



Good ultrasonic cleaner made by skymen

## Standard Industrial Single Tank Ultrasonic Cleaner User Guide

JP-120~11512(ST、G、P、PG) series

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# Skymen Technology Corporation Limited

Established in 2007

Headquartered in Bao'an District, Shenzhen City, Guangdong Province  
A national high-tech enterprise that has been focusing on ultrasonic cleaning machines  
The top three cleaning equipment brands in the industry for many years in a row

Skymen Technology Corporation Limited has its own independent brand "skymen", which is widely used in factory manufacturing, hospitals, military police, industry, commercial environment, civil and other fields, providing environmental protection and precision for more than 1,000 domestic and world famous enterprises. Ultrasonic cleaning solutions enjoy a high reputation in the industry. At present, it has developed into a world-leading high-end ultrasonic cleaning brand enterprise. It has completed the strategic layout in the Pearl River Delta/Yangtze River Delta and the Bohai Rim Economic Circle, and its products are sold to more than 100 countries around the world. and region.

## ■ Shaoguan production base

Shaoguan Industrial Park, the standard industrial plant building covers an area of more than 10,000 square meters, has a number of automatic production lines, and the annual production capacity of ultrasonic products reaches 1 million units. Committed to building an ultrasonic technology product chain and industrial park.

## ■ Fuyong Marketing Center

Zhonggang Plaza, Exhibition Bay has established an independent marketing center with an office area of more than 1,300 square meters. It is a comprehensive operation center integrating sales, human resources, and finance; it aims to comprehensively improve the company's management level, strive for continuous improvement, and achieve sustainable management.

## ■ Shajing R&D Center

The R&D center covers an area of 3,000 m<sup>2</sup> +. The core personnel of the R&D center's technical and management teams have more than ten years of industry R&D experience. They have gathered and trained a large number of outstanding talents and achieved a series of fruitful research in the field of ultrasonic cleaning. Has more than 50 patents.



Shaoguan production base

Fuyong marketing center

Shajing R&D center

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# 1 Instruction for use

## ■ Equipment overview

JP series single tank cleaning machine is our standard model, using high quality 304 stainless steel plate production, strong corrosion resistance and long service life. Using high quality pure industrial ultrasonic transducer independently developed by ourselves, using the latest bonding technology and imported special adhesive, with high electroacoustic conversion efficiency and strong ultrasonic output power. Equipped with automatic heating device, temperature control range: room temperature ~95°C (temperature difference ± 5°C).

## ■ Service environment

Temperature: -10°C ~40°C Humidity: 35~85%

## ■ Cleaning principle

Using ultrasonic transducer (shocks) to emit high frequency ultrasonic waves produces 28000 (28Khz shocks) or 40000 (40Khz shocks) shocks per second, with liquid as the propagation medium. Because ultrasonic is a kind of compression longitudinal wave pushing the liquid pressure changes and countless tiny vacuum bubble cavitation effect, when real bubble pressure blasting, can produce a strong impact, the bubble closed form more than 1000 atmospheric pressure, in instantaneous time countless blasting and regeneration can be attached to the object surface, concave or hidden grease, dirt quickly loose from the object, achieve thorough cleaning without damaging the workpiece surface.

Industry	Industrial cleaning of workpiece products & materials
Semiconductor	Integrated circuits, power tubes, silicon wafers, gallium arsenide, diodes, lead frames, capillary tubes, trays, etc.
Electronic electrical	Tube parts, cathode ray tubes, printed circuit boards, quartz parts, resistor, voltmeter, variable capacitors, circuit breakers, relays, connectors, variable connector, electrolytic contacts, telephone exchange equipment, speaker parts, power meters, motor / roller / fixed pieces on pumps, LCD glass, core parts, computer floppy disks, video tape parts, hoop parts, heads, etc.
Precision Machine	Bearings, sewing machine parts, typewriters, textiles machines, optical machinery devices, gas valves, watches, cameras and metal filters, etc.
Optical Devices	Lens, prism, lens, lens, filter lens, glass device, field film, optical fiber, etc.
Hardware machinery	Bearings, gears, steel balls, metal castings, tools, adjustable valves and cylinder components, burners, compressors, oil presses, spray guns and ultracentrifuge, market faucets, filters, over filter element, etc.
Electroplate	Electroplating parts, casting mold, stamping parts, etc.
Automobile	Piston ring, vaporizer, fuel pump, flowmeter housing, compressor housing, bottom of measuring rotating crank, automotive castings, electrical components, etc.
Chemical fiber	Chemical or artificial optical fiber nozzle, filter protector, chemical fiber texture.

# Warranty card

Single Tank Ultrasonic Cleaner			
Departure date			
Machine number			
Operating Voltage			
Working current			
Rated frequency			
Maintenance records			
	Maintenance plan	Replacement parts	Caretaker
01			
02			
03			
04			
05			
06			
07			
08			
09			
10			
11			
12			
If any fault cannot be ruled out, please contact us in time!			

## 8 Fault inspection and processing

### Ultrasound not working

- If the circuit board is burnt, you only need to open the side panel of the machine to observe whether the fuse on the main drive board is broken, and turn on the generator externally. If you find that the fuse is burned, please directly contact the company for after-sales service.
- If the wiring is loose, please check the connection between the main drive board, transducer, adapter board and control panel, and the loose wiring could be repaired by yourself.
- If the controlled ultrasonic signal is not reached, please make the internal inspection as follows,
  - Please check whether the display board is normal, whether the ultrasonic indicator light is normal, when the ultrasonic function is turned on.
  - Please check whether the relay on the adapter board is turned on. And it is the normal condition that the sound of the relay could be hear by switching ultrasonic function.
  - The wiring is wrong and loose with visual inspection, or the main drive board is damaged, please directly contact the company for after-sales services.
  - Other situation, if none of the above three points are the reasons why the ultrasound does not work, please directly contact the company for after-sales service.

