

O.E.M.  
THERMAL TRANSFER  
LABEL PRINTERS

models

# PRINTEX X300



## USER MANUAL

rev. 02.15

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Features and specifications are subject to change without notice

# PRINTEX X300

**PRINTEX X300 is designed to perform two-sided printing (front and back). It is also possible to get single-sided printing (front) simply lifting up bottom printhead.**

## 1. TECHNICAL SPECIFICATIONS

### PRINTING

Two sided (front and back)

Method: Thermal Transfer

Resolution: 12 dots/mm,  
2 printheads 640 dots/line

Printing area: 54 x 500 mm  
Print speed: up to 200 mm/s

X/Y positioning of texts and bar codes

Texts and bar codes printed in four orthogonal directions

Lines, boxes, shadow and reverse printing

Graphic and logos: bit image mode

Bar Codes: EAN8, EAN13, 2/5, 2/5 I, 3/9, 2/7, DUN-14/16, UPC-A, UPC-B, UPC-E, CODE128, EAN128, Code 32, PZN, Code 93, PDF 417, Datamatrix, GS1

Databar, QR Code

Automatic Check Digit computation

Wide/narrow ratio full programmable

Half, standard and double density

Height programmable

Suppression of human readable characters

Batch printing: up to 99.999.999 labels

Layouts: 26 programmable in Flash memory, 100 fields each

Up to 10 protection levels for variable data printing  
4 up/down 16 digits counters

Real Time Clock

Black intensity adjustable via software

Print button for last label repeating

### INTERFACING SIGNALS

Three optoisolated I/O

### DATA TRANSFER INTERFACE

RS232/422/485: serial parameters settable by sw

USB, Ethernet

### HANDSHAKE PROTOCOL

SW : XON/XOFF

HW : DTR

### DATA TRANSMISSION

ASCII format

### CHARACTER GENERATORS

5 fixed matrix, 6 proportionals

up to 112 customized

(see Programming Manual for further details)

Magnifications 9x9

### PERMANENT MEMORY

32 – bit RISC microprocessor

8 MB flash

16 Mb RAM

DISPLAY: LCD alphanumeric 16 characters x 2 rows, 8 colours

KEYBOARD: 10 Keys membrane panel

### DETECTORS

End of paper and feeding synchronism

End of thermal ribbon

### PRINT MEDIA

Continuous paper

### LABEL SIZES

Width: 15 mm min., 60 mm max.

Length: 6 mm min.  
500 mm max.

### ROLL SIZES

Width: 15 mm min., 60 mm max.

Outer diameter: 220 mm max.

Core diameter: 40,5 mm min.

### THERMAL RIBBON

Base polyester film

Outer diameter: length 600 meters max.

Width: 20 mm min., 60 mm max.

Core diameter: 25.4 mm , optional 76 mm

### PRINTER DIMENSIONS

See following pictures

Weight: 13 Kg

### POWER REQUIREMENTS

Voltage: 90 - 260 Vac; 50 - 60 Hz

### ENVIRONMENT

Operating temperature: 0°/ 40° C

Storage temperature: -20°/60° C

Humidity: 10% - 95% non-condensing

## 2. UNPACKING

Open the box and check the content :

- Printex label printer model **PRINTEX X300**,

- connection cables  
serial RS232, USB

- 1 DIN connector: 6 poles

- unwind holder and flanges

- power cable

- roll of labels

- 2 rolls of thermal ribbon

- printing tests

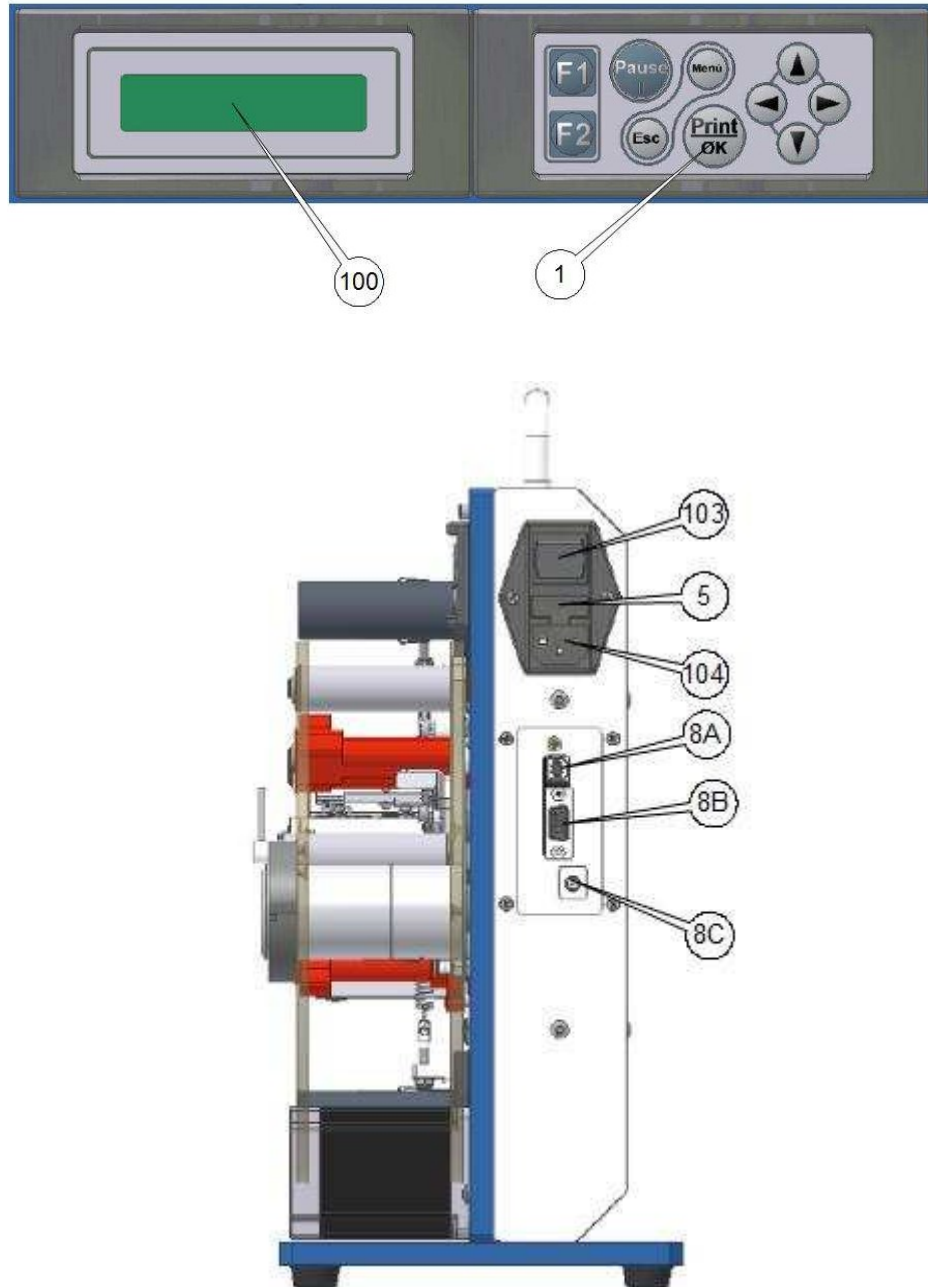
- CD Rom with manuals and Etik

### 3. GENERAL VIEW

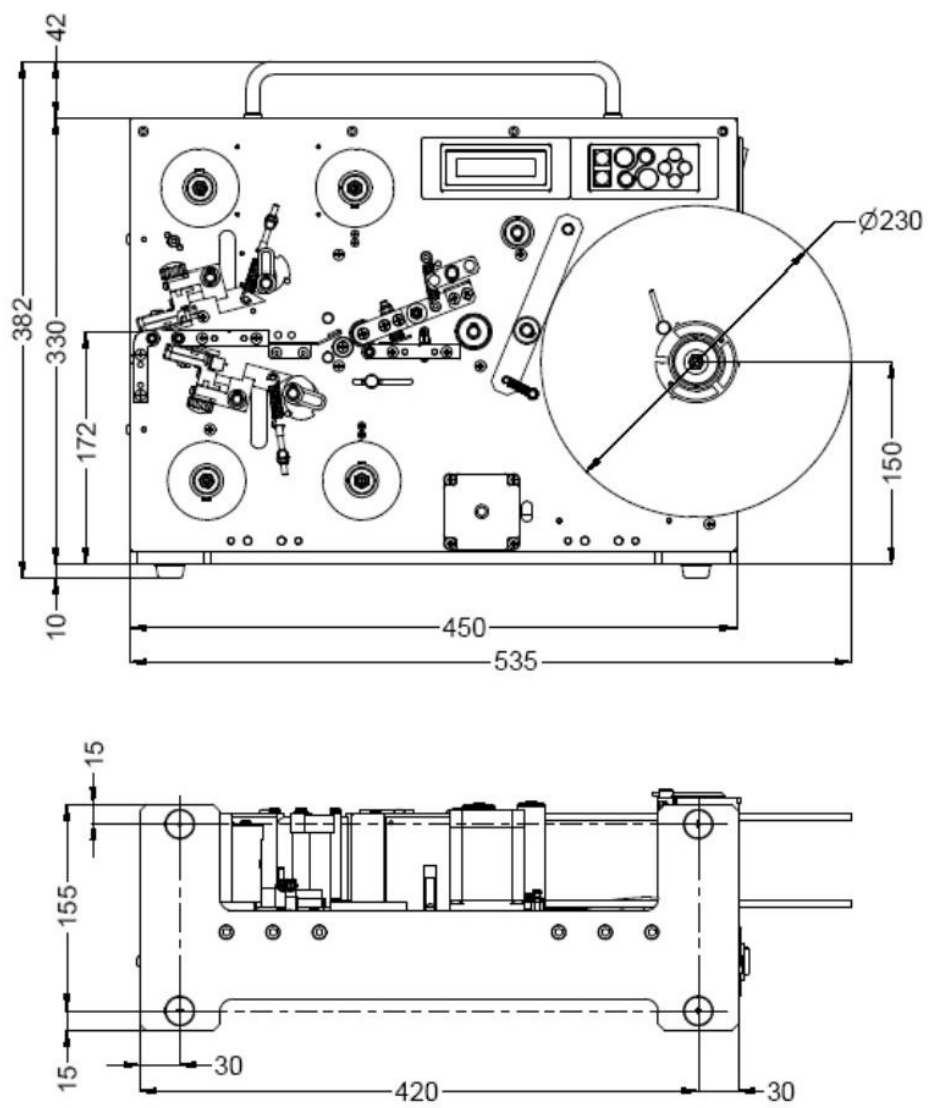
(See picture 1)

