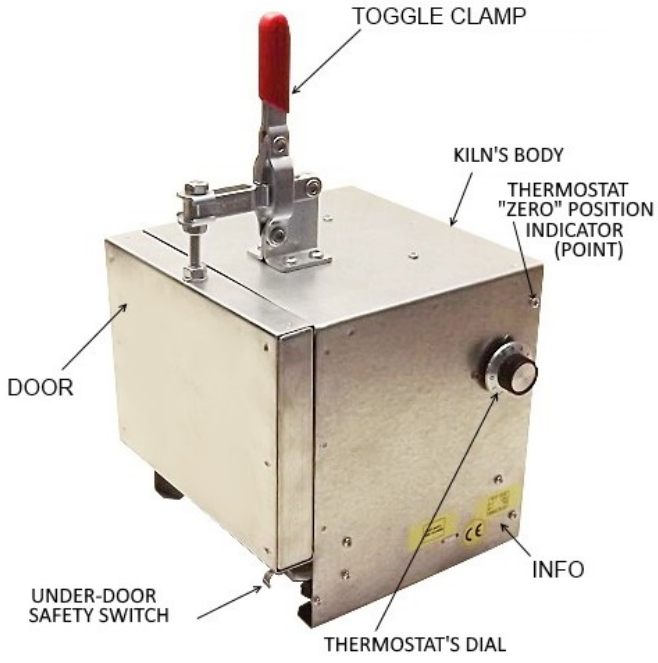
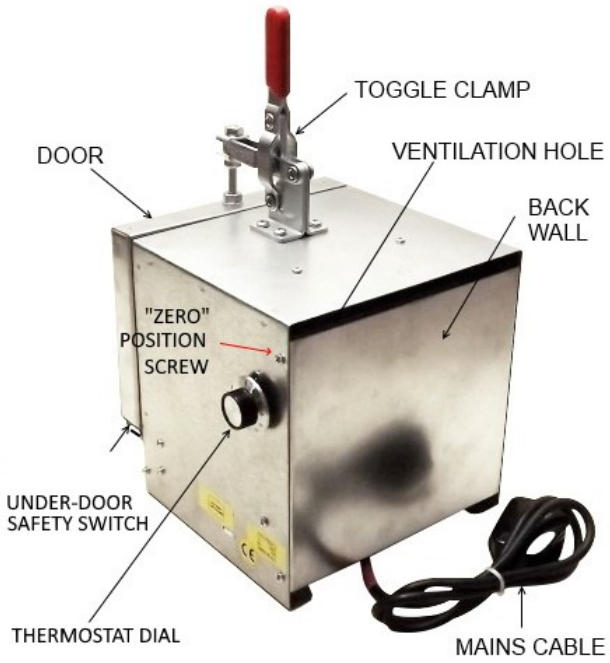
R-11 THERMOSTAT CONTROLLED ELECTRIC MUFFLE KILN USER MANUAL

PRODUCT INTRODUCTION:

This R-11 kiln with a thermostatic temperature regulator is especially designed for scientific experiments and to work with estimated firing temperatures of up to 950°C/1,742°F. You can use it to heat up small pieces of glass, metals or clays (with firing temperatures of up to 950°C/1,742° F) and to work with enamels. This kiln can also be used with other materials that can be heated up using a short-period heating process (see pg. 3) of up to 800°C/1,472°F. The R-11 kiln is supplied with one tile shelf and a secure under-door switch that will disconnect the power supply from the heating element if the kiln's door is open or has not been properly closed.

