

VACUUM PACKING MACHINE

INSTRUCTION & OPERATION MANUAL



ZHENGZHOU KOPY PACKING EQUIPMENTS CO., LTD.

INSTRUCTION MANUAL

The instructions manual are meant for all series of vacuum packing machines.

Please refer to page related for individual series model.

Intelligent Series & Standard Series

Intelligent Series 1: Air exhaustion to vacuum 0~99S

Nitrogen filling 0~9.9S

Heating 0~9.9S Cooling 0~9.9S Gas release

Electric opening of cover

Intelligent Series 2: Air exhaustion to vacuum 0~99S

Nitrogen filling 0~9.9S

Heating 0~9.9S Cooling 0~9.9S Gas release

Intelligent Series 3: Air exhaustion to vacuum 0~99S Slivering 0~9.9S

Heating 0~9.9S Cooling 0~9.9S Gas release

Intelligent Series 4: Air exhaustion to vacuum 0~99S

Heating 0~9.9S Cooling 0~9.9S Gas release

Standard Series: Air exhaustion to vacuum 0~99S

Heating 0~9.9S Cooling 0~9.9S Gas release

● **The flow chart, circuit diagram and the function features are indicated at the respective page of the Instruction Manual. Please refer for details.**

● **If the machine series or model you bought is not stated in this manual, contact the manufacturer for assistance.**

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Use and Characteristics

Use:

Our company manufactured whole range of vacuum packing machinery. We have our own R&D team to ensure our products are capable of: Easy operation, Easy maintenance, User friendly and also to cope with wide range application. Especially suitable for soft packing material such as complex film, aluminum-foil complex film etc.

It can also pack products in vacuum form or inserting gas after vacuum form to solid, powder and even liquid, paste, seed, fragrant article, medicine, chemical, electronic, precision instrument, meter and rare expensive metal etc.

The articles packed in vacuum condition ensure to the quality and freshness for a longer period as it can prevent oxidation, mildew, moth, rotten and damp, vacuum machine have different working environment.

Characteristics:

This machine is user friendly. From the flow chart : Close the machine cover, air exhaustion (vacuum), gas filling, heating, sealing, label printing, cooling, return-air, to the re-opening of cover, the whole processing is done automatically.

The sealing temperature and sealing time can be set flexibly with a wide adjustable range so as to suit various packing bags with different materials and specifications.

This machine is equipped with safe grounding protection and E-Stop button protection to deal with sudden accident. The E-Stop button can be pressed to stop packing procedure immediately if there is any emergency arisen during processing.

Preparation before Use

● Installation

1. Before operation, please read through the Instruction Manual about each operation rules and the safety precaution
2. You must fill the vacuum pump with HFV-32 high-speed vacuum pump oil or 32N lubricant before use (When the machine is placed at a horizontal position, the oil level should keep at 3/4 of oil window.) When running, the oil level should not be lower than 1/2 height of oil window. Do not fill with too much oil to avoid over flow.
3. The machine should be placed horizontally in good ventilation without corrosive gas and heavy dust.
4. The power connection position maybe located at different side, so be sure to do grounding protection before use.
5. Always ensure top cover is open before turning the power on. Start the machine by pressing the top cover and the process start automatically. (For Electric cover series, turn on the power supply and the top cover will automatically open. By pressing the Start button which located near the control panel will start the process cycle.) For 3-phase vacuum machinery, please be sure the vacuum pump is running in correct direction. If the direction is wrong, simply switch the phase of the power.
6. Preheat of vacuum pump must be done in low temperature working area. Turn off

the heater selection switch at the control panel to off position. This is to prevent heating process and cut down wear and tear losses. Run the vacuum pump a few time and machine will be ready to use.

● **Setting**

Please set every parameter first before starting machine for operation. For different machine model, please refer to this chapter.

Setting of common model:

1. Connect to the power supply; turn on power switch, the indicator lamp lights. Set the time relay to adjust the vacuum and sealing timing. (The front two figures show the time of vacuum: e.g. 28 means 28 seconds, the back two figures show the time of sealing: e.g.12 means 1.2 seconds.)

