

# USER'S MANUAL



## **⚠ CAUTION**

Read all precautions and instructions in this manual before using this equipment. Save this manual for future reference.

## AIHM SERIES

**Dear users:**

**Welcome to use our product. Thank you for your trust upon us!**

**Please read all precautions and instructions in this manual before using this equipment. Save this manual for future reference.**

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## SYSTEM INTRODUCTION

- Application:

- ☑ **Pre-heating:** for coating, bending, fitting, unfitting, welding.
- ☑ **Post-welding heat treatment:** tank, boiler or other metal jobs.
- ☑ **Heating:** mold heating, shipboard, zinc bath, and large & irregular metal parts.
- ☑ **Pipeline heating:** pipeline oil, pipeline gas, pipeline water, pipeline petrochemical.

- Features:

1. All operations are micro-computed and controlled through PLC touch screen.
2. High efficiency: Electric power is converted directly to heat power with low loss.
3. Digital display and adjust the parameters, like the output power and temperature.
4. Failure alerts: once operation error occurs, a sounding alarm is activated and error message box pops out on the touch control screen.
5. Accurate measurement for temperature: multi-points to detect the temperature; 6 channels for temperature control with  $\pm 3^{\circ}\text{C}$  tolerance; evenly heating.
6. Digital recorder with optional printer is able to record the temperature data and create chart trends of the heating progress.
7. Air-cooled system allows system work at ultra circumstance:  $-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$ .
8. Integrated module design makes system more stable and low cost for maintenance.
9. Safe to operator: automatically protect for power failure; IP 25 Class.
10. Easy for installation: quick-release coupling.
11. Easy to move or relocate through lifting eyes or wheel system.
12. The advanced IGBT technology is adapted and applied.
13. Universal connector: waterproof, insulation.



## NOTES & WARNING

Welcome to use our AIHM Series Induction system for Pre & Post weld heat treatment, and thank you for your trust and support.

Please read this manual carefully before installation! Please keep this manual after installation.

### Special Warning:

Do not touch the heating piece and induction coil when it is working, or you will get an electric shock or burn !!!

### Safeguard Procedures:

If you touch the charged electrical part, it will result in death or severe burns. Please make sure to check whether the cable is damaged or not in output part firstly, because both wire and induction coil are charged. When you make the machine stop working, please leave the machine for at least 5 minutes in order to release the capacitor, and then you are safe to go on installing or disassembling.



Do not touch the heating work piece and induction coil, especially the latter one, because both parts are with high temperature.



Please leave the pacemaker far away from the magnetic fields caused by this machine.



The poisonous gas is generated when heating insulation. So please keep your workshop with ventilation condition.



1. Please check and confirm Model and its accessory that you ordered.
2. Please read all precautions and instructions in this manual carefully before installing and using the equipment. Save this manual for future reference.
3. The design of the induction coil is very important for the heating effect and the reliability of the machine. It is always suggested to use the coil designed by the manufacturer and inquire our technician whenever you design the coil yourself.
4. The machine should be located in a dry and clean place without metal powders and high temperature.
5. Whenever poor insulation of the induction coil and connecting cables is found, the working must be stopped until good insulation is reformed.
6. Any action of installation, operation, repairs should be undertaken when equipment is power-off.
7. For the safety of the operator, it is suggested that the insulating clothes, gloves and boots be worn during the whole process of operating.
8. Repair and maintenance of the machine can only be done by trained personal.
9. Do not twist any cables that connect power source and work piece or other parts.
10. In order to guarantee long life for the machine system, please comply to the following working condition:

