

Compact Electric Kiln with Controller

DMT-01

INSTRUCTION MANUAL

Please make sure to read the entire instruction manual thoroughly before initial set-up, operation, maintenance and inspection to ensure proper use.

Please keep this instruction manual in a location that is always available to the user.

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Safety Precautions

PLEASE BE SURE TO CLOSELY FOLLOW ALL SAFETY PRECAUTIONS AND WARNINGS.

Please be sure to read the entire instruction manual thoroughly before initial set-up, operation, maintenance and inspection and use.

Please start using only after you have read the equipment's function and safety information and precautions.

This instruction manual provides three types of safety warnings: "Danger", "Warning" and "Caution".

All precautions described hereunder which pertain to safety are to be read carefully. Please be sure to follow them.



Danger symbol indicates possible death, severe injury or fire if the user disregards the instructions.



Warning symbol indicates the possibility of severe injury if the user does not follow the instructions.



Caution symbol indicates the possibility of minor injury or damage if the user operates the kiln improperly. However, depending on the circumstances, it is still possible to cause severe injury. Please make sure to pay close attention to these warnings.

We call your attention to these warnings throughout the manual by using the following symbols:



Warning; Pay Close Attention



Do Not



Please Follow Instructions

1.Operation These are safety precautions regarding operating instructions in general.

DANGER



Be careful of high temperature!!

Surface and inside of kiln are subject to high temperature created by the electric heating elements. Please be careful of burns or injury.



Since this product is heavy, please be careful in handling.

It may cause serious injury if you drop this product on your feet. Please be careful in handling. Be sure to deliver with more than 2 people since weight is 64.5 kg.

⚠ DANGER



Do not use the kiln other than for firing pottery.

Please do not use this product other than for firing pottery. This may cause serious accidents such as fire, explosion or the generation of harmful gases.



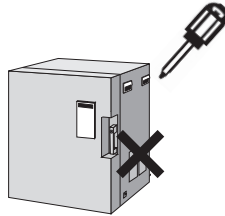
Stop using if you see smoke, smell fumes or hear unusual noises.

Please switch the power (breaker) off and contact us or our distributor.



Do not disassemble, repair or modify the kiln by yourself.

Electric shock, fire, explosion or injury could occur. Please be sure to follow the instruction manual for maintenance and for replacing the heating elements.



Do not put objects on or ride on the top of the kiln or the control box.

This may cause a fire or change in the shape of the kiln. Burn injury could occur or kiln may fall down if you ride on the top of kiln or control box.



Connect earth wire (Ground wire).

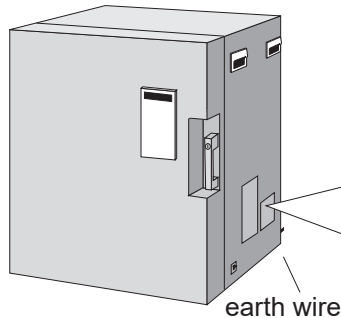
Please be sure to connect earth wire to prevent electric shock.

Please do not connect earth wire to the following parts:

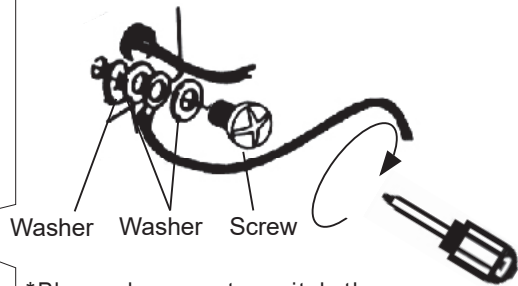
*Water pipe

*Gas pipe

(Electrical flash or explosion could occur.)



Please connect earth wire into the earth terminal in the front of the main body.



*Please be sure to switch the power (breaker) off when you touch the earth wire.

⚠ WARNING



Be careful when handling the door!

Pay attention not to catch fingers when opening and closing since it is heavy. It may cause accident if kiln falls down. Do not lean on or place a additional weight on the kiln.



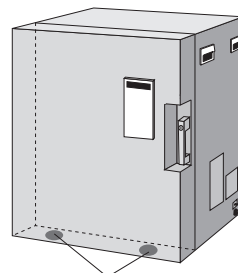
Do not put any metal objects, foreign substances, or fingers into the vent holes or other openings on the kiln.

This may cause electric shock or burn injury.



Be careful of cooling fan.

This product is equipped with a cooling fan on the bottom of the main body and the bottom of the door. Please be careful since it may cause serious injury or accident if you touch the bottom or let objects come in contact with the bottom.



Be careful of cooling fan.(on the bottom of the main body and the bottom of the door)

⚠ CAUTIONS



Be careful not to touch the outside surfaces of the kiln when opening or closing the door.

This may cause damage to the kiln or injury.



Do not place kiln near a TV, radio, or antenna wire.

This may cause disturbances to the TV image and audio signals. Please keep a distance of 2 meters or more from these devices.



Prepare a safe operating environment.

Please be careful not to hit your head against the door, lid or kiln wall when placing pottery in the kiln or taking pottery out of the kiln.



Repair damages to bricks and insulating material immediately.

Damage to bricks or heat insulating materials affects the safety and performance of the kiln. Please consult our distributor. However, cracks on the surface due to use have no effect on the operation of the kiln.

2. Power supply

These are safety precautions regarding the electrical components of the kiln.

⚠ DANGER



Be sure to switch the power (breaker) off when opening the door.

Electric shock could occur if you touch the heating elements without switching the power off.



Do not insert hands into or touch electrical parts.

Electric shock could occur.



Do not operate any switches with wet hands.

This may cause an electrical shock if you operate switches or plug/unplug the power cord into the power outlet.

⚠ WARNING



Use one plug independently with a rating of more than 15 AMPS.

It may produce excessive heat if additional equipment is used on the same circuit.



Do not use this product with other than AC 100 V power supply.

It may cause electric shock, fire or damage to equipment.



Unplug the kiln if you will not be using it for a long period.

This may cause electric shock or fire due to insulating degradation.



Do not use damaged power cord or plug which does not fit tightly.

It may cause a fire or electrical shock.

⚠ DANGER



Do not place power cord under the bottom of the kiln or high-temperature parts.

This may cause a fire or electric shock.



Keep the power cord free from stress and obstructions.

Please do not twist, pull, put heavy objects on, or plug the power cable forcibly. It may cause a fire or electrical shock due to damage to the power cord.



Do not use power cord that is not extended.

A fire may result. Also, do not use a cord reel.



Do not connect other equipment on same electrical outlet. Do not use extension cords.

This may cause a fire or electric shock.

3. Installation These are safety precautions regarding the installation of the kiln.

⚠ DANGER



Set up in a location which has enough space.

It may cause a fire or other accidents if you do not keep at least 50 cm or more between the top of the kiln and ceiling and 15 cm between the side of the kiln and wall.



Do not put flammable materials near the kiln.

Please do not put flammable materials such as curtains, paint, etc. within 50 cm of the kiln. It may cause a fire.



