JUKE 聚科精密脉冲热压焊机

操 作 手 册

JUKE Precise Pulse Hot Pressing Welding Machine Operation Manual

设备概述

Equipment Overview

1、 设备功能：精密脉冲式控制焊接电源，通过安装在机头上的热压焊咀发热焊接产品，通过装在焊咀上的热电偶进行精准的温度数据追踪分析，从而精准判断即时控制。该设备适用于热压焊锡和热熔结合。脉冲热压结合方式可以获得良好的效果，因为在加热和冷却时，工件被加压力固定。

1. Equipment function: the equipment has precise pulse control welding power supply. It can weld products through hot pressing welding nozzle installed on the equipment head, and conduct accurate temperature data tracking analysis through the thermocouple installed on the welding nozzle, so as to accurately determine the immediate control. The equipment is suitable for hot pressing soldering and hot melt bonding. The combination of pulse and hot pressing can achieve good results because the work piece is fixed under pressure during heating and cooling.

2、 功能说明

2. Function description

＞温度检测，LCD 屏实时显示当前焊头温度，并且焊接过程中显示实时温度曲线；

＞Temperature detection, LCD screen displays the current welding head temperature, and display real-time temperature curve during welding;

＞温度控制，五段温度，时间控制精度为 0.1 秒，温度控制精准，可调单位为 1 度；

＞Temperature control, five-segment temperature; time control accuracy is 0.1 second; temperature control is precise, adjustable unit is 1 degree;

＞焊接机头的升降时间和速度控制；

＞Rising and lowering time and speed control of welding head;

＞加热头冷却时间和气流控制；

＞Heating head cooling time and air flow control;

＞使用热电偶进行温度监测和反馈，精准控制使焊接性能更稳定；

＞Use thermocouple to conduct temperature monitoring and feedback, precise control can make welding performance more stable;

＞有多点信号可扩展，很容易与大型自动化设备对接。

＞Multi-point signal can be extended, and it is easy to connect with large-scale automation equipment.

3、常规参数

3. Conventional parameters

＞输入电压：220V，50HZ 稳定电源

＞Input voltage: 220V, 50HZ stabilized power supply

＞输出功率：2000W

＞Output power: 2000W

＞系统文字：中文或英文

＞ System text: Chinese or English

＞机台尺寸：长宽高,320X320X250(mm)

＞Machine size: length, width and height, 320X320X250 (mm)

＞控制方式：微电脑精准控制

＞Control mode: microcomputer precise control

＞显示系统：亮光蓝屏，显示温度、时间和模式

＞Display system: bright blue screen, display temperature, time and mode

＞温度时间：温度以 1 度为单位设置，时间以 0.1 秒为单位设置

＞Temperature and time: the temperature is set at 1 degree, and the time is set as 0. 1 second

＞设备质量：电源主机重 26kg，焊接机头 JK-66 重 10kg

＞Equipment quality: power mainframe is 26kg; welding head JK-66 is 10kg

3、 设备应用

3. Equipment application

＞热压焊锡回流焊；

＞Reflow welding of hot pressing welder;

＞树脂热压(热融)结合；

＞Resin hot pressing (thermal melting) combination;

＞锡焊接 FFC、FPC;

＞Tin welding FFC and FPC;

＞锡焊接线束、连接器；

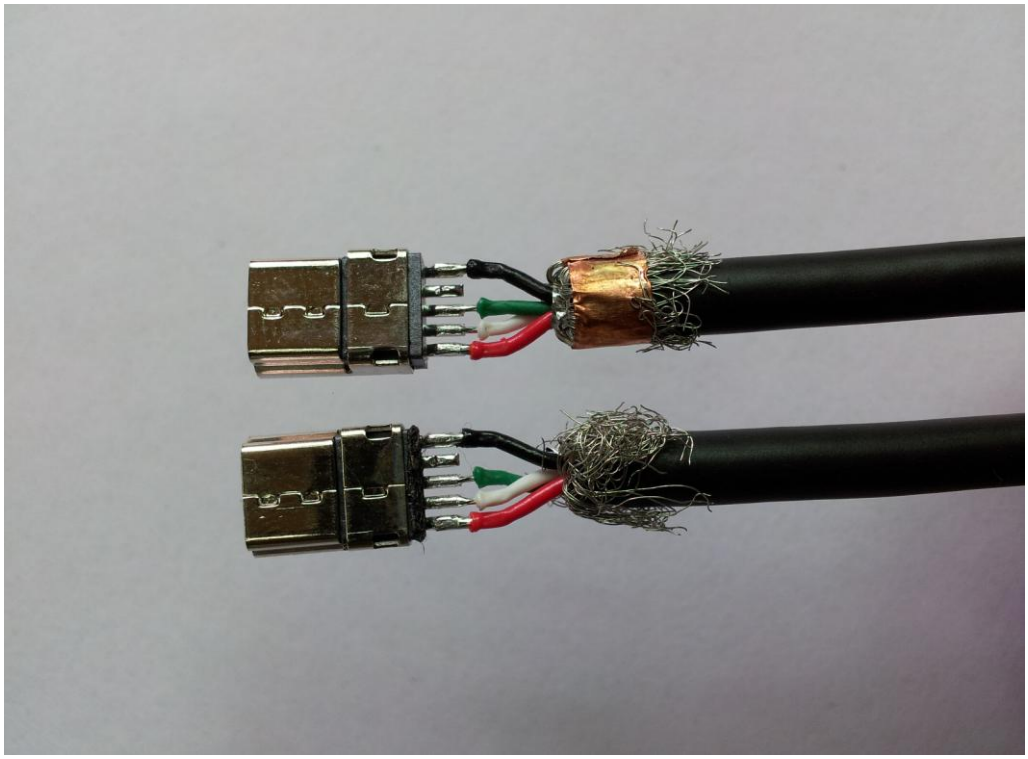
＞Tin welding harness and connector;

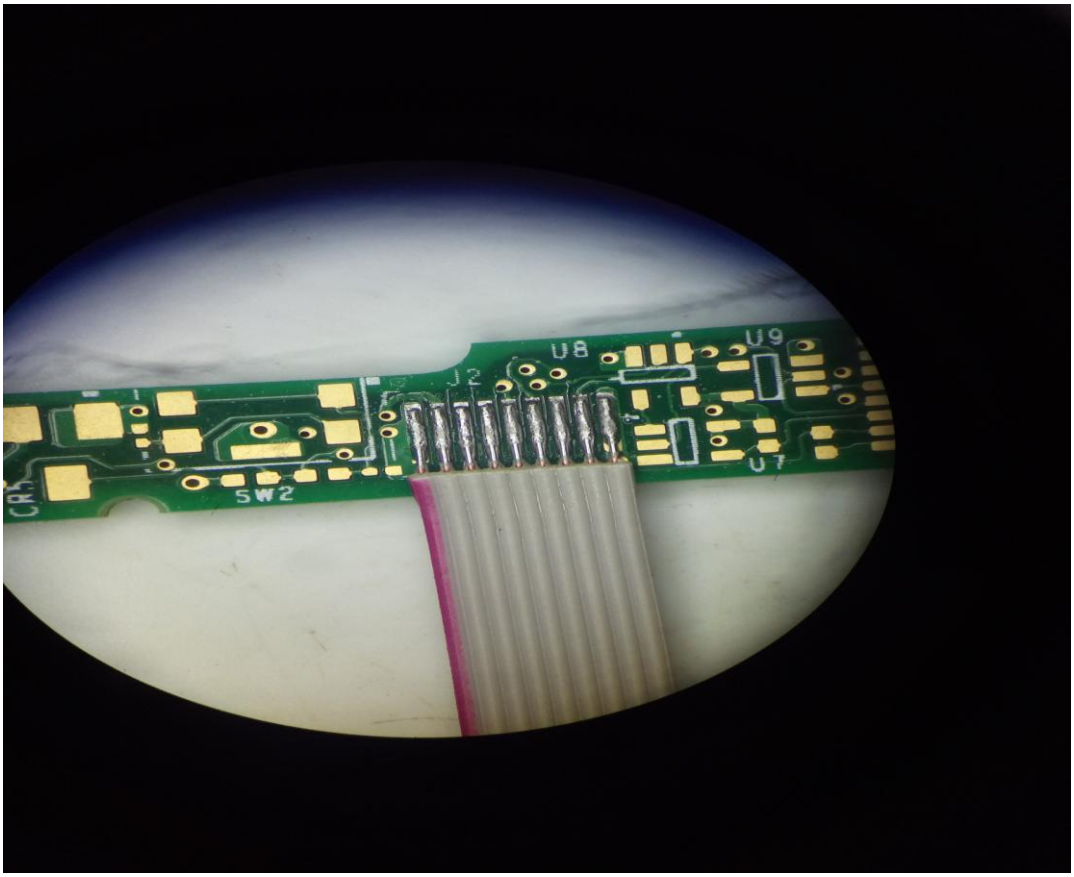
＞ACF 结合；

＞ ACF combination;

＞漆包线焊接

＞Welding of enameled wire

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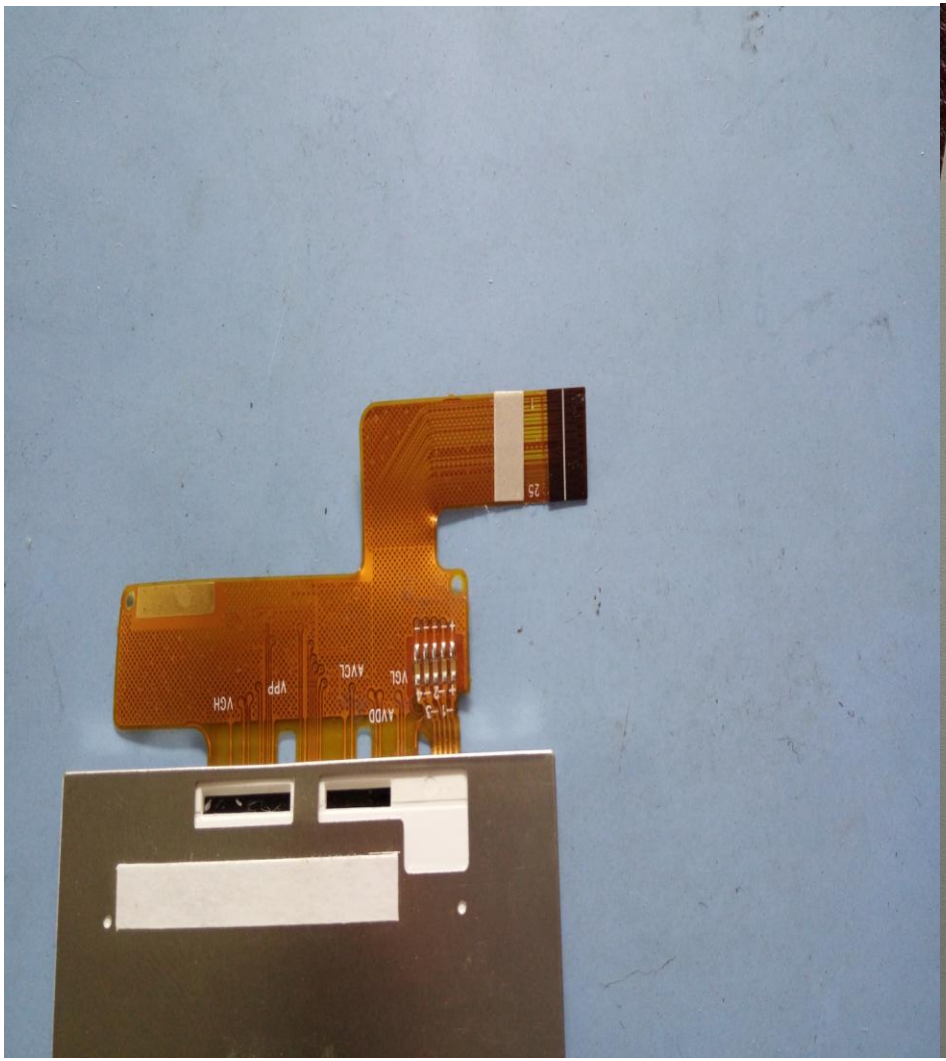
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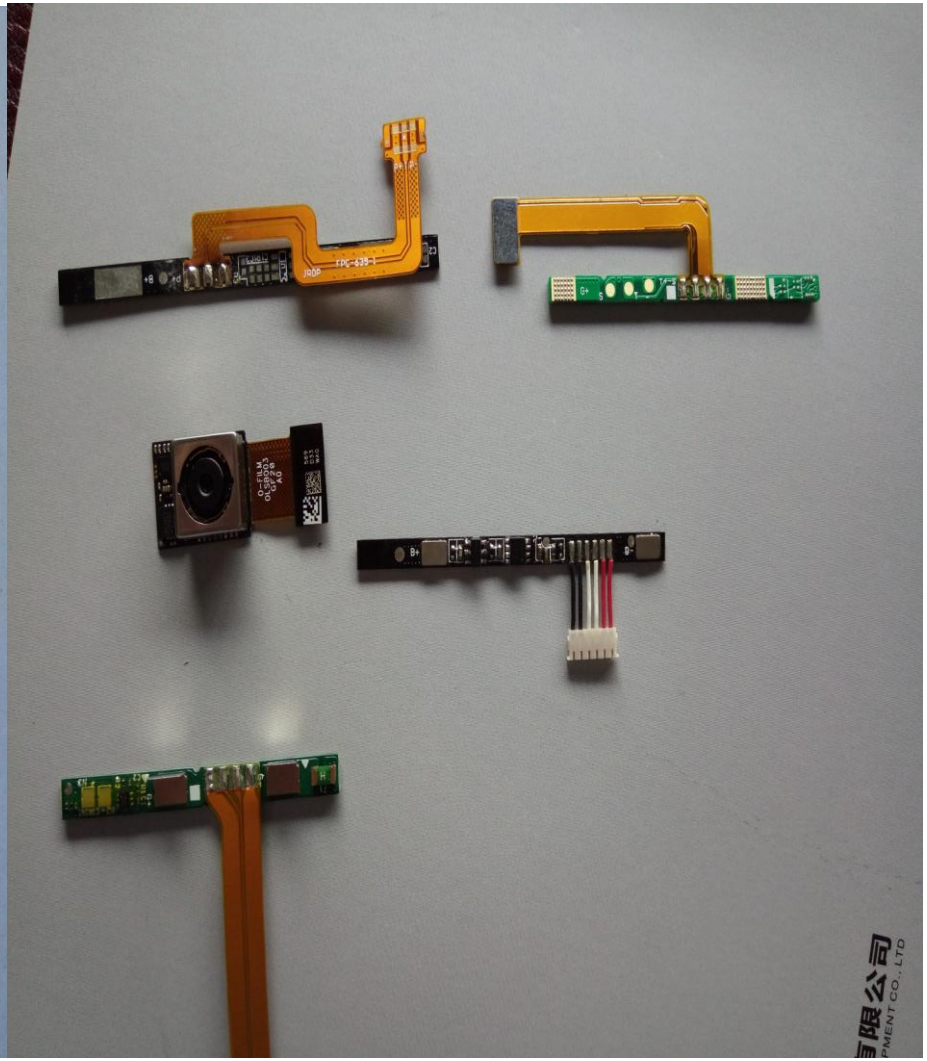
VGH
VPP
AVDD
VGL
AVCL



1. 脉冲热压回流焊特点

1. Features of pulse hot pressing reflow welding

1.1　数字温度控制

使用数字 PID（温度峰值调整）温度控制，可以控制热压数据的控制增益，从而精准控制焊接温度。

1.1 digital temperature control

Using digital PID (temperature peak adjustment) temperature control to control the gain of hot pressing data, and the welding temperature can be controlled accurately.

