

O.E.M.
DIRECT THERMAL
LABEL PRINTERS

models

EH 53/8



USER MANUAL

Italora

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CONTENTS

1. TECHNICAL SPECIFICATIONS	3
2. UNPACKING	3
3. GENERAL VIEW	4
4. ROLLS COMPARTMENT DESCRIPTION	7
5. INCOMING INSPECTION	9
5.1. LABEL FORMAT SET UP PROCEDURE	9
6. PRINTING MEDIA DESCRIPTION	9
6.1. PAPER SPECIFICATIONS	9
7. LABEL ROLL REPLACEMENT	9
7.1. LABEL ROLL REPLACEMENT	9
8. PARAMETERS SETTING, DISPLAY AND KEYBOARD	10
8.1. KEYBOARD	10
8.2. MEANING OF DISPLAY COLOURS	18
9. INTERFACING	18
9.1. SERIAL INTERFACE	18
9.2. I/O SIGNALS	20
10. MAINTENANCE	21
10.1. CLEANING	22
11. TROUBLE SHOOTING	22
11.1. NO LABELS FEEDING	22
11.2. INCORRECT LABEL ALIGNMENT	22
11.3. PAPER SLIDES OUTSIDE	22
11.4. PRINTING WITH PATCHES MISSING	22
11.5. BLANK LABELS	22
11.6. POOR PRINTING CONTRAST	22
12. HARDWARE NOTES	23
12.1. HOW TO CHECK ELECTRONIC BOARDS	23
12.2. THERMAL PRINT HEAD REPLACEMENT	23
12.3. DRIVE BELT REPLACEMENT	23
13. PICTURES	24
14. PART LIST AND RELEVANT PICTURES	30

Features and specifications are subject to change without notice

EH 53/8

O.E.M. GRAPHIC LABEL PRINTERS

1. TECHNICAL SPECIFICATIONS

PRINTING

Method: Direct Thermal

Resolution: 8 dots/mm, 448 dots/line

Printing area: 56 x 2300 mm

Print speed: up to 300 mm/s

Versions: left or right-handed

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

Two 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

PRINT MEDIA

Die cut labels

LABEL SIZES

Width: 25 mm min., 60 mm max.

Length: 6 mm min.

2.300 mm max.

Key: width min.: 2 mm

depth min.: 25 mm starting

from the inner edge

ROLL SIZES

Width: 25 mm min., 60 mm max.

Outer diameter: 220 mm max.

Core diameter: 40,5 mm min.

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

OPTIONS

Peel-off/apply device

ETIK, wysiwyg label editor Windows based

2. UNPACKING

Open the box and check the content :