The times of vacuum and sealing can be adjusted through pressing “+” or “-“ button. (Some model adopts knob adjustment, location of knob depend on the model.)

2. The selection switch on panel adjusts the heating temperature, HIGH represent high temperature, LOW represent low temperature and the MIDDLE represent middle heating. (The temperature adjustment of double-room machine model is divided into four switches.)
3. For setting in vacuum timing, try to set longer timings and observe the vacuum meter when it reach -0.1 Mpa. Add 1-2s to the timings when it reaches -0.1Mps for your vacuum timings. As for the sealing timings, test the bag, advice to test start from low apply both to vacuum and sealing applications.
4. Watch out for any abnormal sound creation to the vacuum pump when running it. Ensure all adjustment and trial is tested before production.

Intelligent Series:

1. Turn on the power supply, check through the setting shows on the panel and make sure “----“ must be shown after setting is done. Otherwise, operation of this machine cannot be function if the setting is not on this mode.
2. Press the setting button, the indicator lamp of vacuum lights to enter into the setting state of vacuum timing. Press the upward or downward key to increase or decrease vacuum time in the range of 0~99 seconds.
3. After the vacuum time is set, press the set key and the nitrogen filling indicator lamp lights to enter into the setting state of nitrogen filling. Press the upward or downward key to increase or decrease nitrogen filling time in the range of 0~9.9 seconds. **Note: Some models of our machine do not have nitrogen filling function, hence; set the timing to 0 for best result.**
4. Press the parameter set key, heating indicator lamp lights to enter into heating setting state. Press the upward or downward key to increase or decrease the heating sealing time in the range of 0~9.9 seconds. The time setting should be from low timing and gradually to higher timings.
5. After the heating time is set, press the set key again, cooling indicator lamp lights to enter into the setting state of cooling time in the range of 0~9.9 seconds.
6. After the cooling time is set, press the set key again to finish the parameter setting, and “Ed” is shown in panel.

7. Press the “temperature selection” set key to enter into temperature set state. Press the set key once, indicate one corresponding temperature value, and the lamp shows orange color; there are three selections such as “high temperature”, “middle temperature” and “low temperature”. (The state lamp lights and it shows green color when sealing operation. If the state lamp doesn’t light, it means there is no heating sealing selection.) For a special requirement, please contact the equipment manufacturer. **(For some intelligent series model, their temperature selection switches are designed separately, adopting ship-type three-position switch, installed separately on panel. For this series model, its temperature selection only has two gears, HIGH means high temperature, LOW means low temperature, the middle means not heating.)**
8. If your machine model is electric cover opening or pneumatic cover opening, we will preset return-air cover opening time. (The time relay is usually installed inside the machine, its time generally needn’t change.) Timing can be changed for production requirement.
9. Remarks & Tips: Ways to fast process of vacuum a small item or product using a bigger chamber is to place a solid block into the chamber as to occupy the chamber space so as to allow less vacuum time needed due to compact space.
10. IMPORTANT : *** DO NOT BLOCK THE AIR HOLE IN THE CHAMBER***