1.2 监视温度曲线图、温度平均值和温度峰值。

1.2 monitor temperature curve, average temperature value and temperature peak value.

1.3 具有 I/O 信号的输入/输出功能，很容易与外部控制器通讯。

1.3 Input / output function of the I/O signal, which is easy to communicate with the external controller.

1.4 具有控制回流焊接、冷却、焊头上升和下降的功能.。

1.4 Functions to control the reflow welding, cooling, welding head rise and lowering.

1.5 使用通用的 K 型热电偶，预留 E 型热电偶可选择。

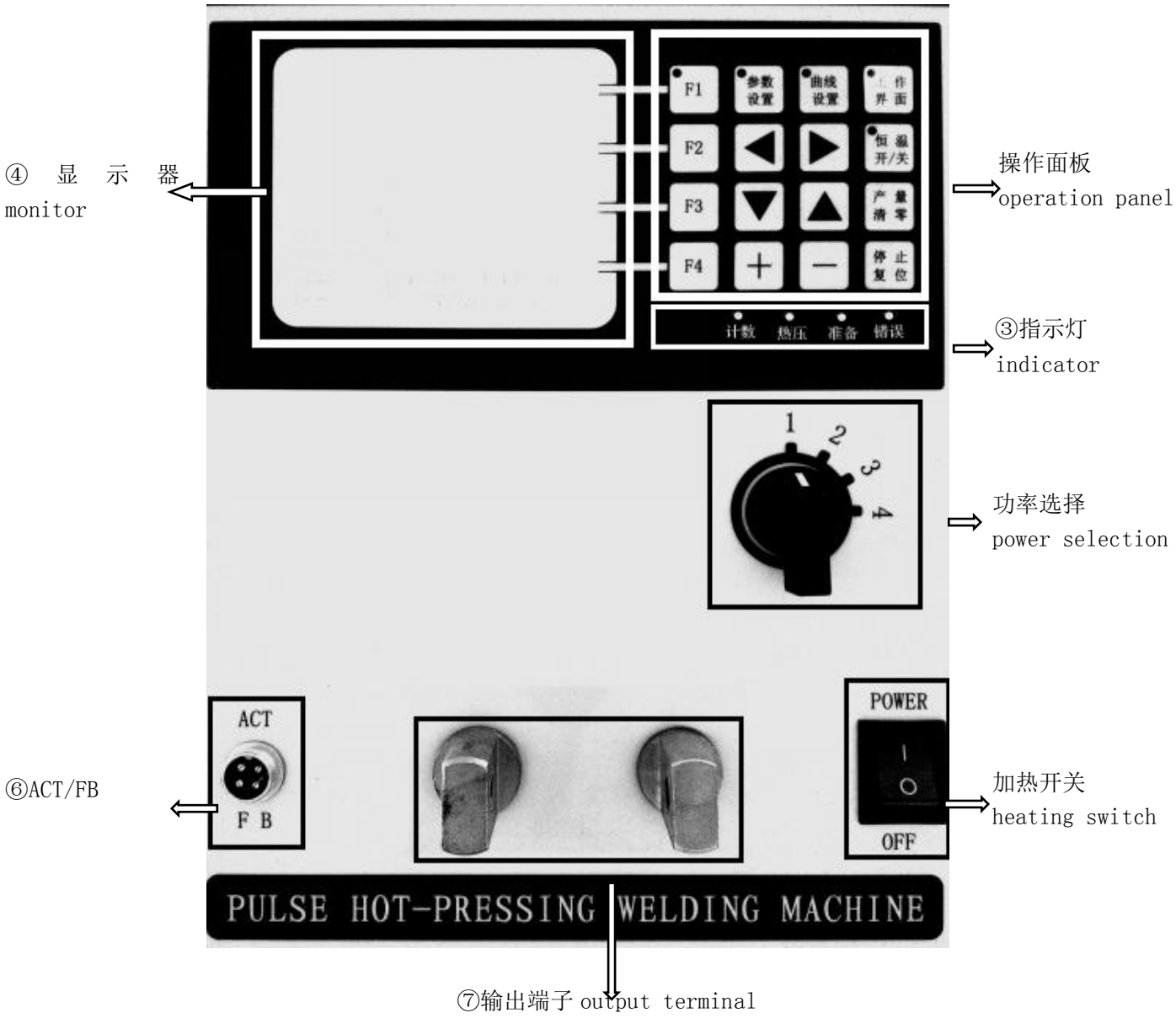
1.5 use general K type thermocouple, reserve E type thermocouple can be selected.

2.各部分名称及其功能

2. Name and function of each part

2.1 前面板

2.1 front panel



① 备热压电路开关

①Equipment hot pressing circuit switch

② 出功率范围开关：根据热压工具功率大小调整档位

②Output power range switch: adjust the gear according to the power of hot pressing tool

③ 通过 LED 灯显示设备当前运行状态

③Display the current running state of the equipment through LED lamp

④ 示设备热压数据和参数

④Display hot pressing data and parameters

⑤ 置热压焊接时间、温度和对应的参数

⑤Set hot pressing welding time, temperature and corresponding parameters

⑥ 压开始信号和温度返馈的输入连接器（热电偶类型:K 型）

⑥Hot pressing start signal input connector of the temperature feedback (thermocouple K type)

⑦ 压焊接电流的输出端：连接到焊接机头端，与热压焊头形成回路。

⑦Output end of hot pressing welding current: connect to a welding head end, forming a loop with hot press head.

2.2 后面板

2.2 Rear panel

①控制回流焊头输入输出信号

①Control reflux welding head input and output signal

②输入输出接口

②Input / output interface

③与外部设备进行通信

③Communicate with external equipment

④冷却内部零部件

④Cooling internal parts

⑤冷却焊头输出信号

⑤Cooling head output signal

⑥焊头上下输出信号

⑥Welding head up-and-down output signal

⑦焊接启动输入信号

⑦Welding start input signal

⑧备用

⑧Standby

⑨电源控制总开关

⑨Total power control switch

⑩交流电源输入（220V）插座　　注意必须接地!!!

⑩AC power input (220V) socket　must be connected to grounded!!!

3.安装与连接

3. Installation and connection

3.1 供电电源

3.1 power supply

AC220V-230V 电压波动±10%以下

AC220V-230V voltage fluctuation below ±10%

电源频率 50/60Hz

Power frequency 50/60Hz

电流 15A 以下

The current is below 15A

注意事项:

设备最大电流 10A;所以在 220v 电源电压 50%占空比和功率调整范围的条件下使用设备时，这时的电流是平均值。

如果没有设置升温时间,或设置时间过短，这时使用大负载的热压焊头。

如果负载过大，初始电流也较大，请准备 15A 以上电源设备。

Matters needing attention:

The maximum current of the equipment is 10A; when using this equipment at 220V supplies voltage, 50% duty factor and the power adjustment range, the current is average.

If the heating time is not set, or the time is set too short, please use hot pressing welding head with large load.

If the load is too large and the initial current is also large, please prepare over 15A power supply equipment.

3.2 安装

3.2 Installation

·安装时，先切断电源设施的开关，关闭本设备的电源，然后进行电源电缆的连接；
When installing, switch off power supply device first, turn off the power supply of the equipment, and then connect the power cable;
·安装时要预留设备间隔空间，这样机身后面板冷却风扇及机身底部通风孔不会被阻塞。
Installation interval should be reserved so that the rear panel cooling fan and the ventilation hole at the bottom of the equipment will not be blocked.
·不要把温度返馈(ACT/TB)电缆与焊接电缆捆扎在一起，各电缆尽可能相互远离，以减少彼此干扰。
Don't bundle the temperature feedback (ACT/TB) cable with the welding cable, each cable should be away from each other as far as possible, in order to reduce interference.
·如果条件允许，可将两条焊接电缆捆扎，尽可能并行在一起。
• If the conditions permit, the two welding cables can be bundled together as close as possible.

4.前面板的基本操作

4. Basic operation of front panel

4.1 概述

4.1 Overview

通过操作面板，与输入输出连接器连接的外部设备，或串行通讯，进行本设备的基本操作
The basic operation of the equipment can be conducted through the operation panel, the external equipment connected with the input and output connectors, or serial communication

当打开总电源开关热压数据被自动加入，系统被启动后处于“工作界面”
When the total power switch is switched on, the hot pressing data is automatically added. After the system is started, it is in the “working interface”.
基本操作分为六种模式，分别为①曲线设置，②参数设置，③工作模式，
④测试模式（F1 键），⑤自动模式（F2 键），
⑥恒温功能（自动模式、测试模式下没有此功能），
每一种模式都可通过专用按键分别切换；
The basic operation is divided into six modes, namely, ①curve setting, ②parameter setting, ③working mode, ④test mode (F1 key), ⑤automatic mode (F2 key), ⑥thermostat function (in automatic mode, test mode does not have this function); each mode can be switched by special keys respectively;

·在曲线设置模式下设置每段温度和升温时间及保持温度时间等热压数据；
In the curve setting mode, temperature for each segment, heating time, temperature

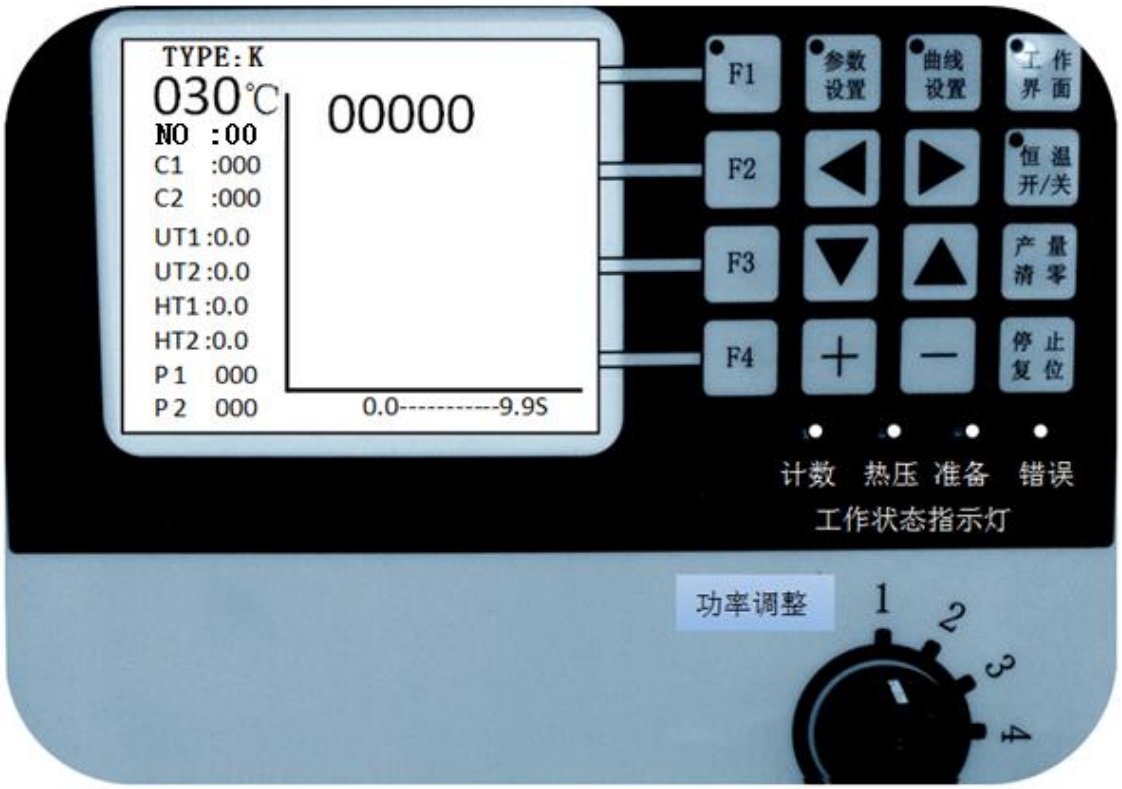
holding time and other hot pressing data can be set;

·在参数设置模式下设置除热压数据之外的所有数据。
Setting all data except hot pressing data in parameter setting mode.

·工作模式是执行热压的模式，显示热压数据,动态温度，峰值谷底温度，生产数量，热压时间（热压时间以秒为单位显示） 。
The working mode is to execute hot pressing mode, display hot pressing data, dynamic temperature, peak and valley temperature, production quantity, and hot pressing time (hot pressing time is displayed in seconds).

4.2 操作面板

4.2 Operation panel



工作状态指示灯

Working status indicator

- 计数　工作一个循环闪亮一次，当生产计数到达生产设定值时计数指示常亮。
- Count: flash once in one working cycle. When the production count reaches the production set point, the counting indicator is always bright.