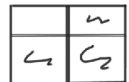
Set up in a location that is out of reach of children.

Please pay close attention to this warning since it may cause fire, burn or serious accident if it comes in contact with children.



Set up in a location that is properly vented.

It may cause a fire. Please open a window a few centimeters to allow fresh air into the room and use a portable fan for additional air circulation if required.



⚠ WARNING



Do not set in a location which is susceptible to rain and water or an area of high moisture.

This may cause a fire or failure from electrical shock or electrical leakage. Please set in a location which is dry and not susceptible to rain to prevent electrical shorts.



Do not set under the fire-alarm box or sprinkler.

It may set off alarm or sprinkler due to the heat from kiln.



Be careful of strength of the floor in set-up location.

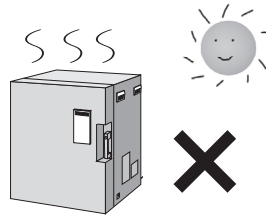
Since this product is heavy, floor material may be damaged or kiln may fall.

⚠ CAUTION



Do not use in a place that is susceptible to direct sunlight.

It may cause trouble due to overheating.



4.Firing These are safety precautions regarding firing the kiln.

⚠ DANGER



Ventilation



Odor occurs from heating element or insulating material for the first operation. Please ventilate fully since gases that are harmful to the human body could occur depending on the variation of glaze or clay that is used.



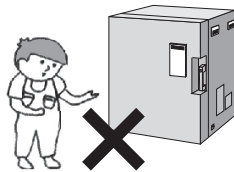
Please do not make reduction firing.

This product is only for oxidized firing. Please do not make reduction firing.



Do not touch kiln due to high temperature.

It may cause burn injury if you touch kiln due to high temperature of the outside of kiln. Especially, be careful not to bring children close to kiln.



Never let unattended children use kiln, or set kiln in a location that children can reach.

It may cause burn injury, electrical shock or other injury. Please do not let children close to kiln since the temperature of the kiln surface becomes high during firing. Please be sure to lock the door to prevent opening the door accidentally.



Do not insert or remove the power plug during operation.

This may cause a fire or electric shock.



Do not touch heating elements.

It may cause an electrical shock or burn injury. It may also cause disconnection or breakage of the element.



Do not pour water on the kiln during firing.

Explosion could occur due to the sudden drop in the temperature.



Do not open the door unless the temperature has become normal.

It may cause burn injury due to heated air unless it drops down to normal temperature (under 40°C) inside furnace.

⚠ WARNING



Do not strike the heating elements or insulating material with pottery or kiln shelving.

This may cause accident.



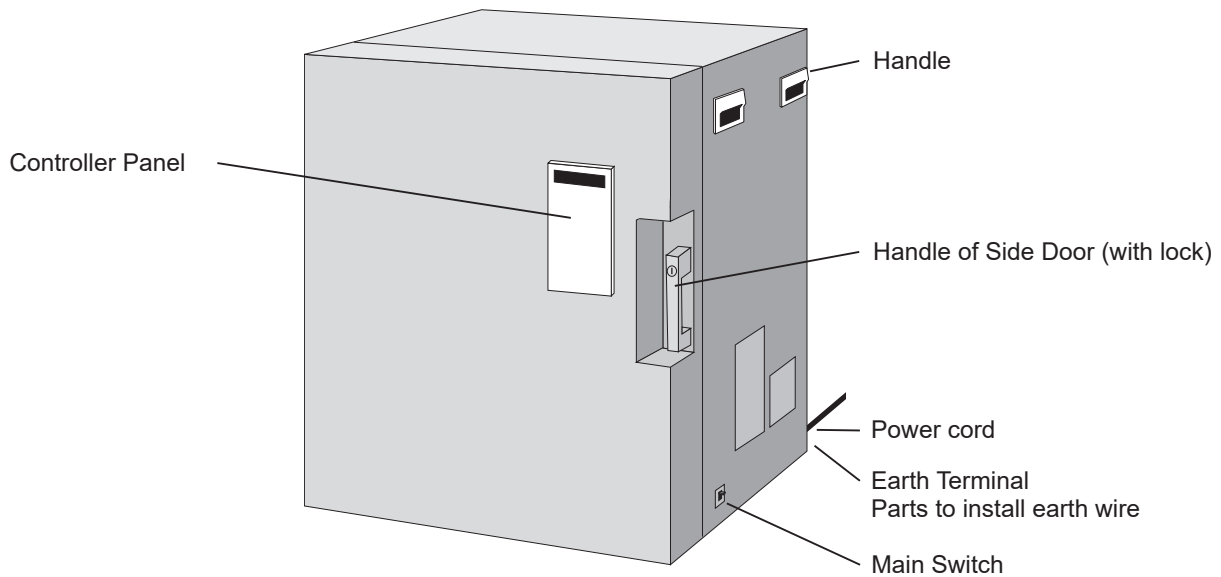
Do not put clothes near the kiln. Do not hang up cloth near the kiln.

These may catch on fire.

1 Kiln Diagram/ Specification/ Attachments

- 1 Kiln Diagram
- 2 Specification
- 3 Attachments

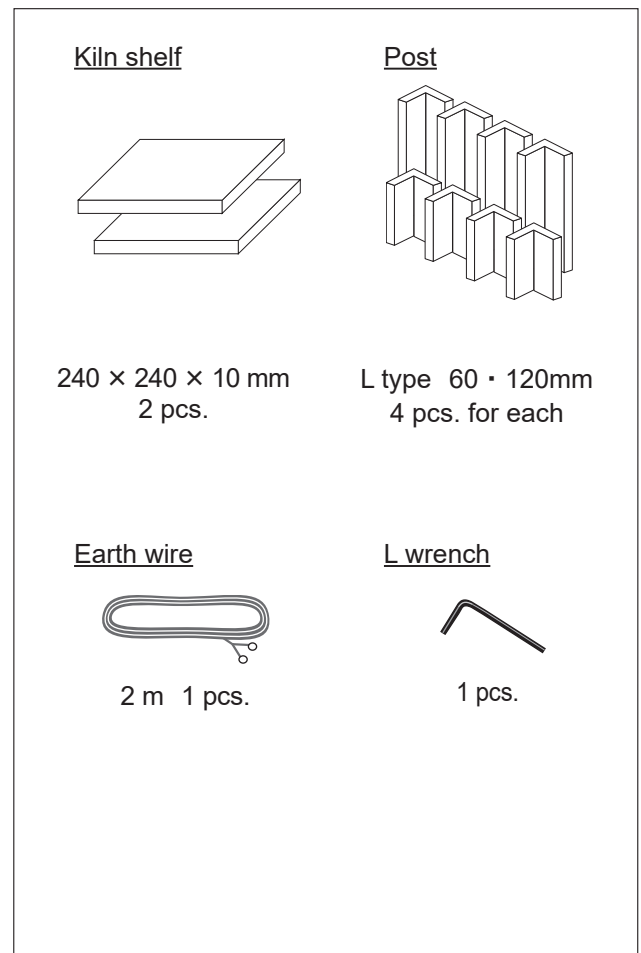
1 Kiln Diagram



2 Specifications

Item	Content	
Outside dimension (W × D × H)	600 × 565 × 720 mm	
Inside dimension (W × D × H)	270 × 270 × 300 mm	
Weight	64.5 kg	
Maximum temperature	1270 °C	
Electric capacity	1.5 kW	
Power voltage	Single Phase less than 15A	
Firing	Firing of controller	
Heating elements	Coil heating elements	
Attachments	Kiln shelf	240 × 240 × 10 mm 2 pcs.
	Post	L type 60 · 120mm 4 pcs. for each
	Earth wire	2 m 1 pcs.
	L wrench	1 pcs.

