

G series Product Instruction



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About this Manual

Welcome to the Instructions for Use for the QBCODE G Series Continuous Ink Jet printer.

This handbook is intended for everyday users of the printers and contains:

About this Manual— Safety, hazard and technology information for printers, including brief introduction of ink jet printing.

Main Parts— A description of the main parts of printers.

Getting Started— Complete instructions for quick setup.

System Menu— An overview of the printer user interface.

Creating and Editing Messages— complete instructions for how to create and edit messages using the control software.

Printer Setup— information on software configuration option for the printer.

Maintenance— operator level maintenance procedures.

Installation and Inspection

Power Supply

Ensure that the mains electrical supply is within the range indicated by the label adjacent to the mains inlet on the printer. If the voltage ratings differ, do not use the printer until you have consulted your local supplier.

Use only the power cable supplied with the printer.

Grounding

The equipment must be connected only to an AC power supply which has a protective ground conductor in accordance with International Electrotechnical Commission (IEC) requirements or applicable local regulations. Any interruption of the protective ground conductor or disconnection of the protective ground terminal may render the apparatus dangerous.

Warning Notes



LETHAL VOLTAGES. Lethal voltages are present within this equipment when it is connected to the electrical supply. Only trained and authorised technician may carry out maintenance work. Making sure the printer is disconnected with the power before removing the covers, processing maintenance or repair activity. The failure to follow this caution can cause danger to the operator and damage to the printer.

HANDLING INK, SOLVENT AND TOP-UP. It is necessary to wear protective clothing and rubber gloves. It is necessary to wear goggles with side-shields or a face mask. It is also advisable to wear safety glasses when carrying out maintenance. If ink or solvent fluid

contaminates the skin, wash immediately with soap and water. DO NOT use wash down or solvent to clean ink stains from the skin.

FIRE AND HEALTH HAZARD. The ink and solvent are volatile and flammable. They must be stored and handled in accordance with local regulations. Do not smoke or use a naked flame in the vicinity of these substances. Immediately after use remove any tissue or cloths that become saturated with these substances. Dispose of all such items in accordance with local regulations.

VAPOUR HAZARD. Prolonged breathing of solvent fluid or cleaning fluid vapor may cause drowsiness and/or effects similar to alcoholic intoxication. Use only in open, well-ventilated areas.

TOXIC HAZARD. The cleaning agent is poisonous if inhaled or swallowed. Do not drink. Seek medical attention immediately if ingested.

Caution Notes



EXCESSIVE USE OF TOP-UP OR SOLVENT. As solvent is used during the stop cycle, repeatedly stopping and starting the printer can lead to excessive use of top-up or solvent and may lead to a *Mixer Tank High* error and low ink viscosity.

QUICK STOP. After a Quick Stop, the machine should not be left in this state for any length of time as drying ink may make restarting difficult.

EQUIPMENT DAMAGE. Do not fit or remove any connector on the printer whilst power is on, otherwise the printer may be damaged.

CLEANING MATERIALS. To avoid damage to the printer components, use only soft brushes and lint free cloths for cleaning. Do not use high pressure air, cotton waste or abrasive materials.

EQUIPMENT DAMAGE. Ensure that the cleaning agent is compatible with the ink used before carrying out printhead cleaning otherwise the printhead may be damaged.

EQUIPMENT DAMAGE. The printhead must be completely dry before attempting to start the printer otherwise the printhead may be damaged.

RISK OF DATA LOSS. All messages apart from the (TEST MESSAGE) will be deleted when you select the Delete All Messages option.

RISK OF UNAUTHORIZED ACCESS. To prevent unauthorized access to the software, ensure that Clear Password is executed when exiting from a higher level password.

Support and Service

Contact Information

If you have any questions or need assistance, please contact QBCODE headquarters, subsidiaries, local distributors or offices for assistance.

About Service

Service is an integral part of the process of business development, constituting the perfect user experience and showing outstanding product function. Our product has a firm carton package of five ply corrugated boards, with clear warning marks.

- Applications support
- Installation services
- Maintenance training
- Technical support
- Field service
- Extended hours phone assistance
- Parts and supplies
- Repair service
- Customer response center

Brief Introduction

This chapter includes the following information:

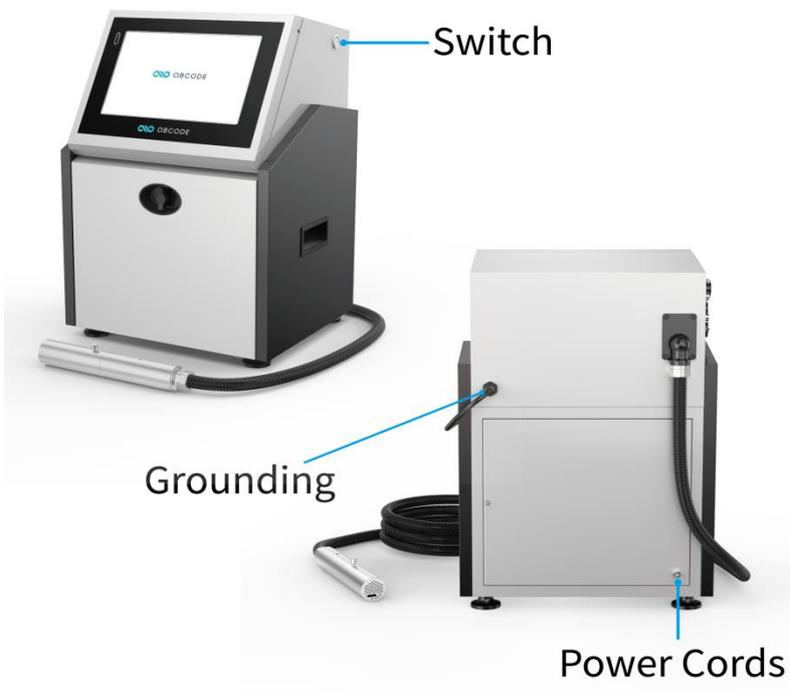
- Specification
- Main parts
- System menu

1.1 Specification

Printing Performance	34 dot matrix	1-4 line(5x5 matrix)
		1-4 line(7x7 matrix)
		1-5 line(5x5 matrix)
Printing Distance		2-30mm
Character Size		5x5,7x5,9x6,12x8,12x12CH,16x11,16x16CH
Printing		English, Arabic numbers and common symbols, User-defined characters, Serial Number, Automatic date, direct editing of Chinese characters and trademark patterns, barcode, QR code, external data,
Display Screen		12.1-inch high definition Touchscreen
Printing Direction		360° All-round printing
User Interface		Multi-language system , Chinese Simplified, Chinese Traditional, English, German, Portuguese, Russian, Spanish, Thai, Arabic, Croatian, Persian, Slovak, etc.
Maximum Printing Speed		2160 characters per second (CPS) (5*5 matrix,single line)
Stored Data		1000+
Printing Conduit		3 meters Standard
Data Interface		USB/RS232/RS485/ Ethernet
Temperature Range		0-45°C
Humidity Range		30-90% Relative humidity, non-condensing
N.W.		26KG
Power		AC100-120/220-240V±10% 50/60Hz 1-phase 150VA
Size		L610mm x W490mm x H780mm

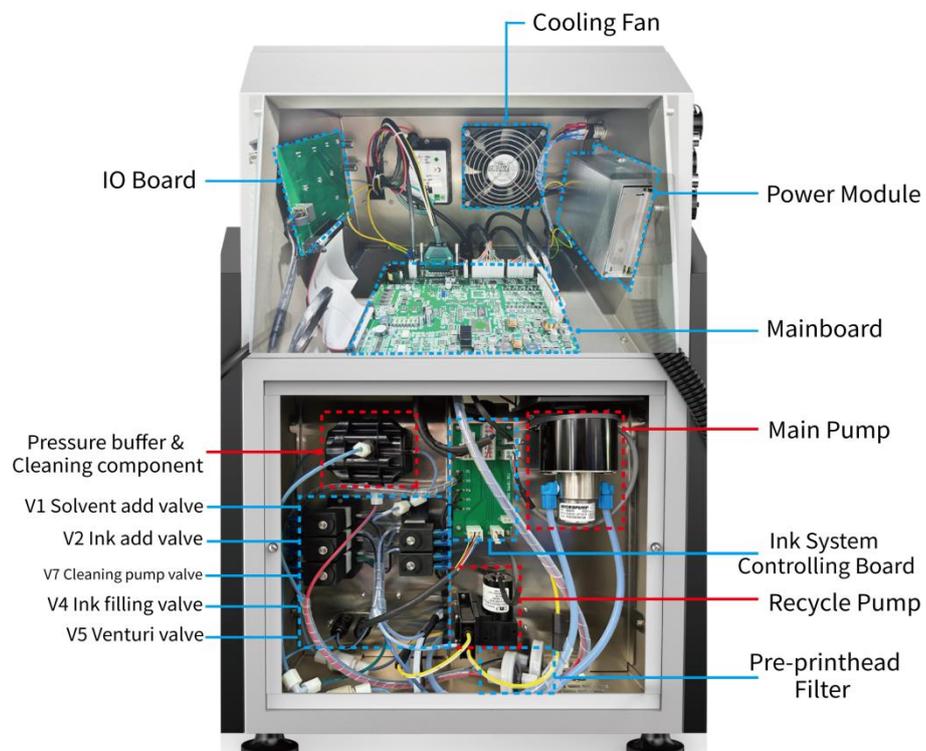
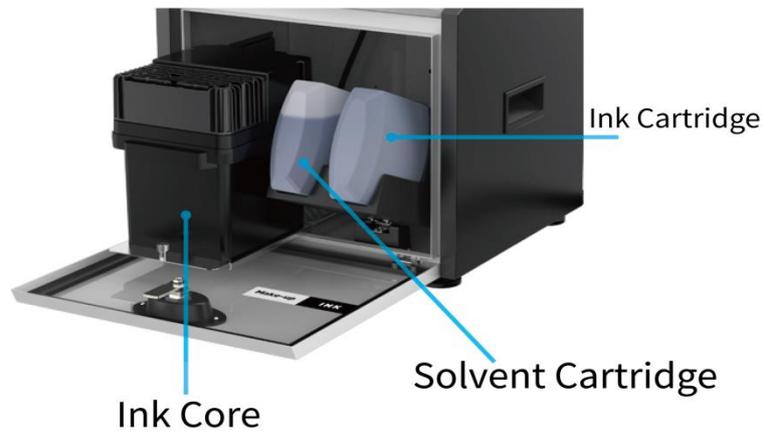
1.2 G3S Series Main Parts

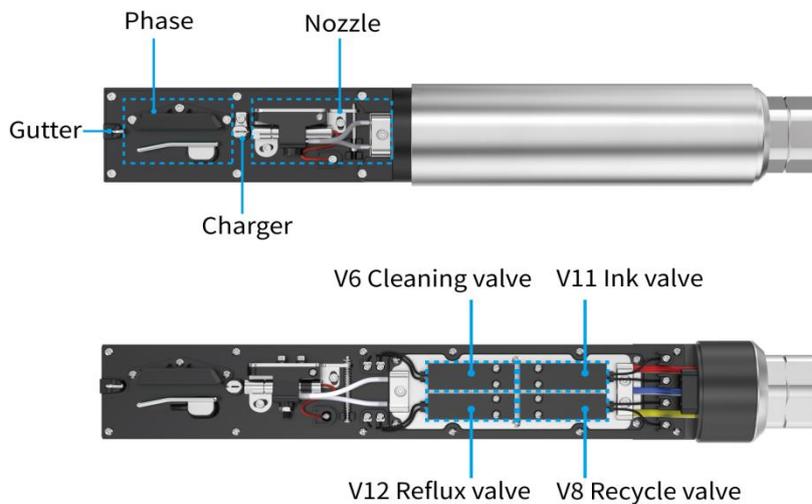
Front View



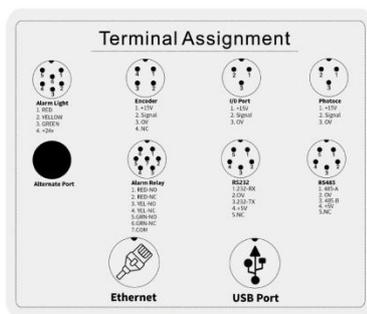
Back View

1.3 G3S Series Internal View





1.4 G3S Series Port



Alarm screw position



1.5 Main Interface



- ①、 Username, User level, USB Status, Modulation Status Display
 - ②、 Current Printing information and Printing Status display
 - ③、 Time Display (Time setting will be available when printer is login)
 - ④、 Language Setting
 - ⑤、 Solvent & Ink Display
 - ⑥、 Faulty sign display
 - ⑦、 Assistant Page
 - ⑧、 User Page
 - ⑨、 File Page
 - ⑩、 Setting Page
 - 11、 Trigger Printing button
 - 12、 Printing Start/Pause control Button
 - 13、 Inkline Start/Pause control Button
 - 14、 Printing technology display and clear button
 - 15、 Font Display and Font setting page
 - 16、 New Message
 - 17、 Current Message Editing
 - 18、 Message File
 - 19、 Switch Menu Button (1、 Service Provider 2、 Counter Page 3、 Message Parameter)
 - 20、 System Information Page
 - 21、 Current Message Display
- Top Menu page, colour changing according to the status of printer

Note: The printer is available for touch and mouse operation.

