

MEFE
MITCHELL ENGINEERING
FOOD EQUIPMENT PTY LTD

Operation Manual



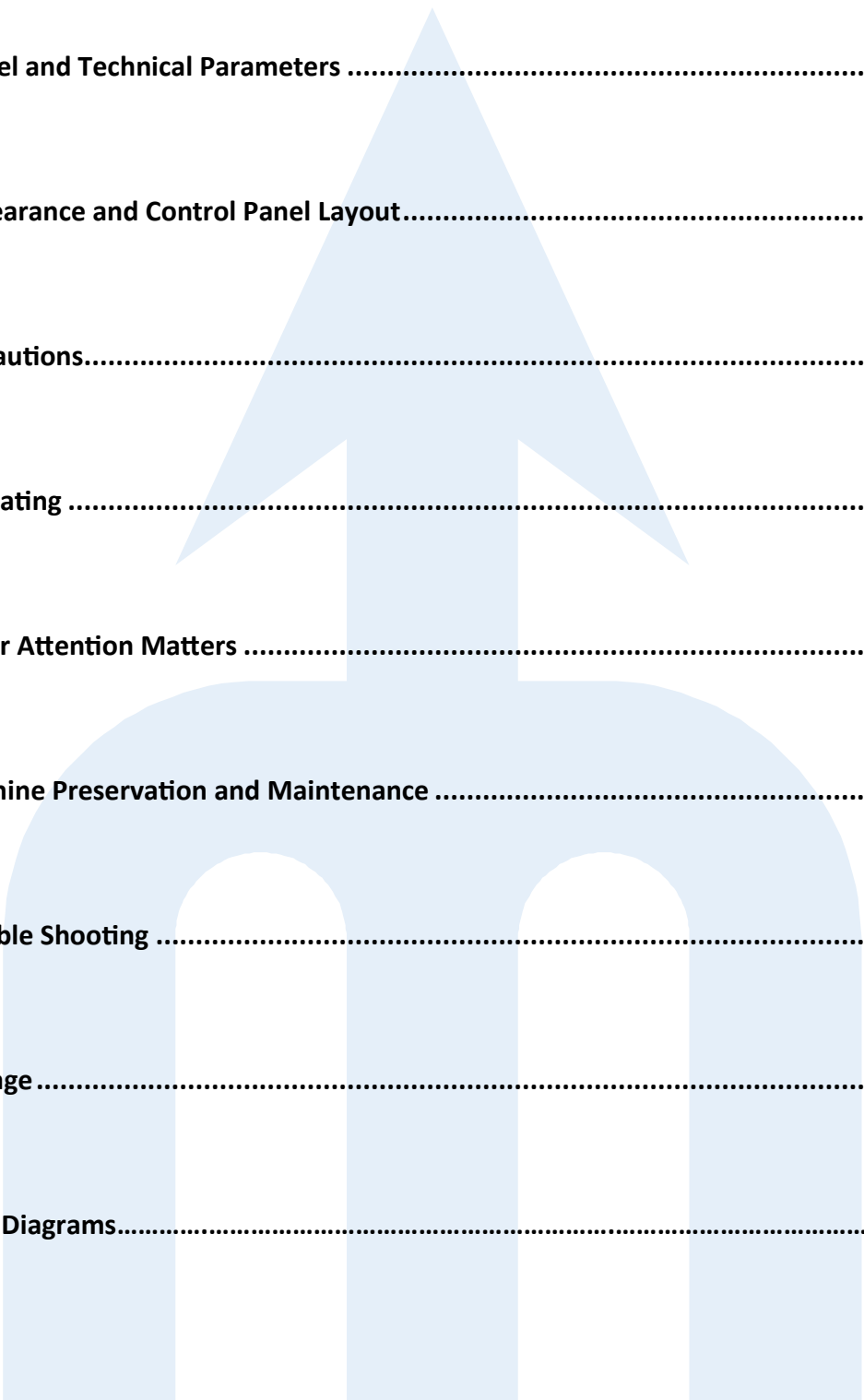
Vacuum Packing Machine

Recessed Double Chamber

CAT 370 6002C

Revision 1

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1. Use and Characteristics

Use:

Product Usage: This vacuum packaging machine offers notable advantages, including superior functionality, ease of operation, straightforward maintenance, and extensive applications. It is designed to utilize flexible packing materials such as composite film or aluminium foil composite film. The machine is capable of packaging a diverse array of items, including solids, liquids, powders, pastes, grains, food, fruits, seeds, fragrances, medicines, chemicals, electronics, precision instruments, valuable metals, and more. Through this sealing process, the machine effectively safeguards products against oxidation, mould, insects, decay, and moisture. This ensures product quality, freshness, and an extended storage period for food.

