



**THERMAL INKJET PRINTER  
F3500**

**USER MANUAL**

4<sup>th</sup> November 2025 Edited V3.0

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# 1.SAFETY INFORMATION

## 1) Consumables use

Overall, there are usually two types of consumables, one is water-base ink and the other is solvent-base ink. For each one ink purchased through normal channels is certified for safety including the cleaner. The operator can get all details of the ink from the equipment sales company.

Nevertheless, we still insist that all operators wear protective gear such as goggles and gloves when coming into contact with consumables. If ink enters the eyes or body, seek medical help immediately.

Refer to the consumables manual for proper ink storage.

## 2) Electricity safety and regulations

Check the nameplate to learn the electrical specifications. Any non-standard electrical behavior is dangerous.

Ensure that all personnel involved in circuit inspection and maintenance have received professional training and are aware of the dangers that may arise from violating operating procedures.

It is strictly prohibited to use alternative power sources to power equipment. Incompatible power sources pose a risk of abnormality and will not receive any compensation.

## 3) Equipment operation

Before starting any operation, please read this manual first. If the operator is not clear about the consequences of the operation, please consult a device technical expert first.

# 2.EMERGENCY CASE

For emergency situations, e.g. smoke coming out of printer, uncontrollable continuous printing, fire, explosive sounds, etc.

**PLEASE REMOVE THE POWER SUPPLY IMMEDIATELY!**

# 3.ENVIRONMENTAL PROTECTION

Don't throw printer or ink cartridges into regular garbage or recycling bins. Ensure proper disposal (e.g. electronic waste) in accordance with local laws.

# 4.PRODUCT WARRANTY

Limited warranty. The housing and circuit board for each printer is warranted to be free from defects in materials and workmanship for a period of twelve months from the bill of lading date. This limited warranty does not apply to spare parts, authorized inks, or cartridges, or to housings and circuit boards that experience problems resulting from misuse, tampering or improper storage.

**The warranty expires under the following circumstances:**

- Any non-original parts and unapproved OEM inks are used.
- The product has been altered or modified without approval from us.
- Print-head damage is a result of improper installation.
- Damage occurs from an accident, such as but not limited to, being dropped, being

sprayed with water or other liquids, caused by a natural disaster, caused by stocking or shipping conditions.

- Unapproved, wrong or unstable power supply is used.

## 5.TECHNICAL SPECIFICATIONS

### 5.1 Date Sheet for 0.5 inch system

NO	DESCRIPTION	SPECIFICATIONS
1	<b>Model</b>	F3511/F3521/F3541
2	<b>Print-head number</b>	Maximum 2 for F3511/F3521 Maximum 4 for F3541
3	<b>Guide plate kit</b>	Guide plate kit for single head (C2.WJ.QT0077B) Guide plate kit for double head (C2.WJ.QT0078B) Guide plate kit for quadruple head (C2.WJ.QT0105B)
4	<b>Controller Weight/Dim.</b>	◆ 1.15Kg ◆ L204mm, W153mm, D52mm
5	<b>Print-head Weight/Dim.</b>	◆ 265g (Net weight, without guide plate and cartridge) ◆ H130mm, W32mm, L84mm With single guide plate and fitted cartridge
6	<b>Power supply</b>	DC 12V-4A
7	<b>Maximum power consumption</b>	48W
8	<b>Maximum printing resolution</b>	600*300 Dpi
9	<b>Optional resolution</b>	4 levels
10	<b>Operation</b>	7" Touch Screen
11	<b>Message memory</b>	8GB
12	<b>Ink solution type</b>	Water based and Solvent based
13	<b>Menu language</b>	Multiple select-able
14	<b>Printable characters</b>	Windows true fonts
15	<b>No. of lines</b>	Unlimited
16	<b>Character height</b>	Maximum 12.7mm/ 0.5 inch for single head
17	<b>Print-ability</b>	Text, image, barcode, counter, shift code, time
18	<b>Operating temperature</b>	5°C -50°C and 0-90% air humidity, non-condensing
19	<b>External connections</b>	External Sensor, External Encoder and Alarm Beacons

## 5.2 Date Sheet for 1 inch system

NO	DESCRIPTION	SPECIFICATIONS
1	<b>Model</b>	F3515/F3525/F3545
2	<b>Print-head number</b>	Maximum 2 for F3515/F3525 Maximum 4 for F3545
3	<b>Guide plate kit</b>	Guide plate kit for single head (C2.WJ.QT0077C) Guide plate kit for double head (C2.WJ.QT0078C) Guide plate kit for quadruple head (C2.WJ.QT0105C)
4	<b>Controller Weight/Dim.</b>	◆ 1.15Kg ◆ L204mm, W153mm, D52mm
5	<b>Print-head Weight/Dim.</b>	◆ 284g (Net weight, without guide plate and cartridge) ◆ H130mm, W32mm, L96mm With single guide plate and fitted cartridge
6	<b>Power supply</b>	DC 12V-4A
7	<b>Maximum power consumption</b>	48W
8	<b>Maximum printing resolution</b>	600*300 Dpi
9	<b>Optional resolution</b>	4 levels
10	<b>Operation</b>	7" Touch Screen
11	<b>Message memory</b>	8GB
12	<b>Ink solution type</b>	Water based and Solvent based
13	<b>Menu language</b>	Multiple select-able
14	<b>Printable characters</b>	Windows true fonts
15	<b>No. of lines</b>	Unlimited
16	<b>Character height</b>	Maximum 25.4mm/ 1 inch for single head
17	<b>Print-ability</b>	Text, image, barcode, counter, shift code, time
18	<b>Operating temperature</b>	5°C -50°C and 0-90% air humidity, non-condensing
19	<b>External connections</b>	External Sensor, External Encoder and Alarm Beacons

## 5.3 Resolution For Both Model

Available DPI-X and DPI-Y Values				
DPI-X	150	200	300	600
DPI-Y	75	100	150	300

## 5.4 Print Speed

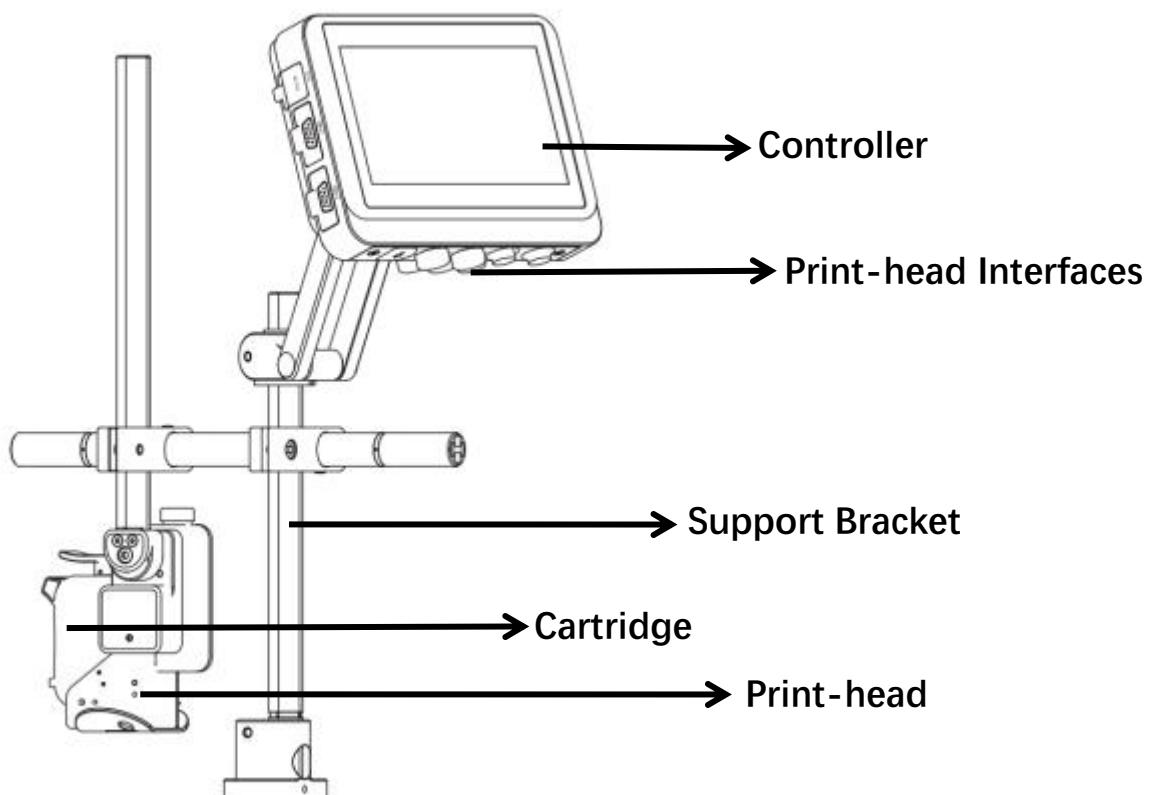
Resolution (DPI-X * DPI-Y)	150*300	200*300	300*300	600*300
Print Speed (m/min)	150	114	76	38
0.5 inch				

Resolution (DPI-X * DPI-Y)	150*300	200*300	300*300	600*300
Print Speed (m/min)	80	60	30	15
1 inch				

Note: DPI-Y value does not affect the printing speed.

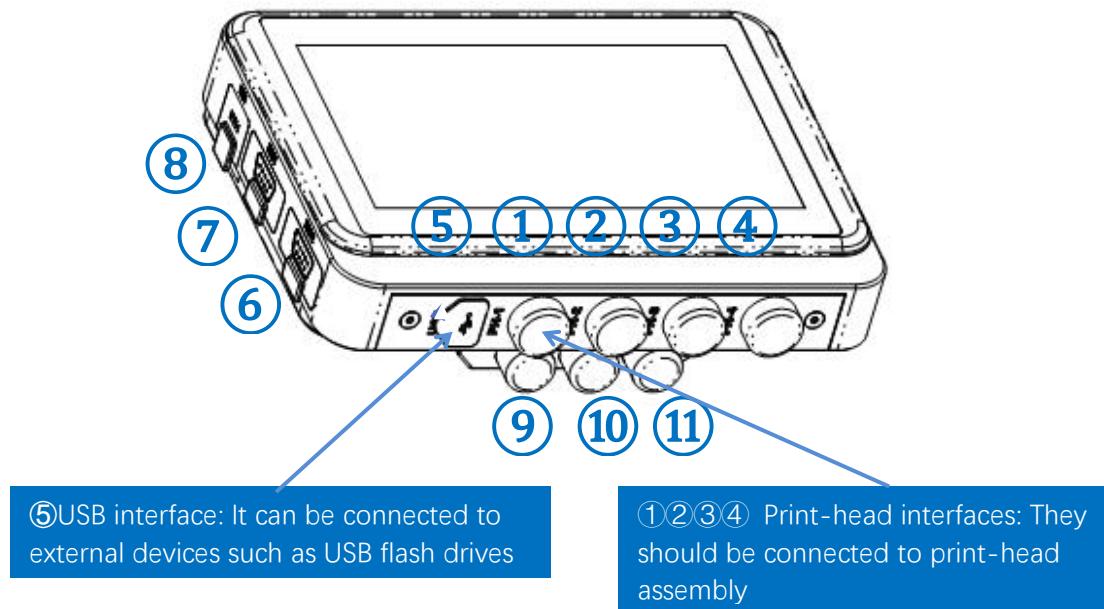
# 6.PRINTER OVERVIEW

## 6.1 Overview

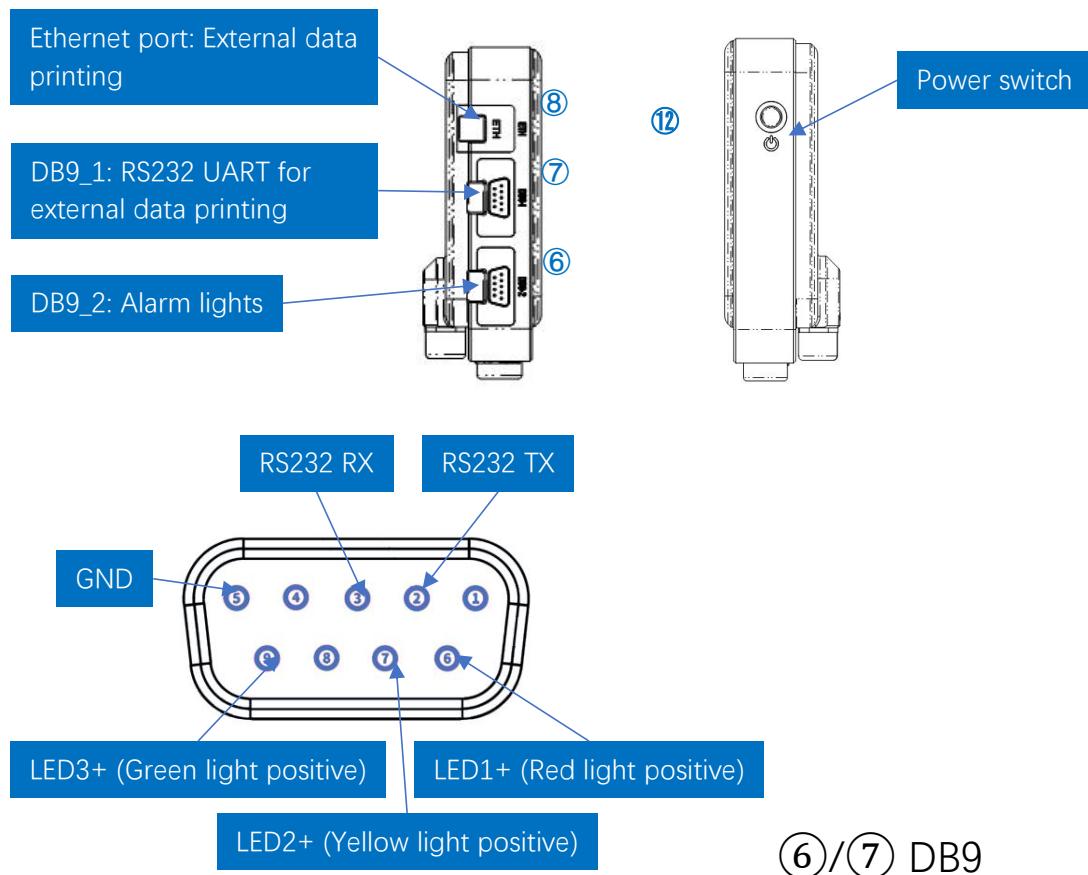


## 6.2 Controller

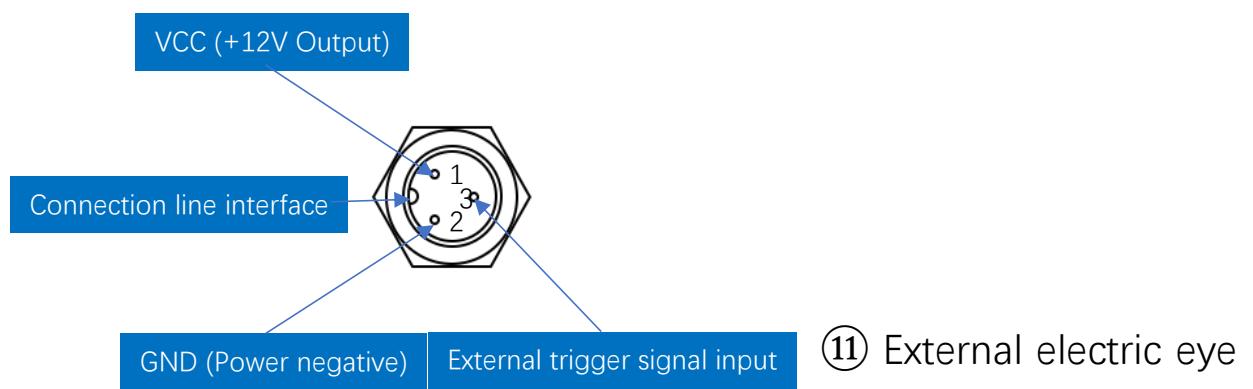
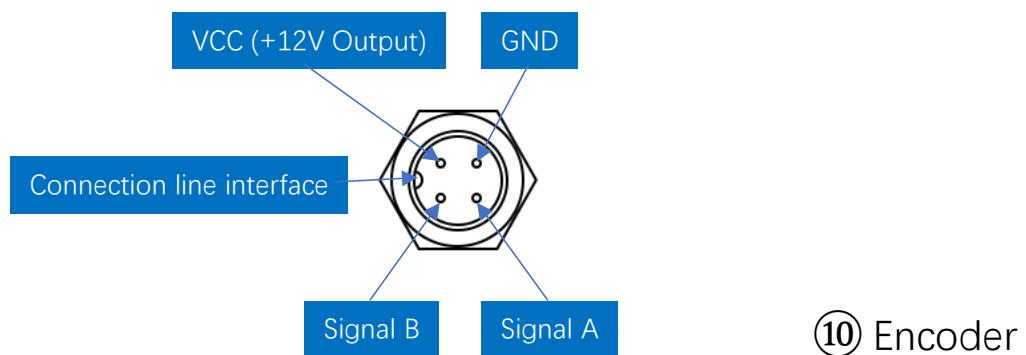
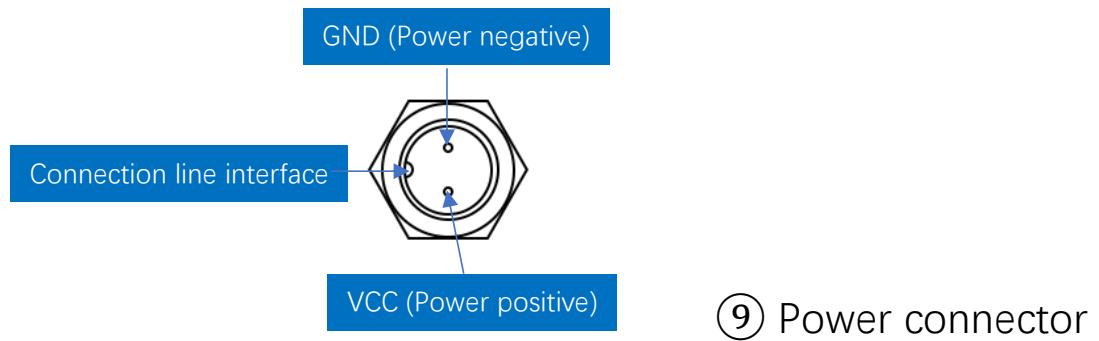
### 6.2.1 Front side



### 6.2.2 Left&Right side

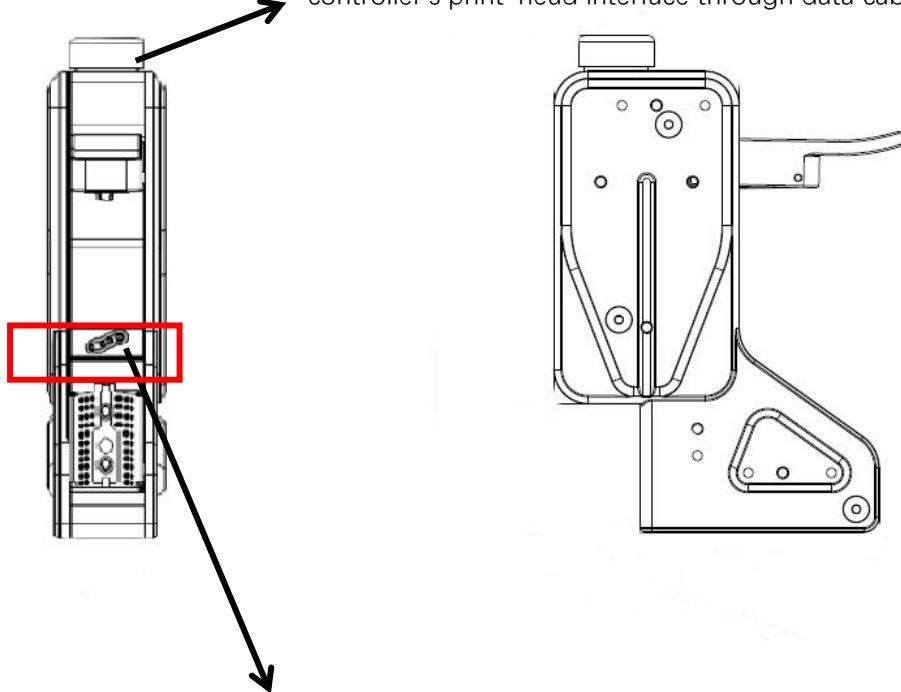


### 6.2.3 Bottom



## 6.3 Print-head Assembly

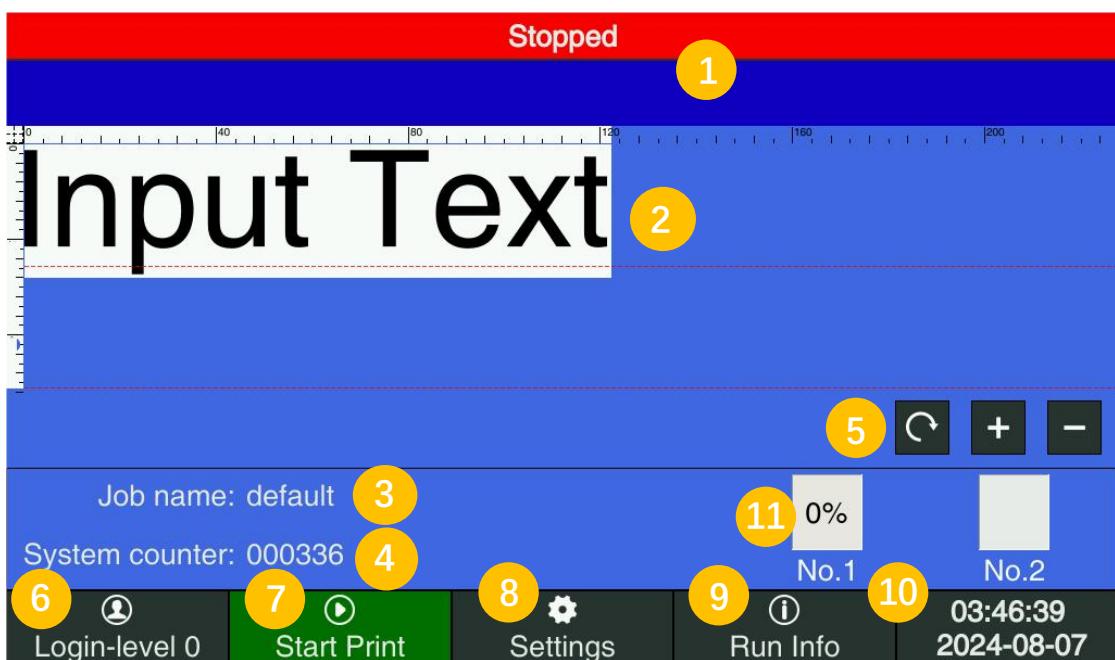
Data cable interface: It is used to connect to the controller's print-head interface through data cable.



Pins: The controller can read cartridge's chip through these pins.

