

华高 HG200C 摇粒机控制电脑使用说明书（英文版）



HG200C
摇粒机控制电脑
HG200C CONTROLLER
FOR
DYEING MACHINE

使用说明书
USER'S MANUAL

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Overview:

HG-TC200C Microprocessor Controller For Dying Machine adopts Chinese vision screen, adopting friendly man-machine interface .Simple operation makes it is possible for you to finish most of the operation according to the interface even without the user's manual. With the perfect effect of controlling temperature, this machine can be widely applied for different objects of controlling temperature, such as: Infrared ray controller, High temperature controller, Normal temperature controller, Dying machine.

Main technique functions:

1) Output to connect (输出接口)

relay output 8 (Relay output: 240VAC 3A)

respectively control heating, cooling , outfall, cold relief, pressure relief , direct adding, positive turn, negative turn, and one for spray-vapour.

2) Temperature control specifications:(测温性能)

temperature measurement component:

Pt100 platinum heat resistance.

Test temperature range: 000°C ---153°C

temperature Control range: 030°C ---145°C

temperature s Control Speed: 0.1°C ---9.9°C/min

temperature s Control accuracy: isotherm state+_0.5°C

temperature control method: optimized automatically control

3. Programmable functions: （可编程功能）

programmable process number: 10(0—9), 12 programmable steps per process.

4. Protective function (保护功能)

(1) the parameters of programmed technics process won't be lost after sudden power-cutting with the advanced IC equipment.

(2) If there is suddenly power off while the machine is working, the present data can be kept and go on working if the power comes again.

(3) It will alarm and stop working when the temperature is over 150 °C.

5. Power working range (电源工作范围)

Power supplying range: AC(180—250)V 50/60HZ

Power consume of the whole machine: ≤5 W

6. Working environment:

Working temperature: ≤50 °C ,

Relative humidity ≤90%

7. Dimension of apparatus:

(96)W*(96)H* (100)L 立方毫米。

Installing hole dimension: 91×91(mm)

Installing way: embedded way of tray

II. Usage explanation （使用说明）

1. Functions of Keyboard

Reset key: Make the computer return the main interface of reset state, running state need to press RUN key first.

RUN key: make computer enter working state, that key is for replying to use, under working state press running key, then the computer pause working; pause state press running key, then computer works.

Confirm key: make pick out menu enter submenu or save function for finishing of technics program and parameter setting.

▷ key right moving key to control cursor move right , press once, move right one bit.

▽ key down key for the cursor to move down, press once, move to next line.

Number key Used for key-inning "0-9"

2) Main interface

After the power connect, the information interface will be shown first if the computer was not under the running state before power-cut last time.

Picture I

TC200C-TCD
HUAGAO TECHNIC
TEL: 0757-83273176

Three seconds later, computer interface will automatically shift to main interface (the interface of reset state)

Picture 2

Present temperature: 036.5°C
1. RUN
2. program
3. parameter

Present temperature means exact temperature figure of dying container.

If the computer was under the running state before power-cut last time, the operation interface will be shown like this

Picture 3

Time: 18 Technics: F01
L03
Present temperature: 036.0°C
Fixed temperature: 065.0°C
Speed : 2.5°C Heating

This interface shows that the computer is under heating state from present temperature 36.5°C to fixed temperature 65.0°C .the speed of heating is 2.5°C/min , heating last time is 18 minutes. The design of the third step(L03) of the first technics(F01) can keep the normal operation from

unexpected power-cut while the computer is operating. If you need to quit from running and return to the reset condition, press running key first then reset key ,you can reshew the picture (2) .

3) Operation menu (操作菜单)

the main interface menu under reset state are as following:

1. run
2. program
3. parameter

you can use ∇ key to move curse to choose the menu your expect ,then press confirm key ;

a) RUN

Under reset state (picture2),choose running event and press confirm key or directly press RUN key to enter running interface:

Picture 4

Choose running technic: F00			
L00			
STEP	AIM	SPEED	TIME
00	060.0	10	05
01	100.0	15	10
02	050.0	30	00
03	000.0	00	00

a) Program

Under reset state, press ∇ key to choose “2” program event, then press confirm key to enter the interface of compose technics

(工艺)

Present temperature: 036.5°C reset
Pin number _____

Picture 5

Press pin number “0000” , then press confirm key

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Please choose technology: F00			
L00			
STEP	AIM	SPEED	TIME
00	????	??	??
01	????	??	??
02	????	??	??
03	????	??	??

Notes: in the above picture , the data of aim , speed , time are random , they can be modified according to the requirement of the technology, F stands for technics number(0-9), L stands for subroutine number (0-11), pick out the technics number and step number, then press confirm key to enter programming technics state, then enter the exact data .After finishing one piece of technology , press confirm key again to save it then you can start the next one or can return to main interface by pressing RST key.

c) Parameter

Under reset state, press “ ” key to choose “3” for parameter, then press confirm key to enter parameter interface.

