CODAIRE-NP/SK

Operation Manual

(v1.3)

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Safety Precautions

1) Ensure that there is no flame or arc generating device within 15 feet of the Printer because the Ink may be flammable.

2) Do not insert any metal matter such as tweezers or screwdriver into the ink ejection hole of the Print Head.

3) Before opening the Machine Case be sure to shut off the power supply.

4) Never drain the ink or flush (if used) into a public sewer system.

5) While the Printer is operating do not face the Print Head nozzle to avoid the ink and/or flush splashing into your eyes or mouth.

6) Operate carefully while the Printer is on because the ink and flush in some portions of the piping tubes are pressurized. If the ink or flush enters your eyes or mouth immediately flush with clear water and seek medical assistance if needed.

7) Switch off the machine when any emergency occurs.

8) The Printer must always be well grounded during use.

1. Introduction

CODAIRE-NP/SK is designed and manufactured to be an affordable and dependable industrial Inkjet Printer. It uses an ARM Cortex M3 Microcontroller, based on the highly integrated SOP system, CODAIRE-NP/SK Printers are very stable in industrial applications with strong anti-interference ability; These Printers are self-contained, including an internal air source, and are especially suitable for on-site environment in poor/dusty environments. A single message can include 100 characters. Character's height is: 20-50mm; optionally: 50-100mm. Unit's can store 100 message files; and can print not only numeric digits, letters, and some symbols, but also variable data such as time, date, shift, count, etc. The print dot size, char's height, char's width, char's inverse, char's reverse, char's string reverse and print delay can be set from the keypad and is very intuitive for easy message input and operational changes.
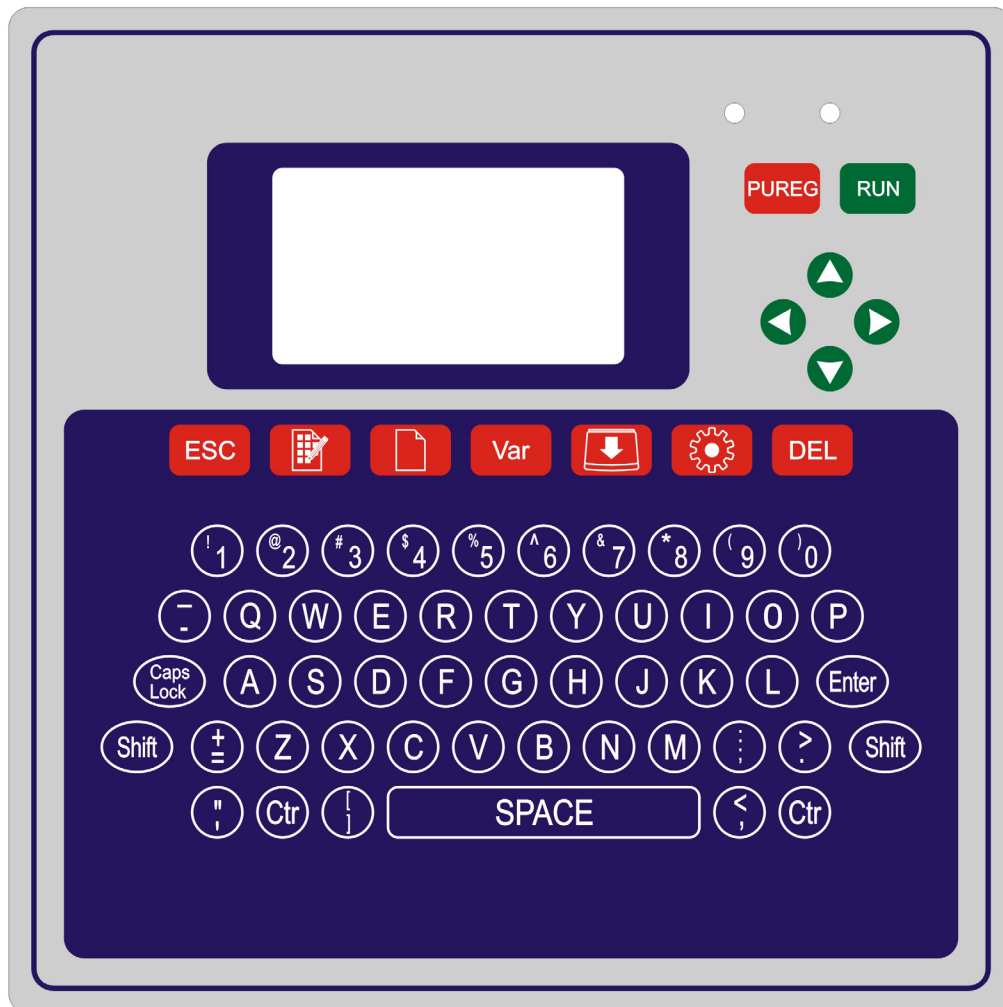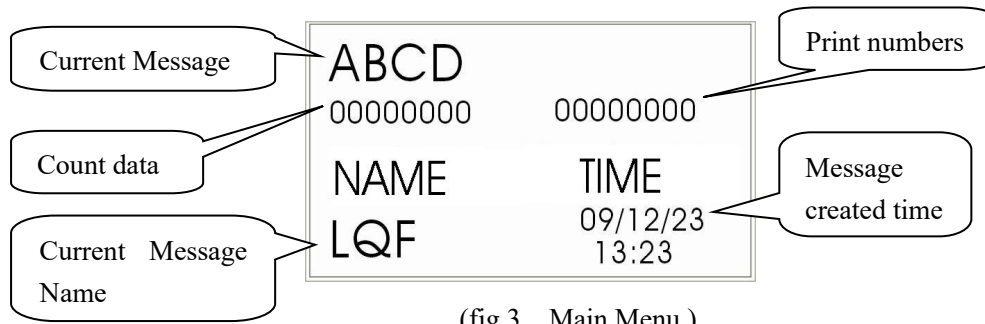
(fig. 1 Front Panel)
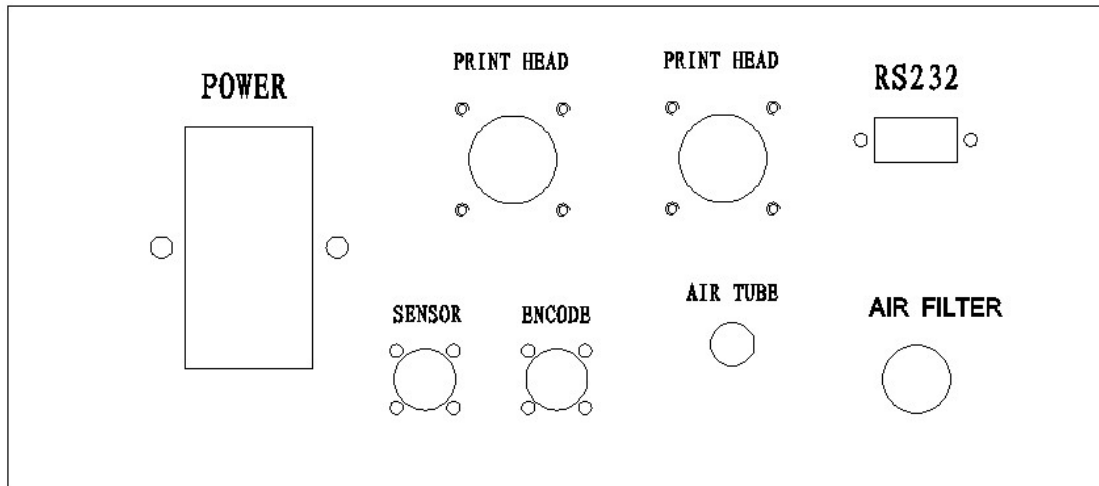
(fig. 2 bottom panel)

