SystemPAK

USERS MANUAL

DQ330/440VSL Integrated Series

Vacuum Skin Packaging Machine

PREFACE

Sincerely thank you for purchasing DQ330/440VSL integrated series vacuum skin packaging and atmosphere packaging machine. Before starting to operate this equipment, please carefully read this user manual and strictly follow the relevant equipment safety precautions provided in this manual, in order to have a clearer understanding of the characteristics of this equipment. Correct operation can prevent accidental injury to personnel, keep the equipment in optimal condition, and extend its service life.

If you have any questions about the purchased equipment or instructions, you can contact us through the following methods.

Regarding the graphs in this manual

If not used according to regulations, it may cause minor injuries and equipment damage.

If not used according to regulations, it may cause injury or death accidents.

If not used according to regulations, it is basically certain that it will cause injury or death accidents.

Indicates the precautions and restrictions that need to be taken in order to use the machine correctly. To avoid incorrect use, please make sure to read.

When using the machine, it can be more convenient and provide some reference if you know in advance. We suggest that you read in advance.

This manual is applicable to machines with different voltages

Please pay attention to the following for correct use.

The voltage and frequency parameters of the machine are recorded in the parameter table in the product manual.

Before use, be sure to confirm the voltage and frequency of the machine.

1. The power supply voltage of the product is confirmed during ordering.
2. Before installing the product, a suitable power supply and facilities should be configured at the location of use.

Different countries have different voltages and frequencies, please be sure to confirm.

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Name of Main Parts

1. Equipment Functions and Characteristics

1.1 The equipment mainly consists of the main structure, film feeding and rewinding mechanism, upper and lower vacuum chambers and molds, pneumatic execution system, temperature control system, and electrical automatic control system.

1.2 Working process of the equipment: Connect the power supply, install the film, place the tray into the mold (lower vacuum chamber), first press the switch, and press the dual start button with both hands for sake of safety. The mold automatically enters the working position, the air in the packaging box inside the mold extracted, and carry out skin packaging (seal the film with the packaging box) or filled with preservation gas for modified atmosphere packaging and cutting. Then the mold automatically slide out. Therefore a packaging cycle is completed.

1.3 The control system of the device is completed by computer control board and human-machine interface touch screen, with stable performance. The control of related electrical and pneumatic components, as well as the operation programs of the upper and lower chambers, heat sealing, cutting, and heat sealing film feeding and rewinding, are all automatically controlled by the computer control board according to the program.

1.4 This device is widely applicable for the preservation and packaging of fresh meat, seafood, and other foods, with characteristics of preserving food freshness, quality, color, shape, and flavor.

2. Preparation Before Using the Equipment

2.1 When using this equipment, customers need to provide their own working air source with a pressure range of 0.6-0.7Mpa.

2.2 Before using this device, the user must configure a pressure working environment greater than 1.0Mpa, with a normal temperature -20 ℃~+60 ℃, an extreme working pressure less than 1.5Mpa, and a 10mm diameter pressure resistant gas pipe.

2.3 Firstly, confirm whether the installation location of the equipment has sufficient power supply for the equipment, with a maximum current of 20A for single-phase equipment and 10A for three-phase equipment.

2.4 Before using this device, users must configure the gas (bottled) with a purity of 99.9% required for packaging, and equip it with the required pressure reducing valve and pressure gauge. The carbon dioxide cylinder must be equipped with an electric heating pressure reducing valve.

The connection of the external power supply of this device requires professional personnel with electrician qualification to operate!

Equipment damage caused by incorrect power connection is not covered by the warranty.

2.5 Any electrical equipment with damage in electrical components may cause electrical leakage, leading to safety accidents. Therefore, safety facilities must be installed before using the equipment.

Safe handling methods to prevent equipment leakage:

Leakage protection circuit breakers must be installed on the lines that provide power to this equipment.

When users provide power to this device, the grounding terminal must be firmly and reliably grounded. In addition, the grounding terminal of the equipment casing should be connected to a grounding wire with a cross-sectional area of no less than 4mm2, and the grounding wire should be connected to a common grounding pile in the factory building.

