



# **YH Series Automatic Textile Screen Printing Machine**

## **Instruction Manual**

- \* Read the manual before using**
- \* Save the manual safely**

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## **Preface**

YH series is our high-tech automatic textile printers. Aimed for higher production output and faster recovery of investments, it's equipped with intelligent micro-processor, minimal maintenance requirement but top quality print result, leading to the superior printer in any print workshop. Please make sure that all the operators should read this manual careful before using the machine.

Extra Note: YH series are the printer made by Ruian Yizhan Printing Machinery Co., Ltd. We keep the right to update machine's exterior, technical parameters and technology without prior notice. Since there might be some company-preference changes in both mechanical & electrical parts which differ a little from the manual description, our after-sale team will help you solve any occurring questions

Best wishes to our customers' upcoming business trip.

Links: This instruction manual should be one of the most important part of usage. Careful reading will ensure the operators to use it in right way. Please keeps it securely in case of pages missing, especially in the article of "**Safety Instruction**".

All right concerning this manual is reserved by our company. Other spontaneous copies or revises are not allowed without permission of our company.

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## **I. Safety Instruction**

In this article, we'll explain the safety operation of SPA series automatic textile screen printing machine, which is the basic operation guide. Please study it carefully as following sequence.

General Information—Special Information For Operators—Other Dangers—Training For Operators On Maintenance and Operation—Technical Parameters

### **1. General Information**

1.1 YH series automatic textile screen printing machine is highly built up by the advanced techniques, ensuring top running stability and durability. All person ready to operate the machine should acquire necessary training and follow the instruction literally because of complicated mechanical structures.

1.2 Thorough study from the training will secure operators from getting any hurts caused by the machines.

1.3 If the machine is installed, operated and maintained by the people who are not trained or know nothing or with little knowledge about the machine, the following dangers might happen:

- A. Some important functions missing
- B. Hurts caused by mechanical and electrical parts
- C. Print materials wasted

1.4 First of all, before operating the machine, each operator should understand the specific mission and its-related dangers as well. They should be qualified as follows.

- A. Draw entire attention to operate the machine with full of physical and psychological energy.
- B. Master the basic knowledge of the machine.
- C. Have already known and understood the operation guide, especially the article of safety instruction.
- D. Knowing the safety contents to those often used equipments provided by the suppliers.
- E. Have access to the safety ambience in working area and know how to avoid the possible danger within work range.

### **2. Special Information for Operators**

- A. Electrical box should always be closed. Otherwise the electro-circuit parts may let people getting electric attack from the open box.
- B. The function of the safety equipments has to be tested by professional operator each time before operating the machine.
- C. The upper turntable should be tested to make sure if it lifts up in the right position.
- D. No other facilities and tools are allowed to place in the range of working area except for those objects in distance beyond at least 2 meters away. All hallways

should open freely.

E. Any changes relating the machine's safety and security equipment are not allowed to proceed, unless they are authorized by the machine supplier.

F. Only the operators who have been trained by the machine supplier are allowed to regulate the printing data, operation process and some other setting-related job.

### 3. Other Dangers

Though the machine adopts the advanced technological design, some dangers might happen as same as other regular machines. The detailed instruction is listed as follows:

Danger	Description	Solution
hurts by mechanical parts	Caused by the turning part or linear moving parts.	Pay more attention on all moving parts especially on those remittent moving ones and the operators are not allowed to wear loose dress. Stand in standard safety place for operation and do not stay in or put your hands or arms inside of running parts.
hurts by surrounding objects	Fall over or slip down from the obstacles on the ground.	No any unnecessary objects placing on the working area and keep the ground dry out.
Electric Attack: Touch on the electrical parts accidentally	Indirectly touch on the electrical parts—especially those insulation broken ones.	Press on the emergency stop switch and then cut off the power

### 4. Training For Operators On Maintenance And Operation

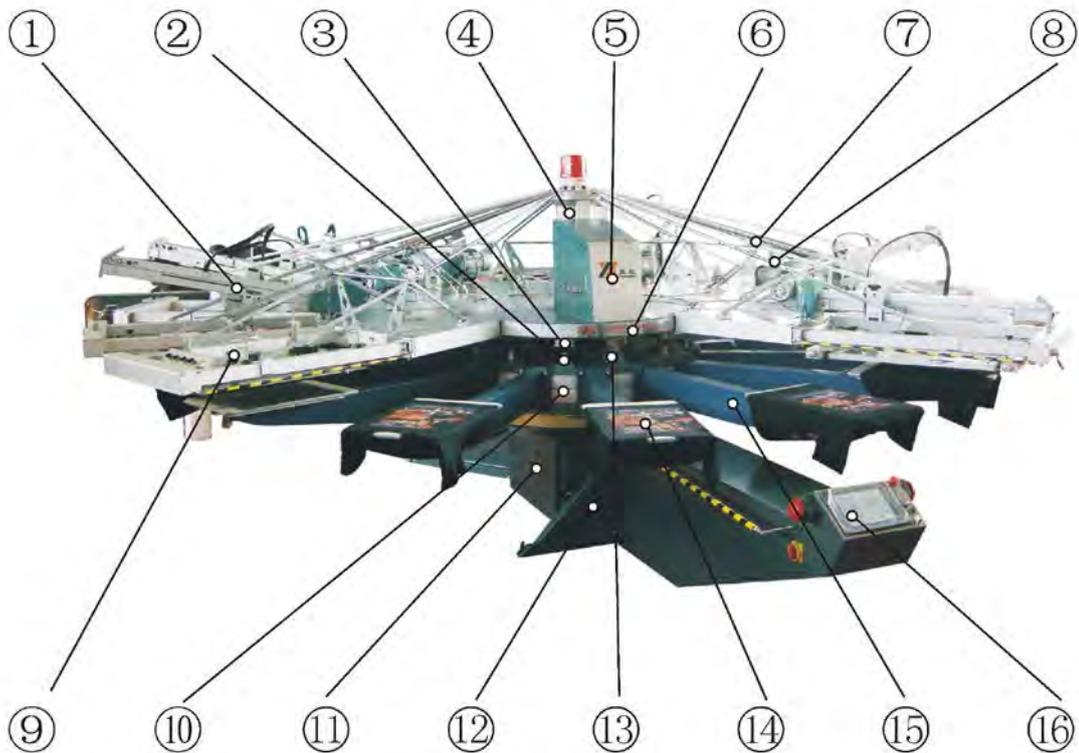
All jobs, including other auxiliary works like machine cleaning, should be done by the qualified person who has been trained by our instructors.

### 5. Technical Parameters★

Model	YH-10 X /8	YH-15 X /14	YH-20 X /22
Pallets	8	14	22
Max Printhead	X=1-6	X=1-12	X=1-20
Max Print Size (mm)	500×700	500×700	500×700
Outline Diameter (mm)	4600	5700	7600
Height (mm)	1650	1850	1850
Weight (kg)	2200	2700	4200
Max Air consumption (Liter/min)	550	600	650
Min Air Pressure	0.8MPa (Only of dry-out air)		
Voltage (V)	3 phases, 4 lines, 380V,50/60Hz		
Servo Power	2.9KW/4.4KW/5.5kw		
Print Motor	0.25kw		
Registration Clearance	+/-0.05mm		
Max Frame Size	700×980 mm		
Speed (pieces/hour)	1000pcs/hr(reasonable), 800pcs/hr (practical)		

## II. Major Parts Instruction

### 1. General Instruction

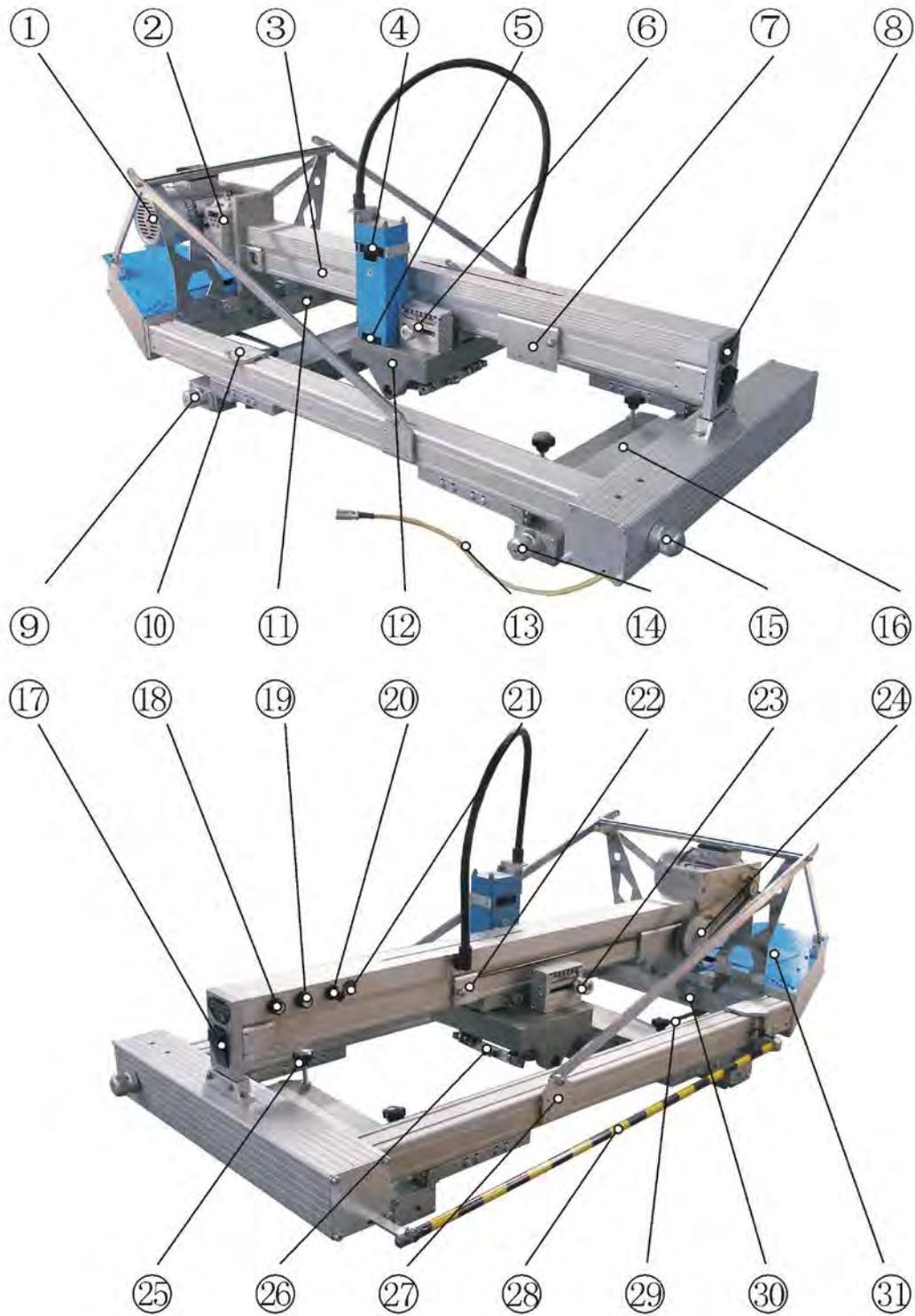


(1)Print Frame: Feature doing print job.

