

Cyclic Corrosion Test – C.C.T CORR Series

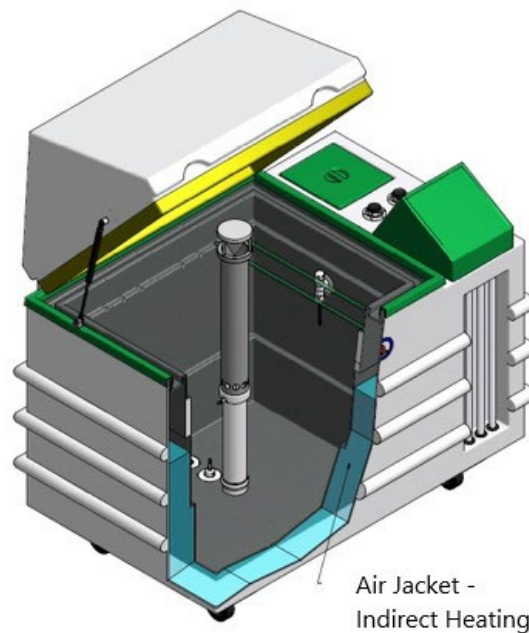
The C.C.T. CORR Series is designed to perform cyclic corrosion tests on metallic samples with organic and non-organic coatings, to meet Automotive, SAE, IEC, ISO, ASTM, JIS standards, and others.



CCT 1300 CORR image illustrative

Indirect heating of the internal cabinet through the air jacket (ASTM B117), ensuring great homogeneity of the internal temperature of the test cabinet.