Characteristics:

1. This machine is easily used. From pressing the cover of the machine to draw out air, heating the sealing, printing the label, cooling, filling with gas and opening the cover of the machine, the whole course is automatically controlled.
2. The regulating ranges of the sealing temperature and time are very wide so that the machine is able to pack various materials.
3. There is an emergency stop button on the control panel. If the packed items are abnormal during drawing air, you can press the emergency stop button to stop the packing procedure.

2. Specifications and technical parameters

Basic technical parameters

3. Control panel layout

Model	Supply voltage	Power	Dimensions of vacuum chamber (L x W x H)	Sealing size	Exhaust volume of pump	Overall dimensions (L x W x H)
CAT 370 6002C	380V	2000W	640 x 540 x 170mm	600mm	20 m ³ /h x 2	1450 x 650 x 960mm

The control panel should be set first before operating the machine:

1. The lid of the device must be open in order to change the settings.



2. **Standby State:** Power on the machine; the power indicator light will illuminate. The panel (digital display) will show "--" This indicates the standby state.

3. Control Panel Layout continued.

Vacuum Time Setting:

- Press the VACUUM setting button once while in the non-running state.
- The vacuum indicator light will illuminate, and the display will show the original value.
- Use the INCREASE or DECREASE button to set the desired vacuum time.
- Press the Vacuum button again to return to the standby state.
- The vacuum time setting button can be freely switched with the sealing time setting button in the non-running state.

Sealing Time Setting:

- Press the SEALING setting button once while in the non-running state.
- The sealing indicator light will illuminate, and the display will show the original value.
- Use the INCREASE or DECREASE button to set the desired sealing time.
- Press the same button again to return to the standby state.
- The sealing time setting button can be freely switched with the vacuum time setting button in the non-running state.

Cooling Time Setting:

- Press both the VACUUM and SEALING buttons simultaneously in the non-running state.
- The cooling indicator light will illuminate, and the display will show the original value.
- Use the INCREASE or DECREASE button to set the desired cooling time (2.5 seconds recommended).
- Press any button again to return to the standby state.

Sealing Temperature Gear Setting:

- Press the SEALING TEMPERATURE setting button to cycle through sealing temperature gears, including LOW, MIDDLE, HIGH, and OFF.

Use of STOP:

- If you need to stop the machine during operation or in abnormal circumstances, press "STOP" to terminate the process and return to the standby state.

Working Procedure:

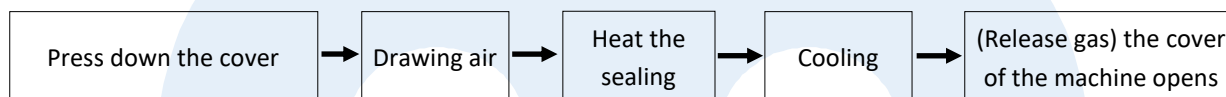
- After setting the parameters, place the packaging objects into the vacuum bag and position them correctly in the vacuum chamber.
- Press the vacuum lid to initiate the machine's operation: vacuuming, sealing, cooling, and deflating.
- The lid will automatically open at the end of the procedure, and the packaging machine will return to the standby state.

4. Precautions

- **Vacuum Oil Inspection:** Check the oil level in the oil window to ensure it's between 1/2 and 3/4 of the window height when the vacuum pump is running.
- **Vacuum Degree Adjustment:** Set the appropriate vacuum time to achieve the desired vacuum degree based on the packaged objects.
- **Sealing Temperature and Sealing Time Adjustment:** Adjust sealing time and temperature according to the material and thickness of the packaging bag for optimal sealing strength.
- **Parameter Setting:** Adjust parameters only when the machine is not running (standby) to avoid potential damage or reduced service life.