3 Attachment



2 Installation

1 Installation

1 Installation

1. Installation

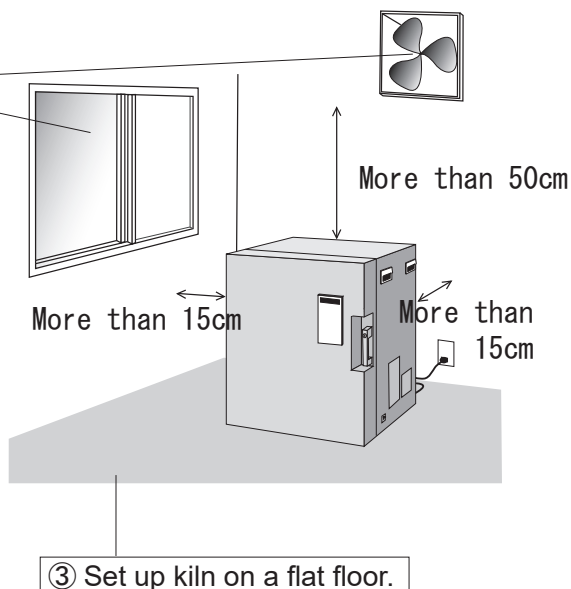
(1) For indoor

① Ventilate well.

An odor may occur from the pottery or kiln during firing since the temperature of the kiln surface becomes high. Please set up a fan for air circulation and ventilate the area well.

② Do not put objects around the kiln.

Please do not put objects within 15 cm around the kiln for safety. Please do not put flammable materials within 50 cm around the kiln.



(2) For outdoor

Please set up kiln on a solid flat floor in a location that is not susceptible to rain or water.

Cautions about connection

- Prepare the power cord which is single phase, 100V and can supply more than AC 95V at full load. Please be careful of the following to prevent decreased power voltage.
 - Do not connect other equipment on same electrical outlet.
 - Do not use extension cord.
- Breaker may open when power is supplied from breaker which is 15 A, or when power voltage is high or when surrounding temperature of breaker is high. In that event, please replace the breaker with a breaker which is 20 A and make the length of wire more than 2 mm. (Please ask your electrician.)



WARNING

Do not set kiln in a location that is susceptible to rain and water.



WARNING

Do not set under the fire-alarm box or sprinkler.



CAUTION

Do not set in a location which is susceptible to direct sun light.



DANGER

Do not connect many devices on same electrical outlet.



DANGER

Do not use extension cord.

2. Set up of timer

You can set current time and change it.
Please set current time in advance since it is necessary for set-up of timer.

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Set-up of timer

① 1. How to set time

⏏ shows flashing.

Operating procedure		Display panel
(1) Push Clock and hold for more than 5 seconds.	for more than 5 seconds. Clock	
(2) Input current time. (Example)	 Example) 13:34	
(3) Push Clock	Clock	 The indicator turns back to show temperature after displaying time for 5 seconds.

※ If you do not operate any keys for 10 seconds, the display turns back to show the kiln temperature. Please operate from the beginning of operating procedure.

Time shows 24 hours a day. Please be careful.

Before noon 7:00

→

Afternoon 7:00

→

When you input incorrectly,

please push 「0」 for 4 times in a row. Then you can start from the beginning of operating procedure.



② 2. Display of time

Control panel shows the temperature inside of furnace.

When you want to confirm the current time, you can do as following procedure.

Operating procedure		Display panel
(1) Push Clock	Clock	

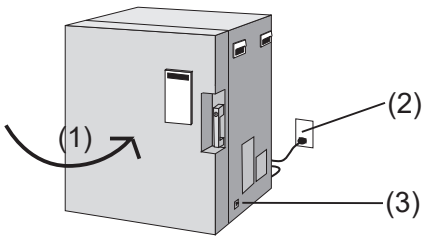






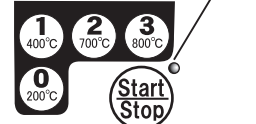


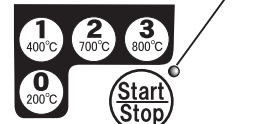
2 Trial operation 《Time required: About 5 hours》

- When you do your first firing or haven't used for a long time, or in the rainy season, trial operation (dry operation) is necessary due to moisture inside furnace.
- Please use the kiln when kiln temperature becomes normal after trial operation. Please do bisque firing first and then do glaze firing.

Please check the following points before trial operation (dry operation).

- Is ventilation enough?
- There are no flammable objects near the kiln?

⋮ shows flashing.

Operating procedure		Display panel
(1) Close the door. Please lock the door so it cannot be opened accidentally during operation.		
(2) Insert power plug.		
(3) Switch the power (breaker) on.		Display shows kiln temperature. 
(4) Push 「Basic program」 key.		
(5) Push trial operation program.		
(6) Push 「Start」 key.		The indicator lights up. 
— During firing 《5 hours》 —		
(7) Firing completes when END is displayed.		
(8) Push 「Stop」 key.		The indicator light is off. 
(9) Turn the main switch off.		

[In case of electric leak (Power breaker trips)]

- Remove the earth wire and do dry operation (Be sure to connect earth wire after dry operation)



DANGER

Ventilation

Please ventilate well since odors occur from heating elements and heat insulating board for the first operation. Smoke and odors become less with future firings.



DANGER

Lock the door in the event that children may open it accidentally.



WARNING

Be careful not to touch or let objects come into contact with the bottom of the kiln, the bottom of the door and cooling fan.

※ If you do not operate any keys for 10 seconds, the display turns back to show the kiln temperature.



DANGER

Be sure to switch the power off before you open the door.



DANGER

Do not touch kiln due to high temperature.

Kiln temperature during operation is high. Also, do not touch the kiln since it may cause electric shock during trial operation as earth wire is disconnected.

3 Before firing

1 Instructions for putting and taking work into and out of the kiln



DANGER

Ventilate

Please ventilate well since odors occur from heating elements and heat insulating board for the first operation. Smoke and odors become less with future firings.

