

## Description

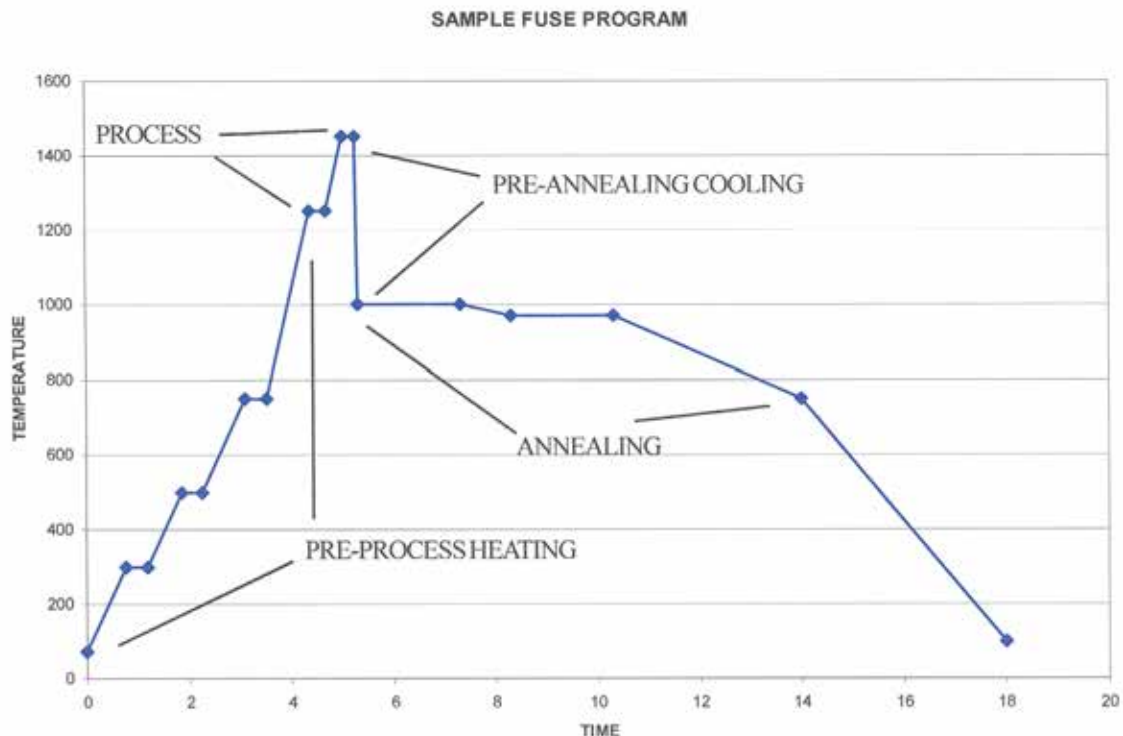
Ramp and Hold Mode allows the operator to design their own firing programs. A Firing Program consists of 1 or more segments strung in succession which give the kiln instructions on how to control the temperature. The GlassMaster controller will store up to 6 custom designed programs in permanent memory.

Segment (SEG) consists of 3 pieces of information:

- Rate (RA)- The measurement of how fast or slow the temperature rises or falls at various points in the firing. This is programmed in degrees Fahrenheit or Celsius per hour.
- Temperature (°F)- This can be the peak temperature of the firing program, a point in the firing program that signals the rate to change, or that signals a hold or soaking period. This is entered in degrees Fahrenheit or Celsius.
- Hold (HLD) - "Hold" is a period of time in which the kiln remains at a specific temperature. This is often referred to as a soaking period. This is entered in Hours and Minutes. The digits to the left of the decimal represent hours and the digits to the right of the decimal represent minutes. Therefore 90 minutes can be represented by "01.30" or "00.90".

A single program can consist of up to 8 segments. A segment can control the cooling as well as the heating of the kiln. It is important to remember that a segment that controls the cooling of the kiln can only slow the natural cooling rate of the kiln. It is possible to string two programs together to create a 16 segment program. See the 16 Segment Programs section for instructions.