- 错误　当运行过程中出现故障时指示灯点亮。

- Error. When error occurs during operation, the indicator light lightens.

· 准备　打开电源后没有出现异常时准备指示灯点亮，可以正常热压操作，进入参数设置界面后指示灯熄灭。

Preparation When turn on the power there is no abnormality, the preparation indicator light lightens, and the normal hot pressing operation can be entered. After entering the parameter setting interface, the indicator lights out.

· 热压　指示此时有电流流向热压工具，热压开始。

Hot pressing　Indicates that the current flows to the hot pressing tool, and the hot pressing begins.

操作按键

Operation keys

F1　功能按键：当屏幕有对应提示时此按键就定义位显示的功能按键，屏幕没有对应显示时表示此按键没有定义功能

F1 function keys: when the screen has corresponding prompt, this key is defined as the function button of display; and if the screen does not have a corresponding display, the button does not have defining function

※注意：当处于正常工作模式（工作界面）时,<F1 >按键是测试模式选择键，按压一次进入测试模式，再按一次退出模式，（详解：8.测试模式）。

※Note: when in normal mode (working Interface), <F1 > key is the selecting key of test mode. Press once to the test mode, then press one once to exit the mode (detail: 8. test mode).

F2　功能按键同上、正常工作模式（工作界面）时,
定义为自动模式（详解：9.自动模式）。

F2 function key I the same as above; in normal working mode (work interface), defined as auto mode (detail: 9. auto mode).

F3　功能按键同上、正常工作模式（工作界面）时,无定义。

F3 function key is the same as above; in normal working mode (work interface) there is no definition.

F4　功能按键同上、正常工作模式（工作界面）时,无定义。

F4 function key is the same as above; in normal working mode (work interface) there is no definition.

·工作界面　此按键工作指示灯亮起表示处于正常工作模式

Working interface, when the indicator lights up, the key is in normal working mode

·曲线设置　按下此按键、按键工作指示灯亮起、界面切换、可进行　温度和升温时间及保持温度时间等热压数据设置。

Curve setting, press this key and the working indicator lights up, switch interface to set temperature, heating time, temperature maintaining time and other hot pressing data.

参数设置 按下此按键、按键工作指示灯亮起、界面切换、
可进行本设备的数据设置，除热压数据设置之外。
Parameter settings, press this key the working indicator lights up, switch interface to set the data setting of the equipment except for hot pressing data setting.

·▼ ▲ 光标上下移动（测试模式是功能键）。
▼ ▲ Move the cursor up and down (in test mode is the function key).
◄ ► 光标左右移动（测试模式是功能键）。
◄ ► Move the cursor to the right or left (in test mode is the function key).
·＋ － 数据加减。
＋ － Data modification
恒温开关 按压此按键开始加热并保持设定的恒温温度（测试模式、
参数设置时恒温自动关闭）
Constant temperature switch press this key to start heating and keep the constant temperature (in test mode and when set the parameter, the constant temperature automatically shutdown)

·产量清零 按压此按键（3-5s）生产数量清零。
Output clearing press this key (3-5s) to clear production quantity.

·停止复位 停止设备运行和清除设备故障复位设备。
Stop reset stop equipment operation and remove equipment failure reset device.

4.3 曲线设置

4.3 Curve setting

在工作模式下的热压参数可在此模式下设置。
Hot pressing parameters under operating mode can be set in this mode.
·通过按【◄】和【►】键可逐位移动数据上的指针。
Press 【◄】and【►】keys to shift pointer on the data bit by bit.
·通过按【▼】和【▲】键移动到想要设置的数据上。
Press 【▼】and【▲】 keys to move to the data you want.
·通过按【＋】和【－】键加大或减小数据，在设置数据时，
不能设置小于下限和大于上限的数据。
Press k【＋】and【－】keys to , increase or decrease the data; when setting the data, it shall not be smaller than the minimum or greater than the upper limit.
·数据设置完成按压其他模式键可退出。
Data settings completed. Press other mode keys to exit.
·曲线数据设置画面
Curve setting screen

①. . . . . .
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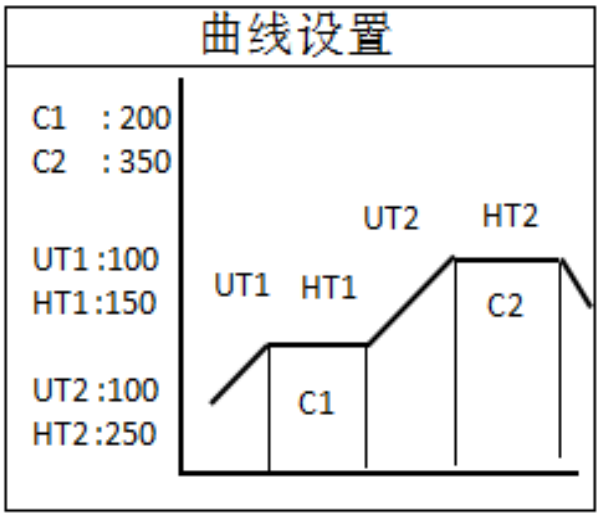


①一段温度：设置温度曲线的一段目标温度。

①Segment 1 temperature: set segment 1 target temperature of the curve temperature.

※【设置值：30-480】单位：℃

※ [Set value 30-480]: unit: C

※温度设定值必须大于等于冷却停止温度，小于<冷却停止>温度设定值时将无法设定。

※The temperature setting value must be greater than or equal to the cooling stop temperature, when the value is less than< cooling stop> temperature, setting is unavailable.

※温度设定值必须小于<二段温度>温度设定，大于将无法设定。

※The temperature setting value must be less than the temperature setting of < segment 2 temperature>, otherwise the setting is unavailable.

②二段温度：设置温度曲线的二段目标温度。

② segment 2 temperature: set segment 2 target temperature of the curve temperature.

※【设置值：30-480】单位：℃

※[Set value 30-480]: unit: C

※温度设定值必须大于<一段温度>设定值，小于<一段温度>设定值时将无法设定。

※The temperature setting value must be greater than the setting value of < segment 1 temperature>. When the value is less than the value of < segment 1 temperature>, setting is unavailable.

③一段升温时间：设置一段温度从常温到一段目标温度的升温时间。

③Segment 1 heating time: set the rising time when segment 1 temperature rises from normal temperature to target temperature.

※【设置值：1-999】单位：10ms(10 毫秒为单位)

※ [Set value 1-999]: unit 10ms (10 milliseconds as unit)

④一段保温时间：设置从一段目标温度保持时间。

④Segment 1 holding time: set segment 1 temperature holding time.
※【设置值：1-999】单位：10ms(10 毫秒为单位)
※ [Set value 1-999]: 10ms (10 milliseconds as unit)

⑤二段升温时间：设置一段目标温度到二段目标温度的升温时间。
⑤Segment 1 heating time: set the rising time when segment 1 temperature rises from normal temperature to segment 2 temperature.
※【设置值：1-999】单位：10ms(10 毫秒为单位)
※[Set value 1-999]: 10ms (10 milliseconds as unit)

⑥二段保温时间：设置二段目标温度保持时间。
⑥Segment 2 holding time: set segment 2 temperature holding time.
※【设置值：1-999】单位：10ms(10 毫秒为单位)
※[Set value 1-999]: 10ms (10 milliseconds as unit)

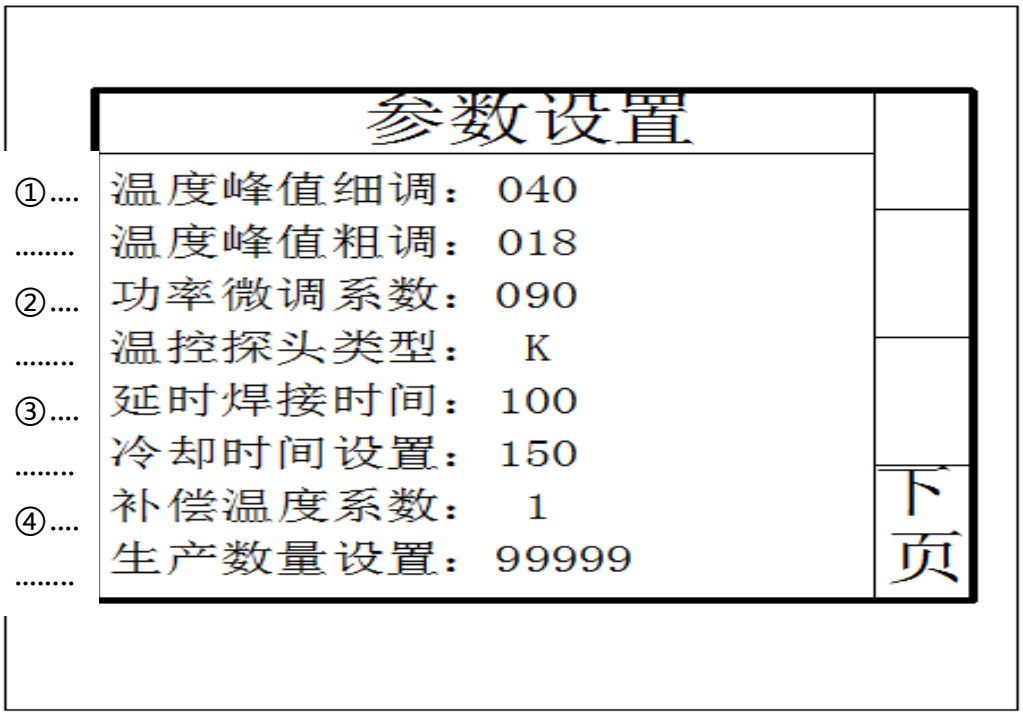
⑦恒温温度 ：设置起始目标保持温度。
⑦Constant temperature: set the initial target temperature maintaining time.
※【设置值：30-150】单位：℃
※ [Set value 30-150]: unit: ℃

⑧冷却温度 ：设置目标冷却温度（注：冷却期间冷却时间和冷却温度先到优先）。
⑧Cooling temperature: setting target cooling temperature (Note: see cooling duration, cooling time and cooling temperature which one comes first).
※【设置值：30-200】单位：℃
※[Set value 30-200]: unit: ℃

4.4 参数设置

4. 4Parameter setting

参数设置第一页
First page of parameter settings



①温度峰值细调：增益调整、调整温度跟随曲线图的方式。

①Peak temperature fine tuning: gain adjustment; adjust the following way of temperature to the curve

※【设置值：1-99】

※[Set value 1-99].

②温度峰值粗调: 比例调整、调整温度跟随曲线图的方式。

②Temperature peak coarse tuning: proportion adjustment; adjust the following way of temperature to the curve

※【设置值：2-20】

※ [Set value2-20]

③ 功率因数:最大脉冲长度极限设置、可用作功率大小微调。

③ Power factor: maximum pulse length limit set, fine tuning of available power.

※【设置值：1-99】（初始值是 90）

※ [Set value 1-99] (The initial value is 90)

④ 温控探头类型：K 型 E 型 K+N 型 E+N 型

④ Type of temperature control probe: K type; E type; K+N type; E+N type

⑤ 延时焊接时间：焊头开始下降到接触到产品产生的延时设置。

（此针对焊头没有限位开关的焊具）

⑤ Welding delay time: delay setting when the welding head lowers to contact the. (The welding head is without limit switch welding)

※【设置值：1-999】单位：10ms(10 毫秒为单位)

※ [Set value [1-999]: 10ms (10 millisecond as unit)

⑥ 冷却时间设置：焊接完成后冷却焊头到常温的延时时间

⑥ Cooling time setting: after completion of welding, the delay time of welding cooling to room temperature.

※【设置值：1-999】单位：10ms(10 毫秒为单位)

※ [Set value [1-999]: 10ms (10 milliseconds as unit)

⑦ 补偿温度系数:温度微调设置，当热压到达温度与目标实际温度不符时，通过调整该参数进行微调修正

⑦ Temperature compensation coefficient: temperature adjustment settings, when the hot pressing temperature and the actual target temperature do not comply, adjust the parameter to fine tuning the correction.

※【设置值：－99 --- ＋**99**】（初始值是 0）

※ [Set value: [-99 --+99] (the initial value is 0)

⑧生产数量设置：设定生产数量，达到该设定数量会自动停机报警，须清零复位后方能再使用。

⑧ Production quantity setting: set production quantity, when reach the number there will be automatic shutdown alarm, reset before use.

※【设置值：1-99999】

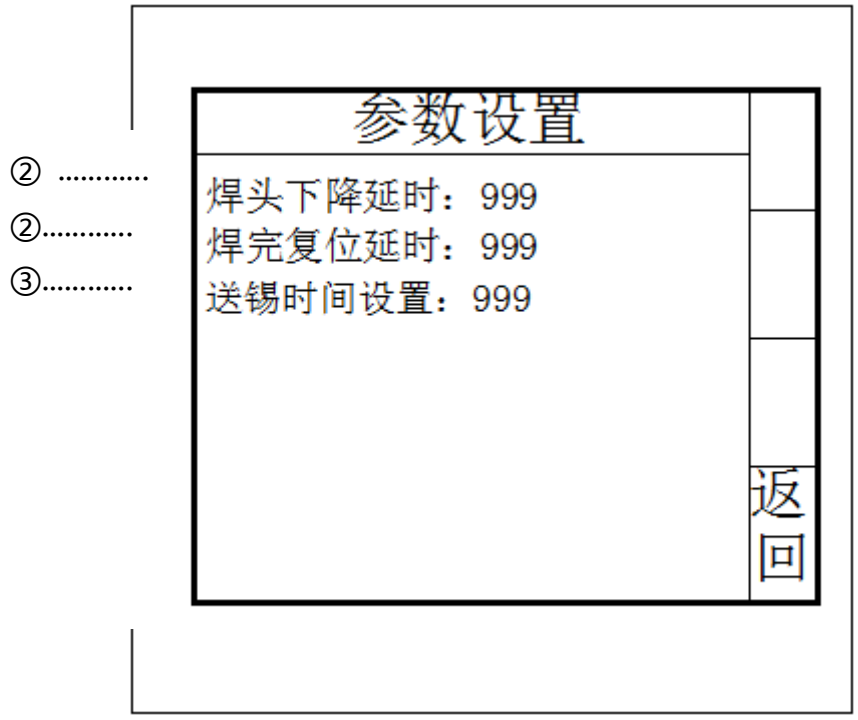
※ [Set value 1-99999]

4.4 参数设置

4. 4Parameter setting

参数设置第二页

Second page of parameter settings



①焊头下降延时：自动化运行时、相对进料气缸的入料延时。

①Welding head lowering delay: feeding delay of opposite feed cylinder under automatic operation.

