



Aging Oven – High-Temperature Chamber – NG-AGOV-ADV

Standards: [QB/T 2920-2010](#), [ISO 188](#), [ASTM D573](#), [ASTM E145](#), [ASTM D5423](#), [ASTM D5374](#), [ASTM D2436](#), [UL 1581](#), [IEC 60216-4-1](#), [ISO 4577](#), [IEC 60811-1-2](#), [BS 903](#), [BS 6746](#), [JB 7444](#), [GB/T 3512](#), [CNS 3556](#), [CNS 742](#), [JIS 7212](#), [JIS 7757](#)



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Description

The **NG-AGOV-ADV** is a high-temperature aging oven built for testing how rubber, plastics, and similar materials respond to long-term heat exposure. It simulates elevated temperature conditions to assess changes in mechanical and physical properties like hardness, elasticity, and tensile strength. The chamber is appropriate for accelerated aging, thermal stability checks, and heat resistance evaluations due to its ability to maintain uniform airflow through forced convection and its capacity to reach temperatures of up to 300°C.

The system features programmable thermal cycles, stable PID control, and precise temperature zoning. The touchscreen interface allows full control of heating steps, duration, and air exchange settings. Over-temperature protection and real-time monitoring are built in. The chamber is made of stainless steel and includes adjustable trays for sample placement. The oven is suitable for industrial labs, universities, and manufacturing environments, as it is designed for both routine use and specialized test protocols.



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The NG-AGOV-ADV complies with critical testing standards including ISO 188 for aging of vulcanized rubber and ASTM D573 for rubber heat resistance testing. It also supports methods under GB/T 3512 and IEC 60216-4-1, used for evaluating insulating materials. This makes the system reliable for labs working with elastomers, polymers, or electrical components that require controlled heat testing conditions.

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Compliance with International Standards

Global compatibility is the primary objective of the NG-AGOV-ADV [Aging Oven](#). The technical requirements of an array of national and international standards are met by its programmable cycles, temperature control accuracy, and test performance. This allows testing laboratories, manufacturers, and research facilities to produce results that are recognized in industries and regions. Below is a selection of the most commonly used standards with which the oven is fully compatible:

ISO 188 – Accelerated Aging of Vulcanized and Thermoplastic Rubber

This standard defines procedures for accelerated aging of vulcanized or thermoplastic rubber. It's one of the core international benchmarks for evaluating how rubber properties change under continuous heat exposure. The NG-AGOV-ADV is engineered to fully support the static air method outlined in [ISO 188](#), offering precise control over temperature and exposure time for accurate and repeatable test results.

ASTM D573 – Heat Resistance of Rubber Compounds

Primarily used in North America, this standard focuses on the heat aging of rubber compounds to assess changes in tensile strength and elongation. The oven's high-temperature accuracy and uniform heat distribution make it a reliable tool for labs performing [ASTM D573](#) testing as part of routine quality control or certification processes.

IEC 60216-4-1 – Thermal Endurance of Electrical Insulation Materials

[IEC 60216-4-1](#) standard relates to the thermal endurance of electrical insulating materials. It specifies the method for determining relative temperature indices using the fixed-time



method. With the NG-AGOV-ADV's stable thermal environment and programmable cycles, users can confidently evaluate insulation stability under long-term heat exposure.

UL 1581 – Thermal Conditioning of Cable and Wire Insulation

Recognized in cable and wire testing, [UL 1581](#) includes various procedures for evaluating electrical insulation performance, including heat aging. The oven helps meet the thermal conditioning requirements of this standard, which is often essential for compliance in regulated industries such as telecommunications and consumer electronics.

GB/T 3512 – Heat Aging Test for Rubber Materials

This standard closely aligned with ISO 188, [GB/T 3512](#) outlines the general procedure for accelerated heat aging of rubber. The NG-AGOV-ADV supports the airflow, temperature accuracy, and time control necessary for these tests, making it suitable for both domestic and export-focused manufacturers in China.

ASTM E145 – Specification for Laboratory Ovens

[ASTM E145](#) specifies the performance criteria for laboratory ovens. It ensures the oven maintains proper temperature uniformity and control, which directly affects the consistency of any thermal aging test. The NG-AGOV-ADV adheres to the expectations of this standard through its PID regulation and forced-air circulation system.