1.6 Keyboard Introduction



1.	Name of Message	4.	Right	7.	Search Message,Next Page
2.	Multi - Language Keyboard	5.	Exit	8.	Search Message,Last Page
3.	Left	6.	More Display	9.	Word Display

Basic Operation

This section contains the following instructions:

- Start jet/Stop jet
- Homepage operation
- Time and system language settings
- Screen settings

2.1 Start Jet/Stop Jet

2.1.1 Power on inkjet printer



Please follow these steps to start jet :

1. Please ensure all wires and cables, including the grounding wire, are connected perfectly;
2. Please ensure the power cable is connected and power on;
3. Turn on mains power switch;
4. The inkjet system initiates. When the following main interface appears, the printer has been turned on.

2.1.2 Start Jet

Click the button  on the lower right corner of the screen. In this process the printer will start the operation of automatic cleaning, and the startjet button  is flashing all the time, which can take about 2 minutes.

After the jet start sequence finishes, the startjet button becomes a status of Print Enable . The product sensor is triggered and printing commences automatically. When the printer is running you can monitor its status:

- The status icons on the display.
- The LEDs on the LCD panel.
- Alarm light (If Installed).

Quick Start

Quick start generally refers to the operation when printer needs to start up again within 30 minutes, which aims at reducing the waiting time.

Step 1: Click the "System Control" at the bottom of the main interface;

Step 2: Click the "System Control" on the right side of the screen;

Step 3: Click the "Quick Start/Power On", the inkjet printer starts up successfully after the jet icon of the main

interface turns into green .

2.1.3 Stop Jet

Click the button  on the lower right corner of the screen to stop jet, The inkjet printer is closed after the jet icon of the main interface turns red . DO NOT switch the printer off until the flush procedure is complete.

Quick Stop:

Step 1: Click the  "System Control" at the bottom of the main interface;

Step 2: Click the  "System Control" on the left side of the screen;

Step 3: Click the "Quick Stop", the printer stops successfully after the

jet icon of the main interface turns into .

Note:

1. Stopping jet needs about 4 to 5 minutes. After the printer finishes automatic cleaning, the jet will stop.
2. Do not frequently start jet and stop jet within the same day. Otherwise, it will trigger alarm of "Mixer Tank Level Too High" and "Ink Viscosity Too Low" so that the printer cannot run normally.
3. The operation of Quick Stop should be under the guidance of a qualified maintenance engineer to prevent the ink supply system becoming clogged with ink.

2.1.4 Power Off

After the cleaning process for jet-stopping is complete, press the power button to power off.

Note:

1. Every time the jet is started or stopped, the printer will automatically clean its printhead, which takes about two to five minutes. When the screen appears “Jet is not running”, you can power off. Otherwise, the ink system will be clogged with ink.

2. If the printer has not been used for over one week, after the normal procedure of starting jet is complete, enter the System menu and select Nozzle Flush, and then execute manual cleaning. This operation helps to extend its lifetime.

2.2 Authority Management



Sample Message Stop ink line finished

Wed 2023/04/26 09:50:49



Admin Management

To ensure production progress and efficiency and prevent bad printing effects or mistakes due to wrong operation, the printer has three-level passwords: non password, user password and maintenance password (super password). Every time after entering the system, the default status is non password status. Each time you enter the system, you need to log in as follows:

Step 1: Click the login button  on the main interface

Step 2: Press the  after inputting the password in the keyboard ; the access permission operation will take effect when the icon is displayed as .

When inputting user passwords (default: 888888, see password modification menu for changing password.), user-level functions are available. When inputting maintenance password (super password), engineer-level functions (including user-level functions) are available. If you do not log in the required level, click the function and fault warning will appear

Edit User Password

After logging in user password, click the login button  on the main interface, and modify user password. After inputting the passwords, click “Enter”, and then new passwords take effect.

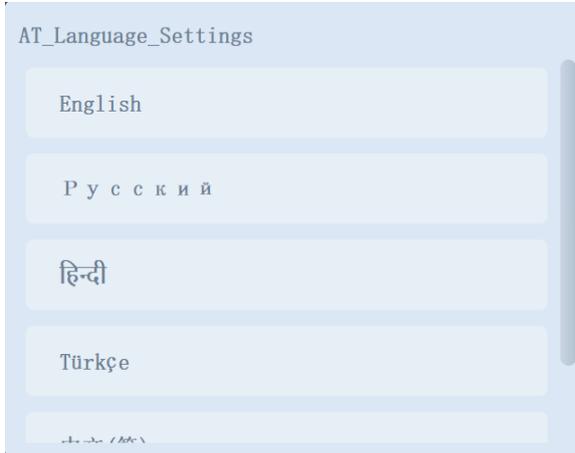
Forget User Password

If you forget user password, please log in engineer-level password and Click the login button  on the main interface. Then click the button “Recover User Password”. The prompt box of “confirm to recover user password?” appears and click “Yes” to reset the password.

Log Out

First, after login, when you turn off the printer it will automatically log out. Second, click the login button on the main interface. Then click logout. Third, click the login button  and turn on the automatic logout features. After 10 minutes it will log out automatically.

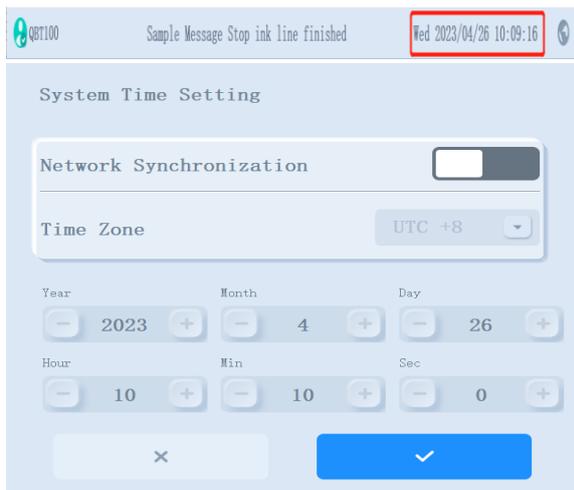
2.3 System Language, Date and Time



System Language click the system language button  on the interface. Click the language you require on the list and then it takes effect immediately.

Note: System language is the language of menu in the operation system.

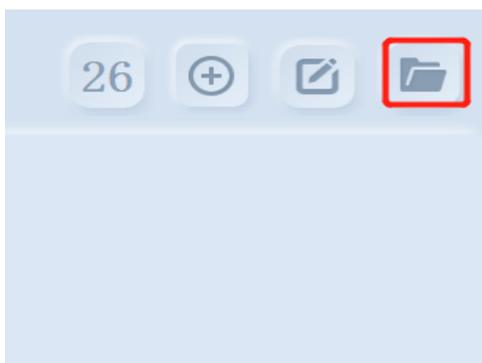
Date and Time



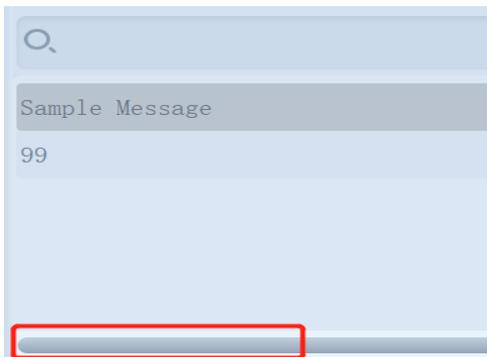
User-level function. Log in user-level password and then click the area of date and time on the main interface. The following interface appears. You can change Year, Month, Day of Month, Hour, Minute and Second by clicking the number directly, click the button “” to confirm. Click the button “” to cancel.

Note: Use the correct year and month to log in administrator privileges.

2.4 Message Search and Preview



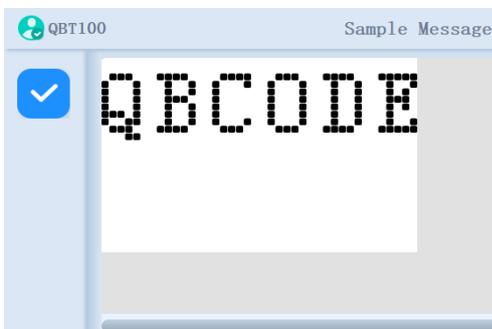
Select: Click the button  on the right corner of main interface and select any message name from the list to load it as the current printing message.



Check: In case of many message files, drag the scroll bar to quickly browse all files.



Search: Click the search button  on the message file interface, and then enter the state of searching message file. Input the first letter/number of the name on the pop-up keyboard, automatically folding up the keyboard and matching the existing message file. Select the filtered message file, and then load it as the current printing message.



Message Preview

The picture above is to preview printing message. Drag the scrollbar left and right to check the message. When switching messages, this preview box will update in real time.

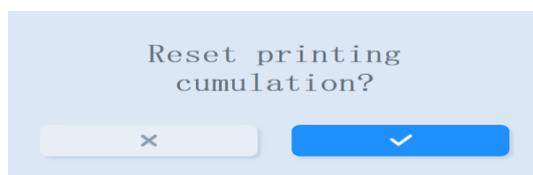
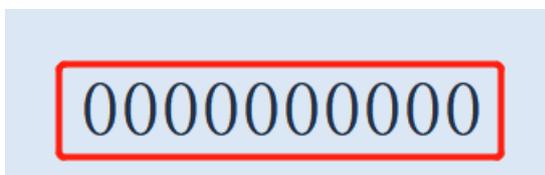
2.5 Product Counter

Total Printing Counter

The area of the picture above is product counter. It follows the inkjet printer rather than print messages.

Reset Counter

Click this area, and then the box of "Reset printing cumulation? " appears. Click the button "Yes", and then the counter will be zero.



2.6 Fault and Warning Information



As the picture on the left shows, the red box includes fault icons of printer, such as printing status, fault and warning icons. When this fault icon appears, click this icon and then the interface of all fault information appears

All fault icons and explanations are shown in the table below:

Icons	Name	Explanation
	Jet Started	The ink jet is running, and the machine is ready to print.
	Jet Stopped	The ink jet is stopped.
	Ink low	The ink level is low and must be replenished. If the icon is still displayed after replenishment, contact maintenance engineer.
	Solvent Low	The solvent level is low and must be replenished. If the icon is still displayed after replenishment, contact maintenance engineer.
	Lid Hood removed	Printhead cover is not closed correctly. The screw of the EHT switch not closed properly. The printer will continue to run but will not print. If this icon appears when the printhead cover is closed correctly report the fault to a maintenance engineer.
	Mix Tank High	Ink level in the mixer tank is too high. The icon should extinguish after a short period of time. If the icon is displayed for over 5 minutes report the fault to a maintenance engineer.
	Mix Tank Low	Ink in the mixer tank has been used up. The icon should extinguish after a short period of time. If the icon is displayed for over 5 minutes report the fault to a maintenance engineer.
	VMS Low	VMS Chamber cannot be filled fully. If the icon is displayed, report the fault to a maintenance engineer.

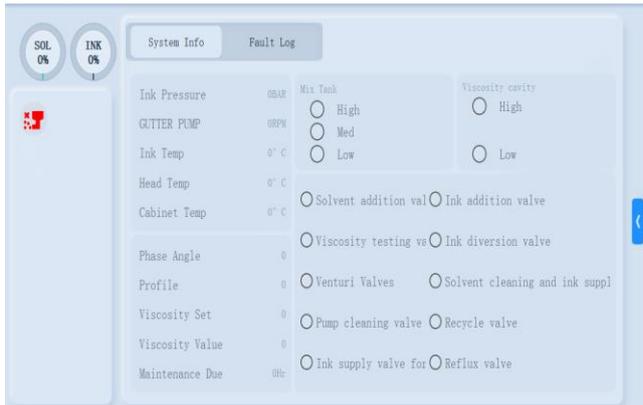
	VMS High	VMS chamber is incapable of being empty. If this icon is displayed, report the fault to a maintenance engineer.
	Abnormal Viscosity	Ink viscosity is too high or too low (more than 75% of set value). If the icon is displayed for over 5 minutes report the fault to a maintenance engineer.
	EHT	EHT leakage has occurred. The deflector electrodes, within the printhead, require cleaning. If cleaning does not solve the problem, contact a maintenance engineer.
	Charge Error	The printhead requires cleaning. If cleaning and drying the printhead does not solve the problem, then report the fault to a maintenance engineer.
	Gutter Fault	Ink is not entering the gutter. The printhead requires cleaning. If cleaning does not solve the problem, then report the fault to a maintenance engineer.
	High Temp	The printer cabinet has overheated (more than 65 degrees). To prevent damage, the printer shuts down automatically. The printer can be restarted after it has cooled.
	Need Service	The printer requires maintenance. Contact a maintenance engineer. The printer will continue to print until maintenance has been applied.
	Encoder Too Fast	Shaft encoder speed is too high to achieve the required print width. (Please reduce the number of printing dots or increase the character width if the printing width is out of control) If the print width is unacceptable, report the fault to a maintenance engineer.
	All Faults	Fault information exists. Click this icon to show all fault information. If the fault cannot be resolved, please contact a maintenance engineer.

2.7 Operation Parameters

Running Information

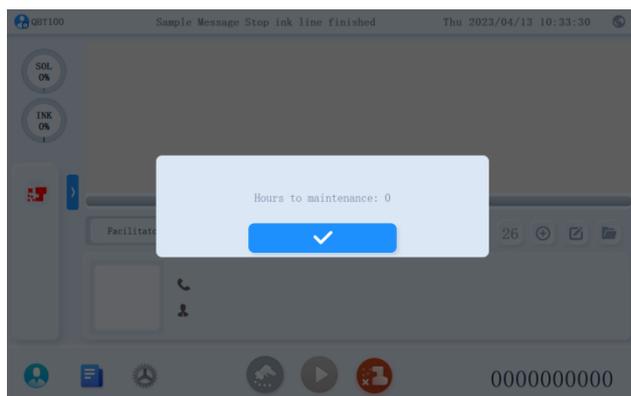


Click the button on main surface to view the overall information of current printer, including System information, Fault Report, Valve Status and Consumables.



