

BMP-1000X

Environmental protection water-based stencil cleaning machine



MOREL

MOREL EQUIPMENTS CO., LIMITED

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1 Foreword

First of all, sincerely thank you for purchasing Moore’s electromechanical equipment products.

This "Instruction Manual" introduces you to the operation method of the product and precautions for use.

Please read this manual, and use the machine after fully understanding the safety issues, product performance and operating methods. In addition, please place this "Instruction Manual" next to the machine after reading it for easy reference at any time. If this manual is lost or dirty and cannot be consulted, please go to our company’s sales outlets or the service department designated by our company to get it.

Terms and Conditions

BMP-1000X, fully automatic spray cleaning equipment, has the advantages of high cleaning efficiency, cost saving, short cleaning time and long equipment life.

Because different countries have different power specifications and safety regulations, please confirm with the service department before use.

Please understand that there may be changes to the items in this manual without notice.

The company is constantly striving to improve the product, so the actual product and the content of this manual will be somewhat different. Before using this product, please confirm the working voltage, working pressure, use environment, etc.

Product List

Safety instructions	1
Warning symbols and records	1~2
Safety compliance matters before use	3~4
Labels with warning symbols	5~6
Before Use	2
Name and function of each part	7~10
Product Information	3
Product features	11
Software features	12
Hardware features	13
Product specifications	14
Routine operation	4
Routine operation process	15
Basic operation	16
User settings	17
Others	5
Basic maintenance	18
Alarm code and failure analysis	19
Precautions when setting up	20

1 Safety Instructions

In order to use the product you purchased safely and prevent the product from causing injury or property damage to you and others, the items in this manual must be followed.

In order to use this product correctly, please read this "Instruction Manual" carefully before use

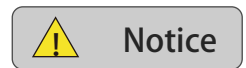
Warning symbols and records

The meaning of each symbol is as follows:



Warning

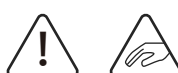
Indicates that if you ignore the content of this logo and make a wrong operation, it may cause serious injury.



Notice

Indicates that if you ignore the content of this logo and perform a wrong operation, it may cause personal injury or damage to objects.

 This symbol indicates matters that should be paid attention to when operating this product. Please read the instructions carefully and use this product safely.



 This symbol indicates prohibited items. Please read the instructions carefully, and prohibit the operation of prohibited items.



 This symbol indicates prohibited items. Please read the instructions carefully, and prohibit the operation of prohibited items.



Safety compliance matters before use



Warning

| About settings

 In order to ensure safety and prevent static electricity, please be sure to enter the ground (Class D grounding). If the grounding is insufficient or not grounded, in case of leakage, it may cause fire and electric shock accidents.

Allow the installation of the ground wire

- The ground terminal of the power plug.
- The copper sheet over 65cm is buried in the ground.
- Ground terminal for grounding construction (Class D).

Prohibit the installation of the ground

- Gas pipeline.
- Dedicated telephone line.
- lightning rod.
- The middle section is a plastic pipe for tap water and faucet.



Do not use or place combustible materials such as thinners, combustible gases, or highly volatile materials near or inside the product.



Do not install in the following places

There are potential safety hazards in these places, which will also accelerate product aging and cause failures

- Places one meter away from flammable materials or curtains.
- Places within one meter of heating appliances such as stoves and heaters.
- Air conditioners, exhaust vents and other places directly exposed to wind.
- Places with high temperature, humidity and low temperature.
- Places exposed to direct sunlight.
- Dusty places.

In addition, when installing in the following places, please contact the nearest our company's sales outlets or our company's service department.

- Places that are hit by sea breeze or are in corrosive gas. Places with large swings or vibrations



Warning

| About power



When using this product, please connect to a power source that meets the specifications specified in the "Instruction Manual".

If it is connected to a power source other than the specifications, it may cause a fire, electric shock, or leakage accident.



Do not use extension cords or octopus cords.

Be sure to use a dedicated socket. Otherwise, overheating of the wire may cause a fire accident.



When the leakage circuit breaker works frequently, please contact the nearest sales outlet of our company or our service department.

If you continue to use or leave it alone, it may cause a fire or electric shock.



Please securely insert the prongs of the power plug into the socket.

Otherwise, it may cause a fire accident.



Do not modify, process or repair the power cord and plug.

Otherwise, it may cause electric shock due to insufficient grounding.



To prevent damage to the power cord and cause electric shock or fire, please observe the following.

- When unplugging the power plug, do not pull on the power cord.
- Do not place objects on the power cord.
- Do not pass the power cord near the heat source.
- Do not bend or pinch the power cord.
- Do not step on or twist the power cord.
- Do not splash all kinds of chemicals on the power cord.
- Do not use power cords in bundles.
- Do not fix the power cord with a stapler, etc.



Do not use non-matching power cords and plugs.

Otherwise, when the power cord passes a current higher than the rated value, it may cause a fire accident.



Do not use the power cord and plug for other products or for other purposes. In addition, when it is lost or damaged, please purchase it at the nearest company's sales outlet or company service department.