### Display is abnormal

- Generally, some components on the display board are damaged. Please confirm the working environment of the machine and whether there is water flowing on it. If it affects the usage, please contact us. During the warranty period, as long as it is not caused by water ingress, we will replace a new display board for you free of charge.

### Heating not working

- Loose wiring, Internally: check the wiring between the control panel, adapter board, contactor, heaters. Externally: check the wiring among the thermostat, contactor and heaters. And the loose wiring could be repaired by yourself.
- The control part is broken. When the heating is turned on, the heating indicator lights on. It is the normal condition that the relay and contactor on the adapter board cause sounds when the heating is turned on. Please check in order, if any step is abnormal, which component is broken.
- The heater is damaged. The heater could be inspected visually whether there is any damage. Please check and make sure there is no abnormality at the joint of the heaters.
- The contactor is broken. When the above situation is normal, then it is basically the broken contactor that makes the heating not working.

### The machine shows no power

- For the internal machine, please confirm whether the power cord of the machine has electricity, please test with a tool, such as a multimeter, please check whether the power supply, adapter board, and control panel are loose or fall off. Please check if there is a normal 5V power on the control panel with a multimeter, if not, the adapter board is broken. And if there is 5V power, that means the control panel is broken.
- For the external machine, please confirm whether the power cable of the machine has electricity, please test it with a tool.

### Weak Power

- The ultrasonic drive is broken. When the machine is making ultrasound, to only put in the cleaning solution. In 2 minutes, if the ultrasound strength is obviously weak, such as the water surface is calm, please test the ultrasound with your hand put in the water.
- The cleaning liquid is too dirty. When the cleaning liquid is too dirty, the ultrasound strength will be significantly reduced. Please replace the dirty cleaning liquid.
- The cleaning object is placed incorrectly. When the cleaning object is placed in the tank, you feel the cleaning force is not as strong as before. This is normal situation and you need to get a good cleaning effect.

### Filter Circulation System does not work (G Series with Filter Circulation)

- The control system is abnormal. The indicator light of the filter circulation is turned on, it is normal. When the liquid level of the auxiliary tank is higher than the liquid level sensor head, the two ends of the liquid level indicator are continuously connected, it is normal. When the contactor of filter circulation is turned on, with the sound is normal. Please check in order, if any step is abnormal, which component is broken.
- The motor is bad. Please make sure the motor is powered on, if the motor does not rotate, the motor is damaged.

## 2 Technical parameters

### JP-120~11512(ST/G) Parameter List

Model	Inner tank size/ Volume	Ultrason- ic power	Heat- ing power	Time control		Ultrasonic Generator		Voltage/Water pump	
				ST series	G series	ST series	G series	ST series	G series
JP-120(ST/G)	500X300X250/38L	0-600W	1.5KW	1-99min	1-99h	Built-in	External	2 phase 220V/10A	220V/550W
JP-180(ST/G)	500X350X300/53L	0-900W	1.5KW	1-99min	1-99h	Built-in	External	2 phase 220V/10A	220V/550W
JP-240(ST/G)	550X400X350/77L	0-1200W	3KW	1-99min	1-99h	Built-in	External	2 phase 220V/19A	220V/550W
JP-300(ST/G)	550X450X400/99L	0-1500W	3KW	1-99min	1-99h	Built-in	External	2 phase 220V/20A	380V/370W
JP-301(ST/G)	800X300X400/96L	0-1500W	3KW	1-99min	1-99h	Built-in	External	2 phase 220V/20A	380V/370W
JP-360(ST/G)	600X500X450/135L	0-1800W	4.5KW	1-99h	1-99h	External	External	3 phase 380V/10A	380V/370W
JP-480(ST/G)	700X500X500/175L	0-2400W	6KW	1-99h	1-99h	External	External	3 phase 380V/15A	380V/370W
JP-600(ST/G)	800X600X550/264L	0-3000W	6KW	1-99h	1-99h	External	External	3 phase 380V/23A	380V/370W
JP-720(ST/G)	1000X600X600/360L	0-3600W	9KW	1-99h	1-99h	External	External	3 phase 380V/30A	380V/370W
JP-1108(ST/G)	1000X900X600/540L	0-5400W	18KW	1-99h	1-99h	External	External	3 phase 380V/47A	380V/370W
JP-1144(ST/G)	1200X1000X800/960L	0-7200W	24KW	1-99h	1-99h	External	External	3 phase 380V/63A	380V/370W
JP-1180(ST/G)	1200x1000x1000/1200L	0-9000W	36KW	1-99h	1-99h	External	External	3 phase 380V/121A	380V/750W
JP-1192(ST/G)	1200x1200x1000/1440L	0-9600W	36KW	1-99h	1-99h	External	External	3 phase 380V/122A	380V/750W
JP-1216(ST/G)	1500x1000x1000/1500L	0-10800W	36KW	1-99h	1-99h	External	External	3 phase 380V/126A	380V/750W
JP-1288(ST/G)	2000x1200x800/1920L	0-14400W	36KW	1-99h	1-99h	External	External	3 phase 380V/135A	380V/750W
JP-1360(ST/G)	2000x1200x1000/2400L	0-18000W	36KW	1-99h	1-99h	External	External	3 phase 380V/145A	380V/750W
JP-1432(ST/G)	2000x1500x1200/3600L	0-21800W	36KW	1-99h	1-99h	External	External	3 phase 380V/155A	380V/750W
JP-1576(ST/G)	2500x1500x1200/4500L	0-28800W	36KW	1-99h	1-99h	External	External	3 phase 380V/173A	380V/750W
JP-1648(ST/G)	3000x1500x1200/5400L	0-32400W	36KW	1-99h	1-99h	External	External	3 phase 380V/183A	380V/1.1KW
JP-1720(ST/G)	4000x1600x1000/6400L	0-36000W	36KW	1-99h	1-99h	External	External	3 phase 380V/193A	380V/1.1KW
JP-1936(ST/G)	3500x1600x1300/7280L	0-46800W	36KW	1-99h	1-99h	External	External	3 phase 380V/221A	380V/1.1KW
JP-11152(ST/G)	2500x2000x1700/8500L	0-57600W	36KW	1-99h	1-99h	External	External	3 phase 380V/250A	380V/1.1KW
JP-11224(ST/G)	3200x2000x1500/9600L	0-61200W	36KW	1-99h	1-99h	External	External	3 phase 380V/259A	380V/1.1KW
JP-11368(ST/G)	8000x1200x1200/11520L	0-68400W	36KW	1-99h	1-99h	External	External	3 phase 380V/278A	380V/1.1KW
JP-11512(ST/G)	8000x1600x1600/20480L	0-75600W	48KW	1-99h	1-99h	External	External	3 phase 380V/330A	380V/1.5KW