## 7.SOFTWARE USING

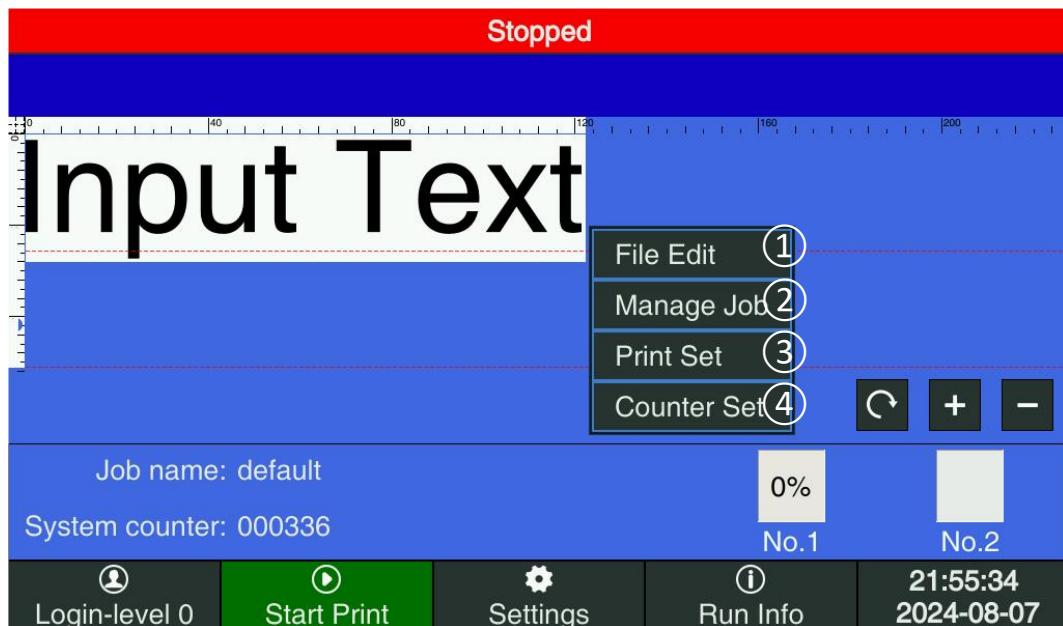
### 7.1 Main interface



### 7.1.1 Page function

ITEMS	NAME	DESCRIPTION
1	Print status indicator function	It is in the non-print state, and the color is red when displayed as 'Stopped'; it is in the printing state, and the color is green when displayed as 'Ready'.
2	Print information preview function	Preview the edited content information and size, each line represents one head. Indicating 0.5 inch or 1 inch cartridge with different scale on the left side.
3	Job name	Current file name.
4	System counter	Display the number of times the current content has been printed, touch the system counter to quickly enter the reset function.
5	Scale setting function	1. The reset button can be used to restore the initial preview size of the system. 2. The zoom in and zoom out buttons can free the size of the currently viewed page.
6	User level display	The device has three levels of user level setting permissions, which are 0, 1, and 2. The highest is level 2 administrator users, and the lowest is level 0 ordinary users. Advanced users can assign different operation permissions to low-level users.
7	Print button	Click to start printing or end the current printing.
8	System settings	Adjust and modify the system parameters.
9	Run info	Display the current operating information of the system and various parameters.
10	System time and date display	Modify the current system date and time.
11	Remaining ink display	Display the remaining ink amount of the current ink cartridges respectively.

### 7.1.2 Edit menu

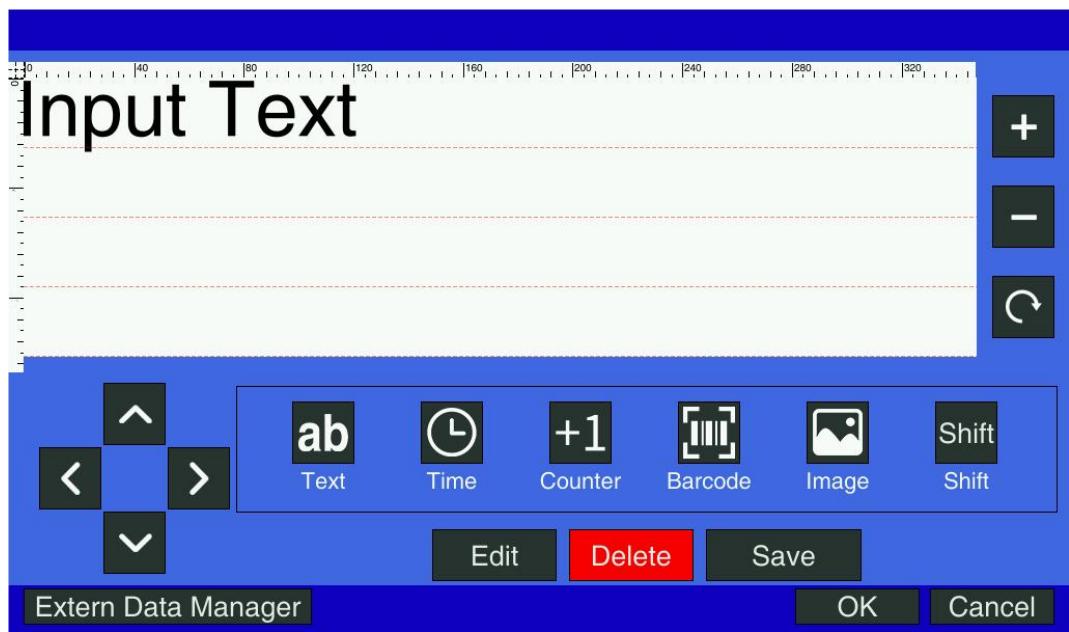


Long press the screen for 1-2 seconds to wake up the edit menu.

ITEMS	NAME	DESCRIPTION
1	File Edit	Click on this button to edit the content that needs to be printed.
2	Manage Job	Click on this button to open the print template management interface.
3	Print Set	Click on this button to set different printing parameters to present different printing effects.
4	Counter Set	Click on this button to open the Counter setting form.

### 7.1.3 File Edit

File edit is one of the important parts on the device. It allows operator to design the layout and display result here. The following shortcut icons can make editing easy for operator.

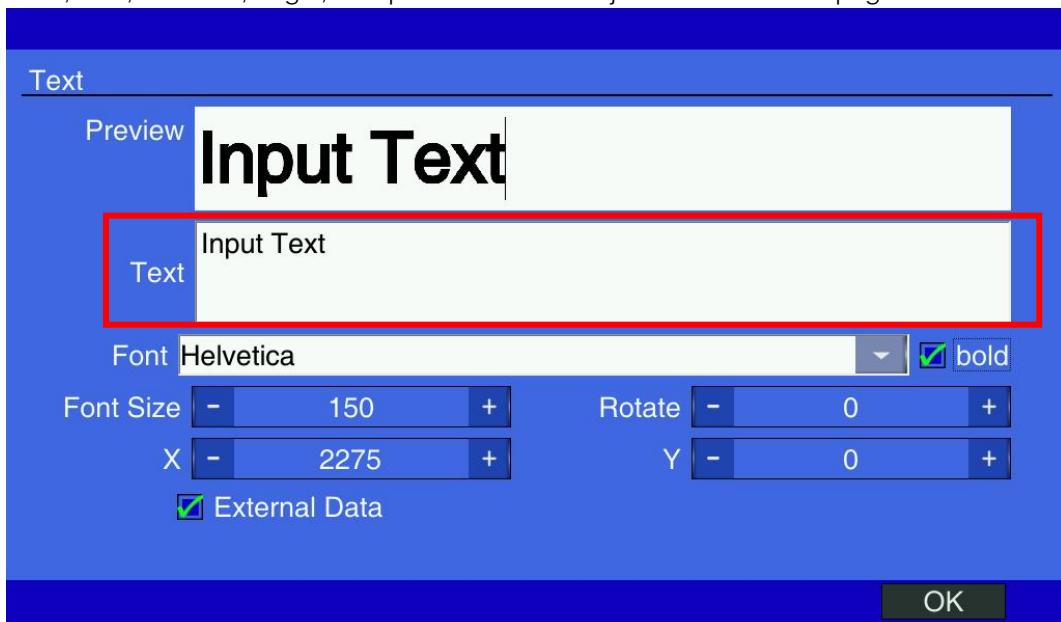


ITEMS	NAME	DESCRIPTION
	Position adjustment	Adjust the position of the content on the screen through the arrow keys or direct drag.
	Text Editor	Click on the button to enter text, numbers, symbols, etc.
	Time Editor	Automatically read the current time of the system, with a variety of time formats built-in.
	Counter Editor	Adding a counter in the edit text can help operator count the number of printing.
	Barcode Editor	Support multi-format barcodes and QR codes, and import and print external data directly.
	Image Editor	Import and print pictures stored locally on the device or an external device.
	Shift Editor	This function enables operator to edit different production shifts according to different time periods.
<b>Extern Data Manager</b>	Extern Data Manager	Manage data which are imported through external port.

	Preview function button	<p>1. The zoom in and zoom out buttons can free the size of the currently viewed page.          2. The reset button can restore the initial preview size of the system.</p>
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### 1) Text edit page

The text, font, font size, angle, and position can be adjusted on text edit page.

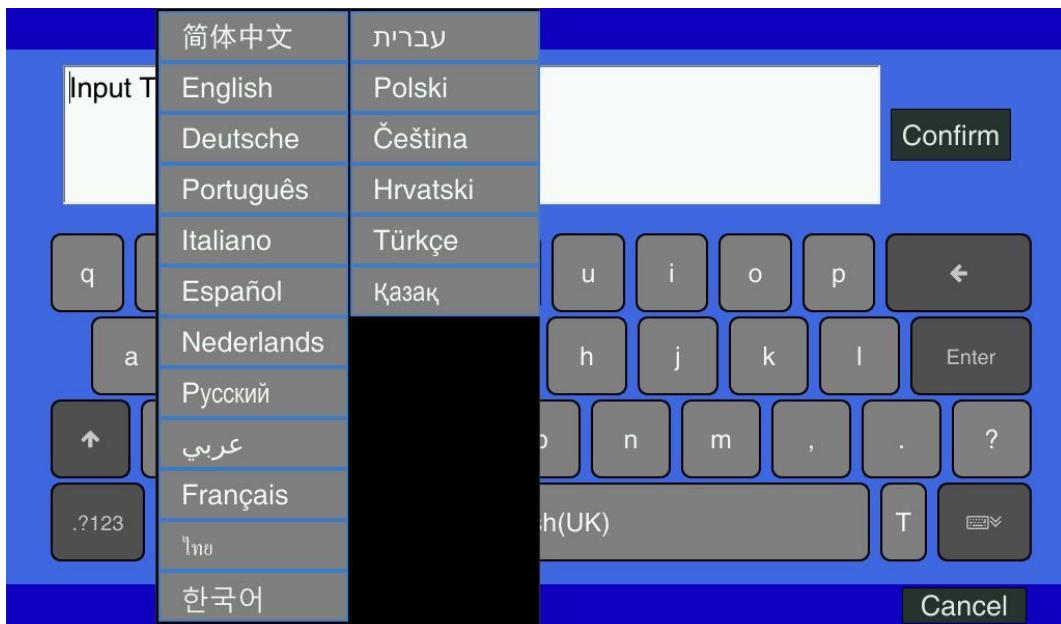


**Text:** Click on the red area shown in the figure above to enter the text.

**External Data:** F3500 also supports external data importing function with checking 'External Data'.



Type on the screen to edit the text, and click the 'Confirm' button after inputting is completed.

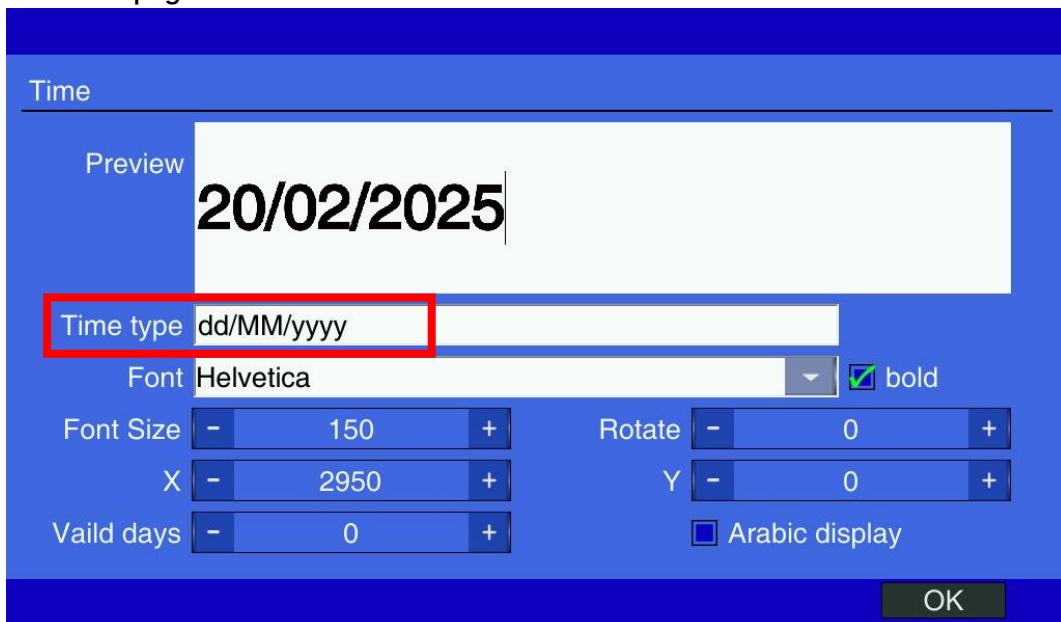


The device has built-in multiple languages, click the corresponding language to change the keyboard input method.

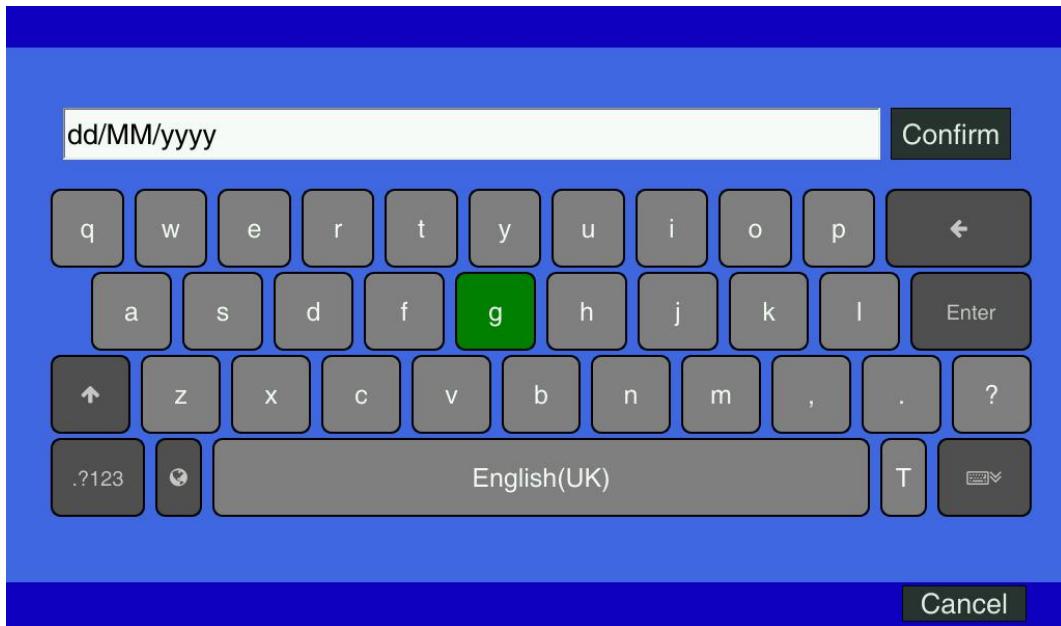
If the letters are displayed abnormally on main interface, such as font size or font height, please switch to another font.

For example, Turkish language, recommended fonts: Arial & Calibri & Dejavu Sans & Georgia & Helvetica & Times New Roman & Verdana.

## 2) Time edit page



**Time type:** Click on the red area indicated by the icon above, and the time format setting keyboard will pop up.



Enter the format that needs to be modified in the input box, and click the confirm button when finished.

If 'JD' is entered, it will count the number of days experienced. For example, if today is 1st-Feb-2025, 'JD' will automatically be converted to '032'.

For the abbreviations of time units, please refer to the following tables.

ND	NN	NO	NR
Sun	1	A	Jan
Mon	2	B	Feb
Tue	3	C	Mar
Wed	4	D	...
Thu	5	E	...
Fri	6	F	Nov
Sat	7	G	Dec

Days can be replaced with 'Sun...Sat', '1...7''A...G' or 'Jan...Dec' by inputting 'ND' 'NN' 'NO' or 'NR'. User can also customize the abbreviation format of the 'Week' and 'Month' on 'Custom date' page (Please refer to 7.3.6), so on the time edit page, user can input 'ND' or 'NR' to display custom format of the Week and Month.

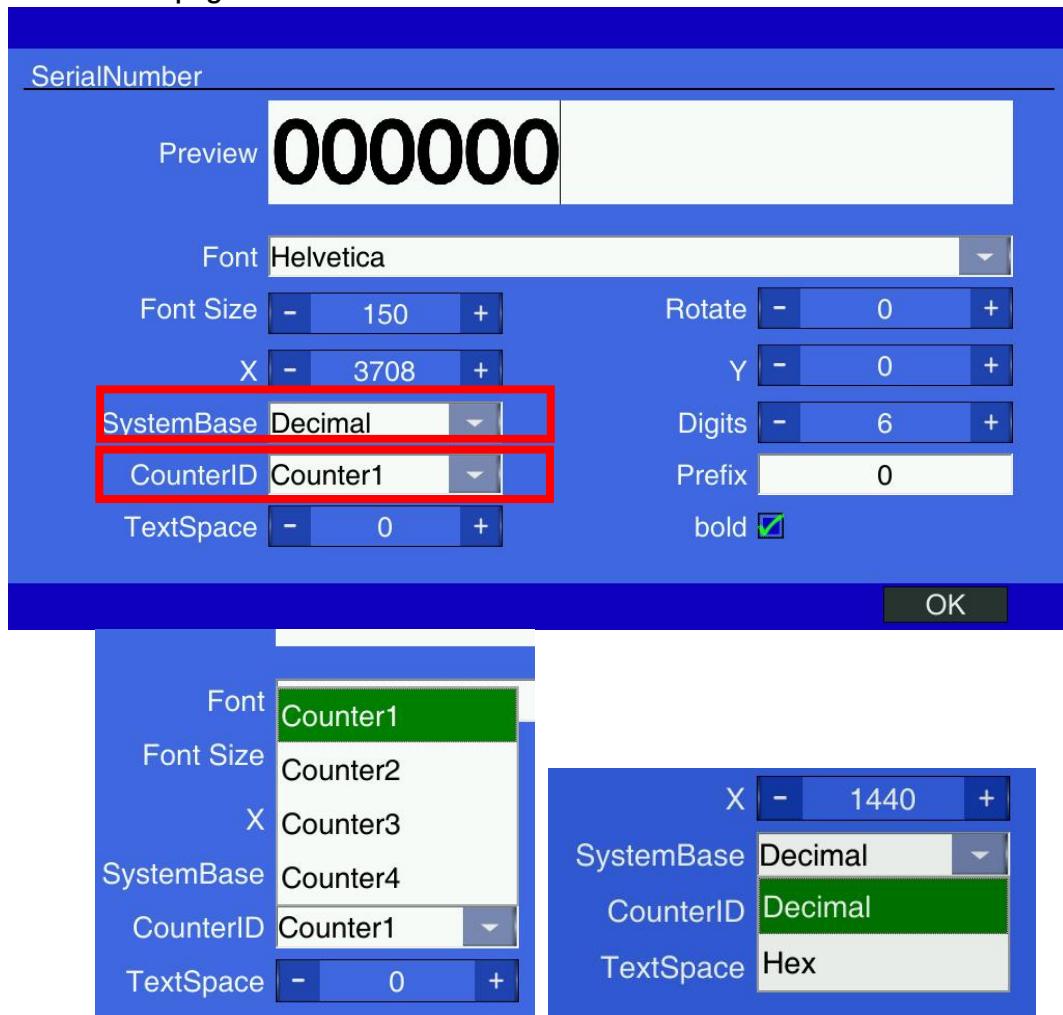
Abbreviations of date, month and year.

d	Date without prefixed '0' (1~31)
dd	Date with prefixed '0' (01~31)
ddd	Abbreviation of day of week (Mon, Tue...)
ddd	Day of week (Monday, Tuesday...)
M	Month without prefixed '0' (1~12)
MM	Month with prefixed '0' (01~12)
MMM	Full name of month (January, February...)
yy	Two-digit year (00~99)
yyyy	Four-digit year (2025)

Abbreviations of hour, minute, second, Julian Day and Week.

h	Hour without prefixed '0' (0~23, but if 'AP'/'A'/'ap'/'a' is added after it, the range would be 0~11)
hh	Hour with prefixed '0' (00~23, but if 'AP'/'A'/'ap'/'a' is added after it, the range would be 00~11)
H	Hour without prefixed '0' (0~23, even if 'AP'/'A'/'ap'/'a' is added after it, the range would still be 0~23)
HH	Hour with prefixed '0' (00~23, even if 'AP'/'A'/'ap'/'a' is added after it, the range would still be 00~23)
m	Minute without prefixed '0' (0~59)
mm	Minute with prefixed '0' (00~59)
s	Second without prefixed '0' (0~59)
ss	Second with prefixed '0' (00~59)
AP or A	Add to display time with AM or PM
ap or a	Add to display time with am or pm
JD	The **th day of the year (e.g. It displays 032 if the date is 1st Feb)
JW	The **th week of the year (e.g. It displays 01 if the date is 8th Jan 2025)

### 3) Counter edit page



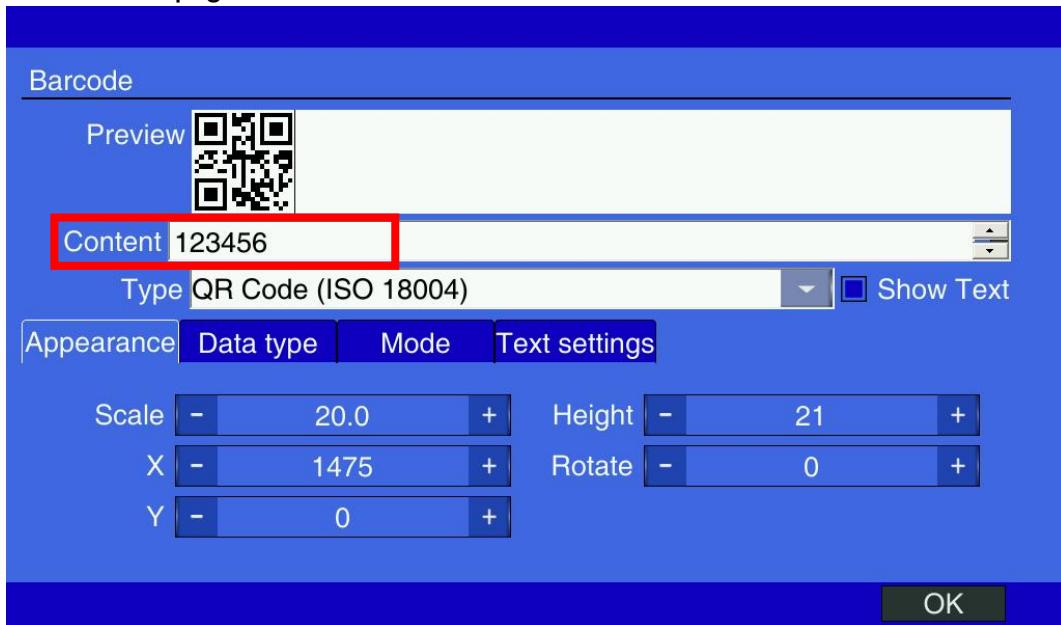
**Counter ID:** Up to four different counters can be inserted into one edit file.

**System Base:** Different format of the counter can be edited by selecting different mode and

modifying the digits.