- **italora** label printer model **EH 53/8**,

- connection cables

serial RS232, USB

- 2 DIN connectors: 5 and 3 poles

- unwind holder and flanges

- power cable

- roll of labels

- printing tests

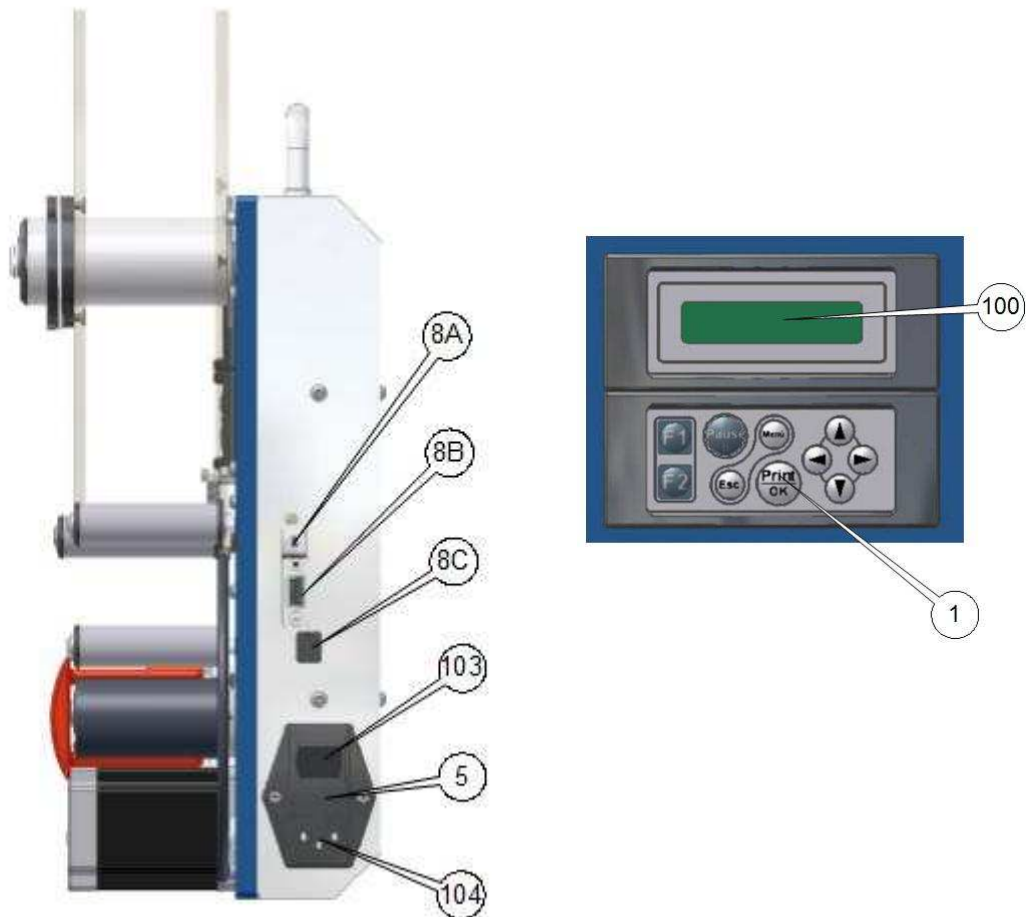
- CD Rom with manuals and Etik Light

3. GENERAL VIEW

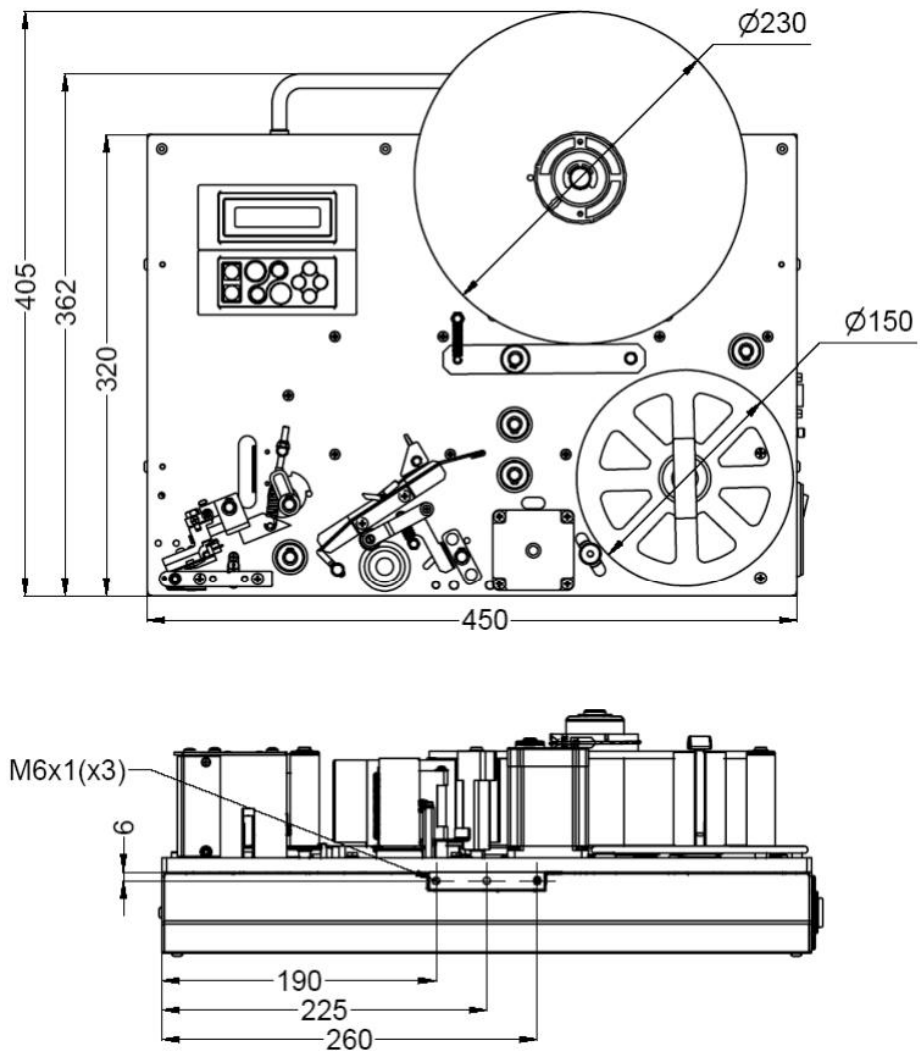
(See picture 1)

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

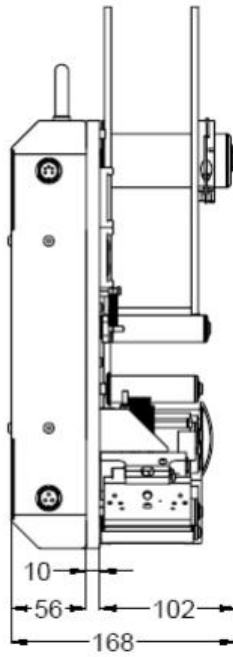
- 100: Display
- 103: main switch
- 104: power cord plug



PICTURE 1



PICTURE 2



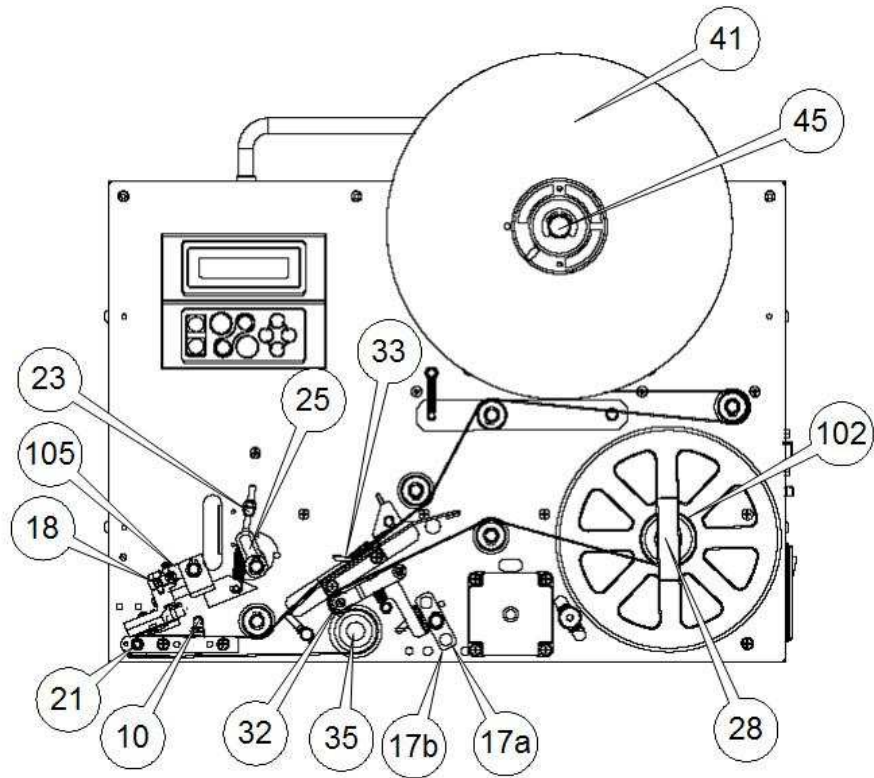
PICTURE 3 (front view)

4. ROLLS COMPARTMENT DESCRIPTION

(SEE FOLLOWING PICTURES)



- | | | | |
|----|---|-----|------------------------|
| 10 | - photosensor for end of roll and label synchronisation | 28 | - clip holder |
| 17 | - lock / unlock toggle lever | 32 | - pressure roller |
| | 17a - working position | 33 | - pressure clip |
| | 17b - open position | 35 | - driving roller |
| 18 | - print head position fine adjustment | 41 | - lock / unlock flange |
| 21 | - printing roller | 45 | - label unwind holder |
| 23 | - print head assembly pressure spring | 102 | - rewinding shaft |
| 25 | - lock / unlock print head lever | 105 | - print head assembly |
| | 25a - working position | | |
| | 25b - open position | | |
| | 25c - cleaning position | | |



PICTURE 5

5. INCOMING INSPECTION

- * Proceed with label loading, see chapter 7.
- * Connect the printer to the computer via serial cable or USB cable or Ethernet networking.
- * For further details see chapter 8 "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

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.**

5.1. LABEL FORMAT SET UP PROCEDURE

(SEE PICTURE 5)

The printer retains the label length and the 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 printing head up by rotating lever #25b.
- 3 - Thread the web between the printing roller and the printing head #21,105.
- 4 - Lift the pressure roller up by rotating lever #17b.
- 5 - Thread the web between the driving roller and the pressure roller #35,32 up to the rewinding

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.

shaft #102.

6 - Check web has been rightly positioned under the label photosensor #10.

7 - Move down the printing head and the pressure roller by rotating levers #25a and #17a.

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 lits light blue and the printer is ready to work.

