FASTJET A400 SERIES

Continuous Inkjet Printer

User Manual

FOR:

FASTJET A400 Series
NICEJET A400Plus Series

Contents

Chapter 1. Product Overview

1.1 Main parts

Major parts of A400 Inkjet Printer are as follows:
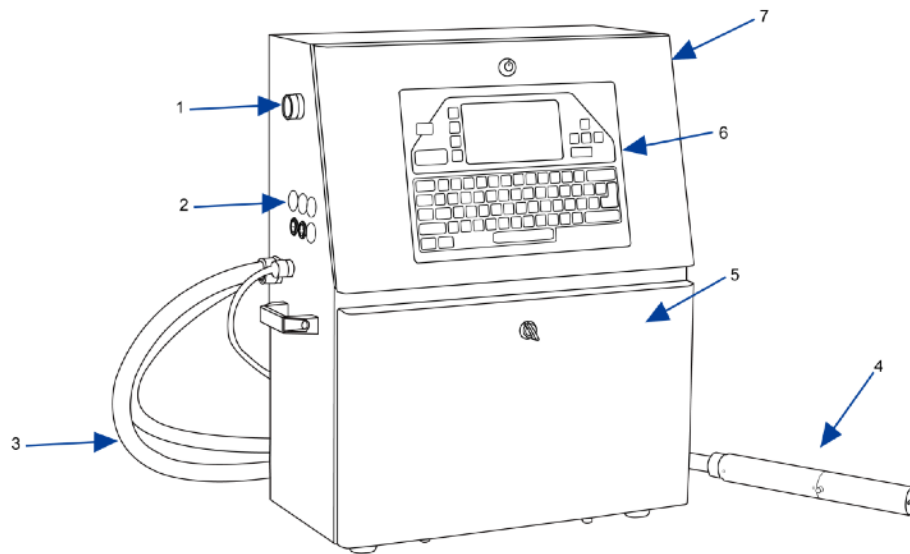
Figure 1-1. Main parts of the printer

1. Main Power Switch
2. Connector Panel
3. Umbilical
4. Print Head
5. Ink Compartment
6. Control Panel
7. Electronics Compartment

1.2 Control Panel
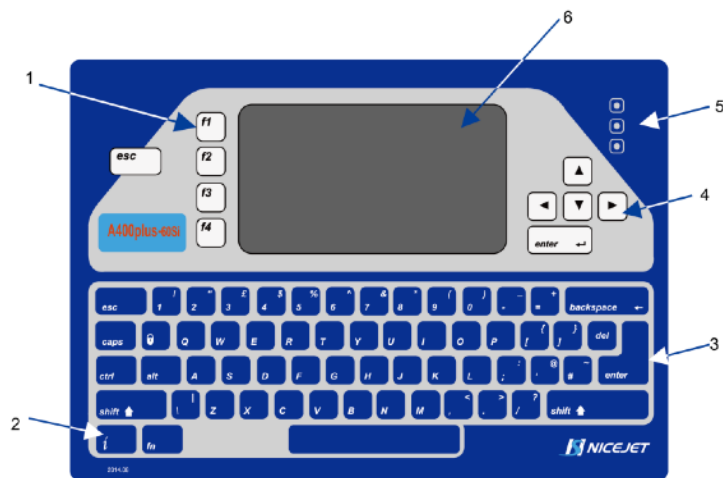
Figure 1-2: Control Panel

1. Function Keys

2. Information Key

3. Keypad

4. Arrow Keys

5. Status LEDs

6. Display

1.3 Print Head
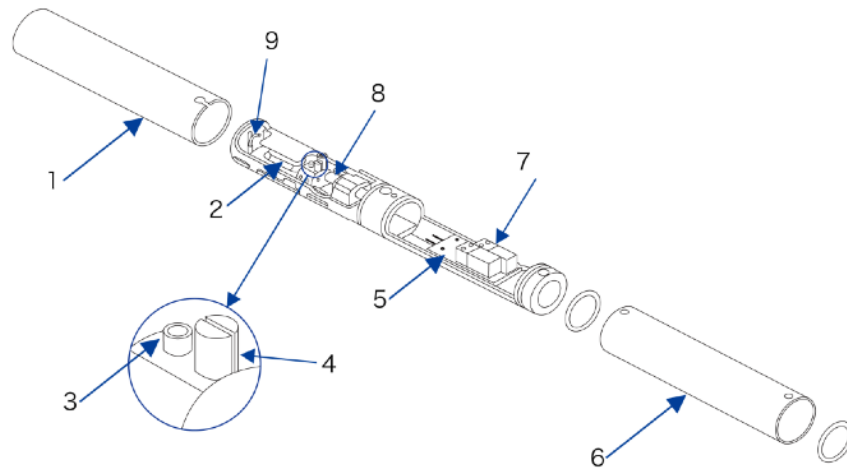
Figure 1-3: Print Head

1. Front Cover of Print Head
2. Electrode of High Voltage Deflection Plate
3. Phase Detector
4. Charge Electrode
5. Heating Block Assembly
6. Rear Cover of Print Head
7. Valves
8. Nozzle Assembly
9. Gutter

1.4 Ink Compartment
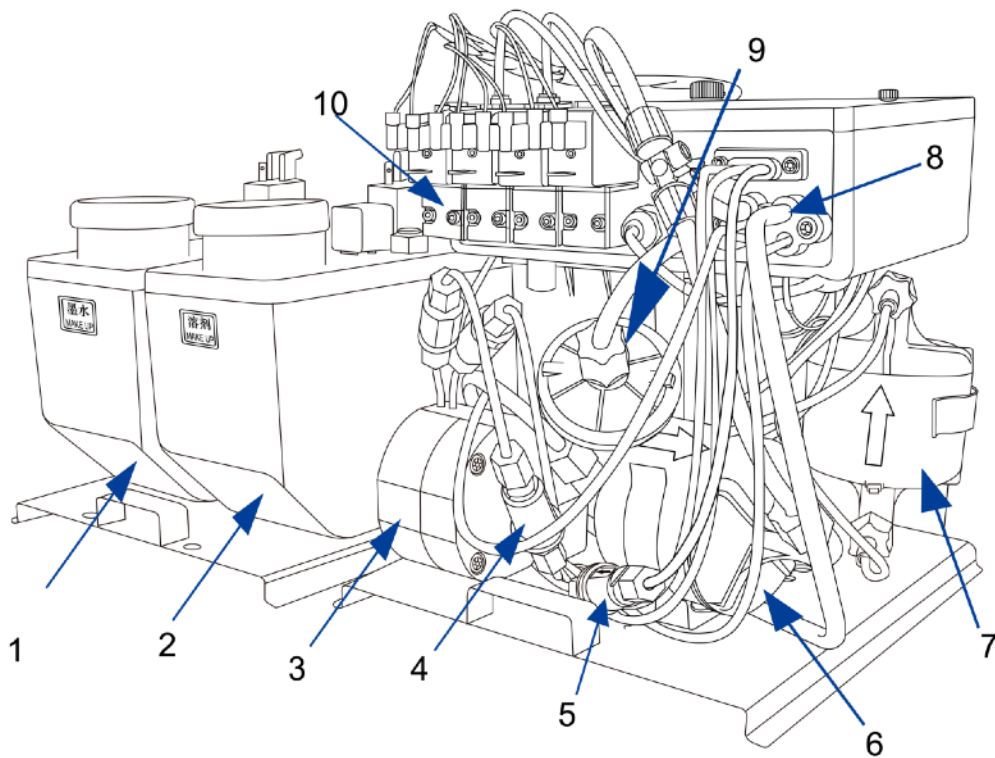
Figure 1-4: Ink Compartment

1. Ink Tank
2. Solvent Tank
3. Cleaning Pump
4. Cleaning Filter
5. Filter before print head
6. Primary Filter
7. Pressure Buffer
8. Drainage Pipe
9. Filter before pump
10. Valves

1.5 Main Screen

Figure 1-5: Main Screen

1. Menus

2. Function Keys

3. Printer Status

4. the Name and the Content of the Message

5. Product Counter

6. Fault and Alarm Icons

This screen displays the following elements:

- The function key controls.
- The icons that indicate the printer status and fault conditions.
- The name and the content of the message. The content is the display is an accurate representation of the current printing message.

1.6 Menu Description

1.6.1 Message menu

Message menu	Function
New Message	Open the New Message interface to create a new message.
Edit Message	Edit a selected internal message.
Select Message	Select a message to print.
Message Parameters	Change parameter of the current print message
Delete Message	Delete the selected internal message.
Copy Message	Copy a saved message and rename it.
Delete All Message	Delete all saved message

Table 1-1. *Message* menu

1.6.2 Editor

The commands in the Editor menu are shown only if the Message Editor or the Logo Editor is open.

