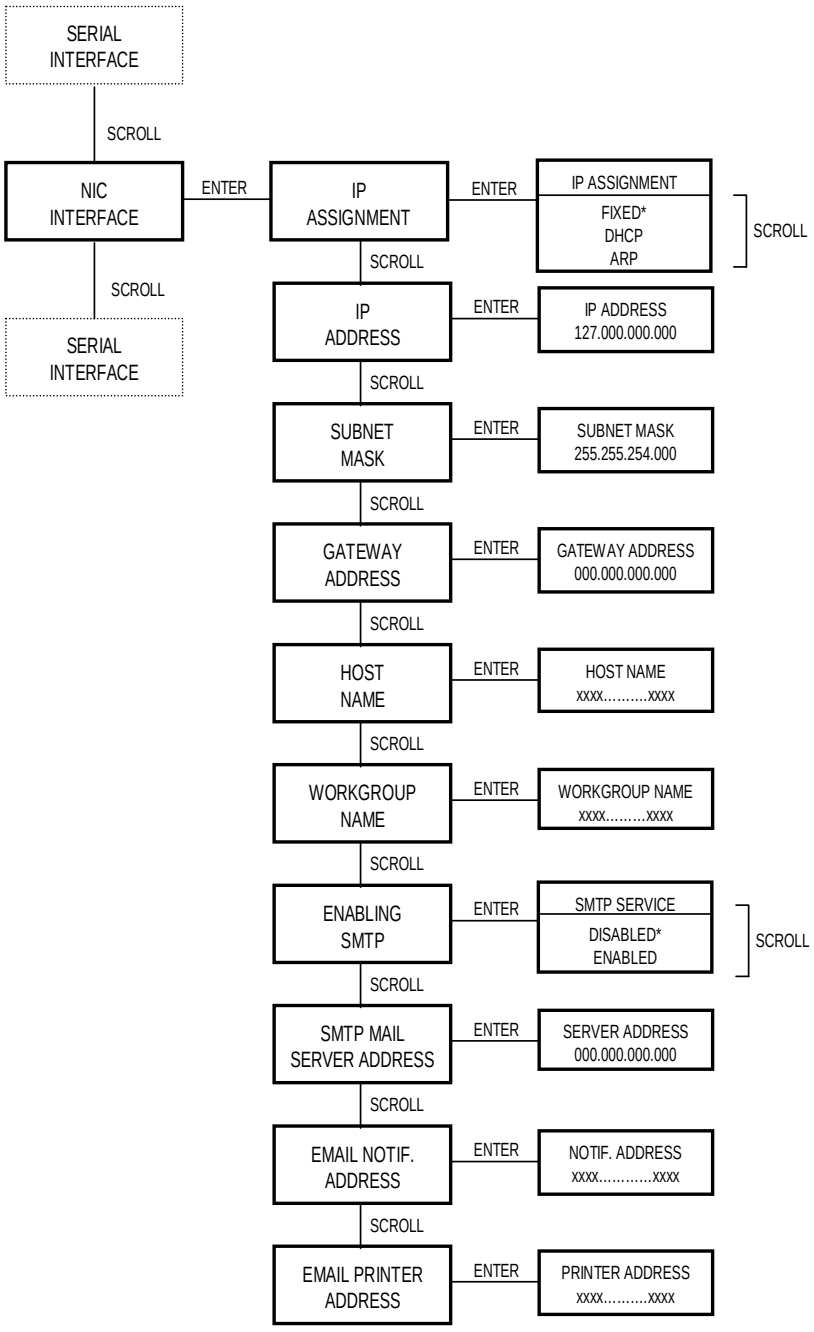

Fig. 40 – Structure of NIC Interface Menu

3.12.1 IP Assignment

IP address assignment mode.
- ***FIXED****: Assigns the static or fixed IP address.
- *DHCP*: Assigns the dynamic IP address (DHCP protocol).
- *ARP*: Assigns the user's defined IP address (ARP protocol).

