

No. 102



GEER TYPE AGING OVEN



OVERVIEW



This Oven is the most widely used heat aging tester for rubber and plastic.

Unlike ordinary heating ovens, the GEER TYPE AGING OVEN satisfies specifications indispensable to aging tests such as closed mechanism, uniform air velocity in the oven, ventilation rate measurement, and rotating specimen rack, which offers excellent productivity and reliable test results



Air Exchange Rate (times/h) is automatically calculated

The operator can start aging of the samples just touching START, after putting test condition such as temperature and time. The touch panel will automatically calculates the air exchange rate.

SHF-SA type can easily adjust the Air Exchange Rate by Opening/Closing the Dumpers.

THERMOMETER for ROOM TEMPERATURE



The thermometer is attached next to the Dumper. It takes surrounding temperature. Touch Panel will calculate Air Exchange Rate by using this surrounding temperature so that Air Exchange Rate can be calculated accurately.

DUMPERS for S and SA type

2 types can be chosen from below.

SHF-S | • Air Exchange Rate measuring device is **attached**.
• Dumper setting is conducted **manually**.

Air Exchange Rate will be measured automatically. In order to test at target Rate, the operator needs to set Air Exchange Rate by opening/closing Dumpers.

SHF-SA | • Air Exchange Rate measuring device is **attached**.
• Dumper setting is conducted **automatically**.

Air Exchange Rate will be measured automatically. In order to Touch Panel so that the damper will be opened and closed automatically.



OPEN



CLOSE

Set the damper to the scale as a guide. By setting the damper, Air Exchange Rate would be changed.



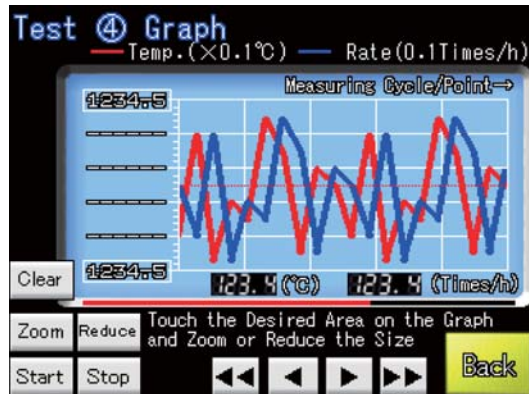
OPEN



CLOSE

The Dumper will be automatically opened/closed since Air Exchange Rate will be controlled by PID control.

GRAPH DRAWING



Graph Drawing while testing

It shows “Temp.” & “Air Exchange Rate” while testing.

It updated every period of “Exchange rate Measuring Cycle” The Max and Min value enclosed by □ of Y axis, the value can be changed.

Touch the desired Area on the graph and “Zoom” or “Reduce” the size in the state of flashing ON and OFF in the frame.

CONSUMPTION RATE LIST

50 conditions of Sealed Electric Consumption Rate can be saved

Sealed Electric Consumption Rate List Back

Select the Sealed Electric Consumption Rate from the Saved Values.
Select the Desired Row and Press “Select”.

No.	Room Temp. (°C)	Test Temp. (°C)	Sealed Electric Consumption Rate (Wh/h)
12	123.4	123.4	1234.5
12	123.4	123.4	1234.5
12	123.4	123.4	1234.5
12	123.4	123.4	1234.5
12	123.4	123.4	1234.5

Save

Page

There is no need to take the Sealed Electric Consumption Rate whenever it tests. The Touch Panel can save the 50 conditions in it.

It shows “Temp.” & “Air Exchange Rate” while testing.

It updated every period of “Exchange rate Measuring Cycle”

The Max and Min value enclosed by □ of Y axis, the value can be changed.

Touch the desired Area on the graph and “Zoom” or “Reduce” the size in the state of flashing ON and OFF in the frame.

