

# Miniglaze<sup>®</sup>/2

PORCELAIN STAINING AND GLAZING FURNACE

## Owner & Operator's Manual

**Model No: Voltage:**

9490950 115V 50/60Hz

9490952 220V 50/60Hz

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## SAFETY:



- If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Never operate furnace in close proximity to combustible materials or place materials on top of the furnace.
- The furnace must be electrically grounded to a three wire electrical outlet or receptacle. The electrical service provided must be a dedicated line of the proper size according to local electrical codes.
- Disconnect the line cord before attempting to service the furnace.
- Do not touch ClearVue™ door/window with fingers during operation.
- Do not operate the furnace controls with tongs or other tools; the tongs will damage the control switches and/or knobs.
- Do not use solvents or liquid cleaners on the control panel; they will dissolve silkscreen or damage plastic parts.
- Do not place firing trays or other hot objects directly in front of the furnace; they will melt the pyrometer.

### OSHA AND CALIFORNIA PROPOSITION 65:

#### MUFFLE DUST EXPOSURE

In keeping with the policy of DENTSPLY Ceramco to build safe products, comply with all National and State statutes and keep you, the valued customer informed; the services of a Certified Industrial Hygienist firm were employed to test and evaluate the lab operator's exposure to respirable refractory ceramic fiber (RCF) and cristobalite (a form of crystalline silica) present in the furnace muffle.

The findings of this test revealed that levels of exposure during the normal operation of this equipment, as outlined in the operator's manual, were far less than the Permissible Exposure Limit set by the Federal Government.

When it becomes necessary to replace the muffle, the person doing this work is recommended to wear a HEPA filter respirator and protective gloves as a precautionary matter.







Seal used muffle in a plastic bag and dispose of in accordance with local, state and Federal regulations.

Because this product and many similar products on the market today contain crystalline silica and ceramic fibers, it is necessary under the statutes of California Proposition 65 that DENTSPLY Ceramco include the following statement:

"This product contains substance(s) known to the State of California to cause cancer."

Material Safety Data Sheets for RCF materials supplied upon request.

