



HandTop Flatbed Ink Jet Printer Operation Manual

HT3020UV-C-K

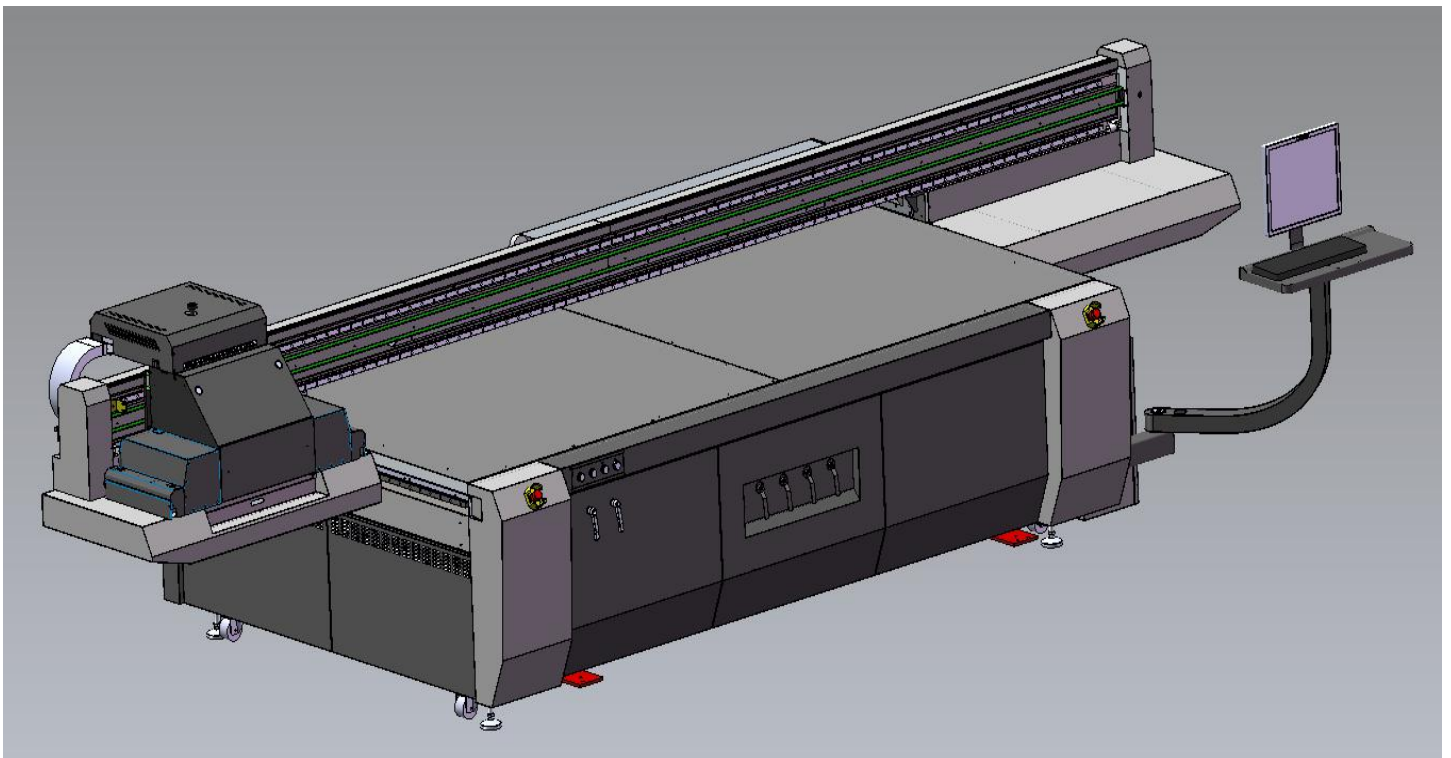


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Foreword

- The UV inkjet printer is a precision machine equipped with extremely fine mechanisms and integrated circuit. With a view to use the printer in an optimal condition, we sincerely compiled this operation manual for your reference.
- This manual has been prepared for end users' easy understanding and using of this printer safely and efficiently. Please read all the contents carefully in detail before operating the printer.
- Alterations of any contents in this manual are subjected to change without notice for technical updates.
- If you have any question on using this printer, please do not hesitate to contact your local dealer or our technical assistance.

1. Indications of symbols

Note the specific features given with these symbols in order to avoid property damage and personal injury in the operating process.



This symbol indicates the failures to be caused by the ignorance of misunderstanding of the instruction may probably lead to equipment damage or personal injury.



This symbol indicates the compulsory operations.



This symbol indicates the improper operation to be strictly prohibited

2. Precautions of operations



Caution

Please supply the printer with rated voltage and frequency, improper power input may cause functional abnormality or damage to the printer.

Any unauthorized alteration is strictly prohibited, or it might cause parts malfunction or damage to the printer.

Never use the printer in a non-ventilated or stuffy workplace, or it may lead to toxic hazards to operators. A ventilator is always a necessity.
Any disassembly or replacement of the parts and cables is strictly prohibited in the state of power-on.
Avoid any body contact with the locomotion parts in the process of printer working, or it may lead to equipment breakdown or personal injury.
The printer is a precision equipment and should always avoid strong impact or shake in any process of loading, installation and operation, or it may result in equipment damage.
Avoid any liquid spilled on the electronic parts or it may result in parts malfunctions.
Keep the chemical consumables away from non-qualified individuals and stored according to the specific instructions.
Avoid setting foot or heavy items placed on the printer or it may result in equipment damage.
Verify that the printer is properly ground wired or it might cause some electric shock risks.
The operator must be well-properly trained and should operate the machine under the instructions, or it may easily cause equipment damage or personal injury.
Always remember to press the scram stop at any emergency, and the printer should not be activated until all the malfunctions are settled.
Avoid continuous eye-contact with the ultra-violets of the lamp.
Wear rubber gloves to avoid chemical liquid spilled on human body. Flush with adequate purified water immediately if accident happened and see a doctor afterwards.
Verify that there is no individual or item within the printing area.
The treatment of the waste chemicals should abide by local environment regulations.

Brief introduction

1. Printer Applications

The UV digital printer is able to print directly on diversified media. The model can be used in advertising production such as banner, panel led, POP stand, vinyl display, meanwhile make creative innovation to the traditional craftwork in the decoration industry, of which fine-art glass, wooden products, natural or artificial leather, ceramic tiles and wallpaper, etc, can also be printed on.

2. Printer Features

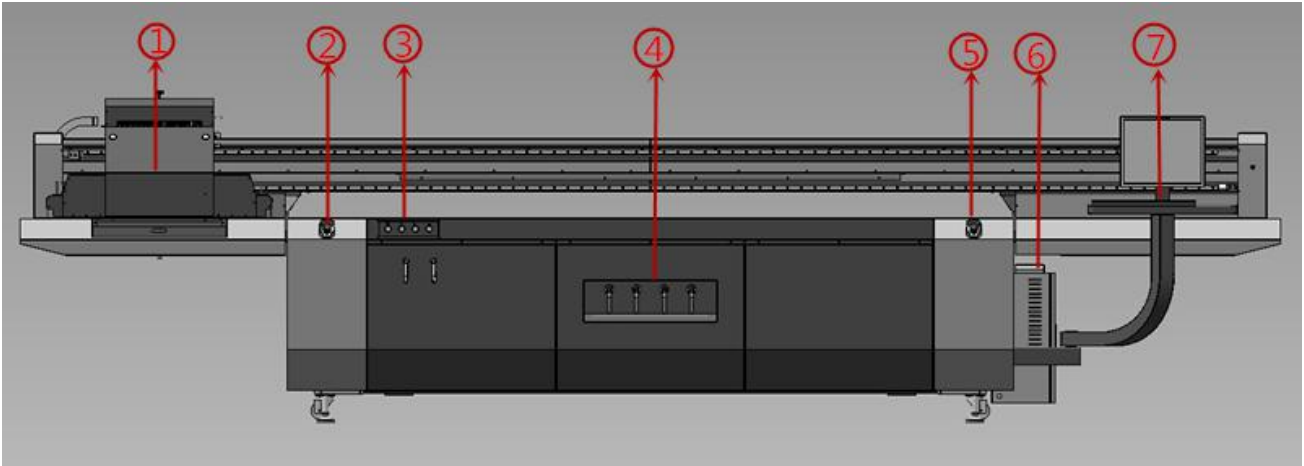
- With the self-R&D ability that enables constant advancement.
- Professional assembly crafts guarantee the perfect qualities.
- Adopt excellent quality parts of worldwide famous brands, e.g. towline of EGUS.GERMANY, servomotor of FUJI.JAPAN, synchronous belt of MEGADYNE.
- Iron beam plus dual lead rails assembly on X-directional mechanical structure enables the carriage to run stably.
- High precision linear encoder strip for the positioning of the carriage.
- Optical fiber with a maximum transmitting speed of 1.25Gb/S and zero-interference ability.
- Industrial PCI data transmitting interface with excellent proof to electric-magnetic interference.
- Automatic head height adjustment enables the head height adjustable to different media thickness of 0-100mm.
- A dual lead screw on the Y-directional mechanical structure guarantees the basis of the stable and high precision stepping movement.
- Anti-crashing attachment can effectively reduce the head-strike risks.
- Self-checking on printer running malfunctions.
- Double-class ink-heating automatic control guarantees the optimum viscosity of ink for printhead continuously discharging.
- Backup storage battery activated automatically for negative pressure system in the state of main power-off.
- More intuitive and user-friendly operating interface.
- With the ability to 24hoursX7days continuous running of commercial printing production.

3. Printer Configurations

Model	HT2512UV-FK Kyocera Flatbed Inkjet Printer			
Printhead type	Kyocera high-performance drop-on-demand piezo heads			
Printhead array	2-4 Pcs			
Maximum resolution	1200*1200 dpi			
Printing speed		4 Pass	6 Pass	8 Pass
	4 head	52	42	36
Print size	2.5m in width by 1.2m in length			
Media type	Hard and soft materials			
Printed thickness	0-100 mm			
Applications	glass、 acrylic、 wooden board、 ceramic tile、 metals、 PVC board、 corrugated board、 plastic board, etc			
Ink type	Environmental-friendly UV ink (non-VOC)			
Color mode	C、 M、 Y、 K、 Lc、 Lm、 V、 W (optional)			
Support file	Adobe Postscript Level 3、 PDF、 JPEG、 TIFF、 EPS、 AI			
Support RIP	Onyx、 Caldera			
Computer system	Windows7			
NET. weight	1200KG			
Dimension	132 cm [H] × 196 cm [W] × 476 cm [L]			
Power consumption	5.4 KW (30A)+3.5KW(Vacuum)			
Power input	AC 220V (±10%), 50 / 60 Hz			
Working environment	Individual, clean, shadowy and dust-free workplace with associated ventilation temperature: 18°C ~ 30°C (64°F ~ 86°F) humidity: 30% ~ 70% (frost-free)			
Certificate	CE, FCC			
Remark. All technical configurations are subjected to change without notification.				

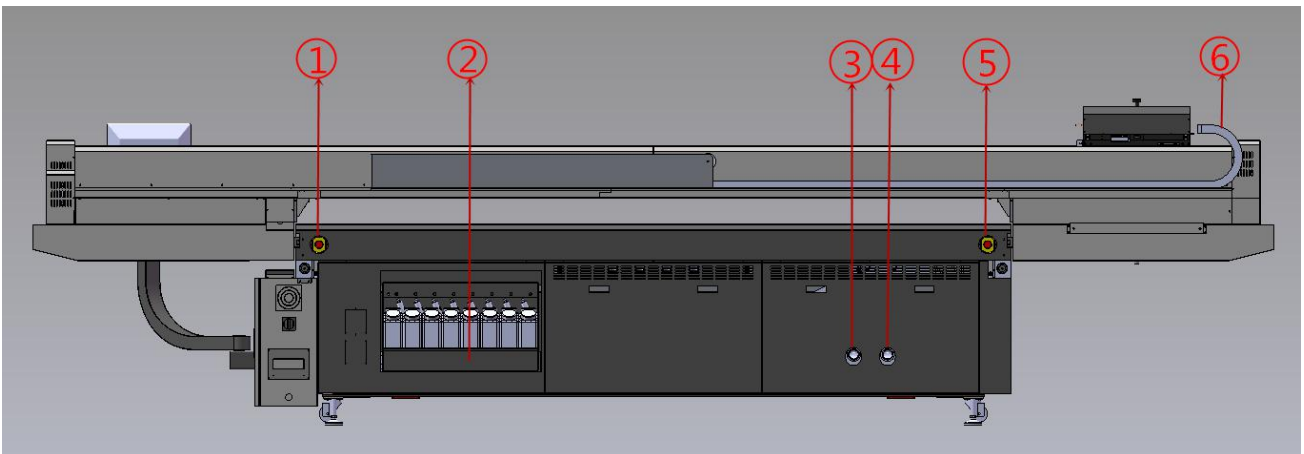
4. Structure Diagrams

4.1 Front-view of the printer



- | | |
|-------------------------------|------------------------------|
| 1. Carriage | 2. Front-left emergency stop |
| 3. Equipment control panel | 4. Suction control panel |
| 5. Front-right emergency stop | 6. Electrical cabinet |
| 7. PC on/off button | |

4.2 Rear view of printer



- | | |
|--------------------------------|---------------------------|
| 1. Rear-right emergency button | 2. Main ink tank cabinet |
| 3. Blower exhaust outlet1 | 4. Blower exhaust outlet2 |
| 5. Rear-left emergency button | 6. Towline |

4.3 Equipment control panel



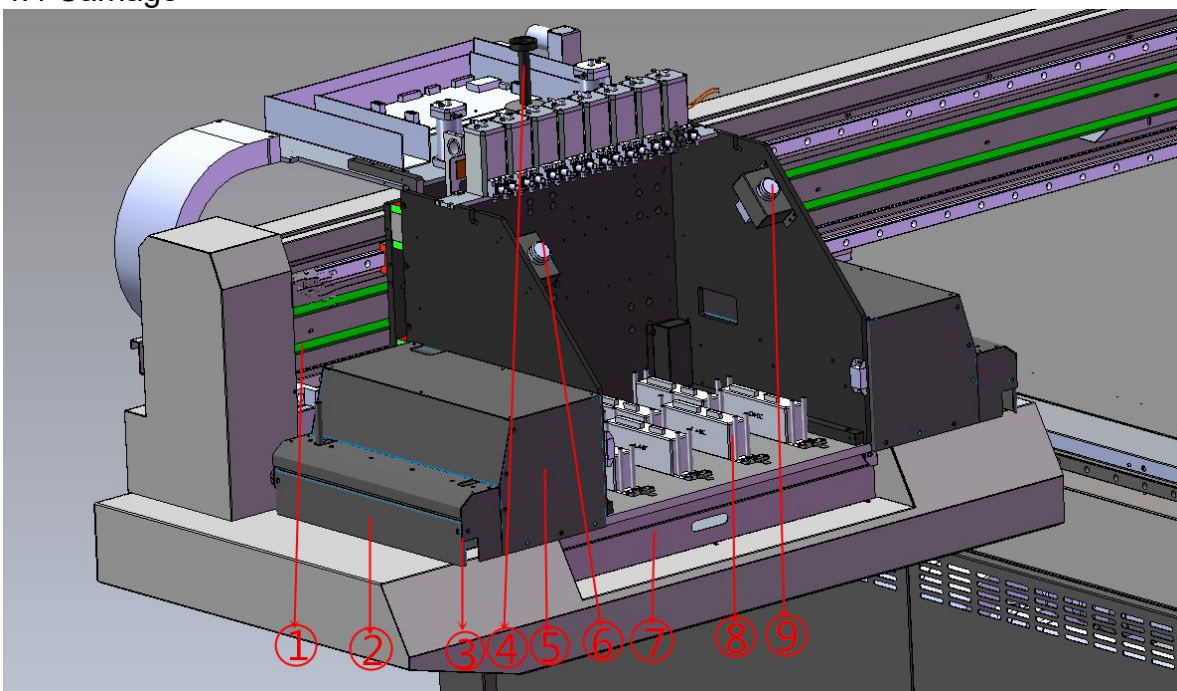
1.Equipment power button

2.Alignment/registration pin lever

3.Table suction /blow change-over lever

4.Suction on/off button

4.4 Carriage



1. Belt
2. Anti-crash sensor
3. Ionizer
4. Spindle
5. LED Lamp
6. Color ink purge button
7. Waste ink tray
8. Kyocera Print head
9. White ink purge button

4.5 Table suction control area



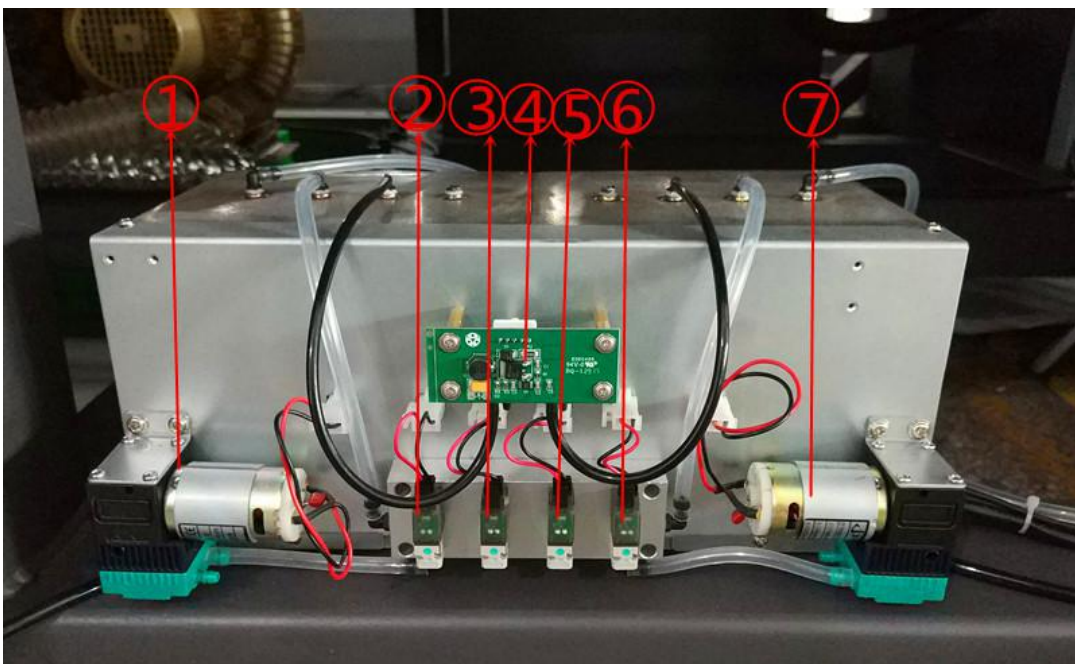
- ① Front-Left Table Suction Zone Valve
- ② Rear-Left Table Suction Zone Valve
- ③ Rear-Right Table Suction Zone Valve
- ④ Front-Right Table Suction Zone Valve

