

CENTURION™ Q50

Owner & Operator's Manual

Model No	Voltage
9493930	100-120V 50/60Hz
9493931	230V 50/60Hz

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SAFETY:



- 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 attempt to service the furnace until you read and understand the service manual. (See Manual under Accessories on page 14)
- Do not operate the furnace controls with tongs or other tools; the tongs will damage the control switches.
- Do not use solvents or harsh liquid cleaners on the control panel; they will enter the panel and damage it.
- Do not place firing trays or other hot objects directly in front of the furnace; they will melt the graphic overlay.



If the furnace is not used in the manner as specified in this manual, the protection provided by the furnace may be impaired.

OSHA AND CALIFORNIA PROPOSITION 65: MUFFLE DUST EXPOSURE

In keeping with the policy of DENTSPLY NeyTech 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.

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 NeyTech 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:

- 50 User Programs
- High Performance Quartz Lined Muffle Produces Superior Porcelain with Long Life Characteristics.
- 1204°C (2200°F) Maximum; 50°C (122°F) Minimum Temperature
- Ultra Smooth Muffle Movement with Stationary Work Support
- Programmable Muffle Dry and Cooling Positions
- Fast Cool Down for Short Times Between Loads Gives Maximum Productivity
- Vacuum Release Programmable in Temperature or Time
- Fast Heat Rates of up to 222°C/minute (400°F/minute)
- Full Program Flexibility; Parameters Changeable During Firing Cycle
- Power Outage Return; Short Power Outages (<30seconds) Do Not Interrupt Cycle Or Cause Loss of Vacuum Due To Outage
- Programmable High Limit Temperature
- Ultra Friendly User Interface
- Energy Saver "Idle Down Time"; Muffle closes but maintains Lo Temp
- NITE MODE: Closes muffle when temperature reaches 100°C to prevent moisture absorption
- Automatic PURGE cycle for muffle decontamination after the use of silver alloys
- Easy temperature and vacuum calibration; operator reads out and adjusts calibrations from control panel
- Agency Approvals: ETL, CE
- LCD Display With clear Backlighting For Better Visibility

INSTALLATION INSTRUCTIONS:

UNPACKING:

Carefully unpack and remove the furnace from its shipping carton. **Save the carton and other packing material for future use in transporting the furnace.**

Shipping damage should be reported to the carrier as soon as detected.

LIFTING AND CARRYING:

- Get a firm footing. Keep your feet shoulder width apart for a stable base.
- Bend your knees. Do not bend at the waist.
- Grip the base of the furnace and lift with your legs.

DO NOT LIFT FURNACE BY THE TOP MUFFLE ASSEMBLY.

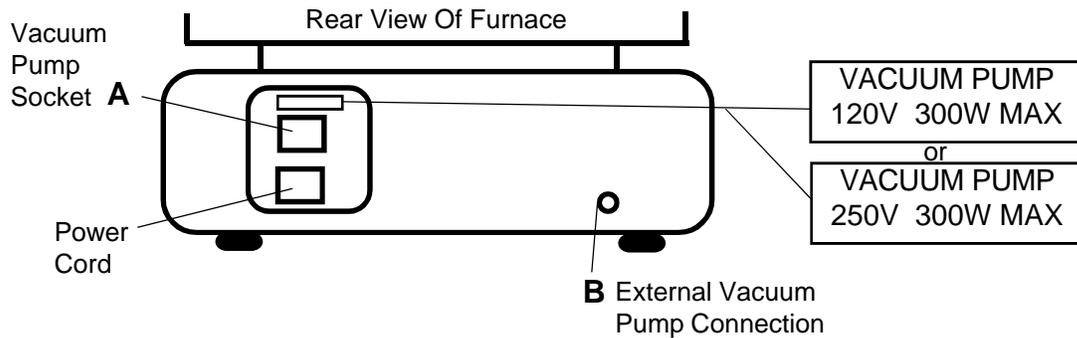
- Keep load close to your body and carry the unit to the destination. Keep your back upright during lifting.

