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R-6801NII Electric Stencil Cleaning Machine Technical book



Catalogue

1. Equipment Overview.....	3
2. Equipment characteristics	4
3. Cleaning process chart	4
4. Main structure and functional description	5
5. Main technical specifications and parameters	8
6. List of Main Accessories	10

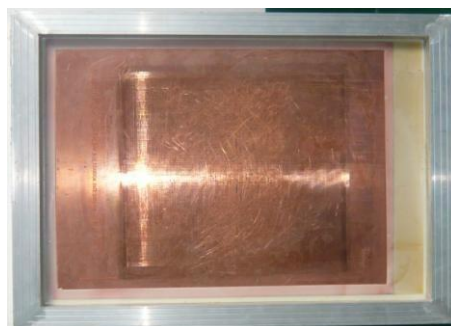
1、Equipment Overview

This multifunctional water-based cleaning machine is mainly designed for surface cleaning of SMT mesh boards, scrapers, PCBs, PCBA boards, and other surfaces in the electronics industry. It uses the most advanced cleaning process in the industry to achieve 100% cleanliness and environmental protection.

The machine consists of a cleaning system, a rinsing system, a drying system, and a filtration system. The machine uses electricity and compressed air as energy sources to manually place the mesh (workpiece) into the cleaning room. After setting the cleaning, rinsing, drying, and other related parameters on the touch screen, press the start button, and the mesh will be automatically cleaned, rinsed, and dried. After the set cleaning process is completed, it will automatically stop running and reset to achieve the next workflow. This machine is very convenient for operators to clean the mesh board, and the chief mate improves production efficiency and quality. It belongs to a new type of high-performance fully automatic cleaning equipment. The equipment uses water-based liquid cleaning



SMT/SOP steel mesh



Adhesive screen board



Printing scraper



PCB/PCBA

agents and DI water for rinsing, with no safety hazards and no harm to personnel.

2. Equipment characteristics

- A high-pressure spray system specifically designed for water-based cleaning fluids to clean screen boards, misprinted boards, PCB/PCBA, and other processes.
- Dual liquid tanks equipped with a heating system for cleaning, rinsing, and hot air drying needs.
- Process flow: **Cleaning - Chemical isolation - Rinsing - Drying.**
- Equipped with advanced fully automatic touch screen operation software, program file storage, usage and simplification.
- The system counting function can automatically accumulate the number of cleaning screens and the number of cycle filters.
- **This device cleans 2 stencils at once**, resulting in higher efficiency.
- The liquid and pump pressure can be displayed on the panel pressure gauge, providing timely feedback on the equipment's operating status.
- The cleaning pressure can be monitored, and the process window is wider, solving the tension problem of SMT steel mesh during high-pressure cleaning.
- The overall stainless steel body is sturdy and durable, with acid and alkaline resistance to cleaning fluids.
- The rinsing adopts an overflow form to allow suspended solids to overflow and discharge without repeated pollution.
- High pressure fan+hot air drying, faster and more thorough drying effect.
- Lower operating costs, only 150-250ml of liquid is required for each cleaning. After cleaning, the residual liquid in the pipeline and pump is directly recovered, which can reduce liquid consumption by 50% liters.