Note: The system temperature of the nozzle is 35°C. If the inkjet printer is used in an environment with low temperature (below 10°C), it is recommended to set it to 45°C (35); if the inkjet printer is used in an environment with high temperature and the ink temperature have changed, it is recommended to set the temperature of the nozzle as the same with the ink temperature.

MAINTENANCE DUE: To ensure the normal operation of the equipment, the system has a set maintenance time. When it is less than 500 hours and more than or equal to 200 hours, the prompt message of remaining time appears when the printer is started, as shown in the figure as below.

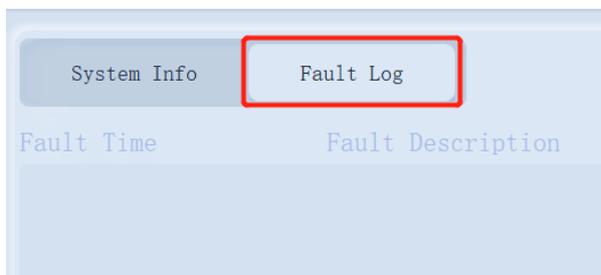


When remaining time is less than 200 hours, start the printer and then the prompt message of remaining time will appear. Plus, the maintenance due appears at the bottom of the main interface, as shown in the figure below.



When remaining time is equal to 0 hour, start the printer and then the prompt message of "0 hour" will appear. The printer cannot start printing. If it happens when printing, close the dialog box and then the printer continues to print. If you stop printing at this point, it will not restart.

Fault Report recording every fault message and its time.



The log can be exported to an external storage device through the USB serial port.

Valve Status showing status of all valves.

Return To Main Interface click this icon  to directly return to main interface.

2.8 System Parameter and Network Setting

2.8.1 System Parameter



System parameters are used to ensure the normal operation and the working parameters of printing. Click "Parameter"  - "System"  function menu on the main interface to open.

Incorrect dot modulation value will affect the printing effect, and even result in the charge error which will cause the inkjet printer automatically to stop the operation of ink line.

Incorrect charge value will affect the printing effect, and even result in the charge error, which will cause the inkjet printer to automatically stop printing. The normal value range: (135-170), the default value is 155.

When the inkjet printer is operating, it will automatically detect ink viscosity and adjust its value: when the current viscosity value is higher than the set viscosity value, the inkjet printer will automatically add solvent to the mixing box to reduce the ink viscosity so as to make it approach the set viscosity value; when the current viscosity value is lower than the set viscosity value, the inkjet printer will increase the ink viscosity of the inkcore by volatilizing the solvent of the normal operation.

The default value of operating pressure is 280. If it is applied to print upward, it is recommended to set the operation pressure as 320.

By adjusting the system parameters, the printer can have the optimum condition in different environment. The set values are shown in the table below.

System Parameters	Description
Modulation	Range: 5-99
Viscosity	Range: 150-600
Work Pressure	Range: 100-500
Printhead Temperature	Range: 0-60
Charge Value	Range: 80-200
Charge Error Shutdown	On/Off. When it is on, if charge error happens, the printer will shut down.
Gutter Error Shutdown	On/Off. When it is on, if gutter error happens, the printer will shut down.

2.8.2 Network Setting

Network Switches Turn on the network setting, enter the IP address and the Subnet Mask below to the Routers. Then, data transfer will be available

DHCP Automatically obtained the IP address of the current internet connection. Then, the data transfer is available

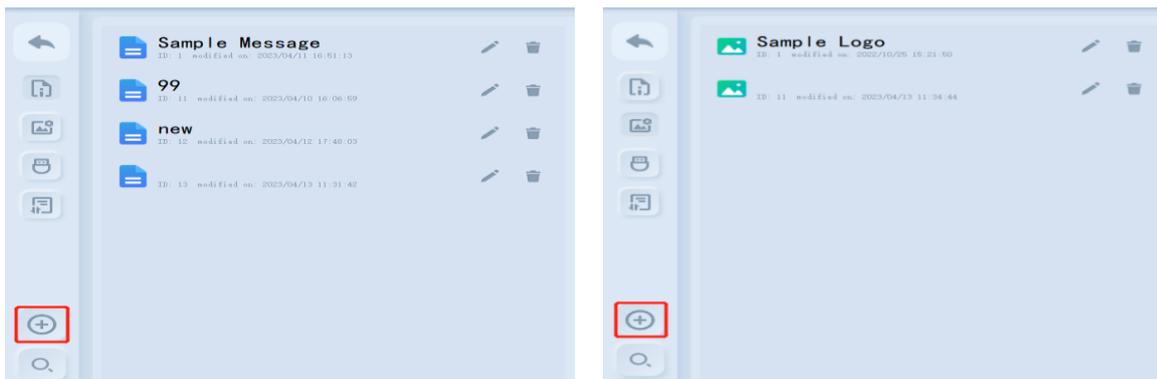
2.9 File Management



File management is at the bottom of the main interface, as shown in the figure, which is used for a new file, editing, deletion, and data transfer

2.9.1 Create New Message/Logo

Step 1: Click "File  /Logo 

 options, then click the New  icon to pop up the following dialog box;


Step 2/step 3: Enter the new message name then click the button to enter Message Editor ;

Step 4: After editing the required message, press the Save  to save the current message.

Note: File name supports English, numbers and symbols. Click "Cap" to change capital letters or lowercase letters.

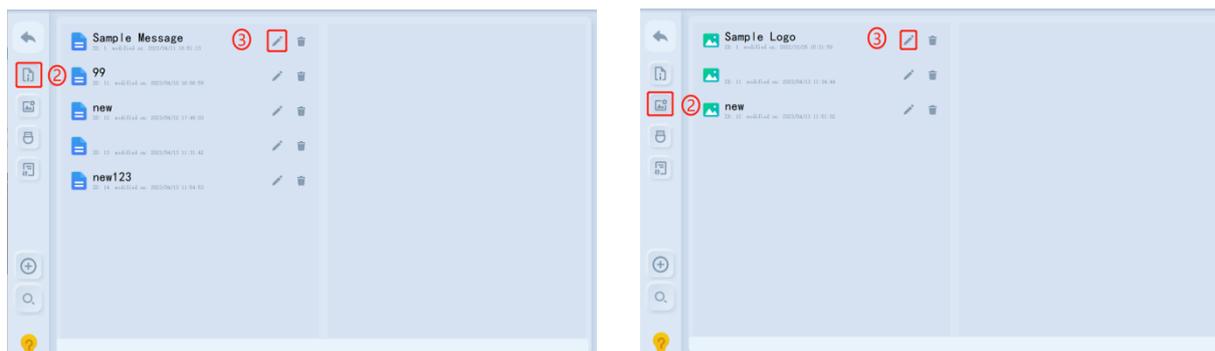
2.9.2 Edit message/Logo

Step 1: Click the "File"  to pop up a dialog box;

Step 2: Click "File/Logo" to enter the menu interface;

Step 3: Click the Edit  in the toolbar to enter the editing state of the current message.

Tip: Editing is not available when multiple icon files are selected.



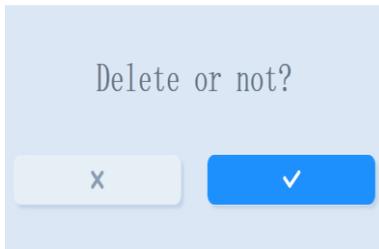
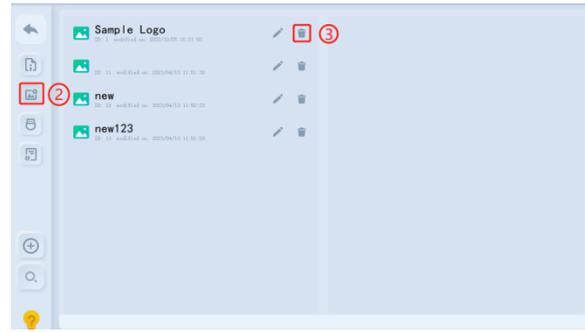
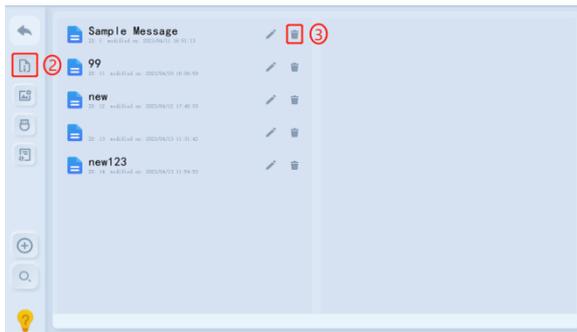
2.9.3 Delete Message/Logo

Step 1: Click the "File"  to pop up a dialog box;

Step 2: Click "File/Logo" to enter the menu interface;

Step 3: Click the Delete  in the toolbar to delete the selected file;

Step 4: In the pop-up dialog box, if the cancel button is selected , the system will not delete the file; if select the Enter , the system will delete the selected file.



Note: Multiple selected files can be deleted at one time;

The system files cannot be deleted, including Sample Logo, Sample Message, MSG_A and MSG_A.

2.9.4 USB Management



This device supports the mutual transfer of data and files between local files and external USB storage devices with FAT32 format (other formats will not be recognized), and supports the transfer of multiple data or multiple files.

To confirm whether the format of the USB is FAT 32 or not, please do the following:

1. Insert the USB into your computer;
2. After confirming that the computer recognizes the USB, enter My Computer (Computer);
3. Find your USB, and right click the mouse button;
4. Click Properties in the pop-up window;
5. The File System displayed in the General option on the pop-up page is the format of the USB.

Access USB:

Insert the USB into the corresponding port on the right side of the machine, and confirm that the USB is inserted in place, the system will display the icon  , indicating that the USB has been recognized.

Remove USB:

After completing the data or file transfer, please do not remove the USB directly, otherwise it will damage your USB or cause data loss. Please follow the steps below to remove the USB:

Step 1: Click the USB icon  on the main interface;

Step 2: In the pop-up dialog box, click the Enter  to confirm the exit;

Step 3: When the USB icon  in the main interface disappears, pull out the USB.

Data Transfer/File Transfer

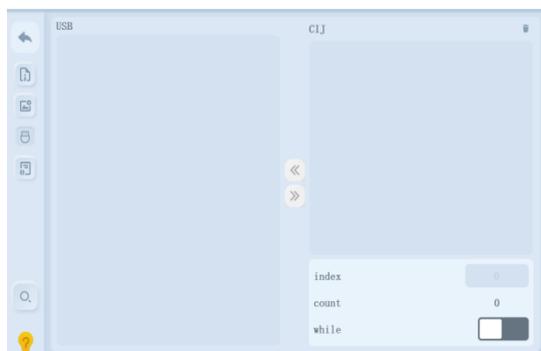


The external data file must be in txt/csv format, and the order of information arranged in Row, for example: the first row is the first message, the second row is the second message, and so on...

Each message supports up to 100 characters, and the characters only support ASCLL characters and Chinese characters.

- Set the index: Which activates printing the information according to your setting;
- Open or close circulation setting:

Yes: When printing to the last message of the file, the next printing will be operated from the first message again;



No: When printing to the last message of the file, the next printing will be operated the last message;

Click the Search button  , search message file, input the first letter/number of the name on the pop-up keyboard, automatically folding up the keyboard and matching the existing message file, select the filtered message file to perform import/export operations.

Click the Delete  , and the selected information file will be deleted.

Click the   to initiate internal/external data transfer.

Note: 1. The Logo name does not contain spaces; 2. The Logo format is: logo.

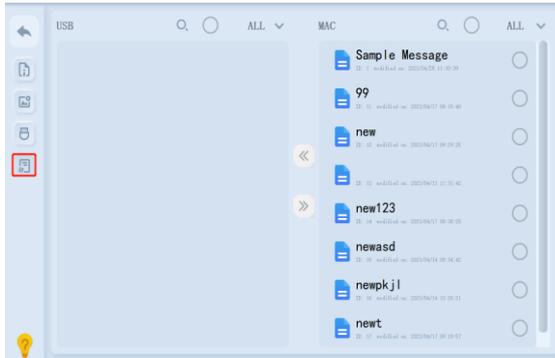


Data Import

Step 1: Insert the external storage settings into the USB interface;

Step 2: Click the "File"  at the bottom of the main interface;

Step 3: Click the "External"  to enter the function interface.



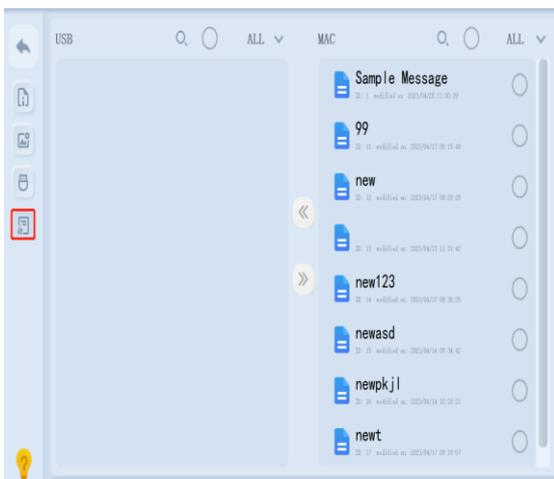
File Import

Step 1: Click the file (message, database, Logo) in the USB menu on the left;

Step 2: Click the  on the right side of the file to make it turn into  ;

Step 3: Click the  to import the selected file to the computer

All imported messages, data and logos are visible and available for editing on the "File/Logo" page



File Export

Click the file (message, database, Logo) in the USB external data menu on the right; click the

 on the right side of the file, when it turns into .

click the  to import the selected file to the external USB.

