Tortilla Making Machine

USER MANUAL

SSS FOOD MACHINERY TECHNOLOGY CO., LTD

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Contents

1. 设备安全 Equipment Safety

2.

本安全章节描述并列举了与设备及其防护相关的总体风险。安全手册的目的是提供设备对于环境、人体健康、安全方面的关键信息，以确保设备的使用方法不会造成人员伤害、设备损坏和环境毁坏。此设备可能含有以下潜在风险：

This chapter exemplifies the overall risks for the equipment.The safety manual aims to introduce the key information of equipment in respect of environment, human health, safety and other aspects,which ensures the use of the equipment will not damage equipment, environment and human health.The equipment may contain the following potential risks:

1.1 机械风险 Mechanical Risk

在机器上放置警示牌是因为有某些危险或风险要提醒使用者。

按期检查机器上的标签,如果发现缺失马上补全。

The warning board on the equipment reminds certain risks to the user.
Labels on the machine should be checked regularly and completed in time if missing.

1.2 电气风险 Electrical Risk

在机器上放置警示牌是因为有某些危险或风险要提醒使用者。

按期检查机器上的标签,如果发现缺失马上补全。

The warning board on the equipment reminds certain risks to the user.
Labels on the machine should be checked regularly and completed in time if missing.

1.3 环境风险 Environmental Risk

总体来讲，这套设备不会产生危害环境的废物如有毒气体、流体。但是，有些固体废物（金属部件和皮带）可能会在部件作废的时候产生。该设备是由铝、不锈钢、碳钢和其他一些金属组成，作废后可以循环，包括机架、滚筒、支撑脚、皮带等。在设备老化及作废时候，设备可能会受到有害物质或者生产过程中的产品所污染。

Generally Speaking，the equipment will not produce the environmentally hazardous waste such as toxic gas, fluid, but it is possible to produce some solid wastes such as metal parts and belts when the equipment have become worn and parts have become obsolete. This equipment is made of the aluminium, steel, stainless steel and other metals and it can be recycled after being discarded including the frame, rolling tank, supporter, belt, etc. The device may be contaminated by harmful substances or products when it ageing.

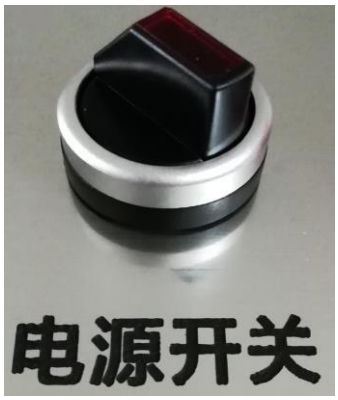
1.4 设备保护屏障 Equipment Protection System

本机组是由安全罩、安全门和线上安装的安全器件构成安全屏障。安全器件包括：安全门开关和急停按钮。

This system is composed by safety cover, safety door, and safety devices on the production line. the safety devices includes: the safety door switch and the emergency stop button.

- 急停按钮
- The Emergency Button

- 电源开关
- The Power Switch



2.设备介绍 Equipment Introduction

烙馍机是我公司针对烙馍饼的食品需求而研制的新型机组。该机组集出面、压扁成型、烘烤、冷却等诸多功能于一体；其生产速度可达每小时 200～500 斤。本机组的核心控制部分采用 PLC 控制器及触摸屏，使本系统的自动化程度和工作可靠性达到了国内先进水平。

The Tortilla Making machine is a new type from our company according to the need of the Tortilla Making in the food market. This machine combines multiple functions of dough output, dough proofing, bun shaping, cooking and cooling; its production capacity is up to 200-500 Kilograms per hour. The control core part of this machine adopts PLC controller and touch screen, which makes its automation and working reliability come up to domestic advanced level.

2.1 使用环境条件与工作条件 Operational Environment and Working Condition

1、环境条件

a.环境温度: 20±20℃

b.电源电压：380V / 50HZ / 三相四线交流电

c.气源压力：≥0.6Mpa

2、工作条件

和面比例：水和面的比例（按工艺要求）

由于面的水分含量将直接影响到压饼和送料螺旋等设备的正常运行，所以本机对和面的要求较高，不仅要求和面比例达到上述要求，同时对面粉的品种选择也有一定的要求，以满足设备工艺流程的需要。

本手册已详列较常用的各项技术资料，以通俗易懂的文字叙述简单明了的图片，为用户提供操作、培训的重要依据。若仍有不明了之处，请与本公司联系，反馈相关的技术信息，本公司定竭力为您服务。

1. Operational Environment:

a. Temperature: 20±20℃

b. Power Voltage: 380V / 50HZ / 3-phase 4-wire AC

c. Air Pressure: ≥0.6Mpa

2. Working Conditions:

Dough Proportion: The proportion of water and dough is according to its technologic requirement.

Because the moisture content of the dough will directly affect the normal operation of the machine such as tortilla pressing machine and spiral feeder, the machine highly demands that not only the proportion of dough needs to meet the above requirements, but also there is a certain requirement for the variety of flour in order to meet the need of technological process.

Common technology data has been detailed in this manual with easy-to-understand

description and clear pictures, which provides the user the operation training. If you still have any questions, please contact us with the the relevant technical feedback. We will certainly strive to provide you with our satisfactory service.

2.2 性能特点 Preformance Features

1、该机产量高、结构合理、运行平稳、噪音低、操作简单、维修方便、外表美观，更是国内先进水平。

2、程序采用 PLC 全程自动监控，光电检测机构，自动计数显示在屏幕上。

3、操作系统采用先进的人机界面液晶显示屏，保障操作者的人身安全。

4、所有与物料接触的零件表面均采用不锈钢及无毒材料制造，符合食品级要求。

1. This equipment has these features: high productivity, reasonable structure, steady operation, low noise, easy operation, easy maintenance, attractive appearance. The machine have reached the domestic advanced level.

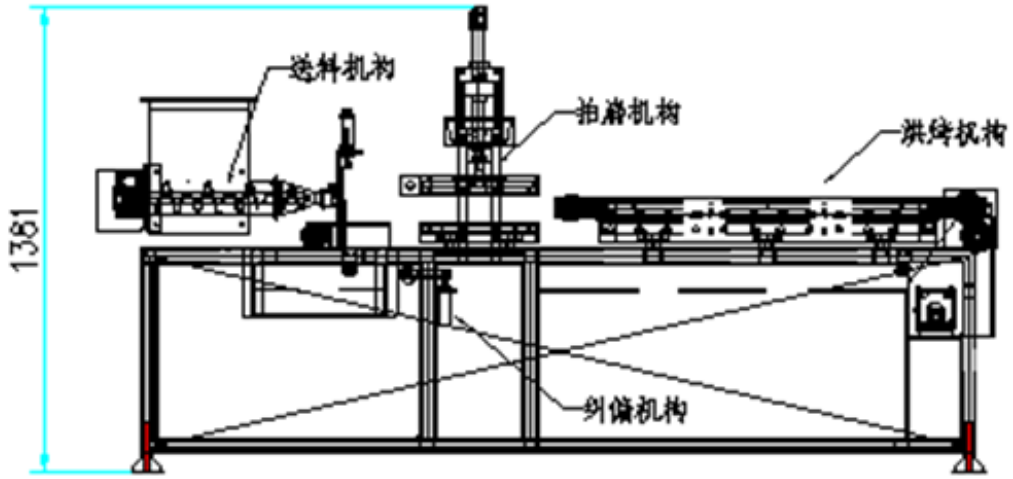
2. The program adopts PLC to automatically monitor the whole process. with photoelectric detection, automatic counting is displayed on the screen.

