

APPENDIX 8 — 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. Choose a location that will put the controller at least two feet from the kiln to prevent overheating the controller. To mount the controller, mark the hole positions on the wall where the controller will be installed using the paper template supplied with the controller and follow these instructions:

STEP 1 – TO MOUNT THE CONTROLLER ON STUD OR POST

- Use the holes marked **A** on the template and screw a #12 x 2 inch wood screw into the wall leaving a .25 inch gap.
- Repeat for the second screw.

TO MOUNT THE CONTROLLER IN SHEET ROCK

- Using holes marked **A** and **B** on the template, drill the necessary holes to properly mount the .25 inch x 2 inch molly bolts into the sheet rock.
- Tighten the first bolt until there is a 1/8 inch gap.
- Repeat for the other three 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.

STEP 2 – 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. 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 contractor box. However, an electrician may need to wire a receptacle for the controller if a three-phase contractor 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 INSTALLATION

Skutt kilns have a hole stamped in the stainless band where the thermocouple flange is to be installed. It is located to the right of the red switch boxes. The firebrick is visible through this hole. The thermocouple flange is a metal tube approximately 5/8 in. (1.59 cm) diameter and 1.5 in. (3.81 cm) long attached to a metal washer.

- Remove the thumbscrew from the flange.
- 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.
- Insert a .5 in. (0.64 cm) twist drill or carpenter's bit through the flange holder.
- Slowly drill through the kiln wall brick into the kiln chamber
- Insert the thermocouple into the kiln so that 1.25 in.(3.18 cm) to 1.5 in.(3.81 cm) of the tip protrudes into the kiln chamber. Tighten the thumbscrew.
- Uncoil the yellow thermocouple wire that is hanging from the bottom of the controller enclosure.
- Plug the thermocouple ends into the receptacle coming from the controller. There is only one way the plug will engage the receptacle.
- The controller is now ready for use.

THEMOCOUPE INSTALLATION IN A KILN NOT MARKED FOR A THERMOCOUPE.

- Mark a .5 in. (1.27 cm) to 5/8 in. (1.58 cm) 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 switch box). Be sure placement is accurate so that you do not drill through an element. Do not drill yet.
- 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 in (0.23 cm) holes for the smaller sheet metal screws. Drill through the metal only. Install the flange with the sheet metal screws provided.
- For the remaining installation steps consult the previous section on Thermocouple Installation for a Skutt Kiln.

STEP 3 – OPERATING INSTRUCTIONS FOR KILNS WITH A KILN - SITTER

The kiln switches, **KILN-SITTER** and **LIMIT TIMER** (IF SO EQUIPPED) NEED TO BE PROPERLY SET AND ADJUSTED FOR CORRECT OPERATION WITH THE CONTROLLER.

- 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 (2156°) firing in the KilnMaster, place a Cone 6 or 7 Junior cone in the Kiln-Sitter.
- Push the plunger in. Repeat this procedure using new cones each firing.
- 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.
- Set all switches in your kiln to High. (Exception do not set the center section of the 818-WR above 4.)