Editor menu	Function
Select Font	Open the select font menu. The selected font is applied to the next input text in the message.
Insert User Filed	Selects user field to copy into the message.
Save Message	Save the message being edited to memory and keep the editor screen open.
Save and Exit	Save the message being edited to memory and exit the editor screen.
Clear Message	Delete the content in the message and keep the editor screen open.
Abandon	Exit the editor screen without saving changes to the message.

Table 1-2. Editor menu when edit message

Editor menu	Function
Set Logo Size	Change the size of the logo.
Save Logo	Save the logo to the memory and keep the editor screen open.
Save and Exit	Save the logo to the memory and exit the editor screen.
Clear Logo	Removes the edited logo.
Abandon	Exit the editor screen without saving logo to memory.

Table 1-3. *Editor* menu when edit logo

1.6.3 User Fields

User Fields menu	Function
Edit User Field	Edit an internal user field, such as Time, Counter, Logo, Text, External Data, Barcode.
New User Field	Open New User Field interface and edit it.
Delete User Field	Delete the selected internal user field.
Reset Counter	Select counter and reset it.
Set Shifts	Set the starting and ending time of each shift

Table 1-4. *User Fields* menu

1.6.4 Password

Password menu	Function
Enter User Password	Enter user password for advanced operating authority.
Change User Password	Enter a new user password to change user password.
Set Password Levels	Open the *Set Password Level* menu. This has options for the *Main Screen* and each of the menus. You can set "*On*" or "*Off*" for each option available in the menu. "*Off*" doesn't have password protection.
Enter Maintain Password	Enter maintain password for maintenance authority.
Change Maintain Password	Enter a new maintain password to change maintain password.
Clear Password	Clear password to the lowest authority.

Table 1-5. *Password* menu

1.6.5 System

System menu	Function
Clean Start Jet	Start the ink jet. A flush and bleed sequence is performed to prevent unstable ink line while ejecting from nozzle.
Quick Start Jet	Quick start the ink jet without a flushing sequence.
Clean Stop Jet	Stop the ink jet. Clean the nozzle and related pipes.
Quick Stop Jet	Quick stop the ink jet without a flushing sequence.
Nozzle Flush	Clean nozzle with solvent manually
Umbilical Purge	Clean the umbilical. It can be used to install the inkjet printer to exhaust air.
Charge Fault Shutdown	This Function can turn off the automatic stopping jet when charge fault.
Gutter Fault Shutdown	This Function can turn off the automatic stopping jet when gutter fault.
Rolling Phase Disable	Disable/Enable rolling phase.
Debug	Turn on/turn off each valve and main pump separately.
Gutter Mode	Set gutter mode Continuous or Intermittent.
System Flush Purge	Clean and drainage Ink System
Wash Nozzle	The nozzle orifice is cleaned by the application of solvent and a suction action.

Table 1-6. *System* menu

1.6.6 Configuration

Configure menu	Function
Heater Set Point	Set nozzle temperature(0 to 40 ℃)
Set Running Pressure	Set pump pressure (0 to 450 Pa)
VMS Calibration	It is able to set the viscosity of ink manual/auto.
Modulation Set Level	Set modulation value.
Phase Charge Set	Set phase charge value.
Phase Offset Set	Set phase offset value.
Charge Value	Set charge value.
EHT Trip Level Set	Set EHT trip level.
LCD Contrast	Set the contrast of the LCD.
Set Time/date	Set the Real Time Clock(RTC) in the printer to the local time and date.
Pressure Zero Offset	Pump zero adjustment.
EHT Range Set	Set EHT value of each grade.
Set Ink Type	Select the ink type.
Speed Ratio	Set character width ratio/print delay ratio/ Internal Interval ratio/External Interval ratio.
Serial Port Configuration	Serial port configuration

Table 1-7. *Configure* menu

1.6.7 Data

Data menu	Function
Status	Display each of current status of the printer.
Diagnostic Screen	All current operational monitoring data of the printer which are conductive to diagnose malfunctions.
Product Counter	It can be used to reset counter.
Software No.	Display software version.
Set Language	Set the type of menu language.
Maintain Time	Display printer running time and maintain time.
Msg Copy to USB	Copy internal message to U disk.
Logo Copy to USB	Copy internal Logo to U disk.
Copy Msg From USB	Copy message in U disk to memory.
Copy Logo From USB	Copy Logo in U disk to memory. Support monochrome bitmap file format(.bmp).

Table 1-8. Data menu

1.7 Specifications

1.7.1 Electrical Specification

The electrical specifications of the printer are shown in Table 1-9.

Voltage	100V AC - 240V AC
Frequency	50Hz to60Hz
Power Consumption	90 watts Maximum

Table 1-9. Electrical specifications

1.7.2 Weight

The net weight specifications of the printer are shown in Table 1-10.

Net Weight	27kg

Table 1-10. Weight specification.

1.7.3 Dimensions

The dimensions of the printer are shown in Table 1-11.

Cabinet	460L*230W*565H
Diameter of the Print Head	35mm
Length of the Print Head	262mm
Diameter of the nozzle orifice	70μm/60μm/50μm/40μm
Length of the Umbilical	3m

Table 1-11. Printer Dimensions

1.7.4 Environmental Specifications

The environmental specifications of the printer are shown in Table 1-12.

Operating temperature	5℃ to 45℃ (41℉ to 113℉)
Rate of change of ambient temperature	10℃(18℉) per hour maximum
Relative humidity	0% to 90% non-condensing
Storage temperature	5℃ to 45℃ (41℉ to 113℉) in original packaging

Table 1-12. Environmental Specifications.

Chapter 2. Printer Operation

2.1. Introduction

This chapter provides the procedures to do the following tasks:

- Installation method used for the first time

- Start print

- Turn off the printer

- Manage message

- Manage user field

- Print configuration

2.2. Installation method used for the first time

2.2.1 Manually Ink Injection

Inject ink into pipe system in order to exhausting the air. Because the pipe system is full of air, when the printer is first install.

The procedures are as follow:

1. Turn on the printer. Open the door of ink Compartment. Pull the pipe system out.

2. Inject ink into the mixer tank according to the following figure(Figure 2-1).
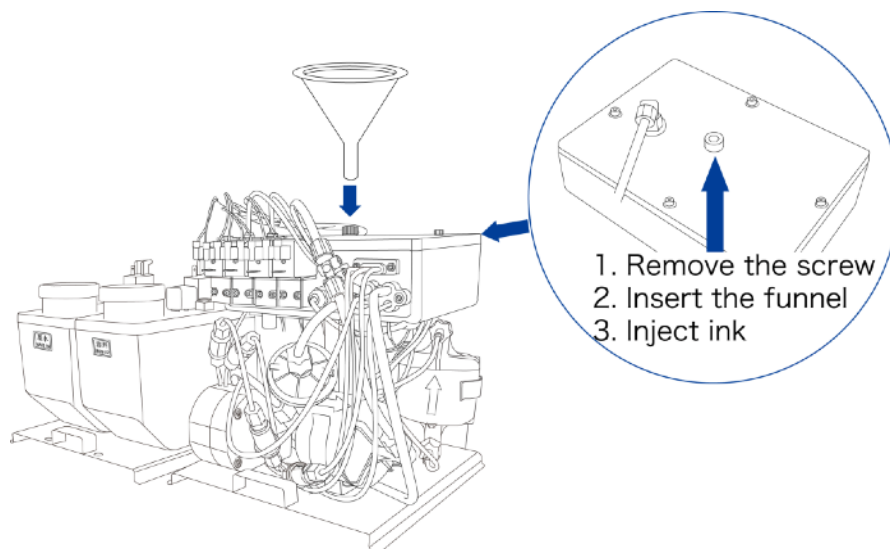
1. Remove the screw
2. Insert the funnel
3. Inject ink

Figure2-1. How to inject ink into the mixer tank.

2.2.2 Exhaust the air of Pipe System

Exhaust the air of the pipe system after manual ink injection.

The procedures are as follow:

1. Select the **System** menu using the **Left/Right arrow key**. Press the **Enter key**.

2. Select the **Debug menu** *and then press* the **Enter key**. The interface is as follow.

Figure 2- 2. Debug interface

3. Open the print head front cover. Put the special effluent bottle under the print head to catch the waste ink

4. Open the **Pump**, **V6**, **V11** and **V12** in the **Debug** interface. Keep they open for 3 minutes

5. Open **V7**, and keep it open for 15 seconds

6. Close **V7**, *and* keep it close for 30 seconds.

Repeat Step 5 and 6 once.