4.6. Ink supply system



1. White steering pump
2. Main ink tank
3. Capsule filter

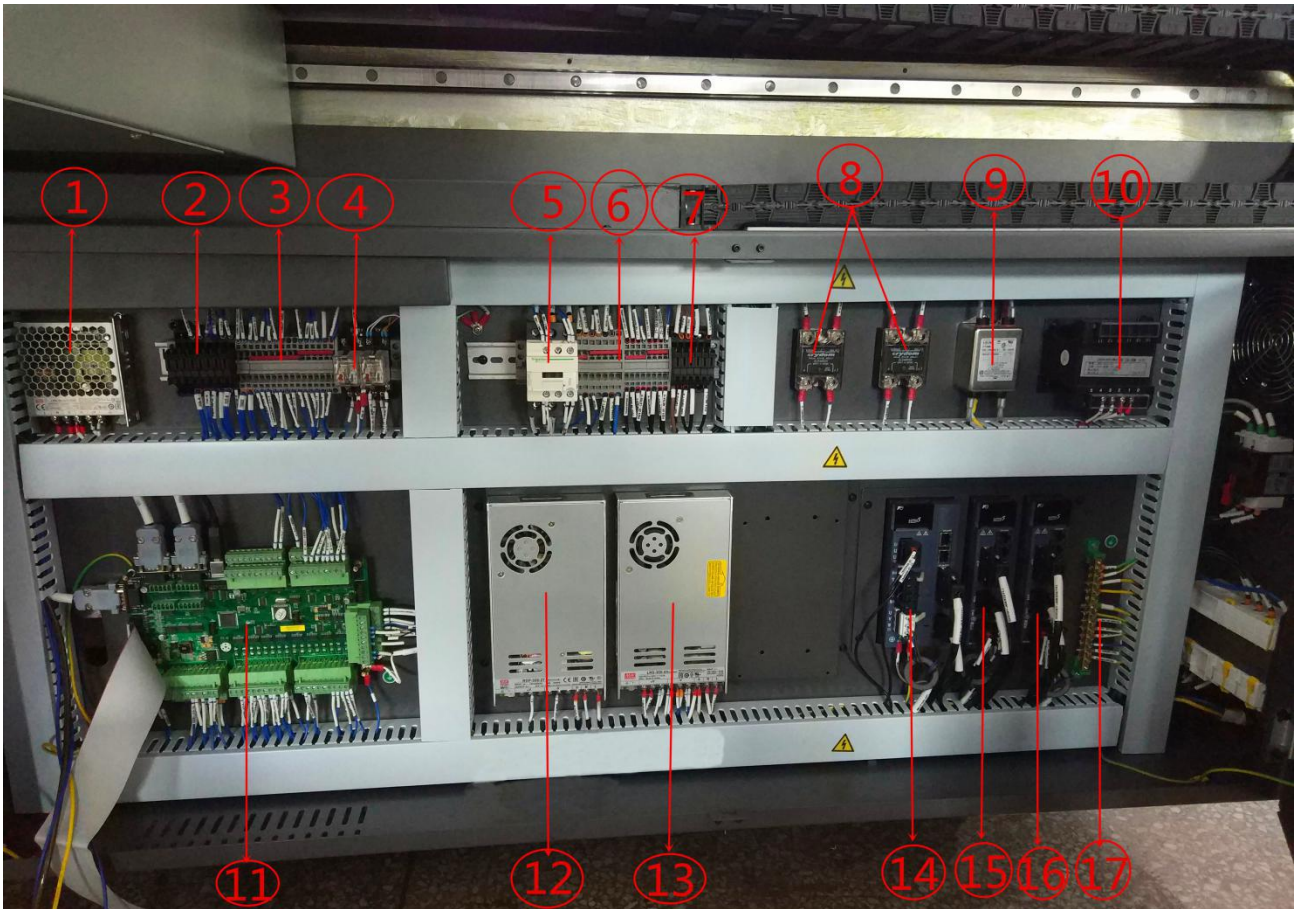
4.7 Negative system



1. Color negative pressure pump

- 2. Color air charge pump
- 3. Color air discharge pump
- 4. Auto negative control board
- 5. White air charge pump
- 6. White air discharge pump
- 7. White negative pump

4.8 Electrical system



- 1.24V power supply
- 2.DC + 24V power supply fuse
- 3.DC + 24V terminal block
- 4.Relay (Sub ink tank heating & Ionizer)
- 5.Ac contactor
- 6.AC220V terminal block

7.AC220V power supply fuse

8.Surge filter (Blower1&2)

9.Wave filter

10.Isolating transformer

11.External device board

12.27V power supply

13.24V power supply

14.X axis servo driver

15.Y axis servo driver(left)

16.Y axis servo driver(right)

17.Grounding terminal block

4.9 Equipment symbol diagram

	 <p>CAUTION Pinch point. Keep hands clear.</p>
	<p>PREVENTIVE MAINTENANCE RECOMMENDATION</p> <p>CLEAN THE QUARTZ GLASS DAILY</p>

	⚠ WARNING Hot. Do not touch.
---	--




	⚠ CAUTION High intensity ultraviolet light. Can burn eyes and skin. Wear proper eye protection.
---	---

	⚠ WARNING Hazard. Eye protection and gloves required.	
---	--	---

	⚠ CAUTION Pinch point. Keep hands clear.
---	--

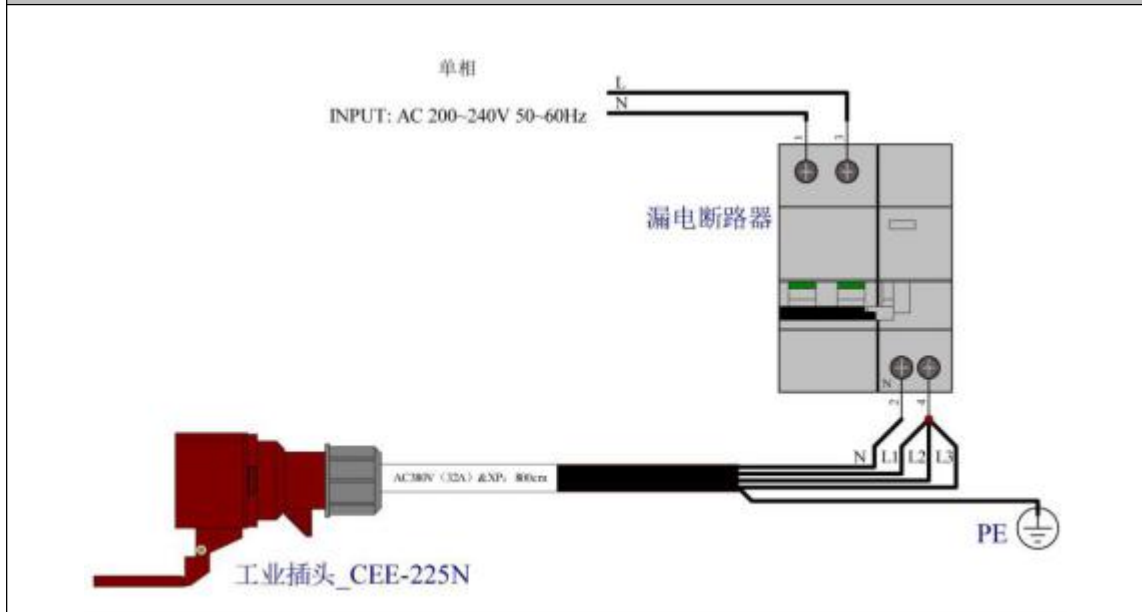
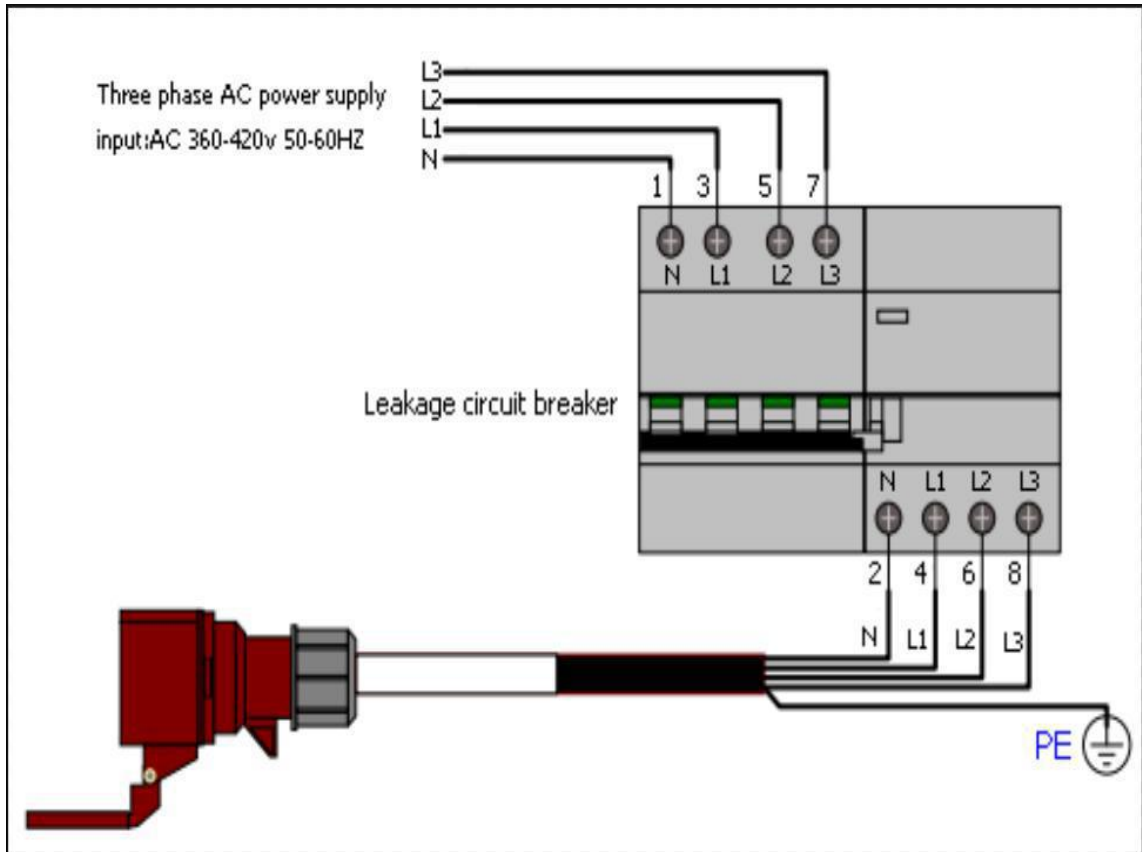
	⚠ CAUTION Hazard. Hands might get caught on the moving carriage. Keep hands clear.
--	--

	⚠ CAUTION Heavy object. Two person lift required.
---	--

	 <p>WARNING Hazard. Eye protection and gloves required.</p>
	 <p>DANGER RISK OF ELECTRIC SHOCK Turn electricity off prior to servicing.</p>  <p>WARNING Hazardous voltage inside. Only authorized personnel may service this equipment.</p>
	 <p>CAUTION Pinch point. Keep hands clear.</p>
	 <p>CAUTION Heavy object. Two person lift required.</p>

1. Equipment working conditions

● The space of the workshop should be 7.5m in width by 5m in length at the minimum
● Constant humidity of 30% ~ 70% RH
● Clean and dust-free
● Sheltered from sunlight
● In a good ventilating condition
● Certified power outlet of which maximum consumption of 6.5kw and amperage of 32A is required
● Rated voltage of 220V and the grounded voltage should below the value of 3V
● The space of the workshop should be 7.5m in width by 5m in length at the minimum
● Constant humidity of 30% ~ 70% RH
● Clean and dust-free




1. Pre-installation

2.1 Prepare the working field under previous instruction

- 2.2 Install distribution box under previous instruction, prepare a 15KVA voltage regulator
- 2.3 Prepare 2 pcs of monkey wrench, 1 pcs of spirit level, 12L of coolant(pure water or anti-freeze fluid) for the LED lamp chiller
- 2.4 Arrange a forklift for at least 8T(with extension arms) before the equipment arrives. If it needs to be unload from the container or hoisted to buildings, a crane will also be needed. Make sure the passage clear for the machine.




2.5 PC configuration requirements

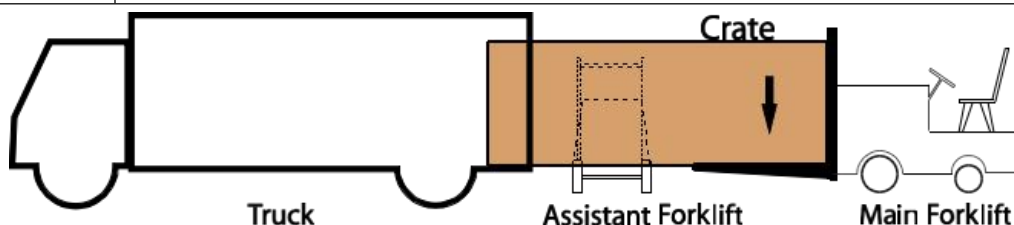
Main board	CPU	RAM	HARD DISK	OS
PCI-E plug supported	Intel Intel coreI7 above (Industrial PC)	≥8G	≥500G	Windows7 64 BIT
	Handtop control software is not available in Windows8 and Windows10 system for the time being			

2. Transportation and unload

3.1 Site transport

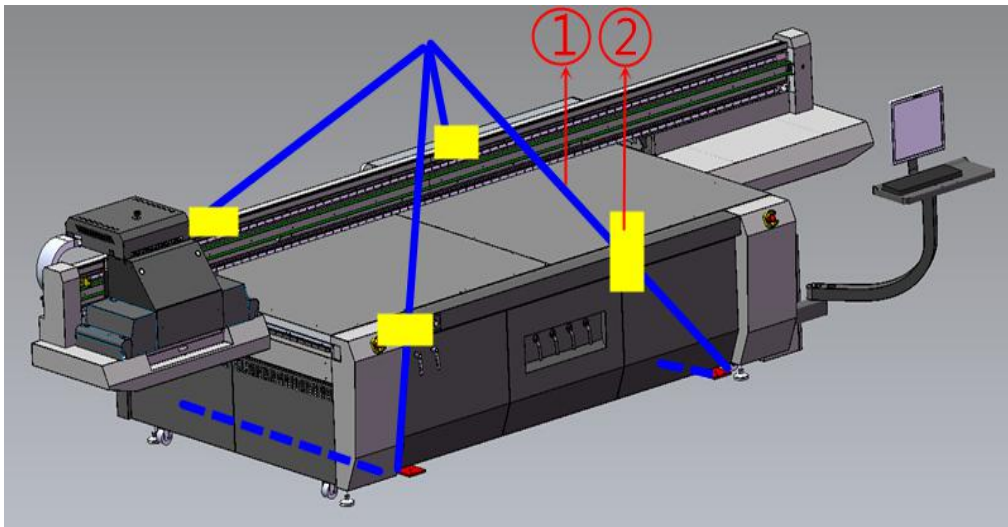
Equipment size & weight 1800 kg 5220mm(L) * 2710 mm(W) * 1380mm

	This printer is belong to heavy, high precision and expensive machine, it is highly recommended to hire professional carriers to perform loading and transport operations to avoid accidents.
	Must insert the forklift in the front side of the package box (Marked as FRONT)
	Please hoist the machine together with the package base when performing hoisting operations, this is to prevent the machine been distorted by outer force.





The loading and transport of the machine would require forklift with more than 8T capacity. The distance between the arms should be at least 2.0m, length of the arms should also be at least 2.0m (No less than the package box width) .



3.2 Unpacking guides



Notice the forklift label here, insert the forklift arms down here.

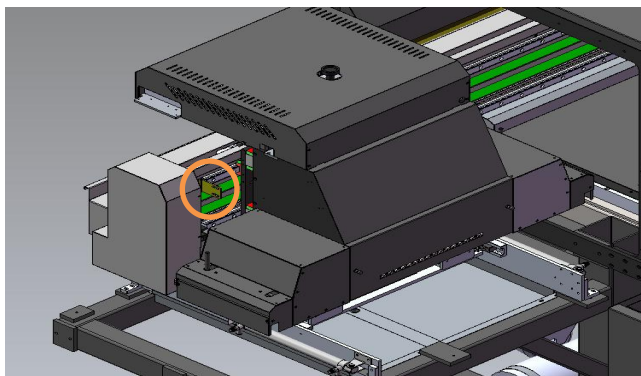


Disable the screws on wooden package.

4. Installation instructions

4.1 Check and acceptance

- Verify that all electronic units and mechanism are in normal state as soon as the printer is placed properly.
- Disassemble all the fixtures of the printer.
- Verify the all accessories listed are completely included and sign the bill.

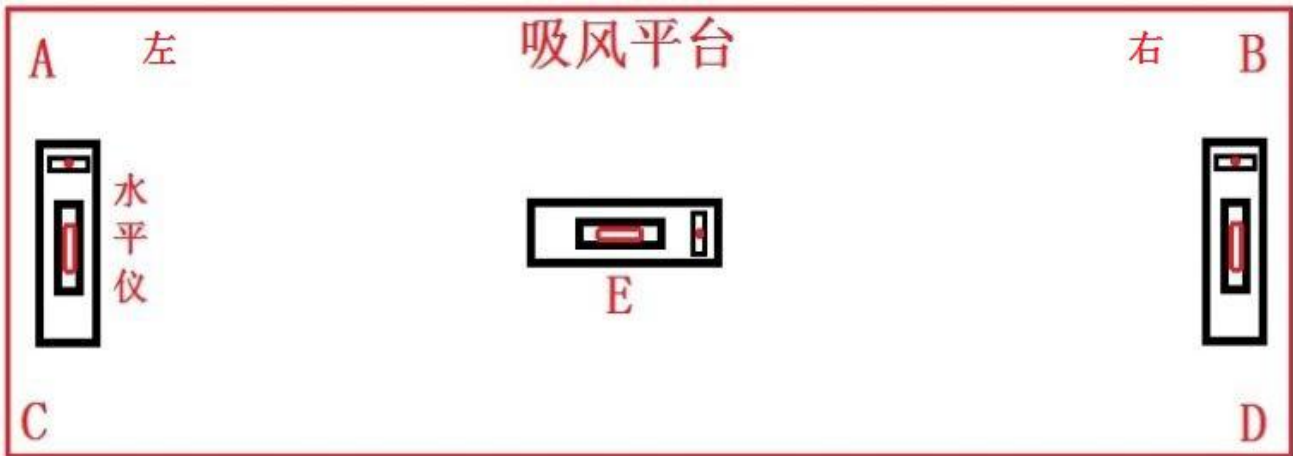


4.2 Equipment level adjustment

Tools: Level (Precision range 0.02mm/m) , monkey wrench



When adjusting the level on the right/left side, the level should face the same direction.

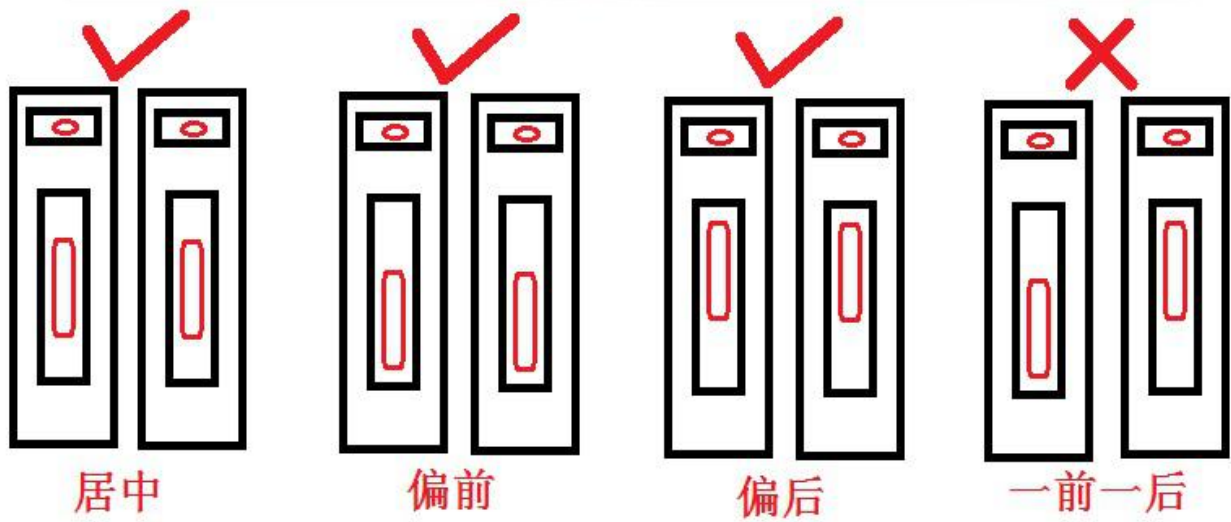


水平仪放置位置示意图

1. There are 6 main supporting foot cups on the machine body. First, raise up all the foot cups, and lower down the 4 foot cups in the corner of the frame, make sure they touch the ground. Jack up the foot cups until the yellow base leave the ground (5mm height would be enough)
2. Place the level on E position, check the height difference of left/right side
3. Place the level between position A and C, or between position B and D, check for the height for A,B,C,D points, then adjust the foot cup height according to the reference from step 2.
4. Adjust the 4 points to the same level with the assist of level, lock the foot cup screw to prevent loose
5. After the level adjustments, remove the yellow bases, lower down all the foot cups to the ground, lock the screws
6. Check the machine level again (Do not raise the foot cup too high, in case the machine shakes when running)



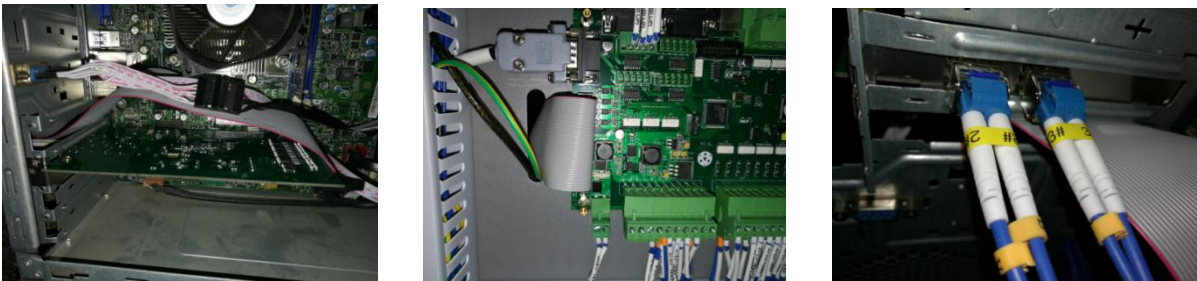
After adjusted the level, check for the error direction should be in the same direction (No more than 1 unit on the measure ruler) as below diagram shows.