- 1: manual printing pushbutton
- 5: 2 fuses 2AT (main)
- 8A: USB connector
- 8B: RS232/422/485 connector
- 8C: Ethernet connector

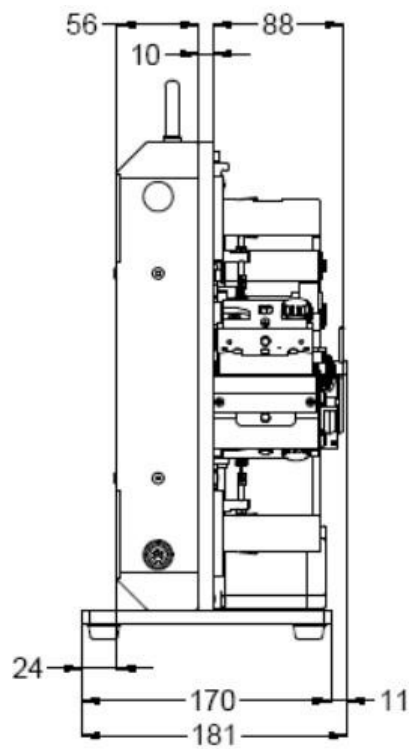
- 100: Display
- 103: main switch
- 104: power cord plug



PICTURE 1



PICTURE 2

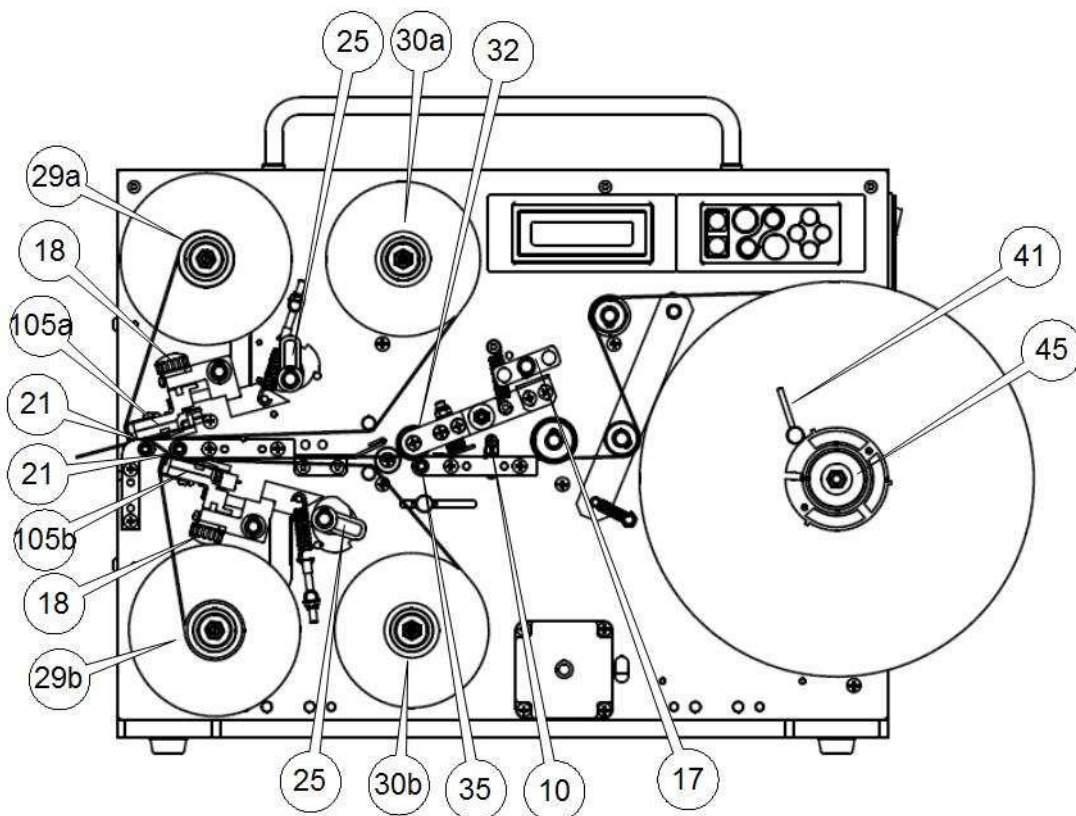


**PICTURE 3** (front view)

#### 4. ROLLS COMPARTMENT DESCRIPTION

(SEE FOLLOWING PICTURES)





**PICTURE 5**

- |                                                            |                                    |
|------------------------------------------------------------|------------------------------------|
| 10 - photosensor for end of roll and label synchronisation | 30a - front thermal ribbon stock   |
| 17 - lock / unlock toggle lever                            | 29b - back thermal ribbon rewinder |
| 18 - printheads position fine adjustment                   | 30b - back thermal ribbonstock     |
| 21 - printing rollers                                      | 32 - pressure roller               |
| 25 - lock / unlock printhead levers                        | 35 - driving roller                |
| 25a - working position                                     | 41 - lock / unlock flange          |
| 25b - open position                                        | 45 - label unwind holder           |
| 25c - cleaning position                                    | 105a - front printhead assembly    |
| 29a - front thermal ribbon rewinder                        | 105b - back printhead assembly     |



## 5. INCOMING INSPECTION

- \* Proceed with label and ribbon loading, see chapter 7.
- \* Check the correct pinout of the serial Cannon 9 pins female connector and connect the printer to the computer.
- \* For further details see chapter 9 "Interfacing".
- \* Check the voltage on the name plate next to the power receptacle.
- \* Connect the power cable to a grounded power line
- \* Switch the main switch on (rear panel)

LIGHT BLUE display ON means operating conditions.

- \* Push the PRINT BUTTON, you will get a printing test with the FIRMWARE release information.
- \* Sending data from the computer you will get the first printing.
- \* Push the PRINT BUTTON to get the last printing again; the printer keeps the information of the last printing until next data arrive.

**NOTE: Printer retains the label length and the backing paper transparency in permanent memory.**  
**In case of change of print media see the following paragraph.**

## LABEL FORMAT SET UP PROCEDURE

(SEE PICTURE 5)

The printer retains the label length and the eventual backing paper transparency in permanent memory.

**If changing label format or print media type** you have to use the following procedure to update the values (see also paragraph 7.2):

- 1 - Switch the printer off.
- 2 - Lift the pressure roller up by rotating lever #17.
- 3 - Thread the web between the driving roller and the pressure roller #35,32 up to printheads.
- 4 - Lift the printheads up by rotating levers #25.
- 5 - Thread the web between the printing rollers and the printheads #21,105.
- 6 - Check web has been rightly positioned under the label photosensor #10.
- 7 - Move down the printheads and the pressure roller by rotating levers #25 and #17.
- 8 - Switch the printer on while pushing the print button.
- 9 - Printer ejects some labels (depending on their length) and stores the values of the media.
- 10 - Release the print button.
- 11 - The display lights light blue and the printer is ready to work.

## 6. PRINTING MEDIA DESCRIPTION

### PAPER SPECIFICATIONS

Coated nylon polyamide, polyester and satin  
Thickness 0,05 mm min; 0,20 mm max  
Label Dimensions see Chapter 1

### THERMAL RIBBON SPECIFICATIONS

- film thickness 4.5 ÷ 6 micron
- core diameter: 25.4 mm
- width: 20 mm min/ 60 mm max.
- length: about 600 meters
- ink coating outside

#### STORAGE

Keep labels and ribbons in a dry place at temperature not over 40° C and not exposed to direct sun light.

