Scarab Kilns
Operating Manual

Scarab XL • Scarab • Mini Scarab • Micro Scarab

Important Notice

Kiln will produce smoke when first fired. Make sure you have adequate ventilation to remove smoke from kiln area..

Thank You!

Thank you for purchasing your Scarab Annealing kiln. We appreciate your business and hope it brings you many years of trouble free service. Please be sure to read the Safety section before working on or operating your new kiln.

Designed by a Flameworker, for Flameworkers

We worked closely with Flameworking Artist Marcel Braun to ensure this kiln was as close to the perfect annealing kiln as we could get. Here are some of the great features you will enjoy:

• Fan Cooled Solid State Relays (Micro Scarab does not require fan)

• Easy Access Component Tray

• Custom Controller Designed Specifically For Annealing Borosilicate Glass

• Unique Center Door (SCARAB AND SCARAB XL MODELS)

• Balanced Wood Door Handles

• Stainless Steel Doors

• Adjustable, Counter-weighted Cantilevered Main Door (Not included on Micro Scarab)

If you have any questions please feel free to call your Skutt distributor or our Skutt Service Department at any time. If your kiln was shipped directly to you and you notice any freight damage please contact your distributor for instructions on filing a freight damage claim with the trucking company.

Quick Start

To Heat Up the Kiln

Press **GO** - The kiln will begin climbing in temperature as fast as it can go. The kiln will flash "HtUP" (heat up) alternately with the rising temperature until it reaches 1100 F. When it reaches temperature it will flash "AtSP" (at setpoint) alternately with the amount of time it is at setpoint.

Whenever you open the door the temperature will naturally drop. If the temperature drops more than 8 degrees below set point, the timer will reset itself when it reaches the setpoint temperature. This is to make sure you know the true amount of time your kiln is at the setpoint temperature.

When You Are Finished Working

Press **GO -** The display will flash "no Str"(No Strike). Press **GO** again - The display will flash "Stnd" alternately with "Annl" (Standard Anneal). Press **GO** again - The kiln will cool using the Standard Annealing program and shut off when it reaches 150 F. It will flash CPLt, the current temperature, and the total firing time. To return to IdLE, press STOP. (Go to the "Programs" section of the manual to see the Standard annealing program values)

BE SAFE

Tens of thousands of kilns are used safely in homes, schools, and professional studios throughout the world. With a good understanding of your kiln and a little common sense you can avoid any accidents. Please observe the following safety recommendations:

Operation

- Some of the openings and fixtures surrounding the kiln will get hot enough to burn your skin when the kiln is heated. Therefore, it is important to be extremely careful when working close to the kiln. We recommend posting warning signs of this potential hazard in the kiln room.

- Keep anyone who cannot understand warning signs such as small children and pets away from the kiln when it is firing.

- Be careful when opening the kiln door while the kiln is heated. We recommend you use fire rated gloves to protect your skin and make sure clothing is kept well away from any kiln opening or hot kiln surface.

- The elements inside the kiln chamber will cause an electrical shock if touched. Never insert metal instruments or place any part of your body into the kiln while it is firing.

- Always be sure to unplug the kiln before working on the electrical components. If the kiln is hard wired, turn off the circuit breaker.

- Plan on being with the kiln when it is scheduled to turn off.

- Remove all potentially combustible materials from the kiln area.

- Long term viewing inside the kiln chamber can cause damage to your eyes. Therefore, it is recommended that you use IR and UV protective glasses when looking into the kiln for extended periods of time. #3 welders green or gray glasses will protect your eyes.

- In the event of a severe storm, unplug your kiln. Exposure to static shock or electrical surges can damage the circuit board in the controller.

- Do not place anything in the kiln you are unsure of. Certain items may potentially melt, explode, or release toxic fumes. Items that may be damp (i.e.greenware, kiln shelves) have the potential to crack or explode inside the kiln if the moisture trapped inside them turns to vapor when rapidly heated.

- Never allow your kiln to exceed the temperature rating listed on the serial plate.

