

Content

Preface/Instruction	1	7.3	Special Oil for Vacuum Pump.....	27
1. Product Description	2	7.4	Replace Teflon cloth and Flat Heating wire.....	27
1.1 Product Usage	2	7.5	Replace Silicon Strip.....	29
1.2 Products Features	2	7.6	Replace Sealing Ring	30
1.3 Operation Principle	2	7.7	List of maintained Spare Part	30
1.4 Naming of the Model.....	3	8. Troubles and Solutions.....	31	
1.5 Main Components.....	4	8.1	Troubles and Solutions of the machine body	31
2. Security	6	8.2	Troubles and Solutions of Vacuum Pump.....	32
2.1 Preparation	6	8.3	Troubles and Solutions of Solenoid Valve	32
2.2 Notice for Security	6	8.4	Troubles and Solutions of the Sealing Device	33
2.3 Operating Environment.....	7	8.5	Error code	33
3. Carrying	7	9. Technical Parameter.....	35	
3.1 Carton Packing	7	9.1	Parameter of A Series.....	35
3.2 Wooden Case Packing	7	9.2	Parameter of B Series.....	35
4. Installation	8	9.3	Parameter of C Series.....	36
4.1 Prerequisite for Installation.....	8	9.4	Parameter in Common.....	37
4.2 Environment for Installation.....	9	10 Storage.....	37	
4.3 Add oil.....	9	10.1	Storage for short time.....	37
4.4 Connecting Electric.....	10	10.2	Storage for long time.....	37
4.5 Connecting Gas-filling System ...	11	10.3	Restart after storage	37
4.6 Connecting Vacuum System	12	11 Diagrams.....	38	
5. Start and Operation	13	11.1	Diagram of Arch Vacuum Lid	38
5.1 Control Panel	13	11.2	Diagram of Ultra-thin Vacuum Lid ..	39
5.2 Power on.....	15	11.3	Diagram of Shallow Vacuum Chamber	40
5.3 Check the Turning Direction of the Vacuum pump	15	11.4	Diagram of Flat Vacuum Chamber	41
6. Standard Operation and Parameter Setting	17	11.5	Diagram of Housing	42
6.1 Standard Operation	17	11.6	Electric Schematic Diagram of Relay-controlling	43
6.2 Instruction of Controlling Program's Cycle	18	11.7	Electric Schematic Diagram of Computer Panel-controlling	45
6.3 Parameter Setting.....	20	12 Diagram of Gas circuit	46	
6.4 Optimal Parameter.....	22	13 List of Spare Parts	46	
6.5 Packing Liquid Products	22			
6.6 Optimal Packing.....	23			
7. Maintenance	23			
7.1 Standard Maintenance Schedule	24			
7.2 Vacuum Pump Maintenance	24			

Preface

Thank you for your choice of our HVC Series Automatic Continuous Vacuum Packing Machine. The content of this instruction is as following:

- Product Description
- Notice for Security
- Carrying and Storage
- Installation and Commissioning
- Operating Guide
- Maintenance and Repairing
- Troubles and Solutions
- Spare Part

This manual introduces the installation and Operation of the product, the following items are included: Carrying, Storage, Installation, Startup, Operating condition, Maintenance, troubles and solutions, and Repairing.

Notice:

- Please read this introduction carefully and get it through before your use.
- Make sure this introduction is possessed by the operator or the managerial personnel of this product.
- Please keep this manual after reading and make sure it is touchable for reference in future.
- Any questions please contact the supplier.

Responsibility:

- This instruction is specially edited by great care. The manufacturer is irresponsible for the mistakes or the user's misunderstanding.
- The manufacturer is irresponsible for the damage or problems raised by having not adopted the required spare part.
- The manufacturer has the right to amend the parameter or the spare part no further notice will be given to the buyer.
- The manufacturer has the reserved rights. Don't reprint any part of the instruction without our written agreement.

Terms:

Teflon Cloth: PTFE Coated Fabric. It features High temperature resistance and nonstick.

Heating Block: Consist of Aluminum Profile (or Sealing bar), Sealing wire, Teflon cloth, etc.

1. Product Description

1.1 Usage and Application

HVC series vacuum packaging machine possesses the advantages of superior function, easy operation, simple maintenance, wide application etc. It applies to the soft packing material such as composite film or aluminum-plastic composite film and so on. It can pack grain, food, fruit, seed, medicine, chemical product, electronic product, precision instrument and meter, rare expensive metal solid etc in liquid, powder or paste shape. The products after packing can be prevented from oxidization, mildew, moth, rot and damp, so quality and freshness is guaranteed to prolong the food's storage period.

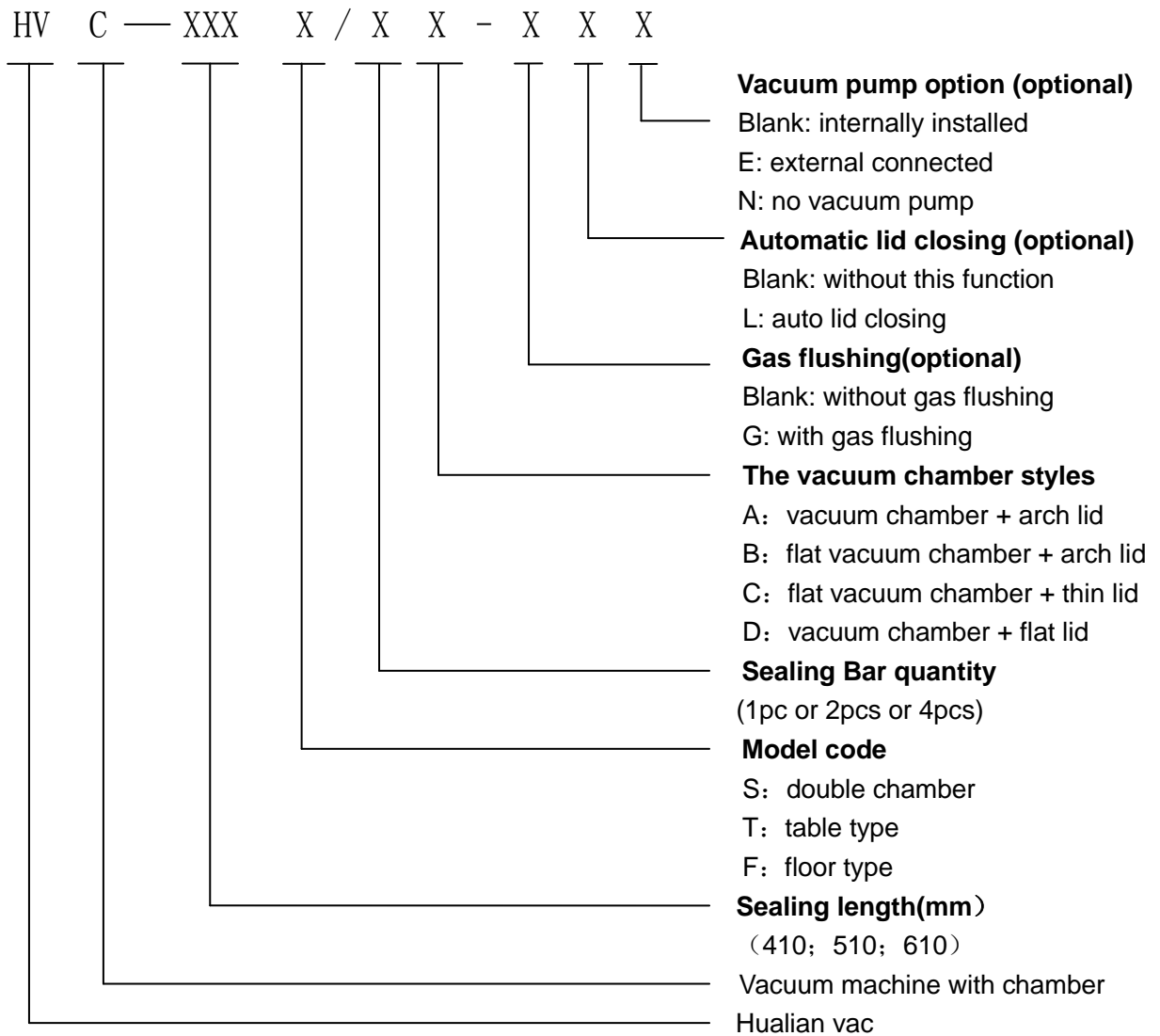
1.2 Product Features

- The machine possesses oil-mist removing function, so it unnecessary to connect a pipe for exhaust.
- It is easy to operate this machine. The whole procedure, including lowering the synthetic glass vacuum lid, vacuumizing, gas-filling (if any), heat-sealing, label printing, cooling, air intake and lifting the vacuum lid, is completed automatically.
- The wide range of the temperature of sealing mouth can be applied to the packing bags with different materials and thickness
- There is an emergent stop switch in the control panel. If any exception in the extracting process, press STOP can interrupt the packing procedure and return to standby state.

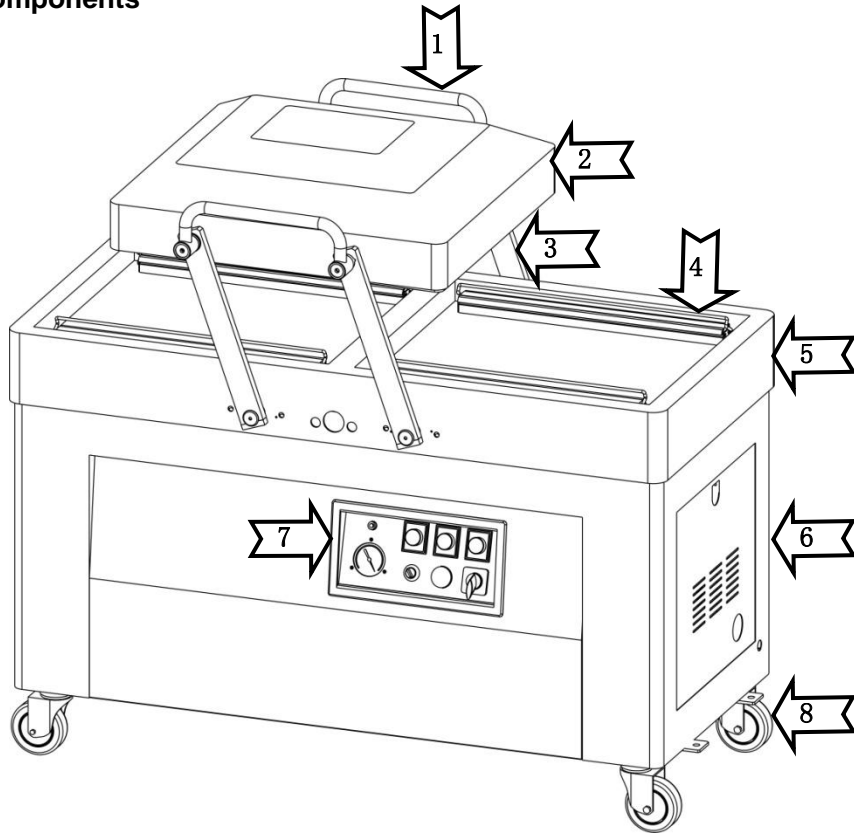
1.3 Operating Principle

Put the bags in the vacuum chamber and lower the vacuum lid. Startup the machine, the vacuum pump runs and will form a vacuum space between the vacuum lid and the vacuum chamber. When the vacuumizing finished, fill the gas to the vacuum chamber if it is needed. Then the airbag or the cylinder will force the heating block to lift to hold down the bags in the effect of the pressure difference inside the vacuum chamber and the outside. The flat heating wire in the heating plate will become hot and the seal the bag when it is connected with low-voltage heavy current. Consequently, fill the vacuum chamber with air after cooling down. The whole vacuum packing is completed