5. Operation procedure

1. Plug the machine into power and choose a packing bag to your requirements.
2. Regulate the heat-seal temperature and time, and choose a high or low heat-seal temperature for sealing. Select your "Seal Temperature" and your sealing time. To prevent melting or wrinkling the packaging, and to avoid damaging the Teflon coated fabric (sealing cloth) and other parts, start out with a low temperature and a short sealing time.
3. The vacuum drawing time should correspond to the contents in the packaging and to the value of the vacuum gage. To get the best effect when packaging wet or special products, it is recommended that you prolong the air drawing time after the vacuum degree reaches 0.1Mpa (the longest time is 99 seconds).
4. Place the packing bag in the vacuum chamber, the bag mouth should be placed on the heating frame flatly.
5. After finishing the above, the machine is ready to start. Press down on the cover of the machine, and the machine will start automatically.
6. The Vacuum packer will form an airtight seal and draw air for the entered in time.
7. Once the time for the air drawing has ended, the machine will seal the packaging for the entered in time. After the package is sealed, the machine will end the packaging procedure and open the lid, ready for the next item to be packaged.



6. Other matters

1. One surface of the silicone rubber strip is cross hatch plane and the other surface can be for installing particle and printing label.
2. During work, press the emergency stop button if it is necessary to stop the machine urgently, then the cover of the machine will open automatically.
3. If you are not using the machine, the power (power switch outside of the machine) should be turned off.
4. The external power wire's sectional area should be bigger than the inside wire's sectional area.
5. If elevation above sea level is much higher in the location, than the environmental pressure will be much lower and so the value of the vacuum pressure gage will correspond lower (see table).

Elevation (m) *above sea level*	Atmosphere pressure (kPa)	Degree of vacuum (Mpa)
0	101.33	0.101
200	98.95	0.099
400	96.61	0.097
600	94.32	0.094
800	92.07	0.092
1000	89.47	0.090
2000	79.49	0.079
3000	70.11	0.070
4000	62.31	0.062

7. Machine Preservation and Maintenance

Warning: When vacuum pump has run for a long time, its surface temperature may reach up to around 70°C. Do not touch the running vacuum pump, if necessary, stop the machine, and wear thermal gloves.

Service Life of Vacuum Pump Oil:

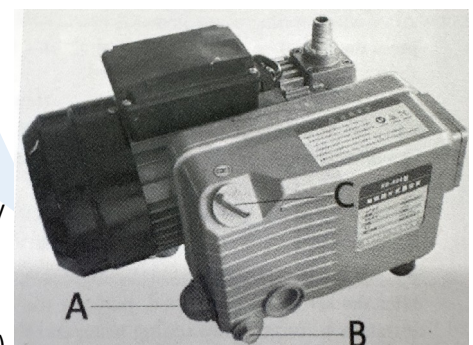
The longevity of vacuum pump oil is contingent upon the operating conditions. It is advisable to replace the vacuum pump oil either every 300 working hours or at a 3-month interval.

Regularly monitor the oil level and quantity, ideally on a weekly basis. Utilize the oil level lens for observation, and replenish the oil if the level is low.

When changing the oil, allow the vacuum pump to run for a few minutes beforehand to attain the optimal temperature. This facilitates better absorption of moisture and impurities by the oil for effective filtration. Higher temperatures can aid in moisture removal from the pump, reducing the likelihood of rust spots.

Changing Oil:

1. Open the machine casing to access the internal components and position an oil pan beneath the oil outlet hole to catch the drained oil.
2. Loosen the oil outlet hole screw to allow the oil to drain into the oil pan.
3. Once the oil has been drained, tilt the vacuum pump slightly to drain away any residual oil, securely reinstall the oil drain plug.
4. Locate the oil inlet hole and loosen the screw.
5. Add the specified, dedicated oil for the vacuum pump (**NO. 68 Food Grade Oil**) through the oil inlet hole. Ensure not to mix different types of oil. If uncertain, always drain and refill with the appropriate oil.
6. Please add oil to 1/2-3/4 of the oil window.
7. Tighten the oil inlet hole screw.
8. Close the machine casing securely.



A. Oil Window
B. Oil Outlet Hole
C. Oil Inlet Hole

To ensure the machine's longevity, prevent failures, and achieve optimal packaging performance, daily maintenance is essential. For machines used extensively (over 4 hours daily), professional maintenance every six months is recommended. For machines used less than 4 hours daily, conduct thorough maintenance annually, consider the site, environment, & product factors.

Maintenance Guidelines:

Power Disconnection: Always disconnect the machine from power before conducting any maintenance, and remove the power plug from the socket.

Abnormal Operation: If the machine is not functioning normally or emits unusual noises, immediately turn off the power and contact the manufacturer or supplier.

Avoid High-Pressure Cleaning: Never use high-pressure cleaning on the machine, as it can severely damage electronic components and other parts.