- When yo first fire the kiln the binders in the fiber components will produce smoke. Make sure you have adequate ventilation to remove this smoke.

INSTALLATION

- As with all electrical products there is danger of electrical shock. Use only properly sized and rated copper wire when installing the power supply for your kiln. We recommend this work is done by a licensed electrician

- Kilns should always be located in a dry place to prevent electrical shock and corrosion.

- Follow all instruction for installation in this manual. Always observe fire, building and safety codes when installing any Skutt Product.

- If there are fire sprinklers located in the kiln room make sure they are rated high enough so they will not be set off when the kiln is at peak temperature. This should be tested with the kiln at peak temperature, the ventilation system turned off and all doors and windows closed for maximum insurance.

- We recommend having a fire extinguisher rated for electrical fires easily accessible near the kiln.

- Skutt Ceramic Products Inc. will not assume liability for injury or damages caused by variations from the instructions put forth in this manual.

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- Kilns get hot. Observe all instructions to ensure proper clearances from flammable or temperature sensitive objects and living things.

- Ventilation is key to maintaining a healthy work environment and proper room temperature. To ensure proper room temperature is maintained consult a qualified HVAC professional.

- The proper placement of thermocouples is crucial to the proper operation of all automatically controlled kilns. Check all thermocouples for damage and correct placement. Thermocouples must protrude into the kiln chamber at least 1" to ensure an accurate reading.

- Only use the stand that is designated by Skutt Ceramic Products for your particular kiln model. Other stands may not properly support the weight of your kiln, provide adequate clearance, and could pose a fire hazard.

- The power cord is sized correctly to handle the power for your particular kiln. Never use an extension cord.

- Make sure the power cord is routed in such away as to not touch any portion of the kiln that gets hot.

- Be careful of pinch hazards when working on, operating and assembling the kiln.

MAINTENANCE

- Always unplug the kiln before performing any repairs or general maintenance. If your kiln is wired direct, turn off the breaker.

- Use only Skutt replacement parts. Improperly sourced parts may pose a hazard to you and your kiln and void your warranty.

- Never modify your kiln without first consulting Skutt. Improper modifications may pose a hazard to you and your kiln and void your warranty.. Items such as alternative thermocouples, controllers, kiln coatings may ruin your kiln if improperly installed or applied.

- Replace any electrical components that are discolored ,brittle, or corroded.

PRECAUTIONS FOR THE GLASSMASTER 33 CONTROLLER

- The controller is a temperature control device. It is not a safety device.

- The maximum operating temperature is 100˚F (38˚C). This temperature refers to the room temperature while the kiln is firing and does not pertain to the internal temperature of the kiln.

- The minimum operating temperature is 33˚F (1˚C).

- The controller contains static-sensitive parts that may be damaged by static electricity. Use caution to avoid creating static that may damage the equipment. In areas where static electricity is common, or during dry times of the year throughout the country, touch the kiln lid handle before touching the controller to discharge the static.

Set-Up

Locating the Kiln

Locate the kiln in a room with adequate ventilation. The room should not exceed 100F. If you believe your kiln will be exposed to room temperatures above 100F you will need to add additional ventilation prior to operation. A fan positioned to blow air across the kiln will help significantly. Protect the kiln from moisture. Place the kiln on a nonflammable surface such as tile or concrete. Do not locate directly under a fire sprinkler.
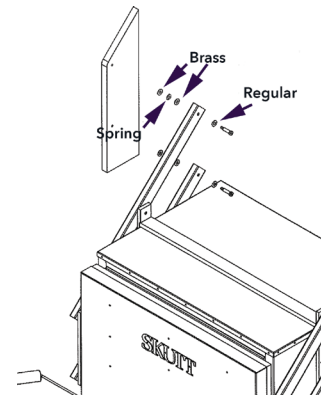
The Scarab and Scarab XL are very heavy and need to be supported by a structure that is rated for its weight. If you cannot find a stand that fits your needs please contact Skutt for a quote on building one for you.