The furnace shipping carton contains the following:

- One furnace complete with power cord
- Owner & Operator's Manual (this document)
- Vacuum tubing, connections, and fuses
- Ceramic work platform (MUST BE INSTALLED in furnace before operation)
- Round ceramic firing trays with pegs

INSTALLATION:

1. 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.



2. The furnace should not be located directly under shelves or other airflow restrictions.
3. Vacuum pump connections:
ELECTRIC VACUUM PUMP CONNECTIONS:
From the rear of the furnace connect the vacuum pump's tubing to point **B** and plug the pump's power cord into the socket at point **A**.
4. Connect the furnace to a power circuit or receptacle with an overcurrent protection (circuit breaker or fuse) rating of at least 15 Amps. This circuit should only supply the furnace and pump.
5. Turn on the furnace power switch (right-hand side of the control panel).
6. **FIRST TIME ONLY:** After the initial power up the display will show: "Remove Foam!", "Place Insulation", "Muffle is off", "To Operate: <ESC>". The muffle will open and the display will again display this sequence. Pressing the **(ESC)** key will start normal operation.
7. The furnace display will show "Nite Mode" after approximately 8 to 10 seconds of self test.
If the operation of the furnace causes the lights to "blink" or "flicker" the furnace is on the same circuit breaker or fuse as the lighting.
8. **IMPORTANT!** Open up furnace with muffle movement keys located on lower left side if the furnace does not open automatically. Install ceramic work platform ("Place Insulation").
Operating the furnace without this platform will damage the furnace!
9. Press **(ESC)** key followed by the **(S)** green start key in the upper right corner of the control panel.
Program 50 will now run to remove any accumulated moisture. This program will take approximately 30 minutes.
If the furnace does not pull vacuum "Err4" check the following:
 - Verify that the ceramic work platform is centered on the door.
 - Check the vacuum pump to verify that it is energized.
 - Check the vacuum hose connections to verify that they are connected to the correct locations.
 - Check door o-ring seal for contamination, and remove with clean rag.
If the furnace pulls a low vacuum "Err5" there may be moisture in the muffle. Press the **(ESC)** key and allow the furnace to continue running to remove the moisture.
10. **Daily Use:** Before starting the normal firing process each day allow the furnace to preheat for 15 to 30 minutes at its low temperature. Alternately, running a firing cycle without a load can also be used as a preheat operation. Preheating the furnace will provide more accurate and consistent results.

When the furnace is not being used keep the muffle closed. This prevents the absorption of moisture into the thermal insulation which reduces vacuum levels when normal firing is attempted.

OPERATING INSTRUCTIONS:

CHANGING PROGRAMS:

The current program number is displayed in the upper right-hand corner of the display window. The program number can be changed when not running a program.

Example: Change to program 34.

Key sequence: ③ ④ 

STARTING PROGRAMS:

Press (green)  to start current program.

The LCD displays the current cycle segment name and the approximate time remaining. **CHANGING**

PROGRAM PARAMETERS:

Press the corresponding parameter key followed by the digit keys and the  (ENTER) key to change a parameter of the current program.

-  "Lo T" for low temperature,
-  "Hi T" for high temperature.
-  "Dry" for dry time,
-  "Hold" for hold time,
-  "Cool" for cool time.
-  "Rate" for ramp rate,
-  "Vac" for vacuum level,
-  "Pull" for vacuum start temperature,
-  "Stop" for vacuum stop temperature,
-  "Stop" for vacuum stop time.

The selected parameter remains active for approximately 60 seconds and then the display changes back to  idle mode. Press the ESC key to change the display sooner.

Example: Change rate to 140°C/Min.

Key sequence: ① ④ ① 

Parameter values programmed or changed during a firing cycle are used only during the current cycle and are not stored permanently in memory. Parameters in a firing cycle that have already been started will not be changed or affected.

The Specifications Parameter Table (page 8) lists the allowable ranges for the various parameters. Attempts to enter values outside the allowable limits will cause the furnace to beep, display the limits and revert back to the original value.