7. Exit **Debug menu**. Exhausting is over.

Note

When proceeding the third step, take out of the pressure buffer, keep the arrow up, shake it gently, make the inside air discharge totally.

2.3 Start Print

2.3.1 Start Jet

To start the printing process, the following operations are required:

1. Make sure that the electrical supply for the printer is available.
2. Open the front cover of the print head, check on the components inside the print head make sure that all components are clean and dry.
3. Close the front cover of the print head. Press the main power switch to turn on the printer.
4. Press the *F1* key to start the jet start sequence. The starting sequence takes approximately two minutes. The interface is as follow:

Figure 2-3. Starting Interface

5. Monitor the icons on the display and the LEDs. When machine status in the bottom display "Waiting Print", the starting sequence is completed. The interface is as follow:

Figure 2-4. Starting completed Interface

Note

If you start and stop the printer many times, the increased uses of makeup fluid can inflect printing quality.

2.3.2 Ink line Observation

The ink spouts through the nozzle, and then recycles by the gutter after jet starting.
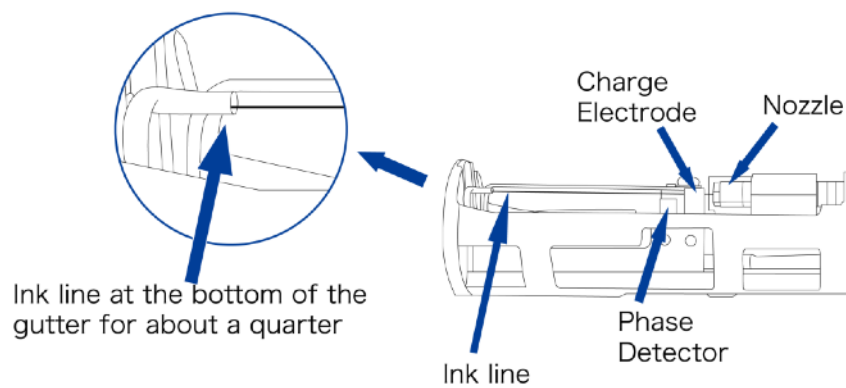
Side View:

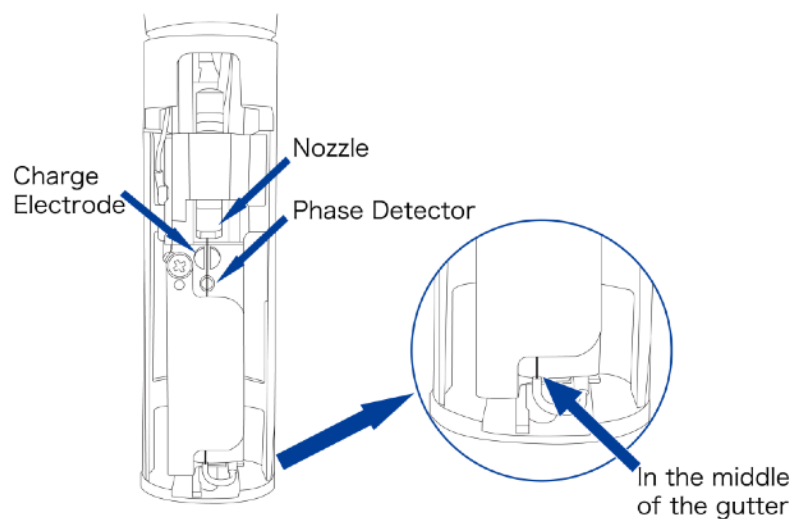Figure 2-5. Side View of Ink line

Front View:

Figure 2-6. Side View of Ink line

2.3.3 Split Point Observation

The state of split point will influence the print effects and stability.
The quality of the split point is depends on these three points below:

- Appropriate and stable ink pressure.
- Accuracy ink VMS.
- Proper modulation configuration.

Observation method is as follows:

1. Take out the magnifying glass from the accessories. Put it in front of the red stroboscope in print head about 15mm.
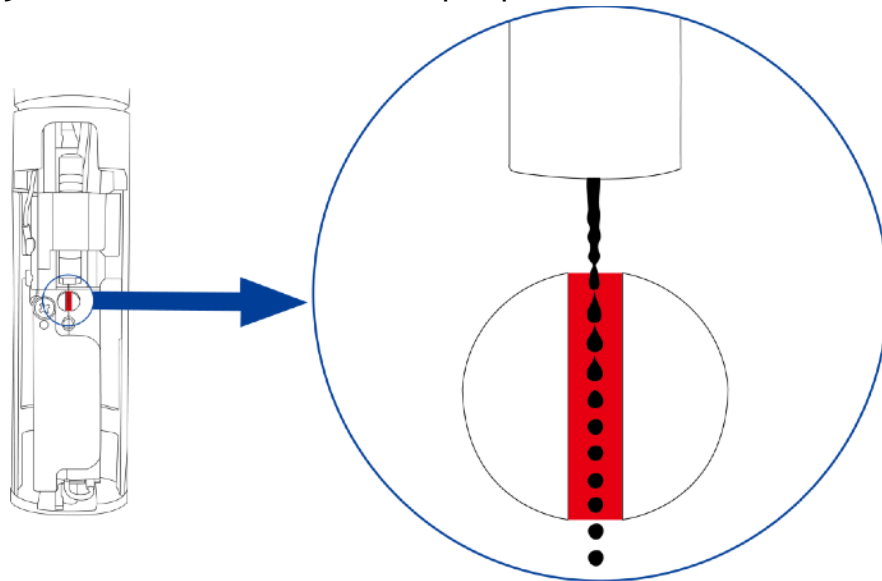2. Adjust the focus to observe the split point.

Figure 2-7. Split point.
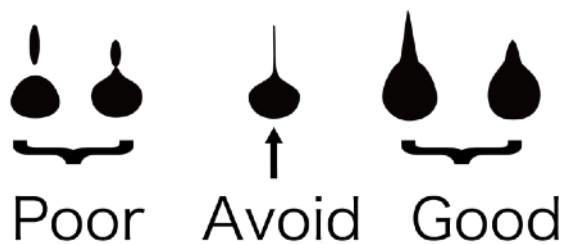
3. The state of split points can refer to following :

Figure 2-8. Split point.

Note

Set modulation can change the state of the split point. Enter into *Configuration*, select *Modulation Set Level* to set the modulation.

2.4 Turn off the Printer

2.4.1 Clean Stop Normally

1. Press the *F1* key to start the jet stop sequence. The default sequence is Clean Stop. The clean stopping sequence takes approximately two minutes. The interface is as follow:

Figure 2-9. Stopping interface.

2. During the sequence, you can open the front cover of the print head to observe if the printer head is dirty. You can flush the dirty.
3. When the jet stop sequence is complete, the interface is as follow. Press the main power switch to turn off the printer.

Figure 2-10. the stop sequence complete interface.

2.4.2 Clean stop (Power failure during the usage)

It will be abnormal switch off, if there is a power failure during the usage. The printer should process the starting jet and clean stopping jet at once when power on.

2.4.3 Clean stop (long term shutdown)

Clean the pipe system, if the Printer will not be used for a long time.

2.5 Message

2.5.1 Create a Message

Do the following tasks to create a message:

1. Use the arrow keys to open *Message* menu. Select *New Message*. The *New Message* dialog box appears (See Figure 2-11).

Figure 2-11. *New Message* Dialog Box

2. Enter a name for the message.

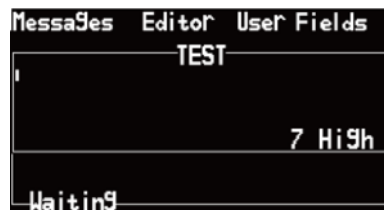3. Press the *Enter* Key. The *Message Editor* screen appears (See Figure 2-12).

Figure 2-12. The *Message Editor* screen

4. You can press the *F1* key to set the height of the font.

5. You can press the *F2* key to insert the user fields.

Note: Additional instruction for message editing

Shift + arrow keys, the curse will be moved one pixel.

Alt + arrow keys, the curse will be moved 100 pixels.

Note: modify attributes of the character

Press the *Enter* key to "*Select Character* " mode.

