

Pro-Fusion Kiln Line User Guide

Models:

Fiber Fuser 120 volts 10 amps max temp 1700°F

The Bonnie Glo 120 volts 13 amps max temp 1700°F

The Bonnie Glo Plus 120v 13 amps max temp 1700°F

These kilns are designed to fuse and slump glass. These were not designed to go to the upper limits and hold for long periods of time. Pots melts are an example and not considered to be fusing glass, the melting temperature of glass is well above the fusing temperatures by 200+ degrees and the long hold times can and will adversely affect the fiber structure of the kilns. Please use the kiln for its intended purpose.

Setting up the kiln:

The Fiber Fuser needs to be on a sturdy non-combustible table. If the table is all metal, then place the base bricks just under the kiln near the outer edges. If the table is wood or steel over wood, then place a larger than the kiln stepping stone or a large floor tile down first, then place the base bricks just under the kiln near the outer edges. All kilns need an air space under them. Never place a kiln directly on a table or solid surface.

The Bonnie Glo needs to be on a sturdy non-combustible table if the table is all metal. Then assemble and place the kiln stand under the kiln. If the table is wood (or steel over wood), then place a larger than the kiln floor tile down first. A piece of cement board used for bathroom shower walls work well also.



The Bonnie Glo Plus (Tilt Model) needs to be on a sturdy non-combustible table, if the table is all metal. Then assemble and place the kiln stand under the kiln. This stand has a clamp where the kiln clamps to the stand to ensure that the kiln does not tip backwards. If the table is wood (or steel over wood), then place a larger than the kiln floor tile down first. A piece of cement board used for bathroom shower walls work well also. Tilt model has to be clamped to stand.



Stand Corner

Tilt Model Stand

Tilt model clamp to stand so that when open does not lean back.

Overview:

The Bonnie Glo, Bonnie Glo Plus, and the Fiber Fuser were all designed for faster firings. It took several years of thought and testing to create kilns that defy what the glass companies recommend for their fusing schedules. Reason for us to make this kiln light weight for easy moving/storage and faster firings in this, "Instant, I want it now world." We are not trying to perform miracles, but believe that glass can fire quicker in the right firing environment.

Jen-Ken Kilns has figured out that larger pieces of glass can fire quicker in a kiln that does not have a kiln shelf. When a shelf is used the kiln has to heat the glass and the shelf at the same time. A slower rate of rise is required so that the glass and shelf absorb the heat at the same rate. If the glass on top heats much quicker than the thick clay shelf below the glass can thermal shock and break.

Brick kilns absorb a tremendous amount of heat and then hold that heat to slow the cooling of the kiln. This absorption takes time and slows the kilns rate on the way up and also slows the kiln decent back to room temperature. There is nothing wrong with it, they are a safe and conservative way to fire. For some of us that do not wish to wait around all day for a firing to complete to see the glass, a fiber kiln can shave hours off a firing. Our fiber kiln which has no brick in it, does not absorb very much heat, so that the glass is able to absorb the majority of the heat generated.

The fiber kiln also gives one other great benefit in that is it very light in comparison to a comparable brick kiln of the same size. The Bonnie Glo weighs about 25 pounds vs 65 pounds for a brick kiln and the Fiber Fuser at 18 pounds compared 40 pounds for the brick version. If you travel and/or teach this could be a great kiln choice.

NO Shelf Kiln wash bottom and use shelf paper. Also try Lava cloth, Fiber board, or Kaiser Lee board as a shelf.

Programming the Pro-Fusion Kilns:

Most glass companies recommend that their glass is fired similar to this schedule. If you desire to use a clay shelf in the fiber kiln feel free to, but a much slower schedule will be needed accommodate the glass and the shelf heating at the same rate.

300 degrees per hour to 1200 degrees and hold 30 minutes.

600 degrees per hour to 1480 degrees and hold 20 minutes,

Full down to 950 degrees and hold for 30 minutes to one hour

200 degrees per hour to 700 and hold 0 minutes

This firing schedule is a good schedule and our fiber kilns are more that capable of firing any similar schedules. If you desire to use a clay shelf in the fiber kiln feel free to, but a much slower schedule like above will be needed accommodate the glass and the shelf heating at the same rate.