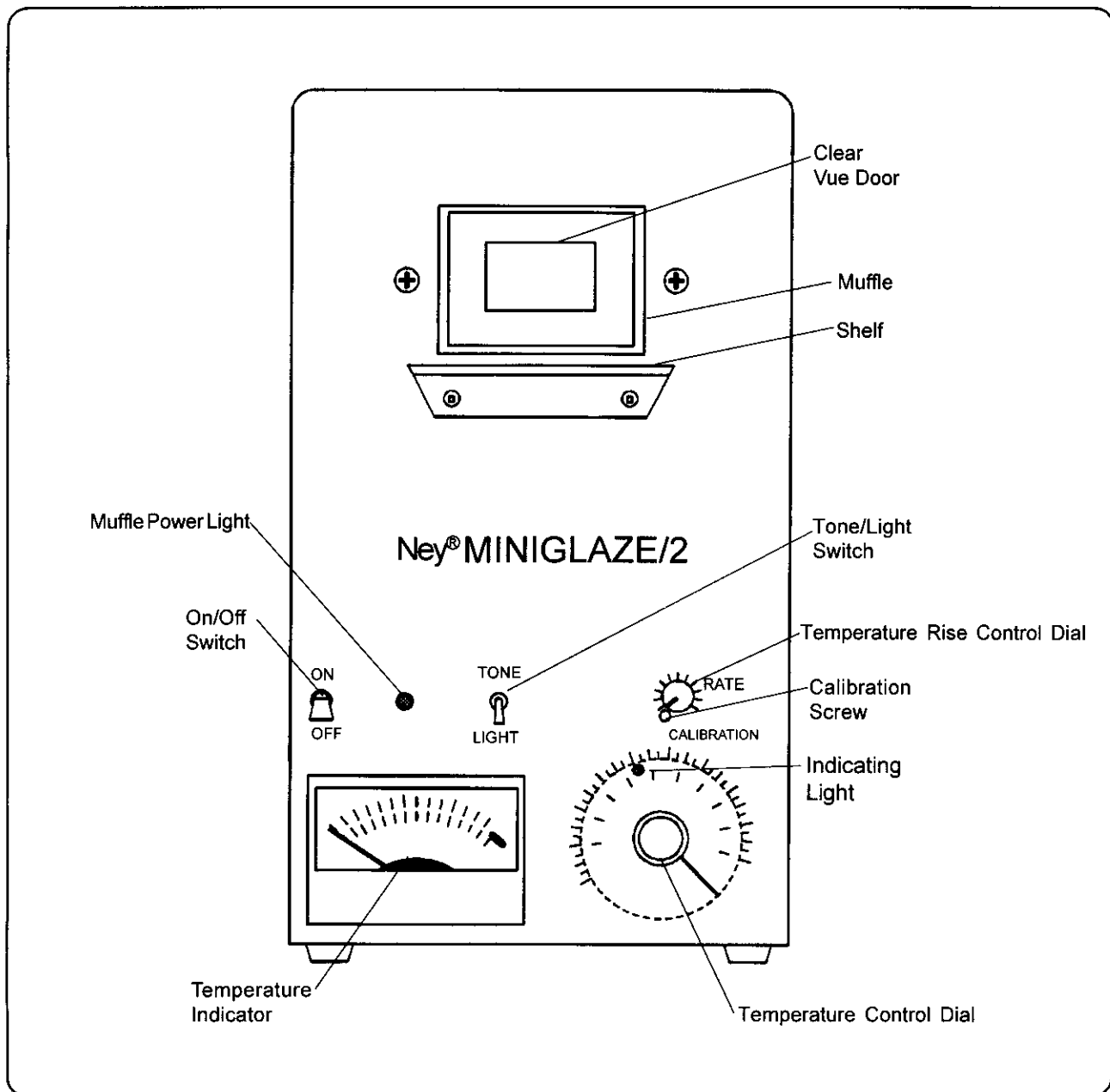
#### SYMBOL TABLE

 - Alternating current	Courant alternatif
 - On (Supply)	Marche (alimentation)
 - Off (Supply)	Arrêt (alimentation)
 - Caution, Hot Surface	Attention, surface chaude
 - Protective Conductor Terminal	Borne de masse, châssis
 - Caution	Attention

**FEATURES:**

- 1100°C (2010°F) Max. Temperature: 200°C (400°F) Min. Temperature
- Adjustable Heat Rate: 10-100°C/M (18-180°F/M)
- Small Foot Print: 6-1/4W x 6D x 11-1/2H
- Visual /Audio Indicator: Lights or Sounds When At Temperature
- Easy Temperature Calibration
- Fast Cooling Fiber Muffle

## FURNACE DESCRIPTION



Miniglaze/2

Figure 1

## INSTALLATION INSTRUCTIONS

### UNPACKING

- Carefully unpack and remove the Miniglaze/2 from its shipping carton.
- Save the carton and other packing material for future use in transporting the Miniglaze/2.
- Shipping damage should be reported to the carrier as soon as detected.

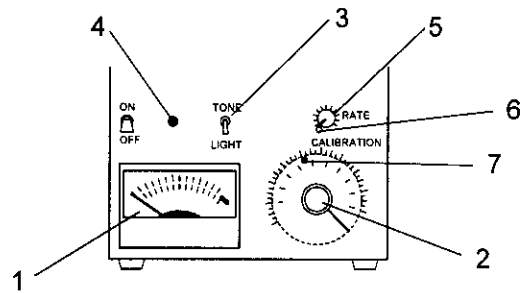
The Miniglaze/2 shipping carton contains the following:

- One Miniglaze/2 Complete With Power Cord
- Owner & Operator's Manual
- ClearVue™ Door

### INSTALLATION:

- Remove all packing material from in and around the furnace. The furnace should be located at least 15cm (6") away from walls, shelves and heat sensitive materials.
- The furnace should not be located directly under shelves or other airflow restrictions.
- Before inserting door, check that the muffle is free of debris.
- Connect the power cord to a power circuit or receptacle with an overcurrent protection (circuit breaker or fuse) rating of at least 15 Amps for 120V (10Amps for 230V). This circuit should only supply the furnace. Never use an extension cord.