※【设置值：1-999】

※Set value [1-999]

②焊完复位延时：自动化运行时、相对焊头上升后进料气缸延时复位。

②Welding reset delay: feeding cylinder delay reset after the opposite welding head rising under automatic operation.

※【设置值：1-999】

※Set value [1-999]

③送锡时间设置：自动化运行时、设置送锡时间用以控制送锡。

③Tin feeding time setting: set tin feeding time to control tin feeding under automatic operation.

※【设置值：1-999】

※Set value [1-999]

4.5 工作界面（操作模式）

4.5Working interface (operation mode)

这是正常运行热压焊接模式。

This is the normal operation of hot pressing welding mode.

当输入热压焊接开始信号时，对产品进行热压焊接操作，输出热压数据。

When input hot pressing welding signal, the hot welding operation is carried out, and the hot pressing data is output.

① 探头类型.....

①Type of probe.....

②焊头温度显示.....

② welding head temperature display.....

③工艺号 ..

③process number..

④目标设定温度一段..

④Target temperature of *segment* 1

目标设定温度二段..

Target temperature of *segment* 2

⑤目标一段升温时间..

⑤Target heating up time of *segment* 1

目标二段升温时间..

Target heating up time of *segment* 2

⑥目标一段保持时间..

⑥Target holding time of *segment* 1

目标二段保持时间..

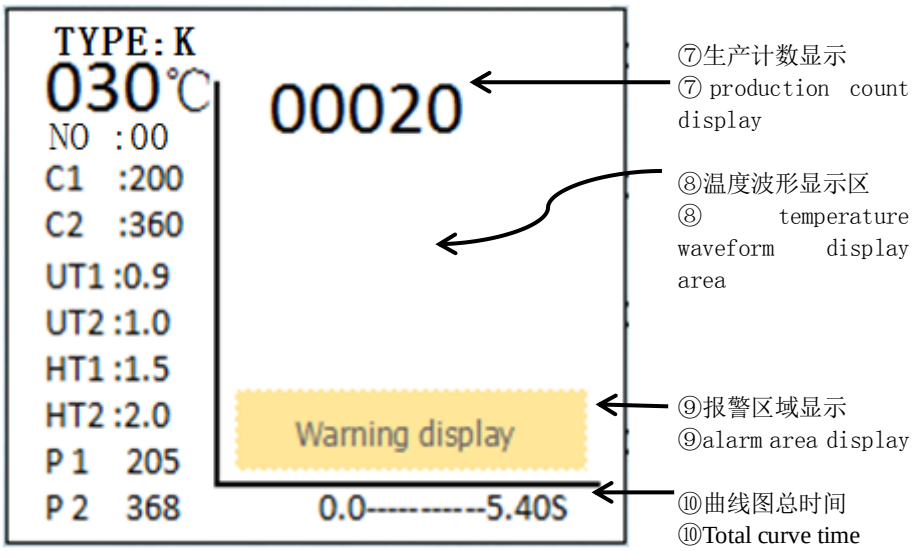
Target holding time of *segment* 2

⑦目标一段峰值谷值..

⑦ Target peak and valley value of *segment* 1

目标二段峰值谷值..

Target peak and valley value of stage 2



⑦生产计数显示

⑦ production count display

⑧温度波形显示区

⑧ temperature waveform display area

⑨报警区域显示

⑨alarm area display

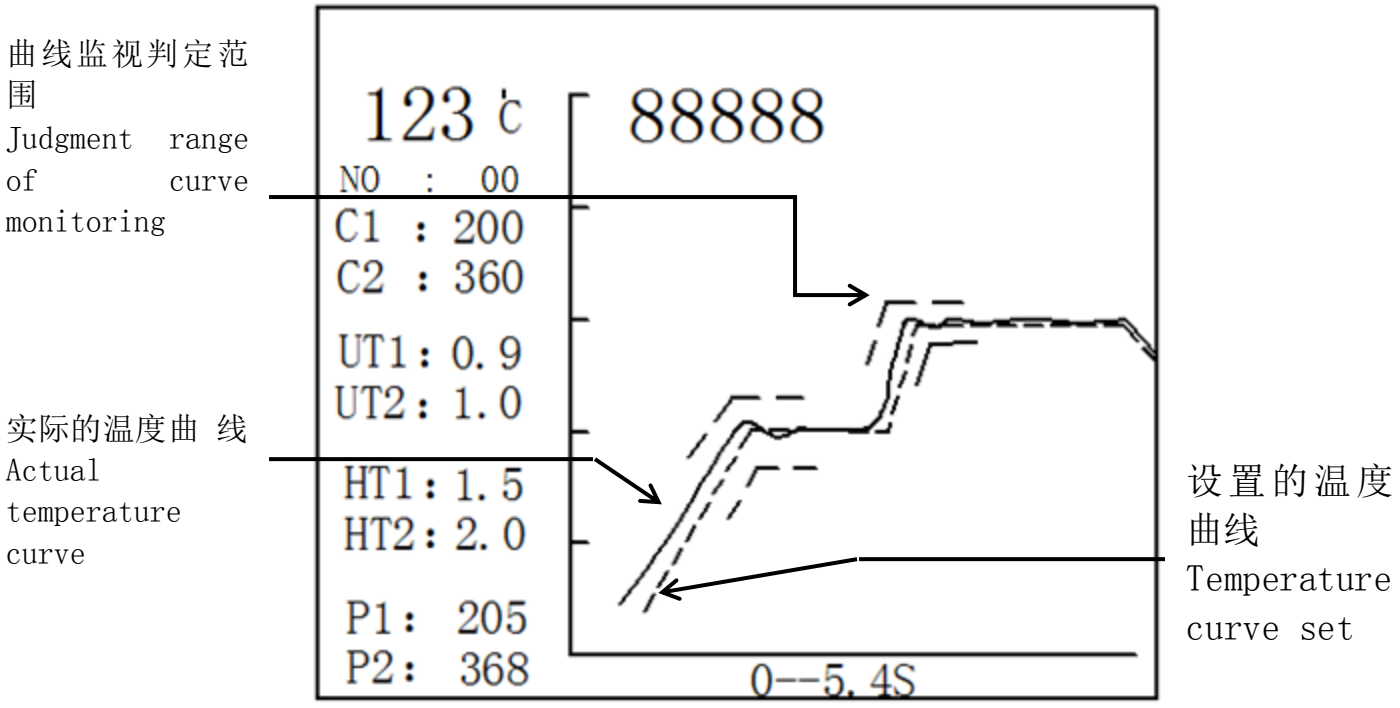
⑩曲线图总时间

⑩Total curve time

①温控探头类型：已选温控探头类型。
①type of temperature control probe: selected temperature control probe type.
②焊头温度显示：显示焊头的当前温度值。
② welding head temperature display: display the current temperature of the welding head.
③目标温度显示：显示第一段第二段目标温度的设定值。
③Target temperature display: display the setting temperature value of the first and second phrase .
④目标温度升温时间：显示升温到目标温度的设定时间值。
④ Target temperature rise time: display set time value when the temperature rises to the target temperature.
⑤目标温度保持时间：显示升温到目标温度后保持目标温度多长时间的设定值。
⑤Target temperature holding time: display set value of the time lasting from the temperature rises to the target temperature.
⑥目标温度峰值谷值：显示曲线图监视判定的范围值。
⑥Peak and valley value of target temperature: display the range value of curve monitoring.
⑦生产计数显示：生产数量输出显示。
⑦Production count display: production count output display.
⑧温度波形显示：以曲线图的方式显示热压焊接结果如、如下图。
⑧Temperature waveform display: display welding results as below in curve diagram.
⑨报警区域显示：出现故障或警告信息时，此区域显示报警信息类型
⑨Alarm area display: when failure or warning information occurs, this area display alarm information type.
※ 当使用《清洗计数》功能时，计数到时此区域提示清洗焊头，不是报警。
※When using “cleaning count” function, the alarm to this area is cleaning welding head not warning.
⑩曲线总时间：显示升温开始到焊接完成的曲线总时间。
※ 注意此界面时间单位为 s (秒) 精确度为 0.1s 。
⑩Total curve time: display the total curve time form temperature rising to welding completion.
Please note that the unit of time in this interface is second and the accuracy is 0.1s.

4.6 工作界面（操作模式）曲线显示

4.6Working interface (operation mode) curve display



※ 热压工作时设置的温度曲线和实际工作显示曲线没有重合、这是温度滞后的原因引起;

※ The set temperature curve and the actual working display curve are not coincident with each other during hot pressing; this is caused by temperature lag;

※ 正常工作时内部软件会判断温度峰值是否超出曲线判定范围、超出范围会报警提示、这时需要重新设定功率和温度峰值细调和粗调以及电压档位;

※In normal work the internal software will determine whether peak temperature exceeds curve judgment curve, or there will be warning alarm. Then it is necessary to set the power and peak temperature fine tuning and coarse tuning as well as voltage;

5.参数曲线设置

5.Parameter curve setting

警告

Warning

※ 如果按《工作界面》键 ，切换到操作模式，则参数设置，曲线设置的内容被存储内置存储器内。

※If press “work interface” key to switch to the operation mode, the parameter setting starts, the memory of curve setting is stored in the built-in memory.

※ 内置存储器写入寿命是 10 万次

※The write life of built-in memory is 100 thousand times

※ 在设置热压数据后第一次进行试热压时，建议把参数设置第一页面的极限温度设置为“二段目标温度加上 50℃ －100℃”。这样，即使是热压数据设置不合适而出现超调，也可最大限度保护焊头或工件造成的损坏。

※When conducting the first hot pressing test after setting the data, the limit temperature on the first page on parameter setting should be “2nd segment target

temperature plus 50 degree- 100 degree". In this way, even the hot pressing data
Is not set properly and overshoot, it can also protect the damage caused by welding head and the work piece.

5.1 功率范围设置

5.1Power range setting

通过选择前面板的开关来改变设备内的变压器此级输出电压，此时，最大输出电流也会随之而改变。

When selecting the switch of the front panel to change the output voltage of the transformer in the device, the maximum output current will also change accordingly.

如果设置值变大，易于使温度上升，但是也易于出现超调，电量消耗加大。

If the setting value is larger, it is easy to raise the temperature, but also prone to overshoot, which will increase the consumption of electricity.

由于"温度峰值粗调"和"温度峰值细调"及<功率因数>的设置，可能会产生较大冲击电流，因此必须注意以下情况：

The settings of "temperature peak coarse tuning" and "temperature peak fine tuning" and <power factor > may have a greater impact on current; we must pay attention to the following circumstances:

※ 必须根据焊头尺寸来选择功率范围，根据下面列表选择档位，如果在上升时间，温升跟随较慢时，请改变单位，使电压逐步的升高。

※ Select the power range according to the welding head size and select the switch according to the following list, if at the time of rise and the temperature rise slowly, please change the unit to gradually increase the voltage.

※ 如果功率范围过大，容易发出"噪声"，不稳定并产生过度震荡。

※ If the power is too large, it is easy to send out "noise", unstable and result in excessive vibration.

※ 热压工具与回流焊头和 700mm 焊接电缆结合使用时,通过范围 1 至范围 3 可获的足够功率。

※ The combined use of hot pressing tool, reflow welding head and 700mm welding cable tool, with range 1 to range 3 can gain enough power.

如果在在功率范围 1 至范围 3 的情况下，焊头温度没有上升，则可能是电路中电流运行出现**断开或受阻碍**，应该检查焊头，连接电缆，输出端子，及前面板红色加热开关，还要检查有没有对地短接等。

If it is in range 1 to range 3 and the welding head temperature does not rise, the current operation in the circuit is broken or blocked. Please check the welding head, connect cable, output terminal, and the front panel red heating switch, and check the short circuit to ground, etc.

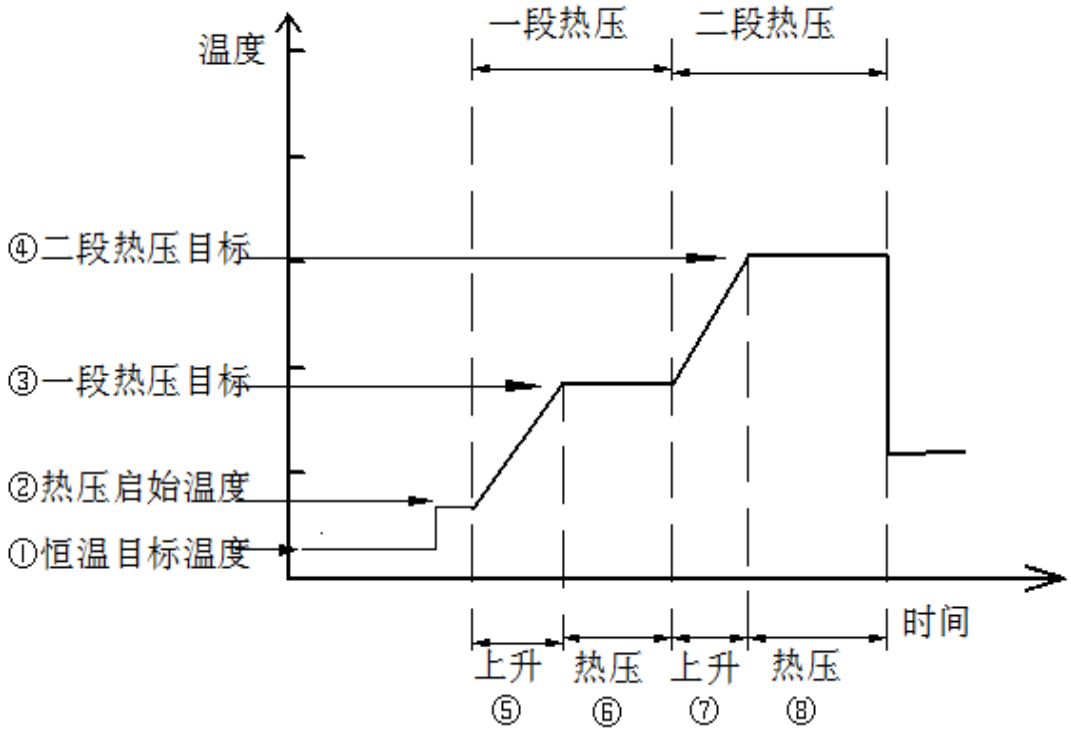
功率范围	输出电压	标准热压焊头
1	1.2V	JK-1.6-25(厚度 1.6 长 25)
2	1.6V	JK-1.6-35
3	2.0V	JK-2.0-40
4	2.4V	大于 JK-3.0-40

Power range	Output voltage	Standard hot pressing welding head
1	1.2V	JK-1.6-25 (thickness: 1.6 length: 25)
2	1.6V	JK-1.6-35
3	2.0V	JK-2.0-40
4	2.4V	Greater than JK-3.0-40

※该表是在出厂前公司内部在该条件下的检查结果，用户条件或本设备的设置不同时，本列表可能不适用。

※ Values in this table are got by inspection within the company before delivery. When user conditions or the equipment settings are not the same, this list may not apply.

