

MacLac

非凡版真空注蜡机

RMKBE Vacuum Wax Injector



专注于首饰铸造  
Specializing In Jewelry Casting

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## 声明

致用户：

- 感谢您对瑞辉自动化系统(广东)有限公司的信赖和支持, 选购艺辉牌系列产品, 为安全操作并最大限度发挥本机性能, 请在操作前仔细阅读说明书, 并严格遵守安全规则, 以防发生意外事故, 造成不必要的损失。
- 在机器使用的过程中, 如遇到问题可以随时联系本公司销售人员, 我们将会竭诚为您服务。
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## STATEMENT

To users:

- Thanks for choosing Yihui brand products of Yihui Casting Technology Co., Ltd. We are greatly appreciated for the support and trust you give to us. To ensure safe operation and play the property of this machine in full, please read the user manual in advance and observe the safety rules in case that accidents happen and unnecessary loss occurs.
- If you meet any problem when using this machine, please feel free to contact our salespersons. We will try our best to give you service.
- During the warranty period, user is not allowed to disassemble the machine without prior permission of the manufacturer, if you did so, the warranty would automatically expire and the manufacturer wouldn't be obliged to provide warranty.
- We are not responsible for the loss including loss in interest and all indirect damages caused by operations due to rule-breaking operations.
- Without our permission, it is prohibited to copy, disseminate or reprint the whole content of this user manual in any form.
- This manual is subject to alterations without prior notice. If you find any mistake or omission in this manual, please inform the supplier you bought the machine from. We will be very grateful for this.

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## 一、设备参数介绍 Equipment parameter introduction

### 1. 注蜡机技术参数 Technical parameters of wax injector

- 电源:单相AC 220V±10% 50 / 60Hz
- 功率:500W
- 保险丝规格:5A/250V
- 蜡缸加热温度范围:0-95°C
- 蜡嘴加热温度范围:0-95°C
- 真空定时范围:0-20S
- 注蜡定时范围:0-20S
- 蜡缸容量:3Kg
- 蜡缸设置压力:< 200KPa
- Voltage:Single phase, 50/60Hz
- Power:500W
- Fuse specifications:5A/250V
- Heating temperature range of wax tank: 0-95°C
- Wax nozzle heating temperature range: 0-95°C
- Vacuum timing range:0-20S
- Wax injection timing range: 0-20S
- Wax tank capacity:3kg
- Wax tank setting pressure:< 200KPa

### 2. 机械手技术参数 Manipulator technical parameters

标准夹具胶模尺寸:L135 × W105 × D45(max)  
加宽型大夹具胶模尺寸: L135 × W135 × D60(max)

Standard clamp film size:L135 × W105 × D45(max)  
Widened large clamp film size:L135 × W135 × D60(max)

### 3. 真空泵技术参数 Technical parameters of vacuum pump

- 电源:AC 220V±10% 50 / 60Hz
- 功率: 120W
- 最大真空压力:-100KPa
- 抽气速率: 1.2L/S
- 加油量:160mL
- power supply:AC 220V±10% 50 / 60Hz
- power: 120W
- Maximum vacuum pressure: -100KPa
- Pumping rate: 1.2L/S
- The amount of oil:160mL