3.12.2 IP Address

These values set the INIT IP address. The IP address is represented by a decimal notation where the decimal values are divided by points in four fields. Each field ranges between 0 and 255. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field. The default value is **127.000.000.000**.

3.12.3 Subnet Mask

These values set the INIT net mask address. This number is represented by a decimal notation where the decimal values are divided by points in four fields. Each field ranges between 0 and 255. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field. The default value is **255.255.254.000**.

3.12.4 Gateway Address

These values set the ID default gateway number. This number is represented by a decimal notation where the decimal values are divided by points in four fields. Each field ranges between 0 and 255. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field.

3.12.5 Host Name

The host is identified by a name. This function allows to create the name of the host using a 14-character string. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field.

3.12.6 Workgroup Name

The workgroup is identified by a name. This function allows to create the name of the workgroup using a 14-character string. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field.

3.12.7 Enabling SMTP

- ***DISABLE****: disables the SMTP (Simple Mail Transfer Protocol) service, that is disables the reception/transfer/error service of the e-mail.
- *ENABLE*: enables the SMTP (Simple Mail Transfer Protocol) service, that is enables the reception/transfer/error service of the e-mail.

3.12.8 Mail Server Address

This item is displayed only if the ENABLING SMTP function is selected in ENABLED mode.
These values set the mail server address. This number is represented by a decimal notation where the decimal values are divided by points in four fields. Each field ranges between 0 and 255. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field.

3.12.9 Email Notification Address

This item is displayed only if the ENABLING SMTP function is selected in ENABLED mode.
This function allows to write the e-mail address where you can notify the failures. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field.

3.12.10 Email Printer Address

This item is displayed only if the ENABLING SMTP function is selected in ENABLED mode.
This function identifies the address of the sender's e-mail using a string of characters. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field.

3.12.11 Contact

The Contact is identified by a name. This function allows to create the name of the printer user; using a 14-character string. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field.

3.12.12 Location

The Location is identified by a name. This function allows to create the name of the Location were there is installed the printer; using a 14-character string. Use the ***Scroll*** function key to increase the values in one field and the ***Enter*** function key to move to the next field.

4 TROUBLESHOOTING

Problem	Possible causes	Solution
Blank labels are printed.	The commands were not properly received.	Check the configuration of the printer.
	Normal paper is being used instead of thermal paper.	Check that the paper being used is thermal paper: the heat generated by friction is enough to leave a sign on the label. If it is not thermal paper, replace it.
	You are trying to print on normal paper in direct thermal mode without the ribbon.	Select the thermal transfer print mode and install the ribbon according to the instructions in section 2.2.4 page 24.
Nothing is printed and the paper does not move.	The printer is Off Line.	Bring the printer On Line by using the special function key and restart the printing job.
	The serial, parallel or USB cable is defective.	Replace the cable with another suitable one.
	The communication parameters are not compatible with those of the computer.	Set the communication parameters that are compatible with those of the computer.
The label is in the wrong position.	The wrong emulation is being used.	Change the current emulation.
	A horizontal or vertical offsets with CDL emulation has been set.	Check and possibly correct the horizontal and vertical offsets.
A label is occasionally skipped.	The paper sensor is not correctly calibrated.	Calibrate the sensor as explained on page.32
It is not possible to calibrate the sensor and/or the printer continues indicating blocked paper.	The paper sensor is obstructed.	Carefully eliminate any label fragments that might have stick to the paper sensor.
The ribbon sticks to the bottom of the print head.	The temperature of the print head is too high.	Reduce the temperature of the print head using the Printhead Heat Selection in the Printer Settings Menu or with the commands provided by each emulation language; in this latter case, please refer to the respective section of programming manual.
A paper out message is shown on the display even though there actually is paper in the machine.	The paper is not passing through the paper sensor.	See section 2.2 on page 18, where the operations required for inserting the paper correctly are described.