TEMPERATURE PARAMETERS:

"Lo T" LOW TEMPERATURE is the initial or dry temperature parameter.

"Rate" TEMPERATURE RAMP RATE is the temperature increase parameter in degrees per minute.

"Hi T" HIGH TEMPERATURE is the final or hold temperature parameter at which the furnace ends the firing cycle.

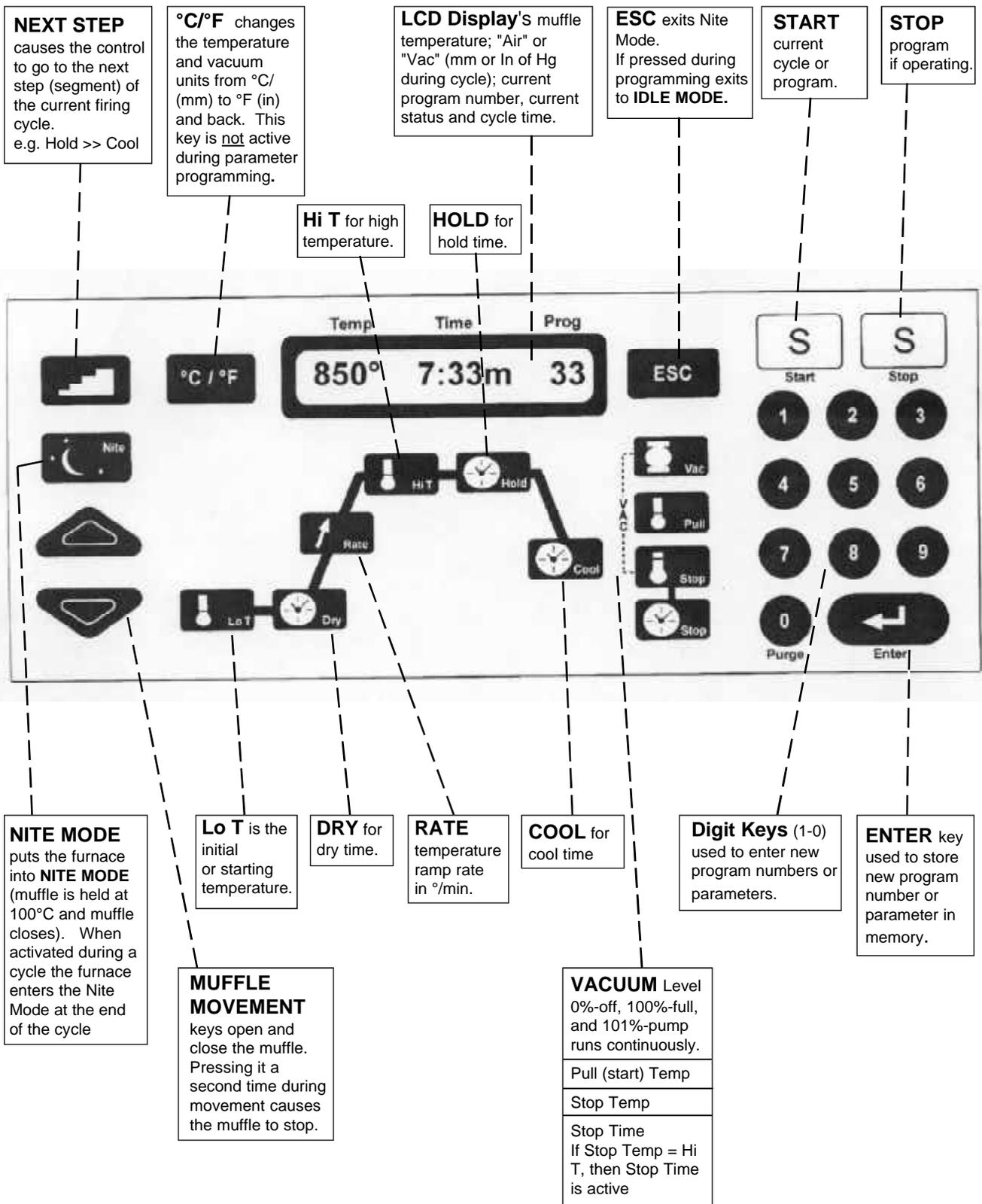
TIME PARAMETERS:

"Dry" TIME is the parameter for the time period between the start of the cycle and the muffle closing. The muffle will close to a programmed height then steps to its closing position as the dry time elapses.