6. PRINTING MEDIA DESCRIPTION

6.1. PAPER SPECIFICATIONS

White coated glossy printing paper

- weight: 65 ÷ 90 g/mq (ISO536)
- caliper: 0,075 ÷ 0,083 mm (ISO534)

ADHESIVE SPECIFICATIONS

- peel adhesion(90° C): 430 N/m
- service temperature: -20° C ÷ + 70° C

LINER SPECIFICATIONS

- BG 40 brown, supercalendered glassine
- weight: 65g/mq (ISO536)
- caliper: 0.057 mm (ISO534)
- transparency: 45%

SUGGESTED MODELS

- Fasson Fasthermal NT
- Kanzaki KPT 86-H

LABEL DIMENSIONS See Chapter 1

7. LABEL ROLL REPLACEMENT

7.1. 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 lever #25b, lift the printing head #105 from the feed roller #21, setting the movement of labels free.

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

Remove clip #28 from the rewinding shaft #102.

Remove backing paper from the rewinding shaft.

Remove the first 50 centimetres from liner of the new roll labels.

Hold pressure clip #33 up and feed the liner through the path, thread the web between the printing roller and the thermal head #21,105, then around the driving roller and under the pressure roller #35,32, finally slide the liner on the rewinder unit #102 and fasten it with the clip holder #28.

Turn the rewinder to stretch the paper.

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

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

Check pressure clip #33 has been positioned between centre and outer side of the label.

WARNING: Italora OEM printer mechanisms must operate only in peel-off mode with backing paper rewound by toggle lever rollers. Any other print mode (strip form, tear-off, etc.) is not allowable and cause an incorrect paper feeding and bad printout quality.

8. PARAMETERS SETTING, DISPLAY AND KEYBOARD

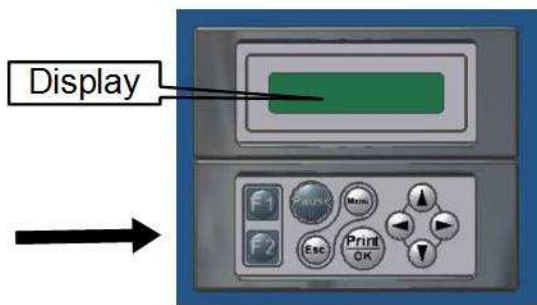
8.1. KEYBOARD

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 Print-Head (0 - 150 %), accordingly increasing the Print Contrast

- DOWN Arrow
 - Decrease the energy percentage supplied to the Print-Head (150 - 0 %), accordingly decreasing the Print Contrast
- **WARNING:**
a too high percentage may seriously damage the Print-Head 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 "Output Commands"
(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

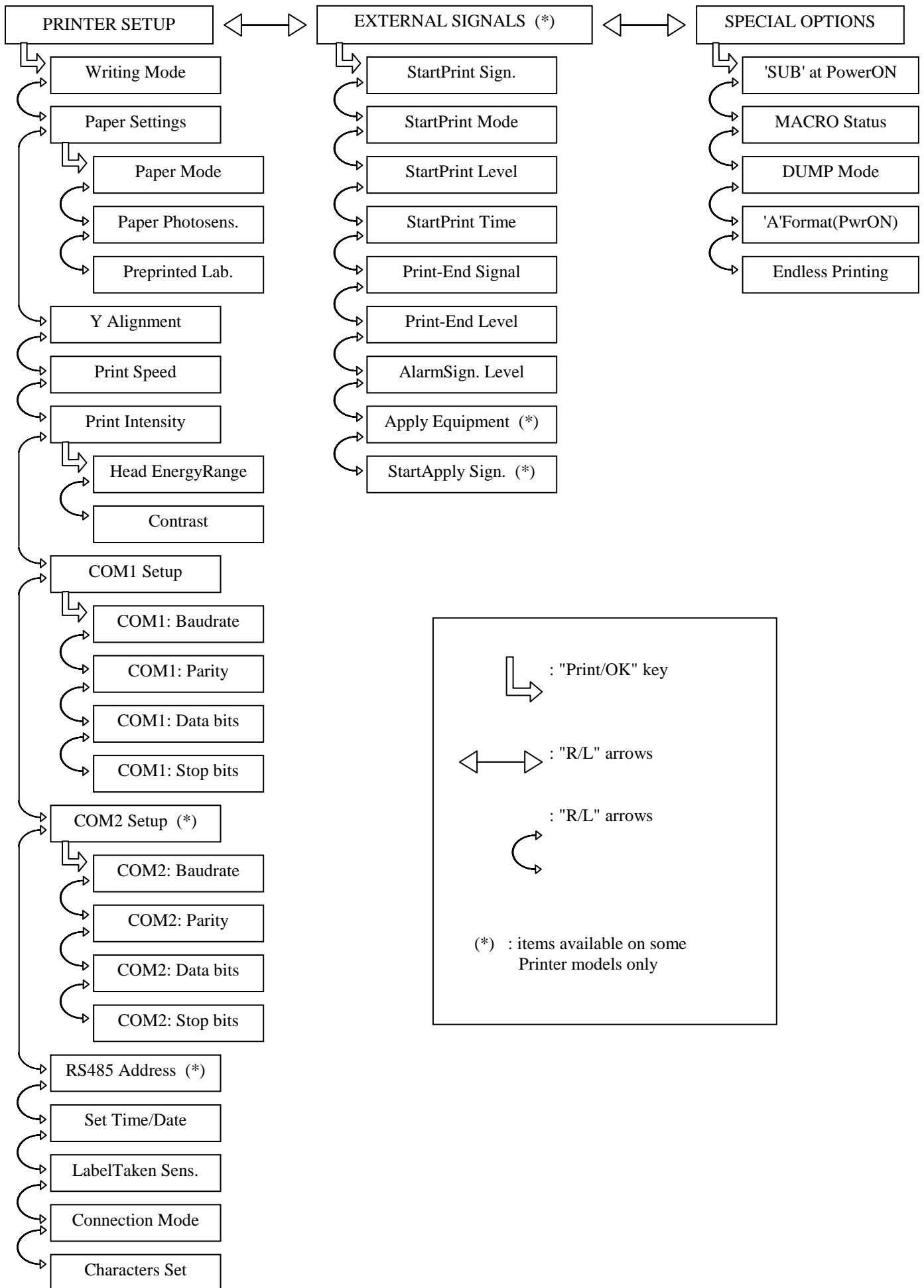
Features available with Printer in "Batch Print" operating mode.