2. Technical Specifications

Height of Character：   CODAIRE-NP/SK 20 - 50mm; 50 - 100mm Optional

Print Speed：   0.2m~91m/min

Nozzle Counts: CODAIRE-NP/SK: 16 or 32

Fonts：   CODAIRE-NP/SK: 5X5,5X7,7X9,10X16,16X16

           Option: 5X5、5X7、7X9、10X16、16X16、16X24、24X24、22*32、32X32

Print Function：   Std., Inverse or Reverse

           Increments/Decremental Count, Timer, Date, Shift, etc.

Print Distance：   5~30 mm

Memory：   100 Files - each file can store up to 100 characters with a 5 x 7 Matrix

           (For file capacity over 100 messages please consult factory)

Power：   110 - 220 AC $\pm$ 10%; 50 Hz./60 Hz.

Environment conditions： Temperature：0℃ – 45℃

           Relative Humidity：10−90% (non-condensing)

Ink Types: MEK, Water, Alcohol/N-Propanol, Ammonia, etc.

Chassis dimensions：(mm) 330 x 250 x 125

Print Head Size：   CODAIRE-NP/SK: 170 x 40 x 60 mm's.

3 System Operation

After Power on, the Main Menu is displayed as shown below:

Current Message

Count data

Current　Message Name

Print numbers

Message created time

ABCD
00000000　　00000000
NAME　　　TIME
LQF　　　09/12/23
　　　　　13:23

(fig.3　Main Menu)

Each message file includes both the print text and print parameters.

：Press this key to enter edit status of current message file.

：Press this key to create an new message file.

Var：In edit status, press this key to insert the variable data

：Press this key to load the message to print, when loading successfully,

the buzzer beeps 3 times.

：Press this key to set system parameters.

HH：Press this key to change the text's current height selection.

3．1　Create a new file

When there is no message file in the device, it is necessary to create a new file.

Press "[icon]" key; it is the prompt to input the file name in the LCD screen, you can input 3 characters as file name, and press "ENTER"to confirm it. After inputting file name, it will display the created file name and created time in the LCD screen, and this file's text is null and the print parameters are default.
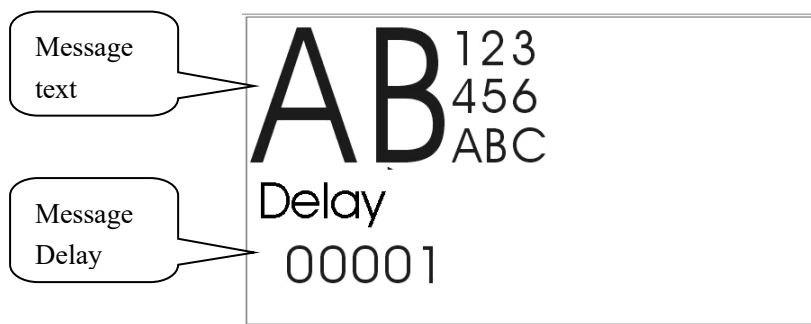
3．2　Chose the file

If there is the icon [icon] on the right of file name in Main Menu, this means that there are more message files in the device (the max. 100 files in the CODAIRE-NP/SK); then in the STOP print status, you can press "UP" or "DOWN" key to choose a different file.

3．3　Edit the file

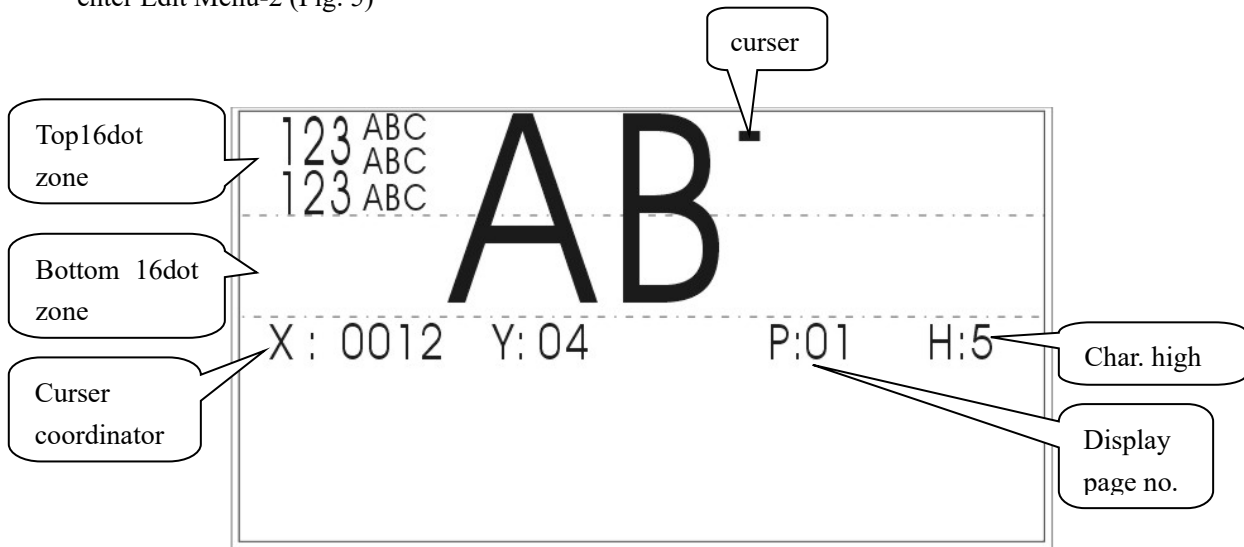In the Main Menu, press "[icon]" to enter the message editing status (fig.4 Edit Menu-1).