"Hold" is the parameter for the time period that the muffle is held at the high temperature.

"Cool" is the parameter for the time period from the end of the "Hold" time until the muffle is completely open. At the end of the "Hold" time the muffle opens to the programmed cool position and stops to its open position as the "Cool" time elapses.

CONTROL PANEL DESCRIPTION:



VACUUM PARAMETERS:

"Vac" VACUUM LEVEL is programmed in percent of the total available vacuum. The vacuum is turned off by programming the level to 0%. The maximum vacuum is achieved by programming the level to 100% and the minimum by programming to 10%. In special cases where it is desired that the pump runs continuously when vacuum is desired, the level can be set to 101%.

"Pull" is the vacuum start temperature parameter. This controls the temperature at which vacuum is applied. This should be programmed equal to or lower than the "Lo T" in most applications.

"Stop" is the vacuum stop temperature and time parameters that stops or turns off the vacuum. Normally this parameter is programmed higher than the "Hi T" so that the vacuum is held during the full cycle. Programming this lower than the "Hi T" will stop the vacuum during the temperature ramp at the programmed temperature.

"Stop" if vacuum is to be held for only a portion of the "Hold" time the vacuum "Stop" temperature must be set equal to the "Hi T" temperature. The furnace will then ask for a vacuum stop time which can be programmed from 0 to a value equal to the current "Hold" time. The factory setting is 1:00 minute. The vacuum "Stop" time does not affect the length of time the muffle is held at the "Hi T".

SPECIAL OPERATIONS:

NEXT STEP - Pressing the  key during a firing cycle will cause the control to end the current cycle segment. (e.g. Rate > Hold > Cool) Pressing this key during the Cool segment will cause the furnace to repeat the last cycle starting with the Rate.

ESC - Pressing the  key during programming will return the furnace to the IDLE MODE or FIRING CYCLE MODE if the furnace was running a cycle.

NITE - Pressing the  key will cause the furnace to go into NITE MODE if the furnace is in IDLE MODE. The furnace will cool down to 100°C then the muffle will close. Press the  key to cancel the NITE MODE operation.

NITE (Firing Cycle) - Pressing the  key during a firing cycle will cause the control to enter the Nite Mode after the completion of the firing cycle and the LCD shows "Nite Mode".

MUFFLE MOVEMENT   - Pressing the up or down key during the idle mode will move the muffle in the indicated direction until it reaches its full travel. Pressing the key while the muffle is moving will stop the muffle at its current position. See "MUFFLE POSITION" below for muffle movement during the DRY and COOL portions of the firing cycle.

 Key changes the display from Celsius to Fahrenheit and back. The conversion cannot be done during parameter programming. The units for vacuum also changes from "mm Hg" to "in Hg" when the temperature units are changed.

PURGE CYCLE: Program "0" is the automatic purge cycle. Load the carbon rod into the muffle in the horizontal position. Change the program number to 0 and then press the  key. The Purge Cycle starts automatically when the  key is pressed.

Pressing the (red)  key **stops** the cycle. A complete purge cycle lasts approximately 2 hours.

CAUTION: Do not stop this cycle at elevated temperatures, the release of vacuum can damage the muffle and cause an unsafe condition.

MUFFLE POSITION:

The "DRY" and "COOL" positions can be adjusted for each furnace. To change the factory preset "DRY" or "COOL" positions, use the following procedure:

"DRY" Position:

1. Press   keys followed by the  (ENTER) key. The furnace will display "MUFFLE POS. DRY-_" and the muffle movement is calibrated by the control.
2. When the muffle stops moving, press the   keys so that the muffle moves to the desired position followed by the  (ENTER) key, after the muffle comes to rest.

