

# [Operating Instructions]

**MAGMA<sup>®</sup> NT1700S**

The Intelligent Sintering Furnace



**Memo**

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## 1. Introduction

Thank you for purchasing our product (**MAGMA NT1700S**). This oven has been designed with rigorous testing and inspections to ensure the highest quality in every aspect. This oven is rugged yet elegant in design with easy to use interface and message system. Please read the instructions carefully prior to use for best user experience.

### ⦿ **Caution**

Please read all the safety information prior to operating the oven to prevent misuse or accidents.

– The safety information has been divided into 'Warning' and 'Caution' sections as described below.

#### **Warning**

Violations of instructions may cause increased risk of serious injury or death.

#### **Caution**

Violations of instructions may cause increased chance of injuries or waste.

## Warning

1. Do not disassemble, repair or modify any part of the machine. This will void any warranty and may cause problems with the machine.
  2. Ensure the oven is properly grounded. This will prevent break or electric shock.
  3. Do not cut or modify the power cord. Do not handle the power cord in a manner that may cause damage.
  4. Keep flammable material away from the oven.
  5. Keep liquid away from the oven and avoid damp environment when placing the oven.
  6. Ensure the power plug is properly plugged in to avoid sparks or damage to the oven.
  7. Always use heavy thermal insulated gloves when handling units. Do not open the oven during operation.
  8. Always ensure the oven is completely stopped before working with the oven and operate the door only when open is not in operation.
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## Caution

1. During machine operation please avoid using the oven functions to prevent accidental stoppage or modification to the programs.
  2. Please handle with care. The oven contains fragile parts.
  3. Do not use in places with heavy vibrations.
  4. Please read the instructions completely before using the oven.
-

## 2. Product Information

### [1] Features

- ▶ Easy to operate
- ▶ 7" TFT LCD high quality display
- ▶ Touch screen capable

### [2] Display Feature

- ▶ Custom user programs
- ▶ Progress graph

## 3. Technical Information

### [1] Temperature Sensor

<b>Sensor Type</b>	Thermocouple R-type
<b>Sensor Range</b>	0~1760°C

### [2] Monitor (User Interface)

<b>Voltage</b>	DC 5V
<b>Display</b>	7" TFT LCD (Touch screen capability)
<b>Control[RS-232]</b>	1 Ch. : I/O Controller
<b>USB</b>	1 Ch. : USB port for update

### [3] Main Controller

<b>Voltage</b>	DC 12V
<b>AC power</b>	4 Ch. : 1 heating power, 1Fan, 2 SSR
<b>DC power</b>	1 Ch. : DC motor
<b>Digital Input</b>	2 Ch. : Door
<b>Analog Input</b>	2 Ch. : TC Input (Temp sensor)
<b>Control[RS-232]</b>	1 Ch. : Main Controller

### [4] General

<b>Voltage</b>	AC 220V, 50/60 Hz
<b>Dimensions</b>	300(W) x 400(D) x 720(H) [Scale: mm]
<b>Temp Range</b>	-10°C ~ +55°C
<b>Weight</b>	48kg
<b>Fuse</b>	2A / AC250V
<b>Max Current</b>	20A
<b>Consumption</b>	Min: 1.8kW, Max: 2.2kW

## 4. Image



[Actual product may differ from image shown]



## 5. Installation

### **(1) AC power connection**

This oven uses AC220V.

Please verify correct voltage before plugging in the oven.