3.3.1 Edit menu 1

(fig.4　Edit Menu-1)

While the curser is flushed on the top-left of 1'st section, you can press again to enter Edit Menu-2 (Fig. 5)

(fig.5 Edit Menu-2)

NOTICE:

1> FOR CODAIRE-NP/SK YOU CAN EDIT THE MESSAGE IN THE TOP AND BOTTOM 16 DOT ZONE BUT YOU CAN PRINT THE MESSAGE IN THE TOP 16 DOT ZONE ONLY WHILE THE MESSAGE IN THE BOTTOM 16 DOT ZONE IS NOT BEING PRINTED.

2> THE START POSITION IN ANY SECTION IS TOP LEFT CORNER.

1) **Create new section:**

Move the cursor to the Top-left corner of the message section for locating the message section's start position, the message section is composed by text or variable Text Input.

In above Edit Menu-2 (Fig. 5), press to display fig.6,
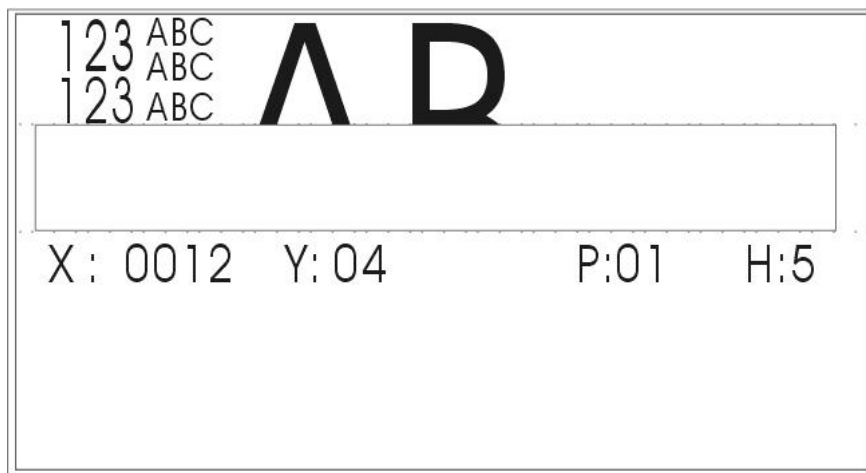
(fig.6 Edit Menu - 3)

then you can press any key to input text characters in cursor position, and press to change current section char height:

5 ： 5*5

7 ： 5*7

9 ： 7*9
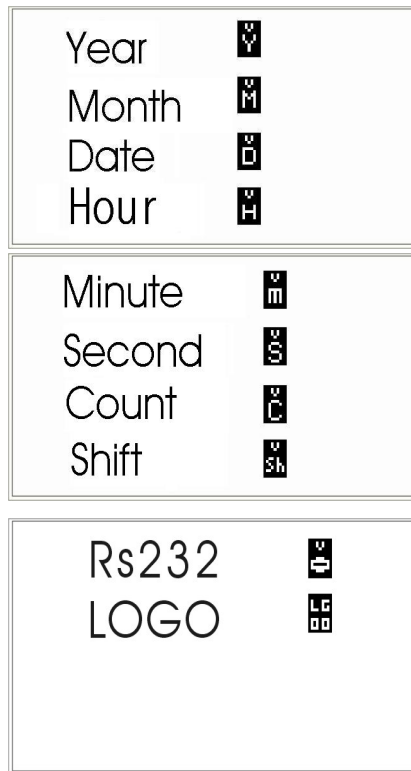
16： 10*16

24： 16*24 (**CODAIRE-NP/SK Optional**)

32： 22*32 (**CODAIRE-NP/SK Optional**)

After end of inputting text content, you should press "ENTER"to confirm the creation of new section.

2) Variable Input

In above Edit Menu-2 (Fig. 5), press " " to enter Insert Variable Menu as below：

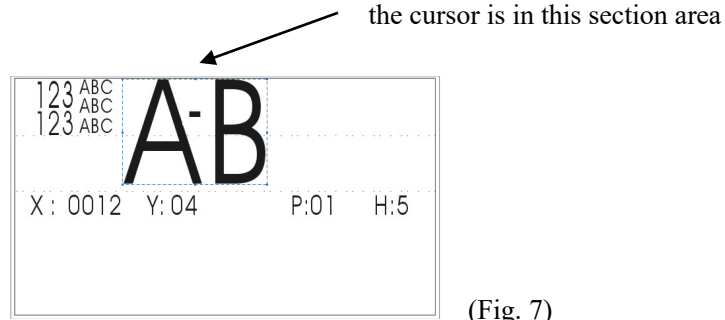(Insert Variable Menu)

Press " ↑ " " ↓ " key to choose what you want to insert as the variable item, then

1) press "ENTER" to confirm for inserting selected variables;

2) if selecting <Year>,<Month> or <Date>, press " SHIFT+ENTER " to insert <Expire Year>,<Expire Month> or <Expire Date>.