**Text Space:** Click '-' or '+' to adjust the distance between each character.

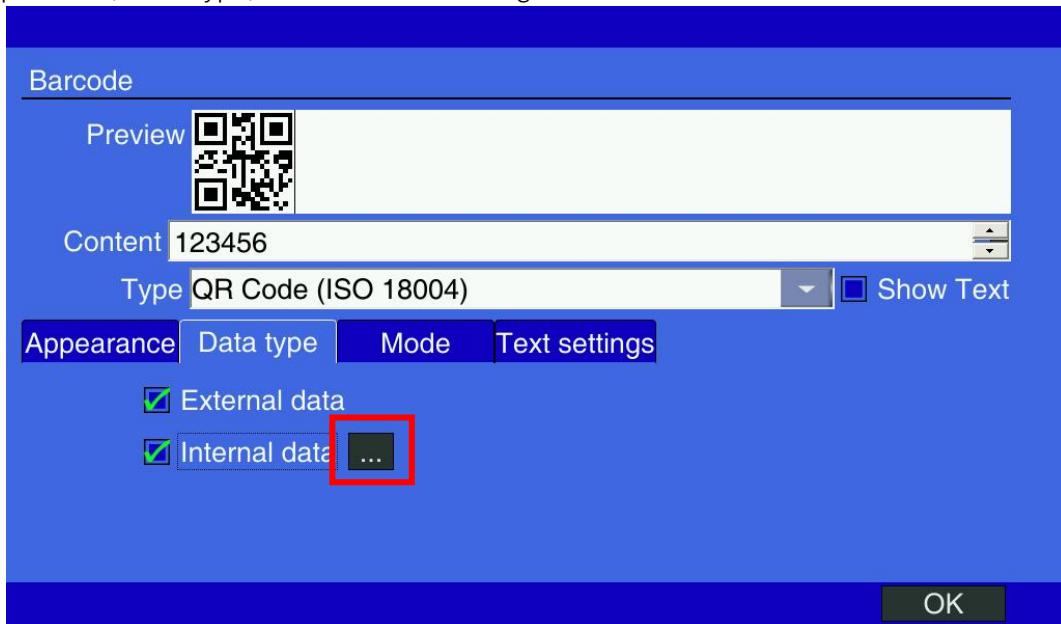
#### 4) Barcode edit page



**Content:** Edit the text in the content area.

**Type:** EAN 14, EAN 13, QR Code (ISO 18004), Data Matrix (ISO 16022), Code\_39, Code\_93, UPC-A, UPC-E, Code\_128, ITF 14, PDF417.

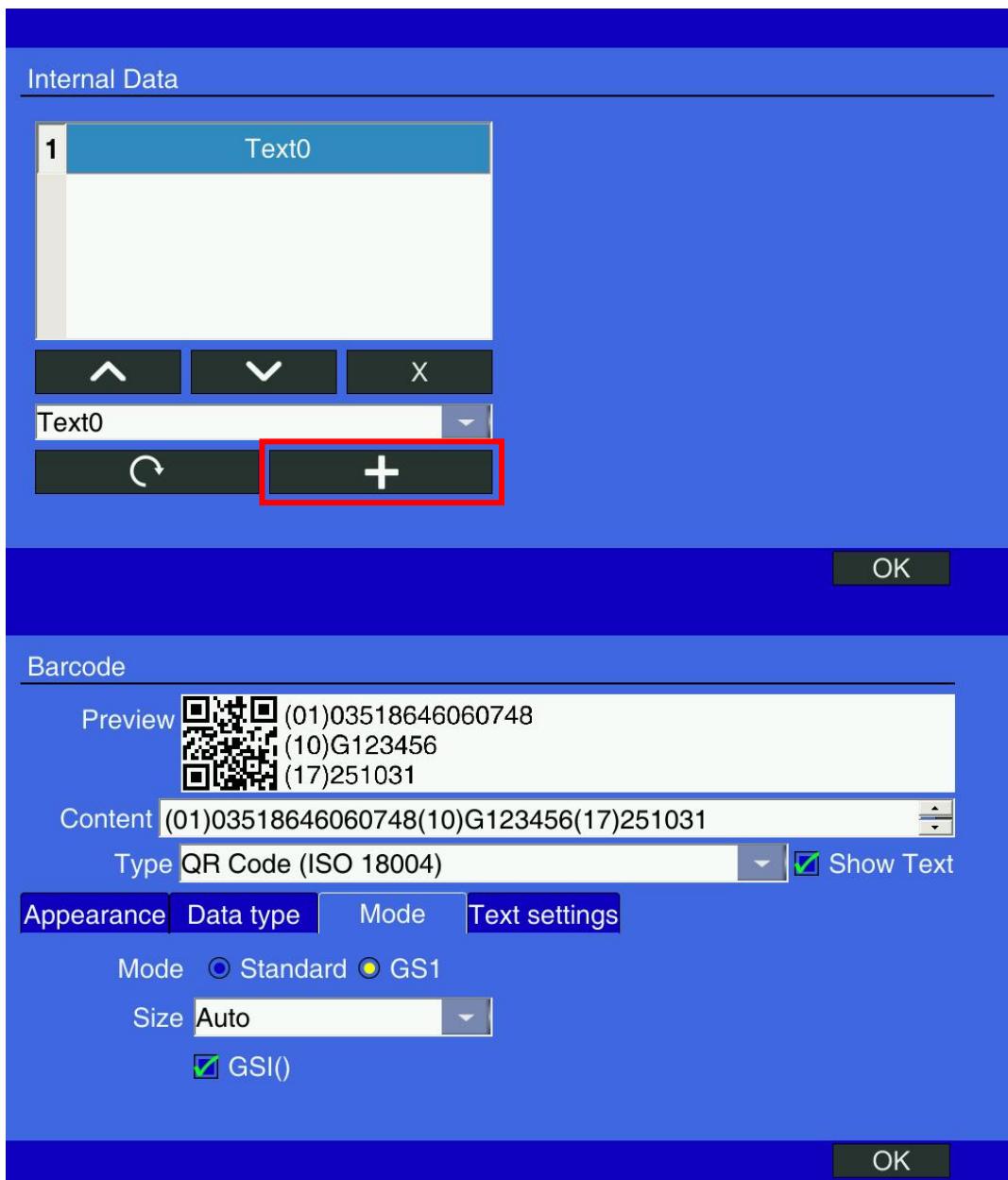
After choosing the type, the function buttons can be used to adjust the parameters: Appearance, Date Type, Mode and Text setting.



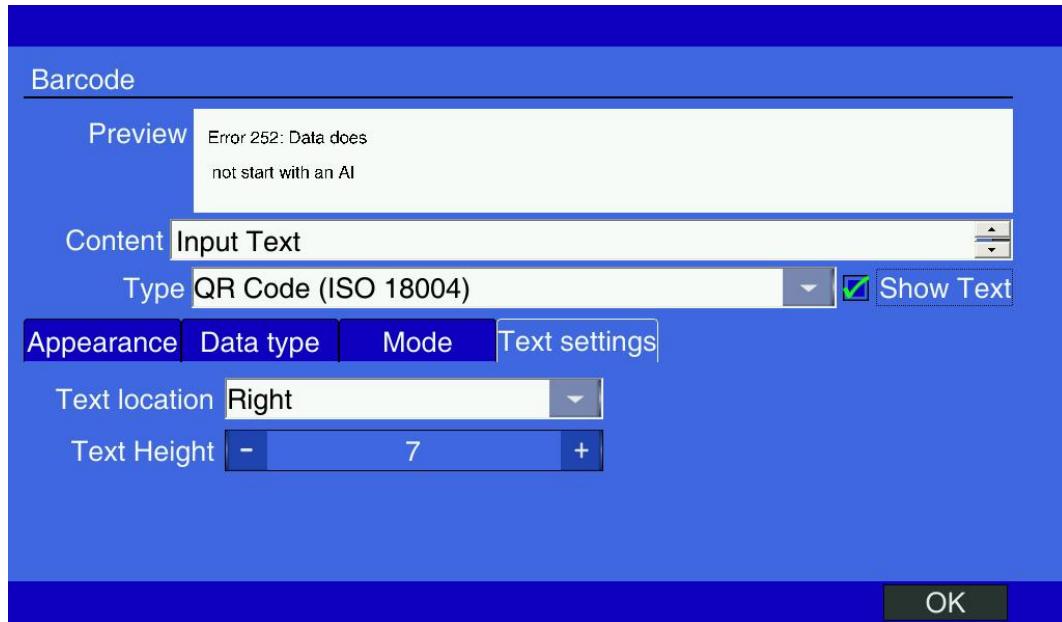
F3500 also supports 'External data' and 'Internal date' import function with checking 'External data' & 'Internal date'.

**External data:** External data can be sent through the Ethernet port, DB9-1 port (serial port) and USB interface.

**Internal data:** Click the three dots icon to enter the 'Internal data' add interface, then click the '+' icon to add the Internal date like in the below picture. (The premise is to create the new text, time, counter, etc on the file edit page).



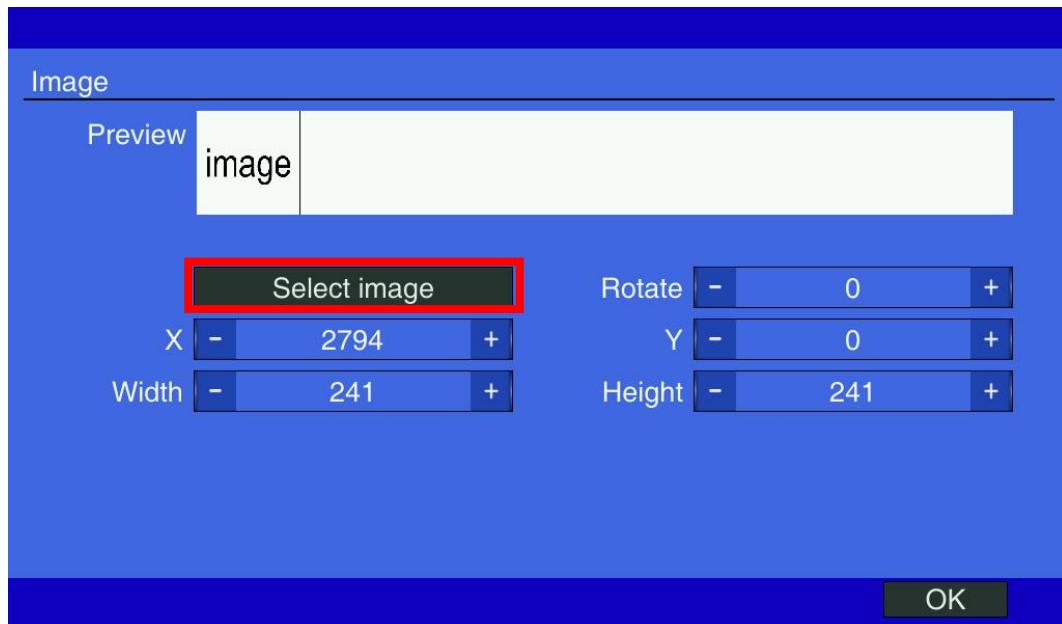
**Standard mode:** Press the 'Enter' button to wrap the text line (QR Code & Date Matrix).  
**GS1 Mode:** Square bracket '[ ]' is the default mode, Round bracket '()' is select-able (QR Code & Date Matrix & Code 128).



**Text location:** The text of the QR Code & Date Matrix can be adjusted to the left, right, above, below.

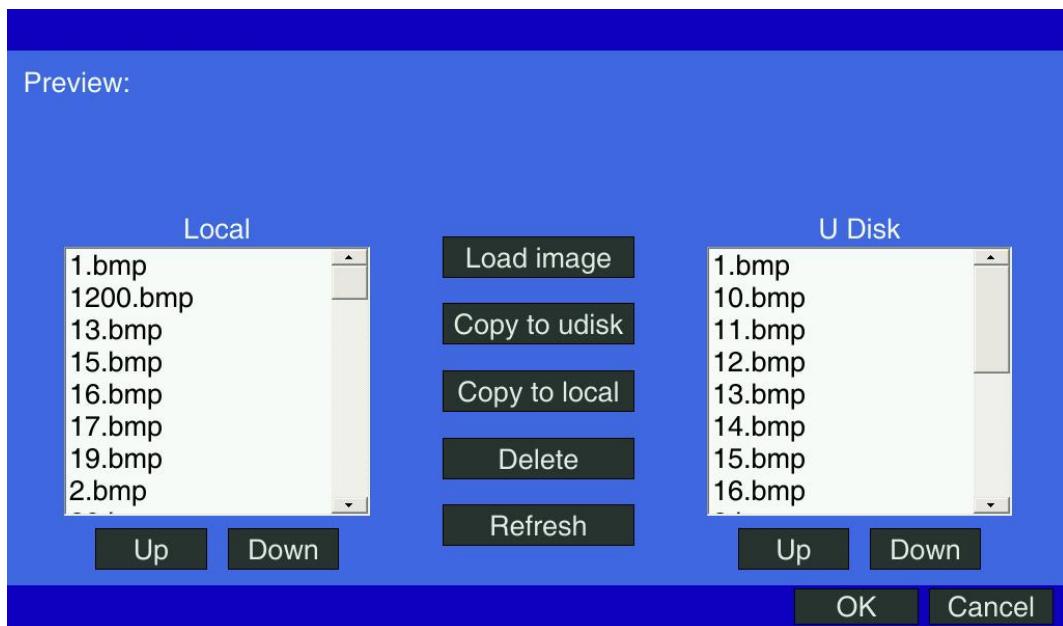
**Text Height:** The size of the Barcode's text can be enlarged or reduced (QR Code & Date Matrix & Code 128 & EAN14 & Code\_39 & Code\_93 & ITF14).

## 5) Image edit page



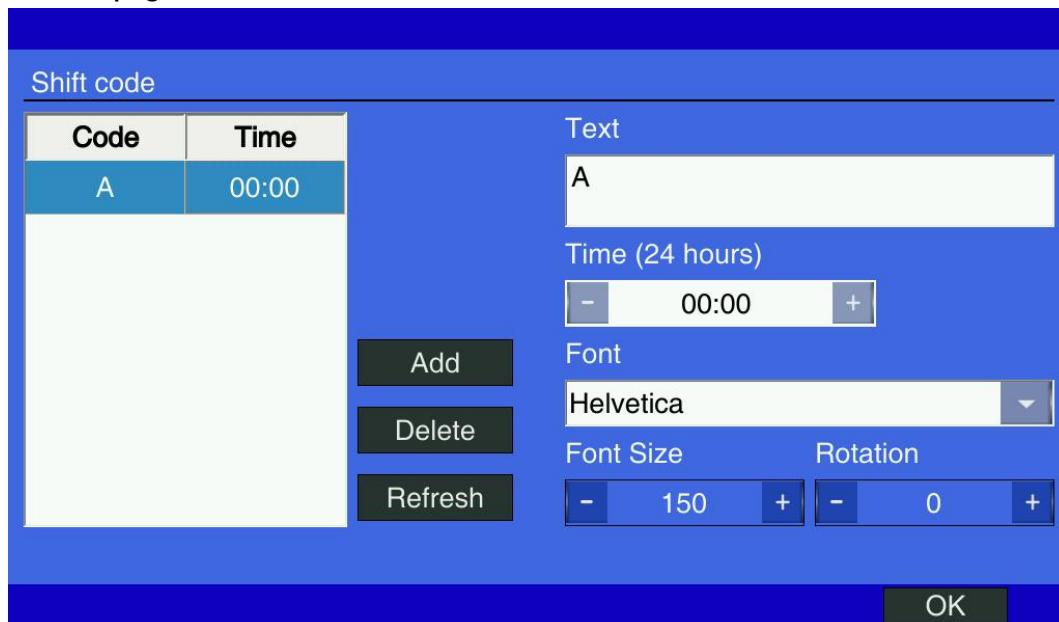
After selecting an image, the image information will appear in the upper area, and the below parameters can be used to adjust the size and angle of the image.

**Note: The image size should not larger than 9999\*1300px:** The higher the pixel of the image, the longer it will take to load, if width or height of image exceeds the value, it cannot be loaded. F3500 supports bmp, png and jpg format image.



Operator can copy images from the USB flash drive to the device on the above page, and F3500 also supports export images from the device to the USB flash drive.

## 6) Shift edit page



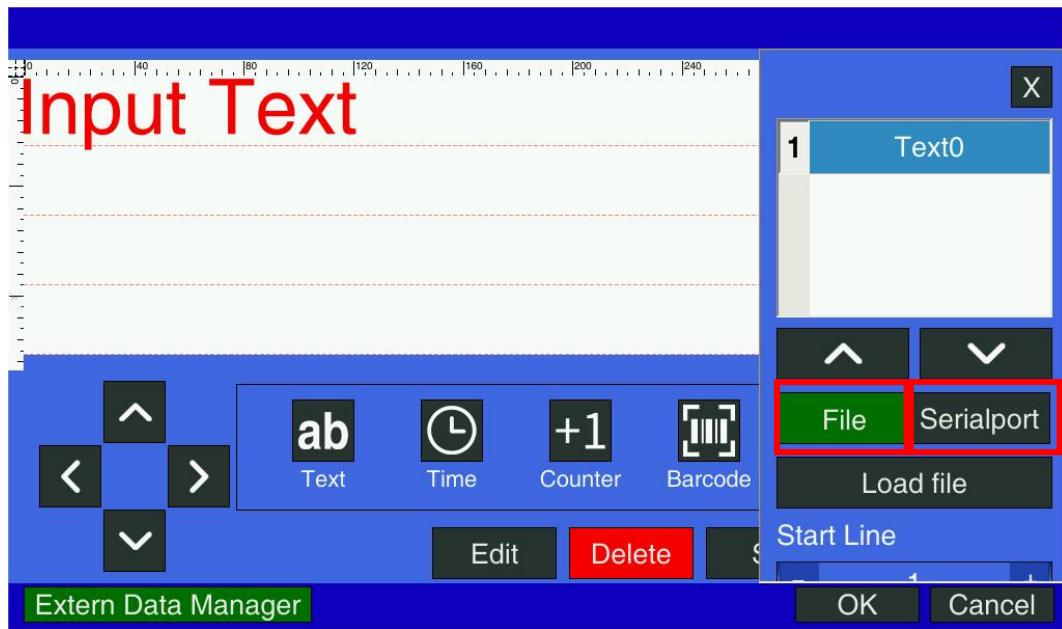
Adjust the time span to assign the corresponding shift code.

## 7) External Data Manager

**File:** Click 'Load file': F3500 supports Txt. and Excel format file, imported through external storage devices such as USB flash drive.

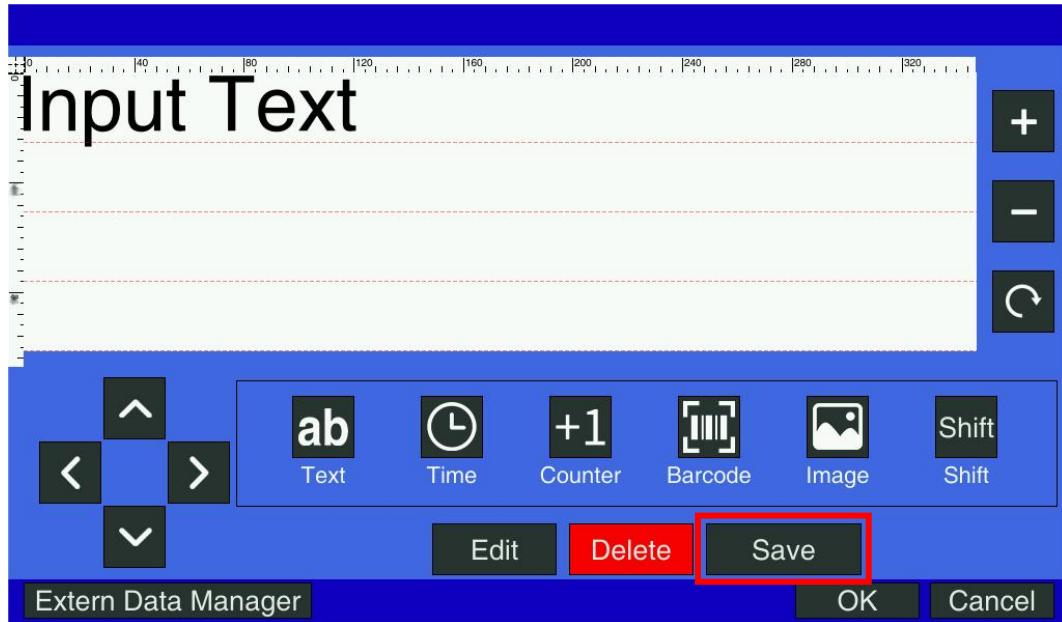
**Serial port:** External data can also be imported through serial port, including Ethernet port and DB9-1 port.

**Note:** this function will be activated when 'External Data' is selected when edit the text or barcode.



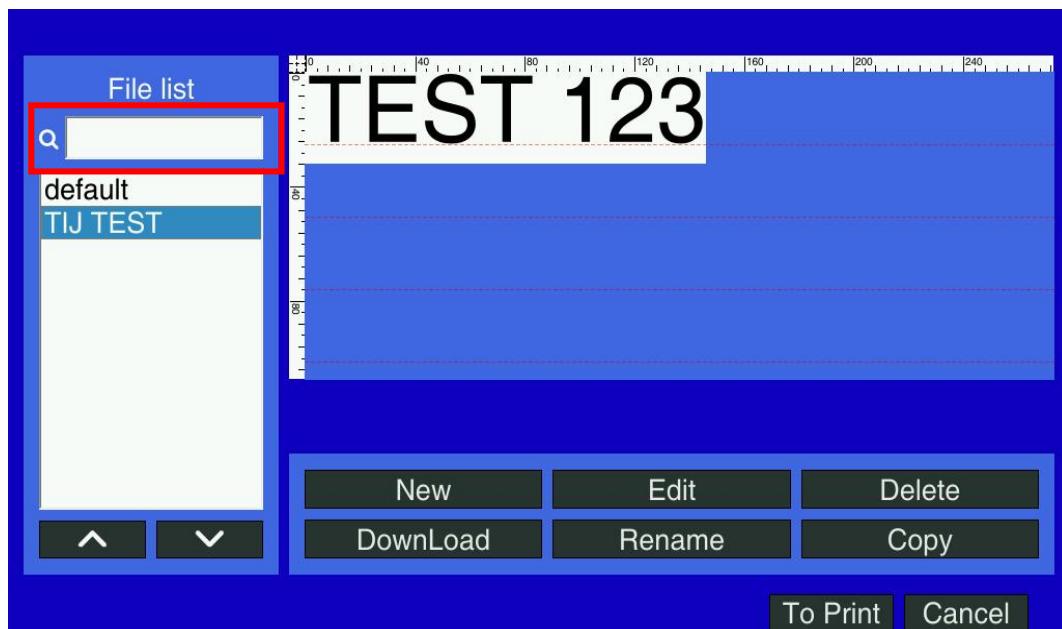
#### 8) File save

After the file is edited, click the 'Save' button to save the file, and click 'OK' to return to the print page.



#### 7.1.4 Manage Job

The previous edited file data is stored in the file management page. Operator can modify or delete them again, or create a new file template, and then name it.



