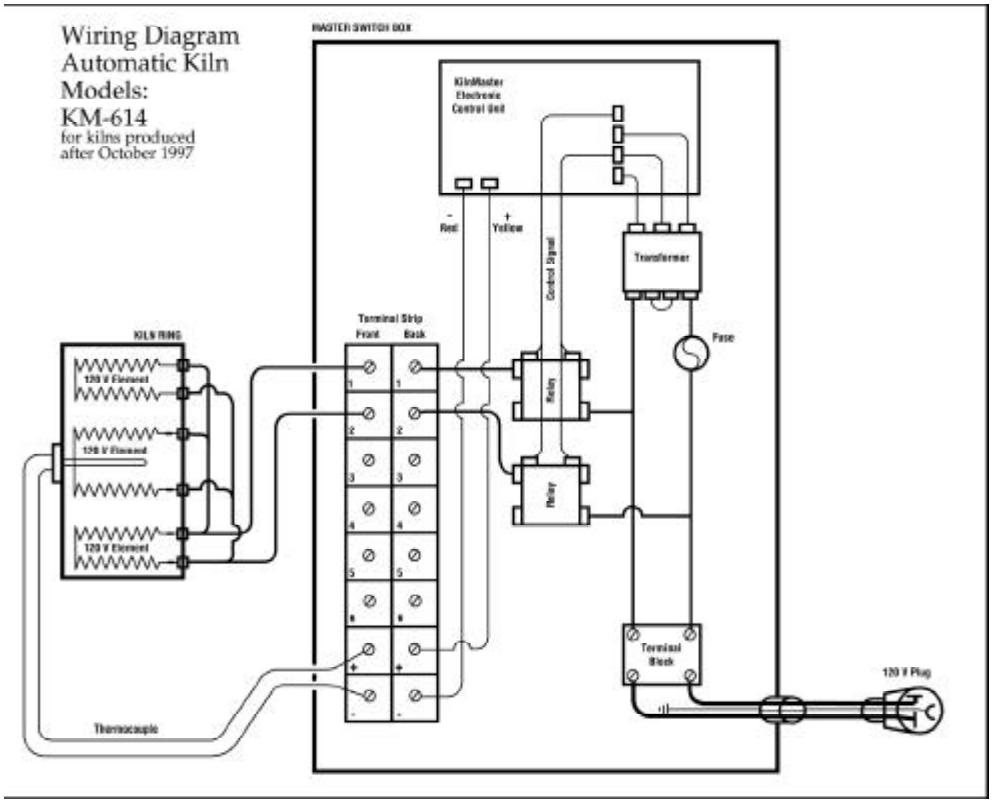
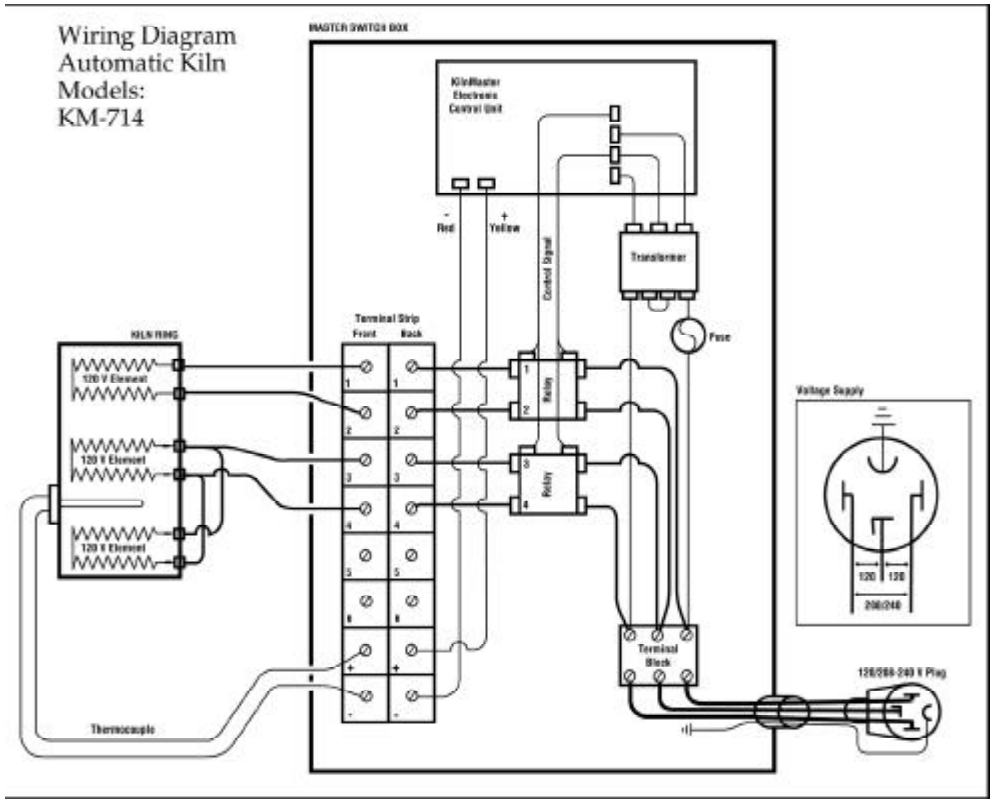