Operation Instructions

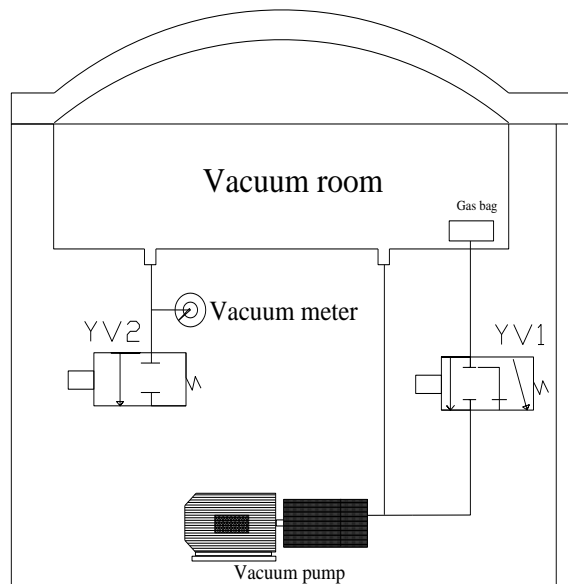
1. Turn on the power supply and select a suitable vacuum packing bag for the product.
2. Set the processing parameter and select the sealing temperature. For the details, please refer to Pages 4~6.
3. Place the vacuum bag at the chamber with the opening end on top of the sealing bar. Clamp it with the hook provided.
4. Close the acrylic cover (For electric or pneumatic driven series, just press the start button) and the machine will complete the processing procedure automatically.
5. During processing, the vacuum chamber will form a vacuum self-lock state, the whole heating and sealing procedure are completed in a vacuum environment, and the LED display on panel shows the flow process.
6. When the vacuum indicator on panel lights, the equipment is under vacuum state, the LED display shows the timing of vacuum time, and it will enter into the next work state automatically after the timing is finished.
7. When the nitrogen filling indicator on panel lights, the equipment is under filling state, the LED display shows the reverse timing of filling time, and it will enter into the next work state automatically after the reverse timing is finished. For some models, this function is disable, and this indication shows disable state when operation. After that, it moves to heating state disable.
8. When heating indicator lights, the equipment enters into heating work state, and the panel shows the reverse timing of heating. It will enter into cooling state automatically after the timing is finished. (For a common machine model, there isn't cooling time set, the cover opens directly after the heating is finished.)
9. According to time setting, the machine doesn't act when cooling, the panel shows "□□" till the reverse timing is finished, air is returned, the cover opens automatically, and the whole processing is finished. Then prepare the next cycle. (For electric or pneumatic cover opening model, the gas release time is calculated; the cover opens automatically after gas release time ended.) For a common machine model, there isn't cooling step, and the cover opens directly.
10. Press the E-Stop button for a sudden condition under processing state, the machine will go to return-air action automatically (for the intelligent model, the panel shows "□□"), the cover opens automatically after return-air action, so the processing ends.

● Note:

1. Silicone rubber strip come with one side nerving and the other for letter and number inserting. It will have embossed effect on sealing surface.
2. Please do not run the machine without any vacuum bag attach. Otherwise, the heating element will have higher wear and tear.
3. Cut off the power supply and pull out external plug when no use.

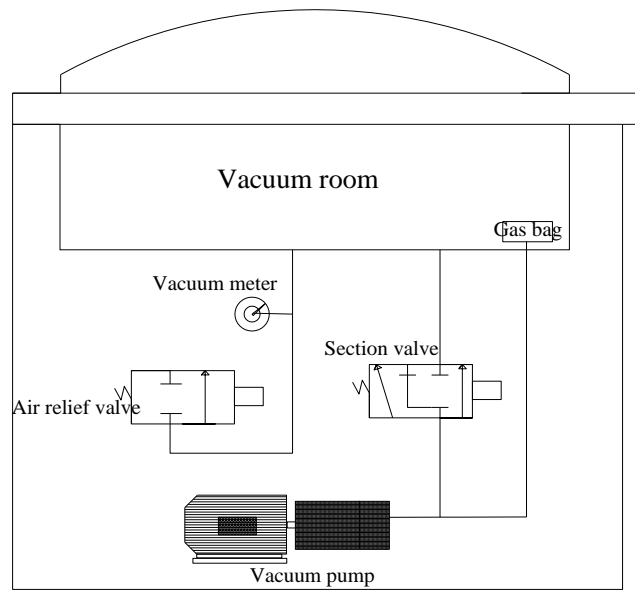
4. The vacuum gauge/meter reading may be different due to different area.
5. Please adopt suitable cooling measure when processing is done in a high temperature occasion.

