ADDENDUM - UPGRADED RAMPMASTER

The RAMPMASTER controller included with your kiln or wall mount control has been upgraded with new features. These new features include: multiple program capability, delay start, display of remaining soak or delay times and longer soaking and delay times.

The programming information given in the original manual is correct and will allow you to learn about the RAMPMASTER. The information contained in this addendum will describe all changes and how they affect programming and firing. It is recommended that the original manual be read first and then this addendum.

Multiple Programs

In response to consumer demand the RAMPMASTER is now capable of multiple program operation. This upgrade allows the you to pre-program the RAMPMASTER with many different firing programs and to call upon any particular program to fire the load.

This upgraded version contains 55 segments. A segment is defined as a temperature ramp, final temperature and soak time. A typical program may contain 3 to 5 segments. The user chooses which segments a program will begin and end with.

Let's say you have 5 individual programs:

3 segment painting program
4 segment fusing program
5 segment fusing program
3 segment slumping program
3 segment pate'-de-verre program.

Typical programming might look like this.

segments 1 through 3 contain the 3 segment painting program
segments 4 and 5 are unused
segments 6 through 9 contain the 4 segment fusing program
segments 10 and 11 are unused
segments 12 through 16 contain the 5 segment fusing program
segments 17 and 18 are unused
segments 19 through 21 contain the 3 segment slumping program
segments 22 and 23 are unused
segments 24 through 26 contain the 3 segment pate'-de-verre program

Notice that we have left 2 unused segments between each program (each programmed with End at the Event/Delay prompt). It is not necessary that you do this and you may group the programs one after another, however, we believe doing so offers a few advantages. First of all, your programs will not be grouped tightly together thereby reducing the possibility of selecting the incorrect program. It also allows you room to modify the programs, if needed, without re-

programming everything. This will become valuable when a delay start is suddenly needed or a longer anneal time presents itself. You have a lot of room, spread it out.
These 5 individual programs have used 26 of the 55 available segments. There is plenty of room left for more programs!!

To program each individual program:

1. Decide which segment a particular program will begin with. Record keeping is essential as you do not want to use segments from other programs. We have included a layout designed to keep track of segments used. Feel free to make copies.

2. With the RAMPMASTER in the Off position (Temp/Off LED on steady), press the Seg/Ps key once. S- 0 is displayed.

3. Use the arrow keys to display the segment number you want to start with.

4. Press the Select key. The Event/Delay LED will begin flashing with End, Cont, dLY or Conr displayed.

5. You can now program all segments of the program as you normally would.

6. When all segments of the program are entered, press the Seg/Ps key twice to exit the programming mode and display the chamber temperature.

7. Repeat this procedure for all programs.

To fire a particular program:

This information is the same as given on page 12 of the original manual and is entitled "Starting At Segments Other Than One". We repeat it here for your convenience.

1. Press the Seg/Ps key once.

2. Use the arrow keys to display the desired starting segment number.

3. Press the Enter key to begin the firing.

4. Press the Seg/Ps key to display chamber temperature. You are now firing the program that begins at the segment you chose.

Delay Start Feature Added

A new feature of the upgraded RAMPMASTER is the delay start. As its name implies, the delay start allows you to delay the beginning of the firing for up to 50 hours.

The delay start feature uses one complete segment to accomplish. It cannot be used in the same segment as the actual firing data. It is located in the Event/Delay position and is abbreviated dLY.

To use the delay start feature, locate the segment you wish to begin with by pressing the Seg/Ps key, arrows to select the segment then select. The Event/Delay LED will be flashing, dLY is chosen and enter is pressed. The Select key is then pressed twice until the Sk/Dly LED is flashing. The delay time is chosen at this point. Use the arrow keys until the desired delay time is displayed, press enter. Press the Select key twice. The next available segment is available for firing data.

Note: when selecting through to choose the delay time you will notice data programmed into the deg/Hr/Ramp and Temp/Off positions. These numbers mean absolutely nothing and can be ignored.

Example: A delay start is needed before the pre-programmed 5 segment fusing program that starts at segment 12. Given the fact that there are 2 unused segments preceding this fusing program we can use one of them to perform the delay start: in this case segment 11. Remember, the delay start feature uses one complete segment.

1. With the RAMPMASTER in the Off position (Temp/Off LED on steady), press the Seg/Ps key once. S- 0 is displayed.

2. Use the arrow keys to display the segment number you want to start with. In this case segment 11.

3. Press the Select key. The Event/Delay LED will begin flashing with End, Cont, dLY or Conr displayed.

4. Use the arrow keys to display dLY. Press the Enter key.

5. Press the Select key. The Ramp light will flash and some value will be displayed. Ignore this, it means absolutely nothing!

