

SALT SPRAY TESTER



INSTRUCTION MANUAL

SAFETY INSTRUCTIONS

Due to the potential hazards associated with any electrical instrument it is important that the user is familiar with the instructions covering the capabilities, and the operation of the instrument. The user should ensure that all reasonable safety precautions are followed and if any doubt should seek professional advice before proceeding.

The instrument is designed for use by suitably trained, competent personnel in a controlled working environment and is intended for use as a Salt Spray Tester only.

TESTEX cannot be held responsible for any unauthorized modifications to this unit.

WARNING

This unit contains hazardous live voltages. Under no circumstance should the user try to prevent or restrict the movement of parts or gain access to the internal circuitry, either personally or with the aid of foreign bodies.

All ventilation slots must be kept clear.

PROVISION FOR LIFTING AND CARRYING

When unpacking or moving this unit extreme care is required, owing to its physical construction and weight.

It is recommended that accepted lifting and carrying procedures are employed and that personnel wear the appropriate protective equipment e.g. safety shoes.

If the unit is to be move an appreciable distance/height it is recommended that it is moved via a suitable vehicle e.g. a fork lift truck.

OPERATING ENVIRONMENT

This unit is intended to be used in a residential, commercial and light industrial environment as laid down in BS EN 50081-1 and BS EN 50082-1.

The following list gives examples of locations in which the instrument might be located; workshops, laboratories and service centers. Locations which are considered to be commercial or light industrial.

CLIMATIC ENVIRONMENT

The unit is intended to operate within the following conditions

- i) Temp 25+/-5 deg Celsius
- ii) Humidity 30-65% RH
- iii) Altitude <2000m above sea level.

And it is intended to be stored in a temp range of -25 - +25 deg Celsius.

ELECTRICAL INFORMATION

This unit complies with BS EN 61010-1 safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use.

INSTALLATION CATEGORY AND POLLUTION DEGREE

Installation category III

Pollution Degree 2

ELECTRICAL / AIR SUPPLY

Voltage: 110V; 127V; 220V; 230V; 240V; 380V; 415V;

Frequency: 50Hz; 60Hz

Phase sequence: 1 Phase; 3 Phase;

Air pressure : 0.4-0.7Mpa

WARNING LABELS

Number	Symbol	Publication	Description
1		IEC 417, No. 5031	Direct current
2		IEC 417, No. 5032	Alternating current
3		IEC 417, No. 5033	Both direct and alternating current
4		IEC 617-2, No. 02-02-06	Three-phase alternating current
5		IEC 417, No. 5017	Earth (ground) TERMINAL
6		IEC 417, No. 5019	PROTECTIVE CONDUCTOR TERMINAL
7		IEC 417, No. 5020	Frame or chassis TERMINAL
8		IEC 417, No. 5021	Equipotentiality
9		IEC 417, No. 5007	On (Supply)
10		IEC 417, No. 5008	Off (Supply)
11		IEC 417, No. 5172	Equipment protected throughout by DOUBLE INSULATION or REINFORCED INSULATION (equivalent to Class II of IEC 536 -see annex H)
12 (see note)	 Background colour - yellow; symbol and outline - black	ISO 3864, No. B.3.6	Caution, risk of electric shock
13	 Symbol under consideration		Easily-touched higher temperature parts
14 (see note)	 Background colour - yellow; symbol and outline - black	ISO 3864, No. B.3.1	Caution (refer to accompanying documents)

SECTION 1 Introduction

1.1 Test Chamber

Spray Tower, Built-in glass nozzle, internal spray approach roads through the pipe and then distributed by a conical distributor to the whole test chamber

Spray Regulator, to adjust the density of spray, when turning to high position, the spray density is increased, and turn to lower to reduce. Saline warm-up slot is in the bottom of the spray tower, this saline is injected through the salt water supplement bottle, the water level is automatically controlled by the float, in the tank bottom fitted with a drainage pipe.