4.3 PC & accessories installation



Install PC monitor holder, and put the USB PC on/off cable, monitor cable, power cable then put inside the electrical cabinet.



Install PCIE card into the PC main board slot, connect the movement control cable to the external device board.

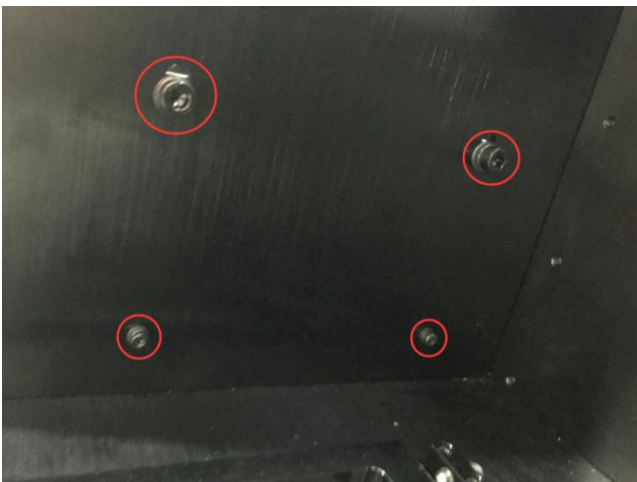
4.4 UV LED lamp assembly

4.4.1 LED assembly

- 1 Unpack the LED lamp carefully, install the lamps to the LED housing, connect the power cable, shutter control cable, anti-crash sensor cable.
- 2 Anti-crash system should always lower 0.5mm than the carriage plate.

***How to adjust the carriage to 2mm**

Put a piece of acrylic on the platform ,then run a nozzle test to detect the height(default height is 2MM), loose the screws of the anti-crash plate, use 1.5mm thickness guage to adjust the height of the plate.



LED housing screws (pic 1)



Anti-crash plate height adjustment (Pic 2)

4.4.2 Chiller installation



(图一)



(图二)



Connect the re-circulation tube to the inlet and outlet of the chiller (no particular order) then tighten the tubes.

4.4.3 Chiller setting



1. Current water temperature
2. Power switch
3. Temperature setting
4. Add button
5. Setting button, long press for 3s for the temperature setting adjust (default 25°C), press again for the temperature variation range(default 5°C). The set temperature should not be 5°C above or below the room temperature, in case condensation on the surface of water tube.
6. Reduce button
7. Power indicate light
8. Water pump working light
9. Alarm setting instruction

4.5 Power input

- The printer is high power consumption equipment of 6.5kw. The input power has to meet with the rated value of AC 220V and 32A.

The specification of the power cable should be the diameter of 4 m² GB. It is also required that the printer to be properly ground wired.

4.6 Lead screw installation

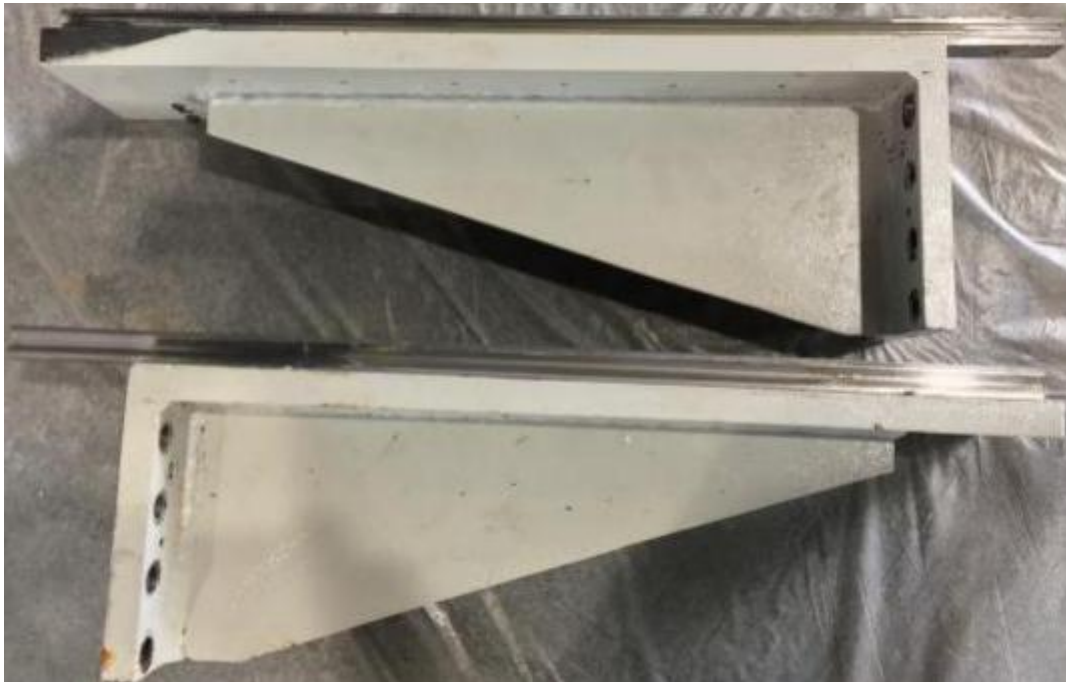
Foreword: For the package and transportation, 2518 Y axis lead screw needed to be dismount, and install after unpacked

Parts:Guide rail stand,Rear bearing stand, lead screw

Tools: Bolt install&uninstall tool, allen wrench, screw driver, glove

Steps:

1. check the parts:



Guide rail stand x2



Rear bearing standx2



Lead screw x2



Block nut (lead screw)

2 Installation of guide rail stand A. dismantle the screw



B. Put the screw on the stand 8 pcs



C. Insert two bolts



D. Mount the guide rail screw.



E. Tighten all the screws



3. Dismount the blocks from X&Y axis

A. Dismount Y axis (carriage) block



B. Dismount the block from X axis, and take off the slide

Note: Beam is not fixed at this time, it can be pushed just by hand. Be aware of the beam slides backward, and slipped off the guide rail!



4. Install rear bearing stand

A. Loose the screws under the guide rail stand



B. Mount the screws, then inset the bolts, and tighten the screws



5. Install left lead screw

A. Dismount the screws from the front bearing stand



B. Put on the glove, and place the lead screw in position, mount the front, rear bearing stand screw, then insert the bolt

Note: When lifting and placing the lead screw, the driver can not be forced in any kind, hold the front bearing stand or the lead screw it self, to avoid damaging the driver!



C. Install the limit switch in the end of the Y axis, it positioned on the rear bearing stand.



6. Install right lead screw

A. Loose the screws from the front bearing.

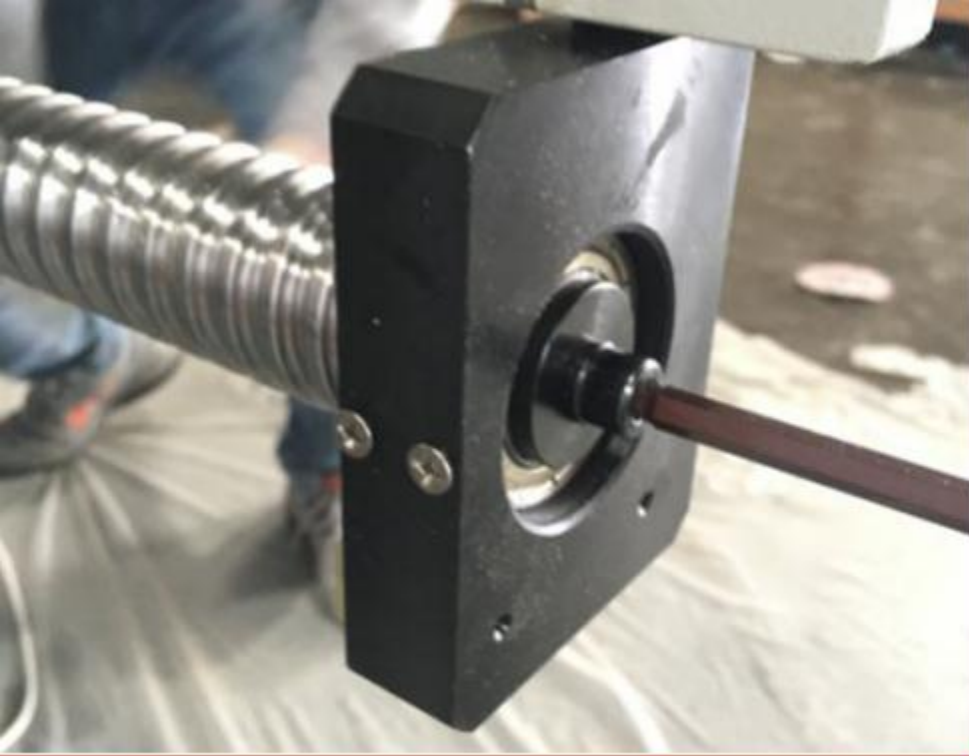
B. Use a rope to hang the back side of the lead screw, (two individuals are required) then place the lead screw onto position with the front bearing stand together



7. Tighten the block nut

A. Push the beam to the end of the front.

B. Use allen wrench to rotate the screw in the end of the left&right lead screw, push the block nut to the front.



C. Dismount the block from the right lead screw



D. Tighten the three screws from the block nut(both lead screw has to be parallel)



5. Software and driver installation

5.1 Topjet installation

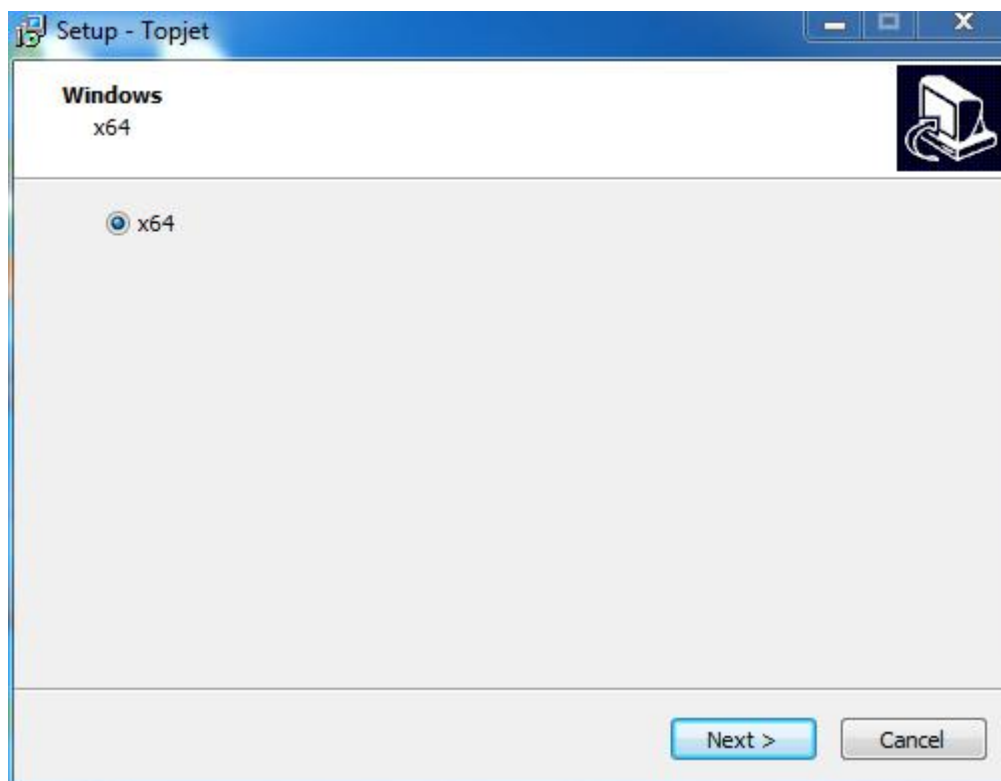
1. Double click the TopJet package for your model

 HT_KJ403_V3017_20171211_KEY 2018/7/20 下午 12:... Application 24,014 KB

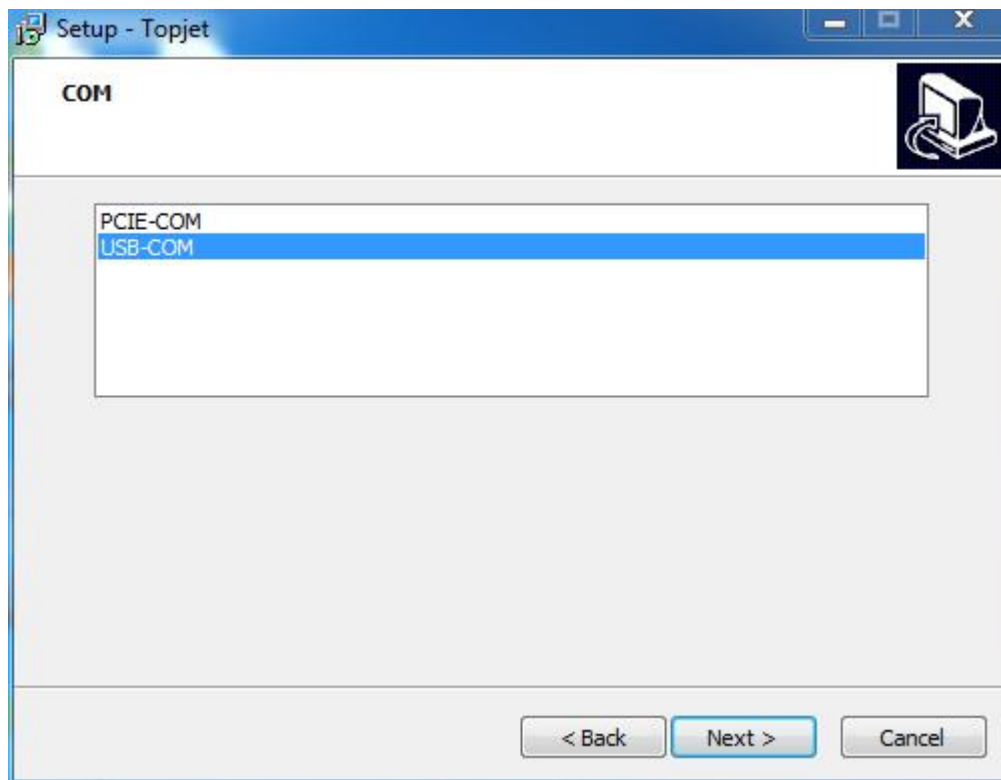
2. Select language



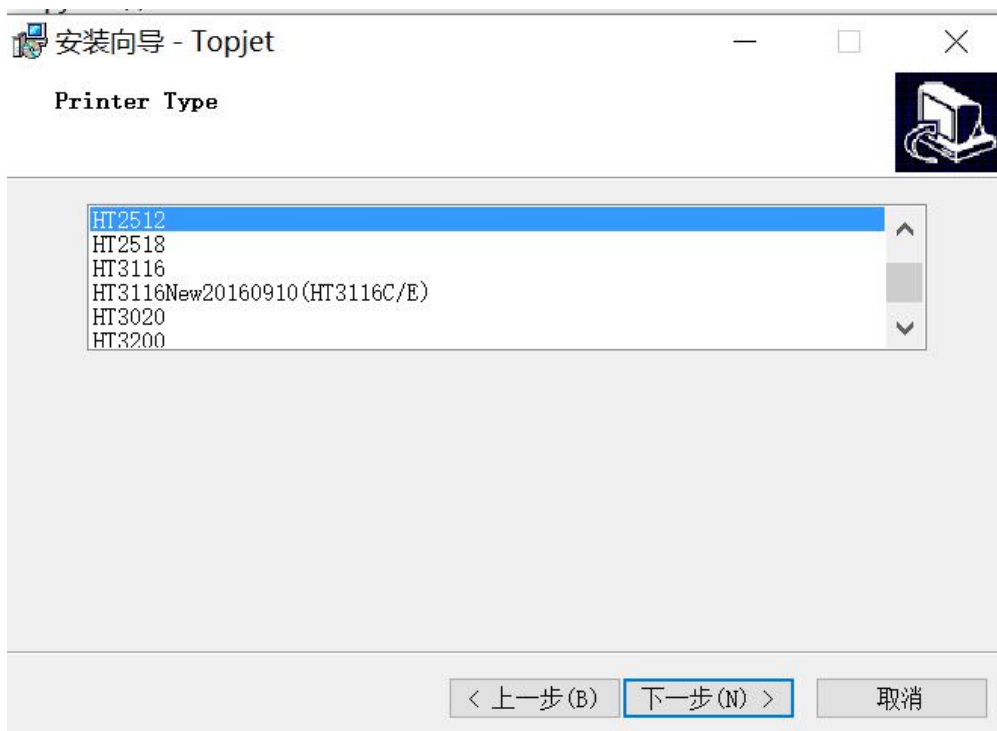
- 3 The latest Topjet version only support 64bit