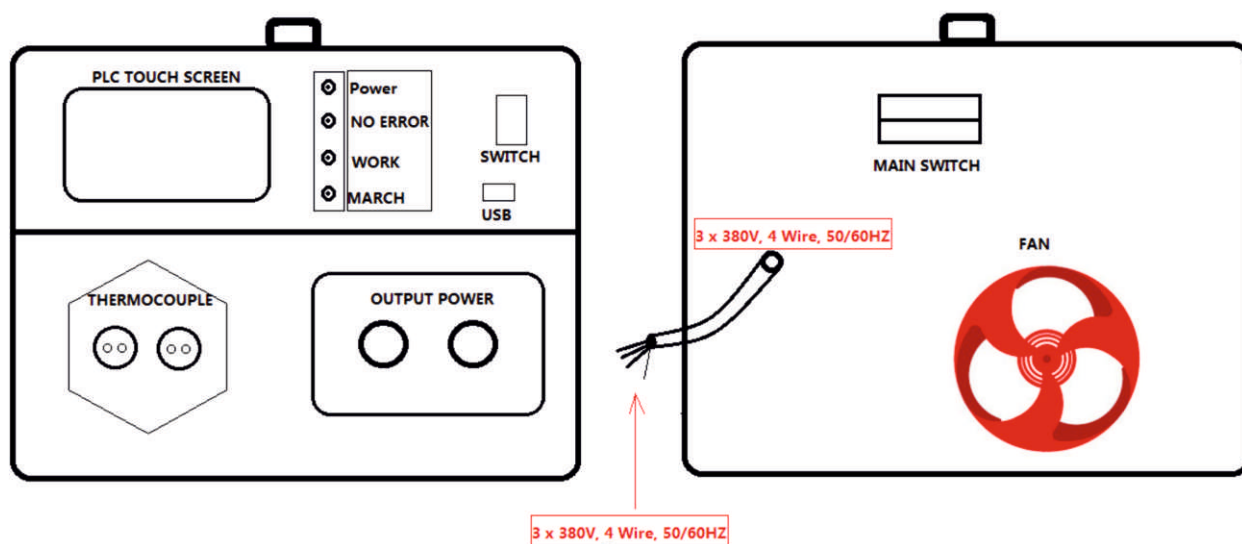
Working Temperature Range: -10~40°C, If over 40°C, the power need adjusted to a low level for operating.

Relative Humidity Range:  $\leq 90\%$

Altitude:  $\leq 1000$  meters; if higher than 1000 meters for operating.

## SPECIFICATION

Model	AIHM-10KW	AIHM-20KW	AIHM-40KW	AIHM-60KW	AIHM-80KW	AIHM-120KW
Input Voltage	3phase , 380V,4					
Input Current	15 A	30A	60A	90A	120A	180A
Output Frequency	5KHZ ~ 30KHZ					
Output Power	10KW	20KW	40KW	60KW	80KW	120KW