Problem	Possible causes	Solution
A ribbon out message is shown on the display even though the ribbon is loaded in the printer.	The ribbon wrapped on the spindle (1) of Fig. 10 (page 19) is not secured to the cardboard core, so the spindle spins freely.	Follow the procedure described in section 2.2.4 on page 24 exactly; making sure that the previously printed ribbon is securely wound on the cardboard core so that it can actually be pulled when the spindle moves. If there is free play between the spindle and the core, the tabs mounted for this specific purpose can be adjusted. They contain two screws; by loosening these, their position can be changed according to the actual diameter of the core.
	The cardboard core of the new ribbon is not securely fixed to the spindle (2) in Fig. 10 (page 19).	Follow the procedures described in section 2.2.4 on page 24 exactly. More specially, the spindle on which the roll of ribbon is mounted must actually be pulled when the ribbon moves. If there is free play between the spindle and the core, the tabs mounted for this specific purpose can be adjusted. They contain two screws; by loosening these, their position can be changed according to the actual diameter of the core.
The paper gets stuck.	The paper in not properly loaded.	Open the cover of the printer and load the paper while carefully following the instructions in section 2.2 on page 18.
Print quality is poor.	The paper has not been properly loaded.	Open the cover of the printer and load the paper while carefully following the instructions in section 2.2 on page 18.
	There are wrinkles in the ribbon, which affect print quality.	Open the cover of the printer and load the ribbon while carefully following the instructions in section 2.2.4 on page 24.
The printer does not power up.	The power cable has not been properly connected.	Repeat the power cable connection procedure.
The messages on the display are in an incomprehensible language.	The wrong language has been selected.	Choose a correct language in the Configuration Menu.

Table 5 – Troubleshooting

If the problem persists, contact your reseller and/or CPG INTERNATIONAL technical assistance.

5 PRINTER SPECIFICATIONS

TECHNICAL SPECIFICATIONS	
Printing type	Direct thermal / Thermal transfer
Resolution	203 dpi or 300 dpi
Maximum printing speed	10 ips at 203 dpi 8 ips at 300 dpi
Flash memory	2 MB
Ram memory	8 MB or 16 MB
Data Flash	2 Mb
Maximum printing width	104 mm.
Maximum printing length w/standard memory	584 mm. at 203 dpi - 254 mm. at 300 dpi
Maximum printing length w/16MB exp. memory	2514 mm. at 203 dpi or at 300 dpi
Minimum size of dot	0.125 mm. (8 dot/mm.) or 0.0833 (11.8 dot/mm.)
Label back-up	Yes

Table 6 – Technical specifications

PHYSICAL SPECIFICATIONS	
Length	360 mm.
Width	270 mm.
Height	270 mm.
Weight (net of packaging)	11 Kg
Noise level	< 70 db (A)

Table 7 – Physical specifications

PHYSICAL OPERATING LIMITS	
Operating temperature	From +4ºC to +40ºC (39ºF to 104ºF)
Storage temperature	From +0ºC to +49ºC (32ºF to 120ºF)
Relative humidity operating Storage	20% - 85% non-condensing 5% - 85% non-condensing
Electromagnetic radiation	3 Volt/m.

Table 8 – Physical operating limits

ELECTRICAL SPECIFICATIONS	
Power source	100-240 VAC RMS (50 – 60 Hz)
Typical power output	100 W
Stand-by power consumption	< 10 W

Table 9 – Electrical specifications

INTERFACES	
Standard	Parallel Serial RS232 (9 pin plug DB connector) USB
Optional	Ethernet 1/100 Base T

