

Sinclair-Tek H6000 Hot Stamping Machine

# User's Manual

(2006)

BEIJING YC DIGITTECH LTD.

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**WITH gratitude:**

We thank you for your choice of Hot Stamping Machine Sinclair-Tek H6000 and you are our client who will achieve all round and good service from us.

**Attention:**

Before you carry out installing, adjusting and operating, please take some time to read the user's manual carefully. It will let you feel more easier and also to be sure that machine runs normally.

Sinclair-Tek H6000 Hot Stamping Machine Control System

BYCD ® Sinclair-Tek H6000 V1.00, 2004

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## 1 Safety directions

### 1.1 Safety prompt

Design of the machine is in accord with safety rules for factory, the safety units installed are in a position to protect the operators of machine and prevent any danger by accident from machine itself. The operators should not just count on these safety units and also have to read and understand the safety preventive measures mentioned in the safety chapters of manual, then can start to run machine.

*Note: unsuitable operation might harm to people and other equipments around the machine.*

### 1.2 Safety points before machine in operation

#### 1.2.1 Confirmation before turn on power supply

- a. Make sure to do routine inspection well as required in the safety chapters of manual.
- b. Make sure that all safety doors of machine have been closed completely.
- c. Make sure that all operating switches of machine are at correct operating position.

#### 1.2.2 Turn on power supply

- a. Make sure that the rotation of the motors is in a correct direction.
- b. Make sure that the indicate lights are normal.
- c. Make sure that all safety units of machine, for example, the protectors, a switch of safety door, an emergency stop button and grounding wires, all are set correctly.

### 1.3 Safety points for operating machine

The machine contains some heating parts, therefore if the operator does not follow the safety points below, the machine might have some potential dangerous situations.

**1.3.1 Operators have to be trained and carefully read the safety points below as well as make sure to be acquainted with all means of operation.**

- a. The operator has to know about means of operation of the machine well.
- b. Do not take off the safety units, protectors, emergency stop button and grounding wires of the machine.

c. Must know that how to stop machine in an emergency.

d. Do not try to stop the running machine with an article or your hands, in particular heating parts.

e. More than 2 people together run the machine at the same time to be definitely prohibited.

### 1.3.2 Only the qualified technician can do maintenance of electric system and mechanical system

a. Turn off the power supply before opening the door of electric cabinet.

b. Make sure that all of power sources are off, before taking off and changing the electric parts.

c. Use the tools with insulation in working.

d. Neither using a fuse that is beyond designed limit nor other metal wires.

e. When changing any wire, be sure to use as the same specification and color as original.

f. Be sure that nobody runs the machine, before turn on the power supply.

g. Do not put anything on the control box or operating place, for example, water and food.

h. Do not touch the switches of machine or any electric parts with wet hands.

### 1.4 Prevent from seriously harm to body

a. Face to the machine to operate the panel in regular procedure.

b. Do not let your hand or any parts of body stretching into the running machine when you bend down.

c. When the motor is rotating, don't let other people be close to the machine from behind or beside.

d. When the motor is rotating, don't let your hand or any parts of body reach into the domain of moving mould plate or other parts.

e. Follow the instruction to operate and maintain machines.

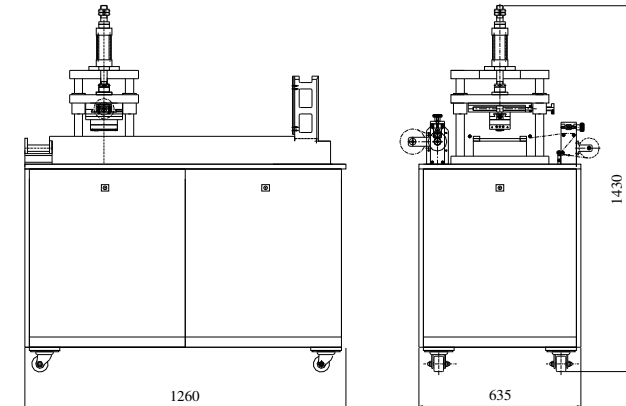
f. Do not examine and repair the mould plates when the motor is rotating and heating.

g. Whenever leaving or having any adjustment of machine, be sure to turn off the power supply.

h. If the machine is in abnormal condition, please inform to your chief or instructor so that doing repair.