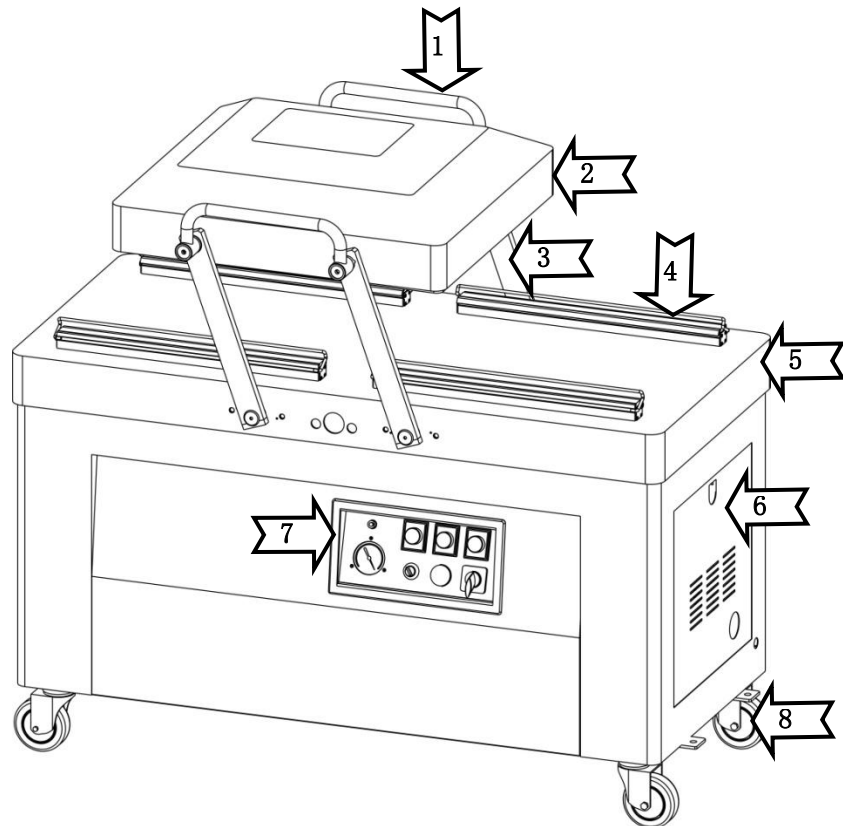
1.4 Naming of the Model



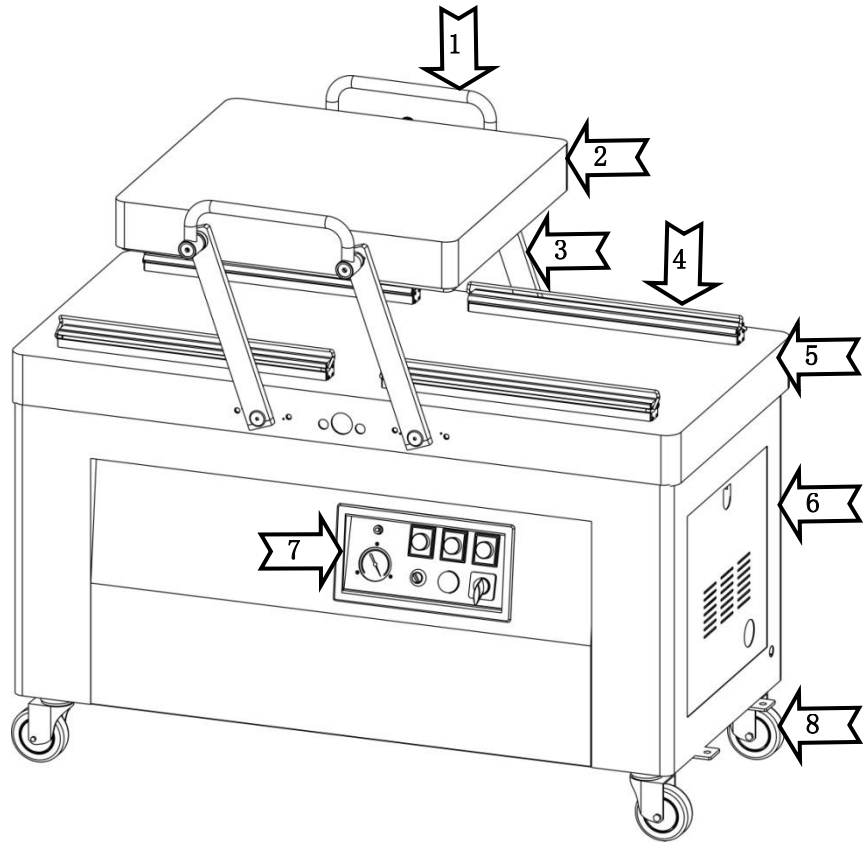
1.5 Main Components



HVC-510S/2A(-G) Double-room Vacuum Packing Machine



HVC-510S/2B(-G) Double-room Vacuum Packing Machine



HVC-510S/2C Double-room Vacuum Packing Machine (Standard)

No	Components	Remarks
1	Handle	
2	Vacuum chamber	Arch lid/ultra-thin lid
3	Connecting rod	
4	Lower sealing assembly	
5	Vacuum chamber	Shallow/flat chamber
6	Housing	
7	Control Panel	Computer pane/Relay
8	Caster	

2. Security

2.1 Preparation

This instruction is a detailed description of the carrying, storage, installation, startup, working condition, maintenance, troubles and repairing.

It is recommended that the machine be installed by trained professional worker.

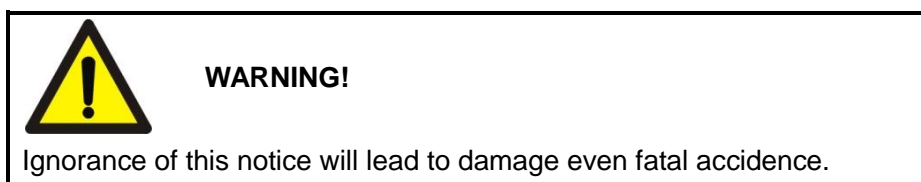
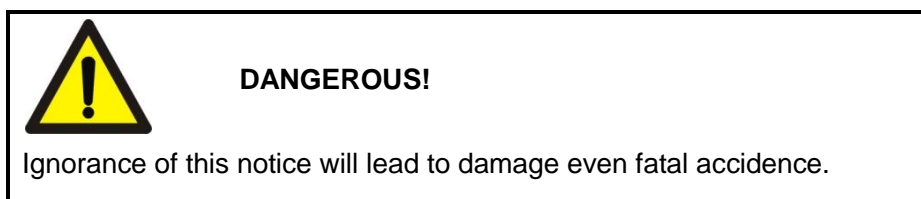
Please do abide the maintenance instruction.

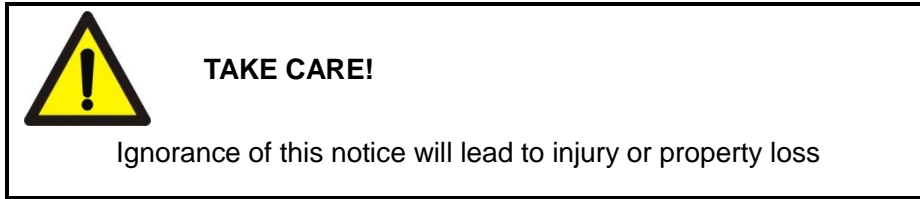
- **Please read carefully and understand thoroughly this instruction before the use of the machine.**
- **Any problem please contact the supplier.**

2.2 Notice for Security

- Please check the power voltage and the frequency in case of error. No matter three phases (AC380V/50Hz) or single phase, the yellow-green wire is the protective grounding wire. Please don't remove.
- Power cord should be placed without pressure or drag and it should be put away when it is not used.
- Don't operate this machine in a corrosive or dusty environment.
- Don't replace the components at will.
- Keep the machine clean and remove timely the attached dust in the vacuum chamber.
- Cut off the power when the machine is not used.
- Please replace the vacuum pump oil timely.
- Please keep this manual well for reference.
- This machine is produced as per the latest technology and security standard. There maybe danger or damage under improper operation. Please notice the keywords "DANGEROUS", "WARNING", "TAKE CARE".

E.g.:

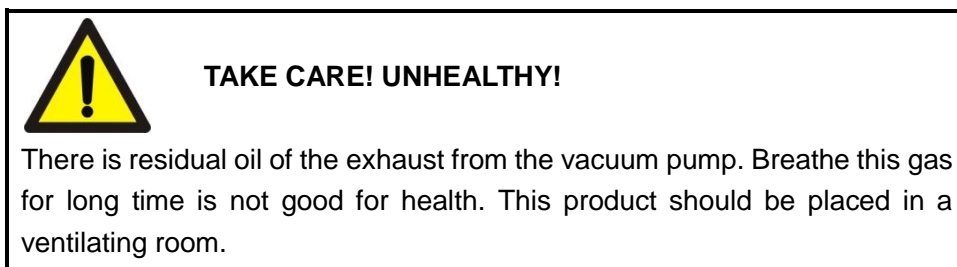




2.3 Operating Environment

The design of this product is running under normal temperature indoor. If the environment is in bad condition, such as corrosive atmosphere or temperature over 35°C or less than 5°C, please contact the manufacturer or the supplier.

The vacuum pump oil can be separated in maximum extent during its running, but not totally separated.



Please choose the special vacuum pump oil if this machine is used for food industry.

3. Carrying

3.1 with carton packing

If the machine is packed by carton with expanded gasket,

- Remove the expanded gasket from the carton.

If the machine is packed by carton with foam material,

- Remove the foam material from the carton.

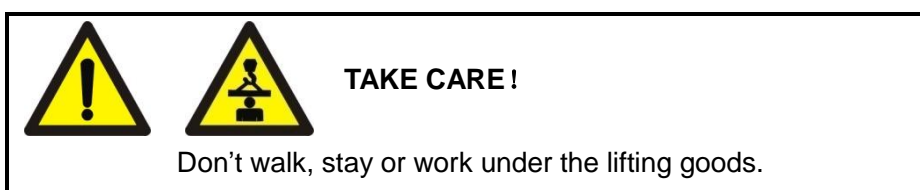
3.2 with wooden case packing

If the machine is fixed by screw to the base of the case,

- Unscrew the screw between the machine and the base of the case.

If the machine is fixed by locking belt,


- remove the locking belt



Note: Please fasten the attached belt or cord to the suitable position of the machine. Pay attention to the gravity of the machine.

- Make sure the cord is safely and tightly fastened to the machine.
- Hang the hanger to the tackle with safe locker.
- Use crane to lift.

Note: Floor-type machine has equipped with caster and it can move in the flat ground. If the caster has locking mechanism, please unlock the mechanism before moving.



TAKE CARE! DAMAGE TO THE MACHINE!


Lean the vacuum pump full of oil will lead much oil into the pump chamber. The vacuum pump may be damaged if there is too much oil when the vacuum pump startup. Don't move the vacuum pump after it is filled with oil.

Note: Please drain the vacuum pump oil before moving the machine.

4. Installation

4.1 The Prerequisite of Installation

- Good and reliable protecting ground wire. To ensure the personal safety, please connect the protecting ground wire firmly to the PE terminal of the machine or the appointed position in the ground sign.
- The power should have a breaker controller with leakage protection function.



Take care! Damage!

If the installation prerequisite can't be reached, the machine will be damaged.
Take care! Injured!

Make sure the installation environment meet the basic security regulation

4.2 Installation Environment

- No inflammable and explosive gases around.
- Temperature: 5-30°C. If the machine will be operated in other environment, please contact the manufacturer or the supplier.
- Environment pressure: standard atmospheric pressure.

- Make sure the Power meet the requirement. (see the name plate in the machine)
- Make sure the machine stands stably. Use foot plate to fix the machine after it is moved to a suitable position. The caster should leave the ground if there is any.
- Make sure the machine is laid in a horizontal position, which is one of the essential of trouble-free operation of the machine.

4.3 Filling Oil



TAKE CARE! DAMAGE!

There is no vacuum pump oil in the newly delivered machine. The vacuum pump works without oil will damage the pump, even in a short time. Please make sure the vacuum pump has filled with the oil before startup.

Note: The vacuum pump should be transported without oil.



TAKE CARE! DAMAGE!

Filling the oil to the vacuum pump through other position of the pump may damage the vacuum pump. The oil should be filled through the oil filler hole.





TAKE CARE! SCALD!

The oil tank is full with high-temperature and high-press oil mist. The user may get scald by the hot oil mist if the oil filler hole is open. Only when the oil filler plug is unscrewed can the vacuum pump stop running. Please screw the oil filler plug when the vacuum pump is working.

- Unload the back cover.
- Unscrew the oil filler plug with wrench in right size.
- Fill the machine with appropriate special oil for vacuum pump. Please refer to the Chapter 7.3 Special Oil for Vacuum Pump.
- Make sure the oil level is between 1/2 and 3/4 of the oil level indicator.
- Make sure the sealing ring is installed in the oil filler plug. Replace the ring when needed.
- Screw the oil filler plug.
- Wait for several minutes.
- Check whether the oil level is between 1/2 and 3/4 of the oil level indicator. If it is less than 1/2, please add more.
- If the oil level is between 1/2 and 3/4 of the oil level indicator, fix the back cover.

4.4 Connecting electric



DANGEROUS! ELECTRIC SHOCK!

Please make sure all the plugs have protective ground wire.
TAKE CARE! Unmatched power will damage the machine. Please check the power parameter of the power referring to the label on the machine. Please abide the regulation of safe operation and the national protective measure of accident.

Power/Grounded connection


- Check whether the power voltage is in accordance with the one written in the label of the machine.
- Please exam the turning direction of the vacuum pump when the machine is connected to three phases power.
- Make sure the machine is connected correctly to the grounded plug to avoid fire or electric shock. (The grounded wire is yellowish green.
- The cable should be movable to avoid extrusion.
- Please replace the cable if it is damaged.
- Please cut off the power when the machine is in problem or maintenance.
- Please put the cable away if the machine will be left unused.

If the machine employs single-phase plug:

- Connect the power cord and the machine correctly.
- Connect the other side of the power cord to the wall power socket.

If the machine employs three-phase power:

- Connect the power cord accurately.
- Connect protective ground wire.



TAKE CARE! DAMAGE!

The incorrect turning direction of the vacuum pump motor will damage the vacuum pump in even a short time. Please make sure the turning direction id correct before startup.

For the vacuum pump equipped with three-phase motor:


- Check the turning direction of the vacuum pump according to the instructive mark.
- Turn on the power and lower the vacuum lid slightly to make the vacuum pump running (Refer to the Start Chapter).

- Observe the fan of the vacuum pump motor if possible and determine the turning direction before the fan stops.
- If it is impossible to observe the turning direction, please listen to the sound of the motor. The vacuum pump running in reverse direction will beep. Look at the vacuum gauge as the vacuum pump in reverse direction can't produce vacuum.

If it is necessary to change the turning direction:


- Exchange any two phases of the three-phases power.

4.5 Connecting Gas-filling System (if any)



WARNING! EXPLOSION!

Do not use flammable gas or the combined gas with more than 20% oxygen constitute, or the explosion may occur.



TAKE CARE! DAMAGE!

The pressure of the air supply should not be higher than 0.1Mpa, or the machine will be damaged.

- Do not use flammable gas or the combined gas with high Oxygen constitute, or the explosion may occur. The manufacturer is irresponsible for the accident or damage caused by the violation of this rule.
- The gas tank should be closed correctly. Please close the master switch of the gas tank when no gas-filling or when the machine is unused.
- The value of the pressure valve in the gas tank should be not higher than 0.1Mpa, or the machine may be damaged.
- The diameter of screw ends in the gas-filling tube is 8mm. The screw ends locate in the side or the back of the machine.