### **(2) Oven Installation**

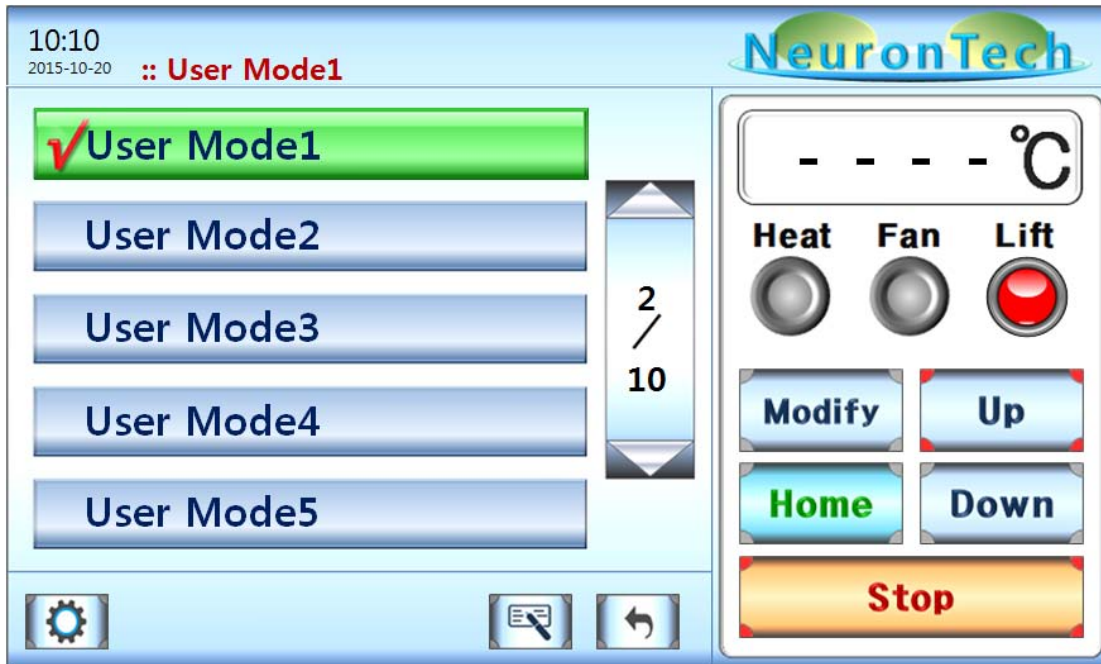
Avoid direct sunlight and humid location when installing the oven.

Please install the oven on a flat, sturdy place.

Install the oven in a place that is clean and free of dust. Dust will affect the elements and electronics.

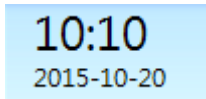
Please keep area clear of debris as the oven operates at 1500C.

## 6. Touch screen Information



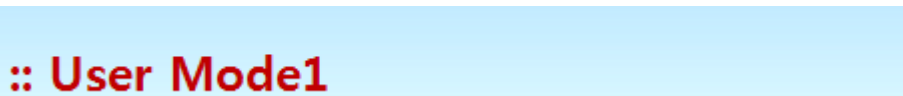
[Display and Interface screen]

### 1) Time Display



Displays current time and date.  
Time and date may be changed by clicking on the display.

### 2) Selected program display



Highlights all selected programs.  
When mode is not selected ::Select Mode is selected.  
Ex) User Mode1











### 3) Temperature display






Displays current oven temperature.

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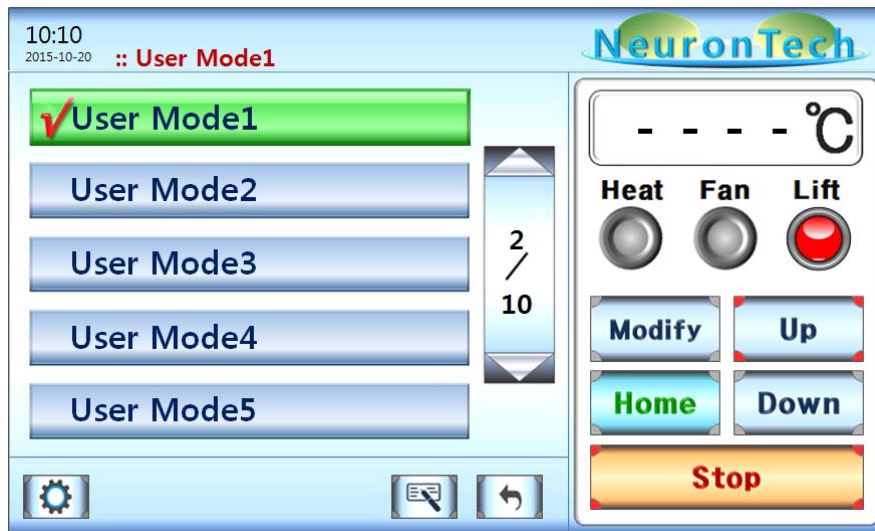
## 4) Button explanation