## 2 Specification

### 2.1 Appearance of machine



### 2.2 Major technical parameter

Applicable material:	PVC or other plastic materials or paper card
Thickness of material:	0.3-0.9mm
Size of material:	54×85.6
Heat temperature:	≤200°C
Temp. control:	±1.0°C
Temp. control:	±1mm
Power supply:	AC380V 50Hz 3 phases 5 wires
Power:	2.0kW
Productivity:	2400-5000 cards/hr.
Dimension:	L1260×W900×H1500mm
Weight:	Appr. 700 kg

### 3 Installation

#### 3.1 Environment of install

**3.1.1 Install place** The place should be far away from inflammables, there is no combustible air in workshop, do not stack any goods around the machine.

**3.1.2 Ground requirement** the machine should be installed inside a standard industry factory building. The installed ground should be smooth and solid. A depth of concrete pad will not be less than 50mm. If an installation is at second floor or above, have to be sure that the floor meets bearing requirements.

**3.1.3 Environment of install** the workshop should be airtight, dustless and have the ventilation installation.

**3.1.4 The requirement of Power source** Power supply is as AC380V/50Hz, 3 phase, 5 wires, ground wire is grounded reliably. Ground resistance  $< 0.1\Omega$ . Ground wire  $> 2\text{ mm}^2$ .

#### 3.2 Load and unload machine

Select lifting place based on the mark of gravity center. Keep the machine in equilibrium throughout lifting. When using a crane to lift, need to select the suitable sling rope. The rope should be pulled straight and try first to slide down. Do not let the rope damage the outside and any parts of the machine.

#### 3.3 Unpack and lay down machine

**3.3.1** Check on the outer package of machine, if there is any damage, please inform supplier. Otherwise unpack the package.

**3.3.2** Level off body of machine with a level. Adjust the height of stands until the machine is level. Four wheels are suspended as well as can not be load-bearing.

**3.3.3** Open a cap of oil tank then fully pouring oil. Using ISO VG46 Anti-Wear Hydraulic Fluid.

***Note:** Hydraulic oil must be accorded with the standards and make sure that the oil is clean. An improper use or unclean oil could speed up the wear of oil tank and hydraulic system.*

#### 3.4 Connection between machine and main power supply

*Caution: Only qualified technician can make a connection of main power supply. A voltage of power supply for machine is as AC380V, if get an electric shock, it would cause some damages of machine or might lead to injuries and deaths on people.*

*Never share a single ground wire by two machines or more.*

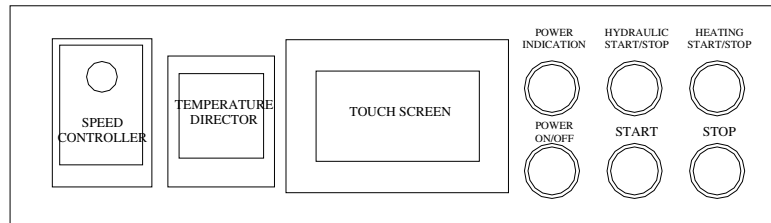
#### 3.5 Connect air supply with machine

Air supply connector of machine is at left side, take off the left door and plug air hose to connector. Diameter of air hose is 8 mm.

## 4 Operation

### 4.1 Directions of operation panel

#### 4.1.1 Illustration of operation panel



#### 4.1.2 Function of push buttons

(1) **Power switch** (self-lock button) Press this button to get the power supply through and the system is power on and the power indicator lights; press the button again (reset) to turn off the power supply and the indicator is off.

a. When power is on, all of electrical equipments are in a state of stand-by.

b. When need to stop the machine, usually just press this button (reset) again; if no work for a long time, pull off the power plug.

c. Only press this button to get power on, then all of electric equipments can be in working.

(2) **Hydraulic start/stop button** (self-lock/self-lock with light) After pressing down this button, the hydraulic system starts and the indicate light on; press again (reset) to stop the hydraulic system meanwhile the indicate light off. It is available for both automatic and manual.