Kiln Wash and Firing on the Kiln Floor

Now for a faster firing without a clay shelf, apply kiln wash to the kiln floor and a layer of fiber paper. Kiln wash is two clays that help keep the glass from sticking to the material it is on. (It is not to wash your kiln with!) Kiln wash is applied by mixing it with water, per the kiln wash instructions, and applying 7 to 10 thin coats to the bottom of the fiber kiln. Once the kiln wash has dried, sprinkle a little dry kiln wash on the floor of the kiln. This dry kiln wash will allow the glass to sit on top of the very smooth painted on wash, actually allowing air to escape from under the glass. It is a good idea and we use a fine-holed strainer and tap dry kiln wash onto the shelf before each use. This simple dusting makes the glass use the kiln wash that was dusted on and not the painted on kiln wash. Meaning that you may not have to repaint

kiln wash on the floor for a very long time. Using shelf paper gives a smoother backing to you glass. Do not get kiln wash on the coils or kiln wash any part of the kiln, except for the floor of the kiln or the top of a shelf (if you use one).

Shelf paper is a great product, but the used shelf paper is a problem for all of us. We ask that you use a canister vacuum with a HEPA filter to vacuum the kiln floor after each use. Then re-apply dry kiln wash with the strainer then another layer of paper, and proceed with another firing. We have laid a damp paper towel on the kiln floor then gently moved it over the kiln floor to collect the fired shelf paper remains without creating very much dust. Please contact your shelf paper supplier for other safety precautions for their shelf paper products. Note: Always wear an approved dust mask when working with kiln wash and shelf papers.

Our Controllers are preprogrammed with conservative firing schedules; see the AF3P kiln manual for all of the firing schedules and how to enter a custom program. Simply go to pro 1 and put in your own faster schedule in the controller, then speed it up over the next few firings

Try the slower firing schedule for the fiber kiln for one or two firings. (The Fiber kilns slower schedule is still 700°F per hour) When the glass is out of the kiln, look at it. Put a stress meter on the glass, if you have one. We put pieces in the freezer and then ran hot tap water from the faucet over the cold glass to see if the day to day real life test would break the glass. If this works well and you are satisfied with the results, speed the next couple firings up a notch. Below are what we have done in our firings. Where we started and what we have achieved.

Brick Kiln	Fiber Slow Firing	Fiber Fast Firing	Fiber Fastest Firing
Ra1 300° per hour	Ra1 700° per hour	Ra1 1000° per hour	Ra1 Full per hour*
°F1 1200° degrees	°F1 1500° F	°F1 1500° F	°F1 1500° F
Hld1 30 minutes	Hld1 10 minutes	Hld1 10 minutes	Hld1 10 minutes
Ra2 600° per hour	Ra2 Full per hour	Ra2 Full per hour	Ra2 Full per hour
°F2 1480° degrees	°F2 950° degrees	°F2 950° degrees	°F2 950° degrees
Hld 2 20 minutes	Hld 2 30 minutes	Hld 2 30 minutes	Hld 2 30 minutes
Ra3 Full			*Full for the Bonnie Glo kiln
°F3 950° degrees			is about 1500°F per hour
Hld3 30 to 1 hour			Full for the Fiber Fuser kiln
			Is about 3000°F per hour.
Ra4 200 per hour			
°F4 700 degrees			
Hld4 0			
Ra5 0			

While annealing is important for reducing stress, do a few firings with an anneal in the program, then start backing the hold time down. After a few satisfactory firings, especially with small fused pieces the elimination of the annealing may be possible. Your firing results will give you an indication of this.

If you are fusing jewelry the kiln will work great for you. Start slower and work up to the fastest firings. Full up or a rate about 1200-1500 degrees F per hour is probably where you will be most of the time.

Thick Glass and Slumping

Ripple glass is thick and thin over the entire surface and will need to heat slower than two or three layers of single strength glass to accommodate the glass variances.

Double strength glass will also need to fire a little slower and not full up.

A fused piece of glass that was once several thin layers of glass has become a thick piece of glass. If a slump is planned the firing schedule needs to go back to the slower traditional firing schedule. A thick piece of glass (if heated rapidly) will thermal shock and break. Also, most ceramic slumping molds are not able to heat too rapidly.

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Annealing is important, but when the glass is not on the clay shelf, annealing does not seem to be as important as when it is. Please anneal the glass if you feel it is needed. A stop at 950 for a time is beneficial, but we have not annealed yet, in trying to push the glass and see what can be accomplished. We take our pieces from the freezer to hot tap water, to test.

Call if you need help, and thank you for using one of our kilns. Go and make great things.