Collector, to collect the spray generated by the nozzle, spray is freely fall in the 80cm² funnel cup, and then by the pipe flow to the measuring cup.

Wet bulb Cup, L-shaped wet ball cup is use humidity fashion water container.

Shelves, the frame is made of high strength plastic, so it is not allowed to place any object more than 2kg at an point, if a object with more contact point, the frame can withstand the weight less than 10kg. The rods can be placed on the upper and lower holes on both sides of Shelve, to place test specimens at 15 degree or 30 degrees angle to the vertical.

Filter, used to filter impurities in the salt solution to ensure that the nozzle is not clogged.

Heat Sink, the sink is in the bottom of the test chamber, used to heat water and to maintain the temperature.

1.2 External of the Test Chamber

Wet and dry bulb thermometer, to read the test chamber temperature and humidity.

Measuring Cup, to collect spray volume of each test

Sealing sink, in order to avoid the leakage of the spray using water seal principle

Saturated air barrel, fitted in the bottom of the control box, used to make the air saturated humidity by heating, humidification in this barrel, and then flow to the nozzle.

Tests cover, a roof bevel 100 degrees perspective cap for covering the top of the test chamber, easy to observe tests.

Pressure regulator, to adjust the air pressure shown on the pressure gauge (Test conditions 1kg/cm²).

Pressure Gauge, to indicate the air pressure heated through the saturated air barrel flow to the nozzle (test conditions 1kg/cm²).

Exhaust Pipe, 48mm (pvc-u) diameter pipe, combined with the row of fog in the outdoor, non-water phenomenon, so that fog natural discharges.

Drainage Pipe, a 1/2 (pvc-u) diameter pipe, to drain wastewater.

1.3 Control Systems

Test chamber temperature controlled according to the standard test method, salt water test is 35 °C, and corrosion resistance test is 50 °C (Optional).

Saturated air barrel temperature controller, used to control the barrel temperature of saturated air temperature at 47 °C for saline test, and at 63 °C (Optional) for corrosion resistance test.

Timer, to set test time 0.1s ~ 9999hr, and then automatically shutdown when time off

Power Switch, control the total power of the whole machine.

Spray Switches, to control spray solenoid valve.

Timer Switch, to control the power of the timer.

Defog switch, to control the defrosting systems, to clear salt spray in the test chamber.

Laboratory low water level indicator, the light is bright when the water level below the lower limit of the test chamber, add in water until the indicator light extinguished. (Careful not to add salt)

Salt spray tank low water level indicator, when the lights bright, it is required to add 5% salt water from the reagent entrance.

The end of the trial indicator, the lights bright explain that the test have been completed.

Pressure drum water level low light, the lights is bright explain that the saturated barrels of water level below the lower limit, add in water until the indicator light extinguished. (Careful not to add salt)

This machine manufactured in accordance with but not limited to the following standards :
ASTM B117, GB/T2423.17

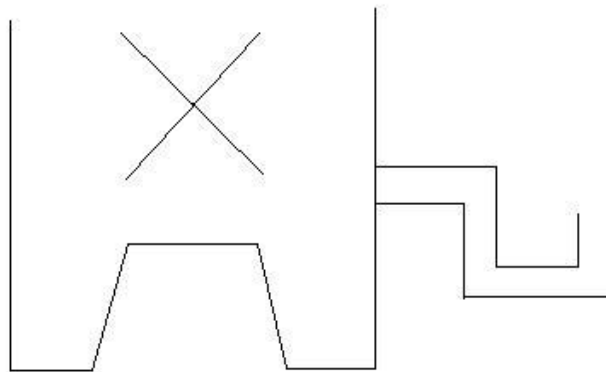
Section 2 Installation Notes and Precaution

2.1 Connect power.

2.2 Machine should be placed on a sturdy floor and away from the wall about 50cm left and right sides to reserve space for maintenance.

2.3 Machines outside cable is for the power supply of whole machine, maybe it better to connected with an additional fuse switch (about 16-25A) before connecting the power cable.

