

# Preface

Thanks for purchasing and using products of Hangzhou Youngsun Machinery Co., Ltd. For safety sake, please read over this manual carefully.

This manual includes safety notice, main technical parameters, operation ways, maintenance methods and common fault solving. We did our best to make this manual complete and precise. If you have any question or you find any defects in this manual, please contact us or our agent. If the manual make you confused, please consult our engineer.

There may be some tiny differences between this manual and machines, please refer to the machines in such situation. Please make this manual in safekeeping to assure momentarily reference and using the machine correctly.

Without the formal permit of our company, Please do not copy or change the content of this manual which will be take as encroachment of right.

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## **1. Machine property and safety information**

### **1.1 Company name and address**

Company name : Hangzhou Youngsun Machinery Co., Ltd

Company address : No.1 Xiyuan Jiu RD, West Lake science and  
technology development Area, Hangzhou

### **1.2 property parameters**

1.Power supply, voltage and power:

2.sealing length:

3.sealing width:

4.Overall dimension:

5.Packaging speed: 2—3times/min

6.pumping speed:

7.Lowest vacuum level: 1KPa

8. Required environment: humidity $\leq$ 98%, temperature:0-40°C

9. Machine configuration:

10.Working noise:  $\leq$ 75DB

### **1.3 Outline and application fields**

Vacuum machines like YS-ZS, DQ, SQ and so on have high performance and a wide range of application. Furthermore, they can be easily operated and maintained. They especially suit to flexible packaging materials such as coextruded film and foil laminated film. It can vacuum package solid, liquid, powder products, precise instruments and rare metals. It can lengthen the products' shelf life and freshness date to vacuum package them. Furthermore, vacuum package can avoid oxidation, going mouldy, attacks from insects and affection of damp. It is fit for all kinds of working

environment and places. Meanwhile, sponge shaped products can be packed, transported and stored more easily after vacuum pumping.

Machine features:

1. The upper vacuum chamber is covered with synthetic glass or transparent window. So you can observe the working procedure clearly.
2. All steps from closing the cover, vacuum pumping to cold air return and open the cover are all done automatically. That makes it very convenient.
3. The lower vacuum chamber is made of stainless steel. It has beautiful appearance, reasonable framework and good leak-proofness. This machine can set vacuum pumping and heating time to achieve optimum efficiency according to different products and requirements. Advanced design and stable property meet client's requirements. Convenient operation increases the production efficiency. All the above advantages make it an ideal vacuum pumping device.

#### **1.4 Safety notice**

1. Earthing work must be done well in case getting an electric shock.
2. Make sure the right power supply, don't plug to an improper one.
3. Don't touch the plug and other electrical elements with wet hand. Don't operate switches with wet hand in case getting an electric shock.
4. Don't break, bend and extend the power cords and also don't put heavy goods on the cords in case the cords been damaged and cause electrical shock and fire.
5. When the vacuum air pump is running normally, its surface temperature will be over 70 °C, so don't touch it with hand directly.

6. This machine can't be used to pump out flammable, explosive and corrosive gas with high degree of oxygen.

7. When the machine will not be used for a long time, please cut off the electricity to avoid insulating damage which may cause electrical shock, electricity leaking and fire.

8. Don't remodel the machine or it will be out of guarantee.

## **2 Installation and debugging**

### **2.1 Specification:**

2.1.1 Model:

2.1.2 Net weight:

2.1.3 Gross weight:

2.1.4 Volume:

2.2 Upload and download、installation、transportation and storage

This machine doesn't need to be disassembled for delivery, you can carry it to the settlement with a forklift.

### **2.3 Debugging**

1. Check if the power supply and voltage meet requirements, if the earthing is done well, if all the junctions are firm.

2. Check if the oil in the vacuum air pump has reached the required position.

(Notice: keep oil in the vacuum pump 1/2 to 3/4 high of the oil pointer. Charge oil regularly. Change oil after one month's continuous work. If there is too much water vapor and dust in the work place, you need to change oil more frequently. Use vacuum air pump oil or N68 machinery oil. Warm up vacuum pump before changing oil.)

3. Set the vacuum pumping time from 10 to 30 seconds according to products requirements. (the longer the time is, the higher of the vacuum degree will be. The higher the altitude is, the lower the ultimate vacuum will be.)

4. Set the sealing time according to the material of bags.

(Notice: the longest sealing time is 3.5 seconds. Generally, set the sealing time from 2 to 2.5 seconds for two-layer complex film. When you are going to use a new packaging material, test its best hot sealing time. With the passage of working, decrease the hot sealing time properly.)