Button	Function
	Raises the door. 4 red indicators mean door is at top position.
	Lowers the door. 4 red indicators mean door is at bottom position.
	Modifies currently selected temperature mode.
	<ul style="list-style-type: none"> <li>- Returns to home page.</li> <li>- Resets mode select.</li> </ul>
	Starts the current program. If no mode is selected the oven will not start
	Stops the current program during operation
	Cycles through pages. (There are 10 pages, each page contains 5 programs)
	Goes to settings menu.
	Change name of the program.
	Returns to last menu.

## 5) Button explanation

	Button	Function
Lift		Displays status of Door.
Fan		Displays status of Fan.
Heat		Displays if the power is going to the heating elements.

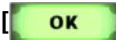
## 7. Naming a Program



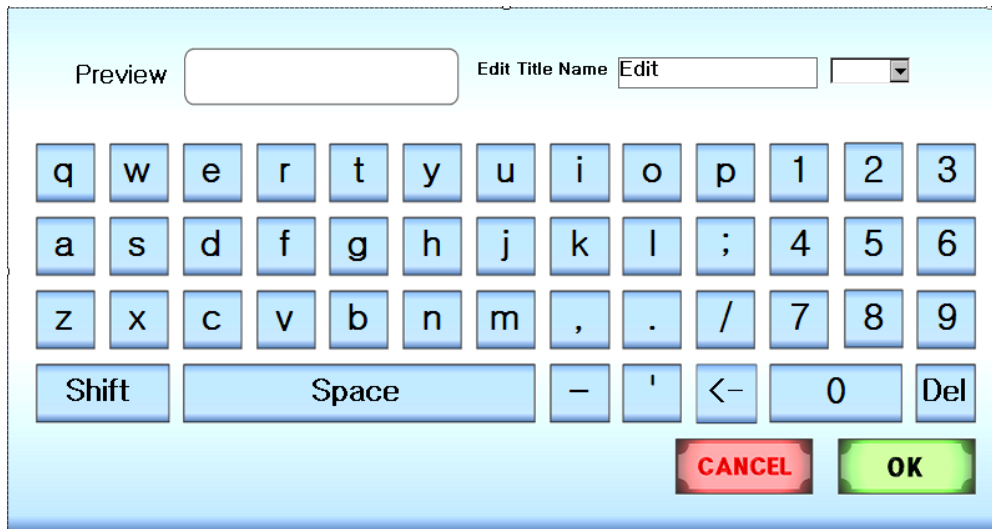
Press the Edit button . Button will change into a new icon .

Press the mode button that needs editing .

This will open the name edit menu.

After the inputting the desired name, press the OK button .

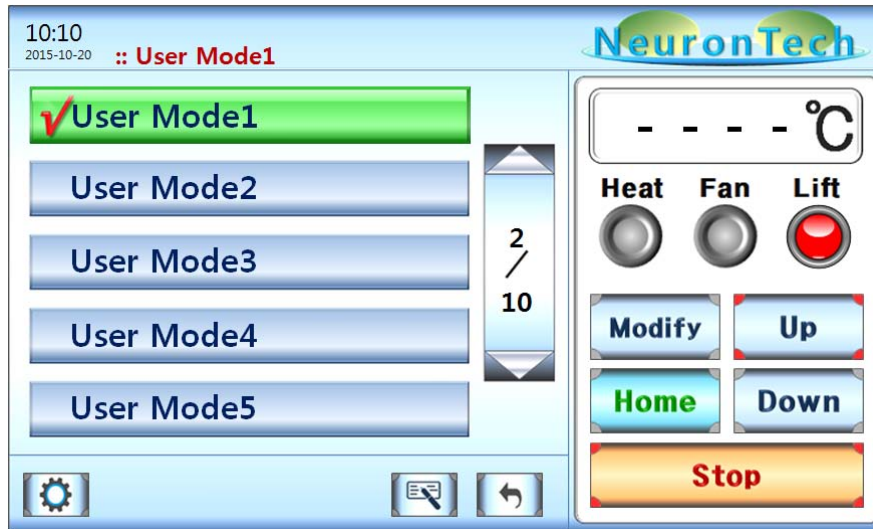
- Press cancel button  if no change is desired.