Please check the following before firing

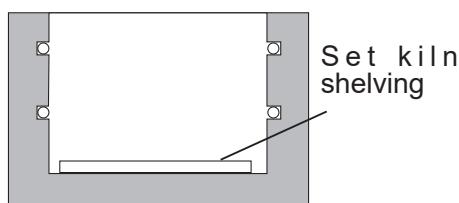
- When you use the kiln for the first time or there is a lot of moisture inside the kiln furnace (brick), please do trial (dry) operation.
- There is sufficient ventilation?
- There are no flammable objects near the kiln?

1 Instructions for putting and taking work into and out of the kiln

1. Instructions for putting pottery into kiln

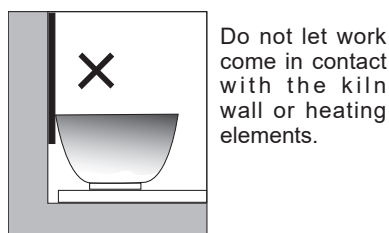
(1) Placing kiln shelves

Please remove foreign objects inside the kiln.



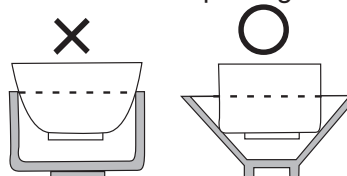
(2) Caution for putting pottery into kiln

- ① Place work and kiln shelves into kiln being certain that they do not come in contact with the heating elements. Heating elements may be damaged if a work or shelving come in contact with them during firing.



- ② Keep all items clear of the kiln wall when putting work into the kiln and removing it from the kiln. Heating elements are weak under high temperature.

Be careful when placing work.



<< Bisque firing >>

- You can pile works up since they are not glazed. However, please be careful to pile works up since they might be difficult to be pulled apart after drying.

Separate work from each other.



<< Glaze firing >>

- Please be careful not to let the glazed parts come in contact with other works, thermocouples, or kiln wall during glaze firing.



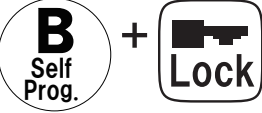
(3) Caution for removing pottery from kiln

- Open the door after switching the power off.
- Take pottery out from kiln after the kiln temperature becomes normal. It may cause a burn injury or crack work if you take a pottery out at the high temperature inside kiln.

4 Functions of controller

- ① Variation of Programs
- ② Convenience and Safety Functions

① Variations of programs

<p>Basic program</p> 	<p>Installing 10 functions including Raku firing, bisque firing, glaze firing which are often used. Easy operation using only 3 keys</p>
<p>Self-produced program</p> 	<p>You can make your own program based on the basic program (Possible to memorize 20 variations)</p>
<p>Continuing programs More than 5 seconds</p> 	<p>You can make programs having 16 stages at maximum. It is convenient when you want to set the temperature more precisely.</p>

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Basic program

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Self-produced program

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Continuing programs

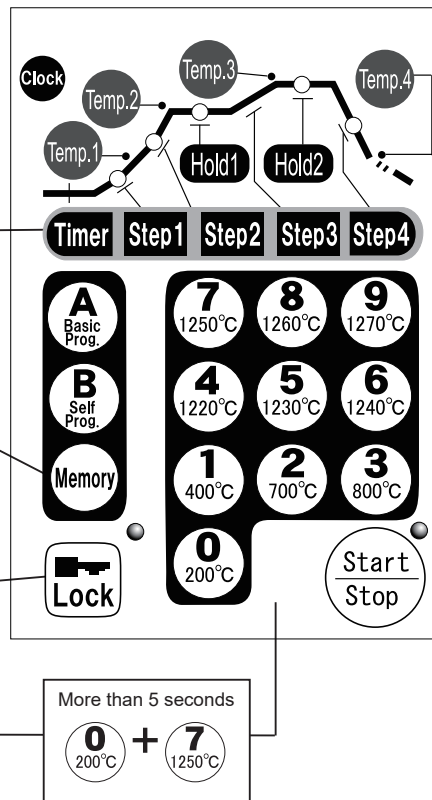
② Convenience and safety functions

Timer You can set
 ① Starting time of firing
 ② After how many minutes you start firing

Memory Preserve the program you make

Lock Prevent improper key operations after setting the program.

Buzzer You can sound a buzzer at
 ① set-up temperature in
 ② set-up process



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Timer

P.21

Buzzer

P.22

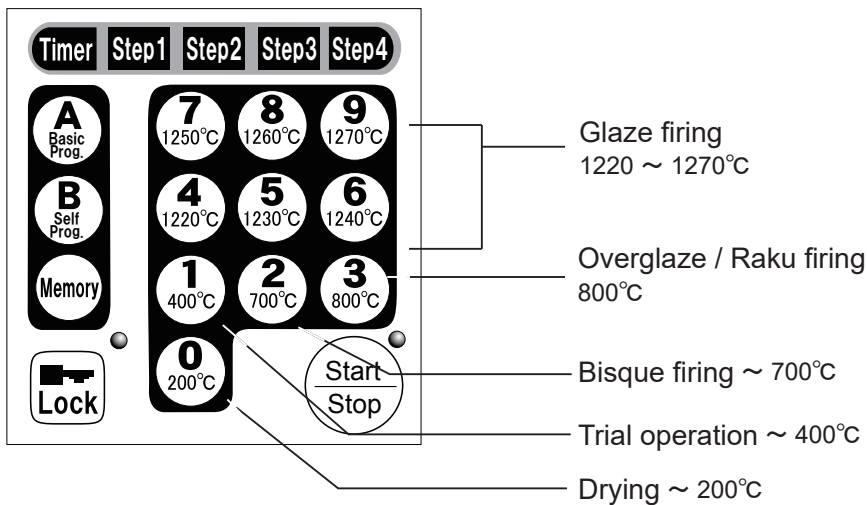
Lock

5 Firing by controller

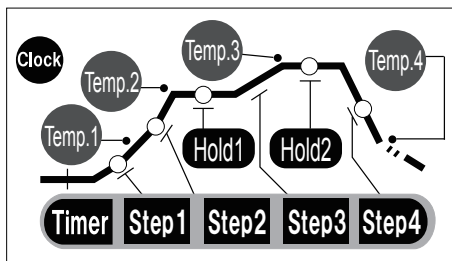
1 Firing by "Basic programs"

1 Firing by "Basic programs"

1. Variations and contents of basic programs



< Contents of basic program >



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< Note for "Self-produced programs" >