## JP-120~11512(P/PG) Parameter List

Model	Inner tank size/ Volume	Ultrasonic power	Heat- ing power	Time control		Ultrasonic Generator		Voltage/Water pump	
				P series	PGseries	P series	PGseries	P series	PGseries
JP-120(P/PG)	500X300X250/38L	0-900W	3KW	1-99min	1-99h	Built-in	External	2 phase 220V/18A	220V/550W
JP-180(P/PG)	500X350X300/53L	0-1500W	3KW	1-99min	1-99h	Built-in	External	2 phase 220V/21A	220V/550W
JP-240(P/PG)	550X400X350/77L	0-1800W	6KW	1-99min	1-99h	External	External	2 phase 220V/19A	220V/550W
JP-300(P/PG)	550X450X400/99L	0-2400W	6KW	1-99min	1-99h	External	External	2 phase 220V/35A	380V/370W
JP-301(P/PG)	800X300X400/96L	0-2400W	6KW	1-99min	1-99h	External	External	2 phase 220V/35A	380V/370W
JP-360(P/PG)	600X500X450/135L	0-3000W	9KW	1-99h	1-99h	External	External	3 phase 380V/24A	380V/370W
JP-480(P/PG)	700X500X500/175L	0-3600W	12KW	1-99h	1-99h	External	External	3 phase 380V/32A	380V/370W
JP-600(P/PG)	800X600X550/264L	0-4500W	12KW	1-99h	1-99h	External	External	3 phase 380V/32A	380V/370W
JP-720(P/PG)	1000X600X600/360L	0-5400W	18KW	1-99h	1-99h	External	External	3 phase 380V/47A	380V/370W
JP-1108(P/PG)	1000X900X600/540L	0-7500W	36KW	1-99h	1-99h	External	External	3 phase 380V/95A	380V/370W
JP-1144(P/PG)	1200X1000X800/960L	0-10800W	48KW	1-99h	1-99h	External	External	3 phase 380V/126A	380V/370W

## 3 Equipment installation

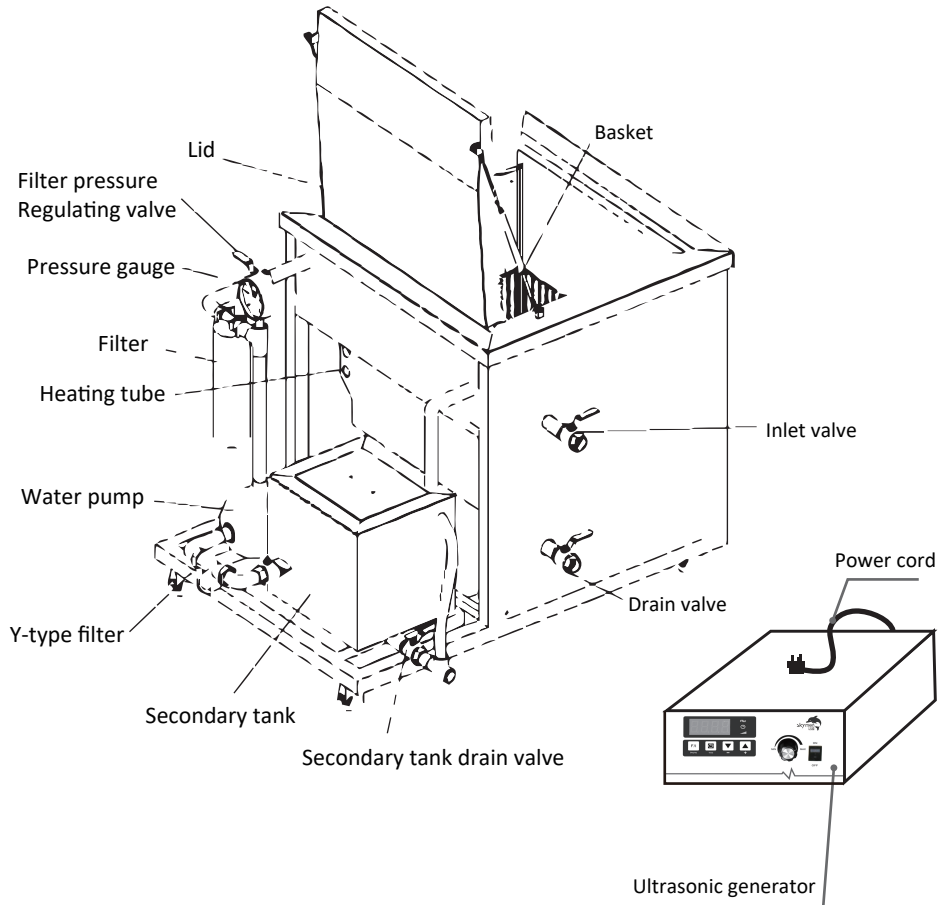
### Machine detection

- Check whether the machine conforms to the purchase;
- Check the machine for deformation, falling and other damages. Disassemble the outer plate to check whether there are screws falling off and other damages during transportation;

