



*Auto Technology Company
Cyclic Corrosion
Test Chamber*

AUTO
Technology

Built for Versatile and Repeatable Testing

The Auto Technology Cyclic Corrosion Test (CCT) Chamber creates a variety of environments in an exposure zone by cycling automatically between salt fog, high humidity, low humidity with dry-off, dwell and ambient conditions - in any combination and for any length of time. Optional cycles include controlled humidity, solution spray and immersion.

Auto Technology CCT Chambers are performance tested under actual test conditions to ensure they withstand the corrosive environments they produce.

There are several unique features that set the Auto Technology CCT Chamber apart from any other chamber on the market. Consider this key information before making a purchasing decision.

All front panels, except the top center panel, are easily removed to access chamber components, which saves space and provides easy maintenance.

All-Plastic Construction

All-plastic construction ensures years of corrosion-free, durable service, despite the corrosive solutions used in testing. With this design, the cabinet is naturally insulated for accurate, repeatable and reproducible test results that comply with a variety of national and international standards, including major automotive, military, ISO and ASTM specifications.

Transparent Cover

The transparent cover allows viewing of test conditions while containing corrosive environments. The cover also meets ASTM specifications for a peaked configuration which prevents condensate from dripping onto test specimens. The chemically-bonded construction and dual-magnetic seal is far superior to other dry-gasket designs in durability, performance, and appearance. Pneumatic cover lifters are available to open the cover and provide true ambient conditions to the exposure zone.





Auto Technology's transparent cover allows uninterrupted viewing of ongoing testing.

Real Cubic Space

The CCT-NC Chamber testing space (shown in liters, cubic feet, and dimensional measurements) includes actual testing space only. It does not include unusable space, such as the area below the false floor where the heaters are located, nor the area in the cover that is not normally used for testing. For example, Auto Technology's 20-cubic foot unit provides more testing capacity than some competitors' 30-cubic foot units.

CCT-NC Chamber Sizes

Model No:	CCT-NC-20	CCT-NC-30	CCT-NC-40	CCT-NC-40
Internal * Capacity	565 ltr. 20 cu. ft.	850 ltr. 30 cu. ft.	1130 ltr. 40 cu. ft.	2548 ltr. 90 cu. ft.
Test Sapace * Testing Plane	.94 square meter 10.1 square feet	1.40 square meter 15.1 square feet	1.74 square meter 18.7 square feet	2.21 square meter 23.7 square feet
Internal * Dimension L x W x H	1270 mm L (50") 737 mm W (29") 635 mm H (25")	1905 mm L (75") 737 mm W (29") 635 mm H (25")	1905 mm L (75") 914 mm W (36") 635 mm H (25")	1930 mm L (76") 1143 mm W (45") 1155 mm H (45.5")
Total Camber Volume	982.5 ltr. 34.7 cu. ft.	1,472.5 ltr. 52.0 cu. ft.	1,925.5 ltr. 68.1 cu. ft.	3,822 ltr. 135 cu. ft.
External Dim. L x W x H	2388 mm L (94") 889 mm W (35") 1422 mm H (56")	3023 mm L (119") 889 mm W (35") 1422 mm H (56")	3023 mm L (119") 1118 mm W (44") 1422 mm H (56")	3150 mm L (124") 1321 mm W (52") 2159 mm H (88")
Floor Space Required	2590 mm L (102") 2057 mm W (81")	3226 mm L (127") 2057 mm W (81")	3226 mm L (127") 2286 mm W (90")	3353 mm L (132") 2540 mm W (100")
Sol. Reservoir	227 ltr. / 60 gal.	227 ltr. / 60 gal.	227 ltr. / 60 gal.	227 ltr. / 60 gal.

* The inside dimensions, capacities, and space given here are "available testing space".

They do not include space below the false floor where the heaters are located or the cover volume.

Chamber Capabilities

Temperature:

Ambient to 71 °C (160 °F)

Humidity:

95-100% During High Humidity from Ambient to 50 °C (122 °F)

< 30% during Dry off cycles

(Controllable Humidity available as an option upon request from 30-95% +/- 5%)

as limited by a 22°C dew point and lab conditions. **NOT ALL TEMPERATURE AND HUMIDITY COMBINATIONS ARE ATTAINABLE!** (Check with factory for details)

Solution Consumption during fogging tests only:

CCT-NC-20

approx. 10 gallons per day for D.I. water and salt

Solution if a "fog only" cycle is running and no cycling takes place.