1. Press *Ctrl + Left/Right arrow* key to select the character.

2. Press the *F3* key to modify the attributes of selected character.

3. Press *Enter* key to exit "*Select Character* " mode.

2.6 User Field

2.6.1 Time

2.6.1.1 Create a *Time* user field

Do the following tasks to create a time user field:

1. Select *User Field* menu. Select **New User Field** and press **Enter** key. The **New User Field** dialog box appears(See Figure 2-13).

Figure 2-13 *New User Field* Dialog Box.

2. Enter a name for the Time User Field.
3. Use the **Left arrow** key and **Right arrow** key to select descriptions. Select the **Time** as the description, and press the **Enter** key.
4. Enter the clock code in the text area.

Figure 2-14. Time User Field Editor screen.

5. Use the **Left arrow** key and **Right arrow** key to select *Print Form*.
6. Press the **Enter** key to save and exit.

2.6.1.2 Time User Field Clock Information

The following table lists the clock codes required to define the clock information.

code	Definition
A	Day number(1 to 7)
BC	Year
DE	Month
FG	Date
HI	Hour
JK	Minute
LM	Second
OO	Week Number
PPP	Day of year

Table 2-1. Clock codes and definitions.

2.6.2 Two-dimensional Code and Barcode

The Printer support these types of two-dimensional code and barcode. Such as Data Matrix, QR code, Code 39, Code 128, EAN8, EAN13.

Do the following tasks to add barcode field in User Fields.

1. Select *User Field* menu. Select *New User Field* and press *Enter* key. The *New User Field* dialog box appears.
2. Enter a name for the Text User Field.
3. Use the *Left arrow* key and *Right arrow* key to select descriptions. Select the *Text* as the description, and press the *Enter* key.
4. Enter the contents in the text area.
5. Use the *Left arrow* key and *Right arrow* key to select *Print Form*.
6. Press the *Enter* key to save and exit.

Note

Use the *Left arrow* key and *Right arrow* key to select code width and code height, when the print form is QR code or Data Matrix.

2.6.3 Counter

The counters (Serializers)

Do the following tasks to add counter user field in User Fields.

1. Select *User Field* menu. Select *New User Field* and press *Enter* key. The *New User Field* dialog box appears.

2. Enter a name for the Counter User Field.

3. Use the *Left arrow* key and *Right arrow* key to select **Counter** as the descriptions, and press the *Enter* key to open counter dialog box for counter.

4. Use the *Left arrow* key and *Right arrow* key to select **Counter** as the descriptions, and press the *Enter* key to open counter dialog box for counter(Figure 2- 15).

5. Set the values for all area in the **Counter User Field** dialog box.

6. Press the *Enter* key to save and exit.

Figure 2-15 *Counter User Field Editor screen*

2.6.4 Logo

Do the following tasks to add Logo user field in User Fields.

1. Select *User Field* menu. Select *New User Field* and press *Enter* key.

2. Enter a name for the Logo User Field.

3. Use the *Left arrow* key and *Right arrow* key to select *Logo* as the descriptions, and press the *Enter* key to open *Logo Editor*. (Figure 2-16).
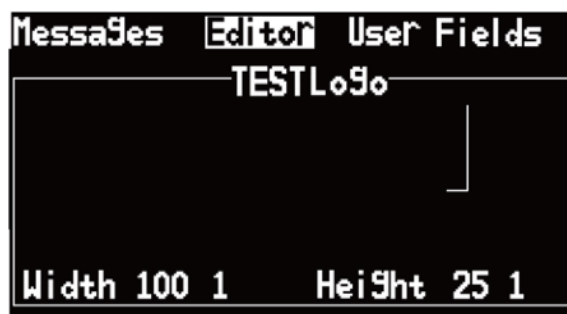

Figure 2- 16. Logo Editor screen.

4. Edit the logo with the help of the key combinations shown in Table 2-2.

Key Combination	Cursor Movement
Arrow keys	Moves the cursor one dot at a time and not draw a line
Shift + arrow keys	Moves the cursor one dot at a time and draws a line.
Ctrl + arrow keys	Moves the cursor one dot at a time and deletes any dots drawn.
Space	Negate current point.

Table 2-2. Key Combinations for Logo Creation

6. When you logo is complete , press the *ESC* key, *Left arrow/Right arrow* key to *Editor* menu to set the size of the logo. Press the arrow key to set the width and the height. Then press *Enter* back to Logo editor screen.

7. Press *Shift + F1* to save the logo and exit logo editor.

2.6.5 Multiple user fields to generate a barcode

This function can make multiple user fields (only including clock, counter, text) to generate one barcode. Generation steps are as follow:

1. Select *User Field* menu. Select *New User Field* and press *Enter* key.

2. Enter a name for the Barcode User Field.

3. Use the *Left arrow* key and *Right arrow* key to select *Barcode* as the descriptions, and press the *Enter* key to open *Barcode* dialog box (Figure 2-17).
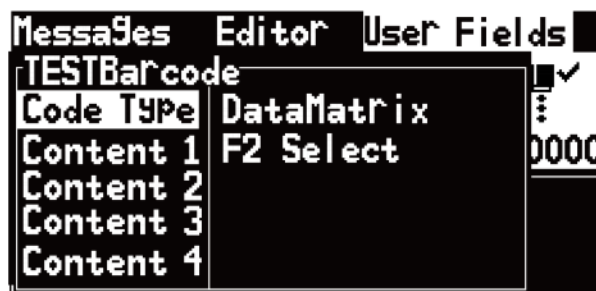

Figure 2-17. *Barcode* dialog box

4. Press the *UP/Down* key, when the cursor stays in the content one to six, press *F2* key to insert the needed user field.

5. Press the *Enter* key to Save and Exit.

2.7 Message Parameters

Message parameter decides the printing mode for Message, and can be set as follows:

Parameter	Scope	Performance
Font Width	1-255	Set Message width, the smallest the font width is, the fastest the printing speed. For instance, when the font width is set as 1, the printing speed is the fastest. The bigger the parameter, the wider the Message.
Font Height	1-10	The character height can be set within 1-10, the bigger the numerical value, the higher the character.
Character Pitch	0-8	The character height can be set within 0-8, the bigger the numerical value, the larger the character pitch.
Print Delay	3-10000	Set product printing delay time (an interval from the time photocell had detected the product to the time printing is started).
Reversal Printing	On/Off	Adjust the left/right direction of character printing (Reverse front to back).
Bottom-up Printing	On/Off	Adjust the up/down direction of character printing (Up-down reversal).
Horizontal Thickening	0-7	Set the frequency of repeat printing so as to thicken the printing contents.
Vertical Dot Matrix	5-34	Set printing dot matrix. If the number of dot matrix of font is bigger than the dot matrix of printing, the character printed will be incomplete; if the number is smaller than that of the dot matrix of printing, printing speed will be slowed down.

Table 2-3: Message Parameters

Editing Parameter Procedure:

1. Press the *F3* key (only in main screen) to open the *Message Parameter* dialog box (See Figure 2-18).

```
Messages  Editor  User Fields
Para For: MESSAGE
Charactor Width    100
Charactor Height    10       00
Charactor Gap        0
Product Dealy       16
Inverse            Off
Reverse            Off
Raster Repeat        0
Printed Dots        25
waiting
```

Figure 2- 18. *Message Parameter* dialog box

2. input the numerical value you need;

3. After setting all parameter values, press Enter to return to main menu screen.

2.8 Print Configuration

The printer is configured through the *Print* menu.

2.8.1 Limited print times configuration

This mode widely applied in beer, beverage food, daily use chemical and other industries. In general, photocell triggered once, printer print message one or several times which can set in **Continuous Print** menu.