WARNING The equipment environment should be well ventilated and free of flammable and explosive materials!

WARNING Anti slip pads must be placed on the ground in front of the equipment!

2.6 Anti slip pads should be placed in front of the operating platform and cleaned regularly, to prevent operators from falling and causing safety accidents due to slippery ground.

MEMO It is recommended to use the equipment at temperature of 10 ℃ to 12 ℃.

3. Equipment Installation

3.1 Acceptance of equipment and accessories

3.1.1 Open the packaging, check if the machine, components, and accompanying accessories are complete, and if the equipment is damaged during transportation. If the machine, components, and accompanying accessories are incomplete or damaged, please immediately negotiate with the transportation department or contact the shipper.

3.1.2 Check the machine and confirm if the received machine matches the requirements and model on the order.

3.2 Circuit access

CAUTION Confirm the correct installation and use of the power supply!

3.2.1 Confirm that the on-site power supply meets the requirements for equipment power and phase, and ensure that temporary power supplies are not used or shared with other equipment to ensure the safety of operators and equipment.

3.2.2 Connect leakage protection and overload protection devices that meet the electrical requirements of the equipment at the power supply access end, and ensure their safety and reliability. When connecting the equipment cable to the power supply, it should be ensured that the contact is good and firm, and electric spark or similar phenomena are strictly prohibited.

WARNING Connect the wires correctly according to the requirements!

3.2.3 When connecting equipment cables to the power supply, do not reverse the phase sequence of the three-phase cables to avoid equipment damage accidents.

CAUTION Install the circuit correctly!

3.2.4 The cable should be equipped with a dedicated truss to fix the cable overhead through wire trays, etc., to avoid faults and accidents caused by immersion in water or friction with the ground.
3.2.5 In the case of connecting to the public grounding terminal, the equipment should be separately equipped with a well connected and reliable grounding terminal, which should be in good contact and fixed with the equipment casing.

WARNING Don't move your device randomly!

3.2.6 When the device needs to be moved, the power and air sources should be disconnected first before moving the device.
3.3 Connection of gas pipeline

CAUTION Correct installation and use of air pipes!

3.3.1 Before connecting the air pipe, it should be strictly flushed to avoid dust and impurities in the air pipe that may affect the performance of the equipment.
3.3.2 Both ends of the pipeline should have eye-catching gas type identification and ensure that the gas identification is firmly pasted, and the identification should not be blurred due to moisture, wear, and other reasons. In case of blurred identification or similar situations, a new identification should be immediately replaced.
3.3.3 When intercepting the pipe, special tools should be used. Ensure that the cut section of the pipe is smooth and no burrs or notches.
3.3.4 Ensure that the overall quality of the gas pipe is good, without any creases or leaks, and ensure that the gas pipe equipped has the required pressure resistance performance of the equipment.
3.3.5 After the gas pipe is connected to the gas cylinder and equipment as required, the connection of each interface should be carefully checked to ensure good connection.

MEMO Set the gas pressure correctly!

3.3.6 After connecting the air source, it is necessary to carefully set and check the pressure of various gases to ensure that the air pressure is within the allowable range of the equipment. (The working gas source pressure range is 0.6~0.7Mpa, and the fresh-keeping gas pressure are also

0.6~0.7Mpa)

3.3.7 If gas leakage is found, the cylinder valve should be closed first. After confirming that all cylinder valves are closed, the gas pipe and other fittings should be reconnected or replaced.

4. Preparation Before Startup

4.1 Confirm that the power supply, compressed air source, and grounding terminal are well connected, and that the equipment is within the specified voltage and pressure range 0.6MPa~0.7 MPa. Confirm that the equipment is in a normal working state and that there are no packaging material or other items in the vacuum chamber of the equipment.

4.2 Check whether the connecting pipes of the oxygen, nitrogen, and carbon dioxide gas sources are correctly connected and whether the pressure setting is correct. The set value range of the pressure reducing valve pressure gauge on the high-pressure gas cylinder with three types of gas sources is 0.6~0.7Mpa.