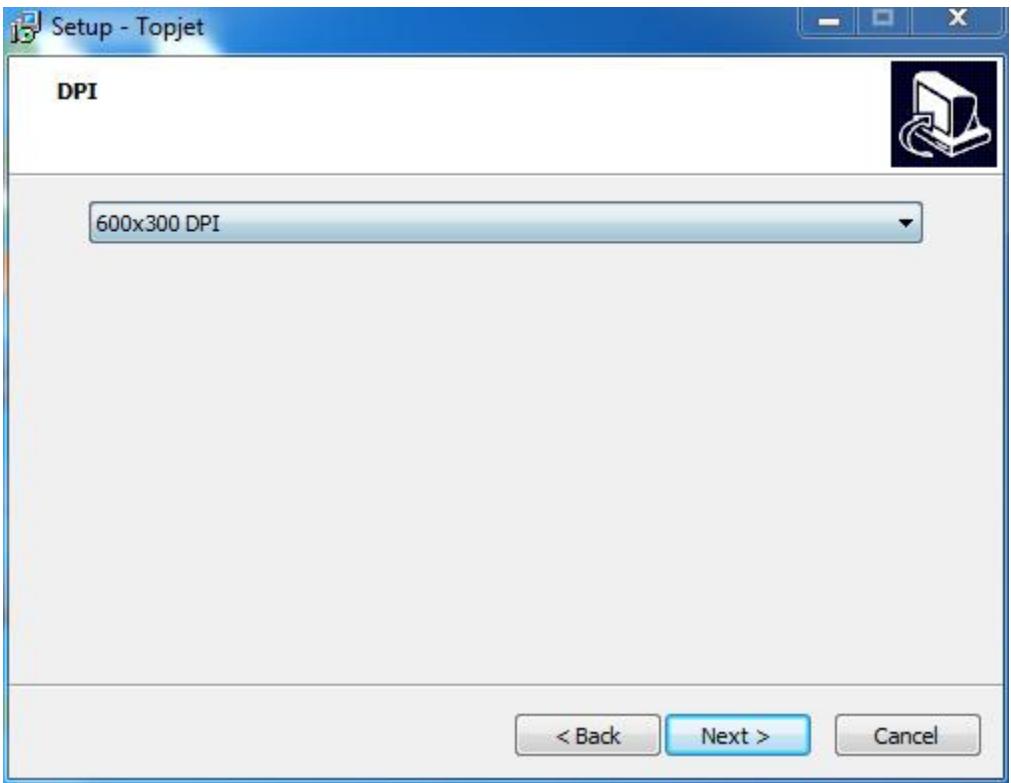
- 4 Select communication way



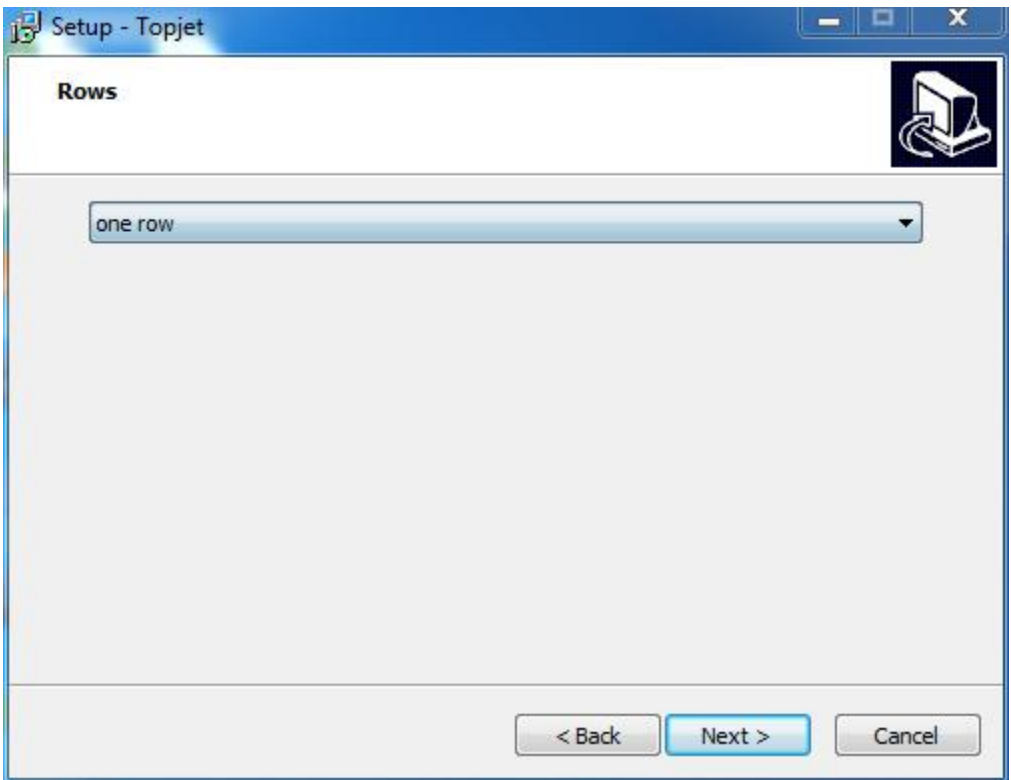
5 Select equipment model



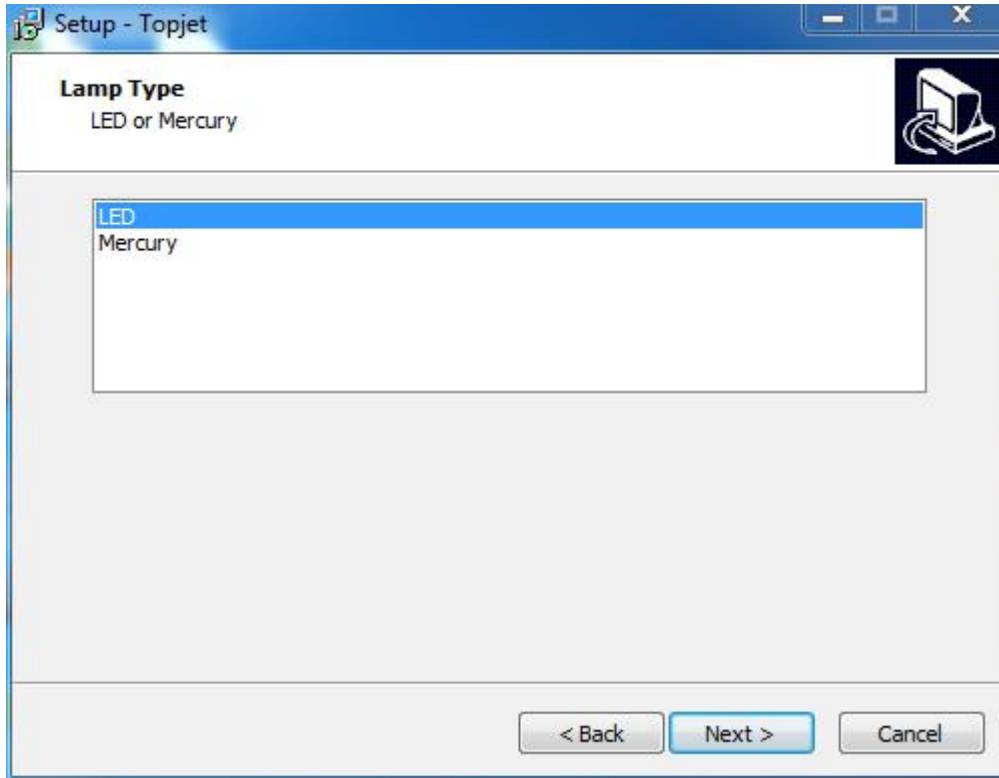
6 Select print head DPI



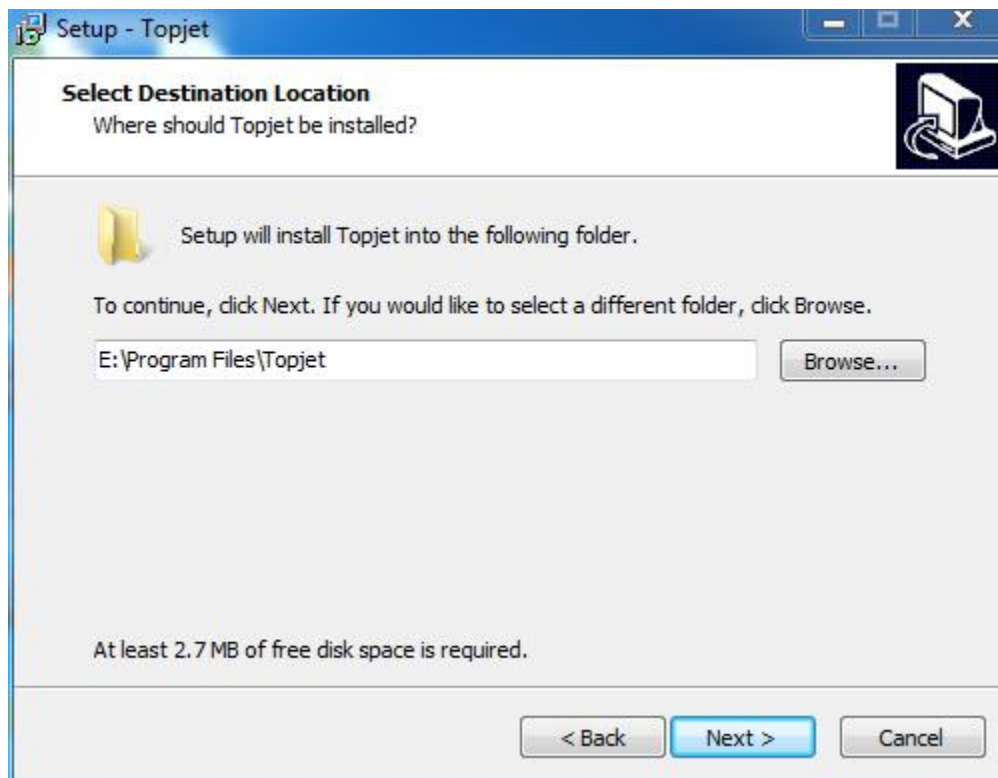
7 Select print head row(s)



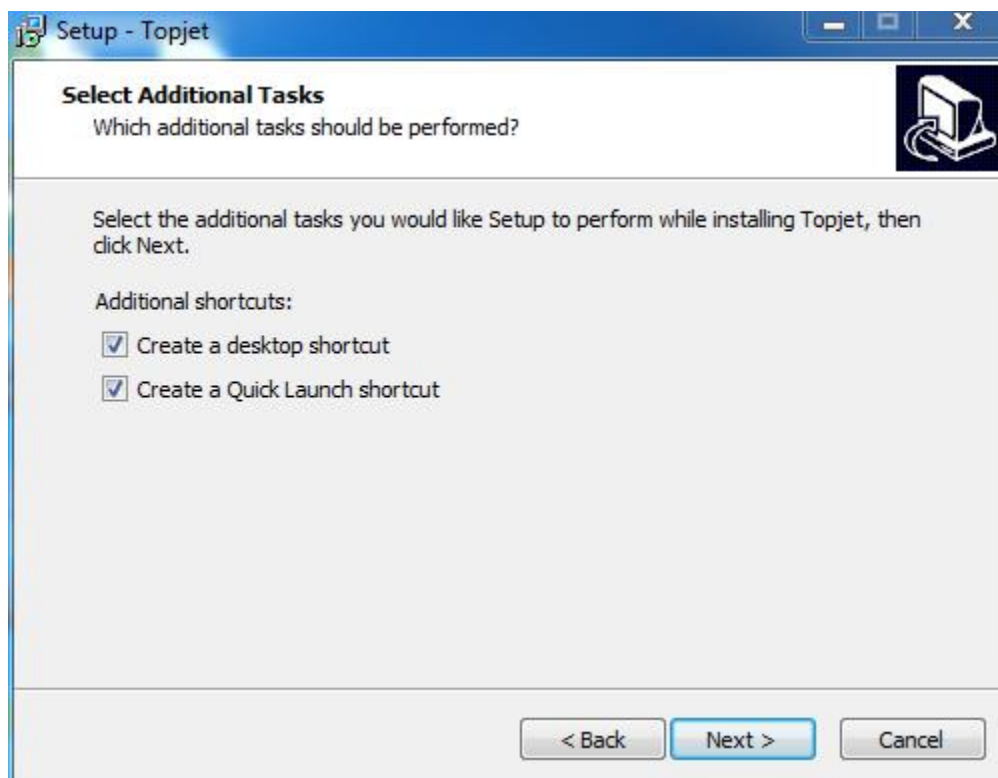
8 Select UV lamp type



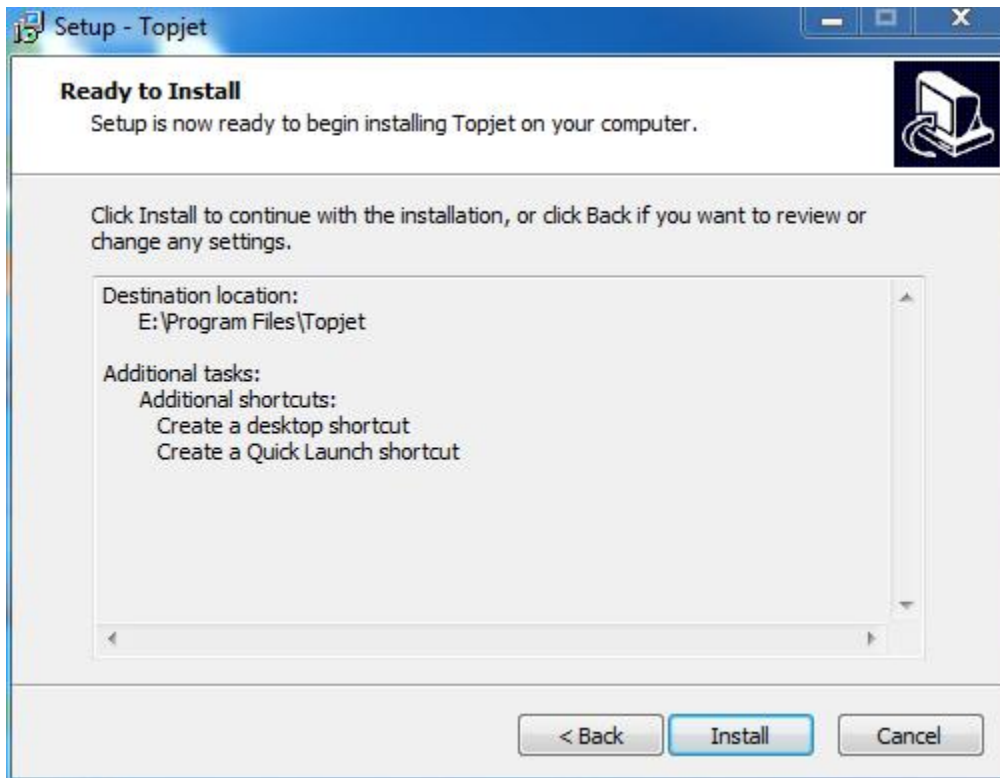
9 Select Topjet directory(C drive is not recommended)