When you click the text  or logo  on the "File Transfer" interface, all text files or logo files are displayed individually. When click "ALL" are selected, all files in external storage device/local storage are displayed simultaneously.

The exported local data, information and files are backed up on the inserted USB external storage device.

2.9.5 Font Management

This menu function can add or delete standard fonts and custom fnt/fnts (icons) in TTF format in the device. See 2.9.4 File Transfer for taking the corresponding operation steps.

Note: This function is only accessible by Administrator, and the User does not have access permission.

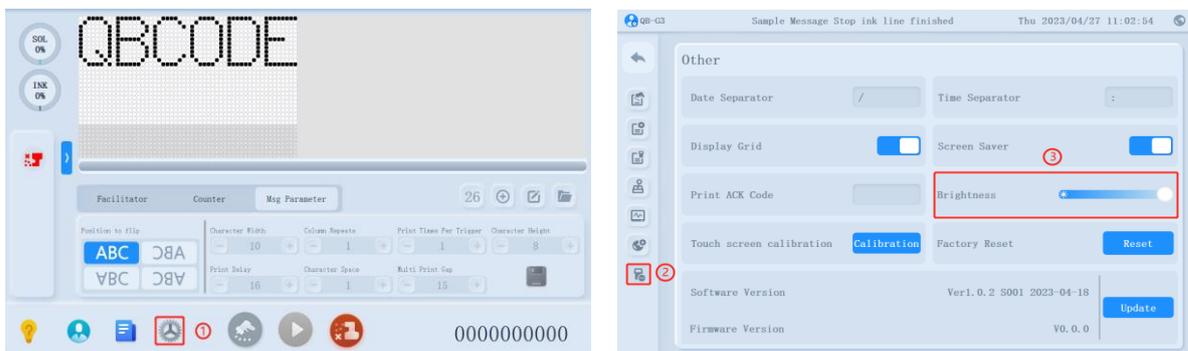
2.10 Screen Setting

2.10.1 Brightness

Step 1: Click  "Parameter" in the main interface to pop up a dialog box;

Step 2: Click the  "Other";

Step 3: In the pop-up dialog box, drag the slider left and right to adjust the brightness (value 0-10).



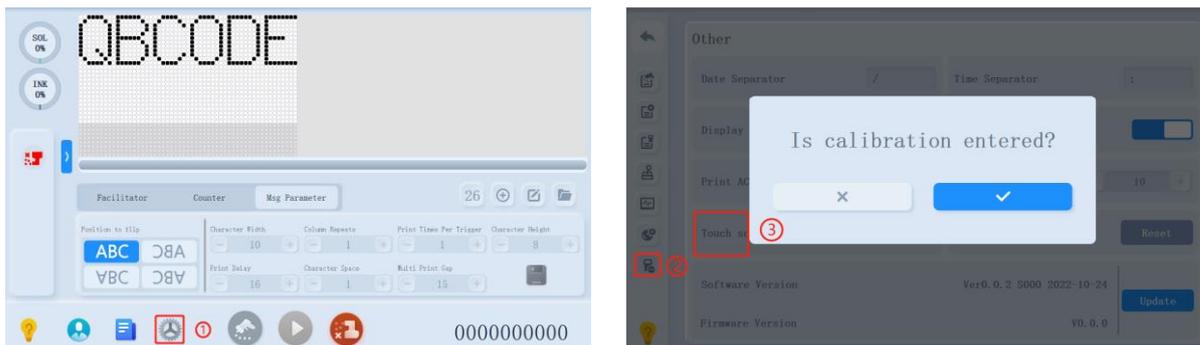
2.10.2 Screen Calibration

When the screen display effect is not visible/clear, re-calibrate the display effect through the screen calibration function. The operation steps are as follows:

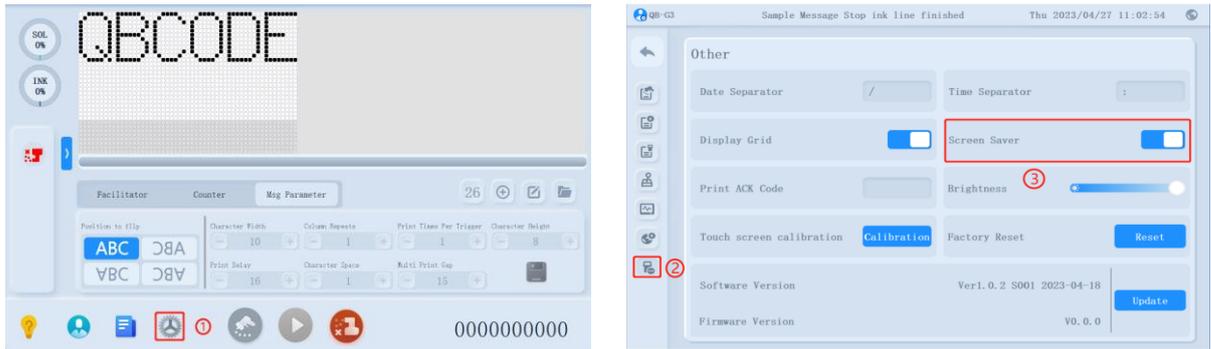
Step 1: Click  "Parameter" in the main interface to pop up a dialog box;

Step 2: Click the  "Other";

Step 3: Click "Calibration": Function Options, click the  to cancel the calibration, and click the  to confirm the calibration.



2.10.3 Screen Protection



The Screen Protection option is available by default. After 3 minutes without any operation, the inkjet printer screen will automatically turn off. In the normal power-on state, the inkjet printer is working to form ink line and to mark after the screen is automatically turned off.

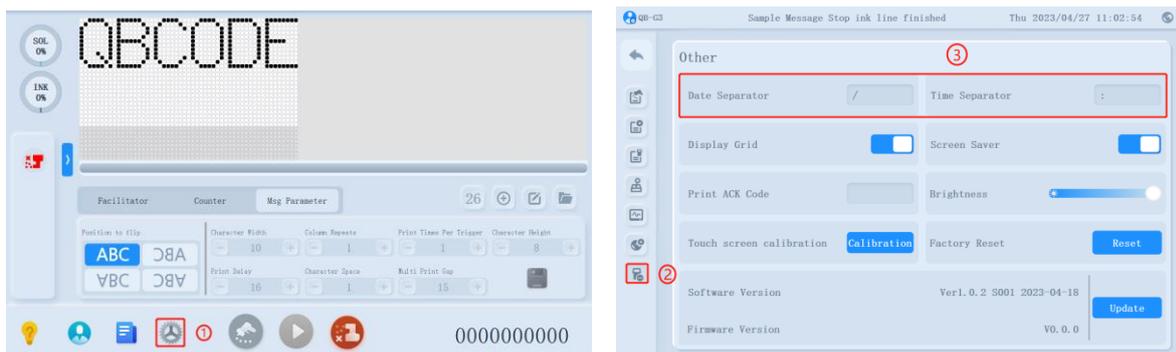
If you want to turn off the screen protection, the operation steps are as shown in the figure above:

Tip: To realise energy saving and environmental protection, it is recommended to open the screen protection.

2.10.4 Separator Setting and Grid Line

Separator Setting

The system provides date and time separating settings. The default date separator is "/" and the time separator is ":". The separators of date and time can be customised by inputting on the keyboard. The steps are as follows:



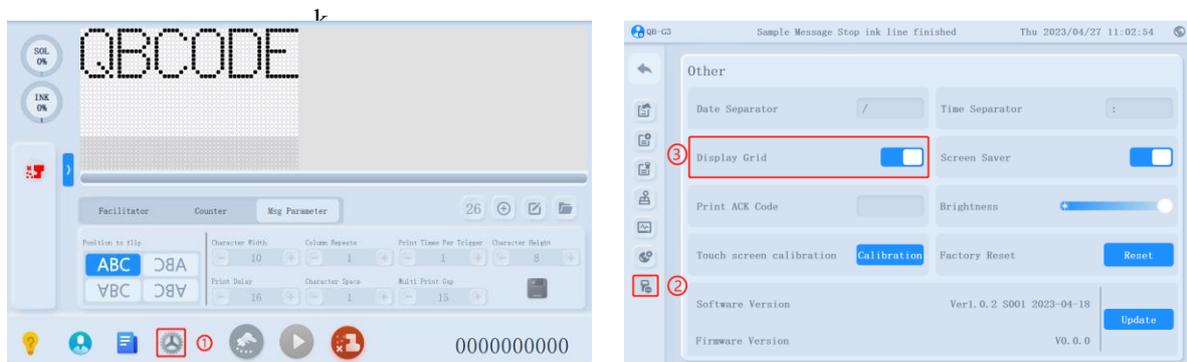
Step 1: click the  "Parameters" button in the main interface;

Step 2: Click the  "Other" button;

Step 3: Customize the date separator or time separator respectively by inputting on the keyboard.

Turn On/Off for the Grid Line

In order to conduct efficiently for the information editing, the grid line function of the system is on by default. The grid line function can be used to easily align and check the effective area of information. If you need to turn this function off , then the steps are as follows:



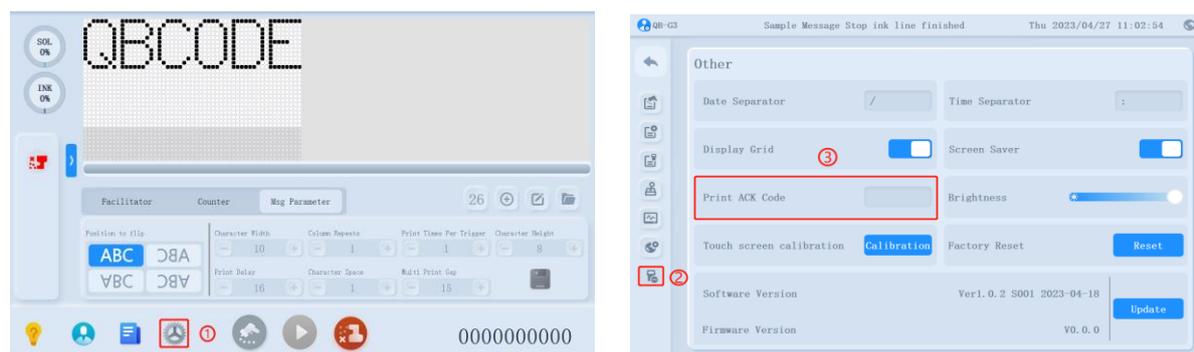
Step 1: click the  "Parameters" button in the main interface;

Step 2: Click the  "Other" button;

Step 3: Click the button to turn off/on grid line.

2.10.5 Print Ack Code

This code is used for customized system for QBCODE. For example, if customer A orders a system of special functions and sets the confirm code as“123”, when customer A inputs“123”, the function of customized system is available.



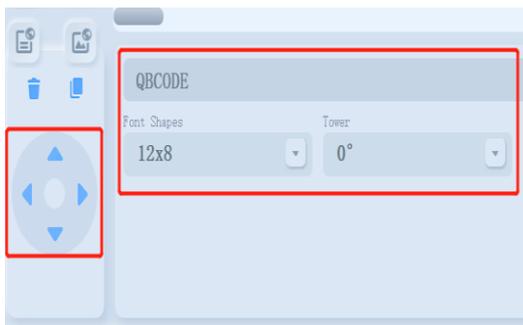
Message Editor

This chapter contains the following instructions :

- Create and edit Messages.
- Parameter.
- Printing setting.

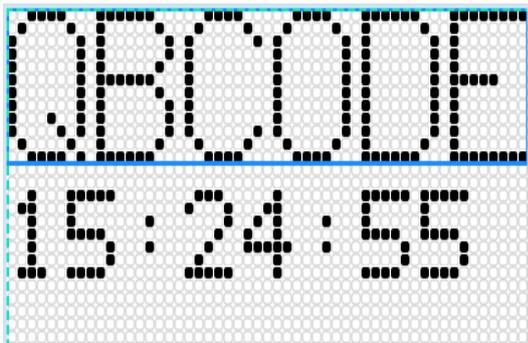
Message Editor is an important tool to create a new message, edit a message, save, or setup a message parameter. It has following options to enter:

- Main interface-click button  to modify the current print message;
- Main interface-click button  to create new message;
- Main interface- "Message Manage"- or  "Text/logo"- "New" , to create new message;
- Main interface- "Message Manage"-select one of the message file-edit  , to modify the specific message.

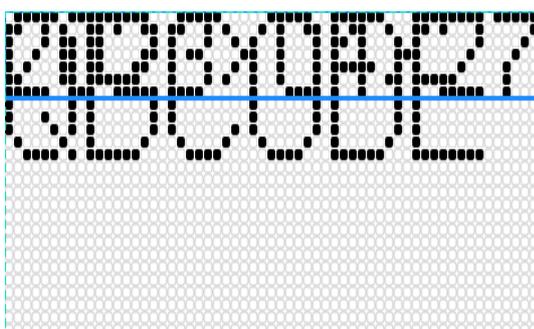


The inkjet printer can edit the printing information when the ink line is in the status including stop/start/print. When editing the current printing information in the state of printing, the inkjet printer will continue to print the information before editing; when the printing information is edited and saved and exited, the inkjet printer will immediately print the latest information.

Module Operation



Click button "text" or click the object button in the "User Area" to immediately add the module of the corresponding objects in the upper left corner of the content editing area. The selected module is prompted with a blue flashing background (as shown), and the module Parameter area displays the parameters of the selected module. You can change the parameter content of the module.