The Scarab XL comes with forklift slots for moving. The Scarab is somewhat lighter and can be moved by 4 strong people using the handles.

Assembly

The Mini Scarab comes fully assembled and ready to go. The Scarab XL, Scarab and Micro Scarab come with the doors packed seperately. The screws for mounting are shipped in the holes where they will be used.

The Scarab XL also requires the counter weights to be installed. Refer to the diagram to see the order of the washers.

Electrical Installation

Model	Voltage	Phase	Amps	Wattage	Wire Size	Receptacle
Micro Scarab	115	1	14.3	1650	12	6-15
Mini Scarab	240	1	16	3840	12	6-20
Scarab	240	1	27	6480	8	6-50
Scarab XL	240	1	48	11520	6	6-50

Give the following electrical specifications to your electrician to make sure the kiln is installed up to electrical code.

Test Fire

It is always a good idea to test fire the kiln before you work with it to ensure nothing was damaged in shipping. This will also give you an opportunity to become familiar with the controller. Refer to the programing section of the manual for instructions. You will want to program the kiln to run the Standard Annealing program for the test fire. If the kiln does not heat up or displays an error code during the test fire contact our distributor or the Skutt factory.

Important: The first time you fire the Scarab and Scarab XL kilns they will burn off the binders in the fiber components (lid and doors)and create a significant amount of smoke. Make sure you have adequate ventilation to remove this smoke from the kiln area. Once the binders have been burned out it will no longer smoke.
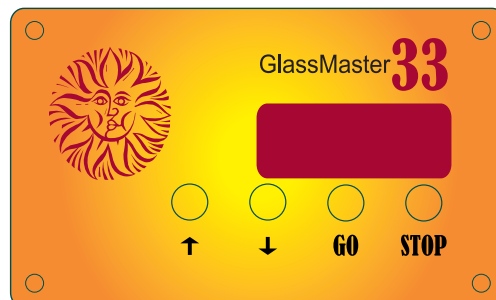.

THE GLASSMASTER 33 CONTROLLER

The GlassMaster 33 Controller was designed specifically for the needs of the Borosilicate Flameworker. It is simple to operate yet has the most innovative programming features on the market. You can use the factory stored programs for Heat up, Annealing. Striking and Repairing or design your own using the Ramp and Hold programming feature.

Certain features are accessible only when the kiln is in certain stages of programming or operation. We call these stages MODES. To find out what features are available in each mode consult the Program Modes Section of the manual.

Key Function

The COE 33 Controller has 4 buttons: UP Arrow, Down Arrow, GO, and STOP. The arrow keys are used access menus, toggle between menu options, and adjust temperature, rate and hold values. When using the arrow keys to adjust values it is helpful to know that the longer you hold the key down, the faster it will scroll. If you overshoot your value just use the other arrow to adjust back to it.

The GO key is used for selecting values and starting and advancing firing programs. The STOP key is used only to STOP a program.

The Display

The display allows for 4 character prompts to be displayed utilizing 7 segments for each character. Sometimes it is necessary for us to be creative on the messages and characters we use. A complete list of display descriptions is available in the Display Message portion of this manual.

Basic Operation

To Heat Up the Kiln

Press **GO** - The kiln will begin climbing in temperature as fast as it can go. The kiln will flash "HtUP" (heat up) alternately with the rising temperature until it reaches 1100 F. When it reaches temperature it will flash "AtSP" (at setpoint) alternately with the amount of time it is at setpoint.

Whenever you open the door the temperature will naturally drop. If the temperature drops more than 8 degrees below set point, the timer will reset itself when it reaches the setpoint temperature. This is to make sure you know the true amount of time your kiln is at the setpoint temperature.

