Elfin IH

Handheld High Resolution Inkjet Printer

User Manual

Sojet Electronics(Xiamen) Co.,Ltd.

IMPORTANT

To ensure the best printing quality, we recommend using only our specified High Resolution Inkjet Printer of cartridges and the corresponding accessories. Any malfunction or poor printing quality caused by improper use of other kinds of inks or accessories will be not be guarranteed.

Safety Precautions

There is high voltage inside the machine when it is live. To avoid accident, maintenance or disassembly by unqualified or unauthorized person is strictly prohibited.

Do not expose ink to direct sunlight or high temperature (35℃ above). The heat of direct sunlight or high temperature will affect ink's storage life and print quality.

If you get ink spill on the eyes or skin during use, clean your eyes or skin by clean water.

Ink leakage inside printer can result in burnout damage to the machine. Switch off the machine and unplug it from power outlet when there's ink leakage inside printer. Contact qualified service technician for test and repair.

Warning Signs

Caution: The sign " ⚠ " indicates information for caution of possible damage to hardware of inkjet printer or data loss.

Attention: The sign " ✍ " indicates important notes helpful for your trouble-free operation of the machine.

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Please read this manual carefully before you use this equipment.

Introduction

Thank you for your purchase of Handheld High resolution printer. We want you to get helpful information for your work with this equipment; therefore we would like to explain a little bit about how to use this machine by this user manual by the following content:

- Important precautions for use of the machine
- Introduction of printer: Parts and components of the machine
- Setup and Installation Instructions: Instructions for Equipment Setup and Cartridge Installation.
- How to use the printer and the check work before/after use of the printer: explanations of general operation and startup/shutdown.
- Operation instructions: explanations on how to new/edit data for printing, and how to adjust printer settings.
- Care and Maintenance: Care and maintenance for printer and cartridge
- Troubleshooting: Common failures occurred and solutions
- Appendix 1 - Terms and Definitions: Definitions for terms used in this document.

Please read this user manual carefully before first use of the printer for full understanding and attention of important information so that you will get maximum use from your new equipment. This will also help you have a quick reference to related sections when you have any problems during use.

Note 1: If you cannot solve the problem encountered during use, please contact us for assistance.

Note 2: The information contained herein is subject to change without notice. The amended information will be updated in user manual by new edition.

Note 3: Any machine failure or damage caused by user's negligence in following this manual will not be covered by the warranty.

Chapter One: Important Precautions for Using Inkjet Printer

Welcome to use Handheld High resolution printer Printer. In order to protect your personal safety and user rights, ensure correct installation and operation, and full play of the machine, it is important that you read the precautions carefully.

⚠ 1.1 General Safety Precautions

1.1.1 Do not operate printer in explosion hazard area.

1.1.2 Do not operate printer when the printing object surface temperature exceeds 100℃.

1.1.3 Open flame or sparkle-hazard is not allowed in printing operation area.

1.1.4 Make sure the printing direction is not pointing to people, animal or any other object that may be blotted by ink.

1.1.5 See to the dust-proof and damp-proof of the printer.

Battery Protection: see to the following precautions for battery protection:

1.1.6 Do not get printer overheated or exposed to direct sunlight. Avoid printer from catching fire.

1.1.7 Avoid abrupt temperature change to the printer. The abrupt temperature change will cause vapor condensation expansion inside printer, and the expansion will lead to battery discharge and corrosion acceleration. Give one hour interval in room temperature environment before moving printer to high temperature environment from low temperature environment.

1.1.8 For your safety's sake, it is strongly suggested that you use our company's original batteries.

1.1.9 Do not use other batteries than suggested and do not disintegrate or modify original batteries. Otherwise, danger or machine failure may occur.

Note: Our Company shall not be liable for any accident or printer failure caused by your use of non-original batteries, disintegrated or altered batteries.

⚠ 1.2 Important Operation Precautions

1.2.1 Do not poke or impact the touch screen sharply.

1.2.2 Make sure that the positioning wheels roll on contact with printing object so as to keep throw distance controlled within 0.5-2.5mm.

1.2.3 Use Non-woven to wipe the nozzle plate when the print is not clear or dots are missing.

1.2.4 Make sure to insert or remove ink cartridge by an angle of 15 degree so as not to damage the cartridge.

1.2.5 Do not insert or remove ink cartridge while the machine is in printing process so as not to cause damage to the cartridge.

1.2.6 Do not use compressed air for cleaning the touch screen. High pressure of the compressed air will damage the touch screen.

1.2.7 Do not use compressed air for direct or indirect cleaning of the ink cartridge. High pressure of the compressed air will damage the nozzle plate.

1.2.8 Read Chapter Seven for troubleshooting when there's failure occurs. If you cannot solve the problem encountered, contact your local dealer or our after-sale service for assistance.

Note: Depending on properties, some ink cartridge may require to be removed from printer after use. Turn off the machine and remove the cartridge from printer. Wipe the printhead clean with Non-woven; cap the printhead with the designed cap for prevention of the nozzles from clogging. (Contact our after-sale service for ink properties information.)

Chapter Two: Installation and Setup Instructions

This chapter will illustrate how to set up the equipment and how to install an ink cartridge. Firstly please check the machine parts by looking at the packing picture and parts list.
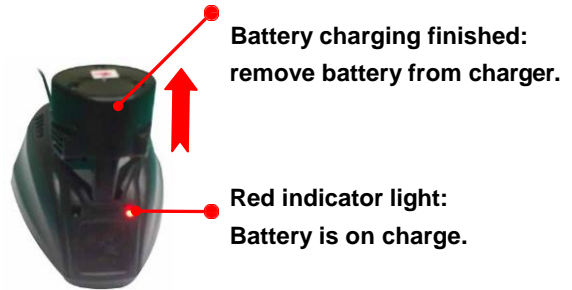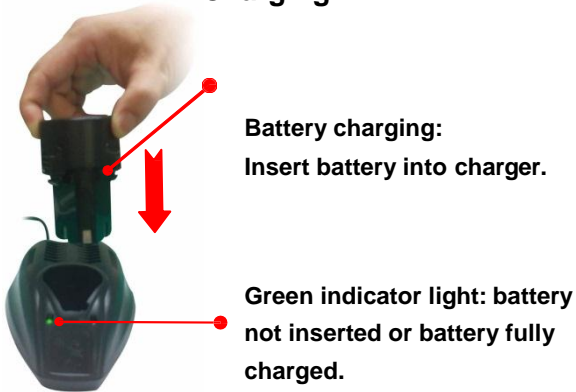
Packing Picture:	
Outer box	
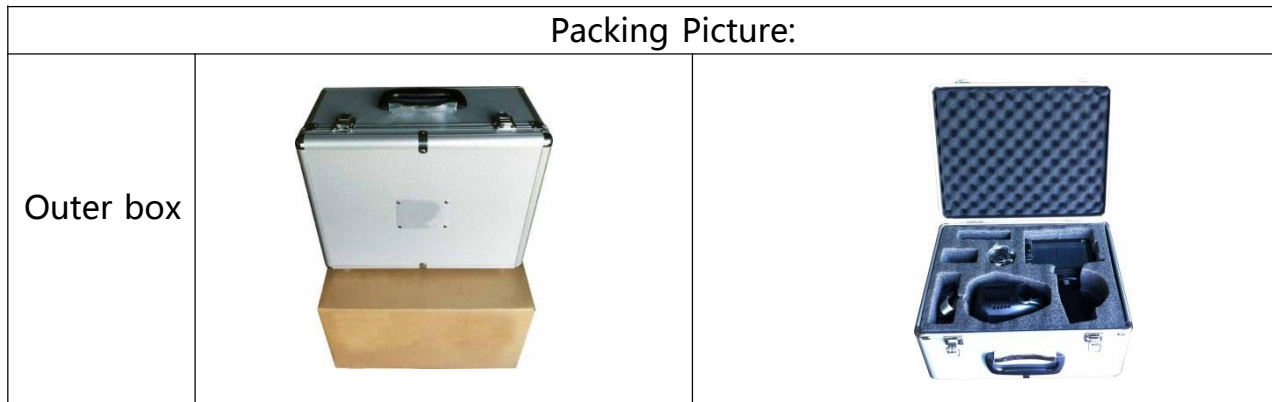
2.1 Parts List

Once you have unpacked your machine, check to make sure that you have all the parts shown here.

Item #	Part Name	Q'ty	Photo	Note
1	Handheld printer	1		
2	USB disk	1		
3	Battery	2		
4	Charger	1		
5	2.5mm position wheel	6		
6	5.0mm position wheel	6		
7	Protective band	1		

2.2 Battery Charging, Installation and Removal

2.2.1 Battery Charging

Battery charging:
Insert battery into charger.

Green indicator light: battery
not inserted or battery fully
charged.

Battery charging finished:
remove battery from charger.

Red indicator light:
Battery is on charge.

2.2.2 Battery Installation and Removal

Battery installation: Put the
battery into compartment in
the handle of the printer;
listen for a click indicating
the battery has snapped to
place.

Battery removal: press
the two lock catches on
battery, remove battery
from printer.

2.3 Cartridge Installation (42ml)

Step 1: Insert cartridge to printer by an angle of 15 degree.

Step 2: Close the cartridge clip to secure (see next figure).

Cartridge removal: Open the cartridge clip, remove cartridge from printer by an angle of 15 degree.

2.4 Position Wheel Replacement

For different substrates, there are three position wheels available (1.5mm, 2.5mm, 5mm).

The one installed on the printer is 1.5mm.

⚫	Height: 1.5mm (installed)	The best printing quality, widest ink application, high requirement on the substrate's evenness.
⚫	Height: 2.5mm (standard)	Good printing quality, wider ink application, no special requirement on the substrate's evenness.
⚫	Height: 5.0mm (standard)	Normal printing quality, not applicable for 3 series inks, applicable for rough printing surface.

1. Take off the two screws besides the reflector.
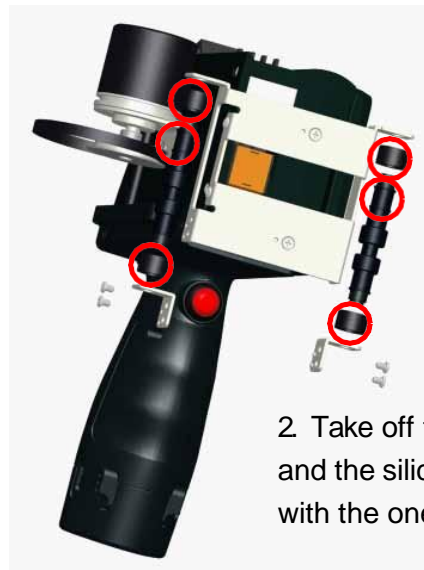
2. Take off the position wheel and the silica gel, and replace with the one required.

