

JEN-KEN KILN

***OWNER'S
MANUAL***

JEN-KEN KILN OWNER'S MANUAL

Read and understand all operating instructions before operating your kiln.

SAFETY PRECAUTIONS: Kilns are as safe as any other electrical appliance when used under normal and proper operating conditions. All safety precautions throughout this manual should be observed.

1. Do Not install kiln closer than 12 inches from any surface. (Also, read first paragraph of page 2 "Choosing a Location").
 2. Do Not place the kiln on any flammable surface (i.e. Carpet, Wood, Linoleum, etc.)
 3. Make sure all electrical specifications are followed. Use correct voltage, wire size and breaker. Make sure all connections are tight. Avoid using aluminum wire.
 4. Always use the proper receptacle.
 5. Install in covered, well-ventilated area. Fumes from the ware has to be vented to the outside. Never use your kiln outside! Avoid moisture.
 6. Always keep children and unsupervised personnel away. Surface will get hot and a burn could result.
 7. Do not operate kiln over maximum temperature rating. (Ceramic to 2300°F, Glass to 1700°F)
 8. Fire clay, glaze, overglaze and glass only to the manufacturer's recommended firing temperature. Improper fire temperatures could result in damage to your kiln.
 9. Replace any worn or defective parts with ONLY genuine ***JEN-KEN Kiln*** replacement parts.
 1. Never place anything above or under the kiln for storage, nor should anything be propped up against the kiln.
 2. Do not store or use flammable products near your kiln such as gasoline, paint, aerosol cans, paper, curtains, plastic, etc.
 3. A qualified electrician or service person should be used for all electrical service or repairs.
 4. If the kiln power cord becomes damaged or corroded, replace the cord immediately.
 5. Unplug the kiln before servicing or vacuuming.
 6. Do not touch or attempt to replace the elements while the kiln is plugged in.
 7. Kiln must be properly grounded.
 8. Never allow the power cord to touch the kiln. Never use an extension cord.
 9. Do not drop or slam the lid shut.
 10. Let the kiln cool to room temperature before opening the lid.
 11. Make sure all switches are turned to "OFF" before opening the lid.
 12. If your kiln is equipped with a kiln sitter, be sure to have the correct cone in the sitter. (EXAMPLE: Do not use a Cone 6 in place of a Cone 06) This would ruin your ware.
 13. Be sure the kiln sitter is adjusted properly, as shown in the Dawson Kiln Sitter Manual. Check the adjustment periodically (about every 20-30 firings or if the tube assembly in the kiln has been bumped by a shelf while loading.
 14. **NEVER LEAVE THE KILN FIRING UNATTENDED.**
 15. Use common sense while installing and using.
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NOTE: If you are in doubt about anything turn the kiln off , call your dealer or the factory at (863) 648-0585 M-F 8-4 Eastern Time

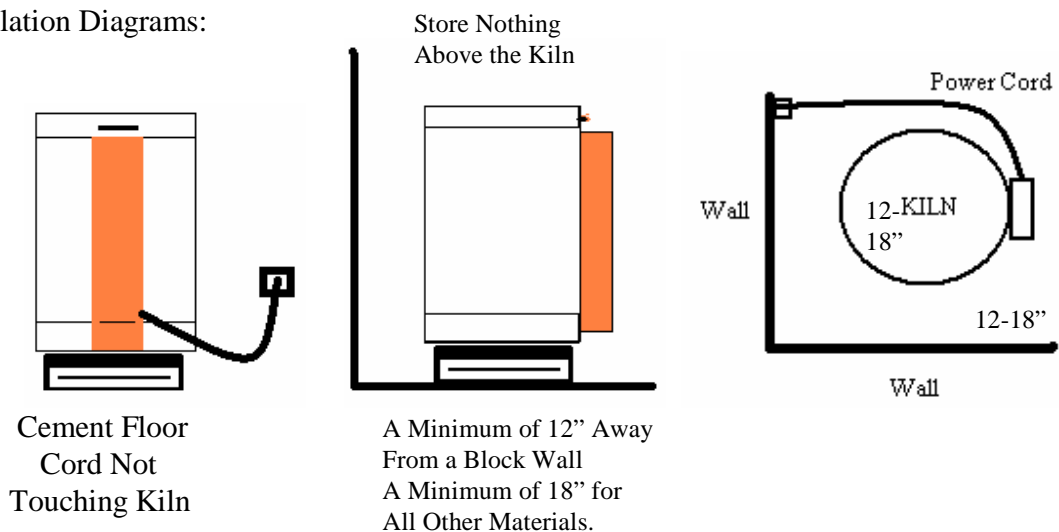
CHOOSING A LOCATION:

The proper location is as important as choosing the right kiln. Below are some safety guidelines:

- The best and safest place for your kiln is on a cement floor. (If not, some type of adequate fireproof material should be used beneath the kiln to prevent a possible fire hazard or prevent discoloration of the floor.)
- Concrete blocks may be used to raise the kiln or a metal stand that is available from **JEN-KEN** Kilns.
- Proper electrical service must be available. Refer to the section on Electrical Specifications.
- Area should be free from flammable or combustible materials such as gasoline, paper, paints, plastics, etc.
- Area should be covered, dry and with good ventilation to the outside. Kilns do not produce foul odors and fumes, but some products (like glazes, china paints and glass) go through a chemical change in the kiln. They could release fumes in the air, that with ample cross-ventilation to the outside, can be kept to a minimum. If ventilation is a problem, then call to see if an Orton Vent System is applicable.
- A minimum of 12 inches should be allowed between the kiln sides and the nearest non-combustible wall or object.
- Never place the kiln in a small enclosed area (such as a closet, cabinet or very small room). The room temperature will increase past a reasonable level quickly. Air circulation and ventilation are needed to remove heat and vapors that may be released in the firing. In a larger room, the exterior of the kiln will stay cooler than in a very small room.
- Since the exterior of the kiln gets very hot, place the kiln out of the way of children, traffic and work areas.
- Never install a kiln outside and avoid undue moisture.
- Never let the power cord come in contact with the kiln. The kiln may need to be rotated a little for the cord not to touch the kiln.

The kiln receptacle should be located to the back right of the kiln, about 1 to 2 feet from the ground. Review the diagram below

Installation Diagrams:



Kilns must have an Air Space Under the Kiln. Kilns Cannot sit directly on a floor or any surface. Use a kiln stand or concrete blocks with the holes up and down at a minimum. Small Table Top Kilns can be used with a kiln stand or the kiln bricks supplied as long at the material under the kiln is not combustible.

ELECTRICAL SPECIFICATIONS:

To operate the kiln safely and efficiently, your kiln needs the proper electrical outlet with the correct electrical capacity and voltage. The chart below will assist you the selection of the proper wire and breaker size for your *JEN-KEN* Kiln. A licensed electrician or the local power company should determine if you have the proper voltage. A kiln that is manufactured for 240 volts of service will not run properly on 208 volts. This difference of 32 volts is about a 25% reduction in power, which hinders a kiln from reaching high temperatures. Likewise, if you have 240 volts and you install a kiln manufactured for 208 volts, it will heat so rapidly it will hurt the ware in the kiln. Improper elements can be dangerous. Be sure to have the proper elements in your kiln to match the electrical service.

If you have 208 volts of service, you NEED 208 volt coils.

If you have 240 volts of service, you NEED 240 volt coils.

Any changes to your kiln or improper electrical installation will void the warranty.

ELEMENTS: Elements are the coils of wire that produce heat inside the kiln. They are made from a high quality, high-temperature wire. During the firing, they become very soft and when cool become brittle. Life expectancy of the elements will depend on the number of firings, the firing temperatures, and the products fired. At lower temperatures, the elements will last longer than firing at higher temperatures. Care should be taken to make sure that no foreign matter (such as glazes, clay or kiln wash) come in contact with the elements. This will greatly reduce their life expectancy. Regular vacuuming of the kiln lid, bottom and the element grooves is recommended.