## CONTROL DESCRIPTIONS



- **Temperature Indicator:** (1) The temperature on the Miniglaze/2 indicates temperature within  $\pm 10^{\circ}\text{C}$  ( $\pm 18^{\circ}\text{F}$ ). the indicator has both Fahrenheit and Centigrade graduations.
- **Temperature Control Dial:** (2) The temperature control dial has both Fahrenheit and Centigrade graduations. Dial markings range from  $150^{\circ}\text{C}$  ( $300^{\circ}\text{F}$ ) to  $1093^{\circ}\text{C}$  ( $2000^{\circ}\text{F}$ ) in increments of  $25^{\circ}$  Fahrenheit and Centigrade.
- **Tone/Light Switch:** (3) The tone/light switch provides a choice between a tone with a light, or a light only to indicate when the set temperature is attained. When the switch is in the LIGHT position, a red light (7) will be illuminated on the temperature control dial when the muffle reaches a temperature  $10^{\circ}\text{C}$  below set point. When the switch is in the TONE position the red light is accompanied by a tone.
- **Muffle Power Light:** (4) A red light located above the temperature indicator signals when power is being applied to the muffle. It will blink intermittently during temperature rise due to the automatic temperature control.
- **Temperature Rise Control Dial:** (5) The Miniglaze/2 is designed to provide an approximate straight line temperature rise. Complete counterclockwise adjustment ("S", Slow setting) will give an approximate  $10^{\circ}\text{C}$  ( $18^{\circ}\text{F}$ ) per minute temperature rise. Complete clockwise adjustment ("F", Fast setting") will give an approximate  $100^{\circ}\text{C}$  ( $180^{\circ}\text{F}$ ) per minute temperature rise. (**NOTE:** During initial heat-up, the rate of increase will be slow to prevent overshoot).
- **Calibration Screw:** (6) Adjust for changes in thermocouple. (See Calibration).

## SETUP & MAINTENANCE

### **CALIBRATION:**

Your new Miniglaze/2 has been factory calibrated and should not need any adjustment. After long term use of this furnace there may be some change in the temperature control. Periodic calibration is necessary to minimize the effects of these changes.

- Place a piece (coupon) of pure silver on the center of a firing tray (on top of a peg). Using a pair of furnace tongs place the tray in the muffle.
- Turn the furnace on.
- Set the heat rate knob for slow temperature rise (full counter-clockwise).
- Set the temperature control dial to 960°C (1761°F).
- Allow furnace to reach set point and stabilize for 10 minutes. Tone will sound or light will illuminate when muffle temperature is within 10°C (18°F) of the set point.
- If the coupon has not melted turn the calibration screw 1/8 turn clockwise. Wait 1 minute for furnace to stabilize.
- If coupon remains un-melted, continue rotating calibration screw 1/8 turn clockwise and waiting 1 minute after each rotation, until silver melts.
- When the silver melts the temperature indicator needle should read 960°C (1761°F).

### **CLEANING:**

- Vacuum dust and dirt from the furnace rather than blow. This will minimize the amount of airborne dust particles.
- Use a soft damp cloth to clean the control panel. Avoid excess water or solution when cleaning the furnace. Some solutions will attack the panel or electronics and may cause the furnace to malfunction.

### **REPLACEABLE FUSES:**

- F1: F 250V / 1.0A

## OPERATING INSTRUCTIONS

- Turn the furnace on
- Insert muffle door
- Turn temperature control dial to 650°C (1200°F)
- Turn the rate control knob to the midpoint between "S" and "F"
- After 15 minutes, adjust the temperature control knob to 1000°C (1832°F) and the rate to maximum ("F").
- Allow furnace to maintain temperature for 10 minutes and readjust the temperature to the desired temperature.

After the Miniglaze has been calibrated and the initial heating procedure has been completed it is ready to process dental porcelain.

### **Staining and Glazing**

Before each operation, the furnace should be brought up to 540°C (1000°F). Set the temperature dial at the desired temperature and adjust the temperature rise to the desired level. Using a pair of furnace tongs place the work in the muffle and replace the door. The tone alarm or light will signal that the set temperature has been reached.