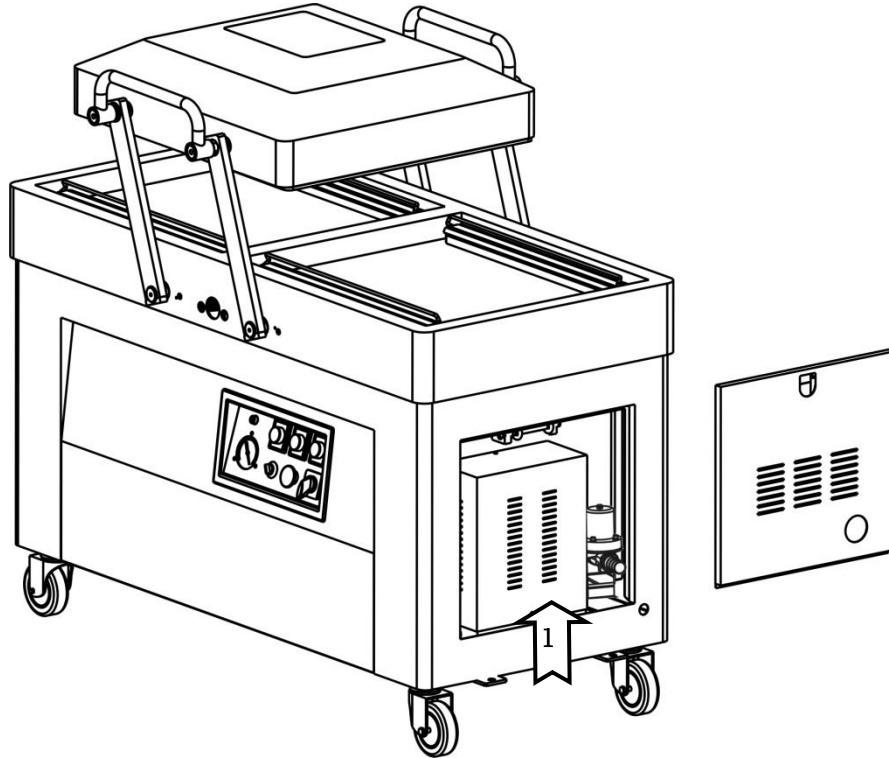


If any question about the gas tank please contact the supplier of the gas tank.

Note: The sealing may complete abnormally if the sealing begins when the vacuum degree is over 0.06MPa because of overfilling.

4.6 Connecting Vacuum System (suitable for external vacuum pump)

If you purchase the machine with built-in vacuum pump, it is unnecessary to follow this step. If you purchase the machine with external vacuum pump, please connect correctly the external vacuum pump.

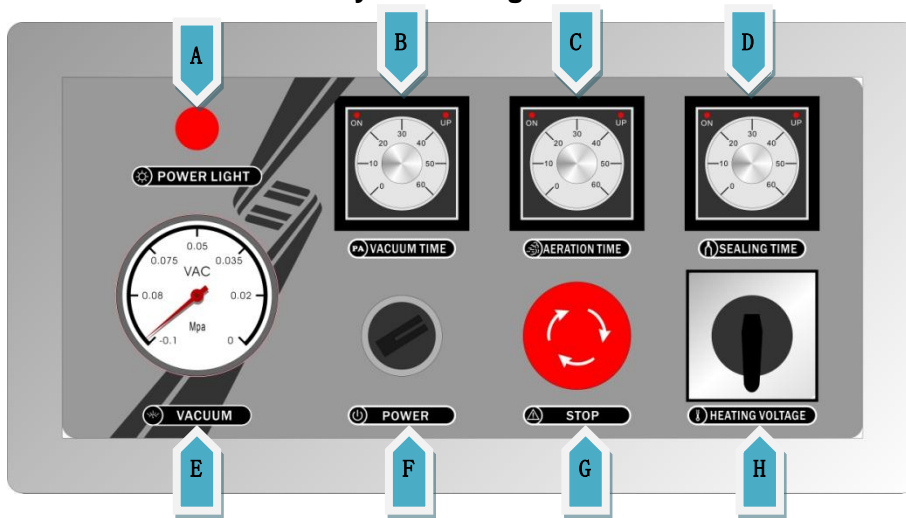


No	Components	Specification
1	External vacuum pump connector	Φ 32mm

5. Start and Commissioning

5.1 Control Panel

- Control Panel for Relay-controlling



Panel of HVC series (without gas-filling function)

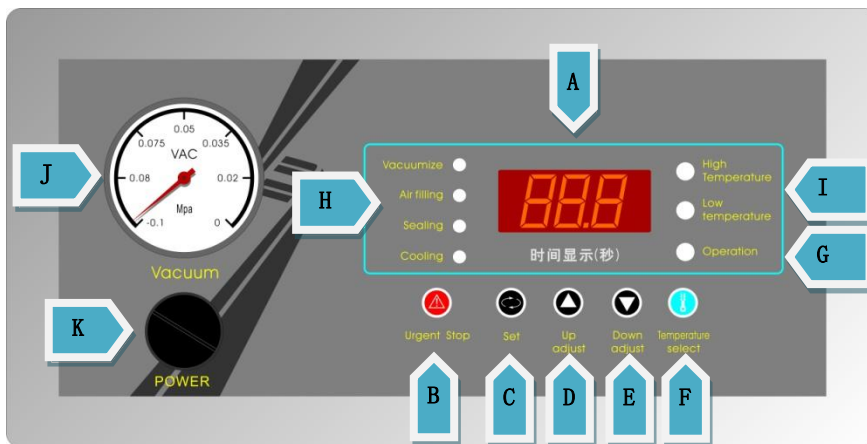
No	Name	Instruction
A	Power indicator	Show the state of power. The indicator will light when the machine get electricity.
B	Vacuum time Relay	Set the vacuummizing time, range from 0 to 60s.
C	Sealing time Relay	Set the sealing time, range from 0 to 6s.
D	Cooling time Relay	Set the cooling time, range from 0 to 6s.
E	Vacuum gauge	Show the vacuum degree of the vacuum chamber.
F	Power switch	Turn on/off the power.
G	Emergent stop switch	For emergent stop, the machine stops when the button is pressed.
H	Heat-sealing voltage Option switch	Option switch for heat-sealing voltage, separately high and low two options.

Panel of HVC series (with gas-filling function)







No	Name	Instruction
A	Power indicator	Show the state of power. The indicator will light when the machine get electricity.
B	Vacuum time Relay	Set the vacuummizing time, range from 0 to 60s.
C	Sealing time Relay	Set the sealing time, range from 0 to 6s.
D	Gas-filling time Relay	Set the gas-filling time, range from 0 to 6s.
E	Vacuum gauge	Show the vacuum degree of the vacuum chamber.
F	Power switch	Turn on/off the power.

G	Emergent stop switch	For emergent stop, the machine stops when the button is pressed.
H	Heat-sealing voltage Option switch	Option switch for heat-sealing voltage, separately high and low two options.

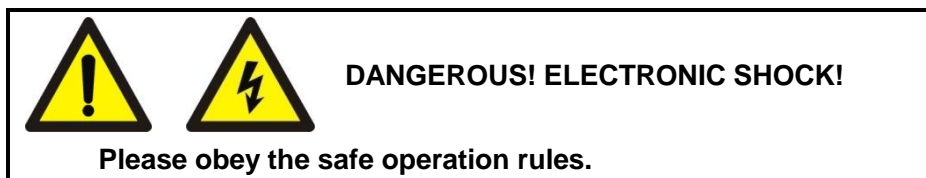
Note: The cooling time relay of HVC series (with gas-filling function) is installed inside the electric box of the machine.



No.	Figure	Name	Remarks
A		Monitor	Shows the state of the functions during the working and the numbers will diminish. Shows numbers of the parameter value of the selected function. Shows “_ _” for standby state. Shows “□ □” when in air-releasing state. Shows “E d” when the program is finished.
B		Emergent Stop	It is used to end the program. The emergent switch can be pressed in any time to stop running. The machine will stop all the working when this button is pressed, Skipping to the deflating function and the vacuum lid will open automatically.
C		Function Select	It is used to choose a function, like vacuumizing, gas-filling, sealing and cooling, or to change the relative parameter. When one function is selected, the indicator on the left side will light.
D		Up adjustment	The parameter of the selected function will increase by one unit every time this button is pressed.
E		Down adjustment	The parameter of the selected function will decrease by one unit every time this button is pressed. Press this button and not loose, the value will decrease by about 5 units.

F		Temperature select	It is used to choose the temperature. The indicator on the right side of the monitor will flicker (high, Intermediate, low) as indication every time the button is pressed. (Note: If these three indicators don't light, the sealing can't be acted.)
G		Working indicator	The indicator lights (red) during the working period.
H		Function indicator	The corresponding indicator will light when one function is executed during the working period. When the Function Select button choose one function, the corresponding indicator will light (red).
I		Temperature indicator	When the sealing function is executed, the corresponding indicator will light (green) during the working period. When Temperature Select button choose one temperature, the corresponding indicator will light (red).
J		Vacuum gauge	Shows the pressure value in the vacuum chamber.
K		Power switch	Turn on/off the power.

5.2 Power on



- Start the machine by turning or pressing the Power Switch.
- After the power is turn on, the indicator of the machine with relay-controlling panel will light, the monitor of the machine with computer panel-controlling shows “_ _”, which indicates the machine is in the standby state and it can be used.

5.3 Check the turning direction of the motor

(For the vacuum pump equipped with three-phase motor)



The incorrect turning direction of the vacuum pump motor will damage the vacuum pump in even a short time. Please make sure the turning direction is correct before startup.

For the machine adopting three phases power, there is a built-in vacuum pump or a power connector for connecting vacuum pump. The vacuum pump may be damaged if the turning direction of the vacuum pump is incorrect. Please make sure the turning direction is in the right way.

- Check the turning direction of the vacuum pump according to the instructive mark.
- Turn on the power and lower the vacuum lid slightly to make the vacuum pump running (Refer to the Start Chapter).
- Observe the fan of the vacuum pump motor if possible and determine the turning direction before the fan stops.
- If it is impossible to observe the turning direction, please listen to the sound of the motor. The vacuum pump running in reverse direction will beep. Look at the vacuum gauge as the vacuum pump in reverse direction can't produce vacuum.

If it is necessary to change the turning direction:

- Exchange any two phases of the three-phases power.

6. Standard Operation and Parameter Setting



TAKE CARE! INJURED!

Please operate according to this manual.
Don't remove the necessary guard cover or housing.



TAKE CARE! UNHEALTHY!

There is resin exist in the exhaust from the vacuum pump. Breathe the gas for long time is unhealthy. The machine should be used in a ventilating room.



TAKE CARE! SCALD!

The heating block can reach to the high temperature of more than 200°C when it is heating. Even after cooling, it is still in a high temperature.

- Don't pack the goods that may be damaged when vacuumizing or after vacuumization with this machine.
- If you have any question about the operation and the function that haven't offered in this manual, please contact the manufacturer or the supplier.
- If the machine is running irregularly or make strange noise, please turn off the power immediately, stop the running and finally cut off the power.
- Once there is any problem, please contact the manufacturer or the supplier.

6.1 Standard Operation Procedure

- Turn on the power switch to startup and the screen shows “_ _”.
- Please employ the compound bag suitable for vacuum packing and the bags should be sterilized before packing foods.
- Put the products in the bags. Choose the proper bags for the products. Don't choose the oversize bags. Ensure a clean environment during the operation. The packing materials and the hands are better to be dry.
- Place the bag in the vacuum chamber or on the base plate (if any). The bag mouth should be placed on the heating block or the silicon strip. If the bag is lower than the heating block or the silicon strip, please insert the base plate (if any) included of the machine, which can make the operation simple and the cycle time short.
- As to the gas-filling system, please cover the bag mouth on the gas-filling connector.

- Several bags can be placed simultaneously on the heating block or the silicon strip as long as the heating block or the strip is longer than the bags. Bags can't be stacked. If the machine has more than one silicon strip, these strips can be used simultaneously.
- Set correct parameter for the vacuum and sealing function. Please refer to Control Panel section.
- Close the vacuum lid and the machine can complete the whole program, including vacuumizing, gas-filling (if any), sealing and cooling. The vacuum lid will open automatically when the last deflating finishes.
- Remove the bags from the machine after the cycle is finished.
- Press Emergent Switch to stop the working if necessary, then the machine will stop running and deflates immediately. The vacuum lid opens automatically.
- Circulate as the above.

Note: The vacuum lid can't be open automatically when there is power cut or other accidents. The machine will execute the deflation function as soon as the electricity is reconnected and the vacuum lid will open automatically.

Note: If the machine stands in high altitude, the atmospheric pressure will decrease and the value in the vacuum pressure gauge will reduce accordingly.

6.2 Program controlling cycle instruction

Controlling cycle of relay-controlling

No.	Process	Remarks
1	Close the vacuum lid	<ul style="list-style-type: none"> ■ The machine starts to work.
2	Vacuumizing	<ul style="list-style-type: none"> ■ The machine begins to vacuumize to extract the air in the vacuum chamber. ■ The "ON" indicator of vacuum time relay lights. ■ The pointer of the vacuum gauge shifts slowly to left side. ■ The "UP" indicator of vacuum time relay lights when the vacuumizing finishes.
3	Gas-filling (if any)	<ul style="list-style-type: none"> ■ The gas-filling begins and fills gases to the bags as soon as the vacuumizing finishes. ■ The "ON" indicator of gas-filling time relay lights. ■ The pointer of the vacuum gauge shifts slowly to left side. ■ The "UP" indicator of gas-filling time relay lights when the gas-filling finishes.
4	Sealing	<ul style="list-style-type: none"> ■ The sealing begins as soon as the vacuumizing and gas-filling finish. ■ The "ON" indicator of sealing time relay lights. ■ The pointer of the vacuum gauge keeps stay. ■ The "UP" indicator of sealing time relay lights when the sealing finishes.

5	Cooling	<ul style="list-style-type: none"> ■ The cooling begins and cool the sealed bags as soon as the sealing is completed. ■ The “ON” indicator of cooling time relay lights. ■ The pointer of the vacuum gauge keeps stay. ■ The “UP” indicator of cooling time relay lights when the cooling finishes.
6	Deflating	<ul style="list-style-type: none"> ■ The deflating begins as soon as the sealing is completed. The air comes into the chamber and the pressure inside the chamber is equal to the outside. The vacuum lid will open automatically. ■ The pointer of the vacuum gauge shifts to right dramatically.
7	Complement	<ul style="list-style-type: none"> ■ The pointer of the vacuum gauge return to the 0 position and the vacuum lid opens automatically. ■ All the indicator of time relays goes out. ■ The products are packed well.


