



# Ozone Aging Test Guideline



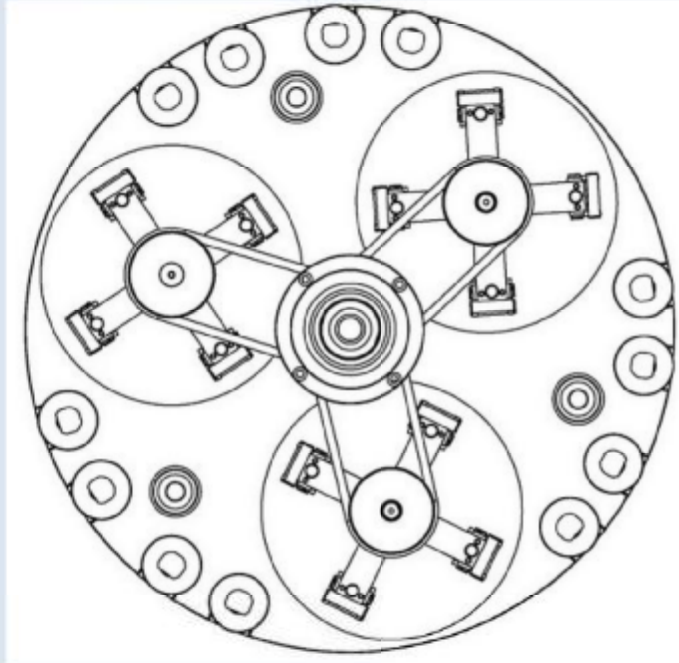
## Analysis of the classical standard of ozone testing:

Performance	Unit	IEC 60811-2-1	ISO 1431-1	ASTM D1149	DIN 53509
Air velocity in the box	mm/s	>500	8..16	8	>600
Flow characteristic		Turbulent flow	Layer flow	Layer flow	Layer flow
Reynolds	Re	>2300	<2300	<2300	<2300
Flow/sample direction		Lengthways	Lengthways	Ortho	Ortho
Fresh air exchange rate	X/hour	<30	clean air	clean air	3
Closed Loop Design		no	no	no	no
Ozone control principle		UV	UV	UV	UV
Ozone concentration		300ppmv	200ppmv	200ppmv	200ppmv
Static testing		Yes	Yes	Yes	Yes
Dynamic Test		no	Yes	Yes	Yes
Carrier movement		no	Yes: ordinary	no	Yes
Inner box circulation/( Use 600mm/s fan)		Yes inside the container	Yes non-compulsory	Yes air fan	Yes specimen
Temperature	°C	25/40	40	40	23...40
Humidity	%RH	Drying/55	<65	Drying	45...65
Lumen material			AL	SS	SS
Airometer		Yes	no	no	no
Container minimum volume	l iter			>110	

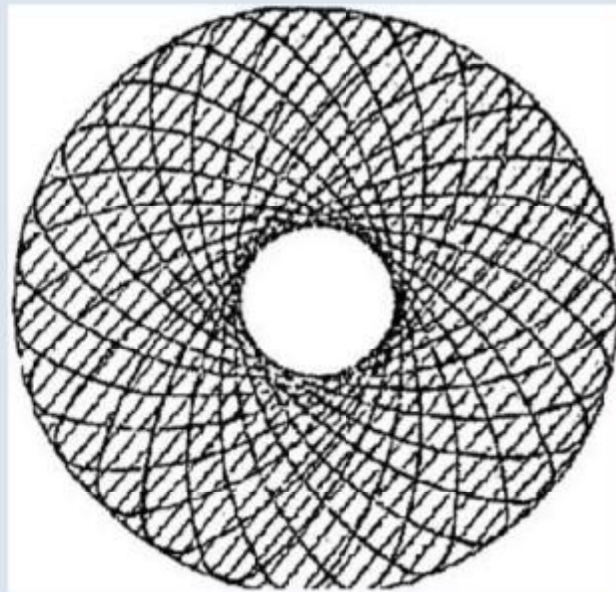
## **Sample rack requirement for ozone aging test chamber**

- 1.The main components consist of shell, electronic components and ozone generator
- 2.Hold the ends of the sample with a fixture at the required elongation, and the length of the sample should be roughly parallel to the air direction when Contact with ozone air.
- 3.The fixture shall be made of materials that are not readily decomposed to ozone, such as aluminium.
- 4.Make the sample rotation rate between (20-25) mm/s , and Each sample moves continuously along the same path in the plane of a vertical dry flow.
- 5.For the same sample spinning one round about (8 - 12) min. Sample scanning area at least 40% of the effective area of the test box.
- 6.Sample preparation should meet the requirements of ASTM 1149. The sample is best to be cut off from the finished product. If needed, you can cut it from the finished product. At least 3 samples should be used at least each test condition.
- 7.The width of the standard specimen is not less than 10mm,thickness  $2.0\text{mm} \pm 0.2\text{mm}$  , length of the sample between the two ends of the stretcher is not less than 40mm.