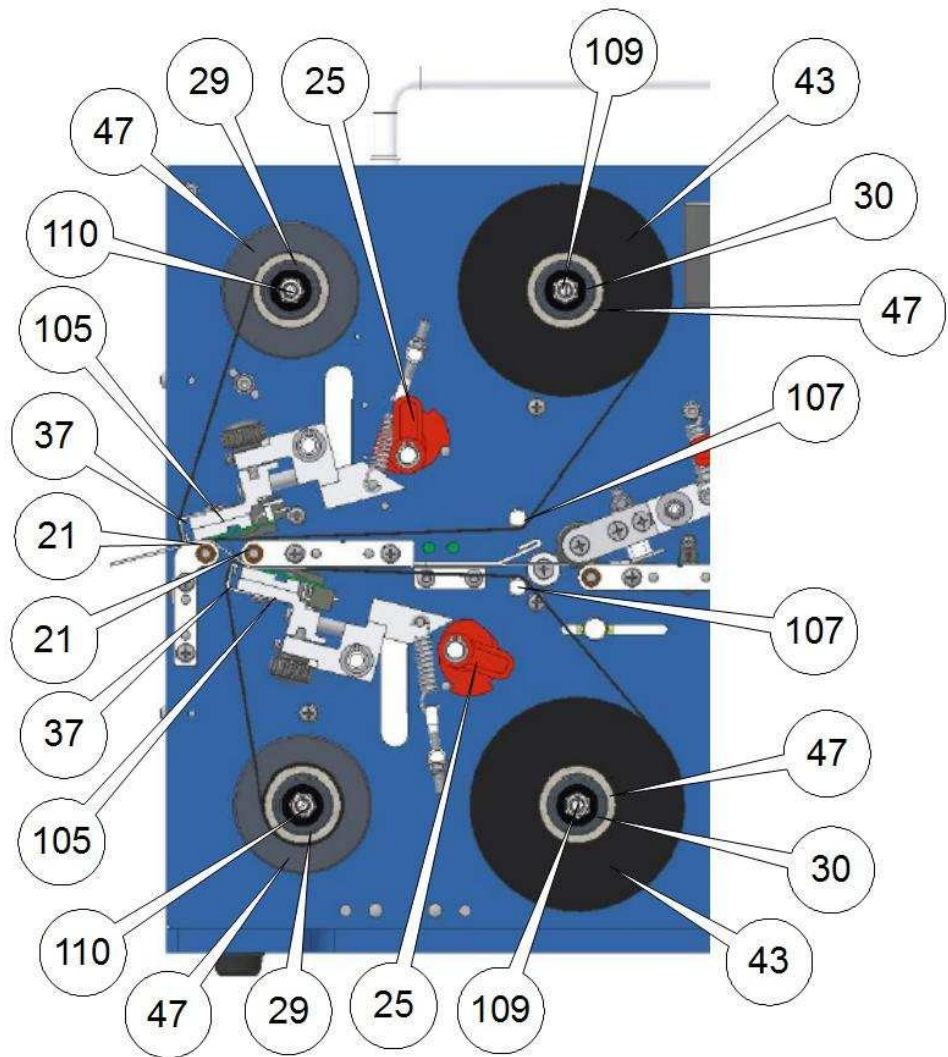
## 7. THERMAL RIBBON AND LABEL ROLL REPLACEMENT

### THERMAL RIBBON REPLACEMENT

(SEE PICTURE 7)

Remove the used roll. Remove the core #47 from the bobbin #30 and put it on the rewinder #29. By rotating the lever #25, lift the printing head #105 from the printing roller #21, setting the movement of the ribbon free.

Slide new ribbon #43 onto bobbin #30 and thread it under the threaders #107 and 37 and up round to the rewinder #29. Attach the ribbon leader with label/tape to core #47. Return head lever to closed position #25



PICTURE 7

## LABEL ROLL REPLACEMENT

(SEE PICTURE 5)

In case of changing of label format or printing media type, remember to follow the "Label format set up procedure" shown on paragraph 5.1.

Remove the movable flange #41.

Remove the empty label roll.

Insert new label roll onto roller #45

Reassemble the movable flange and push it tightly against the side of the label roll.

By rotating the levers #25, lift the printheads #105 from the feed roller #21, setting the movement of labels free.

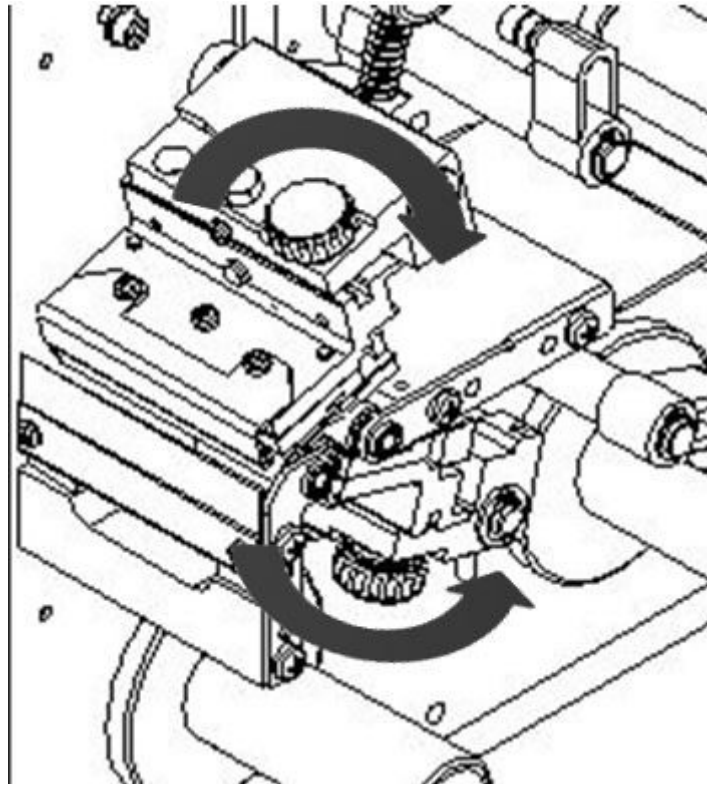
By rotating the lever #17, lift the pressure roller #32 from the driving roller #35.

Feed the labels through the driving roller and under the pressure roller #35,32, thread the web between the printing rollers and the printheads #21,105

Turn head levers and toggle lever back to closed positions #25,17.

Check paper has been rightly positioned under the label photosensor #10.

IN CASE OF PRINTING OF NARROW MATERIAL TO IMPROVE PRINTING QUALITY AND AVOID RIBBON CREASES TURN SLIGHTLY ADJUSTING KNOBS AS SHOWN IN FOLLOWING PICTURE



## 8. PARAMETERS SETTING, DISPLAY AND KEYBOARD

### KEYBOARD

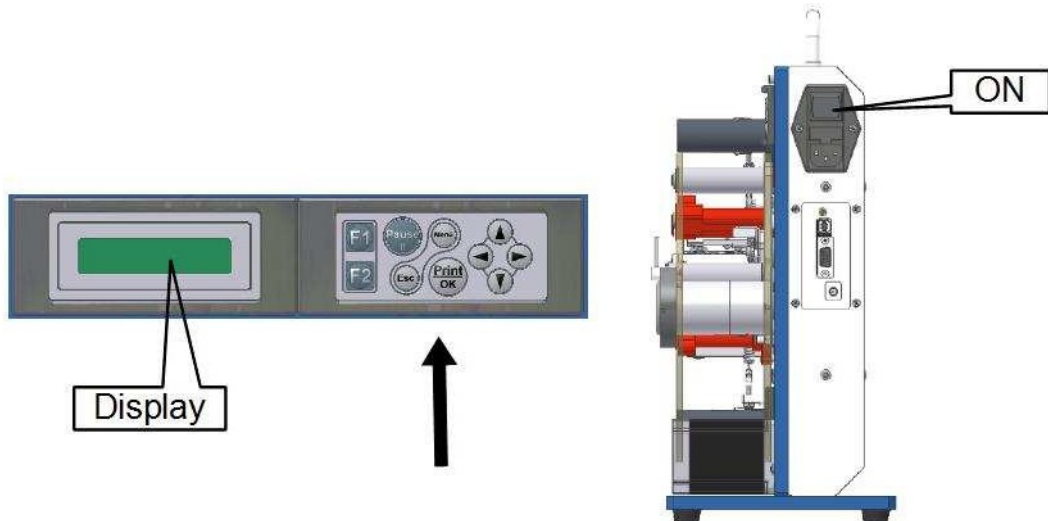
The Printer behaviour in response to the keyboard use depends on the current status of the Printer itself.

#### **POWER-ON**

Features available at Printer Switching-ON.

NB: hold down corresponding key while switching on the Printer.

(release the key only after the activation of the desired function)



Press and hold the key on the front panel  
of the Printer

Switch on the Printer  
(and release the key previously pressed)

- "Power-ON" keypress procedure -

- Print/OK
  - Run the Printer "Initializing Procedure"
- Menu
  - Access the Printer "Setup Menu" before it reaches the Standard operating mode
- UP Arrow
  - Run the "DUMP Mode" of receiving data

#### **Standard Operating Mode (Ready / Data Receiving)**

Features available when the Printer is in Standard operating mode ("Ready").

(Printer Name)  
Ready!

- "Ready" Display message -

- Print/OK
  - Print of the content of the Print Buffer (repeat the last label printed)  
If the Print Buffer is empty (condition that occurs at Printer Switching-ON or after performing a "Reset Procedure"), the Printer will print the "Test Label", that lists the main Printer's current operating settings
- UP Arrow
  - Increase the energy percentage supplied to the Printheads (0 - 150 %), accordingly increasing the Print Contrast
- DOWN Arrow
  - Decrease the energy percentage supplied to the Printheads (150 - 0 %), accordingly decreasing the Print Contrast

**WARNING:**

a too high percentage may seriously damage the Printheads or however reduce its life!!

- Menu
  - Access the Printer "Setup Menu"  
(refer to "Setup Menu" paragraph)
- F1
  - Access the "Label Layout Selection" section  
(refer to "Label Layout Selection (A - Z)" paragraph)
- Pause
  - Enable/Disable the execution of the "Apply Equipment Cycle" stored in Printer memory  
(available only on models with Apply Equipment / "OEM Expansion Board")
- "UP Arrow + DOWN Arrow" (simultaneous pressure)
  - Run the Printer "Reset Procedure"

**Setup Menu**

Features available in the Printer "Setup Menu".