## 7 Device maintenance

Device Name	Maintenance content	Maintenance Standard	Maintenance Cycle	Remarks
Generator	Externally: Disconnect the power supply, unscrew the screw on the side of the generator, remove the upper cover, lightly brush the inside of the generator and blow off the dust with an air gun. Internally: Disconnect the power supply, remove the machine cover, and dust accumulation shows. Brush lightly, and blow away the dust with an air gun.	There is no visible dust accumulation inside the generator.	Once 15 days	The maintenance cycle could be adjusted according to customers' usage. If the device has reached the maintenance standard, no more maintenance is required.
Ultrasonic Transducer	Disconnect the power supply, disassemble the machine cover, and wipe with a soft, lint-free cloth.	There is no visible dirt on the surface of the transducer	Once 7 days	
Tank	Rinse with water, wipe with soft cloth	There is no visible dirt on the surface of the inner tank	Once 3 days	
Water Valve	Whether the leak is blocked	Inlet and outlet valve with smooth water flowing No water leakage when the valves are closed	Once 15 days	
Electrical Parts and Vents	Disconnect power, lightly brush and blow away dust with an air gun	No visible dust accumulation	Once 7 days	
Heating Plate	Disconnect the power supply, remove the machine cover, brush lightly with a brush and blow off the dust with an air gun.	There is no obvious dust accumulation on the surface of the heating plate	Once 7 days	
Power Cable Ground wire and Interfaces	Visual inspection and working tests	No visible breakage on wires	Once 15 days	
Filter Circulation System	Remove the filter element and visually inspect	It could be determined according to the usage frequency or the filter needs	Once 15 days	

## External schematic diagram of 120~1144G and PG Series filter machines

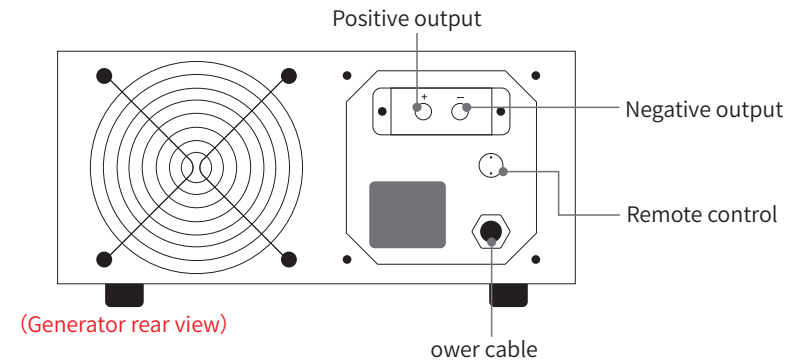


Filter model G,PG cleaner diagram(external model)

## Device installation

- Make sure that the power supply provided to the machine meets the current and voltage requirements of the machine. For details, please refer to the technical specification parameter table;
- Machine placement:  
Since the bottom of the machine is equipped with wiring, it must not be placed in a place where the humidity is very high and the water can submerge half of the casters.
- In addition, the machine needs to dissipate heat when it is working, and the distance between the front, rear, left, and right sides of the machine must be guaranteed to be 10CM. The external generator cannot be placed in a place with high temperature, high humidity and no ventilation;
- Make sure the generator is powered on normally, and refer to the generator instruction manual;

The generator wiring is as follows:



## Generator built-in machine

Just supply power and water to machine, then can start to use.

## The national standard product power cord color is as below

<b>Single phase power</b>	Red is live wire, blue is neutral wire, yellow-green is ground wire
<b>3 phase power</b>	Phase A: yellow Phase B: Green Phase C: red Neutral line: blue Ground Wire: Yellow Green

- For safety, please ensure that the ground wire is connected securely

## External generator machine

The difference between the external generator machine and the built-in generator machine is that the drive part is separated from the main body, and the external main body is used for Three-phases electricity, single-phase electricity for the generator, the power line connection is the same as the built-in type, and the generator connection is divided into remote control lines With the drive line (orange is positive, blue is negative, if the line is marked with +-, then connect in +-);

## 4 Directions for use

### 1 Put in the cleaning solution

When using, make sure that the liquid level is completely submerged in the heating pipe and the items to be cleaned; if there is a filter circulation function (Functional machines (G, PG series), the auxiliary filter tank must be filled to the overflow at the same time as the cleaning tank before the filter cycle can be started (except for the filter cycle function);

### 2 Set working parameters (time, temperature, power)

Long press the addition and subtraction button, the value will be added and subtracted continuously, the specific operation can refer to the control panel;

### 3 Preheating

According to the needs of the cleaning process, the heating function can be turned on first to let the liquid temperature reach the required temperature;

### 4 Put in the cleaning items

Put the objects to be cleaned into the cleaning tank liquid, remember not to let the liquid overflow, and the single-layer cleaning of the objects does not overlap, which can make the cleaning effect better;

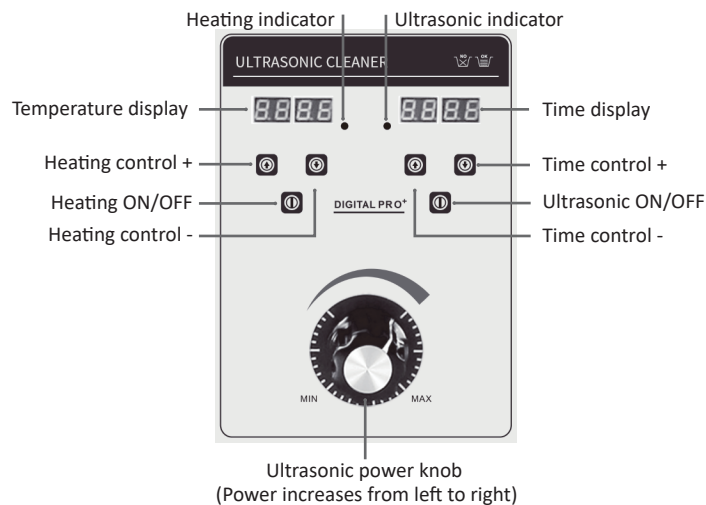
### 5 Start cleaning

Press the ultrasonic start button to start the cleaning work. For machines with filtration cycle, consider whether to open the filtration cycle;