< Temperature list of basic programs >




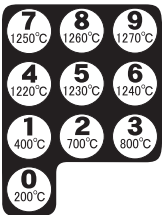



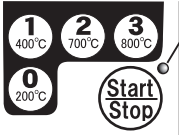


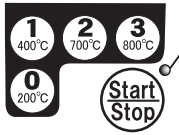
Firing	Key	Timer	Step 1	Temp.1	Step 2	Temp.2 《Hold1》	Step 3	Temp.3 《Hold2》	Step 4	Temp.4	Total time
Drying	0 200°C	0 min.	300 min. (5 h.)	200 °C	0 min.	200 °C <0 min.>	0 min.	200 °C <0 min.>	0 min.	120 °C	300 minutos (5 h)
Trial operation	1 400°C		270 min. (4.5 h)	400 °C		400 °C <0 min.>		400 °C <30 min.>			
Bisque	2 700°C		420 min. (7 h.)	560 °C	90 min. (1.5 h)	700 °C <10 min.>		700 °C <0 min.>			520 minutos (8 h 40 min.)
Overglaze / Raku	3 800°C		210 min. (3.5 h)		800 °C <0 min.>	800 °C <0 min.>		300 min. (5 h)			
Glaze	4 1220°C	0 min.	210 min. (3.5 h)	560 °C	120 min. (2 h)	900 °C <10 min.>	210 min. (3.5 h)	1220 °C <20 min.>	0 min.	120 °C	570 min. (9.5 h)
	5 1230°C							1230 °C <20 min.>			
	6 1240°C							1240 °C <20 min.>			
	7 1250°C							1250 °C <20 minutos>			
	8 1260°C							1260 °C <20 min.>			
	9 1270°C							1270 °C <20 min.>			600 min. (10 h)

※ Total firing time includes up to HOLD2

※ Firing time may be longer by contents or variations of the kiln, compared with those of the above list.

2. Firing by "Basic programs"

⋮ shows flashing.

Operating procedure		Display panel
(1) Switch the power (breaker) on.		It is showing the kiln temperature. 
(2) Push the "Basic program" key. A Basic		
(3) Select the program and push the key. ※ Please decide the temperature by the characteristics of glaze.		 For example 
(4) Push "Start" key.		The indicator lights up. 
— During firing —		
(5) Firing finishes when the display shows "End".		
(6) Push "Stop" key.		The indicator light is off. 
(7) Switch the power (breaker) off.		

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Please be sure to read 『Before Firing』 before firing.

※ If you do not operate any keys for 10 seconds, the display goes back to show the kiln temperature.



DANGER

Do not touch the kiln due to high temperature.

▶ After finishing <Hold 2>, it moves to natural cooling. The display panel flashes on and off showing "End" once the kiln temperature drops down to 120°C .



DANGER

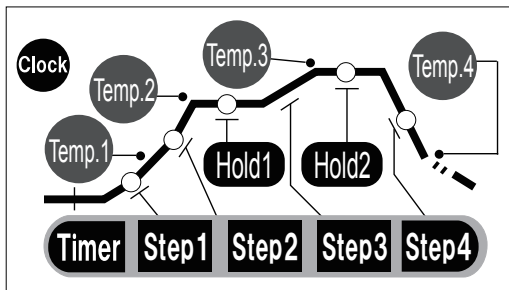
Be sure to switch the power (breaker) off before you open the door.

② Firing by "Self-produced" programs

1. About self-produced programs

You can change a program into your own specification based on "Basic program". It is possible to memorize 20 variations.

※ Self-produced programs are not included with shipment.



- Step1** ... Time from starting to Temp.1
- Step2** ... Time from Temp.1 Temp.2
- Hold1** ... Time for holding at Temp.2
- Step3** ... Time from Hold1 Temp.3
- Hold2** ... Time for holding at Temp.3
- Step4** ... Time from Hold2 Temp.4

2. How to make self-produced programs

⏏ shows flashing.

Operating procedure		Display panel
(1) Call up a "Basic program" similar with the program that you want.		
(2) Set Temp.1		
① Push Temp.1		
② Input the temperature that you want to set into Temperature 1		
	For example 600°C	
(3) Set Step1		
① Push Step1		
② Input the time which you want to set into Step 1		
	For example 300min.	
(7) Continue setting		

P.14 / 32
Refer to "Basic-programs"

P.32
< Note for "Self-produced programs" >

P.31
< Examples of "Self-produced programs" by controller >

Range possible to input temperature setting




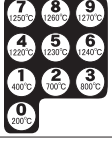





Maximum 1310°C
Minimum 0°C
Unit: 1°C

※ If you do not operate any keys for 10 seconds, the display goes back to show the kiln temperature.

- In the event that you continue the firing program saving, please go to "When you start the program you make without saving" see next page.
- In the event that you save the setting, please go to "When you start firing by the program you saved" see next page.

3. Saving “Self-produced programs”

⏏ shows flashing.

Operating procedure		Display panel
(1) Push  after making self-produced programs.		
(2) Number the programs which you register (preserve). Input any numbers (1 ~ 20).		 For example 
(3) Push  again and fix it.		
(4) Saving finishes when buzzer sounds.		

◀ You can register 20 self-produced programs. Number the program number from 1 ~ 20.


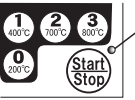


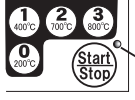
P.32

< Note for “Self-produced programs” >

4. Firing by “Self-produced programs”

When you want to start firing by self-produced programs you make without saving.

⏏ shows flashing.

Operating procedure		Display panel
(1) Push “Start” key after making programs (continuing of P.16).		The indicator lights up. 
— During firing —		
(2) Firing finishes when the display shows “End”.		
(3) Push “Stop” key.		The indicator lights off. 
(4) Switch the power (breaker) off.		

P.12

Please be sure to read 『Before Firing』 before firing.

 **DANGER**



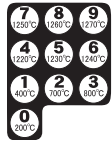



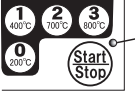


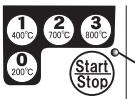
Do not touch the kiln during firing.

 **DANGER**

Be sure to switch the power off when you open the door.

When you want to start firing by self-produced programs that you saved.

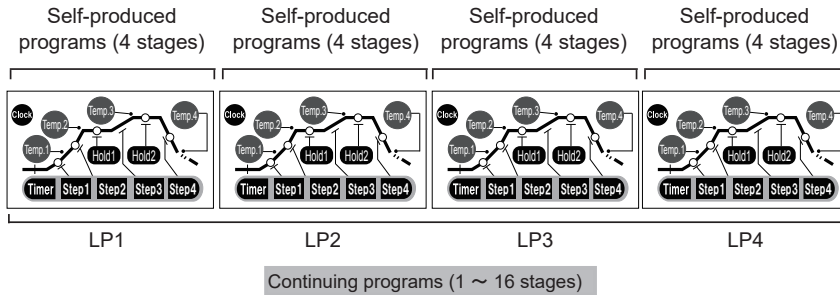
⏏ shows flashing.

Operating procedure		Display panel
(1) Push “Self-produced program”.		
(2) Input the program number which you saved.		 For example 
(3) Push “Start” key.		The indicator lights up. 
— During firing —		
(4) Firing finishes when the display shows “End”.		
(5) Push “Stop” key.		The indicator lights off. 
(6) Switch the power (breaker) off.		

③ Firing by “Continuing programs”

1. About continuing programs

You can set the temperature in 16 stages at maximum by combining 4-stages firings based on “Self-produced programs”.



2. How to make continuing programs

shows flashing.