Controlling cycle of computer-control panel

No.	Process	Remarks
1	Close the vacuum lid	<ul style="list-style-type: none"> ■ The machine starts to work. ■ The indicator lights.
2	Vacuumizing	<ul style="list-style-type: none"> ■ The machine begins to vacuumize to extract the air in the vacuum chamber. ■ The indicator in front of Vacuumizing lights. ■ The monitor: the value decrease second by second from the set time (maximum 99s). ■ The pointer of the vacuum gauge shifts slowly to left side.
3	Gas-filling (if any)	<ul style="list-style-type: none"> ■ The gas-filling begins and fills gases to the bags as soon as the vacuumizing finishes. ■ The indicator in front of Gas-filling lights. ■ The monitor: the value decrease by 0.1 second each time from the set time (maximum 9.9s). ■ The pointer of the vacuum gauge shifts slowly to right side.
4	Sealing	<ul style="list-style-type: none"> ■ The sealing begins as soon as the vacuumizing and gas-filling finish. ■ The indicator in front of Sealing lights. ■ The monitor: the value decrease by 0.1 second each time from the set time (maximum 9.9s). ■ The pointer of the vacuum gauge keeps stay.
5	Cooling	<ul style="list-style-type: none"> ■ The cooling begins and cool the sealed bags as soon as the sealing is completed. ■ The indicator in front of Cooling lights. ■ The monitor: the value decrease by 0.1 second each time from the set time (maximum 9.9s). ■ The pointer of the vacuum gauge keeps stay.

6	Deflating	<ul style="list-style-type: none"> ■ The deflating begins as soon as the sealing is completed. The air comes into the chamber and the pressure inside the chamber is equal to the outside. The vacuum lid will open automatically. ■ Monitor: shows “ □ □ ” ■ The pointer of the vacuum gauge shifts to right dramatically.
7	Complement	<ul style="list-style-type: none"> ■ The pointer of the vacuum gauge return to the 0 position and the vacuum lid opens automatically. ■ Monitor: shows “ E d ” , indicating the cycle is completed. ■ The products are packed well.

Note: The pointer of the vacuum gauge may shift slightly when the sealing just begins, which is not the mechanical failure.

6.3 Parameter Setting



TAKE CARE! DAMAGE!

Unreasonable parameter setting may damage the machine or shorten the service time.

- Unreasonable parameter setting may damage the machine or shorten the service time.
- The whole program or the sealing may not be completed correctly because of unreasonable parameter setting
- If you have any question about the operation and the function of the machine, please contact the supplier.

Note: The parameter can be set only when the machine stops running. The machine won't work if you lower the vacuum lid without parameter setting.

Parameter setting of relay-controlling panel

There are three adjustable time relays on the relay panel of HVC series (without gas-filling function), respectively vacuum time, sealing time and cooling time. Rotate the time relay adjusting button to the scale needed.





There are four adjustable time relays on the relay panel of HVC series (with gas-filling function), among which the vacuum time, sealing time and gas-filling time is installed on the control panel and the cooling time relay is in the electronic box inside the machine. Rotate the time relay adjusting button to the scale needed.

Sealing voltage setting

There are two options of sealing voltage, Low (1) and High (2), separately used for the thin or thick vacuum packing material. The machine won't heat if the heat-sealing voltage is in "0" level.

Parameter setting of the program


No.	Figure	Operation	Monitor
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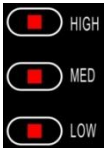
1	Startup	The monitor shows “__” or “E d” after startup.	Shows “__” or “E d”.
2		Choose the function by pressing Function Select button. Press once to choose next function.	
3		When one function is selected, the corresponding indicator lights (red). Four functions is respectively vacuumizing time, gas-filling time, sealing time, and cooling time.	Shows the set value of the selected function.
4		Press once to increase or decrease unit of the selected function time. Press the button and not loose, the value will increase or decrease by 5 units every second.	Shows the set value of the selected function.
5		Press once or several times the function select button until all the indicator light out and the machine will save all the parameters.	Shows “__” or “E d”.

The adjustment range of these functions:

Function	Parameter range	Adjusting range	Unit
Vacuumizing	0~99	1	Second
Gas-filling	0~9.9	0.1	Second
Sealing	0~9.9	0.1	Second
Cooling	0~9.9	0.1	Second

Temperature select settings:

No.	Figure	Operation	Monitor
1	Startup	The monitor shows “__” or “E d” after startup.	Shows “__” or “E d”.
2		Press once the temperature indicator on the right of the monitor will correspondingly light for high, intermediate and low level.	Shows “__” or “E d”.

3		<p>When the Temperature Select button choose one temperature level, the corresponding indicator will light (red). The sealing won't be acted if the three indicator all light out.</p>	Shows “_ _” or “E d”.
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6.4 Optimal parameter

- The vacuumizing time should be determined by the quantity and the size of the materials in the vacuum chamber. Usually the vacuumizing time can be set as 20-40s.
- The sealing function may not be completed if sealing starts when the vacuum level has not down to less than 0.06Mpa.
- Prolong properly the vacuumizing time for special products, such as liquid or the products consisting of much water.
- The gas-filling time (if any) should be set according with the practical condition.
- If the chamber is overfilled, the vacuum lid will open automatically and the program will stop.
- If the sealing starts when the vacuum level reach to 0.06Mpa for overfilled gas, the sealing may not be completed regularly.
- The sealing time can be set between 1-3 seconds.
- If the bag is too thick or too thin, adjust the temperature to high or low level.
- Note: Too long sealing time will shorten the heating block and the silicon's service time as the heating block will heat dramatically.
- The sealing function parameter is essential to the quality of the sealing, the temperature should be adjusted slowly from low to high.
- The cooling time can be set between 1-3 seconds according to the thickness of the bags.

6.5 Packing Liquid Products

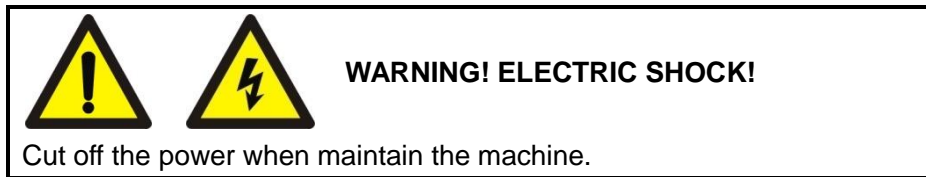
- The machine is suitable to pack liquid products, such as soup and sauce. Lean the machine properly when pack these kinds of products.
- The temperature of the liquid will goes up to the boiling point when in a certain low pressure or high temperature. The liquid product with high temperature will soon goes up to the boiling point and the vacuum degree will be lower.
- It is suggested the liquid products be cooled down before packing to ensure the optimal vacuum degree.
- The following blank shows the boiling point, temperature and pressure of the water.

Vacuum Pressure [MBAR]	1000	800	600	400	200	100	50	20	10	5	2
Boiling Point [°C]	100	94	86	76	60	45	33	18	7	-2	-13

6.6 Optimal packing

- Employ good quality vacuum bag in correct style.
- Leave enough space on the bag mouth, at least 30mm.
- Place the vacuum bag neat on the heating block or the silicon strip.
- If the bags are much lower than the heating block or the silicon strip, please insert proper base plates (if any).

7. Maintenance



The daily maintenance is necessary to prolong the service time, avoid mechanical failure and get the optimal packing effect. If the machine is frequently used (more than 8 hours a day), it is suggested to do professional maintenance every 6 months. If the machine is used for less than 8 hours a day, the maintenance can be acted once every year. (The time can be adjusted as per the environment and the product.)

However, the partial maintenance should be often acted by the user. The following is the general introduction.

- Cut off the power supply before maintenance. Pull the plug from the socket in the wall.
- If the machine runs irregularly or makes strange noise, please cut off the power immediately and contact the manufacturer or the supplier.
- Please clean the vacuum lid with solvent-free detergent. Exam at least once every week the vacuum lid whether it fractures. If there is any breakage, please stop using the machine
- Don't wash the machine by high pressure cleaning, which will damage the electronic device and other spare parts.
- Don't let the water enter to the extracting opening or the exhaust hole of the vacuum pump, or the vacuum pump may be damaged and can't be restored.
- Non-professionals please don't act the major maintenance.
- Move or transport the machine in an upright horizontal state. Leaning the machine may damage the vacuum pump.
- The machine works at most 8 hours in a day. The manufacturer is irresponsible if the user prolongs the working hour of the machine without authorization and damage the machine.
- If the machine is damaged or in problem as the user maintains the machine without the instruction in this manual, the manufacturer is irresponsible for the problems.


7.1 Standard Maintenance Schedule

Cycle	Maintenance
Daily	<ul style="list-style-type: none"> ● Clean the vacuum chamber, vacuum lid and housing with wet cloth and remove the foreign materials attached on the heating block. ● The cleaner should be solvent-free. ● Don't use high pressure cleaner.
Weekly	<ul style="list-style-type: none"> ● Check the oil level and the quality. If there is not enough oil or the oil goes off, please add oil or replace the oil. ● Check whether the heating block is damaged. Please replace the Teflon cloth /the flat heating wire when the sealing go bad or the Teflon cloth/flat heating wire is not attached to the heating block. ● Check the sealing ring of the vacuum chamber. Replace it in time if the rings is damaged or stretched. ● Check whether the vacuum lid cracks. Please stop using the machine of the lid is broken.
Six months	<ul style="list-style-type: none"> ● Check whether the vacuum filter is saturated. If it is, please replace the filter. ● Replace at least once the vacuum pump oil every six months.
Three years	<ul style="list-style-type: none"> ● Replace the transparent lid. ● Replace the sealing airbag or the cylinder.

7.2 Vacuum pump maintenance



- The daily maintenance of the vacuum pump is essential to prolong the service time and ensure correct operation.
- It is suggested to exam all-round the vacuum pump at least once every year if the machine is used frequently. Any question or suggestions please contact the manufacturer or the supplier.

Filling and replacing oil



TAKE CARE! POLLUTION!

Please deal with the waste oil according to the environmental regulations.

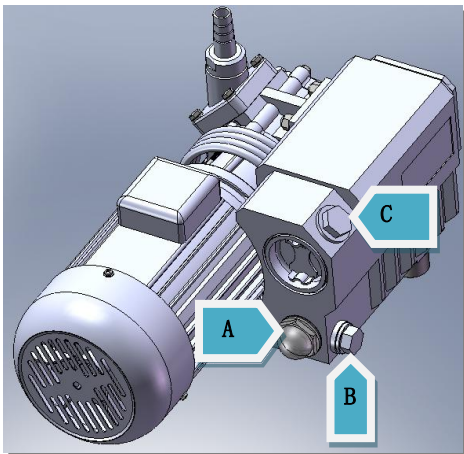
TAKE CARE! SCALD!

The surface temperature of the vacuum pump will rise to more than 70°C when it is running.

Don't touch the vacuum pump during its working. If it is necessary to touch, please stop the running, cool it down or wear thermal protective glove.

- There is no vacuum pump oil of the newly delivered machine. Please fill the oil for its first use.
- **Check the color of the vacuum pump oil.**
The vacuum pump oil is bright and clear without any foam or muddle. If there are white materials after the precipitation, it indicates there are foreign materials in the oil. Please do replace the blackened vacuum pump oil or the oil with foreign materials.
- **The service time of the vacuum pump oil**
The service time of the vacuum pump oil depends on its working environment. To extract clean and dry gas, the vacuum pump oil should be replaced every 500 working hours or every six months.
- **It is suggested to replace the vacuum pump oil mist filter at the same time when replacing vacuum pump oil.**

Keep the pump running for several minutes before replacing to get a proper temperature of the oil and the pump, so that the wet air and the impurities can be better absorbed and filtered. High temperature will volatilize the wet air in the pump so as to reduce the rust.




- A: Oil level indicator
- B: Oil-drain hole
- C: Oil-filling hole

Replacing oil

- Open the back cover.
- Place a basin for oil under the oil-drain hole.
- Unscrew the oil-drain plug with wrench in correct size.
- Drain the oil.
- Put the oil-drain plug back after oil-drain.
- Dispose the waste oil as the environmental protection law regulates.

Note: When you unscrew the oil-drain plug, the oil flow through the oil-drain hole, so there should be a basin for oil. At the end of the oil-drain, please lean the machine slightly so that the residual oil can flow away.

Filling oil:




TAKE CARE! DAMAGE!

Correct oil type and quantity is essential to the vacuum pump. Incorrect vacuum pump oil or overfilled oil will damage the vacuum pump.

- The newly delivered machine should be filled with oil.
- Fill the oil after the oil-drain or when the oil level descends.
- Unscrew the oil-filling plug with wrench in correct size.
- Fill the machine with appropriate special oil for vacuum pump. Please refer to the Special Oil for Vacuum Pump section.
- Make sure the oil level is between 1/2 and 3/4 of the oil level indicator.
- Make sure the sealing ring is installed in the oil filler plug. Replace the ring when needed.
- Screw the oil filler plug.
- Wait for several minutes.
- Check whether the oil level is between 1/2 and 3/4 of the oil level indicator. If it is less than 1/2, please add more.
- If the oil level is between 1/2 and 3/4 of the oil level indicator, fix the back cover.
- Check weekly the oil level. If it is less than 1/2, please add more.

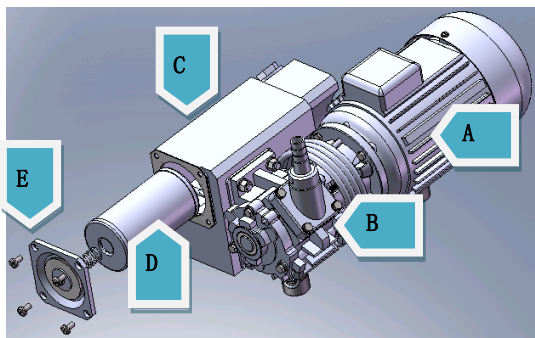
Replacing filter



TAKE CARE! POLLUTION!