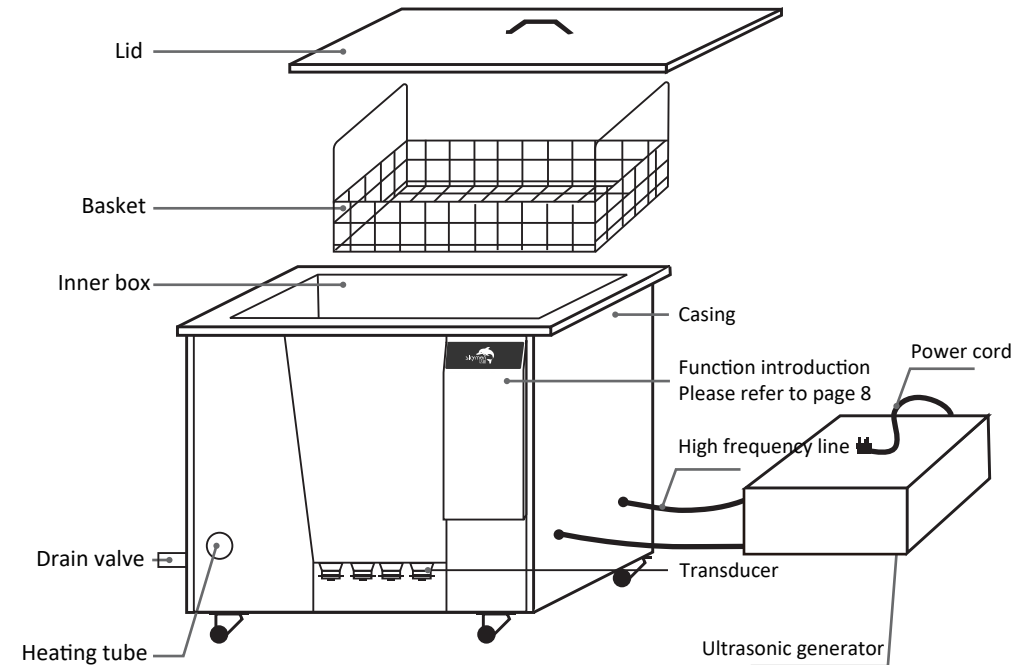
### 6 Finish cleaning

To stop the ultrasound in the middle, just press the ultrasound start button again, the countdown is over, after the cleaning work is completed, turn off the power, and clean and dry the inner tank;

## Conventional 120~301 ST, P built-in product control panel diagram



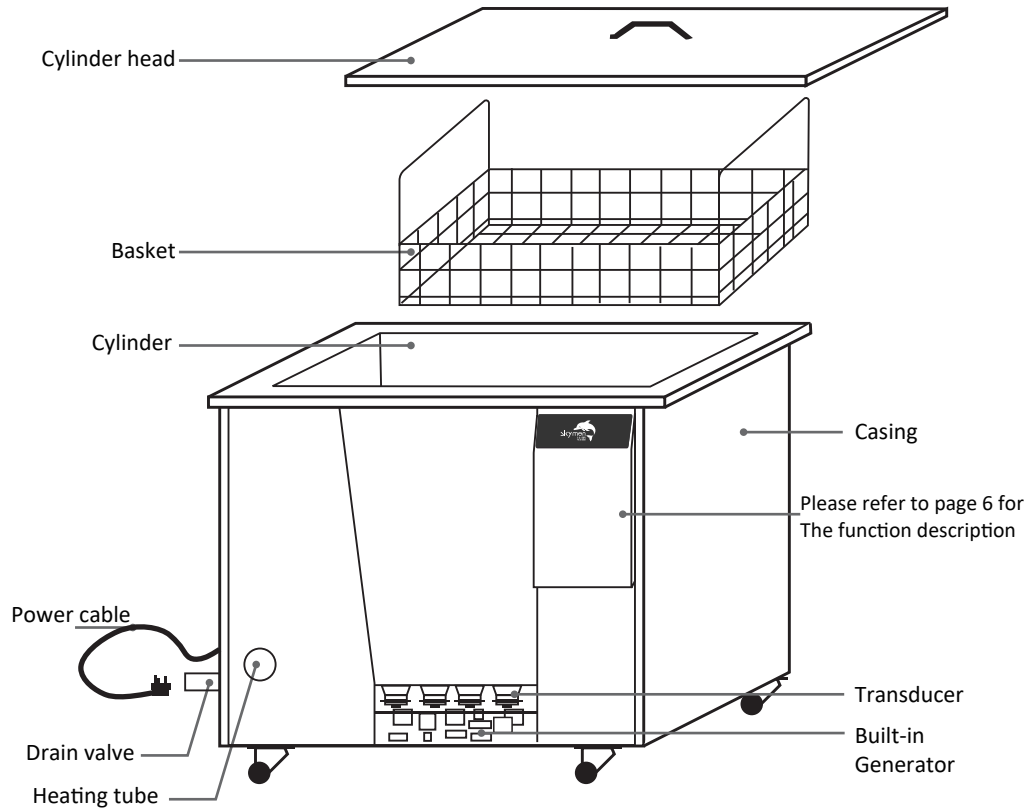
## Schematic diagram of standard series 360~11512ST, P Series external type



Standard 360~11512ST/P cleaner diagram(external model)



■ Schematic diagram of the built-in model of the Standard model 120~301ST and P series



Standard 120~301ST,P series schematic diagram (built-in)