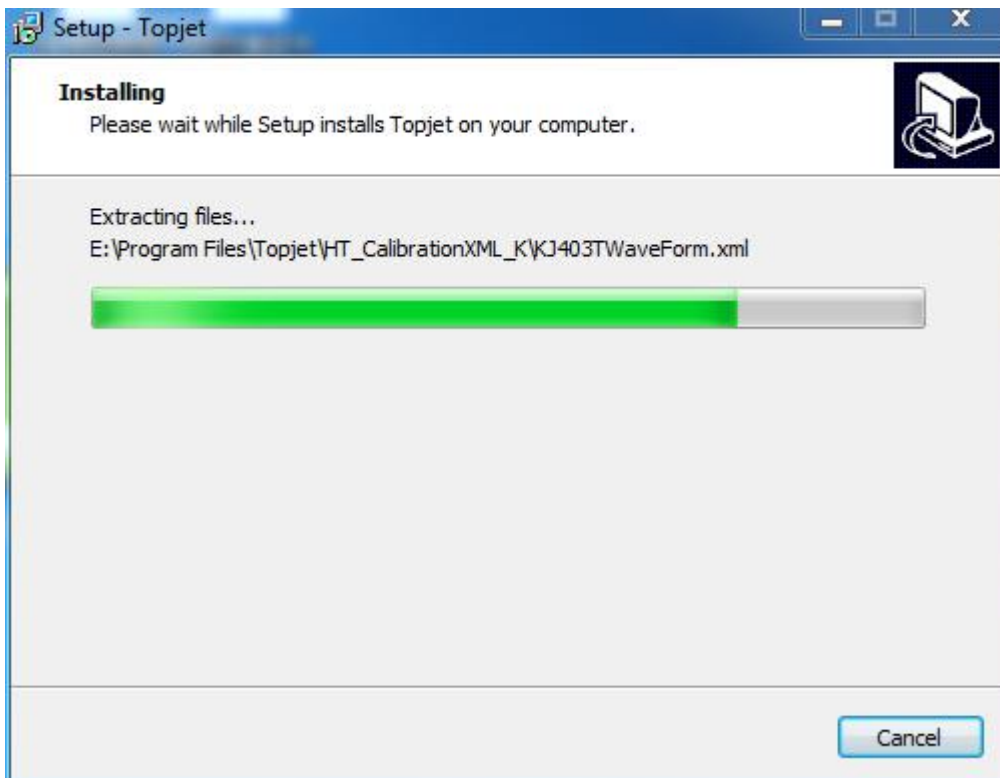
10 Select shortcut



11 Finish



12 等待完成安装。



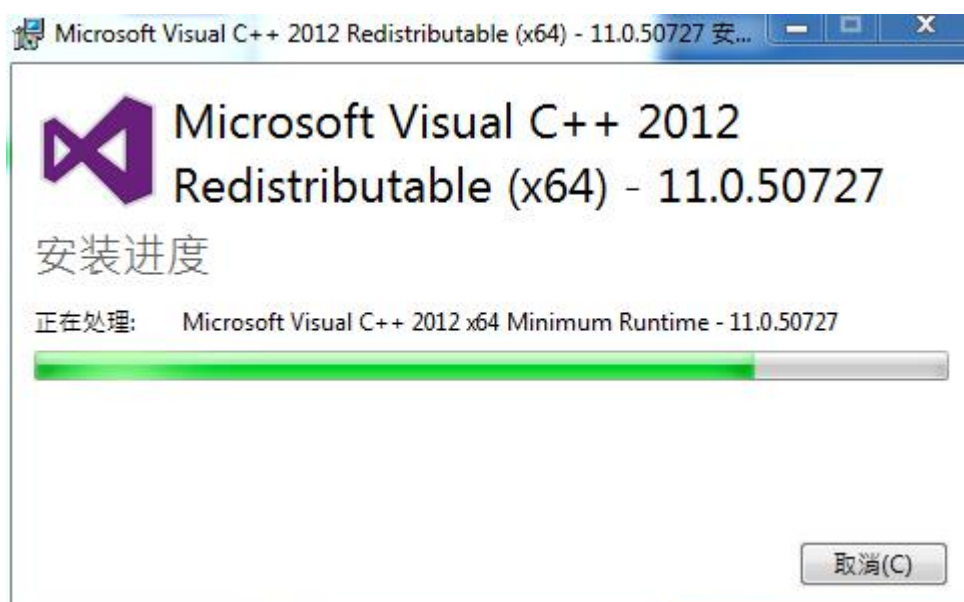
13

Select Agreed to proceed



14

Finish



15

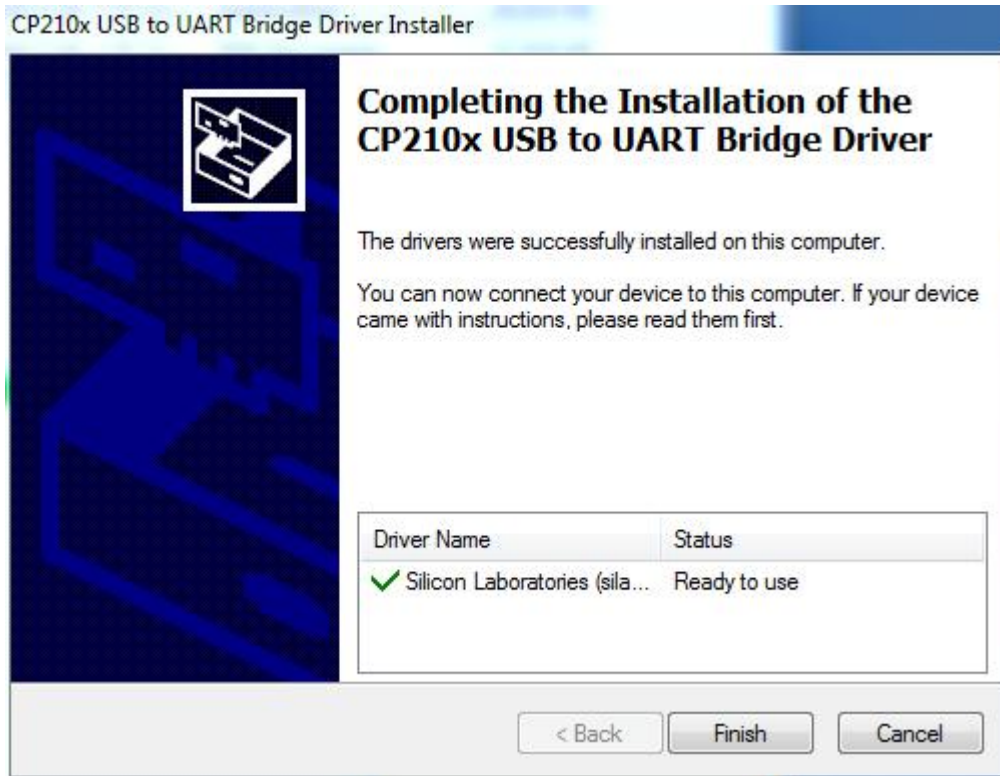
Install USB communication driver



16 Accept and Next



17 Next

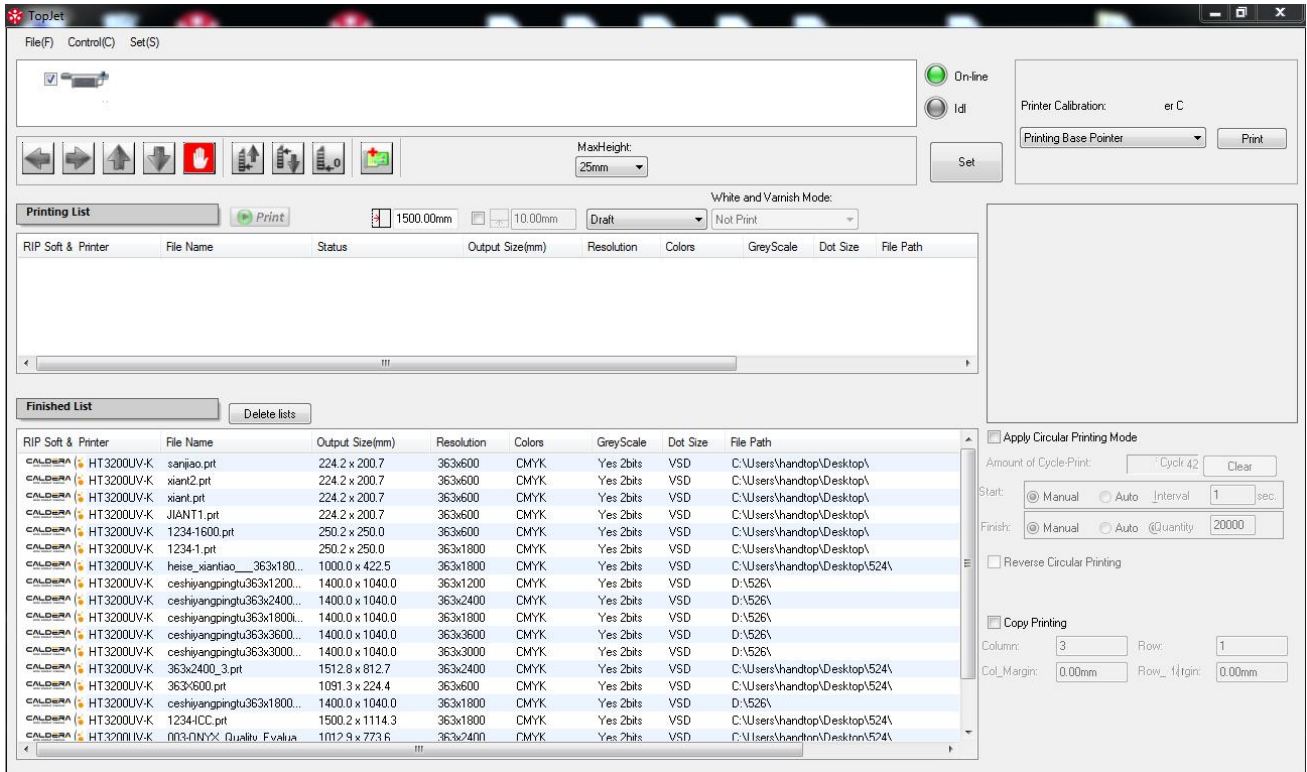


18 Finish, reboot the PC.



5.2 Topjet features instruction

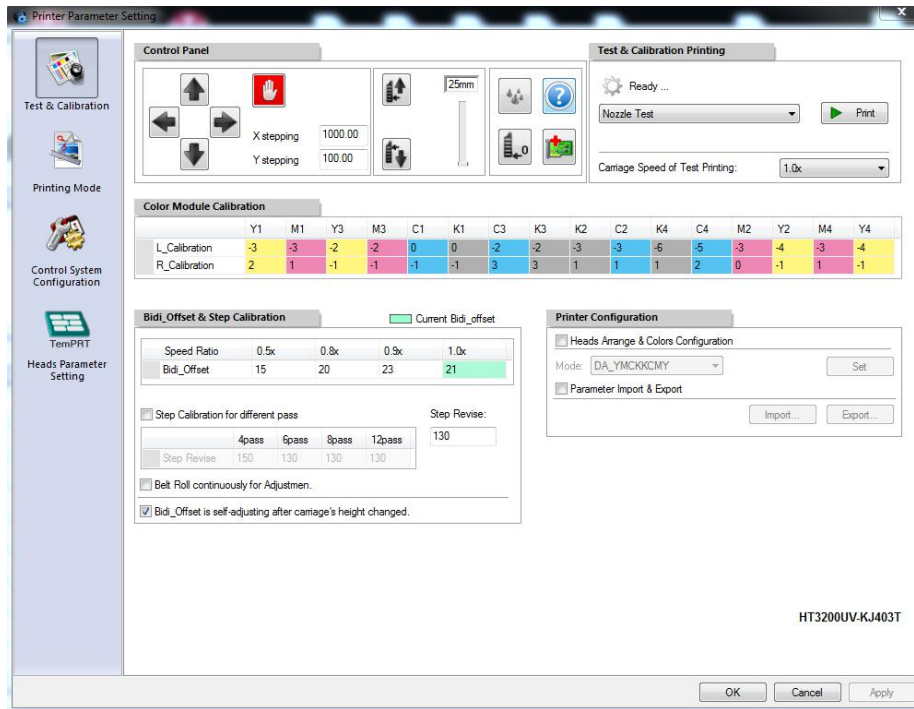
5.2. Main interface



Features	Functions instructions
	Y&X control
	Stop/cancel button
	Carriage Up & Down, Zero position calibration.
	Diagnosis
	Printing list
	Finished list
	Print button
	X & Y zero position setting
	White and Varnish output, this model is not supported in this model
	Parameter setting

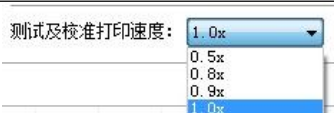
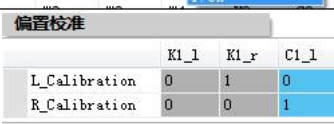


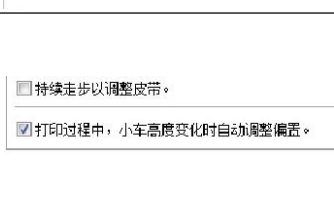

喷头测试及校准打印: 喷头状态测试 打印测试图	Calibration print list
<input type="checkbox"/> 复制打印	Copy print

5.2.2 Test and calibration interface

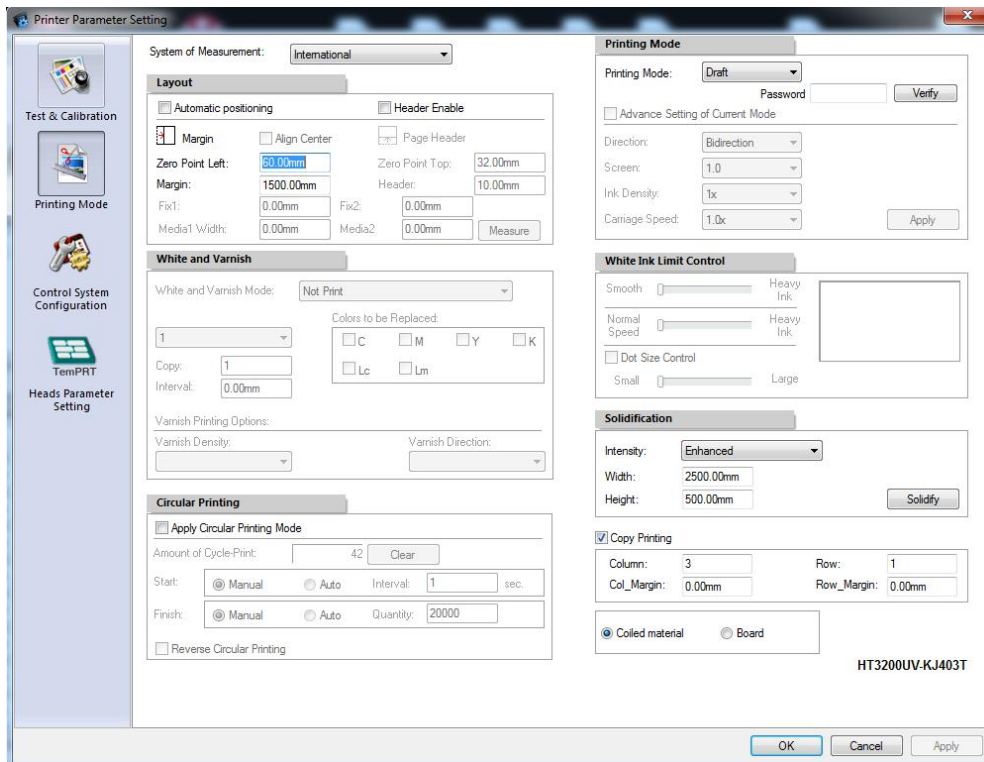



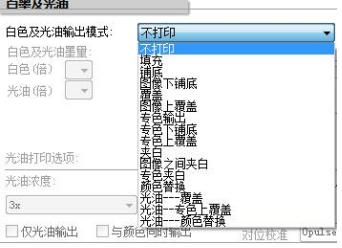



Features	Functions instructions
控制面板 <p>X步进 826.8mm Y步进 101.9mm</p>	X/Y stepping setting
	Print head spraying function Topjet version/SN
测试及校准打印 Ready ... 喷头状态测试 打印 喷头垂直校准 喷头对齐 左向打印偏置 右向打印偏置 走步校准 打印原点 电压及温度调整	<ol style="list-style-type: none"> 1. Nozzle test: printing head nozzle status 2. Vertical calibration: Print head left&right physical adjustment 3. Nozzle alignment: Print head front&rear physical adjustment 4. Left calibration offset: Print head left calibration 5. Right calibration offset: print head right calibration

	<p>6. Bidirectional offset: print head bidirectional calibration</p> <p>7. Stepping calibration: print head pass adjustment</p> <p>8. Base pintor calibration: X&Y zero position setting.</p> <p>9. Voltage&temperature calibration: color difference adjusment</p>
--	---

	Carriage speed selection
	<p>1. L_Calibration: L_Calibration adjustment value</p> <p>2. R_Calibration: R_Calibration adjustment value</p>
	<p>1. Speed Ratio: Carriage speed adjustment value</p> <p>2. Bidi Offset: Bidirectional adjustment value</p>
	<p>1. Difference passes calibration: 6PASS (1-6PASS)、8PASS (8-10PASS)、12PASS (12-16PASS)、adjustment value;</p> <p>2. Stepping calibration: All passes adjustment value</p>
	<p>1. Belt continuously moving: Belt will roll continuously</p> <p>2. Carriage height auto adjustment: Bidirectional offset will change automatically according to the carriage height.</p>
	<p>1. Print head configuration:</p> <p>2. Parameter import&export:</p>

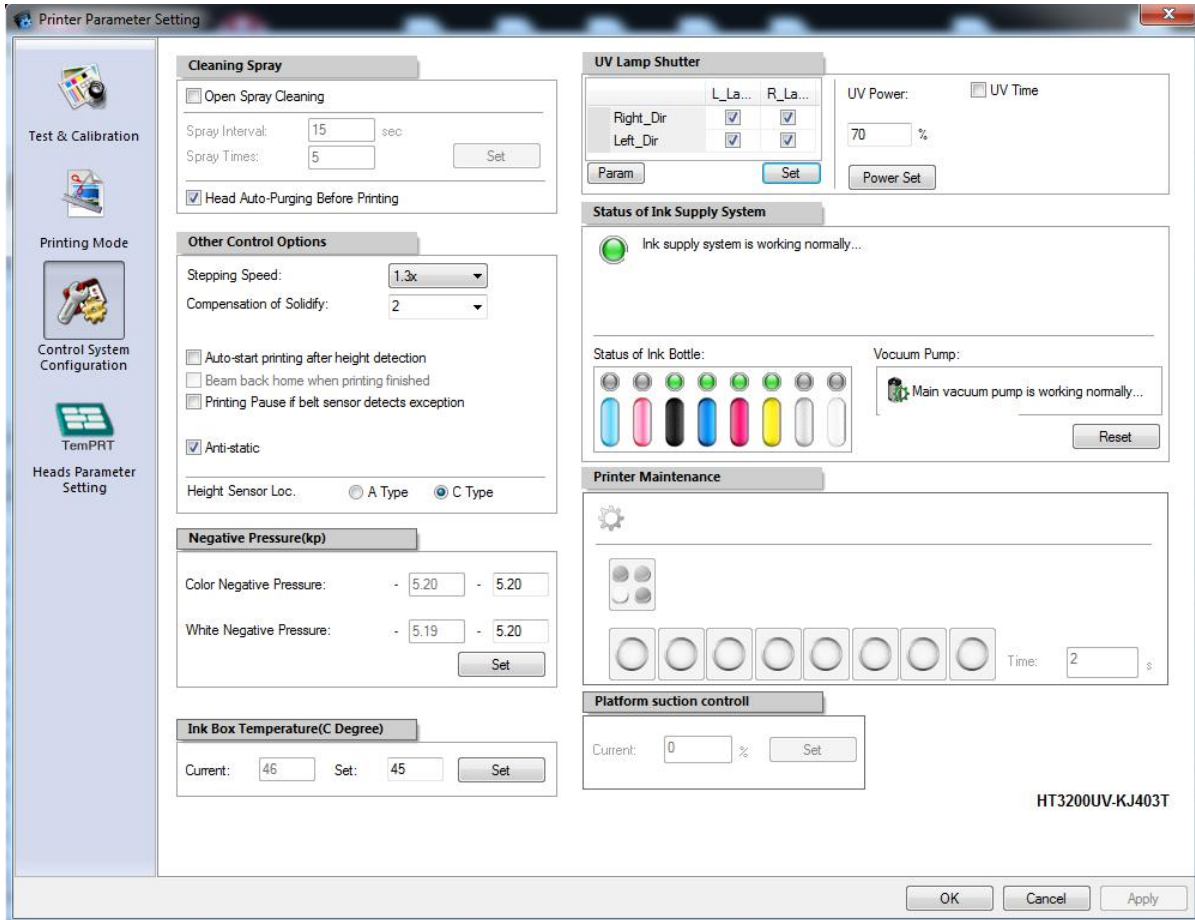
5.2.3 Printing mode interface






Features	Functions instructions
	<ol style="list-style-type: none"> 1.X&Y zero position setting value; 2.X&Y printing position setting value。
	<ol style="list-style-type: none"> 1. Fill: Print at blanks with white color 2. Base:Print with white color as a base layer of the whole image 3.Base of image: Print with white color as a base layer of other colors. 4.Overcoat: Print with white as a color layer above the whole image 5 Overcoat of image: Print with white as a color layer above the other colors 6.Spot: Set the white as spot, and output in spot mode 7.Overcoat of spot: Print with spot as a color layer above the whole image 8.Middle layer: Image-white-image three layer print, the white layer divides the two sides printed. Applied in some transparent media. 9.Middle layer of image: Colors-white-colors three layer print, the white layer divides the two sides printed. Applied in some transparent media. 10.Middle layer of spot: Colors-white-colors three layer print, the white layer divides the two sides printed. Applied in some transparent media. 11.Color replace: Print with white as a substitution of the other colors. 12.Varnish-overcoat: Print with varnish as a color layer above the whole image 13.Varnish-overcoat of spot: Print with varnish as a color layer above the other colors 14.Varnish replace: Print with varnish as a substitution of other colors.
	<ol style="list-style-type: none"> 1. Print modes: Draft、Production、Quality、ink density 2. Directional: unidirection&bidirection; 3. Screens: 1.0、0.75、0.5、0.33、0.25, 4. Ink density:1x 2x 3x 5. Carriage speed: 0.5,0.8,0.9,1.0
	<ol style="list-style-type: none"> 1. White ink control, smooth-high: 2. Speed: normal printing speed and ink density is 1.0x, changing the setting will change the both.
	<ol style="list-style-type: none"> 1. Solidify printing: in this function, print head will not printing ink, only LED lamp will work

<input checked="" type="checkbox"/> 复制打印 列: 3 行: 1 列间距: 0.40mm 行间距: 0.00mm	Copy print: copy multiple images
--	----------------------------------

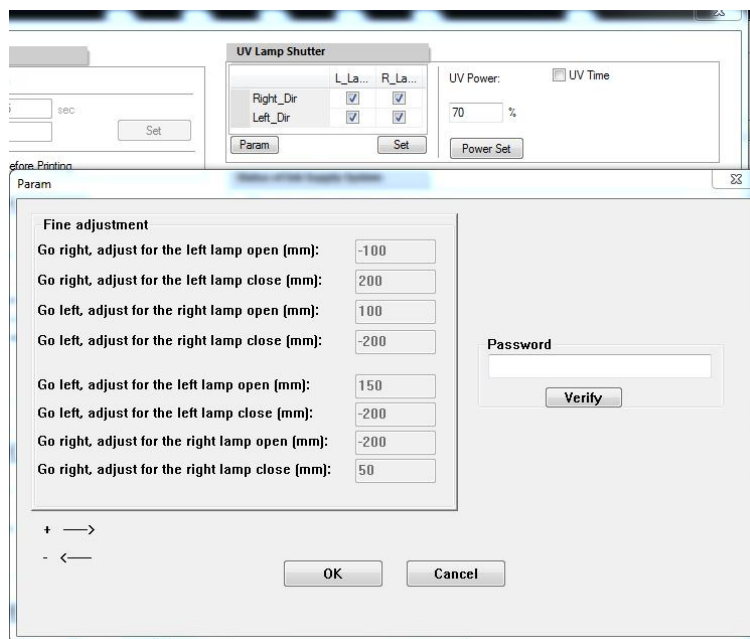
5.2.4 Control parameter setting



Features	Functions instructions
清喷设置 <input checked="" type="checkbox"/> 开启空闲时喷头清喷 清喷间隔: 10 秒 单次清喷脉冲数: 8 设置 <input type="checkbox"/> 打印前自动清洗喷头	1. Spray cleaning: Print head will do ink jetting when carriage is in home station
运动控制选项 步进速度: 1.3x 固化补偿: 2 pass <input type="checkbox"/> 测高结束后自动开始打印 <input type="checkbox"/> 打印结束后导轨自动返回原点 <input type="checkbox"/> 打印时响应皮带纠偏传感器异常(暂停) <input checked="" type="checkbox"/> 防静电打印 测高传感器位置: <input type="radio"/> A型 <input checked="" type="radio"/> C型	1. Movement control: Machine printing movement control 2. Print after height detection: carriage will start print automatically after height detection 3. Anti-static: On/off ionizer 4. Height sensor: default is C type

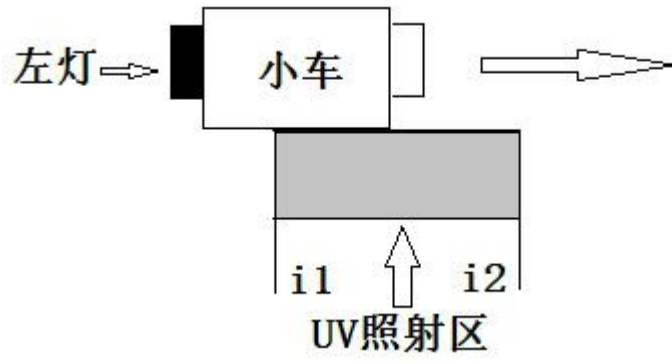
	<ol style="list-style-type: none"> 1. Negative pressure: Color&white negative pressure setting; 2. Negative pressure value:0.5~10Kpa; 3. Default negative setting: -4.5Kpa。 4. Ink box temperature: Sub tank heating temperature setting, default:40 degrees;
	<ol style="list-style-type: none"> 1. UV lamp shutter working mode: Control the left and right lights to move left and right respectively. Only the option selected will open the corresponding shutter accordingly. 2. Parameter setting: Correct the position of the LED light on or off in the printing area (for the adjustment method, see the control parameter interface below-LED light on / off position setting); 3. UV energy: LED lamp energy control adjustment, adjustment range: 0% ~ 100%; 4. Does not support UV light timing function。
	<ol style="list-style-type: none"> 1. Ink system status: In the ink circuit status, the green light indicates the normal status, the yellow light indicates the abnormal status, and the status information will be displayed for different colors. 2. Ink status: indicates the ink filling corresponding to the color combination mode is enabled. When the main ink bottle is out of ink, the green light will change to a yellow light and display status information; 3. Reset button: The reset function of the peripheral control board is equivalent to restarting the peripheral board and clearing the error message. The corresponding physical function is the reset button set on the peripheral control board; it includes the ink circuit and the air circuit.