5.2 曲线图的设置
5.2 Curve diagram Setting



在曲线设置画面中，根据①---⑧的值，设置温度曲线。

In curve setting screen, set the temperature curve according to ①---⑧value.
在参数设置第一页，根据①的值，设置<恒温温度设置>参数。
On the first page of parameter setting, set <constant temperature setting > parameter according to the value of ①.
当设置温度曲线变成目标值后，热压焊头的温度受到控制。
When the set temperature curve becomes the target value, the temperature of hot pressing welding head is controlled.

由于使用热压焊头的形状和尺寸及功率不同，电流时间设置和回路的阻抗造成的损失也不同，热压完成后显示的温度波形于设置温度曲线要求也不一致。
The shape, size and the power of hot pressing heads are difficult, damage caused by current time setting and circuit impedance is different, the temperature curve is also inconsistent with the temperature curve after the completion of hot pressing.

为了与设置温度曲线参数一致，要调整前面板的功率选择开关，
In order to be the same with set temperature curve, power selection switch of the front panel should be adjusted,
“温度峰值粗调”,”温度峰值粗调”和功率因数进行调整。
Adjust “temperature peak coarse tuning”, “temperature peak coarse tuning” and power factors.

由于热压焊头尺寸的不同，建议升温时间设置为 0.5----1.0 秒。
Due to different head size, heating time should set to 0.5----1.0 seconds.

※关于恒温温度，是在一定环境中使热压完成后保持一定温度。借助于这个功能、可以减少外围环境温度变化的影响。
※Constant temperature means to maintain a certain temperature after hot pressing in a certain environment. This function can reduce the influence of temperature change in the peripheral environment.

5.3 “温度峰值粗调”，“温度峰值粗调”设置
5.3 “Temperature peak coarse tuning”, “temperature peak coarse tuning” set

由“温度峰值粗调”，“温度峰值粗调”控制调节设备的输出电流，通过设置来改变温度上升波形。
Use “temperature peak coarse tuning” and “temperature peak coarse tuning” to control and adjust the output current of the equipment, and change the temperature rise curve by setting.

在数据设置的第一个画面中，通过①来调整“温度峰值细调”增益
通过②来调整“温度峰值粗调”比例
In the first picture data set, use ① to adjust the gain of “peak temperature fine tuning”
Use ②to adjust the proportion of “peak temperature coarse tuning”

“温度峰值细调”增益可以在 01---99 范围内调整，通常调在 50 至 80 之间。

The gain of “peak temperature fine tuning” can be adjusted in the range of 01---99, usually between 50 to 80.

“温度峰值粗调”比例可以在 2--20 范围内调整，通常调在 17-20 之间。

The proportion of “peak temperature coarse tuning” can be adjusted in the range of 2--20, usually between 17-20.

若设置值较大，则温度上升较快，若设置值较小温度上升较慢，但温度易于稳定，温度超调量较小。

If the setting value is large, the temperature rises rapidly, and if the setting value is small, the temperature rises slowly, but the temperature is easy to stabilize and the temperature overshoot is small.

“温度峰值细调”可以理解为温度微调。

“Peak temperature fine tuning” can be understood as minor temperature adjustment.

“温度峰值粗调”可以理解为温度粗调。

“Peak temperature coarse tuning” can be understood as coarse temperature adjustment.

可以先调整“温度峰值细调”，如果调整到最大值或最小值无法满足需要，则可调整“温度峰值粗调”参数，然后配合“温度峰值细调”参数微调来达到或接近理想目标。

First adjust “peak temperature fine tuning”, if the maximum or minimum value can not meet the need, then adjust peak temperature coarse tuning” parameters, and then use “peak temperature fine tuning” parameters to reach or close to the ideal goal.

也可适当调整升温时间 和功率微调系数来调整温度曲线接近理想目标。

It can also adjust the heating time and power fine tuning coefficient to adjust the temperature curve in order to the ideal target.

5.4 功率微调系数设置
5.4 Power fine tuning coefficient setting

流过热压焊头的电流最大值受参数设置第一个画面③的限制。

Through the maximum value of current passing hot pressing welding head is limited by the first picture ③ of parameter setting.

选择功率 1 档时，启动太慢，选择功率 2 档时超调过大，因此，必须取功率 1 档和 2 档中间值。根据此情况选择功率较大档位，并调节功率因数值，使温度曲线更加接近理想目标值。

The starting speed is too slow when the power is selected at gear 1, and the overshoot is too large when the power is selected at gear 2. Therefore, the middle value of power between gear 1 and gear 2 must be taken. According to this situation, the larger power gear is selected, and the power value is adjusted so that the temperature curve is closer to the ideal target value.

默认功率因数值被设置为（90％），如果该值变小，不易于温度迅速升高，但也不易于温度出现超调。

The default power value is set to (90%). If the value is smaller, it is not easy to rapidly increase the temperature, but it is not easy to overshoot the temperature.

5.5 冷却时间设置
5.5 Cooling time setting

热压经过一段二段升温和恒温保压时间焊接完成后.进入焊接凝固冷却状态，当冷却时间设定值到达后焊头开始上升。

When hot pressing welding is completed after segment 1 heating, segment 2 heating and constant pressure holding time, and then enters the welding solidification and cooling. When the cooling time reaches the setting value, the welding head begins to rise.

5.6 延时焊接设置
5.6 Delay welding settings

焊机可能不具备焊头下降到接触产品后，输出一个信号的限位微动开关。因而靠焊头开始下降信号输出后延时一段时间接触到产品后输出一个信号。

The welder may not output a signal of limit switch when the welding head lowers to the contact products. Therefore, it is necessary to delay a period of time after the lowering signal of the head is output, so as to contact the product and output a signal.

5.7 温度补偿设置
5.7 Temperature compensation setting

当热压焊头被加热时，如果达到的实际温度与目标设置值不一致且温差小于 10 度，可通过调整此参数调节实际的控制温度。

When the hot pressing head is heated, if the actual temperature and the setting value is not consistent and the temperature difference is less than 10 degree, the actual control temperature can be adjusted by adjusting this parameter.

也即是：如果该温度较高或较低，改变和调整<温度补偿>值

That is, if the temperature is higher or lower, change and adjust the < temperature compensation > value

※这个功能通常不需要设置，该值为 “0 ” 即可。

※This function can be realized when the value is “0”.

5.8 温度极限设置
5.8 Temperature limit setting

当热压峰值温度或尖峰温度超过此设定值时。

When the maximum temperature or peak temperature of hot pressing exceeds this setting value.

※此峰值采样为 5 微秒/次，干扰尖峰温度也有可能达到此温度。

调整温度峰值，功率等参数时注意不要超调过大。

※The sampling of the peak value is 5 microseconds per time, and the interference peak temperature may reach this value.

When adjust the peak temperature, power and other parameters, be careful not to overshoot too much.

5.9 计数设置
5.9 Count settings

产品的数量控制计数，当操作面板屏幕计数器到达计数设置值时，14 脚 I/O 接口 第 10 脚 将输出低电平信号给外部设备，直到计数复位结束。

Quantity control count of the product, when the operating panel screen counter arrives at the count setting value, the 10th pin of 14 pin I/O interface will output the low level signal to the external equipment until the count reset ends.

操作界面屏幕将提示输出“COUNT COMPLETE.”。

The operating interface screen will prompt the output “COUNT COMPLETE”.

6.热压操作
6. Hot pressing operation

在操作模式下可以接收信号时“准备指示发光二极管”亮起，输入热压开始信号 开始热压进行，接下来，在所设置的升温保持时间到达后，输出热压数据，然后输出热压结束信号。

When the signal can be received in the operating mode, the “ready indicator luminous diode” lightens, input hot pressing start signal to conduct hot pressing. Then, when the set heating holding time is reached, output hot pressing data and hot pressing end signal.

6.1 电路检测
6.1 Circuit detection

连接检查

Connection check

检查并确认各个部件：前面板的输出端，焊接电缆，焊头等是否稳妥。

Check and confirm the various components: make sure output end of front panel, welding cable and welding head are safe.

如果螺丝松动，接触面氧化，等都会造成接触电阻变大，因此，不能提供热压所需的足够功率。

Screw loose and contact surface oxidation will cause contact resistance becomes bigger and cannot provide enough power for hot pressing.

线路检查

Line check

检查并确认两根焊接电缆已经捆扎在一起。

Check and confirm that two welding cables have been bundled together.

如果两根焊接电缆距离过远，可能会产生电磁场，电路阻抗变大，因此，不能提供足够功率。

If the two welding cables are too far away, the electromagnetic field may be generated and the impedance of the circuit increases. Therefore, it is not possible to provide enough power.

·布线检查

Wiring check

检查并确认焊接电缆和回流焊头的跨接线没有与其他金属接触或接地。

Check and confirm the jumper wire of welding cable and reflow welding head are not connected to other metal contact to ground.

当使用长的焊接电缆时（350mm 以上），由于电流通路电感较大，引起功率损耗，温度可能不会按所设置的温度目标值上升。

When using long welding cables (above 350mm), there will be power loss due to the large inductance of the current path. The temperature may not rise as the set target temperature.

另外，如果电感较大，电流通路的阻抗大于热压焊头的阻抗，焊接电缆可能会产生较高温度。

In addition, if the inductance is large and the impedance of the current path is greater than the hot welding, welding cable may produce higher temperature.

连接电缆时，两根电缆应该尽可能靠近，平行放置，减少电感。

When connecting cables, two cables should be as close as possible and be parallel to reduce inductance.

6.2 温度反馈电路的检查

6.2 Inspection of temperature feedback circuit

·连接的检查

Connection check

检查并确认各个部分：前面板的 ACT/FB 连接器，回流焊头的热电偶到焊具插座的连接。

Check and confirm the various parts: front panel ACT/FB connector, and the connection between thermocouple of reflow welding head to socket welding.

线路的检查

Line inspection

确认温度返馈电缆<AFT/FB>没有与焊接电缆捆扎在一起，确认温度返馈电缆没有放置在易产生噪音的设备周围。

Verify that the temperature return cable <AFT/FB> is not bundled with the welding cable, and verify that the temperature return cable is not placed around the equipment, which is prone to noise.

如果反馈电缆与地线接触，即是热压已经执行，可能无法进行温度测量，并且会造成焊头损坏。

If the feedback cable and ground contact, namely the hot pressing has been executed, temperature measurement may not be conducted, and will cause damage to the welding head.

如果可能，可用烙铁接触焊头的热电偶部位，然后检查确认温度显示是否上升，如果显示下降,可能热电偶极性接反。

If possible, use the iron to contact the thermocouple parts of the welding head, and then check whether the temperature display rises. If the display drops, it is possible that the thermoelectric dipole is reversed.

随着热电偶反馈电缆的延长，温度显示值变大。
With the extension of thermocouple feedback cable, the temperature display value becomes larger.

6.3 热压时操作
6.3 Hot pressing operation

·前面板
Front panel

当输入热压开始信号后，“准备指示发光二极管”熄灭，在完成焊头下降后，“热压指示发光二机管”点亮，于是开始电流热压。
When input hot pressing start signal, “ready indicator luminous diode” falls out; when welding head lowering is completed, “hot pressing indicator luminous diode” lightens, and the current hot pressing begins.

在热压完成后“热压指示发光二极管”熄灭，在所设置的各项时间完成后，“计数指示发光二极管”闪亮一次，然后“准备指示发光二机管”点亮，可以接收下一个热压启动信号
After the hot pressing is finished, the “hot pressing indicator luminous diode” is extinguished, and after the set time is finished, “count indicator luminous diode” shines once, then “ready indicator luminous diode” lightens. The next hot pressing start signal can be received.