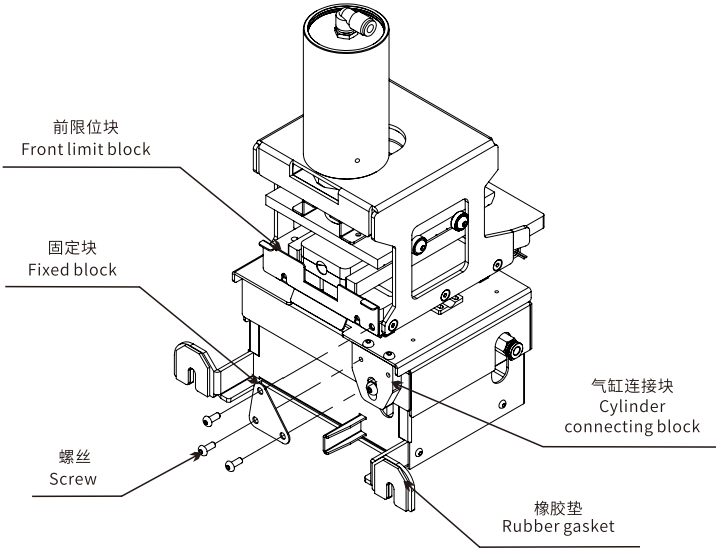
## 二、安装指导 Installation guide

### 1.使用条件 Conditions of Use

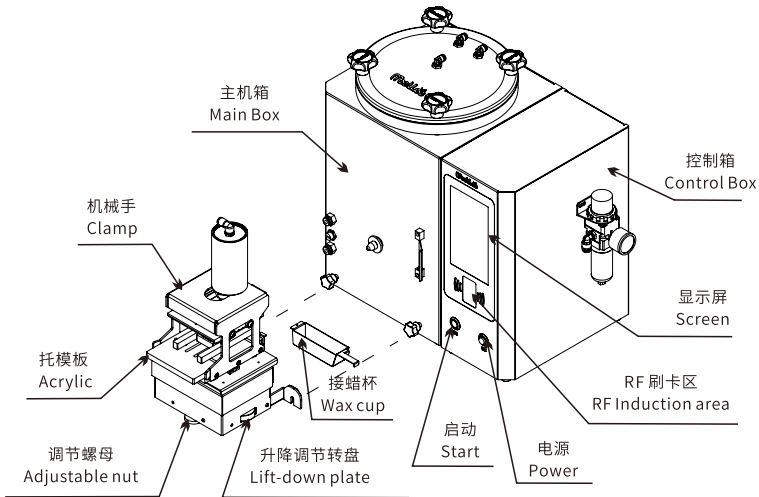
- 电压 AC220V  $\pm$ 10%;
  - 使用开关必须为带漏电保护的空气开关,电源供电必须接地;
  - 压缩空气必须进行干燥、除尘、除油处理并且稳定;
  - 设备周围不能放置易燃易爆物品;
  - 不能在有粉尘有害气体环境下使用此机器;
  - 真空泵使用前,加真空泵专用油。
- 
- Voltage AC220V  $\pm$ 10%;
  - The switch used must be an air switch with leakage protection , and the power supply must be grounded;
  - The compressed air must be dried, dust-removed, oil-removed and stable;
  - No flammable and explosive materials should be placed around the equipment;
  - This machine cannot be used in an environment with dust and harmful gases;
  - Before using the vacuum pump, add special oil for the vacuum pump.

### 2.注蜡机箱与机械手连接 Connect the wax injector case to the clamp

- ①卸下“固定块”的3颗螺丝,将“固定块”保存好。(如需要打包运输时,将“固定板”固定回原位,防止机械手在运输过程中因摆动造成的二次损坏);
  - ②将“主机箱”和“控制箱”平放在工作台面上;
  - ③将注蜡机箱上的两个“胶头螺丝”旋转松动,旋转出一定的距离;
  - ④将“机械手”挂靠在注蜡机箱的两个“胶头螺丝”上,将“胶头螺丝”拧紧;
  - ⑤转动机械手底部的“调节螺丝”,使“机械手”水平放置;
  - ⑥将“接蜡杯”放置于“机械手”相应的卡位上,完成安装。
- 
- ①Remove the 3 screws of the "fixed block" and save the "fixed block". (If you need to pack and transport, fix the "fixed plate" back to the original position to prevent secondary damage caused by the swing of the clamp during transportation);
  - ②Place the "Main Box" and "Control Box" on the work table;
  - ③Loosen the two "plastic head screws" on the wax injection case to a certain distance;
  - ④Hook the "manipulator" on the two "plastic head screws" of the wax injection case , and then tighten the "plastic head screws";
  - ⑤Turn the "adjustment screw" at the bottom of the manipulator to place the "manipulator" horizontally;
  - ⑥Place the "wax receiving cup" on the corresponding card position of the "manipulator" to complete the installation.



拆卸运输专用“固定块”示意图  
Schematic diagram of  
disassembling and transporting "fixed block"

