

TROUBLESHOOTING YOUR KILN

WARRANTY WORK

All Skutt Kilns come with a Two Year Warranty which covers parts and labor. All warranty claims must be approved and serviced by an Authorized Skutt Distributor. If there is not an Authorized Skutt Representative in your area you may contact Skutt Kilns directly for authorization, however, labor costs will not be covered.

NON-WARRANTY WORK

Once the warranty has expired, many Skutt Kiln owners prefer to work on their own kilns to save money. We still recommend that you work closely with a Skutt representative to insure the diagnosis and repair are correct and done safely. There are a number of resources available to help you troubleshoot the problem efficiently and effectively.



YOUR LOCAL SKUTT DISTRIBUTOR

Your local Skutt Distributor should have a kiln repair technician on staff and replacement parts in stock. This is the best place to start since the call is local and you can often pick up parts that same day.

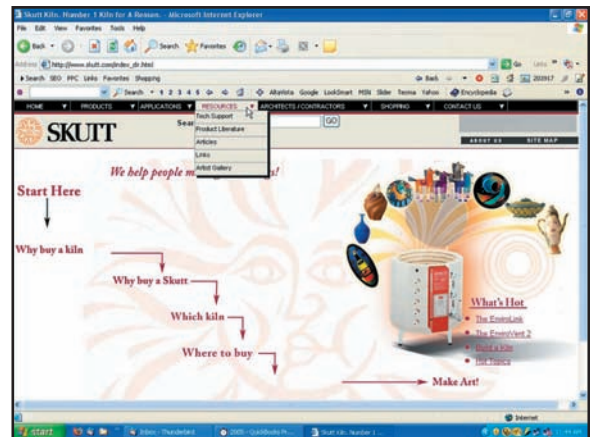
THE SKUTT FACTORY

Skutt has a well-trained staff at your disposal for technical support and information Monday through Friday from 8:00 AM to 5:00 PM Pacific Time. We will be happy to assist you with installation questions and troubleshooting of technical problems.

THE SKUTT WEBSITE

You also have a complete library of technical support information at your fingertips on our web site. To access this data just go to www.skutt.com, and click on the "Ceramic Kilns" tab. This will take you to the Ceramic Kilns Home page. Now go to the "Resources" tab in the top navigation bar and choose "Tech Support". Here you will find a whole library of documents on testing procedures, repair instructions and diagnostic tips.

With some basic guidelines and a general understanding of how your kiln functions, it is possible to safely diagnose and solve firing problems on your own. Just remember to be safe and ask for help when you need it.



ERROR CODES

Error Codes are designed to protect your kiln and the ware inside your kiln if there is a problem with the firing.



In most cases when an error is triggered the kiln will shutoff and display E followed by the Error Code that describes the error that occurred. Non-critical errors will not stop the firing but they will display a code to notify you of the problem.

The following tables describe the error codes, their probable cause, and recommended solutions. If you run across a code that is not listed or you need help explaining, please give Skutt or your local distributor a call.

Error Code	Description
E- 0	Software Error.
E- 1	The temperature is increasing less than 12 degrees per hour during a ramp segment, where the temperature is programmed to increase. This slow rate must persist for 22.5 minutes before the error is displayed
E- 2	During a hold segment the temperature rises to greater than 50 degrees above the hold temperature which was set. The temperature must stay 50 degrees above this set temperature for 18 seconds before the error is displayed.
E- 3	During a hold segment the temperature is more than 50 degrees below the hold temperature which was set. The temperature must stay 50 degrees below this set temperature for 18 seconds before the error is displayed.
E- 4	The firing is in a ramp segment where the temperature is programmed to decrease and temperature is more than 50 degrees above the previous hold temperature. The temperature must remain 50 degrees above the hold temperature for 18 seconds before the error is displayed. E- 4 is the same as E- 2 except that E- 4 occurs during a ramp phase rather than a HOLD
E- 5	The temperature is more than 50 degrees below the local set-point temperature during a ramp segment where the temperature is programmed to decrease. The temperature must stay 50 degrees below this set temperature for 18 seconds before the error is displayed.
E- 6	A Negative temperature is displayed. This generally indicates the thermocouple is connected incorrectly. To correct this situation, ensure the red and yellow wires are connected correctly to the controller and at all junctions. You can identify the red lead on an unmarked thermocouple with a magnet because a magnet will be attracted to the red lead.

Causes	Correction
Caused by hardware or electrical noise, can be caused by electrical spikes, surges, or arcing across the relay	Recheck the selected program, and reprogram if necessary.
Worn or old heating elements Low voltage to the kiln A broken heating element or faulty relay Burned or broken wires to the elements or relays Electrical noise	Check elements. Check Relays Use VOLT Menu feature to check voltage.
Stuck relay.	If only one section (or relay) remains on then it is a stuck relay. Turn of breaker to shutoff power to the kiln.
Opening the door or lid of the kiln. Relay or element failed during firing.	Check relay. Check elements.
Stuck relay Skipped step feature	Check relay If E- 4 occurs when skipping a ramp phase, press a key to clear the error. Allow the kiln to cool to within 50 degrees of the next hold temperature. Restart kiln and skip steps until you get to the segment you want.
Open door or lid Bad elements Bad relay	Check elements. Check relay.
Using the kiln in temperatures below 0 degrees °F (17 degrees °C) Thermocouple (T/C) connected backwards, red and yellow leads reversed. Board has been damaged by static electricity or ESD (electro static discharge)	Check T/C to make sure it is connected properly. Do T/C bypass test, if temperature reading is still negative, the board has been damaged and needs service.