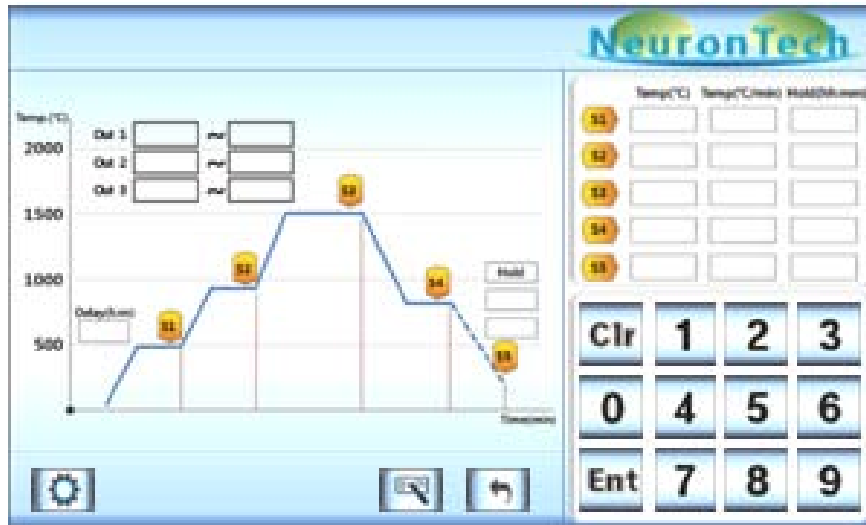
[Name edit menu]

## 8. Temperature setting (Modify)




- 1) To change 'User Mode1' temperature and/or time settings, press the 'User Mode1' button.



- 2) Press the Modify button (  ).
- 3) This will open up the Modify menu.

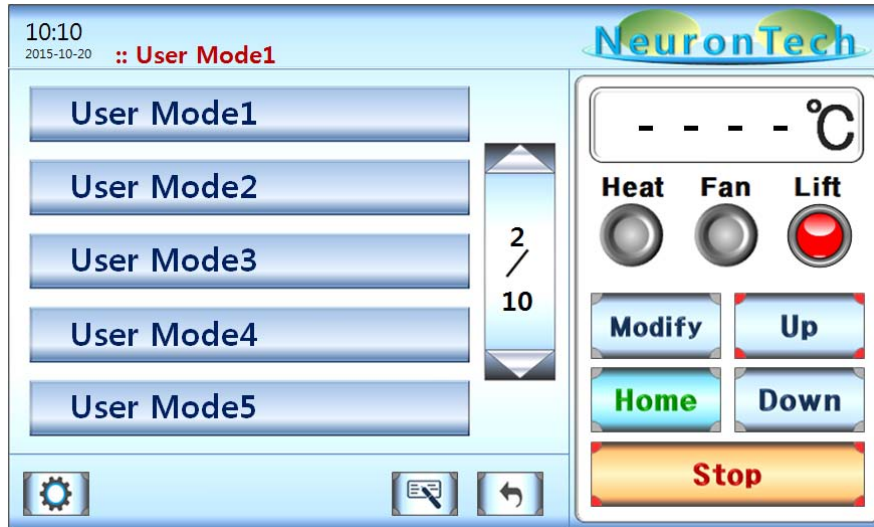


[Modify menu]