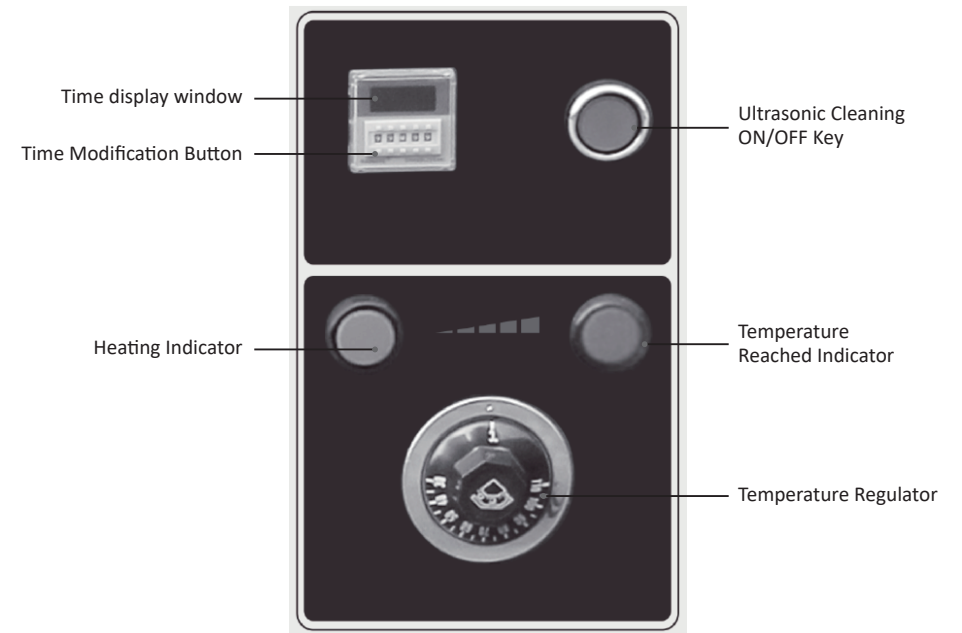
■ Standard model: 120~301ST/P built-in generator series machine setting

**Timer** Press the time "+" key to set the desired countdown time. When the time is added to 99 or reduced to 0, continue to press the "+" key to display the normally open display ON. This series of products supports the countdown setting from 1-99 minutes and the normally open setting, the time displayed is the set time, it will count down when working, and the indicator light at the "time display window" will be on.

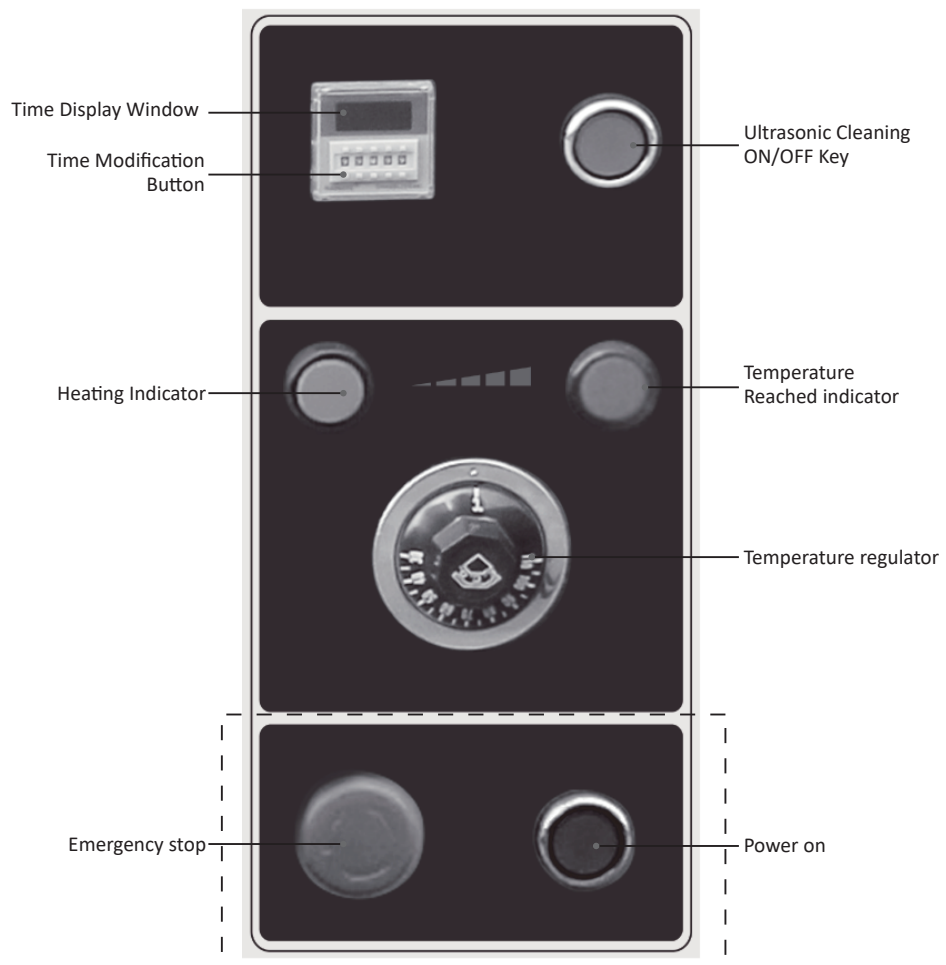
**Temperature setting** Use the temperature +, - keys to set the temperature value, switch the key to start the heating function, when heating, the "temperature on indicator" will be on.

**Power setting** Ultrasonic power regulator, turn left to turn it down, turn right to turn it up, put the cleaning work piece to a suitable position, do not twist the regulator at will after setting.