Note: While replacing the position wheels, need to change the DPI setting accordingly:

    1) 1.5mm wheel corresponding DPI range 295-305

    2) 2.5mm wheel corresponding DPI range 260-270

    3) 5mm wheel corresponding DPI range 200-210

Chapter Three: Inkjet Printer Introduction

3.1 Printer

5"touch screen

Encoder

Power switch

Band hole

Handle

Battery

DB15 port

Ethernet port

USB port

Positioning Wheels

Cartridge clip

Printhead

Print switch

Battery lock catch

3.2 Technical Specifications

A. Performance Values

Item	Specifications		Note
Technical source	HP TIJ 2.5 Thermal Ink Jet technology		
Dimension	(H*W*D):143.5*123*236mm		
Weight	1.15KG		
Power input	AC 90V-240V/50-60HZ;		Designed charger
Battery	Quantity	Standard come with two large capacity rechargeable batteries.	Charging time approximately 1.5 hours for full. When charging is in process, indicator light on charger is red. When charging is finished, charging protection functions and indicator light is green.
	Capacity	Each battery is composed of three 2200mAh cells.	
	Voltage	11.1-12.6V.	
	Life	Approximately 300 cycles.	
	Standby time	Approximately 7H.	
	Operating time	Approximately 4H.	
Print height	1-12.7mm.		
Print speed and resolution	Standard 300DPI;		
Print content	Barcode, alphabetic, numeric, image, date/time, expiration date, shift code, common counter, lot-box code.		
Ports	1. Ethernet port; 2. USB2.0 Port; 3. DB15 Port.		
Interface	5inch full-color large LCD touch screen with resolution 800*480.		
Ink management	1. Automatically recognizes ink types, and identifies optimum printing parameters for each ink type; 2. Guarantees the using of genuine original HP ink; 3. Automatic measuring system for the usage of ink.		
Product Certification	CE, FCC.		
Environment requirement	1. Working environment: -10℃~ +55℃; 10%-85RH; 2. Storage environment: -25℃~+80℃;10%-90%RH.		

B. Features:

Item	Specifications	Note
Languages	Chinese, English, Japanese, French, German, Spanish, Portuguese and Russian.	
Font	Default font is Arial; allow users to load fonts they need.	
Barcode	UPCA, UPCE, EAN13, EAN8, INT25, CODE39, CODE128, EAN128, PDF417, DATAMATRIX, QR.	
Date format	Variety of date formats available	
Counter	Flexible setting for common counter, Lot-Box code counters.	
Multi-management	Multi-level password protection (Operator, Technician and administrator).	

C. Ink Solutions:

1. Support 42ml cartridge of HP TIJ2.5 technology;
2. Support ink of various colors: black, red, green, yellow and blue;
3. Support porous, semi-porous and non-porous substrates.

Chapter Four: How to Use the Printer and the Check Work before/after Use

In this Chapter, you will learn how to use the printer, including check work before and after use.

4.1 How to Use the Printer

Sq #	Procedure	Instructions
1	cartridge Installation	Insert cartridge into the printer stall by an angle of 15 degree, close cartridge clip to secure. (See Section 2.3 Cartridge Installation).
2	Turn on printer	Load battery to compartment on printer handle, secure with lock catch (see Section 2.2.2 Battery Installation and Removal). Switch on power, printer enters initialization startup.
3	Main Interface - Printing Managem ent	After initialization startup, "main interface appears (see Section 5.1) Click to enter "Printing Managemen (see Section 5.2).
4	Select data - Start printing	Select a file on data list, click Start to Start printing.
5	Printing report	When printing starts, the button change to the icon Stop for stop printing, meanwhile a printing report appears.
6	Stop printing	Click Stop to stop printing, printing report exits, and the button returns to "Sta printing" status.
7	Switch off	Exit printing, and switch off power.

4.2 Check Work before Use

Sq #	Item	Check Work
1	Battery charging	Is the battery fully charged?
2	Positioning wheels	Do the wheels slide well?
3	Encoder	Is the encoder well connected to positioning wheels? Make sure the connection is not loose.
4	Cartridge	Is the cartridge wiped clean? Has the cartridge been installed to printer?
5	Printer status	Check status bar, is the equipment status normal?
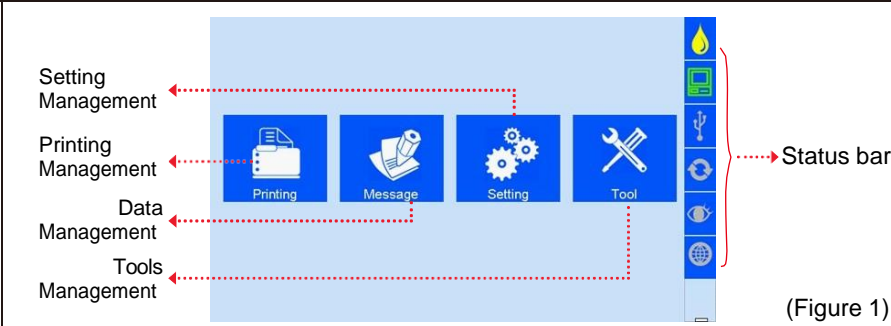
4.3 Check Work after Use

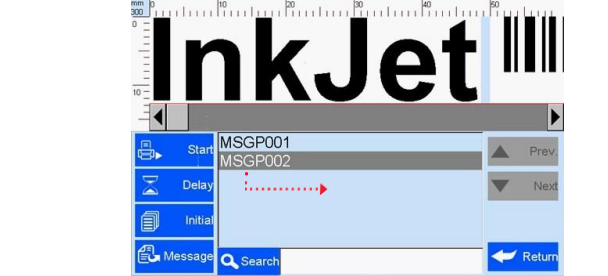| Sq #	Item	Check Work
1	Printer Power Status	Is the printer power switched off for power saving?
2	cartridge	Is the cartridge removed from printer and wiped clean and printhead capped?
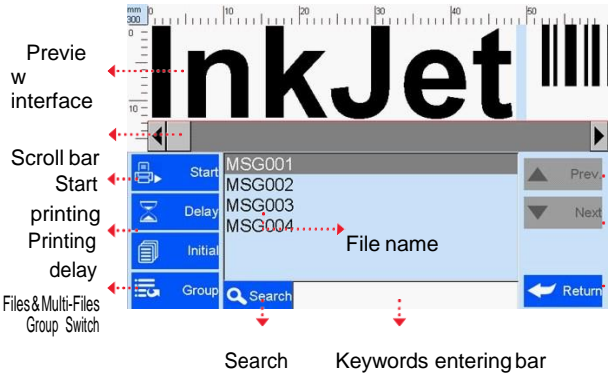
Chapter Five: Printer Operation Instructions

This chapter explains how to operate printer interface, including Printing Management, Data Management, System Management, Tools Management, and Status Bar.

5.1 Main Interface

Switch on power, printer starts initialization startup. After initialization startup, "main interface" appears (see Figure 1).	Setting Management · · · ◄ Printing Management · · · ◄ Data Management ◄ Tools Management ◄ · · · · · · ►Status bar (Figure 1)	
Printing Management	To find and preview data, start/stop printing, set printing delay value, and set printing initial values (see Section 5.2).	
Data Managemen	To Find/Preview, create-new, Edit, Copy, Delete data (see Section 5.3).	
System Management	To manage system setting, editing options, printing options, user authority, and screen correction setting (see Section 5.4).	
Tools Management	To manage image logo, system upgrade, system backup, system record, equipment default restoring, system resetting (see Section 5.5).	
Status bar	Display information of ink, equipment, USB, encoder, external photocell, Ethernet status and Clean Printhead (see Section 5.7).	
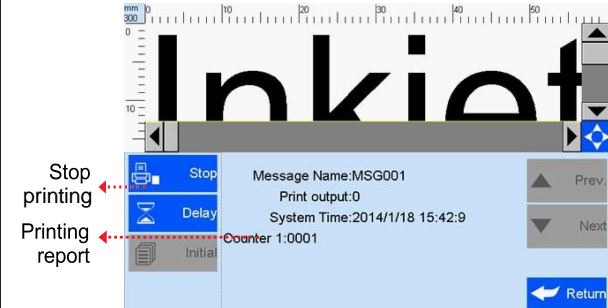
5.2 Printing Management

Click [Printing] on main interface to enter printing management (see Figure 2) Click [Group] switch to Multi-Files Group; Click [Message] switch to single Files list;	 (Figure 2)
Multi-Files Group list (Multi-files printing)	
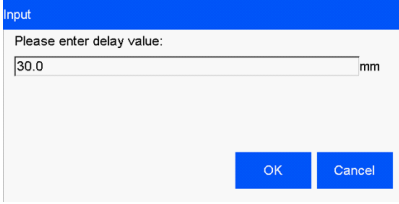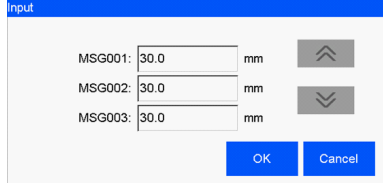
5.2.1 Find/Preview Data (see Figure 2)

A. Find data	Find by Pageup/Pagedown/keywords.
B. Preview data	Preview data by locating or selecting a file of data to display on preview interface; data located/selected will be displayed in sequence on preview interface, and can be viewed scaled up and down by times of 1 and 2.
Note: Drag the scroll bar horizontally to view the data when it exceeds the screen horizontally.	
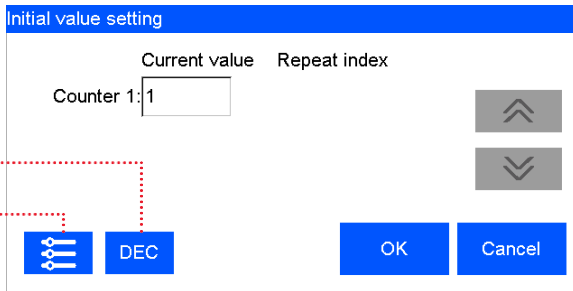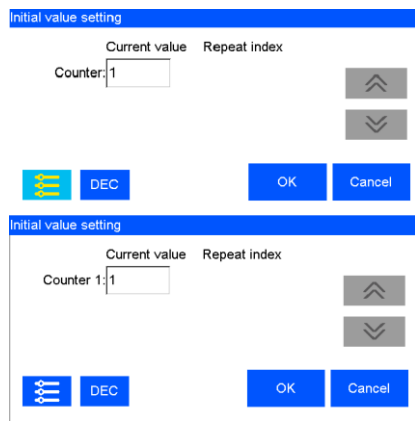
5.2.2 Start Printing / Printing Report