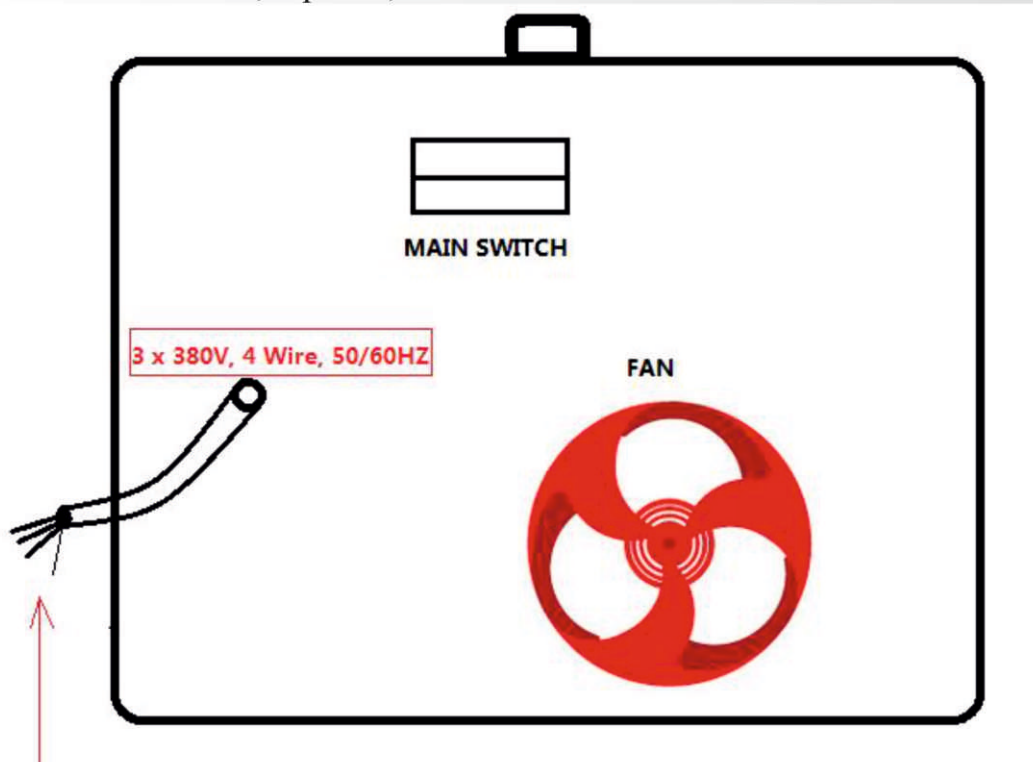
## POWER SOURCE INSTALLATION

People who have not received the qualified training or are not familiar with electronic equipment is forbidden to install the equipment;

In order to guarantee operator's safety and prevent electric shocks and fire accident, the power source must be in good grounding, make sure that the grounding resistance is less than 10  $\Omega$ , and the short-thick ground wire specification should be 3.5mm<sup>2</sup> multicoated copper wire or please follow up your local standard for electric safety operation code regarding to the ground wire regulation. If you need to ground for more than one induction heating machine, we propose not try to use public ground wire in order to avoid the risk of looping-in. Input power must be in permanent connection status. Do not install or debug the machine under circumstance of non-insulated condition in order to avoid risk of danger.

When the machine is connecting to the electric power, please do not touch the input power port and output power port even though the machine is in non-working status.

- Power source: 380VAC, 3 phase, 4 wires:



- The output power connector is regardless of the direction, Please connect the induction coil freely.
- Please don't move the induction coil when the induction heating equipment works.