When You Are Finished Working

Press **GO -** The display will flash "no Str"(No Strike). Press **GO** again - The display will flash "Stnd" alternately with "Annl" (Standard Anneal). Press **GO** again - The kiln will cool using the Standard Annealing program and shut off when it reaches 150 F. It will flash CPLt, the current temperature, and the total firing time. To return to IdLE, press STOP. (Go to the "Programs" section of the manual to see the Standard annealing program values)

Adjusting Heating Rate and Setpoint

You may want to adjust your Heating Rate and Setpoint temperature to match the project you are working on. The standard heating rate is factory set at Full (as fast as it can go) and the setpoint is set to 1100 F. This should take between 30 minutes and 1 hour to reach temperature depending on factors such as strength of voltage or age of elements. You can adjust the Heating Rate and Setpoint Temperatures in either IdLe Mode (Before the Firing) or Heat-up Mode. You can also adjust the Setpoint in Setpoint Mode.

From IdLE (Before starting the program)

Press UP ARROW - The display will show HtUP
Press GO - The display will show rAtE and the current stored heating rate.
Press UP/DOWN ARROW- The display will move the current rate up or down depending on the arrow you press. When you reach the desired value press **GO** to enter the value. The display will the show SEtP. **Press UP/DOWN ARROW** to adjust your Setpoint temperature and press **GO** to enter the value. The display will then return to IdLE. To run the program with the new values press **GO**.

Important - When you adjust your rate and setpoint, the controller retains those values for the next firing so be sure to change them back when necessary.

From HtUP (Kiln is heating to setpoint)

Press UP ARROW - The display will show rAtE and the current stored heating rate.
Press UP/DOWN ARROW- The display will move the current rate up or down depending on the arrow you press. When you reach the desired value press **GO** to enter the value. The display will then show SEtP. **Press UP/DOWN ARROW** to adjust your Setpoint temperature and press **GO** to enter the value and continue firing the program.

From HtUP (Kiln is at setpoint)

Press UP/ARROW - The display will then show SEtP.
Press UP/DOWN ARROWS to adjust your Setpoint temperature and press **GO** to enter the value and continue firing the program.

Entering an Annealing Program

Your GlassMaster 33 has 3 factory set Borosilicate Annealing programs and 1 Soft Glass program to choose from as well as a Custom option that allows you to design your own. The factory set programs were designed by Professional Glass Artist Marcel Braun to give you convenient options that are specific to the thickness and type of glass you are working with.

For most projects the Factory Standard Anneal will work just fine and is recommended. If you are working with especially small or thick pieces you will want to choose one of the other two programs and if you are working with either 90 COE or 96 COE soft glass you will want to use the Soft Glass program due to the different strain point, or design your own custom annealing program.

Standard Anneal		
Rate	Temp	Hold
FULL	1050	1.00
100	950	1.00

Selecting a Factory Annealing Program

When you are done working and the kiln is still at the Setpoint temperature, press **GO.** The display will then show ""Str"" alternately with "no". This is where you would choose a striking program if you wanted to run one. We will discuss Striking in the next section of this manual.

Thick		
Rate	Temp	Hold
FULL	1050	4.00
25	950	4.00

Press **GO** again after you have selected a Striking program. The display will then show "Annl" alternately with "Stnd". This is the default Standard Anneal program. Use the **UP/DOWN ARROWS** to select one of the programs listed in the tables to the right and press **GO.**

Crash		
Rate	Temp	Hold
FULL	1050	0.15
400	950	0.15

Your choices are:
- Stnd (Standard)
- tHIC (Thick)
- CrSH (Crash)
- SoFt (Soft Glass
- CUSt (Custom)

Soft Glass		
Rate	Temp	Hold
FULL	975	1.00
20	825	2.00

It will run your selected Annealing program after running the striking program and then shut off. When the program is complete the display will flash CPLt alternately with the total firing time and the current temperature of the kiln. To return to IdLE mode press **STOP.**

Writing a Custom Annealing Program

You can write your own custom annealing program of up to 8 segments for specialized purposes. A segment consists of a Temperature Rate, a Temperature to reach, and the amount of time you want to Hold at that temperature. You enter the Custom Annealing program in the Menu mode before starting the kiln. That way all you have to do is verify the program when you are ready to anneal. If you determine that you want to change the program when you are at Setpoint, you can always enter new data during the verify phase.