Click [Start] button to start printing. When printing starts, a printing report appears (see Figure 3). Printing report: It is the timely record of printing in process, including data file name in process, print output quantity, counter value, shift code, system time. The printing report exits when printing stops.	 (Figure 3)

5.2.3 Printing Delay

Click [⧖ Delay], printing delay setting interface appears (see Figure 4) ✍ See Appendix 1: Terms and Definitions 1 for more information.	**Input** Please enter delay value: `30.0` mm OK Cancel (Figure 4)
While execute Multi-Files printing, user can set the delay distance for each single file.	**Input** MSG001: `30.0` mm ⌃ MSG002: `30.0` mm ⌄ MSG003: `30.0` mm OK Cancel

A. Printing delay default value: 30mm;

B. Printing delay value range: 0.0-999.9mm;

C. It is allowed to set printing delay value during printing process: the newly set value becomes valid for immediately next printing.

D. Printing delay value for each message are independent from one another, the delay setting for current data file will not affect another data file.

5.2.4 Print Initial Values

Click [🗐 Initial], the interface of initial values setting and repeated index value checking appears. System switch DEC-10 decimal (0-9) H36-36 hexadecimal (0-Z) The Generic Binary is editable; See5.4.2	**Initial value setting** Current value Repeat index Counter 1: 1 System switch ◄ Counter synchronizing ◄ [⚏] DEC OK Cancel
Counter Synchronizing: when multi counter included in the same file, click [⚏], then all counters' current value will be synchronized to counter 1's current value. After confirmed, a dialog box will display the counters' setting, user can set the counter's begin/end/step/repeat number and the binary regulation.	**Initial value setting** Current value Repeat index Counter: 1 [⚏] DEC OK Cancel **Initial value setting** Current value Repeat index Counter 1: 1 [⚏] DEC OK Cancel

5.2.5 Stop Printing

Click [🖨 Stop] to stop printing and exit printing report, return to Start Printing status (see Figure 2).
Note: Printer automatically stops printing when there is case as power-off, out of ink, alarming etc.

5.3 Data Management or Multiple Files Group.

From the main interface click [资料] , enter the Files Management interface, user can create, edit and delete the file (s) or Multiple Files Group(s); Click [Group] switch to Multi-Files Group. Click [Message] switch to single files.	**New** ···· New **Modify** ···· Modify **Delete** ···· Delete Group ···· **Copy** Search ···· Return (MSGP001 / MSGP002)
Create new multi-files group: click [New] : A. Add new file: select the file from the list, click [Add], add it to the multi-files group, when there is no multi-files group exist, need to create first. B. Files' sequence: click [Up] [Down] to adjust the sequence of the files. C. Delete: delete the file(s) in the group. D. Search: User can search the needed file. E: Group Name: Maximum 15 characters, unique and cannot be null.	**add** ···· Add **File list** ···· (MSG001/MSG002/MSG003/MSG004) **Up / Down / Delete / File list / in the group** Name MSGP002 **Group name**
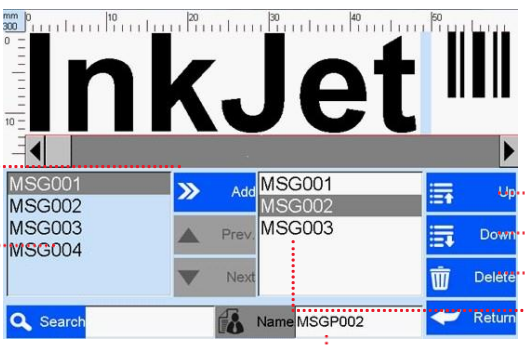
5.3.1 New/Edit Data

|	
Clip [New] or [Modify] on data management interface to enter data edit interface. A. New: text, counter, shifts, production data, expiration data, image logo, barcode, dynamic text, dynamic logo, device information, string; B. Edit: data in printing process cannot be edited; C. File name: maximum 15 characters, empty file name or repeated file name are not allowed.	**Image Logo** **Expiration date** **Production** **Text** ···· Text / MFD / EXP / Logo ···· **Page up / Add objects** Counter / Shifts / Barcode / Dyn. Text ···· **Delete objects / Dynamic text** **File name** ···· MSG. Name MSG001 ···· Return **Counter** ···· **Barcode** **Shift code** **Device information** **Dynamic logo** ···· Dyn. Logo / DeviceInfo / String ···· **String** MSG. Name MSG001 ···· Return
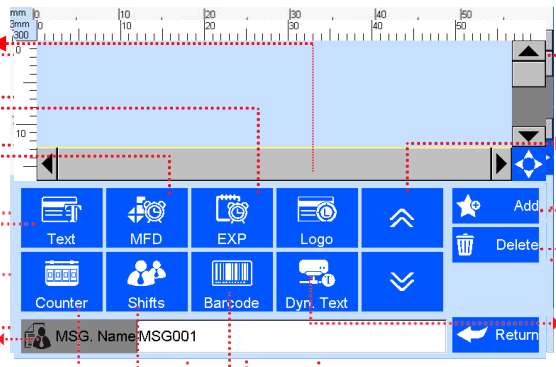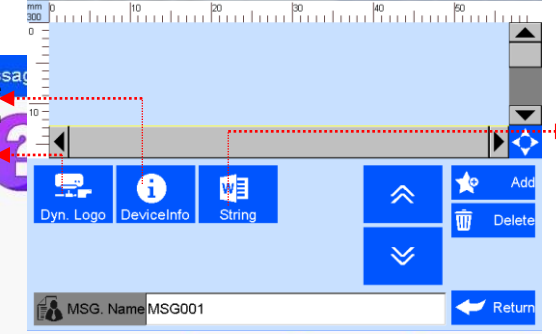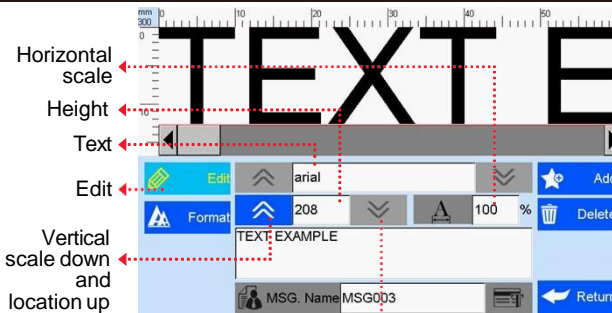
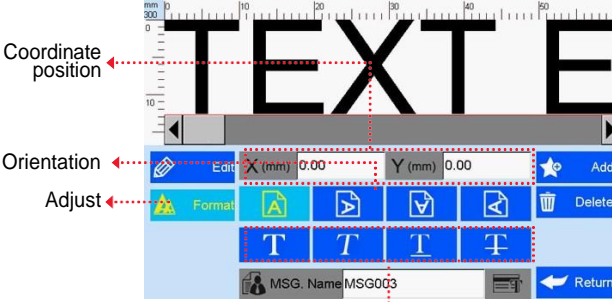|	
Click **← Return** to save data when finish editing, a check box appears to ask "Are you sure you want to save the message? Cancel, Yes, No" If you click "**Cancel**", the machine will remain on editing interface.	**Message** ? Do you want to save the message? Cancel Yes No
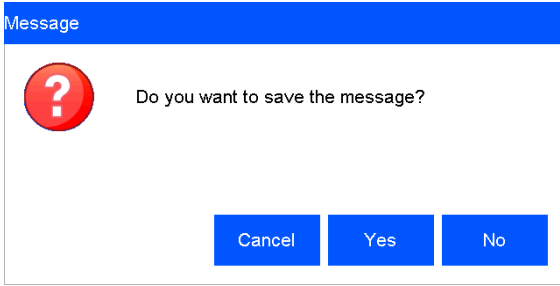
Note: "MSG001" is default data in system. The system allows maximum 500 files of data (including default "MSG001"); The system does not save empty or error messages.

5.3.2 Add Text Object

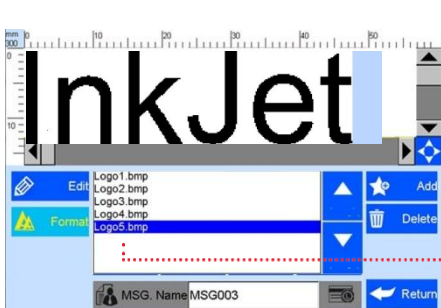|	
Click [Text] to add text object, see Figure 9. Click [Edit] to enter text editing interface: A. Font: including the default one, totally support 2 fonts at same time, the default one and one alternative font. B. 16-208(adjust freely within the scope of 1-12.7mm）； C. Text horizontal scale: 1-300%；	Horizontal scale Height Text Edit Vertical scale down and location up **TEXT E** Edit · arial Format · 208 · A 100 % TEXT EXAMPLE MSG. Name MSG003 Add / Delete / Return Vertical scale up and location down (Figure 9)
Click [Format] to enter text adjustment interface. E. Coordinate location: adjustable range for X axis 0-3000mm; for Y axis, 0-12.7mm. F. Text orientation: 0°, 90°, 180°, 270°. Four orientations adjustable. G. Font effects: bold, italy, underline, strikeout, four effects adjustable.	Coordinate position Orientation Adjust **TEXT E** Edit · X (mm) 0.00 · Y (mm) 0.00 · Add Format · · Delete MSG. Name MSG003 · Return Font effect (Figure 10)
Note: Please refer to this Section (Section 5.3.2) regarding how to add objects as "production date", "expiration date", "image", "counter", "shift code","dynamical text""dynamical logo", but the content of "production date", "expiration date", "counter", "shift code", "dynamical text", "dynamical logo" cannot be revised or adjusted directly when you add, and the font, height, content and font effect of "image" "dynamical logo" cannot be revised directly. There is no option of horizontal scale " [A] " for "image" "barcode", "dynamical logo".	