Present temperature: 036.5°C reset
Pin number _____

Enter the pin number : “0000” then press confirm key

Revised temperature: -0.0 °C
Pin number 0000 2

Now, You can change the pin number into any number for easily remember. When you change the last pin number in the right side, that means pin number is unnecessary or you need to put into the pin number when you are composing program.

When this is difference between the display temperature on the computer and real temperature, you can use revised temperature to modify. The modifying range is $\pm 9.9^{\circ}\text{C}$.

The operation of modifying : press number key , change \pm symbols; press key then press number key, after finishing, press confirm key to escape from it.

4) program examples(take the third step technology as example, step number starts from 0(F03 L00)

③90 °C heating time 30 minutes

3.0°C/min

4.0°C/min

Start ①positive and negative turn

50°C cooling

②Spray vapour (10 minutes)

④time 15 mins

3 mins 10 seconds 3 mins

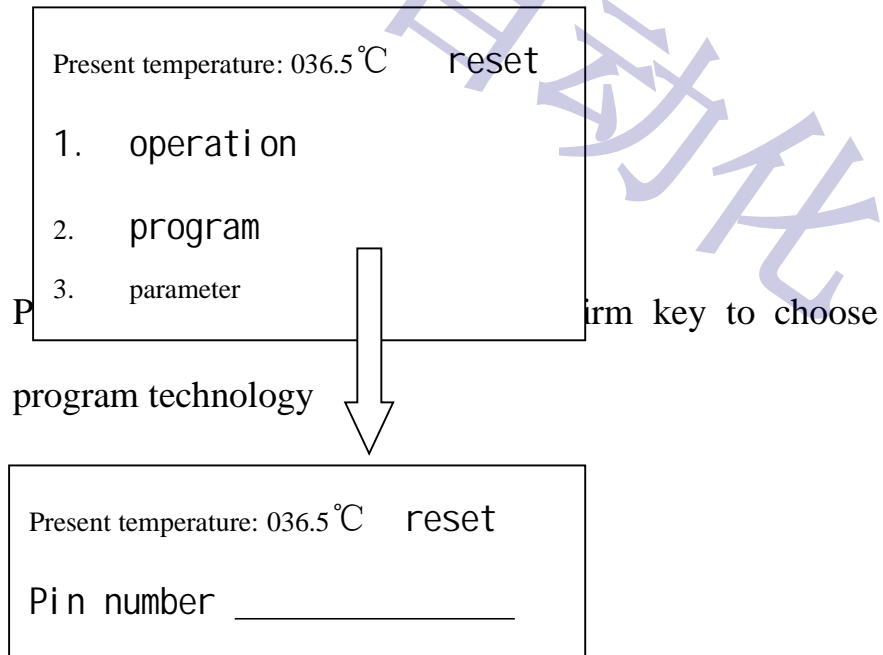
⑤finish

Positive turn stop negative turn

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SUB	TEMP	SPEED	TIME	Notes
00	163.0	1.0	30	① 表示正转 3.0 分钟,中间停 10 秒反转 3.0 分钟 It stands for positive 3.0 mins, interval 10 seconds then negative turn 3.0 mins
01	070.0	0.0	10	② 喷蒸汽时间为 10 分钟,到 70℃ 停止喷汽,时间到才执行下一步工序.(注意:设定喷蒸汽程序时,速率项应设定为“00”.) Spray vapour time:10 mins, stop spraying when it is up to 70℃, carry out next step process.(attention: when setting spray vapour process, speed sector should be setted as “00”.)
02	090.0	3.0	20	③ 升温到 90℃,升温时间为 20 分钟,时间到才执行下一步工序.(注意:设定加热程序时,速率项不能设定为“00”.) up-gradng temp to 90℃, isotherm phase 20 mins, start to carry out next step process when time is up.(attention: when setting heating process, speed sector can't be setted as “00”.)
03	050.0	4.0	15	④ 冷却到 50℃,冷却时间为 15 分钟,(注意:设定降温程序时,速率项不能为“00”.) Cool to 50℃, cooling time 15 mins,(attention: setting down-gradng process, speed sector can't be “00”
04	000.0	0.0	00	⑤ 程序结束 process finish.

Press RST key to main interface





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Please choose technology: F00			
L00			
STEP	AIM	SPEED	TIME
00	????	??	??
01	????	??	??
02	????	??	??
03	????	??	??

press confirm key



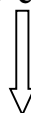
Please choose technology: F00			
L00			
STEP	AIM	SPEED	TIME
00	????	??	??
01	????	??	??
02	????	??	??
03	????	??	??

Press number key and  key to compose the data of the first line, then press  key to move cursor to the next line then compose the data till the end



Please choose technology: F03			
L00			
STEP	AIM	SPEED	TIME
00	163.0	1.0	30
01	070.0	0.0	10
02	090.0	3.0	20
03	050.0	4.0	15

Check the data right or not then press confirm key to save this piece of technology



Please choose technology: F03			
L00			
STEP	AIM	SPEED	TIME
00	163.0	1.0	30
01	070.0	0.0	10
02	090.0	3.0	20

Go on composing technology, choose technology number then press confirm key ; press RST key to return to main interface.