Do the following operations:

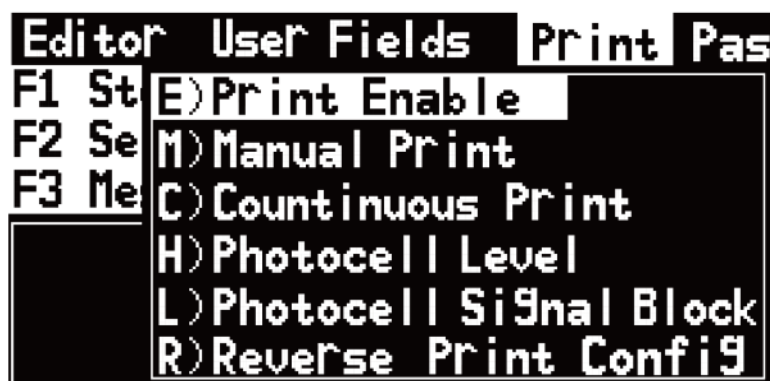1. User the *arrow* keys to open P*rint* menu. The screen display:

Figure 2-19 . *Print* menu

2. If you want to use this mode to print . You should set **Print Enable**, **Continuous Print**, **Photocell Level** and **Signal Block** menus.

a. *Print Enable* menu.
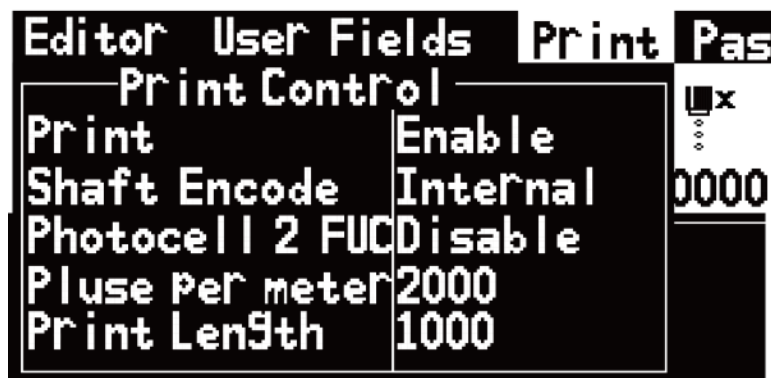
Figure2- 20. *Print Control* menu

- Select *Print Enable* option.

- Set the *Shaft Encode* to *Internal* option for a fixed line speed.

  Set to *External* option for use with a compatible shaft encoder where the line speed is variable.

- if pec2 is connected, select *Reset* or *Close*.

- Don't need to set up.

- Don't need to set up.
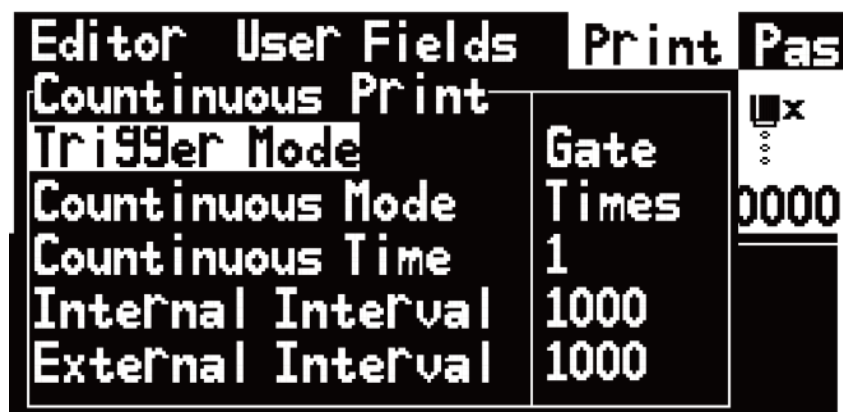
b. *Continuous Print* menu.

Figure2- 21. *Continuous Print* menu

- When *Trigger Mode* select *Trigger*. Once triggered the printer will print **Continuous Time**, unless the photocell level condition.

  When *Trigger Mode* select *Gate*. Only meet photocell level

condition, the printer will print after triggered.

- Select **Continuous Mode Close** option, if you want print one time after triggered.

Select **Continuous Mode Times** option, if you want print several times after triggered.

- Set print times after triggered.

- Set the **Internal Interval** to use the pluses internally created to set the distance between each print.

- Set the **External Interval** to use the external shaft encoder pulses to set the distance between each print. Set the **External Interval** , if external shaft encoder connected.

c. **Photocell Level** menus.
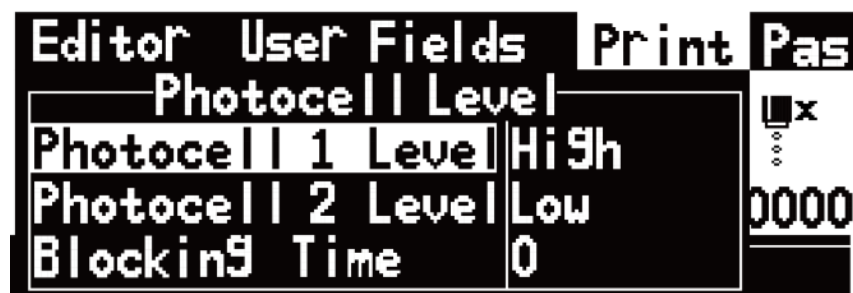
Figure2-22 . *Photocell Level Signal Block* menus.

- Set Photocell Levels high or low to allow the high or low activating photocells.

- Blocking Time set to avoid twice triggered for one product.

2.8.2 Continuous Print

The message is printed repeatedly. This mode widely used in building material, pipe material and steel product and other industrials.

Do the following operations to print continuous:

1. User the *arrow* keys to open *Print* menu.

2. If you want to use continuous print mode to print . You should set *Print Enable, Continuous Print* and *Photocell Level* menus.
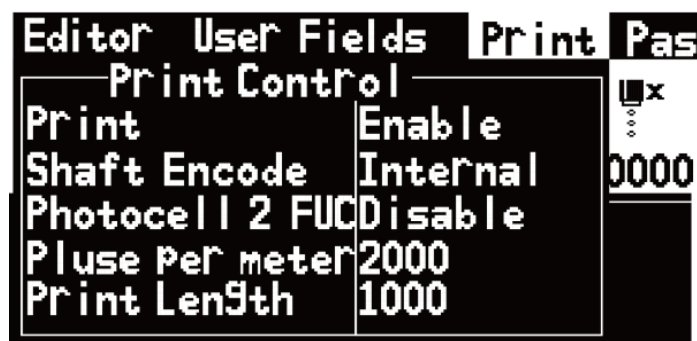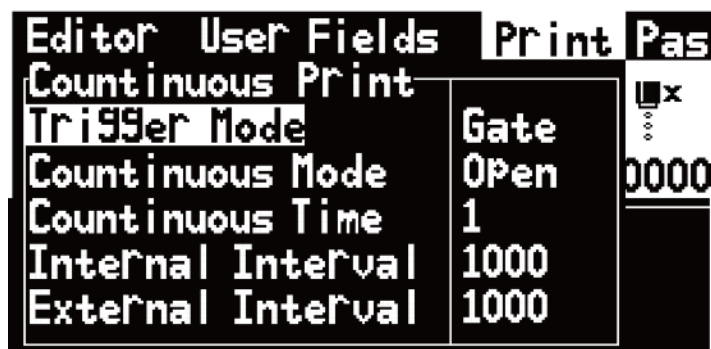
a. *Print Enable* menu.

Figure 2-23. *Print Control* menu

- Select *Print Enable* option.

- Set the *Shaft Encode* to *Internal* option for a fixed line speed.

    Set to *External* option for use with a compatible shaft encoder where the line speed is variable.

- if pec2 is connected, select *Reset* or *Close*.

- Don't need to set up.

- Don't need to set up.

b. *Continuous Print* menu.

Figure2-24 . *Continuous Print* menu

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- When *Trigger Mode* select *Trigger*. Once triggered the printer will print Continuous Time, unless the photocell level condition.

   When *Trigger Mode* select *Gate*. Only meet photocell level condition, the printer will print after triggered.

- Select *Continuous Mode Open* option.

- Do not need to set.

- Set the *Internal Interval* to use the pluses internally created to set the distance between each print.

- Set the *External Interval* to use the external shaft encoder pulses to set the distance between each print. Set the *External Interval* , if external shaft encoder connected.

c. *Photocell Level* menus.
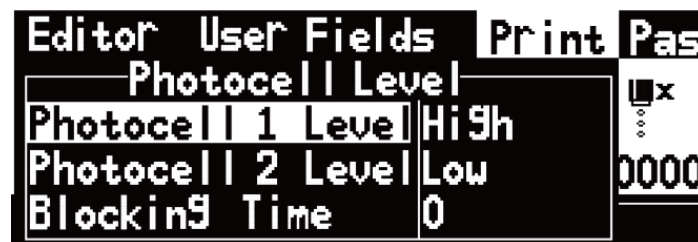
Figure2- 25. *Photocell Level Signal Block* menus.

- Set **Photocell Levels** high or low to allow the **high** or **low** activating photocells.

- Blocking Time set to avoid twice triggered for one product.

<table>
<tr><td>Note</td></tr>
</table>

Selected Manual Print to trigger print, if there is no photocell. Set the *Trigger Level* the save to *Photocell 1 Level* in *Photocell Level*.

2.8.3 Meter Mode

This mode widely used in cable pipe and other industrials where need identify meters. There must be a shaft encoder.

The setting of this mode is as follow:

1. User the *arrow* keys to open *Print* menu.
2. If you want to use meter mode to print . You should set *Print Enable* and *Photocell Level* menus.

a. *Print Enable* menu.