TOUBLE TIMER

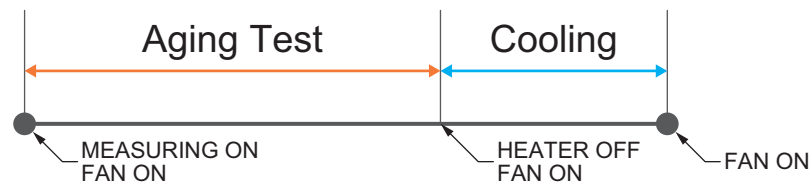
【Heater OFF Timer and Fan OFF Timer】

Test ① Condition 1/2	
Enter the Test (Measuring) Condition	
Test Temp.	123.4℃
Off Timer	12345Hr
Fan Blowing Time After Heater Off	123Min
Fan Stop Temp.	123.4℃
Exchange Rate Measuring Time	123Min
Exchange Rate Measuring Cycle	123Min

Back Next

The Geer Type Aging Oven can set the timer for the heater OFF after testing and for the fan rotation after Heater OFF. (0~99,999 hrs)

※ Fan also stops when the temperature inside the bath reaches



DATE LOGGING (OPTION)

【Date Logging】



SD card inside the Touch Panel can take a log while measuring Sealed Electric Consumption Rate. The data is saved as one CSV file in SD Card per one test. After finishing test, PC can take the log data from Oven and open it as excel file.

SPECIFICATION

Standard : JIS B7757 K7212 K6257 / ASTM D573 D2436 E145 / ISO 188 4577

Oven Dimensions : [Standard] 450mm(W)×450mm(D)×500mm(H) / [Large] 600mm(W)×600mm(D)×600mm(H)

Material : SUS-304

Temperature Range : Room Temperature +20~300°C

Temperature Indication : Measured Value±1.5°C (0~300°C ±0.5%)

Temperature Adjusting : Set Temperature±1°C

Air Velocity : [LOW] 0.5±0.1m/s / [HIGH] 1±0.2m/s (Can be changed on Touch Panel)

Air Exchange Rate Calculation : Automatic Calculating by electric consumption method.

Air Exchange Rate Control : [SHF-S] Manual Dumper Setting / [SHF-SA] Automatic Dumper Setting

Can be set 5~10 times / hr, or more than 60 times/hr

([Option] UL Standard 100~200 times/hr)

Rotating Frame : 7.5±2.5 rpm

Safety : Overheat Preventer, LeakageBreaker

Accessory : Specimen Circle Hanger 2 Stages, Rectangle Stage 2 Stages, Clip 40 pcs

Option : [UL Standard Spec] AirExchange Rate 100~200 times/hr

[USB Cable Output] The Data Log can be taken out by USB cable.

[LAN Cable Output] The Data Log can be taken out by LAN cable.

[Mini Printer] Dot Print Head. The data selected from Temperature, Outside Temperature, Consumption Rate, Exchange Rate, etc. can be printed out