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:

- 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:
 - Head EnergyRange
limitation of the energy supplied to the Print-Head:
 - 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 Print-Head (Print Contrast)
- COM1 Setup
Serial communication settings for "COM1" Port
 - COM1: BAUDRATE
 - COM1: PARITY
 - COM1: DATA bits
 - COM1: STOP bits
- COM2 Setup (available on "two-RS232 COM Port" models only)
Serial communication settings for "COM2" Port
 - COM2: BAUDRATE
 - COM2: PARITY
 - COM2: DATA bits
 - COM2: 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:

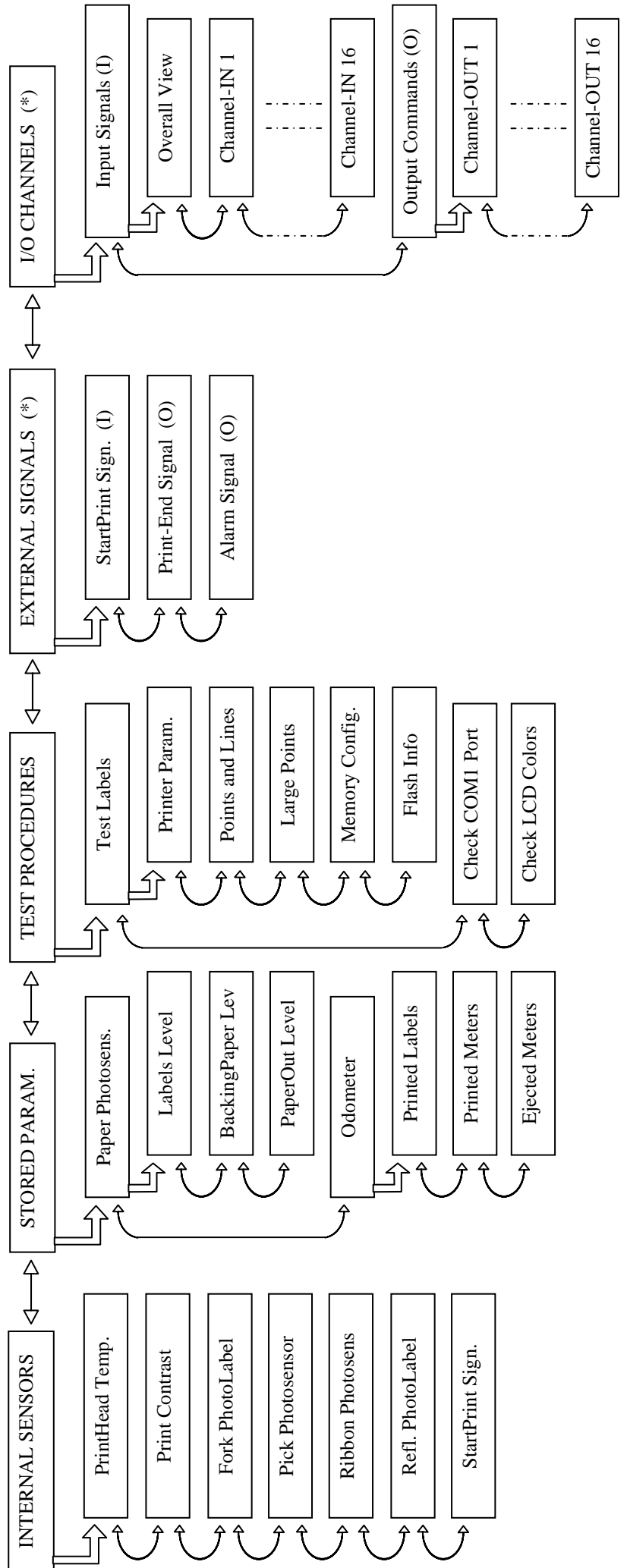
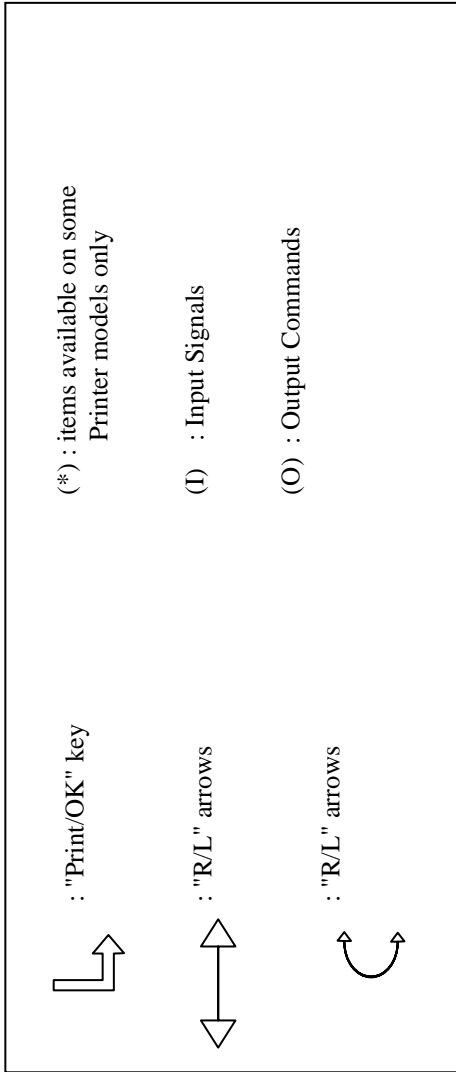
- StartPrint Sign.
Enable/Disable Start-Print Signal
- StartPrint Mode
Start-Print Signal operating mode selection
- StartPrint Level
Set the Start-Print Signal logic level of activation
- StartPrint Time
Set the Start-Print Signal minimum period
- Print-End Signal
Print-End Signal operating mode selection
- 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

Debug Menu



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.: Print-Head 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 Photosens: value read from Inked Ribbon Photosensor
- Refl. Photolabel: value read from Print Media Photosensor (Reflection type)
- StartPrint Sign.: Start-Print Signal value

STORED PARAM.

- o 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
- o 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

- o Test Labels
print of Test/Check Labels:
 - Printer Param.: Printer operating settings (also called "Printer Test Label")
 - Points and Lines: Print-Head dots integrity check pattern
 - Large Points: Print-Head dots integrity check pattern
 - Memory Config.: Printer's memories settings
 - Flash Info: Printer's Flash Memory settings
- o Check COM Port
serial communication check procedure (available for "COM1" Port only)
- o 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")

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

8.2. 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
 - browsing the "RAM Memory Backup" 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)