3. The operating system adopts advanced human-machine interface liquid crystal display screen to ensure the personal safety of operators.

4. the surface of all parts in contact with materials are made of stainless steel and non-toxic materials in accordance with the demands for food industry.

2.3 主要技术参数 Main Technical Parameters

- 生产速度：200～500 斤/小时；
- 产品规格：饼直径 1～30cm,厚度：1-30mm 可调；
- 压缩空气要求：0.6～0.8MPa
- 主机重量：≈500Kg
- 电源：380V　50～60HZ 1.1KW
- 耗气量：3 m^3 /min
- 外形尺寸：2800×950×1550（长×宽×高）；
- Production Speed: 100～250 kg/h
- Product Specifications: tortilla　diameter 1-30cm, thickness:1-30mm (Adjustable);
- Compressed Air Requirement: 0.6-0.8MPa
- Machine Weight: ≈500Kg
- Power: 380V　50～60HZ 1.1KW
- Air Consumption: 3 m^3/min
- Machine Outline Size: 2800×950×1550mm



主视图

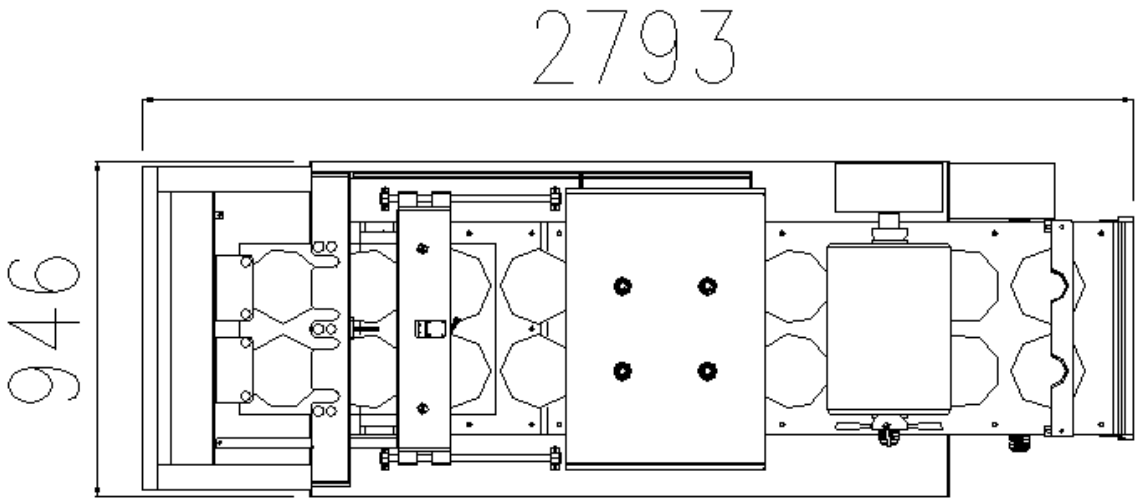
Front View

1、送料机构 Material Feeding Mechanism

2、纠偏机构 Deviation Rectifying Mechanism

3、拍扁机构 Flattening Mechanism

4、烘烤机构 Baking Mechanism

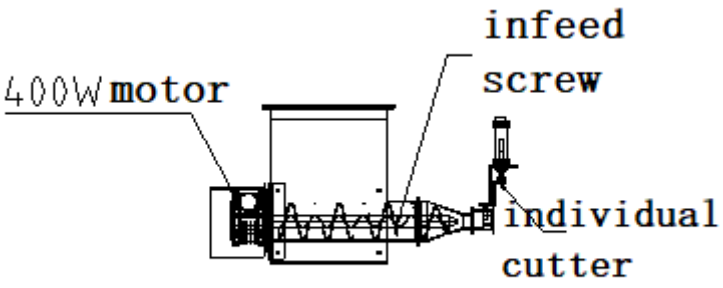


俯视图

Top View

3.功能模块概述 The Outline Of Function Modules

3.1 送料机构 Material Feeding Mechanism



由 400W 伺服电机控制，精密的螺杆推进，使得送料机构快速稳定运行；加上独立的切刀控制系统，可随意实现生产所需的规格大小。

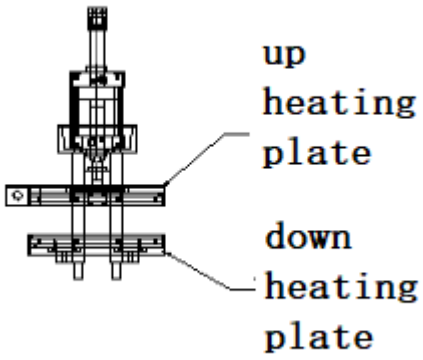
The mechanism is controlled by 400W servo motor with propulsion of the precise screw, which makes the material feeding mechanism operate fast and steadily. the size of tortilla can be adjusted optionally with the independent cutter control system.

3.2 纠偏机构 Deviation Rectifying Mechanism

新增的自动纠偏机构，可实现自动纠偏功能，使得输送物料的高温带在运行中更加稳定。

The new automatic deviation rectifying mechanism have the automatic rectification function, which makes the material conveying high temperature belt more stable during the operation.

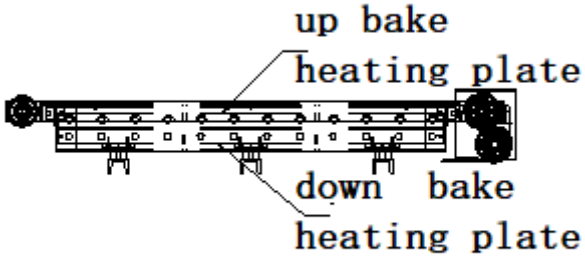
3.3 拍扁机构 Flattening Mechanism



由气缸和上下加热板组成，专业定制的上拍加热板和下拍加热板，使得生产出来的饼皮更加美观。

This mechanism is composed by cylinder and top and down heating boards. These two professional customized heating boards make the shape of tortilla more aesthetic.

3.4 烘烤机构 Baking Mechanism



由上下两层烘烤加热板组成，特制的烘烤加热板，使得饼皮在烘烤过程中受热均匀，更加保证了产品的工艺效果。

This mechanism is composed by top and down two heating boards. These two specially-made heating boards make tortilla s cooked evenly during baking, which ensures the technical effect of products.