3. Cleaning process chart

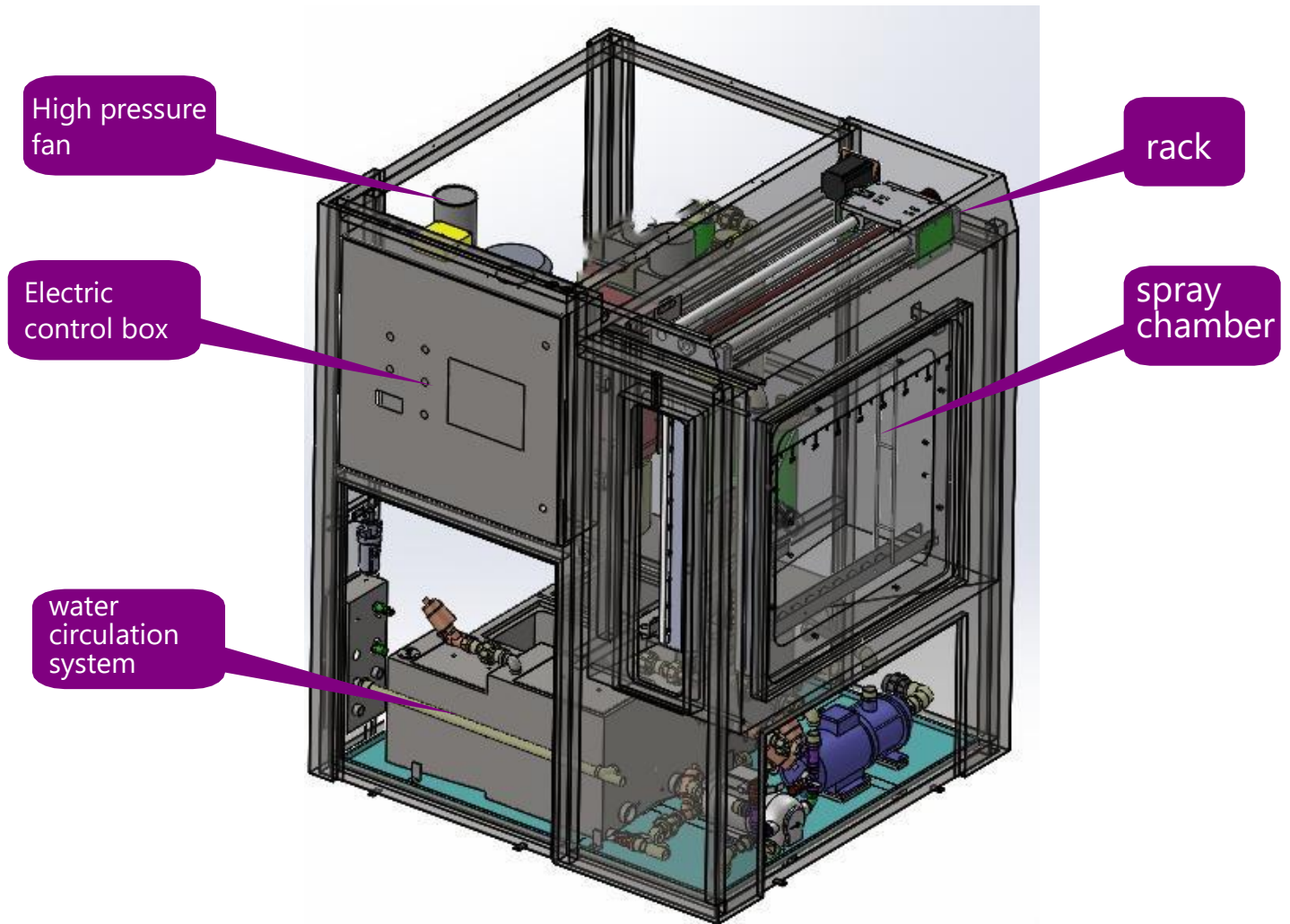
Serial Number	Production processes	Function	Beat	Cleaning medium	Set temp	Filtration Accuracy
1	Manual feeding	—	—	—	—	—
2	Spray cleaning	clean	2-5min	Water based cleaning agent	40-60°C	0.45um
3	Spray rinsing	Rinsing	2-5min	Pure water	40-60°C	0.45um
4	Hot air cutting and drying	Drying	2-5min	Hot-air	60-90°C	—
5	Manual Unload	—	—	—	—	—