- The muffle will then move up and then down to confirm the new programmed position. This will be the "DRY" position for all programs.
- During the Dry time the muffle will close in multiple small steps from the programmed height to the fully closed.

"COOL" Position:

- Press **7** **7** keys followed by the  (ENTER) key. The furnace will display ",MUFFLE POS. COOL_--".
- When the muffle stops moving, press the   keys so that the muffle moves to the desired position followed by the  (ENTER) key.
- The muffle will then move down and then up to confirm the new programmed position. This will be the "COOL" position for all programs.
- During the Cool time the muffle will open in multiple small steps from fully closed to the programmed height.

Manual Muffle Positioning:

The muffle can be manually positioned during the DRY and COOL portions of the firing cycle by using the muffle movement keys. The furnace will then remain in this position and not move until the dry or cool time has elapsed.

SPECIFICATIONS:

PARAMETER	MINIMUM	MAXIMUM	INCREMENT
Low Temperature	50°C (122°F)	800°C (1472°F)	1°C (1°F)
Dry Time	0 Seconds	99:59 Min.	1 Sec
Heat Rate	1°C/Min. (2°F/ Min.)	222°C/Min. (400°F/ Min.)	1°C/min. (1°F/min.)
High Temperature	50°C (122°F)	1204°C (2200°F)	1°C (1°F)
Hold Time	0 Seconds	99:59 Min.	1 Sec
Vacuum Level*	10%	100%	1%
Vac Pull Temperature	50°C (122°F)	1204°C (2200°F)	1°C (1°F)
Vac Stop Temperature	50°C (122°F)	1204°C (2200°F)	1°C (1°F)
Vac Stop Time	0 Seconds	Full Hold Time	1 Sec
Cool Time	0 Seconds	99:59 Min.	1 Sec

* Special Vacuum Cases: 0% is no vacuum or air firing cycle; 100% is the maximum vacuum possible at current location; 101% is pump on continuously during the programmed vacuum on time.

OPERATIONAL

- Temperature Accuracy:	+/- 3°C (+/- 5.5°F) at steady state
- Muffle Temperature Uniformity:	+/- 5°C (+/- 9°F) at steady state
- Vacuum Recycling Dead Band:	30mm Hg
- Muffle Temperature In NITE MODE:	100°C +/- 10°C (212°F ± 18°F)

ELECTRICAL

Voltage Ranges:	100	120V	230V
	50/60Hz	50/60Hz	50/60Hz
Currents:	13 Amps @ 100V	14.5 Amps @ 120V	7.2 Amps @ 230V
Wattage: 1740 Watts with pump max			
Watts to Maintain 1000°C: less than 400 Watts, muffle closed, no vacuum pump			