5.3.3 Add Production Date

Click [MFD] to add object "production date". Click [Setting] to enter date format setting, choose a format by arrow up and down，Gregorian and Hijri available. (see Figure 11).	Date format Calendar Type Adjust **201404** Edit · YYYYMMDD Format · Calendar Gregorian Setting MSG. Name MSG003 · Return Add / Delete (Figure 11)
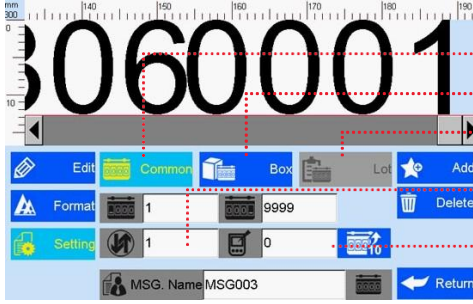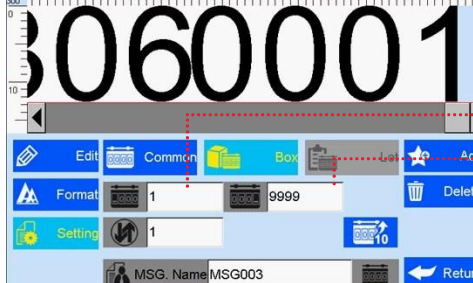
5.3.4 Add Expiration Date

Click [EXP] to add object of expiration date. Click [Setting] to enter date format setting and days to expire (scope: 0~9999)，Gregorian and Hijri available. (see Figure 12).	**201504** Edit · YYYYMMDD Format · Days 365 Setting · Calendar Gregorian MSG. Name MSG003 · Return Days to expire Calendar Type Add / Delete (Figure 12)

5.3.5 Add Image

Click [Logo] to add object image. Select a logo on file list by page up and down (see Figure 13).	InkJet Edit — Logo1.bmp / Logo2.bmp / Logo3.bmp / Logo4.bmp / Logo5.bmp ▲ Add Format ▼ Delete Image file list (Figure 13) MSG. Name MSG003 Return
Note: When there is no image file found, a message box appears to prompt image import (see Figure 14). See Section 5.5.1 Image Management for image import.	Message No logo files found, please import first! OK Shifts Barcode Dyn. Text Dyn. Logo MSG. Name MSG003 Return (Figure 14)

5.3.6 Add Counter

Click [Counter] to add object counter. Click [Common] to for option of common counter, box number, lot number. A. Click [Common] for common counter setting: minimum value, maximum value, stepping value, repetition number (see Figure 15).	060001 Edit Common Box Lot Add Format 1 9999 Delete Setting 1 0 MSG. Name MSG003 Return Common counter Box No. Lot No. Stepping value Repetition number (Figure 15)
B. Click [Box] and [Lot] option of box number and lot number setting: minimum value, maximum value, stepping value for box number and lot number (see Figure 16). Note: There is no repetition number for box number or lot number.	060001 Edit Common Box Lot Add Format 1 9999 Delete Setting 1 MSG. Name MSG003 Return Minimum value Maximum value (Figure 16)

5.3.7 Add Shift Code

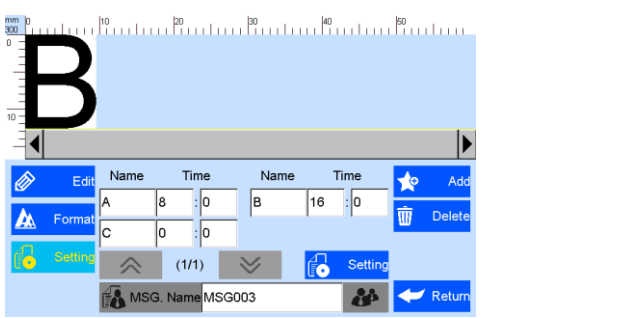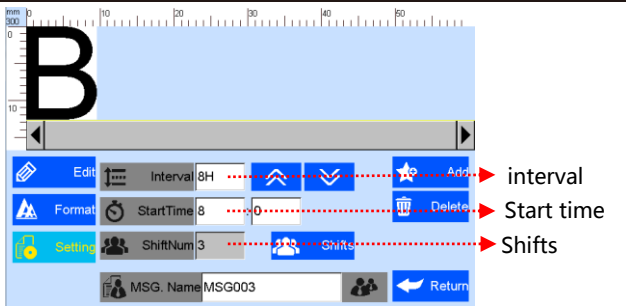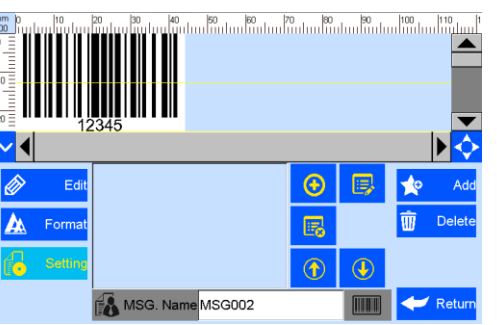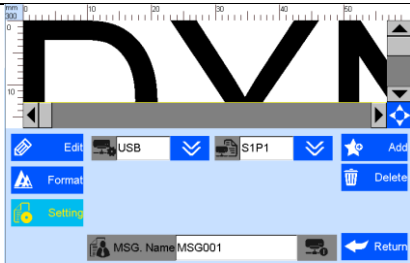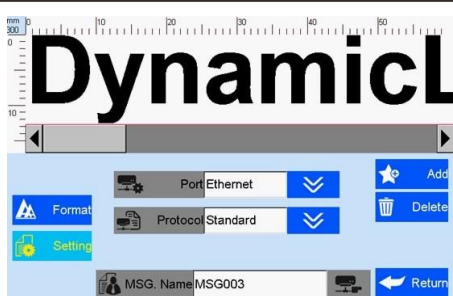|	
Click [Shifts] to add "shifts code". Click [Setting] enter the setting interface: can set shifts interval, start time and shifts numbers. A. Shifts Interval: 9 options: 0、0.5H、1H、2H、3H、4H、6H、8H、12H , each option makes a day to the responding shifts number. Such as: interval value 8H, means 3 shifts per day.	
B. Start time: set the time for the first shift. Note: in 24-hour time system.	
C. Shifts: set shifts numbers. While interval value is 0, shifts can input freely from 2-48.	
D. Click [班组] to view the detailed information. E. Shift: can set the shit name, time. F. Shift name: maximum 5 characters. G. Shift time: can set different time, shifts will change according to time.	
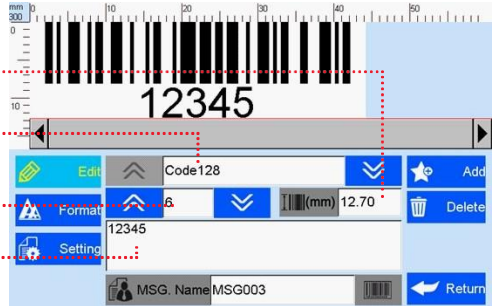
5.3.8 Add Barcode

Click [Barcode] to add object "barcode". A. Click [Edit] to enter barcode edit: Barcode type, horizontal scale level, barcode height, barcode text (see Figure 18).	Barcode height Barcode type Horizontal scale level Barcode text Code128 6. (mm) 12.70 12345 Edit Format Setting MSG. Name MSG003 (Figure 18)
B. Click [Format] to enter barcode adjustment: coordinate location, text orientation, text display/hide, text height, error correction level, white space level (see Figure 19, 20). Note: Setting options may differ depending on different barcode types. [T👁 Text] : Text display; [T👁 Text] : Text hide; [📈1] ~ [📈4] : error correction level; [0] ~ [4] : white space level.	12345 Text display Edit X (mm) 0.00 Y (mm) 0.00 Add Format [A] [▷] [▽] [◁] Delete Setting T👁 Text 4mm MSG. Name MSG003 Return Text height (Figure 19)
	Error correction level Edit X (mm) 0.00 Y (mm) 0.00 Add Format [A] [▷] [▽] [◁] Delete Setting [📈1] [0] MSG. Name MSG003 Return White space level (Figure 20)
C. click [Setting] enter barcodes setting interface: User can create, edit and delete data sources in the barcode content. The data sources including 9 objects: text, production date expiry date, counter, shifts, dynamic text, device info, string and carriage return. After create a new object， its name will show up in the list, user can sort the objects by up and down arrows.	12345 Edit ⊕ 📋 Add Format 📋 Delete Setting ↑ ↓ MSG. Name MSG002 Return

5.3.9 Add dynamical text

Clip [Dyn. Text] to add dynamic text. A. Clip [Setting] to to the interface of dynamical text setting with the way of dynamical transmission path or communication protocol .	
B. Scan printing Port is USB, selection modes are: S1P1： scan one while printing one S1PN： scan one while printing multiples, print to next scan data SNPN： scan multiples while printing multiples, can repeat set the print times; SGPN: Fix scan numbers and print numbers, can repeat set print times and scan numbers.	

### 5.3.10 Add dynamical LOGO

Click [Dyn. Logo] to add dynamical LOGO.See the picture beside. Note: pls refer to 5.3.9 of adding dynamical text, set the data transmission path communication protocol.	 (Figure 23)

5.3.11 Add Device Information

Clip DeviceInfo , add device information;

Clip Setting, enter device information setting interface, can choose device name and device SN No.