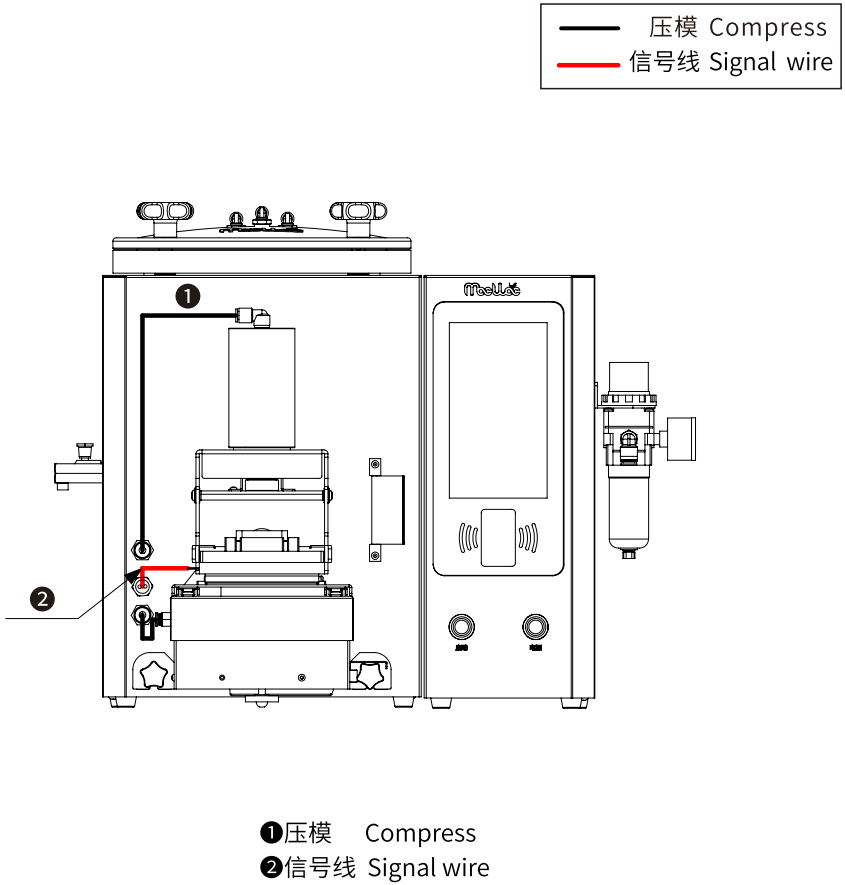


注蜡机箱与机械手连接示意图  
Schematic diagram of connection  
between wax injector case and clamp

### 3.气管、信号线、电源线的连接 Connection of tube, signal wire and power wire

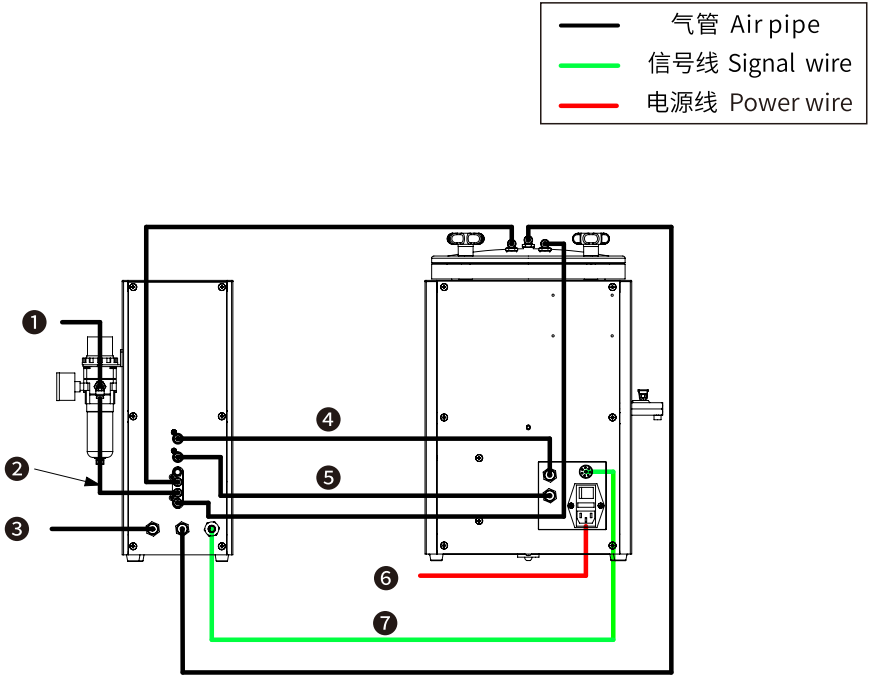
注蜡机箱前面气管、信号线连线示意图

Schematic diagram for the pipe and signal wire connection on the front of the wax injector



注蜡机箱背面气管、电源线连线示意图

Schematic diagram for the pipe and power wire connection on the back of the wax injector