(2)Positioning Steel Block: Load on the top of the bottom turntable and make sure all stations run in the same distance.

- (3)Positioning Steel Fork: Load underneath of the upper turntable and feature adjusting the distance between each stations
- (4)Main Shaft: Support the whole body and bring the turntable stable running environment.
- (5)Communication Electrical Box: Contain the electrical communicating and power parts for each print heads.
- (6)Upper Turntable: Support the print frame and secure the up/down movement.
- (7)Steel Bar: hold the print frame and feature its angle adjustment
- (8)Steel Chain: Lift the printhead up and down.
- (9)Flash Cure Unit: Install on top of both curing or printing position.
- (10)Bottom Steel Turntable: Support all pallet arms and run freely in both clockwise and counter-clockwise direction
- (11)Main Electrical Box: Offer machine the major power and control transmission.
- (12)Main Body: Base supporting part in which the main cylinder and servo-motor are buried.
- (13)Positioning Sensor Switches: Three proximity switches are combined to deliver PLC the digital signals.
- (14)Pallet: Mounted on the front arm for substrate support.
- (15)Pallet Arm: Installed on the bottom turntable for pallets support.
- (16)Control Centre: Bring the major commands and off-contact adjustment.

## **2. Print Frame**



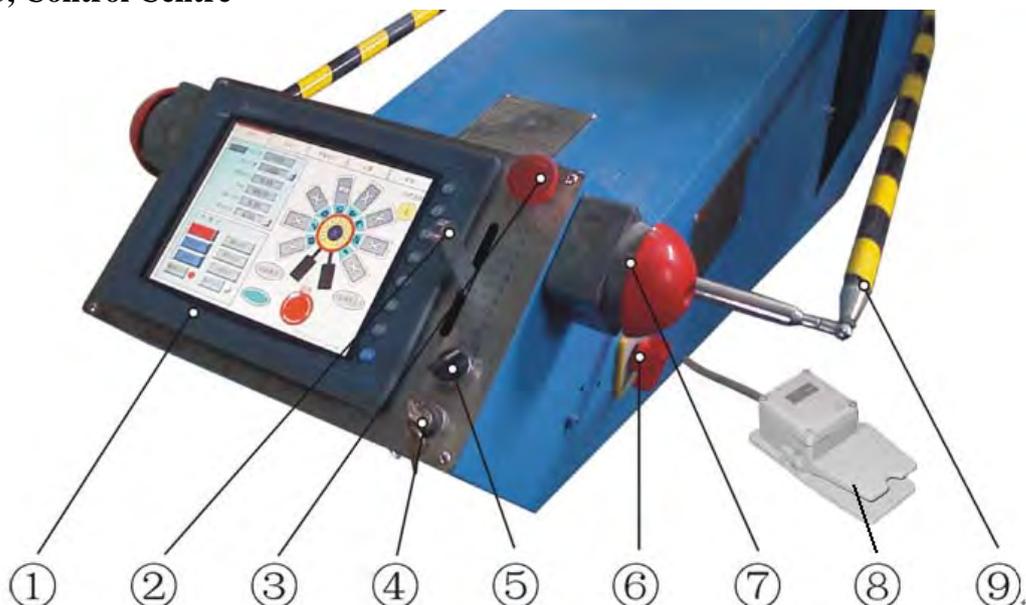
**Major Parts Description:**

(Note: In this article, the action of printhead moving backward is defined as print stroke, otherwise as flood stroke)

- (1)Motor
- (2)Frequency converter
- (3)Print track
- (4)Squeegee height adjusting knob

- (5)Flood height adjusting knob
- (6)Squeegee angle adjusting knob
- (7) Print stroke length adjusting block
- (8)Printhead control panel
- (9)Rear horizontal knob for screen frame adjustment
- (10)Aluminum block for linking the neighbor print frames
- (11)Multi-pin connector for flash cure unit
- (12)Printhead
- (13)Safety cord
- (14)Front horizontal knob for screen frame adjustment
- (15)Longitudinal knob for screen frame adjustment
- (16)Micro-adjustment combining parts
- (17)Snap
- (18)Print speed adjusting knob
- (19)Flood speed adjusting knob
- (20)Print/flood pressure adjusting knob
- (21)Print/food pressure meter
- (22)Flood stroke length adjusting knob
- (23)Squeegee angle adjusting block
- (24)Belt combining parts
- (25)Screen frame locking handle
- (26)Squeegee/floodbar frame
- (27)Frame micro leveling block
- (28)Safety bar
- (29)Screen frame locking cylinder
- (30)Proximity switch for sensing the printhead lifting up and down
- (31)Triangular supporting parts

### 3, Control Centre



- (1)Touch screen: Feature technical data and setting display.
- (2)Off-contact adjusting handle: off-contact can be adjusted in range of 0-10 mm through tuning cylinder's moving stroke length.

(3)Emergency stop switch: When emergency things happen, Press it to let the bottom turntable stop moving forward, meanwhile it can return backward and stop at the nearest work position.

(4)Lock switch: used for locking the touch screen when people enter inside of the machine--unlock it by spinning clockwise.

(5)Start/stop switch: used for machine startup and stop

(6)Power source switch: control the electrical power supply

(7)Skip-shirt smash button: Located on both side of the control centre, it allows operator to avoid printing on the empty pallets as they travel through the print station meanwhile it doesn't interrupt other running pallets.

(8)Petal switch: It functions in three different ways.

a) In the automatic running mode: stepping on it will stop turntable running until loose it.

b) In the semi-auto mode: one time step means one time print cycle.

c) In the manual mode: when you step on it and hold on, it will let a big steel sheet pop up to loose the pallets mounted on the top arms and then you can take off the pallets in a pleasure

(**Note:** some machines might not input this kind of function).

(9)Safety bars: Mounted on both side of the central working area, function as same as emergency stop button when pressing them.

### III. Safety Control

#### Note:

I, All the safety combining parts can work as same for emergency stop purpose even though the person is stuck inside of the circling area. Usually test them to see if they still work on well.

II, When the machine works in the manual mode, the safety parts can be operated as needed, but in both semi-auto and automatic modes, the safety combining parts are forbidden to use for only stop purpose.

1, Emergency Stop Switch: The machine is going to stop working while pressing this red button switch. Spin it in reverse direction to recover its working mode.

2, Safety bars: Mounted on both side of the central working area, they are wrapped with yellow and black colored adhesive bands.

3, Safety cords: linking between two each print stations, the machine will stop working once snap them off. Any one or more of the safety cords should be snapped off before the operators go into the inside area.

The above safety combining parts link to the servo system like a circuit. Whatever you trigger any of them, there will be an emergency stop SIGN occurring on the touch screen.



**Note:** any safety parts should not be used as stop purpose if machine runs in normal way, otherwise there will be an extra load or burden happening on gear box and motor. Overusing them will easily break the machine and then our one year limited warranty will be expired.

## **IV, Machine Installation and Adjustment**

In this article, it will show the contents of how to install and regulate the screen printer.

### **1, General Information**

The machine installation has to be done by our company's technician or the qualified person authorized by our Yizhan corporation, otherwise the warranty will be expired.

Note: At least two workers are needed to assist our technician to complete the entire installation.

### **2, Working Place Requirements**

The minimum distance between the machine and surrounding objects like wall and pillars or other machines is not less than 1 meter. The base ground should guarantee the machine will not sink in the coming service years.

### **3, Working Ambience Requirements**

To obtain the excellent print result, the surrounding ambience should be follow as:

3.1 Workshop features clean, dry and ventilated.

3.2 The temperature should be in the range from 5° C and 40° C.

3.3 The humidity can not beyond 80% .

3.4 The voltage error should be less than +/-10% of the machine's standard voltage, otherwise a manostat is needed.

3.5 The compressed air should be filtered and keep dry before entering inside of machine.

3.6 Keep attention to the electric hit protection.

### **4, Installation Sequence of Major Body**

The machine will go to the adjustment step until finish the basic installation. The major adjustment sequences and adjusting positions are listed as follows.

4.1 Position Major body: If the central body loads on the base holder, level it by tuning four ground screws mounted under base. Tighten them until finish the tuning job.

4.2 Turn on the electrical and air source and let the upper turntable moving up to the maximum place if all the wire lines are linked.

4.3 Load on the printing and curing frames.

4.4 Load on the support arms, ensuring them on even.

4.5 Load on pallets

4.6 Turn on the electric power to let the make run in low speeds when make sure all parts move in interruption free.

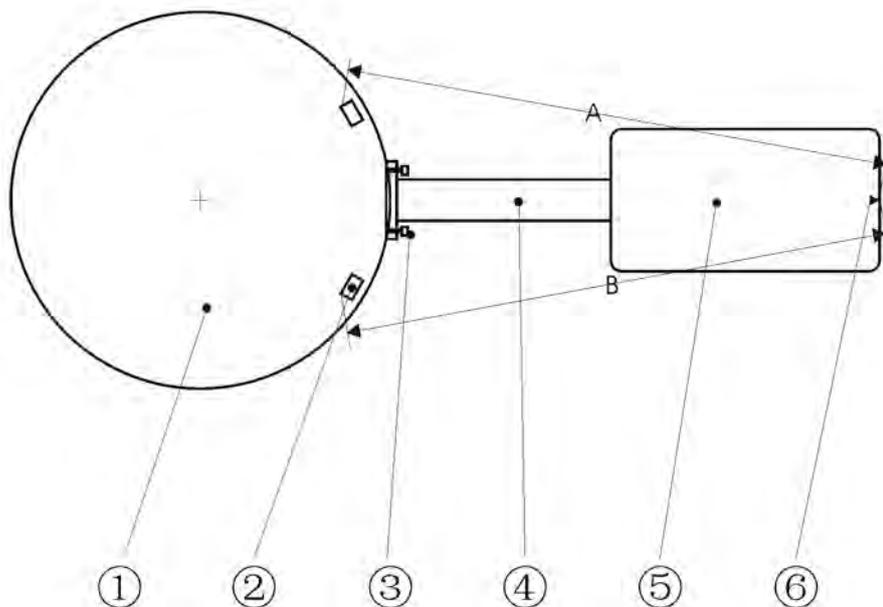
### **5, The Adjustment of Station Frames, Pallet Arms and Pallets:**

This article is very important part of the manual, of which the sequence is flexible as to reach the reasonable mechanical error clearances as follows:

- 1), Pallet Arm Evenness: the minimum distance between the top of two nearby arms should be less than 3 mm.
- 2), Pallets on The Same Spatial Surface: The height clearance for all pallets should be less than 0.5mm.
- 3), The depth of parallelism between the print/flood stroke level and the screen level should be less than 0.5mm/M
- 4), The depth of parallelism between the pallet and screen should be less than 0.5mm/M.