5. Installation and Unloading of Sealing Film

5.1 Place the packaging film on the film release handle and rotate the nut counterclockwise to tension the film roll.

5.2 After the installation of the film roll, it should be ensured that the film is in a flat state on the film receiving shaft, and there should be no overlap or deviation to one side.

5.3 The schematic diagram of film installation is shown in Figure 1.

5.4 In MAP mode, the film collecting shaft should be rotated a few revolutions after each startup to recover the film that has been deformed due to the residual heat radiation of the previous heating system.

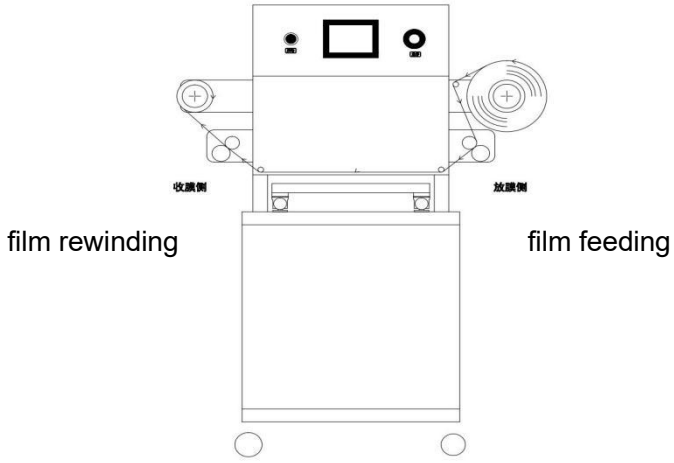


Figure 1 schematic diagram of film installation

6. Startup, Equipment Debugging

DANGER

During the operation, a great deal of pressure will be generated in the upper and lower vacuum chambers of the equipment. It is strictly prohibited to put hands into the upper and lower vacuum chambers when the equipment is switched on, to avoid any personal injury!

6.1 Connect the power supply and turn on the main power switch of this device - Rotate the switch from OFF to ON (see Figure 2), the human-machine interface touch screen on the front control panel of the device will light up (see Figure 3), and the human-machine interface will display the operation screen.

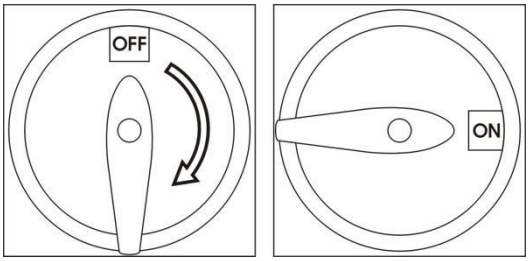


Figure 2 Power Switch

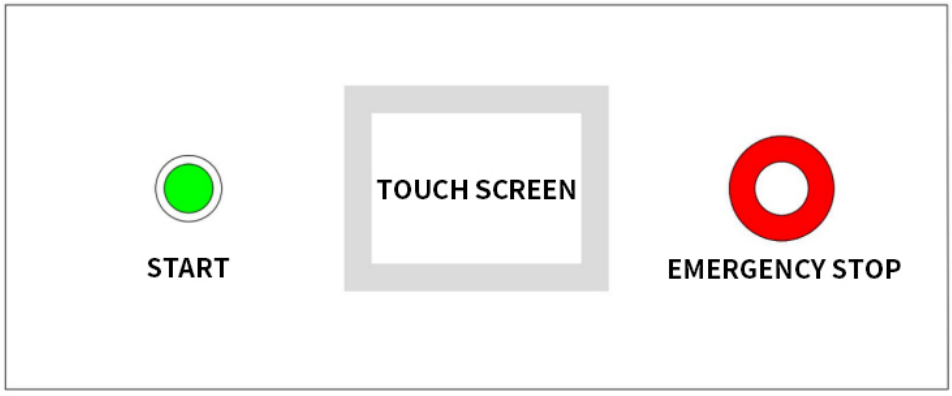


Figure 3 Control Panel

Control panel components name:

① Start switch with indicator light ② Touch screen ③ Emergency stop switch

6.2 Connect the working air source pipe. The air source connections of the equipment are located at the rear side of the equipment (see Figure 4).