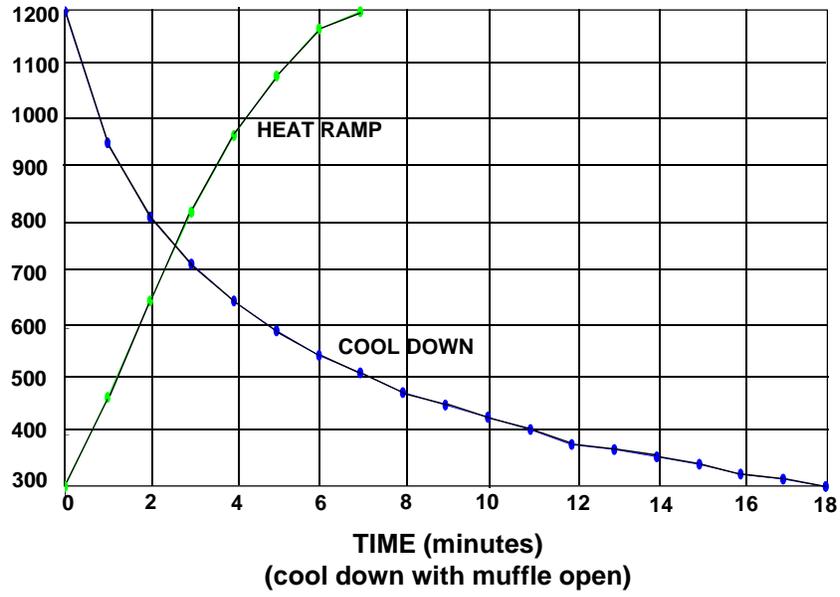
MECHANICAL

Exterior Dimensions:	Height	Width	Depth
Muffle open	48cm (19")	33cm (13")	45cm (17.5")
Muffle closed	33cm (13")	33cm (13")	41cm (16")
Interior Muffle Dimensions:			
Height:	6.3cm (2.5")	Diameter:	10cm (4")
Furnace Weight:	21Kg (45lbs)	Shipping Weight:	25Kg (55lbs)

ENVIRONMENTAL

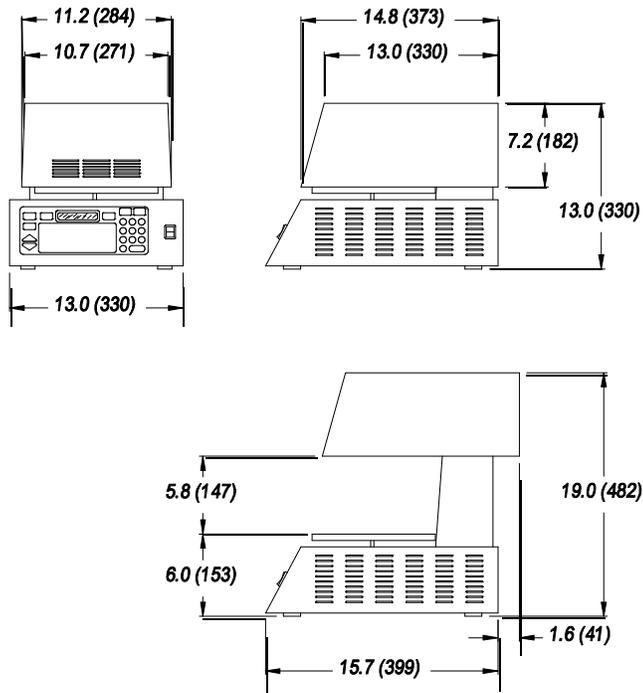
Ambient Operating Temperature: 5 - 40°C (41°F - 104°F)
Relative Humidity: Maximum 80%, non-condensing

PERFORMANCE CURVE: (maximum ramp rate)



OUTLINE DRAWING:

in (mm)



SETUP & MAINTENANCE:

The **CENTURION** has a software adjustment program for changes in operation. It is called "Setup". The following procedure identifies how to use the "Setup" routine to make these types of changes.

The furnace displays "Setup? " after it's internal testing when power is turned on. If the  (ENTER) key is pressed when the word "Setup?" is displayed the furnace will go into an operator "Setup" routine. In this routine various control characteristics can be reviewed and changed. These include: Temperature Adjustment, Programmable High Limit Temperature, Vacuum Adjustment and Idle Down Time.

Initial Conditions: Furnace is not running a firing cycle and the temperature has been changed to °C readout.

A. TEMPERATURE ADJUSTMENT:

Every **CENTURION** is calibrated at the factory to 960°C +/- 3°C. This accuracy applies to furnaces that are temperature stabilized (i.e., furnace has operated at the Lo T for a minimum of 20 minutes).

Silver calibration is not recommend due to its poor accuracy. Silver calibration under ideal conditions is only accurate to +/- 10°C. If not done correctly, a +/- 25°C error is possible.

The Tcal setup feature allows the operator to adjust for temperature differences between materials and techniques. If consistent overfiring is occurring, the Tcal value should be reduced by the estimated number of degrees that it is overfiring. The estimated number of degrees that the furnace is underfiring should be added to the Tcal value. If the furnace is estimated to be over firing by 15°C then subtract 15 from 960 which results in 945. 945 is entered into the Tcal value replacing the 960. Procedure:

1. Press the  (ENTER) key when the display shows "Setup?" after power is turned on.
2. Enter the desired Tcal value followed by the  key.
3. Press the **ESC** key to exit Setup.