Device name can be defined by entering 2.4.5 user management, device SN No. cannot be changed.
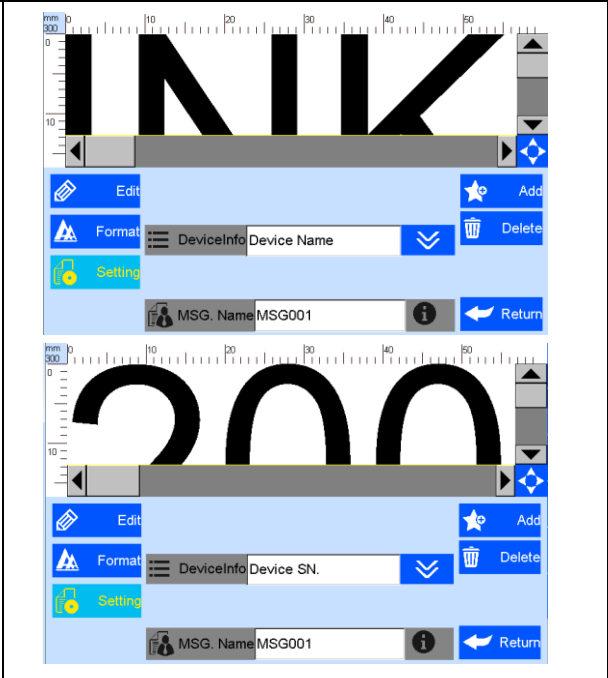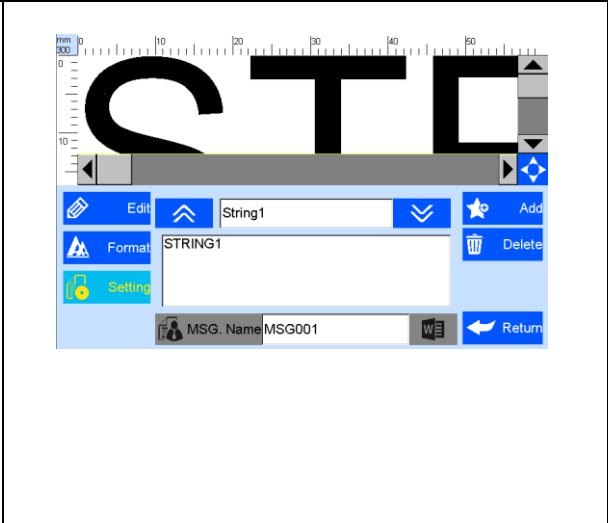

5.3.12 Add String

Clip String to add string.

Clip Setting to enter the string setting interface. The system default can add 5 different strings. One data allows maximum 20 string objects, each string of character maximum number is 75.
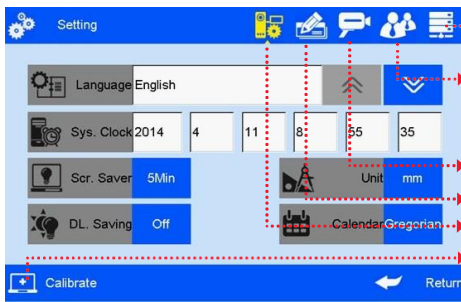
Note: when add one same string object, other same strings will be modified automatically while modify one of string.

5.3.13 Delete Object or Delete/Import/copy Data
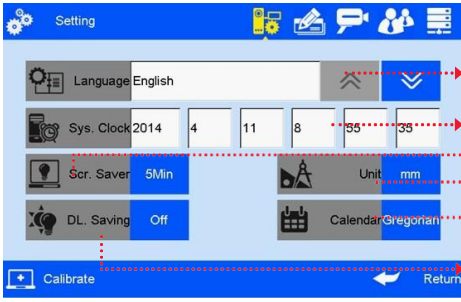
Select an object on data editing interface, click 🗑 **Delete** to delete the object, a dialog box appears to prompt if you are sure that you want to delete.	**Message** ❓ Are you sure to delete the selected object? [Yes] [No]
⚠ Select a file on the list on data management interface, click 📄✗ **Delete** to delete the file, a dialog box appears to prompt if you sure that you want to delete . Note: data in printing process cannot be deleted.	**Message** ❓ Are you sure to delete message MSG003 ? [Yes] [No]
Click 📄⇧ **Import** in File Management interface, it will import all files saved in U disk under defined route. User will be prompted if same name already existed. Before import, insert the U disk firstly.	ℹ MSG002 existed, cover? [All Yes] [All No] [Yes] [No]
Select 📋 **Copy** a file and click in File Management interface, the same message will be copied and saved as the same name with "C1" suffix, for example: MSG002's copy will be named as MSG002C1.	**Message** ❓ Are you sure to copy message MSG001.msg ? [Yes] [No]

5.4 System Management

Click [Setting] to enter system management (See Figure 26).

(Figure 26)

5.4.1 System Setting
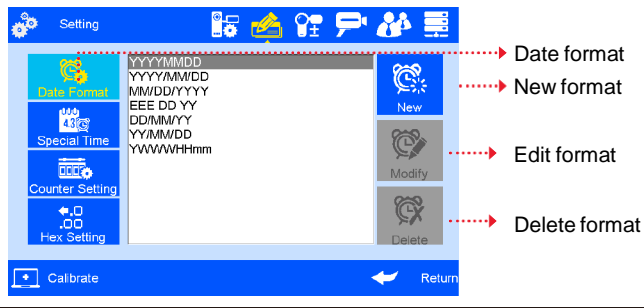
Click [icon] on system management interface to enter system setting (see Figure 27).

(Figure 27)

A. System language	Standard language in delivery country as default language.
B. System time	Manufacture time as default time, can be set by user.
C. Screen saver time	see Appendix 1: Terms and Definition 3. 1) System default 5 minutes, 4 options for changeover: 5minutes, 3 minutes, 1minute, OFF. 2) If screen saver is optioned OFF, screen enters standby status if inactive for 1hour. 3) Screen becomes active when there's alarm or error.
D. unit	Switch between mm and inch.language in delivery country as default language.
E. Daylight saving time	Three modes for setting: OFF, European summer time, US summer time.
F. Calendar Type	two modes available: Gregorian and Hijri.Default setting is Gregorian; System time will be changed according to the calendar setting.

5.4.2 Edit Options

Click [icon] on system management interface to enter edit options setting interface.

A. Click [Date Format] to enter production date and expiration date format setting.
Note: six common date formats default, forty-four more formats addable for user. The six default date formats not editable and cannot be deleted.
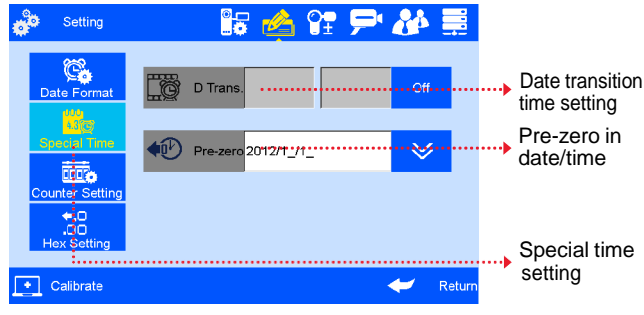

→ Date format
→ New format
...... Edit format
...... Delete format

Click [New] or [Modify] in date format setting interface, new or edit date format, date format edit interface appears.
Note:
Year/Month/Hour have 3 hex options: decimal/26 hex/36 hex, before operating first need to select hex and then the date format.
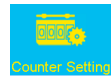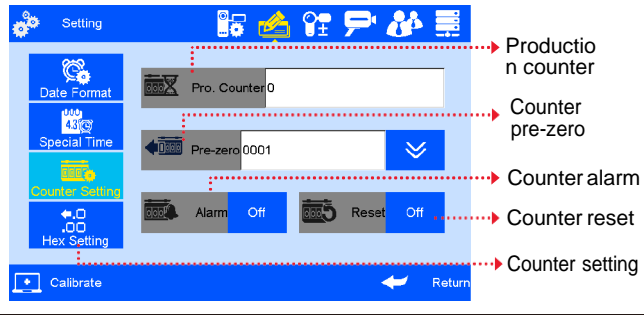

...... Hex switch

1. [YYYY] Year, options are: [YYYY] ---4-digit,   [_ _YY] ---last 2 digit,   [_ _ _Y] ---last 1 digit

2. [MM] Month, options are: [1-12] ---digit,   [1-9-En] ---Jan to Sep is 1-9, and then O/N/D,
   [M EN] ---abbreviations,   [M ALL] ---full English

3. [HH] Hour, options are: [24H] --24 hours system,   [12H] ---12 hours system

B. Click [Special Time] to enter special time setting.

[icon] see Appendix 1: Terms and Definitions 4, 5.

→ Date transition time setting
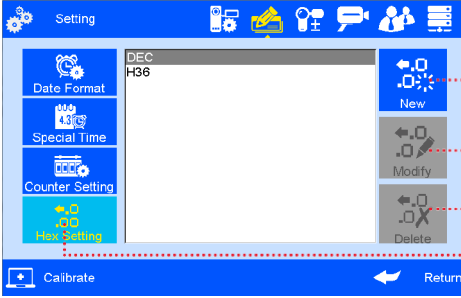→ Pre-zero in date/time
→ Special time setting

1) Date transition time setting: system default normal zero o'clock as date transition time to next date, users can set different time as date transition time.
2) Pre-zero in date/time: four options: OFF, empty preposition, empty postposition, centered without zero. (e.g. 2012/05/09, 2012/_5/_2, 2012/5_/2_, 2012/5/2).

C. Click [Counter Setting] to enter counter setting.

→ Production counter
→ Counter pre-zero
→ Counter alarm
→ Counter reset
→ Counter setting

1) Production counter: setting extent: 0~99999999.
2) Pre-zeros: four options: OFF, empty preposition, empty postposition, centered without zero (e.g. 0001,___1, 1___, 1).
3) Counter alarm: ON or OFF option. When counter alarm is turned ON, the machine will stop printing, sound alarm and prompt message that print number reaches maximum value.
4) Counter reset: ON or OFF option. All counters will start from initial values if the counter reset is turned ON. The printing value will continue with the last one if the counter reset is turned OFF.

D:clip **Hex Setting** ,enter the system setting interface. The system can be new, modified, and deleted, system default: DEC-10 decimal (0-9) 　　　　　H36-36 hexadecimal(0-Z) It can't modify or delet the default system	Setting Date Format Special Time Counter Setting Hex Setting Calibrate DEC H36 ······▶ New system ······▶ Modify system ······▶ Deletsystem ▶ System setting Return
New and edit the system 1. Can import the system name by yourself, but only allow three letters and figures. 2. System content: can import Arabic numerals 0-9, 26 uppercase letters (A-Z) or lowercase letters(a-z)	New Hex Name ······▶ System name Content ······▶ System content OK　　Cancel

5.4.3 Printing Options

Click [icon] on system management interface to enter printing option setting.