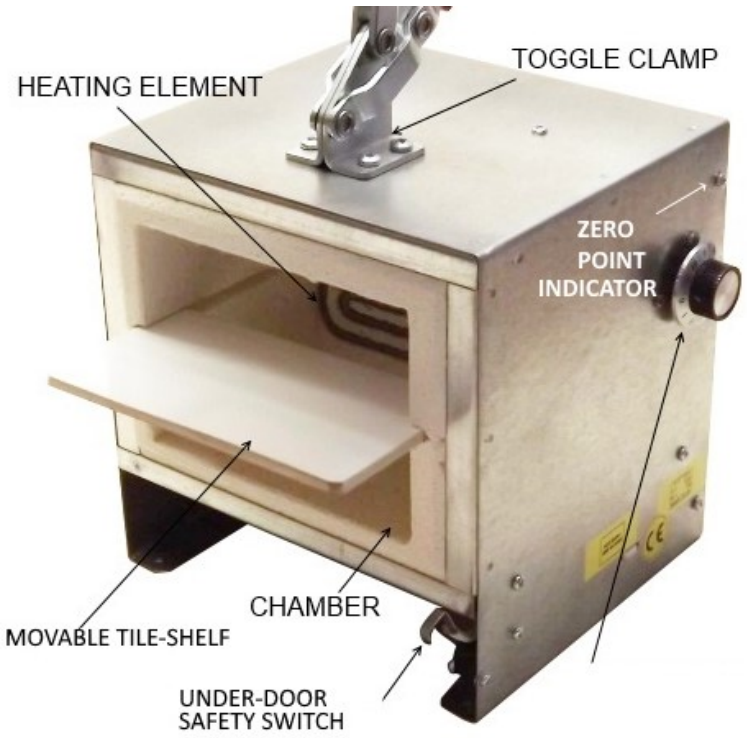


Pic. 1 FRONT VIEW:



Pic. 2 BACK VIEW:

MODEL:	**R-11**	**SHELF (PLATE)**	**ONE, MOVABLE TILE**
INPUT:	**115/220/240 V ON REQUEST**	**DOOR POSITION:**	**UPWARDS OPENING**
POWER:	**550 WATT**	**THERMOSTATIC T-REGULATOR:**	**250-23-1CB 1-10 POINTS**
ESTIMATED MAXIMUM HEATING TEMPERATURE:	**950°C / 1,742°F**	**TEMPERATURE RANGE OF SHORT-PERIOD HEATING PROCESS:**	**20-800°C (68-1,472°F)**
ESTIMATED HEATING TIME TO 950°C:	**50 MINUTES**	**EST. TEMPERATURE RANGE OF LONG-PERIOD HEATING PROCESS:**	**900-950°C (1,652-1,742°F)**
CHAMBER MATERIAL:	**MUFFLE (STD-23)**	**CHAMBER DIMENSIONS (MM)**	**135 (w) x 90 (d) x 100 (h)**
BODY MATERIAL:	**GALVANISED STEEL**	**KILN DIMENSIONS (MM)**	**200 (w) x 220 (d) x 350 (h)**
CONTINUOUS WORKING TIME:	**8 HOURS**	**WEIGHT:**	**4.7 KG**



Pic. 3

Pic. 4

PREPARATION:

- Remove the kiln from its original box(s).

- Place the kiln on a heat-resistant worktop, e.g. masonry, concrete, metal or ceramic tile(s).

- Now switch your kiln on. When using the kiln for the first time, it must be heated up (thermostat dial to position 3) for approximately 3-5 minutes to allow any water to evaporate from the chamber. Let the kiln cool down completely before you start using it. Please do not be alarmed if light smoke and/or a smell appears (when using the kiln for the **first time**). This is normal for new kilns as any water, grease or oils burn out from the heating element(s), shelves and from inside the kiln. It should not happen again after the first time it is heated. If your kiln is used less than once a month then please repeat this process each time you use it.

- Place a piece of the material(s) you will be working with into the chamber and close the door properly.

- Conduct the appropriate tests to determine the correct temperature for your material(s) using the thermostat dial shown in Pic. 4.

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THERMOSTAT POSITION:	MINIMUM (T = °C / °F)	MAXIMUM (T = °C / °F)
2	120 / 248	700 / 1,292
4	220 / 428	750 / 1,382
6	300 / 572	800 / 1,472
8	400 / 752	850 / 1,562
10	500 / 932	900 / 1,652

When you are not using the kiln, turn it off by turning the dial to 0 (Pic. 4) position.