The matching power cord and plug are specially designed to connect to this product, and their safety has been confirmed. If it is used for other products or other purposes, it may cause fire and electric shock.



Please use the product at the specified frequency.

If it is used at a frequency other than the specified frequency, it may cause an accident.

Warning

| About operation



Please use the product in the environment specified in the specifications in the "Instruction Manual".

Otherwise, it may cause fire or electric shock.



Do not touch the product, power plug and power cord with wet hands.

Otherwise, it may cause an electric shock accident.



Do not turn off the power, unplug the power plug or open the door of the product while the equipment is working.

Otherwise, it may cause an accident or damage the equipment.



Do not place objects, vases, cups, etc. filled with water on this product.

If water or objects fall, it may cause fire, electric shock, and personal injury.



Do not use flammable gas atomizers, etc. around the product.

If spray gas, etc. come into contact with electrical components inside the product, it may cause an explosion or fire.



Do not allow rainwater or cleaning water to wet the electrical components inside the product.

If it gets wet with water, it may cause electric shock and malfunction.



When you need to touch the inside of the product for cleaning or replacing parts, be sure to turn off the power.

If you work in a live state, it may cause electric shock and personal injury accidents.



Do not modify this product or install this product after replacing parts. In addition, please do not disassemble the parts that are not indicated by the switch in the "Product Manual", and the covers, parts, etc. that are fixed with wire, etc. .

Otherwise, it may cause fire, electric shock, and personal injury.



Do not drop metal pieces such as pins, staplers, etc. into the interior and gaps of the product.

If the dropped metal piece comes into contact with the circuit, it may cause a fire accident.



Do not put your hands or clothes close to movable parts that can be touched while this product is working.

Otherwise, it may cause personal injury.



To ensure safety, when not using the product for a long time, be sure to unplug the power plug from the socket.

Otherwise, the accumulation of dust will cause heat generation and fire accidents.



If the product used has a charging part inside, be sure to cut off the power before opening the cover.

Otherwise, it may cause an electric shock accident.



Warning

| About operation



Switch the inside of the machine or take it out. When putting it in, please follow the label attached to the product and the instructions in the "Instruction Manual".

Misoperation may cause injury.



Please make sure that the door is locked when operating with the door open.

If the door closes unexpectedly, it can cause personal injury.



When troubleshooting errors or performing internal cleaning, etc., please operate in accordance with the contents of the "Instruction Manual".

If you perform operations other than those recorded, it may cause accidents.



When closing the door, be careful not to pinch your fingers.

It may cause personal injury.



Do not bump this product.

Otherwise, the product may be damaged, causing it to fail to work normally.



If the cover and door are opened while the product is working, the safety switch will be turned on and the machine will stop working. Do not touch the safety switch in this state.

If the safety switch is accidentally cut off, the product will suddenly work, which may cause a certain part of the body to be clamped or hit a certain part of the product and be injured.



Do not use thinners, stupid and other chemicals to clean the dirt on this product.

Otherwise, the product may be damaged.



Warning

| About maintenance and inspection



When this product needs to be repaired, please contact the nearest sales outlet of our company or our service department.

Otherwise, improper maintenance may lead to accidents such as fire and electric shock.



When this product emits smoke, smells, or makes abnormal sounds, please stop using it immediately, cut off the power supply, unplug the power plug from the socket, and contact the company's sales office or the company's service department.

If you continue to use it, it may cause a fire or electric shock.



When this product is flooded due to disasters, etc., please stop using it and entrust the nearest sales outlet of our company or our service department to contact for maintenance and inspection.

If you continue to use it, it may cause a fire or electric shock.



Please check the power plug and power cord regularly. When the power plug is damaged or the power cord is damaged, please stop using this product, and contact the nearest sales office of our company or our service department for replacement.

Otherwise, it may cause fire or electric shock.



Please regularly check whether the installation site is unstable. In the event of an abnormality, please contact the nearest sales office of our company or our service department.

If you continue to use it with imperfect settings, it may cause a tipping accident.