A. Click [Print Option] to enter nozzle maintenance setting (see Figure 31).

Nozzle maintenance
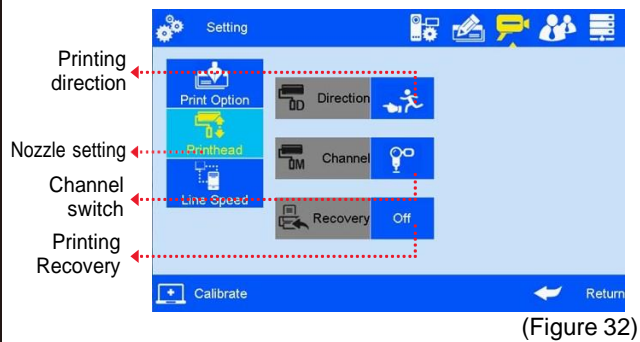Pre-purge
Clean printhead
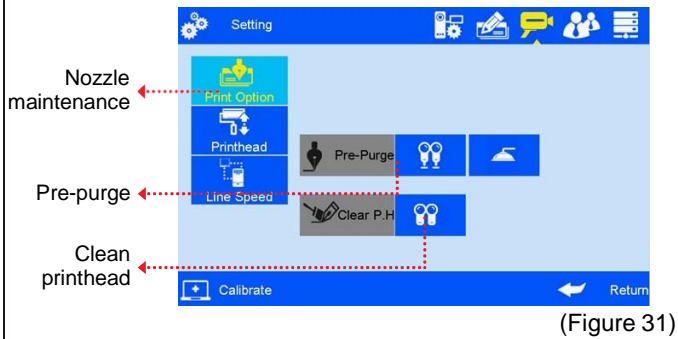
(Figure 31)

Note: 1) Pre-purge Mode: 2 modes: [icon] both right & left nozzles; [icon] the working nozzles only.

2) Pre-purge: four shifts: OFF, low, medium, high. see the following figures:

[icon] --Off; [icon] --Low; [icon] --Medium; [icon] --High

[icon] see Appendix 1: Terms and Definitions 6, 7.

B. Click [Printhead] to enter printhead setting (see Figure 32).

Printing direction
Nozzle setting
Channel switch
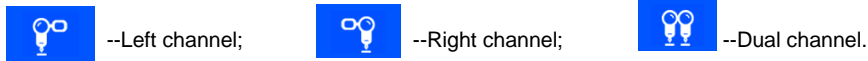Printing Recovery

(Figure 32)

3 Note: printing direction: system default from left to right.
1) Four directions optional: left-to-right, right-to-left, mirror sides of left-to-right and right-to-left, see figures as follows:

[icon] --Left-to-right; [icon] --Right-to-left; [icon] -Mirror side of left-to-right; [icon] --Mirror side of right-to-left.

2) channel switch: Left channel, Right channel, Dual channel, see the figures as follows:

[icon] --Left channel; [icon] --Right channel; [icon] --Dual channel.

3) Printing Recovery: when the set is [On], printer will resume printing automatically when the power continue. The default setting is [Off].

Note: When the printing contains counter, and the Printing Recovery setting is "ON", operator need to check on the counter value and do needful adjustment.

[icon] see Appendix 1: Terms and Definitions 8.

C. Click [Line Speed] to enter production line setting (see Figure 33).
Line speed: system default 30m/min;
Adjustable scope 1~150m/min；
DPI: system default 300DPI; adjustable scope 50~600DPI.

Line speed
DPI
Line speed setting
Run speed test

(Figure 33)
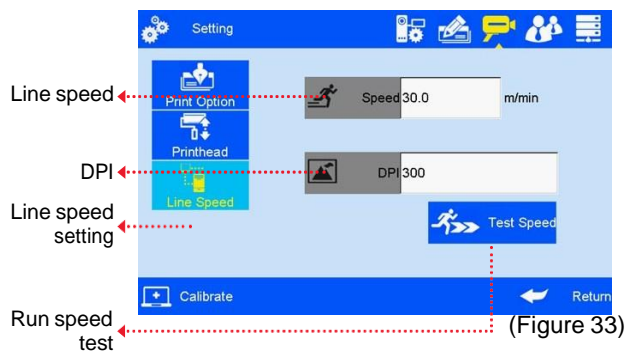
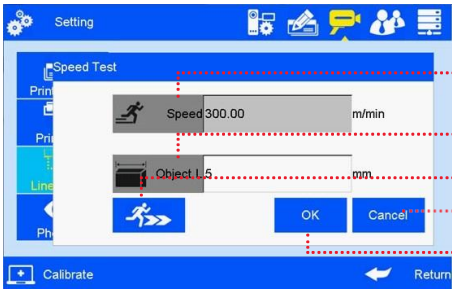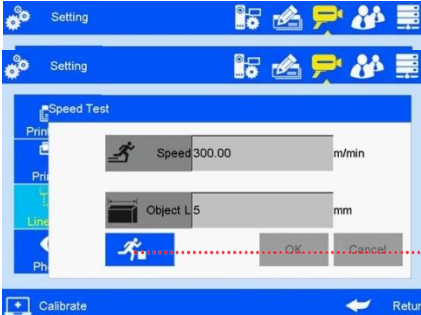Click [Test Speed] on line speed setting interface to run speed test (see Figure 35, 36).

Line speed test: input test object length 0~3000mm, click [🏃] to enter speed test startup interface, then start production line, put test object onto production line, the photocell will be sensing the object, and the machine will calculate line speed automatically. Click [OK] to save current speed test result. Click [Cancel], current speed test value will not be saved. If test repeated, system will take average value of multiple results. Click [🏃] to stop speed test, and click [OK] or [Cancel] to save or give up test result.

(Figure 35)

Speed
Test object length
Run speed test
Give up
Save

(Figure 36)

Stop speed test

Note: if external encoder is connected, system can detect automatically, and switch line speed interface to encoder DPI setting interface. User cannot programme line speed setting when external encoder is connected.

5.4.4 User Management
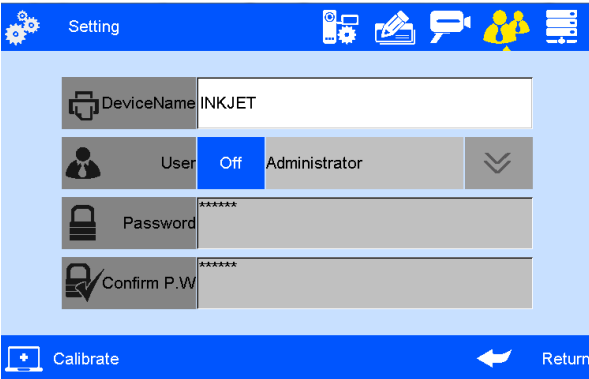
Click [👥] on system management interface to enter user management (see Figure 37).

A.Device name: can be defined, the maximum is 15 characters.

B.User permission management switch: system default OFF. A login dialogue box requests user name and password for access to operation of the printer when machine power is switched on.
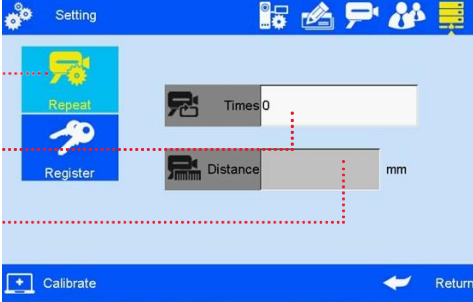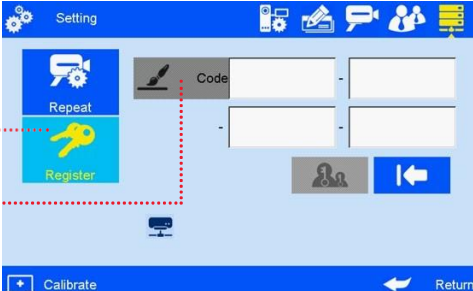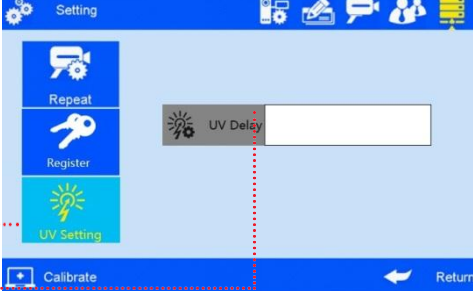
C.User name: different names for different access permission. Administrator is of best authority, with access to all settings including password modification. Engineer is with access to data management and printing management; and operator is with access to printing management only.

D.Password and password confirmation: administrator creates user name and set password. Maximum 15 characters for password.
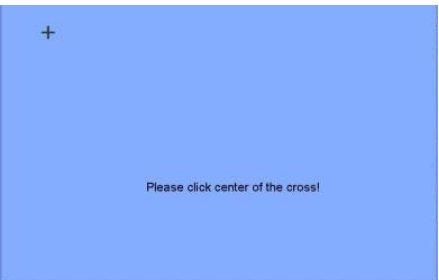
Note: Please contact local dealer or our company for printer unlocking when you forget administrator password.
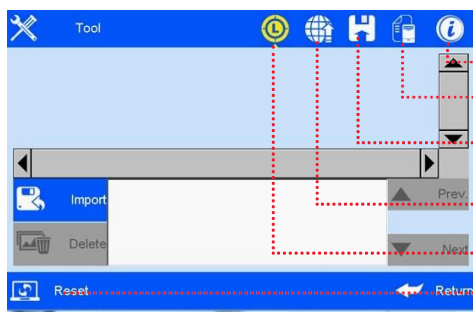
5.4.5 Special Features

Click 📋 on system management interface to enter "Special Features" setting.

A. Click [Repeat] to enter "Continuous printing" setting (see Figure 38).

✍ See Appendix 1: Terms and Definitions 9 for more information.
1) Continuous output times: system default 0 (OFF). Adjustable scope 0~9999.
Note: 0 is equal to OFF; 9999 equal to infinite.
2) Output interval: system default OFF, adjustable scope 0~999mm.

Continuous printing ←
Continuous output times ←
Output interval ←

Setting

Times 0
Distance   mm

Calibrate   Return

(Figure 38)

B. Click [Register] to enable "Special Features" (see Figure 39).

Note: Enable special features by registration code.

Enable Special Features ←
Registration code ←

Setting

Code

Calibrate   Return

(Figure 39)

C. Press [UV Setting], entering UV setting interface (see Figure 40)

Note: Can set the UV delay distance;
Adjustable scope 0-3000mm.