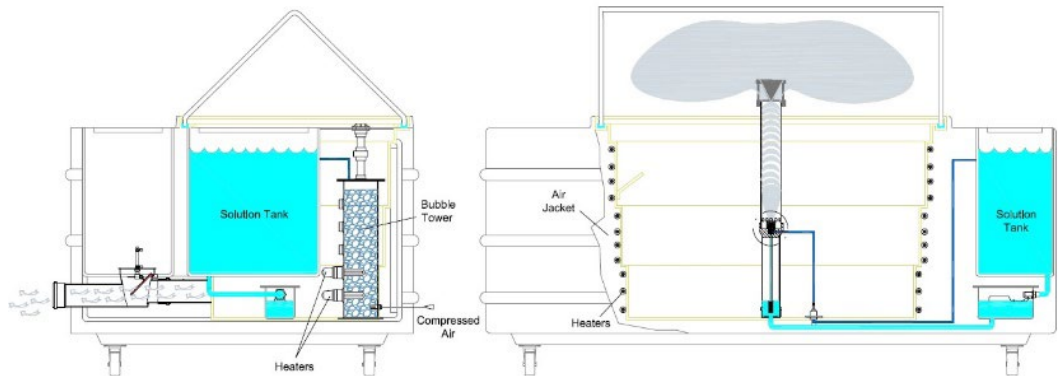
US PATENT # 10371623



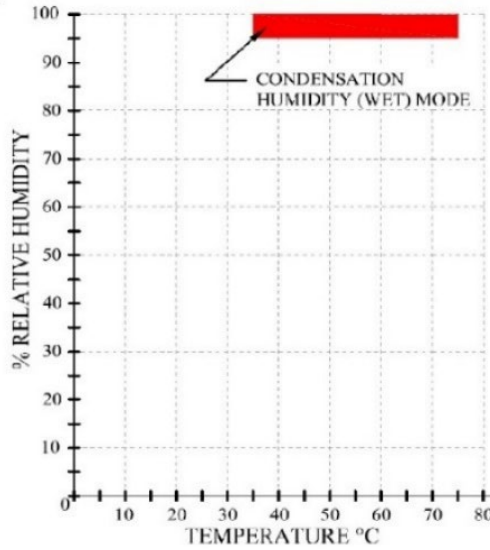
Specifications/Model	CCT 1300 CORR	CCT 3000 CORR	CCT 5000 CORR
<p>Allows programming cycles with 8 different modes</p>	<ul style="list-style-type: none"> - Mode: SALT SPRAY / SALT FOG - Mode: HUMIDITY – 95 ~ 100 % R.H - Mode: NATURAL DRY - Mode: DRY OFF (Hot Air Injection) - Mode: DRY OFF CTH (Circulation) - Mode: SPRAY / STRESS* (Ford, Volvo, Scania/SAAB) - Mode: CLIMATIZATION* (Temp. x R.H%) - Mode: LOW TEMPERATURE * -4°F (-20°C), consult us another. - Mode: ULTRA LOW TEMPERATURE * -22°F (-30°C), consult us another. <p>* Optional modes</p> <p>NOTE: For Cyclic Corrosion Test, CCT CORR series chambers we do not recommend internal volume less than 35.3 cu.ft (1,000 Liters), because below this volume we have the presence of turbulence, which affects the final result of the tests.</p> <p>Equipment with 600 liters internal test volume is manufactured only for SALT SPRAY/ SALT FOG, HUMIDITY, NATURAL DRY and DRY OFF modes, consult us for details.</p>		

**MODE: Salt Spray /
Salt Fog**
ASTM B117/ISO 9227/JIS
Z2371/ DIN 50021

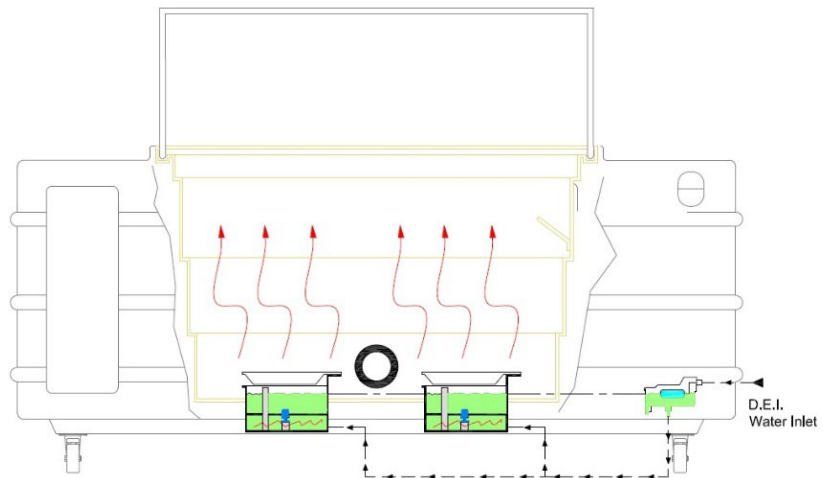
- **Air Jacket**, providing indirect heating of chamber, to ensure the homogeneity of temperature according to ASTM B117, ISO 9227.
- **Lid** designed with smooth surface, without seams to prevent contamination on the test pieces from solution drip, according to ASTM B117. Decrease the thermal loss for the environment, guaranteeing better performance.
- **Unibody construction**, in other words, the solution tank, bubble tower, and panel are built as one piece.
- **Central Atomization Tower** built to ensuring fog uniformity and homogenous results, according to ASTM B117- ISO 9227 – JIS Z2371.
- Chamber Temperature Range: Ambient 9°F to 122°F (5°C to 50°C)
- Saturator Tower (Bubble Tower) Temperature Range: Ambient 9°F to 165°F (5°C to 74°C)
- Resolution of chamber and bubble tower temperature controller: 0.1°C
- PT100 temperature sensors – 3 wire
- Homogeneity of chamber and bubble tower temperature: $\pm 1.8^{\circ}\text{F}$ ($\pm 1.0^{\circ}\text{C}$)
- Bubble Tower Pressure Range: 29 kPa min. to 196 kPa max. (4.2psi min. to 28 psi max.)
- Fog Collection Range: ISO 9227: 1.0 to 2.0 ml/hour, continuous 16 hours of test