Operating procedure	Display panel
(1) Enter into continuing program mode. More than 5 seconds .	More than 5 seconds
(2) Set the continuing programs.	
① Call up the original self-produced program.	For example
② Change the contents of the self-produced program you call up in your preference.	
Set	
Push	
Input the temperature which you want to set into Temperature 1.	 For example 600°C
Set	
Push	
Input the time which you want to set into Step 1.	 For example 300min.
Continue setting 	
Push when setting finishes Input again and again since the display moves to the next LP inputting.	

※ Self-produced programs are not registered with shipment.

◀ If you push for more than 5 seconds again, the display turns back.

※ If you do not operate any keys for 10 seconds, the display goes back to show the kiln temperature.

◀ If you do not want to set 16 stages and stop in the middle, input 0 °C into the temperature in the next stage you want to stop.

◀ If you want to change the program you input, move to the stage you want to change and input again.

- In the event that you continue the program to firing, please go to “When you start the program you make without saving” see next page.
- In the event that you save the setting, please go to “When you start firing by the program you saved” see next page.

5 Firing by controller

③ Firing by “Continuing Programs”

3. Saving of “Continuing programs”

shows flashing.

Operating procedure		Display panel
(1) Push after making continuing programs.		
(2) Number the programs which you save. Input any numbers (1 ~ 20).		 For example
(3) Push again and fix it.		
(4) Saving finishes when buzzer sounds.		

◀ You can save 20 self-produced programs. Number the program number from 1 to 20.

P.32

Use < Note for “Self-produced programs” >

4. Firing by “Continuing programs”

When you want to start firing by continuing programs you make without saving.

shows flashing.

Operating procedure		Display panel
(1) Push “Start” key after making programs (continuing of P.18).		The indicator lights up.
— During firing —		
(2) Firing finishes when the display shows “End”.		
(3) Push “Stop” key.		Switch the power (breaker) off.
(4) The indicator lights off.		

P.12

Please be sure to read 『Before Firing』 before firing.

DANGER

Do not touch the kiln for high temperature.

DANGER

Be sure to switch the power off when you open the door.

When you want to start firing by the continuing program which you saved.


shows flashing.

Operating procedure		Display panel
(1) Enter into continuing program mode.	More than 5 seconds +	
(2) Input the program number which you saved.		 For example
(3) Push “Start” key.		The indicator lights up.
— During firing —		
(4) Firing finishes when the display shows “End”.		
(5) Push “Stop” key.		The indicator lights off.
(6) Switch the power (breaker) off.		

6 Convenient functions of controller



1 Timer




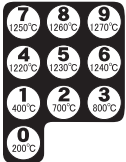



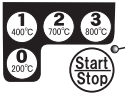
You can set the timer in the following 2 ways.

1. In how many minutes you start firing after pushing  key.
2. What time you start firing


P.12







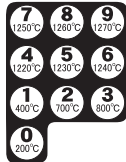






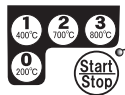
Setup of Timer

1. In how many minutes you start firing after pushing  key.
 shows flashing.

Operating procedure		Display panel
(1) Push  after inputting the program.		
(2) Input time.		 For example 65min.
(3) Push 		 The indicator lights off.

Unit of time is "minute"
 (Maximum 9999 minutes)
 (6.9 days)
 Minimum 0 minutes





2. What time you start firing.
 shows flashing.

Operating procedure		Display panel
(1) Push  after inputting the program.		
(2) Push 		
(3) Input the starting time of firing.		 For example 13:34
(4) Push 		
(5) Push 		 The indicator lights off.

Time shows 24 hours a day.
 Range to input
 Within 23 hours and 49 minutes

※ If you do not operate any keys for 10 seconds, the display turns back to show the kiln temperature.

When you want to cancel the timer you set

Operating procedure	
(1) Push  and input another program.	 →  

2 Buzzer

You can set buzzers in the following 3 ways.
Buzzer sounds for 20 seconds.

- | | |
|--|----------|
| 1. You do not ring buzzers. | [AL-0] |
| 2. You ring the buzzer at the designated temperature in the process you specify. | [AL-1] |
| 3. You ring the buzzer after the designated process finishes. | [AL-2] |

Note:
Once you set the buzzer, the setting continues in the next firing unless you change. If buzzers are unnecessary, please set back to "No buzzer (AL-0)".

1. You do not ring buzzers.

shows flashing.

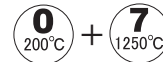
Operating procedure		Display panel
(1) Enter into buzzer setting	More than 5 seconds 	
(2) Set the buzzer "0" and "AL-0".		
(3) Save the setting.		

※ If you do not operate any keys for 10 seconds, the display turns back to show the kiln temperature.

When you want to confirm the buzzer you set.

Go back to the buzzer setting mode and confirm the contents of the display.

More than 5 seconds



2. You ring the buzzer at the designated temperature in the process you specify.

shows flashing.

Operating procedure		Display panel
(1) Enter into buzzer setting mode.	More than 5 seconds 	
(2) Enter into the buzzer setting mode "AL-1".		
(3) Push the key of the process which you want to ring the buzzer		The indicator flashes. For example Step2
(4) Input the temperature you want to ring the buzzer.		 For example 1275°C
(5) Save the setting.		

※ If you do not operate any keys for 10 seconds, the display turns back to show the kiln temperature.

Note:
If you set the buzzer during hold, it often rings.

6 Convenient functions of controller

3. Sound the buzzer after finishing the designated process.

⋮ shows flashing.

Operating procedure		Display panel
(1) Enter into buzzer setting mode.	More than 5 seconds 	
(2) Enter into the buzzer setting mode "AL-2".		
(3) Push the key of the process which you want to ring the buzzer		The indicator flashes. For example Time 2
(5) Save the setting.		

3 Lock

You can lock input keys to prevent an operating mistake of the program during firing or the saved program.

※ You can confirm the process, setting temperature, and program number during firing even if key input is locked.

1. Lock

Operating procedure		Display panel
(1) Push for more than 5 minutes.	More than 5 seconds 	The indicator lights up.
(2) Buzzer sounds briefly.		

2. Cancel the lock.


Operating procedure		Display panel
(1) Push for more than 5 seconds.	More than 5 seconds 	The indicator lights off.
(2) Buzzer sounds briefly.		





7 Troubleshooting

1 About controller


Error message

Error message : The error shows the problems of the kiln during firing.

Please correspond to the error message, push  and cancel the error.