CCT-NC-30, 40 & 90

approx. 15 gallons per day for D.I. water and salt

Solution if a "fog only" cycle is running and no cycling takes place.

NOTE: D.I. water consumption increases with cyclic testing when cycling from fogging to non-fogging tests.

Practical Features Mean Optimum Performance



Control Packages

A STANDARD or COMPUTER control package is available. Standard industry test specifications are built-in and pre-programmed so testing can begin immediately.

The number of programs and steps that the chamber can store varies with the control package. Both control systems can be easily updated for future testing needs or customized for special applications.

Standard Controls

- Programmable Logic Controller (PLC)
- Easy-to-use 2-line, 20-character text operator interface
- RS232 Port for computer interfacing and remote modem diagnostics (optional)
- Store up to 15 different test, each up to 18 step long

Computer Controls

- Notebook computer with color screen, full keyboard, CD ROM, and hard drive for full chamber datalogging.
- Store up to 20 different test profiles, each up to 50 steps long, each step with individual looping
- All test profiles can be named with personalized names by the user. Example: if Auto Technology pre-programs the test profile named “SAE J2334”, the customer can change the name to “Customer Test #123”.
- Each machine is pre-programmed with many commonly used test profiles.
- All pre-programmed and open test profiles can be changed, modified, and stored by the user.
- Graphing on the computer screen of actual test data for temperatures, pressures and humidity levels (optional).
- Optional modem support from Auto Technology’s facility for quick technical assistance (customer must supply an available phone line.)

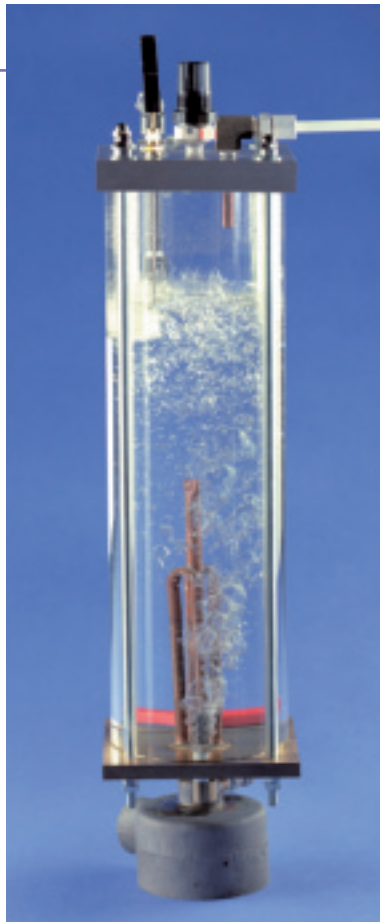
Data Logging and Recording: (computer controls)

Automatically record the following;

- Test name, number and location on the hard drive
- PID tuning settings
- Calibration data set for a particular test
- Test set-up including step condition, step time, temperature set-points, RH set-point and looping set-up.
- Time and date stamped data with all chamber action including the position of all inputs and outputs for each data point
- Set the data-logging interval as desired
- All customer notes data-logged as typed

Bubble Tower

The bubble tower includes Auto Technology's unique AUTO-FILL feature, which provides longer unattended testing. A low water/high temperature sensor and pressure relief valve are added as extra safety features. The bubble tower can be easily serviced for annual preventative maintenance & calibration.



MORE STANDARD FEATURES

- Swivel Casters for easy movement
- Leveling bolts
- Low-Water cut-off protection on bubble tower heater
- Front access to components for easy maintenance
- Air pressure gauge with +/- 1% accuracy
- In-line filter assembly for salt and D.I. water
- Built-in 60-gallon salt solution reservoir (largest available in the industry)
- Chamber safety features meet the most common U.S. and international safety standards. Redundant safety features protect the user and the equipment

Unifog Dispersion Tower

Auto Technology's Unifog Dispersion Tower has an inverted cone design to provide uniform fog throughout the chamber. This adjustable cone located at the top not only evenly baffles the fog throughout the chamber, but also can be manually raised or lowered to direct the fog to meet testing requirements.



