

## SAFETY

Read and understand this installation and operating manual as well as the controls manual before operating your kiln. If you have any questions please contact Evenheat Kiln at 989-856-2281 or at evenheat-kiln.com.

Kilns are as safe as any other electrical appliance when used under normal and proper operating conditions. To create and maintain this safe environment observe all safety precautions.

### Warning Symbol Descriptions

Warning symbols are used throughout this manual. These symbols alert the operator to certain hazards and important information. Pictured below are symbols used along with a description of each.



The Exclamation Point alerts you to particular cautions, hazards and information.



The Lightning Bolt alerts you to specific information regarding the risk of electric shock. Electric shock may result in injury or death.



The Heat Waves alert you to specific information regarding the risk of burn injury.

### Emergency Shut Off Provision



The kilns power supply connection (plug/receptacle, breaker or disconnect) acts as the emergency electrical power shut off. Access to these devices should be unobstructed and safe at all times.

All electrical installations for direct wired models (those without a plug/receptacle connection) must include a power disconnect near the kiln and that is easily accessible and safe for emergency power shutoff.

### Electrical Safety



A licensed electrician should be used for all electrical installation and service. All applicable local, state and federal electrical codes must be followed.

Use correct voltage, wire size and fuse or breakers. Kiln electrical requirements are located on the kiln nameplate. Make sure all electrical connections are tight. Avoid using aluminum wire.

Always use the proper electrical receptacle. Never alter the kiln cordset or cordset plug. Alterations can be dangerous. Alterations will void any warranties along with nullifying any Listing Agency markings.



Evenheat recommends that a voltage check be performed before placing the kiln into service, ideally before actual purchase. Operating voltage varies. The kilns operating voltage (printed on the kilns nameplate) must match the applied voltage (actual electrical service voltage). If it does not, do not install or operate the kiln as potential electrical and fire hazards exist. Contact Evenheat for guidance in such cases.

The kiln must be properly grounded.



Unplug or disconnect the kiln from the electrical service before accessing the chamber for servicing or vacuuming. Do not attempt to touch or replace the heating elements while the kiln is plugged in or connected to the electrical service. Electric shock may result in serious injury or death.

Never, ever use an extension cord to operate a kiln.

### Kiln Location Safety

The best location for the kiln is a concrete floor. If not available, the kiln must be placed on a minimum of 2" of masonry extending at least 12" beyond the outside perimeter of the kiln.



Do not place or use kiln on combustible surface.

Place only on the metal stand provided by Evenheat Kiln, Inc.

The surface on which the kiln is placed shall be capable of safely supporting the combined weight of the kiln, kiln load and any operating personnel.

Observe all building, fire and safety codes when installing the kiln.

Do not install the kiln closer than 12" (31cm) from combustible wall surface or object or 36" from any ceiling surface in all opened and closed positions.

Install in a covered, well ventilated area.

Never place the kiln in a small, enclosed area such as a closet, cabinet or very small room. The room in which the kiln is placed into service shall be capable of safely dissipating all heat produced by the kiln.

Do not place the kiln in any structure resembling a carport or screened in porch. Avoid areas that are subject to outdoors weather.

Never install a kiln outside. Avoid moisture.

It is the user's responsibility to be knowledgeable regarding any and all contaminants, produced by the ware during firing, and take steps to properly and legally contain and dispose of these contaminants.

It is the user's responsibility to provide ventilation capable of removing all gases, fumes and other airborne contaminants produced by the ware during firing safely from work the area and building structure.



Do not store flammable or combustible products near or in the same room the kiln such as gasoline, paint, aerosol cans, paper, curtains, plastics, etc. Better yet, store these items in another separate structure designed for this purpose.

Position the power supply cables, power supply conduit, controller cables, pyrometer thermocouple leads and other materials in such a way as not to create a tripping hazard around the kiln.

The area around the kiln should be free of obstructions that interfere with the proper and safe operation of the kiln.

Never place anything under or above the kiln for storage. Absolutely nothing should be propped against the kiln.

