

## 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.



**Studio Pro**

**Studio Pro STP**



## Studio Pro Features

### Dual Access Design

The Studio Pro features our Dual Access Design. The Dual Access Design simply means you have the choice of entering the chamber through the Front or through the Top.

Front entry offers many unique advantages. Front Entry grants wide open access to the kiln floor. This wide open access is excellent for ware placement, particularly for ware that cannot be moved once positioned. The gentle, hinged action brings the chamber back down with precision and confidence. Front Entry also makes possible the use of forming tools that require a horizontal approach.

Top entry offers its own unique advantages. Top entry allows for the use of forming tools that require a vertical approach. It also offers easy placement of large ware such as slumping molds and forms. The hinged lid, with its built-in venting allows for excellent ventilation opportunities.

### Built-In Lid Vent

Venting the lid of the Studio Pro is easy and convenient with its built-in lid vent system. The lid vent is attached to the front of the lid and offers two venting positions: 1/2" and 1". To vent simply lift the lid slightly, rotate the lid vent downward and lower the lid. It's that simple and that convenient.

### Fiber & Brick Construction

The Studio Pro uses a combination of Firebrick and Refractory Fiber construction. Firebrick absorbs and stores heat, it also releases heat. It's also structurally sound. These characteristics make it an excellent choice for annealing and construction purposes. Refractory Fiber, on the other hand blocks heat rather than absorbing it. It's also light in weight. The lid, which is made of fiber, does not continue to "throw off" the amount of heat that a brick lid does when opened. On a small kiln such as the Studio Pro this is helpful when accessing through the lid during firing, it's just more comfortable.

### Control System

The Studio Pro is available in a manually controlled, infinite switch design or an automatic design using the Set-Pro control.

## Kiln Setup and Placement

### Pyrometer/Thermocouple Installation (For Manually Controlled Infinite Switch Versions)

The thermocouple/pyrometer (temperature sensor and indicator) were packaged separately and are included in your Studio Pro shipping container. The thermocouple/pyrometer must be installed before use.

1. Remove the thermocouple/pyrometer from its shipping container.
2. Insert the thermocouple into the hole provided in the back right of the kiln. Insert the thermocouple until only one of the five white insulators is visible from the outside of the kiln.
3. Attach the pyrometer to the red control panel with the provided screws.

### Lid Handle Installation

The lid handle for your Studio Pro was also shipped separately and is included in your Studio Pro shipping container. The handle must be installed before use.

1. Attach the lid handle to the tab located on the left side of the lid with the provided washer and bolt. The handle should be pointing out, away from the kiln.
2. We've set up the lid handle to be operated with the left hand. If you would prefer to lift the lid with your right hand we have included some mounting holes on the right side of the lid. Simply unscrew the handle tab from the left side of the lid and reinstall it on the right.

### Kiln Location

Place your Studio Pro in a location that offers a level, non combustible surface. The Studio Pro should be placed no closer than 12" from any wall or 36" 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 Studio Pro

Plug the Studio Pro's power plug into your standard household outlet. As the Studio Pro requires 12A/120V to operate, it's best that it be the only device plugged into the circuit. We have designed the Studio Pro'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.

### Your Firing Surface

You will always want to fire your ware on a kiln shelf prepared with a kiln wash or glass separator. You may also choose to fire on many of the fiber "papers" available. You DO NOT want to fire your ware directly on the base of the Studio Pro. Doing so will most likely allow your ware to stick to the base and damage it, and that's no fun. If you have not prepared your shelf do so now. If you're using Evenheat supplied shelves and wash there are separate instructions included with these items.

### Loading the Studio Pro

As mentioned in the Features Section of this manual the Studio Pro gives you a choice between loading via the Top or Front.

To load via the top, turn the kiln off by rotating the infinite switch (if it's a manually operated design) to the OFF position or throw the power switch to the OFF position (if it's equipped with a Set-Pro control) and simply lift on the lid handle and take the lid back. A built-in stop will hold the lid at the open position. Avoid positioning the shelf or ware directly at the thermocouple. The thermocouple needs some space around it in order to operate properly. When lowering the lid be sure that your ware does not make contact with the lid. This is possible when using tall forming molds and large pieces.

To load via the front, turn the kiln off by rotating the infinite switch (if it's a manually operated design) to the OFF position or throw the power switch to the OFF position (if it's equipped with a Set-Pro control) and simply lift on the front chamber handle and take the chamber back. A

built-in stop will hold the chamber at the open position. Place your shelf squarely onto the floor of the Studio Pro. At this point we think it's a great idea to gently lower the chamber to check that the shelf clears the chamber. Reposition if necessary. Position your ware on the shelf as desired and close the kiln. Open the lid and check for clearance, particularly with the thermocouple. Remember we want to give the thermocouple some space.

