

# ENVIRONMENTAL CHAMBER WITH ACCELERATED CORROSION TEST SET-UP



**Experiment:** To find the Corrosion effect on test sample.

**Year of Purchase** : 2020

**Cost** : 8.97 Lac

The Salt water spraying/corrosive resistant machine are specialized to test the performance of the products for its surfaces of various materials after treatment of corrosive protection by means of painting, coating, galvanizing, anodizing and of lubricant.

**Environmental Chamber With Accelerated Corrosion Test Set-Up** allows selective and reproducible accelerated corrosion testing complying with the requirements of relevant national and international standards such as DIN, ISO, ASTM, DEF, MIL-STD, etc. Standard as well as customizable sizes are available. This Chamber also called **Corrosion resistance test chamber, Cyclic Corrosion Test Chamber** and **Salt Spray Chamber**.

## **Special Features:**

- Choice of capacities – 1000 Lt.(Approx)
- Easy to clean, smooth, non-corrosive surfaces
- It has the function to refill water automatically when water level is insufficient.
- With accurate glass made nozzle (Pyrex) no sediment of crystallization blocked in 4000hours.
- The control instruments are mounted in one panel so it easy to operate and clear at a glance.
- Equipped with dual protection for over temperature and an alarming device for insufficient water level so as to ensure the safe operation.
- The test tank is heated directly by vapor so that the temperature rises fast and the stand by time shortened.
- The water spraying column equipped with the disperser has the functions to lead and adjust the reek and also has the function to make the falling reek even (the control instrument and the nozzles adopt the systems of

Europe, America and Japan. The relevant materials adopt Taiwan system to assemble).

- Color touch panel.

### **Operating Principle:**

The test condition are controlled by microprocessor based control system. The 32 Bit I/O system with integrated soft PLC governs control. A web server can place test and diagnosis information in the intranet via Ethernet if desired. The temperature to be provided according to the test are:

The test method of salt water:

- The lab: 35oC ±1oC
- The saturated air barrel: 47oC±1oC
- The test method of corrosive resistant:
- The lab: 50oC±1oC
- The saturated air barrel: 63oC±1oC

A salt solution is sprayed into the test chamber using the venture principle through a nozzle located at the top of the test space. The compressed air required is heated in a pressurized humidifier and saturated with moisture before it enters the test space.

The brine solution in the venture nozzle feeder vessel is kept at a constant level by recirculating supply. The heating in the test chamber ensures uniform temperature conditioning to the required set temperature.

Condensation generated is drained away through a floor drain, and the corrosive test chamber atmosphere is vented through an exhaust vent.

### **Construction Details:**

Provides better automatic controls for the chamber by integrating HMI and PLC together. This special feature is compelling alternative to traditional methods and provides a simplified, reduced cost control system architecture. It works by following operating steps:

- Sensors measure the physical quantity like temperature and convert them to electrical signal.
- The actuation device acts upon that electrical signal.
- At HMI interface between operator and chamber occurs.
- The machine operates with the logic design controls controlled by software.
- This signal is sent to the chamber by logic control devices and the chamber operates.