



SUZUKI INSTRUMENTS

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WALK IN STABILITY CHAMBER-(2000 LTR)-(1.6 X 0.75 X 1.7 METER) (W X D X H)-PLC, HMI & 21-CFR SOFTWARE

Construction Details

- CE Certified
- Designed as per ICH guidelines to meet, WHO and USFDA requirement
- Fulfills storage conditions of **25° C - 60% RH, 40° C - 75% RH, 30° C - 65% RH, 25° C - 40% RH, 30° C - 35% RH**
- Chamber equipped with PLC & Touch screen HMI system
- Highly accurate Individual control Loop for precise control of temp and humidity
- Interior fabricated from matt finished **Stainless Steel (S.S. - 304)**
- Exterior body is fabricated from matt finished **Stainless Steel (S.S. - 304)**
- Toughened glass window to inspect samples without affecting the chamber temperature.
- Prefabricated Puff Panels with cam-locks to avoid thermal leakage
- Electrical wiring as per CE Compliances
- Chamber illumination by LED light with door switch.
- User friendly and tactfully designed chamber door and locking mechanism
- Facility to open chamber door from inside, in case of emergency
- Aesthetic outer appearance and high quality
- Supplied complete with IQ/OQ/PQ Documents, Calibration certificates and Instruction manual.



Following advance features are available

- Equipped with 7" Touch screen HMI Controller and PLC System
- Equipped with **GSM MODULE (Mobile alert configuration) system** for parameter deviation
- Equipped with **Magnetic Door Lock Mechanism**
- Password protected door access system
- Supplied complete with **21-CFR (PART-11) Compliance PC**

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Software

- Audit trail generation in PC Software
- Equipped with In-Built **Data logger (Uniformity module)** system
- Also equipped with 4 Temp + 4 RH Sensor for data logging purpose
- Monitor Low water level status
- Facilitates automatic water filling system
- Auto resume after power failure
- Ready to use **STANDBY REFRIGERATION SYSTEM** in case main system fails
- Ready to use **STANDBY HUMIDITY SYSTEM** in case main system fails
- **Auto Switch-Over facility from Mains to Standby system and vice versa**
- Calendar options for choosing the days on which Either Mains or Standby system will remain active

Technical Specification

•Chamber Size	: 1.6 x 0.75 x 1.7 (W x D x H) Meter (1600 X 750 X 1700 MM)
•Chamber volume	: 2000 liters
•Inner chamber	: Stainless steel S.S. - 304 Mirror Polished with cam lock
•Exterior body	: Stainless steel S.S. - 304 Matt finished
•Insulation	: Puff insulation
•Insulation thickness	: 80mm
•No. of trays	: 08 Numbers
•Controlling System	: Highly advanced Touch screen HMI & PLC Control system
•Display	: Digital LCD Display (7" Screen Size)

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Salient Features of 21-CFR Compliance Software

- Multi Chamber data - Acquisition Software
- Generates graphical analysis of DATA as per - 21 CFR Compliance guidelines
- File encryption Facility
- Secure login facility
- Password protected. System access is controlled by the system supervisor
- Limit system access
- Limit module access
- Password expiration
- Bilateral user ID and password identification
- Access failure lock out
- System access logs
- System audit trail report.
- System Input / Output logs
- Mean kinetic temperature calculation
- Maintains log of user activities like users logged in, login/logout time, and changes made by the user in software settings Audit Trail Reports.
- Ensure Gap-free Records
- Schedule Reports via Email
- Meet Tough Standards
- View Environments in Real-Time
- Flexible Alarm Management
- Consistent Alarm Acknowledgements
- Highly Secure & Temper proof
- Protection From Data Loss

Air Circulation

Temperature is maintained by a quiet running blower circulation throughout the chamber. Forced air circulated vertically down and re-circulated throughout the chamber for uniform temperature and humidity distribution.

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Heating & Cooling System

Long lasting SS tubular heaters used as heating element. The stainless steel fins provided to ensure better heat transfer. Hermetically sealed compressor CFC free compressor (134 A gas) coupled with evaporation coil and condenser. All refrigeration components like expansion valve, driers, oil separators, pressure gauges and vibration eliminators provided. Reputed company make refrigeration system such as *Emerson/Kirloskar* Make

Door & Gasket

Robust type hinges fitted on the right hand side of the chamber with front opening single door. Leak proof double lined silicon gasket will be provided. The inner surface of the door will be provided with pre-polished stainless steel and will be mounted such that conduction is avoided.