Machine Weight : [Standard] Approx. 200kg / [LARGE] Approx. 400kg

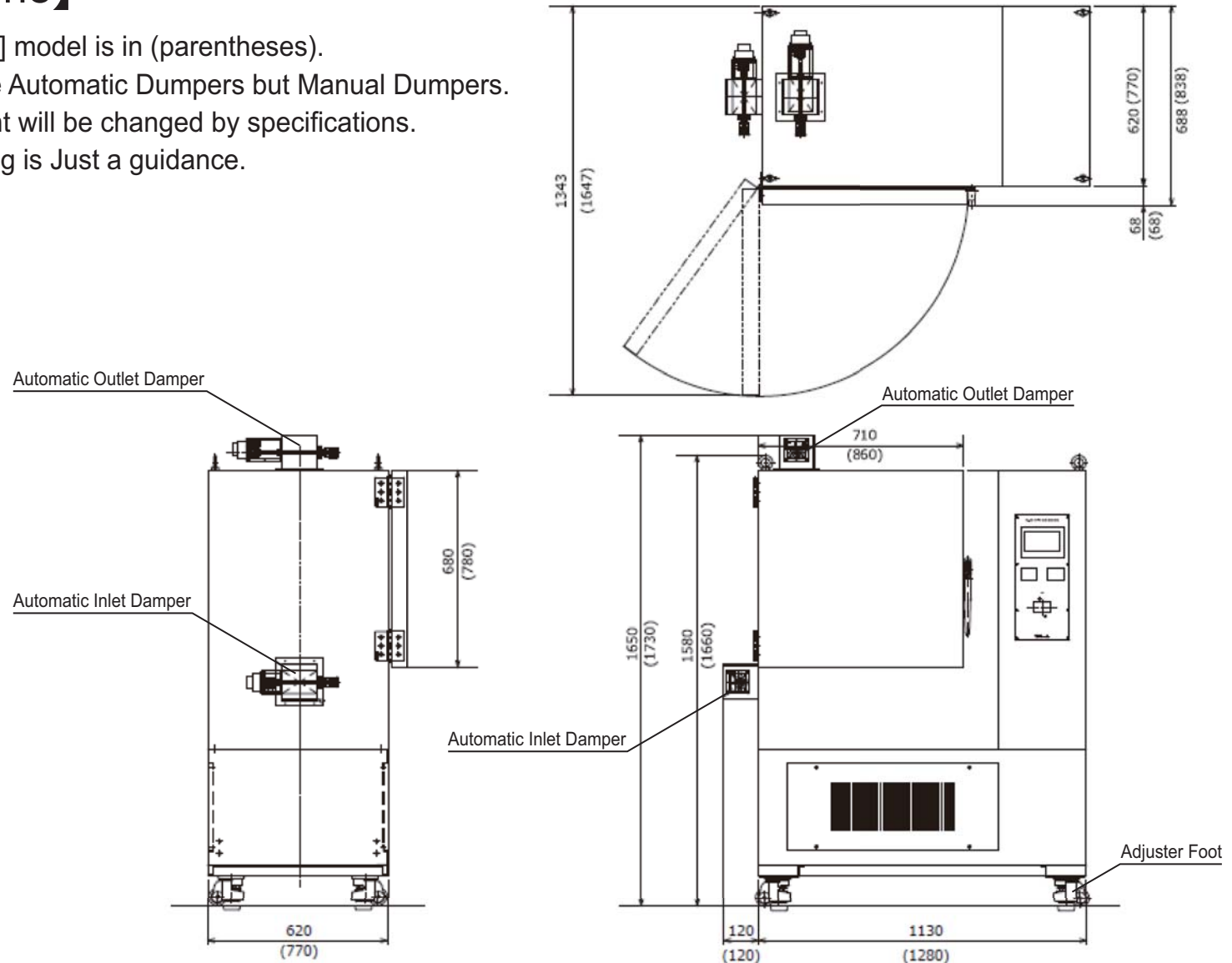
Power Source : 200V 3-Phases 30A (UL Standard Spec=40A)

※ Any Voltage and Frequency are easily adopted. Please Check with YASUDA SALES.

DIMENSION and WEIGHT

【Dimension Outline】

- The dimension of [LARGE] model is in (parentheses).
- SHF-S type does not have Automatic Dumpers but Manual Dumpers.
- The Dimension and Weight will be changed by specifications.
- The number on the drawing is Just a guidance.



What is GEER AGING OVEN? ①

【Heater OFF Timer and Fan OFF Timer】

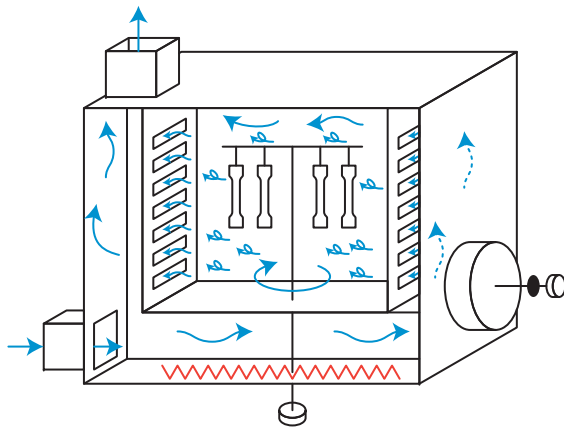


English name of the standard which the machine follows is

“Forced Air Circulation Oven Type Thermal Accelerated Aging Tester”.