### Kiln Use Safety



The surface of the kiln is hot and burn injuries are possible. Keep all children and unsupervised personnel away. Always wear protective clothing, gloves and eyewear when operating and handling a hot kiln.



Use extreme care when accessing a functioning and/or hot kiln. Under no circumstances should you touch the heating elements with your body or any other devices like tools. Electrical shock may result in serious injury or death.



Use care when accessing or looking into a hot kiln, this includes looking through a cracked lid or peepholes. High heat escapes quickly and burn injury may result. When accessing or looking into a hot kiln, approach slowly and wear protective clothing and gloves designed to withstand high heat and eyewear capable of filtering Infrared and Ultraviolet light.

Protective clothing should be worn when operating the kiln and includes, but is not limited to, cotton clothing, heat resistant gloves and eyewear capable of filtering Infrared and Ultraviolet light.

Do not operate the kiln over the maximum temperature rating printed on the nameplate.

Never fire a kiln unattended beyond its anticipated firing time.

Never allow the power cord to touch the kiln. If the cord, plug or receptacle become damaged discontinue use and replace immediately.

Do not open the chamber with the lid in the open position.

Do not open the lid with the chamber in the open position.

It is recommended that a fire extinguisher, capable of dousing an electrical fire, be accessible in the event of fire. Smoke detectors within the kiln room are also recommended.

Keep the kiln lid and chamber closed when not in use.



It is the user's responsibility to have knowledge of the material intended to be fired. If you are unsure as to the safety of firing a particular material contact your materials supplier for guidance. If you remain unsure as to the safety of firing a particular material do not do it. Firing hazards include materials that explode or produce toxic gases. Finished ware hazards include materials containing lead. Materials containing lead should not be used for articles intended for food use.

Fire all ware according to the material manufacturer's instructions. Improper firing may result in damage to the kiln or ware.

Do not use the kiln to prepare food, heat a living space, dry clothes or ice laden articles or use as a storage devise. The kiln is designed for one purpose and one purpose only: the firing of glass materials.

All kiln models not equipped with an automatic shutoff devise (electronic control or kiln sitter) must not be allowed to exceed the rated operating temperature indicated on the kiln nametag. To prevent kiln from exceeding this maximum temperature disconnect it from the electrical power supply.

A kiln will remain very hot long after the firing is complete. All safety recommendations should be followed, even with the kiln unpowered, to avoid any burn injuries. Keep children and other unauthorized personnel away.

When firing is complete, and during periods of non-use, remove power from the kiln by unplugging or by throwing the disconnect or breakers to the OFF position.

#### **Kiln Maintenance Safety**



Disconnect electrical power from the kiln before performing any kiln maintenance. Failure to disconnect the electrical power supply may result in electrical shock which can cause serious injury or death.

Replace any worn, damaged or defective parts immediately with Evenheat Kiln replacement parts only. Discontinue use until parts are replaced.



When vacuuming the kiln use only HEPA filters on the vacuum. Prolonged expose to brick dust and other refractory materials can cause lung injury.

Inspect all electrical service connections periodically for wear.

Periodically check chamber jacket clamps for tightness. Tighten as necessary.

## **Fishbone Glass Annealer Features**

### **Designed to Fit**

The Fishbone mandrel rest is designed with 25 teeth, spaced 1/2" apart. This gives you the opportunity to use all the space the Fishbone has to offer.

### **Deep Chamber**

The Fishbone is designed with a 7-1/2" deep chamber allowing for large sculptural pieces. This great depth also allows for a staggered, front to back placement of beads for an even greater number of beads per session.

### **Two Point Mandrel Rest**

The Fishbone sports a two point mandrel rest. The two point rest allows you to suspend your beads above the fiber floor, it keeps your beads from moving around and it provides a stable base on which to rest. It's very cool.

### **Mandrel Crown**

A Mandrel Crown is placed atop the Fishbone for mandrel drying and storage. It's a very unique and wonderfully useful feature. You'll love it.

### **Set-Pro Controller**

The Fishbone is equipped with our Set-Pro, 3 button control. The Set-Pro offers easy programming and includes annealing hold times up to 100 hours. Your Fishbone was shipped with separate operating and programming instructions for the Set-Pro control.