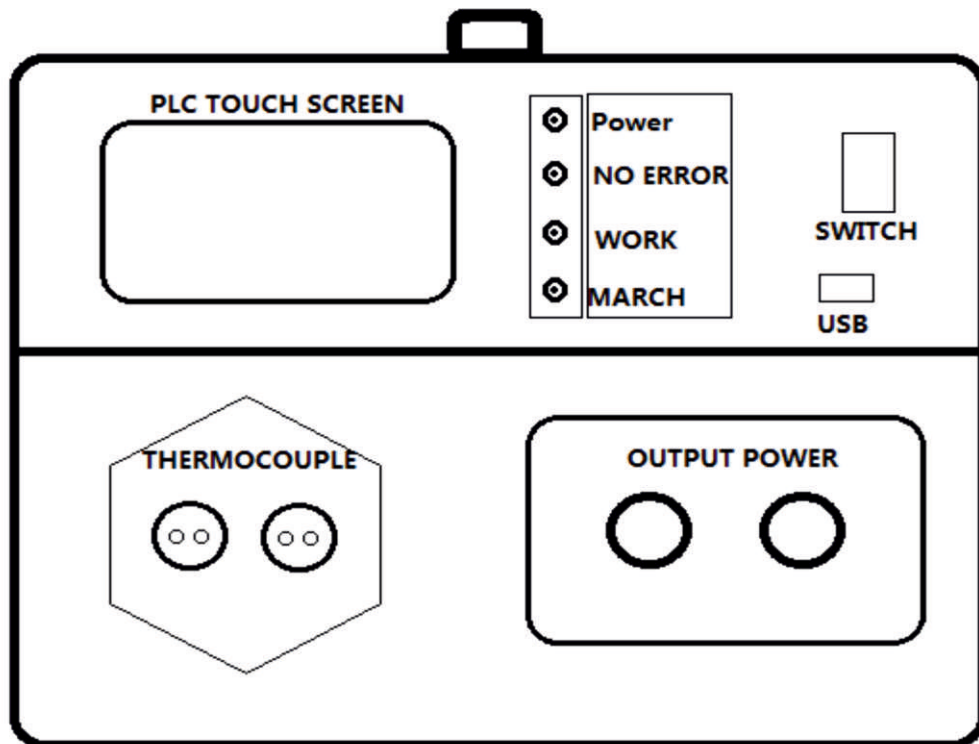


Otherwise the induction heater will be damaged.

- When we wrap around the induction coil, the number of turns between 8 ~ 15, the inductance between 80 ~ 400 uH.
- Please keep the input and output of air open.
- Please don't twist the soft coils cable.

## **THERMOCOUPLE**

We can use K Type thermocouple. The thermocouple is important for measuring the temperature. Please install the thermocouple at the most suitable place in order to have precise temperature value measured.

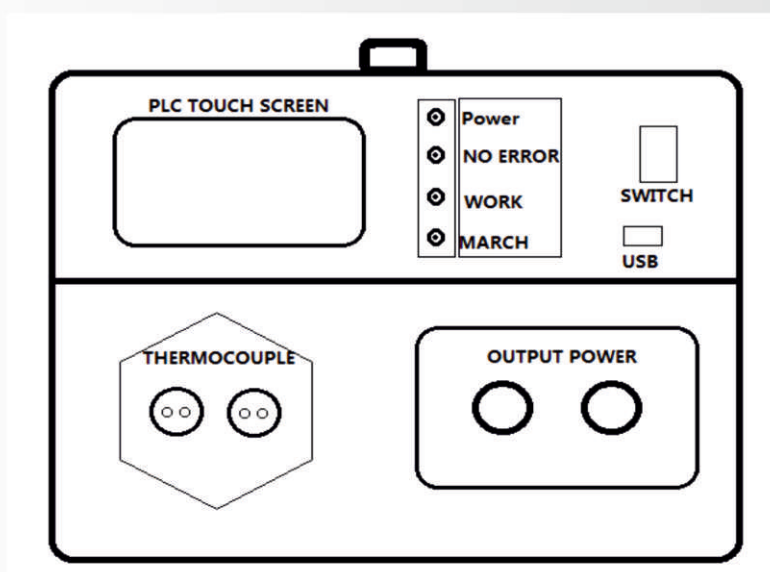


- We will install the thermocouple at the Central position.
- The number of thermocouple can be decided by end user's need.
- The thermocouple will be connected to the heated work piece, wrapped around with the insulation blanket.
- Please check the thermocouple and connector wire in good condition.
- Please weld the thermocouple on the heating piece; the head of thermocouple needs to connect the heating piece directly.
- Make the connector wire out and be parallel to the heating part.
- Please check and make sure there should be no anywhere short circuit between induction coil and thermocouple.

### INSULATION BLANKET:

- We have 3 models of insulation blanket for operating different temperature (450°C / 650°C / 800°C). Please select correct model for your application and implement it in a proper way in the specified range of heating temperature.
- Please make the insulation blanket closed to the heating part, don't revealed any part of the heating part.
- It is OK to use 3cm thickness insulation blanket if the temperature lower than 450°C.
- Please use 5cm thickness insulation blankets if the temperature more than 450°C.
- Our insulation blanket can be applied for the weld-preheating job, please make sure the welding temperature requirements (recommended temperature range 150°C ~ 200°C).
- Our insulation blanket can be applied for hydrogen elimination after welding, preventing cold cracks (recommended temperature range 350°C ~ 400°C).
- Our insulation blanket can be applied for PWHT, stress relieve in order to improve the welding quality.
- The blank must be greater than the welding groove of work piece on both sides by 150mm or above.
- Please periodically check the integrity status of blanket-type insulation. If there is some damage, please replace with new one immediately.
- The operators are strongly requested to wear the protective glasses, working uniform and gloves which prevents the tiny fiber from flying into eyes and direct skin contact may cause temporary discomfort (wash by clean running water can ease the discomfort).

