

## **Rakuing with an Electric Olympic Raku Kiln**

Firing raku at home can be a frightening experience. Most artists who want to fire raku have a fear of gas, fire, and what will the neighbors think when they see this. Another fear occurs when the lid of a 2000-degree kiln is opened or worse yet, picking up a red-hot firing chamber while trying to get at your piece inside. The protective clothing of aprons, gloves and facemask are a sight to see as well as very uncomfortable to wear. These circumstances put most raku lovers at the mercy of the local art center and the "semi-annual raku party".

Now there is a pleasant alternative – "*what is it?*" You ask...the Olympic Electric Raku kiln. Incorporating the same efficient design of the time-proven Olympic gas raku, we have created an electric raku kiln. All Olympic Raku Kilns (gas and electric) are built of durable brick with a metal frame and convenient hand operated winch to open and close the firing chamber.

The original electric raku model has an 11 ¼" x 13 ½" firing chamber and plugs into a standard 120 volt – 20 amp outlet. Larger versions are available requiring 240 volts. Each kiln is standard with an easy to read analog pyrometer and infinite heat control. An electronic control may be ordered as an option.

When using an electric raku kiln there are important things to take into consideration. The first is locating your kiln in an area with adequate space, ventilation and having easy access to electric outlets. It is beneficial to have access to the kiln from all sides. All flammable materials such as curtains, plastics, etc. in the area of the kiln should be removed.

If the kiln is to be placed outside, it must be kept dry. Have a roof over the kiln or use some type water resistant tarp when the kiln is not being fired. Because all kilns generate heat, the stand should be placed on a cement floor. Tiles or linoleum could be damaged without this precaution.

Part of the raku process includes having the materials ready and available once you begin firing. You will need reduction containers – (galvanized garbage cans are best) that are the correct size and are arranged for easy access and clear movement around the kiln. Grass, leaves, sawdust or shredded paper work well as reduction materials. These combustibles should be at a safe distance from the kiln, yet easy to reach during the post firing process. Allow enough room for unencumbered movement as well as water sources for cooling and emergency situations.

Use only raku clay, which is bisque fired before the actual raku firing. Raku clay has a high grog content, which minimizes thermal shock as rapid temperature changes occur. Non-raku clay may break and result in damage to the kiln and

other pieces inside. Use raku or metallic oxide glazes when rakuing, which will give vivid raku colors upon reduction.

Begin heating the kiln on high with the fire chamber completely closed. The kiln may take 2 hours to reach raku temperature. As the kiln reaches approximately 1900° Fahrenheit open the kiln and begin loading your ware. To preheat and avoid thermal shock slowly lower the raku-firing chamber. Maintain full power when opening the kiln to minimize heat loss between pieces.

Around 1900-1950° Fahrenheit the rakuing process will begin to take place. You can tell the ware is ready to remove by its shiny, wet appearance. Raise the firing chamber; remove pieces with tongs and place in reduction containers as quickly as possible. Once ware is inside the container add more reduction material and cover within 15 seconds to ensure efficient reduction. (It is not how much reduction material you use, but how fast you can get pottery ware into the container and covered that provides exceptional raku pieces.) Keep container covered for 15 minutes - 1 hour. After ware has cooled, wash each piece to remove soot and carbon.

Olympic Raku kilns are designed to minimize heat loss when the firing chamber is lifted so that you can continue the rakuing process without interruption. Once ware is removed from the kiln and placed in reduction containers, new items may be loaded in the kiln. The usual recovery time between pieces is 15 minutes. You may also want to place items on top of the raku-firing chamber (on the outside) that you will be rakuing next so that they are preheated before placing in the kiln.

### **Raku Glaze**

Many commercial glazes are available from numerous suppliers including Rainbow Products. Some times commercial glazes designed for decorative ceramics make excellent raku glazes. A glaze colored with metallic oxides such as copper, cobalt or tin work nicely. These glazes usually are green, blue or white when used in oxidation. Experimentation can be fun!