## SPECIFICATION:

Width: 16cm (6-1/4 in.)

Depth: 15cm (6 in.)

Height: 29cm (11-1/2 in.)

Weight: 2.7kg (6 lbs.)

Operating Voltage: 115V ac (100-120V), 50-60Hz, 5.0A  
230V ac (200-250V), 50-60Hz, 2.1A

Power Requirements: 720 watts

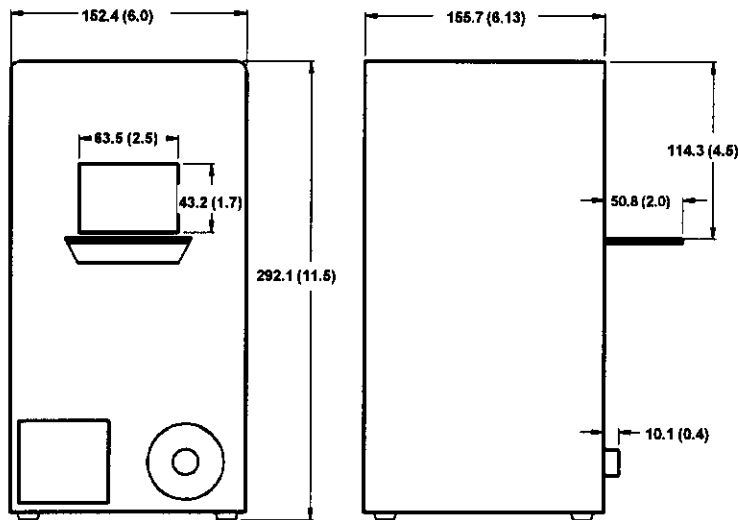
Temperature Display Accuracy:  $\pm 10^{\circ}\text{C}$  @  $650^{\circ}\text{C}$  -  $1000^{\circ}\text{C}$   
 $\pm 18^{\circ}\text{F}$  @  $1202^{\circ}\text{F}$  -  $1832^{\circ}\text{F}$

Heat Rise Rate:  $10^{\circ}$  -  $100^{\circ}\text{C}$  ( $18^{\circ}\text{F}$  -  $180^{\circ}\text{F}$ )

Maximum Operating Temperature:  $1100^{\circ}\text{C}$  ( $2010^{\circ}\text{F}$ )

Muffle Chamber dimensions: 6.4cm x 8.9cm x 4.5cm  
(2-1/2" W x 3-1/2" D x 1-3/4" H)

## OUTLINE DRAWING: mm(in)



## TROUBLE SHOOTING

**CAUTION:** THE FOLLOWING MAINTENANCE REQUIRES ACCESS TO THE CIRCUIT BOARD ASSEMBLY AREA. THE POWER CORD MUST BE UNPLUGGED FROM THE POWER OUTLET TO ELIMINATE ANY SHOCK HAZARD BEFORE THE FOLLOWING STEPS ARE UNDERTAKEN.

PROBLEM	PROBABLE CAUSE	SOLUTION
Muffle does not heat, no lights illuminated	<ol style="list-style-type: none"> <li>1. No power supplied to unit</li> <li>2. Blow fuse F1</li> <li>3. Circuit board not functional</li> </ol>	<p>Check power to your AC receptacle</p> <p>Replace fuse 1A P/N: 9320071</p> <p>Replace circuit board P/N: R9494084 (115V) P/N: R9494085 (230V)</p>
Muffle does not heat: tone sounds every second and/or lamp (in dial) flashes every second and meter reads room temp	<ol style="list-style-type: none"> <li>1. Thermocouple not tightened to pyrometer</li> <li>2. Thermocouple burned out (open)</li> <li>3. Circuit board not functional</li> <li>4. Burned out muffle.</li> <li>5. Wiring problem</li> <li>6. TC shorted.</li> </ol>	<p>Check TC wires on pyrometer.</p> <p>Replace thermocouple P/N: 9490573</p> <p>Replace Circuit Board P/N: R9494084 (115V) P/N: R9494085 (230V)</p> <p>Replace muffle P/N: 9490567 (115V) P/N: 9490585 (230V)</p>
Muffle heats continually with muffle temperature greater than the set temperature	<ol style="list-style-type: none"> <li>1. Faulty triac</li> <li>2. Circuit board not functional</li> </ol>	<p>Return unit to DENTSPLY Ceramco</p> <p>Replace circuit board P/N: R9494084 (115V) P/N: R9494085 (230V)</p>
Meter disagrees with set point more than 50°C	<ol style="list-style-type: none"> <li>1. Out of calibration</li> </ol>	<p>Calibrate meter as per instructions.</p>