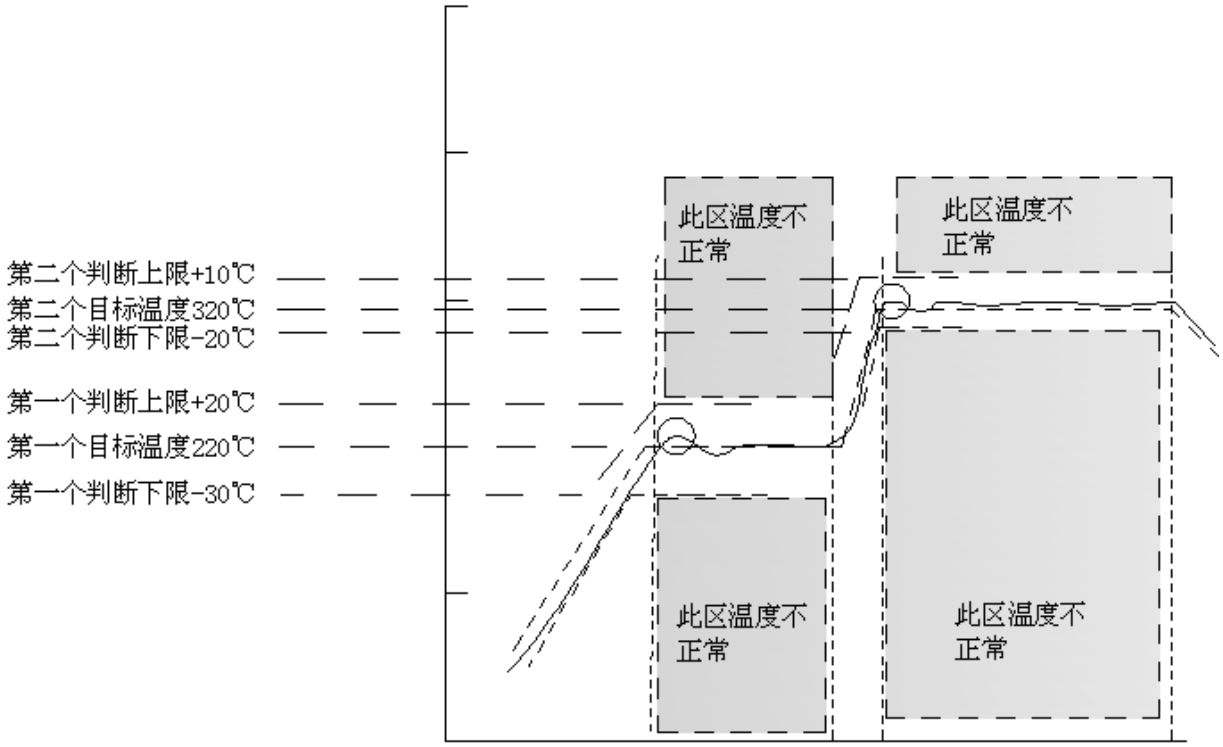
·后面板 I/O 口
Rear panel I/O port

50PIN I/O 接口连接器 4 脚输出下面信号：
4 pin connector of 50PIN I/O interface output the following signal:

当热压准备完成后输出低电平信号，在热压启动后输出高电平信号，直到完成热压所有动作后，准备就绪时再次输出低电平信号，等待下次热压启动信号。
Output low level signal when hot pressing is ready, output high level signal after hot pressing, until the hot pressing action is finished, the low level signal is output again when the preparation is ready, and the next hot pressing start signal is waiting.

7.曲线图监视判断结果
7.Judgment results of curve diagram monitoring

示意图
Schematic diagram



8.测试模式
8.Test mode

在操作模式就绪的情况下，通过按压操作键盘 <F1>键切换到测试模式。
When the operating mode is ready, switch to the test mode by pressing the <F1> key.

测试模式与正常操作模式区别如下：
The differences between test mode and normal operating mode include:

①测试模式的字样（TEST MODE.）出现在屏幕最上方，正常模式没有显示。
①The word “TEST MOD” appears at the top of the screen, and the normal mode is not displayed.

通过按【▼】键　焊头下降。
press 【▼】key to lower the welding head.
通过按【▲】键　焊头上升。
press 【▲】 [] key to rise the welding head up.

通过按【►】键　平台右移。
press 【►】key to right the platform.
通过按【◄】键　平台左移。
press【◄】key to left the platform.

·从 I/O 接口启动焊头上升/下降，焊头处于交替上升和下降
Start welding head rise/ lowering from I/O interface; the welding head is alternately up and down

②如果焊头是通过按【▼】键 、I/O 接口启动焊头下降、 焊头处于下降状态
②If start welding head lowering by pressing 【▼】key and I/O interface, the welding head is lowering
当从 I/O 接口或启动开关输入热压开始信号时，进行热压，蜂鸣器发声、
有热压曲线显示。（有些机型可能出厂没有热压）
When input the hot pressing start signal from the I/O interface or the start switch, the hot pressing is started and the beeper beeps. There is a hot pressing curve display. (Some models may be shipped without hot pressing)
注意：测试循环模式只进行一次热压有效。
Note: test cycle mode is effective when conducting only once hot pressing.

③如果焊头处于上升状态
③If the welding head is on the rise
当从 I/O 接口或启动开关输入热压开始信号时，不进行热压，蜂鸣器发声。
When input the hot pressing start signal from the I/O interface or the start switch, the hot pressing is not started and the beeper beeps.
注意：没有热压曲线显示，但状态指示灯正常显示。
Note: there is no hot pressing curve showing, but the status indicator is in normal display.
除上述以外，测试和正常操作模式相同。
Except for the above, test and normal operation mode are the same.

9.自动模式
9.Auto mode

在操作模式就绪的情况下，通过按压操作键盘 <F2>键切换到自动模式。
When the operating mode is ready, switch to the auto mode by pressing the <F2> key.
自动模式与正常操作模式区别如下：
The differences between auto mode and normal operating mode include:

① 自动模式的字样（AUTO MODE.）出现在屏幕最上方，正常模式没有显示。
①The word “AUTO MODE.” appears at the top of the screen, and the normal mode is not displayed.

② 自动模式下可以通过内部杜邦线连接实现左右平台、前后平台、送锡等功能组合。出厂设置根据用户需求而定。
②Under the auto mode, function combination of left and right platform, front and rear

platform and tin feeding can be realized by inner DuPont line. The factory settings are determined according to the user's needs.

③ 当从 I/O 接口和启动脚踏开关输入热压开始信号时，进料气缸开始动作，经过《焊头下降延时》时间后焊头开始下降工作，后续进入正常工作模式。

③ When inputting the hot pressing start signal from the I/O interface and start pedal switch, the feed cylinder begins to move. The welding head begins to lower after “welding head lowering delay” time; then enters into the normal operating mode.

③ 完成焊接后， 焊头上升， 经过《焊完复位延时》时间后进料气缸开始复位，后续进入正常工作模式。

③ After completing welding, the welding head rises, and the feed cylinder start reset after “welding head lowering delay” time; then enters into the normal operating mode.

④ 工作模式时序 1：50P I/O 输入输出端口由于采用串行模式、会产生输出输入的超前和滞后的时间误差、最大误差范围为 10 毫秒左右。

④Working mode sequential 1:50P I/O input and output ports, because of the serial mode, will lead to the input and output time lag error; the maximum error range is about 10 milliseconds.

⑤ 工作模式时序 2：14P I/O 输入输出端口由于采用并行模式、输出输入最大误差范围为 1 个时钟节拍。

⑤Working mode sequential 2:14P I/O input / output port, because of parallel mode, the maximum error range of output and input is 1 clock beats.

⑥注意：

⑥Note:

※焊头下降延时时间和焊完复位延时时间的调整可能会造成进料气缸和焊头下降冲突，此时需进一步调整延时时间或进料速度。

※The adjustment of welding head lowering delay time and welding end reset delay time may cause the lowering conflict between feed cylinder and the welding head; it is necessary to further adjust delay time or the feed speed.

10.错误检测功能

10.Error detection function

如果发生错误，电缆热压被立即停止，并根据各个错误发生的原因，输出报警信号和显示错误的相关信息。

If an error occurs, the cable hot pressing is stopped immediately, and the alarm signal and the related message of the error are output according to the causes of each error.

① 超温或电偶开路：

①Over-temperature or couple opens circuit:

LCD 屏幕下方显示:"TC OPEN ERROR."
The bottom of the LCD screen shows: “TC OPEN ERROR”.
当温度反馈电缆任何一边断开时或温度超过规定温度时发生这个错误。
This error occurs when either side of the cable is broken according to temperature feedback or the temperature exceeds the specified number.
② 温度差过高：
②Temperature difference is too high:
LCD 屏幕下方显示:"TEMP LIMIT OVER."
The bottom of the LCD screen shows: “TEMP LIMIT OVER”.
当温度反馈超过内部规定温度时，发生超温度极限的错误。
When the temperature feedback exceeds the internal prescribed temperature, the error of ultra temperature limit occurs.

③温度设置错误：
③Temperature setting error:
LCD 屏幕下方显示:"SET TEMP ERROR."
The bottom of the LCD screen shows: “SET TEMP ERROR”.
当涉及到温度参数设置错误时，发生本错误。
This error occurs when the temperature parameter setting error is involved.

④一段升温出现错误：
④Error occurred in the 1st segment of heating up:
LCD 屏幕下方显示:"1st TEMP ERROR."
The bottom of the LCD screen shows: “1st TEMP ERROR”.
热压开始时后，没有温度上升或温度反馈探头从焊头上脱落后发生本错误。
This error occurs when hot pressing starts, if there is no temperature rise or temperature feedback probe falls from the welding head.

⑤二段升温出现错误：
⑤Error occurred in the 2nd segment of heating up:
LCD 屏幕下方显示: "2nd TEMP ERROR."
The bottom of the LCD screen shows: “2nd TEMP ERROR”.
热压进行到第二段升温时，没有温度上升或温度反馈探头从焊头上脱落后发生本错误。
When the hot pressing is on the 2nd heating up segment, this error occurs when hot pressing starts, if there is no temperature rise or temperature feedback probe falls from the welding head.

⑥升温慢或反馈探头极性接反：
⑥Temperature rises slowly or anti-polarity feedback probe:
LCD 屏幕下方显示: "TC INVERSE."
The bottom of the LCD screen shows: “TC INVERSE”.
热压开始时后，出现温度不上升反而出现温度下降时发生本错误。
This error occurs when hot pressing starts, the temperature does not rise but drops,

⑦产量到达：

⑦Count arrives:

LCD 屏幕下方显示: "count complete."

The bottom of the LCD screen shows: “count complete”.

表示已到达计数设置，机器将停止直到计数值清除。

Indicates that it has reached count setting, and the machine will stop until the count is cleared.

⑧主副焊头温差过高：

⑧Temperature difference between main and auxiliary welding heads is too high:

表示使用双焊头时，两个焊头的加热温度差值超过设定值。

Represents that when using the double welding heads, the heating temperature difference of the two heads exceeds the set value.

⑨副焊头电偶开路：

⑨Auxiliary welding head couple opens circuit:

表示使用双焊头时，副焊头开路。

Represents that when using the double welding heads, the auxiliary welding head opens.

11.警告提示信息

11. Warning message

A、焊头清洗提示：

A. Welding head cleaning tips:

LCD 屏幕下方显示:"CLEAN HEAD."

The bottom of the LCD screen: “CLEAN HEAD.”

当计数数量到达参数设置第二页<清洗计数>设定值时。发出提示信息同时报警一下。

When the count quantity reaches the setting value of < cleaning count > parameter setting on the second page, send out prompt message and alarm once.

B、产量到达提示：

B: count arrive tips:

LCD 屏幕下方显示:"COUNT COMPLETE."

The bottom of the LCD screen: “COUNT COMPLETE.”

当计数数量到达参数设置第二页<计数设置>设定值时。发出提示信息。

When the count quantity reaches the setting value of < counting setting > parameter setting on the second page, send out prompt message.

12.与外部设备的连接
12. Connections with external devices

本设备具有三个接口功能。分别是 I/O 接口,回流焊头 I/O 接口和串行通讯接口,用于和外部设备连接。
This equipment has three interface functions, which are I/O interface, reflow welding head I/O interface and serial communication interface, and they are used for connection of an external device.

• 输入/输出接口的功能
• Function of input / output interface
输出本设备状态,热压状态,监视判断的触点信号,输入控制信号。
Output equipment status, hot pressing state, monitor and judge the contact signal, and input control signal.

• 回流焊头输入/输出接口的功能
• Function of reflow welding input / output interface
输入回流焊头启动信号,并输出焊头上下运动和冷却信号或输出脉冲定位 X 轴 Y 轴 Z 轴定位信号。
Input reflow head start signal, and output welding head movement and the cooling signal or output the positioning signal of pulse positioning X axis Y axis and Z axis.

• 串行通讯的功能
• The function of serial communication
根据 RS-232 的技术规范,从 脚插输出和输入信号。
According to the technical specification of RS-232, the output and input signals are inserted from pin.

• 输入/输出接口的功能
• Function of input / output interface
14P I/O 接口连接器的信号列表
The signal list of 14P I/O interface connector
电源输出端电流不能超过 300 毫安
The output current of the power supply should not exceed 300 Ma

插脚	名称	功能	输 入 / 输出	类型	公共端
1	HEAD_HUFF	吹气冷却电磁阀输出	输出	+24V 信号输出	
2	HEAD_HUFF	吹气冷却电磁阀	公共端	第 1 插脚公共端	

3	LEFT-FEEDSTOCK	左右平台(左) 焊锡送料电磁阀输出	输出	+24V 信号输出	
4	LEFT-FEEDSTOCK	左右平台(左) 焊锡送料电磁阀输出	公共端	第 3 插脚公共端	
5	HEAD_DOWN	焊头下降电磁阀输出	输出	+24V 信号输出	
6	HEAD_DOWN	焊头下降电磁阀输出	公共端	第 5 插脚公共端	
7	LEFT_RIGHT	左右平台(右)	输出	+24V 信号输出	
8	LEFT_RIGHT	左右平台(右)	公共端	第 7 插脚公共端	
9	+24Vcom	+24V 返回	+24V COM	触点输出	
10	+24V	+24V 输出	+24V	触点输出	
11			输入	公共端连接‘闭合’	+24VCOM
12	HEAD_UP	回流焊头上升输入 (第二定义为紧急停止)	输入	公共端连接‘闭合’	+24VCOM
13	HEAD_DOWN	回流焊头下降输入 (第二定义为自动启动信号)	输入	公共端连接‘闭合’	+24VCOM
14			输入	公共端连接‘闭合’	+24VCOM

Pin	Name	Function	Input / Output	Type	Common end
1	HEAD_HUFF	Air cooling solenoid valve output	Output	+24V signal output	
2	HEAD_HUFF	Air cooling solenoid valve	Common End	First pin common end	
3	LEFT-FEEDSTOCK	Left and right platform (left) Solder feeding solenoid valve output	Output	+24V signal output	