6. Press the Select key. The Sk/Dly/Soak light will flash. Use the arrow keys to set the delay time in hours and minutes: maximum 50 hours. Press enter.

7. Press the Select key. The Temp/Off light will flash and some value will be displayed. Ignore this, it means absolutely nothing!

8. Press the Select key. You have now advanced to the first segment of your 5 segment fusing program and the display should read Cont. Wonderful, your done.

9. Press the Seg/Ps key twice to exit the programming mode and display the chamber temperature.

In this example we put a delay in before a pre-programmed program. You can now see the value in leaving a few unused segments between programs. It is certainly possible to program the delay originally with the program also. If you want the delay, start the firing at program 11, if you do not want the delay then start at segment 12. Easy!

Time Remaining in Soak or Delay Cycle

The previous version of the RAMPMASTER did not display the time remaining in a particular soak or delay cycle as the firing was in progress. The user had to use some sort of timing devise to keep track of this. No more! The upgraded version of the RAMPMASTER does inform the user of all remaining times.

During any soak or delay cycles, the user simply presses the enter key once. This will display time remaining in the soak or delay. Using this feature will not interrupt the firing and the program will continue to operate as normal. It may be left in this position as long as you like. If the enter key is push again the display then goes back to reading the temperature.

A few notes on this feature: When the soaking or delaying cycle is completed, the display automatically reverts back to temperature display. If the program encounters another soak or delay time, the enter key must be pushed to display time remaining. Also, when there is less than 1 minute left in the soak or delay cycle the display will read 0. This should be obvious as the display does not indicate seconds remaining.

Soak Time Extended

The soak period has been increased from 40 to 50 hours, wow!! Will you ever need a 50 hour soak? Time may tell.

Continue Regardless

In the original version of the RAMPMASTER the Event/Delay prompt allowed for two choices: continue or end, Cont and End respectively. The upgraded version offers two extra choices: delay and continue regardless, dLY and Conr respectively. We have already discussed the delay feature in detail. Time now to discuss the continue regardless (Conr) feature and how it differs from the continue (Cont) feature.

As discussed on page 5 of the original manual, the continue prompt (Cont) demands that the program continue to fire into that segment. What page 5 does not tell you is that the program will not continue until the temperature of the chamber matches the temperature the controller decides it should be. This is called guaranteed soak. This means that all programmed data must be performed exactly as programmed.

Continue regardless (Conr) on the other hand will allow the controller to move into the segment without requiring the chamber to match the temperature the controller decides it should be. When the controller calculates that the temperature or soak time should be complete it moves directly to the next segment. What's happening in the actual firing chamber is secondary. This is called a nonguaranteed soak. This means that the controller acts on its own to make decisions and does not use the actual chamber temperatures in its decision process.

You are probably scratching your head and asking yourself why anyone would want to progress into the firing without reaching the temperatures that are programmed. We admit we find little or no use for this feature for use in glass firing. It can come in handy for other applications unrelated to glass and that's why it's there. In most instances we recommend that the Cont be used instead of the Conr. Personally, I would avoid it all together.

Segment 0

Segment 0 falls along the same line as the continue regardless feature. Its use in glass is limited at best. It's applications are designed for other markets.

Segment 0 can have two functions: recycle the firing (repeat the firing over and over) and automatic start from a mechanical timer.

If you are interested in either of these two features please contact the factory for guidance.

For normal operation Segment 0 should have the Event set for End and should not be changed.

Faceplate Changes

The original manual describes the faceplate from the original 8 segment controller. A few things have changed.

A point that was not covered in the original manual was the layout out the position markers next to the yellow LED's. To the left of each LED are two boxes with printing in each box. The printing in the left box indicates what data is being programmed as you are programming. The printing in the right box indicates at which position the program is currently located as the program is running or is off.

The Event mark has been changed to indicate the addition of the delay feature. It was previously marked Event/E out. It is now marked Event/Delay. The LED flashes during the programming mode to indicate that either End, Cont, dLY or Conr is to be chosen. The LED remains on steady during the firing if a delay is being used.

The deg/Hr/Ramp mark has remained the same and functions in the original fashion. The LED flashes during the programming mode to indicate that degree per hour data is being programmed. It remains on steady during the firing to indicate that the program is ramping to temperature.

The Soak/Soak mark has been changed to indicate the addition of the delay feature. It was previously marked Soak/Soak. It is now marked Sk/Dly/Soak. The LED flashes during programming to indicate that a soak or delay time is be programmed. It remains on steady during the firing to indicate that the controller is soaking at a temperature.

The Temp/Off mark has remained the same and functions in the original fashion. The LED flashes during the programming mode to indicate that temperature data is being programmed. It remains on steady when the controller is in the Off position.