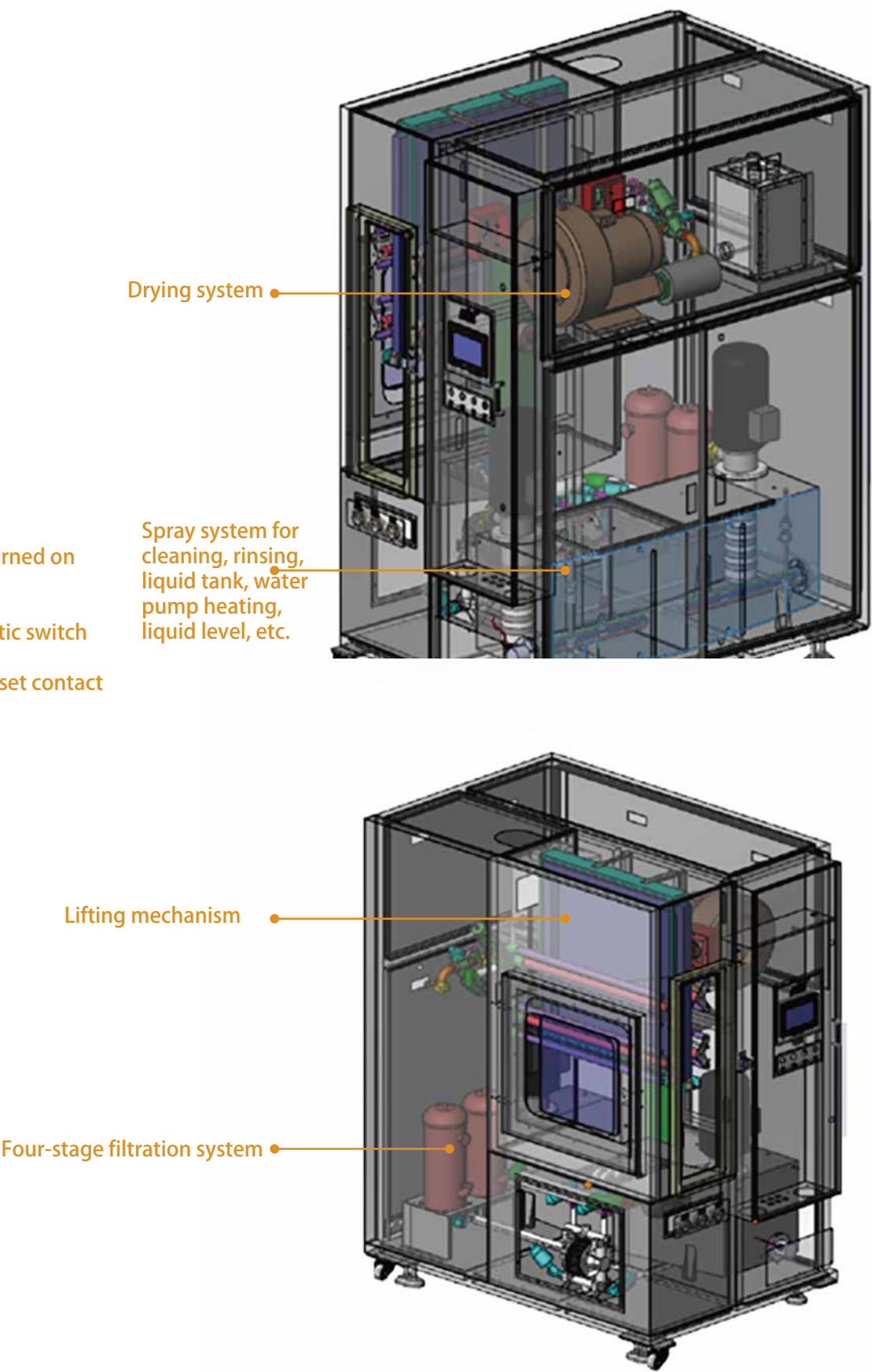
Before Use

Exterior

Name and function of each part

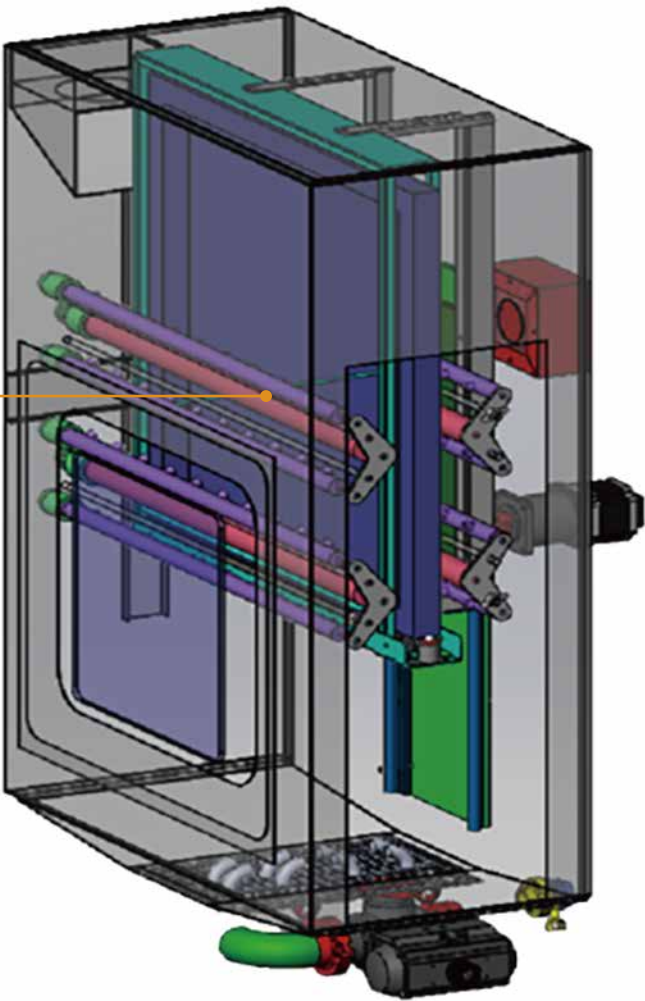


Equipment operating system

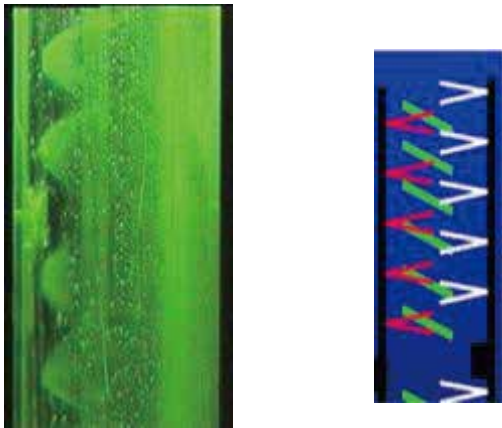


Equipment operating system

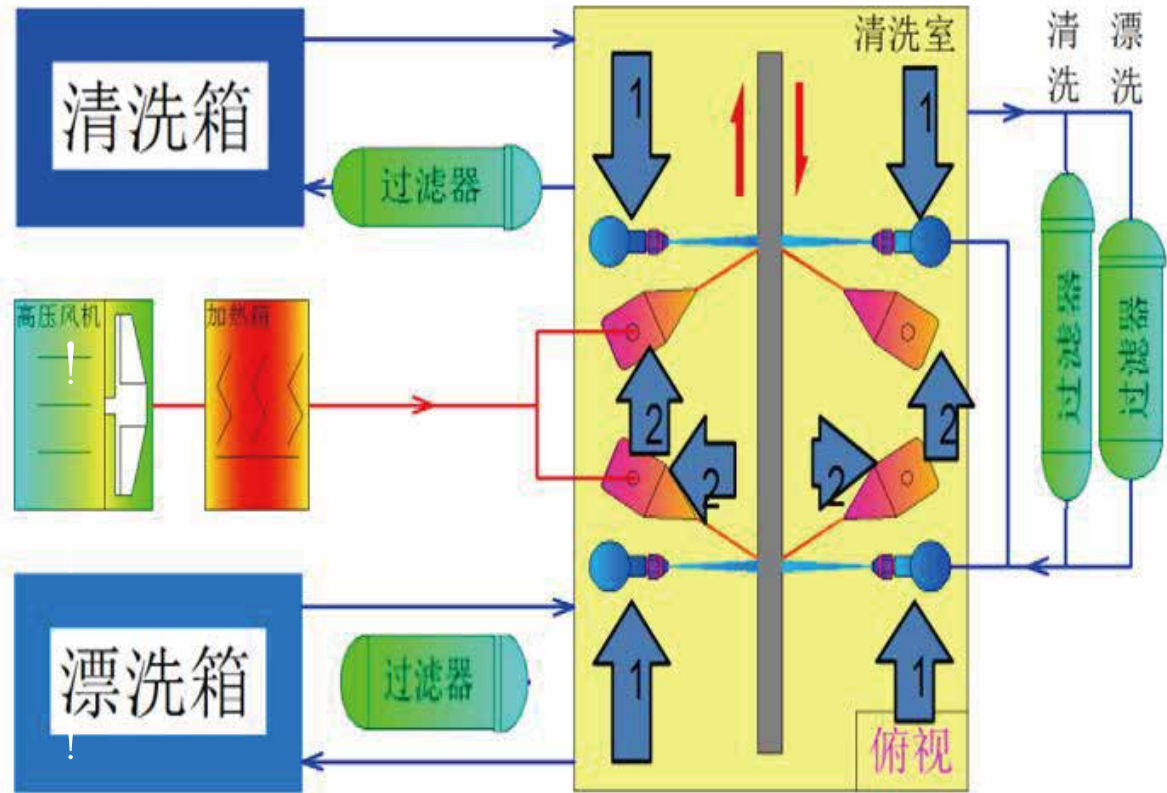
Eight spray arms
80 fan nozzles for cleaning
Four wind knives wind cutting
Toss the screen up and down



Spray screen



Cleaning process



Cleaning detection method

According to IPC-J-STD-001 standard flux residue three-level standard regulation $<40\mu\text{g}/\text{cm}^2$, flux residue two-level standard Regulations $<10\mu\text{g}/\text{cm}^2$, ionic pollutant content level-one standard regulations $\leq 1.5 (\text{NaCl})\mu\text{g}/\text{cm}^2$, extraction resistivity $> 2 \times 10^6 \Omega \cdot \text{cm}$



Product Information

BMP-1000X equipment

BMP-1000X stencil cleaning machine is a fourth-generation stencil cleaning machine specially designed for "Water-Based" process:
Fully automatic cleaning, rinsing, and drying process (using a unique dual eight spray arms cleaning and rinsing design, dual four air knives, air cutting drying design, cleaning and rinsing using online filtration to ensure cleanliness)

Application: cleaning of SMT steel mesh, copper mesh, glue mesh, glue printing jigs, PCB misprinting board, can effectively clean the residual solder paste, red glue and other contaminants on the surface after printing and the hole wall.