JEN-KEN CERAMIC KILNS

Models JK, FR & AF &AF3C	Voltage	Amperage Draw	Wire Size Required	Fuse Required	Receptacle
11/9	120	17	12	20	5-20R
1411	120	17	12	20	5-20R
Model 23	120/120	13/13	14	15/15	Two 5-15R
1811	240	20	10	30	6-30R
1822	240	26	8	30	6-30R
1829	240	39	6	50	6-50R
2122	240	30	8	40	6-50R
2422	240	36	6	50	6-50R
2431	240	45	6	50	6-50R
2829*	240	45 OR 55	6	50 OR 60	6-50R OR DW
Oval 27	240	55	6	60	Direct Wire
(JK) ² 22	240	40	6	50	6-50R
(JK) ² 29	240	45 OR 55	6	50 OR 60	6-50R OR DW
Ceram-a-Glass 1513	240	20	6	30	6-30R

Ceram-a-Glass 1815	240	26	6	30	6-30R
Ceram-a-Glass 2422	240	45	6	50	6-50R
Ceram-a-Glass 2822	240	45	6	50	6-50R
Ceram-a-Glass (JK) ² 22	240	45	6	50	6-50R
Ceram-a-Glass Oval 18	240	48	6	50	6-50R

* The 2829, Oval, JK Squared Series can be ordered as a 45 amp kiln or a high-fire 55 amp kiln, requiring direct wire installation. The higher amperage means the kiln can fire to higher cone numbers more times with the added power.

For kilns ordered with the 208 volt elements, the same amperages, wire size, breaker and receptacle should be followed as the 240 chart above.

JEN-KEN Glass Kilns

MODELS GS & Digitals	Voltage	Amperage Draw	Wire Size Required	Fuse Required	Receptacle
Chilipepper	120	8	14	15	5-15R
Fuse Box	120	8	14	15	5-15R
Bead Box	120	8	14	15	5-15R
Cube	120	15	14	20	5-15R
VitroGraph	120	15	14	20	5-15R
Bead Annealer 11/4.5 w/ or w/o 2" Flip Door	120	13	14	15	5-15R
Bead Annealer 11/9 w/ or w/o 4" Flip Door	120	13	14	15	5-15R
11/6	120	13	14	15	5-15R
Fiber Fuser	120	13	14	15	5-15R
Bonnie Glo	120	15	14	15	5-15R
15/6 15a	120	15	14	20	5-15R
15/6 17a	120	17	12	20	5-20R
Rectangle	240	17	12	20	10-20R

G-18	120	15	12	20	10-20R
GS-18	240	15	12	20	6-30R
GS-21	240	15	12	20	6-30R
GS-18-E	240	20	10	30	6-30R
GS-21-E	240	25	10	30	6-30R
GS-24-E	240	25	10	30	6-30R
GS-28-E	240	36	8	40	6-50R
____-11-E	120	17	12	20	5-20R
____-18-E	240	20	10	30	6-30R
____-18-E 15"	240	26	10	30	6-30R
____-21-E	240	25	10	30	6-30R
____-24-E	240	23	10	30	6-30R
____-24-E 15"	240	26	10	30	6-30R
____-28-E	240	25	10	50	6-50R
____-28-E 15"	240	45	6	50	6-50R
OVAL 9	240	36	8	50	6-50R
OVAL 13	240	45	6	50	6-50R
OVAL 18"	240	45	6	50	6-50R
(JK) ²	240	36	8	50	6-50R
(JK) ² 15"	240	45	6	50	6-50R
Pro Fusion	240	45	6	50	6-50R
Crucible 11	240	17	12	20	10-20R
Crucible 18	240	30	6	50	6-50R
DW Crucible	240	45	6	50	6-50R
Autofire Remote 120-20	120	20	12	20	10-20R
Autofire Remote 240-30	240	30	10	30	6-30R
Autofire Remote 240-50	240	50	6	50	6-50R
IF YOUR KILN IS OVER 30 FEET FROM THE BREAKER YOU MAY HAVE TO GO TO THE NEXT HEAVY GAUGE OF WIRE, PLEASE CONSULT YOUR ELECTRICIAN. THE FARTHER THE ELECTRICAL RUN THE HEAVIER THE WIRE HAS TO BE!!!!					