It helps to write your program out before you began entering it. More than likely you will not need all 8 segments in your program. After you have entered the data in your last segment the display will ask you to enter data for the next segment. Enter 0000 for the rate in this segment to indicate that the previous segment is your last. The Display will then return to IdLE mode indicating the program is loaded. You will be asked to verify the program when you are ready to run it from Setpoint.

From IdLe press **UP/ARROW.** The display will then show HtUP. Keep pressing the **UP/ ARROW** until you see AnnL in the display then press **GO.** The display will read rA 1 alternately with the current rate that is entered. Use the **UP/DOWN ARROWS** to navigate to your desired temperature rate and press **GO** to select it. The rate is expressed in degrees per hour. To program the kiln to go as fast as it is capable, you will want to set it for FULL which is located between 9999 and 0000.

Next it will prompt you to enter the temperature you want to reach in segment 1. The display will read
°F 1 (Degrees Fahrenheit) alternately with the current temperature setting. (If the kiln is set to read in Celsius it will show °C 1). Use the **UP/DOWN ARROWS** to navigate to your desired temperature and press **GO** to select it.

Next it will prompt you to enter the amount of time you want to hold in segment 1. The display will read HLd1 alternately with the current setting. When you enter a Hold time, everything to the left of the decimal on the display is hours and everything to the right is minutes. Use the UP/DOWN ARROWS to navigate to your desired Hold Time and press GO to select it.

Next it will prompt you to enter the Temperature Rate for Segment 2, "rA 2". Continue to enter your data for your remaining segments. After you have entered the data for your final segment enter 0000 for the rate on the following segment and press GO to select it. This signifies to the controller that you are done and the display will return to IdLE.

Running a Custom Annealing Program

When you are done working and the kiln is still at the Setpoint temperature, press **GO.** The display will then show ""Str"" alternately with "no". This is where you would choose a striking program if you wanted to run one. We will discuss Striking in the next section of this manual.

Press **GO** again after you have selected a Striking program. The display will then show "Annl" alternately with "Stnd". This is the default Standard Anneal program. Use the **UP/ARROW** to navigate to CUSt and press **GO.** The display will display the first temperature rate of your custom annealing program. Press **GO** to verify each piece of the data in your program. After you have verified the last piece of data the display will flash AnnL alternately with the current temperature and begin running your annealing program. When the program is complete the display will flash CPLt alternately with the total firing time and the current temperature of the kiln. To return to IdLE mode press **STOP.**

Entering a Striking Program

There are 4 Striking program options to choose from on your controller. Three of them are factory set programs to specific temperatures (listed below) and one you can customize. Striking programs consist of two segments, a heating segment and a cooling segment. That segment is then cycled up to 99 times. When the Striking Program is done cycling it will began the Annealing program automatically.

You access these striking programs from Setpoint by pressing GO. The display will flash "no" alternately with ""Str"" (No Strike). If you do not wish to run a striking program you would press GO to select "No Strike" and the controller would move on to asking you what Annealing Program you would like to run..

To select a factory program, press the **UP/ARROW** after pressing **GO** from setpoint until you see the temperature based Striking Program you wish to run and press **GO** to select it. The display will then flash "CYCL" alternately with the number of Cycles currently entered. Enter the number of Cycles you want be using the **UP/DOWN ARROWS** and then press **GO** select it.

The display will then cue you to select an Annealing program. After an Annealing Program has been selected the controller will run both the Striking and Annealing programs selected then shut down..

1150		
Rate	Temp	Hold
FULL	1150	0.05
FULL	900	0.05

1100		
Rate	Temp	Hold
FULL	1100	0.05
FULL	900	0.05

1200		
Rate	Temp	Hold
FULL	1200	0.05
FULL	900	0.05

Writing a Custom Striking Program

From IdLe press **UP/ARROW.** The display will then show HtUP. Keep pressing the **UP/ARROW** until you see ""Str"" in the display then press **GO.**

The display will read rA 1 alternately with the current rate that is entered. Use the **UP/DOWN ARROWS** to navigate to your desired temperature rate and press **GO** to select it. The rate is expressed in degrees per hour. To program the kiln to go as fast as it is capable, set it for "FULL" which is located between 9999 and 0000.