#### Adjustments Processes:

5.1, Target the highest pallet and mark the point on the central middle of outer rim entitled (6), in the meantime find out two symmetric positioning steel blocks (2) on both side of the pallet-related arm (4) of the bottom turntable (1). Make sure the distances entitled A and B from the central rim of the pallet to the positioning blocks are equal—(A=B).



- 5.2, Level the pallets in the same spatial surface by adjusting the underneath screws of the pallets.
- 5.3, Turn the pallet to the underneath of any one of the print frames and let the upper turntable decline to the lowest point.
- 5.4, Let the screen level with the print stroke line by tuning the screws locking on the frames.
- 5.5, Target one longest middle central point of the print frame and move the frame from side to side to make sure the central lines align perfectly to the bottom pallet.
- 5.6, Level the screen frame and the bottom pallet equally by tuning the screws out on the side handles and the fixing blocks on the frame side.
- 5.7, Adjust the rest frames sequentially by tuning the arm position and pallet heights based on the coordinate of the first finished frame.

5.8, Make sure the rest screen frames leveling with their print stroke line by tuning the screws. On the other hand, adjust the rest pallets and frame to let them leveling in the same distance.

5.9, Tighten all the screws on the frames and link the nearby frames firmly.

## **6, Upper Turntable Moving Cycle Adjustment**

The upper turntable will move a cycle up and down for any one of print cycle. Good pre-set assures long time service life, major parameters listed as follows.

6.1, In the clean position, the distance from the bottom face of upper turntable to the top face of the down turntable is 170mm approximately.

6.2, In the lift-up position, the distance from the bottom face of upper turntable to the top face of the down turntable is 140mm approximately

6.3, In the lift-down position, the distance from the bottom face of upper turntable to the top face of the down turntable is 170mm approximately

6.4, Make sure the distance from the bearing rim of the positioning fork to that of positioning block on the bottom turntable should be more than 3 mm when the turntable lifts up.

6.5, Make sure the bearings of the positioning fork can fit the bottom positioning block reasonably when the turntable lifts up.

6.6, Change the up/down positions of upper turntable by tuning the screws mounted out on the shaft—decrease by clockwise tuning and increase by counterclockwise.

6.7, Change the up/down positions of the upper turntable by moving the stroke sensor block out on the main cylinder. The sensor block close to the motor is functioned as down move—increase the move-down distance by tuning left side, vise versa. The sensor block close to bottom shaft is functioned as up move—increase the move-up distance by tuning right side, vise versa.

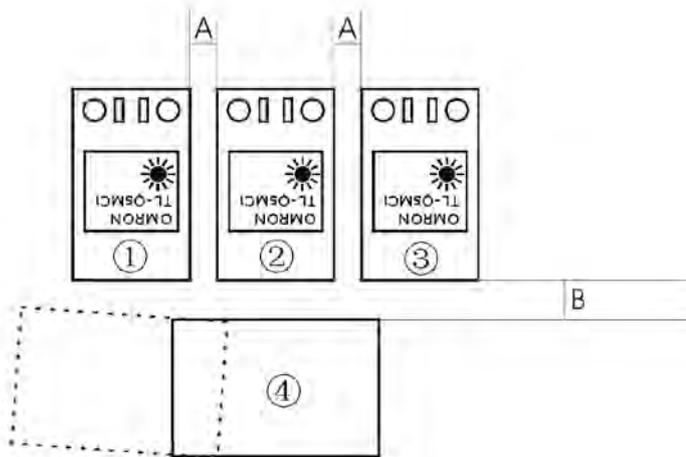
6.8, Let the upper turntable moves smoothly by tuning two screws mounted on the sides of the air inlet and outlet of the main cylinder, which arrive at the reasonable shock absorbing environment.

6.9, Make sure there is no parts shocking sounds when doing the above steps

6.10, Make sure all parts are totally locked down after separate adjustments.

## **7, Proximity Switches of the Upper Turntable**

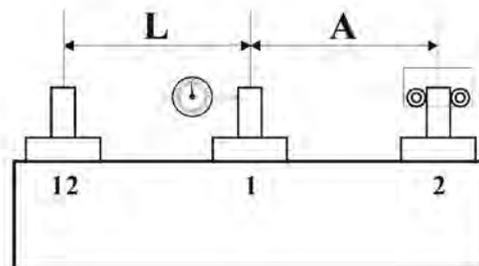
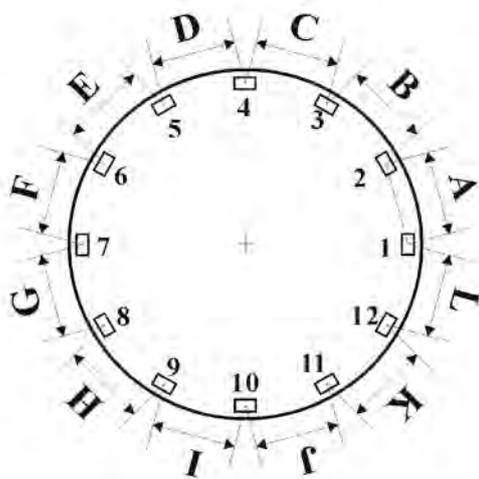
The following three proximity switches feature judging the moving directions and positioning precision, illustrated as below.



- 7.1, The distance for A is in the range of 3-4mm and the distance for B is in the range of 4-5mm.
- 7.2, The proximity switches—(1), (2) and(3)--will light up consecutively when the positioning block (4) passes through them.
- 7.3, The proximity switch (2) will lift up when the upper turntable lift down while the rest of them do not work.
- 7.4, All the positioning blocks should work as same as above positioning block do.

**8, Steel Positioning Block**

The precision of the positioning blocks determinates the final registration clearance where the error distance for all nearby blocks should be less than 0.02mm. The tuning methods are listed as follows.



Technically, the final tuning result should be equal to the equation of  $A=B=C=D=E=F=G=H=I=J=K=L$  where there is 12 positioning blocks coded on the rim of the turntable. The tuning methods are listed as below.

- 8.1, Tighten the bearings mounted on the positioning forks to make sure they have some constriction margins when inserted by its-related block.
- 8.2, .Tighten the bearings mounted on both sides of the cross bar to make sure they are fixed and have some constriction margins.
- 8.3, Lift down the upper turntable, install a positioning block No 2 and then mount a calibrated meter on the rim of it close to the left side of the block No 1 and keep protrusion pin touch with it in right angle. Write down the data occurring on the meter for now.
- 8.4, In clean mode, be aware of the block hitting incidence of the calibrated meter when spin around.
- 8.5, Write down the calibrated data of the block No 2 from the meter when solid the block by its holder.
- 8.6, Write down the calibrated data of the block No 3 from the meter when solid the block by its holder.
- 8.7, Keep note of the data for all rest positioning blocks from the A to L by following as the same method as block No 2 do.
- 8.8, Sum up all the data and divided by 12 to get an **average value**.
- 8.9, Use the positioning holder to lock down the positioning block No2 and loose the locking screws on block No 1 to adjust the position to reach at the average value.
- 8.10, Use the positioning holder to lock down the positioning block No1 and loose the locking screws on block No 12 to adjust the position to reach at the average value.
- 8.11, Adjust the rest blocks (12-1) and solid them after finish the rest blocks tuning to the average value.
- 8.12, It is no need to adjust the last positioning block No 2. But it is necessary to let the error clearance to even it and coordinate to all blocks only if error value is beyond the range of  $\pm 0.02\text{mm}$ . And the positioning blocks will finish until the error clearance is within the range of  $\pm 0.02\text{mm}$ .

## **VI, Startup and Stop**

The machine's first trial should be operated by our company's technician or the qualified people authorized by our Yizhan company. And the trial report should be filled out. The testing results should be recorded securely and any possible faults or malfunction should be written down on the test report. Two parties should sign on the test report paper unambiguously where the date and place are marked. Thenceforth, the authorized workers should confirm the operating regulation literally to start the machine.

### **1, Startup Regulation**

- 1.1 The machine should be operated by the personnel who has been trained, qualified and know the safety instruction well all the time.
- 1.2 The machine's possible malfunction should be removed by the authorized personnel before startup. Only the authorized personnel have rights to enter into the work area to avoid any unnecessary mistakes.
- 1.3 Check the connection of electric circuit and air pump devices before startup.

- 1.4 Check the safety devices before startup.
- 1.5 Make sure the upper turntable lifting up to the right place before startup.
- 1.6 Unnecessary tools and equipments should keep away from the machine.
- 1.7 Ensure all workers have known the function and position of the safety devices.

## **2, Stops During Normal Working Mode**

Stick to the following instructions to implement the stop work during to normal working mode.

- 1.1 Rinse the screen frame and print position
- 1.2 Click on the “clean” button in manual mode to let the bottom turntable moving a half step in case of bumping accident between the positioning steel forks and blocks.
- 1.3 Turn off the machine through the startup & stop switch.
- 1.4 Turn off the power supply.

## **3, Long Time Stops**

Need no-using the machine for a planned long term. Follow the steps as below.

- 1.1 Remove the screen frame and unused ink.
- 1.2 Click on the “clean” button in manual mode to let the bottom turntable moving a half step in case of bumping accident between the positioning steel forks and blocks.
- 1.3 Turn off the main control switch
- 1.4 Cut off the electrical supply
- 1.5 Rinse the machine thoroughly
- 1.6 Carry out maintenance as needed

## **4, Stops During Trouble Attacking**

If the central controlling system senses trouble hitting, it will shut down the machine in case of accidental hurts to the operators. Solve the problem before using again.

## **5, Stops During Dangerous Circumstance**

- 1.1 When the operators sense the possibility of the upcoming dangers, they can stop machine by implementing the emergency stop switch, safety bars and safety cords.
- 1.2 Pressing the safety handles, wrapped in yellow and black color bands on both sides of the central working area, will also perform as same function as other safety parts.



**Note:** Any safety parts should not be used for stop purpose if machine runs in normal way, otherwise there will be an extra load or burden happening on gear box and motor. Overusing them will easily break the machine and then our one year limited warranty will be expired.

## **VII, Controls**

In this article, as the mechanical and electrical parts have been described clearly, we

will mainly explain how to be familiar with the touch screen and membrane control panel on each print station.