- RIGHT/LEFT Arrows
  - Scroll Menu and Submenus Items
- UP/DOWN Arrows
  - Scroll available Options for each Item in Menu and Submenus
  - Increase/Decrease numeric fields in the Options
- Print/OK
  - Store the displayed Option
  - Access Submenus (when the message "OK to Enter" is shown)
  - Run the displayed procedure (when the message "OK to START!" is shown)
- Esc
  - Exit Submenus and return to the previous Menu/Submenu
  - Exit Menu and return to the "Ready" operating condition

WARNING: to really change the value of any option, the "Print/OK" key should be pressed!!  
Transferring to another Item ("RIGHT/LEFT Arrows") or exiting the Submenu/Menu ("ESC" key) without pressing the "Print/OK" key will NOT STORE the setting of the option previously displayed!!  
In this case, the settings of the last properly performed storing operation will be kept as valid.  
Each press of the "Print/OK" key stores the value of the currently displayed option.

**Label Layout Selection (A - Z)**

Features available in the "Label Layout Selection" section.

- RIGHT/LEFT Arrows
  - Scroll "Label Layouts" ('A' to 'Z')
- UP/DOWN Arrows
  - Scroll available Options ("Set as Default" or "Erase!")
- Print/OK
  - Perform the Option displayed
- Esc
  - Exit the section and return to the "Ready" operating condition

**Special Combos**

The special combos are keys combinations (starting from "Ready" operating condition) that should be used to access some special features.

**Debug Menu**

This combo give access to the "Debug Menu", feature that allows to analyze the internal settings of the Printer and (eventually) the external interfacing signals.

"Ready" condition

’ "Menu"

’ "F1"

’ "Print/OK" < access the "Debug Menu"

’ "Esc" < return to "Ready"

Available features inside the "Debug Menu" of the Printer:

- RIGHT/LEFT Arrows
  - Scroll Menu and Submenus Items
- UP/DOWN Arrows
  - Scroll available Options for "Output Commands" ("ON" or "OFF")  
(feature available on "OEM" models only)
- Pause
  - Suspend/Resume reading "Internal Sensors"
  - Suspend/Resume reading "Input Signals"  
(feature available on "OEM" models only)
- Print/OK
  - Access Submenus (when the message "OK to Enter" is shown)
  - Run the displayed procedure (when the messages "OK to START!" or "OK to PRINT!" are shown)
  - Resume reading "Internal Sensors" from Pause condition
  - Resume reading "Input Signals" from Pause condition  
(feature available on "OEM" models only)
  - Perform the selected Option for "OutputCommands"  
(feature available on "OEM" models only)
- Esc
  - Exit Submenus and return to the previous Menu/Submenu
  - Exit the Menu and return to the "Ready" operating condition

### Batch Print Mode

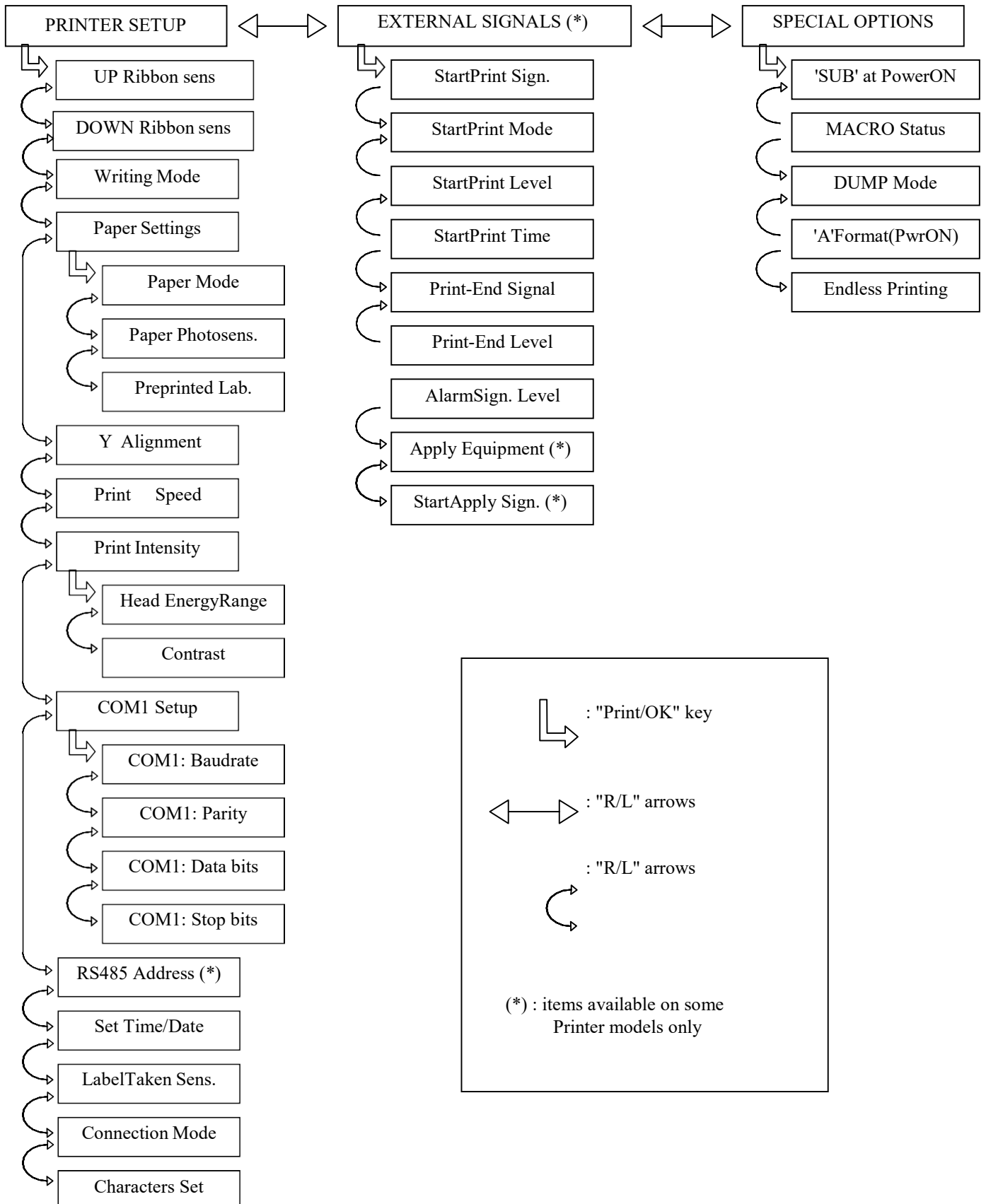
Features available with Printer in "Batch Print" operating mode.

Batch Copies:  
# (x) of (N)

- "Batch Print" Display message -

- Pause
  - Suspend/Resume the current Print Cycle
- Print/OK
  - Resume the current Print Cycle from Pause condition
- Esc
  - Quit the current Print Cycle and return to "Ready" operating condition

## Setup Menu



The "Setup Menu" allows to manage Printer operating general settings and parameters.

Available settings are divided into the following Submenus:

- **PRINTER SETUP**  
Printer operating parameters
- **EXTERNAL SIGNALS**(available on "OEM" models only)  
External Signals management
- **SPECIAL OPTIONS**  
special Printer operating modes

### ***PRINTER SETUP***

"Printer Setup" Submenu contains the following Items:

- UP Ribbon sensor
  - Enabled: To detect and alarm if end of ribbon of upper printhead
  - Disabled: No control on end of ribbon of upper printhead
- DOWN Ribbon sensor
  - Enabled: To detect and alarm if end of ribbon of lower printhead
  - Disabled: No control on end of ribbon of lower printhead
- Writing Mode  
Printing method:
  - Direct Thermal: directly on thermo-sensitive media
  - Thermal Transfer: through inked ribbon transfer
- Paper Settings  
Print Media management:
  - Paper Mode  
Print Media typology:
    - Labels: stickers/adhesive labels
    - Continuous: continuous media without marking signs
    - Tag/Tickets: media with marking signs or holes
  - Paper Photosens.  
Print Media photosensor typology:
    - Fork
    - Reflection
  - Preprinted Lab.  
setting to use pre-printed labels
- Y Alignment  
Set the alignment "Gap" at printing end
- Print Speed  
Set the Printer printing speed
- Print Intensity  
Print Intensity adjusting:
  - Heads EnergyRange  
limitation of the energy supplied to the Printheads:
    - Standard (Low): limitation enabled, operating in "Low Energy" range
    - High Energy: limitation disabled, operating in "High Energy" range
  - Contrast  
percentage of energy supplied to the Printheads (Print Contrast)
- COM1 Setup  
Serial communication settings for "COM1" Port
  - COM1: BAUDRATE
  - COM1: PARITY
  - COM1: DATA bits
  - COM1: STOP bits
- RS485 Address (available on "RS485" models only)  
Printer address for communication on "RS485" protocol
- Set Time/Date  
Internal Time/Date settings
- LabelTaken Sens.  
Use/Presence of Label-Taken Sensor
- Connection Mode  
Control Characters receiving mode
  - Standard: received characters are not modified



- Mainframe: conversion of all Control Characters received in the "Carriage Return" character (CR, ASCII code = 13)
- Characters Set  
Alphabetical Characters Set selection