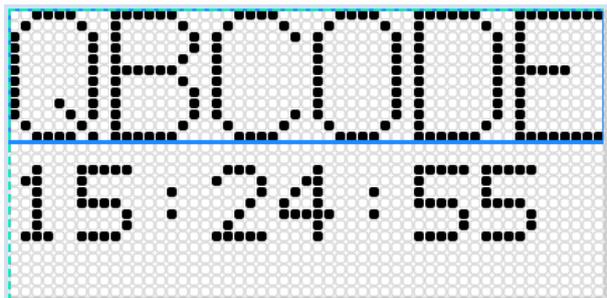


When multiple information modules are added to an information file at the same time, the information will overlap, as shown in the left figure: When the two modules have intersected, drag one of the modules to ensure it is not intersected. Otherwise, it cannot be saved.

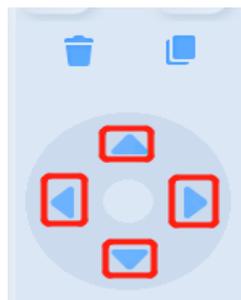
The operation methods are as following:

Method 1: Press and hold the information module with the blue background, and then release it after dragging it to the corresponding position.

Method 2: Adjust the module slightly to ensure the four-direction position movement by using the  to complete the setting.

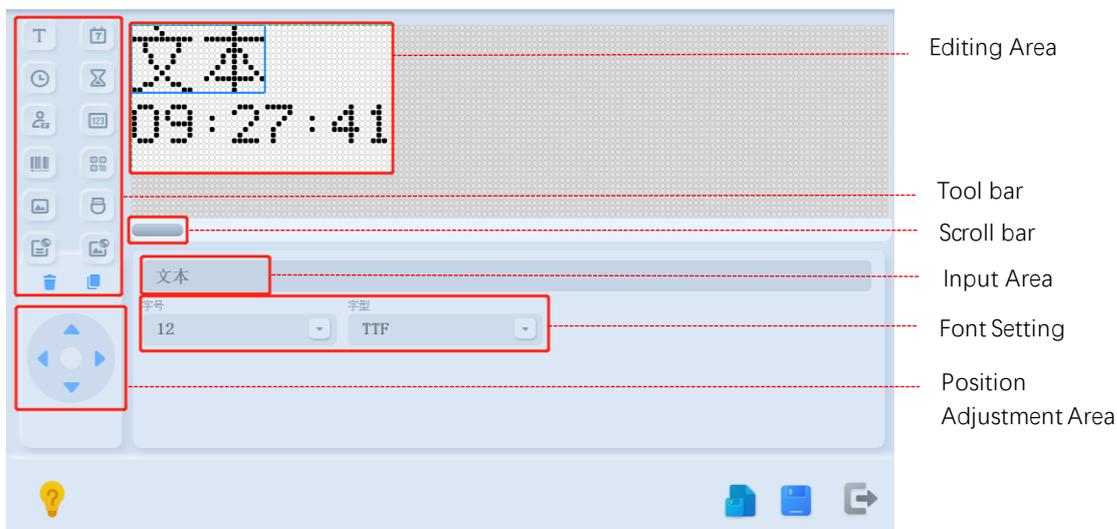


Method 1



Method 2

3.1 Add Message



Module Parameter

When entering the information editor interface for the first time, the information editor is in a blank state and edits the information content through the menu module of the information editor. Click the "text" button, the system will open the dialog box and select the corresponding content module.



3.1.1 Add New Fixed Character



Step 1: Click the "T" and select Fixed Text ;

Step 2: Click the input area (where the cursor flashes) and input the required text information on the pop-up keyboard (see 1.6 keyboard introduction);

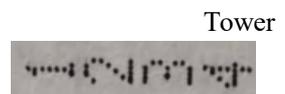
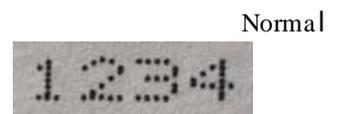
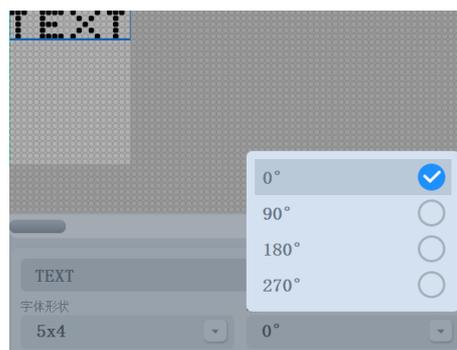
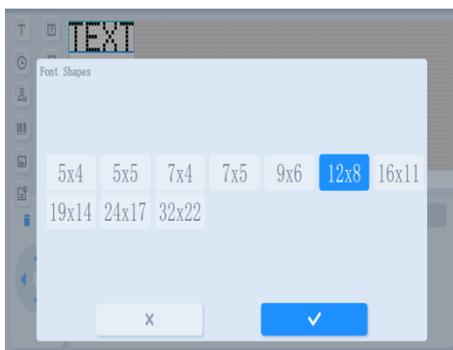
Step 3: Click the **Enter** button on the keyboard to complete the text information input.

In the text module parameters, the font size and rotation angle of the text information can be set to complete the size and direction of the required information.

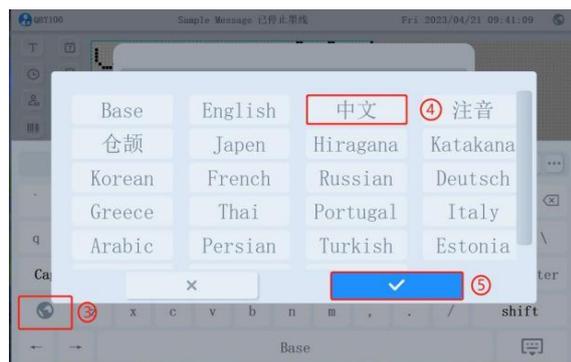
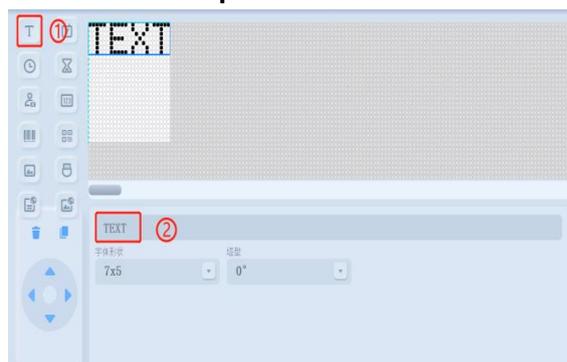
Font shape: provide a variety of font options, non-Chinese fonts 5x5, 7x5, 9x6, 12x8, 16x11, 19x14, 24x17, Chinese fonts 12x12CH, 16x16CH, 24x24CH, 32x22CH.

Tower: Each character is provided to rotate in the counter clock direction, with the angle settings are 0°, 90°, 180° and 270° respectively.

- Currently, tower printing only supports numbers, English letters and symbols, without Chinese or other foreign language characters.
- Information modules supporting tower printing: text, date, time, validity period, counter, shift and external data.

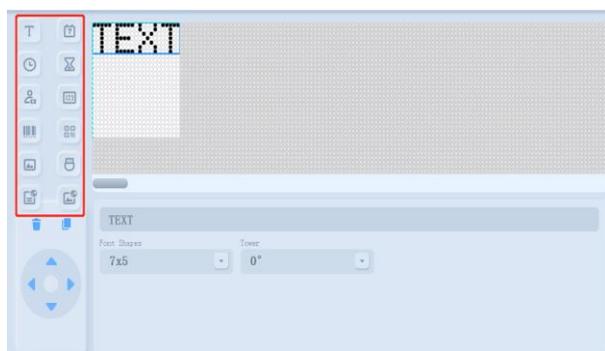


3.1.2 Add Multiple Characters



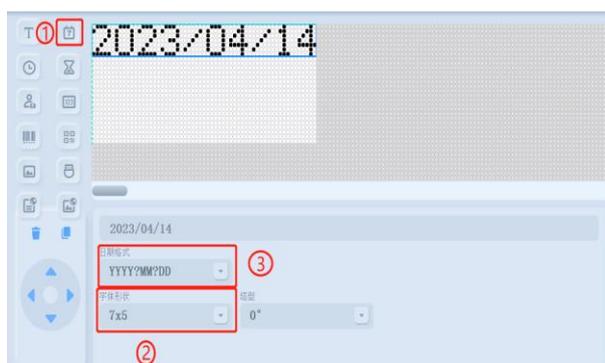
- Step 1: Click the  "Text" to add multiple character mode;
- Step 2: Click the flashing cursor to pop up the keyboard (see 1.6 Keyboard Introduction);
- Step 3: Click the  multilingual keyboard to enter the dialog box;
- Step 4: Select the required input method / keyboard as you needed,
- Step 5: Click the input area (where the cursor flashes) and input the required text information on the pop-up keyboard;
- Step 6: Click the  OK button on the keyboard to complete the text information input.

3.2 User Field



Click the "User Field" on the left-hand side to immediately add the corresponding object's module in the upper left corner of the content editing area. 9 kinds of objects are provided in the user area; namely date, time, validity period, icon, counter, barcode, QR code, shift, and external data.

3.2.1 Date/Time



- Step 1: Click on the date / time module;
- Step 2: Click the  expand button in the date format / time format menu to select the required format,
- Step 3: Click the  expand button in the date format / time format menu to select the required font size,

Date Parameters

Font Selection: It provides various types of fonts: 5x5、7X5、9X6、12X8、16X11、19X14、24X17.

Date Format: YYYY?MM?DD、YY?MM?DD、YYYY、MM、DD、YYYY?MM、YY?MM、MON、DAY、YY、

WK、YYYYMMDD、DD?MM?YYYY、MM?DD?YYYY、DD?MM?YY

Note: The "?" in Date Format is a wildcard character. Click "System Parameter"- "MISCELLANEOUS"- "Date Separator" in main interface to set any symbol you want to display.

Time Parameters

Font Selection: It provides various types of fonts: 5x5、7X5、9X6、12X8、16X11、19X14、24X17.

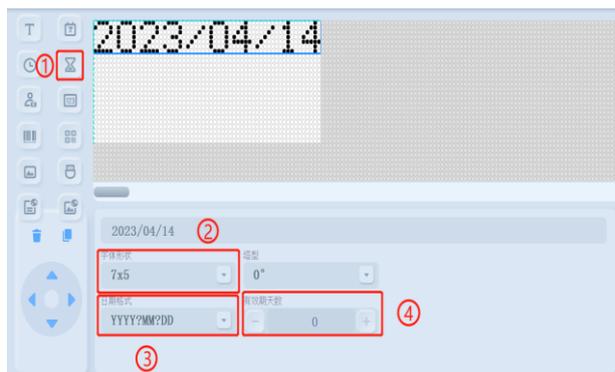
Time Format: hh?mm?ss 24h、hh?mm?ss 12h、hh?mm?ss 12h AM/PM、hh 24h、hh 12h、hh 12h AM/PM、mm、hh?mm 24h、hh?mm 12h、hh?mm 12h AM/PM.

Note: The “?” in Time Format is a wildcard character. Click  “System Parameter”-  “MISCELLANEOUS”- “Time Separator” in the main interface to set any symbol you want to display.

Tower: Each character is available to rotate in the counter clock direction, with the angle settings are 0°, 90°, 180° and 270° respectively.

- Currently, tower printing only supports numbers, English letters and symbols, without Chinese characters and other foreign language characters.
- Information modules supporting tower printing: text, date, time, validity period, counter, shift and external data.

3.2.2 Expiry Date



Step 1: Click on the expiry date module;

Step 2: Click the expand button  in the menu to select the required date format, then click the button  to confirm;

Step 3: Click the expand button  in the menu to select the required font size, click the button  to confirm.

Step 4: Enter the required number in the Enter Expiry Days option.

Expiry Date Parameters

Font Selection: It provides several types of fonts: 5x5、7X5、9X6、12X8、16X11、19X14、24X17.

Time Format: hh?mm?ss 24h、hh?mm?ss 12h、hh?mm?ss 12h AM/PM、hh 24h、hh 12h、hh 12h AM/PM、mm、hh?mm 24h、hh?mm 12h、hh?mm 12h AM/PM.

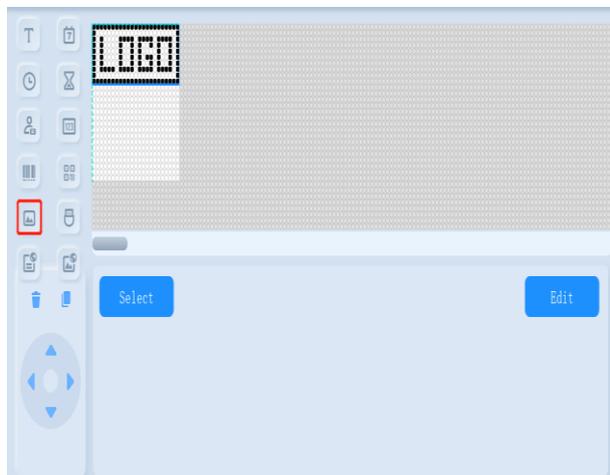
Expiry Days: Default is 0 day, click +- button to adjust the days, or just enter the exact number.

Note: The “?” in Time Format is a wildcard character. Click  “System Parameter”-  “MISCELLANEOUS”- “Time Separator” in main interface to set any symbol you want to display.

Tower: Each character is available to rotate in the counter clock direction, with the angle settings are 0°, 90°, 180° and 270° respectively.

- Currently, tower printing only supports numbers, English letters, and symbols, without Chinese characters and other foreign language characters.
- Information modules supporting tower printing: text, date, time, validity period, counter, shift and external data.