The major important screen pages are illustrated in the following contents. But not all pages are illustrated since our current software is complicate and integrate. The illustration is made according to our present software. The pictures might change in different model of machines.

## **1, General Information**

.The mechanical control equipments are composed of touch screen, industrial PLC, communication control centre, servo motor, frequency converter, power, transformer and other related parts. All the parts are controlled by the touch screen and membrane control panel mounted on front head of each print station.

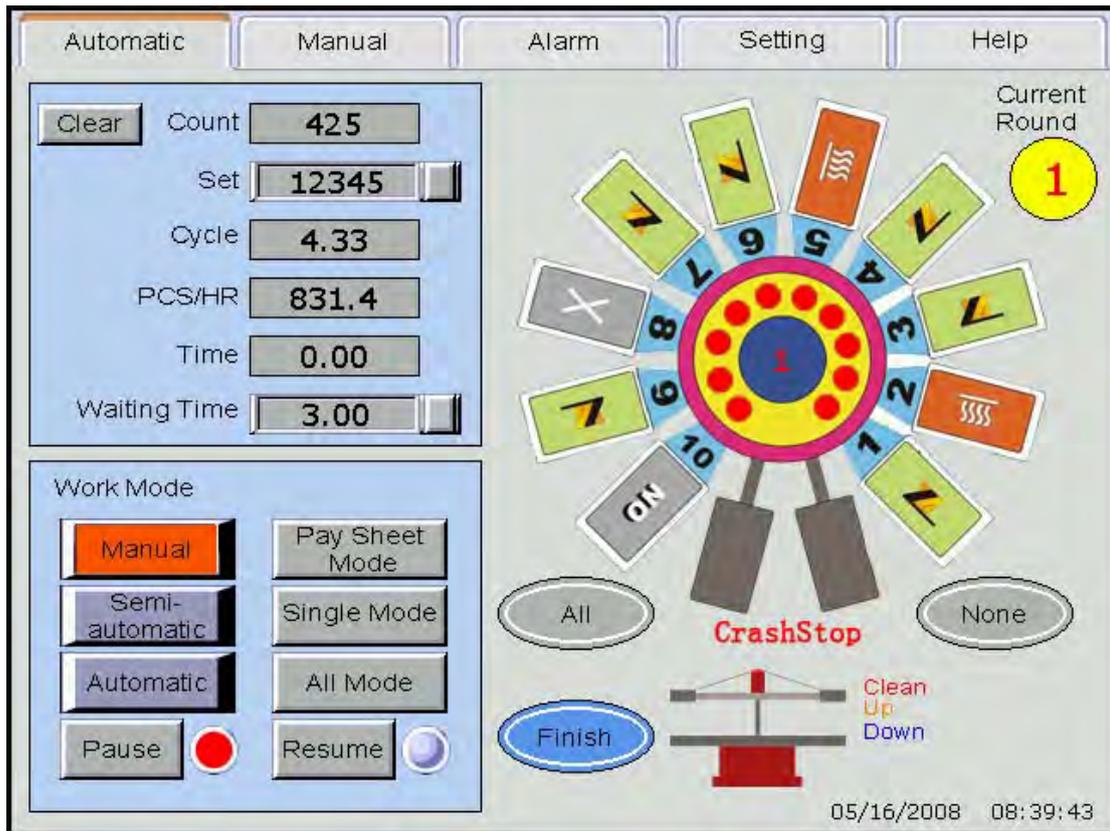
Clean screen with some soft fabric cloth. The erosive detergents are not allowed to clean the touch screen in case of surface damages.

Note: Yizhan company highly recommend using self-adhesive transparent membrane to protect the screen from getting scratches and damages.

## **2, Instruction on Touch Screen**

Turn on the power and the starting page will pop up until pass 8 seconds. Input the passwords and you will enter into the main operation page where there are 5 major pages that are Automatic, Manual, Alarm, Setting and Help respectively. They are illustrated as follows.

### **2.1 Automatic Page**



- (1) Clear: the real-time production data will be zero after 5 seconds click on it
- (2) Count: Display the real-time production data
- (3) Set: Preset the production data
- (4) Cycle: one print cycle time
- (5) PCR/HR: Indicates the speed of production by hour
- (6) Time: Indicates the loading time left.
- (7) Waiting Time: Set the fabric sheet loading time—the pallets arm will run when the time cuts off
- (8) Manual: The machine will be in manual mode effecting in the beginning and end of work afterwards.
- (9) Semi-automatic: the “keep working” dialogue will pop up when click on this button and re-click the right side button. And the printer will run a cycle according to the preset commands if step on the pedal switch.
- (10) Automatic: the “keep working” dialogue will pop up when click on this button and re-click the right side button. And the printer will keep working according to the preset commands until step on the pedal switch and hold it, vice versa.
- (11) Pay Sheet Mode: The print stations will start working consecutively by clicking it.
- (12) Single Mode: All print heads only work on one substrate sheet.
- (13) All Mode: All activated print heads start working when clicking on them.
- (14) Pause: The machine will pause on all modes
- (15) Resume: Recover working from pause state

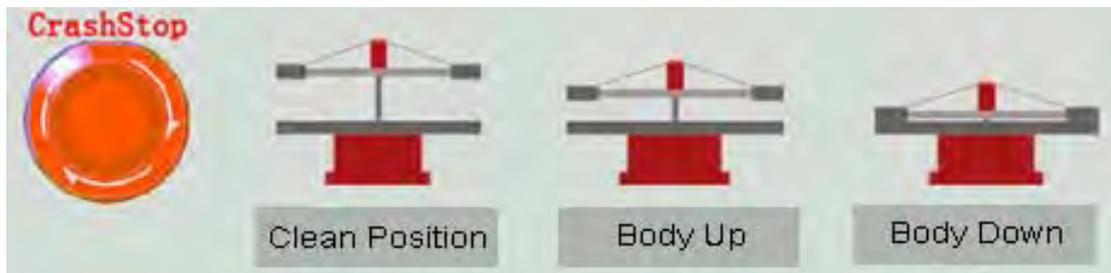
- (16) Current Round: Only display on the thick ink print mode to show the rounds
- (17) All: All work stations activated.
- (18) None: All work stations aborted
- (19) Finish: Clicking it will stop current working stations and fabric sheets load is forbidden.

**Icons Description On Print/cure Station**



- A: Print Station;
- B: Cure Station;
- C: No Equipment Station;
- D: Station Aborted

**Icons Description On Turntables**

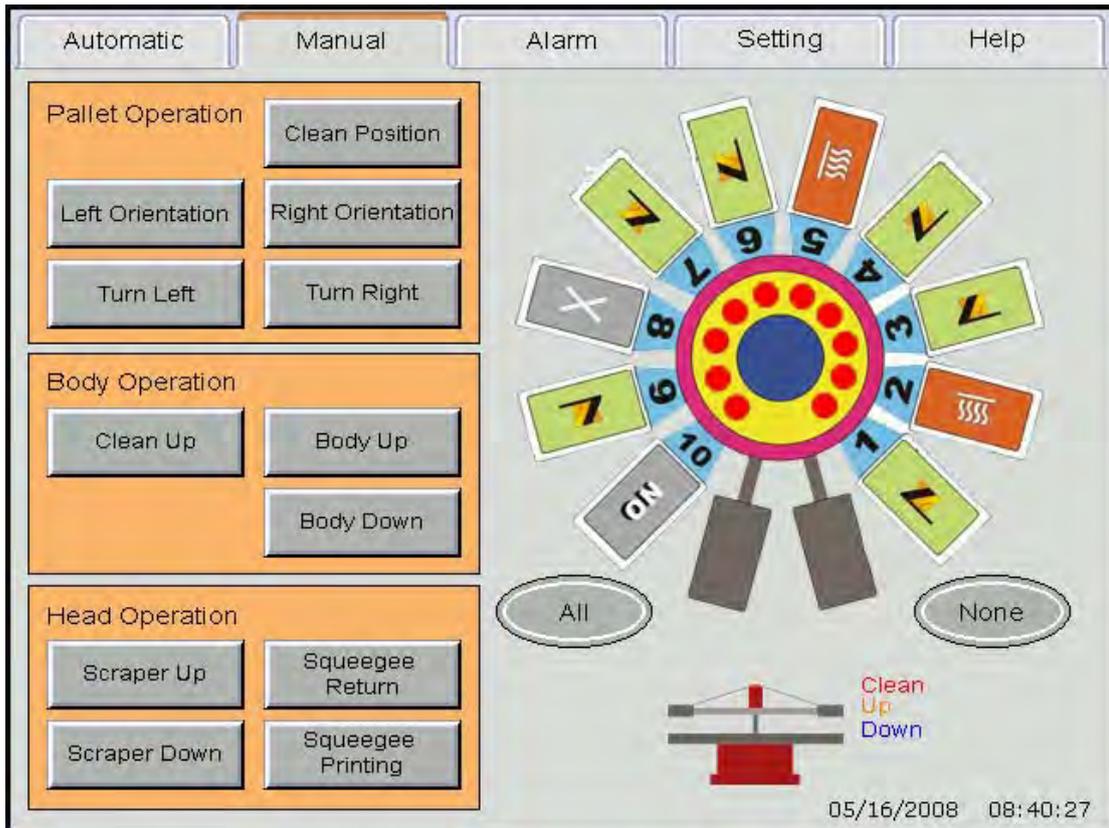


**Icons Description On Light Indicator**



Red paint indicators show the current station being working according to the preset commands. The red number on the blue circle means the starting print station around the whole cycle.

**2.2 Manual Page**



### Button Description

(1) Clean Position: The upper turntable will lift up to the maximum meanwhile the bottom turntable will turn half position way and stop in favor of cleaning screen and pallets. The bottom turntable will turn back to the original place as re-click this button.

(2) Left Orientation: As click this button, the bottom turntable will spin leftward until the nearest positioning block stand in the middle of three proximity switches, where the upper turntable can only launch the lifting up and down function.

(3) Right Orientation: As click this button, the bottom turntable will spin rightward until the nearest positioning block stand in the middle of three proximity switches, where the upper turntable can only launch the lifting up and down function.

(4) Turn Left: The bottom turntable will move leftward in one station way by one click.

(5) Turn Right: The bottom turntable will move rightward in one station way by one click.

(6) Clean Up: The upper turntable will lift up to the maximum while click it.

(7) Body Up: The upper turntable will lift up to the highest practical work height while click it.

(8) Body Down: The upper turntable will lift down to the lowest practical work height while click it.

(9) Scrapper Up: All the scrapers in the triggered print stations will lift up while click this button.