2.4 Drainage pipes can be used PVC1/2 hard pipe, it is noted that the water pipes should be down. The exhaust pipe can be used PVC2 1/2 hard pipe extend to outdoor.



2.4 Please avoid direct sunlight exposure on the machine so as not to affect the conditions of the test.

2.5 Do not close to other electrical equipment, precision instruments, inflammable materials in the Machine installation location, in order to avoid dangers.

2.6 This machine is made of PVC plastic, be careful not to hit it, the test temperature do not exceed the test criteria range, so as to avoid overheating and deformation.

Section 3 Operating Instructions

3.1 Plug the power cable and then make the compressed air pipe connected to the machine to the rear with a gas source processor.

3.2 After the power and gas supply connected, switch on the machine, then check if the light on the panel is bright or not, add water in the corresponding position if light is bright, until the indicator light extinguished. Close the lid, and add water to from a sealed cover. Such as the salt water level of salt water tank is low then the light is bright. With 5% salt water from the reagent entrance to add saline disposable with more, according to the time of the test with the normal three days later it will expire. Such as pressure drum water level is low then light is bright, add water to the pressure drum, until the indicator light extinguished.

3.3 Brine Configuration

a) Modulation Methods, collect 5000ML pure water or distilled water, add 250 g sodium chloride Stir uniform, just as 5%.

b) Test the PH value if it is between 6.5 and 7.2.

c) If the PH value greater than 7.2 then add in a little acetic acid.

d) The pH value less than 6.5 then add in a little sodium hydroxide.

(b, c the general use of pure water does not need to measure)

3.4 The saline solution will be configured into the entrance of the reagent with 5000ML brine can probably do about 20 hours test, which is to be on the basis of the spray volume, it can be still sprayed about four hours when the light is bright.

3.5 Place specimen or sample in the racks.

★ According to the standard require tilting, such as the standard specimen 130 × 70 (mm) used to 15 degrees, 30 degrees oblique.

3.6 Set the test temperature

★ Set temp according to the standard (key "∨" to increase, "△" to reduce)

A Salt water test, the test chamber temperature is 35°C, the saturated air barrel temperature of 47 °C.

B Corrosion test (Optional), the laboratory temperature is 50°C, the saturated air barrel temperature 63 °C.

3.7 Set the test of time, 0.1S-9999HR (H, Hour. M, Minute. S, Second. The Key "+" means increase, "-" means reduce)

C After the air compressor connecting, adjust the instrument inlet gas pressure to 2kg/cm². Front outlet pressure regulator adjusted to 1kg/cm² pressure, the pressure see the pressure gauge, (clockwise to increase, counter clockwise to reduce, injection pressure has set in the factory, whatever how much pressure into the machine, which will automatically adjust, so customers only required to connect the gas source, do not need to adjust).

3.8 Open the spray switch then it will start spraying.

3.9 Press the timing button, according to the timing of the set time, time to automatically stop the test end indicator lights.

3.10 Defog switch, make the test chamber temporality clear so that when testing the products can be observed without opening the lid.