The polluted filter should be disposed separately from other wastes according to the regulation.

There are one or several filters in the vacuum pump, which is used to absorb and filter the oil mist. The filter will turn wet (saturated) and need replacement. The machine can't reach to the maximum vacuum level if the filter is saturated.



- A: Three phases motor**
- B: Pump body**
- C: Oil tank**
- D: Oil-mist filter**
- E : Filter cover**

- It is suggested to replace the filter at the same with the vacuum pump oil. The filter locates on the way of the vacuum exhaust pipe.
- The normal maintenance cycle of the oil-mist filter is between 6-12 months.

Replacing the oil-mist filter

- Open the back cover of the machine and find the oil-mist filter.
- Unscrew four bolts on the filter cover and take out the filter cover and the spring.
- Remove the old oil-mist filter and replace a new one.

- Reinstall the spring and the filter cover.
- Install the back cover to the housing.
- Dispose the wasted oil mist filter following the environmental laws.

7.3 Special oil for vacuum pump


The temperature of the working environment is important for the choice of the oil type. The following table lists the relationship among the working temperature, oil quantity and oil type. There are two suggested brand for the oil: Shell Vitrea, Great Wall special oil for vacuum pump.

Vacuum pump oil	VM32	VM68	VM100
Viscosity level ISO-VG	32	68	100
Applicable temperature (°C)	<5	5-20	12-30
Dosage (L)	0.3		

Note:

- If the oil applicable for low temperature is used under high temperature, the abrasion between the vacuum pump blade and the pump body will be aggravated and affect the service time of the vacuum pump.
- If the machine is not used under normal environmental temperature, please contact the manufacturer or the supplier.

7.4 Replacing Teflon cloth and flat heating wire



TAKE CARE! SCALD!

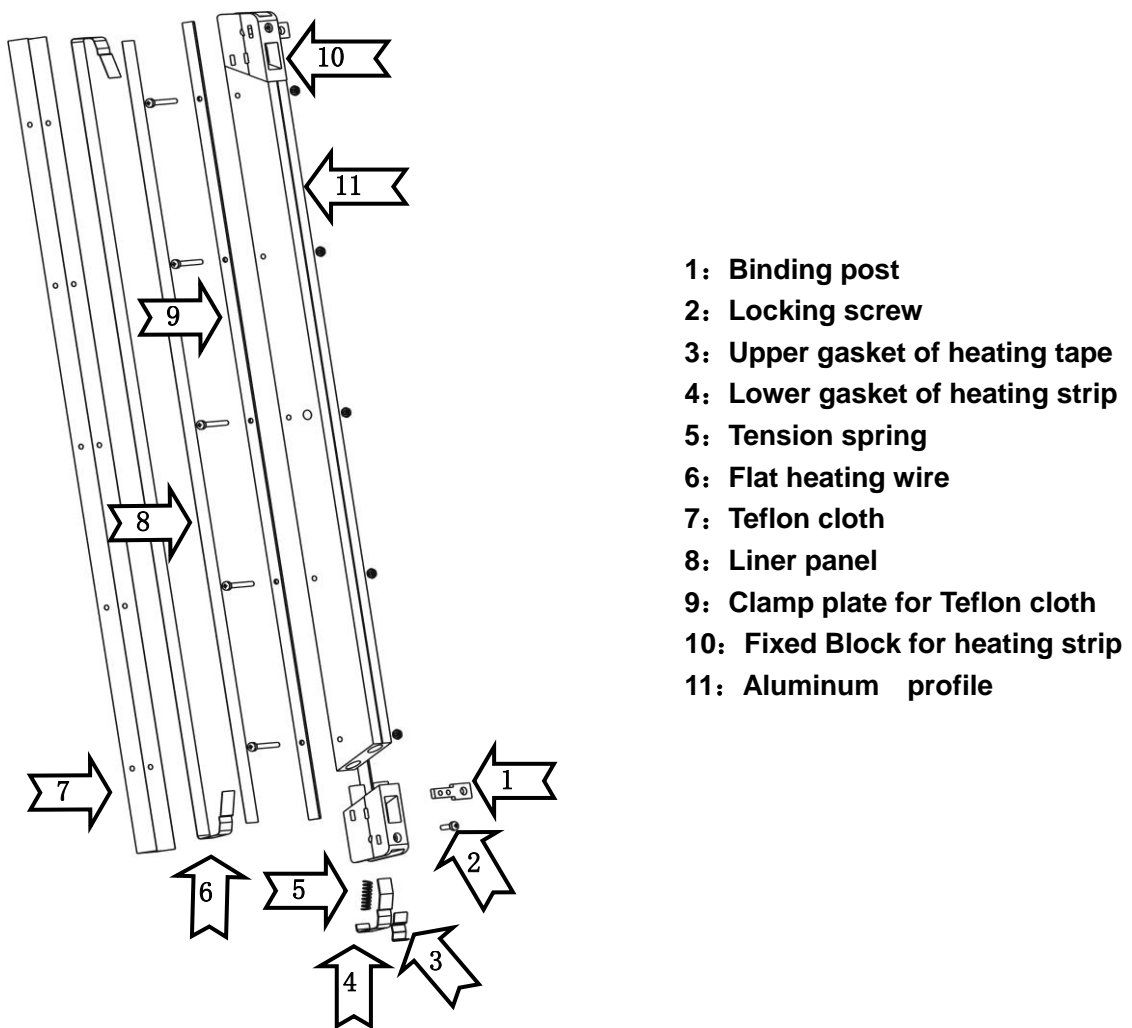
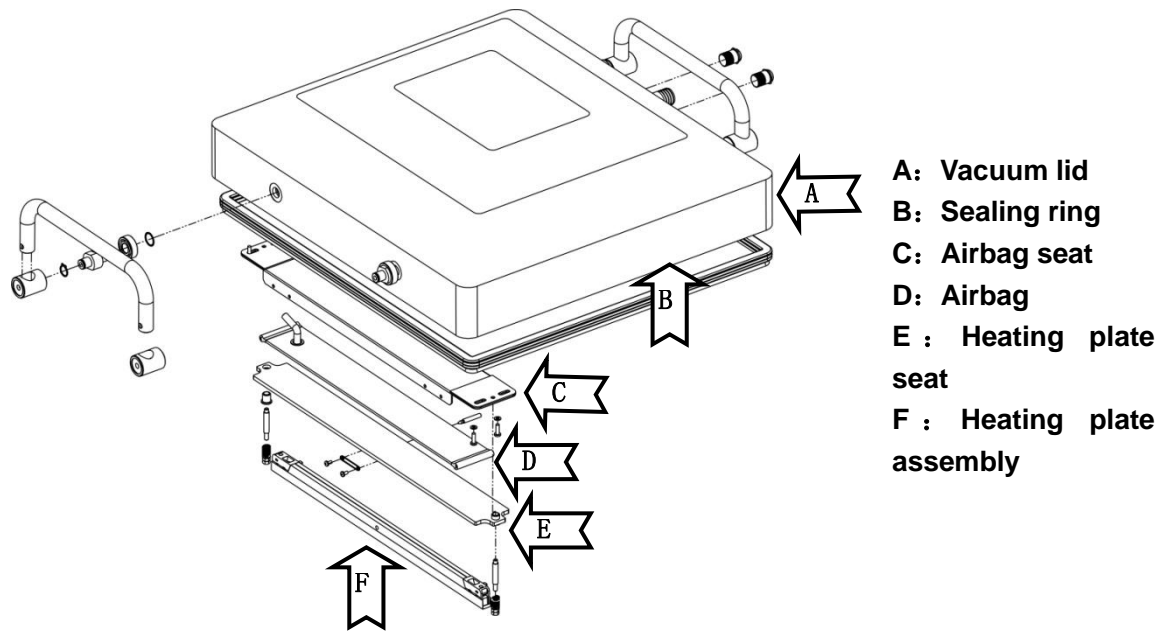
The surface temperature of the heating block will rise to more than 200°C when heated. Even cool it down, there is still high temperature.

The quality of the sealing, in some extent, depends on the maintenance of the heating block and the silicon strip.

Daily maintenance: Clean the heating block and the silicon strip with wet cloth. Exam the heating block and the silicon strip weekly. Replace the flat heating wire, Teflon cloth or the silicon strip if the heating block is not flat or the sealing is not good.

Heating block structure

- The average maintenance cycle of the heating block, Teflon cloth and the flat heating wire is at least once every three months. (The prerequisite is the machine is used for packing standard products with standard vacuum packing material.)

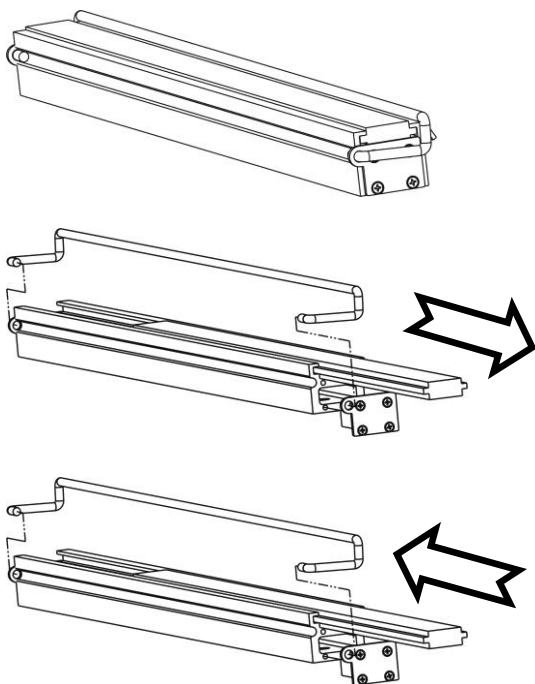


- Remove the heating plate.
- Remove the pressure tape for pressing Teflon cloth.
- Remove the Teflon cloth on the heating plate.
- If it is for replacing only the Teflon cloth, wipe the grease away with a clean cloth, then stick the new Teflon cloth to the heating plate.
- Unscrew the bolt of the fixing block.
- Unscrew the bolt of the fixing block.
- Pull out the copper sheet and the heating wire.
- Remove two sides of the heating plate with the same method.
- Remove the old Liner panel under the heating wire.
- Wipe away the grease on the heating plate with a clean cloth.
- Stick the new Liner panel to the heating plate.
- Cut a new segment of flat heating wire, whose length is 25cm more than the heating plate.
- Insert one side of the flat heating wire through the trough of the heating plate, reinsert the copper sheet and fasten the bolt.
- Pull the other side of the flat heating wire out from the trough on the other side of the heating plate.
- Fasten the flat heating wire with a nipper and simultaneously, insert the copper sheet and screw the bolt. Make sure the flat heating wire is fastened straight before screwing the bolt.
- Cut out the unnecessary flat heating wire of the copper sheet.
- Stick a new segment of Teflon cloth to the new flat heating wire smoothly.
- Put the heating plate back to the machine.

7.5 Replacing silicon strip

Check weekly whether the silicon strip is coarse. Replace the silicon strip once it is not flat.

- **The average maintenance cycle of the silicon is at least once every 6 months.**



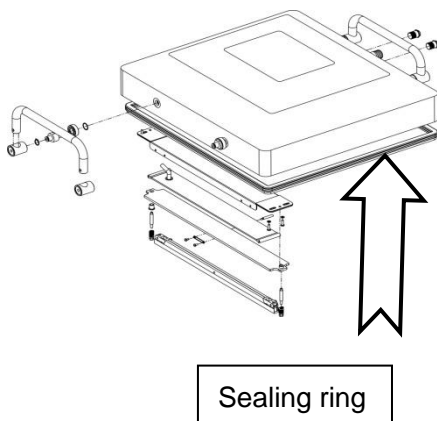
- The silicon strip is blocked in the silicon strip support and it can be removed directly by unscrewing four bolts on the press tape.
- Unscrew the bolts and remove the support plate of the press tape.
- Remove the old silicon strip from the silicon strip support.
- Cut a new silicon strip in the same length with the old one.
- Put the new silicon strip in the silicon strip support and install the support plate of the press tape.
- The silicon strip should be placed smoothly in the silicon strip support. The flat silicon strip is important, which should be with no tension.

Note: One side of the silicon strip is reticulate pattern, and the other is reticulate pattern with fixed holes. It can be installed with character, which is used to print label. Choose the side as your needs.

7.6 Replace Sealing Ring

The sealing ring keeps the vacuum chamber sealed during its working, which is essential to get the needed vacuum level. The sealing ring will wear out for different pressure. Please replace it at regular intervals.

The average maintenance cycle of the silicon strip is at least once every six months.



- The sealing ring is blocked in the vacuum chamber trough and it can be remove directly.
- Please measure the length of the new sealing ring based on the old one. The lid can't be closed or may leak for too short/long ring.
- Put the new sealing ring in the vacuum chamber trough.

The sealing ring should be placed smoothly without any tension.