Cleaning process:
1. Stencil printed with solder paste and glue 2. SMT carrier and wave soldering furnace fixture 3. PCBA flux contamination 4. Misprinted board 5. Flux cleaning for PCB and mixed substrates 6. Cleaning tools or oil stains on optical parts 7. Precision machinery and optical parts 8. Oil stain cleaning of lead frame before device assembly 9. Silicon wafer cleaning after cutting or grinding 10 UV glue residue cleaning of online dispenser carrier

Cleaning mode:
1. Water-based spray cleaning 2. Air atomization cleaning 3. Solvent spray cleaning 4. Plasma cleaning 5. Ultrasonic cleaning

Steps



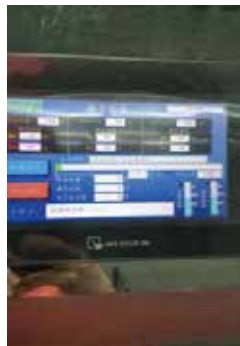
Cleaning equipment is ready to start



Open the front door manually to enter



Put in the washing



Set the parameters and press start



Manually close the front door to start cleaning

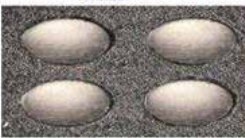
Cleaning comparison



The printed stencil is not cleaned/
cleaned incompletely
印刷的网未清洗 / 清洗不彻底



清洗后



After cleaning

Bad printing
印刷不良



印刷效果良好

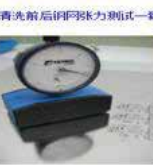


Good printing effect

Double side
cleaning
nozzle,Wind knife



The tension test of the
stencil before and after
cleaning is the same
清洗前后的网张力测试一致



The double high-density isobaric double-side spray bar cleaning nozzle has strong cleaning power and does not damage the tension of the steel mesh.

BMP-1000X equipment parameter characteristics

1. Fully automatic cleaning mode: the screen is thrown up and down, and the heated cleaning fluid is sprayed through the spray arm high pressure and equal, and the whole process of automatic cleaning, rinsing and drying is automatic;
2. Visualization of the whole process: visualized window and LED light device, the cleaning process is clear at a glance;
3. Scientific nozzle design (patent): 8 spray arms on the left and right are distributed-completely solve the blind area of cleaning, spray arms and nozzles are detachable
4. Visual nozzle pressure can be adjusted: solve the problem of collision and splashing of small workpiece size under high-pressure spray conditions during cleaning;
5. Install photoelectric sensors to protect the viewing window and the entrance of the screen to prevent the cleaning liquid from spilling out and ensure its safety;
6. Comprehensive cleaning system; the standard diluent tank/rinsing tank heating system improves the cleaning efficiency, shortens the cleaning time, is compatible with running water washing or chemical cleaning, and is aimed at SMT; THT's PCBA surface residual rosin, solder paste and other organic , Inorganic pollutants are thoroughly and effectively cleaned.
7. Cleaning and rinsing adopts an online independent built-in filter system, independent electric pump, independent spray arm, independent nozzle, and the circulation of solvents to prevent the cleaning and rinsing from as little liquid as possible, which can increase the service life of the rinsing water. Reduce the amount of solvent.
8. Body material; the overall 304 stainless steel body, resistant to acid, alkali and other cleaning fluids;
9. In the event of a failure, it has an emergency stop button and leakage protection function;
10. Lower operating costs; lower equipment investment costs, localized services, teams and adequate supply of spare parts.

BMP-1000X equipment parameter configuration

Cleaning area: The cleaning liquid storage tank is used to recover and store cleaning liquid, and perform 4-stage filtration, heating and monitoring, and liquid level monitoring of the cleaning liquid.

Cleaning water pump: 2.2KW (1), 4 spray arms, 40 nozzles;

Liquid storage tank volume: ≤90L (1 piece);

Filtering device: stainless steel filter screen 1mm (2 pieces), liquid tank filter bag: 50 mesh (1 piece), cleaning in-line filter element 0.45um (3 pieces); heating power: 9KW (1 piece), heating temperature: room temperature ~ 80 ° C (adjustable);

Liquid level protection: low position, neutral position, stop position, over limit;

Spray pressure: 0.1~0.6Mpa (adjustable)

Rinse area:

The rinsing water storage tank is used to recover the stored water, and perform 4-stage filtration, heating and monitoring, and liquid level monitoring of the cleaning liquid.

Rinse water pump: 2.2KW (1), 4 spray arms, 40 nozzles;

Volume of rinsing water storage tank: ≤90L (1 unit);

Filtering device: stainless steel filter screen 1mm (2 pieces), liquid tank filter bag: 50 mesh (1 piece), cleaning in-line filter element 0.45um (3 pieces); rinsing water tank heating power: 9KW (1 piece), heating temperature: room temperature ~80° C (adjustable);

Liquid level protection: low position, neutral position, stop position, over limit;

Drying area:

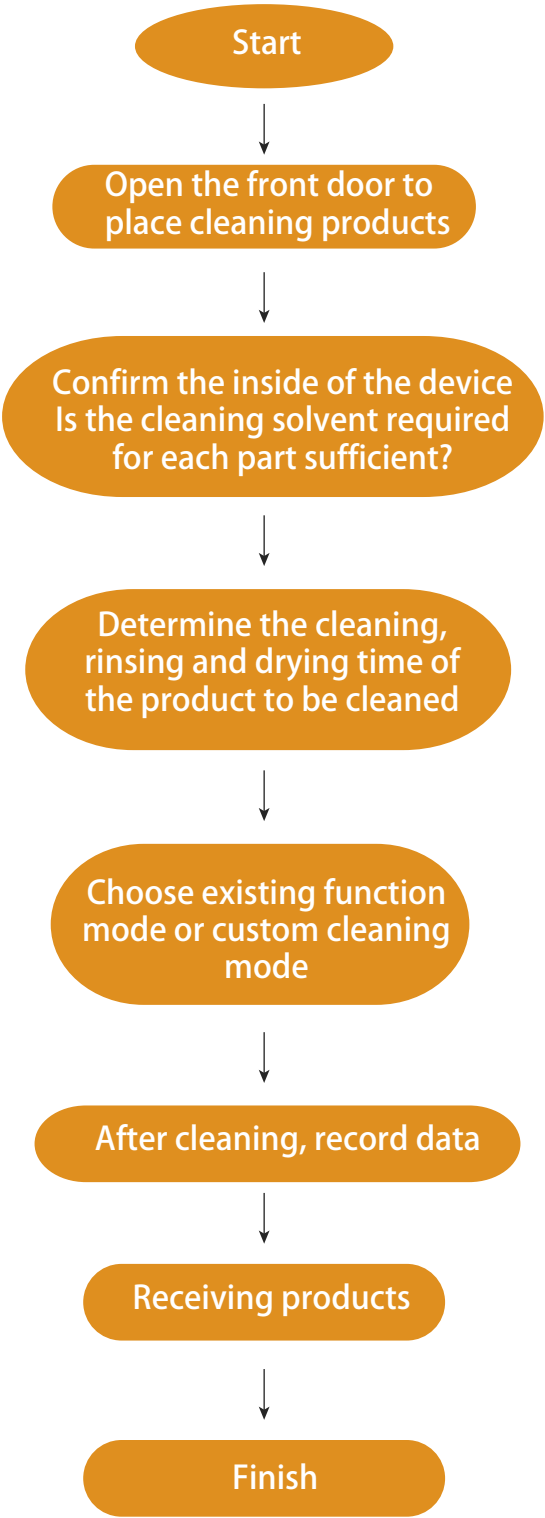
The drying section is used to completely dry the product, and to heat the wind, wind cutting, heating and temperature monitoring.

Air knife fan: 5.5KW (1 piece), stainless steel heating tube: 5.5KW (1 piece), 4 air cutting air knives.
Heating temperature: room temperature~60° C (adjustable);

Running device on the screen:

The running device consists of a stepping motor, a stepping driver, and an encoder that rotate steadily.
Stepping motor: 1 set; stepping drive: 400W (1), encoder: 1 set.