3.11 The test is completed then according to the sequence will switch off.

Section 4 Troubleshooting

Problems	Reasons	Handling
Test chamber can not heat to the set temperature	<ol style="list-style-type: none"> 1. temperature set too low 2. Lab safety protection switch set too low 3. Heating system failure 4. Electromagnetic relay failure 5. Controller failure 	<ol style="list-style-type: none"> 1. Set temperature controller at the desired temperature 2. Set safety switch at the desired temperature 3. Contact supplier 4. Contact supplier 5. Contact supplier
Saturated barrel temperature can not rise to the set temperature	<ol style="list-style-type: none"> 1. Saturation barrel temperature controller set too low 2. Saturated barrels safety switch is too low 3. Heating system failure 4. Electromagnetic relay failure 5. Controller failure 	<ol style="list-style-type: none"> 1. Set temperature controller at the desired temperature 2. Set safety switch at the desired temperature 3. Contact supplier 4. Contact supplier 5. Contact supplier
Lack of spray volume	<ol style="list-style-type: none"> 1. Spray regulator placed too low 2. The Glass filter of the preheat tank is blocked 3. Pressure set too low 	<ol style="list-style-type: none"> 1. Raise the position of spray regulator 2. Clean the glass filter 3. Relief valve is adjusted to 1kg/cm², and the pressure regulator is adjust to the 2kg/cm² on the air compressor
Low water level indicator lighting	Lack of water of the lights	it will cut off power operation when the lamp is lit, should add water or solution to the container which water lever is low
Temperature kept rising	Control system failure	turn off the power and than contact the supplier

Section 5 Maintenance

5.1 Maintenance

5.1 Replace the water in the heat sink if the test more than one month.

5.2 If the salt solution is not be used over one week, do not use again, so as not affect the test.

5.3 If the next test is long time, clean up the test chamber, and discharge the water in the tank.

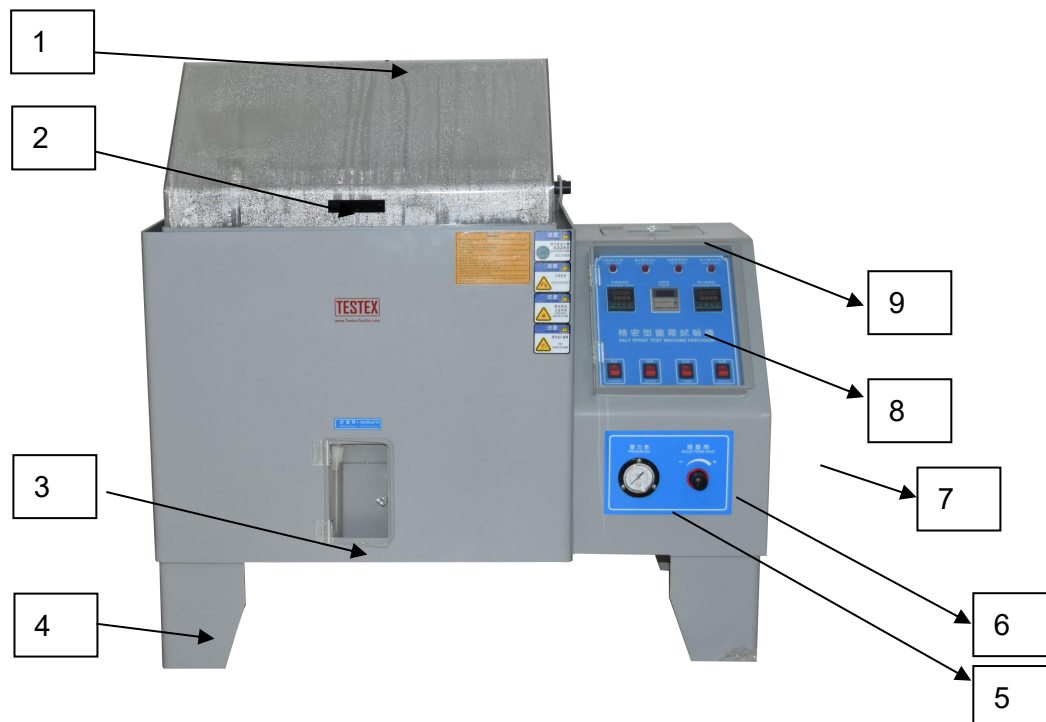
Heat sink water discharging > Open the drain valve.

Water tank discharging > uproot the middle silicone.

