



Robot Arm Automatic Ultrasonic Cleaning Machine 200L Chamber 5 Stages

Our Product Introduction

Basic Information

- Place of Origin: Shenzhen, China
- Brand Name: Sky men
- Certification: RoHS, CE, FCC, SGS
- Model Number: JTM-5108SD
- Minimum Order Quantity: 1
- Price: 53,000USD
- Packaging Details: Wooden case
- Delivery Time: 50 working days after deposit
- Payment Terms: T/T
- Supply Ability: 50 pcs per month



Product Specification

- Chamber Size: 500(L)*600(W)*400(H) Mm
- Robot Arm Quantity: 1pc
- Washing Beat: 10 35min
- Machine Dimension: 5000x2300x2300mm
- Material Of All The Tank: AISI 304
- Power Of The Cleaning Machine: ≈36kW
- Highlight: **200L Automatic Ultrasonic Cleaning Machine, Robot Arm Ultrasonic Cleaning Machine, AISI 304 Ultrasonic Cleaning Machine**



Product Description

I. Project overview

1,Project name: 5 stages automatic ultrasonic cleaning machine

2,Project requirements:Based on the product information and cleaning technical requirements provided by customers, on the basis of meeting the technical agreement and production requirements, we will provide customers with mature, reliable, stable and excellent performance of automatic cleaning equipment to meet the use requirements, and provide customers with complete after-sales service and use technical guidance.In this project, Party B (the Seller) shall be responsible for the equipment design, manufacturing, commissioning, quality and after-sales service, and the project construction shall be completed according to the agreement reached with the customer before the sale.

II. Equipment details

1,Equipment overview:

1.1 The fully automatic cleaning machine model JTM-5108SD is a high-intelligence and high-precision cleaning equipment designed and manufactured for customer products; it mainly uses ultrasonic cleaning, to clean, rinse and dry customer products; So that the cleanliness of the customer's workpiece can meet the requirements of use, The equipment has 4 cleaning chamber, 1 drying chamber, loading and unloading table. The equipment is completed automatically, without the need for personnel to be on duty, and manual intervention can also be carried out as needed.

1.2 The model is JTM-5108SD automatic cleaning machine mainly by:

1 ultrasonic occurrence system (including generators, transducers),

2 holding system (cleaning tank),

3 heating system,

4 liquid level control system,

5 Induction positioning system

6 PLC control system,

7 Robot arm system.

8 Filtration circulation system,

9 High pressure water spraying system

Among them,

1 The physical shock generated by the ultrasonic occurrence system is the most important way of cleaning;

3 The heating system is to sensing the heating temperature by high precision temperature probe to realize the start-stop control of the heating device;

4 The level control system is a real-time induction of the amount of cleaning solution in the tank to realize the amount control of cleaning solution;

5 Induction positioning system helps mechanical grip precision positioning to improve grasp accuracy and effectiveness;

6 PLC control system is the start and stop and cleaning process, And according to the actual situation of the cleaning process for preparation or manual intervention;

7 The robot arm system is an effective way to carry and smoothly transport products into the next cleaning process

8 The filtration circulation system is to effectively filter the large particle stains in the cleaning liquid to achieve the maximum utilization of the cleaning solution;

9 Semi-enclosed stainless steel spray pipe equipped with an umbrella nozzle, to achieve high pressure water spray coverage, spraying pipe can move in tank automatically

2,Basic parameters of equipment

2.1 Workpiece information	Racks, rack size: 350x220x7mm
2.2 Chamber size	500(L)*600(W)*400(H) mm
2.3 Basket size	400(L)*500(W)*300(H) mm; 1 basket can load 15~20pcs racks
2.4 Power of the cleaning machine	~36kW
2.5 Robot arm quantity	1pc
2.6 Washing beat	10 35min
2.7 Machine dimension	About 5000x2300x2300mm,The actual size prevail
2.8 Power demand for equipment	380V±10%/50Hz,3 phase
2.9 Material of all the tank	AISI 304
2.10 Remote control	Software problem that cause performance problem should be done by remote on device by Skymen engineer
2.11 HMI and keys language	English

3,Working process:

3.1 To be washed products:Medical instruments

3.2 Cleaning process:

Loading

→ 1 ultrasonic cleaning for 10 minutes (media: water + alkaline detergent)