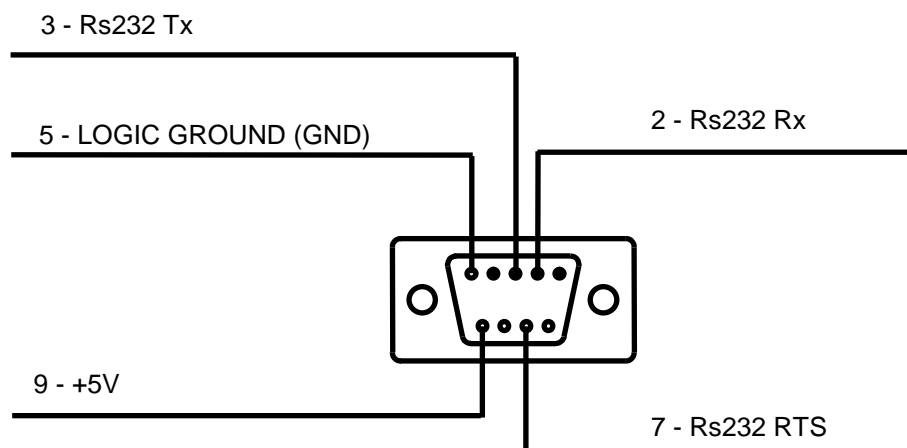
9. INTERFACING

9.1. SERIAL INTERFACE

Printers **EH 53/8** 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

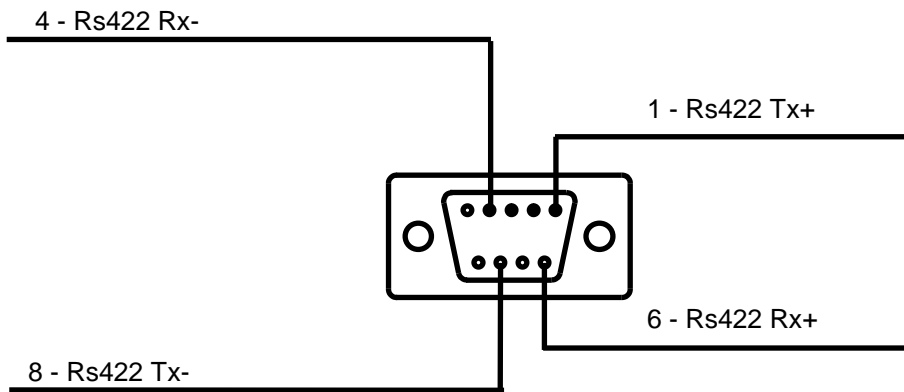
Connector pinout is



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:		COMPUTER CONNECTOR:	
-using sw protocol XON/XOFF:		-using sw protocol XON/XOFF:	
short together PINS 7-8 and 1-4-6.		short together PINS 4-5 and 6-8-20.	
-using hw protocol CTS/RTS:		-using hw protocol CTS/RTS:	
short together PINS 1-4-6.		short together PINS 6-8-20.	



HANDSHAKE PROTOCOL

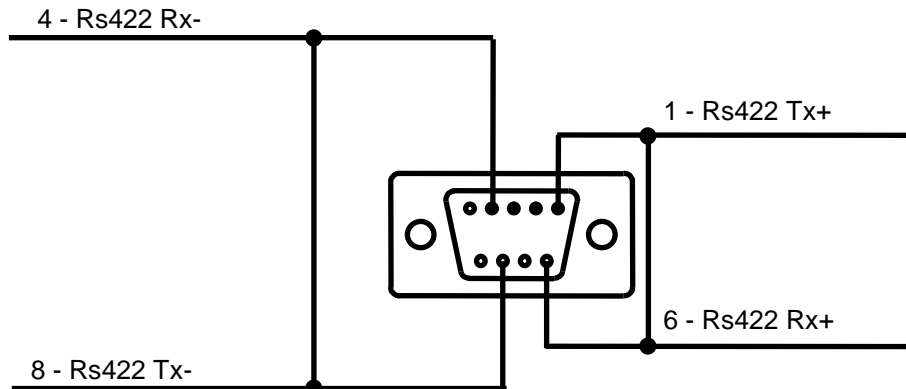
Rs422 serial line has no handshake protocol.

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.

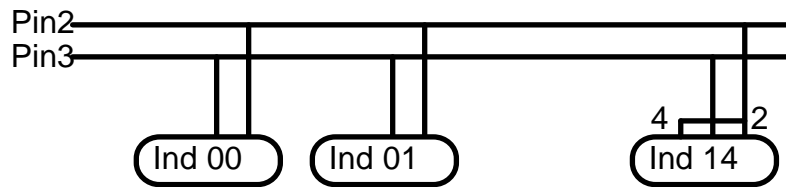
Connection to personal computer may be done in different ways based on used converter.

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).



HANDSHAKE PROTOCOL

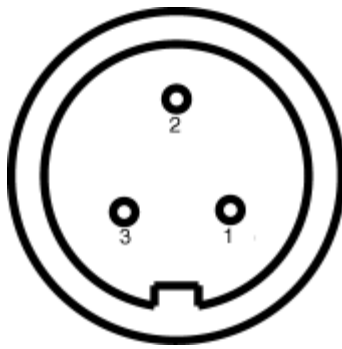
RS 485 serial line has no handshake protocol.

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.

9.2. I/O SIGNALS

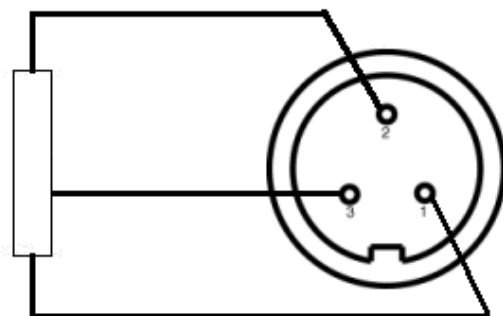
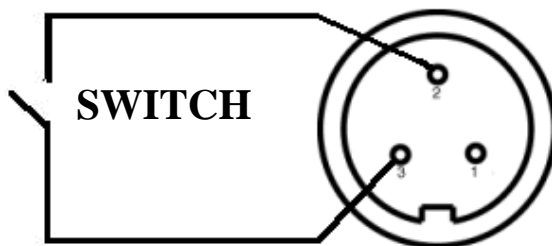
Printers **EH 53/8** are provided of two optoisolated lines for I/O signals: one input and one output.



- | |
|--|
| <ol style="list-style-type: none"> 1) GND 2) +24V 3) INPUT - START PRINT signal |
|--|

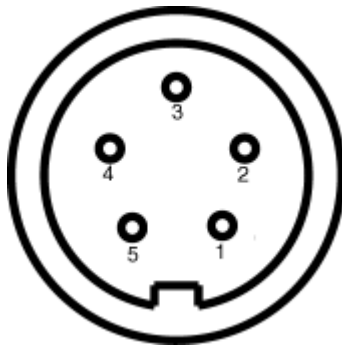
3 poles, female, START PRINT signal
Internal view, soldering side

PHOTOCELL



Input signal

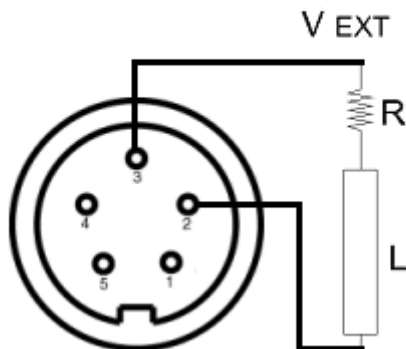
Internal circuit resistance = 1800 Ohm



- | | |
|----|-----------------------|
| 1) | GND |
| 2) | +24V |
| 3) | OUTPUT - ALARM signal |
| 4) | unused |
| 5) | unused |

5 poles, female, ALARM signal
Internal view, soldering side

ALARM



Output signals

Alarm

V = internal tension

I = current

R = Current limiting resistance of external circuit

L = Load impedance of external circuit

V = internal +24 Volt

Output transistor can drive up to 1 ampère.

$$I = V/(R+L)$$

$$I_{max} = 1A$$

V (Volt)	I (mA)	R + L (Ohm)
24	10	2400
24	20	1200
24	50	240

suggested values in **bold**

10. MAINTENANCE

WHEN NOT IN USE:

- SWITCH OFF POWER

- ALWAYS LIFT UP THE PRINTHEAD AND THE TOGGLE LEVER MECHANISM

10.1. CLEANING

Print Head

- Turn the power off.
- Wait until thermal head cools down.
- Lift the print head by using the lever on position 25c
- Remove labels.
- Moisten a cotton cloth with denatured alcohol.
- Polish the below 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 print head.