4.设备安装 Equipment Installation

4.1 设备安装参数 Installation Parameters

- 机器安装及存放的环境条件：

环境温度为 5℃~35℃(不冻结)，空气相对湿度不大于 90%RH，海拔高度须≤1000m。 安装时还必须考虑强磁场或电场对控制系统可能造成的影响。下列场所应避免有明火、热蒸气、水气较多处、震动频繁处等。

- 机器工作电源：标准的为额定电压 380V AC；三相；频率：50Hz。
- 机器安全作业的工作区域: 长宽需预留大于生产线设备 2 米×2 米安全空间。
- Equipment Installation and environmental conditions for storage: environment temperature is 5℃~35℃(Unfreezing), relative air humidity is lower than 90%RH, and the altitude has to be lower than 1000m. Potential impacts caused by the strong magnetic field and the electric field on control system have to be taken into consideration during the installation. The following places shall be avoided: the open fire, the superheated steam, the water vapor, the frequent vibration, etc.
- Machine Working Power: Rated Voltage 380 V；AC；Three Phases；Frequency：

50Hz.

- The work area of machine safety operation: It must be reserved of 2×2M space for the length and width beside equipment itself outline size.

4.2 安装安全守则 Safty Rules For Installation

- 确保设备的安全防护装置完整、可靠；
- 安装设备时必须佩带安全帽；
- 调试时应注意夹伤，禁止带电安装设备。
- 电源要求带保护接地线且要求有足够容量。
- 设备闲置时将电源关闭、气源关闭。
- The equipment safety system must be ensured its integrity and reliability.
- Helmets must wear during the installation.
- Crush or pinch injury shall be paid more attention to avoid during the adjustment. It is prohibited to install equipment with living working.
- The power supply requires the protective grounding wire with enough capacity.
- The power supply and the air source must be turned off when the machine is not working.

4.3 机械安装 Machine Installations

将设备移至生产线上，用卷尺将各单机移至制定位置。安装时一定要注意不能损坏设备的机械精度和外观。参考机械外观图，调整可调螺栓，调整方法为:松开可调螺栓上螺母,用工具调各处至水平后再固紧。

⚠ 注意： 不允许机器的支脚被埋入土内，致使机器的热膨胀受到限制。

Transfer the equipment to the production line and move all equipment parts respectively to the right places with the tape measure. Attention must be paid not to damage the appearance and the accuracy of the machine. Adjust screw bolts with the appearance reference drawing. The adjusting method is: loosing cap nuts on the screw bolts and then adjusting them to the same level with tools before being fixed.

⚠ Attention: the legs of the machine mustn’t be buried in the earth, or the machine will be limited by the thermal expansion.

4.4 电气安装 Electrical Installation

电气设备安装说明：Electrical Equipment Installation Instructions:

- 在装机前总电源必须安装漏电开关。
- 给主机供电的电线线径要足够大。
- 人员必须经过专业培训。
- The main power have to be equipped with the Ground Fault Circuit Interrupter(GFCI) before the machine installation.

- The diameter of the power line must be wide enough.
- Installers must have received professional training.

1. 电气设备的维修及安全注意：The Maintenance And The Safety Of The Electrical Equipment:
   电气维修时：一定要把电源关闭，并把电源插头拔开。维修人员必须经过专业培训，方可对本机器维护和修理。
   The power must be turned off and unplugged during the electrical repair.
   Repairman who must have received professional training are eligible to maintain and repair the machine.

2. 电气的安全操作说明 Electrical Safety Operation Instruction
   - 在电路里面是不允许乱改变电路的，必须是经过培训的专业人员才可以。
   - PLC 程序是不允许改动，改动前必需经过机器的制造商允许的情况才可以。
   - 电箱里有保护开关不允许乱改动，绝对不可以以大换小。
   - The circuit mustn't be changed except trained and qualified professionals
   - The PLC program mustn't be changed without permission of the machine manufacturer
   - The electrical box with the protection switch mustn't be changed, let alone be replaced by bigger one.

3. 电气设备的搬运、运输和存放 Transfer, Convey And Storage For The Electrical Equipment
   - 在搬运机器时，一定不能把电器拆下来，不能压到电箱里面所有电器件。
   - 在运输的途径，一定要保持电器部分平衡，振动尽可能减小，不能受到外力重压。
   - 存放的地方一定要平整，没有水滴的地方，不能有太阳直照。
   - The machine mustn't be taken apart and electric parts in the electrical box mustn't be squeezed during the transfer.
   - The electrical equipment has to be kept balance,the vibration shall be reduced as much as possible, and the equipment can not be under the tremendous pressure in transit.
   - The storage place must be flat, no water and no sunshine.

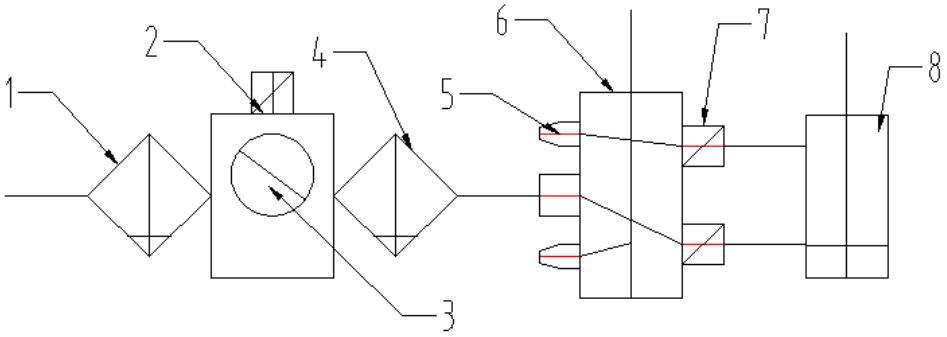
4.5 气路安装 Air Circuit Installation

气路系统 Air Circuit System

气路系统部分主要由气动三联件、电磁阀、气缸组成。气动三联件作用是：净化进入气路系

统的压缩空气；调节进入气路系统的空气压力；给进入气路系统的压缩空气增加雾化润滑油。由电磁阀控制各气缸动作，从而使机组各相应机构执行对应的动作。

The air circuit system mainly composed by the pneumatic FRL, the solenoid valve and the cylinder. The function of the pneumatic FRL is to purify and adjust the compressed air which is into the air circuit system, and then to add the atomizing lubrication oil to the compressed air. The function of the solenoid valve is to control the cylinder and consequently make all parts in system perform corresponding action.