3.2.3 Logo

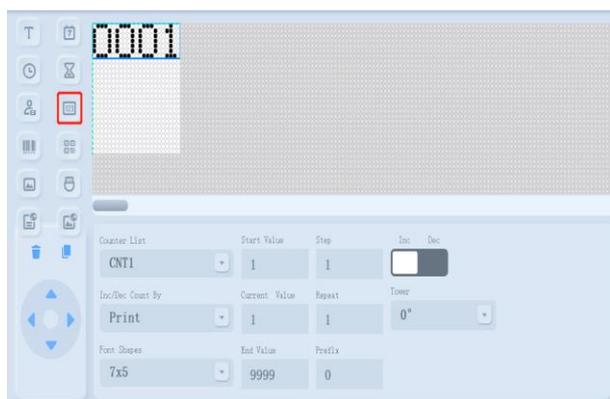


Click "User Field"- "Logo" to add logo module, and the parameter of logo is as below.

Please select logo format: Select the logo files saved in the printer, and the logo file can be imported, or created by the logo editor.

Edit: Click the button and enter the Logo Editor interface (Logo Editor operation refer to chapter of Logo Editor), to modify the logo directly, and then save and exit.

3.2.4 Counter



Click "User Field"- "Counter" to add counter module, and the parameter of counter is as below.

Counter List: Each message supports max. 8 counter modules, and one message cannot support two same counters at the same time. (The setting value of counter is only for the related message)

Font Selection: It provides several types of fonts: 5x5、7X5、9X6、12X8、16X11、19X14、

Start Value: The value starts to count. It can be alphabet, number, letter or digits.

Current Value: The count value that has reached, depending on when the count is edited.

Stop Value: The last value of the count cycle. Stop value cannot be smaller than start value, and the digits of stop value decide the digits of this counter displayed.

Step Size: Number of units that the count increments or decrements. (e.g., start value 1, stepping 3, so the result is 1、4、7.....)

Repeat Count: The times for count value increase or decrease before printing a count value. (e.g., start value 1, step value 3, repeat count 2, so the result is: 1、1、4、4、7、7.....)

Guide Character: Defines to replace the leading of another specified new character is 0. (e.g., current value 109, stop value 9999, guide character G, so the result is: G109)

Increments and Decrements: Click button to switch increments and decrements, counting increments and

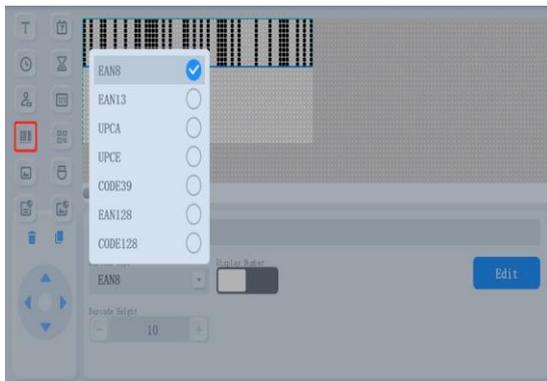
decrements in a count cycle.

Inc/Dec on: Sets the counter trigger source. The default is "PRINT". Trigger a print, and then a counter counts. If it is set to increase/decrease other counters (such as CNT1), set the counter trigger source. After waiting for other counters (such as CNT1) to complete one cycle, this counter counts again, then other counters (such as CNT1) to count another cycle, this counter counts again, and again.

Reset Counter: Click the button  on the main interface, and click the button  in the confirm box, then all counters will be reset. Click the button  to return.

Note: It will automatically count starting from the initial value when the counter prints to the termination value. Example: Set the initial value of 001 and the termination value of 100. If the current printing value is 100, the next printing value is 001.

3.2.5 BarCode



Click User Field-BarCode, and add the module of Bar Code. The current system supports 7 barcode types including EAN8, EAN13, UPCA, UPCE, CODE39, EAN128 (GS1) and CODE128.

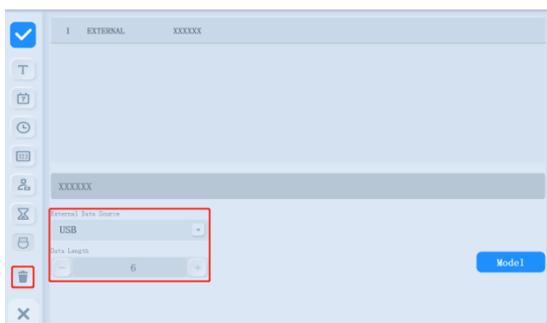
Display Number: When turning on this function, the numbers of bar codes will appear at the bottom.

BarCode Height: Adjust the height of bar codes by the button+/-, or click the number to change.



Edit: Click the edit button, and then enter the following interface. Next, enter the content editing area. At this time, you can change the order between modules by dragging the module, or click the

button  to delete the module



If you insert the "external data" module in the user area, first, the "data length" consistent with the barcode digit needs to be set, for example, the "data length" of EAN8 is 8, then click the template to enter any 8 digits number.

Here are the types that bar code module will support:

CODE	DESCRIPTION
EAN 8	EAN code is type of commodity codes developed by the international commodity coding association. EAN 8 is a simple coding form and consists of 8 digits.
EAN 13	EAN code is a kind of commodity codes developed by the international commodity coding association. EAN 13 is a standard encoding form consisting of 13 digits.
CODE 39	CODE 39 is a type of bar codes that can represent numbers, letters and other information. It is mainly used for automatic management of industry, books and tickets. It is widely used at present. It can contain these contents: the number of 0 ~ 9, A to Z of the English letters, and "+", "-", "*", "/", "%", "\$", "." and other special symbols and spaces.
UPC	UPC code is the earliest large-scale application of bar code, and its characteristic is a length of fixed, continuous bar code, which is currently mainly used in the United States and Canada. Because of its wide range of applications, it is also known as the universal bar code. The UPC code can only be used to represent numbers.
EAN128(GS1)	EAN128 is a code that are two continuous and non-fixed length verification methods with high density and high reliability. It is the only barcode can be used in EAN-UCC system representing additional information and it can be widely used to identify nonretail trade projects, logistics units, assets and locations, etc.
CODE 128	CODE 128 can represent 128 ASCII characters from ASCII 0 to ASCII 127.

Delete and Return

If deleted barcode module is required, press the  "Delete" button on the interface to delete the selected barcode module.

Press the return button  to return to the previous menu without any operation. Press the button

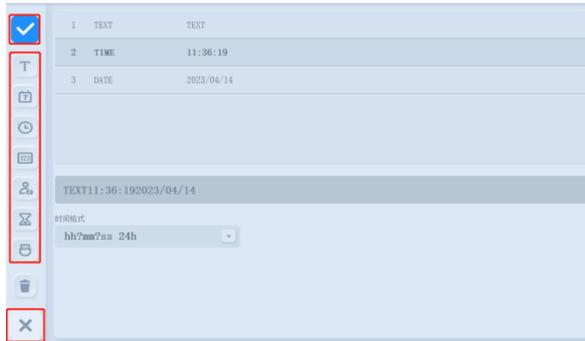
 to save and return to the previous menu.

3.2.6 QR Code



Click **User Field-2D Code**, and add the module of QR Code. It supports QR CODE and DMatrix. The height and width of the QR code are system default and vary with different categories. This machine supports up to 78 characters.

QR code levels: It provides four levels: LOW、MEDIUM、QUARTILE、HIGH. Usually, the identification rate of QR code can be improved by reducing the accuracy level of the code.



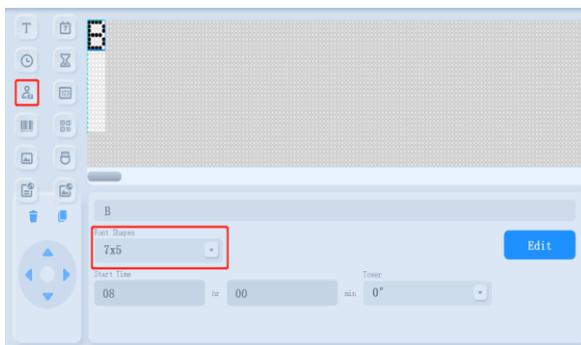
Edit: Click the button “Edit”, and then enter the following interface. Next, enter the content editing area. At this time, you can change the order between modules by dragging the module, or click the button  to delete the module.

Delete and Return

In the case there is a need to delete an added barcode module, press the delete button  on the interface to delete the selected barcode module.

Press the return button  to return to the previous menu without any operation. Press the OK button  to save and return to the previous menu.

3.2.7 Shift

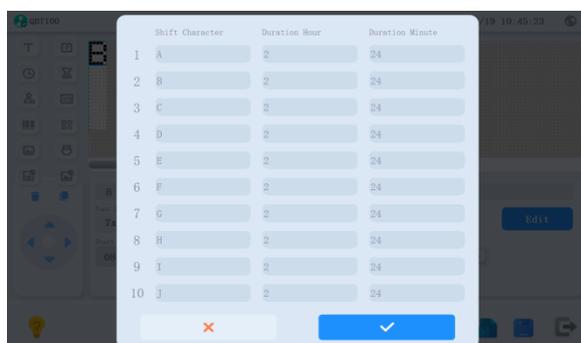


Click User Field-Shift, and add the module of Shift.

The Parameter is as follows:

Font Selection: It provides various types of fonts: 5x5、7X5、9X6、12X8、16X11、19X14、24X17、32X22.

Begin Time: set the time beginning from the first



Edit Shift: Click the “Edit” button to enter the parameters of the interface. You can set 1 to 10 shifts. Every shift consists of shift character and shift time. The shift not required can be set to empty.

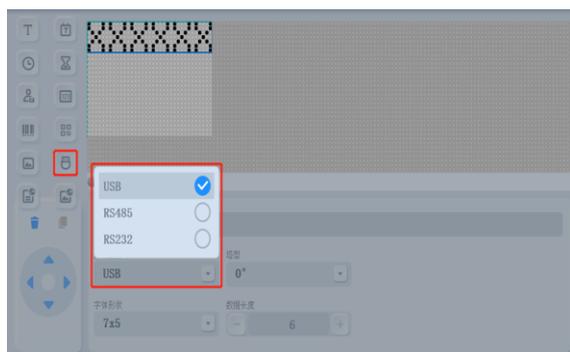
Press “Cancel”  to return to the previous menu, press OK  to save and return to the previous menu.

Note: When setting the shift time, in principle, the total duration of all effective shifts should not exceed 24 hours.

Tower: Each character is provided to rotate in the counter clock direction, with the angle settings are 0°, 90°, 180° and 270° respectively.

- Currently, tower printing only supports numbers, English letters and symbols, without Chinese characters and other foreign language characters.
- Information modules supporting tower printing: text, date, time, validity period, counter, shift and external data.

3.2.8 External



Click **User Field-External**, and add the module of External . The setting is as follows:

External Data Source: Two types: USB or RSB485/RS232.

Print Control Mode: This setting is only available when choosing RS485. It provides 4 modes: “SEQUENTIAL”、 “TRIGGER”、 “OVERWRITE”、 “RS485/RS232

Font Selection: It provides various types of fonts: 5x5、 7X5、 9X6、 12X8、 16X11、 19X14、 24X17、 32 X22.

Data Length: Adjust the data length according to the actual situation. If the length of the data is greater than the length of the external data, 0 is added to the leading part; if the length of the data is less than the length of the external data, the last few bits of the external data are intercepted.

Tower: Each character is provided to rotate in the counter clock direction, with the angle settings are 0°, 90°, 180° and 270° respectively.

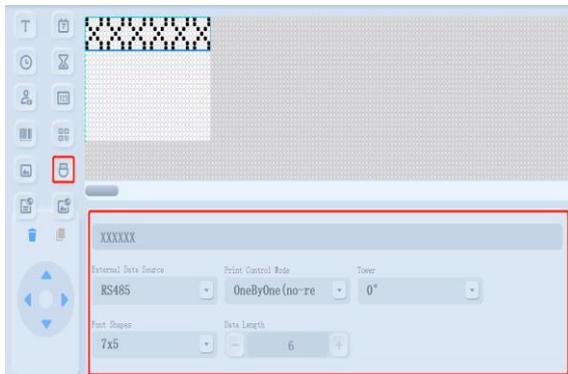
- Currently, tower printing only supports numbers, English letters and symbols, without Chinese characters and other foreign language characters.
- Information modules supporting tower printing: text, date, time, validity period, counter, shift and external data.

The difference between the 4 modes is as follows:

Mode	Message queue or not	Whether to continue with the last one	Whether to overwrite the data	Whether RS485/232 triggers printing
SEQUENTIAL	YES	NO	NO	NO
TRIGGER	YES	YES	NO	NO
OVERWRITE	NO	NO	YES	NO
RS485/232 CONTROL	YES	NO	NO	YES

USB External Data Source: See Chapter 2.9.4 USB External Storage Device Management.

RS485/232 OR USB External Data Source



One by one: The transmitted information will be sprayed in the transmission order.

Overwrite: Only spray the latest message transmitted to the inkjet printer.

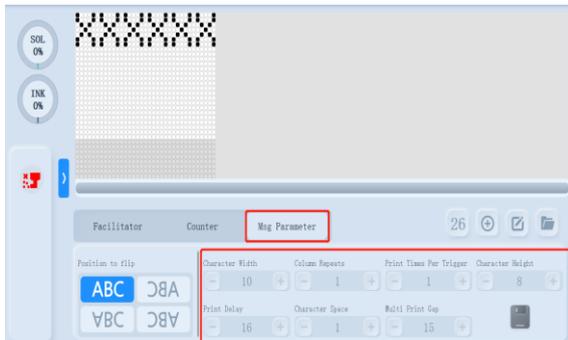
One By One-Last Repeat: The transmitted information will be sprayed in the transmission order. If the transmission of information to the inkjet printer is stopped, the next printing of the inkjet printer will spray the last transmitted information.