MORE OPTIONS

- Solution Spray, Immersion, Wet Bottom RH and Controlled Humidity options
- Automated agitation/mixing system for solution tank
- External condensate collection package
- Air-Actuated cover lifters
- Deluxe Datalogging
- Recorders (strip & circular)
- Sample holding devices
- Power-assist vent kit
- pH meter
- Start-up kit
- Spare parts maintenance kit
- 60-gallon mixing tank on stand
- Training class on CCT operation
- Modular design
- Retractable RH Probe

HOW THE CYCLIC CORROSION CHAMBER WORKS



WATER



COMPRESSED AIR



SALT

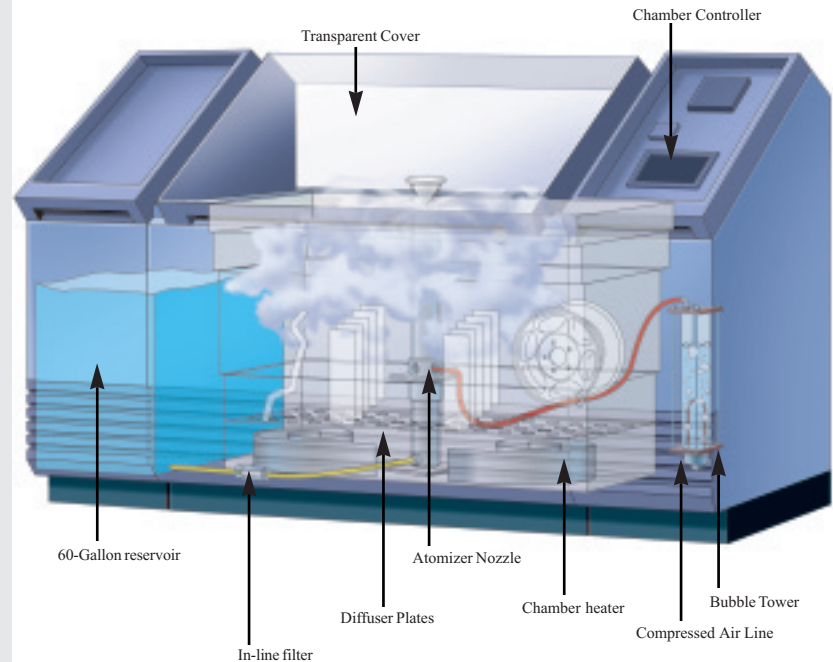


BLOWER AIR

SALT FOG & HIGH HUMIDITY CYCLE

Salt Fog Cycle

- Hot, humid air is created by bubbling compressed air through a bubble (humidifying) tower containing hot deionized water.
- Salt solution is moved from the 60-gallon reservoir through a filter to the atomizer nozzle
- When the hot, humid air and the salt solution mix at the atomizer nozzle, the solution is atomized into a corrosive fog. Fog is distributed by the Unifog Dispersion System.
- Chamber heaters maintain the programmed chamber temperature set point by heating the water that has entered the exposure zone and covered the heaters.



High Humidity Cycle

During the humidity cycle, the chamber operates much like the salt fog cycle, except that deionized water is fed to the atomizer nozzle rather than salt solution. This creates a 100% relative humidity condition in the exposure zone.