⇒ Which means that a usual Constant Temp Oven, does not have the air inside the chamber to be circulated. This is the key difference between an USUAL OVEN and GEER TYPE AGING OVEN.

< Difference 1 >



As in the standard, the GEER TYPE AGING OVEN will have both an air inlet and an air outlet to create the forced air inside the chamber. This air in an out is one of the key test factors.

The operator is to test the test sample with different air exchange rate to see the reaction of the test sample. For example, using the same test sample and same test temperature and etc, the test sample can have a great difference in the result with different air exchange rates.

※ Key word “Air Exchange Rate”: How many times the air : inside the chamber was exchanged per an hour.

What is GEER AGING OVEN? ②

< Difference 2 >



Air Dumper for No.102-SHF-77 and SHF-S



Air Dumper for No.102-SHF-SA

To have the air exchange inside the oven, the GEER TYPE AGING OVEN will have an air in and outlet dumpers on the machine like the pictures in the left.

The GEER TYPE AGING OVEN is to calculate the air exchange rate by the amount of electricity it consumes during the test. For example, if the test is conducted at 200°C, a wider opening of the dumper will require more heating in the oven to keep the temperature constant at 200°C compared to a situation where the dumper is kept closed.

※ Key word “Electricity Consumption”: How much electricity it is consumed to keep the oven at a constant temperature. The air exchange rate is calculated through this electricity consumption.

< Difference 3 >

Air Exchange Rate	Average Wind Speed
3~10 times/hr	0.5±0.1m/s
1 time per minute	1±0.2 m/s

Inside a GEER TYPE AGING OVEN the wind is to blow to force the aging of the test sample. The windblowing inside the oven is to blow depending on the air exchange rate that is set for the test as in the right chart.

< Difference 4 >



Unlike the usual constant temperature oven, the GEERTYPE AGING OVEN has a turning hanger which spins at a rate of 5~10 turns/min.

What is GEER AGING OVEN? ③

< Difference 5 >

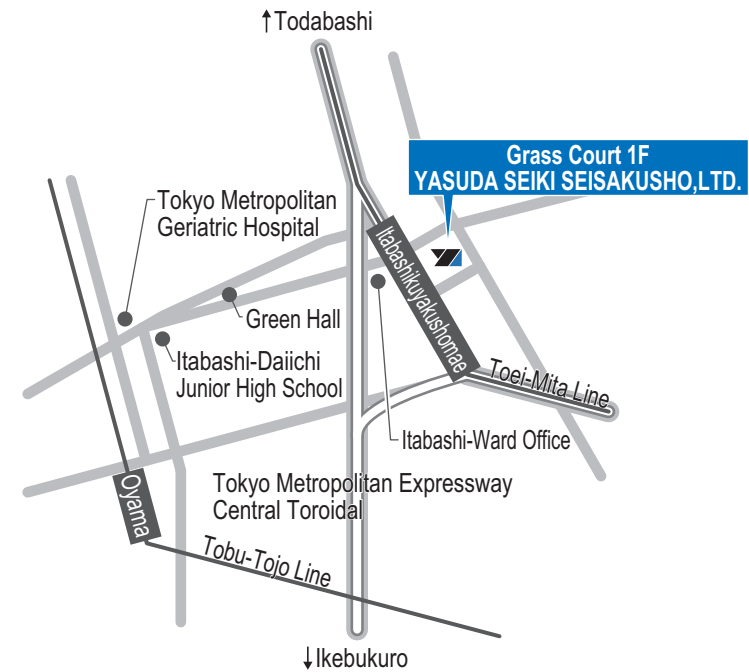
The Operator is to report the following as the test result for the GEER TYPE AGING OVEN test
(The test report will differ among the test sample and also among the industry)

- A) Any cracks, breaks, pulverization, and deformations to the sample by looking at the naked eye
- B) Change in mass
- C) Any mechanical loss of power before and after the test
(e.g. tensile and bending stress)
- D) Any loss of optical quality before and after the test
(e.g. change of color, fading, and loss of clarity)
- E) Any loss of electrical performance before and after the test
(e.g. dielectric strength and resistance)

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