Vacuum Chart diagram I:



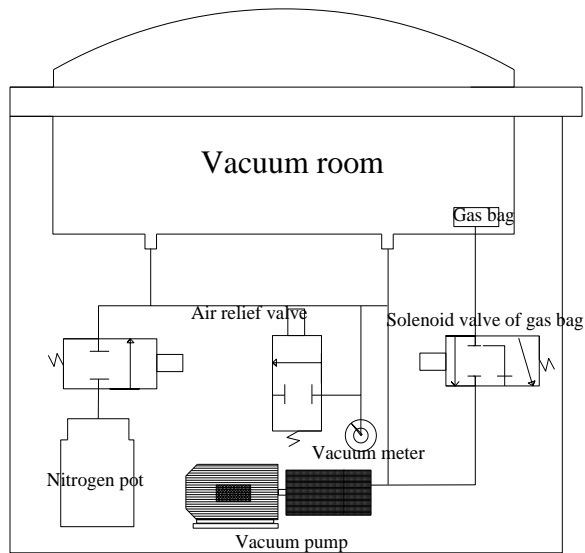
Note: This diagram corresponds to all intelligent series model and standard model of vacuum pumps with check valve, and this model of machine do not have the function of gas flush system.

Vacuum Chart diagram II:



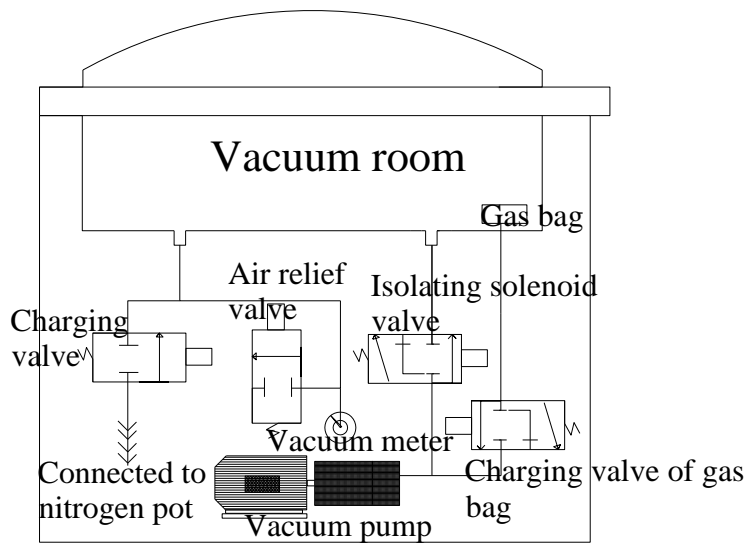
Note: This diagram corresponds to all intelligent series model and standard model of vacuum pumps without check valve, and this model of machine do not have the function of gas flush system

Vacuum Chart diagram III:



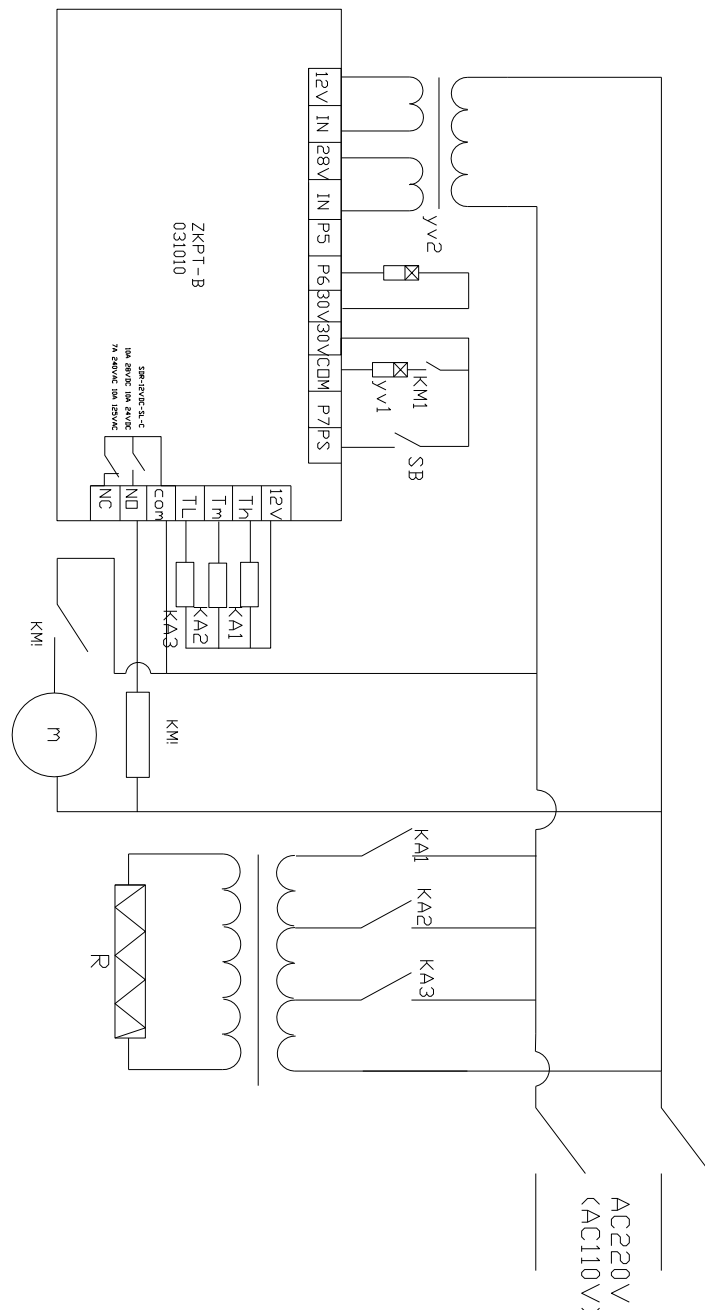
Note: This diagram is limited for the intelligent series model with the function of gas flush system. This model of machine adopts the vacuum pump with check valve.

