

# **UNDERSTANDING YOUR PMC KILN EVENHEAT AND SIERRA KILNS**

## **INTRODUCTION**

We have divided these instructions into two segments: setting up your kiln and programming your kiln. The first deals with how to position your kiln within your studio or work area. These apply to all PMC kilns. The second helps you to understand and, if needed, modify the programs in your kiln's controller. These instructions pertain to both Evenheat and Sierra kilns.

## **SET UP**

For the most part, common sense should guide you in positioning your kiln for firing. Even though the kiln is very well insulated, the temperature of the outside of the kiln will increase. For this reason, it is important to place the kiln away from any flammable material during firing and while the kiln cools after firing. This means placing a space of about 12 inches between the kiln and any flammable material on all four sides as well as above the kiln. Remember that heat rises and the area above your kiln should be well ventilated to dissipate escaping heat.

The kiln also should be placed on a suitable work surface. If you intend to place the kiln on a wooden or plastic (vinyl, Formica, etc.) covered wooden surface, we recommend that you use an insulating material between the kiln and the counter. Such things as an insulated cookie sheet usually are sufficient.

These kilns operate on standard 120V household current and draw less than 15 amps. For this reason most household electrical systems can accommodate the use of these kilns. Be careful not to overload a circuit. Placing another electrical appliance on the same circuit along with an operating kiln may result in a circuit failure.

## **IMPORTANT: NEVER OPERATE THE KILN UNATTENDED**

With a little forethought, it is possible to use the Sierra and Evenheat kilns in most studios and work areas. If you have any questions about your specific situation, please contact us.

## **PROGRAMMING YOUR SIERRA KILN CONTROLLER**

Programming the Sierra kilns can be a simple operation. The purpose of these instructions is to make this process easy to understand, especially if you are new to kiln programming and use.

The controller in the latest Sierra kilns is designed to provide four (4) program options. Three of these, for PMC Plus and PMC Standard, are simplified to make their use almost automatic for many people. The controller still gives the user some flexibility in choosing hold temperature and hold time. (See later in this information for details about earlier Sierra controllers.)

## **SIMPLE PROGRAMS (1 TO 3)**

Let's start at the beginning. Once you plug in and turn on the Sierra kiln, the display will alternate between "IdLE" and a four digit number. This number is the temperature of the kiln chamber. You are ready to choose your kiln program.

Push the Program button. This is the left hand button (green). It is the primary means of progressing through the kiln program menu. The Display should change to read "FASt" or the name of the last program used.

At this point you can use the up or down arrow buttons (center/red or right/blue) to select the program you want to use. The choices are:

1. FASt: Full ramp (temperature change) to 1650° F for 10 minutes
2. Slo: Ramp (temperature change) to 1470° F for 30 minutes
3. Std: Full ramp (temperature change) to 1650° F for 2 hours
4. ProG: Eight (8) segment program, fully user defined

The first two programs are used for PMC Plus or PMC3. As set at the factory, the temperatures are programmed for PMC+. The controller program allows you to change the hold temperature setting if you use PMC3.

The first is useful for firing pieces with only metal (PMC or PMC with other metal) or PMC+ /PMC3 with CZ's (cubic zirconia) or other lab grown gemstones. These pieces will tolerate this program's rapid temperature increase in kiln temperature (ramp) as well as the high PMC+ hold temperature (1650 used for PMC+).

The second program is useful for firing PMC+ or PMC3 with more sensitive materials such as brass, glass and ceramics. This program increases kiln temperature at a rate of 1500° F per hour, which usually is appropriate for small glass cabochons or ceramic pieces when used with PMC+ or PMC3. It also uses the lower PMC+ hold temperature (1470° F for PMC+) since glass colors usually are affected less at this temperature level than at 1650.

Program 3 is for PMC Standard. Use of glass and other heat sensitive materials with PMC Standard is not advisable. This form of PMC requires the full 1650 hold temperature for 2 hours. This temperature and hold time combination usually has severe negative impact on glass. Therefore, this program uses full ramp.

In these three programs, the ramp speed is set and not variable. The other two factors, hold temperature and hold time, can be altered by the user. Here's how.

In the first step you chose the program you want to use (FASt, Slo, Std) [From the display "IdLE", push the Program button, the use the up and down arrow buttons to select the appropriate program.].

Push the Program button again. The display will alternate between "° F" and a number. This is the hold temperature, either as set at the factory (1650 for Programs 1 & 3, 1470

for program 2) or the one last used with this program. If the temperature is what you want, push the Program button. If not, use the up and down arrow buttons to select the proper temperature, then push the Program button.

This brings you to the next step, hold time. The display will alternate between "Hd" and a four digit number, split in half by a decimal point. The two digits to the left of the decimal indicate hours and those right indicate minutes. Program 1 should read "00.10", program 2 should read "00.30" and program 3 should read "02.00". If the display is different or you want another setting, use the up and down arrow buttons to enter the appropriate time. Then push the Program button.