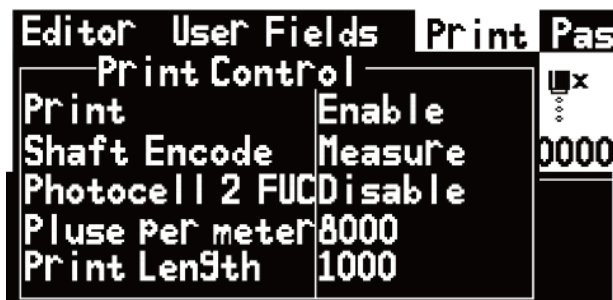Figure2-26 . *Print Control* menu

- Select *Print Enable* option.
- Set the *Shaft Encode* to *Measure* option.
- If pec2 is connected, select *Reset* or *Close*.
- Set pulse per meter. For example, a 2000P/R shaft encoder, the circumference is 250mm. There are 8000 pulses per meter. Set 8000 in *Pulse per meter* area.
- Set **Print Internal** in *Print Length* area. If Set 900, the printer will print a message per 900mm.
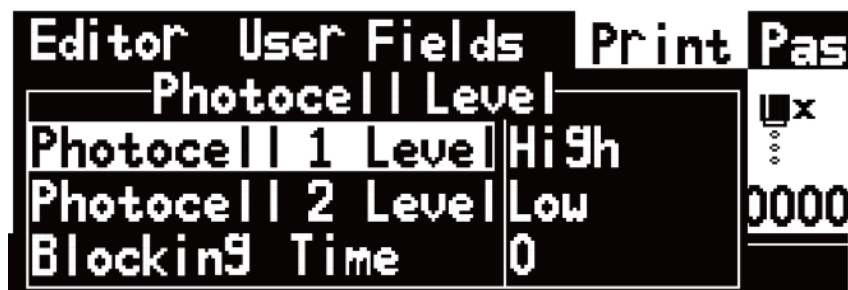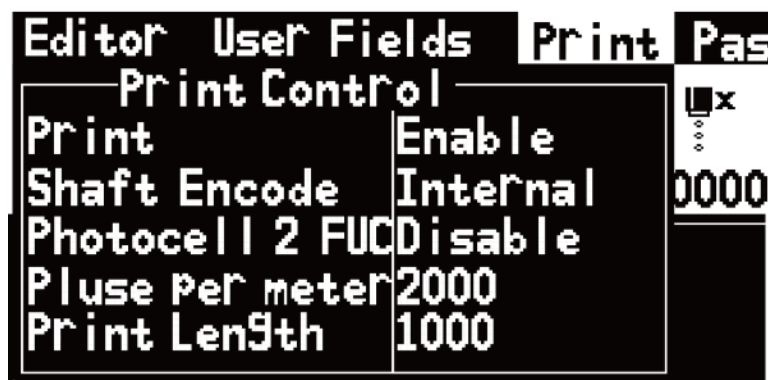
b. *Photocell Level* menus.

Figure2-27 . *Photocell Level Signal Block* menus.

1,2. Set **Photocell Levels high** or **low** to allow the high or low activating photocells.

3. **Blocking Time** set to avoid twice triggered for one product.

2.8.4 Reverse Mode

This mode widely used to in electronic, label printing, egg and other industries. It provides the effective production for the array printing.

To use Reverse Mode need to set:

1. User the *arrow* keys to open *Print* menu.

2. If you want to use meter mode to print . You should set *Print Enable, Continuous Print, Photocell Level, Photocell Signal Block* and *Reverse Print Config* menus.

a. *Print Enable* menu.

Figure2-28. *Print Control* menu

- Select *Print Enable* option.
- Set the *Shaft Encode* to *Measure* option.
- If pec2 is connected, select *Reset* or *Close*.
- Do not need to set.
- Do not need to set.
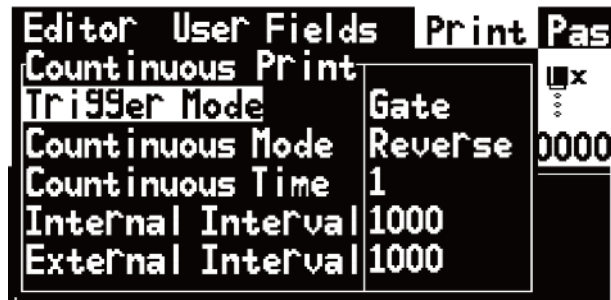
b. *Continuous Print* menu.

Figure2-29 . *Continuous Print* menu

- Do not need to set.

- Select *Continuous Mode Reverse* option.

- Do not need to set.

- Do not need to set.
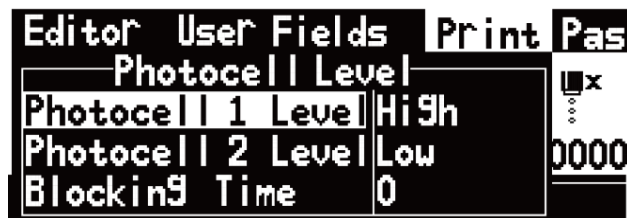
- Do not need to set.

c. Photocell Level menus.

Figure2-30. *Photocell Level Signal Block* menus.

- Set **Photocell Levels high** or **low** to allow the high or low activating

  photocells.

- **Blocking Time** set to avoid twice triggered for one product.
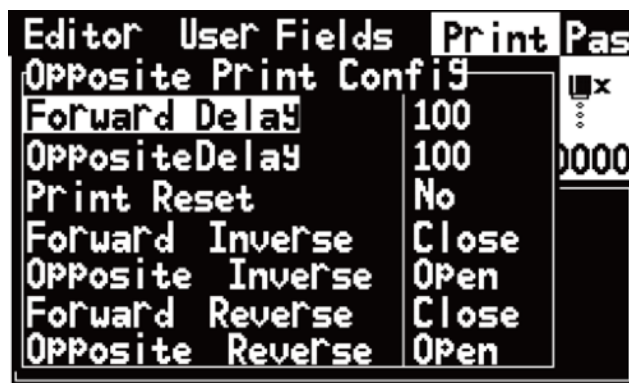
d. *Reverse Print Config* menu

Figure2-31. *Reverse Print Config* menu

- Set the print delay when print forward direction.
- Set the print delay when print opposite direction.

- Reset print. After reset, the printer will print forward direction.
- If Set *Forward Inverse Close*, the forward direction will pint inverse-off and vice versa.
- If Set *Opposite Inverse Close*, the opposite direction will pint inverse-off and vice versa.
- If Set *Forward Reverse Close*, the forward direction will pint reverse-off and vice versa.
- If Set *Opposite Reverse Close*, the opposite direction will pint reverse-off and vice versa.

Reverse Mode print sample:

Forward direction:

```
And 7x5 TEST MESSAGE
TWIN LINE FASTJET
```

Figure 2-32. Forward direction sample

Opposite direction:
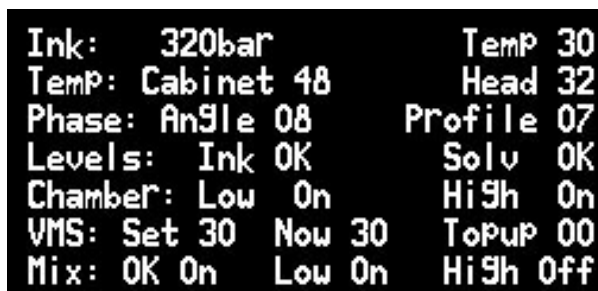
```
ƎƆAƧƧƎM TƧƎT ϛ×Γ bnA
TƎᒐTƧAꟻ ƎИIᒐ ИIWT
```

Figure 2-32. Forward direction sample

Chapter 3. Trouble Shooting and Maintenance

3.1 Diagnostic screen

Diagnostic screen can be entered into any time by press the "i" key located at the left bottom keyboard.

The Diagnostic screen

```
Ink:    320bar          Temp 30
Temp: Cabinet 48         Head 32
Phase: Angle 08        Profile 07
Levels:  Ink OK         Solv  OK
Chamber: Low  On        High  On
VMS: Set 30  Now 30    ToPup 00
Mix: OK On    Low On   High Off
```

<p align="center">Figure 3-1. Diagnostic screen</p>

Meaning of major parameters:

Ink：——Ink system (i.e. ink pump) operating pressure. It is generally 300-350 under normal startup mode.

Temp——Temperature of ink in the ink system

Temp：（Cabinet）——Temperature of inkjet printer case

Head——Temperature of print head of inkjet printer. It is generally 35 under normal startup mode.