UV LED Setting ←
UV Delay Distance ←

Setting

UV Delay

Calibrate   Return
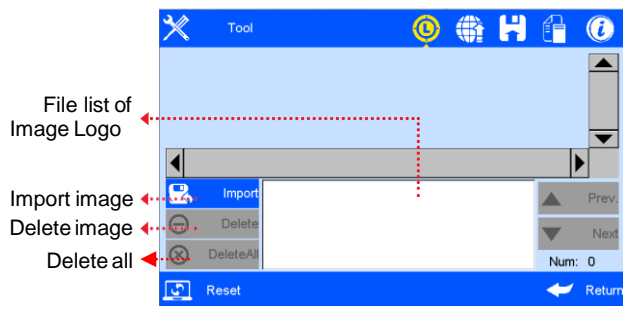
(Figure 40)

5.4.6 Screen Touch Correction

Click [Calibrate] on system management interface to enter screen touch correction (see Figure 41).

Note: Please correct screen touch when there's inaccurate touch phenomenon. Icon "+" appears on different location on screen guides you the screen correction. The interface exits after screen touch correction finished, and a message appears to prompt screen touch correction success or failure for your attention.

+

Please click center of the cross!
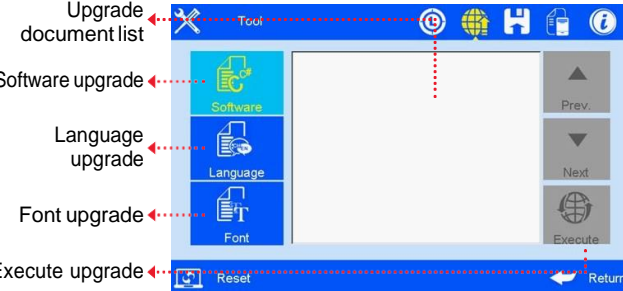
(Figure 41)

5.5 Tools Management

Click [Tool icon] on main interface to enter tools management interface (see Figure 42).	About printer — System record — Backup management — Upgrade management — Image Logo — System reset (Figure 42)

5.5.1 Image Management
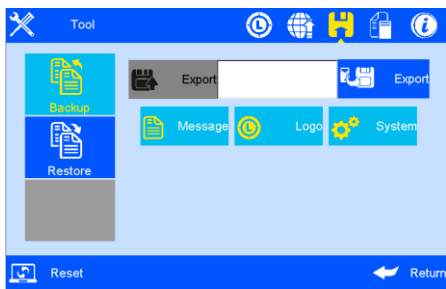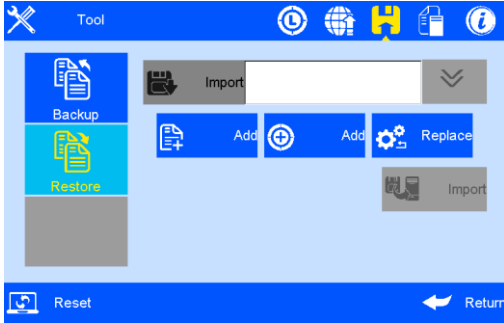
Click [Logo icon] to enter image Logo management interface (see Figure 43). Image import: import image from USB or Ethernet. Image format: Solid color BMP; Image height: 0-150 pixel point. Image length：0-1000000 pixel point.	File list of Image Logo — Import image — Delete image — Delete all

Note: 1) System prompts and cuts the excess part if the imported image exceeds borders.
2) Image import cannot be executed when pixel points exceed 100.
3) Image Logo document route: USB Disk/InkJet/Logo.

5.5.2 System Upgrade
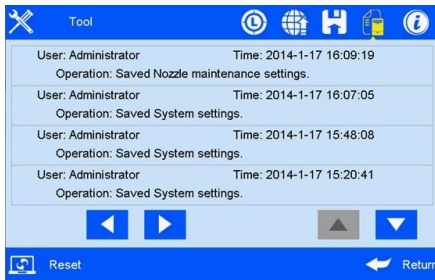
Click [Globe icon] to enter upgrade management interface (see Figure 44). Users can upgrade the software, add or change languages and fonts by USB.	Upgrade document list — Software upgrade — Language upgrade — Font upgrade — Execute upgrade (Figure 44)

A. Software upgrade	System automatically searches for software upgrade documents in designated folder and displays the upgrade documents by list. User can select anyone in the list for upgrade. Document route: USB Disk/InkJet/Upgrade/Application.
B. Language upgrade	System is loaded with multiple languages upon delivery. User can add one more language if needed. Document route: USB Disk/InkJet/Upgrade/Language.
C. Font upgrade	System supports two fonts; user can add another font besides the default Arial. Document route: USB Disk/InkJet/Upgrade/Font.

Note: Software upgrade documents, language documents, font documents can only be identified when they are packed by the conversion tools provided by our company. The language documents, font documents are not replaceable and cannot be deleted.

5.5.3 System Backup

Clip ![H] to enter backup management. Clip ![Backup] to enter backup operation interface; Export backup: include message, logo and system setting	![Tool screen with Backup, Restore, Export options]
Clip ![Restore] to enter the backup restore interface; can restore the message, image and setting of USB disk to the device; Data optional: 1、 New: copy the data of USB disk to the device 2、Replace: replace the same name data 3、Delete: delete existing data of device 4、Cancel: Not need to choose data Image optional: new, replace, delete and cancel optional Setting optional: replace and cancel optional	![Tool screen with Restore, Import, Add, Replace options]

Note: Please check USB connection status and disk space is normal when execute backup import and export. Backup document route: USB Disk/InkJet/Backup.

export. Backup document route: USB Disk/InkJet/Backup.

5.5.4 System Record
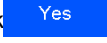
Click ![icon] to enter system record viewing interface. All operation activities including operator, operation and operation time will be shown.		![System record viewing interface]
System record information includes:	1) The printing activities: printing start and stop, initial values.	
	The printing activities: initial values setting diary.	
	3) All operation activities in system management (including touch screen correction).	
	4) Image import and delete activities, system upgrade, backup, and reset activities.	
Note: System record does not include querying and viewing activities.		

5.5.5 About Equipment

Click ![i icon] to enter equipment information viewing interface. Information displays current hardware version, software version, machine serial number, dealer code, company Logo, company name and website.	![Equipment information screen showing Software Version:2.3.0.6437, Hardware Version:18.52.3F, Serial Number:80000012, Printer Code:1459257713]
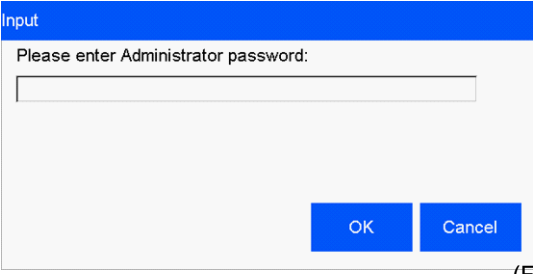
5.5.6 System Reset

⚠️ Click [Reset] on tools management interface to enter system reset management (see Figure 48).

Click [Yes] to execute system reset. You need to enter administrator password for permission to reset execution (see Figure 49).

Message

❓ Are you sure to restore to default settings?

[Yes] [No]

(Figure 48)

Input

Please enter Administrator password:

[   ]

[OK] [Cancel]

(Figure 49)

Note: System reset is to restore all defaults.
1) Restore all the settings to defaults, clear all data and images.
2) Maintain software version in current version; restore language and font to default.

After system reset, system parameters are as follows:

Item #	Item	Parameter
1	Language	English
2	System time	Manufacture time
3	Screen saver time	5 minutes
4	Unit	Metric/mm
5	Daylight saving time	OFF
6	Customer year	OFF
7	Date transition time setting	OFF
8	Pre-zero in date/time	OFF
9	Pre-zero in counter	OFF
10	Counter alarm	OFF
11	Counter reset	OFF
12	Pre-purge	OFF
13	Clean printhead	Standby
14	Printing direction	Left-to-right
15	Channel switch	Left channel
16	Print Recovery	OFF
17	Line speed	30m/min
18	DPI	300DPI
19	User permission management	OFF
20	Continuous output times	0 OFF
21	Data management	Only system default data Msg001
22	Printing delay	30mm
23	Printing initial value	Counter initial value and data source current value.

5.6 Edit Input Method Options

A keypad appears when user clicks the editing bar. Keypad of Uppercase, lowercase, numeric, or common symbols for changeover (see Figure 50, 51, 52, 53).

A. Uppercase: uppercase keypad is pre-set keypad to appear (see Figure 50).	(Figure 50)
B. Lowercase: click **Shift** to change between uppercase and lowercase (see Figure 51).	(Figure 51)
C. Numeric and common symbols: Click **?!123** to change between numeric or common symbols input (see Figure 52).	(Figure 52)
D. More symbols: click **Shift** on numeric/common symbols keypad for more symbols (see Figure 53).	(Figure 53)
Shift	Input changeover key
?!123 **ABC**	Numeric/common symbols and alphabetic input changeover key.
Clean	Remove key (clear all input)
←	Delete (delete one character)
⌨	Hide keypad
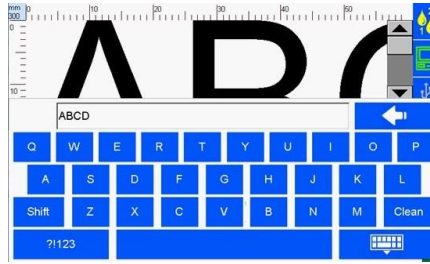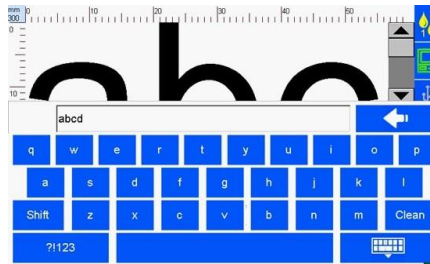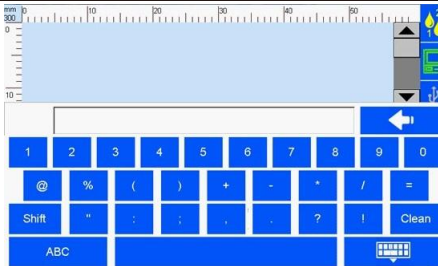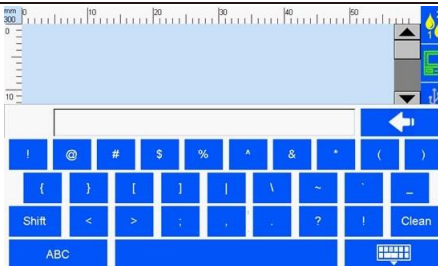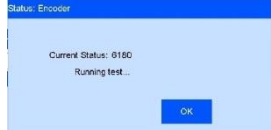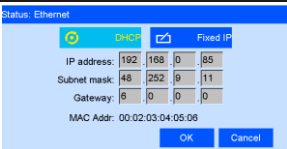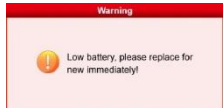
5.7 Status Bar (See Figure 1)