KILN BRICK:

All *JEN-KEN KILNS* are made of hand selected 2300°F refractory brick. This brick is an insulating fire brick that has holes inside and throughout the brick to give it an insulating value. If it was solid brick it would not hold the heat inside the kiln, but transfer the heat through the solid material to the outside. The brick is strong as a whole as has a very long life. The brick can chip easily and care should be taken to avoid bumps while loading and unloading shelves. Frequently vacuum the brick lid, the groves that the elements are in and the bottom of the kiln. This will remove the dust, sand and loose kiln wash from the kiln.

KILN JACKET:

Your *JEN-KEN KILN* is encased in a stainless steel jacket and is also equipped with handles for easy moving. Due to the high temperatures, discoloration may appear on the stainless. A good metal polish can remove this discoloration, but most do not worry about the looks of the kiln after years of use.

ACCESSORIES:

SHELVES: Shelves help you make the most of the inside of your kiln. Shelves are sized a few inches smaller than the inside diameter of the kiln so that they can be placed in and out of the kiln easier. They are made of refractory material so that they should be handled carefully. Shelves come in full and half sizes. Half shelves enable you to fire tall pieces on one side of the kiln and smaller ones on the other side. Should a crack appear in a shelf, break the shelf along the crack and use it as two separate pieces. A good coat of kiln wash should ALWAYS be maintained on top of the shelves. Ceramics use ceramic kiln wash with silica in it and glass requires glass kiln wash with no silica in it to stick to your glass. Store shelves upright on edge leaning on a sturdy structure. Shelves stacked flat can put too much pressure on the bottom shelf and cause it to stress and crack. It usually breaks in the kiln during the next heating.

POSTS: Posts are also made from refractory material and should be handled carefully. Post sizes range in heights from ½” to 14”. They are used to support the shelves in your kiln at different levels depending upon the height of the ware you are firing. Usually, three posts allows you to level the shelf easier (though some prefer four). Glass kilns with lid elements usually only use one shelf at a time. The lid element does most of the work heating the one shelf and would not provide the direct radiant heat to a lower shelf. The top shelf would fire fine with the bottom shelf lagging behind by a large temperature differentiation. Posts do not need to be to outer edge of the shelf. Move the posts in several inches so that the posts help support more of the middle of the shelf. This will help keep the middle of the shelf supported from underneath without a post there. For large shelves this is required so that the shelf is not supported at the edges, but more towards the center.

CERAMIC KILN WASH: Kiln wash is a protective coating used to keep glazes and porcelain from sticking to the kiln shelf and the kiln floor. Mix the desired amount of dry, high fire kiln wash with water to the consistency of a thick cream and stir thoroughly. Apply several thin coats of kiln wash with a hair brush to the kiln floor and the tops of the shelves, alternating directions. Let dry. When areas wear thin they may be re-coated. If glazes or glass have dripped onto the shelves or the kiln floor, chip the glazes off, sand and smooth the area then reapply the kiln wash. To test kiln wash, slide your hand over the surface of the kiln washed shelf. If your hand is white and powdery,

the kiln wash is satisfactory. Perform this test periodically. When the palm of your hand is clean, then re-apply kiln wash to the shelf to prevent the ware from sticking.

Apply a thin coat of kiln wash to the cone supports on the kiln sitter and to the bottom of the sensing rod (where they come in contact with the cone). However, do NOT apply kiln wash to the cone or to the side of the porcelain tube.