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

11.1. 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 YELLOW:

- head temperature control active, printer stops until temperature has fallen to normal values.

11.2. INCORRECT LABEL ALIGNMENT

Make sure that:

- print head is closed (pict.5,#25a)
- toggle lever is closed (pict.5,#17a)
- paper position under the photosensor (pict.5,#10)
- backing paper is correctly rewound (pict.5,#102)
- pressure clip (pict.5,#33) is positioned

between centre and outer side of the label.

- 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

11.3. PAPER SLIDES OUTSIDE

Check whether:

- pressure clip (pict.5,#33) is positioned between centre and outer side of the label.

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

11.4. PRINTING WITH PATCHES MISSING

Check whether:

- thermal print head needs cleaning (chapter 9)

11.5. BLANK LABELS

Check whether

- the print head connector is correctly plugged in

(pict.13,#112) with polarity key up.

11.6. POOR PRINTING CONTRAST

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

- UP Arrow

Increase the energy percentage supplied to the Print-Head (0 - 150 %), accordingly increasing the Print Contrast

- DOWN Arrow

Decrease the energy percentage supplied to the Print-Head (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

12.1. HOW TO CHECK ELECTRONIC BOARDS

- First unplug the power cable from the printer.

- turn the 4 rear and the 3 front screws out (pict.8a#114 - 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 electronic board from the chassis

Y3 = LCD

Y4 = stepping motor

Y5 = label photosensor

Y7 = serial port

Y15 = thermal head (power)

YGM = thermal head (signals)

Y17 = keyboard

Y18 = LCD

Y25 = start print

Y27 = alarm

Y29 = USB

Y30 = power supply

- disconnect the ground cable turning the chassis nut out

- unplug the main switch connector.

12.2. THERMAL PRINT HEAD REPLACEMENT

(SEE PICTURE 27)

1 switch the printer off .

2 unplug the connectors #112 from the print head.

3 lift print head by rotating the lever #25c.

4 turn the screw #130 out.

5 remove the adjusting nut #18.

6 pull out the print head and dissipater assembly from the pivot pin.

7 turn the screw #138 out and remove the print head #26 from the dissipater.

8 replace thermal head and run back steps 7 to 2.

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

9 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.

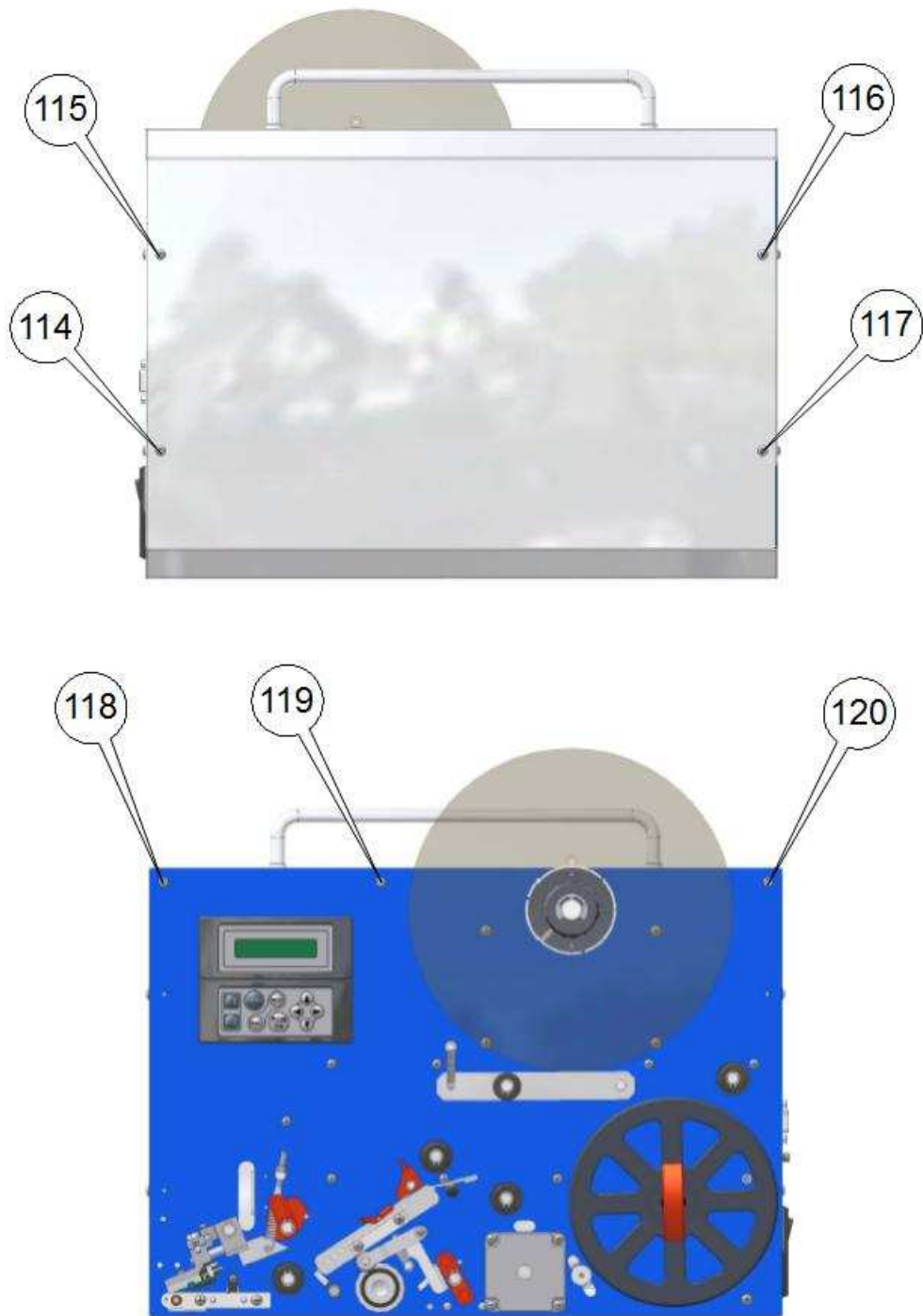
12.3. DRIVE BELT REPLACEMENT

(SEE PICTURE 29)