### **EXTERNAL SIGNALS** *(AVAILABLE ON "OEM" MODELS ONLY)*

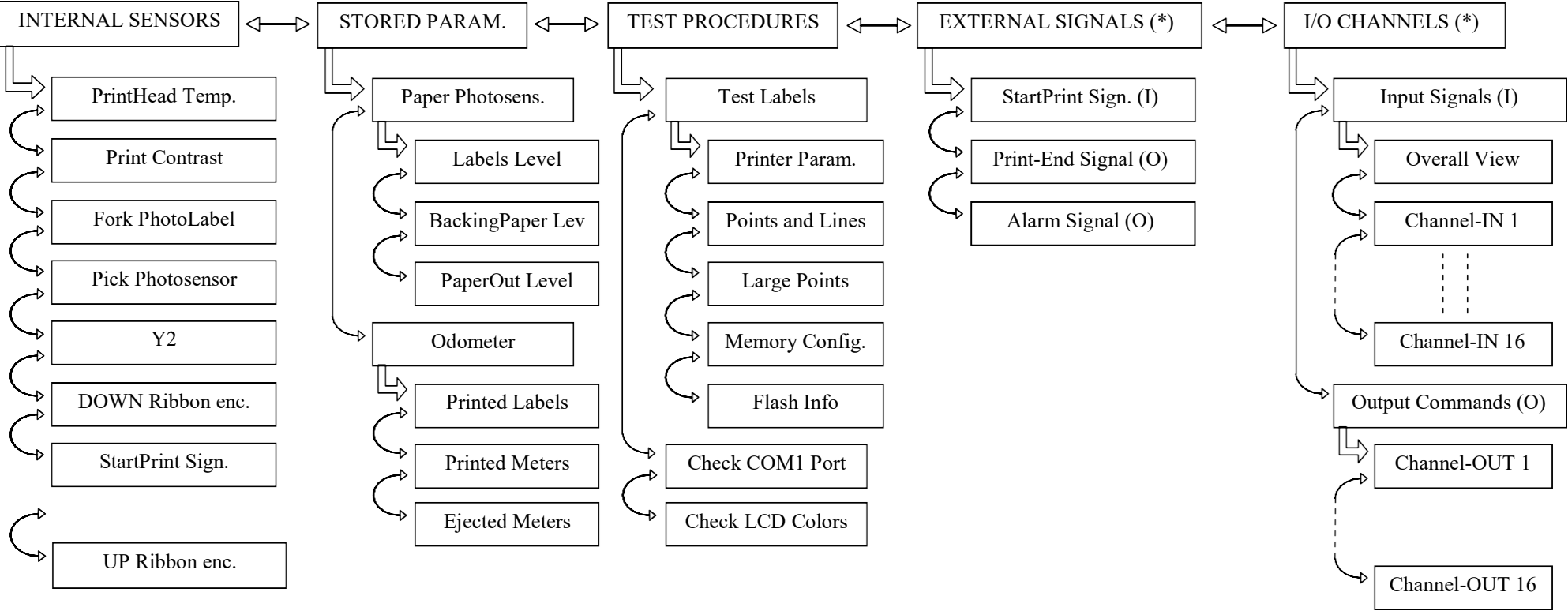
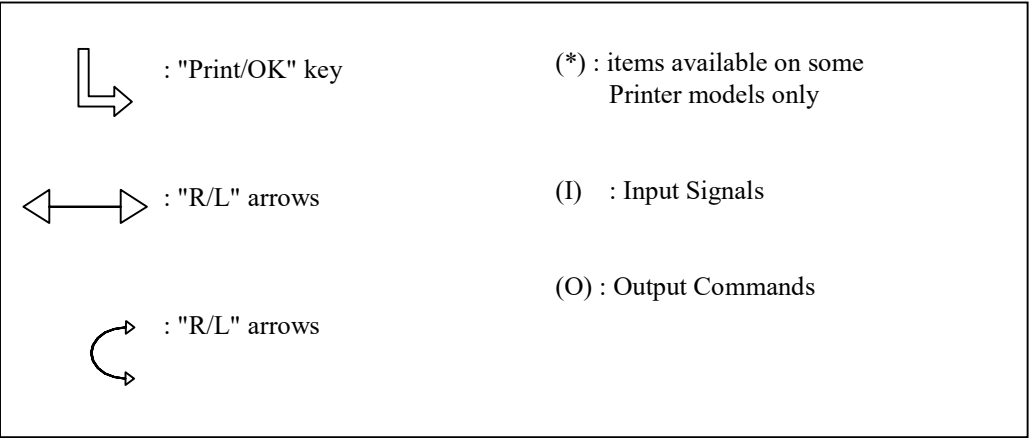
"External Signals" Submenu contains the following Items:

- StartPrint Sign.  
Enable/Disable Start-Print Signal
- StartPrint Mode  
Start-Print Signal operating mode selection
- StartPrint Level  
Set the Start-Print Signal logic level of activation
- StartPrint Time  
Set the Start-Print Signal minimum period
- Print-End Signal  
Print-End Signal operating mode selection
- Print-End Level  
Set the Print-End Signal logic level of activation
- AlarmSign. Level  
Set the Alarm Signal / Auxiliary Out logic level of activation
- Apply Equipment *(available on "OEM" and "OEM Expansion Board" models only)*  
Enable/Disable the execution of the "Apply Equipment Cycle"
- StartApply Sign. *(available on "OEM" and "OEM Expansion Board" models only)*  
Enable/Disable Start-Apply Signal

### **SPECIAL OPTIONS**

"Special Options" Submenu contains the following Items:

- 'SUB' at PowerON  
Send of "SUB" character (by the Printer) every time the power is restored (eg: at Power-ON or in case of voltage drops)
- MACRO Status  
"Macro Interpreter" operating mode:  
the Printer automatically composes the labels with data directly received from the device to which it is connected (eg: an electronic balance)
- DUMP Mode  
"DUMP" operating mode:  
the Printer decodes all the received characters and prints them as a sequence of single values depending on the set code (hexadecimal, decimal or ASCII)
- 'A'Format(PwrON)  
Management of the "Label 'A' Format" auto-activation at Power-ON
- Endless Printing  
Endless Printing operating mode:  
continuous printing of data contained in the Print Buffer



The "Debug Menu" allows to monitor and analyze Printer settings and (eventually) the external interfacing signals, in order to identify and solve any faults or malfunctioning.

Available settings are divided into the following Submenus:

- **INTERNAL SENSORS**  
Printer Internal Sensors interrogation
- **STORED PARAM.**  
displaying of parameters related to Print Media transparencies and made/performed Prints
- **TEST PROCEDURES**  
procedures to test some Printer features
- **EXTERNAL SIGNALS** (available on "OEM" models only)  
External Control Signal analysis
- **I/O CHANNELS** (available on "OEM" and "OEM Expansion Board" models only)  
Input Signals and Output Commands analysis

#### **INTERNAL SENSORS**

- |                     |                                                     |
|---------------------|-----------------------------------------------------|
| – Printhead Temp.:  | Printhead temperature                               |
| – Print Contrast:   | Print Contrast percentage                           |
| – Fork PhotoLabel:  | value read from Print Media Photosensor (Fork type) |
| – Pick Photosensor: | value read from Label-Taken Photosensor             |
| – Ribbon Encoders:  | value read from Ribbon Encoder                      |
| – StartPrint Sign.: | Start-Print Signal value                            |

#### **STORED PARAM.**

- Paper Photosens.  
Print Media transparencies, stored during the last alignment procedure:
 

– Labels Level:	boundary value of labels detection
– BackingPaper Lev:	boundary value of backing-paper detection
– PaperOut Level:	boundary value of End-Media detection
- Odometer  
parameters related to made/performed Prints:
 

– Printed Labels:	number of printed labels
– Printed Meters:	amount of printed Print Media
– Ejected Meters:	amount of ejected Print Media

#### **TEST PROCEDURES**

- Test Labels  
print of Test/Check Labels:
 

– Printer Param.:	Printer operating settings (also called "Printer Test Label")
– Points and Lines:	Printhead dots integrity check pattern
– Large Points:	Printhead dots integrity check pattern
– Memory Config.:	Printer's memories settings
– Flash Info:	Printer's Flash Memory settings
- Check COM Port  
serial communication check procedure (available for "COM1" Port only)
- Check LCD Colors  
8-color LCD Display check procedure

#### **EXTERNAL SIGNALS**

**(AVAILABLE ON "OEM" MODELS ONLY)**

- |                     |                                         |
|---------------------|-----------------------------------------|
| – StartPrint Sign.: | Start-Print Signal status               |
| – Print-End Signal: | Print-End Signal management             |
| – Alarm Signal:     | Alarm Signal / Auxiliary Out management |

#### **I/O CHANNELS**

**(AVAILABLE ON "OEM" AND "OEM EXPANSION BOARD")**

- Input Signals  
reading of the 16 Input Signals ("Channel-IN")
- Output Commands  
management of the 16 Output Commands ("Channel-OUT")

## MEANING OF DISPLAY COLOURS

The Printer display can use different background colours. The meaning of these colours is the following:

- Light Blue:
  - "Ready" operating condition
- Red:
  - Error/Alarm condition due to factors external to the Printer (need for direct Operator intervention to identify and solve the problem)
- Yellow:
  - Error/Alarm condition due to critical operating conditions internal to the Printer (Printer resumes when operating conditions go back to the optimal ones)
- Blue:
  - browsing the Printer "Setup Menu"
  - browsing the "Label Layout Selection" section
- Violet:
  - browsing the Printer "Debug Menu"
- Dark Blue:
  - Printer busy/engaged in internal procedures
  - Pause status during "Batch Print Mode"
  - Pause status while reading "Internal Sensors" (Debug mode)
  - Pause status while reading "Input Signals" (Debug mode) (available on "OEM" models only)
- Green:
  - "Ready" operating condition when the execution of the "Apply Equipment Cycle" is enabled. (available on "OEM" and "OEM Expansion Board" models only)
- Yellow/Green blinking:
  - need for Operator intervention to restart Printer (when the message "Turn OFF/ON to do" is shown)

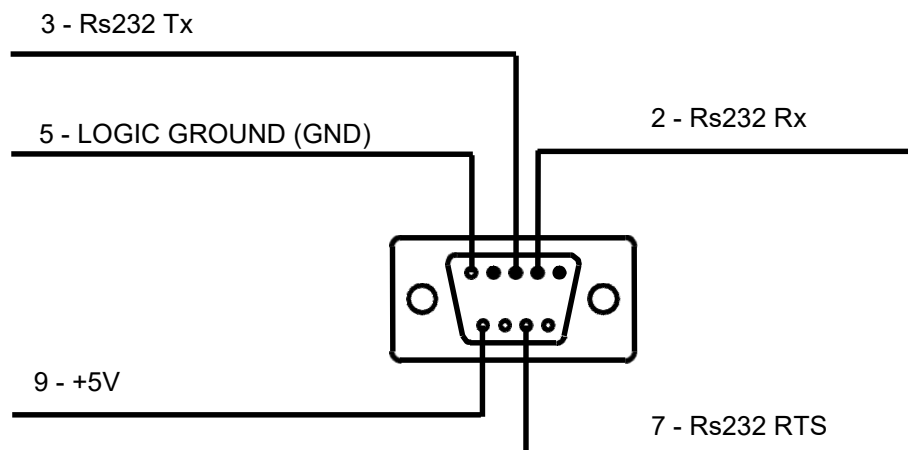
## 9. INTERFACING

### SERIAL INTERFACE

Printers X300 have a RS232/422/485 hardware interface. Provided on board connector is a Cannon 9 pins "DB" female cabled as shown in the following pictures.

#### RS232 – DB9 CONNECTOR

Connector pinout is

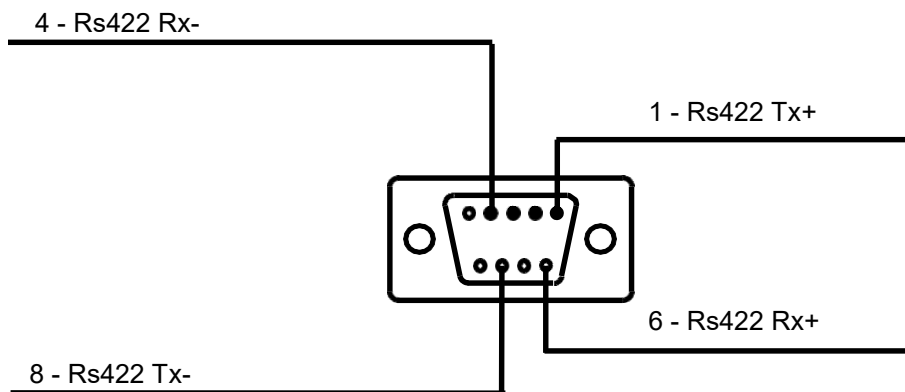


Connection to personal computer may be done in different ways:

COMPUTER CONNECTOR - 9 PIN		COMPUTER CONNECTOR - 25 PIN	
COMPUTER	PRINTER	COMPUTER	PRINTER
2	3 TX	3	3 TX
3	2 RX	2	2 RX
8	7 RTS	5	7 RTS
5	5 GND	7	5 GND
COMPUTER CONNECTOR: -using sw protocol XON/XOFF: short together PINS 7-8 and 1-4-6. -using hw protocol CTS/RTS: short together PINS 1-4-6.		COMPUTER CONNECTOR: -using sw protocol XON/XOFF: short together PINS 4-5 and 6-8-20. -using hw protocol CTS/RTS: short together PINS 6-8-20.	

### Rs422 – DB9 CONNECTOR

Connector pinout is



### HANDSHAKE PROTOCOL

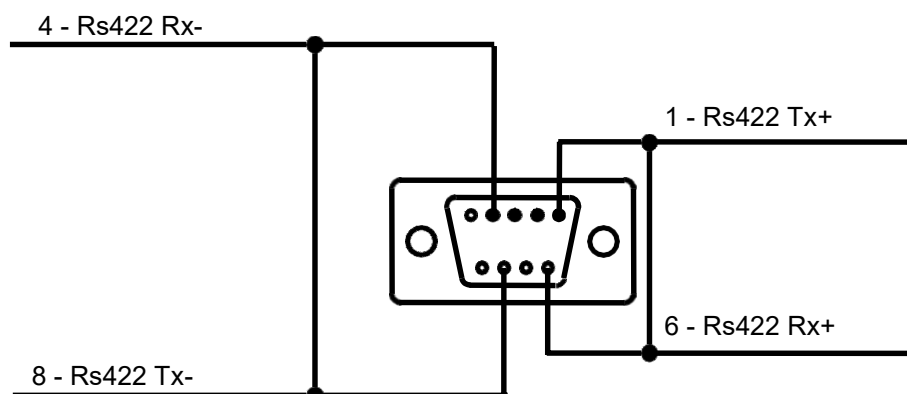
Rs422 serial line has no handshake protocol.

It means that if you transmit more than 2 / 3 KBytes of data at a time it's strongly recommended to insert a short delay (1 or 2 msec) between transmission of each character, in order to avoid printer errors during data receiving; alternatively software XON / XOFF handshake mode may be used.

Connection to personal computer may be done in different ways based on used converter.

### Rs485 – DB9 CONNECTOR

Connector pinout is



Maybe you'll need to do a short circuit between pins 2 and 4 on printer side connector, in order to enable the line terminator resistance (already included on the cpu board).

Pin2  
Pin3

Ind 00

Ind 01

4 2  
Ind 14

### HANDSHAKE PROTOCOL

RS 485 serial line has no handshake protocol.

In fact CTS printer signal, normally used in RS232 serial line to stop data transmission, is used here to set up the direction of data stream.

It means that if you transmit more than 2 / 3 KBytes of data at a time it's strongly recommended to insert a short delay (1 or 2 msec) between transmission of each character, in order to avoid printer errors during data receiving. Connection to personal computer may be done in different ways based on used converter.

## I/O SIGNALS

### Wiring for I/O signals 6 poles DIN connector

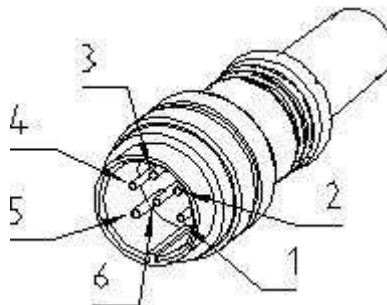
Pick & Place working mode allows an external device (i.e. PLC, photocell, pneumatic applicator, etc...) to start or halt printing.

When Pick & Place option is enabled 3 optoisolated signals are available:

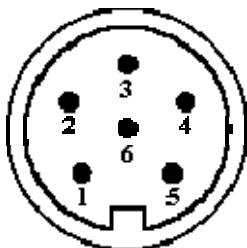
START PRINT  
PRINT END  
ALARM

Input – print consent  
Output – print end signal  
Output – auxiliary output for error conditions

These 3 signals are mapped on a 6 poles DIN tap.  
DIN plug has following outline:



External view

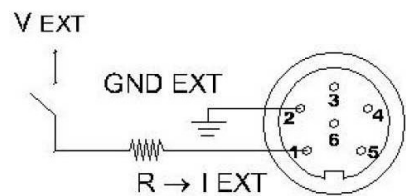


DIN plug  
Internal view, soldering side

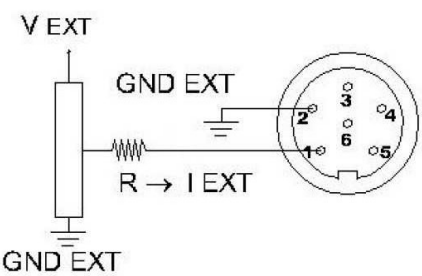
- |    |                       |
|----|-----------------------|
| 1) | + START PRINT (INPUT) |
| 2) | - START PRINT (INPUT) |
| 3) | + ALARM (OUTPUT)      |
| 4) | - ALARM (OUTPUT)      |
| 5) | + PRINT END (OUTPUT)  |
| 6) | - PRINT END (OUTPUT)  |