GLASS KILN WASH: Glass kiln wash is a coat that keeps glass from adhering to the kiln shelf and the kiln floor in the event of a glass run.

If applicable, scrape the old kiln wash off with a putty knife. It is best to wear a dust mask while cleaning and working with the kiln wash. Stir the kiln wash powder first with a spoon to mix the clays. Then add the kiln wash to water. The most common mixture is 4 cups of water to one cup of kiln wash powder. Stir to get most of the lumps out. Apply a protective coating of kiln wash to the floor of the kiln. Hot glass can create holes in the fire brick of the kiln.

Apply kiln wash using a soft bristled brush to the kiln shelf. Feel free to stir the kiln wash in a mixing container with the brush (as this will keep the clays from settling). Load the brush heavily with kiln wash when dipping it in. Flow the first coat on in one long brush stroke. Repeat this with parallel brush strokes. Allow the shelf to absorb most of the moisture then apply another coat in a cross direction to the first. Repeat this for 8-10 coats. A thick layer of kiln wash will be easier to remove later and will last longer too. Too much kiln wash on a shelf is not a problem (unless it is uneven) but not enough will cause glass to stick to the shelf and eventually break. Store the unused kiln wash (liquid or powder) in a sealed container.

Let the shelf stand for several days to dry or place it in the kiln and heat it up to 500°F with the lid propped open a few inches. If the shelf surface is not smooth when dried, use the palm of your hand and rub the kiln washed shelf gently in a circular motion till smooth.

PYROMETER: A pyrometer is a meter used to measure temperature inside the kiln. A thermocouple (sensing device) is attached to the meter and the end is inserted into the kiln (through either peep hole or thermocoupler hole) obtain the temperature reading. It is useful, as a guide, to show how fast the temperature is rising and when you are nearing your desired temperature.

WHEN USED FOR CERAMICS:

A pyrometer used for ceramics measures only temperatures and should not be used as a substitute for a pyrometric cone in the kiln sitter. A pyrometer can help prevent a potential over-fire. If the pyrometer reads a higher temperature than the cone firing temperatures the time is longer than usual. Then you can turn the switch(es) to "OFF". If you are in doubt about a firing, turn the kiln off, let it cool to room temperature, then inspect the cone and the firing. It is far cheaper to put a new cone in and re-fire than to over-fire the load.

WHEN USED FOR GLASS:

A pyrometer used for glass work is a useful tool that can gauge the rise in temperature over a period of time. Example: take the temperature reading, wait 10 minutes and take the reading again. Subtract the first reading from the second to find the difference. Then divide this number by 10 minutes to give the rate of rise per minute.

- First temperature reading 500°F, Second temperature reading 725°F for a difference of 225°F. Divide 225°F by 10 minutes equals 22.5°F per minute rise in temperature.

There is a ½” thermocoupler hole (in the steel jacket) located on the back right side of the kiln. If the hole is to be used, you will need to drill through the brick using a ½” drill bit for large thermocouplers or a ¼” for small ones. The hole is easy to drill by just spinning the bit with your fingers. Slowly push the bit in and out of the hole clearing the dust each time. Be sure to vacuum up the brick dust. If there is not a hole in the steel jacket, then a peephole plug may be ordered that has a hole pre-drilled through it. Then the thermocoupler can slide in through the peephole plug in the kiln.

Insert the thermocoupler at least 3” into the kiln and do NOT allow the tip to touch anything inside the kiln. Make sure the ceramic block or the alloy rods never touch the outside metal jacket of the kiln.