Vacuum circuit schematic diagram IV:



Note: This diagram is limited for the intelligent series model with the function of gas flush system. This model of machine adopts the vacuum pump without check valve.

Electrical diagram I:



Note: This is intelligent series model with single sealing and without the function of gas flush system.

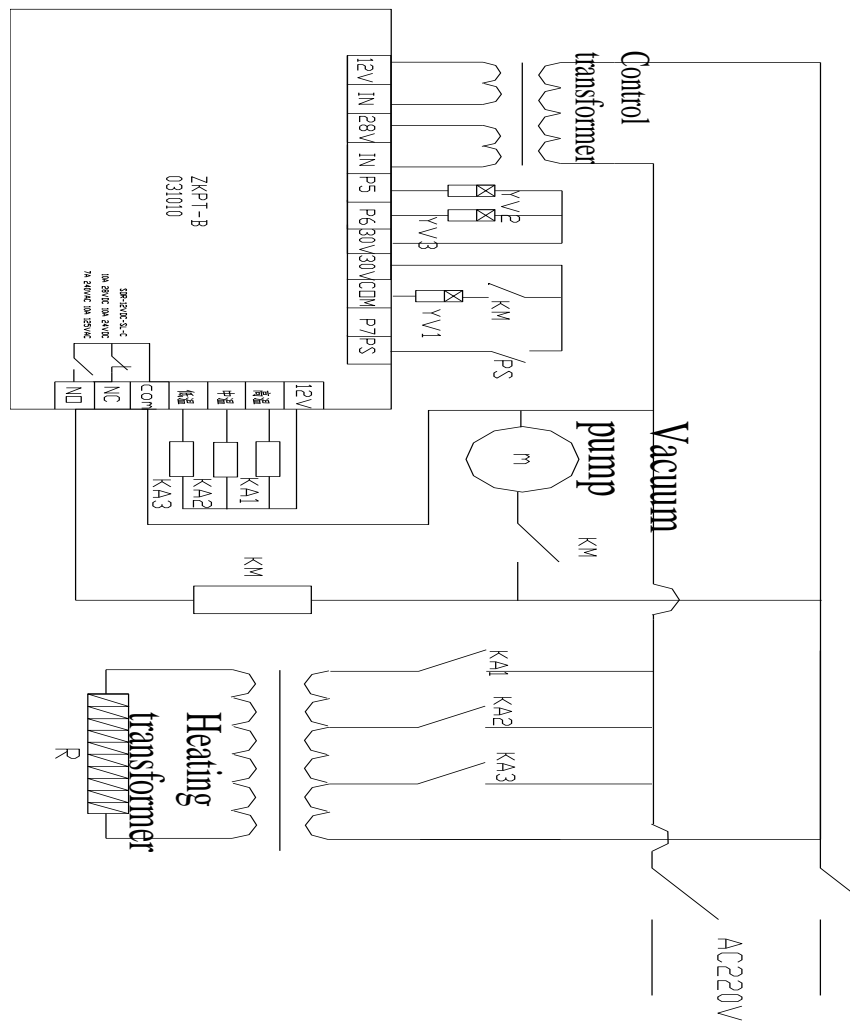
YV1 Isolating solenoid valve YV2 Return-air solenoid valve