Profile——Phase working status. It is generally 06~10 under normal startup mode. Levels: Ink LOW——Ink level in the ink tank is low

Solvent Low——Solvent level in the solvent tank is low

Chamber：Low, High——Low, high liquid level probe in the viscosity chamber. ON and OFF will alternate when the printer is under normal startup mode.

VMS：Set——setting value of ink viscosity during running. The value will vary because of different ink and temperature.

Now——Actual value of the ink viscosity during running; normally, the actual value approximates to the setting value of ink viscosity.

Mix：OK, Low, High——Low, medium and high ink level probe in the mixing tank. ON means there is ink in the tank, OFF means no ink.

3.2 Fault and Warning Icon

Fault Icons

Icon	Name	Cause	Remedial Action
	Mixer Tank Empty	Ink leak	Check the piping system with the help of engineer.
		Solvent vaporization	Add ink until the icon disappears.
		Valve Clogging	Take V2 down and clean it up with special cleaner.
	Charge Fault	Nozzle Clogging	Do *Nozzle Flush* and *Wash Nozzle* operation. Open the front cover of the print head, and clean the print head. Close the front cover of the print head when all components is dry and clean.
		Poor split point	Observe the split point and adjust it to the best condition.
		incorrect ink line position	Observe the ink line and adjust it to the best position.
		ink is out of expiration date or polluted	Eject the ink and clean the piping system. Inject new ink.
		fitter exhaustion	Cleaning up the piping system and change the fitter. Contact the engineer for more information.
	Gutter Fault	Nozzle Clogging	Do *Nozzle Flush* and *Wash Nozzle* operation. Open the front cover of the print head, and clean the print head. Close the front cover of the print head when all components are dry and clean.
		Gutter Clogging	Clean gutter until it is though.
	EHT Trip	High Voltage Deflection Plate accumulate ink	clean print head's high voltage deflection composition and dry it. Contact the engineer for more information.

Warning Icons

Icon	Name	Indication
	Printer is running.	Ink jetting is running, printer is ready for printing.
	Printing stops.	Ink jetting stops.
	Low ink level	Add ink. Please contact maintenance engineer if the icon still appears after adding.
	Low solvent level	Add solvent. Please contact maintenance engineer if the icon still appears after adding.
Visc	Viscosity fault	Too high or low viscosity. Please report to maintenance engineer if the display of the icon exceeds 5 min.
	High liquid level in the mixing tank.	High liquid level in the mixing tank. Please report to maintenance engineer if the display of the icon exceeds 5 min.
	Print head cap is uncapped.	The front cover of the print head cannot be tightly capped. Inkjet printer continues running but printing. Please report to maintenance engineer if the display of the icon exceeds 5 min. Please report to maintenance engineer if the icon still appears after putting on the front cover of the print head.
ABCD ✗ AB ✔	Synchronizer runs too fast.	Synchronizer runs too fast to reach the width required by printing. Please report to maintenance engineer if the width of inkjet printer is disqualified.
	Service	Inkjet printer requires maintenance from maintenance engineer. The printer will keep running after maintenance.

3.3 Trouble Shooting

- The Printer Does Not Start

  Check the power supply and if the Printer is turned on.

- Keyboard has echo sound but screen is off

  Please check the screen contrast. After restart the printer, press *"Ctrl"* + *"L"* and press enter when screen is clear.

- Poor printing quality

Cause	Solution
Print head is too far from the target object	Move the print head close to the target object.
Character Height setting is too big or small	Adjust the character height
Poor split point	Adjust the split point
Gutter stained with ink	Clean the gutter and observe the ink line
Unstable relative motion	confirm the printing position or choose the rotary encoder

- No printing
  - Incorrect character width or printing delay setting

    Adjust the character width or the printing delay
  - Photocell fault
  - Incorrect Printing Mode setting

- Missing some targets/products
  - Photocell not used properly
  - Incorrect Printing Mode setting
  - Ink line is not well regulated
  - Nozzle clogging. Clean the Nozzle.
  - Filter clogging
  - poor ink line station

3.4 Nozzle Cleaning

1. In the "*System*" menu select the "*Nozzle Flush*".

Figure 3-2. Nozzle Flush screen

2. When the "*F1*" function on the main screen showed "*Stop Flus*", use cleaner wash the position of print header shown in flowing picture until the "*F1*" function show "*Start Printing*" again.
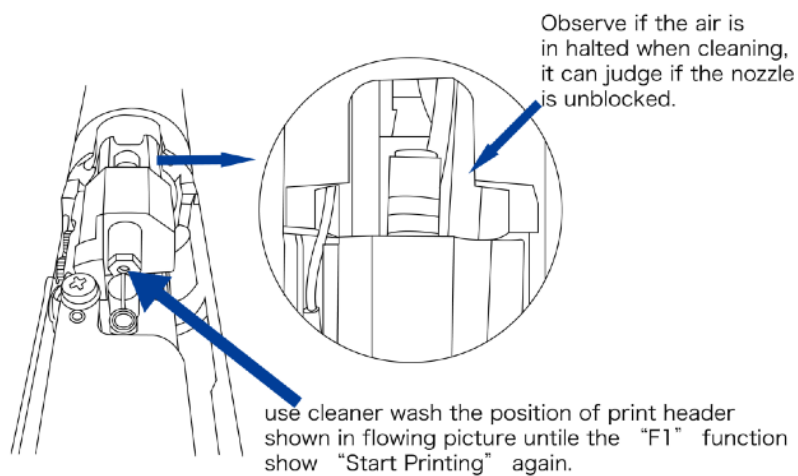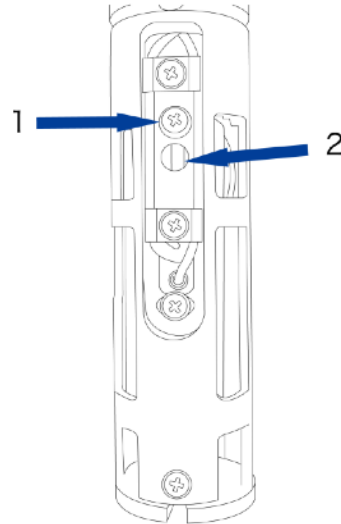

Figure3-3. Nozzle Flush

"*Nozzle Flush*" function can be used in starting print, printing state and in the process of stopping. According to the actual state to increase the time of nozzle cleaning.
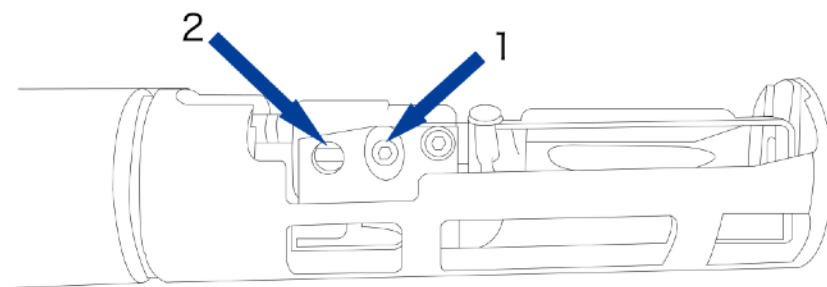
3.5 Ink Line Adjustment

● Left/Right adjustment

Loose the 1 screw in the screen and move the "2" slightly can move the ink line left or right.

● Up/Down adjustment
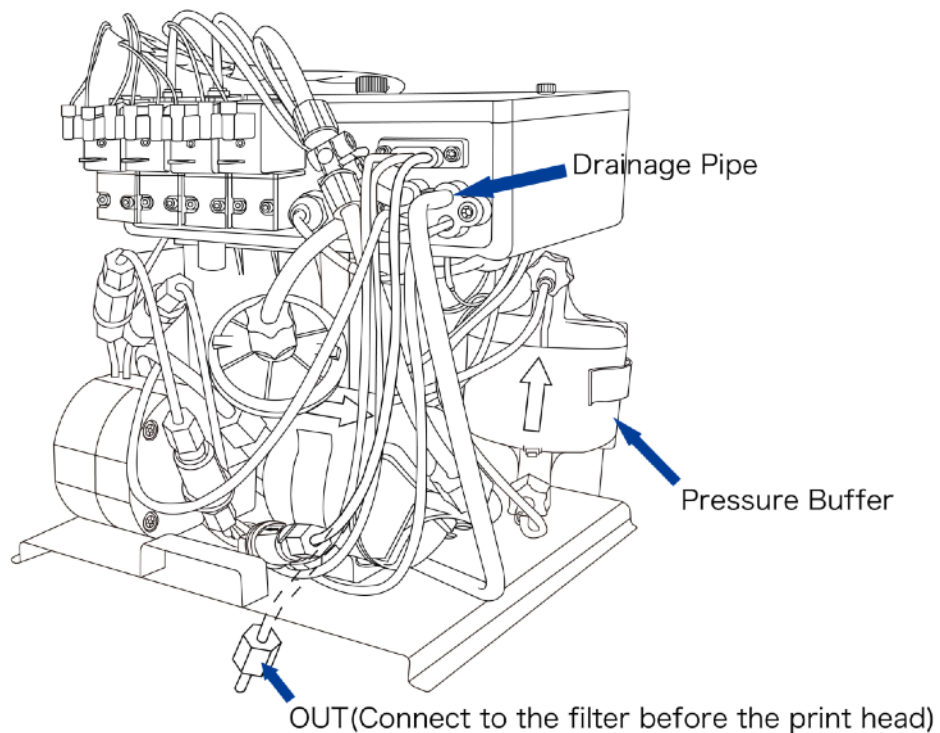

Loose the 1 screw in the screen and move the "2" slightly can move the ink line up and down.