气路系统示意图

Air Circuit Picture

1、过滤器 The Filter　　2、调压阀 The Adjusting Valve　　3、压力表 The Pressure Gauge

4、油雾器 The Atomizing Lubrication Instrument　　5、消音器 The Muter

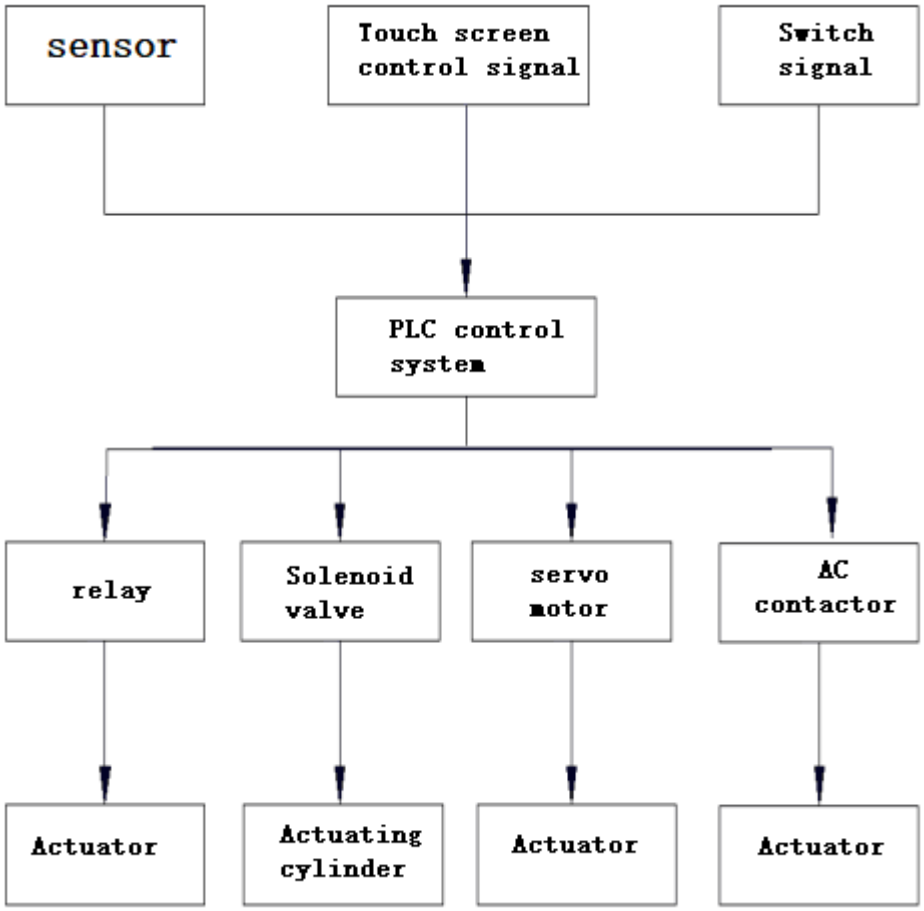
6、电磁阀 The Solenoid Valve　　7、节流阀 The Throttle Valve　　8、气缸 The Cylinder

5.设备操作 Equipment Operation

5.1 工作流程 Working Procedures

该设备在 PLC 控制下，主要通过各传感器、开关信号及控制指令，按照事先设定的工作程序完成机组各部分功能，其控制原理如图所示：

Under the control of PLC, the equipment will complete programmed functions of all parts primarily through sensors, the switching signal and the control command. Its control principle is as shown below:



5.2 启动前检查 Check Before Starting

确保安全装置稳定、可靠；外部电源、气压合适。

Ensure the stability and the reliability of the protection system;

Ensure the propriety of the external power source and the atmosphere pressure.

5.3 人机界面 Human-Machine Interface

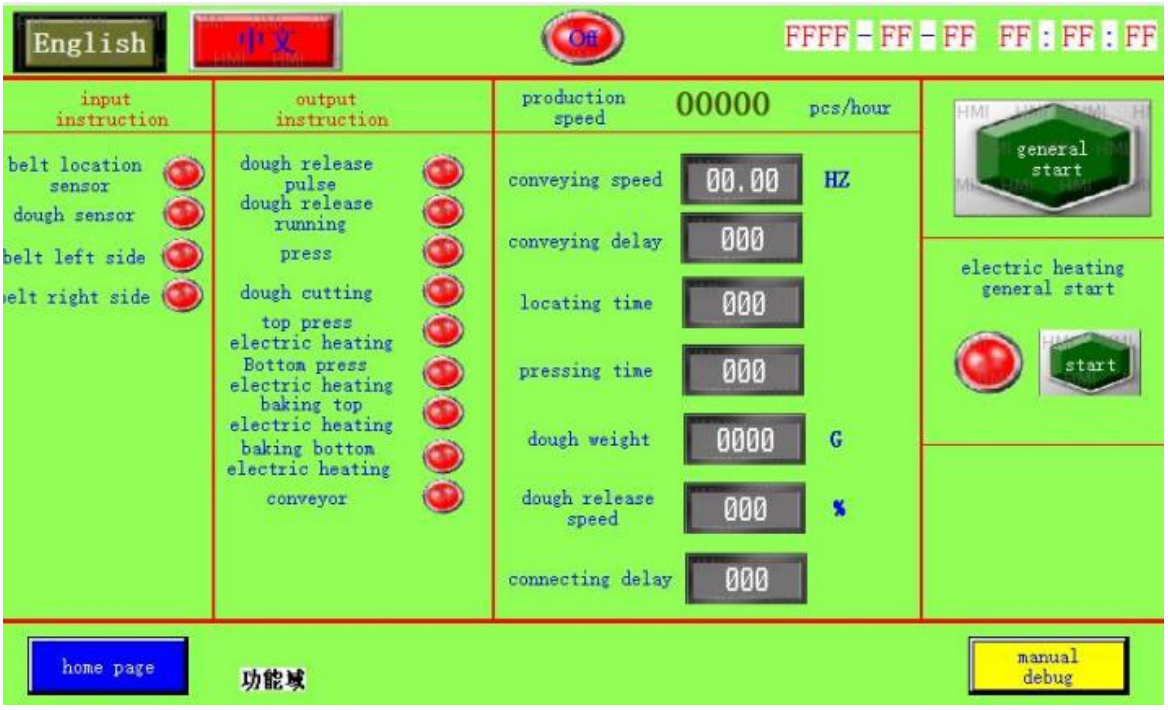
在该机组正常工作中，操作人员可通过触摸屏来实现对机组的操作控制，并且该机组的工作状态将显示在触摸屏上，使操作更加方便、直观、快捷、可靠。人机界面——触摸屏主要由各种不同功能画面组成，每个画面上有各种功能键和显示条文。各画面之间可以转换。

In normal operation of the machine, operators can control it with the touch screen. the operating state of the machine will be displayed on the touch screen, which makes operation more convenient, fast, accurate and direct. The touch screen is composed of various pictures with different functions and there are various function keys and items on each pictures which can be transformed from and to each other.

(一) 初始界面 The Initial Interface

点击即可进入运行界面。
Click to enter the operation interface.