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

## 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.

### For Automatically Controlled Designs (Set-Pro Controller)

A separate control manual is included on the manuals disc included with your kiln. Refer to these manual(s) for Set-Pro 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)

Step 1 – Vent the lid of the kiln to the 1” venting position (this allows the light smoke to escape). Program the Set-Pro control for a rate of 1600°F per hour to 1600°F and hold for 10 minutes and start the firing. A separate programming guide for the Set-Pro is included with your Studio Pro.

As the Set-Pro operates you will hear a slight clicking sound. This sound is produced by the control relay turning the heating element on and off. It's a welcome sound.

Step 2 - Once the kiln has reached 500 to 600°F close the vent and allow the lid to sit directly on the kiln. *Use protective measures as described in the Firing Cautions and Tips section of this manual when operating the vent.*

Allow the Set-Pro to run through the entire firing program which should take about 1 hour 15 minutes. During firing take note of the clicking sound, the glow within the chamber, the relative temperature of the kiln surfaces and the control display. In other words, get used to what the kiln is going to do.

Step 3 – Please let it cool fully before attempting to load and fire.

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.

### For Manually Controlled Designs (Infinite Switch)

Step 1 – Vent the lid of the kiln to the 1” venting position (this allows the light smoke to escape) and rotate the infinite switch to the LOW setting. Keep an eye on the pyrometer and get a feel for how fast the temperature increases and where the temperature might settle. Once you've had fun with that go on to Step 2.

Step 2 – Rotate the switch to MED and continue to get a feel for the kilns performance. Again, you'll want to note how fast the temperatures increase and to what. When you would like to move on to the next step shut the lid completely by closing the vent and go to Step 3. *Use protective measures as described in the Firing Cautions and Tips section of this manual when operating the vent.*

Step 3 – Rotate the switch to MAX and continue to get the feel of the kiln. Once the pyrometer indicates 1600°F you may turn the kiln off. Please let it cool fully before attempting to load and fire.

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 Studio Pro

### For Automatically Controlled Designs (Set-Pro Controller)

Refer to the included Set-Pro manual for programming instructions and general glass firing programs.



*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)*

Generally speaking, glass firing requires that the temperature be raised to the process temperature (fusing, slumping, molding temperature) at a particular speed or rate. What rate to use? That depends upon the thickness of and the type of work you are doing. Typically, rates of 500°F an hour to 1000°F per hour are acceptable for most work.

The ultimate process temperature depends upon the type of work you desire. You'll find slumping or draping temperatures around 1150°F to 1250°F. Fusing temperatures can range anywhere between 1300°F and 1450°F. The make of your glass, its thickness and desired result will determine which ultimate temperature you program.

As with the operating instructions for manual control these instructions are designed to get you going in the right direction. The glass you choose and your desired results will determine your temperature rates, final temperatures and annealing temperatures. For detailed firing instructions you will want to contact your ware supplier. They will have the specific requirements for your ware.

### For Manually Controlled Designs (Infinite Switch)

The infinite control switch regulates the heat within the kiln. The infinite switch allows you to set the heat anywhere from Low to Max. It's very much like a stove switch that we're all used to. You are not choosing an actual temperature you are choosing a heat setting. As the infinite switch is rotated to any position but OFF the pilot light will illuminate indicating that the kiln is on.

Generally speaking you will begin by setting the infinite switch to the LOW setting for a period of time, how long is up to you and your ware. Most ware likes a gradual type of firing as opposed to full on, so LOW is a good place to start. Once the switch is set to LOW the heating element will begin to warm up and you will begin to see the chamber temperature rise on the pyrometer.

Rotate the infinite switch to a heat setting somewhere around the MED. This brings the temperature of the chamber up beyond the LOW setting yet it's still not full on. Again, how long you leave the kiln at this temperature depends on your ware and your desires.

At some point you will probably find it necessary to increase the heat setting to Max or close to Max. This is fairly typical for most firings. It's at this point that you will really concentrate on your pyrometer, or in the case of glass – the glass itself. Your ware has a temperature or temperatures at which you can expect it to mature or change.

If you're firing glass you will most likely anneal your glass at some temperature much lower than your maximum firing temperature. In this case you will gain experience over time where best to position your infinite switch to accomplish this.

Once your firing is complete. Rotate the infinite switch to the OFF position (the pilot light will go out) and allow the kiln to fully cool before opening and removing the ware.

If the above firing procedures appear to be vague and too basic, it's because they are. What we are trying to convey is a sense that the typical firing is performed in steps. The Studio Pro is capable of firing everything from glass and metal clays to low fire ceramics and annealing. These different types of ware require different temperatures, rates and so forth. For detailed firing instructions you will want to contact your ware supplier. They will have the specific requirements for your ware.