	Ink information	Ink information includes dynamic and static information. Static information includes cartridge serial number, client code, cartridge type. Dynamic information: 1) ink original volume, and prospect print output for current data. 2) Ink remaining percentage, prospect print output for current data. Ink status icons include: 1) Normal ( ): Normal ink status. 2) warning ( ): ink amount lower than 10%; 3) Error ( ): wrong cartridge, cartridge not installed, or ink used up.
	Equipment status	Hardware and software status in printer. (e.g. Printing not started)
	USB information	Automatically displays by icon for equipment normally connected to USB port. Support three devices: USB disk, mouse, and keyboard. Status: not connected (gray), normal connection (green), warning (yellow). Normally connected equipment will be displayed by icon USB disk, mouse, or keyboard.
	Encoder information	Displays encoder or photocell connection status as unconnected (gray) and normally connected (green).	When encoder is connected, click encoder signal test interface appears.
	Photocell information		When photocell is connected, click photocell signal test interface appears.
	Ethernet information	The printer connection to computer is realized by Ethernet port, therefore realizes equipment operation and upgrade transmission on PC end. Information includes display IP, mask code, gateway, MAC; can automatic gain or manual input IP, mask code and gateway.
		Status includes: Unconnected (gray); Normally connected (green, interaction with PC software normal); Warning (yellow, interaction with PC software wrong, connection failure, software on PC not activated, computer not switched on etc.).
	Battery information	Displays battery information by five levels: 100% 、 80% 、 60% 、 40% 、 20% 。
		Note: When battery is less than 20%, system displays message to alert you of the low battery condition and prompts battery replacement.

	Clean Printhead	Status: Invalid (grey), while printing going on, this function is invalid. Valid (green), can active this function.

Chapter Six: Care and Maintenance

Printer is a precision machine. To keep your machine work properly and bring facilitation to your production; to keep your machine in good condition and extend equipment life, it is important to carry out proper care and maintenance on machine from time to time.

6.1 Printer Care and Maintenance

6.1.1 You may fully charge the battery but do not overcharge the battery. It is suggested not to overcharge it by long time, and not to use the battery in too cold or too hot condition.

6.1.2 Make sure to use and drain off the battery and recharge it at least once a week.

6.1.3 Make sure to check if the printer is loaded with ink cartridge and battery. Make sure to check if the battery has drained off.

6.1.4 Clean ink cartridge: wipe nozzle plate with Non-woven to keep nozzles clean and unclogged. (Please refer to ink cartridge care and maintenance for instructions).

6.1.5 Keep touch screen clean. Do not hit touch screen sharply.

6.1.6 Keep machine surface and ports clean.

6.1.7 Check status bar upon machine startup, make sure status bar is normal and check if there's alarm of error. (In case of alarm of error, check troubleshooting for solution).

6.1.8Depending on properties, some ink cartridge may require to be removed from printer after use. Turn off the machine after use, and remove the cartridge from printer. Wipe the printhead clean with Non-woven, cap the printhead with the designed cap for prevention of the nozzles from clogging, and store the capped cartridge in safe environment with printhead facing up. (Please refer to ink cartridge care and maintenance for instructions).

Note: Standard battery cannot be substituted.

6.2 Ink Cartridge Care and Maintenance

Maintain correct methods for use and storage of the cartridge will keep the cartridge work with best print quality and extend cartridge life. Please always follow instructions in Ink Cartridge Care and Maintenance. The warranty will not cover damage or failure caused by negligence in following our care and maintenance instructions.

6.2.1 Ink volatilizes slowly if the cartridge is decapped. Keep new and undecapped cartridge in its original package. Decap new cartridge only when it is to be used.

6.2.2 Try to use up ink as soon as possible once the cartridge is decapped to prevent blockage because ink become dry on nozzle plate very soon.

Note: Due to property difference, different inks have different dry time or care and maintenance methods. Contact our after-sale service for more information.

6.2.3If ink in cartridge is not used up at a time after decapped, remove the cartridge from printer and cap the printhead and store it in airtight container. (Storage temperature is room temperature).

Note: Do not use adhesive tape to seal the printhead, and do not store cartridge in soft plastic bag.

6.2.4 Nozzle plate is delicate. Do not touch or clean nozzle plate with anything sharp or rough so as not to scratch nozzle plate.

6.2.5 Use the Non-woven provided by our company to wipe and clean nozzle plate.

Note: Wipe nozzle plate with the printhead facing down. Move the printhead in the direction of nozzle channel. Move the printhead in the direction across nozzle channel will damage the nozzles.

6.2.6Do not shake ink cartridge or expose it to vibration. Shake or vibration will get air run into cartridge and affect print quality.

Chapter Seven: Troubleshooting

Note 1: The table below lists the most commonly seen problems and the solutions to each. If there's any other problem, contact your local dealer or our after-sale service for assistance.

Note 2: The table below is for reference only because causes for each problem may differ depending on individual situation such as setup environment, operation demand.

7.1 Troubleshooting for Ink Cartridge

Sr.#	Problem	Problem	Solutions	Comments
1	The print has broken line or white line.	1. Nozzle blockage or damage.	A. See Section 6.2 Ink Cartridge Care and Maintenance, wipe and clean nozzle plate with Non-woven; B. See Section 5.4.3, purge the nozzles by the option "Clean Printhead".	If the problem is still unsolved: Check if there's any spring-loaded connectors depressed in Driver board; Check if there's contamination on cartridge contact plate.
		2. Cartridge not in good contact with printer.	Remove the cartridge and re-insert.	
2	The print is complete at first, and then becomes incomplete	Ink starvation or air bubbles blocking nozzles.	A. Check status bar if there's alarm of low ink. B. Send back to our company for test.	
3	The print is totally blank.	Ink used up or total nozzle blockage.	See Section 5.7 to check ink status: is ink used up?	
4	Unable to identify ink cartridge.	1. Connectivity problem on printer (defect or damage)	Remove cartridge and re-insert.	If problem is unsolved: Check if there's any spring-loaded connectors depressed in driver board. Check if there's contamination on cartridge. Check if there's contamination on ISM card. Check if there's any connector depressed on ISM card board.
		2. Cartridge dealer code mistake.	Remove cartridge and re-insert.	

7.2 Troubleshooting for Printer

Sr.#	Problem	Cause	Solutions	Comment
1	Printer cannot be switched on	1. Low battery.	Replace a new battery.	
		2. Battery connectivity problem.	Remove battery and re-install.	
		3. Equipment or battery damage.	Contact local dealer or after-sale service.	
2	Printer does not print	1. Printing not started.	Click "Start printing" button to start printing.	
		2. No data for printing.	Select a file and click "Start printing" button.	
		3. Printing delay value too big.	Check if the printing delay value is normal.	
		4. Cartridge not installed.	Install a cartridge.	
		5. Cartridge installed but used up or damaged.	Check cartridge status according to Section 5.7, is ink used up or cartridge dealer code wrong?	If ink used up, or cartridge dealer code wrong, replace a new cartridge.
		6. Photocell not works.	Check if photocell switch is normally connected, check according to Section 5.7 to see if photocell works.	Click for photocell signal test interface, press printing switch to test if photocell works.
		7. No signal output from encoder.	Check if encoder works, check encoder status according to 5.7.	Click for encoder signal test interface, move encoder to see if encoder works.

Appendix 1: Terms and Definitions

Sr.#	Term	Definition	Comment
1	Printing delay	It is the distance from the point when photocell senses the printing object to the point when printing starts. User can adjust the value to alter the print position on printing object.	E.g. Printing delay value is 30mm, printer starts printing at 30mm point after the photocell senses the printing object.
2	Printing initial value	It is beginning value in printing process for print data.	E.g. Set the initial value as 9, the counter counting starts from 9 for first print.
3	Screen saver time	It is a power saving function, the screen will automatically turn off and enter standby mode when the screen is inactive for a time period as set.	E.g. Set the screen saver time as one minute. The screen will automatically turn off and enter standby mode if the screen becomes inactive for one minute.
4	Customer year	It is the special year on customer demand. Customer can change the year in date format by any round number within scope.	E.g. The system date is 2012/07/31. Supposed the date by customer is 2010/07/31, customer can set the year in date as 2010. Then the date shown on the print will be 2010/07/31.
5	Date transition time setting	When system time reaches certain point, the printout date and time will be that of the next date.	For example: Current date is 07.10, set the date transition time to be 07:59, then the time of last printing out before that is recorded as 09/07 07:59, after that is 10/07,8:00. If the date transition time is 12:01, then the time of last printing out before that is recorded as 10/07 12:00, after that is 11/07.
6	Pre-purge	Ink becomes dry on nozzle plate during use. The dried ink will make the print not clear for half of first character. To prevent this phenomenon, user can turn this function ON.	When Pre-purge function is turned ON, printer will spray a little ink at optioned level during idle period in printing process to keep nozzle plate warm and moist so as to eliminate dried ink phenomenon.
7	Clean Printhead	Customer can use this function to purge nozzles.	Purge whole nozzle plate, make sure nozzles are unblocked.
8	Channel switch	Customer can switch for different channel to achieve best print quality according to print need and nozzle channel condition.	E.g. At option of single-channel printing, when there are damage in left channel nozzle or there are missing dots in print by left channel, user can switch to right channel printing. At option of dual-channel printing, left channel and right channel will work at same time for printing to achieve darker print and best print quality.
9	Continuous printing	Multiple outputs of same print during one session of period photocell sensing the print object.	
10	Printing Recovery	When there is a power failure, and the setting is "ON", system will go back to the last printing status and resume printing when power gets back. The default setting for this function is "OFF"	When the printing contains counter, and the Printing Recovery setting is "ON", operator need to check on the counter value and do needful adjustment.