### CONTROL PANEL LAYOUT



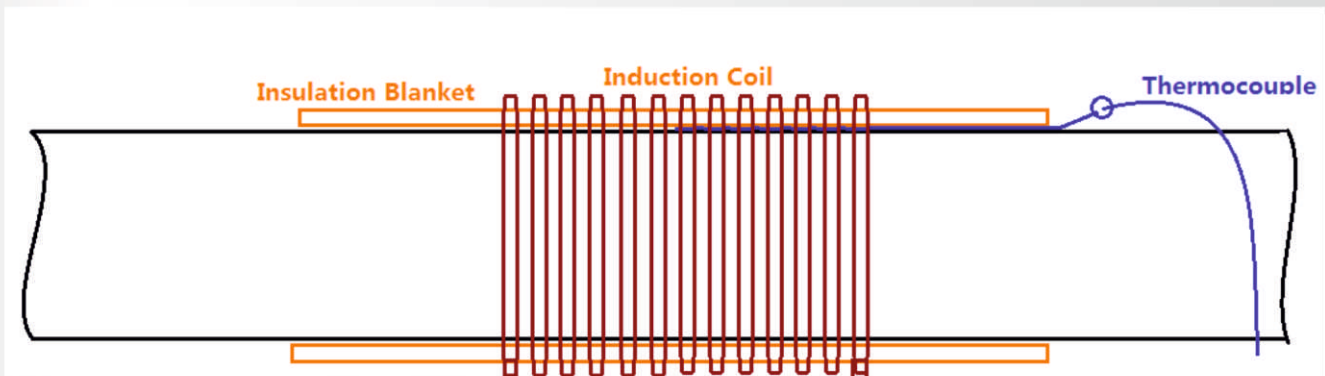
Pic 3

- **Power LED** will light when turning on the power switch (Pic3#) on the front panel.



- **Working LED** light indicates when the machine is in normal working status.
- **Failure LED** will light when there is operating failure or error.
- **Reserve Button** is the optional switch for dual output coils (not for single coils).
- **Reset Button** is used for reset the machine.
- **Alarm Buzzer** will be activated with alarming sound once operation failure occurs.
- **Silence Button** (Noise Reduction) is for switch off manually the alarm if user doesn't like the alarm sound.
- **PLC Switch** is a power switch for PLC touch screen panel.

### INSTALL PROCESS:



Please check the pic:



Heating Pipe



Thermocouple



Around insulation blanket



The machine Working



Around Induction Coil

Connect the coil and thermocouple to machine




## PLC OPERATION GUIDE

After starting the machine system and turn on the PLC switch, you will have below WELCOME PAGE to select the language you prefer to. (Please see Pic 4)



Pic 4

Click the Button  to Login In:

Name: Operator

Pass Word: 123456

Name: Manager

Pass Word: 135246

Factory Setting Pass Word: 135246

## MENU INTRODUCTION



1: Heating Time control system

2 Heating temperature control system.

3. User Login

4. Mode Selection

5. Language

6. Factory Setting

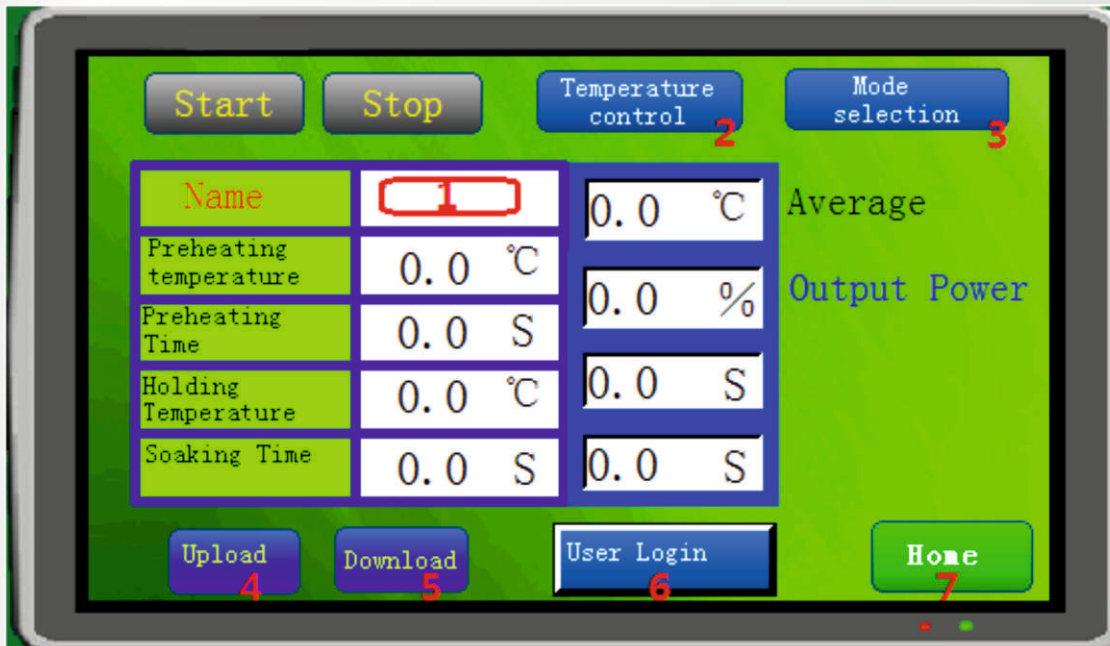
7. Alarm History

8. Parameter Setting

9. Contact Us

**HEATING TIME CONTROL OPERATES:**

1. Click Heating Time Control
2. Login In
3. Check the fellow picture



1. Setting the name of the preheating part
2. Change to Temperature control
3. Mode Selection
4. Upload the heating process
5. Download the heating process
6. User Login
7. Back Home

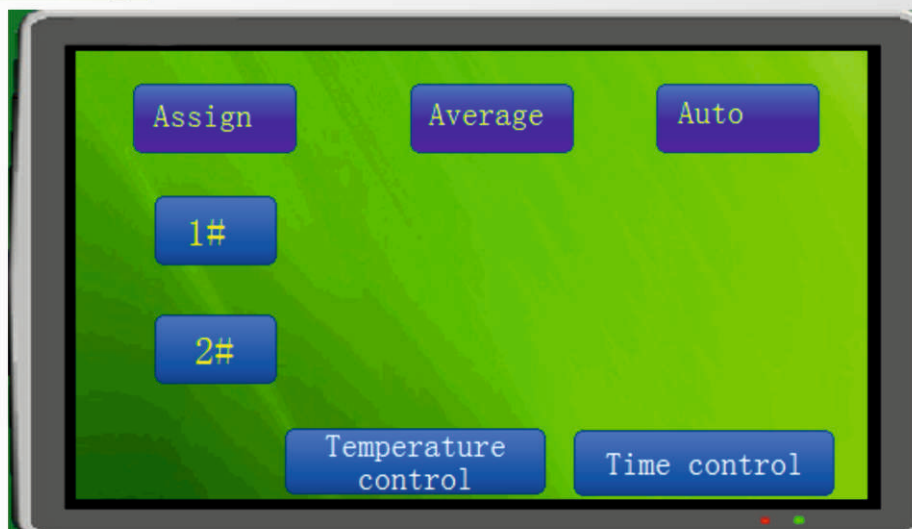
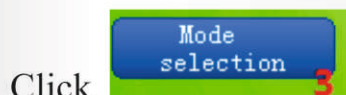
**Login In First**

Click , Setting the preheating name and preheating details.





Click Download and Return.