The display should read "Strt". The program is complete and the kiln is ready to start. If you want to begin the firing, push the Program button again. The display will read "DELa". If you want to set a time delay, use the up and down arrow buttons. When the delay is selected or if you do not want to use a delay, push the Program button. The display will read "-on-" and the kiln will start.

During the firing, the kiln will make clicking noises. This is the controller turning the power on and off to maintain the proper temperature levels. It is a normal part of the kiln operation.

When the program is completed, the kiln will sound a tone (several times) and stop the firing process. You can acknowledge the completion by pushing any button. If you do not, the kiln will still stop the firing process and, after a few moments, the display will alternate between "CPLt" and the four digit number indicating the time required to complete this firing.

### **USING THE EVENHEAT PMC KILN**

The Evenheat PMC kilns also have separate programs preset at the factory for use with PMC+, PMC3 and PMC Gold. These programs, however, are not variable as they are on the earlier Sierra models. The Evenheat kilns have five preset programs. They are:

PMC Standard: full ramp to 1650 °F for 2 hours

PMC+ Fast: full ramp to 1650 °F for 10 minutes

PMC3 Slow: 1500° F ramp up to 1110 °F for 45 minutes

PMC3 Fast: full ramp to 1290 °F for 10 minutes

PMC Gold: full ramp to 1800° F for 2 hours

If your firing requires any variation from these parameters, use the advanced program, which is fully variable. Use the instructions which follow.

### **ADVANCED PROGRAM (4)**

There may be times when you will want to choose all three components of the firing program: ramp speed, hold temperature and hold time. In the Evenheat kilns you would use this program to insert firing settings which are not available in the factory programs. The final program provides this flexibility.

At the first step, use the up or done arrow button to select “ProG”. Push the Program button. The display will alternate between “rA 1” and a number. This is the ramp speed, the rate in degrees per hour at which the kiln temperature will change, for the first of four possible segments. Use the up and down arrow buttons to select the speed you want. When the setting is correct, push the Program button.

The display will alternate between “o F 1” and a number. This is the hold temperature for the first segment. As with the other programs, use the up and down arrow buttons to select the desired temperature, then push the Program button.

The display will alternate between “Hd 1” and the four digit number showing hours and minutes for the first segment hold time. Use the up and down arrow buttons to select the desired hold time, then push the Program button.

At this point the display will read “rA 2” and allow you to select the ramp speed for the second segment. If you want a second set of ramp and hold temperature, hold time settings, use the up and down arrow buttons as well as the Program Button to select and move through the program items. You can repeat this in segments three through eight. (Note: Some earlier models used a controller with four (4) segments in this program.)

After each segment you have the option of ending the program, using only the segment(s) for which you provided the three settings: ramp speed, hold temperature and hold time. You can choose to set one, two, three or four segments. After setting the information for the last segment you want, simply leave the next ramp speed at 0 and push the Program button. This will end the program and allow you to begin the firing process.

## **EARLIER KILNS**

Some of the earliest Sierra kilns used a more basic controller. These controllers have two programs available: a simple three item program and a more complex three segment program. Both are very similar to the programs later used in the Sierra kilns.

## **SIMPLE PROGRAM**

When you turn on this kiln, the controller display reads “IdLE”. Pushing the left Program button changes that to read either “P0” or “P1”. The up and down arrow buttons allow you to select the correct one. ProG1 is the simple program usually used for PMC.

Select P0 by pushing the Program button again. The display will change to alternate between the ramp level (SPD5, SPD4, SPD3, SPD2, SPD1) and the degrees per hour at which the kiln temperature will increase (FULL, 1500, 1000, 500, 200). With this program it is necessary to select the ramp speed which is appropriate for the material you will fire. Usually either SPD5 (FULL) or SPD4 (1500) is correct for PMC, whether Standard, PMC+ or PMC3. We suggest that you use SPD5 (FULL) for metal or metal with CZ's and/or lab grown stones and SPD4 (1500) for pieces with glass or ceramics. Select the proper ramp speed using the up and down arrow buttons, then push the

Program button.

From this point on the programming is the same as in the first three programs of the new controller. You will select the appropriate hold temperature and hold time for the material you are using. Please refer to the firing instructions provided with the PMC to obtain the correct combination of temperature and time.

### **ADVANCED PROGRAM**

After turning on the kiln, push the Program button and select P1, then push the Program button again. The display will alternate between "rA1" and a number. This program operates in the same manner as the current ProG, other than having three segments rather than the current four. Please refer to the earlier instructions on the ProG settings.

### **SUGGESTED USES FOR THESE PROGRAM SETTINGS**

In selecting the firing program which is appropriate, use the simple rule: the most sensitive material determines the firing sequence. When firing PMC by itself or with other materials not affected by a rapid increase in temperature, heat up to 1650°F or hold time as long as 2 hours, any of the first three programs will suffice. Then it is a matter of determining which program will provide full sintering of the metal (fusing without changing shape) and which also will provide the most convenient firing schedule. In most instances you will fire PMC Plus using Program 1 (FASt) and PMC Standard using Program 3 (Std).

When using PMC+ with glass (not advisable with PMC Standard), you probably will use Program 2 (Slo)