Next it will prompt you to enter the temperature you want to reach in segment 1. The display will read
°F 1 (Degrees Fahrenheit) alternately with the current temperature setting. (If the kiln is set to read in Celsius it will show °C 1). Use the **UP/DOWN ARROWS** to navigate to your desired temperature and press **GO** to select it.

Next it will prompt you to enter the amount of time you want to hold in segment 1. The display will read HLd1 alternately with the current setting. When you enter a Hold time, everything to the left of the decimal on the display is hours and everything to the right is minutes. Use the UP/DOWN ARROWS to navigate to your desired Hold Time and press GO to select it. Repeat this process for the second segment.

You will enter the number of Cycles when you select to run the program from Setpoint.

Entering a Ramp and Hold Program

You can write your own custom firing program of up to 8 segments and store up to 4 programs for specialized purposes. A segment consists of a Temperature Rate, a Temperature to reach, and the amount of time you want to Hold at that temperature. You enter the Custom program in the Menu mode before starting the kiln.

It helps to write your program out before you began entering it. More than likely you will not need all 8 segments in your program. After you have entered the data in your last segment the display will ask you to enter data for the next segment. Enter 0000 for the rate in this segment to indicate that the previous segment is your last. The Display will then return to IdLE mode indicating the program is loaded. You will be asked to verify the program when you are ready to run it from Setpoint.

From IdLe press **UP/ARROW.** The display will then show HtUP. Keep pressing the **UP/ARROW** until you see "r-Hd" in the display then press **GO.**

The display will read "USr1" indicating that this is program #1 in your stored programs. As mentioned, you have 4 program spots available. If you choose one where you already have data stored ,you will write over the old program when you enter the new one. Use the Program Log sheet on the back page of this manual to keep track of your programs. Use the **UP/DOWN ARROWS** to navigate to your desired program slot and press **GO** to select it.

The display will read rA 1 alternately with the current rate that is entered. Use the **UP/DOWN ARROWS** to navigate to your desired temperature rate and press **GO** to select it. The rate is expressed in degrees per hour. To program the kiln to go as fast as it is capable, you will want to set it for FULL which is located between 9999 and 0000.

Next it will prompt you to enter the temperature you want to reach in segment 1. The display will read
°F 1 (Degrees Fahrenheit) alternately with the current temperature setting. (If the kiln is set to read in Celsius it will show °C 1). Use the **UP/DOWN ARROWS** to navigate to your desired temperature and press **GO** to select it.

Next it will prompt you to enter the amount of time you want to hold in segment 1. The display will read HLd1 alternately with the current setting. When you enter a Hold time, everything to the left of the decimal on the display is hours and everything to the right is minutes. Use the UP/DOWN ARROWS to navigate to your desired Hold Time and press GO to select it.

Next it will prompt you to enter the Temperature Rate for Segment 2, "rA 2". Continue to enter your data for your remaining segments. After you have entered the data for your final segment enter 0000 for the rate on the following segment and press GO to select it. This signifies to the controller that you are done and the display will show rEDI signifying the program is loaded and ready to go. Press GO to start the program.

View Segment and Skip Step

If you want to see what segment the kiln is currently running press UP/ARROW while the kiln is firing and the current segment will appear on the display followed by the traveling setpoint temperature and "SStP". The traveling setpoint is not the same as the Setpoint temperature you enter for your program. The traveling setpoint is used only for troubleshooting purposes by the Skutt Technicians. If you find you want to Skip one of your programmed steps during the firing press GO when SStP appears in the display window. You must press it within 2 seconds otherwise the message disappears.

Entering a Repair Program

If you have a piece you are working on that you know is cracked you can run a Repair Program that will bring it up to a temperature that will soften the glass to mend the crack and then cool it back to Setpoint.