**START PRINT**  
(soldering side view)

**SWITCH**



**PNP Photocell**



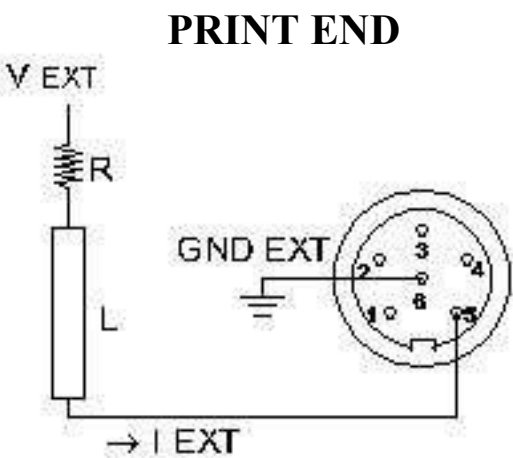
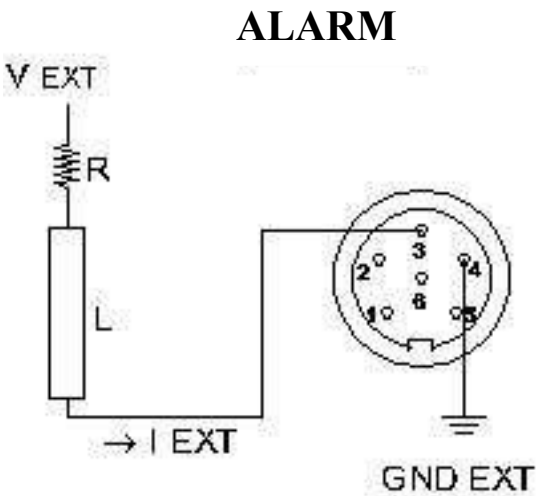
**Input signal**

Vext = external tension  
Iext = current on external circuit  
R = external circuit resistance

Vext (Volt)	Iext (mA)	R (Ohm)
<b>24</b>	<b>15</b>	<b>1270</b>
24	30	470
24	50	150
<b>12</b>	<b>15</b>	<b>470</b>
12	30	70
<b>5</b>	<b>15</b>	<b>0</b>

suggested values in **bold**

**ALARM and PRINT END signals**  
(soldering side view)



**Output signals**

Alarm and Print End  
 $V_{ext}$  = external tension  
 $I_{ext}$  = current on external circuit  
 $R$  = Current limiting resistance of external circuit  
 $L$  = Load impedance of external circuit

$V_{ext}$ (Volt)	$I_{ext}$ (mA)	$R + L$ (Ohm)
24	10	2400
<b>24</b>	<b>20</b>	<b>1200</b>
24	50	240
12	10	1200
<b>12</b>	<b>20</b>	<b>600</b>
12	50	120
5	10	500
<b>5</b>	<b>20</b>	<b>250</b>
5	50	100

suggested values in **bold**



## 10. MAINTENANCE

WHEN NOT IN USE:

- SWITCH OFF POWER
- ALWAYS LIFT UP THE PRINTHEADS AND THE TOGGLE LEVER MECHANISM

### CLEANING

#### Printhead

- Turn the power off.
- Wait until printheads cool down.
- Lift the printhead by using the lever on position 25
- Remove labels.
- Moisten a cotton cloth with denatured alcohol.
- Polish the print side to remove incidental adhesive traces or parts of labels
- Wait until dry before use

**WARNING: never use hard tools as this may damage the printhead.**

**Rubber feeding roll:** use alcoholic detergents.

**Photosensor:** use a soft brush.

**Metallic and plastic parts:** use a soft cloth with water-based detergent (weak).

**Removing adhesive traces or parts of labels:** use alcoholic detergents. Be careful the liquid does not drip on the electronic compartment.

## 11. TROUBLE SHOOTING

### NO LABELS FEEDING

Three situations may occur.

a) Display is OFF, check (pict.1,#100):

- main voltage
- main switch (pict.1,#103) ON.
- main connector (pict.1,#104) plugged in
- main fuses (pict.1,#6) intact.

b) Display is RED, check:

- label roll is not used up.
- paper position under the photosensor (pict.5,#10)
- c) Display is RED, check:
  - thermal ribbon is not used up.
- d) Display is YELLOW:
  - head temperature control active, printer stops until temperature has fallen to normal values.

### INCORRECT LABEL ALIGNMENT

Make sure that:

- printheads are closed (pict.5,#25)
- toggle lever is closed (pict.5,#17)
- paper position under the photosensor (pict.5,#10)

- movable flange is tightly pushed against the side of the label roll with the lever (pic.5,#41) in lock position.

See also "Label format set up procedure" paragraph 5.1

### PAPER SLIDES OUTSIDE

Check whether:

- movable flange is closely positioned against

the side of the label roll with the lever (pic.5,#41) in lock position.

### PRINTING WITH PATCHES MISSING

Check whether:

- thermal printheads need cleaning (chapter 10)
- thermal ribbon unwinds correctly.

- there are creases on the rewound thermal ribbon. If so, turn the nut (pict.7,#110) clockwise, in order to increase the rewinding torque (a quarter of a turn max.) while holding the roller (pict.7,#29) still.

### BLANK LABELS

Check whether

- printhead connectors are correctly plugged in (pict.27,#112) with polarity key up.

- thermal ribbon is correctly positioned, opaque surface on the label side.

### POOR PRINTING CONTRAST

Printer Standard operating mode ("**Ready**" *Display message*).

- UP Arrow  
Increase the energy percentage supplied to the Printheads (0 - 150 %), accordingly increasing the Print Contrast
- DOWN Arrow

Decrease the energy percentage supplied to the Printheads (150 - 0 %), accordingly decreasing the Print Contrast

Otherwise use the software command ?77& (see Programming Manual).

**BEWARE: continual high operating temperature of thermal head may reduce its working life.**

## 12. HARDWARE NOTES

### HOW TO CHECK ELECTRONIC BOARDS

- First unplug the power cable from the printer.

- turn the 4 rear and the 4 front screws out (pict.8a#113 - 120).
- remove rear panel.
- turn the 2 side screws out (pict.8b,#121 - 122).
- remove the side panel
- Unplug following connectors from CPU board (pict.21).and pull carefully off the electronicboard from the chassis
- Y3 = LCD
- Y4 = stepping motor
- Y5 = label photosensor

Y7 = serial port

Y11 = I/O signals

Y15 = printhead (power)

YGM = printhead (signals)

Y17 = keyboard

Y18 = LCD

Y22 = upper (front) ribbon sensor

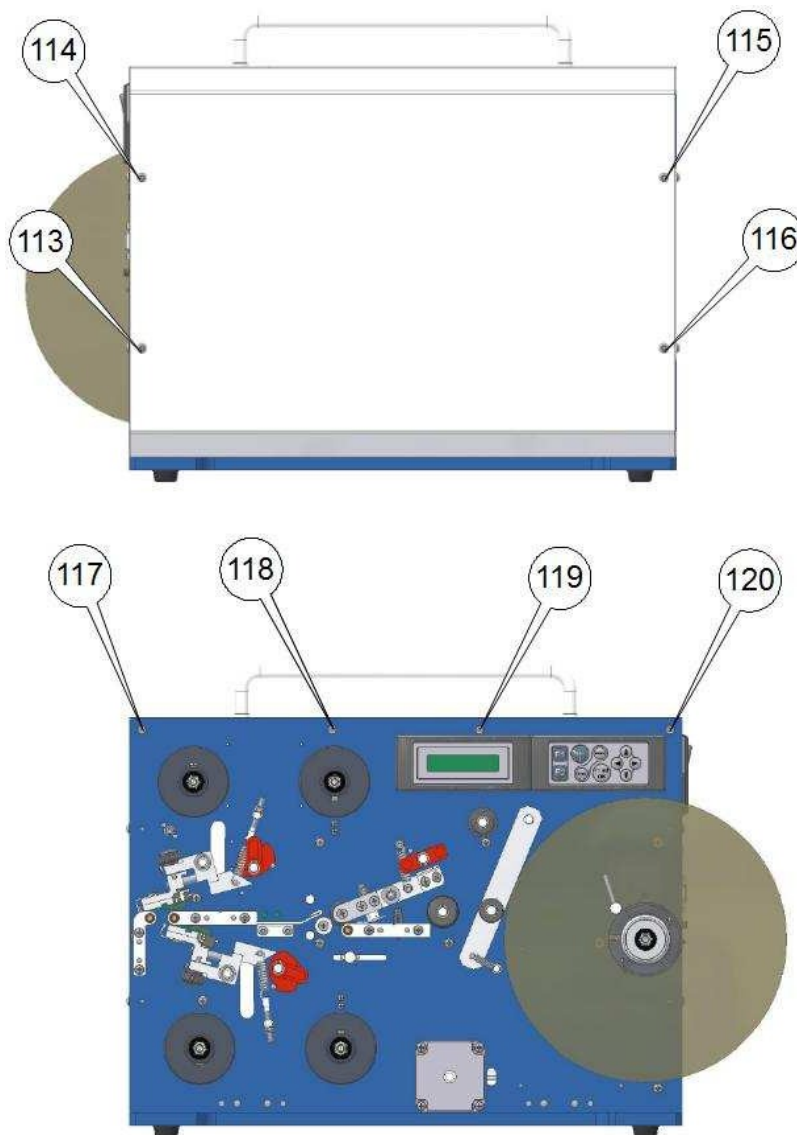
Y23 = lower (back) ribbon sensor

Y29 = USB

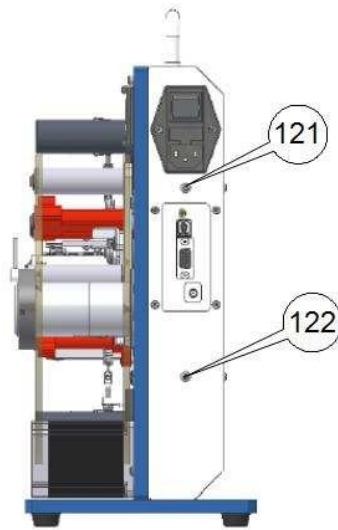
Y30 = power supply

- disconnect the ground cable turning the chassis nut out

- unplug the main switch connector.