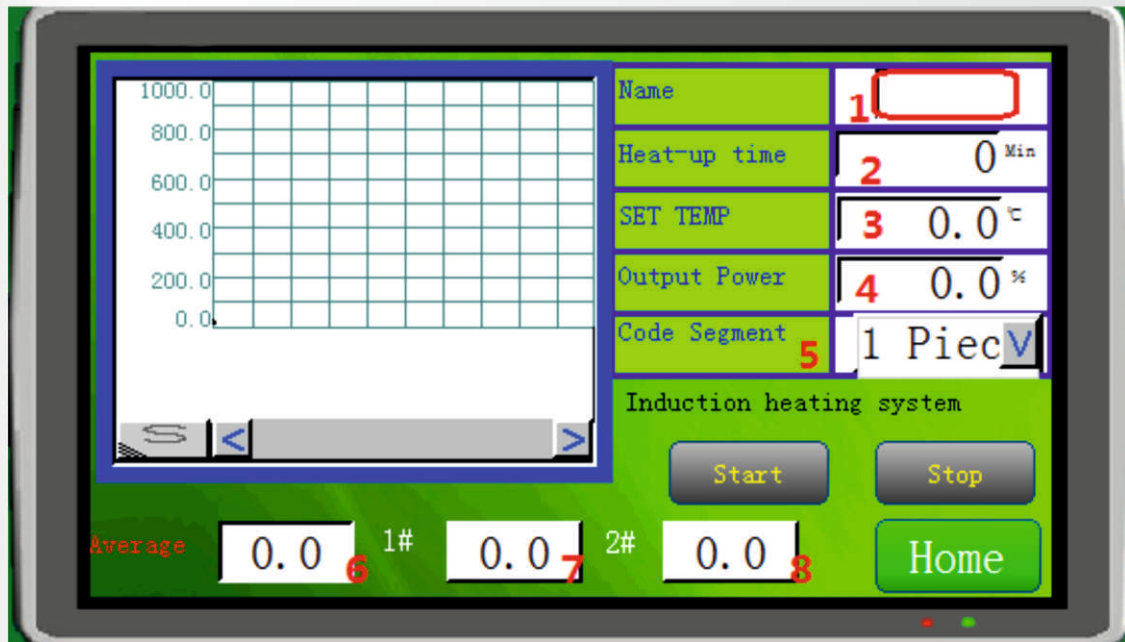
Choose the connecting thermocouple 1# or 2 #. We advise to use AUTO model.

Click **Time control** return the time control page. Click **Start**. The machine works

TEMPERATURE CONTROL HEATING OPERATES:

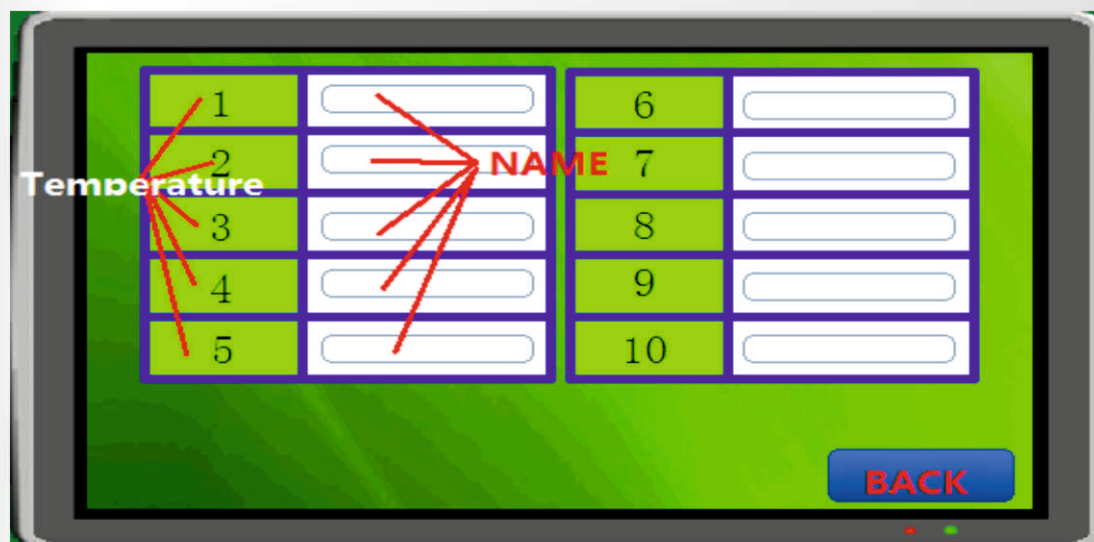
The temperature  
control heating

Click , Check



1. The name of the heating part
2. The running heating time
3. Setting Temperature
4. Output Power
5. The code segment. It is the step of setting heating process
6. Average the temperature
7. 1# temperature
8. 2# temperature.

Click **1** , Check:



Click Temperature part  1 : check:

filename	temperature°C	Time (m)
Temperature	0.0	0
Temperature1	0.0	0
Temperature2	0.0	0
Temperature3	0.0	0
Temperature4	0.0	0
Temperature5	0.0	0
Temperature6	0.0	0
Temperature7	0.0	0
Temperature8	0.0	0
Temperature9	0.0	0
Temperature10	0.0	0

WR PLC

1

Return

Write in heating temperature and heating time, WR PLC, Return.

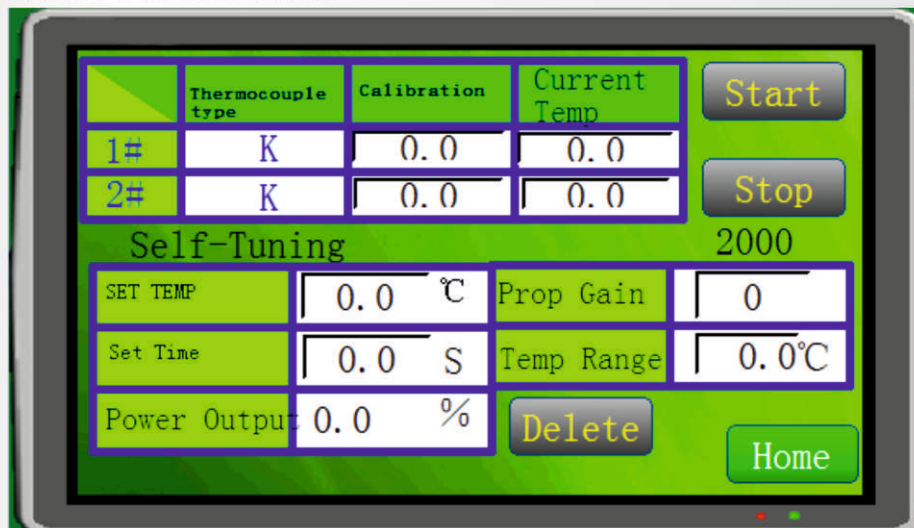
START the machine, It will work well.



## ALARM HISTORY



## PARTNER SETTING



## SYSTEM TIME SETTING





## WORLDWIDE HYDRAULIC SOLUTIONS

### AEROBOOM CORPORATION

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#### YOUR NEAREST DISTRIBUTOR

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Web: [www.aeroboom.com](http://www.aeroboom.com)

### LIFETIME WARRANTY

*Aeroboom warrants all of its products to be free from defects in material and workmanship for the life of the product. This warranty applies to original purchaser and is not transferable. Damaged components, including broken welds, dented or crushed cylinder walls, bent pistons, or couplers are the result of misuse, and are not covered under this warranty. Items such as seals, o-ring and spring wearing out shall not constitute a defect and shall not be considered for warranty credit. We believe that the Aeroboom products you purchase will meet or exceed your performance requirements. However, in the unlikely event that an Aeroboom product fails due to material or workmanship defect please contact Aeroboom, to have it resolved.*



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