From Setpoint press both the **UP ARROW** and **DOWN ARROW** at the same time and hold them down until you see "rEPr". When you let go the display will flash the current temperature that the Repair Program is set for. Press **GO** to select it or use the **UP/DOWN ARROWS** and then press **GO** to select the new temperature. The display will then flash "Hld" alternately with the current Hold time entered. Press **GO** to accept the current Hold time or use the **UP/DOWN ARROWS** to select a new Hold time and then press **GO** to select it.

The program will run and return to Setpoint.

Display Messages

Messages

IdLE - Kin is in Idle Mode and is ready to program. It is powered off but could still be hot.
HtUP - The Kiln is in Heat up mode or HtUp is a selection option.
Str - This represents Strike as a program option
St## - The kiln is heating in Strike Mode. The digits represent the current cycle.
AtSP - The Kiln is at Setpoint.
AnnL - The kiln is running an annealing program or Anneal is a selection option.
Stnd - This represents the Standard Annealing option.
THIC - This represents the Thick Annealing option
CrSH- This represents the Crash Annealing option
SoFt - This represents the Soft Glass Annealing option
CUSt - This represents the Custom Annealing option

Error Codes

Err1 - temperature rising less then 12 degrees F per hour.
ErrF - temperature is rising during a down ramp.
Errd - temperature is more than 100 degree F above the set point for 15 seconds during a positive ramp.
Errr - memory error; program parameter is out of range or microprocessor memory does not match non
     volatile memory.
TC   - indicates thermocouple is backwards. Can also be caused by damaged hardware.
FAIL - Open thermocouple circuit.

PROGRAMING MODES

The menu options you have access to depend on where the kiln is in the firing and what keys you have already pressed. In order to simplify how these various menus are organized we have identified 8 different "MODES". Below is a description and list of options for each mode.

Idle Mode - Kiln is off and ready to be programmed

Idle Mode is the starting point for all programming. This is where you start your firing or choose a menu option. If you ever press **STOP** the controller should return to Idle Mode.
Display
Flashes idle and temperature
Active Keys
UP ARROW activates Menu Mode
GO start firing with last heat-up ramp to last set point

Menu Mode - Edit Custom Programs

MENU MODE is accessed by pressing the **UP** arrow while in the Idle Mode. This is where you can edit your custom profiles for Heat-up, Striking, Annealing and Ramp and Hold. It **s**hows the menu options which can be accessed by scrolling using the arrow keys. After scrolling to the option you wish, press **GO** to access it. For more information on selecting and modifying programs see the **Controller Operation** section of this manual

Display

Htup - heat up rate and set point

Stri - edit custom striking profile

Annl - edit custom anneal profile

rHLd - enter and fire ramp hold profile

Active Keys

ARROWS cycle through menu options
GO accepts displayed option
STOP goes back to idle

Heat-up Mode - Kiln is Heating to Programmed Set Point

Heat-Up Mode is activated when you press start from Idle Mode. It signifies the kiln is heating to set point. From here you can adjust the Rate and Set Point by pressing the UP or DOWN Arrow or move straight to the Strike/ Anneal Mode by pressing GO.

Display

Shows current temperature, flashes **HtUP** (heat up) every 8 seconds

Active Keys

ARROWS activate Adjust Rate/Set Point mode
GO activates Strike/Anneal Mode
STOP goes back to Idle Mode

Set Point Mode - Kiln Is Holding At Set Point

Set Point Mode is activated when the kiln reaches the programed set point temperature. When you are finished working you can activate Strike/Anneal Mode by pressing GO

Display

Shows current temperature, flashes **AtSP** followed by the time (in minutes) at set point temperature every 8 seconds. If the temperature drops 7 degrees below the set point temperature, the display begins to flash every 1 second and the timer is reset to 00.00. The timer will remain at 00.00 until the temperature reaches set point again.