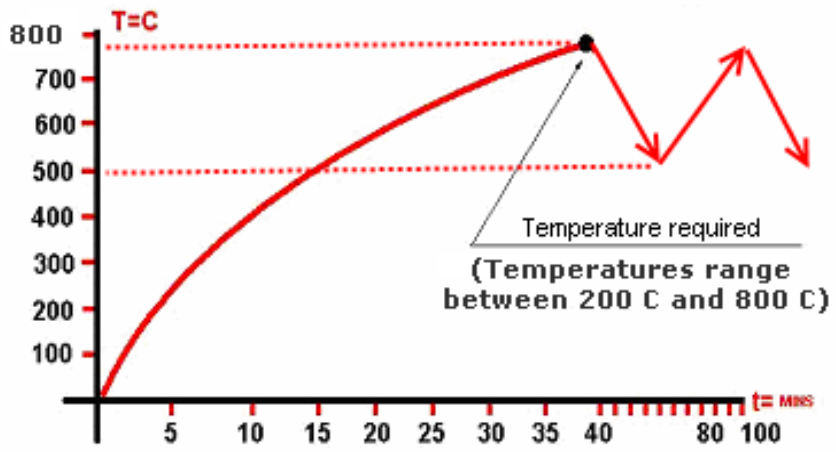
APPROXIMATE TEMPERATURES INSIDE THE CHAMBER FOR A SHORT-PERIOD HEATING PROCESS:

HEATING PROCESSES:

SHORT-PERIOD HEATING PROCESS: This is when the thermostat automatically switches the kiln OFF as soon as the set temperature is reached inside the chamber. When the temperature inside the chamber drops down to approximately half of the set temperature, the thermostat will automatically switch the kiln ON again in order to once again increase to the required maximum temperature.

This process is widely used for heating many types of sensitive materials like bio-plastics, waxes, wood, some cements and other types of materials for which short-period heating processes are critical, e.g. for drying cements, hardening some types of metals or for silver surface treatment.

SHORT-PERIOD HEATING PROCESS GRAPH (EXAMPLE):

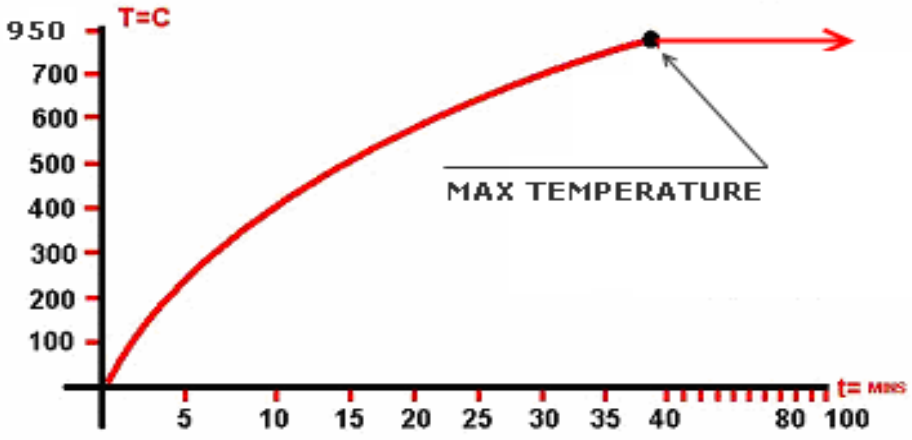


LONG-PERIOD HEATING PROCESS: This is when the kiln heats up to the maximum temperature and maintains that temperature for as long as you want, until you switch the kiln off.

Using the long-period heating process, this kiln is fully suitable for working with most popular types of metals, high-temperature enamels and clays with firing temperatures of under 950°C (1,742°F). The kiln can also be used with other materials that should be heated continuously at a high temperature.

With this kiln model, the long-period heating process can easily be changed to a short-period heating process and back at any time by using a small screw inside the axis under the thermostat dial (Pic. 4 - more information about how to do this is provided on the next page).