(3) **Heating start/stop button** (self-lock/self-lock with light) Press the button, the heat press plates start heating and the heating indicator is lighting; press

again (reset) to stop heating and the heating indicator light is off. Auto/man all are effective. Press the button, the heat press plates start heating and the heating indicator is lighting; press again (reset) to stop heating and the heating indicator light is off. Auto/man all are effective.

(4) **Start button** (reset button) Under continuous working mode, press down this button for **1 second**, auto-cycle starts; automatically continuous running based on the set parameters. Press stop button to stop work. Under single step mode, hot stamp once by pressing once.

(5) **Stop button** (reset button) Under continuous working mode, press this button to stop continuous work.

### 4.2 Touch screen display and parameter definition

#### 4.2.1 Initial display

Push the power switch, after power supply is on, a display is showed as below:



Touch **AUTO** to enter a display of parameters setting.

Only you touch **AUTO**, the machine can run.

#### 4.2.2 Display of parameters setting



After turning power on, the default is as **ST On**, **Contin**, **Mark**. Explain each key as below:

**ST On** The step motor starting, automatically feed hot stamping material (gold paper, silver paper and scratch film). Press once changing to **ST Off**, the step motor does not run and stamping material (gold paper, silver paper and scratch film) no feed. **Only use it when adjusting.**

**Contin** Continuous mode. After pressing the start button, it continuously hot stamp until pressing down the stop button. Press it once to change to **Single Step**, Single-step mode. After pressing the start button, stamp once. Press again, stamp once again.

**Mark** Read mark working mode. Photosensors read marks on stamping material (gold paper, silver paper and scratch film) and control feeding of material, so that assure the stamping position accurate. Press once to switch to **No Mark**, non-read mark mode, photosensors do not work.

**Set Timer:** Set time. Set a space time of feeding material of hot stamping.

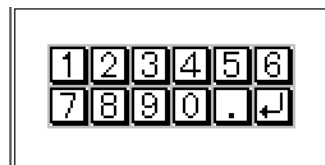
**NMT** A space time of feeding material under non read mark mode.

**MT** A space time of feeding material under read mark mode.

Press **NMT** or **MT** show the display of time input as below:

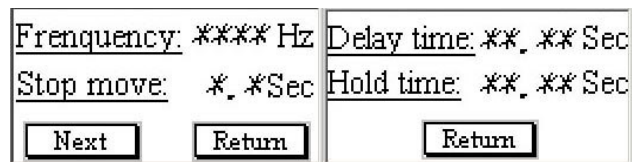


The number key board is as below:



Press **Return** to confirm and return.

**St Motor Para** Press down to enter into the display of setting parameters of step motor. It is as below:



**Frequency** Adjust the speed of feeding hot stamping material and make it be consistent with speed of feeding card. Max. value is as 8000. It is set as 3000 at factory.

**Stop move** Under manual mode, the running time of the step motor after pressing down. It is set as 3 at factory.

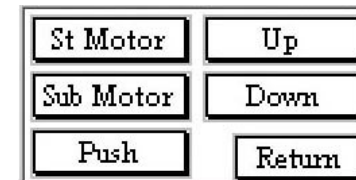
**Delay time** Frequency of hot stamping, minimum value is as 0.1.

**Hold time** The time is hot stamping stay time in the lower.

**Return** Confirm and return to display of set parameters.

#### 4.2.3 Manual display

Touch **MANU** in the initial display to enter the Manual display. **This display only use for adjusting machine.**



**St Motor** Start-stop control of the step motor ( hot stamping material feed). Press down to start and uprising to stop.