→ 2 High pressure water spraying for 3 Minutes (media: Water)

→ 3 ultrasonic rinsing for 5 minutes (media: hot water)

→ 4 ultrasonic rinsing for 5 minutes (media: hot water)

→ 5 Hot air drying for 10 minutes

Unloading

3.3 Cleaning agent type:Water + detergent

3.4 Description of the cleaning process configuration:

No.	cleaning liquid	Cleaning method	ultrasonic	Working tank	recycle filtering	heating power
1	water + alkaline detergent	ultrasonic cleaning	40kHz/1.8kW	tank 1	Yes	4.5kW
2	Water	High pressure jet	/	tank 2	Yes	/

3	Hot Water	Ultrasonic rinsing	40kHz/1.8kW	tank 3	/	4.5kW
4	Hot Water	Ultrasonic rinsing	/	tank 4	/	4.5kw
5	/	Hot air dry	/	tank 5	Yes	9kW

Allocation description of cleaning system

4.1 Ultrasonic cleaning + Filtration cycle system

No.	1st tank					
Structure	Tank size	500x600x400mm				
	Tank capacity	120L				
	Tank material	AISI304,thickness 2mm				
Ultrasonic system	Transducer	36pcs ultrasonic transducer, the total ultrasonic power is 1.8kW, and the power is continuously adjustable				
	Generator	Imported IGBT sweep control board with uniform ultrasonic output, output power with photoelectric display and current display				
heating system	temperature control	Digital display, temperature control range RT-95°C				
	heating power	Place a 4.5kW stainless steel heating pipe inside the tank				
Filtration system	Storage tank	.Tank volume is 30L, equipped with a lid; .Set the liquid level control in the box, if no liquid, will automatically turn off the circulating pump and sound and light alarm; .Set the discharge valve and set the discharge mode according to the requirements				
	circulating pump	Adopt centrifugal water pump				
	Filter Precision	5μm filter				
	Tube coupling	Connect AISI 304 pipe with Y type valve with pressure gauge (0~0.8Mpa) showing the operating status of the circulating pump				

4.2 High pressure water spraying

No.	4th tank					
Structure	Tank size	500x600x400mm				
	Tank capacity	120L				
	Tank material	AISI304,thickness 2mm				
spray rinsing system	Spray device	Semi-enclosed stainless steel spray pipe equipped with an umbrella nozzle, to achieve spray coverage, pipe can move in tank automatically				
	Storage tank	.Tank volume is 30L, equipped with a lid; .Set the liquid level control in the box, if no liquid, will automatically turn off the circulating pump and sound and light alarm; .Set the discharge valve and set the discharge mode according to the requirements				
	circulating pump	Adopt centrifugal water pump				
	Filter Precision	5μm filter				
	Tube coupling	Connect AISI 304 pipe with Y type valve with pressure gauge (0~0.8Mpa) showing the operating status of the circulating pump				

4.3 Ultrasonic Rinsing

No.	2nd tank					
Structure	Tank size	500x600x400mm				
	Tank capacity	120L				
	Tank material	AISI304,thickness 2mm				
Ultrasonic system	Transducer	36pcs ultrasonic transducer, the total ultrasonic power is 1.8kW, and the power is continuously adjustable				
	Generator	Imported IGBT sweep control board with uniform ultrasonic output, output power with photoelectric display and current display				
heating system	temperature control	Digital display, temperature control range RT-90°C				
	heating power	Place a 4.5kW stainless steel heating pipe inside the tank				

4.4 Ultrasonic Rinsing

No.	3rd tank					
Structure	Tank size	500x600x400mm				
	Tank capacity	120L				
	Tank material	AISI304,thickness 2mm				
Ultrasonic system	Transducer	36pcs ultrasonic transducer, the total ultrasonic power is 1.8kW, and the power is continuously adjustable				
	Generator	Imported IGBT sweep control board with uniform ultrasonic output, output power with photoelectric display and current display				
heating system	temperature control	Digital display, temperature control range RT-90°C				
	heating power	Place a 4.5kW stainless steel heating pipe inside the tank				