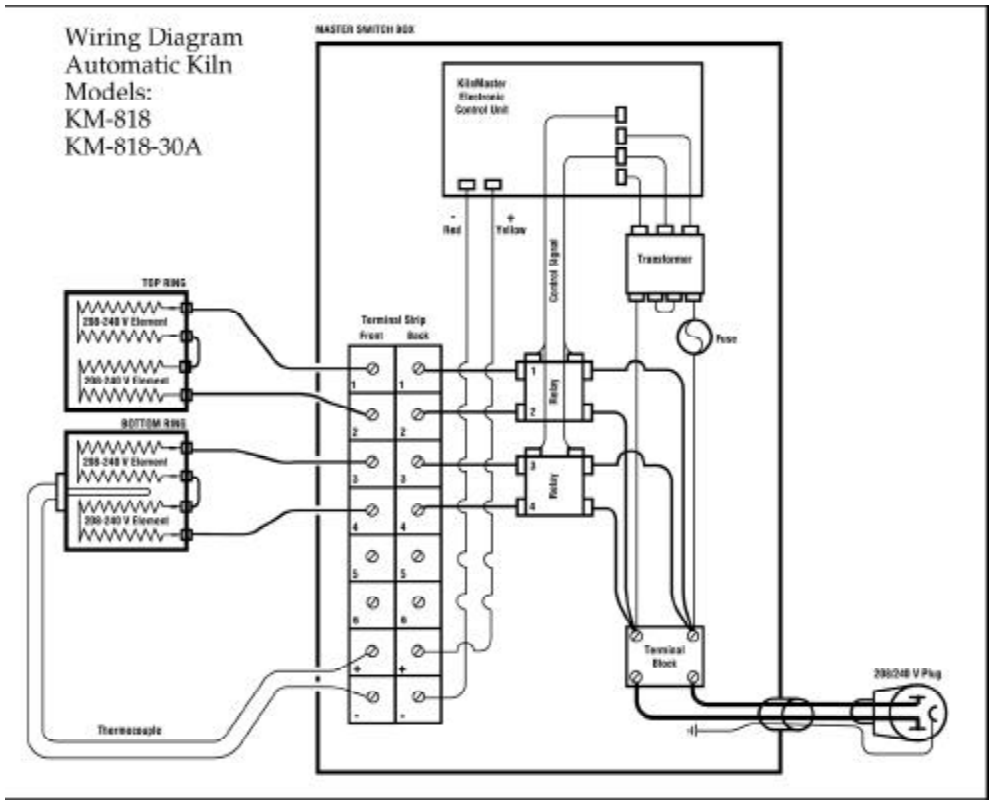




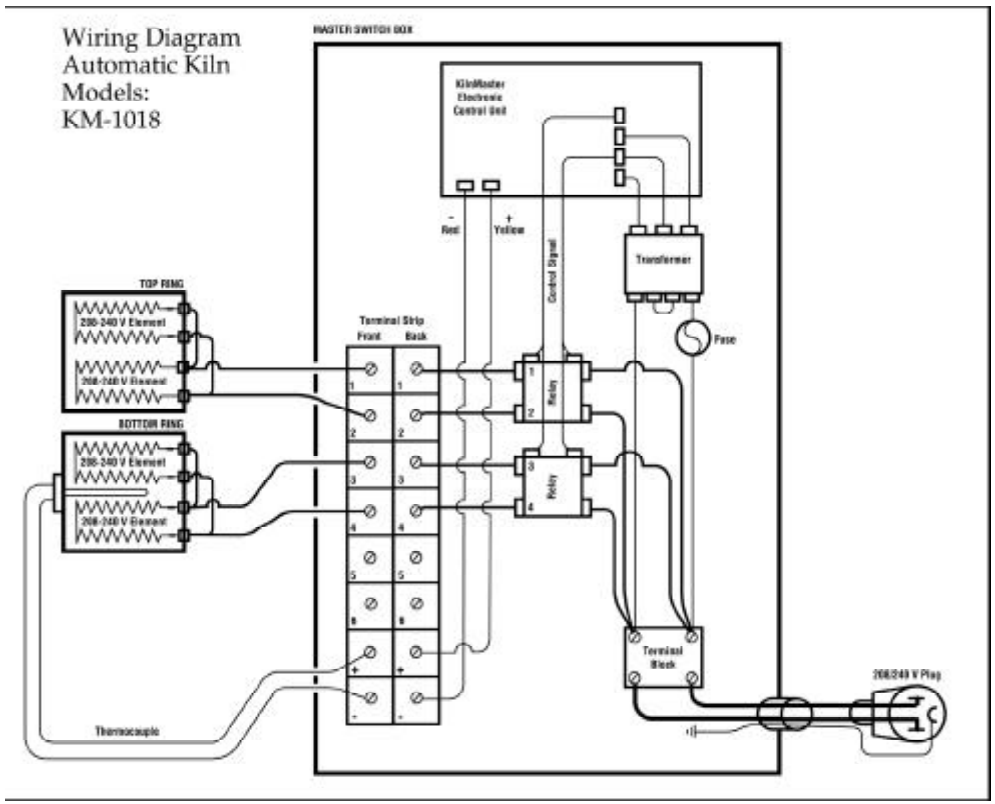
APPENDIX 5

Wiring Diagrams