In order to ensure programming success, it is very important to have a good understanding of heating glass and how your GlassMaster works to control the kiln. Please refer to the General Firing Guidelines section of the manual before programming the kiln.



Please read the [Kiln Safety and General Firing Guidelines](#) before programming your kiln.

The controller must be in **IDLE Mode** before you can enter a program. When the kiln is in idle mode it will flash IDLE alternately with the current temperature of the kiln chamber. Press **STOP** if the kiln is not in **IDLE Mode**

## Ramp and Hold Mode Programming Steps

<p><u>Step 1</u> From Idle Mode, press <b>RAMP/HOLD</b>.</p>	Display will read "PROG" (Program)
<p><u>Step 2</u> Enter the <i>PROG Number</i> of the program you wish to create or run. (This is a number between 1 and 6 that you assign to a program which will be stored in permanent memory until it is replaced.) Press <b>ENTER</b></p>	Display will read "SEGS" (Segments)
<p><u>Step 3</u> Enter the <i>number of segments</i> in your program. Press <b>ENTER</b>.</p>	Display will read "RA" 1 (Rate #)
<p><u>Step 4</u> Enter the <i>first heating rate</i> in degrees per hour. Press <b>ENTER</b>.</p>	Display will read "°F" (Degrees Fahrenheit)
<p><u>Step 5</u> Enter the <i>first temperature to reach</i>. Press <b>ENTER</b>.</p>	Display will read "HLd1" (Hold #)
<p><u>Step 6</u> Enter the amount of <i>hold time</i> in hours and minutes. Press <b>ENTER</b>.</p>	Display will read "RA2" (Rate #) unless it is a 1 segment program then it will read ALRM (Alarm)
<p><u>Step 7</u> Repeat steps 4 through 6 until all segments have been completed. The display will then flash <i>ALRM</i> (Alarm) . The default setting for no alarm is 9999. See section on programming alarm for more details. Press <b>ENTER</b></p>	Display will return to Idle Mode
<p><u>Step 8</u> The display then returns to Idle mode. At this point the program is loaded and ready to start. Before pressing <i>START</i> it is a good idea to press <i>REVIEW</i> to make sure the program was input correctly. If you are satisfied with the review, press <b>START</b> and the program will began firing.</p>	The display will read the internal temperature of the kiln chamber unless a <i>DELAY START</i> has been programmed in which case it will begin counting down minutes from the designated Delay time.

After the program is running you may wish to use the *ANNEAL*, *ADD TIME*, or *ADD TEMP* keys to alter when the kiln begins it's annealing cycle based on the look of the glass during the final hold of the heating cycle. For instructions on using these features consult the [Additional Programming Features](#) section of the manual.

## Storing and Recalling programs.

When inputting a Ramp and Hold Program, the first piece of information that is entered is the "PRG" number. The program number is a memory location to store programs that you would like to use again in the future. You can store up to 6 programs by assigning them PRG numbers.

It is helpful to keep a list of all the programs that you have stored in memory. If you are entering a new program and choose a PRG number that already contains a program, you will write over that program. So always be sure to choose a PRG number which does not contain a program you wish to save.

To recall a program:

1. Press RECALL
2. Enter the PROG (Program) number where your program is stored, then press ENTER.
3. The program is now loaded.
4. Press REVIEW to be sure you have loaded the correct program.
5. Press START to run the program.

## Skip Step

It is possible to advance to the next segment of a firing program while it is running in Ramp and Hold Mode and Glass Fire Mode. This feature is similar to the Anneal Now key however it may be used on any segment of the program not just the final heating segment. To use this feature press the VIEW key and then promptly press the ENTER key. The display will then read SKIP. If you press ENTER at this point the program will advance to the next segment of the program. If you do not press ENTER the program will continue in the current segment.

You will also see values for the "SET P" (Set point) and "bd T" (Board Temperature). These are used more for diagnostic tools when working with a technician.