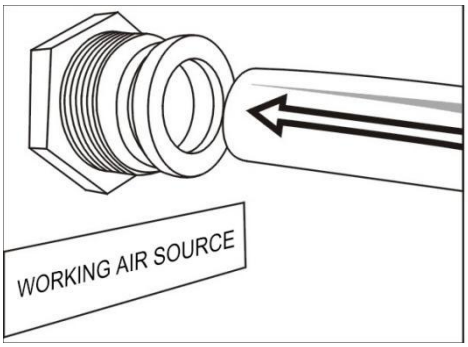


Figure 4 Pipeline Connection

6.3 After connecting the air pipe, turn on the external air source switch and confirm the air source pressure:
Working air source: 0.6-0.7Mpa

6.4 Equipment Operation Control Panel Description (Figure 3)
6.4.1 The green button is a start button used to start the device into working mode. When the device is powered on, pressing this button will start the device and the button indicator will also light up. When the various mechanisms of the device are not in their initial positions, the function of this button has a reset function.
6.4.2 The human-machine interface touch control screen automatically and accurately controls the entire packaging process.
6.4.3 The red button is an emergency stop button used to stop the equipment. Regardless of whether the equipment is in any working state, pressing the emergency stop button will stop the equipment in its current state. After stopping, the device does not store the current state data. When restarting the device, the red emergency stop button needs to be rotated clockwise to pop up.
6.4.4 The green indicator light indicates the status of the device, and the light on indicates that the device has entered normal working mode.
6.4.5 The two green buttons on both sides of the mold are single cycle start buttons. When the equipment start indicator light is on, pressing both buttons simultaneously will initiate one packaging process for the equipment.

6.5 Device operation touch screen control interface

6.5.1 After powering on the device and completing the self check, the screen shows:

The middle part of the screen displays distributor or manufacturer of the device and contact information.

6.5.2 Press to enter the screen shown in Figure 6.

6.6 Main operation screen (Figure 6)

6.6.1 The temperature of upper mould shows here, and below counting of the packaging quantity. The pack aging count is displayed as a maximum of 8 decimal digits. Click on the device pattern on the screen to jump to setting screen, click on the temperature area to jump to the temperature setting screen, and click on the mold position to jump to the manual operation screen.

Figure 6

6.6.2 Click the menu button below to pop up a quick selection menu, where you can quickly reach the desired operation screen for operator

6.7 Parameter Setting Diagram (Figure 7)

6.7.1 Press the Manual key to enter the screen shown in Figure 7.

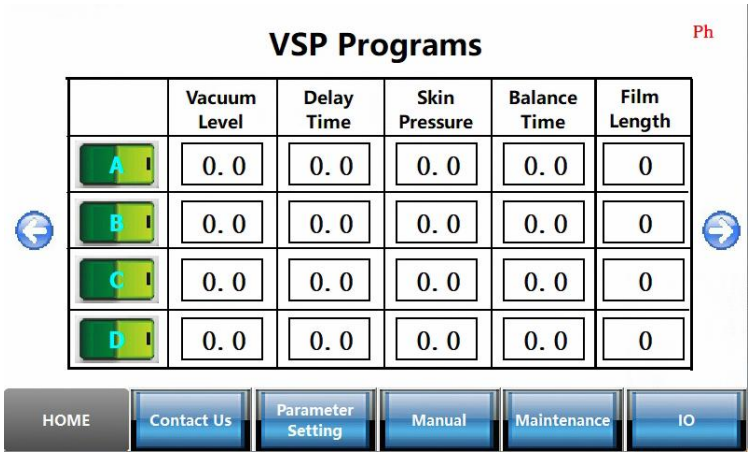
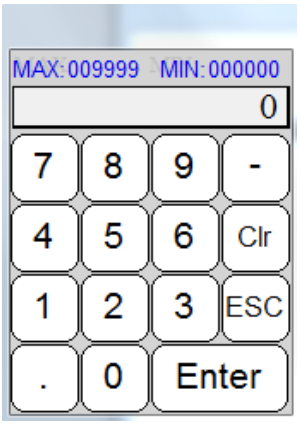


Figure 7

6.7.2 Clicking on the numerical screen will automatically pop up the keypad. After entering the numerical value, press “ENTER” to confirm, and the value will be stored in the microcomputer.