Daily operation process



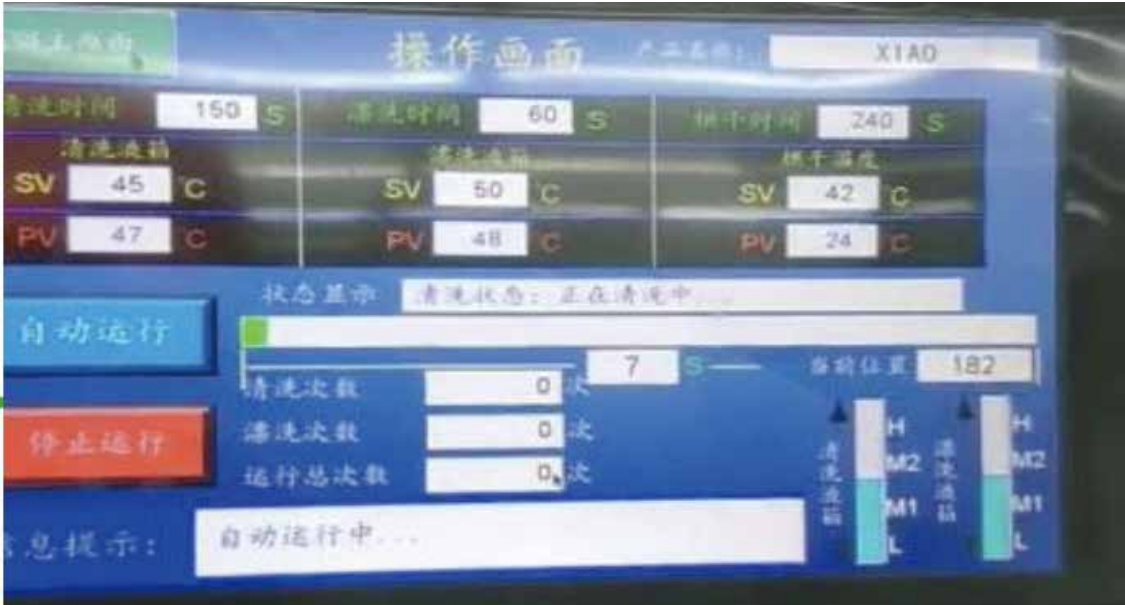
BMP-1000X equipment parameters

Parameter	
Cleaning area size:	750*750*40mm(L*W*H)
Physical dimension:	1100*1650*1980mm(L*W*H)
Nozzles in cleaning area:	40 nozzles,304 stainless,fan-shaped 65°
Nozzles in rinsing zone:	40 nozzles,304 stainless,fan-shaped 65°
Drying area:	4 air knives,304 stainless steel
Cleaning size range setting:	50~750mm
Cleaning time:	0~100 minutes(adjustable)
Rinsing time:	0~100 minutes(adjustable)
Drying time:	0~100 minutes(adjustable)
Power/Air source:	Three-phase five-wire system,380V/18KW(rated power) 0.45Mpa-0.7Mpa
Weight:	590KG

Basic Operation

1. Turn on the power

Automatically start the initialization action, please wait until the end of the action, after the initialization is completed, enter the interface

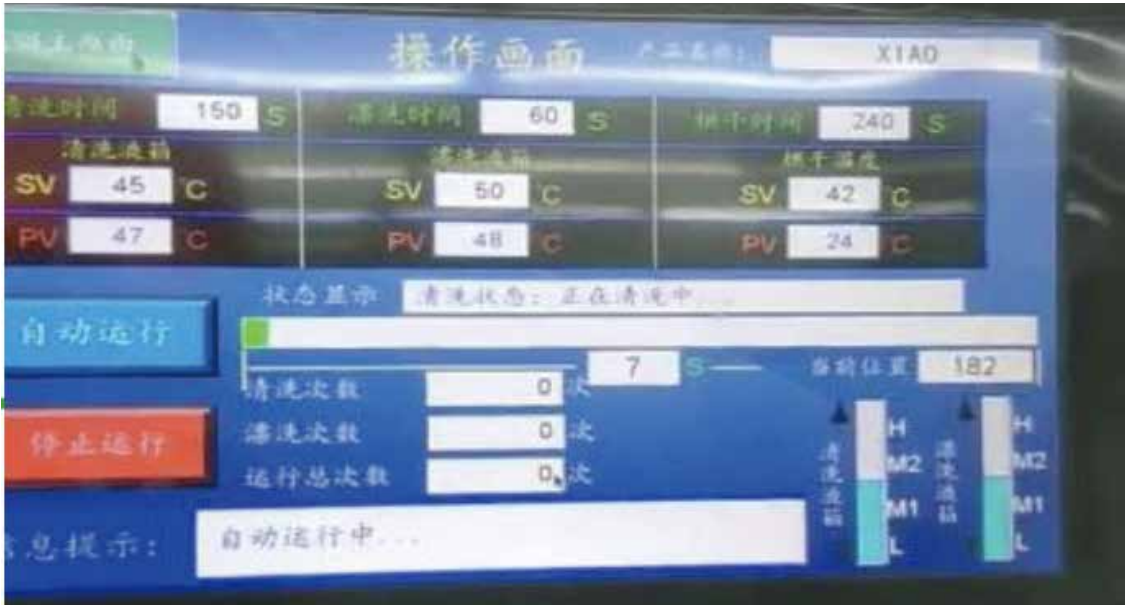


Automatic picture



Login interface

Click Operation to enter the main interface. As shown below.



2. Select the mode type

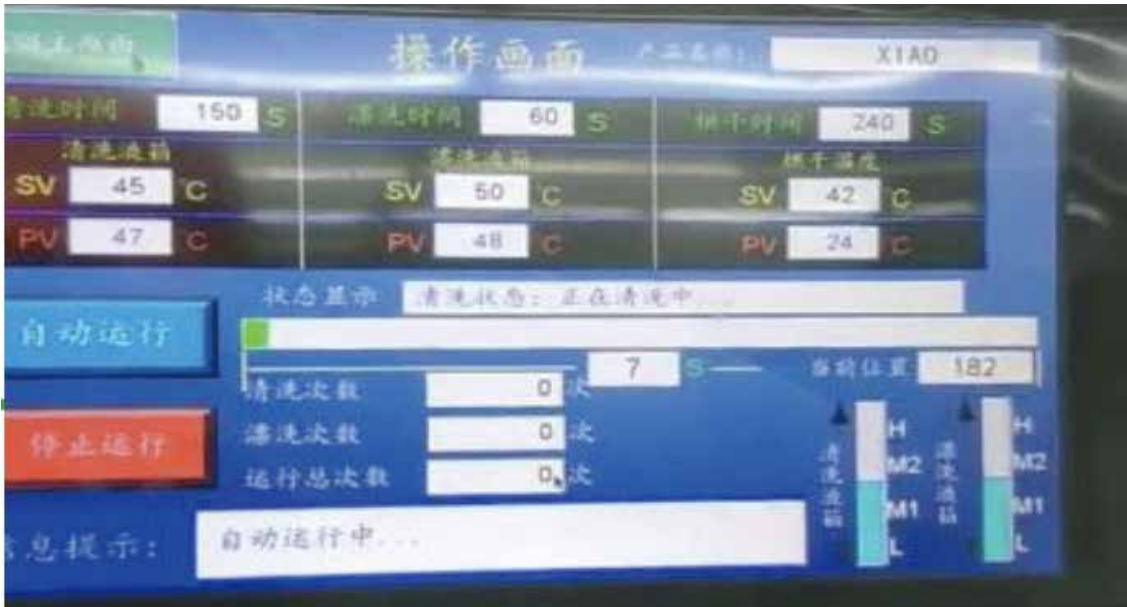
Choose the desired working mode and language from the interface