7. Machine Preservation and Maintenance Continued

Protect Vacuum and Exhaust Holes: Prevent water from entering the vacuum hole of the vacuum chamber or the exhaust hole of the vacuum pump to avoid irreparable damage.

Professional Maintenance: Large-scale maintenance should only be performed by professionals to avoid potential damage.

Proper Machine Handling: Maintain the machine in an upright and horizontal position during transportation or movement. Tilting the machine can harm the vacuum pump.

Cooling Measures: Implement air cooling or water cooling for the vacuum pump, especially in summer or during extended daily operation exceeding 10 hours.

User Responsibility: If the user neglects maintenance as per instructions, resulting in machine failure or damage, the manufacturer will not bear any liability.

Routine Maintenance Schedule:

Every Day:

- Clean the vacuum chamber, vacuum lid, and machine casing thoroughly.
- Remove any foreign objects that may be adhered to the heating plate to maintain a clean and organized machine.

Every Week:

- Check the oil level and quality of the vacuum pump. If the oil level is low or the oil has deteriorated, add or replace the oil accordingly.
- Inspect the heating assembly for any damage.
- Check the condition of the varnished cloth (high-temperature cloth). If significantly damaged, replace it.
- Examine the sealing ring of the vacuum chamber lid. Replace if damaged or deformed.

Every 6 Months:

- Check the vacuum pump filter for saturation. Replace the filter if needed.
- Replace the vacuum pump oil at least every three months based on usage conditions.

Every Year:

- Conduct a comprehensive check of the machine's circuitry for signs of aging, loose connections, or poor contact. Replace or rectify wires as necessary.
- Following this maintenance schedule will help ensure the machine remains in optimal working condition, prolong its lifespan, and maintain consistent performance during packaging operations.

8. Trouble Shooting

8-1 Machine Failure and Troubleshooting

Issue	Causes	Resolution
Machine Inoperative with Unresponsive Control Panel	Disconnected Power	Plug machine into power
	Loose Power Switch contact	Adjust or repair the power switch, replace if necessary
Control Panel Activated, Machine Inoperative	Misaligned or faulty micro switch in the vacuum chamber	Align or substitute the micro switch
	incorrectly configured parameters	Complete the parameter configuration
	internal machinery malfunction	Contact manufacturer
Automatic Opening of Vacuum Chamber Lid Fails	Gas spring or extension spring malfunction	Inspect, repair, or replace as needed.
Vacuum room's vacuum degree is normal but air always remain in the bag.	Bad reset of hot seal and too short distance	Repair to reset flexibility
Failure to Achieve Optimal Vacuum / Slow Machine Vacuum Speed	Insufficient vacuum time setting	Increase vacuum time
	Low oil levels or dirty oil in the vacuum pump	Verify & replenish oil levels or replace with appropriate oil (consider oil type & quantity)
	Leakage of air, wear on sealing ring	Install a new sealing ring, identify and address the source of air leakage
	Saturated oil mist filter	Replace the saturated oil mist filter
Vacuum Chamber Shows Normal Vacuum Level, Yet Bag Retains Residual Gas	Incorrect heating plate adjustment, excessive pressure on bag mouth from heating plate and silicone strip, hindering air extraction	Adjust or repair heating plate settings to ensure proper flexibility; Check for air leakage in the bag pipeline or malfunctioning solenoid valve.
Unable to seal, or poor sealing	Unselected heating temperature	Choose appropriate heating temperature
	Too long, or too short sealing time	Reduce, or extend sealing time
	Commencing the sealing process before reaching the necessary vacuum level	The detected vacuum degree cannot be greater than 0.06Mpa
	Damaged electric heating flat wire	Replace
	Heating transformer failure	Replace
	Sealing contactor failure	Repair or replace
	Heat Sealing solenoid valve failure	Repair or replace
	Heat sealing strip stuck and not working	Repair
	Silicone damaged or stuck with foreign objects	Clean, or replace silicone rubber
	Dirty inside bag mouth	Clean bag mouth
	Loose electrical heating flat wire	Tighten
	Too short cooling time	Prolong
	The bag is no correctly and flatly placed on the heating plate	Place bag mouth flat on the heating plate.