4	LEFT-FEEDSTOCK	Left and right platform (left) Solder feeding solenoid valve output	Common End	Third pin common end	
5	HEAD_DOWN	Head down solenoid valve output	Output	+24V signal output	
6	HEAD_DOWN	Head down solenoid valve output	Common End	Fifth pin common end	
7	LEFT_RIGHT	Left and right platform (right)	Output	+24V signal output	
8	LEFT_RIGHT	Left and right platform (right)	Common end	Seventh pin common end	
9	+24Vcom	+24V return	+24V COM	Contact output	
10	+24V	+24V output	+24V	Contact output	
11			Input	Common end connection 'closed'	+24VCOM
12	HEAD_UP	Reflow welding head rising input (Second is defined as an emergency stop)	Input	Common end connection 'closed'	+24VCOM
13	HEAD_DOWN	Reflow welding head down input (Second is defined as auto start signal)	Input	Common end connection 'closed'	+24VCOM
14			Input	Common end connection 'closed'	+24VCOM

• 输入/输出接口的功能

• The function of input / output interface

50I/O 接口连接器的信号列表

Signal list of 50I/O interface connector

保护电源输出端（最大电流 30 毫安）

Protection power output (maximum current 30 Ma)

插脚	名称	功能	输入/输出	类型	公共端
1	AUTO_RUN	自动化热压开始信号	输入	公共端导通	+24VCOM
2	HEAD DOWN/UP	热压焊头上升/下降	输入	公共端导通	+24VCOM
3			输出	触点输出	+24VCOM
4	READ 准备就绪	热压开始准备就绪（完成）信号	输出	触点输出	+24VCOM

5			输出	触点输出	+24VCOM
6			输出	触点输出	+24VCOM
7	+24V	+24V 输出	+24V	电源	+24VCOM
8	+24VCOM	+24V 返回	+24VCO	公共端电源	+24VCOM
9	NC		输出	触点输出	+24VCOM
10			输出	触点输出	+24VCOM
11			输出	触点输出	+24VCOM
12			输入	公共端导通	+24VCOM
13			输出	触点输出	+24VCOM
14	PRG NO SEL1	模式选择信号 （ON 测试模式；OFF 正常工作模式）	输入	公共端导通	+24VCOM
15			输出	触点输出	+24VCOM
16	IDLE START	恒温开始信号	输入	公共端导通	+24VCOM
17	ACT_IN-	热电偶输入-	输入	模拟输入	差分输入
18	ACT-IN+	热电偶输入+	输入	模拟输入	差分输入
19	PRG NO SEL2	工艺选择信号 （ON：1 号工艺；OFF：0 号工艺）	输入	公共端导通	+24VCOM
20	HEAD_DOWN	焊头下降辅助信号	输出	触点输出	+24VCOM
21	HEAD_HUFF	冷却　　辅助信号	输出	触点输出	+24VCOM
22	ERROR 紧急错误	紧急状态输出信号	输出	触点输出	+24VCOM
23	READ 准备就绪	热压开始准备就绪（完成）信号	输出	触点输出	+24VCOM
24			输入	公共端导通	+24VCOM
25	+24V	+24V 输出	+24V	电源	+24VCOM
26			输出	触点输出	+24VCOM
27			输出	触点输出	+24VCOM
28	TC_IN-	热电偶输入-	输入	模拟输入	差分输入
29	TC_IN+	热电偶输入+	输入	模拟输入	差分输入
30	COUNT1_RESET	计数器复位	输入	公共端导通	+24VCOM
31			输出	触点输出	+24VCOM
32			输入	公共端导通	+24VCOM
33			输出	触点输出	+24VCOM
34	COUNT1_OK	计数器 1 数量到达信号	输出	触点输出	+24VCOM
35	NC				
36	IDLE_STOP	恒温停止信号	输入	公共端导通	+24VCOM
37			输出	触点输出	+24VCOM
38	NC				
39	NC				
40	+24VCOM	+24V 返回	+24VCO	公共端电源	+24VCOM
41			输出	触点输出	+24VCOM
42	STOOP/RST/停止/复位	热压停止/错误状态解除信号	输入	公共端导通	+24VCOM
43			输出	触点输出	+24VCOM
44			输出	触点输出	+24VCOM
45	RISE.POINT2 上升点 2	（设置）二段上升温度到达输出电平	输出	触点输出	+24VCOM

46			输出	触点输出	+24VCOM
47			输出	触点输出	+24VCOM
48	NC				
49	NC				
50	+24VCOM	+24V 返回	+24VCO	公共端电源	+24VCOM

Pin	Name	Function	Input / Output	Type	Common end
1	AUTO_RUN	Automatic hot pressing start signal	Input	Common terminal turn-on	+24VCOM
2	HEAD DOWN/UP	Hot pressing head up / down	Input	Common terminal turn-on	+24VCOM
3			Output	Contact output	+24VCOM
4	READ ready	Hot pressing start ready (finish) signal	Output	Contact output	+24VCOM
5			Output	Contact output	+24VCOM
6			Output	Contact output	+24VCOM
7	+24V	+24Voutput	+24v	Power Supply	+24VCOM
8	+24VCOM	+24Vreturn	+24vco	Common terminal power supply	+24VCOM
9	NC		Output	Contact output	+24VCOM
10			Output	Contact output	+24VCOM
11			Output	Contact output	+24VCOM
12			Input	Common terminal turn-on	+24VCOM
13			Output	Contact output	+24VCOM
14	PRG NO SEL1	Mode selection signal (ON test mode; OFF normal working mode)	Input	Common terminal turn-on	+24VCOM
15			Output	Contact output	+24VCOM
16	IDLE START	Constant temperature start signal	Input	Common terminal turn-on	+24VCOM
17	ACT_IN-	Thermocouple Input -	Input	Analog input	差分输入
18	ACT-IN+	Thermocouple input +	Input	Analog input	差分输入
19	PRG NO SEL2	Process selection signal (ON: No. 1 process; OFF: No. 0 process)	Input	Common terminal turn-on	+24VCOM
20	HEAD_DOWN	Head down the auxiliary signal	Output	Contact output	+24VCOM

21	HEAD_HUFF	Cooling auxiliary signal	Output	Contact output	+24VCOM
22	ERROR Emergency error	Emergency status output signal	Output	Contact output	+24VCOM
23	READ Ready	Hot pressing start ready (finish) signal	Output	Contact output	+24VCOM
24			Input	Common terminal turn-on	+24VCOM
25	+24V	+24Voutput	+24v	Power Supply	+24VCOM
26			Output	Contact output	+24VCOM
27			Output	Contact output	+24VCOM
28	TC_IN-	Thermocouple Input -	Input	Analog input	差分输入
29	TC_IN+	Thermocouple input +	Input	Analog input	差分输入
30	COUNT1_RESET	Counter reset	Input	Common terminal turn-on	+24VCOM
31			Output	Contact output	+24VCOM
32			Input	Common terminal turn-on	+24VCOM
33			Output	Contact output	+24VCOM
34	COUNT1_OK	Number of counter 1 arrives at the signal	Output	Contact output	+24VCOM
35	NC				
36	IDLE_STOP	Constant temperature stop signal	Output	Common terminal turn-on	+24VCOM
37			Input	Contact output	+24VCOM
38	NC				
39	NC				
40	+24VCOM	+24Vreturn	+24VCO	Common terminal power supply	+24VCOM
41			Output	Contact output	+24VCOM
42	STOOP/RST/停止/复位	Hot pressing stop / error status cancel signal	Input	Common terminal turn-on	+24VCOM
43			Output	Contact output	+24VCOM
44			Output	Contact output	+24VCOM
45	RISE.POINT2 Rising point 2	(Set) point 2 segment rising temperature reaches output level	Output	Contact output	+24VCOM
46			Output	Contact output	+24VCOM
47			Output	Contact output	+24VCOM

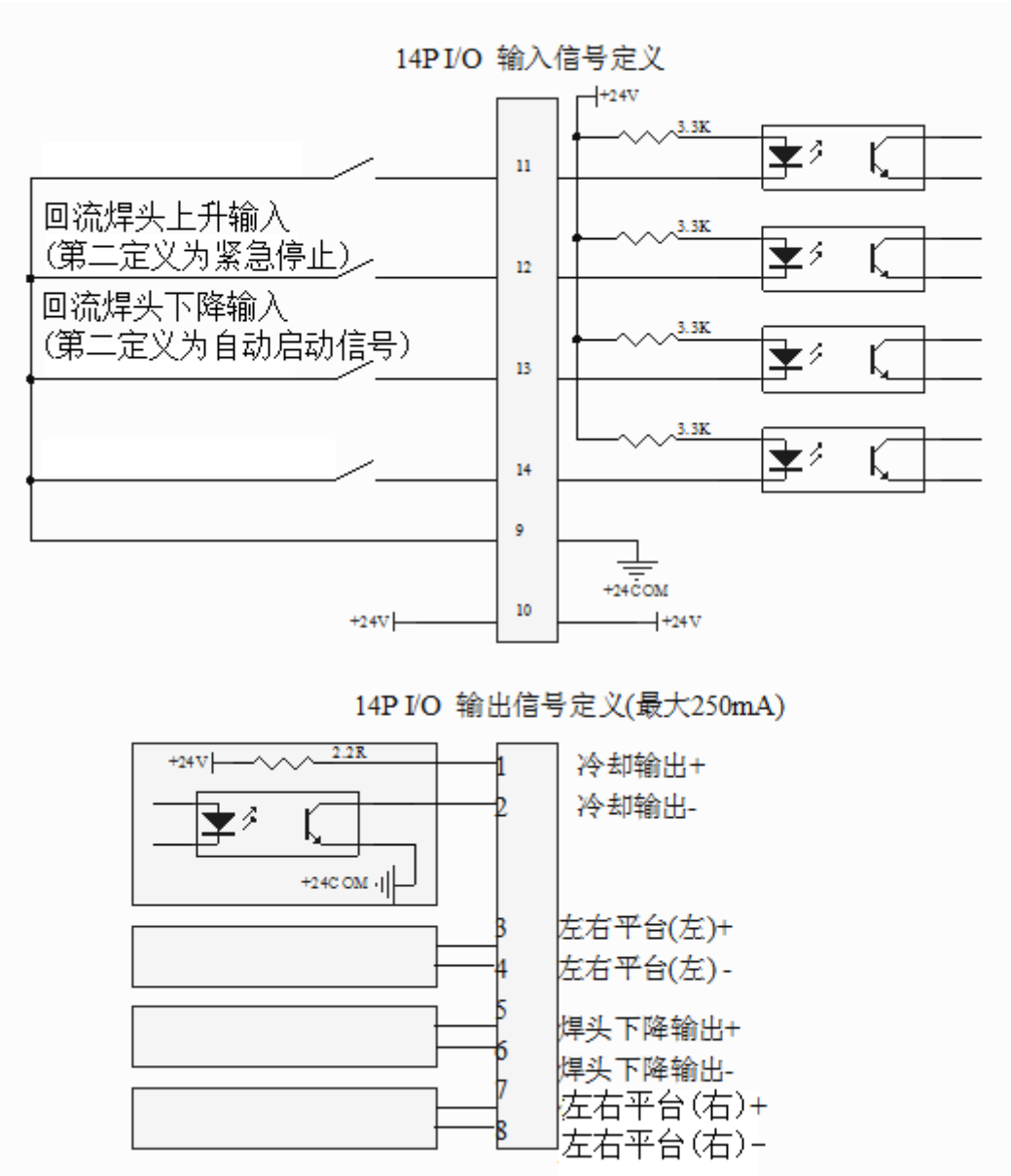
48	NC				
49	NC				
50	+24VCOM	+24V return	+24VCO	Common terminal power supply	+24VCOM

• 触点输入信号的技术规范和连接

• Technical specifications and connections for contact input signals

该输入信号是从后面板的 I/O 接口连接器输入。

The input signal is input from the I/O interface connector of the rear panel.

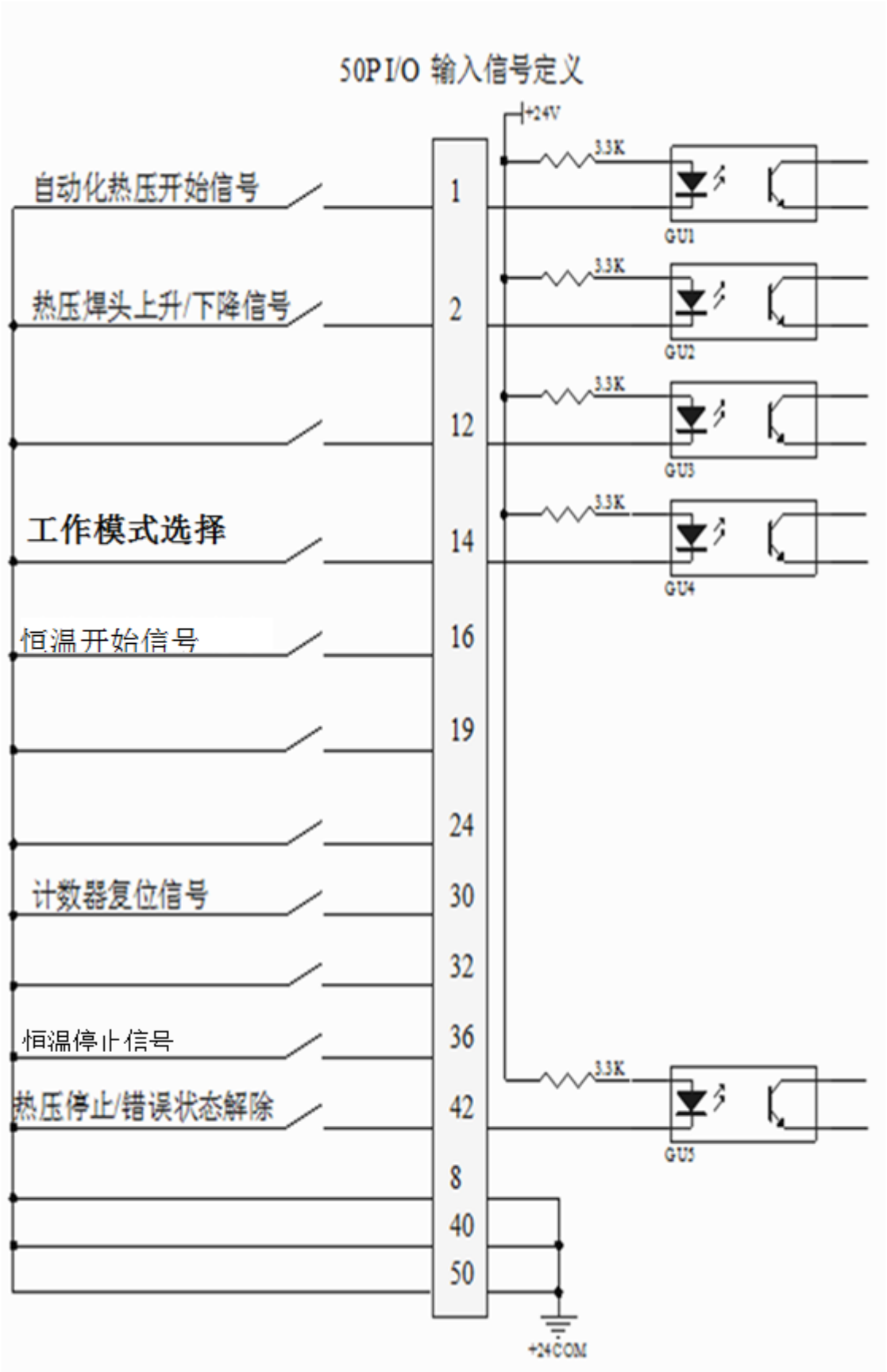


• 触点输入信号的技术规范和连接

• Technical specifications and connections for contact input signals

该输入信号是从后面板的 I/O 接口连接器输入。

The input signal is input from the I/O interface connector of the rear panel.