5. Connect to power supply. Turn the button to the “open” position. Close the vacuum cover, press it a little bit, the vacuum air pump will start to work. Pay attention to its working direction. Positive direction means vacuum has been established, reverse direction means vacuum hasn't been established. Then you need to change the direction immediately. (Normally, it has been regulated well before delivery)

6. Put the packaging bags on the sealing bar and under the bag pressing bar.

7. Close the vacuum air pump chamber, press it a little bit. Then the whole packaging process from pump vacuum air and sealing to return air will be finished by electrical automatic program.

8. During working, when there is some abnormal phenomenon, press the “stop” button, return air in advance, start working again.

9. When the machine needs a temporary stop, turn the button to “off” position. When not use the machine for a long time, cut off power supply, clean the machine thoroughly.

10. When the machine works in a high temperature place, take some cooling provision.

11. The vacuum subpressure is different in different places with different altitude.

### **3. Working principle**

1. Pump vacuum air: close the vacuum chamber, gas spring touches limited switch, then it will give the pc start signal. The vacuum air pump starts to work, vacuum chamber starts to pump air. It will pump air in the packaging bag simultaneously. Two position triple valve starts to work, the hot sealing air bag becomes vacuum. Hot press frame keep original position. The pointer of vacuum meter will rise until it reaches expected vacuum degree. (It's controlled by the air pumping time

relay).vacuum air pump stops working when the air pumping time' s up.

2 .Hot sealing: when the air pumping time' s up, the two-position triple valve will disconnect. Outside air gets into hot sealing chamber through its upper air inlet hole. The pressure differences in the vacuum chamber and hot sealing chamber can make the hot sealing chamber inflate, then make the hot-press frame move upwards and press the bag mouth. While at the same time, the hot sealing transformer starts to work, bag mouth sealing starts. Simultaneously, hot sealing time relay in the PC starts work , several seconds later, hot sealing finishes.

3. Cooling: in order to guarantee the sealing quality, after hot sealing, keep the hot-press frame in the original position for several seconds.

4. Return air: two-position double valve connects, air enters vacuum chamber. Pointer of vacuum meter gets back to Zero, hot-press frame resets through its own gravity,Vacuum chamber opens its cover automatically.

## 4. Operation

### 4.1 machine framework



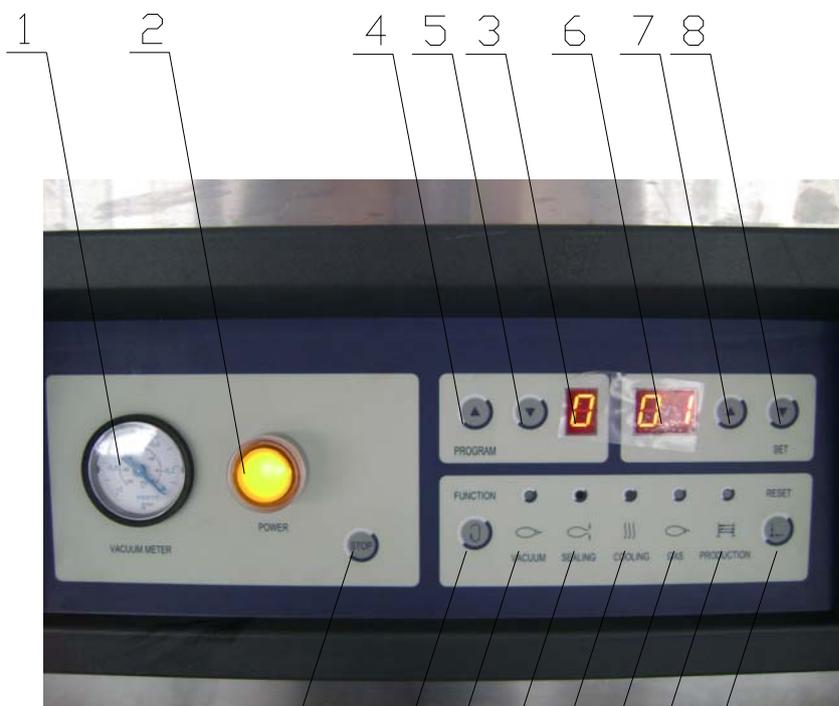
- ①. Hotpressing bracket
- ②. Silastic pressing bar
- ③. Silastic abturing ring
- ④. Air hole
- ⑤. Control panel
- ⑥. Vacuum meter (0, -1bar)
- ⑦. ON/OFF switch
- ⑧ Filler well of vacuum air pump