Active Keys

ARROWS activates Adjust Rate/Set Point mode (increasing the set point by more than 7 degrees F will reset the timer).
GO activates Strike/Anneal Mode
STOP goes back to Idle Mode

Strike/Anneal Mode - Kiln is Set to Program Strike and Anneal

Strike/Anneal Mode is accessed by pressing the **GO** button during Heat-Up Mode or Set Point Mode (Mostly from Set Point Mode). Scroll through the selections by using the Arrow keys and make your selection by using the **GO** key. It will first ask you to set the Striking program and then the Annealing program.

Display

Flashes **"Str"** alternately with the current Strike Setting which is no **(no** striking program).

Active Keys

ARROWS select Strike or Anneal Setting, Adjust Rate/Temperature for Custom programs.
GO selects Striking/Annealing profile and values for Custom Programs.
STOP goes back to Idle Mode.

Firing Anneal Mode -Runs Strike/Anneal Programs and Shuts Off

Firing Anneal Mode is the final stage of your firing where the controller runs the Striking and Annealing profiles selected and then turns off

Stage 1 - Firing Striking Mode (this stage is skipped if no striking was selected)

Display

Shows the temperature and flashes the current Cycle # every 8 seconds.

ACTIVE Keys

Arrows are ignored
GO skips to anneal profile
STOP goes to idle

Stage 2 - Anneal Profile

Display

Shows the temperature and flashes AnnL every 8 seconds to show current mode.

Keys

UP Arrow shows current segment
Down Arrow is ignored
GO is ignored
STOP goes to idle

Complete

After the kiln has finished the Annealing Cycle the display will show the total firing time alternately with the current temperature.

Display

Shows total firing time and temperature.

Keys

STOP goes to idle

SKUTT CERAMIC PRODUCTS, INC. warrants this product to be free from defects in materials and workmanship for two full years from the date of the first retail purchase from an authorized Skutt dealer.

What Skutt will Do
Skutt will repair or replace, at its expense, any defective part upon return, freight prepaid, to any authorized Skutt Service center.

What is Not Covered.
This warranty does not cover (1) any defect not reported to an authorized Skutt dealer or distributor within 10 days of discovery; (2) Type K Thermocouples; (3) any damage caused by overfiring; (4) products subjected to abnormal strain, freight damage, neglect, abuse, improper storage, failure to follow instructions, or products altered from factory standard condition; (5) products whose identification number has been changed; (6) failures of, or failures caused by, parts or accessories not manufactured or supplied by Skutt Ceramic Products; (7) kilns used for purposes other than firing glass materials; (8) elements used in the process of melting glass in a crucible kiln or otherwised exposed to long hold times at high temperatures.

Other limitations. *ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING PROPERTY DAMAGE, LOST PROFITS, LOSS OF USE, OR OTHER ECONOMIC LOSS, ARE EXCLUDED TO THE FULL EXTENT PERMITTED BY STATE LAW. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you. ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Dealers are not authorized to modify this Warranty or to make any additional commitments. Skutt will not be responsible for promises not contained in this Warranty.*

State Law Rights. *This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.*

6441 S.E. JOHNSON CREEK BLVD, PORTLAND, OREGON 97206   (503) 774-6000

How to Request Warranty Service

All repair work must be authorized, either by Skutt, or by an authorized Skutt Distributor before the work is done. If you believe your kiln is going to require warranty servicing, the first step is to call the Distributor from whom you purchased the kiln. If they are unable to provide or coordinate service, call Skutt Ceramic Products and ask for our Technical Service Department. 503-774-6000

Skutt has one of the most extensive networks of Distributors in the country. However, not all areas have a trained kiln technician. We realize that re-packaging and shipping your kiln is not a realistic option for most of our customers. Many of our Distributors have trained kiln technicians either on staff or with which they contract. Often times these technicians will travel to your business or home to do the repair. Skutt will pay them for their time on the job. It is your responsibility to pay them for their travel time to and from your location.

PLEASE REGISTER YOUR WARRANTY AT WWW.SKUTT.COM
under the "Contact Us" tab to streamline future warranty requests.
You will need your SERIAL NUMBER, MODEL NAME, VOLTAGE, and PHASE.
All of this information can be found on the SERIAL PLATE,
which is located on the back of the kiln.