8. Trouble Shooting Continued

8-2 Vacuum pump failure and troubleshooting

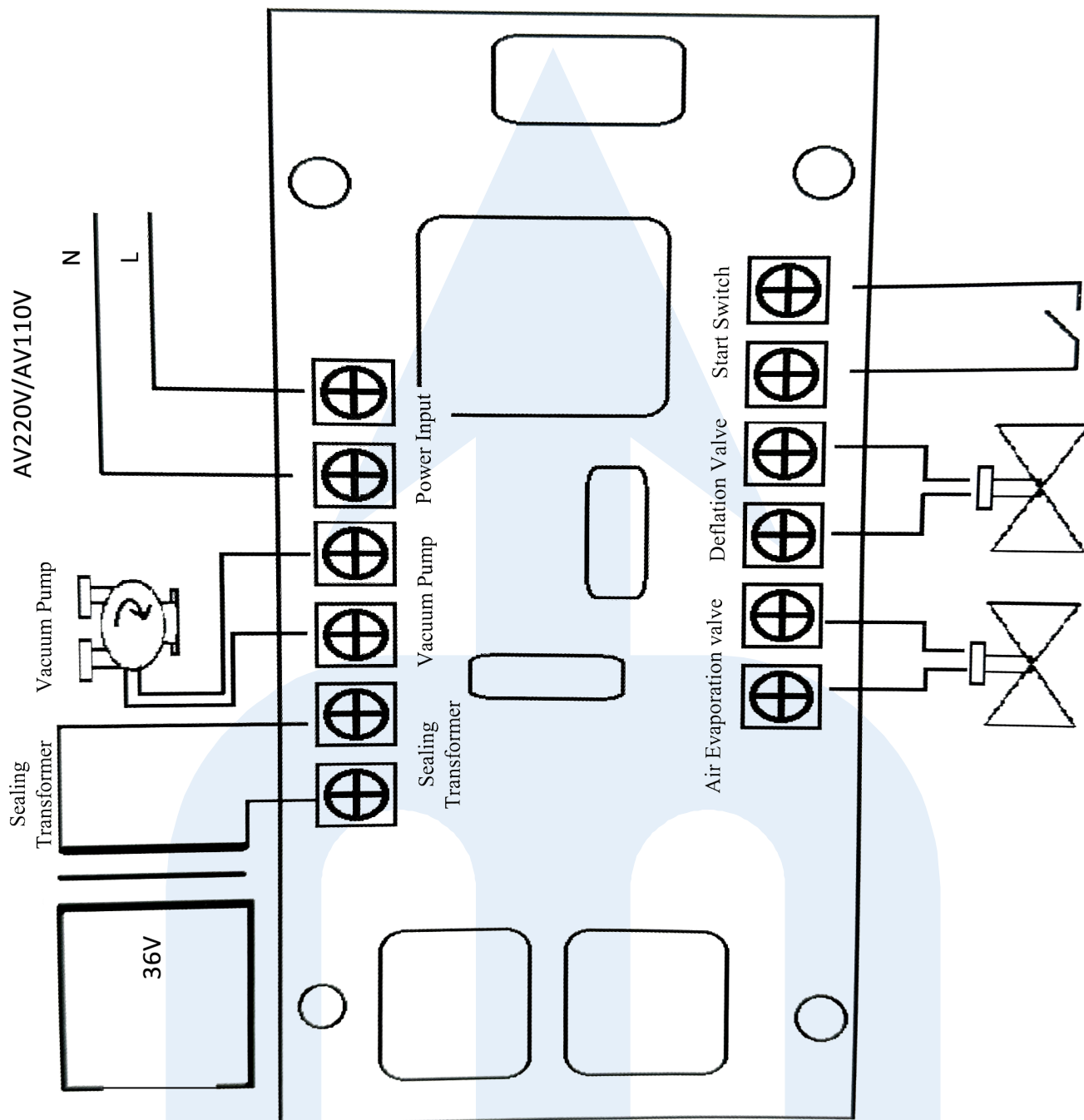
Issue	Causes	Resolution
Too high temperature when the pump is running	Clogged exhaust filter	Clean or replace the filter
	Too much, or too little pump oil	Check and adjust oil level
	Poor heat dissipation	Improve environmental ventilation conditions
Abnormal noise during pump running process	Seriously worn or loose transmission parts	Find the faulty piece and replace
	Incorrect pump running direction	Correct running direction (three-phase power)
Smoke in exhaust port or oil droplets discharged	Too much pump oil	Drain excessive pump oil
	Incorrect installation position of exhaust filter or broke material	Reinstall or replace exhaust filter
	Clogged exhaust filter (oil contamination)	Clean or change filter