Trigger: The information transmitted to the printer will be sprayed in the transmission order. If the transmission of information to the inkjet printer is stopped, the next printing of the inkjet printer will spray the last transmitted information.

3.3 Delete

Select a module, click the "Delete" button  on the toolbar to delete the module, this cannot be recovered.

3.4 Parameter



Edit information parameter, Click the button on main interface. Parameter follows the message. The setting is shown as follows:

Parameter	Range	Description
Width	0-1000	The larger the value is, the wider the message will be.
Product Delay	0-10000	Sets the product delay (the time between the start of product (trigger point) and the print start position)
Character Height	0-10	The larger the value is, the highest the message will be.
Printed Dots	1-34	Standard 34 dots. Here you can set dots smaller than 34 or equal to 34. The smaller the dots, the smaller the height of the message. If the font specified has a larger value of dots than the printed dots parameter then the print character will be

		incomplete (truncated).
Reverse	On/Off	Toggle reversed character (back to front) printing
Print Times/Trigger	1-99	After trigger point, the print times for message
Multi-Print Gap	0-10000	When print times is equal to two or over 2, sets the product delay. (the time between the start of product(trigger point) and the print start position)
Raster Repeat	0-10	This will make characters in bold.
Character Space	0-9	The larger the value is, the larger the character gap will be.
Invert	On/Off	Toggle inverted character (upside down) printing

After setting Reverse and Invert, the printing effects are shown as follow:

Normal	
Reverse	
Invert	

After all Parameters have been completed, the system will automatically save  , or you can manually save the message by press save button .

Press the button  to return to the main interface of the information editor with all settings do not take effect. Press the button  to save the parameter values just set and return to the main interface of the information editor.

Notes:

- You can satisfy your printing demand by adjusting the parameters above. Different combinations will have different printing effects.
- Product delay and message length are dependent on the line speed and resolution of the shaft encoder.
- Changes made to the default settings will affect subsequent new messages created but will not affect existing messages.

3.5 Save and Save As

Save

Click the button  "Save to" to save message. This will not apply if the intersected area appearing s between modules.

Save As

Click the button  "Save As", and then the name box will appear. Input the name and save. If the intersected area appears between modules, click Save as it will be failed to save.

3.6 Return

When the information file is saved or saved as state, click the  "return" button to exit the editing state and the system returns to the main interface of the information editor.

When the information file is editing without any save performed, click the "Return" button, the system pops up the prompt dialog box whether to save:

- Click the button , the information will not be saved, and the system will return to the main interface of the information editor where all settings do not take effect.
- Click the button , the system will save the current edit file and return it to the information editor

Logo Editor

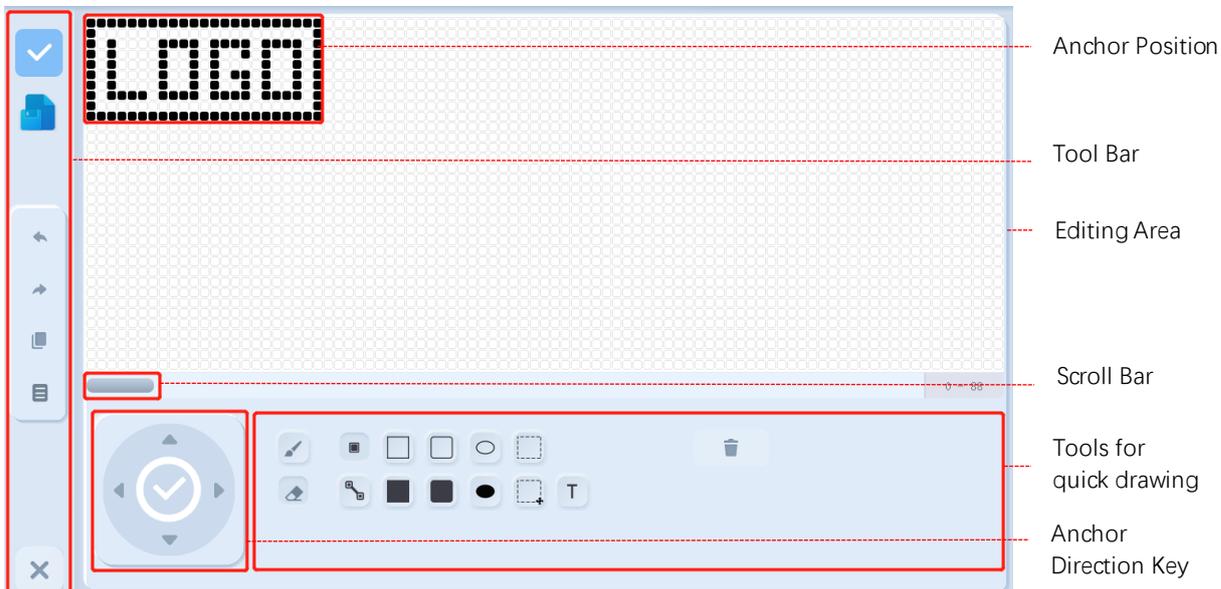
This chapter contains the following instructions :

- Create and edit Logo
- Parameters
- Printer Setup

It is the primary tool that the Icon Editor adds new information, edits information, information disks, and sets information parameters. Access is available by the following means:

- Main Interface -  File Management - Click add  - click the icon  module button ;
- Main Interface -  File Management - Icon Management - Click add , to add new information;
- Main Interface -  File Management - Information Management - select any information file -  Edit - click the icon  module button to modify the specified information content.

4.1 Main Interface



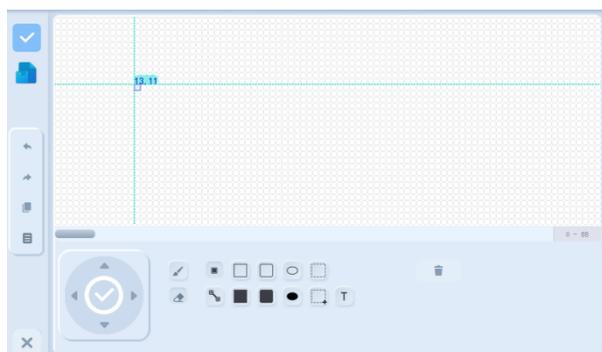
4.2 Operation

Note: The LOGO editor software of PC version is also included. You can edit the icon on the PC and then import it to the printer for use. Attached appendix 1, 《LOGO editor for PC》.

4.2.1 Drawing

The default height of Logo Editor is 34 dots and width has no limits. You can choose points randomly, or you can choose points by the arrow keys, and then click the button  to confirm. Click the dot and then click the button  to cancel.

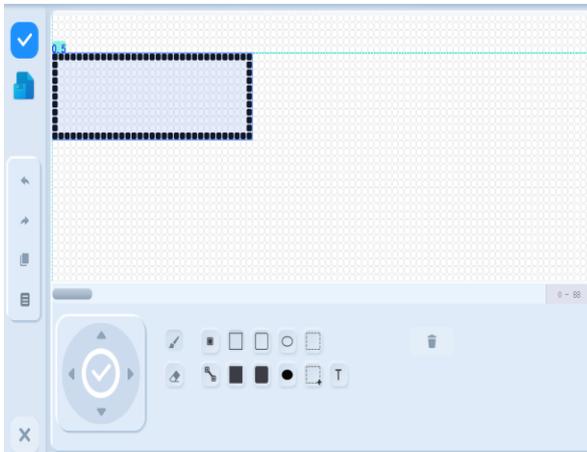
4.2.2 Cursor Movement



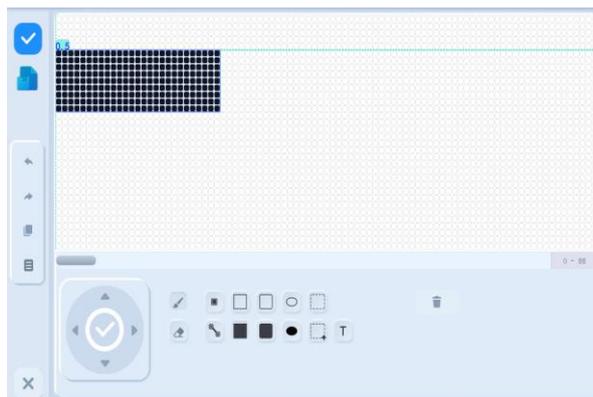
With or without using the drawing tools, the cursor can be moved by clicking the "up" , down , left  and  right " keys.

Without using the drawing tool, click the  key to colour the position of the cursor.

4.2.2 Tools for Quick Drawing

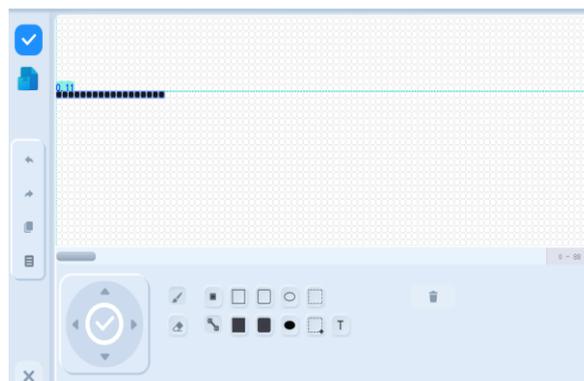


Unfilled Rectangle Drawing : Two positions that are not in the same position will automatically generate an unfilled rectangle. Select the button, select the point in the edit area and confirm the trace point, then select another point and confirm the trace point, press the button  again, and finally press the OK button  to finish. (as shown in the figure to the left).



Filled Rectangle Drawing : A filled rectangle is automatically generated by tracing points at two different locations. Select the button, select the point in the edit area and confirm the trace point, then select another point and confirm the trace point, then press the OK button  to automatically generate the trace point effect as shown in the figure to the left.

Straight Line Drawing : Two positions that are not in the same position will automatically generate a line or right angle to connect the two points. Select the button, select the point in the edit area and confirm the trace point, then select another point and confirm the trace point, press the button  again, and finally press the OK button  to finish. (See below picture).



Brush tool: Slide the right round icon left and right to adjust the brush size and to ensure drawing patterns with different thickness combined with the point drawing tool (the left figure below).

Eraser tool: Slide the right round icon to the left and right to adjust the size of the eraser with the colour of the square where the cursor located can be cleared (the right figure below).

Press the  "delete" key and select the cancel key  to cancel or the confirm  key to delete in the pop up "whether to clear the editor?" dialog box.

Press the "save"  key or "save as"  key to directly save the pattern or pop up the Naming dialog box, enter the file name to save the pattern and press the "return"  key to return to the next level menu.

System Setup

This chapter contains the following instructions :

- Message, create and edit
- Parameters
- Printing setup

5.1 System Setup

Through the main interface - click the "system parameters"  button to enter.



5.1.1 Printing Setup

Photocell Set: Low-level trigger and high-level trigger. When photocell is connected, select high-level trigger. When photocell is not connected, select low-level trigger. Incorrect Settings may result in inability to print.

External Shaft Encoder: When shaft encoder is connected, turn it on. When Reverse Available is on, it still works if shaft encoder is reversed.

Reverse Shaft Encoder: Set the reverse to positive.

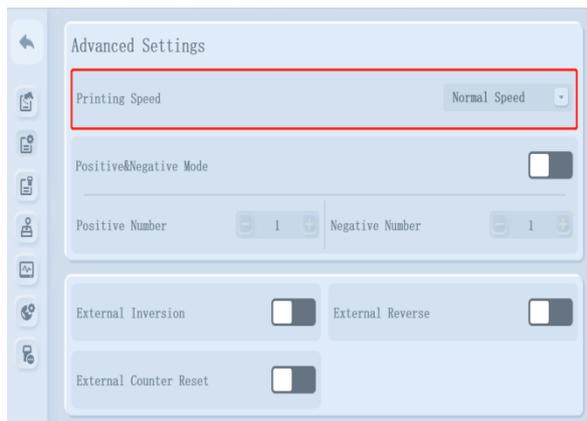
Continuous mode: In the continuous printing mode, the printing messages can be repeated many times without the external signal triggering. This option is useful in situations where messages must be periodically printed on a continuous product, such as a pipe or a cable. The functions and settings of different modes are described in the table below.

Continuous Mode	Description
Off	In this mode, external signal is needed to trigger printing, or manually click the "printing" button on the main interface.
Time Mode	Continuous printing at a set time interval.
Shaft Encoder Mode	Continuous printing at the unit of shaft encoder pulse interval
Intermittent Mode	Continuous printing at a set interval. Calibration: when there is a difference between the actual printing interval and the set printing interval, click the "calibration" button, enter the actual printing interval on the pop-up page, and then calibrate.

Note: For production lines with unstable operation speed or variable speed, the external spindle code signal source uses the synchronizer to get a stable spray printing width.

Look up maintenance engineering assistance when the spray spacing is offset in interval mode.

5.1.2 Advanced Settings



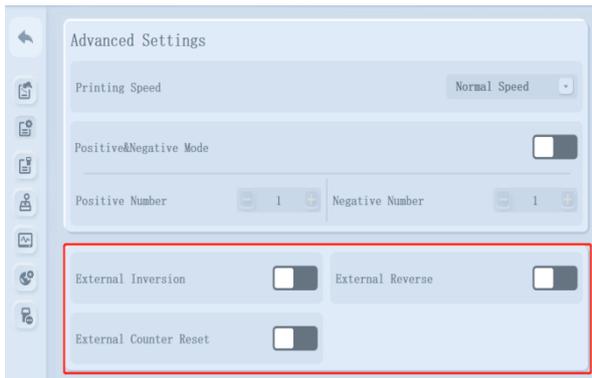
Spray Printing Speed: There are four levels to choose from: low speed, normal speed, high speed, super high speed.