**Sub Motor** Start-stop control of the donkey motor (cards collect). Press down to start and press again to stop.

**Push** Start-stop control of cards pushing cylinder. Press down to push card and uprising to return.

**Up** The mould plate moves up. After starting oil pump, press down, the plate moves up.

**Down** The mould plate moves down. After starting oil pump, press down, the plate moves down.

**Return** Return to initial display.

## 4.3 Operate machine

### 4.3.1 Set temperature

Set temperature of hot stamping plate through temperature controller on operation panel. Press key SET, the number twinkles and enters into revising mode. Press ◀ to move revising position and press ▼ or ▲ decrease or increase number. The data will be stored after revising for 8 seconds and number stop to twinkle. **Max. temperature must not be over 150°C.**

### 4.3.2 Operating of continuous working mode under reading mark state.

**Should have distance of plate and speed of feeding stamping material adjusted before regular operation.**

a Push down “Power” button, the power indicator is on, system is electrified and an initial display is showed. Press down SET to enter into display of setting parameters.

**Only when entering into display of setting parameters, then being able to do continuous work or single step work under automatically mode.**

b Press down “Heat” button, heating indicator is on and the plate starts to heat. After reaching the set temperature then carrying out followed operation.

c Put card in. Press down the limit switch.

d Touch **AUTO**

e Press Start button to start hot stamping.

f Press Stop button to stop hot stamping.

### 4.3.3 Operating of continuous work mode under non-reading mark state.

**Should have distance of plate and speed of feeding stamping material adjusted before regular operation.**

a Push down “Power” button, the power indicator is on, system is electrified and an initial display is showed. Press **AUTO** to enter into display of setting parameters.

**Only when entering into display of setting parameters, then being able to do continuous work or single step work under automatically mode.**

b Touch **AUTO** to enter into the display of set parameter. Touch **Mark**, change to **No Mark**.

c Push down “Heat” button, heating indicator is on and the plate starts to heat. After reaching the set temperature then carrying out followed operation.

d Put card in. Press down the limit switch.

e Press **Start** button to start hot stamping.

f Press **Stop** button to stop hot stamping.

### 4.3.4 Operating of single step mode under reading mark state.

**Should have distance of plate and speed of feeding stamping material adjusted before regular operation.**

a Push down “Power” button, the power indicator is on, system is electrified and an initial display is showed. Press down **AUTO** to enter into display of setting parameters.

**Only when entering into display of setting parameters, then being able to do continuous work or single step work under automatically mode.**

b Touch **AUTO** to enter into the display of set parameter. Touch **Contin**, change to **Single Step**.

c Push down “Heat” button, heating indicator is on and the plate starts to heat. After reaching the set temperature then carrying out followed operation.

d Put card in. Press down the limit switch.

e Press down **Start** button and begin hot stamp once.

f Press **Start** button once to start hot stamping once.

### 4.3.5 Operating of single step mode under non-reading mark state

**Should have distance of plate and speed of feeding stamping material adjusted before regular operation.**

a Push down “Power” button, the power indicator is on, system is electrified and an initial display is showed. Press down **AUTO** to enter into display of setting parameters.

**Only when entering into display of setting parameters, then being able to do continuous work or single step work under automatically mode.**

b Touch **AUTO** to enter into the display of set parameter. Touch **Mark**, change to **No Mark**. Touch **Contin**, change to **Single Step**.

c Push down “Heat” button, heating indicator is on and the plate starts to heat. After reaching the set temperature then carrying out followed operation.

d Put card in. Press down the limit switch.

e Press **Start** button to start hot stamping once.

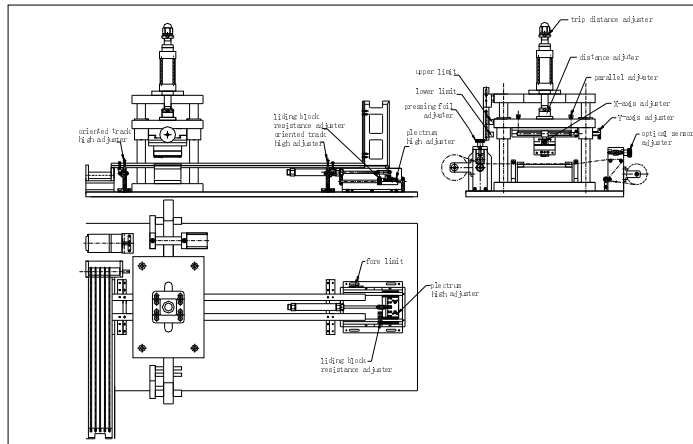
f Press **Start** button once to start hot stamping once.