9. Storage

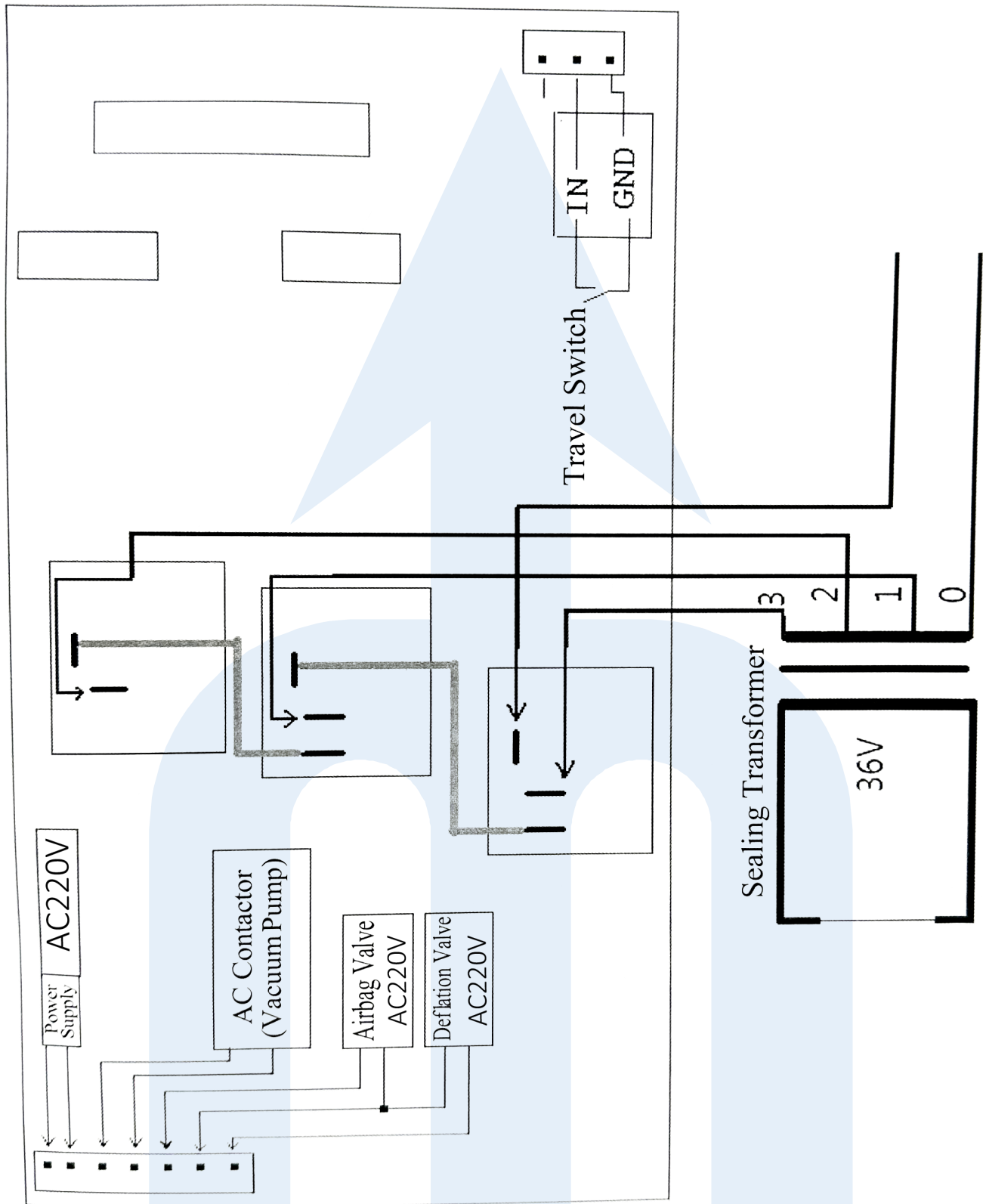
1. Turn off the power switch and disconnect the power supply.
2. Close the vacuum chamber lid to protect the internal components.
3. Cover the machine with a plastic bag to prevent dust accumulation.
4. Whenever possible, store the equipment in its original packaging for added protection.
5. If relocation is necessary, ensure to drain the vacuum pump oil before transport. Avoid transporting the machine upside down.
6. Store the equipment in a dry, dust-free, and shockproof room to maintain its condition.
7. Avoid storage or usage in environments with excessively high temperatures or prolonged exposure to sunlight, as this can cause deformation of the organic glass lid and potential damage to the machine.

For any inquiries or concerns, please feel free to contact the manufacturer or supplier.

10. Circuit Diagrams



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