3. Start working

Stencil put in → Automatic cleaning, rinsing, drying and other operations → take out.

User Settings

Click on the main user interface to enter the operation interface. As shown below.



Set the parameters corresponding to the cleaning time, rinsing time, and drying time according to the product to be cleaned.



Login interface

Daily Maintenance

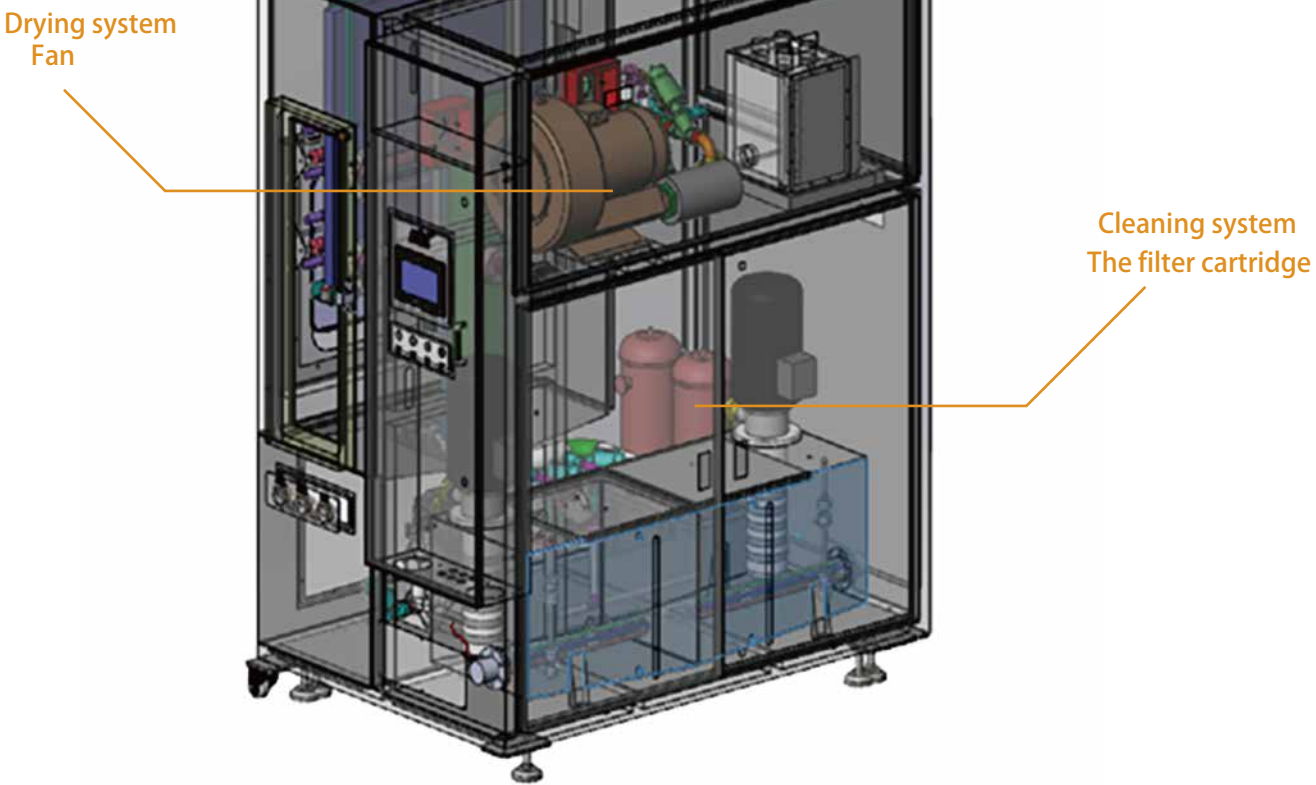
After long-term use, the filter screen in the filter will adhere to the surface due to the dirt cleaned by the product, resulting in a decrease in cleaning ability. Therefore, to ensure the durability of the equipment, please clean it according to the following steps.



Warning

When cleaning the inside, be sure to turn off the power.
Otherwise, it may cause electric shock or personal injury.

Do not use benzene, thinner, etc. to clean this product.
Otherwise, the product may be discolored, damaged, or malfunctioning.



Alarm code and failure analysis

[illegible]

Precautions when setting up

When setting up and moving this product, please confirm the "Warning"/About setting in "Safety Observations Before Use".

Please leave enough space when setting up and using