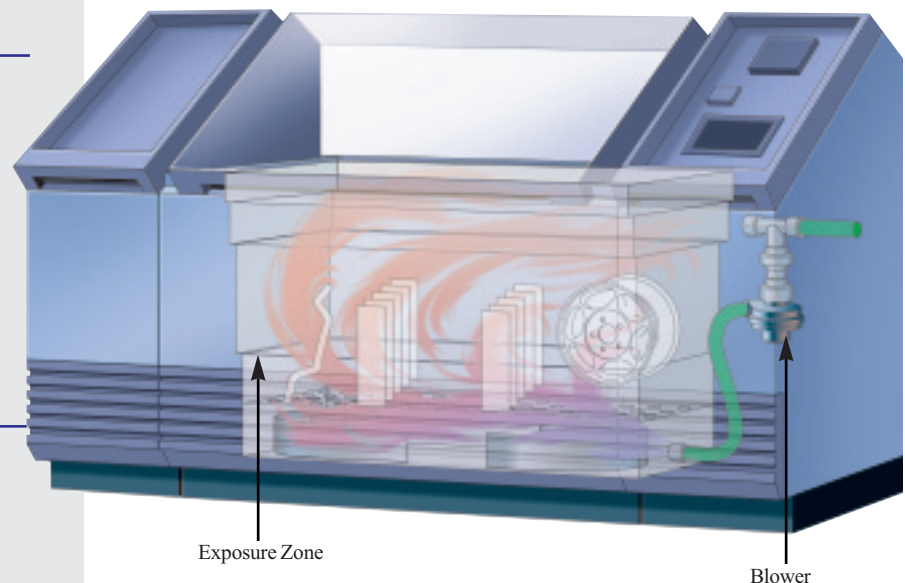
DRY AND DWELL CYCLE

Dry Cycle

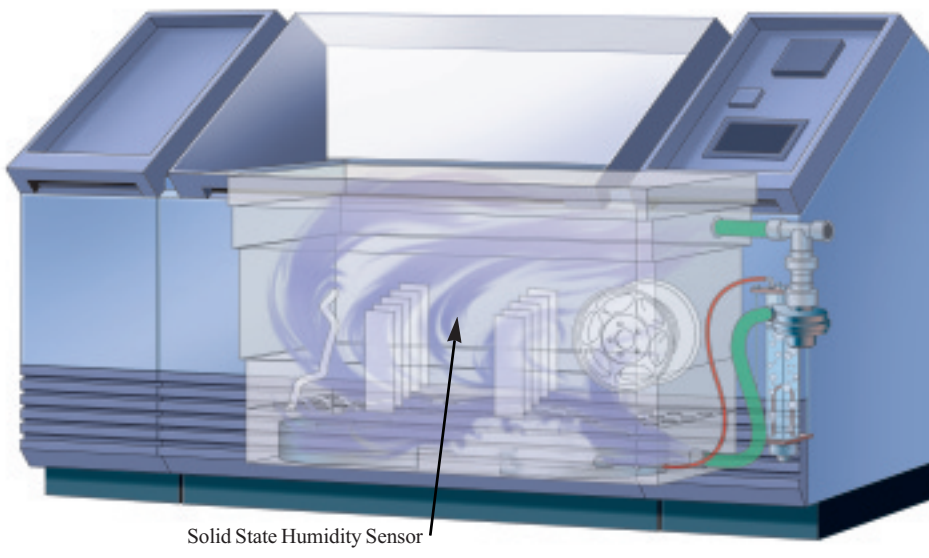
For a low humidity state in the exposure zone of the chamber, air is forced into the exposure zone via a blower motor which directs air over the energized chamber heater. Chamber temperature is set by the operator and maintained by the controller.

Dwell Cycle

During the dwell cycle, no action is taken by any of the chamber components.



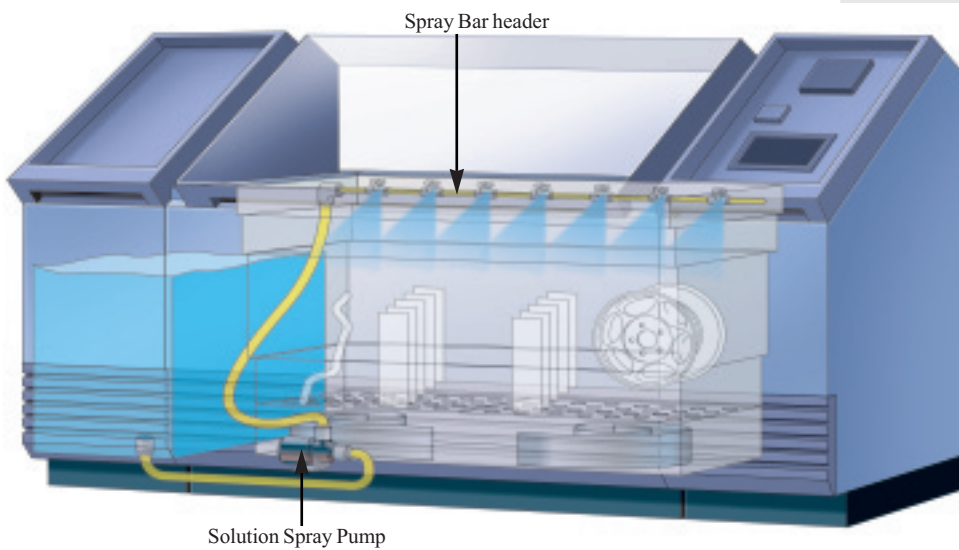
CONTROLLED HUMIDITY CYCLE



Controlled Humidity Cycle *

- A solid-state humidity sensor reads the current humidity condition and compares that to the humidity set-point in the controller
- The mechanism used to control the humidity moves chamber air via a blower motor and passes it over a heater coil in the bottom of the chamber.
- As humidity is needed, the controller pulses the atomizer nozzle(s) in the fog tower on & off while recirculating the air flow.