## Top view of our new test clamp



## Coincidence test curve



Sample rotation and scanning area (shadow)

Make the sample rotation rate between (20-25) mm/s , and Each sample moves continuously along the same path in the plane of a vertical dry flow.

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For the same sample spinning one round about (8 - 12) min. Sample scanning area at least 40% of the effective area of the test box.

## **Ozone climatic test chamber**

**Fast determination ▪ smooth operation ▪ high reliability**

Ozone Aging Test Chamber Can be used to test rubber products with static tensile deformation, such as vulcanized rubber, thermoplastic rubber, cable insulating bush; expose the test specimens to the sealed air in the test chamber without light and with constant ozone concentration and constant temperature according to predetermined time, and then observe the cracks on test specimens' surface and the degree of change of other properties to evaluate the rubber's ozone aging resistance properties.



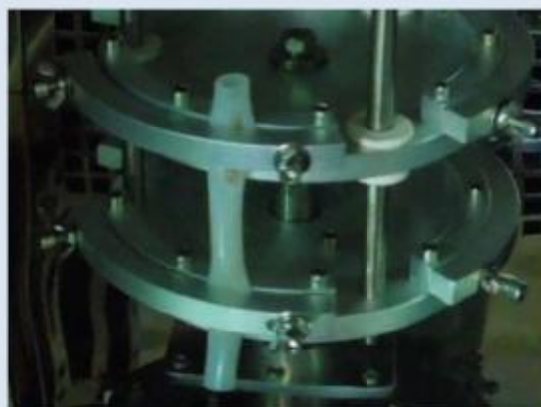
## **Eco-friendly ▪ reliable ▪ industrial leading status**

Refrigeration principle and compressor: In order to meet the requirements of test chamber on temperature decrease rate and lowest temperature



## **Creative ▪ efficient ▪ advanced ▪ and eco-friendly**

Rotary working table: aluminum alloy table board (corrosion resistant) All parts contacting water are made of stainless steel or copper

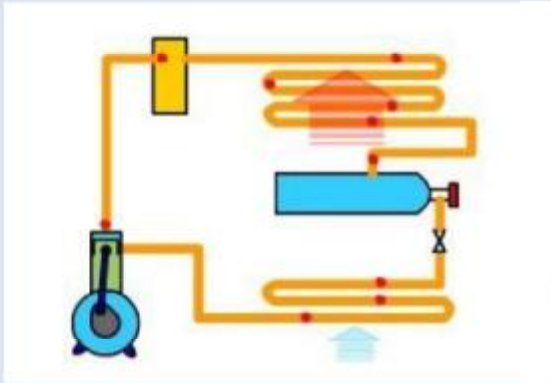


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## Advance design ▪ good simulation performance

The working room have wind channel interlayer on three walls, equipped with heater and humidifier, circulating fans and other device. On top of the test chamber there are balance exhaust holes to exhaust air in laboratory constantly to keep balance of air concentration in test chamber



## STANDARD FEATURES

Model	COA-150
Internal dimension (WxDxH)	500x600x500 mm (150l )
External dimension (WxDxH)	1000x1000x1750 mm
Temperature range	RT+10~ 60℃ (suggest to use 40℃±2℃)
Temperature Fluctuation	±1℃
Ozone concentration	50~1000 pphm, adjustable
Ozone concentration deviation	±10%
Sample holder	2pcs removable sample tray, SUS#304 stainless steel
Temperature controller	Programmable touch screen controller
Ozone concentration analysis	Concentration analysis meter
Ozone generator	High pressure silence discharge type
Protection system	Leakage, short circuit, over temperature, over heat

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## CHAMBER STRUCTURE AND FEATURES

- 1, Internal material is imported high quality mirror stainless steel plate.
- 2, External material adopts stainless steel with paint spray.
- 3, Insulation material: high-density glass fiber
- 4, Use long axial fan motor and high and low temperature resistant aluminum alloy wing type wind turbines to force vertical air circulation.
- 5, Chamber door adopts double layer high and low temperature resistant silicone seal ensure the airtight test area.
- 6, Chamber bottom has high quality universal wheel and fixed foot cup.
- 7, Observation window uses multilayer hollow tempered glass.
- 8, Exhaust system: exhaust the high concentration ozone from the test chamber to avoid to poison.
- 9, Optional: Built-in 360 degree rotation sample holder, including 3 sets static tensile fixture and 3 sets dynamic tensile fixture.

## CONTROL SYSTEM

- 1, With imported micro-computer LCD controller to control the temperature.
- 2, PID control
- 3, With auto calculation function to reduce the setting inconvenience.
- 4, Heater: fin type radiator pipe nickel-chromium alloy u-shaped heater, auto calculate with high accuracy PID + SSR control
- 5, Temperature measurement: SUS#304, PT 100

## STANDARD CONFIGURATION

- 1, Power line x 1pc
- 2, Sample holder x 1set
- 3, Fuse x 1set
- 4, Operation manual x 1set

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