### **Cool Touch Handle**

Playing in the heat is fun, trying to avoid isn't. We've designed the Fishbone with a non-metallic, Cool Touch handle that stays cool throughout the annealing process. It's one less thing to worry about in the heat of battle.

### **Flexible Fiber Door**

The Fishbone door is designed with flexible fiber. As the door is closed this flexible fiber forms slightly around the mandrels for a tighter seal while providing even more stability to the beaded mandrel.

### **Attractive Powder Coat Finish**

The Fishbone is finished in an appealing powder coat finish. Powder coating is a finishing method that provides great looks with greater protection against scuffs and scratches than paint. Powder coating has the added advantage of being environmentally friendly to apply.

### **Embedded Heating Elements**

The heating elements of the Fishbone are completely embedded within the fiber chamber for safety.

### **Standard Household Plug**

The Fishbone operates from a standard household plug which makes choice of placement easy and convenient.

## Kiln Setup and Placement

### Kiln Location

Place your Fishbone in a location that offers a level, non combustible surface. The Fishbone should be placed no closer than 12" from any wall or 48" from any ceiling surface in all opened and closed positions. All flammable and combustible materials should be removed from the kiln area. Enjoy your kiln safely.

## Kiln Operation

### Plugging In the Kiln

Throw the kiln control panel power switch down to the OFF position. Plug the Fishbone power plug into your standard household outlet. As the Fishbone requires 12A/120V to operate it should be the only device plugged into the circuit. We have designed the Fishbone's power cable to run straight out the back of the control panel: mainly to keep it out of your way but also to help keep it away from the kiln itself. Once you plug it in make sure the power cable is not touching the kiln.

### Pre Fire

Evenheat suggests that you perform a test fire with your new kiln before putting it into service.

A pre fire gives you an opportunity to become familiar with the features and functions of the kiln before committing to an actual firing. It also allows your element to form a protective oxide barrier. A light lubricant was used in the production of your heating element. The pre fire will burn this off, almost immediately! You may notice a light smoke as this occurs. It's normal.

A separate control manual is included on the manuals disc included with your kiln. Refer to these manual(s) for controls programming instructions.



*Scan this QR code to view instructional programming videos for both the Evenheat Set-Pro and Rampmaster controls.*

*You will also find these instructional videos and manuals on our web site [www.evenheat-kiln.com](http://www.evenheat-kiln.com)*

Program the control to reach 960°F as fast as possible and hold for 30 minutes (see the included controls programming manual for instruction). Once the kiln reaches 960°F it will begin to hold 30 minutes. As it's holding, you will notice audible clicks. These clicks are made by the control relay turning the heating element on and off and it's a normal and welcome sound.

We would encourage you to repeat this pre fire procedure if you've never fired a kiln of this design before. You won't hurt anything. Kilns are wonderful machines and they're even more wonderful when you know what to expect and how to work them.

### Firing the Fishbone

Generally speaking you will want to program the Set-Pro to reach your anneal temperature as fast as possible and remain at that temperature for an period of time. Annealing temperatures are glass specific, contact your glass supplier for annealing temperatures and times.

The Set-Pro control regulates the heat within the kiln. It does so automatically by turning the heating elements on and off. A separate instructional manual for the Set-Pro control was included with your new Fishbone. Please refer to this manual for all programming and operation details.

## Loading the Fishbone

*It's generally accepted that the annealing chamber should be holding at the annealing temperature before any glass is inserted for annealing.*

Lift the door on the Fishbone and place your glass laden mandrel on the mandrel rest as shown.



Close the door. Your glass is now annealing.

When annealing is complete remove mandrels and throw the Fishbone power switch to the Off (O) position.



### The Mandrel Crown™

The Fishbone is equipped with a very unique and wonderfully useful feature we call the Mandrel Crown™. The mandrel crown is located on the top of the kiln and is provided as a mandrel storage and drying rack. It's that simple.

Use the Mandrel Crown™ to store and dry your mandrels.

During kiln use the mandrel crown and mandrels will become warm.