6.7.3 Each mode has four sets of values that can be adjusted, which are already set when the equipment leaves the factory and the parameters play an important role in packaging quality. Therefore, in general, do not make adjustments on your own.

CAUTION

All parameters must be adjusted by the technical personnel of the equipment manufacturer!

6.7.4 The length of the film rolled is the length of the waste film that is pulled to the waste film cylinder after each packaging is completed, and this length is measured in millimeters. Please set it according to the actual length during operation.

6.8 Temperature Setting (Figure 8)

6.8.1 Press the MENU key to select "Mold Temperature" to enter this screen.

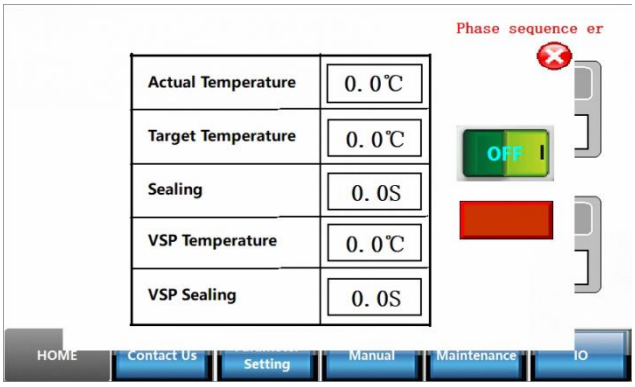


Figure 8

6.8.2 Touch the numerical keys to set the temperature.

The maximum limit of 220 degrees Celsius has been set.

6.8.2 The sealing time can be set here.

⚠ CAUTION

Excessive temperature can damage the heating system of the equipment.

MEMO

The sealing temperature of ordinary tray sealing is generally between 140 ℃ and 160 ℃ (it is recommended to adjust from low to high by 5 ℃ each time),

Please determine the specific time for heat sealing based on the actual situation of the sealing film!

6.9 Manual operation (Figure 9)

6.9.1 Press the MENU key to enter this screen.

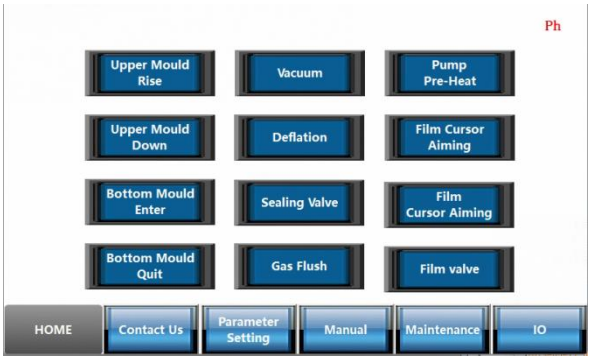


Figure 9

6.9.2 The buttons for manual operation are all single action buttons, pressing to act and releasing to stop, and only one button is operated at a time. Pressing any key will cause the device to perform a corresponding action while the device is stopped.

Do not operate any buttons on the manual interface while the device is running!

7. Workflow

7.1 After the device is powered on, start to standby. The operator inputs the required functions and parameters on the touch screen according to the packaging requirements, and then puts the tray to be packaged into the tray mold (lower vacuum chamber). Press the two green start buttons simultaneously to start the equipment, and the lower vacuum chamber will automatically enter.

7.2 The heat sealing mold (upper vacuum chamber) begins to descend and close up with the lower vacuum chamber, forming a sealed vacuum chamber.

7.3 The vacuum pump starts and extract air from the vacuum chamber. When the preset vacuum value is reached, the inflation solenoid valve opens.

7.4 After inflation is completed, the equipment enters the sealing procedure.

7.5 After the sealing is completed, the lower vacuum chamber will automatically return to complete the packaging process.

When pressing the start switch, be sure to place a tray in the lower mold to prevent the film and silica gel strip from melting during equipment test.

8. Replacement of Vulnerable Parts

Before replacing vulnerable parts, it is necessary to turn off the power and gas sources and exhaust the residual gas, waiting for the equipment to cool down!