4. Main structure and functional description

4.1 Main structural components

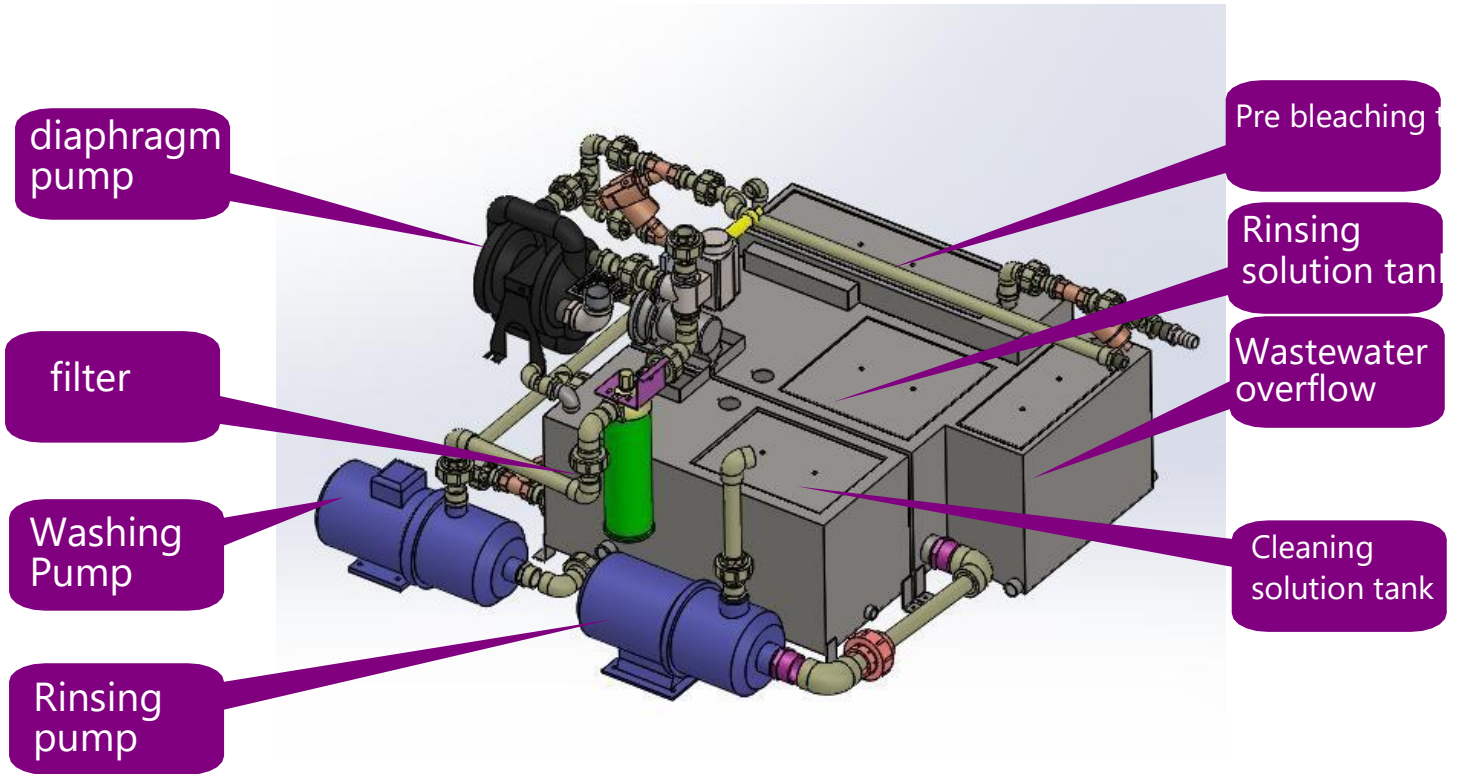
The equipment mainly consists of

Rack , spray cleaning system, spray rinsing system, internal moving mechanism, cleaning tank, rinsing tank, electric heating air system, water circulation system, spraying room, high-pressure air cutting system, and electric control box.



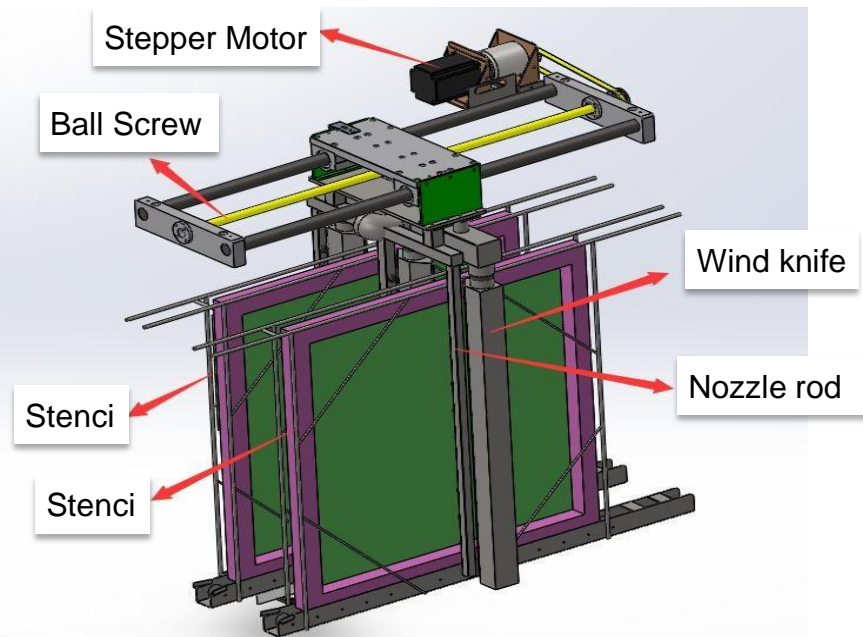
4.2 Water circulation system and working principle

Double pumps and pipelines, with liquid directly flowing back to the tank and rinsing water overflowing through external circulation



Internal mobile mechanism

- a. This mechanism adopts high-precision linear guide rails, sliders, and ball screw rods, which are driven by a stepper motor to move back and forth from left to right., ensuring accurate reset each time, long service life, and convenient maintenance or replacement.
- b. The spray rod moves back and forth from left to right. to spray, and targeted spraying can be achieved in local areas



4.2.1 Cleaning system

During cleaning, the stencil is fixed, and the spray bar sprays back and forth from left to right.

All cleaning nozzles spray cleaning liquid under high pressure, which scans the workpiece in all directions. The cleaned cleaning liquid directly flows back to the cleaning liquid tank for circulation, filtration, and heating.