• 触点输出信号的技术规范和连接

• Technical specifications and connections of contact output signals

该输出信号是从后面板的 I/O 接口连接器输出。

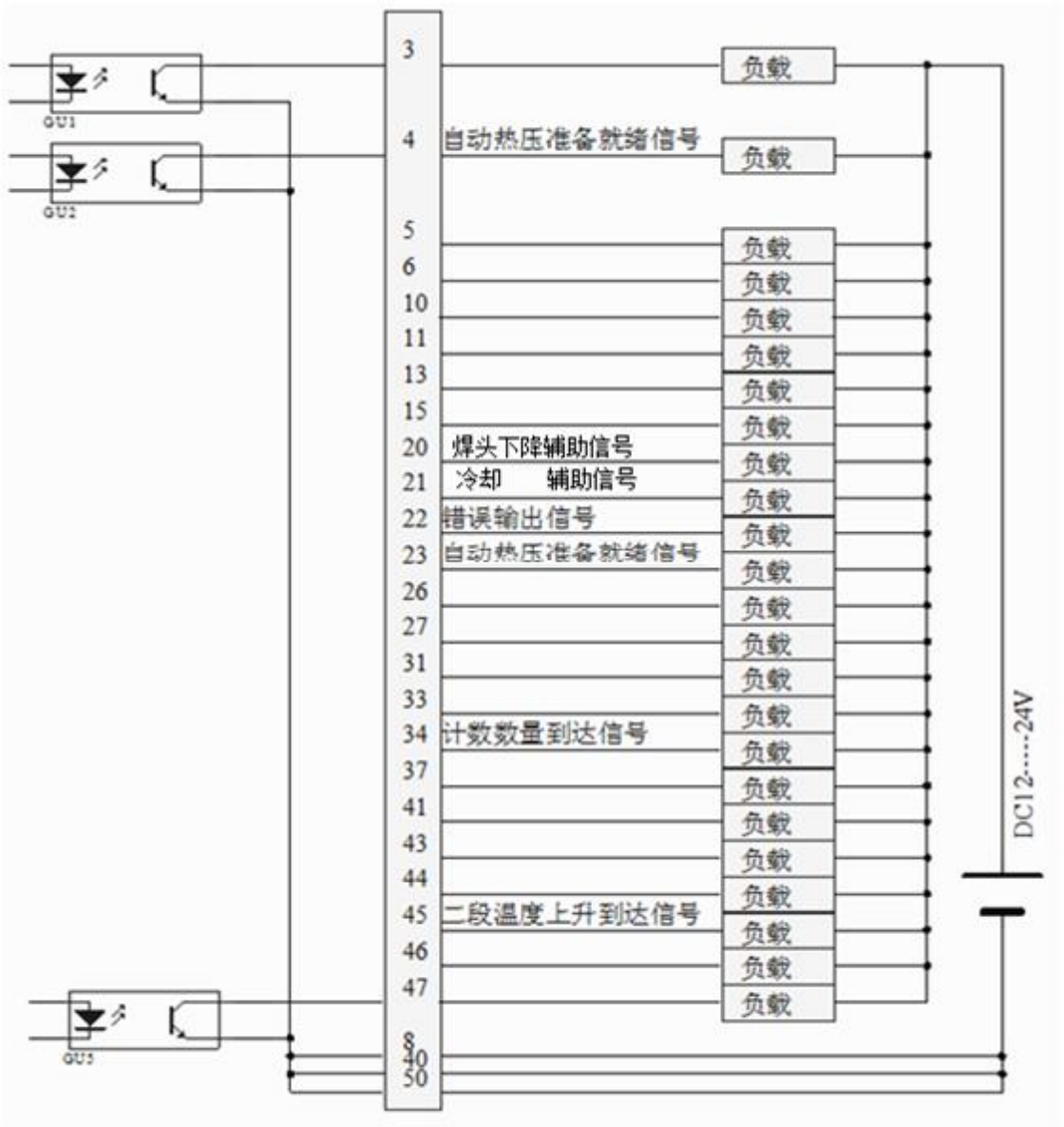
The output signal is output from the I/O interface connector of the rear panel.

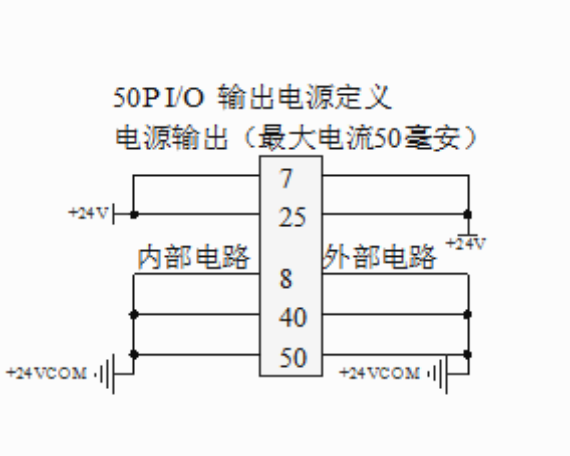
50P I/O 输出信号定义 ： 电压 12-24V　电流：小于 30 毫安

50P I/O output signal definition: voltage 12-24V; current: less than 30 Ma

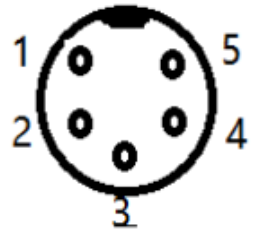
注（负载电流大于 30 毫安无法驱动会损坏内部电路；普通继电器电路无法驱动）

Note:　(when the load current is greater than 30 Ma, it can not drive and will damage the internal circuit; ordinary relay circuit can not drive)

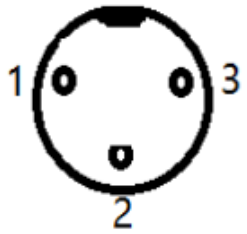




该输出信号是从后面板的扩展 I/O 接口连接器输出。
The output signal is output from the extended I/O interface connector of the rear panel.

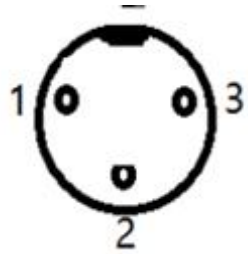


1:输出信号　冷却输出返回端
2：输出信号　冷却信号输出端



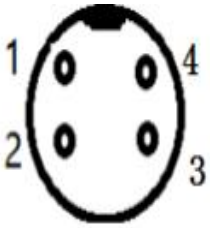
1：输出信号　焊头下降电磁阀输出返回端
2：输出信号　焊头下降电磁阀信号输出端

1：输入信号　启动脚踏开关信号输入
2：+24VCOM　启动脚踏开关信号公共端



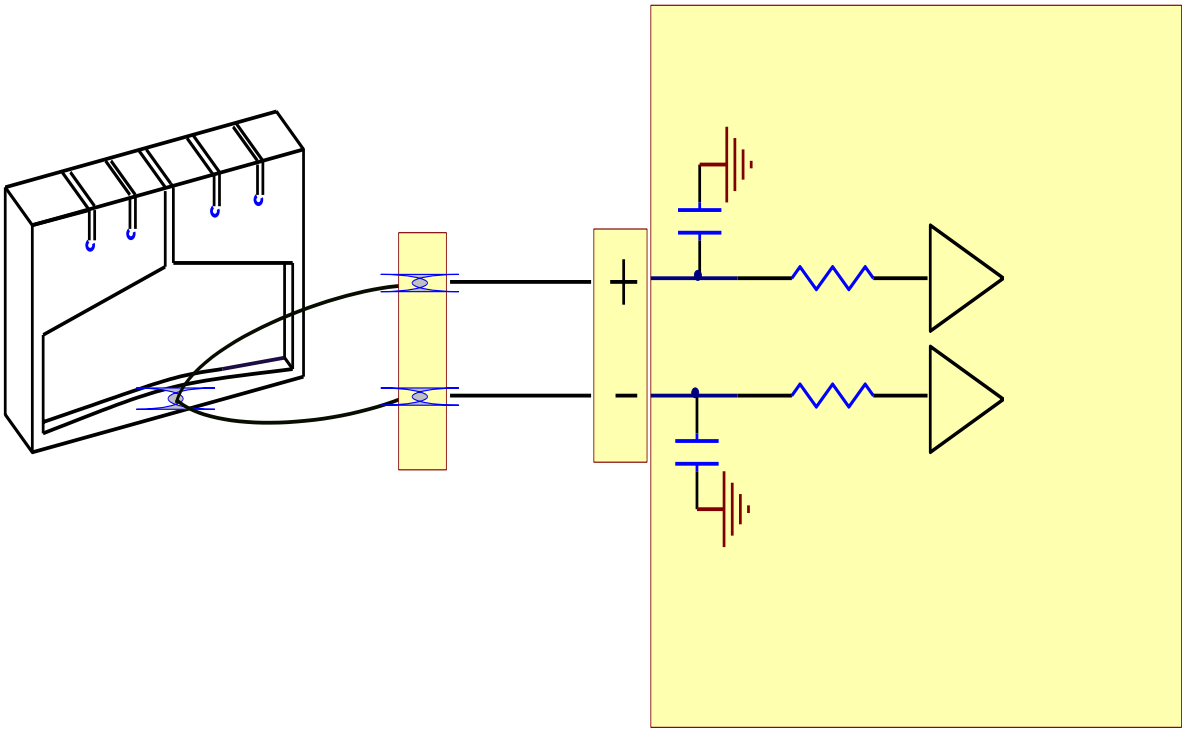
1：输出信号　进料电磁阀输出返回端
2：输出信号　进料电磁阀信号输出端

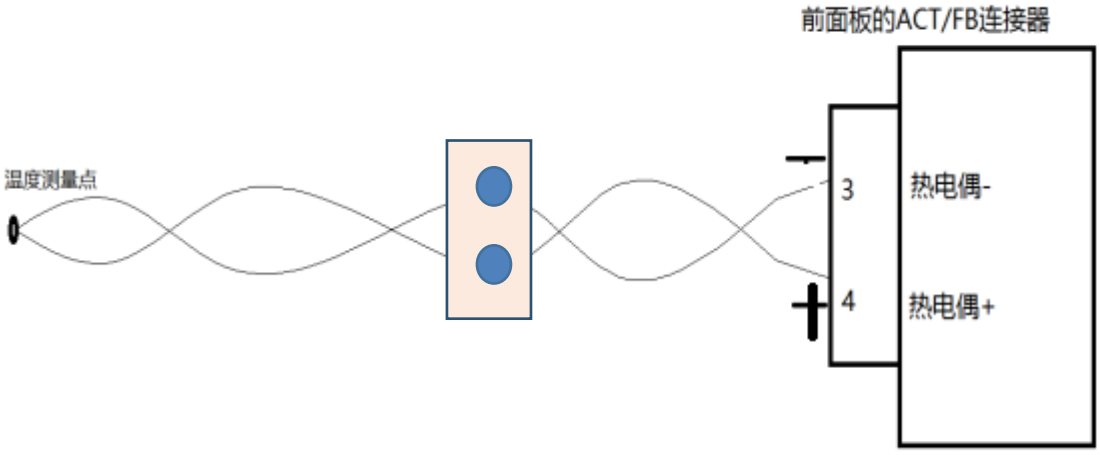
该输出信号是从前面板连接器输出。
The output signal is output from the front panel connector.



1：焊头开关信号输入
2：焊头开关输入信号公共端（ +24VCOM ）
3：K型热电偶输入负极（ - ）
4：K型热电偶输入正极（ + ）

• 模拟输入信号的技术规范和连接
• Technical specifications and connections of analog input signals
在本设备中，从前面板的 AFT/FB 连接器连接到热电偶获的测量温度作为模拟信号入。
In this equipment, the measuring temperature obtained by the connection of the AFT/FB connector of the front panel to the thermocouple is regarded as analog signal.





* 用于反馈的补偿导线应该尽可能短，而且必须是屏蔽的双绞线接入。

* Compensation wires for feedback should be as short as possible and must be shielded twisted pair access.

放大器输入固定为使用 K 型热电偶，如果使用其他型号热电偶要提前定制，否则会造成测量误差。

The input of the amplifier is fixed to use K thermocouple. If other thermocouples are used, the measurement error should be made in advance, otherwise the measurement error will be caused.

*. 如遇本设备性能提升需更新软件，本手册有细微变更，恕不另行通知

*.In case of software update due to upgrading equipment performance, this manual is subject to minor changes without notice.

2017 年 *09* 月　　第 *3.2* 版

September 2017. Version 3.2