**Search box:** When the device stores a lot of files, enter the key letters, operator can search for all file names that contain both uppercase and lowercase letters (eg: a/A)

**New:** Create a new print file

**Edit:** Re-edit the current selected file

**Delete:** Delete the current selected file

**Down Load:** Files can be mutually copied with external device

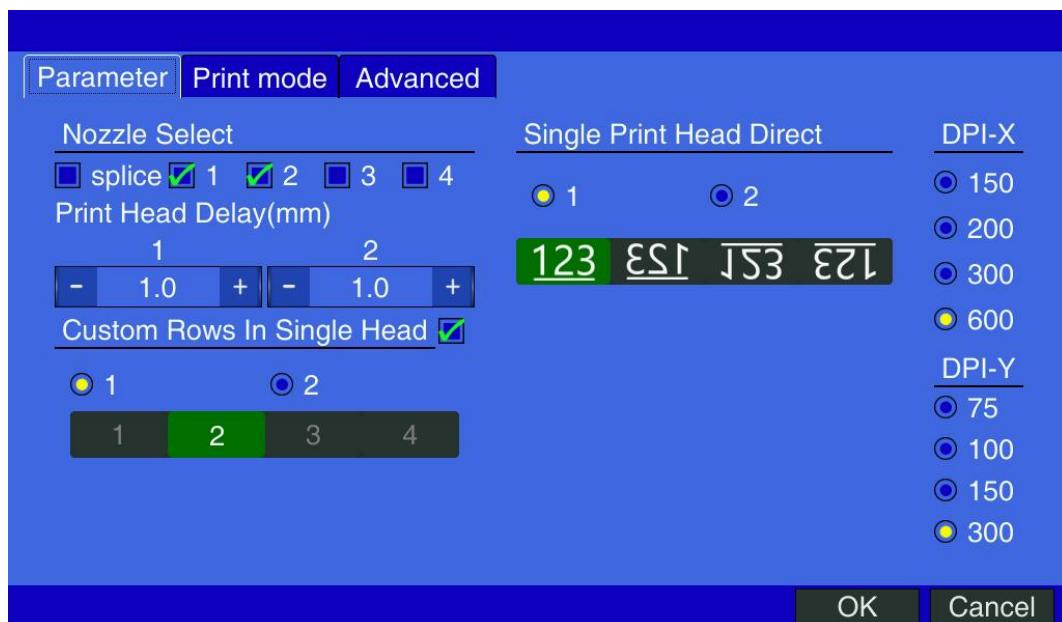
**Rename:** Change the current selected file's name

**Copy:** Copy the current selected file and rename it to a new one

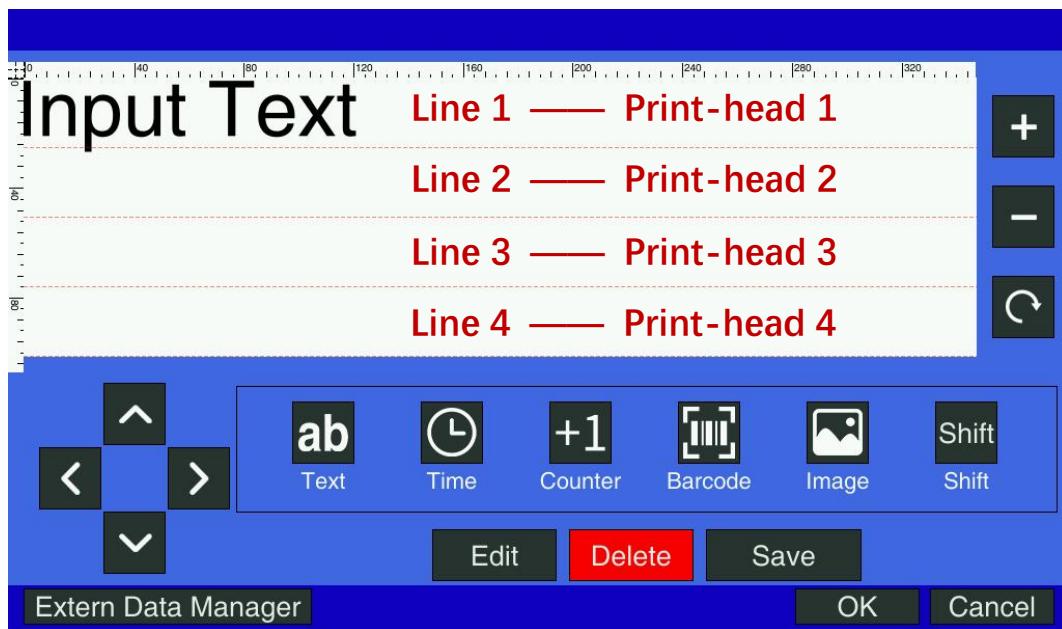
**To print:** Select the file to be printed and click it to return to the home page

### 7.1.5 Print Set

#### 1) Parameter



**Nozzle Select:** Nozzle 1 is print-head 1, responds to line 1, Nozzle 2 is print-head 2, responds to line2, Nozzle 3 is print-head 3, responds to line 3, Nozzle 4 is print-head 4, responds to line 4.



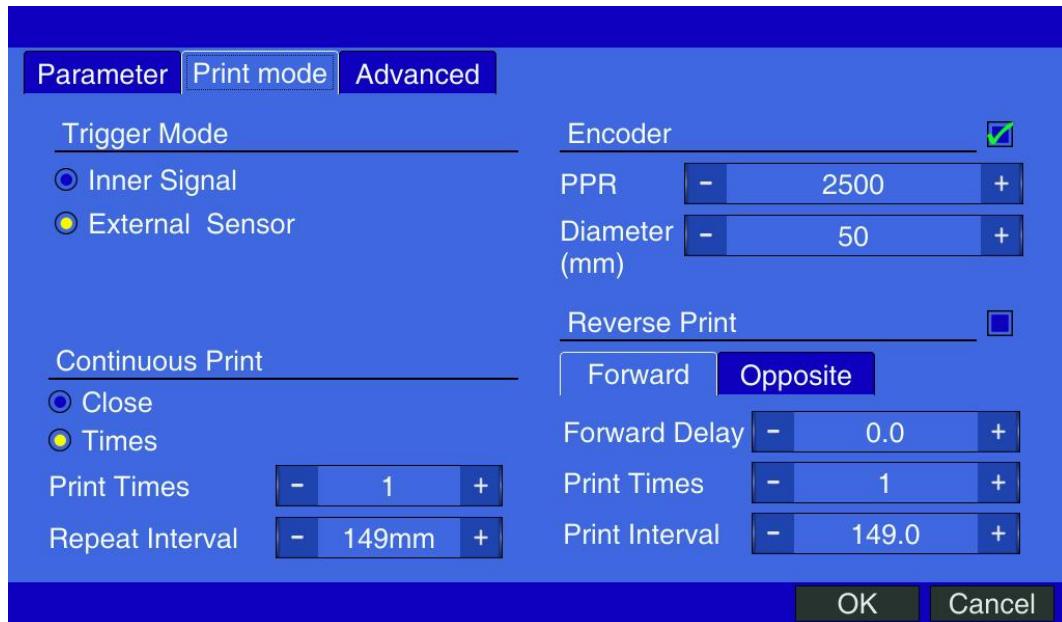
**Print Head Delay:** The distance that each nozzle can be set to delay the printing.

**Custom Rows in Single Head:** Customize which line of content each nozzle will print.

**Single Print Head Direct:** Customize the direction of the content printed by each nozzle.

**DPI-X/DPI-Y:** Print resolution, the higher value, the more ink dots are sprayed out.

## 2) Print mode



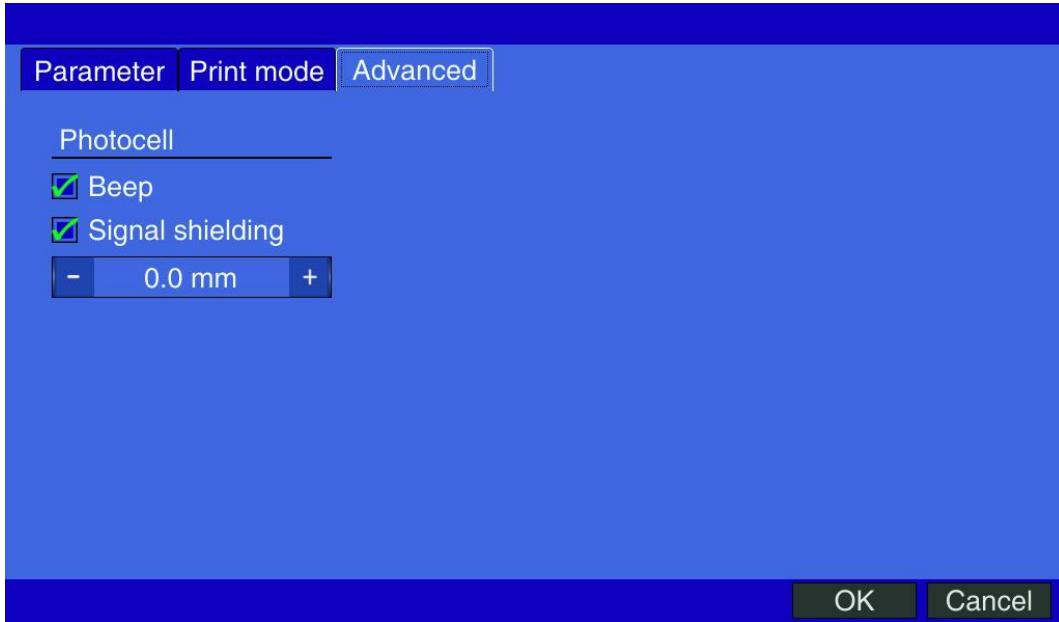
**Trigger Mode:** 'Inner Signal' is not used in conjunction with sensor, 'External Sensor' is used in conjunction with sensor.

**Continuous Print:** 'Close' is that each time a sensor is triggered, the content is printed once, 'Times' is that each time a sensor is triggered, the times of the printed content is based on the value set.

**Encoder:** Ensure the print speed can match the conveying speed that the content can be accurately printed.

**Reverse Print:** It can be used for reciprocating printing, and the times of forward and opposite printing can be customized.

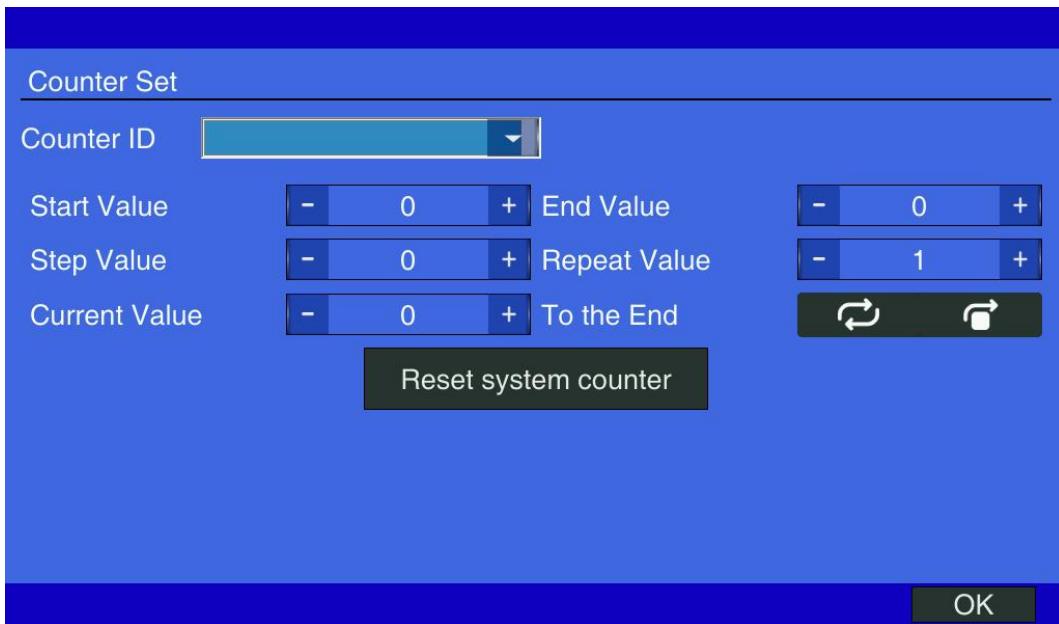
### 3) Advanced



**Beep:** Beep can be heard once per printing is finished.

**Signal shielding:** The print sensor signal will not be triggered again within a certain distance from the position of the last triggered signal.

#### 7.1.6 Counter Set



The number of counters in the Counter ID column is determined by the number of counters edited in the current file. Up to four counters can be added to a file, and different counters can be assigned different values. Click the drop-down box button to switch between different counters.

**Start Value:** Counter start value

**End Value:** After reaching this value, count from the start value again

**Step Value:** Each print counter's accumulative value

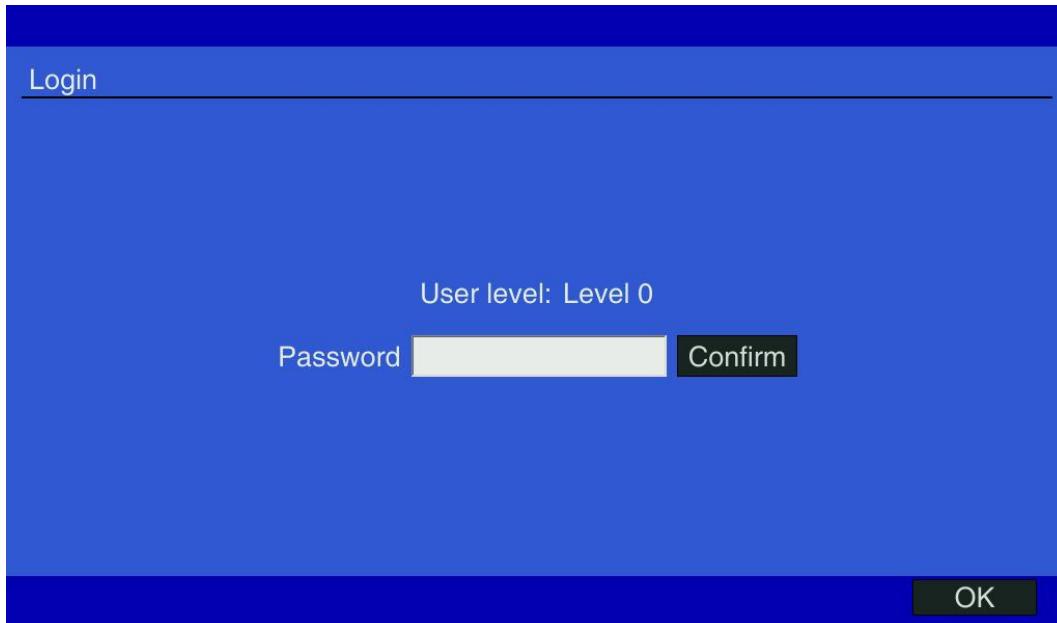
**Repeat Value:** Set the number of times to print each value

**Current Value:** Set the currently printed value within the range

**To the End:** Loop counting and One-way counting

**Reset system counter:** It is 00000 after resetting

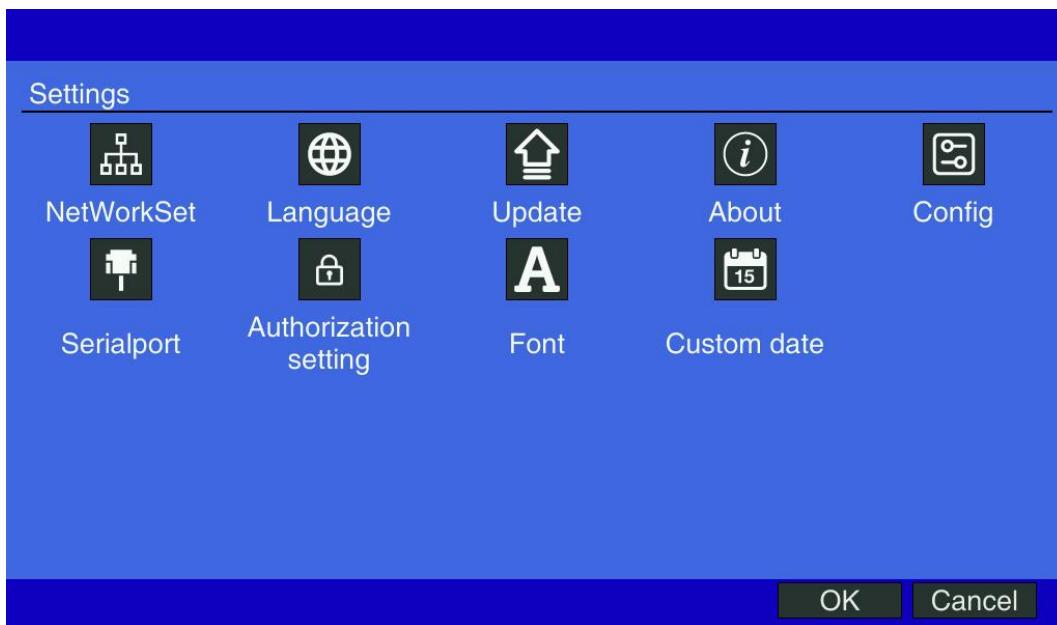
## 7.2 User login



The system will give different user permissions based on the permissions assigned by the administrator. Operator can login to a high-level account to get more permissions.

**Password:** Level 0 to level 1: 123; level 1 to level 2: 123456.

## 7.3 System settings



### 7.3.1 Network settings

F3500 can be used as a server or a client to communicate with external device.

Net Setting

As Client      As Server  Auto Start

IP Addr 192.168.1.121

Server IP 192.168.1.100

Server Port 64032

Apply    Ping Test    Connect

OK    Cancel



Net Setting

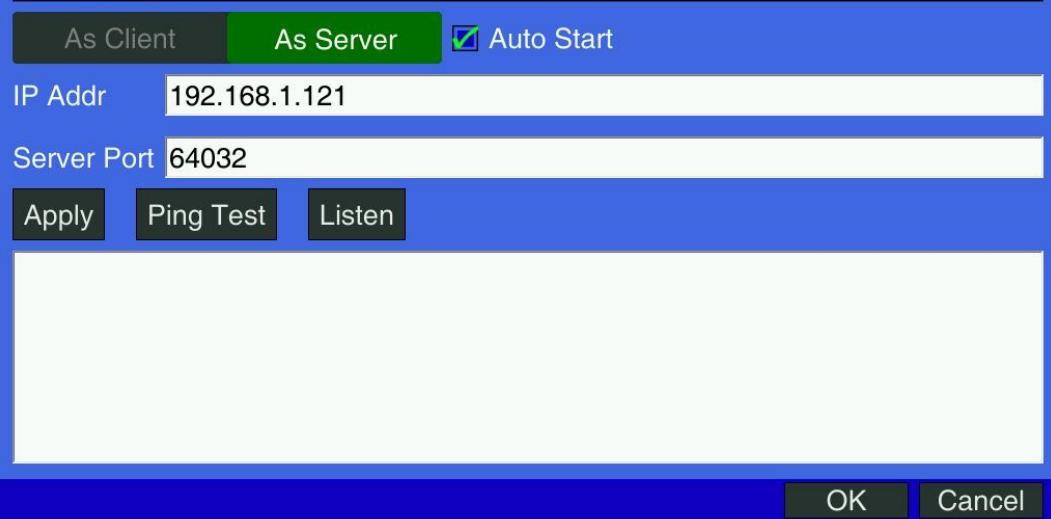
As Client      As Server  Auto Start

IP Addr 192.168.1.121

Server Port 64032

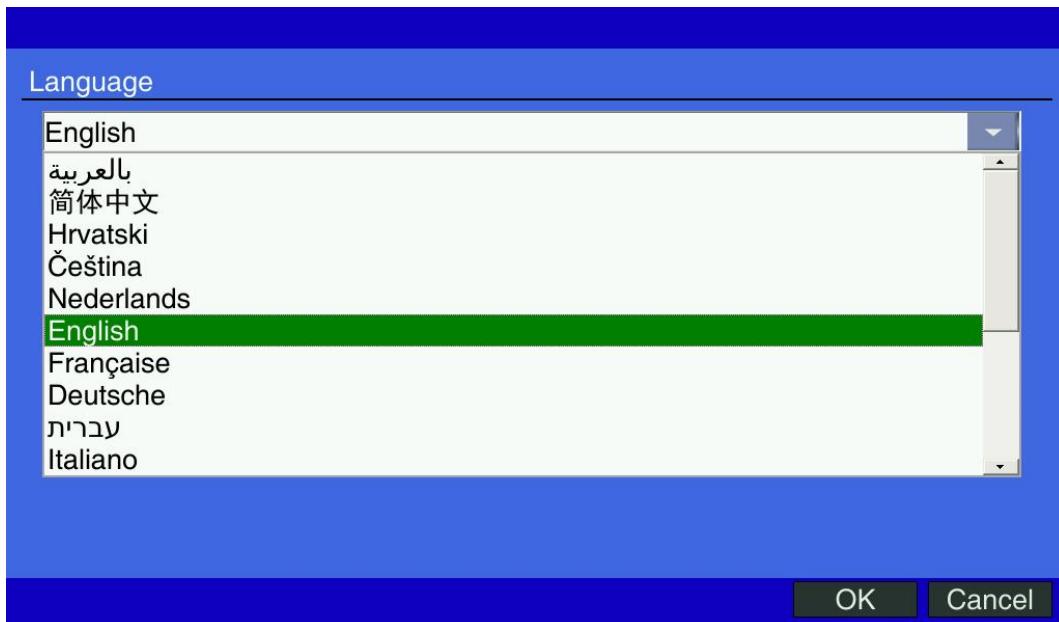
Apply    Ping Test    Listen

OK    Cancel



Enter the corresponding IP Address, Server address, Server Port, the device will be connected to the local area network, and print collaboratively with other devices.

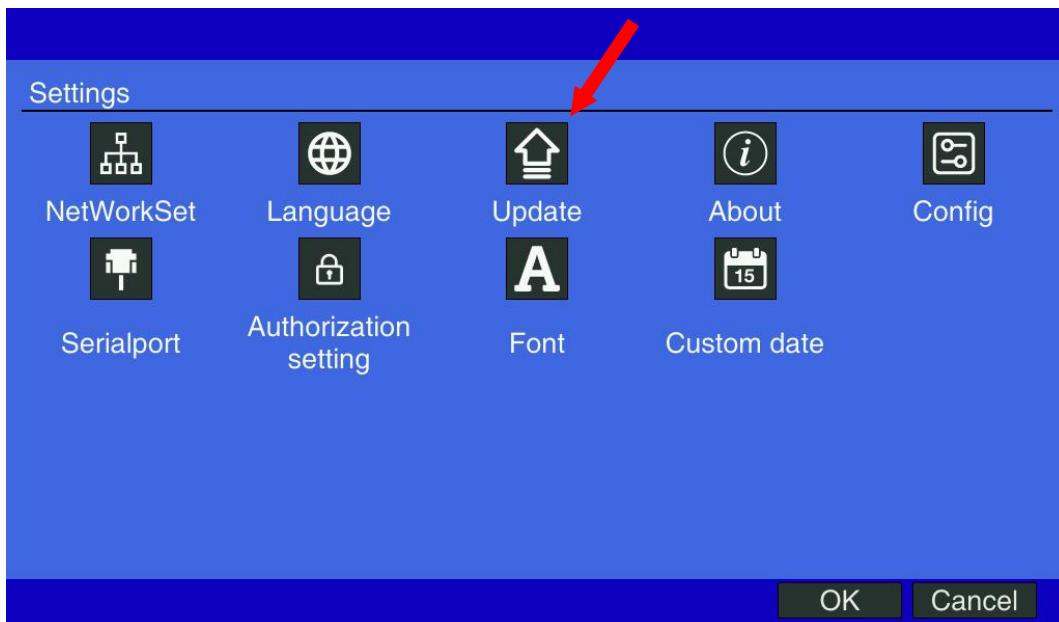
### 7.3.2 Language



The device contains multi-language by one-click switching.

### 7.3.3 Update

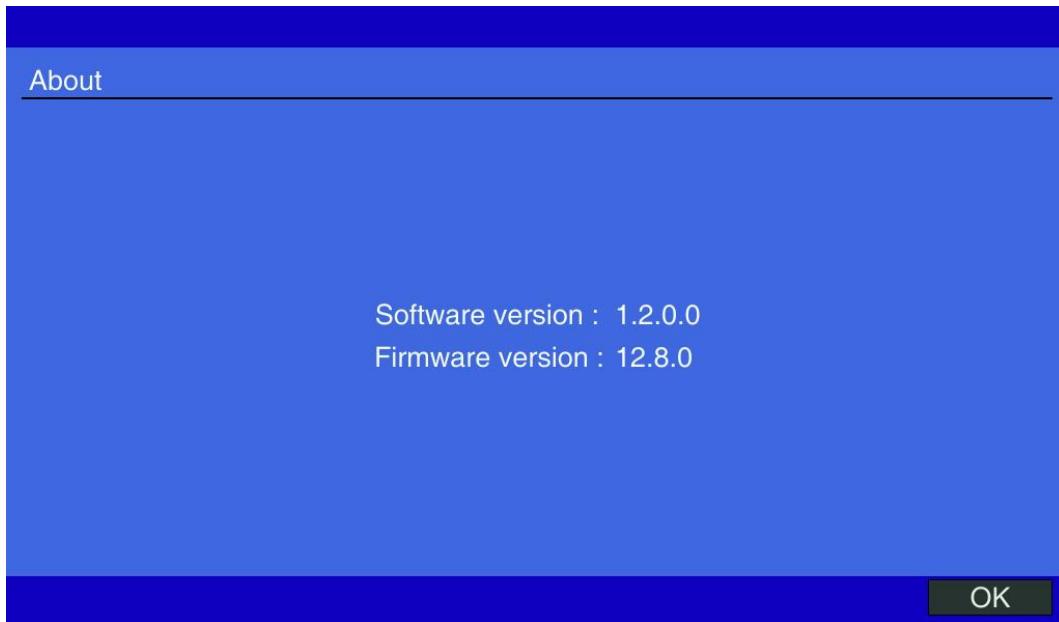
Put the upgrade file in the root directory of the connected USB flash drive, and click 'Update' button.