## ACCESSORIES

DESCRIPTION	PART NUMBER
<b>Clear Vue™ Muffle Door</b>	9490738
Window Only	9390395
Door Only	9490737
<b>Furnace Tongs</b>	
10" Tongs	9390014
12" Tongs	9390015
<b>Furnace Trays</b>	(see DENTSPLY Ceramco Catalog)
<b>Furnace Calibration Kit</b>	9982561

## PRODUCT SERVICE

Two methods of product service are available for the MINIGLAZE/2. The first is telephone assistance available at the numbers listed below. The second is to return the furnace for servicing using the instructions below.

### BEFORE RETURNING THE FURNACE, DO THE FOLLOWING:

- Remove all firing trays and other loose items from inside the muffle.
- The original packing material should be used for the return shipment. Contact DENTSPLY Ceramco for replacements if they are not available.
- Call DENTSPLY Ceramco for a RMA number (Return Material Authorization). This is used to track and identify your furnace. Material received without this number may not be identifiable.
- Equipment damaged in shipment as the result of improper packing may not be paid by the carrier. DENTSPLY Ceramco will not be responsible for damages resulting from improper packing.

TEL 909.795.2461  
FAX 909.795.5268

Ship Prepaid To:  
DENTSPLY Ceramco  
RMA Number \_\_\_\_\_  
13553 Calimesa Blvd.  
Yucaipa, CA 92399-2303 USA

## WARRANTY

### LIMITED WARRANTY AND LIMITATION OF LIABILITY

**WARRANTY:** Except with respect to those component parts and uses which are hereinafter described, DENTSPLY Ceramco warrants its products to be free from defects in material and workmanship for a period of two years from the date of sale. The warranty period for the muffle, a component of DENTSPLY Ceramco's Miniglaze/2 Porcelain Staining and Glazing Furnace, shall be 2 years from date of sale. DENTSPLY Ceramco's liability under this warranty is limited solely to repairing or, at DENTSPLY Ceramco's option, replacing those products included within this warranty which are returned to DENTSPLY Ceramco within the applicable warranty period (with shipping charges prepaid), and which are determined by DENTSPLY Ceramco to be defective. This warranty shall not apply to any product which has been subject to misuse; negligence; or accident; or misapplied; or modified; or repaired by unauthorized persons; or improperly installed.

**WARRANTY EXCLUSIONS:** The warranty described in Paragraph 1 does not include normal wear of DENTSPLY Ceramco's products or its components.

**INSPECTION:** Buyer shall inspect the product upon receipt. The buyer shall notify DENTSPLY Ceramco in writing of any claims of defects in material and workmanship within thirty days after the buyer discovers or should have discovered the facts upon which such a claim is based. Failure of the buyer to give written notice of such a claim within this time period shall be deemed to be a waiver of such claim.

**DISCLAIMER:** The provisions herein stated represent DENTSPLY Ceramco's sole obligation and exclude all other remedies or warranties, expressed or implied, including those related to *MERCHANTABILITY* and *FITNESS FOR A PARTICULAR PURPOSE*.

**LIMITATION OF LIABILITY:** Under no circumstances shall DENTSPLY Ceramco be liable to the buyer for any incidental, consequential or special damages, losses or expenses.

**LIMITATION OF ACTIONS:** The buyer must initiate any action with respect to claims under the warranty described in the first paragraph within one year after the cause of action has accrued.



570 W. College Ave.  
York, PA 17404  
PH: 800-487-0100  
www.dentsply.com

**Product Service Center**  
DENTSPLY Ceramco  
13553 Calimesa Blvd.  
Yucaipa, CA 92399-2303 USA  
909-795-2461 • Fax: 909-795-5268

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