BS 903 – Heat Aging of Rubber Products

Used in the UK and other Commonwealth countries, [BS 903](#) includes various test methods for rubber, including heat resistance evaluations. With its robust design and British standard compatibility, the NG-AGOV-ADV allows international labs to follow BS testing protocols without modifications or workarounds.

JIS K 7212 – Thermal Aging of Plastic Materials

This Japanese standard evaluates the thermal aging properties of plastics. The NG-AGOV-ADV's precise temperature zoning and adjustable program settings make it suitable for



performing [JIS K 7212](#)-compliant tests, particularly in industries where material reliability under heat is critical, such as automotive components and electronics.

Who Benefits from the NG-AGOV-ADV Aging Oven

The NG-AGOV-ADV Aging Oven is a thermal testing solution that is versatile and is used in many different kinds of industries. It assists engineers, researchers, and quality specialists in the prediction of material behavior under heat stress, the acceleration of product development, and the assurance of compliance. The oven contributes substantial value to the following sectors:

Automotive & Tire Manufacturing

Rubber and plastic components such as tires, seals, gaskets, hoses, and belts undergo prolonged heat exposure during vehicle operation. The oven's precise thermal aging capabilities (up to 300°C) enable manufacturers to simulate years of heat stress in hours. This allows them to evaluate durability, elasticity loss, heat resistance, and life expectancy.

Electrical & Cable Industry

Insulating materials used in cables, connectors, and semiconductor shields must retain mechanical and dielectric integrity under heat. Testing silicone and thermoplastic insulators exposes materials to elevated temperatures, replicating real-world aging scenarios. Engineers use the NG-AGOV-ADV to verify insulation lifespan, mechanical strength, and compliance with electrical safety standards.

Aerospace & Defense

Aging simulation is key for components like seals, wire insulation, and polymer housings used in aircraft, spacecraft, and defense equipment. These parts must endure extreme thermal cycles. The forced-convection control of this oven ensures accurate temperature uniformity during accelerated aging, supporting material qualification in avionics and defense-grade electronics.



Medical Devices & Healthcare Equipment

Healthcare components—e.g., rubber seals, plastic tubing, and instrument parts—require reliable performance after exposure to sterilization and body temperature. The aging oven is ideal for simulating thermal sterilization cycles and ensuring parts maintain integrity throughout their service life. This testing supports risk assessments, regulatory compliance, and product safety.

Plastics & Polymer R&D

In labs designing materials for applications like packaging, consumer electronics, or industrial parts, accelerated aging tests shorten development cycles by revealing degradation pathways (e.g., discoloration, brittleness, shrinkage). Programmable thermal profiles make the NG-AGOV-ADV indispensable for characterizing thermal stability and optimizing polymer formulations.

Footwear, Leather & Textile Testing

Materials for shoes, leather goods, and technical fabrics often undergo heat during production or usage. The oven evaluates aging effects such as splitting, color shifts, loss of elasticity, and mechanical breakdown—critical factors in quality assurance for outdoor, sports, and professional-grade gear.



Technical Specifications – NG-AGOV-ADV Aging Oven

Parameter	Specification
Temperature Control Mode	Microprocessor PID control with fuzzy logic and LCD interface
Sensor Type	High-precision platinum resistance temperature sensor
Air Circulation Method	Forced air convection via internal circulation duct
Temperature Range	RT +10°C to 200°C / RT +10°C to 300°C (model dependent)
Temperature Accuracy	±0.1°C
Temperature Uniformity	±2°C at 100°C
Temperature Fluctuation	±1°C
Alarm Threshold	Set value +5°C
Power Consumption	2000 W
Interior Material	SUS 304 stainless steel
Exterior Material	08F cold-rolled steel plate, powder-coated
Inner Chamber Dimensions	23.65" × 19.70" × 29.55" / 600 × 500 × 750 mm
Outer Dimensions	34.65" × 28.35" × 36.65" / 880 × 720 × 930 mm
Net Weight	199 lbs / 90 kg
Air Exchange Rate	3–10 times per hour (adjustable)
Noise Level	≤65 dB
Electrical Supply	220 V, 50 Hz



Parameter	Specification
Safety Features	Over-temperature protection, auto shutoff, visual and audible alarms
Control Interface	Multi-step programmable controller with air exchange and timing functions

Note: Larger capacity aging oven systems are available upon request. Please include your specific technical requirements in your quotation submission, and our consultants will provide support with the appropriate configuration.

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