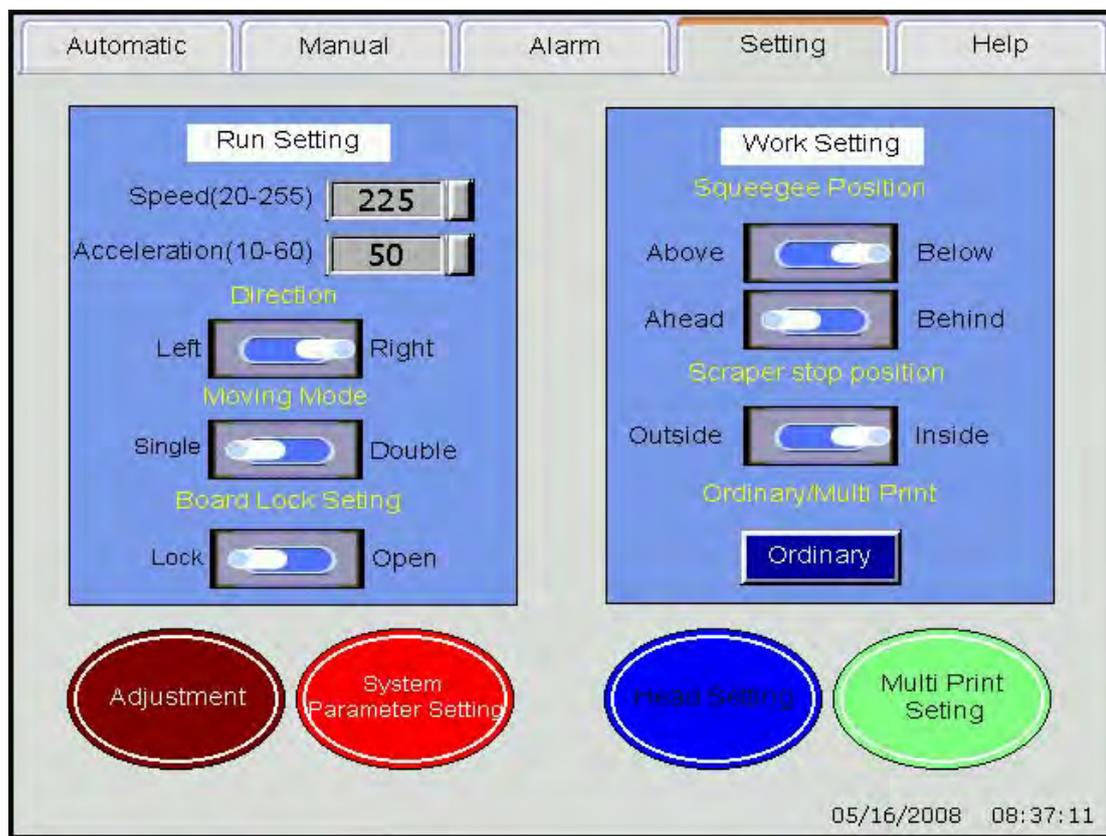
(10) Scrapper Down: All the scrapers in the triggered print stations will lift down

while click this button.

(11) Squeegee Return: All the floodbars in the triggered print stations will execute flood strokes while click it.

(12) Squeegee Printing: All the squeegees in the triggered print stations will execute print strokes while click it.

### 2.3, Setting Page

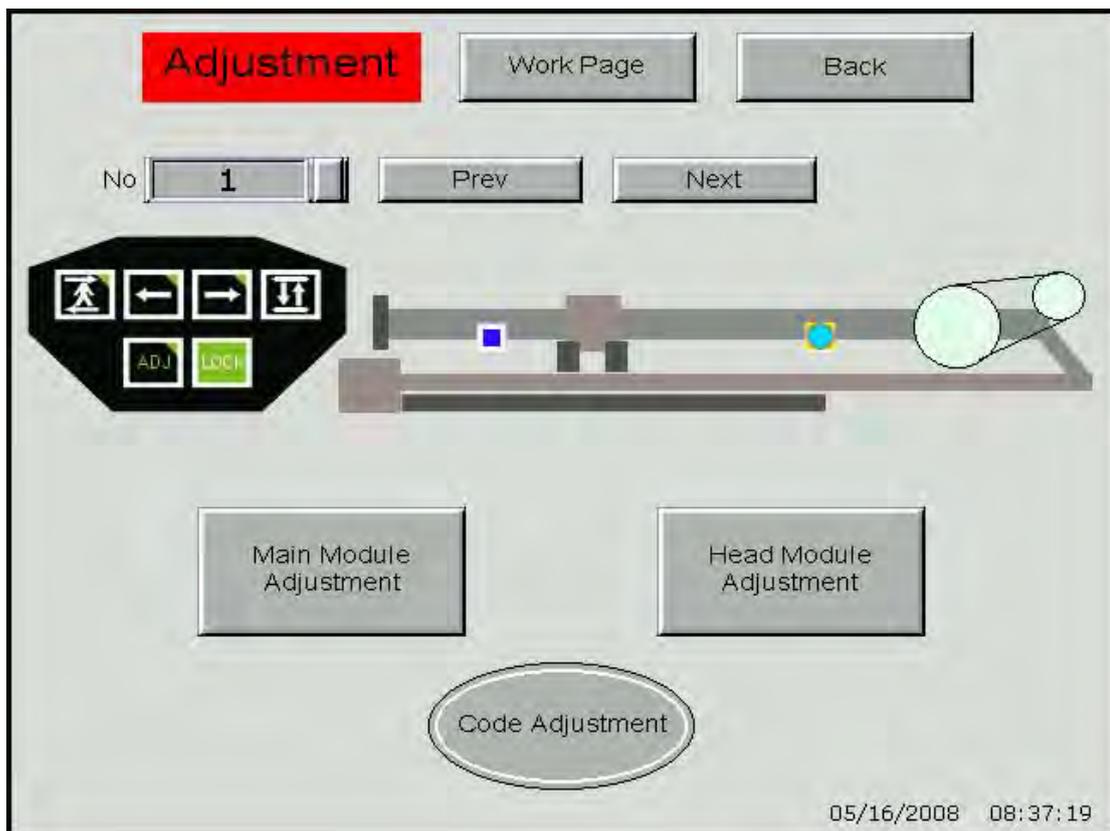


#### Major Buttons:

- (1) Speed: Indicates the speed of bottom turntable
- (2) Acceleration: Indicates the acceleration of bottom turntable
- (3) Left: Indicates bottom turntable will spin leftward in the automatic working mode—note: the button is only used for test mode.
- (4) Right: Indicates bottom turntable will spin rightward in the automatic working mode.
- (5) Single: Indicates the turntable will run one station by one time while circling.
- (6) Double: Indicates the turntable will run two stations by one time while circling.
- (7) Lock: The pallet changeover is aborted during this mode
- (8) Open: The pallet changeover works during this mode.
- (9) Below: The printhead will flood while the upper turntable is lifting down.
- (10) Above: The printhead will flood while the upper turntable is lifting up.
- (11) Ahead: The bottom turntable will spin only if printhead finishes flood action.
- (12) Behind: The bottom turntable will spin before printhead finishes flood action.

- (13) Ordinary: The machine will switch between the ordinary and multi-print mode.
- (14) Adjustment: Enter into adjustment page while click it.
- (15) System Parameters Setting: Enter into system parameters setting page while click it.
- (16) Head Setting: Enter into head setting page while click it.
- (17) Multi Print Setting: Enter into multi print setting page while click it.

### 2.3.1 Adjustment Page



#### Major Buttons:

- (1) No: Display the state of current station
- (2) Pre: Select the pre-station
- (3) Next: Select the next station
- (4) Print frame illustration: Display the state of both membrane control panel and frame proximity.
- (5) Main Module Adjustment: Enter into the main module adjustment page
- (6) Head Module Adjustment: Enter into the head module adjustment page.
- (7) Code Adjustment: Enter into the code adjustment page.

#### Main Module Adjustment Page:

Act Status 0000001111111111 As Status 0000000000000000 Work Page  
 Act Error 0000000000000000 As Error 0000000000000000  
 Act Cmd 0 Alarm code 7 Clear Back  
 Left Right Waiting Time 3.00 0.00

**Manual** **Input**  
 Alert sw1 sw2 sw3 up down stop hand foot lock

Head Code Work Mode  
 10A Manual  
 20A Semi-automatic  
 10A automatic  
 10A automatic  
 20A New Run  
 10A Finish  
 10A Run Time 4.33  
 0 Pulse 831.4 15638

**Output**  
 ser on clear clean work brake switch light AlarmWeight  
 0.20  
 Left Orientation Right Orientation Printing Return  
 Left Right Scraper Up Scraper Down  
 Clean Measure Head Adj Clean Up Body Down  
 Speed 225

### Head Module Adjustment Page

**Head Module Adjust** Work Page Back

No 1 Prev Next

Type 10A Return Status 0000000000000000 Err Code 0  
 Print Num 2 Print Frequency 40.0 Return Frequency 40.0

Input: [10 lights]

Output: [10 lights]

### Codes Adjustment Page:

		NO.	
0	66	6	60
1	63	7	66
2	62	8	64
3	68	9	62
4	67	10	65
5	66	11	61

0 0 15621

Measure Back

#### Description for above threes pages:

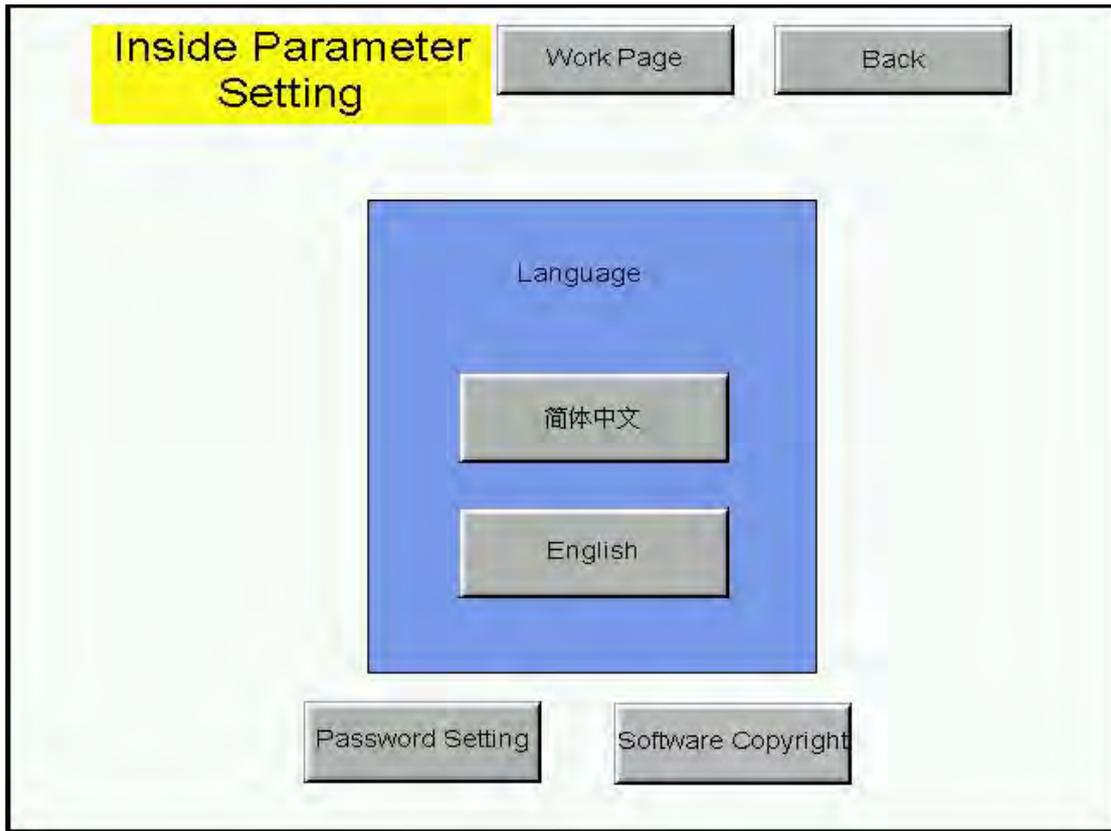
This page is only available to the professional fix operators, which might need an advanced password to log in. Other person is forbidden to enter in.