(二) 运行界面 The Operation Interface



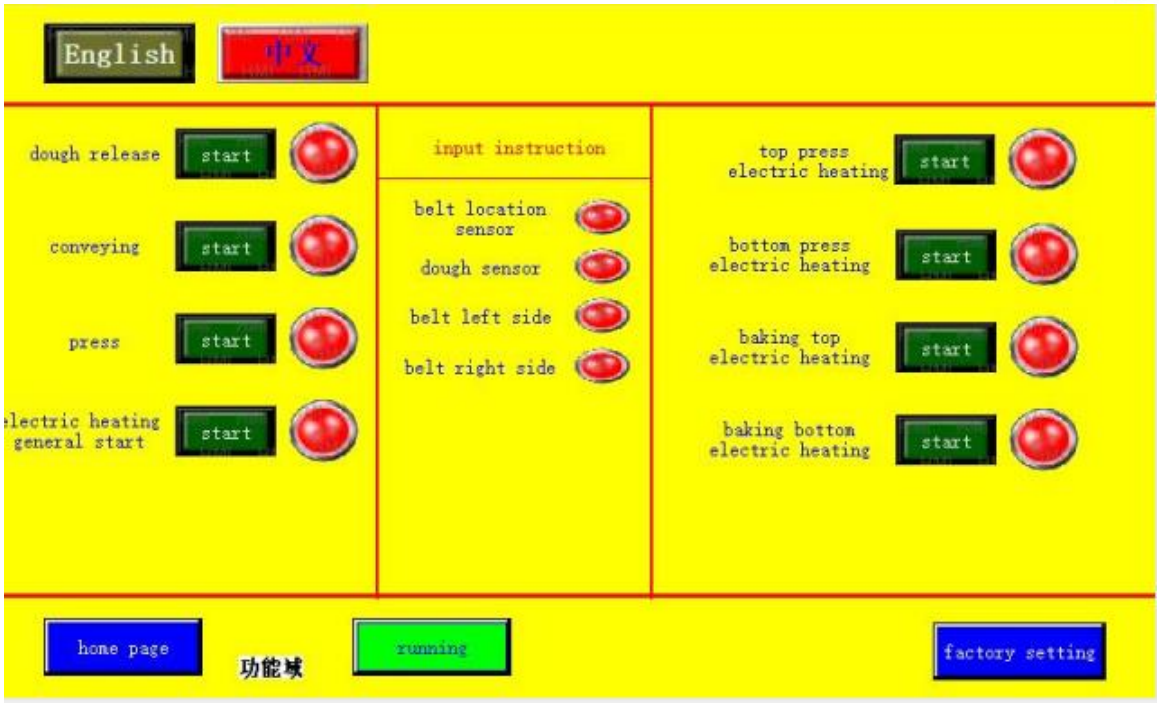
此界面为运行界面,用户可通过此界面操作该机器,并通过各名称后的方框按钮修改各功能块的参数

This is the operation interface. The user can operate the machine in this interface and change the function parameters in square buttons.

1. 带位置感应：显示四氟带是否运转到带位置检测光电设定的位置；
Band position sensor: To show whether the Teflon band go to the position set by the sensor
面团感应：显示面团是否输送到面团检测光电设定的位置；

Dough sensor: To show whether the dough is conveyed the position set by the sensor
2. 输出脉冲：显示当前输出脉冲状态；Output Pulse: to show the current state of output pulse;
3. 出面使能：显示当前出面使能状态；
Dough enable state: To show the current state of dough enable
4. 拍扁：显示拍扁机构的信号输出状态；
Flattening: To show the output signal state of the flattening mechanism;
5. 切面：显示切面机构的信号输出状态；
Dough Cutting: To show the output signal state of the dough cutting system;
6. 上拍电热：显示上拍电热的加热状态；
Top flattening Electric Heating: To show the heating state of the top flattening electric heating
7. 下拍电热：显示下拍电热的加热状态；
Bottom flattening Electric Heating: To show the heating state of the bottom flattening electric heating;
8. 烘烤上电热：显示烘烤上电热的加热状态；
Baking Top Electric Heating: To show the heating state of baking top electric heating;
10.烘烤下电热：显示烘烤下电热的加热状态；
Baking Bottom Electric Heating: To show the heating state of baking bottom electric heating;
9. 输送：显示输送电机的信号输出状态；
Conveyor: To show the output signal state of conveyor motor
10. 冷却风机：显示冷却风机的信号输出状态；
Cooling Fan: To show the output signal state of cooling fan
11. 生产速度：显示当前时段的实际生产速度；
Production Speed: To show the production speed at current time
12. 输送速度：输送带的运转速度；
Conveying Speed: To show the speed of the conveyor belt;
13. 定位时长：面团检测光电检测到面团后输送带运转到设定时间停止；
Positioning Time: The conveyor belt will stop in this positioning time after the sensor has detected the dough.
14. 拍扁时长：拍扁机构的运行时间；
Flattening Time: The operation time of the flattening mechanism;
15. 面团克数：面团的设定重量；
Dough Weight: The setting weight of dough;
16. 出面速度：出面绞龙的运转速度；
Dough Releasing Time: The operation speed of the auger
17. 接头延时：带检测光电检测到输送带接头延迟到设定时间开始出面;
Connector Delay: The dough starts to release in setting time after the sensor has detected the connector of the conveyor belt.
18. 总启：点击按钮可启动或停止机器运转；
General start: Touch this button to start or stop machine;
19. 电热总开：点击按钮可启动或停止整机的加热系统；
Electric Heating General Start: Touch this button to start or stop the heating system of the whole machine.
20. 首页：点击按钮返回首页；
Home Page: Touch this button to back to Home page;
21. 手动调试：点击按钮进入手动调试界面。
Manual Debugging: Touch this button to enter manual debugging interface.

(三) 调试界面 Manual Debugging Interface



此界面为调试界面,用户可通过各功能块对应的按钮测试各功能块的运转状况：

This is the manual debugging interface. The user can test operation condition of each modules by touching the corresponding button.

1. 出面：点击启动按钮使出面绞龙运转；

Dough Releasing: Touch this button to run the dough releasing auger.

2. 输送：点击启动按钮使输送机运转；

Conveying: Touch this button to run the conveyor;

3. 拍扁：点击启动按钮使拍扁汽缸运行一次；

Flattening: Touch this button to run the flattening cylinder once;

4. 切面：点击启动按钮使切刀汽缸动作一次；

Dough Cutting; Touch this button to run the cutting cylinder once;

5. 上拍电热：点击启动按钮使上拍电热启动加热；

Top Flattening Electric Heating：Touch this button to run the top flattening electric heating for heating;

6. 下拍电热：点击启动按钮使下拍电热启动加热；

Bottom Flattening Electric Heating:Touch this button to run the bottom flattening electric heating for heating

7. 烘烤上电热：点击启动按钮使烘烤上电热启动加热；

Baking Top Electric Heating: Touch this button to run the baking top electric heating for heating;

8. 烘烤下电热：点击启动按钮使烘烤下电热启动加热；

Baking Bottom Electric Heating: Touch this button to run the baking bottom electric heating for heating

9. 电热总启：点击启动按钮使加热系统全部启动；

Electric Heating General Start：Touch this button to run the whole heating system;

10. 冷却风机：点击启动按钮启动冷却风机系统；

Cooling Fan：Touch this button to run the cooling fan system;

11. 出厂设置：点击恢复出厂设置的参数；

Factory Settings:Touch this button to revert the machine to factory setting parameters;

12. 运行：点击按钮返回运行界面；

Running：Touch this button to return to the operation interface.