There are many good glaze formulas available in raku books such as "*Raku, A Practical Approach*" by Steve Branfman. Again experimenting is part of the fun!

Olympic Kilns under its' Rainbow Products division carries four raku glazes that generate numerous colors depending on the temperature fired and the reduction process initiated. Our resident potter, Tina Whitlock, fired all the raku pieces shown in the photographs in the Olympic Electric Raku kiln.

Tina notes the following effects of the raku glazes:

- The Raku White Crackle glaze creates a beautiful white crackle when fired a cone 07; however, when fired at higher temperatures of cone 05 or more, the results create a clear silver/gold color. Reduction is recommended.
- Haugen's Gold is gold at cone 07-05 in a heavy reduction atmosphere. In oxidation the color will vary from various blues to greens.
- Copper Red Luster is copper as a penny in heavy reduction atmosphere (cone 07-05). The Copper Red Luster is also very fluid so to avoid a runny look, the recommended firing temperature is cone 012. This glaze will achieve various blues and greens when oxidized.
- Rainbow Luster provides a deep crimson purple appearance when fired cone 07-05 in heavy reduction. When fired at higher temperatures it tends to turn to gold.

Please contact Olympic Kilns for additional information about raku kilns or glazes.



## ELECTRIC RAKU INSTRUCTIONS

### LOCATING YOUR KILN:

Three things should be considered when locating your Olympic Kiln:

1. Adequate space
2. Proper ventilation
3. Convenience of electric outlets

For the area that has been chosen, allow 12 inches of space between the kiln and the walls. All flammable materials such as curtains, plastics, etc. in the area of the kiln should be removed.

If the kiln is to be placed outside, it must be kept dry. Use a roof over the kiln or some type water resistant tarp when the kiln is not being fired. Because all kilns generate heat, the stand should be placed on a cement floor. Tiles or linoleum could be damaged without this precaution.

### RAKING:

Planning –

- Reduction containers – (galvanized garbage cans are best) that are the correct size and are arranged for easy access and clear movement around the kiln. Grass, leaves, sawdust or shredded paper work well.
- Combustibles should be at a safe distance from the kiln, yet easy to reach during post firing process
- Helpers that know their job
- Arrange water sources for cooling and emergency situations
- Provide safe, clear avenues for unencumbered movement

Operating the kiln-

- Plug kiln into a receptacle that has an adequate breaker
- To operate kiln pulley system, unlock lever and turn the hand winch. Ensure winch is in a locked position before releasing the handle.
- **Use only raku clay pottery and raku glaze when raking.** This clay and glaze is designed for thermal shock the ware must go through, other materials may explode and damage the kiln as well as other pottery ware.

Begin heating the kiln with the fire chamber completely closed. The 120-volt electric raku kiln may take approximately 2 hours to reach raku temperature; however, the 240/208-volt electric raku will reach temperature in about 60 minutes. As the kiln reaches approximately 1900° Fahrenheit begin loading your ware. To preheat and avoid thermal shock slowly lower the raku-firing chamber. Maintain full power when opening to minimize heat loss between pieces.

Around 1900-1950° Fahrenheit the raking process will begin to take place. You can tell the ware is ready to remove by its shiny, wet appearance. Raise the firing chamber; remove pieces with tongs and place in reduction containers as quickly as possible. Once ware is inside the container add more reduction material and cover within 15 seconds to ensure efficient smoking. (It is not how much reduction material you use, but how fast you can get pottery ware into the container and covered that provides exceptional raku pieces.) Keep container covered for 15 minutes - 1 hour. After ware has cooled, wash each piece to remove soot and carbon.

Olympic Raku kilns are designed to maintain their temperature (even when the firing chamber is lifted) so that you can continue the raking process without interruption. Once ware is removed from the kiln and placed in reduction containers, new items may be loaded in the kiln. You may also want to place items on top of the raku-firing chamber (on the outside) that you will be raking next so that they are preheated before placing in the kiln.