- Step:**
1. Put the upgrade file of software in the root directory of USB flash drive. (USB flash drive format: FAT32, capacity  $\leq 8GB$ )
  2. Do not change the name of the file.
  3. Insert the USB flash drive into USB interface.
  4. On setting page, click 'Update', when update success, the machine will reboot, do not manually switch off of the machine, waiting for it restart, then confirm in 'About' that it is the latest version.(Do not remove or insert the U flash drive during the upgrade)

### 7.3.4 About

View the version information of the current software and firmware.



### 7.3.5 Config



**Print voltage:** Please set the value of printing voltage and printing pulse according to the label on the ink cartridge or enable 'Auto Match'.

**Caution: any incorrect setting might damage the ink cartridge.**

**Auto jet:** This function is used to keep the nozzle wet and prevent the blockage from not using for a long time.

**Clean nozzle:** Hold down 'Clean' button, and the nozzle will continuously spray ink and clean the nozzle.(The ink sprayed out here will not be calculated in the displayed remaining ink volume value)

**Ink low level:** When you set the value of the ink low level, it is to be used in conjunction with the

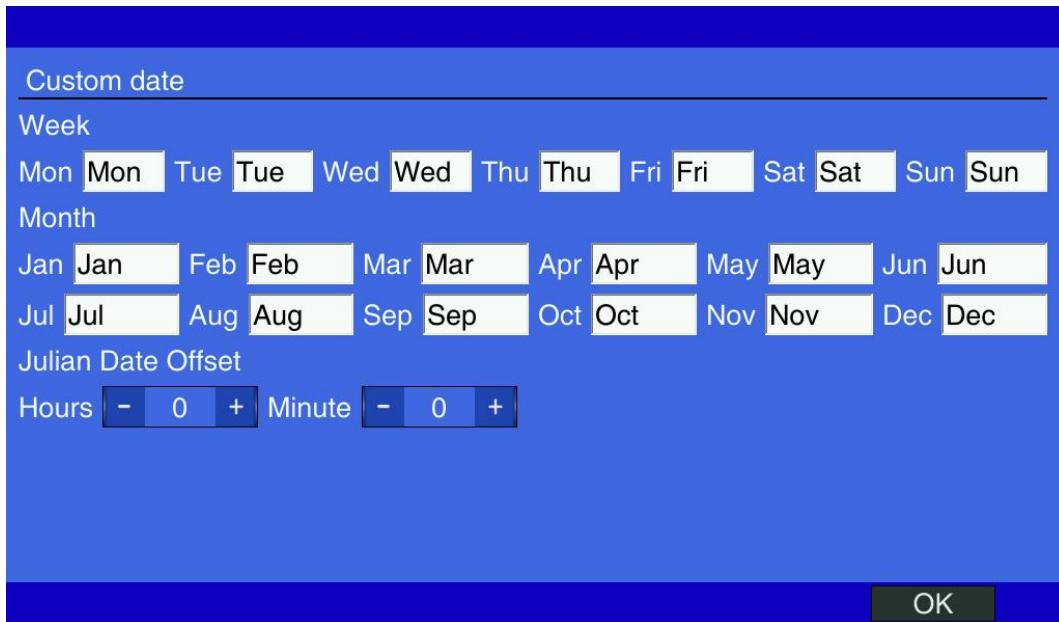
alarm light.

### 7.3.6 Custom date

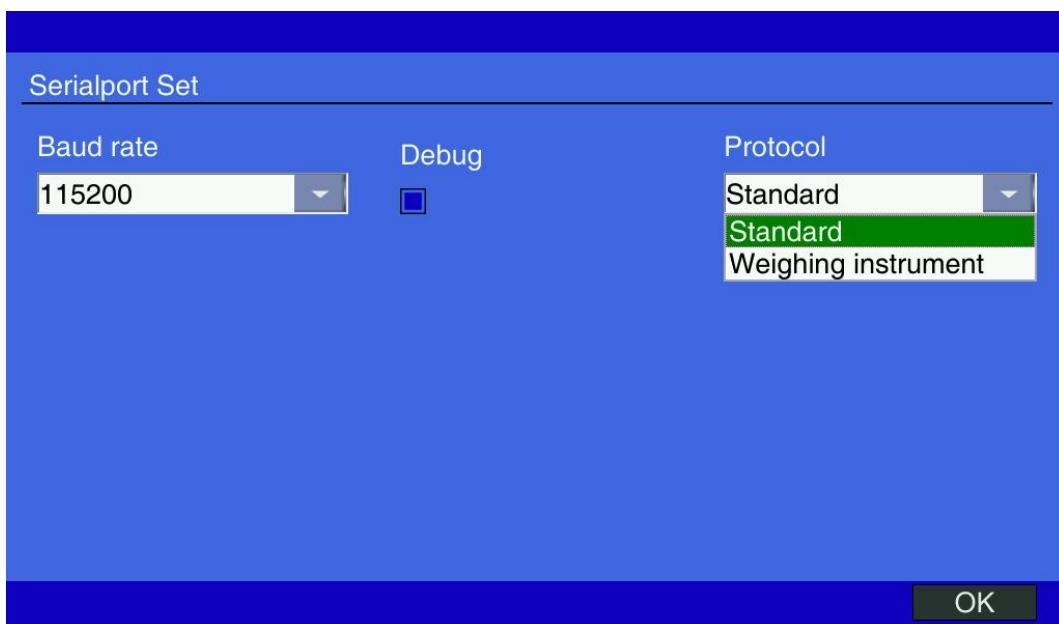
**Week & Month:** Operator can customize the abbreviation mark for week and month.

**Julian Data Offset:** Delay changing the current system date to the date of the next day.

If you do not use this function, please set the value to 0, or it will affect the accuracy of the system time.



### 7.3.7 Serial port settings



**Baud rate:** Select the corresponding Baud rate, the device may be connected to an upper computer.

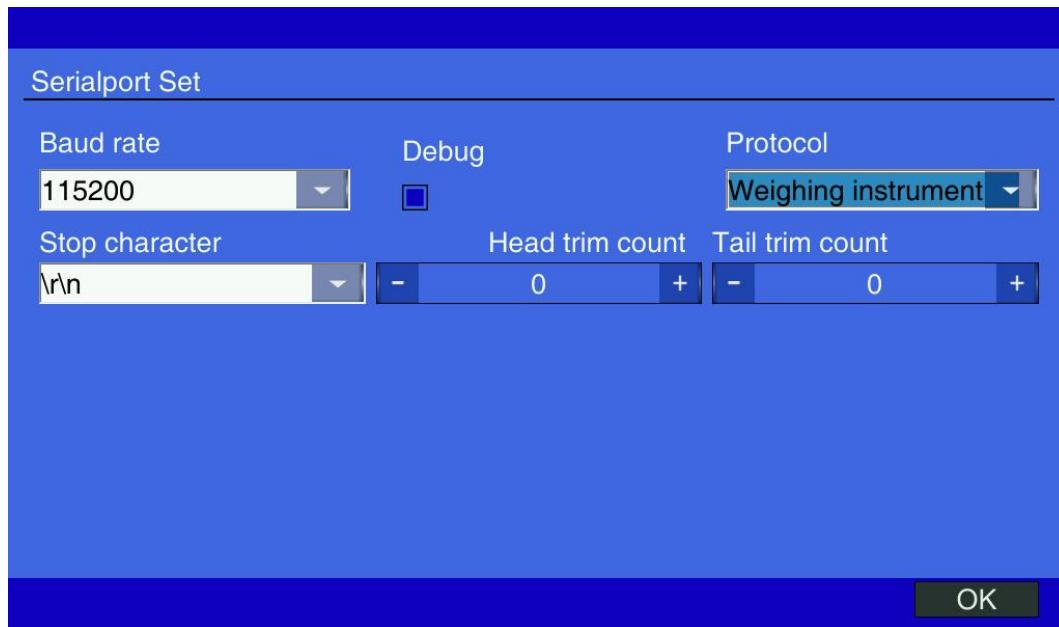
**Protocol Type:**

#### 1) Standard mode

Default mode, scanner is also supported in this mode.

## 2) Weighing instrument mode

The default format for the data of receive and send is ASCII.



**Stop character:** There are four types of the end character:

- ① \r\n : The hex is 0d 0a
- ② \r : The hex is 0d
- ③ \n : The hex is 0a
- ④ ; : The hex is 3b

Which stop character to choose depends on the protocol of the weighing instrument.

### Head trim count & Tail trim count

This data represents the data received by the serial port in weighing instrument mode.

**The head trim count:** trim the first few characters of the data.

**The tail trim count:** trim the last few characters of the data.

## 7.3.8 Authorization settings

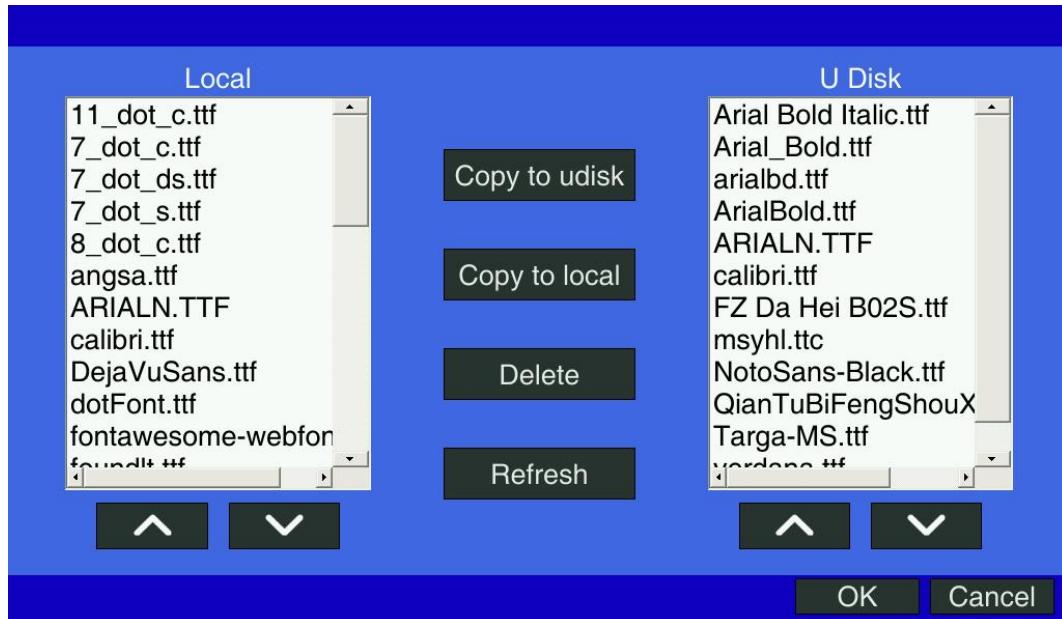


Access to user authority management settings, Low-level users need to enter a password to access to advanced menu which is determined by administrator.

The administrator user can set the account and password authority of the same-level and lower-level users. The system can identify three levels of user authority: 0, 1, and 2. The module functions below would be available for different users after selecting different classifications.

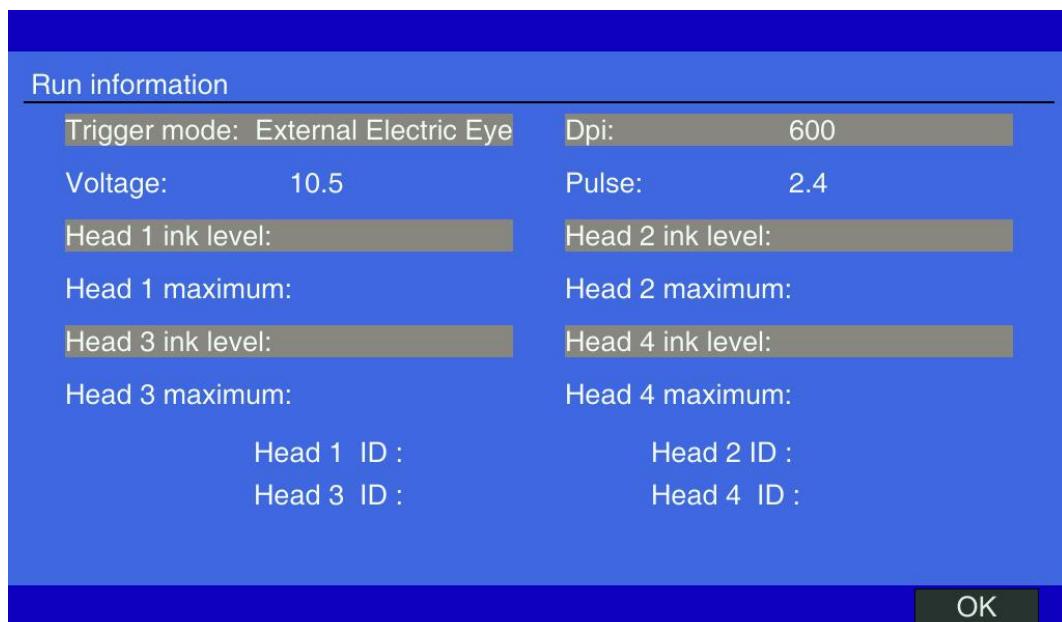
**Note:** The default passwords of Level 1 and Level 2 are 123 and 123456.

### 7.3.9 Font



Install external font to this device by copying the font with TTF format to the connected USB flash drive.

### 7.4 Run information



Run information contains the information of various parameters of the equipment, so that operator can quickly understand the current system information of the equipment.

# 8. Operate the Thermal Inkjet Printer

## 8.1 Installation

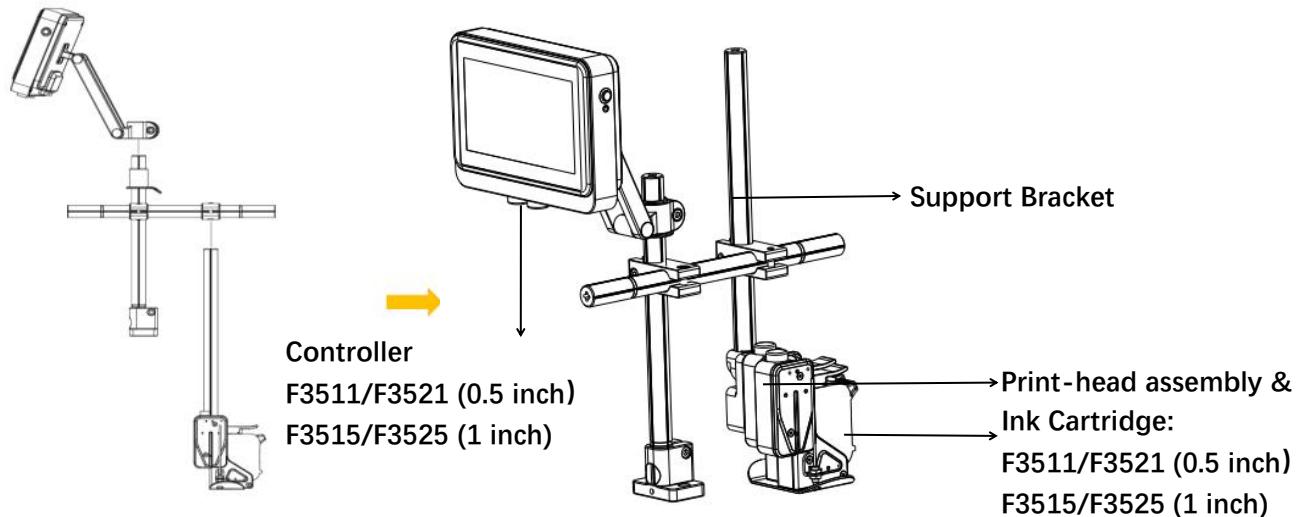
### 8.1.1 Top Level Assembly

Top level assembly includes controller, support bracket, cartridge and print-head assembly.

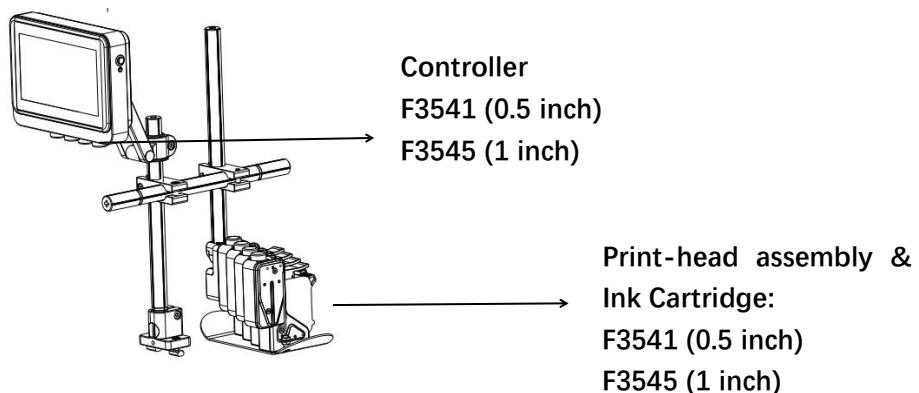
There are two kinds of controller with different number of print-head interfaces:

2-printhead-interface controller and 4-printhead-interface controller.

F3511/F3515 and F3521/F3525 have two print-head interfaces which can be connected to at most two print-head assemblies.



F3541/F3545 has four print-head interfaces which can be connected to at most four print-head assemblies.



### 8.1.2 Accessory



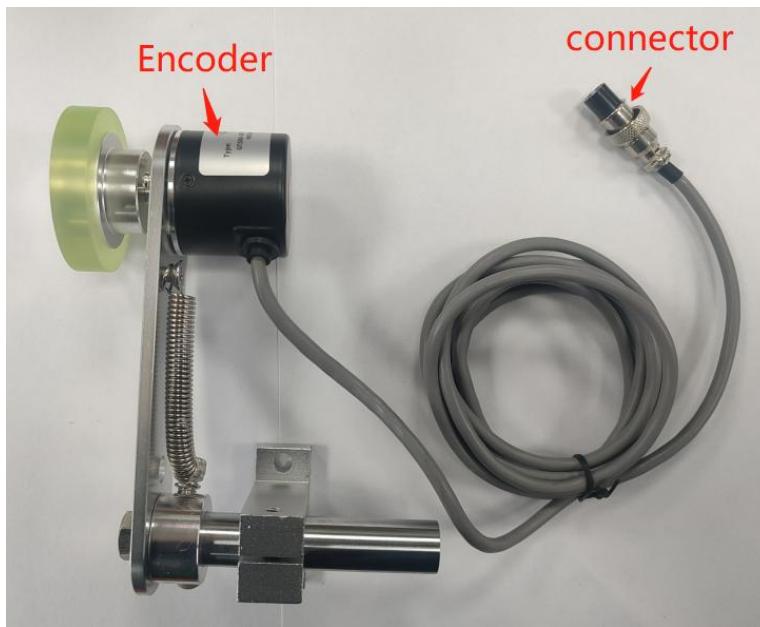
Optical fiber sensor set

Control output: NPN collector output

Power supply: 12-24V

Current consumption: 5mA-50mA

**Note:** Refer to the attached manual for the use of optical fiber sensor set.



Encoder

Encoder (with aviation plug 'GX12-4P' pre-assembled), bracket, wheel and necessary fasteners are included in 2500PPR.

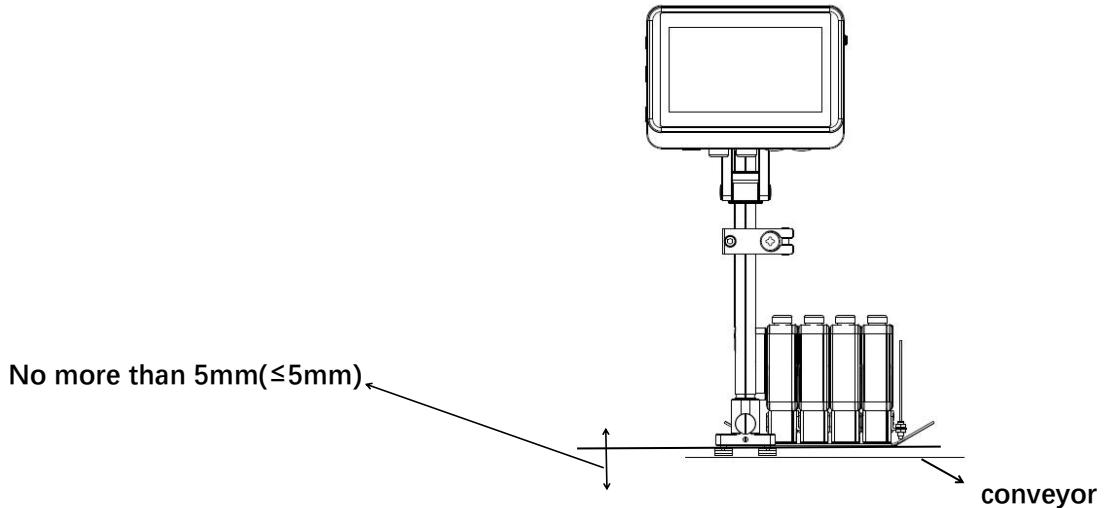
**Control output:** NPN collector output.

**Necessity of connecting encoder to controller:** sometimes the print content is stretched or shortened because of unstable speed of conveyor. To avoid such a situation, encoder must be connected to TIJ so that the print speed can match the conveying speed and content can be

accurately printed.

Note: Refer to the attached manual for the use of encoder.

## 8.2 Attention For Installing



### 1) Power

Make sure that the power is grounded.

### 2) Stability of support bracket

Set the support bracket at a reasonable angle. Do not vibrate or slant it and make sure that the support bracket is stable.

### 3) Nozzle height

Make sure that the distance between nozzle and print target is no more than 5mm.

## 8.3 Insert the ink cartridge

### 8.3.1 Correct way of inserting

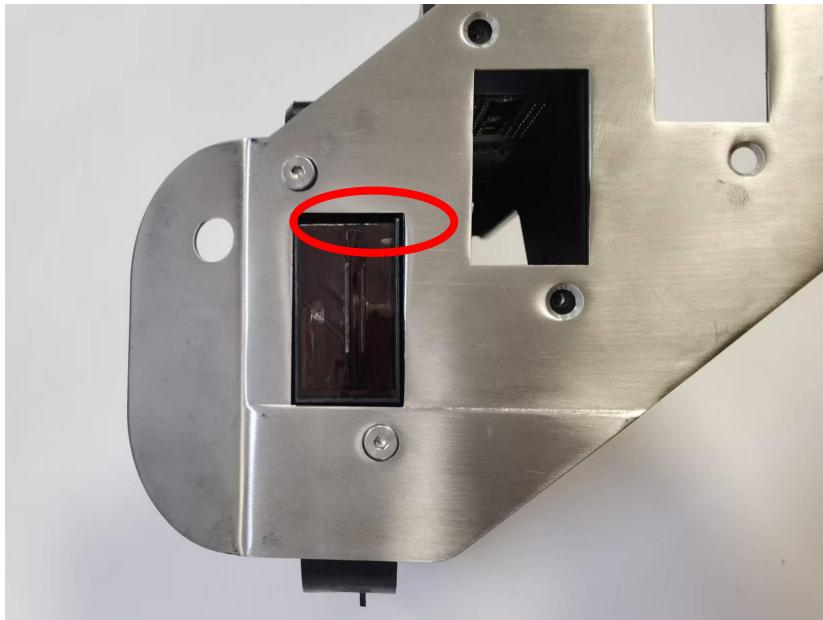
- 1) Insert the ink cartridge diagonally into the slot, left side of the nozzle exposed out of the slot first.