13. 首页：点击按钮返回首页。

Home Page: Touch this screen to return to home page.

5.4 正确操作流程与方法 Correct Operation Procedures And Methods

1、将压缩空气接入主机进气口。
1. Feed the compressed air into the air inlet of the host machine.

2、接通 380V/50Hz 交流电源。

2. Connect the 380V/50Hz AC power.

3、手动检查机器各个运动零部件间是否有异物，是否有松动现象，有则请及时排除，以免造成零部件的损伤。

3. Manually examine whether there is some foreign matter and looseness between the parts and remove it promptly lest damaging parts.

4、点击手动调试按钮，进入手动调试界面，分别点击各功能按钮，进行测试单独动作，确认无误后，点击运行界面按钮。

4. Touch the manual debugging button into the manual debugging interface and then separately touch each function button for testing. Touch the operation interface button after confirmation when the test have finished.

5、准备和好的面，将面放入出面料仓里。

5. Put the kneaded dough into the dough releasing storage.

6、进入运行界面，确认面无误后，点击总启按钮，开始连续生产。

6. Enter into the operation interface, check the dough, and then touch the general start button to continuously produce.

7、工作时禁止将防护罩拆下，以免发生意外。

7. The protection cover mustn't be removed so as to avoid accidents.

8、调压阀的压力在出厂前已根据设备要求进行设定，不要随意调节更改。

8. Do not change the pressure on the pressure regulating valve which has been set according to requirements of the equipment prior to its delivery.

6.设备维护 Equipment Maintenance

1、目的：通过对设备的检查、调整、保养、润滑、维修来减少设备的磨损，降低故障率，提高设备的使用效率。设备的维护保养是设备安全运行的重要保证

2、基本要求：清洁、紧固、调整、润滑、防腐。在平常的生产过程中，机器保养员应做到：

根据机器的保养手册及保养规程，按规定周期内严格执行各项保养工作，降低零件的磨损速度，消除产生故障的隐患，延长机器的使用寿命。

1. Target: Check, adjustment, maintenance, lubrication and repair for machine can reduce the wear, decrease the fault rate and increase its efficiency. The maintenance is an important guarantee to operate safely for the machine.

2. Basic requirements: adjusting, lubricating, anti-corrosive. In daily running, the maintenance worker should: according to the maintenance guide, carry on the maintenance work regularly, lower machine wearing, eliminate the hidden trouble, prolong the service life of machine.

6.1 机械维护 Mechanical Maintenance

目的：防止机械摩擦副异常磨损 ,防止润滑剂污染、泄漏,防止润滑故障 ,提高可靠性 ,降低维修成本。保证设备正常运转、减少设备磨损、防止和减少设备事故，降低动力消耗，延长设备修理周期和使用寿命的有效措施。

Target: It is an effective measure for the machine to not only prevent it from abrasion and the lubricants from pollution and trouble, which improves the reliability and decrease the maintenance cost for the machine, but also guarantee the normal operation of the machine, prevent it from accidents and decrease its power consumption so as to prolong the service life of the machine.

驱动、传动部位检查要点提示

Drive and transfer section checking points:

- 滚动链条：滚子、传动片损坏；销子、夹子的安装；链轮轴平行、链条紧张程度。
- 皮带：表面伤痕、破裂、沾油、磨损；多条皮带紧张程度一致性；皮带轮槽是否磨光。
- 轴承、传动盘、键：轴承异音、振动；传动盘异音、轴平行；键与键槽松动。
- 电机、减变速器、电磁离合器、制动器：电机、减变速器异音、发热、振动；电磁板、接线板异音、振动、油污；链条生锈、干燥缺油。
- 空压系统：油量、油压、分离器是否安装在易见处，显示部分清楚；电磁铁是否发热、有异音；汽缸锁定有否防松设施；压缩气有否泄露定期向气动三联件储油杯加油（缝纫机油或变压器油，保证能以雾状喷入压缩空气中），并做到每个交接班给油水分离器放水。
- Rolling Chain: No damage of roller and link strip, correct installation of pin and clamp, the parallel of axis and the tension of chains.
- Belt: No damage, crack, pollution, abrasion on surface, the consistency of tension for belts, the polishing of belt grooves.
- Bearings, Drive plates, Keys: No abnormal sound and vibration from bearings, no abnormal sound from drive plates, the parallel of the axis, no looseness between keys and keyway.
- Motor, Speed Reducer and Transmission, Electromagnetic Clutch, Brake: No abnormal sound, overheat, vibration from motor, speed reducer and transmission, no abnormal sound, vibration, oil contamination for electromagnetic plate and terminal board, no rust, drying and oil starvation for chains.
- Air Compressor System: The oil gauge, the oil pressure gauge and the separator should be installed in a place easy to be seen. The display on gauges must be clear; no overheat and the abnormal sound for the electromagnet. The air cylinder should install the loose-proof facilities. No leakage of compressed air. Regularly add oil into the oil cup of pneumatic FRL（sewing machine oil and transformer oil are practicable，which can spray into compressed air）. The water should be released from oil-water separator at every shift.

6.2 电气维护 Electric Maintenance

控制、操作盘：电压、电流计读数清晰、正确；指示灯、铭牌有无损坏；继电器有否异音；门是否关紧、无缝；盘内有无灰尘、异物。

电气设备：继电器、光电开关、限位开关安装是否正确、有否水、油、尘土附着；设备安装有否不当或损坏；开关处有否标明被控制设备名称；紧急停止开关动作是否灵敏。

配线：配线、配管有否偏移；中继箱盖是否安装正确；地线是否完好、无脱落；电缆线配布是否整齐、规范；有无不必要的长配线。

Control and Operation Panel: the voltmeter and the galvanometer display clear and correct reading; no abnormal sound from the relay, closeness and seamlessness for the door; no dust and foreign matters in the penal.