3) Move the section location and modify the content

When the cursor is in the section area, as fig. 7:

the cursor is in this section area

(Fig. 7)

---- Press "SHIFT" + "↑" "↓" "→" "←" to move the section's position;

---- Press "SHIFT" + "R" to mirror this section using for printing on other side of the same box when CODAIRE-NP/SK with 2x7 dot print head or optional with 2x16 dot print head as below:
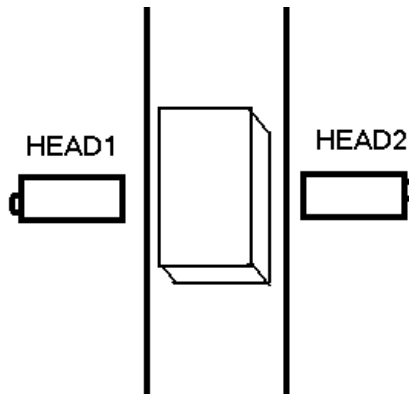
---- Press [icon] to modify the section's content but the variable cannot be modified.

4) **Setup print delay**----In Edit Menu - 1(Fig. 4), move the cursor to "Delay" item, then you can set the print delay parameter.

Delay：（0~60000）

Print delay---the time from the sensor detecting the product to the print head starting printing,

Which unit is print stroke.

3.3.2 Edit menu 2

In Edit Menu-1(Fig. 4), press "↓" "↑" to enter the Edit Menu-2, than you can set the print speed and rotate parameter.

(Fig. 8)

Speed：（0~500）

Max. Speed is 90m/min.

Rotate factor：(0~90)　(Slant printing)

While Rotate factor = 0, the print head is not rotated; If the rotate factor above 0, the print head can rotate for appropriate print height, meanwhile, you should change the speed for getting appropriate char width: the speed increase 10, the char width increase 1, the total char width is 50 step to change.

3.3.3 Edit menu 3

In Edit Menu-1(Fig. 4), press " ↓ "" ↑ "to enter the edit menu-3, than you can set the print reverse and invert parameter.
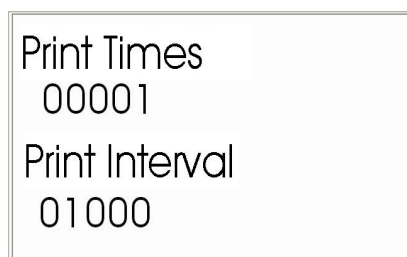
```
Reverse
  NO
Invert
  NO
```

(Fig. 9)

Message Reverse: Change the direction of print from left to right or right to left

Message Invert: The message will be invert up and down.

3.3.4 Edit menu 4

In Edit Menu-1(Fig. 4), press　" ↓ " " ↑ " to enter the edit menu-4, than you can set the print time and print interval parameter.

```
Print Times
  00001
Print Interval
  01000
```

(Fig. 10)

Print Times （0~65535）：

Print times for optical sensor when activated 1x. 0 means continuous print.
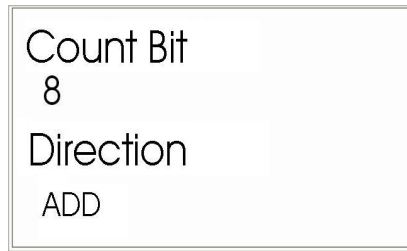
Print Interval （0~65535）：

Print Interval is for interval of multi-printing when optical sensor is activated once.

3.3.5 Edit menu 5

In Edit Menu-1(Fig. 4), press　" ↓ " " ↑ " to enter the edit menu-5, than you can set the count bit
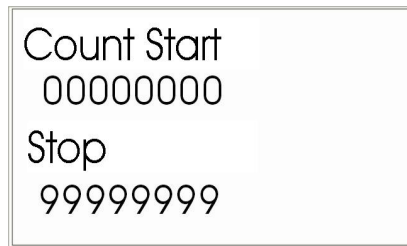
and count direction parameter

Count Bit
8

Direction
ADD

(Fig. 11)

Count Bit(1~8)：1-8 digits count.

Count Direction：increase count or decrease count.

3.3.6 Edit menu 6

In Edit Menu-1(Fig. 4), press "↓""↑"to enter the Edit Menu-6, than you can set the count start and count stop parameter

Count Start
00000000

Stop
99999999

(Fig. 12)

Count, Start and Stop data.

Note: If press **Shift** + [image], the Counter start from this Count Start; if press [image] only, then the Counter start from last count number.