The page features displaying specific signal feedback of the station positioning system. Like positioning-related electronic pulse number and other digital data etc. Please comprehend them before using as necessary.

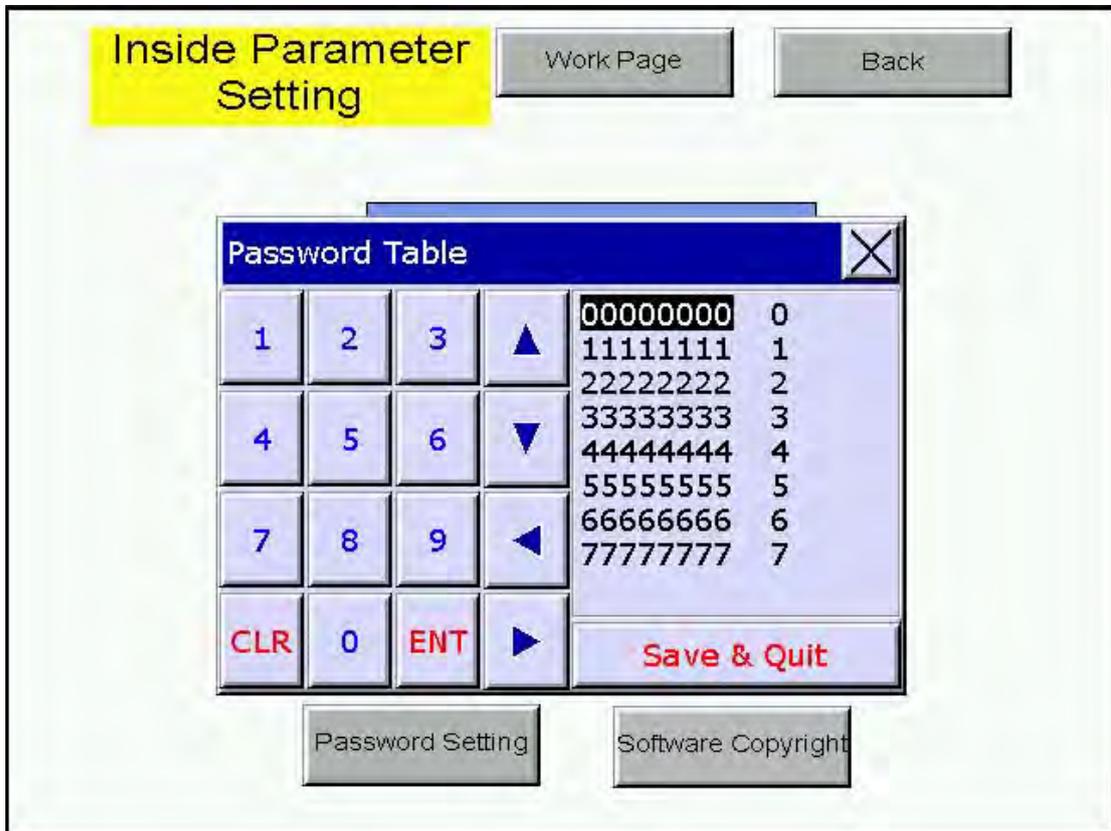
The manual do not describe more details except for above contents.

#### 2.3.2, System Setting Page

The passwords and operation languages change can be realized on this page.



**Passwords Exchange Page**



## Software Authorization Page

Software authorization

Validity Period: 2008 Y 5 M 31 D

Soft Information: Normal

Information Machine: 3216097635

Input Approved: 0

Transfer Time: 0

2008 Y 5 M 16 D 8 H 40 M 24 S

Pre-page

### 2.3.3 Head Setting Page

The page here concludes both print station page and cure station page where they can exchange by clicking on their-related icons illustrated as follows.

#### **Print Station:**

Description On Print Head Setting

(1), The table only includes the major parameters to the triggered printheads. The parameters of un-triggered printheads will be shielded on the table space.

(2), Printing Number: Indicates the total print/flood strokes in one time. The strokes range is within 0 to 50

(3), Squeegee Printing: Indicates the print strokes in one time. The stroke range is within 0 to 50 where one stroke time should be less than 6 seconds.

(4), Squeegee Return: Indicates the flood strokes in one time. The stroke range is within 0 to 50 where one stroke time should be less than 6 seconds.

Head Setting		Work Page	Back
Print	Heat		
	Printing Number	Squeege Printing	Squeege Return
No 1	2	40.0	40.0
No 2			
No 3	1	40.0	40.0
No 4	1	40.0	40.0
No 5			
No 6	1	17.2	32.8
No 7	1	40.0	40.0
No 8			
No 9	1	40.0	40.0
No 10			

**Cure Station:**

Description On Cure Station Setting

(1) The table only includes the major parameters to the triggered cureheads. The parameters of un-triggered cureheads will be shielded on the table space.

(2) Fan Mode: indicates the fan cooling modes ranged from 0 to 3.

A, 0: Fanning always on

B, 1: fanning when the cure head is activated, vise versa

C, 2: fanning when the cure head is un-activated, vise versa

D, 3: fanning always aborted

(3) Run: As the cure heads are activated, the cure values are ranged from 0 to 7 where there are 8 different cure levels that 0 is curing off, 7 is full curing and other numbers show their-related cure grades.

(4) Stop: As the cure heads are un-activated, the cure values are ranged from 0 to 7 where there are 8 different cure levels that 0 is curing off, 7 is full curing and other numbers show their-related cure grades.

(5) Time: Indicates the curing time ranged from 0 to 60 seconds when the cure heads are activated.

Head Setting      Work Page      Back

Print      Heat

	Fan Mode	Run	Stop	Time
No 1				
No 2	2	7	0	3
No 3				
No 4				
No 5	2	5	1	4
No 6				
No 7				
No 8				
No 9				
No 10				

Fan Mode 0:On 1:Off 2: Signal On 3:Signal Off

### 2.3.4, Multi Print Setting Page

Multi Print Setting      Set Round's **2**      Back

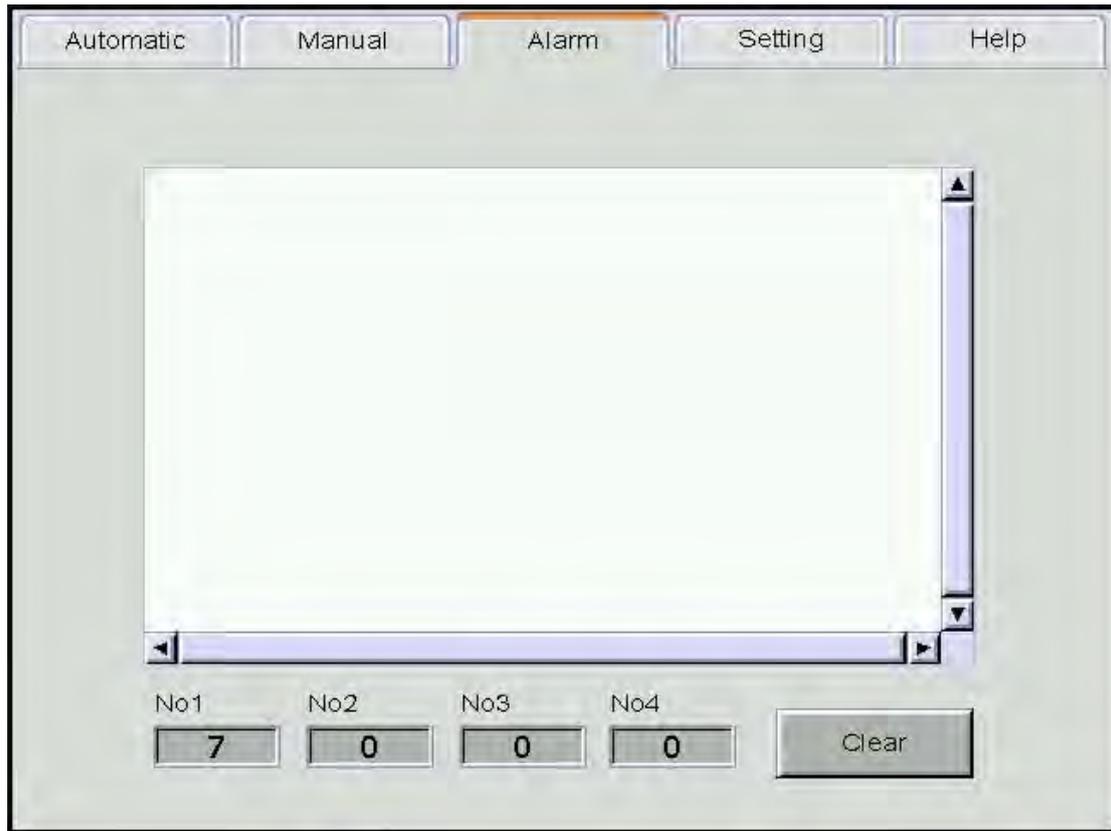
NO	1	2	3	4	5	6	7	8	9	10
Round 1	<input checked="" type="radio"/>									
Round 2	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Round 3	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Round 4	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Round 5	<input checked="" type="radio"/>									
Round 6	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Round 7	<input checked="" type="radio"/>									
Round 8	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Round 9	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Round 10	<input checked="" type="radio"/>									

(1) This page only works on the thick ink print mode. The rounds number can be preset in order to build up ideal layers, ranged from 2 to 10 rounds.