M Vacuum R Heating element

KA1 KA2 KA3 separately indicate High-temperature, Middle-temperature and Low temperature

031010 Intelligent control plate KM AC contactor

Electrical diagram II:



Note: This is intelligent series model with single sealing and the function of gas flush system.

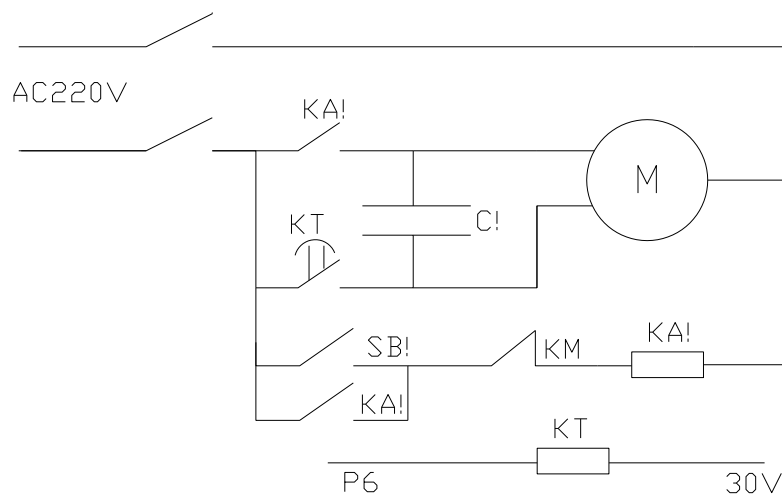
YV1 Isolating solenoid valve YV2 Charging solenoid valve

YV3 Return-air solenoid valve M Vacuum pump R Heating belt KM AC contactor

KA1 KA2 KA3 separately indicate High-temperature, Middle-temperature and Low temperature

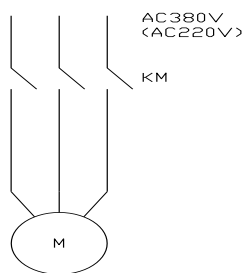
031010 Intelligent control plate

Electric schematic diagram III:



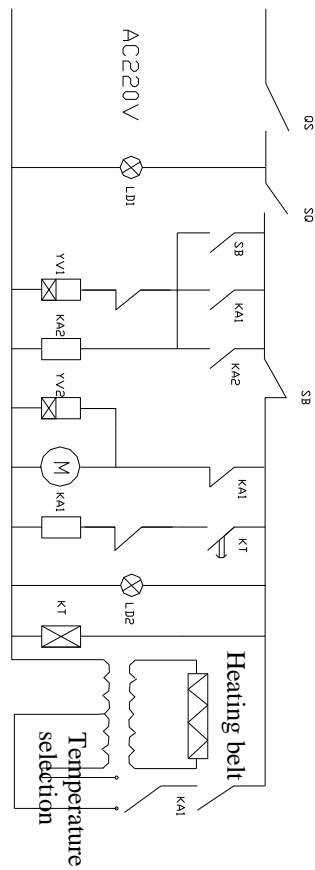
Note: Some intelligent series model adopt electric cover opening, and aimed at the principle of electric cover opening circuit of partial models, combining electric schematic diagrams I and II, this diagram constitutes electric cover opening machine with or without gas charging model.

Electrical diagram IV:



Note: If your machine adopts three-phase four-wire power supply, the wire connection of vacuum pump should refer to the above diagram.