Display	Name of errors	Reason	Countermeasure
	Inability to raise the temperature	<ul style="list-style-type: none"> Thermocouples are forgotten to be set in kilns. The temperature setting is beyond the heating ability of the kiln. The hot wire of the kiln is disconnected. Door is opening during firing 	<ul style="list-style-type: none"> Install the thermocouples into the kiln. Set the suitable temperature. Stop firing, and change the hot wires after cooling the inside of the kiln sufficiently. Close the door paying close attention to the heat of the kiln.
	Disconnection of thermocouples and electrical conductors or Detection of abnormal high temperatures	<ul style="list-style-type: none"> Disconnection of the thermocouples or electrical conductors Loosening of connection Abnormal high temperature inside the kiln 	<ul style="list-style-type: none"> Repair and change the thermocouples or electrical conductors by the condition of heat insulation. Tighten the connection if it is loose. Please consult NIDEC DRIVE TECHNOLOGY ceramics department in the event that the display still shows F3 even if you try the above countermeasures
	Reverse connection of thermocouples	<ul style="list-style-type: none"> Polarity is reversely connected in connection of thermocouples. 	<ul style="list-style-type: none"> Shift the polarity of wire connection.
	Abnormal temperature of microcomputers or breakdown of temperature sensors	<ul style="list-style-type: none"> High abnormal temperature inside the microcomputer Breakdown of the temperature sensor 	<ul style="list-style-type: none"> Please consult NIDEC DRIVE TECHNOLOGY ceramics department when it occurs.

When you want to make sure the content of the program you set

Operating procedure	Display panel
(1) Push the key of the process you want to confirm	 <p>Temp.1 For example 5 1230°C</p>
(2) The display automatically turns back to show "In operation" in about 5 minutes.	

When you want to make sure if the firing mode is on or off

Confirmation if the microcomputer is in firing mode or not after starting firing

Operating procedure	Display panel
(1) Make sure if the display panel shows the furnace temperature and the maximum setting temperature.	<p>The kiln temperature </p> <p>Shows alternately</p> <p>The maximum setting temperature </p>
※ This shows time (minutes) to start firing in the event that you set timers.	

※ The maximum setting temperature. It flashes on and off for 3 seconds every 20 seconds.

Display panel does not light up.

Contents to confirm	Countermeasure
(1) Make sure if the power (breaker) is on or off.	Switch the power (breaker) on if it is off.
In the event that the power (breaker) shuts down.	Make sure that the power cord reaches to the kiln itself.
The display shows an electrical leak.	Do trial operation (dry operation).
In the event that the power (breaker) shuts down not because of an electrical leak, but because of an electrical short	Contact of hot wires may be one of the reasons. Repair is necessary. Please consult "NIDEC DRIVE TECHNOLOGY" ceramics department.
(2) Confirm if the connection of hot wires is correct or not.	

Please consult "NIDEC DRIVE TECHNOLOGY" ceramics department when the above countermeasures are not effective.

Buzzers do not sound

Problems	Countermeasures
The buzzer sounds even if you do not set it.	Confirm if the buzzer setting which you set last time does not remain. ※ If you set buzzers in the process of holding, the buzzer is responding to the change in the temperature.
	In continuing program, buzzer settings do affect even when you use other programs. If buzzer settings are unnecessary, please set "No buzzers (AL-0)".

P.12

Please be sure to read 『Before Firing』 before firing.

P.8

Please be sure by 『Electric works』

P.21

About Buzzer

2 Others

Blackout

If power supply is restored within 10 minutes : Firing continues in the process as before blackout.
If blackout takes more than 10 minutes : Firing automatically stops.

8 Maintenance

Replacement of heating elements

1. How to replace heating elements

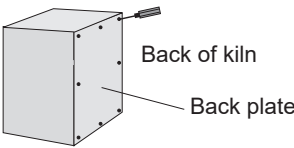
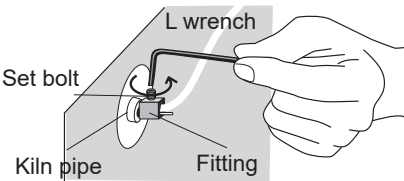
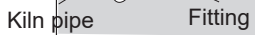
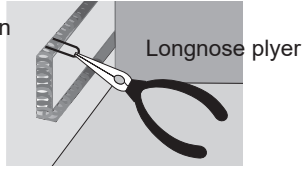
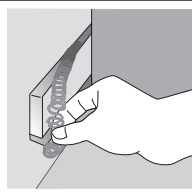
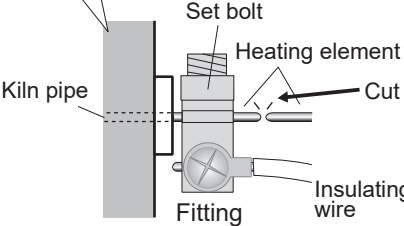
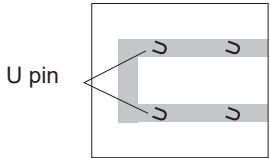
(1) Ordering heating elements

Please include the following information when ordering heating elements

- | | |
|--|--------|
| ① Model of the electric kiln | DMT-01 |
| ② Serial number | () |
| ③ Date of purchase Year, month and day | () |

▶ Please be sure of kiln model and manufacturing date. It is listed on the name plate on the side of the kiln.

(2) Replacement of Heating Elements

Operating Procedure	
(1) Take the heating elements off.	
① Remove the back plate of the kiln. Take all 8 screws off using driver.	
② Confirm the position of heating elements you want to replace and remove fitting from the back of the kiln. Loosen set bolt using the attached T wrench.	
③ Remove kiln pipe.	
④ Remove all U pins which hold heating elements using longnose pleyer from the front of the kiln.	
⑤ Pull the heating element forward slowly and remove it not to damage the brick.	
(2) Install new heating element	
① Insert both sides of a new heating element into the back hole inside kiln.	Put the rest of the heating element into groove .Be sure to hold the set bolt on tightly and fasten it using attached T wrench.
② Put the removed kin pipe back to the original position from the back of the kiln. (Put the heating element through)	
③ Connect the heating element with insulating wire using fitting, pulling it out slightly.	
④ Tap the U pin using wooden hammer from the front of the kiln and attach the heating element.	
⑤ Install the back plate.	

Caution)
Please be careful not to break the U pin holding the heating elements inside the bricks.

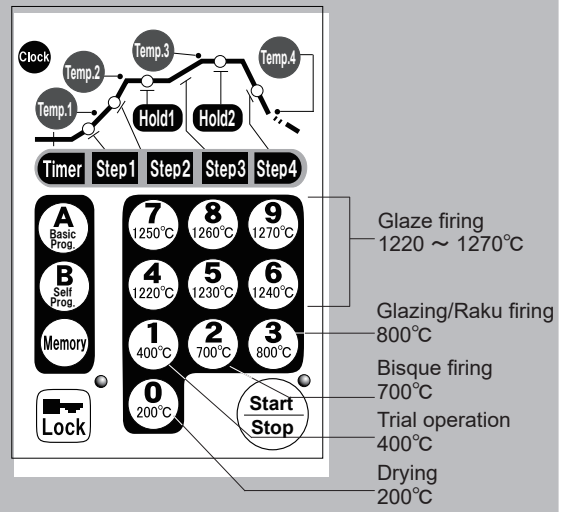
Caution)
Please be careful not to damage bricks.

Caution)
Please be careful not to hit U pin too strongly since it tends to break easily.