(2) The rounds and its-related stations are vividly displayed on the table, where the red icon means being activated, vice versa.

(3) During the whole thick ink print mode, the activation and un-activation on both automatic and manual pages are aborted.

## 2.4, Alarm Page



### Description On Alarm Page

The on-board program will detect out the causes and place where the troubles hit. The specific alarming code numbers show the relative phenomenon, cause and solution in favor of shooting the problems, illustrated as bellow table.

Alarm Code	Phenomenon	Causes	Solutions
001	Trouble on the servo motor. Please start it again after turn off the power.	It is automatically originated from the servo driver, clued by the main supervisor.	Check on alarming information on the servo driver and judge the causes.
002	Pallet shakes while upper	The positioning blocks or proximity switches are not	Adjust the positioning blocks or proximity

	turntable runs down.	on the right place.	switches.
003	Upper turntable doesn't lift up on the right position as pallet arms run	The upper turntable doesn't lift up to the right position while executing the left and right turn modes.	Clear out the alarm to operate in right way
004	Abnormal positioning	The positioning blocks or proximity switches are not on the right place.	Adjust the positioning blocks or proximity switches.
005	Position searching goes wrong.	Can't sense the right signals while positioning. Coder can't bring out signals.	Adjust the positioning blocks or proximity switches and test the coder for flexibility.
006	Servo-motor mission rush in jam	Click on the screen button to initiate a new mission before the prior one unfinished.	Clear out the alarm to operate in right way
007	Time-out on servo motor	The work hasn't been done with the preset time limit.	Check out if there are some causes resisting the servo motor.
008	Micro-adjustment goes wrong on Servo motor	The signals from proximity switch and coder are not harmonized when servo motor doing the high precision positioning job.	Check out if something wrong goes on placing the proximity switches.
009	Communication mode block goes wrong.	Contact lost between the main control mode and communication control mode.	Check out if hardware main control mode is broken down or the contact missed between the main control mode and communication control mode.
010	Wrong equipments type.	Some heads do not work normally being tested out by the mode.	Test the trouble modes to see if they work normally according to their relative codes.
011	Communication of the frequency converter goes wrong.	Troubles occur on some head control modes and frequency converters.	Test the trouble modes, frequency converters and their contact to see if they work normally according to their relative codes. ( backed up by the outside digital display )

012	Time-out on print	The printhead can't complete one stroke within 6 seconds.	Check to see if there are some causes resisting the head motors.
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Clear out the current alarm by clicking on the CLEAR button as necessary. In the same time, there is line of code zone ranged from 1 to 4 to show the specific causes in favor of test.

## 2.5, Help Page

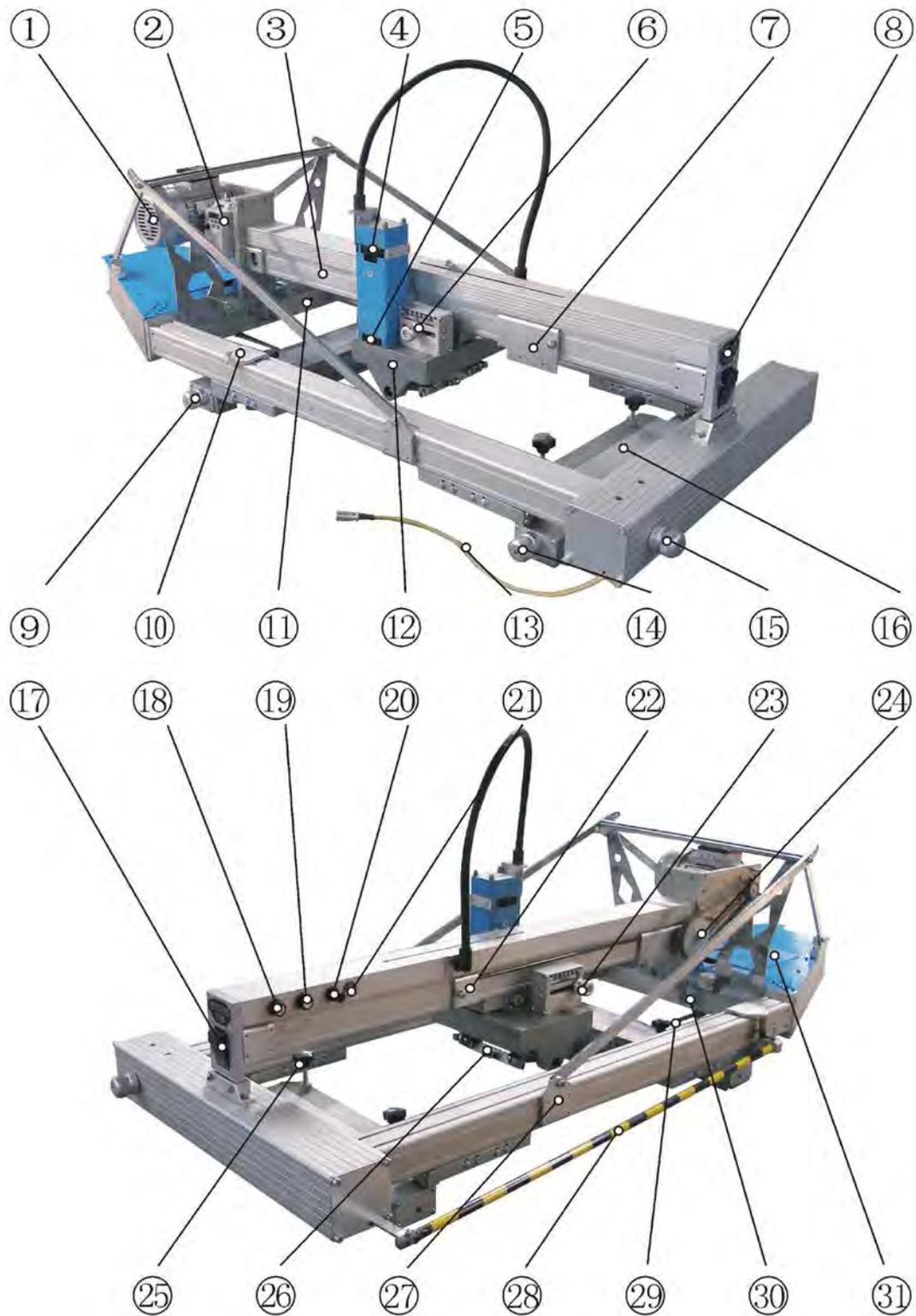
Description on Help Page

This page offers regular helpful information and basic operation guide.



## 3, Instruction on Print Position

### 3.1 Adjustment On Print Frame

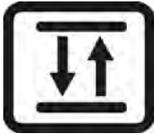


- (1) Air pressure: The print pressure can be realized by spinning the air pressure regulator (20), where the data will display on the nearby pressure meter(21)
- (2) Stroke length adjustment: Set the practical stroke length by setting the front and rear stroke length adjusting blocks (7), (22).
- (3) Squeegee/floodbar up/down stroke length adjustment: the squeegee/floodbar up

- and down practical stroke length can be set by spinning the knobs entitled (4) and (5).
- (4) Squeegee/floodbar angle adjustment: squeegee/floodbar angle can be adjusted in range of 30 degrees by sliding the knobs entitled (6) and (23). Please lock it down when the angle is right.
- (5) Screen frame height adjustment: Micro-adjust the height between the pallet and screen by driving the screw under part (16)
- (6) Screen position adjustment: Frame's horizontal and longitudinal position can be adjusted through the combining parts entitled (9), (14) and (15). Lock the frame down by turning the knobs (25) when finish its position adjustment.
- (7) Print speed adjustment: The print/flood speed can be set through the touch screen or the combined button the printhead membrane panel—pressing the ADJ button meanwhile tuning the speed knobs (18) and (19). The speed will increase accordingly by tuning clockwise, vise versa meanwhile the specific speed will display on the screen either.

### 3.2, Control on Print Frame

There are different buttons set on the printhead membrane control panel. Their different combining works deliver the machine different commands.

Button and Combining Buttons	Functions
	<p>The station will launch print/flood action if it is the printhead. The station will launch cure action if it is cure head. The curing period should be limited within 60 seconds;</p>
	<p>The upper turntable will lift up and down in Manual mode.</p>
	<p>The screen frame will pneumatically be locked up and down by pressing on it till 3 seconds in Manual mode.</p>
	<p>The bottom turntable will spin one station way leftward by pressing on this combined buttons.</p>
	<p>The bottom turntable will spin one station way rightward by pressing on this combined buttons.</p>

	<p>Lift up the upper turntable to the maximum height for first press and bottom turntable will forward or return half station way wherever its current position is.</p>
	<p>The squeegee and floodbar can be exchanged through this combined buttons.</p>
	<p>The print/floods strokes work consecutively by pressing on this combined buttons. The action will stop until re-press them.</p>
	<p>The print/flood speeds can be adjusted by pressing on “ADJ” and speed knobs on the front head side.</p>