Error Codes	Descriptions
E- 8	When using the CONE FIRE MODE, the temperature is decreasing during the last ramp segment. If this a KilnSitter Kiln using a Wall Mount Controller, KilnSitter may have shut off the kiln
PF	Continuous PF in display.
Err P	A continuous Err P indicates a short term power outage has occurred and the kiln has continued with the program.
Err-	The Err with a dash indicates there was a power loss to the controller while writing a program to the non-volatile memory chip.
E- E or E- t	A hardware error has been detected by the controller software.
E- d	The kiln or one of the zones in a zone control kiln, is more than 100°F (37°C) above the travelling set point.
E- A	Invalid Program variable
StUc	Key was held too long or was stuck
E- bd	Controller is reading a board temperature above 160 degrees. Firing has stopped.
E- H	Analog to Digital Converter did not pass the self – check diagnostic test on reset.
FAIL	Steady display all thermocouples (T/C's) have failed. If flashing thermocouples of a zone control kiln has failed.

Causes	Correction
Faulty relay Broken Element KilnSitter Shut-off kiln	Check relay. Check Elements Check Cone used in KilnSitter
Indicates a long-term power outage The kiln has been shut down.	Press 1 to clear the display and restart the kiln.
Power Outage Power Surge	Press 1 to clear the display If firing was in progress, it will continue.
Power loss	Recheck the selected program, and reprogram if necessary.
Hardware error	The controller must be returned for service.
Stuck relay	Check relay
	Reprogram if problem persists have board sent in for service
	If problem persists after releasing key have keypad replaced
Room temperature is too hot..	Lower room temperature below 100°F (37°C)
	Board will need to be serviced
	Change T/C

QUESTIONS AND ANSWERS

How can I correct a value that's been incorrectly typed before pressing ENTER?

Clear the display by pressing all zeros, then input the correct number and press **ENTER**. When a cone value has been incorrectly entered the process is slightly different. After pressing **0000**, press **ENTER**. The display will again ask for a preheat value and then a cone value.

How can I change only one value for a RAMP/HOLD firing profile without re-entering the whole program?

Follow the instructions for entering a new program and just press **ENTER** for every value that will remain the same. Make a change in the value that is incorrect, then continue.

How can I change the program after it has already started?

Press the **STOP** key. This will stop the firing. Use either the **CONE FIRE MODE** or **RAMP/HOLD MODE** to input the new firing profile for the remaining portion of the firing. Press **START** to resume the firing. The controller will automatically determine where to start the program (based on the current internal temperature) and proceed with the adjusted program.

The kiln shuts off too early.

The kiln can be restarted if the cones on the shelf indicate an under-fired load. (This should be used only if you were present when the kiln fired off.) The cones are no longer accurate if they have cooled much from the time of shut off. To restart follow these steps.

- Press **CONE FIRE** or **RAMP/HOLD** to view the firing just completed.
- Press **ENTER** to accept any of the segments that are correct until the point where the cone number or final firing temperature is requested.
- Program in a hotter cone or higher firing temperature. You could also add a few minutes of hold time at the final firing temperature.
- Press **START** after the reprogramming is complete. The kiln will begin firing based on current temperature and will fire to completion using the newly programmed data.
- *Helpful hint* If the firing is just slightly under fired, program five minutes of hold time at the final firing temperature. This will allow the sections of the kiln that are somewhat cooler to catch up to the hotter sections.

The kiln displays CPLt but the kiln won't cool off.

Check the elements to see if any are still glowing inside the kiln. If a whole section of the kiln is glowing, a relay is stuck. Unplug the kiln and contact your distributor for further information.

At night I see a blue flash coming out of the control box when it clicks. Is it serious?

The flash occurs when the contacts open causing a small arc. This is a normal occurrence and should not be a concern.

I PROGRAMMED A RAMP/HOLD PROFILE AND WHEN I PRESSED START, THE ALARM SOUNDED.

Review the program to ensure that all segments of the profile have a value entered. Also, check the alarm to see if a value has been entered that is lower than the room temperature. The default setting for no alarm to sound is **9999**.

The kiln is plugged in, but there is nothing on the display.

First check your circuit breaker to ensure it has not tripped. If the circuit breaker is okay, check the fuse. The fuse is located on the bottom of the KM 1 Controller and on the lower left side of the kiln mounted controller. Turn the knob a quarter turn counter-clockwise to remove the fuse. Check the fuse wire, and if broken, replace the fuse. If the fuse is smoky, replace it. After the fuse is replaced, if the new fuse blows, check for other possible causes. A blown fuse may be caused by a short in the circuit or a power surge.

Some segments of the display are dimmer than others.

When a few segments of the LED-display become dimmer than the others, the problem may be the result of age, indicating the circuit board may soon fail. Another possible cause is exposure of the controller to high heat. This situation needs attention. Do not use the kiln when this problem is present. Contact your distributor.

The thermocouple is flaking.

Flaking is normal with Type K thermocouples, especially when high fired. Use a soft bristle toothbrush to remove the flakes and vacuum them from the kiln so they do not attach to your ware. Remove the thermocouple element periodically and check it for thinning.

The end firing temperature is different now than when I first got my kiln and the results do not seem quite right. What should I do?

After about 50 Cone 6 firings, or 150 Cone 04 firings, it is necessary to replace the thermocouple element. When the temperature seems to drift, it is an indication that the thermocouple is becoming thinner and wearing out. Another possibility is a cone correlation difference. As elements age it takes longer and longer for the kiln to reach temperature. ConeFire Mode programs will automatically lower the ending temperature to compensate for the added heat work induced by the increased time.