Caution)
Please cut the rest of the heating element by pleyer not to let it come in contact with the back plate.

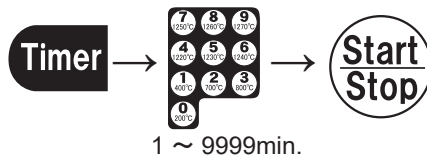
Basic program

- Trial operation → →
- Bisque firing → →
- Glazing /Raku firing → →
- Glaze firing → ~ →
- Drying → →

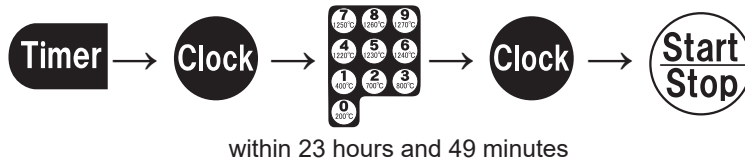


Convenient functions

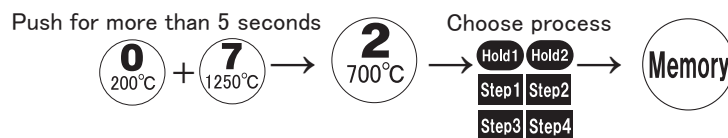
- Timer In how many minutes you start firing



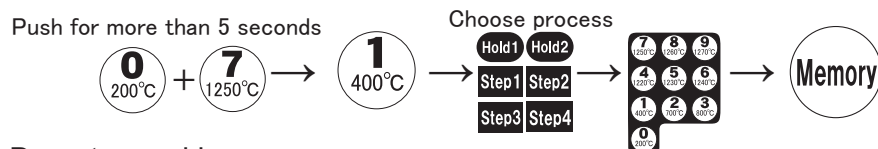
What time you start firing



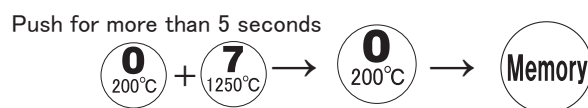
- Buzzer Sound buzzer after the designated process finishes.



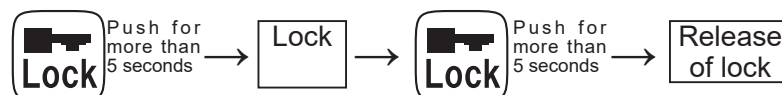
Sound buzzer at the designated temperature



Do not sound buzzer



- Lock

























Appendix

< Example of custom program by controller >

You can change a program into your own program using “Basic program”. You can make your own program easily by changing the content of “Basic program” which is similar with the one you prefer.

*When you want to set maximum temperature at 1240°C

 shows flashing.

Operating procedure		Display panel
(1) Call up a “Basic program” similar with the program which you want to make. Choose [7] since you want to set maximum temperature at 1240°C this time and the content is similar.	 ↓ 	 
(2) Push  Display shows the temperature which is set in at present.		
(3) Input 1240°C which you want to set. <In case of starting firing without registration 3→7>	   	
(4) Push  after making custom program in order to save the setting content.		
(5) Number the programs which you register (preserve). Input any numbers (1 ~ 20).		
(6) Push  again and secure it. Saving finishes when buzzer sounds.		
(7) Push 「start」 .		The indicator lights up. 

You can save 20 variations of custom programs. Please number program. (1 ~ 20).

P.26

Please use <temperature chart for basic program> to understand the content of a basic program and <note for custom program> to save your own program.

Appendix

<Temperature chart of basic program>

*Total time is to completion of «H old 2»

Process Temperature Program		Timer	Temperature ₁	Time 1	Temperature ₂	Time 1	Hold 1	Temperature ₃	Time 3	Hold 2	Temperature ₄	Time4	Total time
A-0	Drying	0	200	300	200	0	0	200	0	0	120	0	300
A-1	Trial operation	0	400	270	400	0	0	400	0	30	120	0	300
A-2	Bisque firing	0	560	420	700	90	10	700	0	0	120	0	520
A-3	Glazing Raku firing	0	560	210	800	90	0	800	0	0	120	0	300
A-4	Glaze firing	0	560	210	1050	220	0	1220	180	20	120	0	630
A-5	Glaze firing	0	560	210	1050	220	0	1230	180	20	120	0	630
A-6	Glaze firing	0	560	210	1050	220	0	1240	240	20	120	0	690
A-7	Glaze firing	0	560	210	1050	220	0	1250	240	20	120	0	690
A-8	Glaze firing	0	560	210	1050	220	0	1260	270	20	120	0	720
A-9	Glaze firing	0	560	210	1050	220	0	1270	270	20	120	0	720

<Note for custom program>

Process Temperature Program	Timer (min.)	Temperature ₁ (°C)	Time1 (min.)	Temperature ₂ (°C)	Time2 (min.)	Hold1 (min.)	Temperature ₃ (°C)	Time3 (min.)	Hold2 (min.)	Temperature ₄ (°C)	Time4 (min.)	Total time (min.)
B-1												
B-2												
B-3												
B-4												
B-5												
B-6												
B-7												
B-8												
B-9												
B-10												
B-11												
B-12												
B-13												
B-14												
B-15												
B-16												
B-17												
B-18												
B-19												
B-20												

Warranty Provision

*NIDEC DRIVE TECHNOLOGY warrants, to the original purchaser of new products only, that this product shall be free from defects in workmanship and materials under normal use having followed the precautions of the instruction manual and labels in the text for one year from the date of original purchase.

*The success of a work is not our responsibility. (For example, firing irregularity of a work or cracks)

*Replacement is subject to appropriate charges in the following situations regardless of the warranty period.

- Breakdown or damages due to wrong operation or modification.
- Breakdown or damages due to dropping after purchasing.
- Breakdown or damages due to fire, earthquake, flood damage, lightning strike, public hazard, gas hazard, salt damage, or unusual power voltage.
- Changes of apparent condition such as blemishes from using or storing.
- No warranty card

*Please keep warranty card on a safe place. Replacement cards are not available.

*Warranty promises you payment based on the warranty period and provisions.

Therefore your legal right wouldn't be limited by this warranty card. Please contact NIDEC DRIVE TECHNOLOGY dealer if you have any questions such as repair after warranty period.

Please look at the attached warranty card regarding warranty.

How to dispose

*Please consult with local government since the disposal method for the kiln is different in each local government.

*Please do not disassemble the kiln when you dispose of it. (Dust could occur.)

NIDEC DRIVE TECHNOLOGY CORPORATION

〈Web Page Information〉 Please scan the QR code or access the URL below.



Contact Us

<https://www.nidec.com/en/nidec-drivetechnology/inquiry/>



Sales Offices

<https://www.nidec.com/en/nidec-drivetechnology/corporate/network/sales/>

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NIDEC DRIVE TECHNOLOGY CORPORATION

Nidec Shimpo Corporation change its company name to Nidec Drive Technology Corporation on April 1, 2023.