- 2) Make sure the left side of the nozzle is tightly attached to the left side of the slot, and then press the ink cartridge to the right side of the slot to ensure that the nozzle is completely exposed out of the slot.



- 3) When inserting the ink cartridge under the condition that the guide plate has been installed, be careful not to touch the soft chip of the nozzle.



- 4) Finally, hold the clip down to fix the ink cartridge. This process only requires gentle pressing and there should be no feeling of stuck. If there is, it indicates that the ink cartridge is not installed properly, pressing the ink cartridge forcefully at this time will damage the soft chip of nozzle.



- 5) After inserting the ink cartridge correctly, the screen will display the percent of the ink.  
(The color of remaining ink display: green > 40%; 40%≥orange≥10%; red< 10%).



### 8.3.2 Correct way of removing

- 1) Open the clip and pull the ink cartridge out gently.



- 2) Remove the cartridge, be careful not touch the soft chip of the nozzle.



### 8.3.3 Incorrect way of inserting

- 1) When inserting the ink cartridge, the soft chip of nozzle comes into contact with the pins and generates friction, the nozzle is not exposed out of the slot.



- 2) Hold the clip down (nozzle is not exposed out of the slot), the pressing process requires a lot of force and there is a sense of being stuck, if continue to press the clip forcefully, the soft chip of nozzle will be damaged.



### 8.3.4 Incorrect way of removing

- 1) Pull out the cartridge violently before the clip is fully opened.



- 2) The pins are pressed down while removing the ink cartridge and the soft chip of nozzle will be damaged.



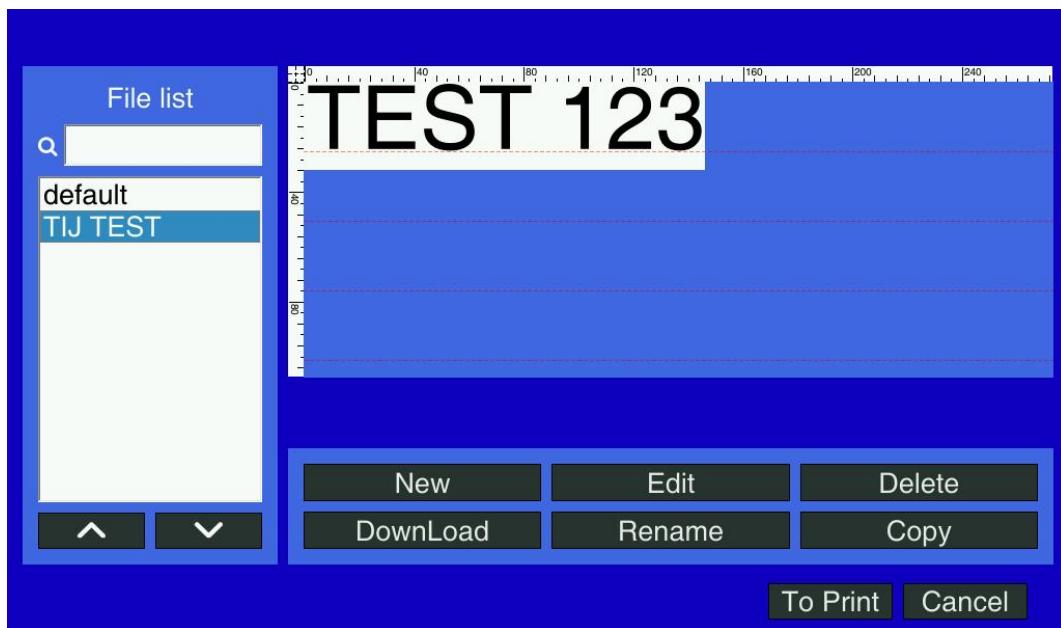
## 8.4 Print

Step 1: Create a new file that will be printed.

- 1) Long press the screen for 1-2 seconds to wake up the edit menu.



- 2) Press 'Manage Job'

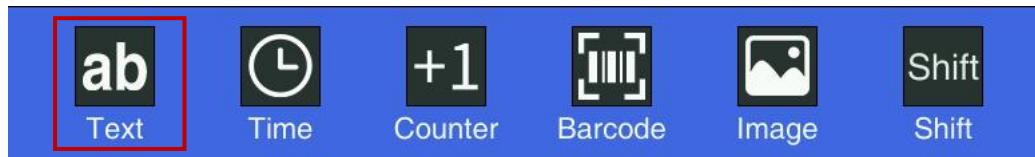


- 3) Press 'New'

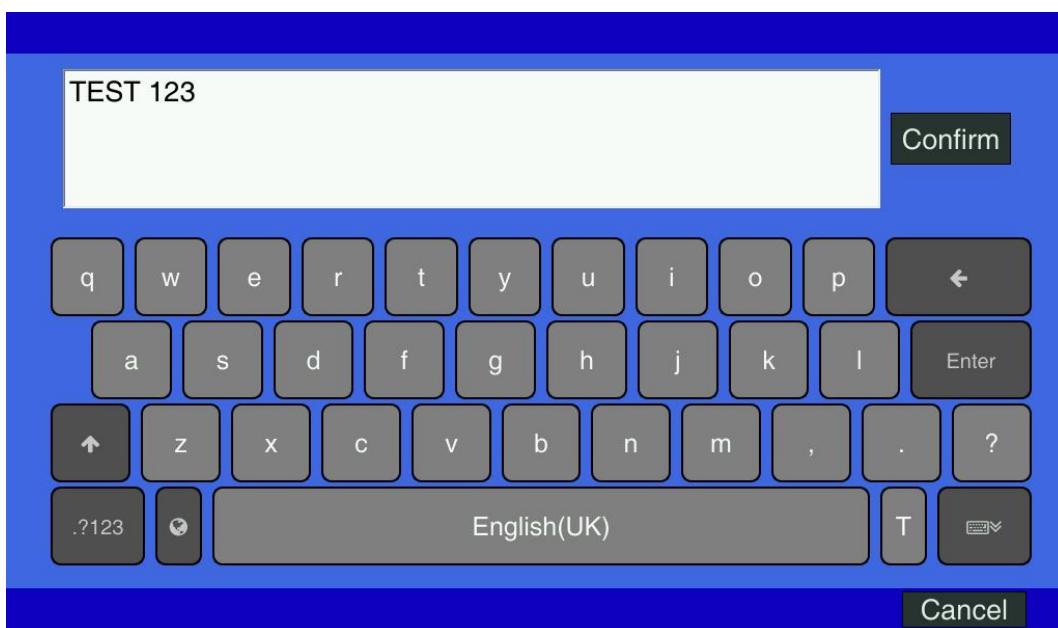


Input the file name, for example: TIJ TEST. Then press 'Save'

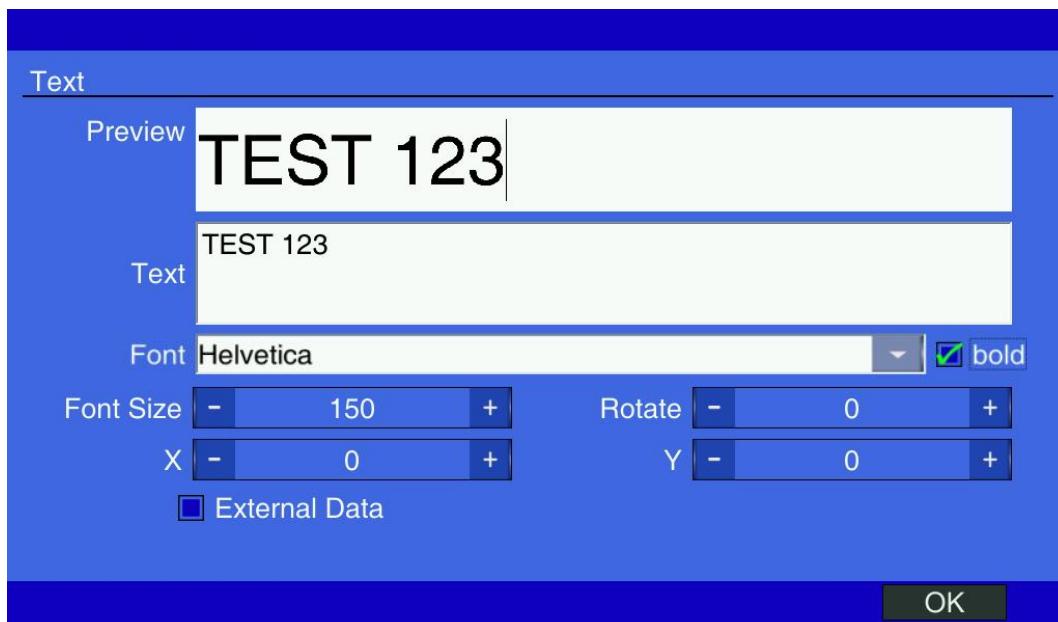
- 4) Click the corresponding icon to create the corresponding format: Text, Time, Counter, Barcode, Image and Shift can be created.  
Press 'Text' icon to create a text file.



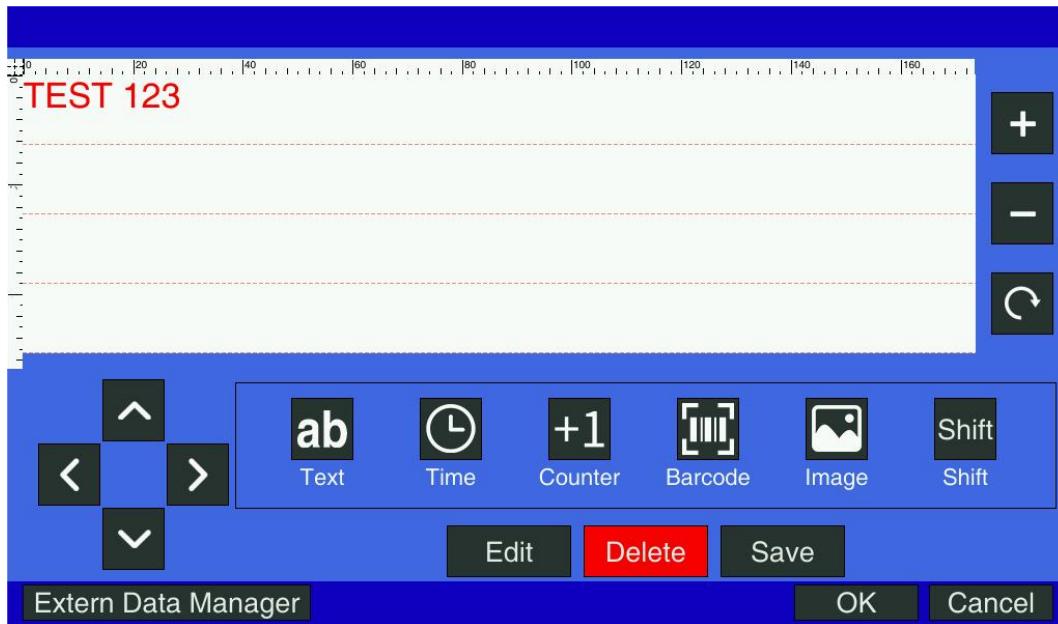
- 5) Input the TEST 123 in column Text for example



Press 'Confirm'



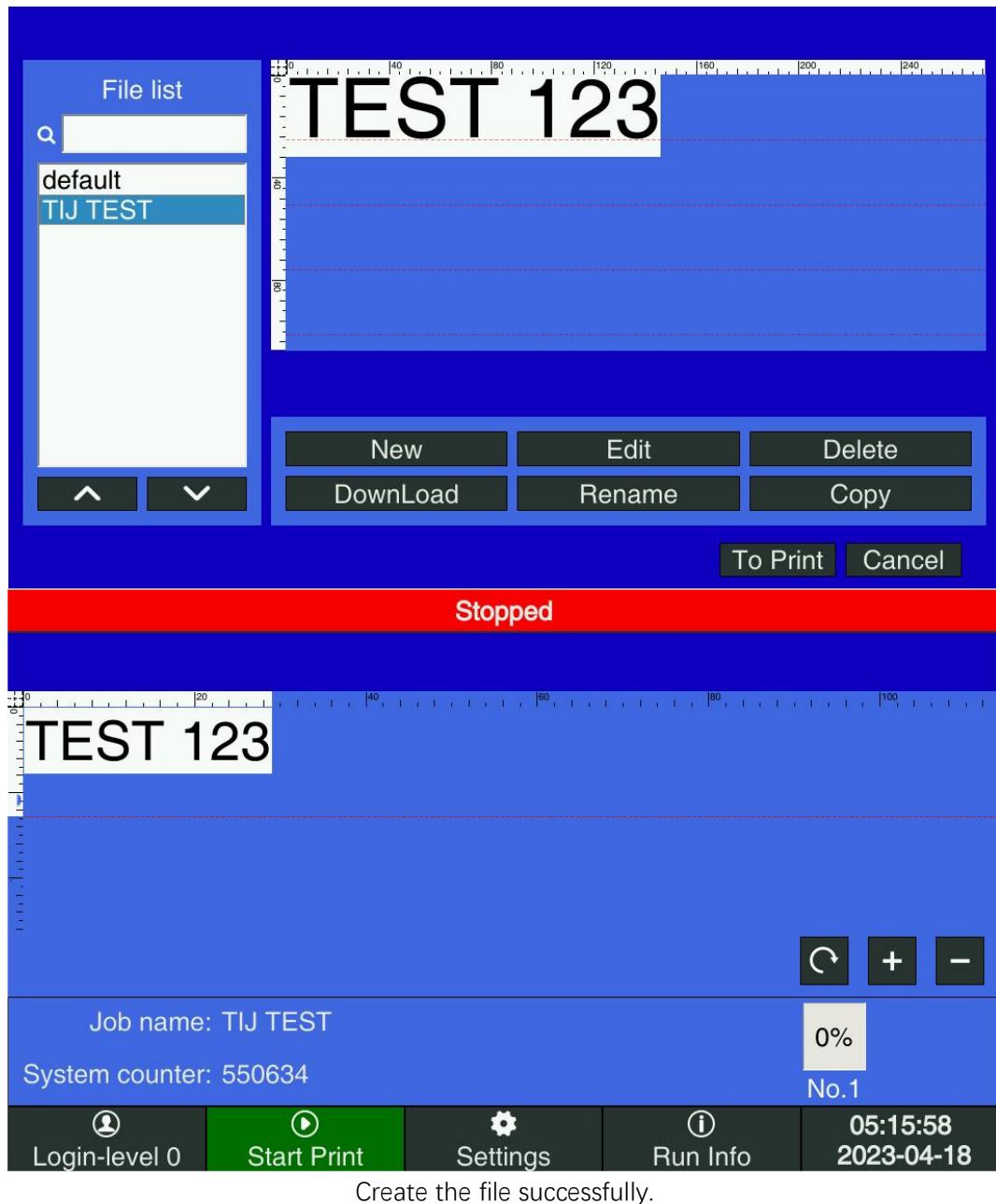
Press 'OK'



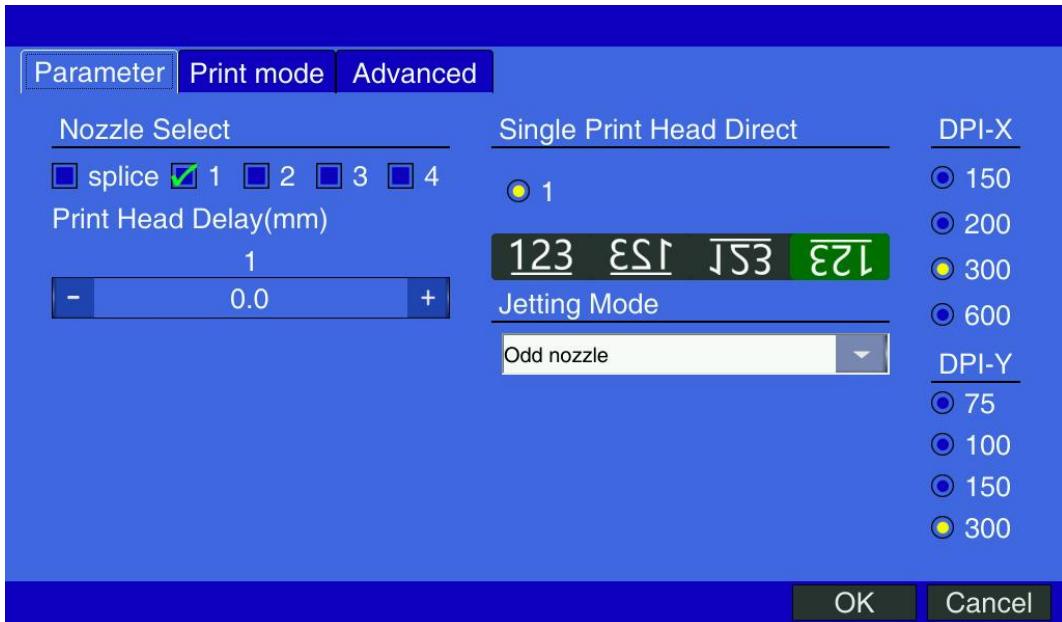
Press arrows to adjust the position, then press 'Save >> OK'.

6) Press 'To Print'

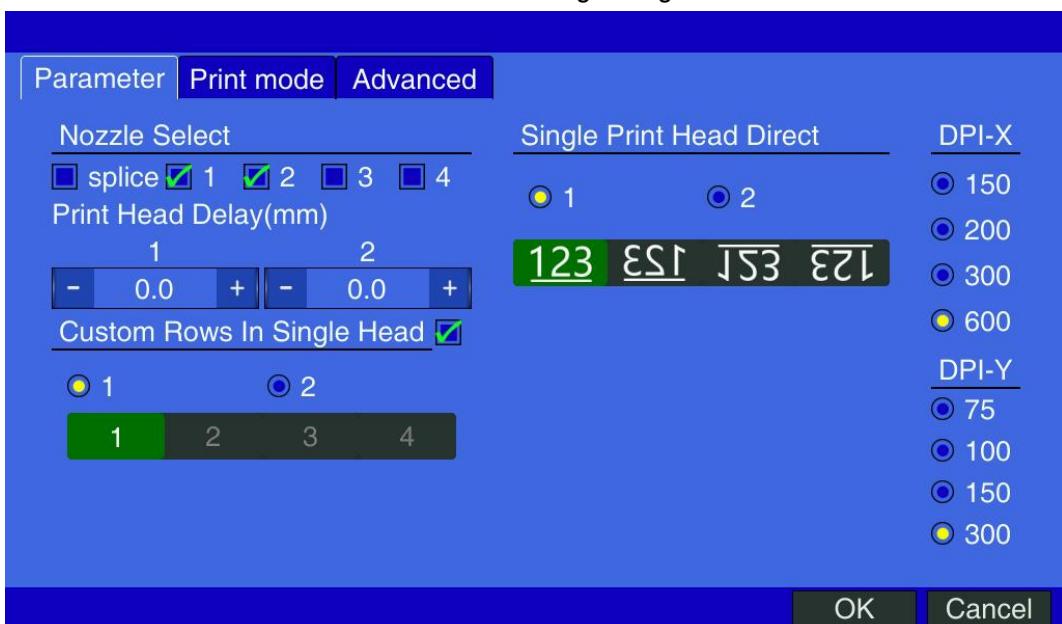
Select the file to be printed from the file list, then press 'To Print'.



Step 2: Print set: Long press the screen, select 'Print Set'.



For 0.5 inch with Jetting setting mode



For 1 inch without Jetting setting mode

Parameter page is for printing parameter settings, operator can set the print-head delay, print resolution (the higher value, the greater ink output).

0.5 inch: Switch between 'Odd nozzle' and 'Even nozzle' after using a period of time can make the ink cartridge more durable.

1 inch: There is no 'Jetting Mode'.

**Note:** For each print-head, only when it is connected to the corresponding print-head interface can the 'Nozzle Select' function take effect.

<b>Parameter</b>	<b>Print mode</b>	<b>Advanced</b>
<p><b>Trigger Mode</b></p> <p><input checked="" type="radio"/> Inner Signal  <input type="radio"/> External Sensor</p>		
<p><b>Encoder</b> <input checked="" type="checkbox"/></p> <p>PPR - 2500 +</p> <p>Diameter - 50 + (mm)</p>		
<p><b>Continuous Print</b></p> <p><input checked="" type="radio"/> Close  <input type="radio"/> Times</p> <p>Print Times - 1 +</p> <p>Repeat Interval - 149mm +</p>		
<p><b>Reverse Print</b> <input type="checkbox"/></p> <p>Forward <input type="radio"/> Opposite <input checked="" type="radio"/></p> <p>Forward Delay - 0.0 +</p> <p>Print Times - 1 +</p> <p>Print Interval - 149.0 +</p>		
<input type="button" value="OK"/> <input type="button" value="Cancel"/>		

In the 'Print mode' page, operator can select 'Trigger Mode' of the device's printing. Increase or decrease the parameter values of the 'Encoder', and the proportion of the output print content will be adjusted. When the trigger mechanism of the device is activated, the interval between printing content can be set.

<b>Parameter</b>	<b>Print mode</b>	<b>Advanced</b>
<p><b>Photocell</b></p> <p><input checked="" type="checkbox"/> Beep  <input checked="" type="checkbox"/> Signal shielding</p> <p>- 0.0 mm +</p>		
<input type="button" value="OK"/> <input type="button" value="Cancel"/>		

If 'Beep' option is selected, beep can be heard once per printing is finished.  
If 'Signal shielding' is selected, the print sensor signal will not be triggered again within a certain distance from the position of the last triggered signal.

### Step 3: Start printing



When 'Ready' is shown in status bar, it is ready to print now.

Operator needs to activate the encoder and trigger the optical sensor.

The 'System counter' value will increase by one once it is printed successfully.



Print result

# 9.Maintenance

## 9.1 Maintain the print-head daily

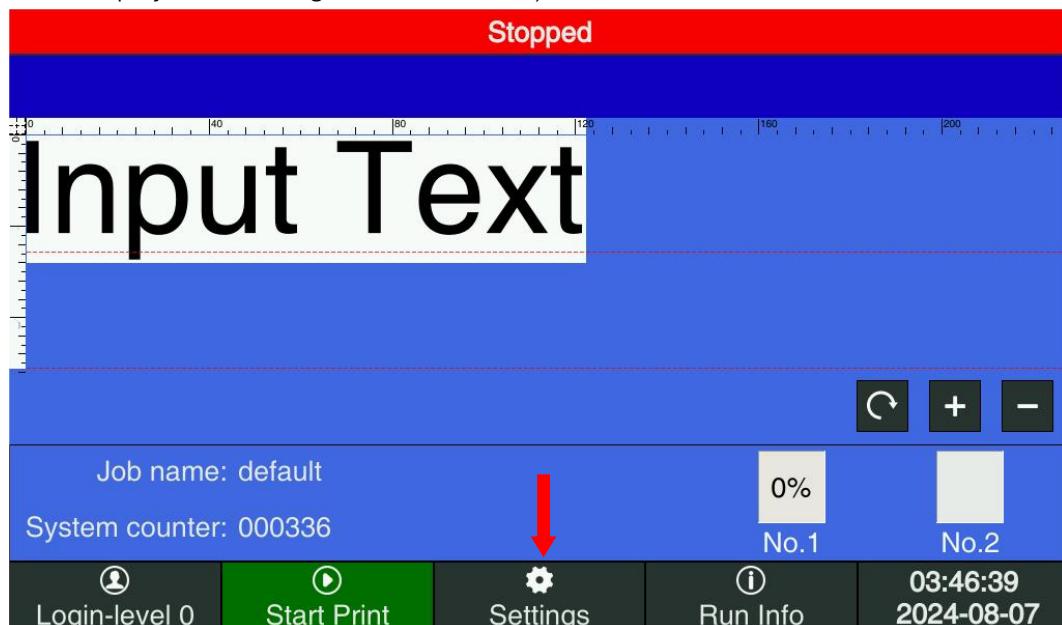
- 1) Please insert the ink cartridge and remove the ink cartridge correctly(Refer to 8.3.1&8.3.2).
- 2) Don't touch the print-head pins.
- 3) If the nozzle is dirty, clean it with non-woven cloth gently in the same direction.