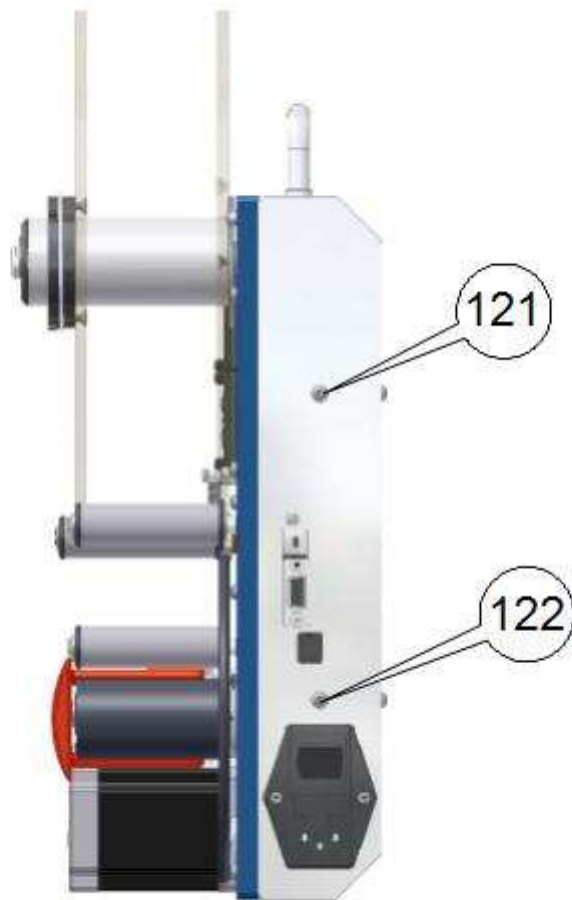
Loosen the relevant idler #16 to remove belt #34 or #36. Replace the belt and stretch it by the idler till you