⑨ Oil drain hole of vacuum air

pump

4.2 Control panel function



16      9/10/11/12/13/14/15

- 一、
  1. Vacuum meter (0, -1bar), show vacuum degree of the chamber.
  2. ON/OFF switch, “ON”, indicator light comes on, ” OFF” , indicator light goes off.
  3. Small display screen shows working models. 0 to 9 models suits different products.
  - 4, 5. Regulate working models up and down.
  6. Big display screen shows different parameter time.
  - 7, 8. Regulate different parameter time up and down.
  9. Functional button: repeat displaying different indicators.
  10. Air pumping time display, when this light is on, The number on the big display screen is air pumping time. Use button 7 and 8 to regulate it.
  11. Hot sealing time display. When this light is on, the number on the big screen is the hot sealing time. You can regulate it via button 7 and 8. Set it in the range of 1.2 to 2.0s for normal materials.
  12. Cooling time display. When this light is on, the number on the big screen is for cooling the sealing mouth time. (During 0 to 99) there is no need to set it generally.
  13. Null.
  14. Productivity display. When this light is on, the numbers showing on 3 and 6 are productivity within the scope of 0 to 999. It will zero clear after cutting off electricity. (notice: when this light is on, button 4,5,7,8 can't regulate the contents on screen)
  15. Zero clear productivity.
  16. Stop button. When the machine is working normally or you need to cease it in advance, press this button to return air in advance.
- 二、 During working , corresponding steps' indicators 10,11,12 will flash. The number shown on big screen 6 is their count down.
- 三、 The 9<sup>th</sup> model is for warming up the pump. Notice that the number shown on big screen 6 is the air pumping frequency. It' s 30s/time.

Under this model, the vacuum air pump works continuously, its cover can't be opened during working. Normally, we set it to 30 times which takes 15 minutes.

## 5. Maintenance and trouble shooting

5.1 Change heater strip and fire resistant adhesive plaster.

5.2 change Silastic abturing ring

5.3 change the oil in the vacuum air pump.

- ①. warm-up the machine for ten minutes.
- ②. Change oil when machine is no working.  
(don't change oil when the machine is working to avoid danger) .
- ③. Normally, keep oil 1/2 to 3/4 high of the oil meter, when there is too little oil, charge some. While there is too much, drain out some.

### 5.4 Fault analysis

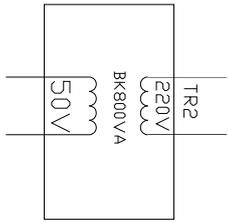
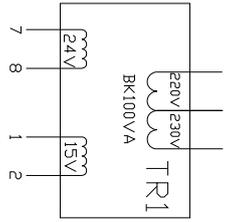
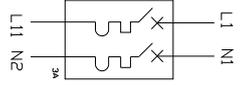
Fault phenomenon	cause	sollution
1. ON/OFF Switch light is on, but the control panel has no display	1) Wire have poor contact	Check the circuit
	2) PC board' s fuse is broken	Change fuse
	3) PC board is broken	Change PC board
2. vacuum air pump has no action	1) limited switch is not pressed in	close the cover, regulate the limited switch' s height.
	2) PC board' s fuse is broken	Change fuse

	3) contactor is broken	Change contactor
	4) motor of vacuum air pump is damaged	Change vacuum air pump
3. Vacuum chamber can't achieve required vacuum degree	1) vacuum air pump is worn or damaged	
	2) Air circuit system leaks	check if the air pipe connector is loose, if the pipe is damaged, if the obturating ring is damaged and if the valve is damaged.
	3) too much or very little oil in vacuum chamber	charge oil or drain out extra oil.
	4) Air pumping time is not enough	regulate air pumping time
4. Vacuum chamber can't be opened.	1) electricity is suddenly cut off in working	connect to power supply again, then it can reset
	2) air returning valve is broken	Change it
	3) the connector of air returning valve is loose.	Check the valve circuit
5. Can't seal or the sealing effect is not good	1) heater is not hot	Check if the heater's leading wire is loose, if the heating time is zero, if heating strip is broken.
	2) bag mouth sealing valve doesn't work	Check if the valve wire's plug-ins are loose, if the valve is broken
	3) air bag isn't inflated.	Change air bag

	4)heating time is too long or too short	Regulate heating time
	5) There is dirty thing on the sealing bar	Clean it
	6) Silica gel strip and Teflon tape are worn, there surface is not plat.	change