7.7 List of maintained components

No	Specification
Vacuum pump	XDZ-020
Filter	
Sealing system	Heating wire Teflon cloth
Silicon strip	Material: silicon rubber Specification: various model and length
Sealing ring	Material: silicon rubber Specification: various model and length

8. Trouble shooting

8.1 Trouble shooting of the machine body

Troubles	Reasons	Solutions
The machine doesn't work and the control panel shows nothing.	No connection of the power supply.	Put the power plug to the power socket.
	The fuse of the main circuit burns out.	Replace the fuse (same specification).
	The contact of the power switch looses.	Exam, fasten, repair or replace.
The control panel startup, but the machine doesn't work.	The micro switch of the vacuum lid is in wrong position or damaged	Adjust or replace the micro switch.
	The parameter is being set.	Complete the parameter setting.
	Internal failure of the machine.	Contact the supplier.
The vacuum lid can't open automatically.	The gas spring or the tension spring fails.	Exam, repair or replace.
The best vacuum state can't be achieved. The vacuumizing speed is slow.	Incorrect pump turning direction.	Correct the turning direction.(three phases power)
	Short vacuumizing time.	Prolong the vacuumizing time.
	Insufficient oil or dirty oil	Exam the oil level or replace the oil.(pay attention to the oil type and the volume)
	Pipe leakage.	Replace it.
	Pipe contact looses.	Exam and fasten it.
	The airbag or the cylinder leaks.	Exam and fasten it.
	Air leakage or abrasive sealing ring.	Replace the sealing ring.
	Oil-mist filter is saturated.	Replace the oil-mist filter.
Sealing failure or poor sealing.	The bags are not correctly placed on the heating plates.	Place the bags on the heating plate in order.
	Too long/short sealing time.	Shorten/prolong the sealing time.
	Inappropriate heating temperature.	Choose proper temperature.
	Silicon strip damaged or with impurity.	Clean or replace the silicon rubber.
	Teflon cloth damaged or with impurity.	Clean or replace the Teflon cloth.
	The inner side of the bag mouth is unclean.	Clean the bag mouth.
Gas-filling failure or poor	Too long/short filling time.	Shorten/prolong the filling time.
	The air tank is or nearly empty.	Replace air tank.

gas-filling (if any)	Air tank closed.	Open the valve.
	Incorrect setting of the filling pressure.	Check whether the pressure gauge or the secondary pressure is set as 1 atmospheric pressure (1-ATM). Warning! The compound gas can't be higher than 1-ATM anytime.
Normal vacuum level, but remain residual gas in the bag.	Poor reposition of the heating plate. The distance between the heating plate and the silicon strip is too long/short.	Repair the heating plate and make it good reposition and flexible. Adjust the distance.

8.2 Trouble shooting of the vacuum pump

Troubles	Reasons	Solutions
Starting current or the working is too high.	Overflowing pump oil or incorrect oil type.	Check the oil level and type.
	Excessive viscosity when in low temperature.	Replace the proper pump oil.
	Exhaust filter blockage.	Clean or replace the filter.
The pump overheats during working.	Overflowing/insufficient oil.	Exam and adjust the oil level.
	Poor heat dissipating.	Clean the blade of the radiating pump and the motor to improve the ventilation.
Strange noise during working	Driving components wears out or looses.	Find out the broken parts and repair.
	Incorrect turning direction.	Correct the direction (three phases power)
Vent smoking or exhausting oil drip	Overflowing pump oil	Let the excessive oil out.
	Exhaust filter installed in the inaccurate position or the material breaks.	Reinstall or replace the exhaust filter.
	Exhaust filter blockage.	Clean or replace the filter.

8.3 Trouble shooting of the valve

Troubles	Reasons	Solutions
Poor sealing	Impurity attached to the sealing area	Clear up
	Sealing side damaged	Repair or replace
	Sealing rubber damaged	Replace
Valve can't open and closed.	Control fuse burn out.	Replace
	Poor contact of cord.	Repair

	silicon rectifier diode breakdown	Replace
	Coil burnout	Replace
	The lifting part of the Armature iron has contaminants.	Replace
	Blocked spring caused by rust or breakage	Replace
	Too low voltage	Check the power voltage

8.4 Trouble shooting of the sealing device

Troubles	Reasons	Solutions
Sealing failure	No heating temperature is chosen.	Choose the proper heating temperature.
	Too long/short sealing time	Shorten/prolong the sealing time
	Sealing before the vacuum level is achieved.	Check whether the vacuum is not higher than 0.6Mpa.
	Flat heating wire damage	Replace
	Heating transformer damage	replace
	Sealing contact failure	Repair or replace
	Heat-sealing valve failure	Repair or replace
	Blocked heat-sealing strip	Repair
Poor sealing	Silicon strip damage or foreign matter attached	Clean or replace the silicon rubber
	Teflon cloth damage or	Clean or replace the Teflon cloth
	The inner side of the bag mouth is unclean.	Clean the bag mouth.
	Loose flat heating wire	Fasten
	Short cooling time	Adjust
	Improper temperature	Choose the proper temperature

8.5 Error code

Control system encodes one or more error code, which is used to give instructions and prevent the machine from damages when the machine can't work regularly.

F1 Alarm

Alarm: The monitor shows F1and flickers.

Reason: The current time of the extracting valve is over 15s.

- **The gas spring or the tension spring of the vacuum lid damaged.**

When the gas spring or the tension spring of the vacuum lid is damaged, the vacuum lid can't open and the extracting can't finish automatically.

Solution: Replace or adjust the gas spring. Each time when the extracting is completed, lift slightly the vacuum lid and the machine can continue running.

- **Extracting valve damaged**

When the extracting valve is damaged, the vacuum lid can't extract and the vacuum lid can't open, thus the extracting can't be completed.

Solution: replace or repair the extracting valve.

- **Inaccurate position of proximity switch or damaged**

The extracting can't complete automatically if the proximity switch is in wrong position or damaged.

Solution: replace or adjust proximity switch.

Note: The correct position of the proximity—lower the vacuum lid slightly, the proximity switch will have signal when the distance between the front of the vacuum lid or the vacuum chamber is about 10-20mm and the machine begins running.

If the error code turns up frequently or damages the machine, please contact HUALIAN MACHINERY or the supplier.

9. Technical parameter

9.1 Technical parameter of A series double-room Vacuum packing machine

Model	Size of vacuum chamber	Specification of vacuum pump	Gas-filling	Sealing specification	Specification of Sealing transformer	External dimension	Power
HVC-410S/2A	510×500mm	20m ³ /h	X	410×10mm	500W	1070×720×940	Single phase 220V/50Hz Or Three phases 380V/50Hz
HVC-410S/2A-G	Depth 160mm	X1	√	X2			
HVC-510S/2A	610×550mm	20m ³ /h	X	510×10mm	600W	1270×720×940	
HVC-510S/2A-G	Depth 160mm	X2	√	X2			
HVC-610S/2A	720×550mm	45m ³ /h	X	610×10mm	1000W	1485×720×940	
HVC-610S/2A-G	Depth160mm	X1	√	X2			

9.2 Technical parameter of B series double-room Vacuum packing machine

Model	Size of vacuum chamber	Specification of vacuum pump	Gas-filling	Sealing specification	Specification of Sealing transformer	External dimension	Power
HVC-410S/2B	510×500mm	20m ³ /h	X	410×10mm	500W	1070×720×930	Single phase 220V/50Hz or Three phases 380V/50Hz
HVC-410S/2B-G	Depth 150mm	X1	√	X2			
HVC-510S/2B	610×550mm	20m ³ /h	X	510×10mm	600W	1270×720×930	
HVC-510S/2B-G	Depth 150mm	X2	√	X2			
HVC-610S/2B	720×550mm	45m ³ /h	X	610×10mm	1000W	1485×720×930	
HVC-610S/2B-G	Depth 150mm	X1	√	X2			
HVC-720S/2B	820×550mm	63m ³ /h	X	720×10mm	1500W	1700×830×950	Three phases 380V/50Hz
HVC-720S/2B-G	Depth 180mm	X1	√	X2		1890×1030×1000	
HVC-820S/2B	910×800mm	100m ³ /h	X	820×10mm			
HVC-820S/2B-G	Depth 225mm	X1	√	X2			

9.3 Technical parameter of C series double-room Vacuum packing machine

Model	Size of vacuum chamber	Specification of vacuum pump	Gas-filling	Sealing specification	Specification of Sealing transformer	External dimension	Power
HVC-510S/2C	610×550mm Depth 45mm	20m ³ /h X2	X	510×10mm X2	600W	1270×720×910	Three phases 380V/50Hz
HVC-510S/4C	610×630mm Depth 45mm			510×10mm X4	1500W	1270×805×910	
HVC-610S/2C	720×550mm Depth 45mm	45m ³ /h X1		610×10mm X2	1000W	1485×720×910	
HVC-610S/4C	720×630mm Depth 45mm			610×10mm X4	1500W	1485×805×910	

Note: The parameter may vary from the machine and the configuration of the machine is the right one.

9.4 Technical Parameter in common

Min absolute pressure in the vacuum chamber	1Kpa
Temperature of standard environment	5~30°C
Requirement for power	The max deviation from the required one should be within $\pm 10\%$
Gas-filling connector (if any)	8mm
Gas-tank connector in max pressure	1 standard atmosphere
Specification of Control transformer	100W
Heat-sealing mechanism	Airbag
Heating plate	Aluminum profile (with tension mechanism)
Gas-filling function	Optional

10. Storage

10.1 Storage in short time

- Power off, unplug the power and put the power cord away.
- Close the vacuum lid and fix it with hook.
- Cover the machine with plastic bags in case of dusts if possible.
- Store the machine in a dry, dustless and shockproof room.

10.2 Storage in a long time

The internal of the machine has its anticorrosion treatment before it leave the factory, so there is no need to treat it with preventive oil. You can use the preventive oil if it is stored in bad condition, such as corrosive atmospheric environment, overheat or frequent changes of temperature. If any questions, please consult the manufacturer or the supplier.

- Power off, unplug the power and put the power cord away.
- Close the vacuum lid and fix it with hook.
- Cover the machine with plastic bags in case of dusts if possible.
- Keep the original package if possible.
- Store the machine in a dry, dustless and shockproof room.

10.3 Restart after Storage

Operate according to the statement in the INSTALLATION and START chapter.

11. Diagram

11.1 Diagram of Arch Vacuum Lid (suitable for A, B series)

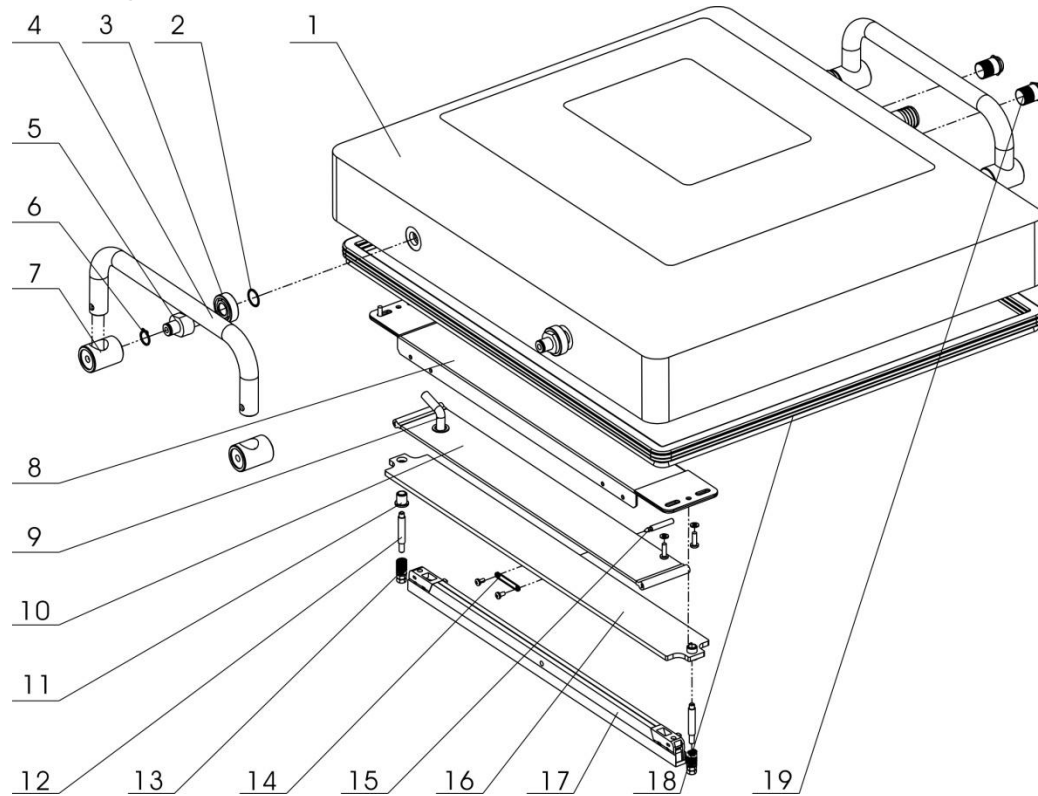


Diagram (1)

No	Name	Qty	Remarks
1-1	Vacuum lid	1	Arch lid
1-2	O type ring	4	
1-3	Bearing	4	
1-4	Handle	2	
1-5	Small axle	4	
1-6	Washers for axle	4	
1-7	Handle holder	4	
1-8	External connector of airbag	2	
1-9	Connector of through-tube	2	
1-10	O type ring	2	
1-11	Airbag assembly	2	
1-12	Heating plate holder	2	
1-13	Pipe	4	
1-14	Guide pole	4	
1-15	Return spring	4	
1-16	Airbag seat assembly	2	
1-17	Heating plate assembly	2	
1-18	Cable spiral terminal	1	
1-19	Airtight ring	2	

11.2 Diagram of Ultra-thin Vacuum Lid (suitable for C series)

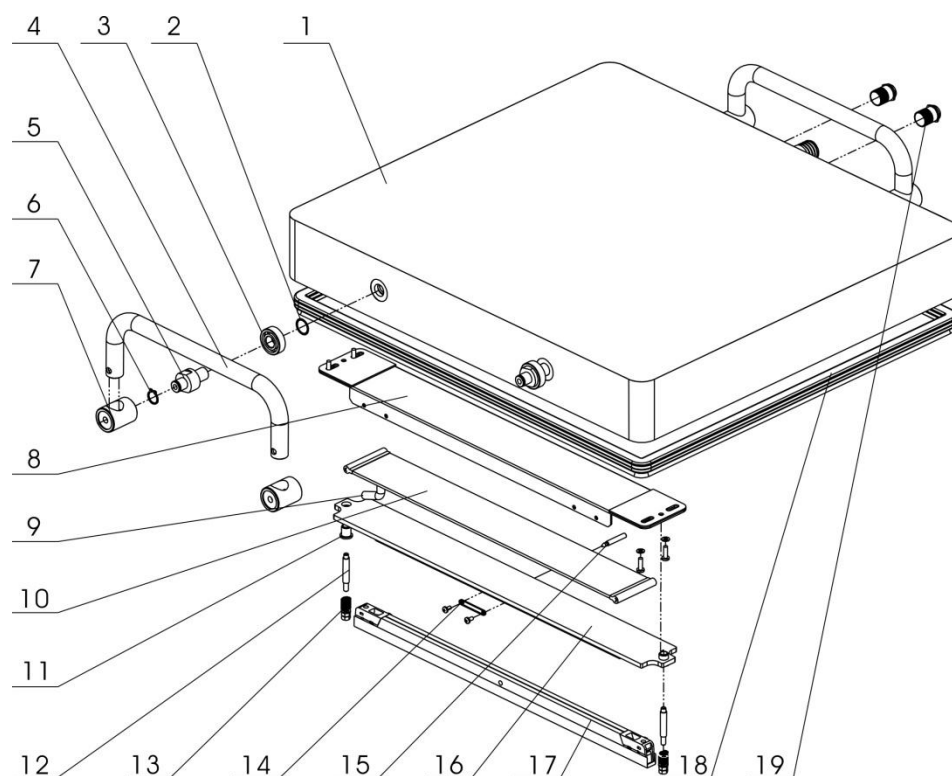


Diagram (2)