5.2.5 Control parameter interface-LED light on / off position setting

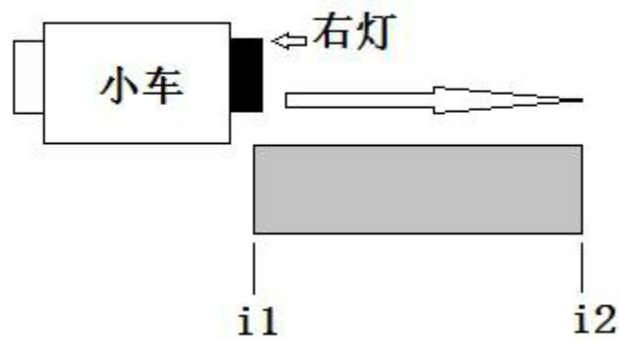
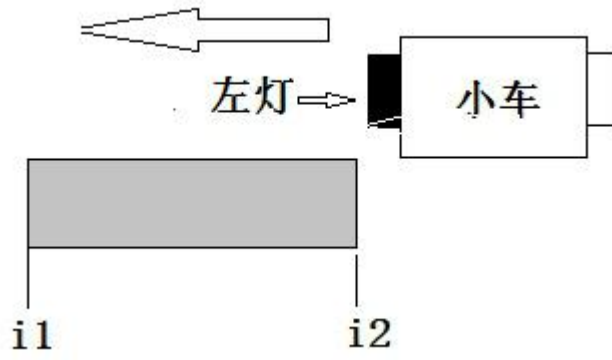
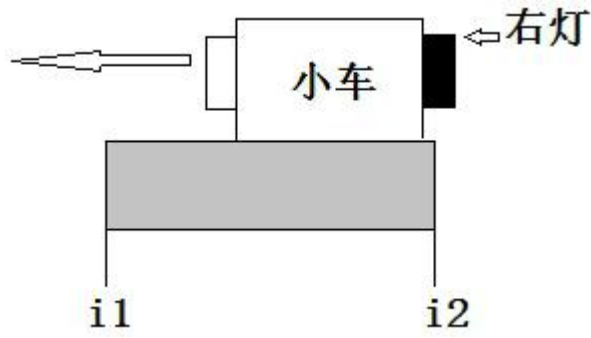


The adjustment password for the position of the LED light switch is ual3. After inputting, click Check to open the fine-tuning setting function. The eight parameters on the left are fine-tuning parameters, the unit is millimeters; the parameters are described in detail as follows:

Position adjustment of left light on (mm) when the cart moves to the right and position adjustment of left light off (mm) when the cart moves to the right: According to the figure below, the top right large arrow indicates that the cart is moving to the right, the black solid rectangle on the left side of the cart indicates the left curing light; the vertical line i1 indicates the position where the LED light is on, and the vertical line i2 indicates the position where the LED light is off, i1 and i2 is the illuminated area of the curing light on the left side of the car. If it is found that the irradiation area does not coincide with the image, you need to adjust the two parameters of "the left lamp on light position adjustment (mm) when the cart moves to the right" and "the left lamp off light position adjustment (mm) when the cart moves to the right". "The left lamp on light position adjustment (mm) when the car moves to the right" adjusts the vertical line i1 position, and "the left lamp light off position adjustment (mm) when the car moves to the right" adjusts the vertical line i2 position; enter a positive number to indicate the position Move to the left; enter a negative number to move to the right. Note that the entered value indicates the amount of movement, for example, entering 10 means moving 10 mm



to the right.



5.2.6 Print head parameter setting

Head Information

Head	Y1	M1	Y3	M3	C1
Serail Num.	1507A318	1507A318	1507A317	1507A317	1607A376

Heads Temperature

C Degree	Y1	M1	Y3	M3	C1	K1	C3	K3	K2	C2	K4	C4	M2	Y2	M4	Y4
Current	42.3	42.3	38.3	38.3	43.1	43.1	42.4	42.4	40.0	40.0	40.5	40.5	42.4	42.4	42.4	42.4
Set	42.0	42.0	38.0	38.0	42.0	42.0	42.0	42.0	40.0	40.0	42.0	42.0	40.0	40.0	40.0	40.0

Heads Voltage & Pulse Width

	Y1	M1	Y3	M3	C1	K1	C3	K3	K2	C2	K4	C4	M2	Y2	M4	Y4
Current	1.0	0.0	1.0	2.0	2.0	2.0	0.0	2.0	1.0	0.0	-1.0	-1.0	1.0	0.0	0.0	0.0
Set	1.0	0.0	1.0	2.0	2.0	2.0	0.0	2.0	1.0	2.0	0.0	0.0	1.0	0.0	-1.0	-1.0

Fire Waveform Parameter

	Y1	M1	Y3	M3	C1	K1	C3	K3	
Ink Name	T-161213-5	T-161213-5	T-161213-5	T-161213-5	T-161213-5	T-161213-5	T-161213-5	T-161213-5	M-17

HT3200UV-KJ403T

5.3 Wave form Read&Write

- Click the TempPRT button (As illustrated below) and input a suitable value in the row labeled “set” area and then click “Set” button to adjust heads’ temperature and voltage.
- The last option is for waveform. Click and chose from the drop-list. If you use Handtop F series ink, chose F-series, and click “write” to set the waveform. That will need to wait 20 second to write the waveform. And you can click “read” to check the current waveform.
- Set all the voltages to 0

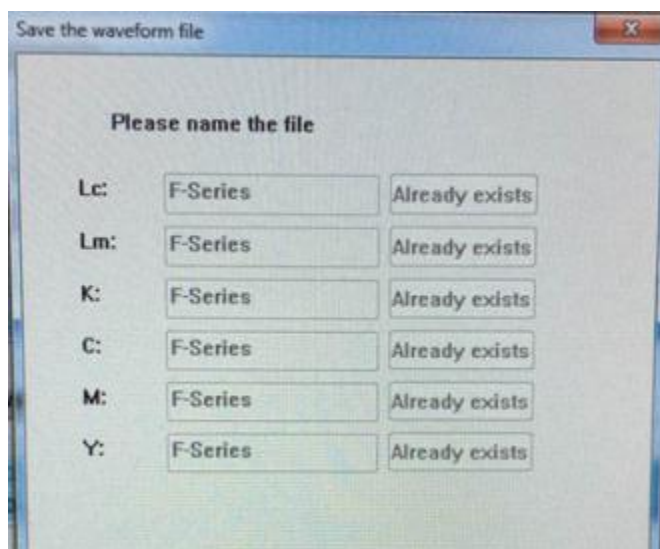
Set the temperature from 38 to 43 degree (Normally 40 degree)



波形文件




	Lc	Lm	K	C	M	Y	V1	V2
Ink Name	ERRORNONE	ERRORNONE	F-Series	F-Series	F-Series	F-Series	ERRORNONE	ERRORNONE

读取 TXT 读取 写入



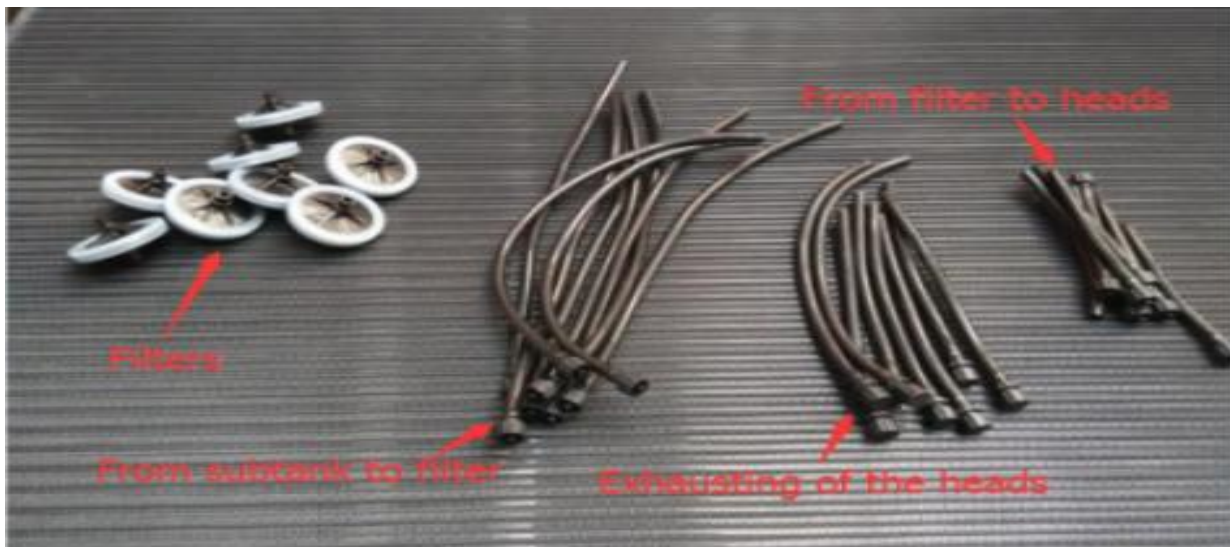
6. Print heads calibration and alignment

6.1 Print head installation

	This operation should done by trained operator, to avoid body injury or parts damage
	Print head cables should be connected when power off, make sure no ink or any liquid on the cable before connected.
	No squeeze or pressure to the print head

1

Print head spare parts



2

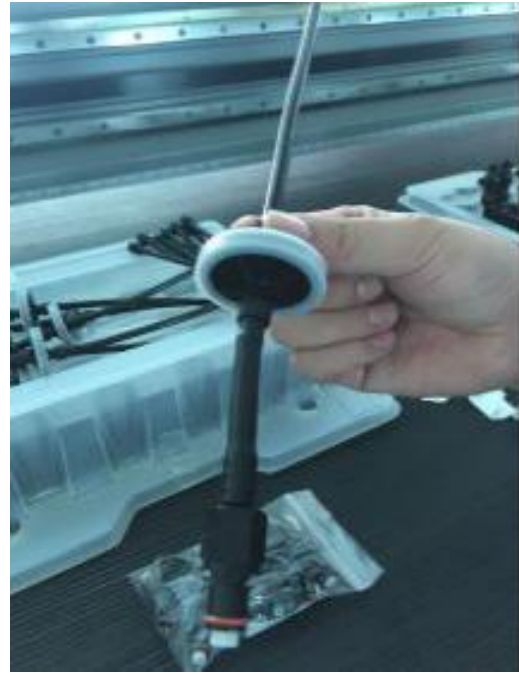
Print head connection



3 Ink tube and filter connection



4 Print head connector



5 Preparation



6 Flush ink tubes with flushing liquid.

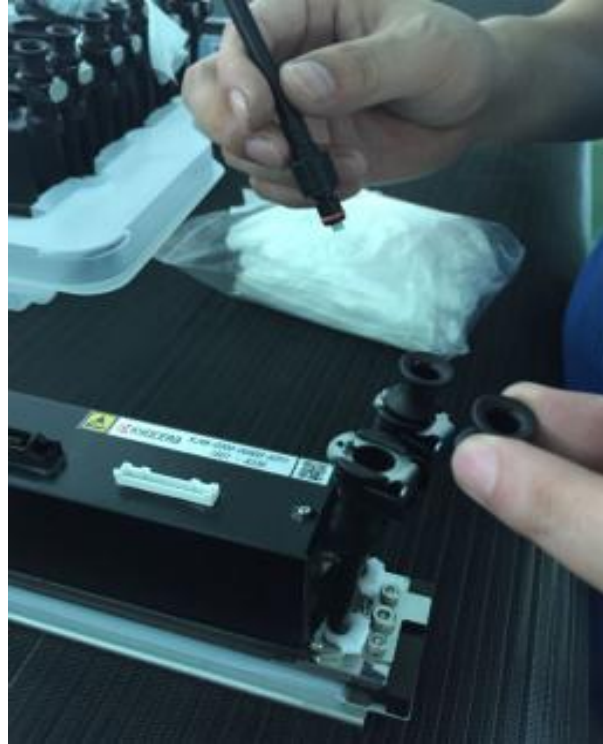


7 Disconnect the block



8

Connect ink tubes



9

Next



10

Ink tube installation finished

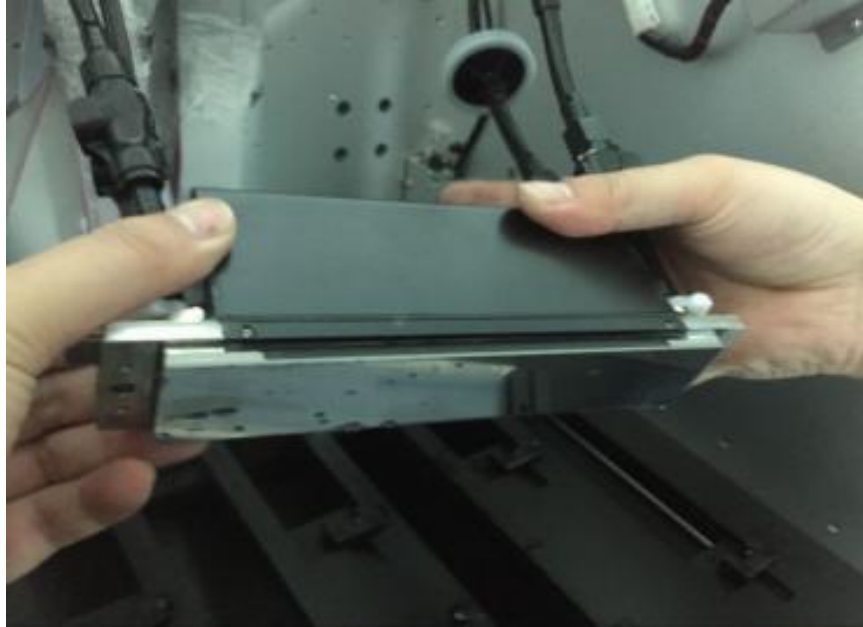


11

Dismount the protective cover of the print head



- 12 Peel off the print head cover



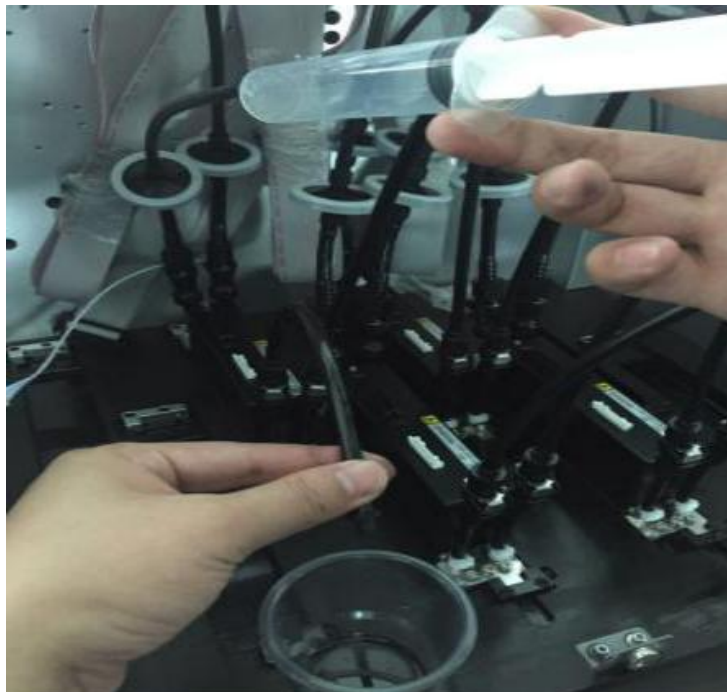
- 13 Install the print head in to the carriage plate



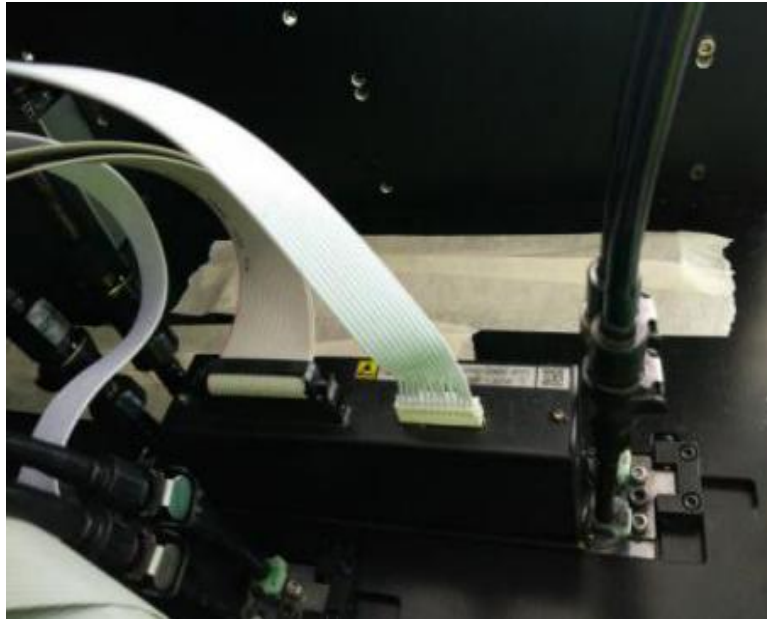
- 14 Use syringe to flush the print head with flushing liquid



- 15 Exhaust the remaining flushing liquid with syringe



- 16 Cable connection, white cable is for power supply, Grey cable is for data transmission



6.2 Ink filling



After print head installation, check the connection of the tubes and cables before filling the ink °

1

Turn off spray cleaning function, lower the negative pressure to -1.2kpa, in case of ink over flow.

2

Fill ink into the main ink tank, and make sure ink pump power cable is connected properly.

3

Click Reset in Topjet

4

After 15 seconds of ink pumping, if ink is still not full fill in the sub ink tank, machine will give 3 beeps alarm



Click Reset 3-4 time, to full fill the sub in tank.

6.3 Air exhausting of the printhead

The exhausting operation should be done the first time of printhead installation; this operation can help exhaust the air bubbles in the chamber.

This operation can also be used to deal with the nozzles missing problem.

- Shutdown the spray function
- Turn off all the valves except the valves of the printhead, which needs to be exhausted and adjust the pressure to a value of -1.0kPa.
- Loosen the cap of the air exhaust tube of the printhead, and press the ink prime button till you see a constant ink stream comes out of the tube. Then seal the tube with the cap.
- Note. The operation must not exceed 3 seconds so as to avoid the generation of bubbles. If the system alert occurs, click the “reset” and continue the exhausting operation when the alert ceases.
- Execute the exhaust on each printhead as the operations described above.
- When finishes exhaust operation, adjust the pressure to a value of -3.5kPa and turn on all the valves. press the prime button till you see the ink comes out of the nozzles of each printhead.
- Use the lint-free towel to wipe up the ink residues on the nozzles surface.
- Print a “nozzle test” and check the status of the nozzles.

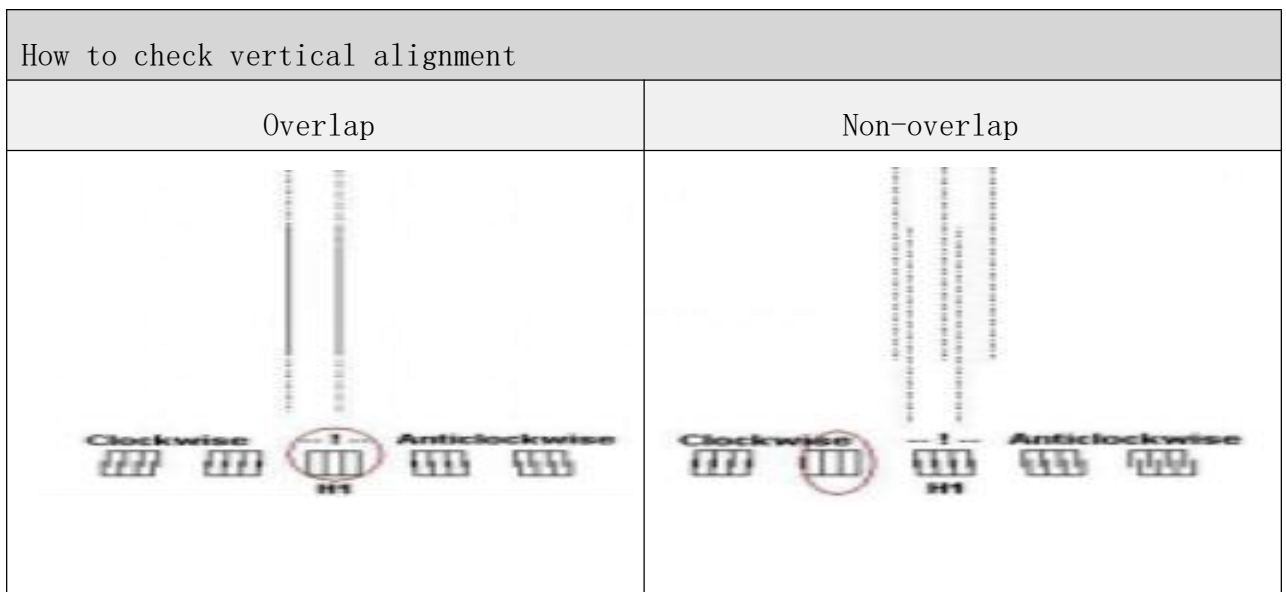
6.4 Printheads calibration settings reference

- 1 Kyocera color negative pressure:4.7mp White 5.0mp(for reference only)
- 2 Voltage&temperature,ink box temperature setting are according to ink series.
- 3 Written a correct wave form before calibration.

6.5 Printheads calibration and alignment

6.5.1 Vertical alignment

- 1 Run the TopJet program and then click the “Set” button to enter the “printer parameters setting” interface.
- 2 Select the printhead vertical alignment in the drop-down-list of the alignment checking and run printing.
- 3 Use the magnifier to observe the upper and lower parts of the small iron printed and sees whether the two parts merge into a complete one.
- 4 If there are still lines that are not overlapping completely, then you might get them aligned by adjusting the screw of the printhead base, and repeat Step 3
- 5 Repeat 2,3,4 until lines are overlap.