## 6、 Electrical elementary diagram and wiring diagram

### 1).Electrical wiring diagram



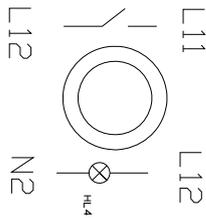
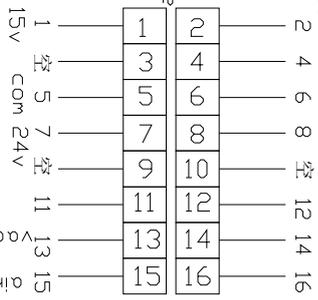
加热丝

mouth sealing valve

15V limited switch 24V

heat on the on sealing place

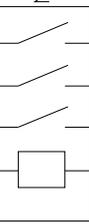
single machine



L11-N2 16

L11 N2 16

L11 N2 13



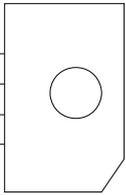
KM1

KM2

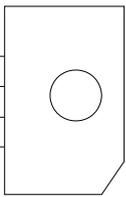
L1

seal and heat

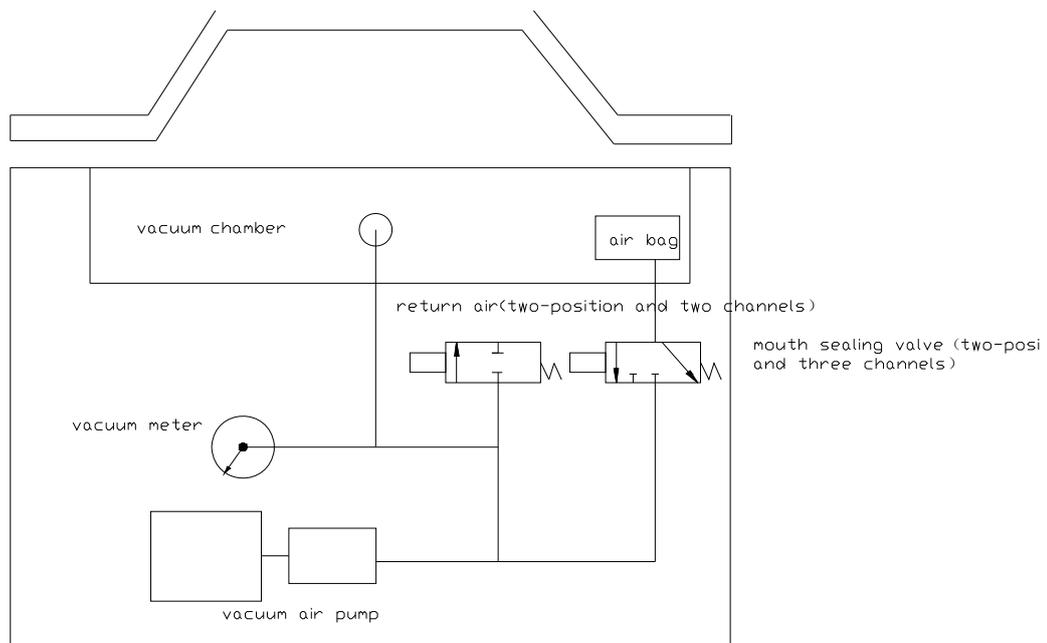
vacuum air pump



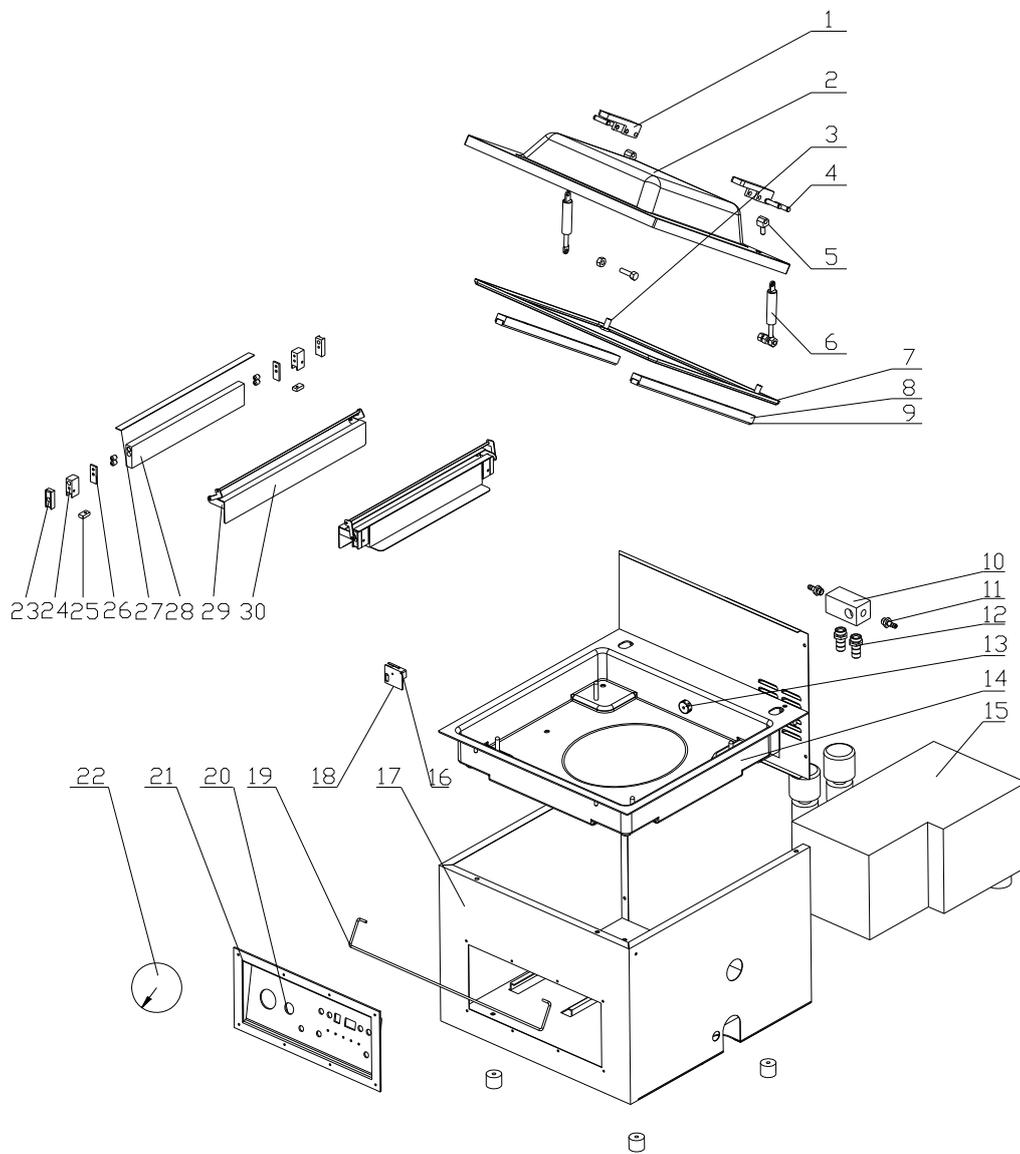
sealing mouth valve air returning



## 2).Air circuit elementary diagram



## 7、Machine framework sketch



No.	Name	model	Quantity per one machine
1	open cover bracket	FZ-400-04-02	2
2	ACRYLIC cover	FZ-400-04-00	1
3	open cover cap	FZ-400-04-03	2
4	Ø8 small shaft	FZ-400-04-12	4
5	Open cover base	FZ-400-04-04	2