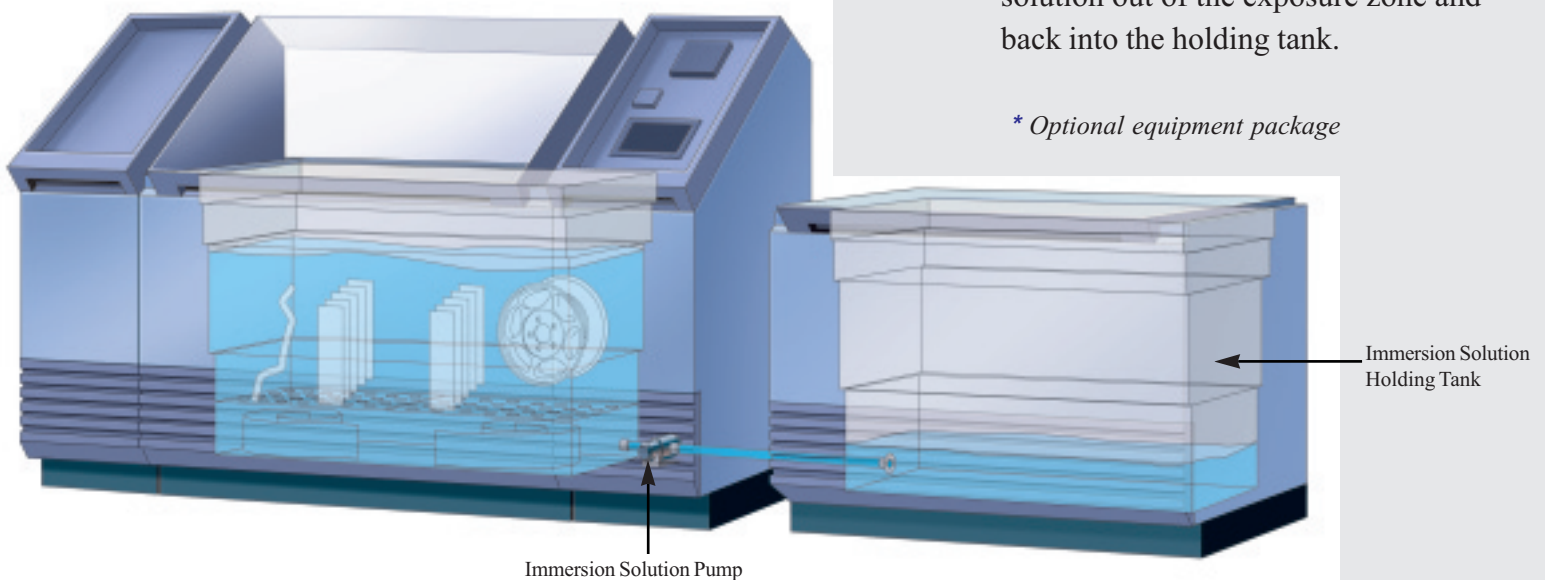
SOLUTION SPRAY CYCLE



Solution Spray Cycle *

Solution is taken from the holding tank via a solution pump. This solution is driven through a spray bar header inside the exposure zone, and onto the parts by multiple spray nozzles. These spray nozzles are adjustable to allow the spray to be directed to the desired location.

IMMERSION CYCLE



Immersion Cycle *

A series of valves, float switches, and pumps move solution from a heated holding tank into the exposure zone via the chamber drain. Once this cycle is over, the process reverses and moves the solution out of the exposure zone and back into the holding tank.

* *Optional equipment package*

MORE AUTO TECHNOLOGY CHAMBER CHOICES



D.I. Water Immersion Tank

Practical features of this polypropylene tank include a lift-off cover with handle, a digital temperature controller, and air agitation.



Multi-Purpose Fog Chamber

An all-plastic salt fog cabinet with built-in support racks and 35-gallon solution tank performs salt fog, acetic acid, CASS, water fog testing and more.



Multi-Gas Test Chamber

Performs moist SO₂ tests in accordance with critical DIN and ASTM test specifications.



Rain / Spray Test Chamber

Meets JIS, SAE, IEC and other specifications for rain and water spray.



Walk-In Test Chamber

The most reliable walk-in chamber for salt fog and humidity corrosion testing of large or multiple parts.



Standard Salt Fog Chamber

For salt fog, acetic acid, CASS, water fog testing and more.

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