3.3.7 Edit menu 7

In Edit Menu-1(Fig. 4), press "↓""↑"to enter the Edit Menu-7, than you can set the count step and count interval parameter

Count Step
00001
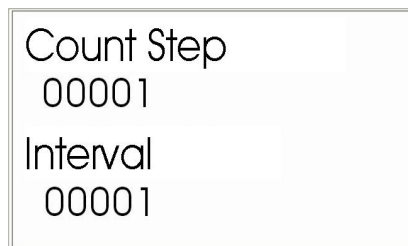
Interval
00001

(Fig. 13)

Count Step（1~65535）：After end of one count interval, count number increase / decrease one step
Count Interval（1~65535）：After end of one count interval, count number increase / decrease one step

3.3.8 Edit menu 8

In Edit Menu-1(Fig. 4), press "↓""↑"to enter the Edit Menu-8, than you can set the count loop

and lead zero parameter

```
Count Loop
 00001
Lead Zero

 yes
```

(Fig. 14)

Count Loop（0~65535）：Shows when the Count Number get to the stop count and repeats.
Lead Zero：The leading '0'char in the counter print out --yes or no.

3.3.9 Edit menu 9

In Edit Menu-1(Fig. 4), press "↓""↑"to enter the Edit Menu-9, than you can set the encode and shift count parameter

```
Encode
 000
Shift Count

 1
```
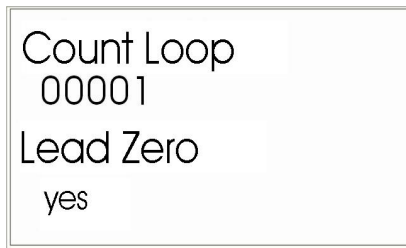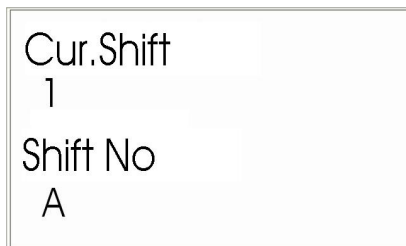
(Fig. 15)

Encode factor（0~300）：The number is the factor for encoder pulses. If encode factor = 000, the system does not have an Optional Encoder.
Shift Count (1~8)：The number is the total shift numbers.

3.3.10 Edit menu 10

In Edit Menu-1(Fig. 4), press "↓" "↑" to enter the Edit Menu-10, than you can set the current Shift and Shift No. parameter

```
Cur.Shift
 1
Shift No

 A
```

(Fig. 16)

Current Shift: Setup current shift number.
Shift No: Setup current shift Character.

3.3.11 Edit menu 11

In Edit Menu-1(Fig. 4), press " ↓ "" ↑ "to enter the Edit Menu-11, than you can set the shift start and pre-print parameter

```
Shift Start
  00 : 00
Pre-Print
   No
```

(Fig. 17)

Shift Start: Setup the shift start time.

Pre-Print: Enable or Disable the pre-print of print nozzle.

3.3.12 Edit menu 12

In Edit Menu-1(Fig. 4), press " ↓ "" ↑ "to enter the Edit Menu-12, than you can set the total count and char interval parameter

```
Total
  00000000
Char Gap
  01
```

(Fig. 18)

Total：The total printed count number

Char Gap（0~10）：the character interval which unit is strokes ((*CODAIRE-NP/SK not available*)).

3.3.13 Edit menu 13

In Edit Menu-1(Fig. 4), press " ↓ " " ↑ " to enter the Edit Menu-13, than you can set the dot size and slash zero parameter

```
Dot Size
  0001
Slash Zero
   Yes
```
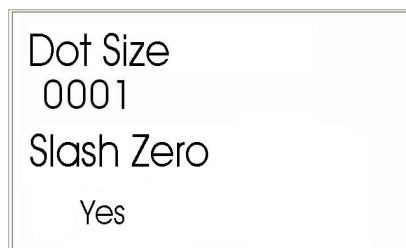
(Fig. 19)

Dot Size（0~1000）：Setup the print dot size.

Slash Zero ： Enable or disable the '0'char have slash.

3.3.14 Edit menu 14

In Edit Menu-1(Fig. 4), press "↓" "↑" to enter the Edit Menu-14, than you can set the data length and first char parameter in auto-variable transmission.
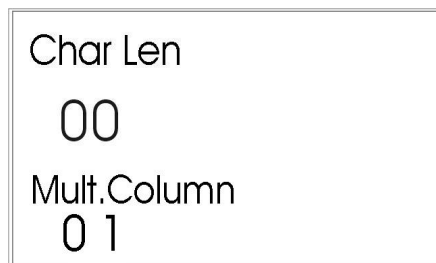
```
DataLen
  03
FirstChar
  02
```

(Fig. 20)

Data Length/First Char: see the detail on <the protocol of auto-variable transmission>

3.3.15 Edit menu 15

In Edit Menu-1(Fig. 4), press "↓" "↑" to enter the Edit Menu-15, than you can select:

Char Len (Max.=80) -- set the Char length in auto-variable transmission, see the detail on <the protocol of auto-variable transmission>.