- Chamber Temperature Range: Ambient 9°F to 167°F (5°C to 75°C), in accordance with the red area of the graphic below.
- Relative Humidity: 95% ~ 100% (ISO 6270-2/ASTM D2247)
- Resolution of chamber and bubble tower temperature controller: 0.1°C
- PT100 temperature sensors – 3 wire



**MODE: Humidity –
95% ~ 100% R.H
(ISO 6270-2/ASTM D2247)**



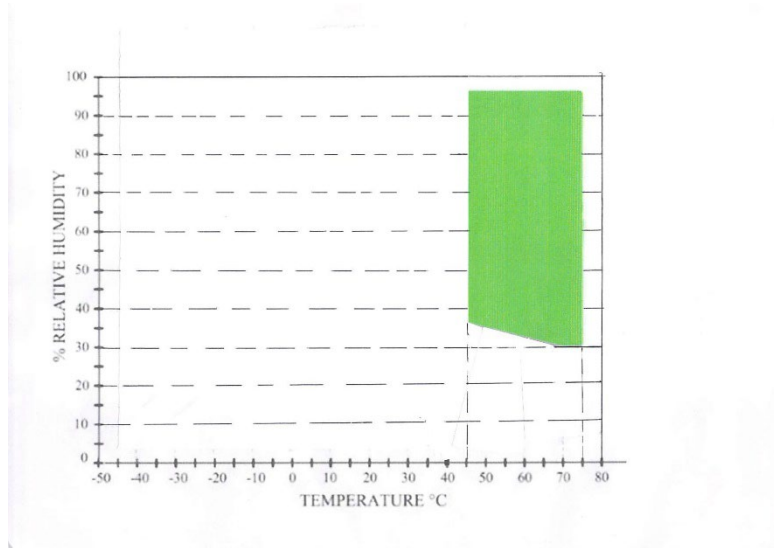
<p>MODE: Natural Dry</p>	<ul style="list-style-type: none"> - Ambient Temperature; Ambient Humidity - When selecting the mode, the equipment lid opens, and the test pieces remain at room temperature. - If the previous mode is SALT FOG/SALT SPRAY, HUMIDITY before opening the lid automatically, there is the purges to prevent contamination of the environment (laboratory).
<p>MODE: Dry Off</p>	<ul style="list-style-type: none"> - Injection of hot/dry air into the chamber- the dry air temperature with homogeneity of $\pm 0.5^{\circ}\text{C}$. - Dry Off Temperature Range: Ambient 9°F to 158°F (5°C to 75°C). - Resolution of temperature controller 0.1°C. - Included Timer for Mode, Set Point and Elapsed Time: hh:mm - PT100 temperature sensors – 3 wire. - Isolation System, prevents contamination by SALT SPRAY during the air system injection.

MODE: Dry Off CTH

It is not compatible with DRY OFF modes.

- Internal circulating air

- The chamber's internal temperature maintains homogeneity of $\pm 0.5^\circ\text{C}$.
- Heating Temperature Range: Ambient 9°F to 158°F (5°C to 75°C).
- Cooling Temperature Range: 158°F (75°C) to Ambient Temperature, only thermal exchange with ambient temperature.
- PT100 temperature sensors – 3 wire
- Resolution of temperature controller 0.1°C .



NOTE: *** External dimensions of the equipment and the wooden packaging: When the customer chooses this option.

CCT CORR 1300: W x D x H (mm): 2,420 x 1,550 x 1,700

CCT CORR 3000: W x D x H (mm): 3,400 x 2,300 x 1,800

CCT CORR 5000: W x D x H (mm): 4,400 x 2,900 x 2,300

Packing of wood:

CCT CORR 1300: W x D x H (mm): 2,600 x 1,700 x 1,850

CCT CORR 3000: W x D x H (mm): 3,602 x 2,450 x 2,196

CCT CORR 5000: W x D x H (mm): Pallets

MODE: Spray / Stress *

Not compatible with Salt Spray
ASTM B117 and ISO 9227, for handling of
the vertical air.