The vulnerable parts need to be replaced in the equipment, mostly are the heating elements of the heating part. When it is found during the packaging operation that a tray cannot be sealed and the temperature does not rise to the preset value, it can be determined that the heating element is damaged.

8.1 Remove the protective plate from the front of the device.

8.2 Unloading the upper vacuum chamber

8.2.1 Remove the power quick plug fixed on the upper right side of the device.

8.2.2 Release the fixing device connected to both sides of the left vacuum air pipe and unplug the vacuum air pipe.

8.2.3 Remove the upper air pipe of the middle cylinder.

8.2.4 Turn on the device power switch, the human-machine interface touch screen starts working, enter the main operation interface, and press the MENU button to enter the manual operation interface.

8.2.5 Press the mold button to move in the lower vacuum chamber; Click the touch screen upper mold down button to descend the upper vacuum chamber. At this point, the upper and lower vacuum chambers meet together.

8.2.6 Loosen the two black "upper vacuum chamber" quick unloading devices on both sides of the

upper end of the upper vacuum chamber to disconnect it from the driving cylinder.

8.2.7 Turn off the manual air valve below the air pipe of the cylinder, press the sealing valve key to exhaust the high-pressure gas in the cylinder, press the locking ring of the pipe, and gently pull out the air pipe on the cylinder,

8.2.8 Click the upper mold RISE button to lift the cylinders on both sides out of the vacuum chamber.

8.2.9 Click the mold LEAVE button, and the molds will both exit and molds disassembled. The installation of the molds follows the opposite steps.

⚠ CAUTION The position of the interface of the upper and lower air pipes should be marked for correct installation while recovery

8.3 Replacing the electric heating element

8.3.1 Gently turn over the the upper vacuum chamber, and the heating system is shown.

8.3.2 Two hexagonal screws visible at both ends of the hot plate. Loosen the screw, and the heating system will pop out slowly while unscrewing.

8.3.3 Gently remove the heating system. There are two terminals on the back of the heating system that fix the heating element. Remove the wires of the heating element to extract the damaged heating element from the heating plate. (Figure 10)

8.3.4 After replacing the heating element with a new one, the installation should be carried out step by step from the back to the front according to the above steps.

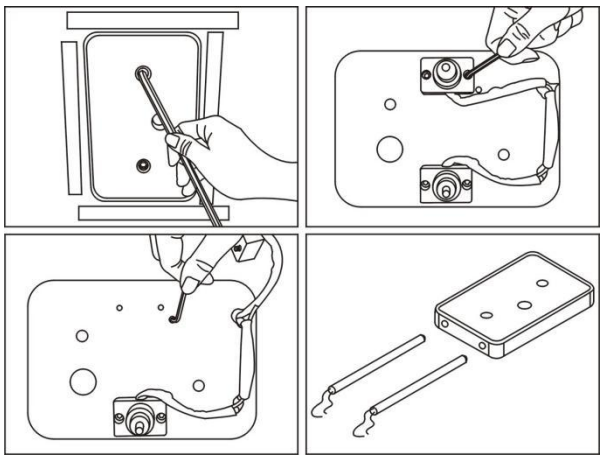


Figure 10 Disassembly of heating plate

⚠ WARNING The heating system should be placed in safe, and it is strictly prohibited to fall down or damage by knocking with iron tools!

9. Daily Maintenance of Equipment

Daily inspection and maintenance are an important routines of ensuring the normal operation of equipment and ensuring personnel safety!

9.1 Daily check

9.1.1 Observe whether the equipment is operating correctly and whether there are any abnormal sounds during operation. Once any abnormal situations are found, immediately stop the machine for inspection or consult the equipment supplier.

9.1.2 Check if there is any leakage at the air pipe joints such as solenoid valves and filter pressure-reducing valves. If there is any leakage, it should be replaced immediately.

9.1.3 Check the gas flow, regularly clean the filter pressure-reducing valve and gas water separator.

9.1.4 Regularly inspect mechanical fasteners, including the bolts of the vacuum sealing system, for looseness.

9.1.5 Regularly clean the dust on the electrical circuit board and motor to prevent it from affecting equipment heat dissipation.