LONG-PERIOD HEATING PROCESS GRAPH (EXAMPLE):



CHANGING THE HEATING PROCESS TYPE:

Your kiln has automatically been set to the SHORT-PERIOD heating process by the manufacturer. If you want to use your kiln continuously (LONG-PERIOD heating process) you must reset the thermostatic temperature regulator to this type of heating process yourself. To do this:

1. Disconnect your kiln from the power supply.

2. Turn the thermostat dial (Pic. 4) anti-clockwise to 0.

3. Unscrew the small screw on the thermostat dial and remove it from the thermostat's metallic axis.

4. Find the 5 mm hole in the centre of the thermostat's axis that has a small screw inside. Turn this screw **ANTI-CLOCKWISE** twice using a small FLAT-HEAD screwdriver.

5. Your kiln will now be able to heat up to the maximum possible temperature and will then stay at that temperature until you manually disconnect it from the power supply.

6. If you want to reset your kiln to the SHORT-PERIOD process, turn the small screw inside the thermostat's axis **CLOCKWISE** twice.

FOR BEGINNERS - IF YOU HAVE LOST THE SETTING:

1. Turn the thermostat dial ANTI-CLOCKWISE to 0.

2. Unscrew the thermostat dial and remove it from the thermostat's axis.

3. HOLD the thermostat's axis at 0 using your fingers or pliers and fully unscrew the small screw inside the axis.

4. Now start to screw it IN again until you hear a small click; you should also be able to feel this with your fingers. Put the numeric dial back on the axis. Now your kiln is set to the SHORT-PERIOD heating process.

NOTE:

You can switch your kiln OFF at any time by turning the thermostat dial anti-clockwise to 0. To increase the temperature, for example to 800°C (1,472°F), turn the dial clockwise (up to the maximum of 10). Please note that this non-linear thermostatic regulator only starts to regulate temperatures when the kiln reaches a minimum of approximately 200°C (392°F).

DELIVERY SPECIFICATION:

R-11-950C electric muffle kiln;

One tile shelf;

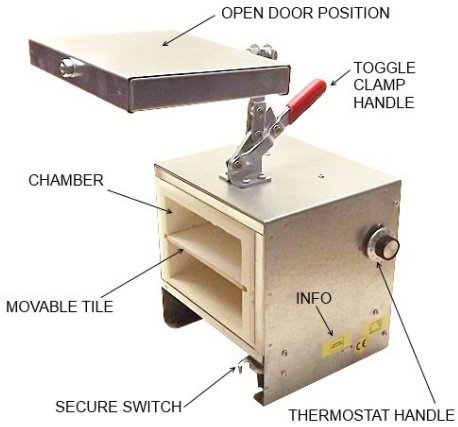
Downloadable user manual with useful information;

Manufacturer's one-year warranty.

SAFETY INSTRUCTIONS and USEFUL TIPS FOR BEGINNERS:

- This model has a secure switch under the door that will immediately disconnect the heating element from the power source if the kiln's door is opened. Please always ensure that this switch's metal strip is under the door and NOT pressed between the door and the kiln's body.
- Always keep your hand (wearing a glove) on the red handle when the door is OPEN to prevent the door from shutting unexpectedly! (See Pic. 5 below).

Pic. 5



When you place an item inside the chamber please make sure that it does not touch the heating element, even when the door is closed. It is recommended that you conduct tests on a small quantity of the firing material you will use to determine the correct position of the thermostatic controller BEFORE starting your work.

- DO NOT lift this kiln by the red handle.
- This kiln should be positioned on a level surface that will not be damaged by heat. A masonry or concrete floor is recommended, but other protective materials may be used, such as a metal or ceramic (tile) sheet.
- ALWAYS wear heat resistant gloves and use appropriate tongs to remove item(s) from the kiln. This kiln should be kept away from all inflammable materials.
- This kiln can reach very high temperatures - NEVER LEAVE it UNATTENDED when it is in use.
- KEEP OUT OF REACH OF CHILDREN.
- Make sure that the door is properly closed to speed up the heating process and to allow the highest possible temperature inside the chamber to be reached.
- Please disconnect the kiln from the power supply when it is not in use.

DANGER: This is an electrical, very hot piece of equipment: always follow any applicable health and safety rules and regulations for electrical equipment and hot work in your country.

MADE IN THE UK