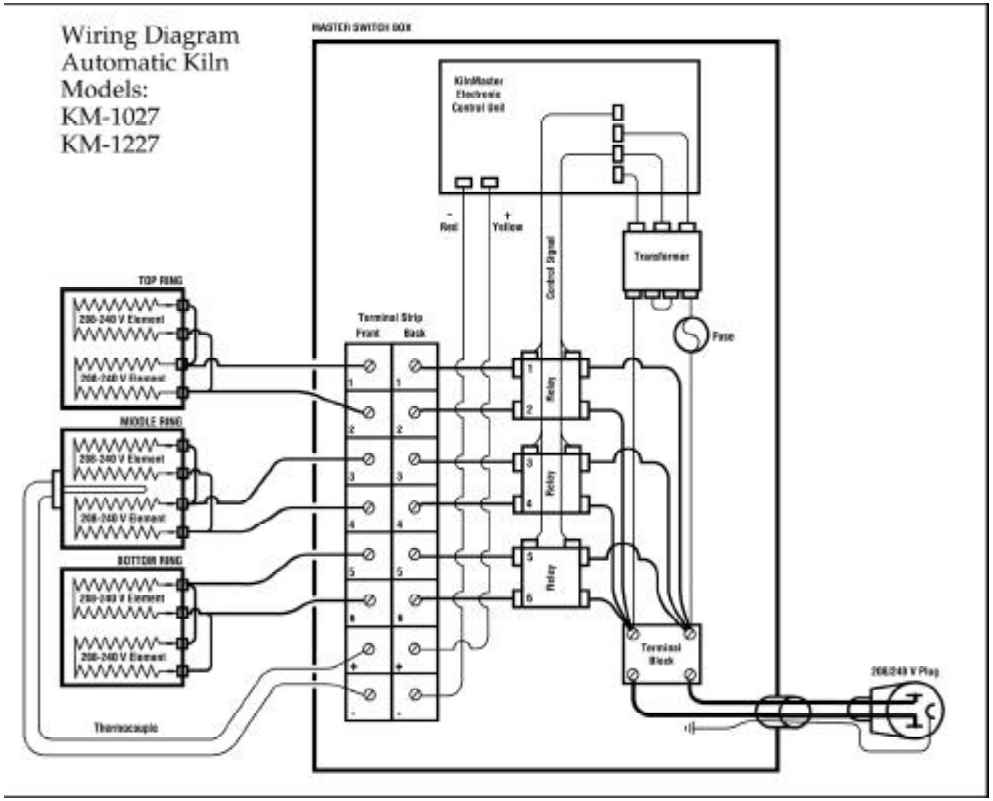
Wiring Diagram
Automatic Kiln
Models:
KM-818
KM-818-30A