5) Running example(take the third step technology as example, step number starts from 0(F03 L00)

Main interface under reset state

Present temperature: 036.5°C

1. RUN
2. program
3. parameter

Press RUN key then press number key to choose F03

Please choose technology: F03

L00

STEP	AIM	SPEED	TIME
03	163.0	1.0	30
04	70.0	0.0	10
05	090.0	3.0	20
03	050.0	4.0	15

Press RUN key to enter into running interface

```
Time: 10      Technology: F03
                                L01
Present temperature: 036.0°C
object temperature: 070.0°C
Speed  : 0.0°C      spray vapor
```

In order to better monitor operation condition, we design two kind of running interface

```
Time: 10      Technology: F03
                                L01
Present temperature: 036.0°C
object temperature: 070.0°C
Speed  : 0.0°C      spray vapour
```

Press ▷ key

```
Time: 10      spray vapour
Present temperature: 036.0°C
Fixed temperature: 070.0°C
output  6
```

This interface is to monitor output condition

Notes: output 1 2 3 4 5 6

SHOW: 1 stands for heating output:

2 stands for positive turning output

3 stands for negative turning output

4 stands for cooling off output

5 stands for calling output

6 stands for spray vapour output

Running state , press RUN key return stop interface.

036.5 °C:	F03	stop		
	L01			
STEP	AIM	SPEED	TIME	
00	163.0	1.0	30	
01	070.0	0.0	10	
02	090.0	3.0	20	
03	????	4.0	15	

Now press RUN key again to reenter running state, press reset key to return to main interface.

6) pause setting of program

enter "18000000" in some step of the technology, when the computer runs to this step, it will alarm, then return to stop interface ,if want to go on running, press ∇ key ,then press RUN key to enter next step .

7) The positive and negative running setting

During technology process, if program "16" before temperature sector of any step , the compute will start positive and negative turn till the appearance of "17" just stop carrying out the positive and negative turning, its composing program method is as follows:

Please program				
technology: F03				
		L00		
STEP	AIM	SPEED	TIME	
00	162.0	10	15	
05	170.0	00	00	

- A 160 0-169.9 Mean that setting range of positive turn time 0.0-9.9 minutes
- B Setting range of speed item 00--99 means that the setting range of interval of the shift between positive and negative turning is 00-99 seconds
- C Setting range of time item 00-99 mean that the setting range of reversal turning is 0.0-9.9 minutes.

The above program means, when technology operation “00” step ,positive and negative turning will work in the backstage, circulate technology will automatically enter into next step. backstage of positive and negative turn will turn 2.0 minutes, 10 second pause, then turn over 1.5 minutes such circulation, until the movement has turn over to stop after the appearance of "17" function. If need the reversal only, you can compose the positive turning and the interval item as “0”. The same if only need positive turn, just make reversal and interval item as "0".

8) Spray vapor setting

During temp control step, when set “00” in speed sector, it indicates that spray vapor setting. For example, program “080.0 00 25” it will carry out spray vapor , time is 25 mins. The limit temp is 080°C. During the

process of spraying vapor, if the temp reaches 080°C, it will stop spraying and run to next step when time is up.

9) Heating and cooling conditions

Heating and cooling depend on time. It only can enter into next technology running when time is up. Or we can say, when actual temp is up to object temp but time is not up, it will stop heating and wait for the time is up then can enter into next step. When time is up but actual temp is not up to object temp, the computer will still enter into next step.

10. Operation attentions

- a. If you need to escape from running under running state and return to RST state, you should press RUN key first then RST key
- b. Each technology needs to program the last step to stop (make all as 0) , otherwise the computer will have errors.

III. Installation and Adjusting

It is better to install the computer in a place with low temperature ,best dry, well ventilated and no dust. You had better keep the computer from transducer which has strong electromagnetism. the power cable of the computer had better not share with the electric appliances of the big power . The temperature probe line of PT100 should adopt three –core shield cable, combining will shield the layer connects to earth line of electric appliances controlling cabinets or machine hulls.

This computer is valuable and need to be best carefully protected,

prohibition against touch or squeeze LCD manifestation window, prevent from dye liquid or water, and keep the front-panel clean.

IV. Temperature checking methods

use standard six resistance box to replace PT100 output

Temperature	Pt100 resistance figure	Temperature	Pt100 resistance figure
0°C	100.000	50°C	119.400
10°C	103.900	100°C	138.500
20°C	107.790	130°C	149.820
30°C	111.678	150°C	157.370

Three minutes pre-heating after switching the computer, the bottom choose 50, and high point for 130 as the final figure

V. The back line diagram of the computer

电脑背面接线图(HG-TC200E)

Public line (公共线)

Heating (加热)

positive turn 正转

negative turn 反转

Cooling 冷却

Alarm /Call 呼叫

VI. The back line diagram of the computer

电脑背面接线图(HG-TC200E-1)

Public line

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Heating 1

Heating 2

Calling

Positive turn

Negative turn

七 After service

Our company supply one year free guarantee for the product and forever after service. If you have any problem while using our product, please contact with us anytime. We are always at your service

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