PICTURE 8a



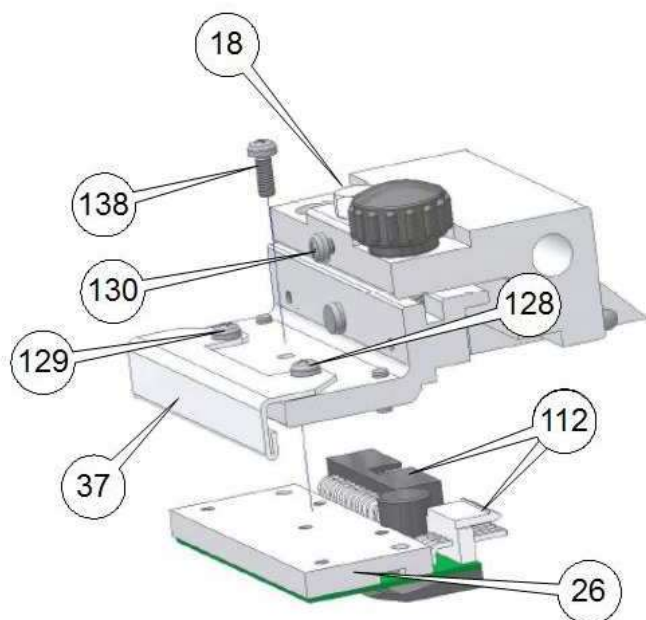
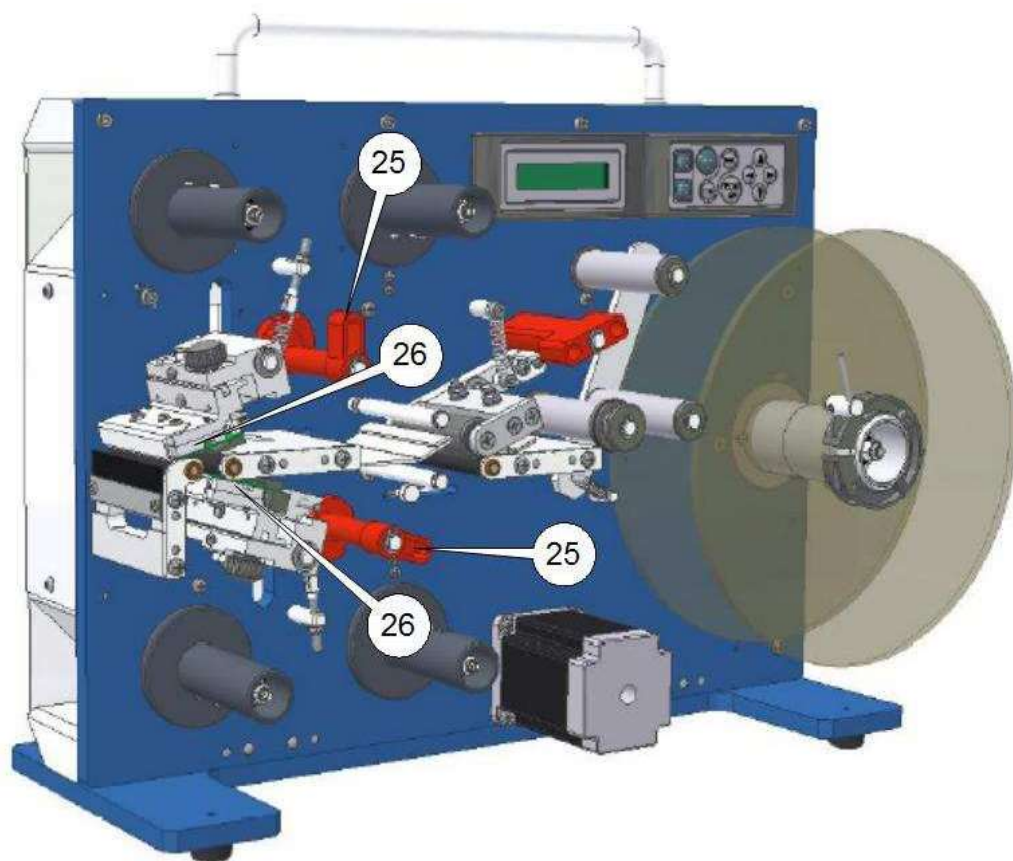
PICTURE 8b

## THERMAL PRINTHEADS REPLACEMENT

(SEE PICTURE 27)

- 1 switch the printer off .
- 2 unplug the connectors #112 from the printhead#26.
- 3 lift printhead by rotating the lever #25.
- 4 turn the screw #138 out and remove the printhead #26 from the dissipater.
- 5 replace printhead and run back steps 4 to 2.
- 6 in case of printing quality problems, loosen the screw #130 and turn slowly the adjusting nut in or out #18, for the best printing quality, finally lock the screw #130.
- 10 in case of creases on the rewound thermal ribbon, loosen the screws #128,129 and adjust the plate #37 in order to obtain a correct parallelism and flatness on the rewound ribbon; finally lock the screws #128,129

**WARNING: pay attention to plug in correctly the printhead connector(s), wrong connection causes irreversible damage to the print head functionality**

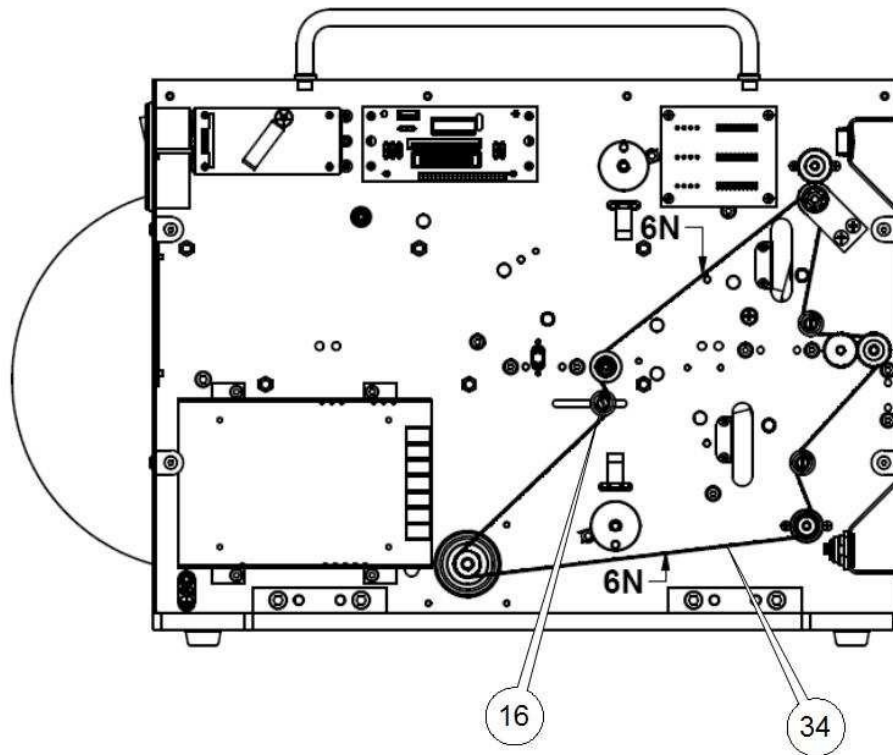


PICTURE 27

## DRIVE BELT REPLACEMENT (SEE PICTURE 29)

Loosen the idler #16 to remove belt #34. Replace the belt and stretch it by the idler till you get a deflection

of 4 to 6 mm when applying a force of 6 N.



PICTURE 29

## Printex X300



## LOGIC BOARD - layout

- LCD**  
**Motor**  
**Label sensor**
- Serial port**
- I/O Signals**
- Printhead GM (power)**  
**Printhead GM (signals)**  
**Keyboard**  
**LCD**
- Upper (front) ribbon sensor**  
**Lower (back) ribbon sensor**
- USB**  
**Power supply**



## 14. PART LIST AND RELEVANT PICTURES

(items are referred to following pictures)

ITEM	CODE	DESCRIPTION	X300
1	800822960	keyboard	*
2	801665280	DIN 6 connector	*
3	800929090	printing roller plate	*
4	800929100	printing roller plate	*
5	056102080	fuse 2A T	*
10	809065080	label photosensor assy	*
11	800943880	display assy	*
13	800823000	power supply	*
15	800877000L4	logic board	*
16	800925310	belt idler assy	*
17	80076209002	lever	*
18	800722460	nut	*
19	061702050	bushing	*
21	801312130	printing roller	*
22	800929180	heat dissipater assy	*
23	800742100	printhead lever spring	*
24	800722980	driving roller	*
25	800925880	printhead lever	*
26	800822650	thermal printhead (12 dots GM)	*
27	80094A450	ribbon rewinder assy	*
28	80094A460	ribbon stock assy	*
29	800742210	ribbon spring	*
30	801665270	ribbon photosensor	*
31A	059007040	printhead flat cable 20 pins 400mm	*
31B	059006180	printhead flat cable 20 pins 300mm	*
32A	059007280	printhead cable 4 pins (power) 400mm	*
32B	059006170	printhead cable 4 pins (power) 300mm	*
33	800929140	pressure roller	*
34	801802310	belt	*
35	800823050	anti-static brush	*
36	800929230	adapter 40/76mm	*
40	800742090	spring	*
41	801602090	fixed flange assy	*
43	800722541	tie rod	*
44	800929250	printing roller pinion	*
45	801622160	printing roller pinion	*
46	801605200	movable flange assy	*
47	800929210	pinion Z25	*
49	80094A510	stepper motor assy 12 dots	*