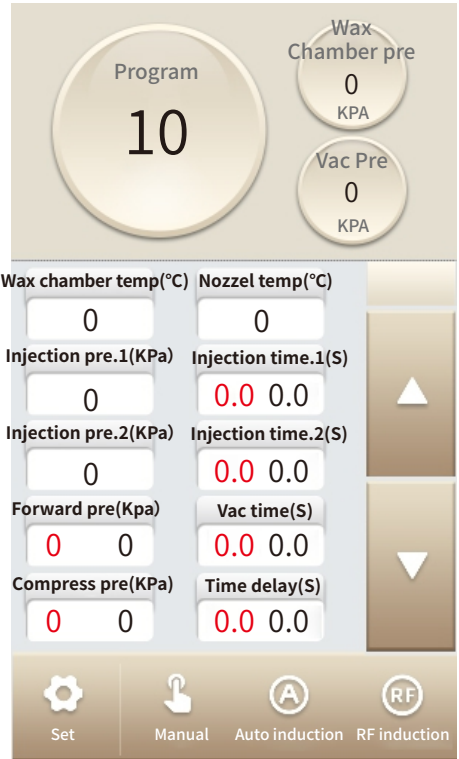
- ① 压缩空气供给0.4-0.7MPa  
Compressed air supply 0.4-0.7MPa
- ② 调压阀输出0.4MPa  
Regulating valve output
- ③ 真空泵Vacuum pump
- ④ 压模Compress

- ⑤ 推模Forward
- ⑥ 外部供电电源 AC 220V±10% 50/60Hz  
To external power supply  
AC 220V±10% 50/60Hz
- ⑦ 信号检测 Signal detection



### 三、液晶屏介绍 Screen interface introduction

#### 1.主界面 Introduction to the main interface of the LCD screen



- 程序:0-1000组
  - 蜡缸压力:显示蜡缸压力值
  - 真空压力:显示真空室压力值
  - 蜡缸温度:设置蜡缸加热温度,亮红色灯说明正在加热
  - 蜡嘴温度:设置蜡嘴加热温度,亮红色灯说明正在加热
  - 蜡缸压力1:设置第一次注蜡压力
  - 注蜡时间1:设置第一次注蜡时间
  - 蜡缸压力2:设置第二次注蜡压力
  - 注蜡时间2:设置第二次注蜡时间
  - 推模压力:设置夹具推进的压力
  - 真空时间:对胶模抽真空时间
  - 压模压力:设置夹具向下的压力
  - 压模延时:注蜡完成压模保持时间
  - 手动:按下时,只能通过启动按键启动注蜡
  - 自动感应:可以通过磁感应与启动按键启动注蜡
  - RF感应:通过射频感应快速选择胶模的程序号
- 
- Program:0-1000 groups
  - Wax Chamber Pre: Display wax bath pressure value
  - Vac Pre:Display the pressure value of the vacuum chamber
  - Vac chamber temp ( °C ): Set the heating temperature of the wax bath , the red light means it is heating
  - Nozzel temp(°C): Set the wax nozzle heating temperature, the red light indicates that it is heating
  - Injection pre. 1(KPa): Set the first wax injection pressure
  - Injection time.1(S): Set the first wax injection time
  - Injection pre.2(KPa): Set the second wax injection pressure
  - Injection time.2(S): Set the second wax injection time
  - Forward pre.(KPa): Set the clamp pushing pressure
  - Vac time (S): Vacuum time for rubber mold
  - Compress pre.(KPa): Set the downward pressure of the fixture
  - Time delay(S): Mold holding time after wax injection
  - Manual: Once pressing,only can press "Start Button" to injection
  - Auto induction: Wax injection can be started by magnetic induction and start button
  - RF Induction : Quickly select the program number of the rubber mold through radio frequency induction

## 2. 液晶屏设置界面介绍 Introduction to LCD screen setting interface



- 压模启动时间: 向下压模等待时间
- 推模启动时间: 机械手推进等待时间
- 注蜡启动时间: 注蜡延时启动时间
- 输入数据: RF射频卡写入程序号数据
- 写入: 填写写入程序数据后按下写入按钮, 当写入按钮抬起, 设置滴滴两声, 说明写入成功

- 抽真空: 按下时, 按当前程序设置的抽真空时间进行抽真空
- 注蜡: 按下时, 按当前程序设置的注蜡时间进行注蜡
- 压模: 机械手向下压模
- 推模: 机械手向前推进
- 排气: 蜡缸排气
- 排蜡: 关闭抽真空, 真空室压力 = 蜡缸压力

- Compress starting time:Waiting time for pressing down
- Forward starting time:Manipulator advance waiting time
- Injection starting time:Wax injection delay start time
- Data input:RF card write program number data
- Read:After filling in the program data, press the 'read' button, when the 'read' button is lifted up, if occurs two beeps , indicating that the writing is successful
- Vacuum:When it is pressed, the vacuum is performed according to the vacuum time set by the current program
- Wax injection:When pressed, the wax is injected according to the wax injection time set by the current program
- Compress:Manipulator pressing down
- Forward:Manipulator push forward
- Exhaust air:Wax pot exhaust
- Exhaust wax:Close the vacuum, vacuum chamber pressure = wax pot pressure