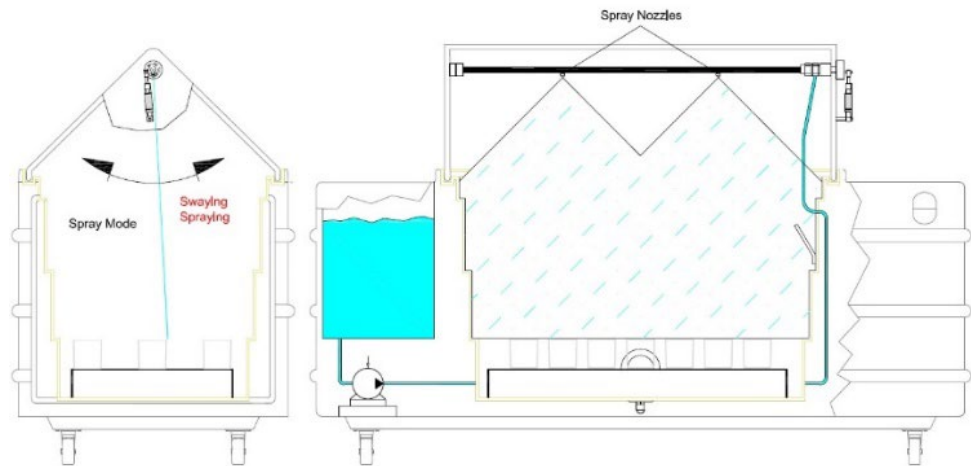
* Optional - EQOP 0128 - 1300

* Optional - EQOP 0129 - 3000

* Optional - EQOP 0130 - 5000

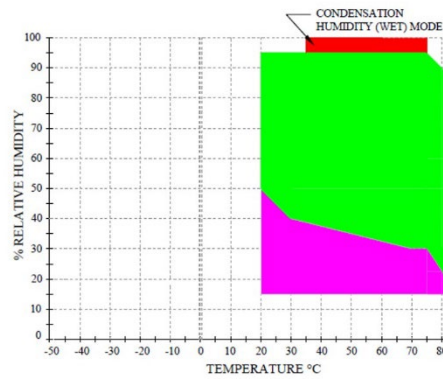
(Ford, Volvo, Scania/SAAB)

- Swaying tube with spraying nozzles.
- Spray device is capable of producing finely distributed and uniform spray of salt solution that falls on the specimen.
- The system does not re-use spray solution.
- Spray nozzles are made of plastics.
- After the spray mode, the chamber has a device to evacuate the salt solution.
- Solution Tank for spray has a capacity of 100 liters.



NOTE: With this option consult us about the external dimension of the equipment, there will be a change in the depth dimension.

- The user can set the temperature and relative humidity within the chamber in accordance with the green area of the graphic below.
- Heating Temperature range: 68°F to 176°F (20°C to 80°C), with ramp and soak control
- Cooling Temperature range: 176°F to 68°F (80°C to 20°C), with ramp and soak control
- Horizontal air movement inside the chamber.
- Cooling System, compressor, evaporator (coil), control valves and software.
- Relative Humidity: Green area of graph \pm 3%. Purple area on request.