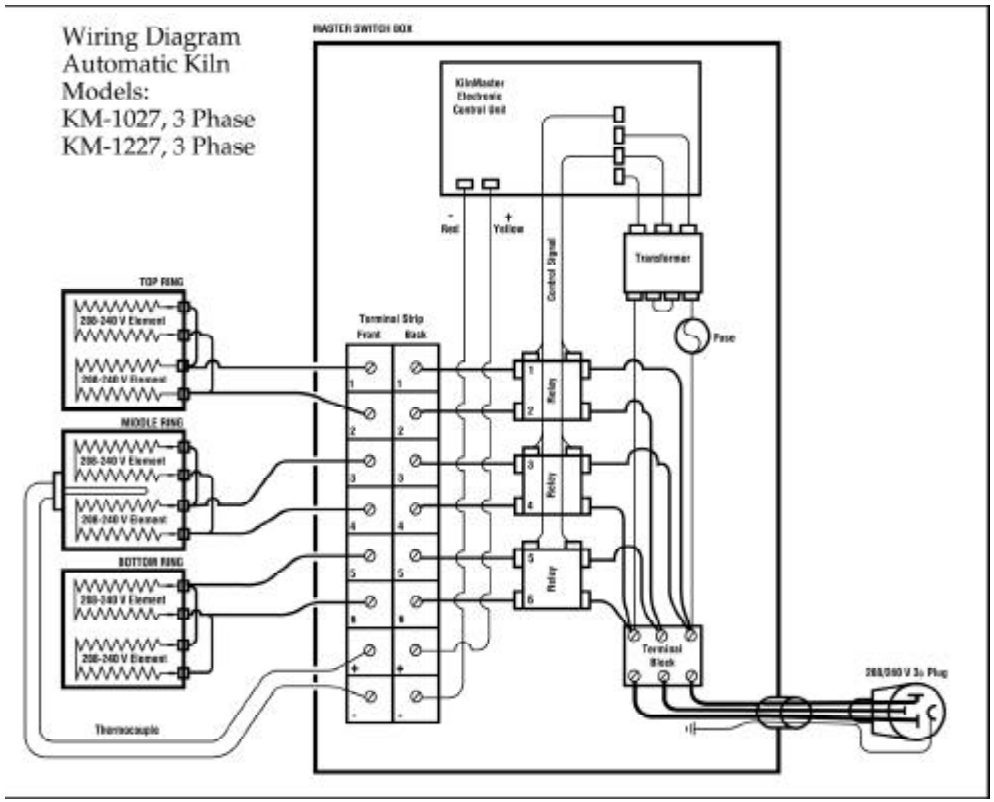
Wiring Diagram
Automatic Kiln
Models:
KM-1018