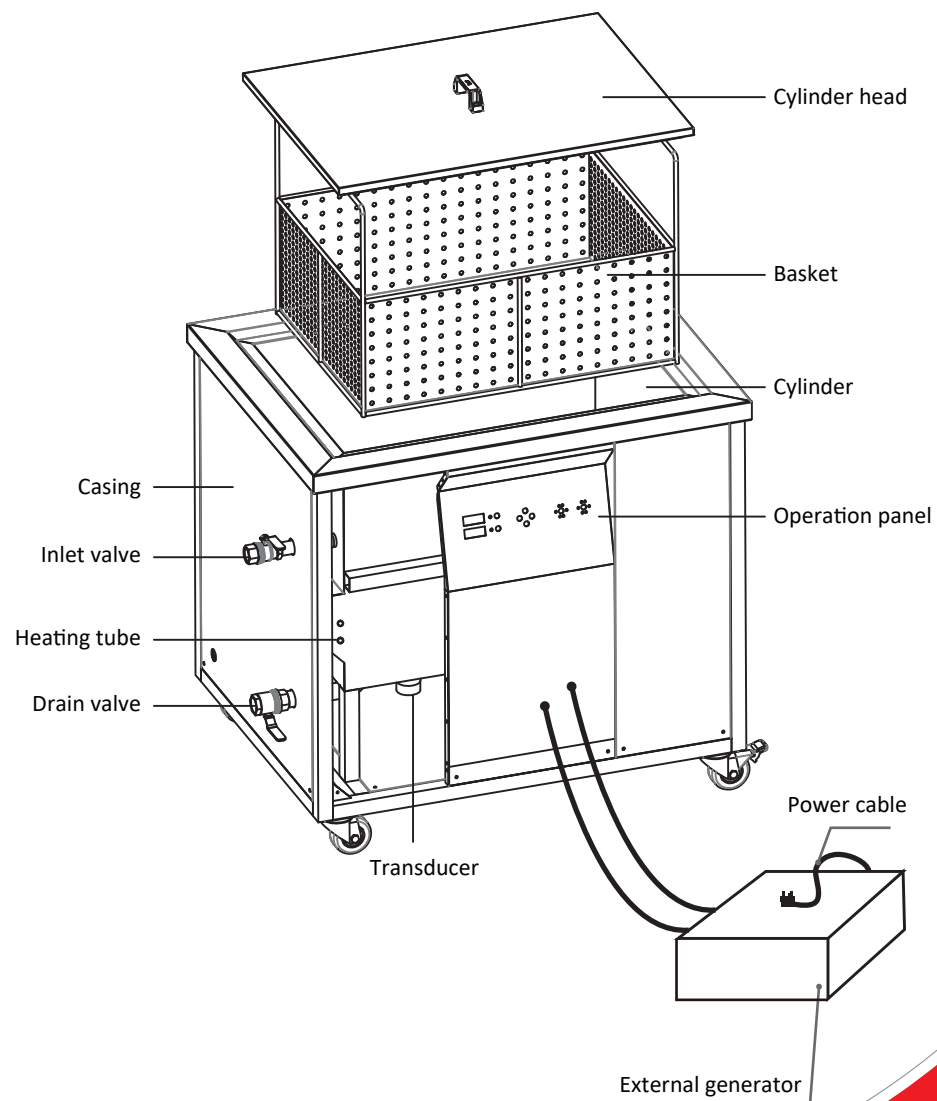
■ Control Panel Of Standard Model 360~720 St/P Series



■ Control Panel Of Standard Model 1108~11512 St/P Series



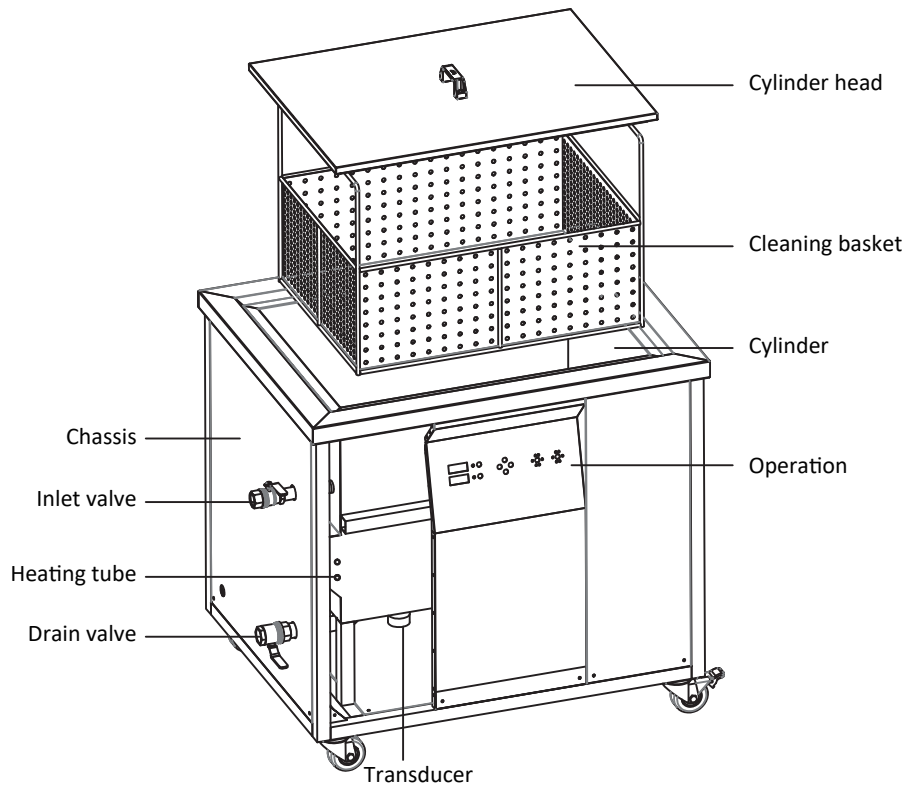
■ Schematic diagram of the built-out model of the Upgraded inclined plane 360ST~11512ST and P series



Schematic diagram of upgrading bevel 360ST~11512ST, p series (external type)