- Cleaning medium: water-based cleaning solution
- Cleaning fluid tank material: SUS304
- Nozzle material: SUS304
- Water pump pressure: 0.3-0.5MPa
- Water pump flow rate: 4T/H
- Water pump head: 45M
- Filtering accuracy: 5um

4.2.2 Rinsing system

During rinsing, the stencil is fixed, and the spray rod sprays back and forth from left to right. All rinsing nozzles spray DI water under high pressure, which scans the workpiece in all directions for rinsing. The DI water after rinsing directly flows back to the rinsing tank for circulation filtration and heating.

- Rinsing medium: DI water
- Rinse tank material: SUS304
- Nozzle material: SUS304
- Water pump pressure: 0.3-0.5MPa
- Water pump flow rate: 4T/H
- Water pump head: 45M
- Filtering accuracy: 5um

4.2.3 Liquid Storage Tank

The storage tank is used for the recovery, storage, and filtration of the sprayed liquid. Two stainless steel primary filter screens are installed at the outlet of the storage tank to protect the cleaning pump, which is then filtered through a 5um filter

4.2.4 Water circulation device

The cleaning room is equipped with a two-stage filter, the liquid tank is equipped with a primary filter, and the stainless steel single core filter is equipped with a secondary filter

4.2.5 Liquid level sensor

Due to the volatilization of the liquid, the workpiece is repeatedly cleaned, resulting in a continuous decrease in liquid. The sensor detects the upper, middle, and lower limits of the liquid storage capacity to alarm and control, notifying the operator of the function of adding liquid.

4.2.6 Temperature control device

The temperature control in the liquid tank is set by the temperature controller through thermocouple detection to set the ideal temperature.

4.2.7 Heating device

Cleaning efficiency can be improved by using a heating tube electric heating device.

4.2.8 Drying device

High pressure air cutting is a gas flow generated by a high pressure fan, which is heated by a heating tube and then quickly separated from the water droplets on the surface of the washed workpiece through an air knife, achieving the goal of rapid drying of the workpiece.

5、 Main technical specifications and parameters

Machine dimensions	L1600*W1400*H1850 (mm)
Voltage	Three phase 380V (three phase five wire)
Total power (KW)	28
Rated current (A)	28
Indicator light	Three color indicator light+sound warning, Urgent Switch
Noise	<40 decibels
Air source	0.4-0.6Mpa
Exhaust port	125mm
PLC control	Cleaning parameters can be adjusted and set as needed
Tank monitoring	With heating+temperature control+capacity float control

Rinsing agent	DI water/tap water
Number of cleaning Stencils	2 PCS
Cleaning heating power	7KW
Number of tanks	4PCS (cleaning tank+rinsing tank+pre rinsing tank+waste water tank)
Cleaning box volume	42L high level
Temperature control	The heating temperature of the liquid tank is adjustable
Regulatory ability	Adjustable temperature and time for heating and drying, and adjustable speed for air knife spray rod
Volume of preheating and rinsing tank	35L
Rinsing heating power	7KW
Rinse tank capacity	42L high level
Clean time	2-5Min (configurable)
Rinsing time	2-5Min (configurable)
Drying time	2-5Min (configurable)
Stencil Max cleaning Size	750*750*40MM
Equipment weight	600KG
Cleaning method	Spray cleaning - Spray rinsing - Air cut drying
Operational control	PLC+touch screen (one click start)
Language	Support English

6、 List of Main Accessories

Material Name	Material code	Brand/Origin	Remarks
Horizontal centrifugal pump	CDDQ01-0043	Lovara/Italy	Italian brand
Horizontal centrifugal pump	CDDQ01-0012	Lovara/Italy	
Electric diaphragm pump	CDDQ05-0009	Sachiel	
Fan	CDDQ01-0008	Taiwan Huachang	
PLC	CDDQ02-0030	Mitsubishi	
Temperature control module	CDDQ02-0029	Mitsubishi	
Heating tube	CDDQ01-0011	customization	
Touch screen	CDDQ02-0029	Weilun	
Solenoid valve	CDDQ02-0037	SMC	
Pressure sensor	CDDQ03-0008	SMC	
Stepper motor	CDDQ02-0005	Research and control	
Optical axis slide rail	CDZC01-0063	Shangyin/TBI	
Proximity Sensor	CDDQ03-0008	Omron	
AC contactor	CDDQ01-0004	chint	
Intermediate relay	CDDQ02-0002	Omron	
Nozzle	CDPZ01-0004	New Pool Source	
Other electrical appliances		Omron	
Filter	CDGLQ01-0022	Peche	Consumables
Heating tube	380V 7KW	customization	Consumables
Filter	CDGLQ01-0022	Brand/Origin	Consumables