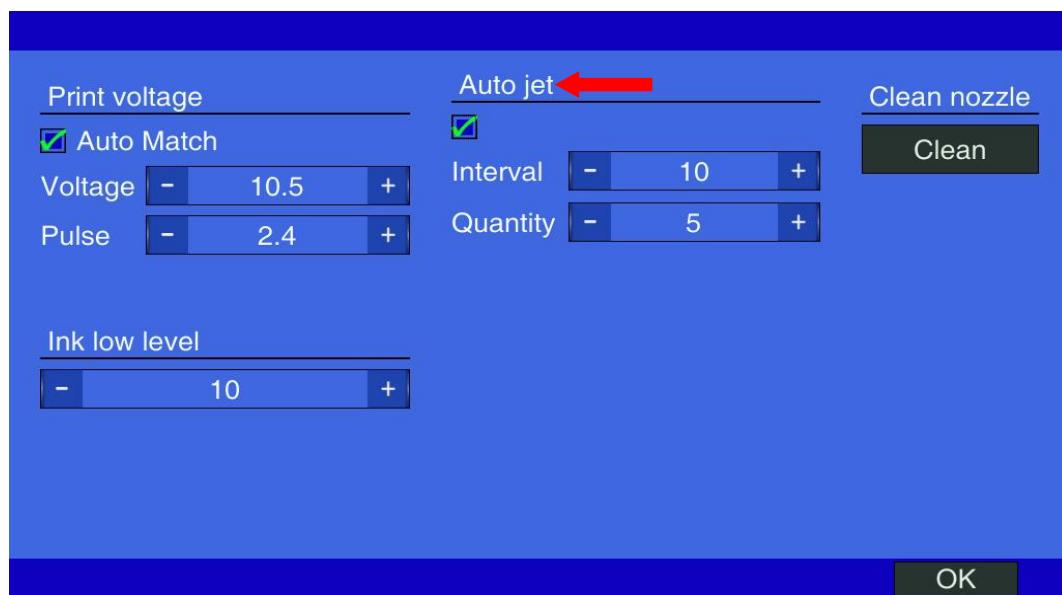
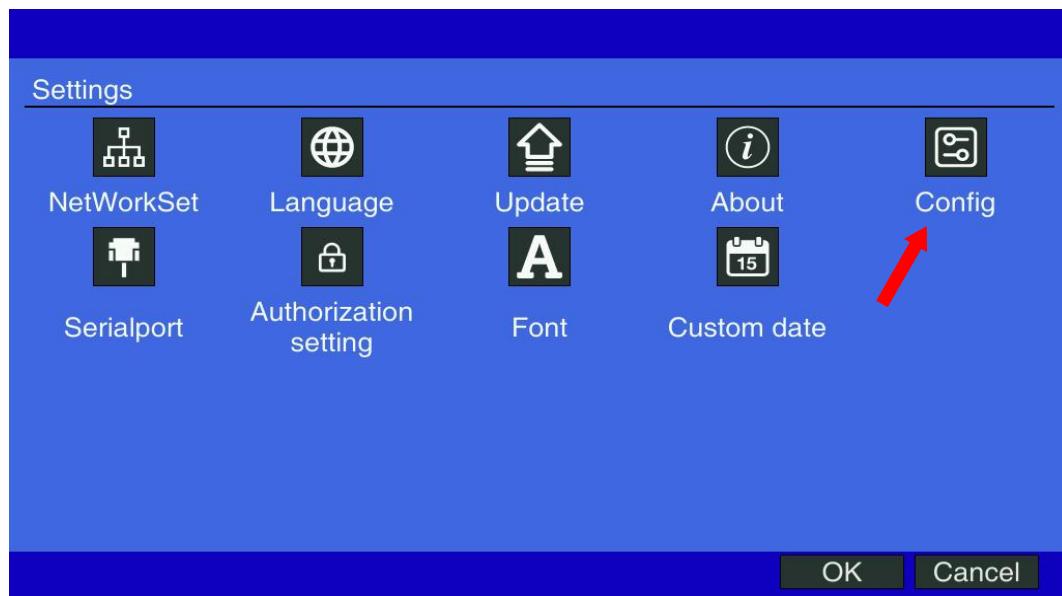


## 9.2 Nozzle clean

Before starting to print, it is suggested that operator should print some content in advance for testing. If the print result has line defects, or the result is fuzzy, it is necessary to clean the nozzle.

- 1) Clean the nozzle with a non-woven cloth;
- 2) Switch the odd and even nozzle alternately to test the printing effect: Print Set >> Parameter >> Jetting Mode(only for 0.5 inch);
- 3) Press 'Setting >> Config >> Clean' (the ink sprayed out for clean nozzle will not be calculated in the displayed remaining ink volume value).





It is recommended to enable 'Auto jet'.

Then set the interval and quantity according to individual needs.

As the above picture, the nozzle will jet 5 times automatically every 10 seconds.

Auto jet can prevent the ink in the nozzle from getting dry.

**Note: '10' and '5' are not fixed values, they can be altered.**

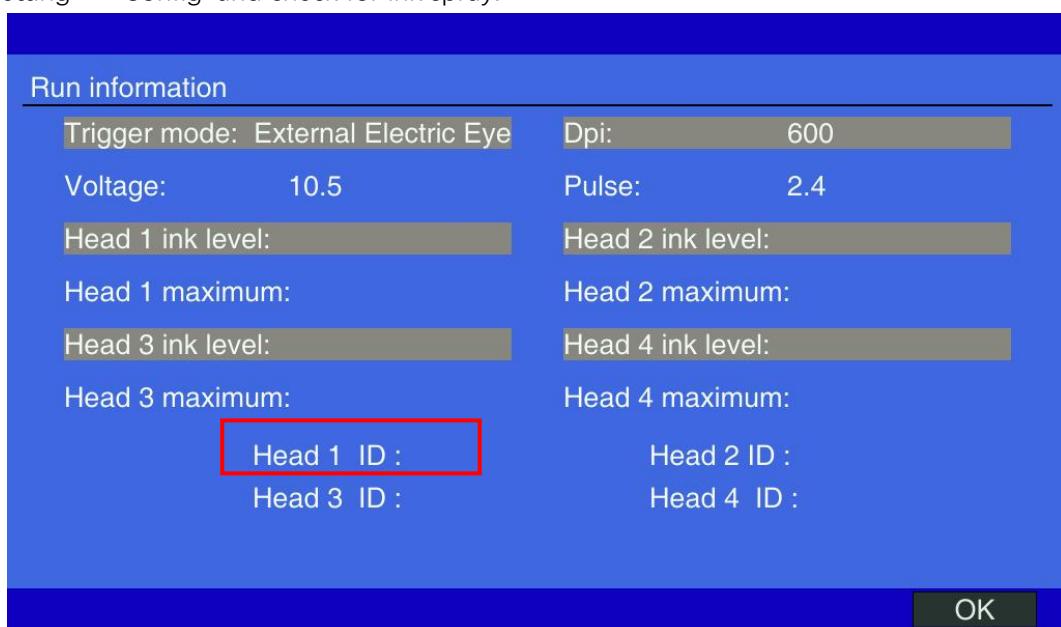
## 9.3 Troubleshooting

### 9.3.1 Cartridge Error

When TIJ display Cartridge error, as shown in the picture below.



First, please check the Head ID in 'Run Info'. If Head ID is empty, please long press 'Clean' button in 'Setting >> Config' and check for ink spray.

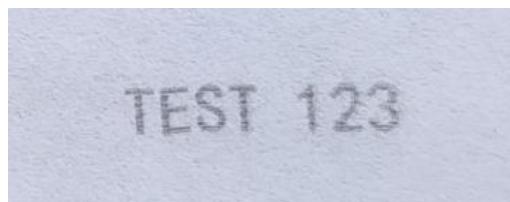




If there is ink spraying out, it means that the print-head/ cable/ controller are normal and connected well, it might be a chip's problem. If there is no ink spraying out, please check if the print-head/ cable/ controller are normal and connected well.

### 9.3.2 Poor print quality

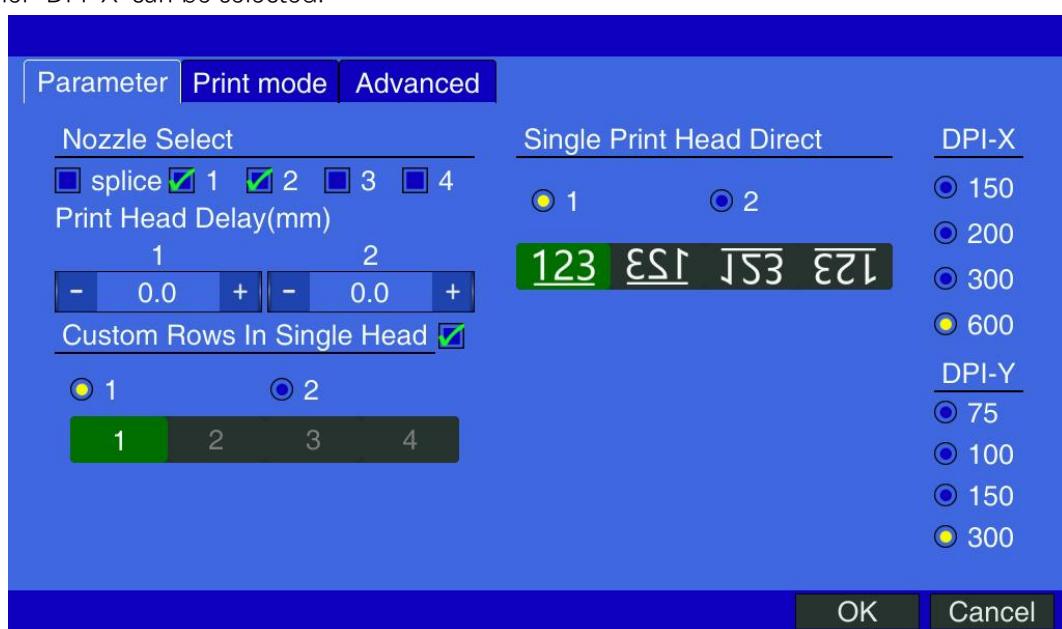
If print result is fuzzy and bad, shown as the picture below



Maybe there are several reasons for this:

#### 1) DPI is too low in the parameter.

Higher 'DPI-X' can be selected.



2) The distance is too far between the nozzle and the object that will be printed.

The distance should be no more than 5mm and the object should not touch the nozzle.

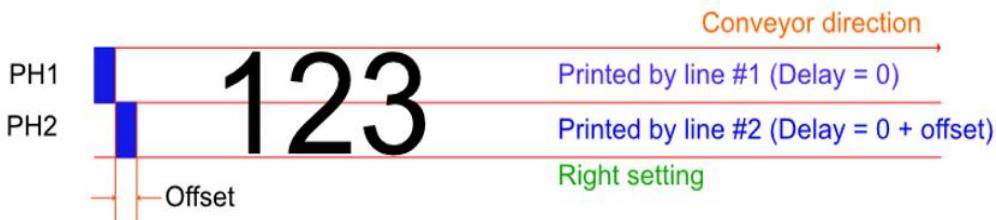
3) The print-head, cartridge or cable is damaged.

Please replace the print-head, cartridge or cable.

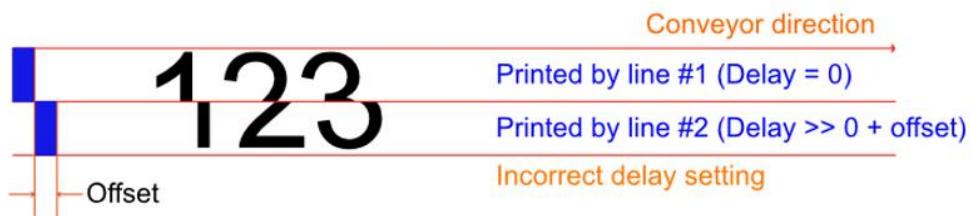
### 9.3.3 Combination failure for multi-lines

- 1) When multiple print-heads are used for combination, PH1 and PH2 should be perpendicular to the moving direction of the conveyor and the print-head delay value should be correct.

Well combination and print-head delay value, the print result is shown as the picture below:



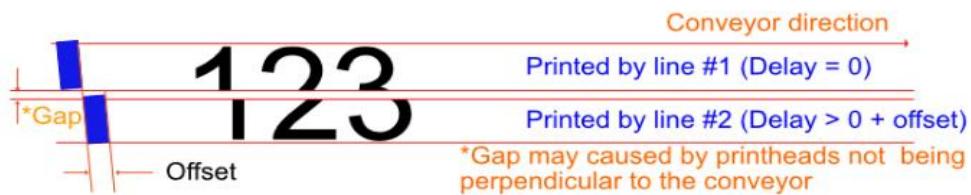
- 2) If PH1 and PH2 are perpendicular to the direction of conveyor, but the print-head delay value is incorrect, the result is shown as the picture below:



Please adjust the print-head delay value.

- 3) It will have a gap between PH1 and PH2, if the print-heads are not perpendicular to the moving direction of the conveyor.

The result will also not be OK, as the picture shown below:

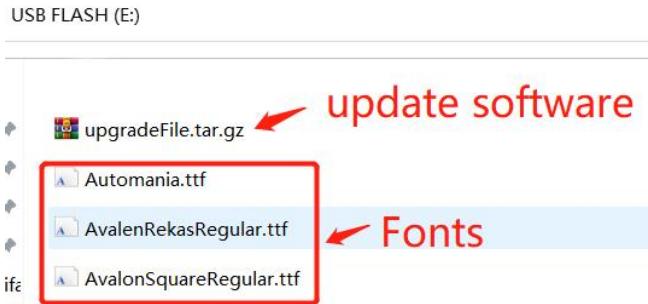


Firstly, fix the gap between PH1 and PH2 by aligning both of them.

Then, adjust the print-head delay value.

## 9.4 Software Update

Copy the update software file to the root directory of USB flash drive (USB flash drive format: FAT32, capacity ≤ 8GB). Do not change the name of the file.



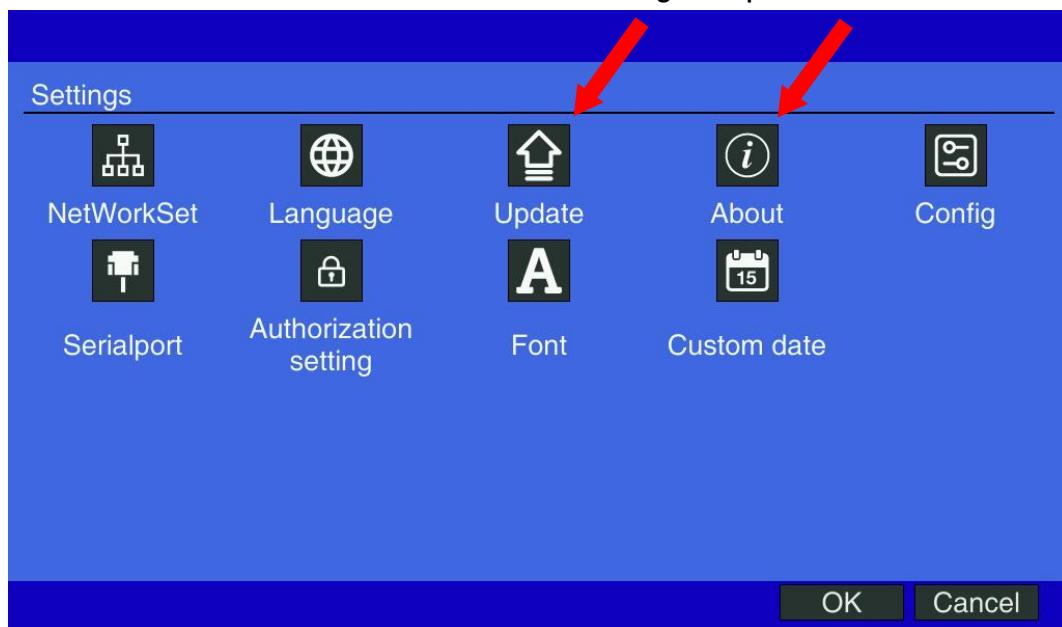
1) Insert the USB flash drive into TIJ USB port.



2) Press 'Settings >> Update'.

TIJ will update the software automatically. When update success, the machine will reboot, do not manually switch off the machine, wait for it to restart, then confirm in 'About' that it is the latest version.

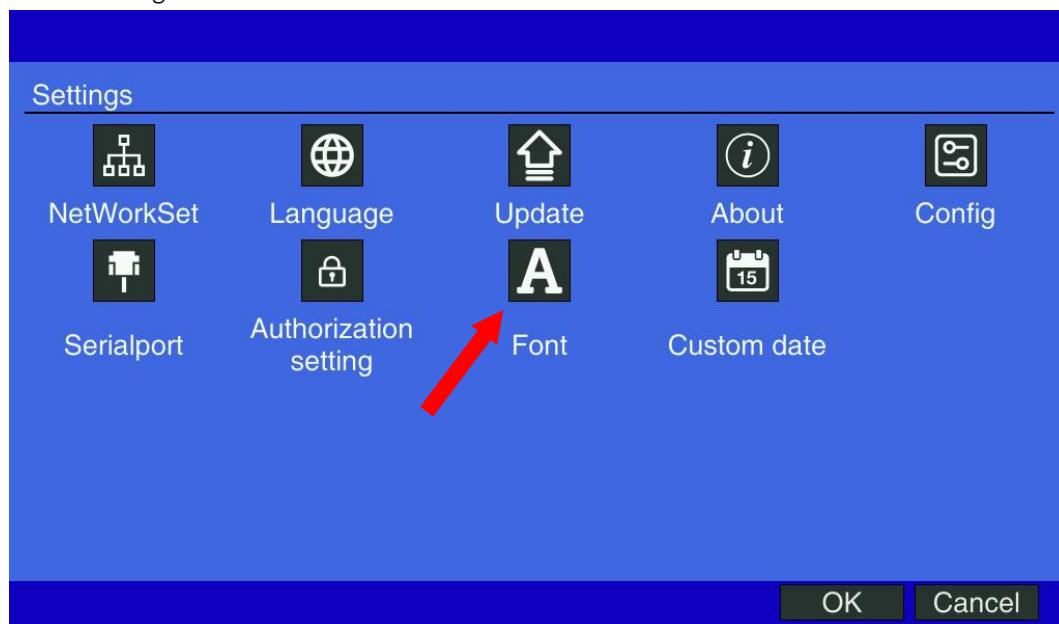
**Note: Do not remove or insert the USB flash drive during the update.**



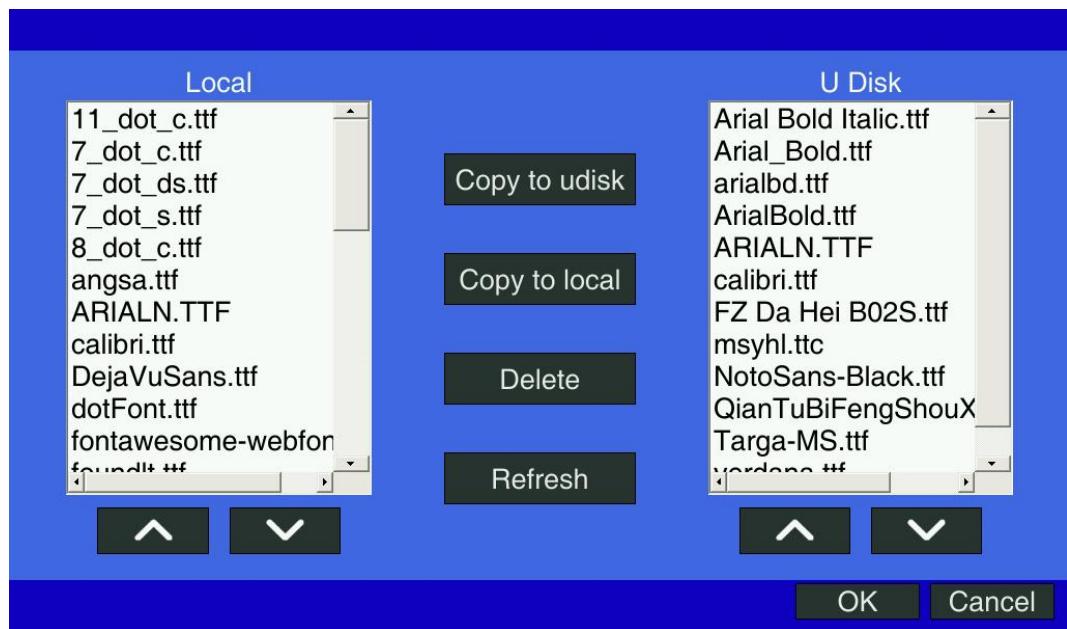
# Upgrading...

## 9.5 Import Font

- 1) Copy the fonts to USB flash drive
- 2) Insert the USB flash drive into TIJ USB port
- 3) Press 'Settings >> Font'.



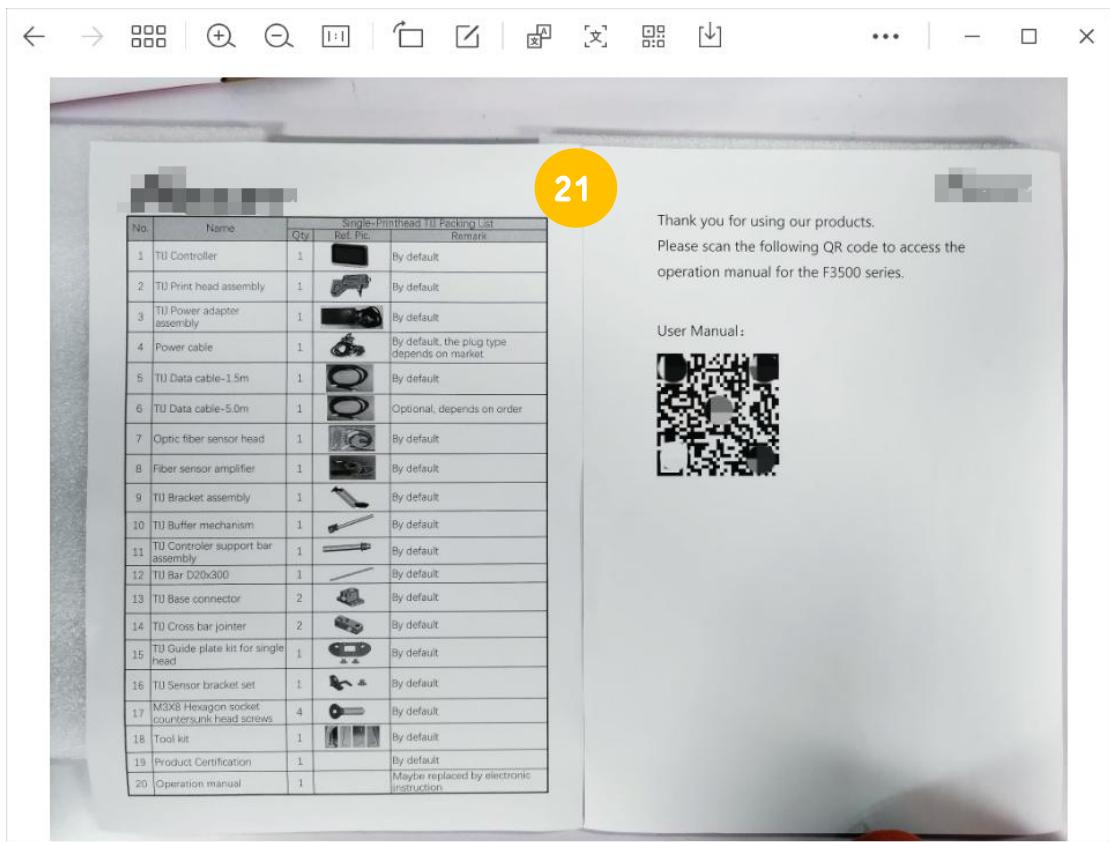
- 4) Select the font file(format: .ttf) in the USB, press 'Copy to local'.