## 四、操作说明 Instruction

### 1.系统参数设置 System parameter setting

压模启动时间: 建议值1.0S, 当不需要机械手时可设置为0;  
推模启动时间: 建议值1.0S, 当不需要机械手时可设置为0;  
注蜡启动时间: 建议值0.2S

Compress starting time: The recommended value is 1.0S , it can be set to 0 when the manipulator is not needed;

Forward starting time: The recommended value is 1.0S, it can be set to 0 when the manipulator is not needed;

Injection starting time: Recommended value 0.2S

### 2.程序参数设置 Program parameter setting

蜡缸、蜡嘴加热温度

Heating temperature of wax tank and wax nozzle

### 3.RF参数写入 RF parameter writing

输入数据(对应的程序参数)后按写入, 写入成功时, 写入按键抬起, 系统发出提示音。

After entering the data (corresponding program parameters), press 'Read' .

When successful, the 'read' button is lifted and the system emits a beep voice.

#### **4.手动控制(包括排气、排蜡) Manual control (including exhaust and wax discharge)** 液晶屏设置界面:抽真空、注蜡、压模、推模、排气、排蜡

LCD screen setting interface: vacuum , wax injection , compress , forward, exhaust air, exhaust wax.

#### **5.注蜡模式 Wax injection mode**

注蜡启动模式:手动模式、自动感应模式(液晶屏主界面选择)

程序选择:手动输入程序号、RF自动感应选择程序号

Wax injection start mode : manual mode , automatic induction mode (selected on the main interface of the LCD screen).

Program selection: manually enter the program number, RF automatic induction selects the program number.

#### **6.注蜡操作 Wax injection operation**

- 1.选择胶模对应的程序号(自动感应/手动选择)
- 2.选择注蜡启动模式(液晶屏选择自动模式/手动模式)
- 3.调节夹具高度(夹具高度调节)
- 4.放入胶模
- 5.启动按键(自动感应无需操作)

1. Select the program number corresponding to the rubber mold (automatic induction / manual selection).
2. Select wax injection start mode (LCD screen select automatic mode/manual mode).
3. Adjust the height of the clamp (adjust the height of the clamp)
4. Put in the plastic mold.
5. Start button (automatic induction without operation).

#### **7.夹具上下调节 Adjust clamp up and down**

机械手右下角逆时针拨动转盘,机械手上升;机械手右下角顺时针拨动转盘,机械手下降。  
(注:通过镜子可观察注蜡嘴与模具口是否对齐,通过拨动转盘调节合适的高度。)

Rotating the switch (Which under right side of the clamp) near the machine direction,clamp uping;

Rotating the switch (Which under right side of the clamp) away the machine direction,clamp downing;

(Noted :Through the mirror we can know the injection nozzle match with rubber mould or no,We can rotate the switch make a good position of it.)

#### **8.压模位置调节 Vulcanizing Position**

抓住压模气缸逆时针拧松,移动位置,顺时针拧紧即可

Hold the Vulcanizing gas cylinder switch it in near the machine direction to loose it,adjust position,tighten it.

## 五、故障处理/紧急停止 Malfunction handing/emergency stop

### ●故障处理 Malfunction handing

当出现报警时:设备控制箱的启动按键灯出现闪烁,按启动按键可取消报警,若出现报警查看蜡缸气压、压模气压、推模气压是否正常,若不正常查看气管是否漏气。

When an alarm occurs: the start button light of the equipment control box flashes, press the start button to cancel the alarm, if an alarm occurs, check whether the wax cylinder air pressure, die air pressure, and push mold air pressure are normal; if not, check whether the air pipe is leaking.

### ●紧急停止 Eergency stop

在注蜡过程需要紧急停止时,按一次控制箱的启动按键即可紧急停止注蜡工作。

When the wax injection process needs an emergency stop, press the start button of the control box once to stop the wax injection work.

## 六、包装清单 Packing list

打开包装时,请检查一下配件是否齐全。

When opening the package, please check whether the accessories are complete.

| 配件清单 Parts list |                                      |                |            |
|-----------------|--------------------------------------|----------------|------------|
| 序号<br>No.       | 配件名称<br>Parts name                   | 数量<br>Quantity | 单位<br>Unit |
| 1               | 真空注蜡机<br>Vacuum wax injector         | 1              | 台SET       |
| 2               | 机械手<br>Clamp                         | 1              | 台SET       |
| 3               | 真空泵<br>Vacuum pump                   | 1              | 台SET       |
| 4               | 注蜡机配件盒<br>Wax injector accessory box | 1              | 盒BOX       |
| 5               | 托模板套盒<br>Acrylic plate               | 1              | 盒BOX       |

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制造商 Agency

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