MODE: CLIMATIZATION *

(Temp. X RH)

* Optional - EQOP 0122 - 1300

* Optional - EQOP 0123 - 3000

* Optional - EQOP 0124 - 5000

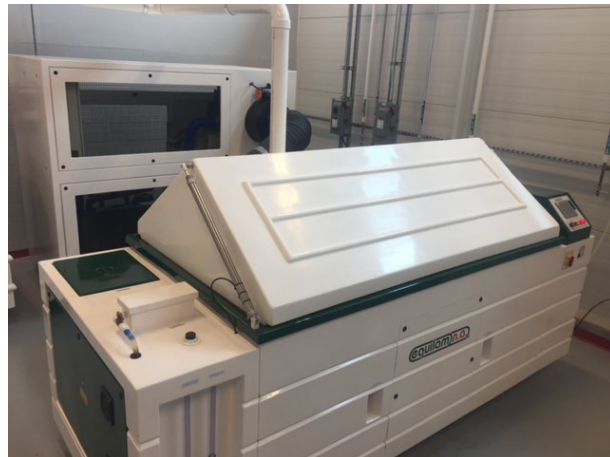
(Consult us for details)





Illustrative photo: CCT 5000 CORR





Illustrative photo: Cooling System




Illustrative photo: CCT 3000 - Low Temperature + Climatization

<p>User Interface Platform – Touch screen full color</p>	<p style="text-align: center;">Touch Screen Full Color</p> 
<p>Trend Plot of Test Parameters on touch screen</p>	<p style="text-align: center;">Included</p>
<p>Pneumatic lid with safety system.</p>	<p style="text-align: center;">Included</p>
<p>Alarm message, recommended maintenance displayed on touch screen</p>	<p style="text-align: center;">Included</p>
<p>Critical parameters shown on a single screen.</p>	<p style="text-align: center;">Included</p>
<p>Programs open for programming the corrosion cycles.</p>	<p style="text-align: center;">Included</p>
<p>Error messages display, indicates alarm triggered with description, and saves alarm time and date.</p>	<p style="text-align: center;">Included</p>
<p>Visual and sound safety system on screen.</p>	<p style="text-align: center;">Included</p>
<p>Pneumatic lid with safety system (air compressed).</p>	

<ul style="list-style-type: none"> - multiple days continuous test tank (spray mode). - Automatic and manual mixing settable in touch-screen PLC. - Easy access for cleaning. 		<ul style="list-style-type: none"> - Fully open for easy cleaning. - Indication of maximum and minimum level. - Solution filtering system (anti blocking).
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<p>Bubble Tower with constant level, no auxiliary tank necessary for long duration test</p>	
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<p>Centralized Atomization Nozzle with distribution tower and cone in accordance with: ASTM B117, ISO 9227, JIS Z2371</p>	
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Models	CCT 1300 CORR	CCT 3000 CORR	CCT 5000 CORR
<p>External Dimensions: W x D x H (mm) Lid Closed</p>	<p>97.7" x 45.3" x 66.9" (2,480 x 1,150 x 1,700)</p>	<p>133.9" x 63.0" x 70.9" (3,400 x 1,600 x 1,800)</p>	<p>150.0" x 70.9" x 82.7" (3,800 x 1,800 x 2,100)</p>
<p>Internal Dimensions W x D x H (mm)</p>	<p>51.2" x 30.7" x 35.4" (1,400 x 850 x 850)</p>	<p>81.9" x 42.5" x 39.4" (2,050 x 1,080 x 1,000)</p>	<p>78.8" x 59.1" x 39.4" (2,000 x 1,500 x 1,000)</p>
<p>Approx. Crated Dimensions W x D x H (mm)</p>	<p>102.4" x 51.2" x 72.9" (2,600 x 1,300 x 1,850)</p>	<p>140" x 70" x 83" (3,550 x 1,700 x 2,110)</p>	<p>Pallets/Container</p>
<p>Approx. net weight (kg)</p>	<p>802 lbs (364 kg)</p>	<p>1,212 lbs (550 kg)</p>	<p>1,962 lbs (890 kg)</p>
<p>Approx. shipping Weight – Crated (kg).</p>	<p>919 lbs (417 kg)</p>	<p>1,874 lbs (850 kg)</p>	<p>2,204 lbs (1,000 Kg)</p>