# 10.Appendix

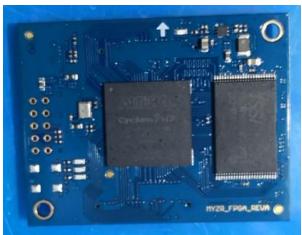
## 10.1 Packaging list



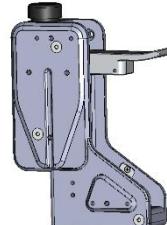
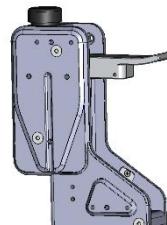
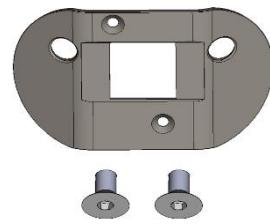
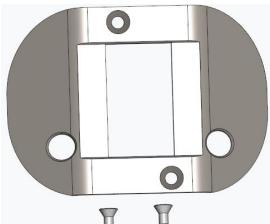
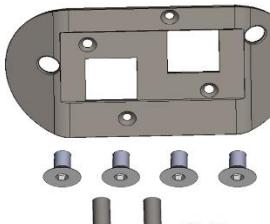


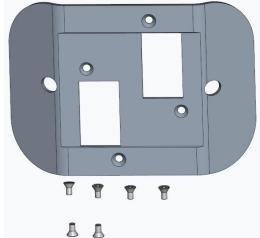
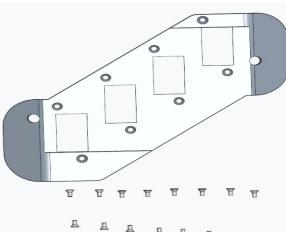
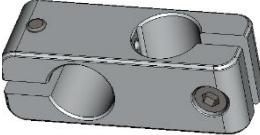
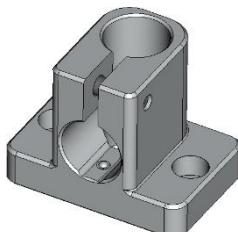
## 10.2 Spare parts list

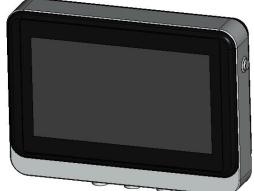
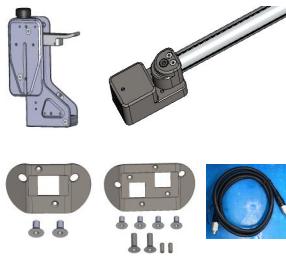
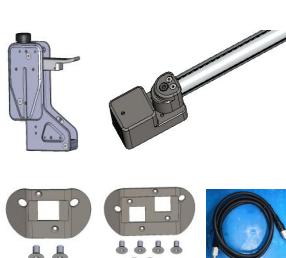
No.	Part No.	Part Name	Reference Picture	Note
1	C2.ZJ.0040A	TIJ Touch screen set		For TIJ controller, HMI
2	C3.BZ.0001QDB	TIJ Screen drive board		For TIJ controller screen driving

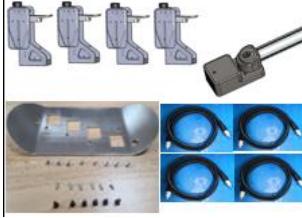
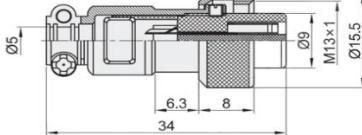
3	C3.BZ.0001ZB.2T	TIJ Main board-Double head		For TIJ controller
4	C3.BZ.0001ZB.4T	TIJ Main board-Quadru ple head		For TIJ controller
5	C3.BZ.0001FPGA	TIJ FPGA Core board		For TIJ controller
6	C3.BZ.0002CB	TIJ CB200 Core board-FJ		For TIJ controller
7	C3.KG.0002A	TIJ 3.0 Switch assembly		For TIJ controller
8	C3.BZ.0001JKB	TIJ Power interface board		For TIJ controller
9	C3.BZ.0002QDB	TIJ drive& connection board		For TIJ print-head

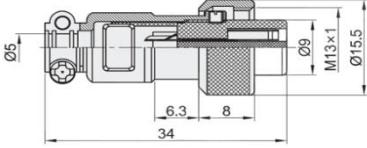
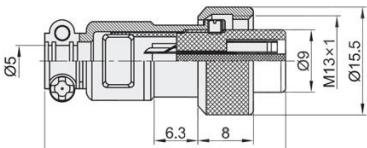
10	C3.BZ.0003QDB	TIJ print-head drive board		For TIJ print-head
11	C4.H30H00.1500	TIJ Data cable		For TIJ print-head and controller connection
12	C4.H30H00.1500B	TIJ Data cable (90° elbow)		For TIJ print-head and controller connection
13	C4.H30H00.5000	TIJ Data cable 5m		For TIJ print-head and controller connection
14	C4.H30H00.5000B	TIJ Data cable 5m (90° elbow)		For TIJ print-head and controller connection
15	C2.ZJ.0038A	TIJ Power adapter assembly		For TIJ controller power supply
16	Y4.P03H4A.1200	TIJ Power Supply (US)		By default, the plug type depends on market

17	Y4.P03H4B.1200	TIJ Power Supply (EN)		By default, the plug type depends on market
18	C2.ZJ.0018A	TIJ print-head assembly (0.5 inch)		Use with TIJ controller
19	C2.ZJ.0018B	TIJ print-head assembly (1 inch)		Use with TIJ controller
20	C2.WJ.QT0077B	TIJ Guide plate kit for single head (0.5 inch)		Use with TIJ print-head, protect nozzle
21	C2.WJ.QT0077C	TIJ Guide plate kit for single head (1 inch)		Use with TIJ print-head, protect nozzle
22	C2.WJ.QT0078B	TIJ Guide plate for double head (0.5 inch)		Use with TIJ print-head, protect nozzle, used to combine two print-heads together to enlarge the printing height

23	C2.WJ.QT0078C	TIJ Guide plate for double head (1 inch)		Use with TIJ print-head, protect nozzle, used to combine two print-heads together to enlarge the printing height
24	C2.WJ.QT0105B	TIJ Guide plate for quadruple head (0.5 inch)		Use with TIJ print-head, protect nozzle, used to combine four print-heads together to enlarge the printing height
25	C2.WJ.QT0105C	TIJ Guide plate for quadruple head (1 inch)		Use with TIJ print-head, protect nozzle, used to combine four print-heads together to enlarge the printing height
26	C2.ZJ.0019A	TIJ Buffer mechanism		Use with TIJ print-head, absorb shock and locate print-head working direction
27	C2.ZJ.0022A	TIJ Cross bar jointer		For D20 bar cross connection and location
28	C2.ZJ.0023A	TIJ Base connector		Connect D20 bar to base
29	C2.ZJ.0020B	TIJ Sensor bracket set		Used for optical fiber sensor integration

30	C2.WJ.QT0089A	TIJ Bar D20x300		Provide more possibility for print-head together with cross bar jointer
31	C2.ZJ.0017B	TIJ Controller for two print-heads		Control the print-head to work as intended purpose
32	C2.ZJ.0046A	TIJ Controller for four print-heads		Control four print-heads to work as intended purpose
33	C2.ZJ.0021A	Easy-position bracket assembly		Bracket assembly, hold/support the controller in its position and angle as intended purpose
34	C2.ZJ.0024A	TIJ Controller support bar assembly		Support to separate the controller from existing bracket system when used together with Base connector
35	C2.ZJ.0041A	TIJ Single-printhead set (0.5 inch)		Inkjet execution unit
36	C2.ZJ.0062A	TIJ Single-printhead set (1 inch)		Inkjet execution unit

37	C2.ZJ.0044A	TIJ Quadruple-printhead set (0.5 inch)		Inkjet execution unit
38	C2.ZJ.0064A	TIJ Quadruple-printhead set (1 inch)		Inkjet execution unit
39	C4.B40000.100	TIJ FFC 40Pin		For main board and screen drive board connection
40	C4.N1200.200	TIJ Wire harness 12P		For main board and power interface board connection
41	C4.N08000.200	TIJ Wire harness 8P		For main board and power interface board connection
42	C4.B20000.100	TIJ FFC 20Pin		For printhead inner connection
43	C2.ZJ.0042A	TIJ Optical fiber sensor set		Optical fiber sensor & amplifier set (amplifier with aviation plug 'GX12-3P' preassembled) 

44	C2.ZJ.0043A	TIJ Encoder set/GTS06-OP-RAG2500Z1-2M/TIJ		 Encoder (with aviation plug 'GX12-4P' preassembled), bracket, wheel and necessary fasteners are included.
45	C3.BJ.TBQ0001B	TIJ Encoder GTS06-OP-RA G2500Z1-2M		 Encoder (with aviation plug 'GX12-4P' preassembled) , fastener and coupler are included.
46	C5.QT.0038B	TIJ Wheel D50 for encoder		Wheel for encoder, matching shaft with 6mm diameter
47	C3.QT.BJD0003B	Traffic light-DB9-TIJ		Traffic light (With DB9 pre-assembled)

### 10.3 Ink cartridge list for half inch cartridge

No.	Part No.	Part Name	Description
1	YA.MH.TW53C	Cartridge-Water based/Black/FJ101BK	Black aqueous ink: Enhanced fade resistance, smear resistance and water resistance, excellent optical density, sharpness and barcode readability on various porous and semi-porous substrates.
2	YA.MH.TW55C	Cartridge-Solvent based/Black/FJ111BK	Black solvent ink: Fast drying time, excellent adhesion and rub resistance, high optical density, and excellent sharpness and barcode readability on semi-porous and non-porous substrates.

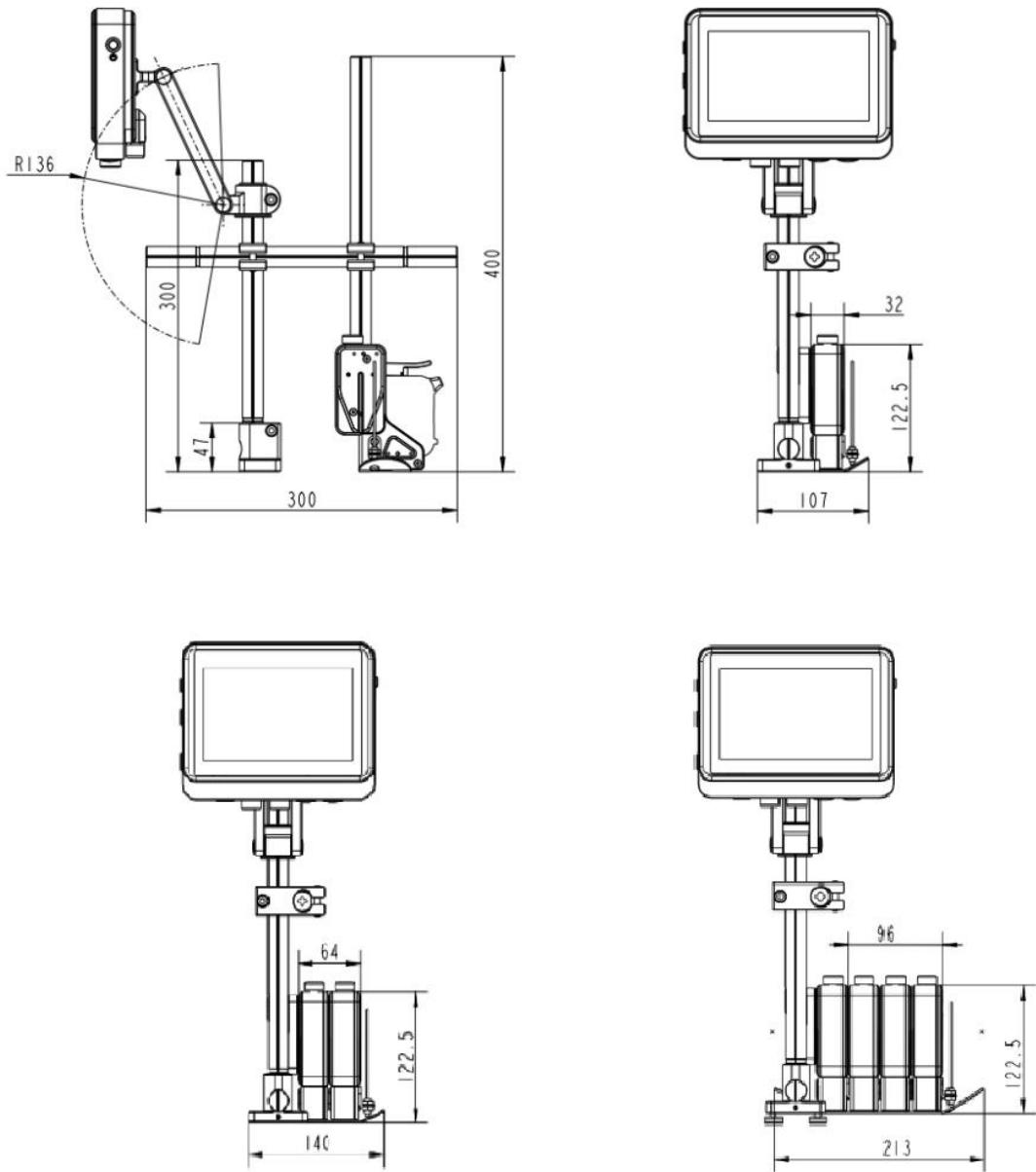
<b>3</b>	YA.MH.TW84C	Cartridge-Solvent based/Black/FJ112BK	Black solvent ink: Fast drying time, more excellent adhesion and rub resistance, excellent sharpness and barcode readability on semi-porous and non-porous substrates.
<b>4</b>	YA.MH.TW85C	Cartridge-Solvent based/Black/FJ113BK	Black solvent ink: Faster drying time, strong adhesion and rub resistance, high density, and excellent sharpness and barcode readability on semi-porous and non-porous substrates.
<b>5</b>	YA.MH.TW86C	Cartridge-Solvent based/Black/FJ114BK	Black solvent ink: High versatility, excellent adhesion and rub resistance, excellent sharpness and barcode readability on semi-porous and non-porous substrates.
<b>6</b>	YA.MH.TW60C	Cartridge-Solvent based/Blue//FJ111BU	Blue solvent ink: Good adhesion and rub resistance, excellent sharpness and barcode readability on semi-porous and non-porous substrates.
<b>7</b>	YA.MH.TW56C	Cartridge-Solvent based/Red/FJ111RD	Red solvent ink: Fast drying time, good adhesion and rub resistance, and excellent sharpness on semi-porous and non-porous substrates.
<b>8</b>	YA.MH.TW58C	Cartridge-Solvent based/Green/FJ111G R	Green solvent ink: Fast drying time, good adhesion and rub resistance, enhanced optical density and sharpness on semi-porous and non-porous substrates.
<b>9</b>	YA.MH.TW59C	Cartridge-Solvent based/Yellow/FJ111Y L	Yellow solvent ink: Fast drying time, good adhesion and rub resistance, and excellent sharpness on semi-porous and non-porous substrates.
<b>10</b>	YA.MH.TW62C	Cartridge-Solvent based/invisible/FJ121 IV	Invisible solvent ink: Fast drying time, good adhesion and rub resistance, and excellent sharpness on semi-porous and non-porous substrates.
<b>11</b>	YA.MH.TW61C	Cartridge-Solvent based/White/FJ111W I	White pigment solvent ink: Fast drying time, excellent sharpness, fade resistance and heat resistance on semi-porous and non-porous substrates.

## 10.4 Ink cartridge list for 1 inch cartridge

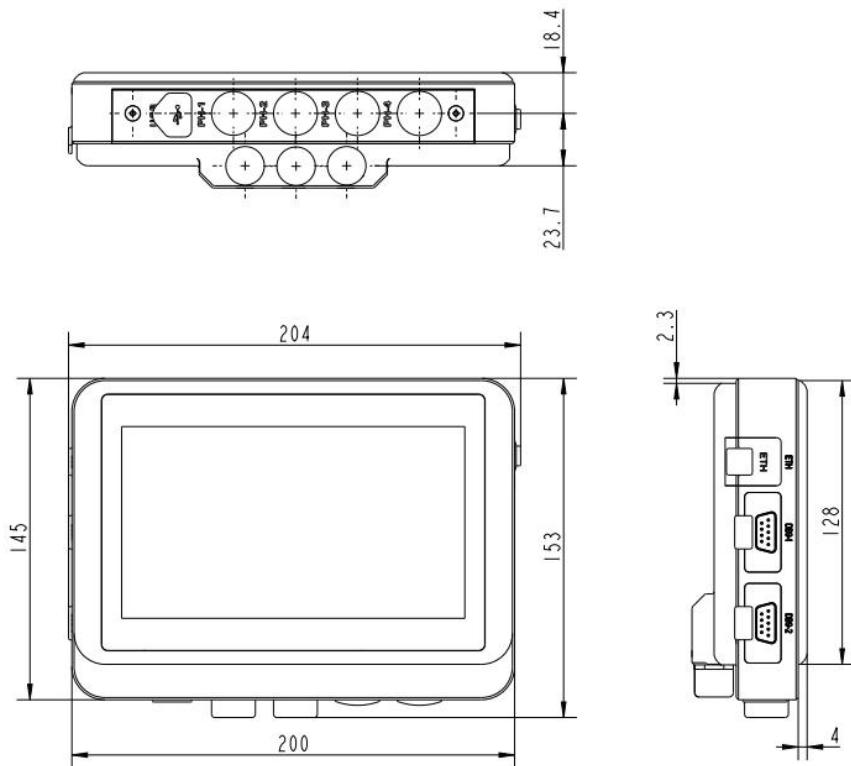
No.	Part No.	Part Name	Description
1	YA.MH.TW81C	Cartridge-Water based/Black/FJW81BK	Black aqueous ink: Enhanced fade resistance, smear resistance and water resistance, excellent optical density, sharpness and barcode readability on various porous and semi-porous substrates
2	YA.MH.TW80C	Cartridge-Solvent based/Black/FJS80BK	Black solvent ink: Fast drying time, excellent adhesion and rub resistance, high optical density, and excellent sharpness and barcode readability on semi-porous and non-porous substrates.

## 10.5 Dimension specification

### 10.5.1 Overall Unit Size (Including 1 inch head)

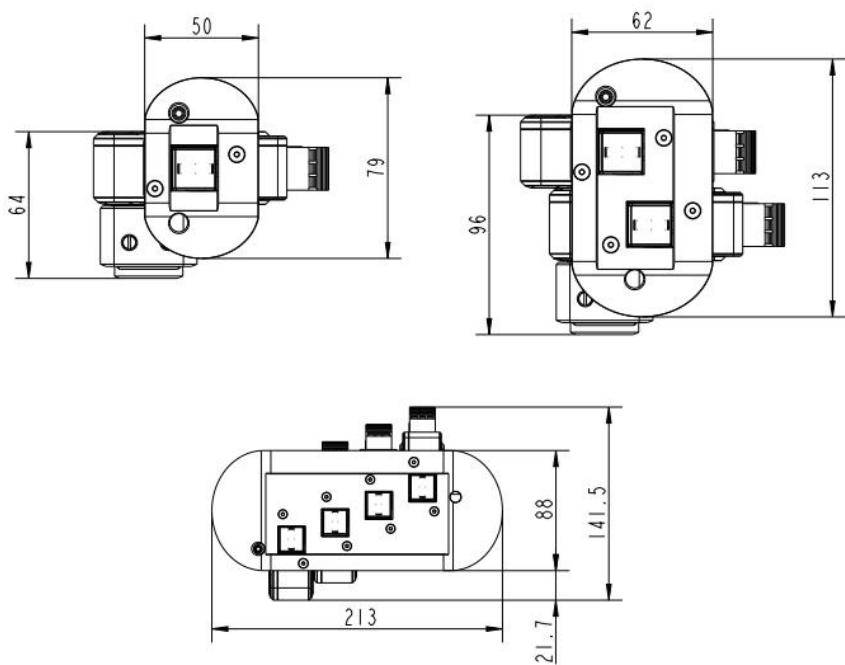


### 10.5.2 Controller Size (Same for both models)

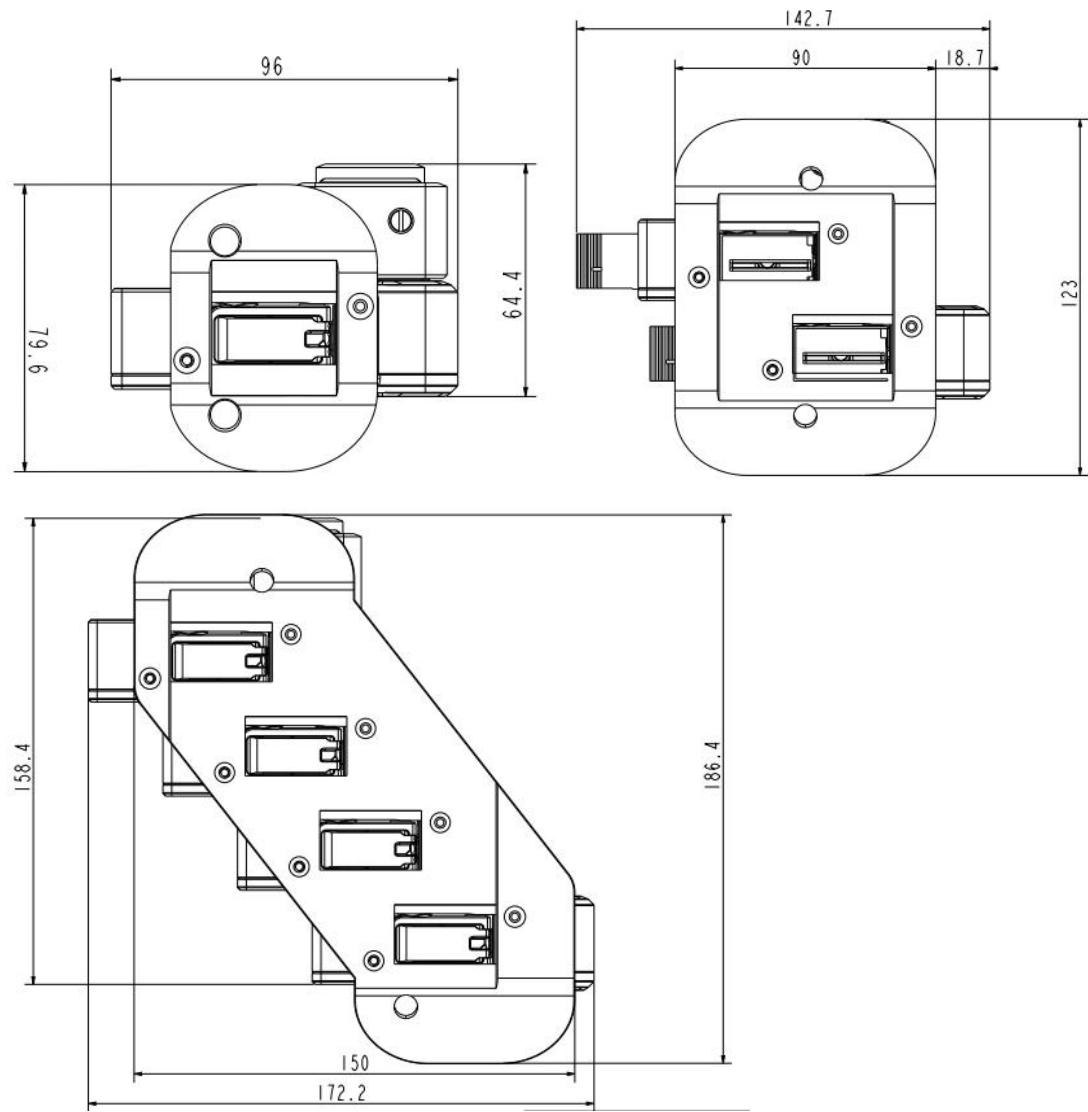


### 10.5.3 Guide Plate Kit Size

#### 1) For 0.5 inch head size:



2) For 1 inch head size:



Cyklop reserves the right to modify the technical characteristics of the product without prior notice.

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