## 5 Adjust and maintenance on machine

### 5.1 Mechanism adjusting

Must assure that the distance of stamping plate is accurate before stamping, this is a key for quality of hot stamping.

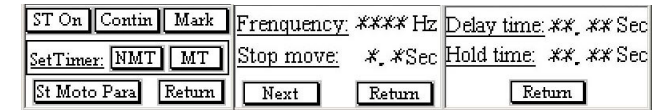
The distance of stamping plate has been adjusted at site of manufacture, generally do not adjust it, but after change the hot stamping plate, have to readjust. Adjust each mechanical portion as below diagram.



Loosen the housing screw, then screwing the adjusting screw. Tightening the housing screw after finishing adjusting. If pressure of hot stamping is not well distributed, may adjust it by adjusting housing screw. **When adjusting the distance of stamping plate, do not move distance too much each moving to avoid the distance too small, thus may make pressure of hot stamping too high and may damage the parts of machine.**

### 5.2 Adjust speed of hot stamping

Press down **St Motor Para** to enter into display of setting parameters of step motor in display of setting parameters, as below diagram:



Carry out adjusting of hot stamping speed by changing value of Delay time, value smaller and hot stamping speed faster. **Minimum value of Delay time must not be less than 0.1.**

### 5.3 Adjust feed speed of hot stamping material

Adjust speed of feed motor (step motor) of hot stamping material and delay time so that achieve feed speed of hot stamping material.

#### 5.3.1 Adjust speed of feed motor (step motor) of hot stamping material

To have speed of feed motor (step motor) of stamping material adjusted you may set parameter on touch screen. In the initial display, touch the key **AUTO** to enter the display of set parameter then press down **St Motor Para** to enter into the display of setting parameters of step motor as below diagram:



Touch Frequency to enter into the display of number input. Enter numbers and touch the key Return to go back. **Max. value must not be over 8000.** It is set as 3000 at site of manufacturer.

#### 5.3.2 Set delay time

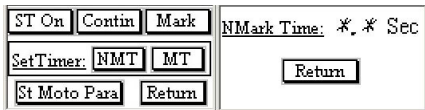
The delay time means the interval between two hot stamping, the delay time under the read mark mode is different from under the non-read mark. **The relay time is related to the feed speed of stamping material and stamping speed.** To set the delay time, by setting the parameter on the touch screen.

- a. Setting under read mark mode: in the initial display, touch the key **AUTO** to enter the display of set parameter, to confirm that work mode is as the read mark mode, touch the key **MT** to enter the display of number input, enter numbers and touch **Return** to go back.





b. Setting under non-read mark mode: in the initial display, touch **AUTO** to enter the display of set parameter, to confirm that work mode is as non-read mark mode, touch **NMT** to enter the display of number input, enter numbers and touch **Return** to return.



#### 5.4 Adjust the speed for picking cards

Adjust the speed for picking cards that can be carried out through the knob of adjusting speed motor on the panel.

#### 5.5 Maintenance of machine

Item	Substance and manner of maintenance	Period
1	Machine must keep clean and dry, regularly clear and clean various positions of mechanism.	1/wk
2	It is necessary to clear and lubricate various movable parts (various guide pillars) regularly.	1/wk
3	Check electrothermic tubes whether have some damage.	1/wk
4	Check various screws and nuts of connecting and tight to see if loosed, in the light of conditions to tighten or change.	1/2wks
5	Check various connection of wires to see if loosen or cracked, then reconnecting or changing wires.	1/1 month
6	Overall check all of hold-down bolts, see their conditions to tighten or change.	1/6 months
7	Lubricate all of bearings with lithium base lubricant.	1/1 year
8	Often observe the altitude of surface of hydraulic oil, when lower than 3/4, fill up promptly.	Often
9	Observe the temperature of hydraulic oil, it should not be higher than 60°C	Often
10	After the machine runs for 1 year, should change hydraulic fluid, which grade is as ISO VG46 Anti-Wear Hydraulic Fluid.	1/1 year