6	QY shaped gas spring	FZ-05-03	2
7	Silastic obturating ring A	FZ-05-05	2
8	Pressing bar slot	FZ-400-04-09	2
9	soft pressing bar	FZ-05-09	2
10	Gas circuit block	FZ-400-04-19	1
11	G1/4 pipe tip	FZ-400-04-17	2
12	G1/2 pipe tip	FZ-400-04-18	2
13	manhead	FZ-400-02-04	1
14	Lower vacuum chamber	FZ-400-02-00	1
15	Vacuum air pump	XD-20	1
16	Limited switch	RU-162-1C25	1
17	cabinet		1
18	Limited switch	FZ-400-04-22	1
19	gland bush bracket	FZ-400-04-01	1
20	button ( with indicator )		
21	Control panel	FZ-05-02	1
22	Vacuum meter	FVAM-40-V1/0-G1/8-EN	1
23	tension block of heat seal strip	FZ-400-03-09	4
24	fixing block of heat seal strip	FZ-400-03-08	4
25	pressing block of	FZ-400-03-10	4

	heat seal strip		
26	collets of hot seal strip	FZ-400-03-12	4
27	insulating bar of heat seal strip	FZ-400-03-13	2
28	Heating base	FZ-400-03-07	2
29	Press bag bar	FZ-400-03-03	4
30	supporting bracket of heater	FZ-400-03-00	2