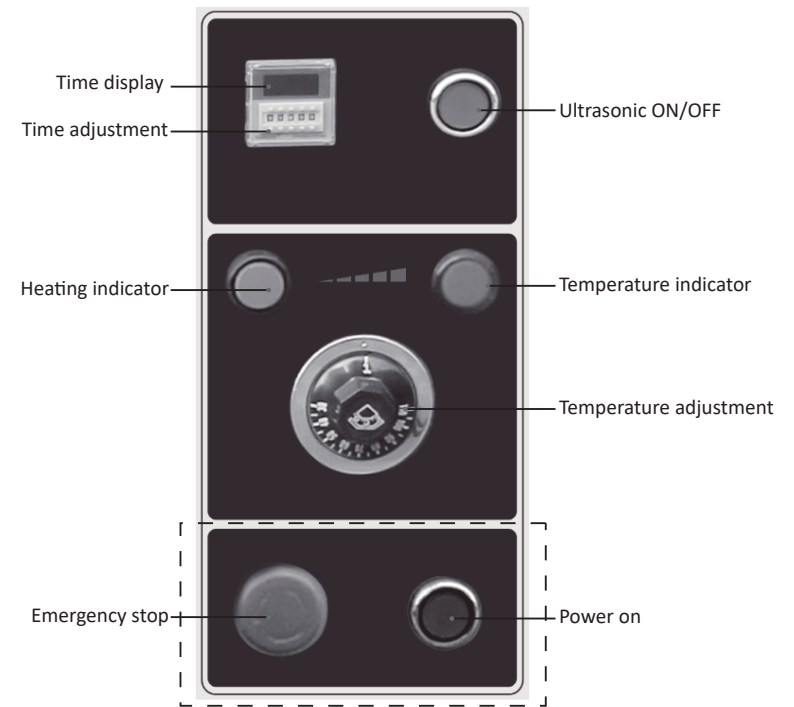
## 6 Structure diagram

### ■ Schematic diagram of the built-in model of the Upgraded inclined plane 120~301ST and P series



Upgrade panel 120~301ST, p ultrasonic cleaner diagram (built-in)

### ■ G, PG series control panel diagram



### ■ External ST, P, G, PG series control

**setting** 12.press the plus and minus button to set the value, set the time unit: seconds, minutes, hours;

**Temperature setting** adjust the temperature control knob;

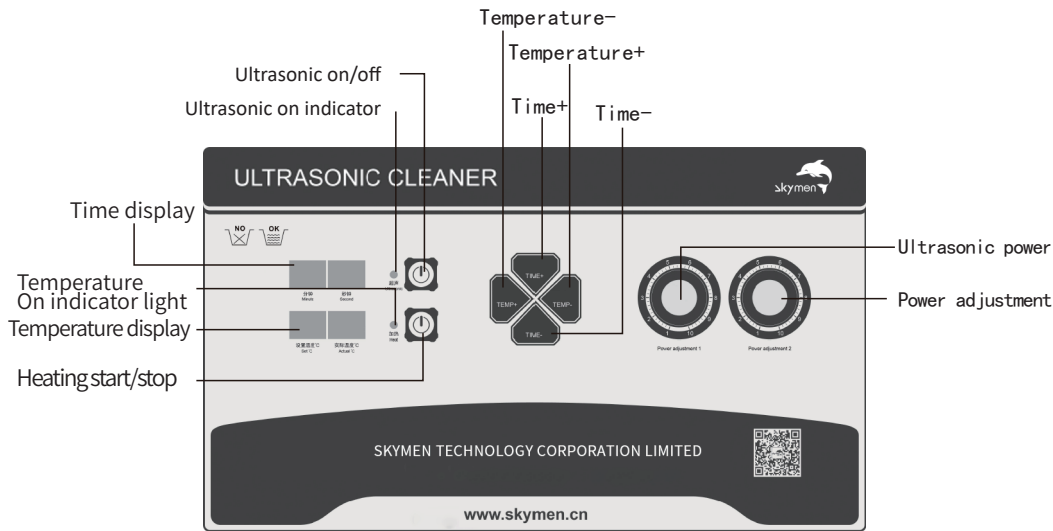
**Power setting** Refer to the generator manual to set the power and control mode. factory setting is the remote control mode,the generator only needs to adjust the power.

**Power button** Turn on the power switch button before running the machine.

**Emergency stop** Turn on the power switch button before running the machine.

**Filtration cycle setting** Make sure that the filter sub-tank enough liquid to start, (G, PG series)

## ■ Upgraded sloped 120~11512ST series control panel diagram



## ■ Upgraded sloped 120~11512ST setting

**Time setting** Press the time "+" key to set the desired countdown time, when the time is added to 99 or reduced to 0, continue to press "" The "+" button will display ON and the normally open display. This series of products supports the countdown setting from 1 to 99 minutes and the normally open setting. The time display When working, it will count down the "time display" and the indicator light will be on.

**Temperature setting** Use the temperature +, - keys to set the temperature value, Switch the key to start the heating function, When heating, the "temperature on indicator" will light up.

**Power setting** Left rotation is small, right rotation is large, Please adjust it to a position suitable for object cleaning! Do not adjust after setting.

## 5 Matters needing attention

### ■ Device Installation

- The ultrasonic cleaner should be installed in a well-ventilated and dry place;
- The machine should be kept away from heat sources;
- It is strictly forbidden to use strong acids and alkalis, alcohol and flammable and explosive liquids as cleaning media;
- It is strictly forbidden to splash liquid into the ultrasonic control cabinet;
- Pay attention to keep the machine clean and turn off the power when not in use;
- Avoid impact and violent movement on the machine;
- The cleaning solution should be precipitated, filtered or replaced in time to ensure the cleaning effect;
- When there is too much sediment in the cleaning tank, it should be rinsed and removed in time to improve the durability of the cleaning tank;
- Regularly use compressed air to clean the dust attached to the electrical control parts and equipment vents;
- Regularly test the insulation of ultrasonic equipment and check the grounding wire;
- Regularly test the power supply to confirm that it meets the power supply requirements of the equipment;
- For equipment with a filter circulation system, the filter element should be replaced regularly;
- If it is not used for a long time, please drain the cleaning solution and clean the cleaning tank;
- When not in use for a long time, please turn it on once a month according to the method of use and work for half an hour;