9.1.6 Regularly check the surface of wires for damage, whether the grounding wire is in good contact, and whether the grounding wire can effectively protect the safety of operators in the event of electricity leakage accidents.

9.2 Equipment maintenance

9.2.1 Keep the touch screen interface clean, and oil stains can cause significant damage to the touch screen. When cleaning the surface, shut down the machine and cut off the power. Gently wipe the touch screen surface with a dry cloth. During normal operations, attention should be paid to moisture, dirt, and puncture prevention.

9.2.2 The upper mold device used for heating and sealing may have dirt sticking to it during long-term operation, which can affect the sealing quality. Attention need be paid to regular cleaning.

9.2.3 To avoid water ingress into the electrical system of the equipment, which may lead to unpredictable consequences, it is prohibited to directly flush the equipment with water. The correct method is to gently wipe the dirt with a cloth and a small amount of cleaning agent.

9.2.4 Vacuum pump maintenance, please refer to the accompanying vacuum pump operation and maintenance instructions.

9.3 Environmental cleaning

9.3.1 Clean up oil, water, dust, etc. in the environment.

9.3.2 There should be no unrelated items around the equipment, except for necessary operating

platforms, turnover boxes (vehicles), etc.

The anti-slip pads under the operator's feet should be cleaned regularly to prevent accidents caused by the operator slipping!

9.3.3 It is necessary to maintain the ventilation status on site and promptly repair or replace the ventilation equipment if it is found faulty.

9.3.4 Gas cylinders should be placed in dedicated frame(vehicles) with supporting to prevent them from tipping and causing accidents during use.

9.3.5 During holidays, the equipment should be maintained and cleaned. When it is completely dry, cover the equipment with a cover to prevent dust and other debris.

9.3.6 Carry out on-site rodent prevention and regularly inspect the equipment for damage to electrical circuits caused by rodent infestation. Once discovered, it should be repaired immediately.

10. Troubleshooting

Serial No.	Common faults	Fault cause	Resolution
1	Incorrect alignment between film pattern and tray	Damaged sensor	Replace the sensor
		Insufficient sensitivity of sensor	Adjust sensor to detect cursor points on the film
		film issues	Replace the film
2	Incomplete or failure of sealing	Oil stains or wrinkles on the surface of packaging material	Clean oil stains and deal with wrinkles
		silicone strip damaged	Replace the silicone strip
		Insufficient working air source pressure	Adjust air pressure to 0.6-0.7Mpa
		Wrong heat sealing temperature	Adjust and test according to the packaging materials
		Heating switch not turned on	Turn on the heating switch
		Heat sealing contact surface does not match	Check and match the packaging materials
3	Sticking packing material on the mould	Dirt on the heating mold	After mold cool down, clean and scrape off surface dirt with a cloth dipped in alcohol
		Junks on the surface of the sealing film	Cleaning the junks from the film
		Sealing temperature too high	Adjusting sealing temperature

11. Technical Parameters

Model	DQ330VSL	DQ440VSL
Maximum tray size	（380mm×260mm×40mm）×1 （260mm×175mm×40mm）×2	（380mm×260mm×40mm）×2 （260mm×175mm×40mm）×4
Maximum film width	320mm	440mm
Maximum film diameter	220mm	220mm
Packaging speed	180～300 boxes/h	300～500 boxes/h
working voltage	380-415V/50Hz	380-415V/50Hz
Working air pressure	0.6～0.8Mpa	0.6～0.8Mpa
Total power	4kw	6.5kw
Vacuum pump displacement	63m^3/h	100m^3/h
Machine weight	200kg	370kg
Machine dimensions	1020mm×920mm×1400mm	1170mm×1130mm×1480mm

12. Packing Check List

Serial No.	Name	Quantity	Remark
1	Integrated Packing Machine	1	set
2	Screw driver	2	pc
3	Inner hexagon spanner	1	set
4	Silica gel strip	2	meter
5	Users manual	1	English
6	Vacuum pump manual	1	English
7	Pipe to air compressor	5	meter
8	Quality certificate	1	