Internal Volume (Liters)	45.9 cu.ft (1,300 L)	106.0 cu.ft (3,000 L)	176.6 cu.ft (5,000 L)
Equipment installation temperature recommendation	63 °F to 82°F (17°C to 28°C)		
Equipment Installation Relative Humidity recommendation	Maximum 85% (without condensation)		
Electrical Supply	208 - 230 V-Ø3-50/60Hz		
FLA (208/220 V) (No Optional)	45	56	63
DI water	In accordance with ASTM D 1193 Type IV		
DI water Pressure	0.5 to 1.0 kgf/cm ²		
DI water connection	½ NPT"		
Compressed air	Free of oil and water - flow rate and constant pressure - 6 kgf / cm ² - 3 ~ 4 m ³ / hour		
Chamber Exhaustion Pipe without siphon	2"	4"	4"
Laboratory Exhaustion	Fume Hood and motor – if necessary		
Service Area	Minimum clearance of 23.6" (60 cm) for an easier cleaning, assembling and maintenance.		
<p>Notice: We recommend that for each type of equipment its respective solution is used. That is, never use a Salt Spray chamber as a CASS - ASS - Kesternich (SO₂) chamber or as a Wet Chamber because chemical contamination will distort the final test result. See Item: 4.6 ISO 9227 Standard.</p>			
<p>1 (One) Year Parts Warranty against manufacturing defects from date of delivery at customer's site. This assumes equipment is used under normal operating conditions in accordance with the instruction manual. This warranty does not apply to glassware (lamps). In case of non-warranty issues during warranty period, actual expenses shall apply.</p>			
<p>IMPORTANT: All our equipment is delivered with Installation, Maintenance and User Manuals. We believe these materials are enough for the correct use of the equipment. We are available for further questions and clarifications. If necessary, we provide the service of assembling and staff training at client's site (Cost for this service available upon request).</p>			
<p>Note: Appearance and equipment specifications are subject to change without prior notice.</p>			

OPTIONAL ACCESSORIES

CODE:

EQOP. 0001 – CCT CORR 600
 EQOP. 0003 – CCT CORR 1300
 EQOP. 0004 – CCT CORR 3000
 / 5000

- (1) rack - 15° or 20° inclination in accordance with ASTM B117 and ISO 9227.



CODE: EQOP.0005

- Special rack for customer supplied test sample.

CODE: EQOP.0008

- (2) Fog collectors.



CODE: EQOP.0009

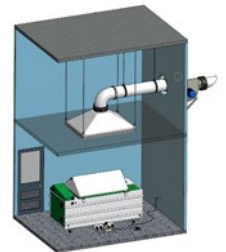
- Pressure regulator with water, oil filter and pressure gauge.



CODE:

EQOP.0011 – CCT CORR 600
 EQOP. 0144 – CCT CORR 1300
 / 3000/5000

- Fiberglass Fume Hood (hood only).



CODE: EQOP.0012

- Fiberglass axial fan assembly
 capacity: 1940 cfm. 220 ~ 208 V.
 Net weight: 88 lbs. (40 kg).



CODE: EQOP.0013

- DI Water assembly includes:
 activated carbon water filter, DI
 column, LED water quality indicator.



CODE: EQOP.0014

- Spare DI water column.



CODE: EQOP.0015

- Spare activated carbon water filter.



CODE: EQOP.0016

- pH meter – Digital with standard solution.



CODE: EQOP.0017

- Conductivity meter – Digital with standard solution.



CODE: EQOP.0018

- Densitymeter to measure concentration of saline solution in accordance to ASTM B117.



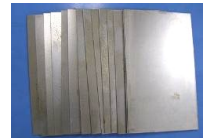
CODE: EQOP.0019

- Plastic bucket with 50lb Salt EQCORR with chemical analysis Certificate in accordance with ASTM B117, ISO 9227, JIS Z2371, MILS STD810G.