Table 10 – Interfaces

EMULATIONS	
Standard	CZL (Zebra) CDL (Datamax) CPL

Table 11 – Emulations

LABEL SPECIFICATIONS	
Diameter of roll	38,1 mm. (1,5 inch) or 76,2 mm. (3 inch)
Width	Max. 118 mm.
Height of gap/black tick	Min. 1,27 mm.
Size of hole	Min. 1,27 mm. – Max. 25,4 mm.
Maximum thickness	0,127 mm.
Internal label rewinder capacity	Max. Diameter: 81 mm. (3.2 inch) (Half Rewinder)
Recommended materials for labels	Thermal transfer: – Premium Coated Paper, permanent acrylic adhesive – Premium Coated Paper, removable adhesive – 7,0 mil coated paper tag-stock – 4,0 mil white polyolefin, permanent acrylic adhesive – Smudge-proof white polyolefin, permanent acrylic adhesive – 8,5 mil smudge-proof poly tag-stock – 2,0 mil polyster label-stock, white, bright and matte chrome – Direct thermal – Ecomomy direct thermal paper, permanent acrylic adhesive – Premium direct thermal paper, permanent acrylic adhesive – IR scannable direct thermal paper, permanent acrylic adhesive – 7 mil direct thermal paper tag-stock – 3,3 mil direct thermal film, permanent acrylic adhesive
Sizes	Roll or continuous form (with or without slots), labels, cards, transparents

Table 12 – Label specifications

RIBBON SPECIFICATIONS	
Length	450 meters
Width	Max. 118 mm.
Ribbon types	Wide Spectrum Wax Ribbon Wax Resin Blend Ribbon Specialty Resin Ribbon Harsh Environment Resin Ribbon

Table 13 – Ribbon specifications

GRAPHIC CHARACTERISTICS	
Bar codes	Codabar, Code 39, Code 93, Code 128A, Code 128B, Code 128C, EAN-8, EAN-13, FIM, German Interleaved 2 of 5, Interleaved 2 of 5, Logmars, MSI, PDF-417, Postbar, Postnet, Royal Mail, Telepen, UCC/EAN Code 128, UPC-A, UPC-E, UPC-EO, UPC-E1, UPS 11, UPS Maxicode, Datamatrix.
Fonts	CP 437 (USA/Western Europe), CP 850 (Multilingual), CP 851 (Greek), CP 852 (Eastern Europe), CP 853 (Turkish), CP 855 (Russian), CP 858 (Euro PC Multilingual), CP 860 (Portugal), CP 863 (France/Canada), CP 864 (Arabic), CP 864E (Arabic), CP 865 (Denmark/Norway), CP 866 Cyrillic, CP 867 (Turkish 2), Mazowia (Polish), Turkish, Greek, Kamenicky, CWI, Roman 8, IN2, ISO 8859-1 (USA/Western Europe), ISO 8859-2 (Eastern Europe), ISO 8859-3 (Southern Europe), ISO 8859-4 (Northern Europe), ISO 8859-5 (Cyrillic), ISO 8859-6 (Cyrillic), ISO 8859-7 (Greek), ISO 8859-8 (Hebrew), ISO 8859-9 (Western Europe 2), ISO 8859-15 (Western Europe), Windows: 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257. Additionally scaleable & Bitmapped Font typefaces shall be downloadable to the printer from the host.
Graphics	Lines and boxes, image in PCX, TIFF and BMP formats.

Table 14 – Graphic characteristics

OPTIONS
Automatic cutter, internal media rewinder, peel-off dispenser, LAN Ethernet interface.

Table 15 – Options

STANDARDS
UL, CSA, TUV, CE.

Table 16 – Standards

6 CONFORMITY DECLARATION

6.1 EEC Regulations

This equipment conforms to the EEC Directive 89/392 (the sound pressure, measured according to ISO 7779, does not exceed 70 dBA), EEC 89/336 for electromagnetic compatibility and EEC 73/23 for device safety.

WARNING!

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

6.2 FCC Part 15 Class A

This equipment has been tested and found to comply with the limits for Class A digital devices pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operations of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Changes or modifications to this equipment not expressly approved by us may void the user's authority to operate this equipment.
The use of a non-shielded interface cable with this device is prohibited.
Interface shielded cables are necessary in order for this product to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

7 SERIAL PORT WIRING

RS 232 serial port pin assignment (DB9 plug)

Pin number	Signal
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	SRTS

Table 17 – RS232 serial port pin assignment

8 INDEX OF FIGURES

9 INDEX OF TABLES