The furnace can be reset to the factory calibration by setting the Tcal value to 960°C. Changes in the Tcal value affects all temperature and programs.

B. PROGRAMMABLE HIGH LIMIT TEMPERATURE:

The user can program a high limit temperature that is lower than the fixed limit of 1204°C built into the control. This limit will cause the furnace to go into Err3 if the muffle temperature exceeds this value.

1. Press the  (ENTER) key twice after turning on the power switch to the furnace when the display initially shows "Setup?".
2. Enter the digit keys of desired temperature followed by the  key and the **ESC** key.

C. VACUUM ADJUSTMENT:

The 100% vacuum level can be adjusted if the furnace is being operated at a high elevation or with a weak vacuum pump. The Vcal should be reduced for higher elevations by subtracting 80mm per 1Km of altitude from 740mm. (1" for every 1000' from 29")

NOTES: The maximum vacuum possible can be done automatically running program 88. At the end of this cycle the maximum vacuum pulled will be stored in the setup routine.

1. Press the  (ENTER) key three times after turning on the power switch to the furnace when the display initially shows "Setup?".
2. The display will show the current vacuum setting "Vac Cal" "100%=710mm".
3. Enter the new Vcal value followed by the  key. The furnace is now recalibrated to the new value. Press the **ESC** key to leave the Setup routine.
4. The maximum vacuum possible for a particular furnace/pump combination can be checked by programming a long hold time with the VAC set to 101%. This will cause the vacuum pump to run continuously. The maximum vacuum appears on the LCD display. Enter this new value for 100% vacuum in step 3 above. This test should be done after running or firing cycle to assure all moisture is removed from muffle.

D. IDLE DOWN TIME:

The length of time the furnace waits before closing the muffle when not used can be programmed from 1 to 99 minutes. The time is set to 15 minutes when shipped from the factory. Programming the time to 0 turns off this feature.

1. Press the  (ENTER) key four times after turning on the power switch to the furnace when the display initially shows "Setup?".
2. The display will show the current programmed time. Use the digit keys to enter a new time in minutes followed by the  key.

CLEANING:

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



User has the responsibility for carrying out appropriate documentation if a hazardous material is spilled on or inside the equipment.

Before using any cleaning or decontamination method except those recommended by the DENTSPLY NeyTech, user should check with DENTSPLY NeyTech, that the proposed method will not damage the equipment.

TROUBLESHOOTING:

ERROR CODES: Err codes can be cleared from the display by turning off and then on the power switch if the error code was caused by a temporary condition.

Err 1: Over Temperature (Muffle temperature > 1220°C); Possible causes: Shorted Thermocouple, shorted triac, shorted optotriac on computer PCB, bad wiring connections, bad computer PCB

Err 2: Open Thermocouple (TC); Possible causes: Open TC tip, bad connection to TC, bad TC to computer PCB connection, bad computer PCB

Err 3: Over Temperature; Temperature above programmable limit Tmax; Possible causes: Prog High Limit programmed lower than current parameters, overshoot from high heat rate, same as Err1

Err 4: No Vacuum; Detected vacuum less than 40mm Hg; Possible causes: Vacuum pump not connected (hose and power cord), interference material on O-ring surface

Err 5: Lo Vacuum; Possible causes: moisture in muffle (run long cycle with vacuum on), vacuum programmed higher than possible at current location, poor vacuum pump performance, Press ESC to clear the Err and continue the firing cycle.

Err 6: Open Muffle: Little or no muffle current detected; Possible causes: Open muffle, low line voltage, bad wiring connections, bad triac

Err 7: Low AC Voltage; (Line voltage less than 90VAC or 190VAC) Possible causes: wall socket shared with other loads, furnace connected with small extension cord.