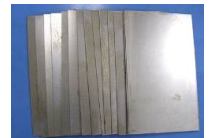
CODE: EQOP.0038

Test Panels – 2.9" x 5" (76mm x 127mm). In accordance with ASTM B117 (100 Pieces).



CODE: EQOP.0075

- Test Panels – 2.7" x 5.9" (70mm x 150mm). In accordance with ISO 9227 (100 pieces).



CODE: EQOP.0044

- Supervisory Software:
Data Acquisition:
By PC (RS 232/ 485 - USB)



CODE: EQOP.0047

- Digital relative humidity indication, software, wet bulb.



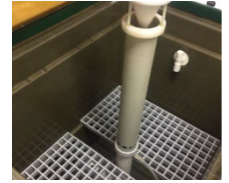
CODE:

EQOP.0118 – CCT CORR 600

EQOP.0120 – CCT CORR

3000/5000

- Grid type test brackets supports 265 lbs (120 kg) with distributed load.



CODE: EQOP.0035

- Cable port $\varnothing = 2''$
(Other diameter, consult us)



CODE: EQOP.0169

- Inclined specimen holder for 36 screws with Nylon threaded bushings to be defined by the customer (maximum $\varnothing 22\text{mm}$)



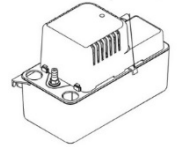
CODE: EQOP.0111

- Gas Scrubber – Exhaust system.



CODE: EQOP.0068

- Pump to drain precipitated solution - Salt Spray Chamber



CODE: EQOP.0034

- Solution tank for long term testing capacity 71.3 gal (270 Liters), with automatic solution mix and feed.



CODE: EQOP.0056

- CSA Certificate (Canada)

Consult us

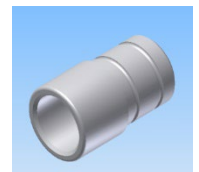
CODE: EQOP.0007

- Side window in lid to prevent dripping on samples -
ASTM B117 - ISO 9227 –
JIS Z2371 - MILS



CODE: EQOP.0169

- Plug SWAAT TEST (ASTM G 85 ap. 3)





CODE: EQOP.0044	<ul style="list-style-type: none">• SWAAT TEST – In accordance VW - PV 1208/2016-2	Consult us
CODE: EQOP. 0046	<ul style="list-style-type: none">• ASTM G 85 A4 – SO2 Injections	Consult us
CODE: EQOP. 0131	<ul style="list-style-type: none">• ASTM G 85 A5 (PROHESION)	Consult us
CODE:	<ul style="list-style-type: none">• DRY Mode in accordance MIL STD 810 G	Consult us
CODE: EQOP.0099	<ul style="list-style-type: none">• Saturated Moisture by Atomization <p>Water Fog Collection Range: 1.0 to 2.0 ml/hour, continuous 16 hours of test. Others consult us.</p>	ASTM D1735
CODE: EQOP.0132	<ul style="list-style-type: none">• Washing walls, Scania / Volvo STD 4319 and Renault ECC1	Consult us
CODE: EQOP.0132	<ul style="list-style-type: none">• Spray nozzles in accordance with RENAULT – ECC1. Incompatible with nozzles: ISO 9227 - ASTM B117	Consult us
CODE: EQOP.0122	<ul style="list-style-type: none">• Climatization Mode Temperature x R.H%	Consult us



CODE: EQOP.0128

- MODE: SPRAY / STRESS:
FORD CETP:00.00-L-467 and
TM: 00.00-L-467

Consult us

CODE: EQOP.0125

- Low Temperature
Chamber Temp. -4°F (-20°C)

Consult us

CODE: EQOP.0134

- Ultra-Low Temperature
Chamber Temp. -22°F (-30°C)

Consult us

- **Further optional requests shall be considered upon request.**
- **Chambers with other internal volumes consult us.**