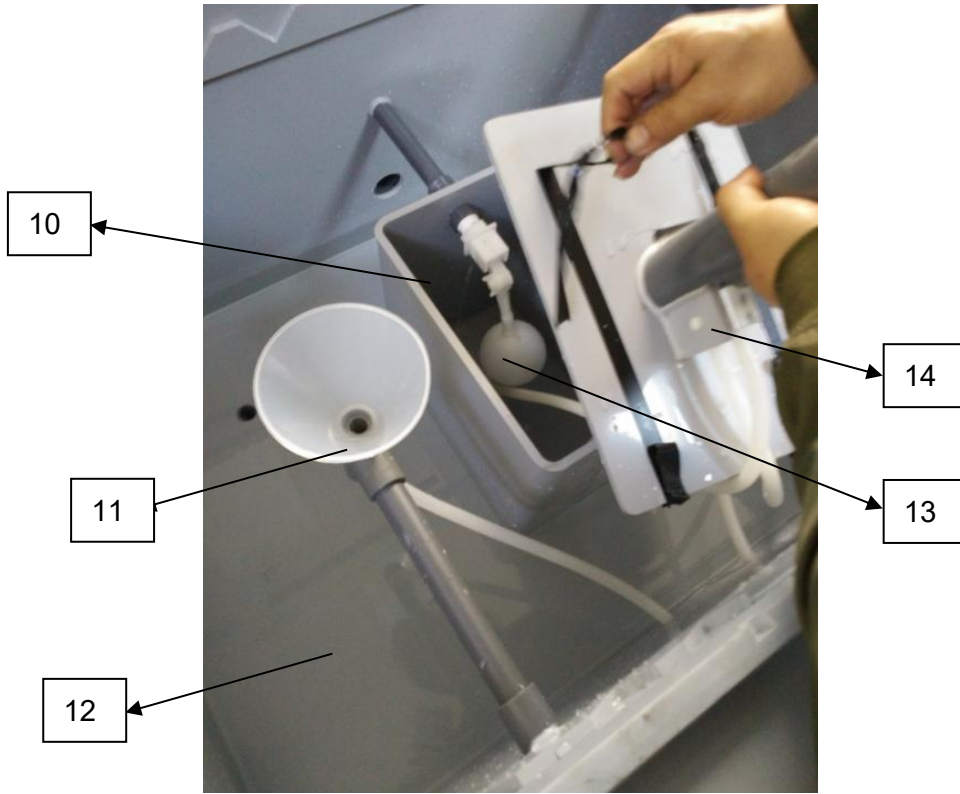
Salt water discharging > uproot the internal silicone.

Please replace the glass nozzle per 2000 hours test, in order to ensure the test quality.

Section 6 Machine



- 1.cover door 2.Handle 3.collect measuring cylinder 4.foot margin
- 5.air pressure meter 6.air pressure adjustment knob 7.Distribution box
- 8.operation board 9.salt water box