Multi Colum (1~9) -- select how many vertical columns are printed for each character.

```
Char Len
  00
Mult.Column
  0 1
```

(Fig. 21)
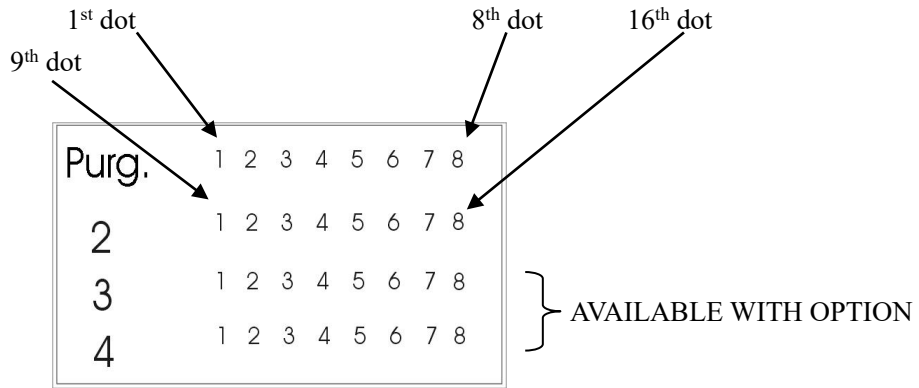
3.3.16 Edit menu 16

```
Valid  Days
 100
```

(Fig. 21A)

In Edit Menu-1(Fig. 4), press "↓" "↑" to enter the Edit Menu-16, than you can select:

Valid Days (Max.=9999)-- Input the "valid days" you wanted, it will automatically calculate the expire date for inserting in <Inset Variable Menu> (page 9)

3. 4 System Setup

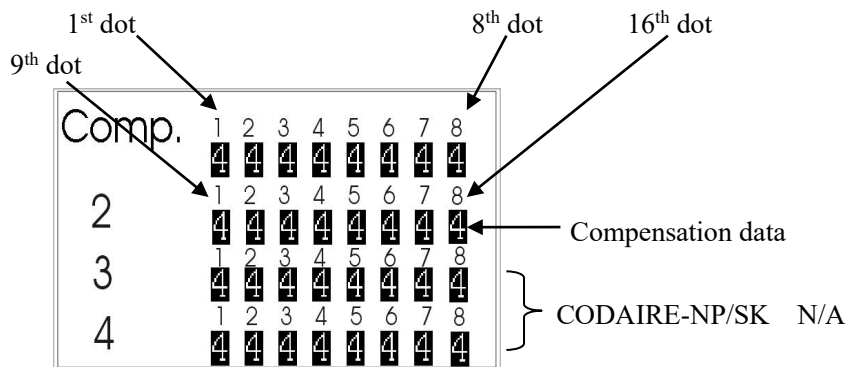In the Main Menu, press [icon] key to enter System Menu-1 as below:

1st dot   8th dot   16th dot

9th dot

Purg. 1 2 3 4 5 6 7 8
2   1 2 3 4 5 6 7 8
3   1 2 3 4 5 6 7 8 } AVAILABLE WITH OPTION
4   1 2 3 4 5 6 7 8

(Fig. 22)

3.4.1 Purge

Press 'Y' or 'N' to select the nozzle to purge, then press **PURGE** to start purge, after

purging press **PURGE** to stop purge.

3.4.2 Dot size Compensation

For modifying every dot size separately, in System Menu-1, press " ↓ " key to enter System Menu-2 as below:

1st dot   8th dot   16th dot

9th dot

Comp. 1 2 3 4 5 6 7 8
       4 4 4 4 4 4 4 4
       1 2 3 4 5 6 7 8
2   4 4 4 4 4 4 4 4 ← Compensation data
       1 2 3 4 5 6 7 8
3   4 4 4 4 4 4 4 4
       1 2 3 4 5 6 7 8 } CODAIRE-NP/SK   N/A
4   4 4 4 4 4 4 4 4

(Fig. 23)