Err 8: EEPROM error; Microcomputer program memory error; Possible causes: bad computer PCB

Err 9: Shorted or Reversed Thermocouple (TC); Possible causes: TC connections reversed at computer board terminals, TC extension wire shorted against metal structure or cabinet

Err 15: Motor Jammed: Possible causes; Lift mechanism stopped during movement, excess load stacked on top enclosure

Err 18: Triac Driver Failure; Possible causes: Muffle or triac shorted.

Err 19: No line frequency detected; Possible causes: bad computer PCB

CERTIFICATE OF CONFORMITY



13553 Calimesa Blvd
Yucaipa, CA, 92399 USA

DENTSPLY Ceramco certifies that the following product:

Names: Centurion Q50

Serial Numbers: EPA xxxx-xxx (Where x is a number from 0-9)

Conforms with the basic requirements of the following EC guidelines:

- Low Voltage Directive 73/23/EEC
with 1. Modification 93/68/EEC
- EMC - Electromagnetic Compatibility 89/336/EEC
with 1. Modification 92/31/EEC
2. Modification 93/68/EEC

The following Harmonized Standards were applied:

EN 55011, 1991, EN55014 (Emissions)

EN 50082-1;1992, IEC 801-2: 1991, IEC 801-3: 1984, IEC 801-4: 1991 (Immunity)

DIN ISO 9001/EN 29 001 (Quality)

IEC 1010

A handwritten signature in black ink, appearing to read "Rich Roy".

Rich Roy

Director of Operations

ACCESSORIES:

DESCRIPTION	PART NO.
Tongs; 25cm (10") Stainless Steel	9390014
Tongs; 30cm (12") Stainless Steel	9390015
Vacuum Pump; 100-120V; 50/60Hz	9494198
Vacuum Pump; 200-240V; 50/60Hz	9494199
Side Mounted Work Shelf	9492932
Ceramic Side Platform Tray	9390017
De-Con Tam Kit; 5 carbon rods	9490799
Silver Calibration Coupons	9982561
Firing Tray Kit, 75mm (3") Round w/ pegs	9492969
Firing Tray Peg Kit (White)	9990042
Firing Tray Peg Kit (Black)	9990043
Firing Tray, flat 25mm sq (1"x1", 5 points)	9353047
Magnetic Language Information Cards	Call DENTSPLY NeyTech
Magnetic Log Cards (pkg 5)	9492975
Service Manual, Q50	9363078

PRODUCT SERVICE:

Three methods of product service are available for the CENTURION. The first is telephone assistance available at the numbers listed below. The second is to return the furnace for servicing using the instructions below. The final method is to call DENTSPLY NeyTech at the phone numbers below and obtain a service manual for a nominal fee.

BEFORE RETURNING THE FURNACE, DO THE FOLLOWING:

- Remove all firing trays, work platforms, and other loose items from inside the muffle.
- The original packing material should be used for the return shipment. Contact DENTSPLY NeyTech for replacements if they are not available.
- Call DENTSPLY NeyTech 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 NeyTech will not be responsible for damages resulting from improper packing.

Ship Prepaid To:	DENTSPLY NeyTech
1.909.795.2461	RMA Number _____
FAX 1.909.795.5268	13553 Calimesa Blvd.
	Yucaipa, CA 92399-2303 USA

WARRANTY

WARRANTY: Except with respect to those components parts and uses which are hereinafter described, DENTSPLY NeyTech warrants this furnace to be free from defects in material and workmanship for a period of two years from the date of sale. DENTSPLY NeyTech's liability under this warranty is limited solely to repairing or, at DENTSPLY NeyTech's option, replacing those products included within the warranty which are returned to DENTSPLY NeyTech within the applicable warranty period (with shipping charges prepaid), and which are determined by DENTSPLY NeyTech 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.

INSPECTION: Buyer shall inspect the product upon receipt. The buyer shall notify DENTSPLY NeyTech 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 here-in stated represent DENTSPLY NeyTech'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 NeyTech 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 occurred.



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