Positive and negative Mode It is the spray mode that is used for the printing head of the inkjet printer to move in two opposite directions and spray information during movement, and can be set by opening the "forward and reverse mode" button - "forward / reverse times".

Turn on the forward and reverse mode function and the default spray printing method of the system is forward spraying first, and then reverse. When it is started again after shutdown, the spray printing will start from the first forward spraying.

If perform reverse spraying first and then forward spraying is required, the operation steps are as follows: click the "Edit" button in the main interface-enter the "Spray Printing Information Parameters" -open the "Reverse Spray Printing" option.

5.1.3 External Control



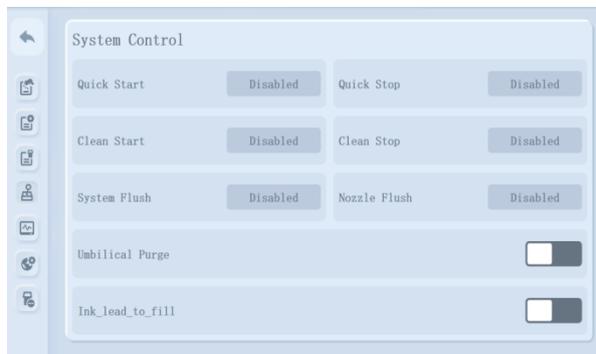
The external control only works when the photocell 2 is used, and the setting has no effect in other cases.

Reverse/Invert: When it is on, the printing effects are shown in 2.4.13. This setting relates to all messages.

Counter Reset: Reset counter in the message.

Note: When performing external reverse spray printing, there are two photoelectric ports that should be triggered simultaneously, and the trigger signal of the photoelectric eye 2 should be advanced to the trigger signal of the photoelectric eye 1, and continue until end the spray printing.

5.2 System Control



System Setup includes Quick Start/Stop, Clean Start/Stop, System Flush, Nozzle Flush, Umbilical Purge, and Ink Filling. Click System  Setup on the main interface then click  to enter the System control.

The default procedure of starting jet and stopping jet is Clean Start and Clean Stop Jet. If the procedure of Clean Start/Clean Stop Jet cannot be operated, you can use "Quick Start "or "System Flush" to stop printer from running.

Note (The following operations can only be carried out with the permission of maintenance engineers) :

- If you need to switch off the printer temporarily, and the close time is less than half an hour, you can use Quick Stop Jet.
- If you use the printer normally, and it is no more than half an hour from the last shutdown time, you can use Quick Start Jet.
- If you use the functions above, when starting jet there is a risk of the printhead components being covered with ink, and it needs manual cleaning.

Daily use and maintenance need to use the system flushing/flush nozzle/printhead cleaning and other functions.

For common operations please refer to the maintenance manual.

***Abnormal Stops**

Abnormal stops will normally use the Quick Stop Jet for reasons of speed and safety. Maintenance operations should normally use Quick Stop Jet. However, the last stop of a maintenance sequence should be Nozzle Flush, to prepare the machine for normal operation.

If a previous stop was due to an abnormal condition, a message is displayed at startup. This message will only clear after the printhead has been inspected.

The software will automatically default to Quick Stop Jet (with a visual warning) under the following conditions:

- The mixer tank is full.
- Viscosity is too low.

5.2.3 Valve Test and Calibrate

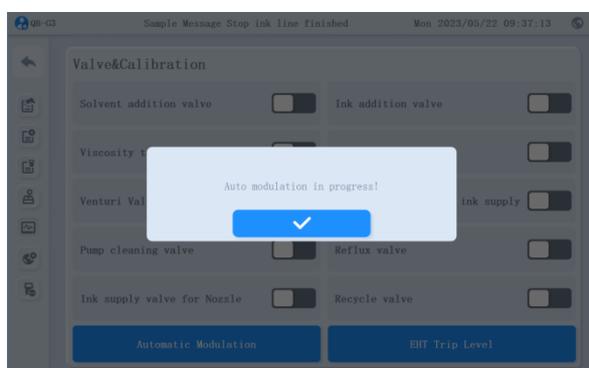


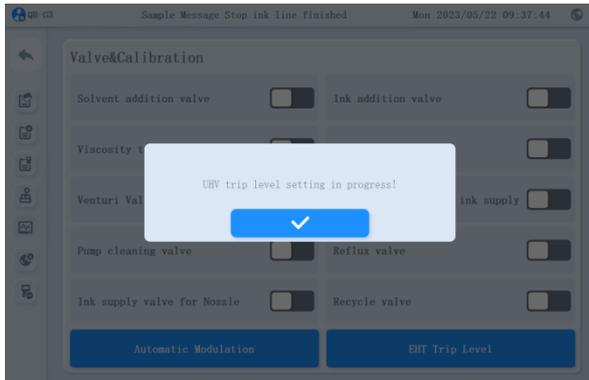
Valve Test: Click switch button of any valves, it will proceed switch on/off operation, to monitor if the valves are work normally.

Auto Modulation: When the jet is on and without high voltage (printhead screw is loosen), click “Auto Modulation”, the printer will calculate automatically and set the dots modulation.

It will pop up a prompt window when you start auto modulation, as below:

When auto modulation is finish, it will pop up a success or failed prompt window, if successful it will shows the new value of modulation.

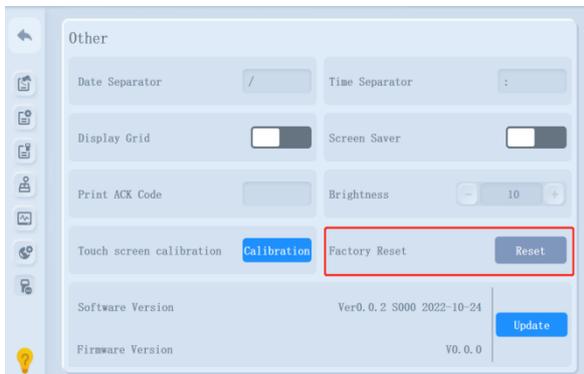




EHT Trip Setup: When the jet is off and with high voltage (printhead screw is tighten), click ‘EHT Trip Setup’, the printer will auto monitoring the onsite environmental temperature, calculate the best suitable current threshold, and write to the printer system. It will pop up an EHT Level prompt window when you start the EHT Trip Setup. When EHT Trip Setup is finish, it will pop up a success or failed prompt window.

This function is used for maintenance engineering and shall be carried out under the guidance of maintenance engineer if operation is required.

5.2.4 System Reset



Click the System Control  - Click Other , and the click “Restore” to reset factory data. Enter System Parameter-System Set, and then click “Reset” to reset factory data.

Note: Back up data before restoring factory settings.

The device contact information and the system version information also included in this menu.

Maintenance

This chapter includes the following information :

- Routine Maintenance
- Troubleshooting

6.1 Routine Maintenance

The table below shows the cleaning and maintenance schedule.

Interval	Task
Daily	Check printhead, clean as required.
Weekly	Clean printer cabinet.
	Visual inspection of connections and fitting
Monthly	Clean the EHT block, charge electrode, phase detector and gutter tube.
	Dust cleaning for cabinet.
Every 2000 hours*	Replace pre-printhead filter and clean printer cabinet
Every 2000-9999 hours*	Replace inkcore and pre-printhead filter, maintenance as requested

*The actual interval depends on operating conditions and is set while installing.

Visual Inspection

The following inspections should be performed daily.

Cabinet and Cables

1. Inspect electrical cables and connectors for signs of damage or wear.
2. Inspect the printer cabinet and umbilical cable for signs of damage, wear, or ink leakage.
3. Report any faults to a maintenance engineer.

Printhead

1. Stop the ink jet and disconnect the printer from the mains supply.
2. Release the knurled screw on the printhead by turning it anticlockwise.
3. Remove the printhead cover.
4. If any ink deposits are evident, then clean the inside of the cover.
5. Inspect the printhead and the inside of the printhead cover for any build-up of ink deposits. Clean if necessary.

Cleaning

Cleaning the Printhead

Thanks to the unique clean stop/start system, the printer will operate for a considerable time before the printhead requires cleaning. However optimum performance and system reliability will only be maintained if the printhead is cleaned regularly and it should be inspected daily.

1. Set the mains power button to the off position and disconnect the mains supply lead.
2. Loosen the knurled screw and check the printhead for a build-up of ink deposits.
3. Where necessary use a cleaning agent compatible with the type of ink being used and tissue or a soft brush to clean the printhead.
4. Allow the printhead to dry and ensure that the slot in the charge electrode is clear of cleaning agent.
5. Refit the printhead cover and tighten the knurled screw.

Cleaning the EHT Block

To prevent build-up of conductive pigment, clean the contoured surfaces of the EHT block. Use tissue and solvent or a soft brush from the recommended cleaning kit.

Cleaning the Printer Cabinet

Periodicity-weekly.

Remove dust from the printer using a vacuum cleaner or soft brush.

Wipe the outer surfaces of the printer using a damp lint free cloth. A mild detergent can be used to remove stubborn contamination.

Ink and Top-Up Reservoir Replenishment

Periodicity-when indicated on the display.

1. Open the ink system compartment door as required. Change the solvent box (on the left side) or the ink box (on the right side).
2. Check that the part number of the ink or top-up specified on the label corresponds to that displayed on the printer display.

6.2 Troubleshooting

Printer will Not Start

Check the System Status LEDs or lamp stack (if fitted) to determine if a system fault is present or if user intervention is required.

- A. If the red or amber LEDs are illuminated, inspect the display to see which icons and supplementary message are displayed. **Look at “Printer Status Icons” at 2.2.6**
- B. If the green LED is illuminated and the printer will not print:
 1. Make sure that a message is selected.
 2. Check that the correct print mode has been selected from the **Print** menu. **Look at “Printer Setup” at 2.6.1**
 3. Check that the product sensor and shaft encoder are connected and working (a lamp on the back of the product sensor should flash each time a product passes the sensor)
 4. If the problem persists, report the fault to a maintenance engineer.

C. If no System Status LEDs are illuminated, check the mains electrical supply as follows:

1. Check that the mains power button is in the on position (pressed in).
2. Check that the mains input connector is correctly fitted.
3. Check that the mains electrical supply is available.
4. If the problem persists, report the fault to a maintenance engineer.

Print Position Incorrect

- A. Check that the Product Delay value set in the Message Parameters menu is correct. *Look at “Setting Message Parameters” at 2.4.13*
- B. Check that there are no unnecessary spaces at the start of the message.

Print Size Incorrect

- A. Check that the set Character height is correct. *See “Editing Messages” at 2.4.13*
- B. Check that the distance from the printhead to the product is correct. Character height increases and resolution decreases as the printhead moves further from the product.
- C. Check that the correct font is selected in the message. *See “Messages Editor” at 2.4*
- D. If the message width appears stretched, decrease the *Width* value set in the *Message Parameters* menu. *See “Setting Message Parameters” at 4.13*
- E. If the message width appears compressed, increase the *Width* value set in the *Message Parameters* menu. *See “Setting Message Parameters” at 4.13*

Print Incomplete

Check that the *Printed Dots* value set in the *Message Parameters* menu is equal to the maximum number of dots required for a raster (26/34 maximum). *See “Setting Message Parameters” at 2.4.13*

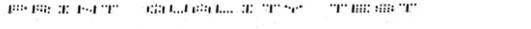
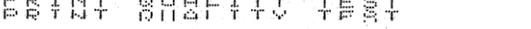
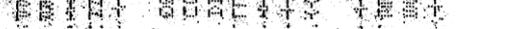
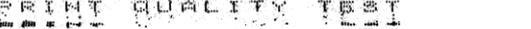
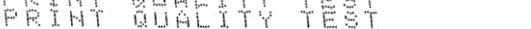
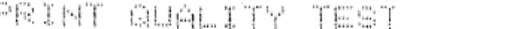
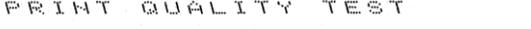
Check the printhead for ink deposit build-up and clean is required.

Poor Print Quality

PRINT QUALITY TEST

The example on the left shows good overall character formation, no stray drops and an even spread of print.

The table below shows samples of faulty printing, the causes and the steps required to rectify the fault.

Samples and Causes	Remedy
 <p>Charge value set too low. Note bottom line is dropping away from main characters. Optimum print height cannot be achieved.</p>	<p>Call maintenance engineer to Calibration charge value correctly.</p>
 <p>Jet not aligned properly, or nozzle partially blocked. Note bottom drops clipping edge of gutter. Possible EHT too low.</p>	<p>Clean printhead. Perform nozzle flush, irrigating the nozzle with wash down. Ensure the gutter is clean.</p>
 <p>Phasing error. Correct drop placement not achieved, significant splashing of surrounding area</p>	<p>Ensure modulation is set correctly. Clean and thoroughly dry the printhead. Rolling phase is enabled. Ensure there is enough time available between prints to phase.</p>
 <p>Incorrect modulation, too many satellites, charging process is not correct</p>	<p>Backflush nozzle, correct modulation using auto modulate, and verify correct breakup. Check the modulation window defined by V min and V max when printing</p>
 <p>Pressure too high, drops not deflected properly, drops “run in” to one another, small print.</p>	<p>Set pressure correctly-re-enter the pressure using the last but one figure from the FIN number (usually 32).</p>
 <p>Pressure too low, drops over-deflected or badly positioned. Possible loss of most deflected drops.</p>	<p>Set pressure correctly-re-enter the pressure using the last but one figure from the FIN number (usually 32).</p>
 <p>Printhead too far from substrate. Drops are affected by air currents and are spaced too far apart vertically.</p>	<p>Decrease distance from substrate, or select a more appropriate font.</p>
 <p>Printhead slot not perpendicular to substrate travel</p>	<p>Align printhead slot perpendicular to substrate travel.</p>