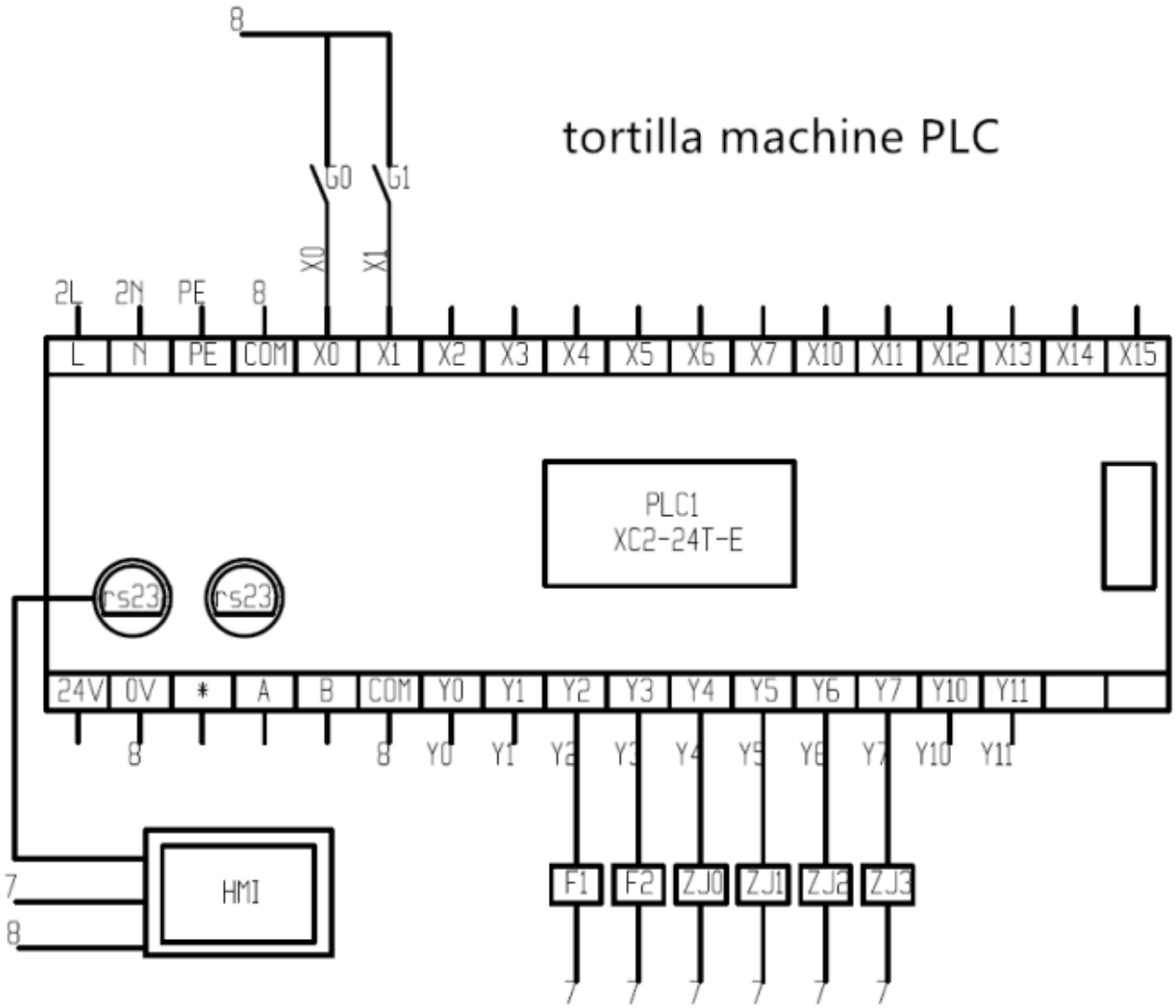
Electrical Equipment: Correct installation for the relay, photoelectric switch and limit switch, no water, oil and dust attachment; no damage on the equipment; the equipment name shall be labelled on the switch; Sensitiveness of the emergency stop switch shall be ensured.

Wiring: No offset for the wiring and the piping; Correct installation for the repeater cover; intactness for ground wire without any dropout; orderliness and regulation of cable distribution shall be ensured; no unnecessary long wire.

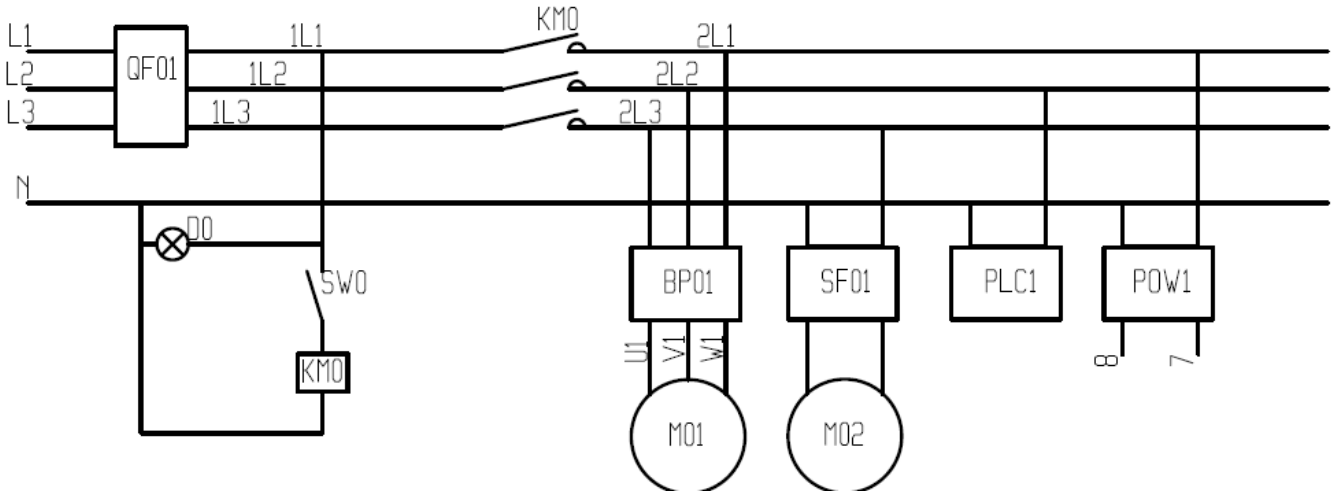
6.3 故障现象及排除方法 The Causes Of Malfunctions And Troubleshootings

序号	故障现象	故障原因	排除方法
No.	Fault Phenomenon	Causes	Methods
1	计数平台皮带跑偏	1、 皮带两边的张力不同 2、 皮带内侧进入面馅或油污	1、 调整从动辊两端的张力 2、 清理皮带内侧和辊筒
1.	Offset for the counting platform belt	1. Different tensions on two sides of the belt 2. Pancake fillings or oil contamination on the inside of the belt	1. Adjust the tension on two ends of the drive roller 2. Clean the roller or the inside of the belt
2	切饼	1、 定位不准 2、 拉膜速度过快	1、 重新调整拉膜定位的位置 2、 调整气缸压力或缓冲
2	Cutting pancake	1. Incorrect positioning 2. Too fast for the pulling speed	1. Readjust positioning 2. Adjust pressure or buffering of the cylinder
3	膜跑偏	1、 膜未安装到指定位置 2、 张力控制器压力太小	1、 重新调整卷膜的安装位置 2、 调整张力控制器压力
3.	Offset for the high temperature belt	1. The high temperature belt was installed in incorrect place 2. Too small pressure from the tension controller	1. Adjust the installation location 2. Adjust the tension controller pressure
4	膜拉变形	张力控制器压力过大	调整压力控制器压力
4.	The high temperature belt is out of shape when pulling	Too large pressure from the tension controller	Adjust the pressure of the tension controller
5	饼成型不标准	1、 可调节气缸行程过短或过长 2、 压饼时间过短或过长	1、 调整压饼气缸行程 2、 调整压扁时长参数
5	Non-standard shape of pancake	1. the cylinder stroke is too short or too long 2. the pancake pressing time is too short or too long	1. Adjust the cylinder stroke 2. Adjust the pancake pressing time