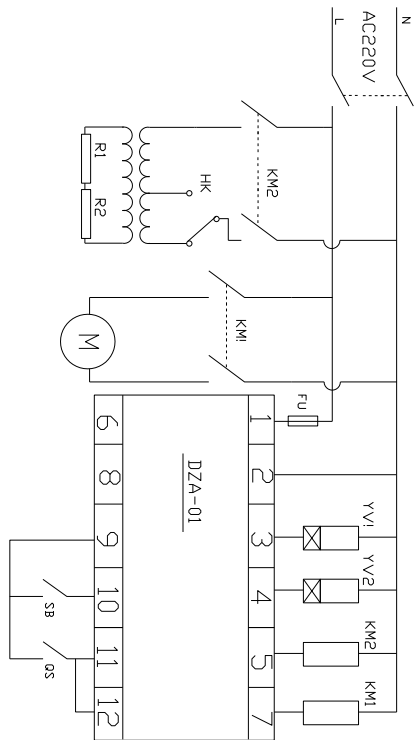
Electrical diagram V:



Note: This diagram is only meant for all standard models. In addition, for the standard model with double-sealing, you should only connect a heating element in parallel.

- YV2 Isolating solenoid valve YV1 Charging solenoid valve
- M Vacuum pump
- R Heating element KM AC contactor

Electrical diagram VI:



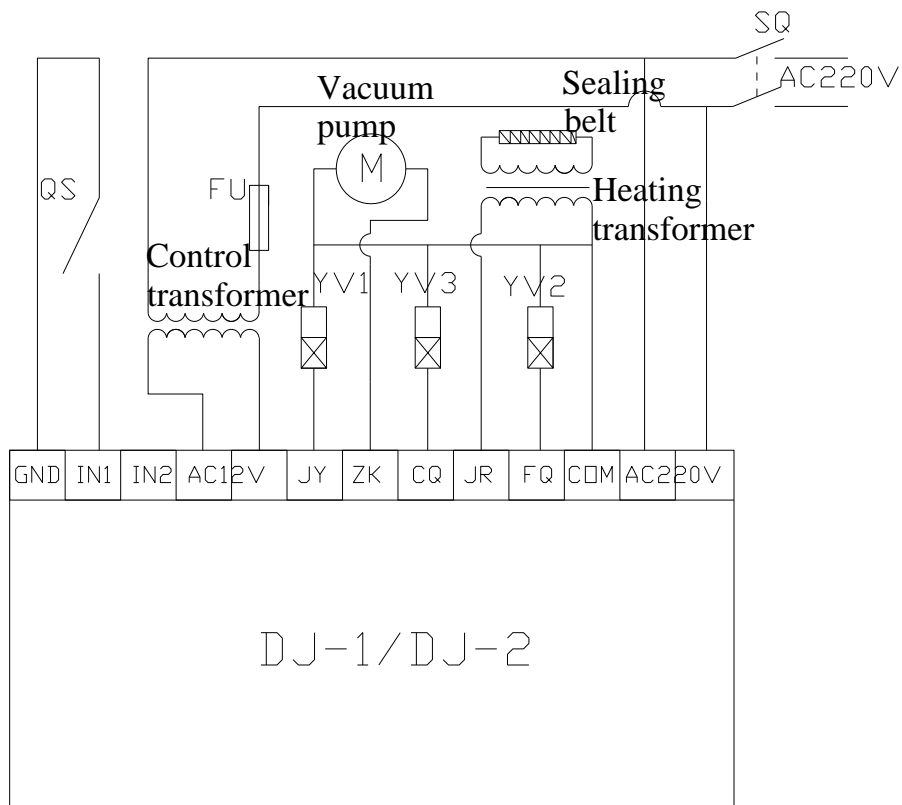
Note: This model of machine is designed for intelligent series temperature selection switch, and the temperature selection is divided into two selections.