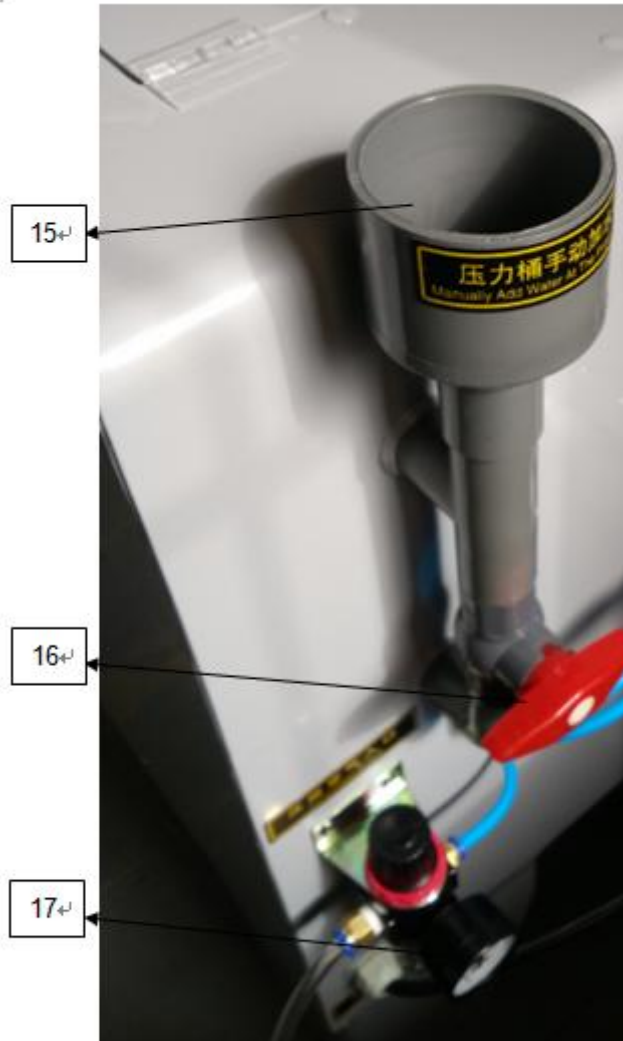


- 10.testing room salt box 11.collect hole 12.testing room 13.salt water folat
- 14.nozzle

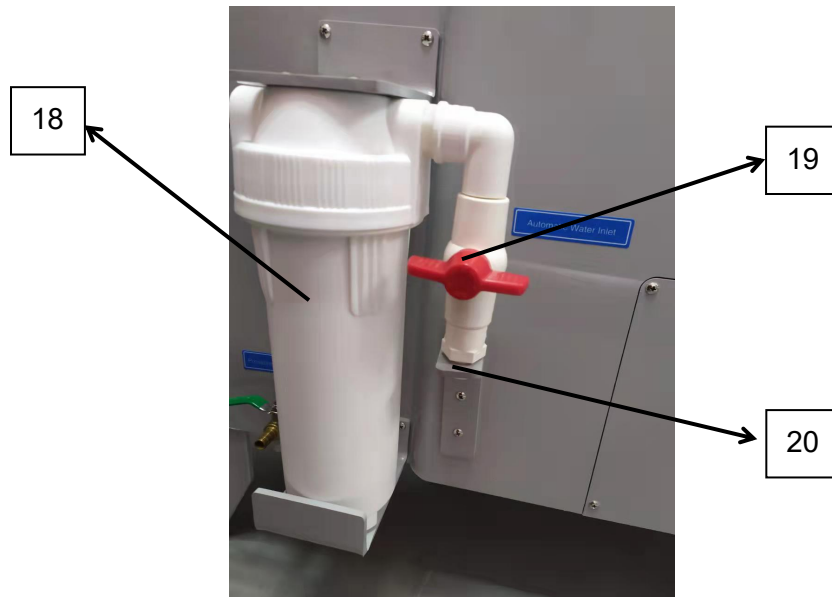




1



15.water add hole of pressure barrel 16.pressure barrel switch 17.machine air pressure meter



18.Filter(Optional)

19.External water switch

20.Water inlet

Section 7 Machine operation

1.connect the machine air pipe and adjust the air pressure on blow value:



2.adjust the spray gas pressure as follow:



3.connect the machine power and open the power switch:



There are 3 alarm lamp will light:
LOW LEVEL OF LABORATORY
LOW LEVEL OF BRINE TANK
LOW LEVEL OF PRESSURE DRUMS

4.LOW LEVEL OF LABORATORY is the testing room's water is not enough,please add purified water until the alarm lamp no light:



4. LOW LEVEL OF BRINE TANK is the salt water box not enough salt water, please add it until the lamp off.



The salt water please check Section 3.

5. LOW LEVEL OF PRESSURE DRUMS is the pressure barrel is not enough water, please open the pressure barrel switch and add water to until light off:





Close the switch after add water.

6. Then add the water as follow and close cover door after add water.:



6. then use the operation board to testing.



Matters needing attention:

1. the salt water tank need to clean each mouth:



2. the testing water need to replace each testing.



3. The salt water need to replace each day.there are a rubber plug on the testing room's salt water box,please open it to outlet salt water.