



## The Wall-Mounted KilnMaster Controller

The wall-mounted KM-1 KilnMaster gives automatic kiln control to most modern Skutt 208/240V kilns and any other brand kiln which uses NEMA 6-50 (single phase) or NEMA 15-50 (3 phase) plugs and receptacles. It can be moved quickly from one kiln to another and can control virtually any kiln in a studio which has the proper cord plug and receptacle configuration.

Once installed, the KilnMaster controller uses the same operating instructions as other Skutt Automatic kilns.

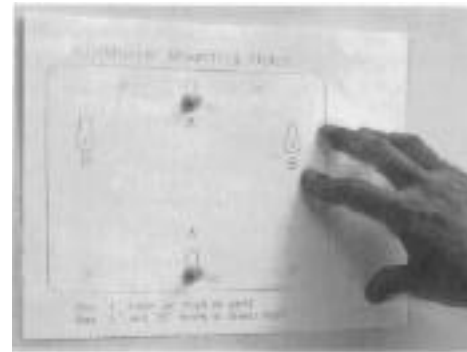
**Locating the controller.** Pick a location that will put the controller *at least* two feet from the kiln to prevent overheating the controller.



**Mounting the controller on the wall.** Mark the hole positions on the wall where the controller will be installed using the paper template supplied with the controller.

*To mount the controller on stud or post:*

1. Use the holes marked "A" on the template and screw a #12 x 2" wood screw into the wall leaving a 1/8" gap.
2. Repeat for the second screw.



*To mount the controller in sheet rock:*

1. Using holes marked "A" and "B" on the template, drill the necessary holes to properly mount the 1/4" x 2" molly bolts into the sheet rock.
2. Tighten the first bolt until there is a 1/8" gap.
3. Repeat for the other three molly bolts.

Before hanging the controller on the wall, loop the cord attached to the quick reference card over a screw so that it hangs below the controller when mounted.

### CONNECTING TO THE KILN.

**Single Phase.** (Switching capacity 48 Amps on 208-240V) To operate the wall-mounted controller, simply engage the kiln plug in the receptacle located on the back of the controller. Then plug the controller into the existing wall receptacle.

**Three-phase.** (Switching capacity 40 Amps on 208-240V) To connect your three-phase kiln, plug the power cord from the kiln into the receptacle mounted on the back of the controller as shown below. Plug the pilot cord (the smaller cord) into the small receptacle mounted on the underside of the controller. The controller





is plugged into a wall receptacle which provides three phase voltage.

You will no longer need to use the three-phase contactor box. However, an electrician may need to wire a receptacle for the controller if a three-phase contactor box was used previously. You may need to make other changes to the supply for kilns not made by Skutt. Other manufacturers may not use pilot cords. Please discuss this with your distributor.

**Thermocouple mounting.** Skutt kilns have a hole stamped in the stainless band where the thermocouple flange should be mounted. This hole is located to the right of the red switch boxes. You can see the firebrick through this hole. The thermocouple flange is a metal tube approximately 5/8" in diameter and 1 1/2" long attached to a metal washer.

1. Remove the thumbscrew from the flange.
2. Align the thermocouple flange so that it is exactly over the hole in the stainless band. Position the flange so the thumbscrew is on the top. Attach the flange to the kiln using the two Phillips self-tapping screws provided. Note: To start the screws, lightly hit each screw with a hammer until the point has pierced the stainless steel band.
3. Insert a 1/4" twist drill or carpenter's bit through the flange holder. Slowly drill through the kiln wall brick into the kiln chamber as shown at right.



4. Insert the thermocouple into the kiln so that 1-1/4" to 1-1/2" of the tip protrudes into the kiln chamber. Tighten the thumbscrew.
5. Uncoil the yellow thermocouple wire that is hanging from the bottom of the controller enclosure. Next, take the receptacle on the end of the wire and engage it with the two prongs on the thermocouple which you mounted on the flange in Step 4. There is only one way the plug will engage the receptacle.
6. The controller is now ready for use.

If you are installing the thermocouple on a kiln that is not marked for a thermocouple, please follow these instructions.

1. Mark a 1/2 to 5/8" diameter hole on the stainless jacket in the center of the brick next to the Kiln-Sitter brick (one brick to the right of the master switchbox). Be sure placement is accurate so that you do not drill through an element. *Do not drill yet.*

2. Align the flange holder accurately over the mark, positioning the thumbscrew hole on top. Mark the position of the small holes on the jacket. Push hard or tap out with a nail and hammer the small screw holes. Drill two 3/32" holes for the smaller sheet metal screws. Drill through the *metal* only. Install the flange with the sheet metal screws provided.
3. Follow steps 2-6 above.

## KILN SETTINGS

The kiln switches, Kiln-Sitter and limit timer (if so equipped) need to be properly set and adjusted for correct operation with the controller. Please follow the instructions for the option(s) that apply to your kiln.

**Kiln-Sitter.** The Dawson Kiln-Sitter is no longer a control device when used with the KilnMaster controller, but it can be used as a backup safety device.