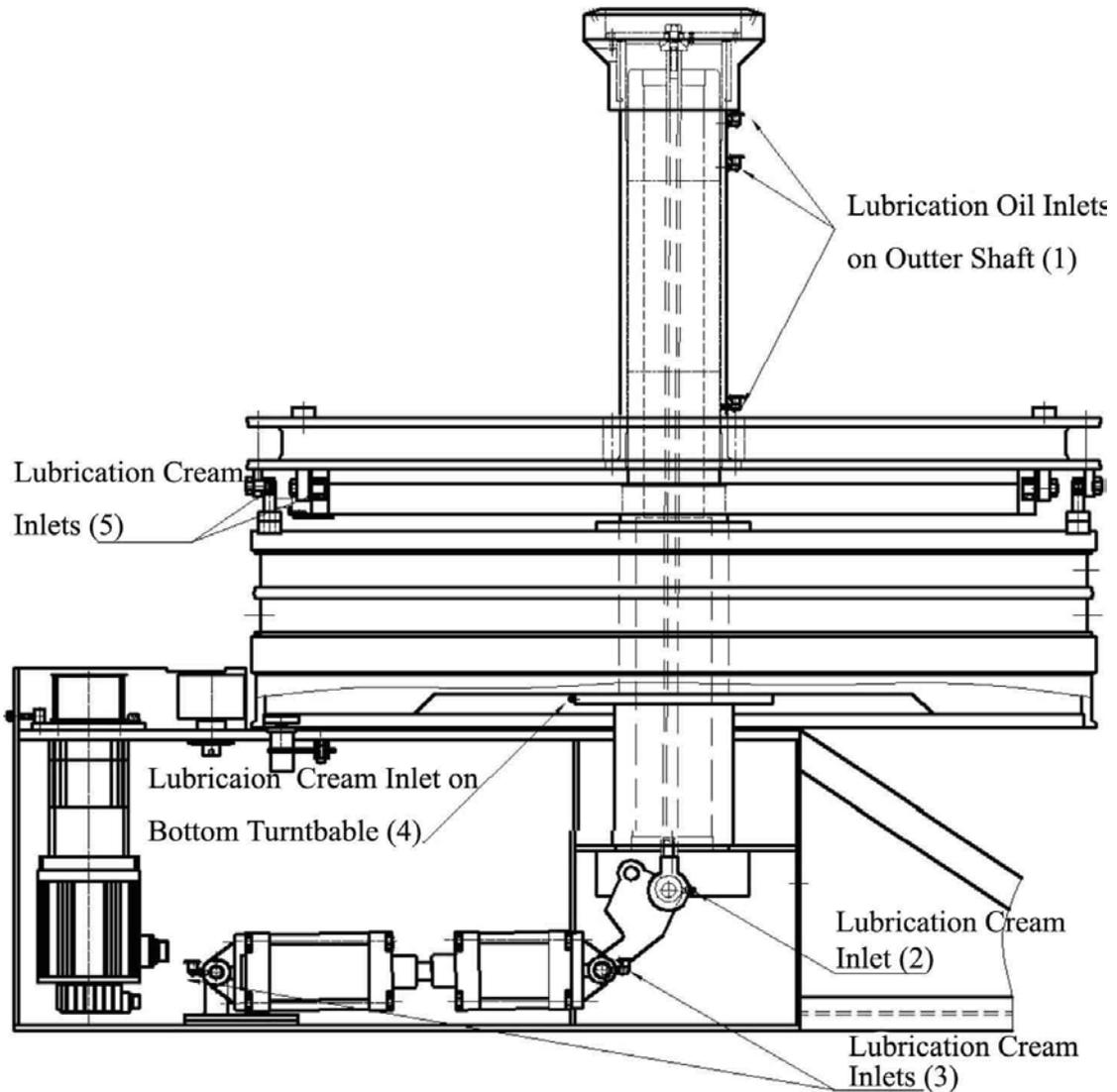
## VII Maintenance

The machine is designed desirably trying to let the maintenance free. Only little maintenance job needs to draw operators' attention.

Maintenance Items	Period	Attention
Pour lubrication oil to the central shaft and main cylinder	1-2 times a day	Use oil pot to lubricate the central shaft everyday to keep mechanical parts running smoothly.
Smear lubrication cream on the bottom turntable.	One time a half year	Pour in the inlets on the bottom turntable.
Clean the underneath of seal strips on print station	Once a week	Use oil-soaked soft cloth to clean it.
Easy rinse	Every day	Clean solid castoff such as ink/paint dust, dirt, and the workshop everyday.
Rinse in detail	Each week	Using suitable detergent to clean every oxidized plated parts. Clean display screen, or change protect film of display screen as necessary.
Check air-compressor and its filter	Every day	Check the cooling drain window where the water level can not surpass the red line or the outlet will be clogged or damaged. Expel the water everyday on the

		manual cooling pipeline.
Clean the cooling water outlet	Every week	Turn off the power, expel the existing water out and disassemble the cooling pipe. Re-install it and lock it after clean over.

### Body Illustration



Note: Oil the inlets No (1) and (3) once a day. Lubricate the inlet No (2) once a week. Lubricate the inlet No (5) once a half month.

Smear the inlets with cream-stuffed soft cloth.



Lubricate the stainless steel arrowed daily with the fabric patch free of fluff.

## IX Troubles Shooting

### 1, Main Frame

Phenomenon	Causes	Solution
No electric power supply	1,Wire connection goes wrong.. 2,The contactor doesn't sock up because of electric phase missing.	1,Check the operation panel and the connection of electrical box. 2,Check the breaker connection and AC contactor.
No power on servo motor	1,Connection of AC380V to Ac220V goes wrong on transformer. 2,Servo motor or servo driver broke down.	1, Check the transformer for the connection job and make sure that power input is linking on AC380v and putout is on AC220V (Note: marked on wire and transformer already). 2, Using AVO-meter to check whether the input voltage on servo driver is AC220V or not. 3, If the input power is correct but not displaying

		on the servo driver, the driver is damaged.
Servo motor doesn't run	1,Safety cords not connected.	1,Link up all the safety parts. 2. Turn the emergency stop switch on. If the emergency stop switch icon occur on the screen both in manual and automatic mode, please check out the connection lines on it. 3. Turn on the safety lock if icon on the screen both in manual and automatic mode, check out the connection lines on it or change the switch.
No display on the screen	1,The power supply is off 1,Screen broke down	1, Check whether the input power is AC220V or not, where the AC220V is right, vice versa. 2, If the input voltage is normal, screen changeover is recommended.
The bottom turntable can not move to the right position meantime the alarm shows on the screen.	The positioning system can not find the right position.	Adjust the position of proximity switches according to the alarm information.
Red alarms on the screen.	1,Signal lines connection goes wrong; 2, Overload transmission causes temporary troubles.	1,Check out the linking port (COM) on the screen or see whether the line is broke. 2,Wait until the system recover by itself.
The emergency stop icon on the screen can not be deleted when all the safety parts are connected well.	1, There must be one of three micro-acting switches not being activated on the circuit. 2,Some lines broke around the circuit.	1,Change the micro-acting switches. 2,Fix the trouble places consecutively according to the electric circuits. .
Upper turntable can not	1,Cylinder does not	1,Check out whether the

lift up and down freely.	work; 2,There is no signals occurred on two sensors outside the main cylinder; 3,Cylinder buffers a little. 4,Trouble on air source	electromagnetic valve has the input voltage, or even broke up. See if the proximity switch broke or loose in some way.; 2,Change it after confirmation; 3,Increase cylinder buffering power. 4,Test the air source.
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## 2, Print head Parts:

Phenomenon	Causes	Solution
The head can not be triggered up	1,No power input; 2,Head mode broke up; 3,No pressing on the heads; 4,No signal feedback when heads pop up; 5,No power input in frequency converter; 6,Head communication lines broken or control panel goes wrong.	1,Check out the power input part on 24V.; 2,Test them by switching the parts; 3,Press the head until lock it on; 4,Check and test the signal input sensor switches. 5,Check out 200V power input part. 6,Check out the input light indicators on the communication control panel or use the exchange way to find out the troubles and deal with them.
Print head can not work	1,No voltage on frequency converter; 2,Frequency value set too low; 3,A big resistance inside of the print head.	1,Check out 200V power input part; 2,Turn up the value to 40 approximately; 3,Check out all print head parts.
Printhead over-run the stop position and stop.	1,The motor tuned too faster 2,Stroke length adjusting block set on wrong place.	1,Turn down motor speed; 2,Put the block on the probable place.
Printhead over-run though the stop position and keep going.	1,Positioning sensor broken; 2,Stroke length adjusting	1,Chang the broken switch; 2,Put the block on the

	<p>block set on wrong place.</p> <p>3,Signals from two sensor switches might be exchanged.</p> <p>4,Motor run reversely</p>	<p>probable place.。</p> <p>3,Exchange them back;</p> <p>4,The print head should run toward the turntable when the converter indicates the motor runs in clockwise direction.</p>
Print head runs slowly comparing to the same frequency.	<p>1,Motors grades not in common;</p> <p>2,Parameters in converters are different.</p>	<p>1,Change the un-compatible motors;</p> <p>2,Reset the converter.</p>
“EF” occurred on the converter.	<p>1,The communication line broken from the head to the converter;</p> <p>2,“EF”line broken from the head to the converter.</p>	<p>1,Check out the line for durability or change it;</p> <p>2,Check out the line for durability or change it;</p>
“LV” occurred on the converter.	<p>1,Input voltage is low on the converter.</p>	<p>1,Check out the input voltage.</p>
Squeegee and floodbar can be exchanged pneumatically.	<p>1, Pneumatic power is quite low;</p> <p>2, Electromagnetic valves broken;</p> <p>3, Head control panel goes wrong.</p>	<p>1, Check out the air pressure;</p> <p>2, Change the broken electromagnetic valves.</p> <p>3, Chang the wrong part by using parts exchanging way.</p>
Print/flood pressure can not be adjusted.	<p>1, Tuning the valve fittings</p>	<p>1, Change the valves.</p>

### 3, Cure Parts:

Phenomenon	Causes	Solution
Fan does not start up	<p>1,On fan startup mode set on the screen;</p> <p>2,Solid reply broken inside of the cure unit;</p> <p>3,Fan motor broken up.</p>	<p>1,Trigger up the fan;</p> <p>2,Switch the solid relay;</p> <p>3,Switch the broken motor.</p>
One curing element is out work	<p>1,The curing element is broken.</p>	<p>1,Switch it.</p>
Several curing elements do not work.	<p>1,The curing elements are broken;</p> <p>2,The solid replies broken inside of the cure unit</p>	<p>1,Switch them;</p> <p>2,Switch the broken solid replies.</p>
The flash cure units can	<p>1,Communication</p>	<p>1,Check out and fix it;</p>

not be activated on the screen.	control goes wrong; 2,Heat mode goes wrong; 3,Communication control panel goes wrong.	2,Fix it by part exchanging way. 3,Check out the input light indicators on the communication control panel or use the exchange way to find out the troubles and deal with them.
The curing elements still work after ending them.	1,Solid relays are broken; 2,Heat mode goes wrong.	1,Switch the faulty solid relays; 2,Switch the faulty heat mode.
<p>Note: When flash cure unit goes wrong, open the control panel and watch out whether the inner lights indicator still work harmoniously relating to the outside curing elements or the working fans. When the reply lights turn on and the voltage output still work, test out the wrong place to fix them with the backup of AVO meter or electroprobes</p>		

## IX, Warranty

We guarantee the warranty is one year limited year. Any following reasons are out of warranty:

1. Do not follow our **Instruction Manual** to operate the machine or let the people without related training to run the machine--irregular installation, operating and maintenance. And the machine is serviced or maintained by non-professional people or without showing respects to our **Instruction Manual**.
2. Run the machine under below conditions: safety equipment broke, placed in unsuitable position, other way that machine do not contain all functions for running.
3. Do not follow our safety operating article of **Instruction Manual** to run the machine, including transit, installation, test the machine, regular machine operation and maintenance.
4. Chang the machine in spontaneity, like dis-assembling our original part/units and loading on some parts/units from other factory.
5. Change driver or operation units in spontaneity, like changing controller or frequency converter.
6. Never pay more attention to supervise the wear and tear units/parts of the machine.
7. Apply un-reasonable lubricants.
8. Do not follow our technical condition to run the machine, for example: electrical power served too high or too low; air-compressor is un-suitable or without filter.
9. Damaged by rigid objects or rough work.

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