You can press " → " " ← " " ↓ " " ↑ " to select which dot to modify, and press " SHIFT " + " ↓ " or " ↑ " to increase or decrease the selected dot size, the range of compensation dot size is 0-8(max. = 8)

3.4.3 Setup time and language

In System Menu-2, press "↓" key to enter System Menu-3 as below :

Time & Date
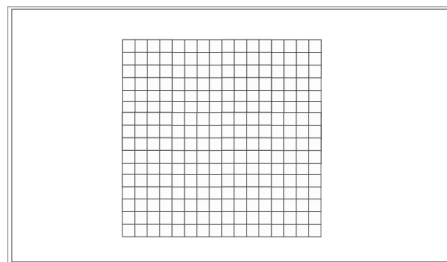09/12/12
09:23:23
Lang. CH
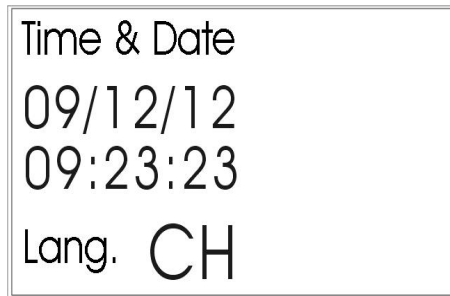
(Fig. 24)

Setup system clock: press "→" "←" to select time and date item;

Setup language: press "↓" to enter language item and press "→" "←" to select language:

EN: English, RU: RUSSIA, ES: SPAIN, FRE: FRENCH

3.4.4 Create LOGO

In System Menu-3, press "↓" key to enter System Menu-4 as below:

You can create logo in this menu, the size of one logo is 16X16 dot; you can make 110 logos totally:

1) Press "Y" key to write current dot or erase it;
2) Press "ENTER" auto-save the logo;
3) Press "SHIFT" + "↑" or "SHIFT" + "↓" to select saved logos to edit;
4) Press "DEL" to delete current logo.

4. Maintenance

Only use the cleaning liquid supplied by the equipment supplier to clean the machine. Refer carefully to the Section "Safety Precaution" before executing the maintenance. Don't use sharp items for the nozzle maintenance. Maintenance should be operated by a professionally trained technician.

Power switch must be off before any maintenance is executed.

4.1 Daily maintenance

Clean the Print Head Assembly and Product Sensor with an air gun after powering off.

4.2 Regular maintenance

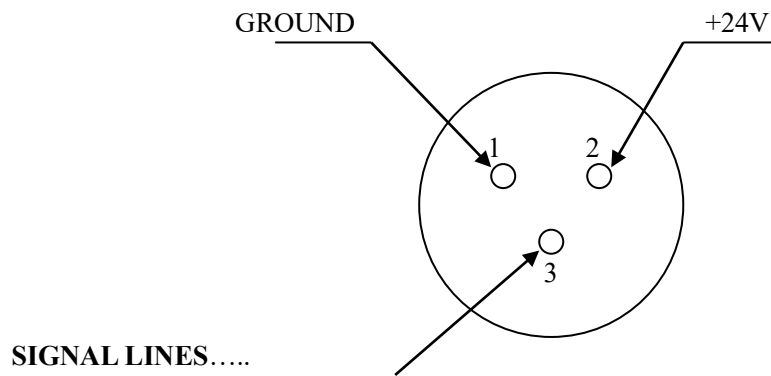The print head should be purged regularly. Replace the filter once per 12months.

When the nozzle is blocked, please refer following suggestion:

－－Check whether the air pressure and ink stream is usual or not.

－－Press the purge switch to see whether there are 7 ink lines (7 nozzle Printer) or 16 ink lines (16 nozzle Printer) shot out from the Printer's face plate.

－－Disassemble the plane of nozzle. (Turn the air pressure off first and loosen the ink joint.
If not, the ink stream will splash out even with very little pressure.)

－－Wash the plane of nozzle with appropriate cleaning liquid of solvent. (Use ultra-sonic method preferably). If ultra-sonic cleaning is unavailable immerse the plane of nozzle with cleaning liquid for 10 minutes.

－－Dry the plane of print head by clean air.

－－Push from the back of the nozzle to the front of it by the tungsten line supplied by Dalemark.

－－Carefully twist the plane of nozzle tightly to avoid any damage of the valve or rubber and to ensure no fiber and/or material is left on the plane of nozzle.

Caution: **The Print Head Cable can be disassembled only when POWER is switched off.**

5 Annex

Sensor Pins definition：

GROUND   +24V

1   2

3

SIGNAL LINES…..

Encoder's pins definition：

SIGNAL LINE   GROUND

1   2

4   3

+24V   NULL