No	Name	Qty	Remarks
2-1	Vacuum lid	1	Arch lid
2-2	O type ring	4	
2-3	Bearing	4	
2-4	Handle	2	
2-5	Small axle	4	
2-6	Washers for axle	4	
2-7	Handle holder	4	
2-8	External connector of airbag	2	
2-9	Connector of through-tube	2	
2-10	O type ring	2	
2-11	Airbag assembly	2	
2-12	Heating plate holder	2	
2-13	Pipe	4	
2-14	Guide pole	4	
2-15	Return spring	4	
2-16	Airbag seat assembly	2	
2-17	Heating plate assembly	2	
2-18	Cable spiral terminal	1	
2-19	Airtight ring	2	

11.3 Diagram of Shallow Vacuum Chamber (suitable for A series)

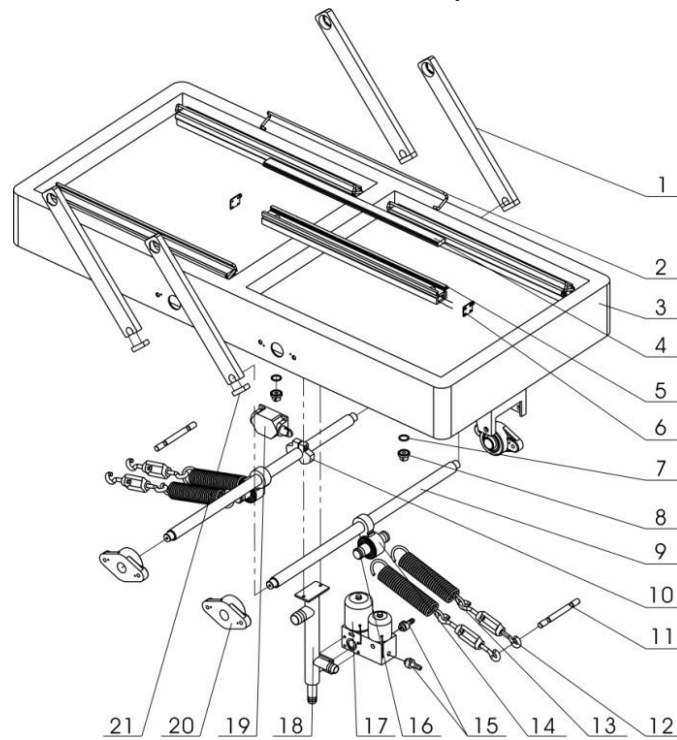


Diagram (3)

No	Name	Qty	Remarks
3-1	connecting rod	4	
3-2	Press tape	4	
3-3	Vacuum chamber	1	deep chamber
3-4	Silicon strip	4	
3-5	Silicon strip seat	4	
3-6	Silicon strip	4	
3-7	Sealing ring	8	
3-8	Stopper plug	8	
4-8	Gas-filling pipe connector (optional)	8	
3-9	Long axle	2	
3-10	Travel switch block	1	
3-11	Tension spring shaft	2	
3-12	Adjusting rod	4	
3-13	Tension spring	4	
3-14	Spring rod	2	
3-15	Solenoid connector	2	
3-16	Rod shaft	2	
3-17	Combined solenoid	1	
3-18	Solenoid seat	1	
3-19	Travel switch	1	
3-20	FL205 bearing seat	4	
3-21	Pressing panel of long shaft	4	

11.4 Diagram of Flat Vacuum Chamber (suitable for B, C series)

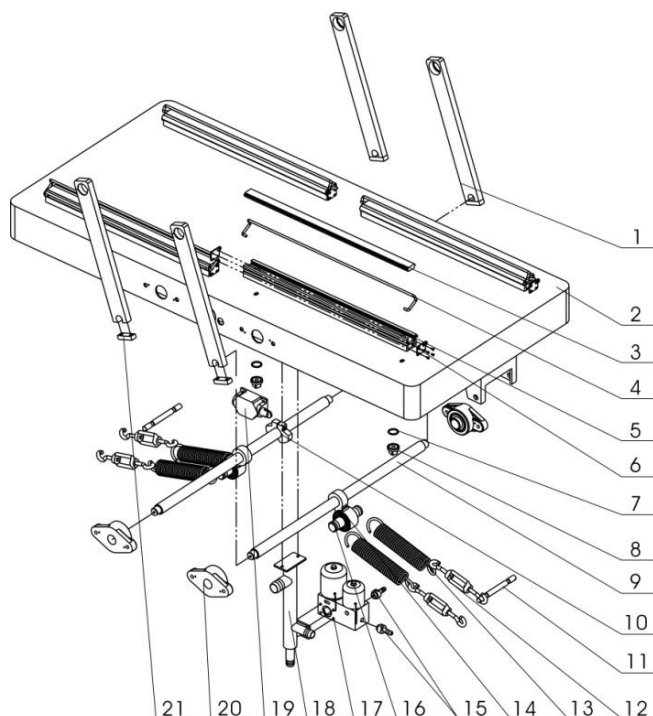


Diagram (4)

No	Name	Qty	Remarks
4-1	connecting rod	4	
4-2	Press tape	4	
4-3	Vacuum chamber	1	Shallow chamber
4-4	Silicon strip	4	
4-5	Silicon strip seat	4	
4-6	Silicon strip	4	
4-7	Sealing ring	8	
4-8	Stopper plug	8	
4-8	Gas-filling pipe connector (optional)	8	
4-9	Long axle	2	
4-10	Travel switch block	1	
4-11	Tension spring shaft	2	
4-12	Adjusting rod	4	
4-13	Tension spring	4	
4-14	Spring rod	2	
4-15	Solenoid connector	2	
4-16	Rod shaft	2	
4-17	Combined solenoid	1	
4-18	Solenoid seat	1	
4-19	ravel switch	1	
4-20	FL205 bearing seat	4	
4-21	Pressing panel of long shaft	4	

11.5 Diagram of Housing (take as HVC-510S/2A with relay-controlling an example)

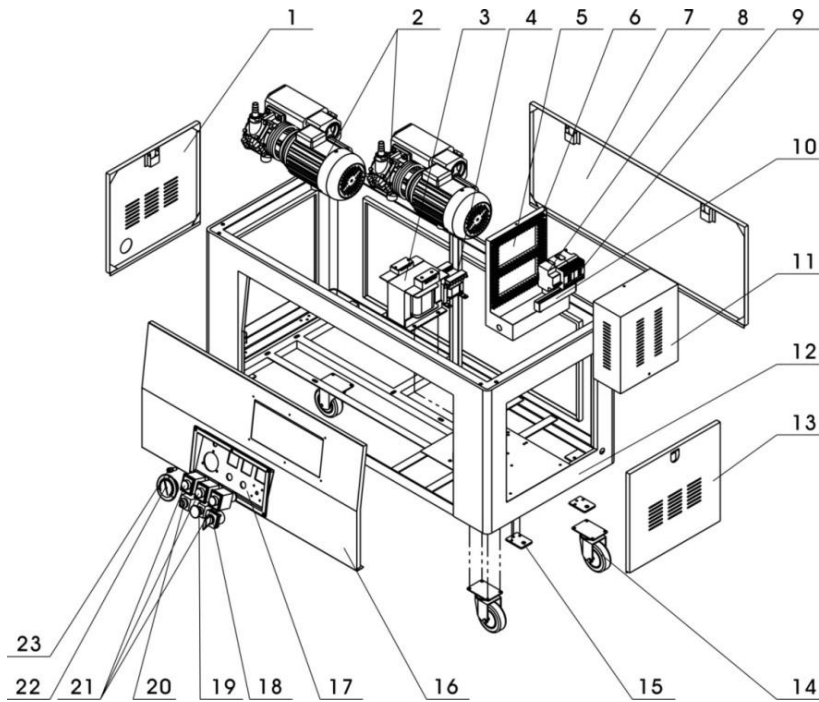


Diagram (5)

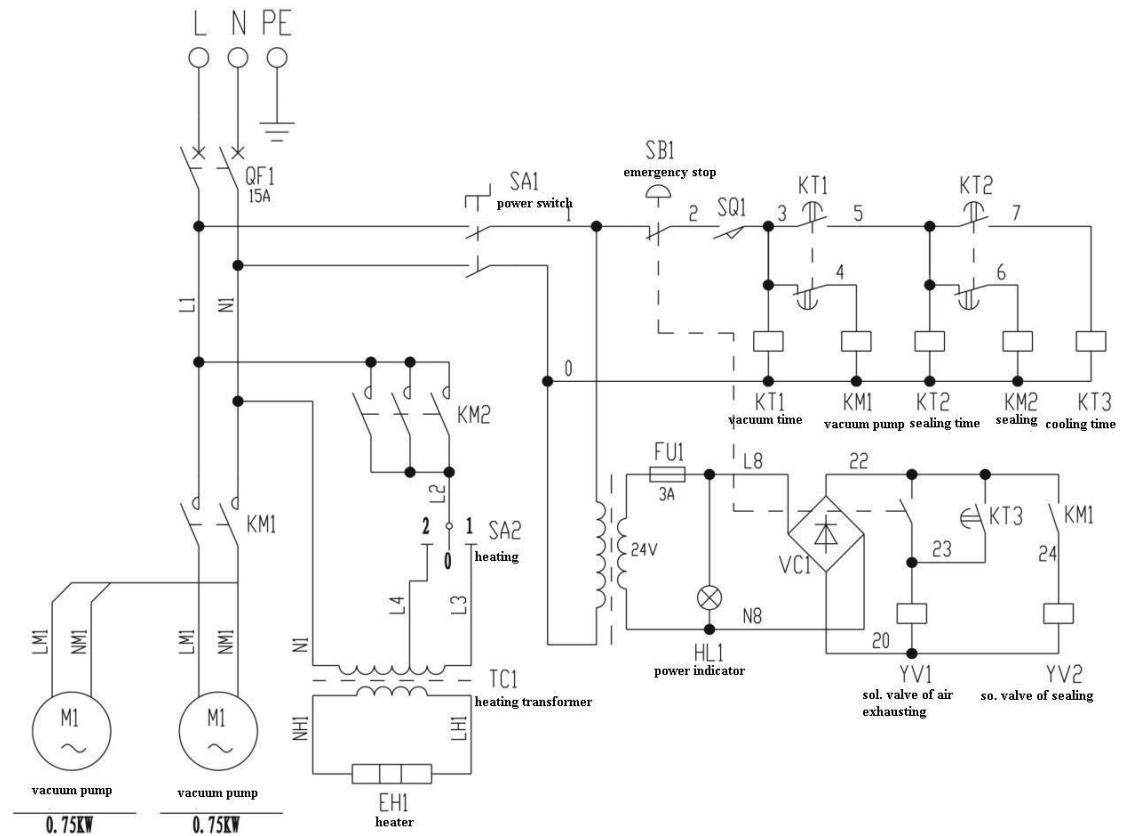
No	Name	Qty	Remarks
5-1	Left door of the housing	1	
5-2	Vacuum pump (XDZ-020 sliding-vane rotary)	2	
5-3	Sealing transformer	1	
5-4	Control transformer	1	
5-5	Electric box	1	
5-6	Trunking	5	
5-7	Rear cover assembly of housing	1	
5-8	AC contactor	2	
5-9	Electrical switch	1	
5-10	Wiring terminal	1	
5-11	Front cover of electric box	1	
5-12	Housing assembly	1	
5-13	Right door of the housing	1	
5-14	Caster	4	
5-15	Installation plate of the housing	4	
5-16	Front cover assembly of the housing	1	
5-17	Relay-controlling panel	1	
5-18	Option switch for sealing voltage	1	
5-19	Emergent stop switch	1	
5-20	Power switch	1	
5-21	Time relay	3	
5-22	Vacuum gauge	1	
5-23	Indicator of the power	1	