YV1 Isolating solenoid valve YV2 Return-air solenoid valve

KM1 AC contactor of vacuum pump

KM2 AC contactor of heating

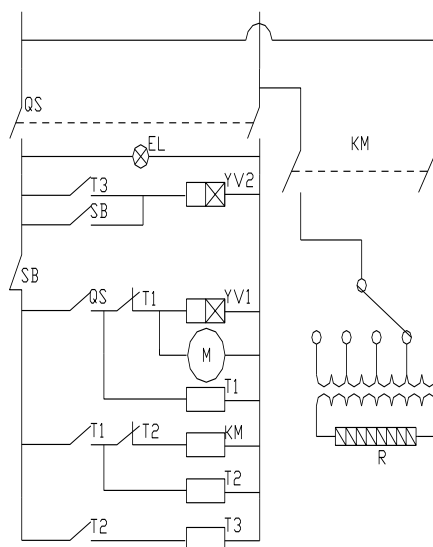
Electrical diagram VII:



Note: This model is an integral machine with vacuum packing and gas flush system, and the whole processing course adopts microcomputer control.

YV1 Isolating solenoid valve YV2 Return-air solenoid valve
 YV3 Solenoid valve of charging nitrogen FU 4A fuse
 SQ DZ47-60 C16 Control transformer 220V/12V/5W
 Heating transformer 250W.

Electrical diagram VIII:



Note: This model is only suitable for double-room vacuum packing machine, and the temperature adjustment of this kind of machine is divided into four selections.

YV1 Isolating solenoid valve YV2 Return-air solenoid valve
SQ DZ47-60 C16

Breakdown analysis

I. Vacuum pump and vacuum system

1. Vacuum pump does not act, the possible reasons are as follows:

- Limit switch is not pressed on
 - close the machine cover and adjust the limit switch.
 - adjust the pull-rod for electric cover opening machine.
- Time relay of vacuum pump is damaged.
 - Replace it.
- Dynamo of vacuum pump is damaged.
 - Replace it.

2. Vacuum chamber cannot reach the vacuum degree, the possible reasons are as follows:

- Vacuum degree cannot be reached because vacuum pump is worn or damaged.
- Loose air pipe joint, broken pipe, damaged sealing ring of vacuum chamber or damaged solenoid valve causes the entry of air into vacuum chamber.
- Insufficient oil in vacuum pump.

- Vacuum timing is not enough.
3. Vacuum chamber cannot be opened, the possible reasons are as follows:
 - Air-bleed solenoid valve is not turned on.
 - For electric cover opening machine, the cover opening motor may be damaged, or pull-rod is jammed.
 4. Air remains in bag after processing is finished, the possible reasons are as follows:
 - Wrong position resting on sealing bar.
 - Redo it.
 - Uneven sealing pressure bar presses the bag opening side so that air cannot escape.
 5. Abnormal sound or tripping when running, black smoke or oil drop at air vent.
 - Abnormal sound of fan of pump motor, it should be repaired.
 - Blockage may be seen in air intake and/or pipe.
 - Insufficient oil of vacuum pump or the use of non-standard lubricant.
 - Long-time running of pump or overheat running under high temperature, please keep the machine ventilated and heat radiated.
 - Faulty vacuum pump motor or solenoid valve of vacuum pump or wear and tear due to usage.
 - Replace parts or contact the manufacture factory.

II. Breakdown of heating sealing.

1. Incapable sealing, the possible reasons are as follows:
 - The heating sealing selector switch is not selected and the heating power is not turned on.
 - The heating element is damaged and the power connecting position of heating element is cut off.
 - The heating time is set at "0".
 - The heating time relay is damaged.
 - The sealing solenoid valve does not act and gas bag does not bulge (or gas bag is damaged).
2. Uneven sealing veins, air bubble or not firm sealing, the reasons are as follows:
 - Sealing rubber bar is unclean.
 - Heating time is too short or temperature is too low.
 - Sealing can't be pressed tightly caused by insufficient bulge of gas bag.
 - Air bubble shrinks caused by insufficient cooling time.
 - Heating sealing bar is damaged and the surface is not flat.

Note: The above breakdown analysis is only for reference. It's different for special model configuration, and here no additional instructions.