Note

Before adjust the ink line, please confirm the nozzle is unblock, standard ink line position reference to *ink line observation*.

3.6 Draining Ink

1. Unscrew the "**OUT**" port out and put it into the effluent bottle.

2. Inverse the pressure buffer.

3. In the "*System*" menu select the "*Single Step*", open "*Pump*", "*Valve 6*", "*Valve 11*", "*Valve 12*", ink will be drained from the "**OUT**" port.

4. After ink drained, quit "*Single Step*" menu, restore the press buffer and the "**OUT**" port.

5. Pull out the *Drainage Pipe*, drain the ink left in the mixing tank and restore it.

Note

This Operation can also be used to drain the solvent.
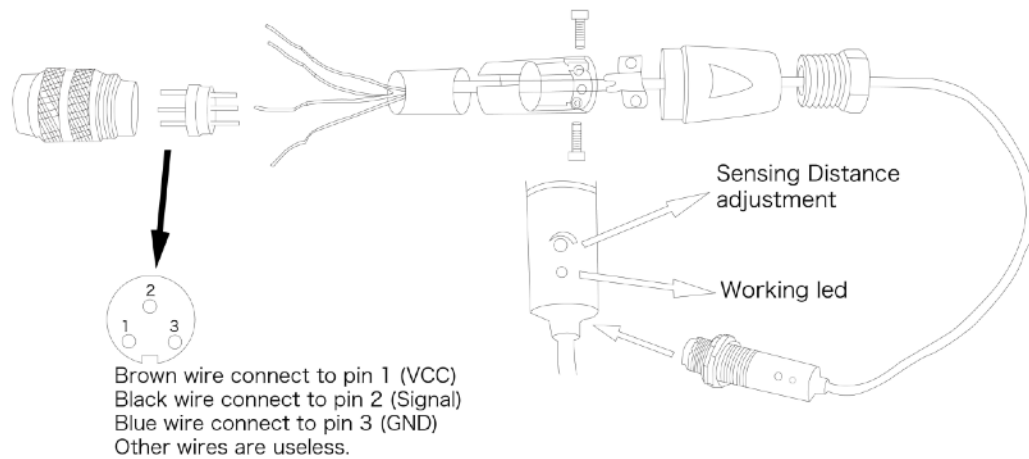
3.7 Pipe cleaning

This operation is usually used to device maintain and change ink.
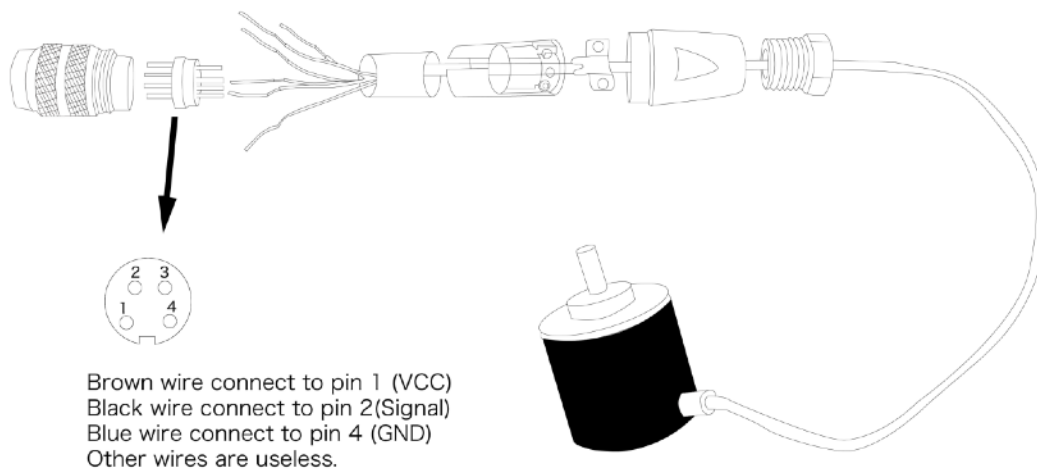
The procedures are as follow:

    1. Fill the mixer tank with the cleaner after ink in the tank was drained (refer to the Draining Ink).

    2. In the "*System*" menu select the "*Single Step*", open "*Pump*", "*Valve 6*", "*Valve 11*", "*Valve 12*", waiting for 10 minutes.

    3. Shutdown "*Valve 12*", open "*Valve 8*", washing the print head gutter (refer to Clean stop step 2) 30 seconds, waiting for 3 minutes.

    4. Quit "*Single Step*" menu and do "*Nozzle Cleaning*" 1 to 3 times(refer to Print head cleaning).

5. *Drain* cleaners in all pipes and mixer tank (ops refer to "*Draining Ink*").

3.8 Shaft Encoder and Photocell Connection

3.8.1 Photocell Connection

Sensing Distance adjustment

Working led

Brown wire connect to pin 1 (VCC)
Black wire connect to pin 2 (Signal)
Blue wire connect to pin 3 (GND)
Other wires are useless.

3.8.2 Shaft Encoder Connection

Brown wire connect to pin 1 (VCC)
Black wire connect to pin 2(Signal)
Blue wire connect to pin 4 (GND)
Other wires are useless.

FASTJET

FASTJET A400   Performance overview

Printing Capability

- Can print 1 to 4 lines of the print at speed up to 300 meter/min.
- Font option: 5x5, 5x7, 7x9, 11x9, 16x11, 24x16, 32x24.
- Maximum print dot: 34.
- Character height: 2-12mm.
- Print Distance: best distance 10mm, and range 2-20mm.
- Current and expiration time, date coding and shift coding serializer.

Approximate Weight

- Unpacked and dry: 27KG
- Packed and dry: 48KG

Print Head & Umbilical
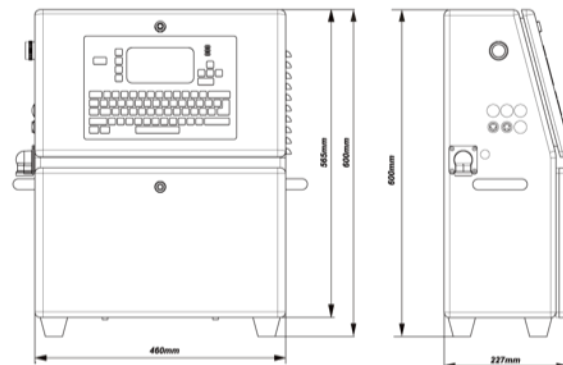
- Stainless Steel Printhead Dimension:
    Diameter 35mm;
    Length 260mm.
- Umbilical Dimension:
    Diameter 21mm;
    Length 2.5 meter, or customized

Accessories

- Positive air kit
- Product sensor
- Printhead stand
- Maintenance kit
- Conveyor belt
- Paging machine

Working Conditions

- Power Supply: 200-240 V/50-60Hz.
- Working Temperature：5-45 ℃.
- Working Humidity: 0-90%.

FASTJET   Sales and service network in China

North China region: Beijing, Tianjin, Shijiazhuang

Northeast region: Shenyang, Changchun, Harbin

East China region: Shanghai, Suzhou, Nanjing, Hangzhou, Ji'nan, Qingdao, Nancang, Xiamen, Hefei, Taipei

South central region: Wuhan, Zhengzhou, Guangzhou, Shenzhen, Hong Kong, Dongguan, Changsha

Southwest region: Chongqing, Chengdu, Kunming, Guilin, Nanning

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More soon...

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