Trays for samples

- Removable Stainless steel Perforated trays
- Strong enough to withstand heavy load of test specimens
- Such trays will also facilitate better air circulation.
- The distance between trays will be 15-20 centimeters.
- Number of tray supplied : **8 Numbers**

Electrical controls

Relays, Contactors, SSR, MCB, Mains Switch, Fan control switch, compressor ON/OFF switch with indicator, Dry heater switch with indicator for safe and ease of operation.

Electrical Circuitry Wires

CE Certified : Inner circuitry wires with individual number tags for ease of servicing and maintenance

Viewing window

Multi pane window, toughened clear glasses sealed with silicone and separated by spacers to form a completely vacuumised window.

Wiper

Viewing window facilitates with wiper to clear the condensed water droplets on the glass.

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HOT AND COLD CHAMBER-60 X 60 X 60 CM (H X W X D)- INNER S.S. & OUTER POWDER COATED-RAMP & SOAK PROFILE CONTROLLER

Salient Features

- Heat proof and electrical shock resistant design
- Automatic cycle commencement on press of a button
- Digital display of Temperature data
- Ramp & soak profile controller
- Highly ergonomic door handle with unique key lock



Heating system

Stainless steel heaters to control the temperature at set point

Refrigeration system

Built in, long life, fully balanced, refrigeration system with hermetically sealed compressor and air cooled condenser.

Door & Gasket

Robust type hinges fitted on the right hand side of the chamber with front opening single door. Leak proof double lined silicon gasket will be provided. The inner surface of the door will be provided with pre - polished stainless steel and will be mounted such that conduction is avoided.

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Relays, Contactors, SSR, MCB. Mains Switch, Fan control switch, compressor ON/OFF switch with indicator, Dry heater switch with indicator, Trip indicators with Alarming (buzzer) system for safe and ease of operation.

Electrical Circuitry Wires

Inner circuitry wires with individual number tags for ease of servicing and maintenance

Temperature Sensor

Class A, Three wire, PT 100 Sensor for accurate measurement of temperature.

RS 232 or 485 communication port (Optional At Extra Cost)

RS - 232 or RS - 485 communication port provided to operate the chamber through PC as well as to log and modify the data in 21 - CFR Compliance software. Tubular display & graphical display provided with complete history printing & storing facility.

Safety Provisions

- High and low temperature safety with audio visual Warning signal for the protection of the specimen.
- Overload protection for all the electrical components used in the chamber as well as control panel.
- Complete electrical and refrigeration system conforming to the statutory regulatory requirements against safety, hazards, accidents and pollutions.
- Over temperature thermostat & thermal fuses provided for Heating system.
- Pressure gauges for measuring the refrigerant and service manifolds provided in the refrigeration system.

Warranty

Unconditional warranty against faulty workmanship for 1 year at site from the date of installation of the equipment.

Technical Specification

•Chamber Size	: 60 x 60 x 60 cm (H x W x D)
•Chamber volume	: 216 Liters
•Inner chamber	: Stainless steel S.S. - 304 Grade
•Exterior body	: Mild steel
•Exterior Body Paint	: Powder coated in attractive shades
•Insulation	: High density bonded glass wool insulation

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•Insulation thickness	: 75 mm
•Illumination	: LED Light for lesser power consumption
•Temperature range	: -40 °C to 150 °C Ambient
•Temperature sensor	: PT-100 Sensor
•Temperature accuracy	: ± 2.0 °C @ -40 °C, ± 0.1 ° @ -10 °C to Ambient
•Controlling System	: Ramp & Soak Profile Controller
•Average heating rate	: 1/2/3 °C min
•Average cooling rate	: 1/2/3 °C min
•Uniformity	: Through forced air circulation blower
•No of trays	: 03 Numbers
•No of blower	: 01 Number
•compressor watts	: 1.0 Kw
•Dry heater watts	: 1.5 Kw
•Power Supply	: 230 volts, 50 hz, single phase, AC Supply

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HUMIDITY CHAMBER-REFRIGERATED-INNER S.S.- 60X60X60 CM-

Double Walled, Inner SS 304, Outer made of Mild steel material duly powder coated, 65 mm thick PUF Insulation; Full length inner glass door for clear inner view, Outer door with Magnetic Gasket & Lock. Forced air circulation for uniform temperature throughout the chamber. Dual preset electronic Digital Temperature Controller Cum Indicator. Temperature Range : 10°C to 60°C \pm 0.5°C; Humidity Range from atmospheric humidity 40% to 90% RH Controlled by Digital Display Controller (Direct RH Indicator) \pm 3% RH, working on 230 V AC single phase. Detailed specification as follows:

Construction Details:

1. Fulfills storage conditions of general laboratory requirements
2. Double wall construction
3. **Interior fabricated from high grade stainless steel (S.S.304).**
4. **Exterior body made of Mild steel material - which is duly powder coated in attractive shades**
5. Full size polycarbonate sheet inner door to inspect samples without affecting the chamber temperature.
6. Properties of polycarbonate sheet door (**Unbreakable, Un-scratchable, High temperature resistant, Robust, Air tight and Transparent**)
7. Double walled metal door with sponge - type silicon gasket for air-tight sealing
8. Electrical wiring as per CE Compliances
9. Chamber illumination is accomplished by Fluorescent light/LED Light with door switch.
10. Cord wire duly tested and inspected with stress factor as per CE standard
11. Electric Motor located at the back side of unit, protected with safety cover to avoid accident
12. Standard motor of reputed make - such as MARATHON/GE/CG/Equivalent Make
13. User friendly and tactfully designed chamber door and locking mechanism
14. Aesthetic outer appearance and high quality



Insulation:

70mm polyurethane insulation (PUF)/ fiberboard to ensure better insulation and less leakage of temperature or RH from inner body to the surroundings.

Air Circulation:

Temperature is maintained by a quiet running blower circulation air throughout the chamber. Forced air circulated vertically down and re circulated throughout the chamber for uniform temperature and humidity.

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Humidity:

Humidity created by steam injection method. The boiler tank is fitted in the back side of the chamber for better servicing, Electromagnetic switch for controlling the wet heater from burning off if water level is not adequate. Float valve provided to control water level in the boiler tank.

Heating & Cooling System:

1. Long lasting SS tubular heaters used as heating element. The stainless steel fins provided to ensure better heat transfer.
2. Hermetically sealed compressor CFC free compressor (134 A gas) coupled with evaporation coil and condenser.

Trays for samples:

1. Removable Wire Mesh/Perforated/S.S. Rod trays
2. Capable to with-stand heavy load of test specimens
3. Such trays also facilitates better air circulation
4. The distance between trays will be 15-20 centimeters

Control:

Microprocessor based Digital Auto-Tune PID temperature and direct RH digital controller. Humidity directly measured in % RH by electronic sensor.

Safety Features:

1. High temperature safety cut off
2. Low water level boiler cut off
3. Electrical overload cut off
4. Time delay for compressor switch ON
5. Electrical circuit breaker

Warranty:

Unconditional warranty against faulty workmanship for 1 year at site from the date of installation of the equipment.

Pre installation mandatory requirement : (Guarantee void in case of non compliance):

1. Distilled water OR DM water supply with tap for boiler input
2. Room temperature around machine Should be preferably at 25 °C with air conditioning or a well ventilated room with exhaust fan. However surrounding temperature should not exceed 30 °C .
3. Stabilized Input Voltage of 230 Volt, 50 Hz, 20 Amps, AC Supply. Use of Servo Controlled Stabilizer is recommended.
4. Water drain line with 3/8" nozzle to be provided at floor level.
5. Recommended to install the chamber 2 feet away from the back wall and 1 feet from all sides
6. UPS for control system upto 1 KVA

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Note

For these range of Equipment, the installation and demonstration at site by our technician is a prerequisite for availing free servicing during the guarantee period of 12 months from the date of sale. On site demonstration is essential and mandatory to avail warranty claim. Warranty void in case on site demonstration not availed.

Technical Specification

•Chamber Size	: 60 x 60 x 60 cm (Inner chamber)
•Chamber volume	: 216 Liters
•Inner chamber	: Stainless Steel S.S. - 304 Grade
•Exterior body	: Mild Steel
•Exterior Body Paint	: Powder coated in attractive shades
•No of trays	: 02 Shelves
•Temperature Range	: 10° C to 60° C
•Temperature Accuracy	: $\pm 0.5^{\circ}\text{C}$ or better
•Temperature Resolution	: 0.1° C
•Temperature Uniformity	: $\pm 2^{\circ}\text{C}$
•Temperature Measurement	: Through Pt - 100 type RTD sensor
•No. of Temperature Sensors	: 01 number
•Humidity Range	: 40% RH to 90% RH
•Humidity Accuracy	: $\pm 3\%$ RH
•Humidity Uniformity	: $\pm 5\%$ RH
•Humidity Measurement	: Through Capacitance type RH Sensor
•No. of Rh Sensors	: 01 number
•Chamber Illumination	: With 1 LED lights for lesser power consumption
•Mobility	: On castor wheels
•Overall Dimensions	: 920 X 1100 X 1450 (L X W X D) mm
•Power Consumption	: 2.0 KW

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