Electric Schematic Diagram

11.6 Electric Schematic Diagram of Relay-controlling

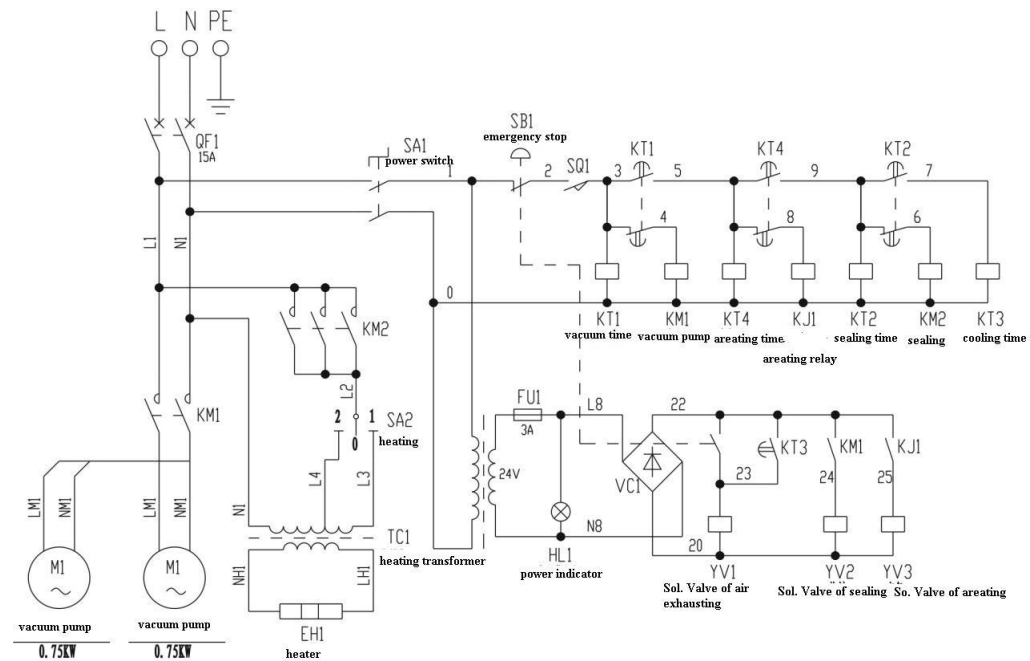
- Single phase without gas-filling function

Single phase AC220/110V 50/60Hz



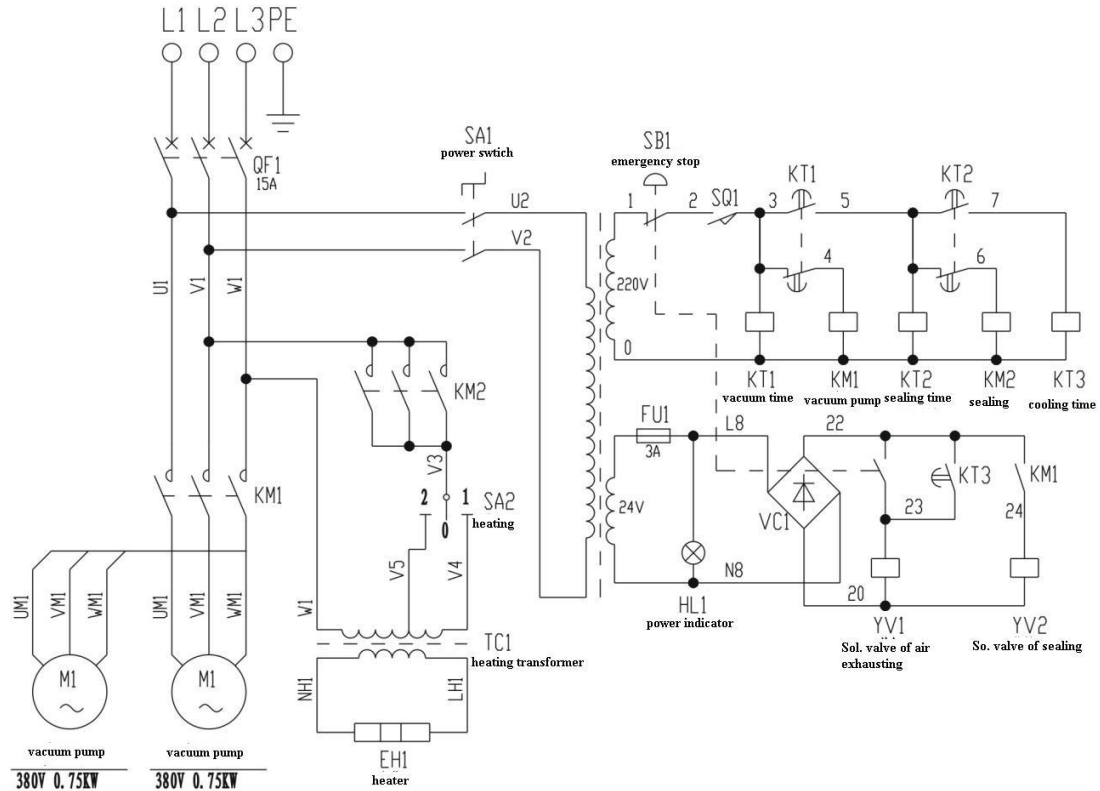
- Single phase with gas-filling function

Single phase AC220/110V 50/60Hz



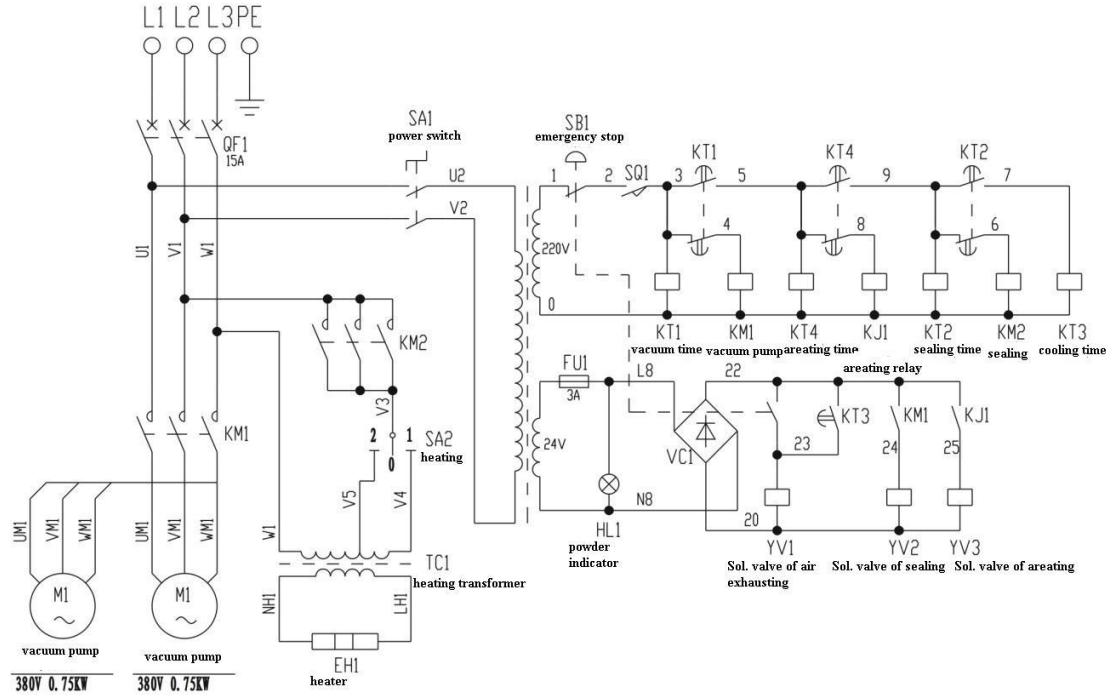
- Three phases without gas-filling function

three phase AC380/220V 50/60Hz

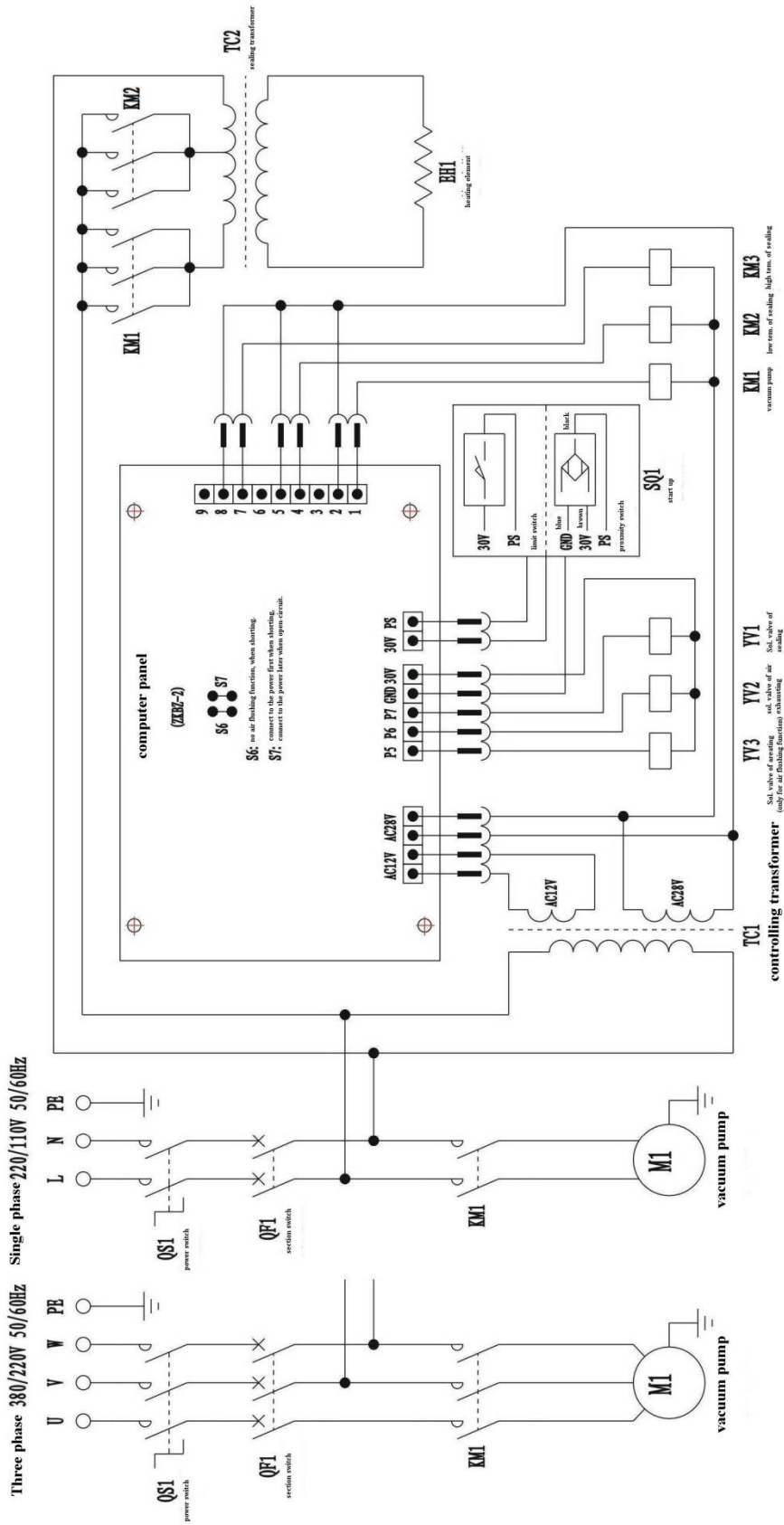


- Three phases with gas-filling function

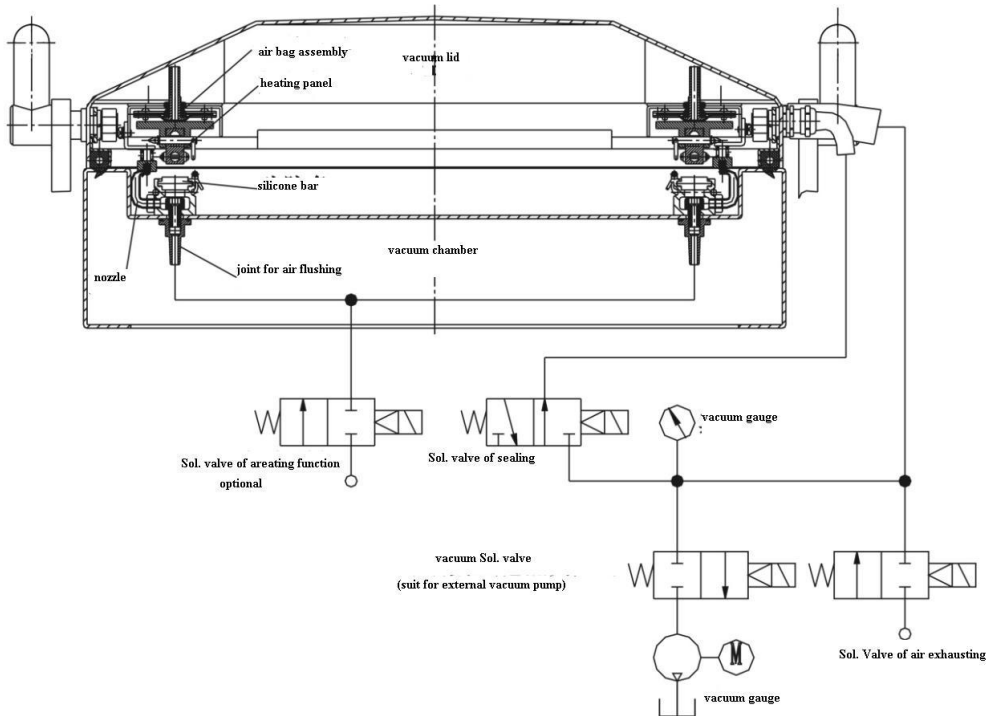
Three phase AC380/220V 50/60Hz



11.7 Electric Schematic Diagram of Computer Panel-controlling



12. Diagram of Gas circuit (take A series as an example)



13. List of spare parts

No	Name	Model	Specification	Qty	Remark
1	Flat Nickel-chromium clip (10X0.13)	HVC-410S/2* series	10x550 (mm)	2	
		HVC-510S/2* series	10x650 (mm)	2	
		HVC-610S/2* series	10x750 (mm)	2	
2	Teflon cloth with gum (B2-0.12)	HVC-410S/2* series	60x410 (mm)	2	
		HVC-510S/2* series	60x510 (mm)	2	
		HVC-610S/2* series	60x610 (mm)	2	
3	Vacuum pump oil	All the types	Single phase VG32 Three phase VG100	1	
4	Silicon character		Chinese	2	
5	Fuse		5A (5X20)	1	
6	Screwdriver		3 inches, slotted/cross	1 for each	
7	Inner hex wrench		M6、M8	1 for each	
8	Wrench		12-14	1	
9	250ml plastic oil tank			1	
10	Operation manual			1	
11	Tension tool for heating element			1	

Note: the spare parts may be different for various configurations of the models.