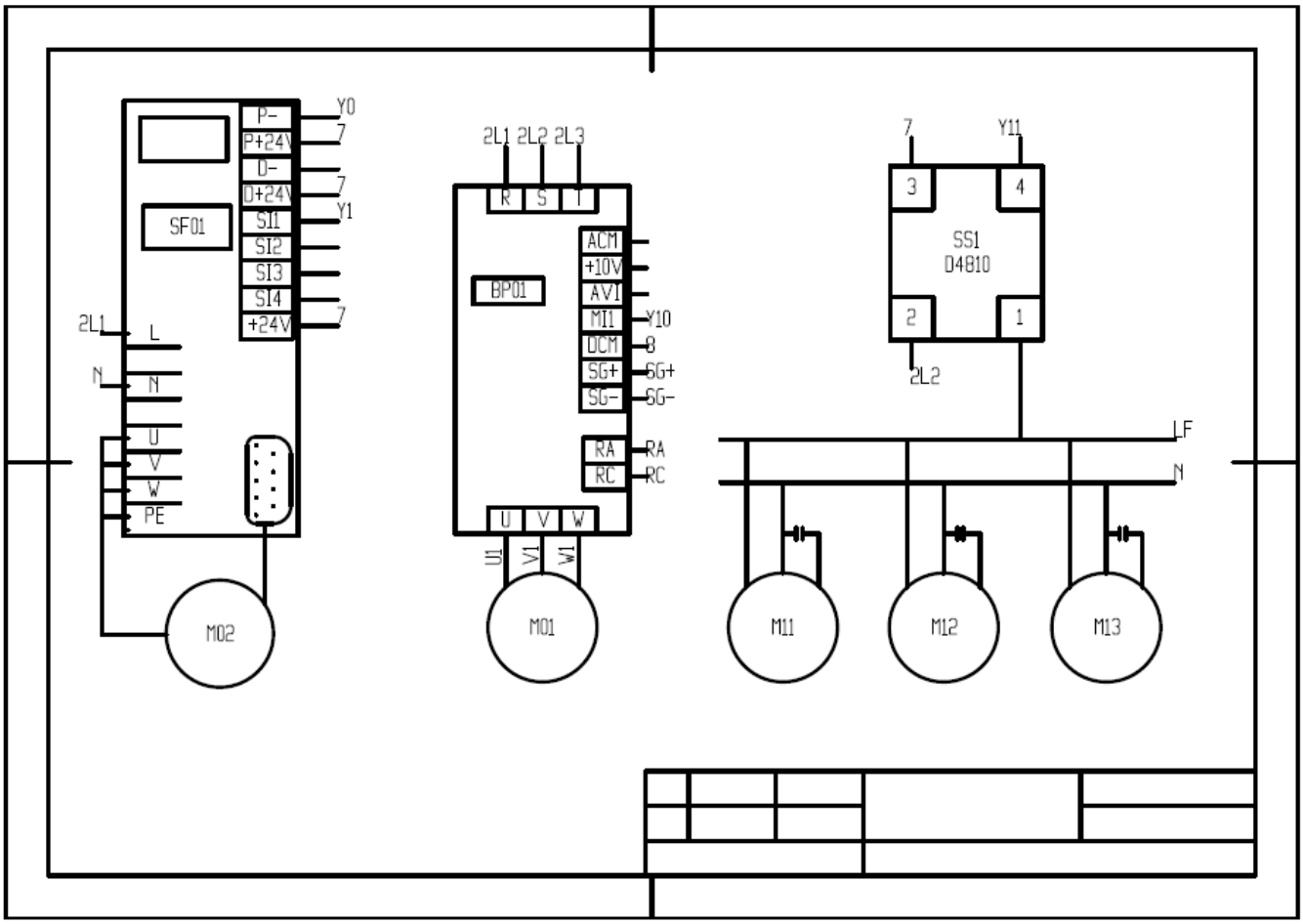
7.附录 Appendix

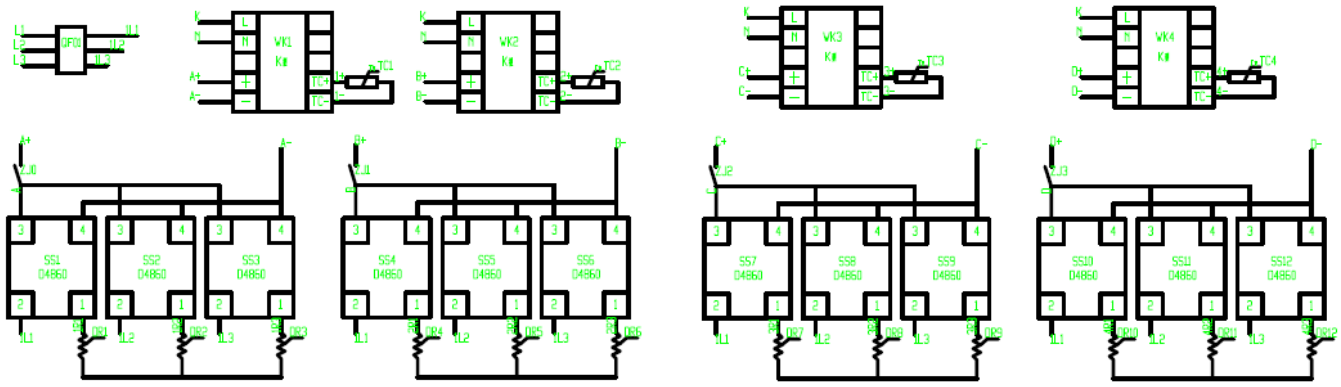


Whole Machine Power



Main Machine





No.	Code	Function	Name	Type
1	QF01	Main Power Switch	Air Switch	NXB-63 4P C40
1	KM0	Main Controll of Power	AC Contactor	C1810
1	SW0	Main Controll of Power	Rotary Switch	LA167-D8-11XD/2
1	D0	Power Indicator	indicator light	LA167-D8-11XD/2
1	BP01	conveyor Indicator	Frequency Changer	VFD-007EL43W
1	SF01	dough release	Servo Driver	DS5L-20P7-PTA
1	POW1	24V DC Power Supply	Power Switch	2REM24065K
1	PLC1	Programe Controll	Programmable Logic Controller	XC2-24T-E
1	M01	Converyor Belt	Motor	
2	M02	dough release	Servo Motor	
3	M03	Hot release	Fan Motor	
4	M11	cooling	Fan Motor	
5	M12	cooling	Fan Motor	
6	M13	cooling	Fan Motor	
1	SS1	power supply A for top pressing heating	Solid State Relay	D4860
2	SS2	power supply B for top pressing heating	Solid State Relay	D4860
3	SS3	power supply C for top pressing heating	Solid State Relay	D4860
4	SS4	power supply A for bottom pressing	Solid State Relay	D4860
5	SS5	power supply B for bottom pressing	Solid State Relay	D4860
6	SS6	power supply C for bottom pressing	Solid State Relay	D4860
7	SS7	power supply A for top baking heating	Solid State Relay	D4860
8	SS8	power supply B for top baking heating	Solid State Relay	D4860