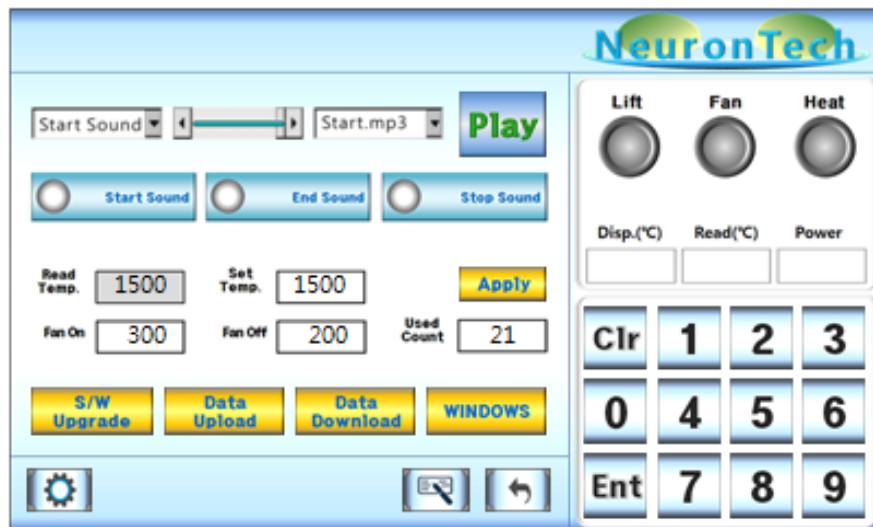
- 4) Press the Enter button (  ) after inputting the desired settings.
  - Press the Edit button (  ) to open the graph of the inputs currently entered. This will allow for visual verification of the settings to ensure they are correct.
- 5) Press the back button (  ) to return to the main menu after editing.

## 9. Oven Setting Setup

- 1) Press the system setup button (  ) to enter the setup menu.


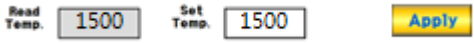

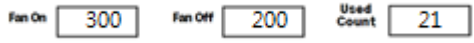






- 2) This will open the setup menu.



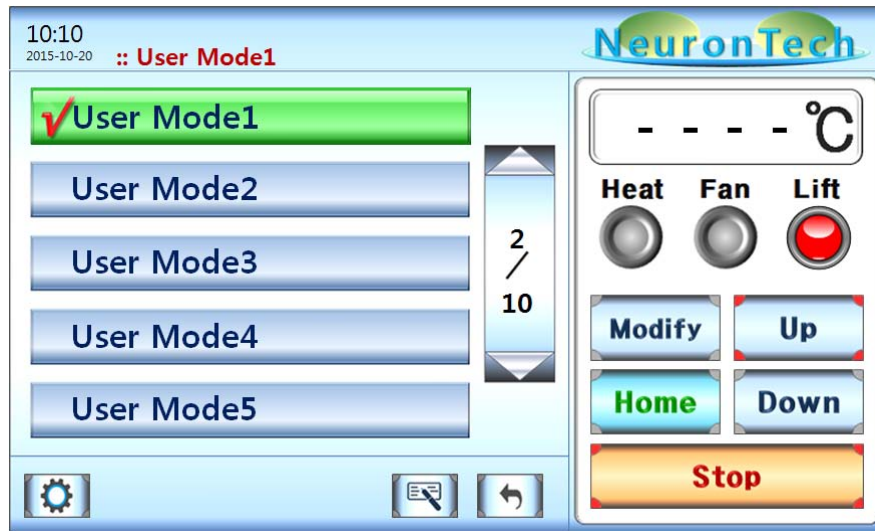
[System Setup menu]