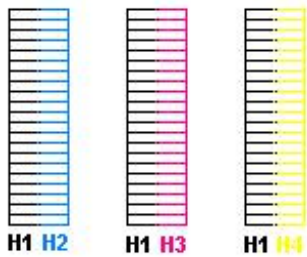
How to adjust the vertical screw.

loosen the screw ,Adjust the screw slightly according to the vertical checking result,Print the vertical checking again.if the lines still not overlapping at the proper position, repeat the two steps above.Fasten the screw , when the vertical alignment accomplished.

6.5.2 Horizontal alignment

- Select the horizontal checking in the drop-down-list of the alignment checking and run printing. The printing result is shown as below.

Note: Since K and C are on the same printhead and M and Y on the other printhead, it is only necessary to perform horizontal alignment with H1 to H3 or H1 to H5.



Horizontal checking print V.I



Horizontal checking print V.II

- The operation of horizontal alignment takes the first printhead of the black color as reference. View the print result as V.I; if the printing lines of the other colors are not overlapping head to head with the black lines, then an adjustment of the vertical is necessary.



The steps of horizontal alignment:

- Loosen the screw ①
- Adjust the screw ③ slightly according to the horizontal checking result
- Print the horizontal checking again
- If the lines of certain colors still can not make a head to head overlapping with the black

line, repeat the two steps above accordingly.

- Fasten the screw ① when the horizontal alignment accomplished.

6.5.3 Left and right heads offset



Left-dir heads offset means color calibration of left-directional print, right-dir heads offset means color calibration of right-directional print.

- 1 Select the “left-dir heads offset” in the drop-down-list of calibration and alignment
- 2 Find out the best aligning icon of the print and take it as a variable adding to original value.
- 3 Flow Step 2 to modify the value
- 4 Repeat 1,2,3 until lines are overlapped perfectly

How to check L&R calibration test


偏置校准									
	K _l	K _r	C _l	C _r	M _l	M _r	Y _l	Y _r	
L_Calibration	0	0	1	1	1	2	0	1	
▶ R_Calibration	0	0	-1	-1	0	1	0	0	

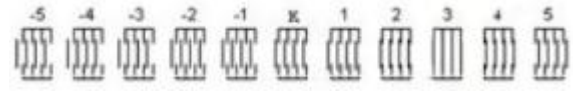
C_l = 3, after modify 3-2=1

6.5.4 Bi-directional calibration

- 1 Select the “bi-directional offset” in the drop-down-list of calibration
- 2 Find out the best aligning icon of the print and take it as a variable adding to original value.
- 3 Change the value until lines are overlapped perfectly

How to check Bi-directional calibration test





+3 is the best

Speed Ratio	0.5x	0.8x	0.9x	1.0x	1.1x	1.2x
Bidi_Offset(Small)	10	13	15	18	20	21
Bidi_Offset(VSD)	6	12	14	13	16	18

Step Calibration for different pass
 Step Revise:

	4pass	6pass	8pass	12pass
Step Revise	0	0	0	0



+3, 18+3=21

6.5.5 Stepping calibration

- 1 Select the stepping checking print in the drop-down-list of calibration and alignment
- 2 Try and find out a number indicates the best overlapping of the tiny lines

3 Change the values on stepping calibration

4 Repeat 1,2,3 until lines are overlapped perfectly

How to check stepping calibration test											
		Aligned									
	<p><input checked="" type="checkbox"/> 对不同pass数的步进分别校准</p> <table border="1"><thead><tr><th></th><th>4pass</th><th>6pass</th><th>8pass</th><th>12pass</th></tr></thead><tbody><tr><td>Step Revise</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></tbody></table> <p>步进校准: <input type="text" value="0"/></p>		4pass	6pass	8pass	12pass	Step Revise	0	0	0	0
	4pass	6pass	8pass	12pass							
Step Revise	0	0	0	0							

6. 5. 6 Base position (datum mark) calibration

1 Select the “print base position” in the drop-down-list of calibration and alignment

2 Measure the distance between the datum checking print and the mechanical base point. The printed result is shown as below.



- 3 Reset the value of the zero position in the layout option. Illustrated as below.



6.6 Calibration confirmation



Print this image after the calibration

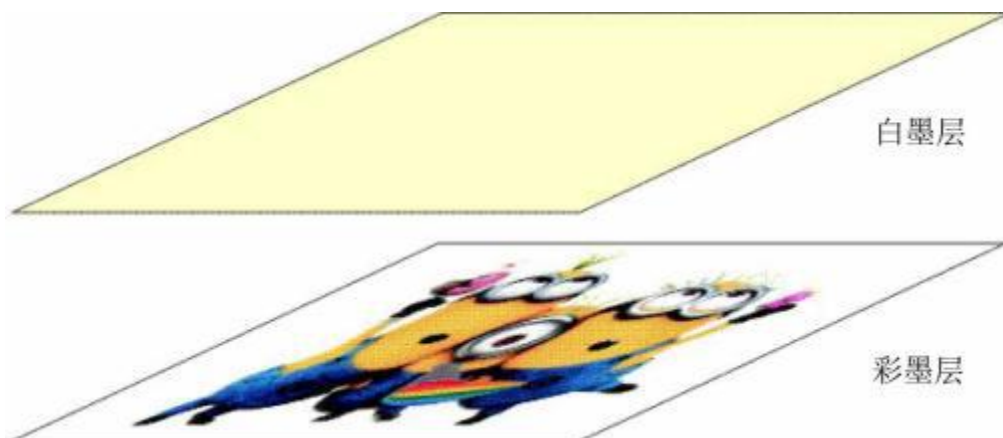
7. White ink print mode

7.1 Not print

No white ink discharging when there is no white color required in the image output.

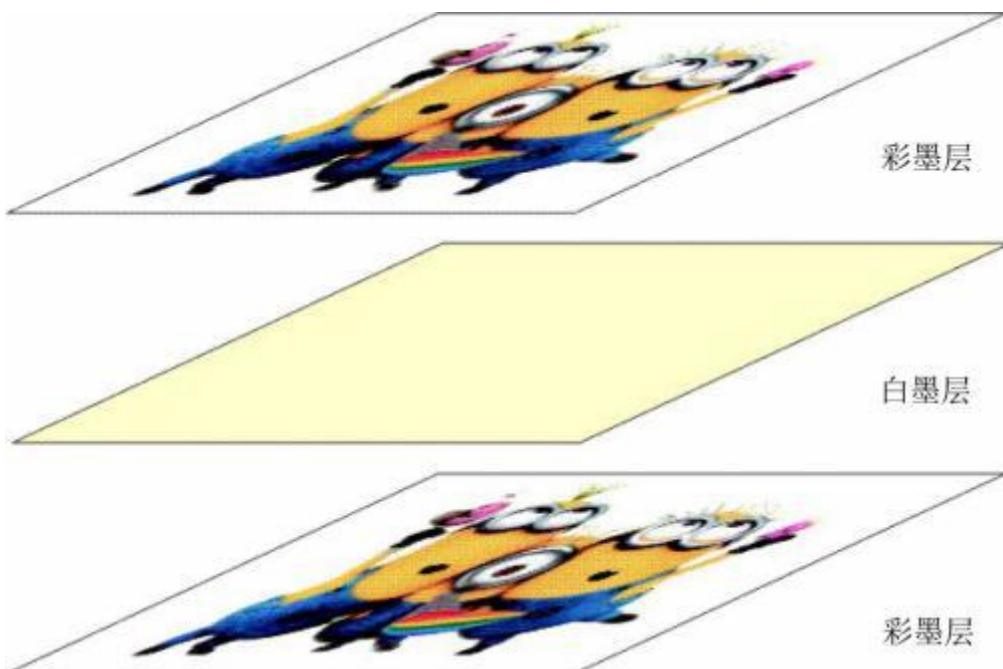
7.2 Overcoat

Print at blanks with white color



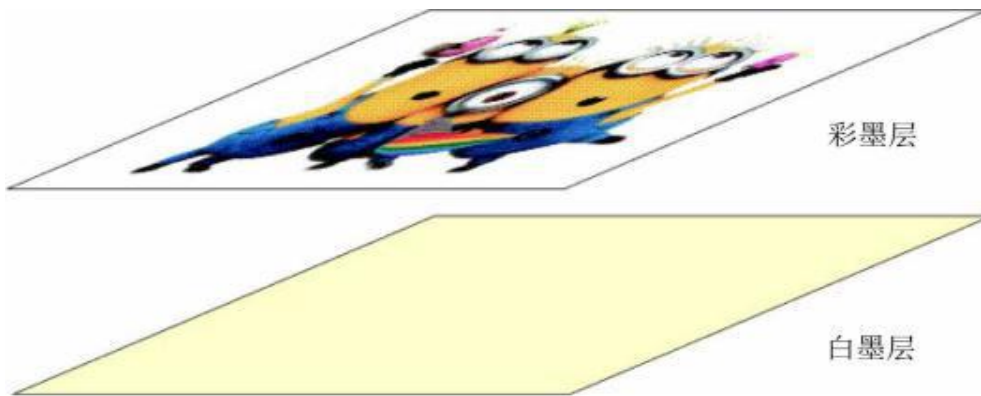
7.3 Middle layer

Image-white-image three layer print, the white layer divides the two sides printed. Applied in some transparent media.



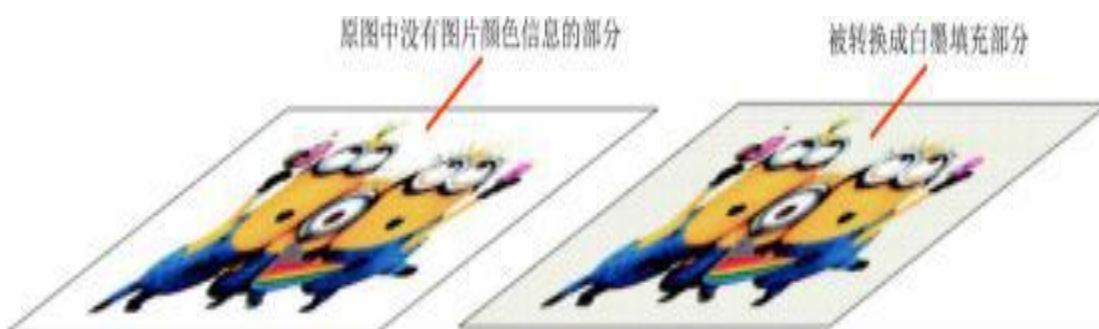
7.4 Base

Print with white color as a base layer of the whole image



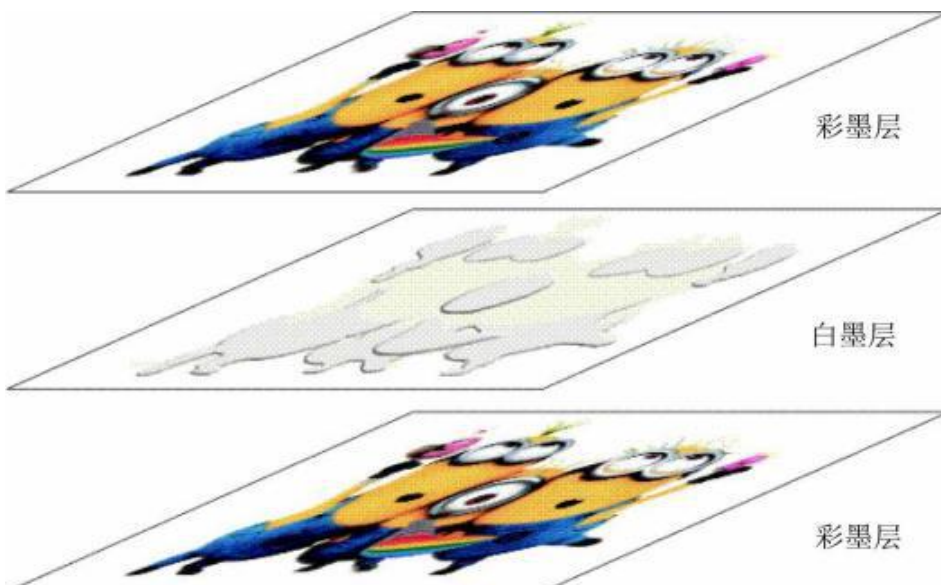
7.5 Fill

Print at blanks with white color



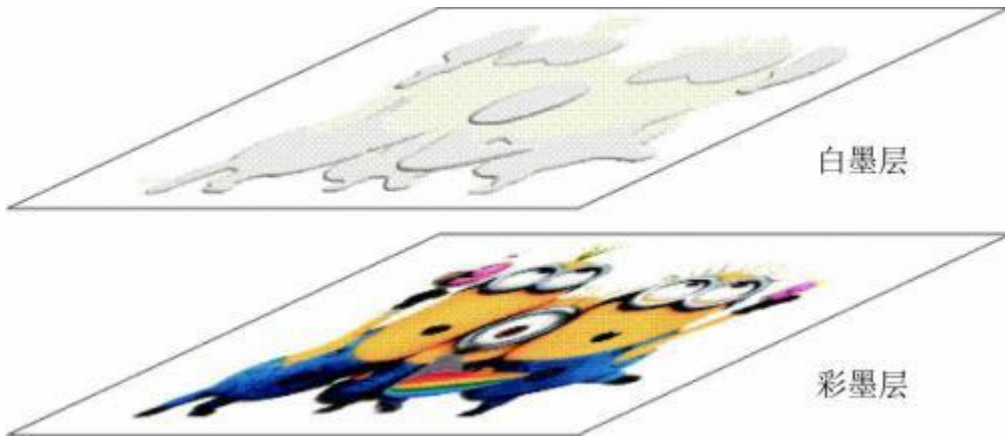
7.6 Middle layer of image

Colors-white-colors three layer print, the white layer divides the two sides printed. Applied in some transparent media.



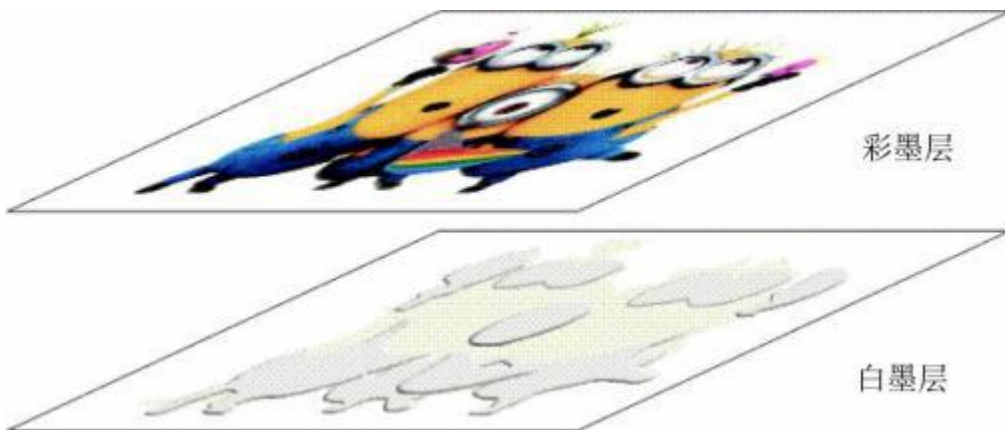
7.7 Overcoat of image

Print with white as a color layer above the other colors



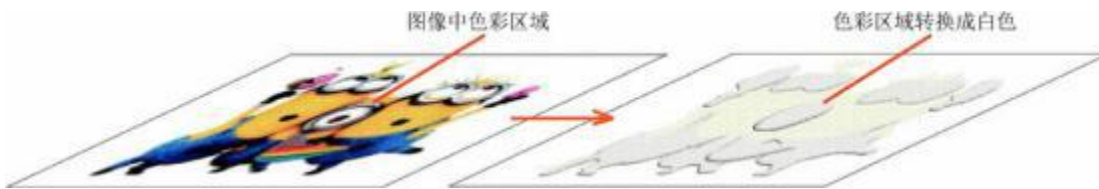
7.8 Base of image

Print with white color as a base layer of other colors



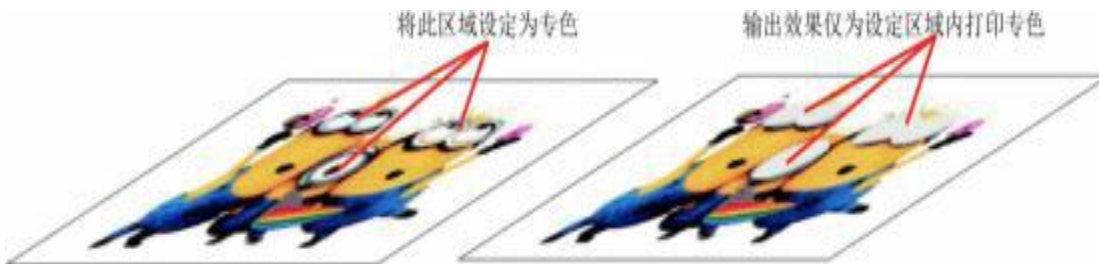
7.9 Color replace

Print with white as a substitution of the other colors.



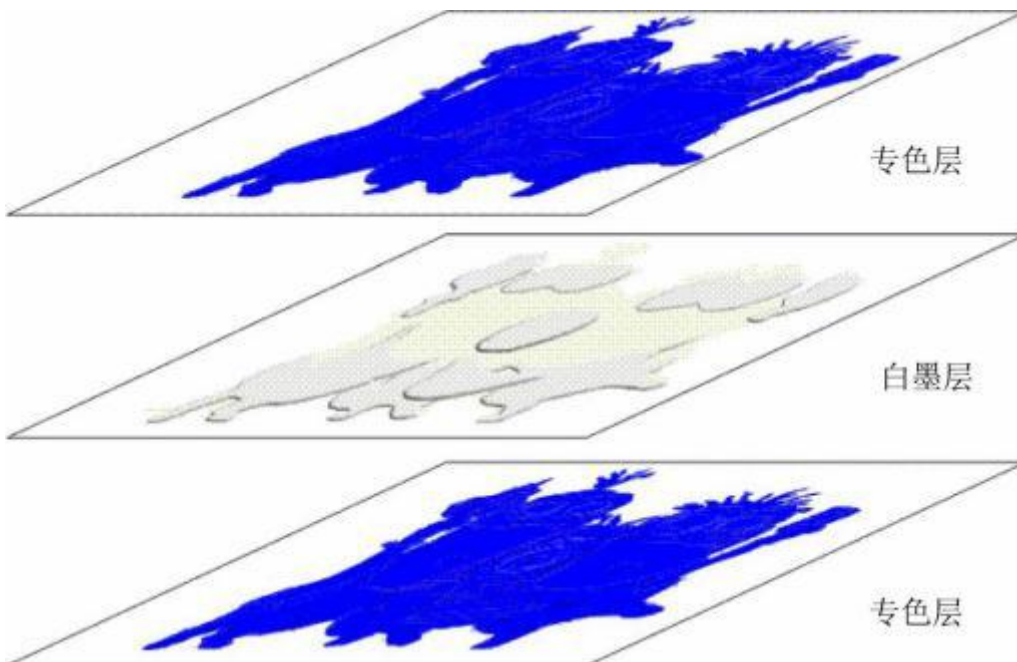
7.10 Spot

Set the white as spot, and output in spot mode



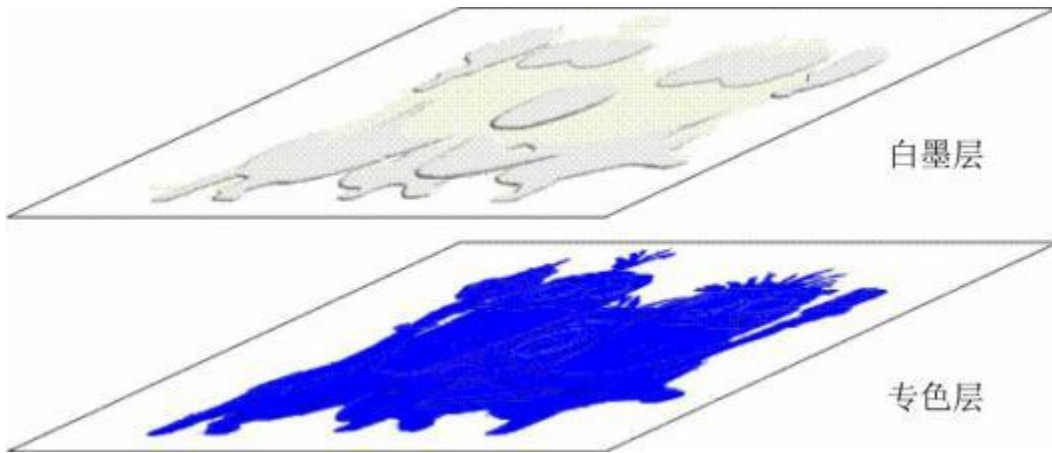
7.11 Middle layer of spot

Colors-white-colors three layer print, the white layer divides the two sides printed. Applied in some transparent media.