1. Place a Junior cone one or two numbers hotter than the cone equivalent you program into the KilnMaster to keep the Kiln-Sitter from shutting off the kiln early. For example, if you program a Cone 5 (2156½) firing in the KilnMaster, place a Cone 6 or 7 Junior cone in the Kiln-Sitter. Use your firing experience or read the relevant sections of this manual for more information.
2. Push the plunger in. Repeat this procedure using new cones each firing.

**Limit timer.** If your Dawson Kiln-Sitter is equipped with a limit timer, set the timer

for 20 hours (the maximum). Because the KM-1 controller turns the power to your kiln on and off to control the temperature, the timer will only run intermittently and will be useless. If you fail to set a maximum time each firing, the timer may shut off the kiln early. You may want to disconnect the wires that operate the limit timer to eliminate the bother of resetting the timer each firing.

**Switches.** The switches on your kiln will no longer be used to control the temperature rise inside your kiln. The KM-1 controller now controls the heating rate.

Set all switches in your kiln to High. (Exception: do not set the center section of the 818-WR above 4.)

If you have questions, please call Skutt Ceramics at (503) 774-600.

**Programming.** Refer to the Quick Start sections on Cone Fire and Ramp/Hold for instructions on programming.

## WALL MOUNT CONTROLLER

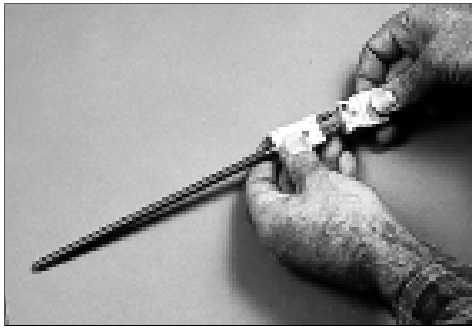
The KilnMaster contains many components which cannot be replaced in the field. Your Skutt distributor may be able to replace cords, connectors and relays.

The thermocouple can be easily replaced when needed:

1. Loosen the thumbscrew on the thermocouple flange and gently pull the thermocouple assembly out of the kiln.
2. Discard the old thermocouple and plug



a new MI cable thermocouple into the receptacle mounted on the cord from the Wall Mounted Controller.



If a problem persists, call the factory to make arrangements for return of parts. When the controller is received we will evaluate the problem and call you with a cost estimate.

Send to Skutt Ceramic Products, 6441 S.E. Johnson Creek Blvd., Portland, Oregon 97206-9594. Our telephone number is (503) 774-6000, Fax (503) 774-7833.

See page 35 for details on replacing the thermocouple elements on KM kilns, which have a slightly different mount.

## Automatic kiln set up.

### PLANNING THE LOCATION OF YOUR NEW KM-SERIES KILN.

**Location.** For safety and convenience follow these basic rules.

1. Locate your kiln near your present electrical outlet or where a new circuit can be installed with least cost. Position the kiln to the left of your electrical outlet so the cord will have an easy run and will not place a strain on the plug or outlet.
2. Install it in a well ventilated, sheltered area such as a carport, garage, utility or hobby room. It should be convenient to your clay working area, and out of the way of other traffic.
3. Allow at least 18" of space between your kiln and adjacent walls.
4. Keep curtains, aprons, plastic or other flammable materials away from your kiln.
5. Never fire your kiln within a four sided cabinet or closet. The fourth side must always be open to room air to prevent the kiln from overheating surrounding surfaces. It is best to leave at least two sides open for easy access to controls and peep holes. Fully automatic kilns should not be located in a room that exceeds 105½F (41½C) or is less than 30½ F (0½ C) as damage to the electronic components may result.

6. If possible, locate the kiln in a room with a cement floor.
7. When installing a kiln in a room with a fire control sprinkler system, please check the sprinkler head rating to insure that heat emitted from the kiln will not activate the sprinkler system.

### UNPACKING AND CHECKING THE KILN

**Checking your kiln for damage.** Your kiln has usually traveled a long way by rail car or truck to get to you. Even though it was carefully packed at the Skutt factory, it could have been mishandled in shipping. If you find any problems as you unpack, do this.

1. Call your freight agent and ask for an inspection.
2. Save all the packing materials.
3. Contact the dealer where you bought your kiln.
4. Don't assemble or fire your kiln until your damage claim has been inspected.

Fortunately, few Skutt owners will experience any problems.

*For information on setting up Skutt PK Production Kilns, see Appendix 7 beginning on page 45.*

### Unpacking the kiln.

1. The bottom tray of each carton is attached to a wooden pallet. The kiln rests on foam packing material which is on the bottom tray. The bottom portion of the carton is stapled to the tray. After removing the staples from the tray, the carton can lift straight up exposing the assembled kiln. There is foam packing material that will fall loose from the kiln when the carton is lifted. Remove the plastic sheet and paper shields.
2. Open the lid, remove the plastic cover and carefully remove the kiln stand and "goodie bag" from the inside of the kiln. Close the lid.
3. For larger, heavier kilns you may choose to remove the lid from the top section. This will reduce the overall weight. To do this remove one cotter pin from the lid rod and slide the lid rod out of the lid hinge assembly. Also remove the thumbscrew and lid brace. Place lid on a clean, flat surface.
4. Remove the black plastic feet from the "goodie bag" and put them on the stand legs. Set the stand in the location you have designated for the kiln. See the section on locating your kiln if you are not sure about the safety requirements for the kiln site.