4.5 Hot air drying

No.	3rd tank	
Structure	Tank size	500x600x400mm
	Tank capacity	120L
	Tank material	AISI304,thickness 2mm
Hot air circulation drying system	Quantity	1 set
	Structure	The left and right side air inlet of the tank, and the circulating air outlet at the bottom is equipped with air heating device. The outlet fan outlet hole above the air duct is reserved for water vapor extraction.
	Principle	Dry the main part of the workpiece through the circulating dry hot air
	Hot air flow rate	30m³/min
	Heating module	Air heating device, heating power of 9kW, digital and explicit thermostat, temperature control range of RT-120°C
	Auxiliaries	High-efficiency air filter, groove body insulation device

5,Main mechanical structure

5.1 Robot arm

Quantity	1 set	
structure	The structure of the robot arm is a single-arm beam type, which is stable in operation, accurate in positioning, large in bearing capacity, strong in flexibility and fast in lifting.	
electrical control	<p>►The robotic arm is controlled by a programmable controller and proximity and induction switches to automatically complete the cleaning process; the cleaning rhythm is adjustable, and the operation process is variable frequency speed regulation, which can achieve soft landing and accurate positioning</p> <p>►Established with a washing basket protection device, when there is a basket in the tank, the robotic arm shall not place any more baskets</p>	
Motor parameters	Lifting	Gear motor, power: 3/4HP, speed: 0-7 m/min (parameters are designed on demand)
	Moving	Servo motor, power: 1HP, speed: 0-7 m/min (parameters are designed on demand)
Can achieve Function	<p>► Manual operation;</p> <p>► Fully automatic operation;</p> <p>► Automatic reset system;</p> <p>► Pause and emergency stop;</p> <p>► The man-machine interface modifies the program;</p> <p>► The man-machine interface adjusts the process parameters;</p> <p>► Can remotely monitor and control equipment operation;</p> <p>► HMI fault alarm display.</p>	
load bearing	Max. 50kg	

5.2 Machine frame chassis and door panel

quantity	1 set	
structure	<p>The frame and chassis of the entire equipment are made of stainless steel</p> <p>The front and rear and left and right sides of the equipment are equipped with decorative door panels, which are mainly composed of brushed stainless steel and acrylic panels. The surface is matte and beautiful.</p> <p>The water distribution tank is set on the rack, and the foot cup is set at the bottom</p>	

5.3 Air release

quantity	1set	
material	Stainless steel, PVC engineering plastics	
installation site	A suction cover can be set up above the organic solvent and water-soluble solvent cleaning tank, which can be connected to the customer exhaust system, and the air valve can be adjustable	

5.4 Basket

quantity	7pcs	
material	AISI 304	
Clamp	With clamp which can hold 15~20pcs racks stand in basket	

5.5 Electric control system

quantity	1 set	
material	Stainless steel board	
structure	<p>►The electric control cabinet is located on the left side of the first tank and is assembled with the cleaning system; install the touch screen of the operation panel and display the working status of the whole machine simultaneously</p> <p>►The buzzer and the equipment shall have three-color working indicator lamp, abnormal situation prompt sound and light alarm;</p> <p>►PLC, relay, air switch, transformer and other main order control circuit is configured in the cabinet;</p> <p>►The line layout is neat and clear, with a clear line number.</p>	

III. Spare part List

Spare parts	Brand	Remark
Transducer	Sky men	40kHz
Generator	Sky men	40kHz/1800W

Water pump	CNP	
Cylinder	Air TAC	
Geared Motor	Delta	
Servo Motor	Delta	
Cooling fan	AIRMATE	
Heater	JIUKOU	
PLC	Siemens	
Touch screen	Siemens	
Digital temperature controller	Omron	
Solenoid value	Air TAC	
Level switch	Skymer	
Photoelectric switch	Omron	
Capacitive approach switch	Omron	
Pneumatic Value	Flowserve Value	
Y-Value	Skymer	
Power switch	Delta	
Relay	Schneider	
Linear Guide Rail	PMI	
Frame/Shell	Jinshuncheng	
Tank	Jinshuncheng	



IV. Documents and spare parts shipped with machine

1, Relevant technical documents

Name	language	quantity	Remarks
Manual	English	1	
circuit diagram	English	1	

piping diagram	English	1	
Water/electric installation diagram	English	1	
Daily Maintenance Instructions	English	1	

2,Spare parts

Name	Quantity
heating pipe	4pcs



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