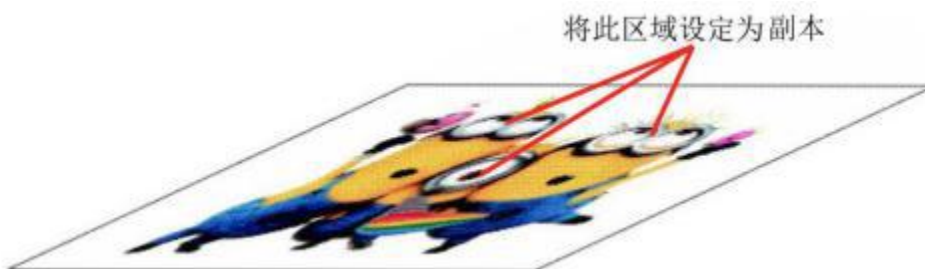
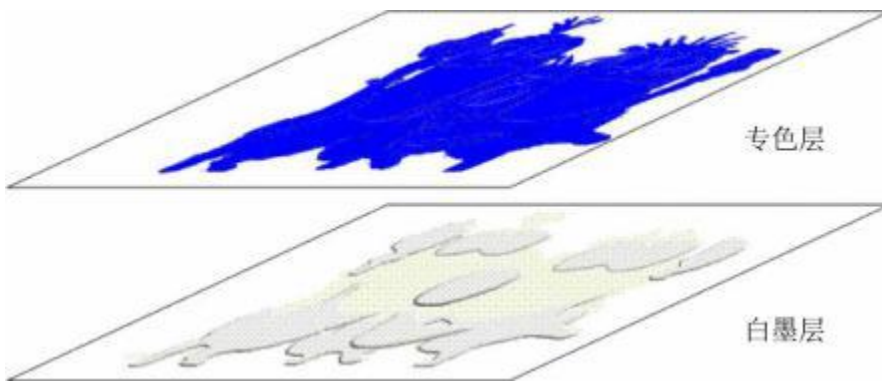
7.12 Overcoat of spot

Print with spot as a color layer above the whole image





7.13 Base of spot


Print with white spot as a base layer of other colors



※Operating instructions


1. Start-up operation

	<p>The user has to go through the safety precautions in chapter Six before the first-time operation. And all operations to be done by beginners must be executed under the instructions of professional technicians.</p>
	<p>In case of emergency, Press the emergency stop button, machine will power off immediately</p>

	<p>Note. These four power circuit breakers only have to be turned on in the initial operation. Once the equipment maintains in constant working phase, there is no need to turn them off anymore.</p>
---	---

- 1 Connect power supply
- 2 Turn on the main power breaker
- 4 Turn on PC
- 5 Turn on the four scram stop on each corner of the printer. Then press the green button for activation.

- 6 Check if the reading value of the pressure is normal
- 7 Activate the air blower and turn on the corresponding suction sector of the platform where the media is laid
- 8 Activate the UV lamp and carry on to the normal printing job.

	<p>For the buttons location please go to Structure diagram</p>
	<p>If machine giving buzzer alarm when it's on</p>



Please go to **Buzz** indications and troubleshooting

2. Printer shut down

- 1 Print the nozzle check on an A4-size paper and compare with the previous one.
- 2 Turn off blower and UV lamp
- 3 Verify that the negative pressure reads normally and the automatic spray function is activated. Then shutdown the computer.
- 4 Shutdown the PC
- 5 Tidy the printer and the workplace.

※Printer maintenance

1. Periodic maintenance



With a view to keep the printer in good working conditions, operators should do the maintenance job periodically according to the following instructions.



Daily Maintenance	clean the frame
	clear away the waste ink
	clean the bottom of the printhead tray
	check the negative pressure system
	nozzles checking.
	clean the towline and its internal cables
	clean the fans and cabinet
	clean the waste ink collecting tray
	replace the filter fiber
	Do the calibration and alignment.

Monthly Maintenance	lubricate the rolling and moving mechanical parts
	check the joints of ink lines and air lines
	replace the air pump

Quarterly Maintenance	replace the capsule filter
	replace the ink pump and optical fiber.

Yearly Maintenance	replace the quartz glass of the UV lamp assembly
	replace the print head filter
	Replace the tubes in the tow line

2. Maintenance of the mechanical parts

Lubricate the moving mechanical parts with lithium grease monthly.	
Moving parts	X-directional slide way X-directional screw leads Y-directional slide way Y-directional screw leads
	Use the lever type grease gun to eject the lubricating grease into the slide block via the lubricating nipple assembly on the block
	Non-clean lithium grease must avoid to be used for lubrication job or it will result in slide way and slide block damage.

3.Precision parts maintenance


All precision parts must be strictly cleaned with isopropanol and lint-free tissue according to the maintenance instructions.

Precision parts	Encoder strip
	Encoder reader
	Head height reader

4.Print head maintenance

4.1 Daily maintenance

- 1 Every day before or after work, take a nozzle checking print and see if there is any blockage.

	Execute priming or flushing immediately as soon as any blockage is observed.
	On the occasion of only one or two color discharging during the printing process, a synchronic color bar printed with the image is strongly recommended, so that all the other colors can also discharge in the whole process.
	Double-check the smoothness of the media when placed on the platform so as to avoid head strike incidents.

- 2 Tidy and clean the printing platform and the bottom of the printhead tray.


- 3 Execute anti-dust and anti-electrostatic operation if necessary.

4.2 Print head preservation maintenance

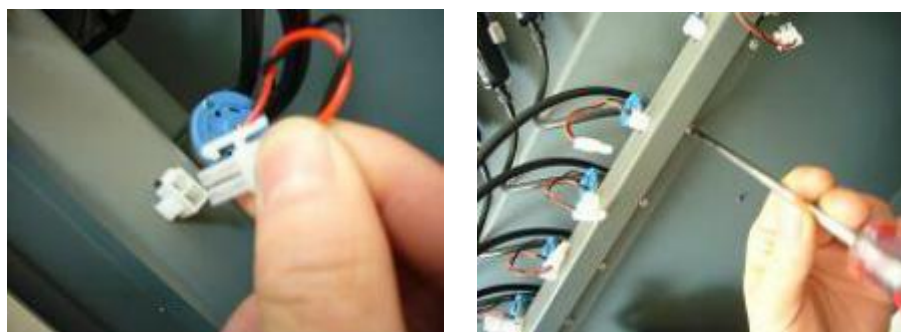
- 1 Get a KT board the size of the printhead tray and wrap it with preservation film.
- 2 Carefully lay some lint-free tissue on the surface and use some flushing to moisture it.
- 3 Put the moisturized KT board under the printhead tray, then roll the Z-directional screw lead manually, making the carriage lowering down till the two surface adhere to each other.
- 4 Slightly contact is right, avoid pressing too hard;
- 5 Turn off the main circuit breaker.

5.Replacement of consumable parts

5.1 更换墨泵

	When hearing three-consecutive buzz, check and see if the ink pump malfunctions.
---	--

- 1 Remove the broken ink pump and remove the tubes connected to the pump.



2 Replace new pump



3 Cut the deformed heads of the tubes;

4 Then reconnect them to the new pump



The buzzer might probably generate three-consecutive buzz in the process of replacing. You will need to reset in the Topjet after

5.2 ink refill



When the hearing six-consecutive buzz, check and see if the ink is running out.



Note. The ink tube must be inserted into the bottom of the main tank

1 Get a new bottle of ink and uncap it, put it nearby.;

2 Uncap the main ink tank which needs to be refilled

3 Press the Reset key in the Topnjet

5.3 Replacement of capsule filter


	The ink filter requires seasonal replacement.
---	---

- 1 Disconnect the power cable connects of the ink pump.
- 2 Clamp the inlet tube so as to avoid ink leaking or withdrawal.
- 3 Disconnect the joints of the tube and the filter. Remove the filter.
- 4 Replace with a new one and pay attention to the flow direction indicated by the arrow mark on the filter.



- 5 Remove the clamp and reconnect the power cable.

5.4 Replacement of air tube

	The replacement must be replaced when any damage or spoil is found on certain tubes.
---	--

- 1 Move the beam to the backward.;
- 2 Shutdown the spray and turn off the valves.

- 2 Turn off the scram stop and disconnect the power cables of both air pumps.
- 3 Disassemble the cover of the towline.
- 4 Replace the used tubes with new ones.
- 5 Mark the tubes accordingly so as to avoid incorrect connection.
- 6 Connect and fix the tube properly.
- 7 Reassemble the cover of the towline. Reconnect the power cable and then activated the printer.
- 8 Turn on the valve and activate the spray function. Take a print test.



The valves must be turned off and disconnect all power cables of the both air pumps before replacement. Or it would easily cause ink leakage.

※Trouble shooting

1. Buzz indications and troubleshooting

There are six kinds of buzz alert programmed in the printer.

Buzz type	Buzz indication	Troubleshooting
Single buzz	The main air pump stops working and the backup air pump activate.	Check if the main air pump is still in proper use, and check the reading values of the pressure indicator. Click reset to activate the main air pump again.
Double buzz	Pressure overload protection Negative pressure limit: -4.5kPa Negative pressure limit: 20kPa	Generally the pressure exceeds 20kPa in the priming operation and lower than -4.5kPa during long-time of non-printing. These phenomenon are normal. When the negative pressure exceeds its limit, simply adjust the regulator anticlockwise to reset the pressure to the standard value.
Triple buzz	15s periodic ink pumping protection (when ink shortage in subtank occurs)	Check and see whether the ink in the main tank has run out, or if malfunctions of the ink pump. And refill ink or replace the ink pump accordingly. Click reset in the program after the troubleshooting
Four-buzz	Data transmitting error	Occasional alert might be normal. But if ever encountered with constant buzz, then it is a problem of data transmitting error. This might be caused by the breakdown of the printhead signal board of external device board. Please contact local dealer for technical service.
Five-buzz	Ink withdrawal problem	The phenomenon might be caused by the malfunction of the level sensor assembled in the air tank or improper disconnection of ink tubes. For troubleshooting please refer to the instructions in sector three.
Six-buzz	Ink of the main tank running out	Refill the main tank with ink or check the level sensor assembled in the main tank.

2. Negative pressure system

2.1 Ink purging failure

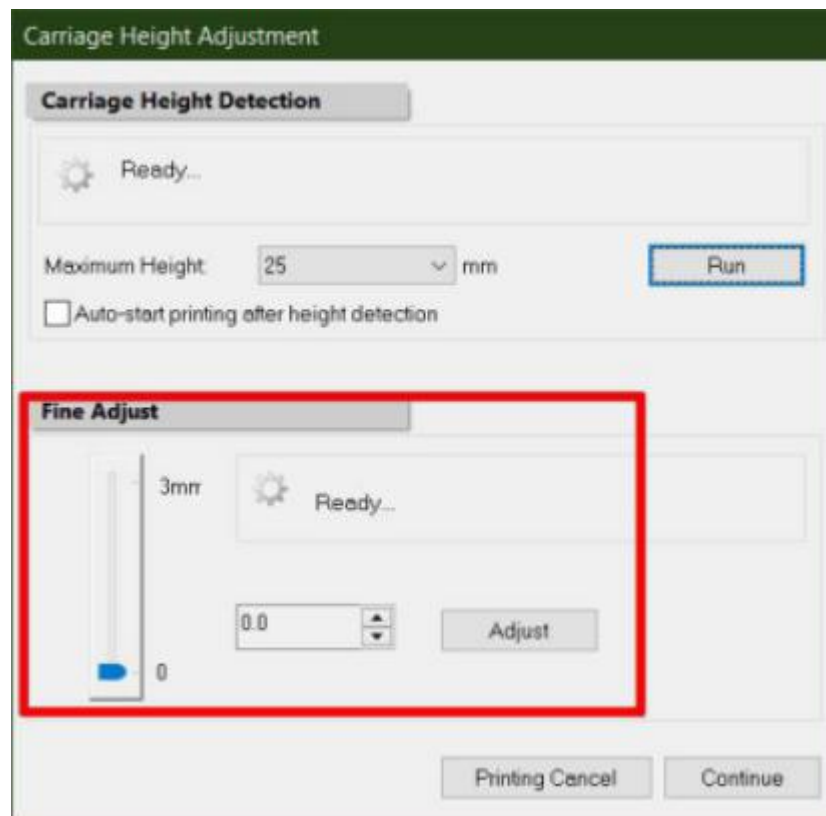
Indication	Ink is not purging when press the ink purge button
Troubleshooting	<p>Check the solenoid valves accordingly</p> <p>Check sub tank is empty (three beeps)</p> <p>Check the positive pressure</p>

3. Printhead strike

3.1 How to avoid head strike

The automatic head height adjustment must be run whenever changes material.

When printing on some heat-formative materials, shut the non-used suction sectors of the platform. And cover the tiny holes of air leaking, so as to decline the possibility of deformation by strengthen the corresponding suction.



When printing on some heat-formative materials, shut the non-used suction sectors of the platform. And cover the tiny holes of air leaking, so as to decline the possibility of deformation by strengthen the corresponding suction.

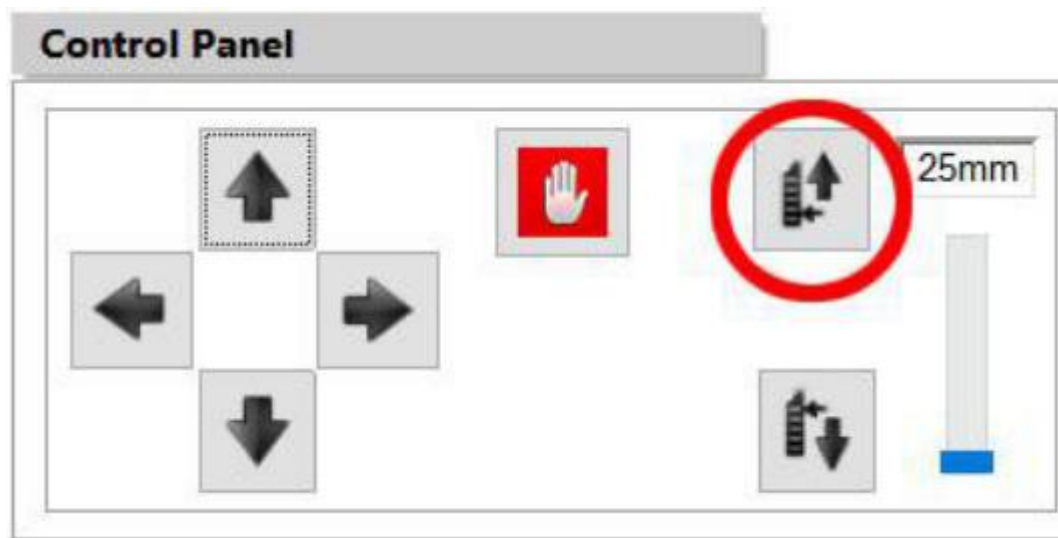
There is a certain distance between the head height detecting position and the datum point. If the printed is too small to be detected when placed near the datum point, you may try and put the media on the location for head height founder first and then move it to the printing position when head height adjustment accomplishes.

Never try to lift the media positioning lever otherwise it may lead to head strike incident. Besides the servomotor might come to an accidental stop by automatic protection and thus result in printing failure.

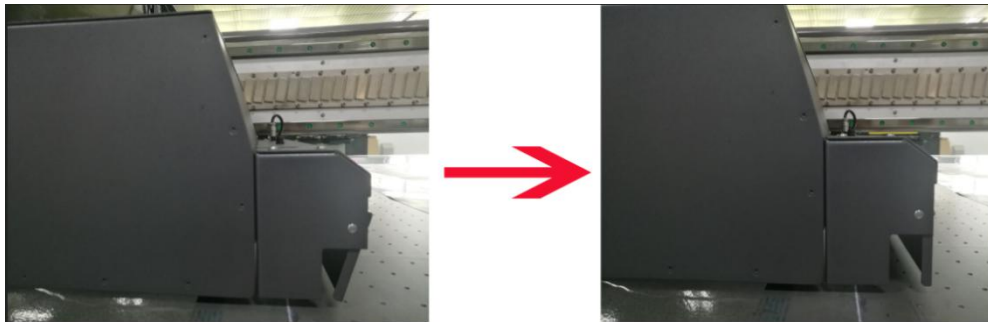
3.2 Dealing with print head strike

1 Wait for the error message to appear on the computer screen before taking any corrective action, Click "Yes" in the error message dialogue.

2 Lift the carriage and remove the media.



3 Reset the anti-crashing device.



4 Control the printer back to the standby position.

5 Restart printing job.



Note. Once the head strike incident happens, take a nozzles check as soon as all trouble solved and see if there is any damage to the nozzles. And do some troubleshooting accordingly if so.

4. Carriage moving malfunction

4.1 Servo driver error code

There are usually error messages displayed in the servo driver, deal with the issue according to the corresponding information.

Order	Code	Indication	Troubleshooting
1	oc1 or oc2	Current overload	Check and see power connection of the motor
2	oL1 or oL2	Overload	Check and see power connection of the motor
3	Hu	Voltage overload	Verified that the power input is within the rated values
4	Fb	Fuser break	Replace the servo driver
5	AH	Amplifier overheat	Keep the environment maintain below 40°C Keep the servo driver away from any heat resource
6	EH	Encoder overheat	Keep the environment maintain below 40°C Remove any item baffles the heat dissipating of the servo driver
7	LuP	Main circuit voltage defected	Check if there is any power supply interruption Verify the power input stably with rated values
8	$\bar{P}oF$	Anti-crashing & scram stop activated	Check if any anti-crashing attachment or scram stop activates, reset correspondingly.
9	$\bar{P}n0$	Media locating attachment enabled	Check the media locating attachment and turn it down if ever enabled
10	=Pot	Y-directional origin indicating	Check the opt-electric sensor if the code displays in the Y-directional non-origin position
11	=PP1	Pulse signal transmitting (the state of running)	Indicates a normal state during X-directional moving Indicates a normal state of non-origin position

4.2 Cache problem (The carriage pause too long at the two ends of the lead rail during the printing process.)

- There might be two aspects that cause this problem, below are the causes explanations and solutions.
- Excessive image size or excessive file gross result in long data processing, and thus relate to printing data transmitting slowdown. Normally when processing some large image or a great amount of images, adopt the mode of print after RIP.
- A virus might have affected the computer. Execute anti-virus operation periodically.

4.3 Printing error (with a message reads “Device is busy, please check the media location plate, raster reader and motor driver, try again.”), The causes might be:

- Anti-crashing attachment enabled
- Media positioning attachment enabled
- Encoder malfunction due to accidental crash with obstacle.
- Data transmitting error due to abrasion of the optical fiber.

4.4 Automatic head height adjustment malfunctions

- When a problem with the head height adjustment assembly occurs, check and see whether there is non-working or retards.
- If the carriage can only be operated going up but not going down. Check if there are too many dirt makes the electromagnet clog and not able to effect action, or if the head height finder is broken.

4.5 Printing quality troubleshooting

Abnormality	Troubleshooting
Horizontal banding	<ul style="list-style-type: none"> ● Check horizontal alignment ● Check color calibration
Unclear(blurred) printing	<ul style="list-style-type: none"> ● Check if the head height is right for the printing job, normally 2mm would be optimum. ● Clean the nozzles surface

	<ul style="list-style-type: none"> ● Do the calibration again
Color deviation	<ul style="list-style-type: none"> ● Adjust the total ink limit by 10%-30%.
The printed image appears dark	<ul style="list-style-type: none"> ● Check color calibration ● Adjust the brightness by 3-6 ● Select all options in the vector image. This method only effects in vector image printing.
Vertical blank or banding	<ul style="list-style-type: none"> ● Check vertical calibration and alignment ● Change the screen type
Blurred printed lines	<ul style="list-style-type: none"> ● Do the calibration again

5.Tools and Materials needed:

- ① Flushing
- ② Lint-free tissue
- ③ Isopropanol
- ④ Towels
- ⑤ Hex key
- ⑥ Butyl gloves
- ⑦ Volatility lacquer thinner
- ⑧ Grease gun and lithium lubricate
- ⑨ Lubrication oil
- ⑩ Blade
- ⑪ Electric torch
- ⑫ Clip
- ⑬ Plastic or glass syringe
- ⑭ Screw driver
- ⑮ High pressure air gun