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

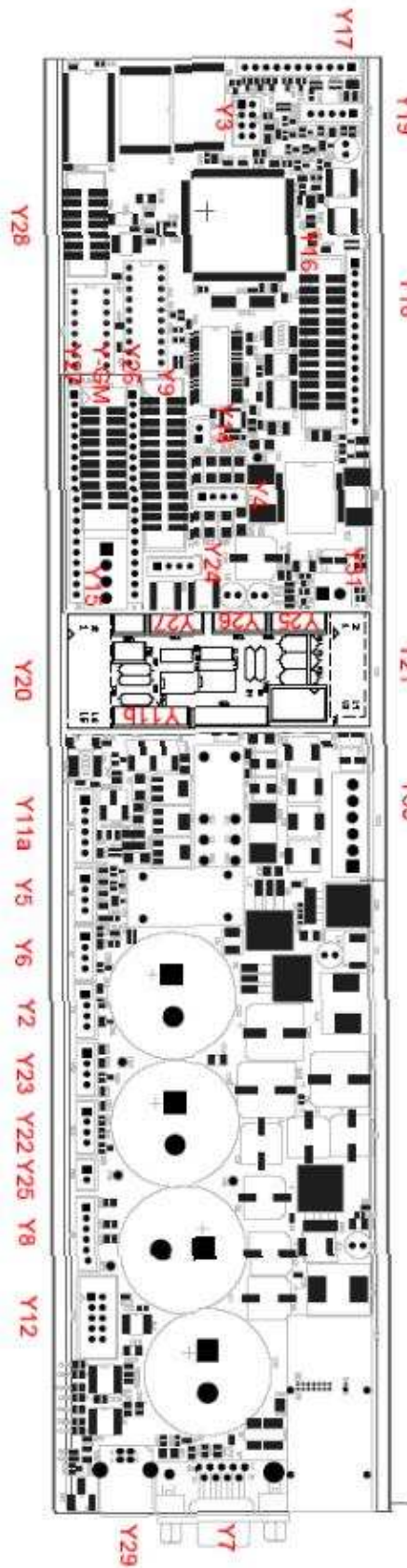
13. PICTURES



PICTURE 8a



PICTURE 8b

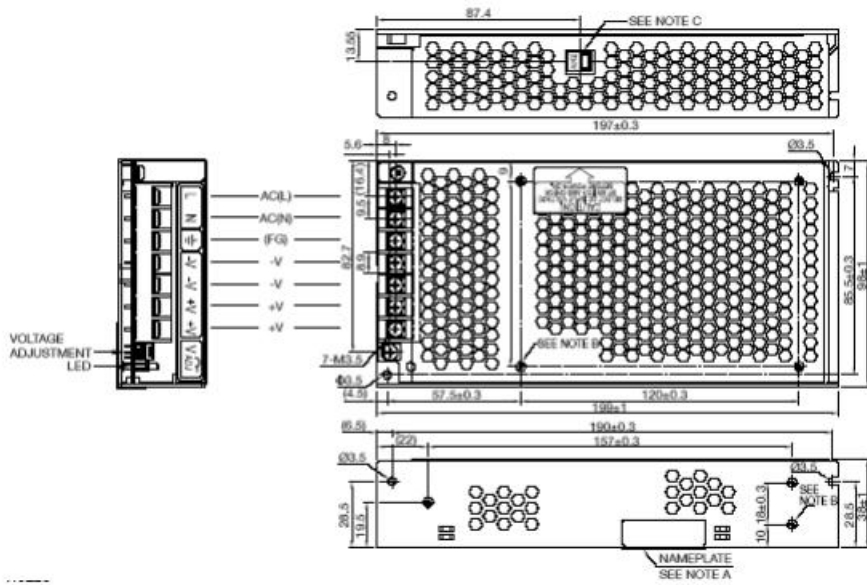


EH 53/8

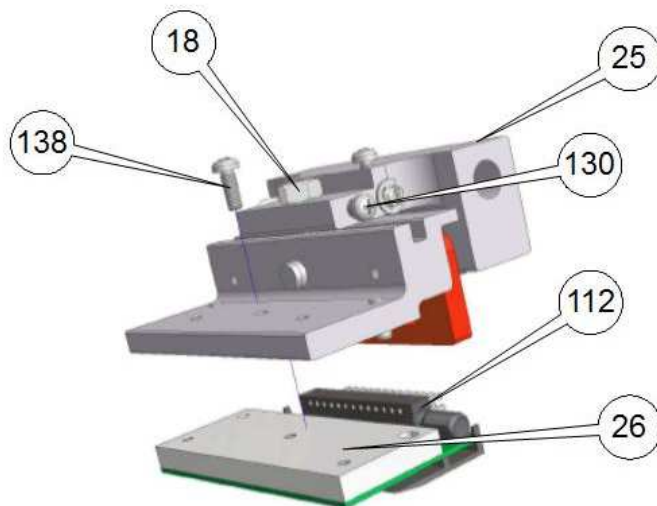
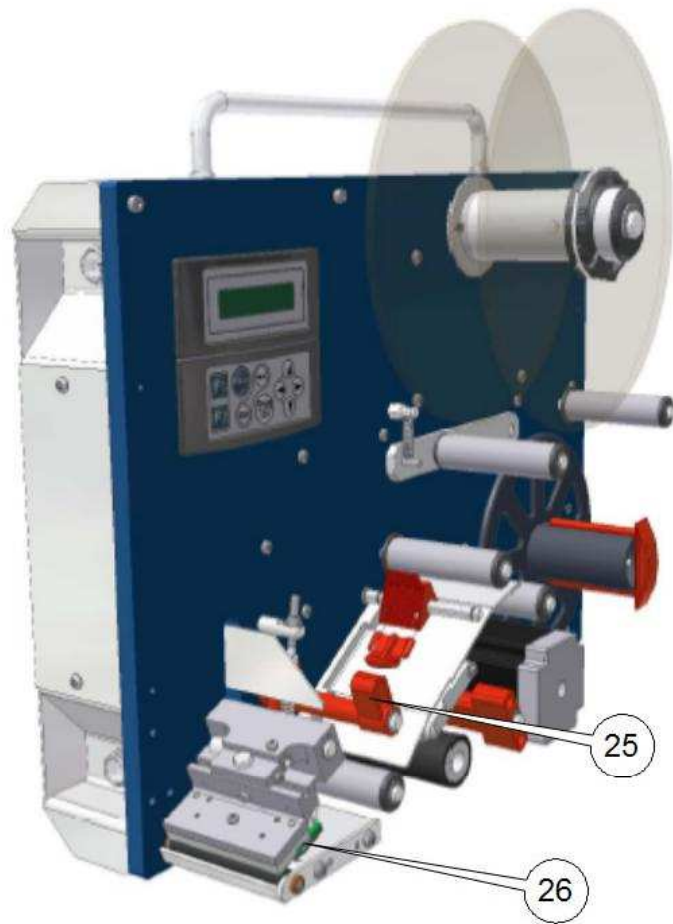
- Y1
- Y2
- Y3 LCD
- Y4 Motor
- Y5 Label sensor
- Y6
- Y7 Serial port
- Y8
- Y9
- Y10
- Y11
- Y12
- Y13
- Y14
- Y15 Thermal head GM (power)
- YGM Thermal head GM (signals)
- Y17 Keyboard
- Y18 LCD
- Y19
- Y20
- Y21
- Y22
- Y23
- Y24
- Y25 Start print
- Y26
- Y27 Alarm
- Y28
- Y29 USB
- Y30 Power supply

PICTURE 21

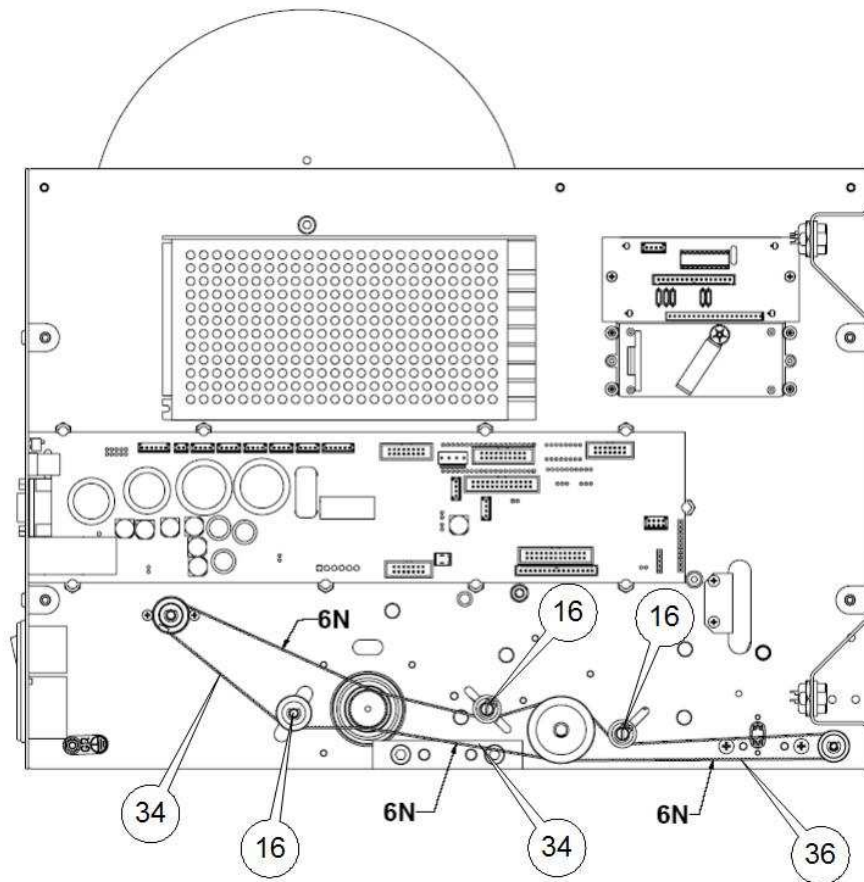
LOGIC BOARD - layout



PICTURE 23 POWER SUPPLY - layout



PICTURE 27



PICTURE 29

14. PART LIST AND RELEVANT PICTURES

(items are referred to following pictures)

ITEM	CODE	DESCRIPTION	EH 53/8 GM 8 dots
1	800822960	keyboard	*
2	059006460	DIN 3 connector	*
3	800925620	printing roller plate	*
5	056102080	fuse 2A T	*
8	059006490	DIN 5 connector	*
10	809065080	label photosensor assy	*
11	800943880	display assy	*
13	800822990	power supply	*
15	800877000I2	logic board	*
16	800925310	belt idler assy	*
17	80076209002	lever	*
18	801312400	nut	*
19	061702050	bush	*
21	809032120	printing roller	*
22	800926630	heat dissipater assy	*
23	800742100	printhead lever spring	*
24	809062150	peeling plate	*
25	800925880	printhead lever	*
26	800822770	thermal print head (8 dots GM)	*
27	809032200	lever spring	*
28	800762340	clip holder	*
31	059007040	print head flat cable 20 pins	*
32	059007270	print head cable 4 pins (power)	*
33	810940029	media position holder assembly	*
34	800782360	belt	*
35	800925600	driving roller	*
36	809062170	belt	*
40	800742070	spring	*
41	801602090	fixed flange assy	*
43	800722541	tie rod	*
44	800925690	printing roller pignon	*
45	800925720	label unwind holder	*
46	800926240	movable flange assy	*
47	801312220	backing paper rewinder pignon	*
49	800949940	stepper motor assy 8 dots	*