NEVER FIRE A KILN UNATTENDED NO MATTER WHAT BRAND KILN, MAKE OR MODEL

**LET THE KILN FIRE AND SHUT-OFF. IF THE KILN CANNOT
BE MONITORED WHILE ON, THEN IT IS FAR BETTER TO
TURN THE KILN OFF AND REFIRE AT A LATER TIME. THE
ONCE THE KILN HAS SHUT DOWN AND IS COOLING AND
POWER HAS BEEN SWITCHED OFF, THEN AND ONLY THEN,
CAN THE KILN BE CONSIDERED READY TO BE
UNMONITORED.**

DO NOT LET ANYONE NEAR A HOT OR COOLING KILN.

KEEP ALL CHILDREN AWAY!

JEN-KEN KILN WARRANTY

JEN-KEN KILNS are warranted to the original purchaser to be free from defects in materials and workmanship when used under normal and proper conditions for the periods specified below. The warranty period begins at the date of original purchase from **JEN-KEN KILNS**, a **JEN-KEN KILN** authorized distributor or dealer.

JEN-KEN KILNS are warranted for 2 years (1 year for the Chili Pepper) from date of original purchase.

Dawson Kiln Sitter is warranted by a separate 1 year warranty from WP Dawson, Inc.

PerfectFire panels are warranted by a separate 1 year plan from the manufacturer.

FireRight panels are warranted by a separate 1 year plan from the manufacturer.

To Claim under the Warranty, the purchaser must:

- 1) Provide written proof of the date of purchase.
- 2) Notify **JEN-KEN KILN** (or distributor/dealer) from whom the kiln was purchased.
- 3) Make the kiln immediately available for inspection.

FOR WARRANTY REPAIRS:

- 1) Warranty repairs should be handled from where you purchased the kiln and they will arrange for any repairs or replacement of parts under the terms of the warranty and upon receipt of the kiln or defective part(s). Warranty work, other than that performed at the factory, **DOES NOT** include labor, just parts. The defective parts may be returned to **JEN-KEN KILNS** (postage prepaid) 3615 Ventura Drive West, Lakeland, Florida USA 33811. Include your name and address, a letter of explanation and the name and address from where you purchased the kiln. If, after factory examination the part is found to be defective, a new or repaired part will be sent prepaid by **JEN-KEN KILNS**.
- 2) If the entire kiln is to be returned to the factory, all transportation costs are the responsibility of the purchaser. The purchaser should notify **JEN-KEN KILNS** (863) 648-0585 prior to shipping. We will advise the best shipping method and if it is necessary to return the whole kiln or only certain parts. Factory warranty

work will be performed within 30 days after the defective part is returned to the factory.

- 3) **JEN-KEN KILN** reserves the right, as its option, to replace the entire kiln or any part of it in order to fulfill its obligation under this warranty.

This Warranty DOES NOT Cover:

- 1) Freight damage.
- 2) Kilns altered in any way after leaving our factory.
- 3) Abuse or neglect, moisture, improper storage.
- 4) Improper installation.
- 5) Kiln Overfires (exceeding the melting temperatures of the materials being fired) regardless of the cause of the overfire. (This does not occur in kiln that are monitored while firing. If in doubt during a firing, turn the kiln off)
- 6) Dawson Kiln Sitter or Limit Timer.
- 7) Kilns operated on incorrect voltage.
- 8) Improper electrical installation.
- 9) Kiln furniture.
 - 1) Kiln ware.
 - 2) Kilns used for purposes other than firing ceramic or glass materials.
 - 3) Kilns operated in excess of the temperature rating of the kiln.
 - 4) Damage that may occur from kilns that are fired on or near combustible materials (i.e.: wood floors).

This Warranty is in lieu of all other warranties, expressed or implied. **JEN-KEN KILN** neither assumes nor authorizes any distributor, dealer, retailer or employee to assume for it any other obligation of liabilities in connection with **JEN-KEN KILNS**.

This warranty is limited, as specified above and excludes incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty give you specific rights and you may also have other rights why vary from state to state.

JEN-KEN KILNS
Manufactured by
Sir Ramic Porcelain, Inc.
3615 Ventura Drive West
Lakeland, Florida USA 33811
(863) 648-0585