### 3) System Setup button Explanation

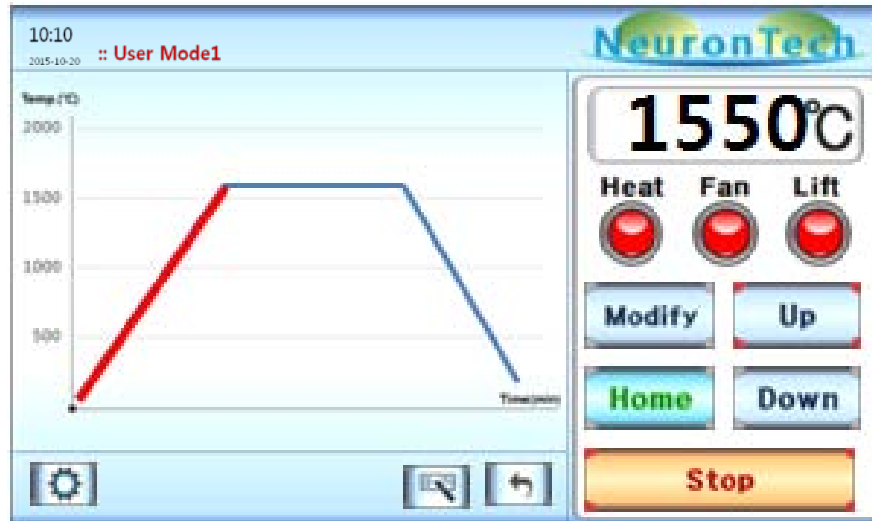
Button	Function
	<p>Change the alert sound for Start, End and Stop functions.</p>
	<p>Temperature Fine Tuning. Use caution when changing value as it may affect units.</p> <p> Apply button to save changes. (Used to change the general temperature)</p>
	<p>Change Fan settings</p>
	<p>Perform Software Upgrade</p>
	<p>Upload temperature program data</p>
	<p>Download temperature program data</p>
	<p>Exits to Windows CE menu (To restart the program please shut the oven off)</p>



## 10. Operation



- 1) Press the User Mode1 button and check mark will appear.
- 2) Press the Start button (  ).
- 3) Program will start once lift goes up completely and screen changes to below.



[Operation screen]

- 4) Press the Stop button (  ) to cancel the operation.

## 11. Troubleshooting

### ■ **“Select Mode!”**

Appears when Start button is pressed without selecting a program.

Solution

- Press the desired mode prior to pressing Start.

### ■ **“Check Parameter!”**

Appears when there are invalid parameters in the program selected.

Solution

- Check the parameter of the program and modify accordingly.

### ■ **“Do you want to stop?”**

Appears when Stop button is pressed during an operation.

Solution

- To stop the program, press the ‘Yes’ button.
- To cancel the stop request, press the ‘No’ button or wait 5 seconds and program will continue to run.

### ■ **“Communication error!”**

Appears when main board and software cannot communicate for more than 10 seconds.

Solution

- Turn off the oven for 10 seconds and restart the oven.
- If the problem persists, contact the manufacturer.

### ■ **“Operation is completed!”**

Appears when program is completed.

### ■ **“High temperature error!” / “Low temperature error!”**

Appears when there is an issue with the thermocouple.

Solution

- Contact the manufacturer.

### ■ **“Limit Switch error!”**

Appears when there is a problem with the Tray lift system.

Solution

- Contact the manufacturer.

[Please contact the manufacturer for any other messages that appears.]

## 12. Warranty Info

Warranty Info	User Note
<p><b>1. Warranty Length</b></p>	<ul style="list-style-type: none"> <li>■ Avoid places of sudden and/or drastic temperature changes</li> <li>■ Do not use flammable material for cleaning</li> <li>■ Do not install near high voltage usage or voltage fluctuations</li> <li>■ Avoid heavy shock to the machine</li> <li>■ Do not place oven in direct sunlight or in place with heavy dusts</li> <li>■ Store in dry places</li> <li>■ Do not use in area with vibrations</li> </ul>
<p>Warranty is good for 1 year after purchase for malfunctions due to manufacturer defects</p>	
<p><b>2. Warranty Exclusions</b></p>	
<p>Warranty is void under these circumstances</p> <ul style="list-style-type: none"> <li>· Modification not approved by authorized support technician</li> <li>· Incident due to operator error</li> <li>· Sales performed by unauthorized persons</li> <li>· Oven not operated as outlined in the manual</li> <li>· Damage caused by external sources such as power outage, fire, act of God, etc.</li> </ul>	
<p><b>3. Miscellaneous</b></p>	
<p>Sales must be invoiced to be eligible for warranty</p>	

- Products may contain differences from the manual upon arrival.

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