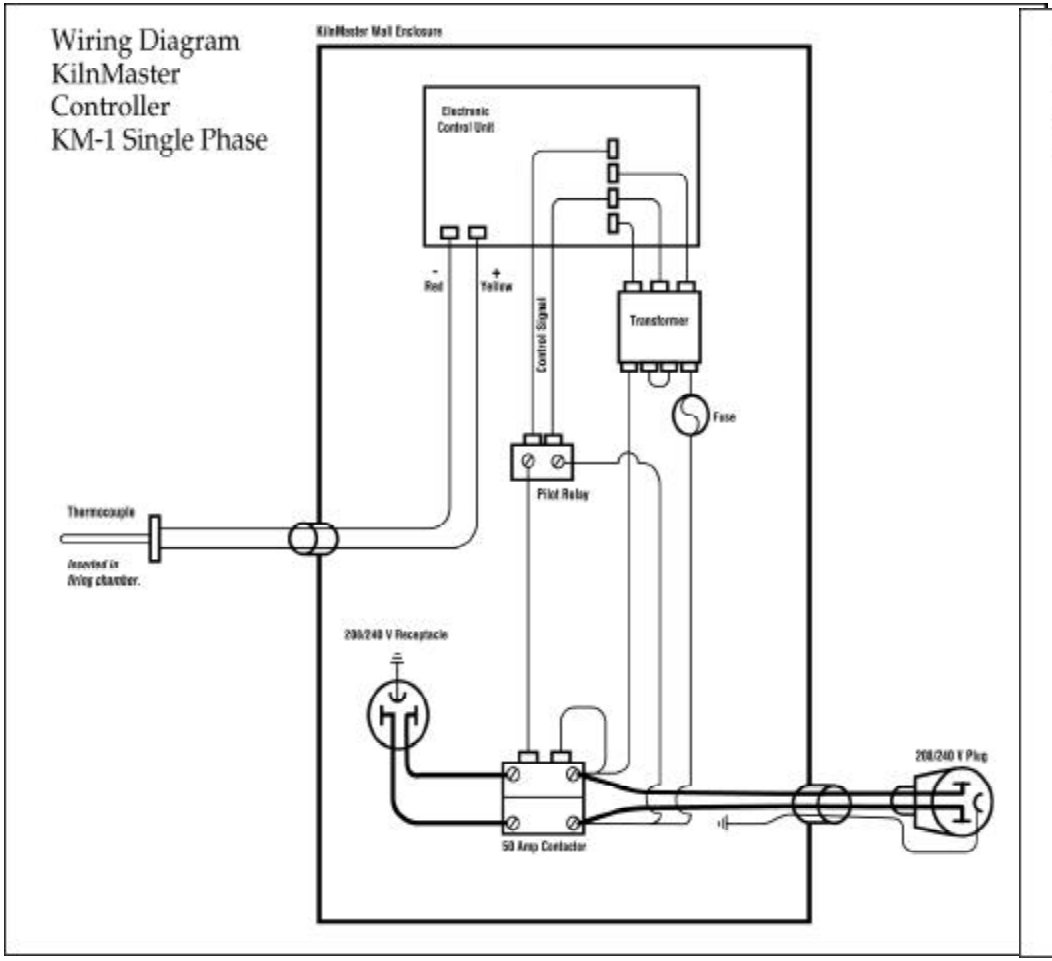
Wiring Diagram
Automatic Kiln
Models:
KM-1027
KM-1227



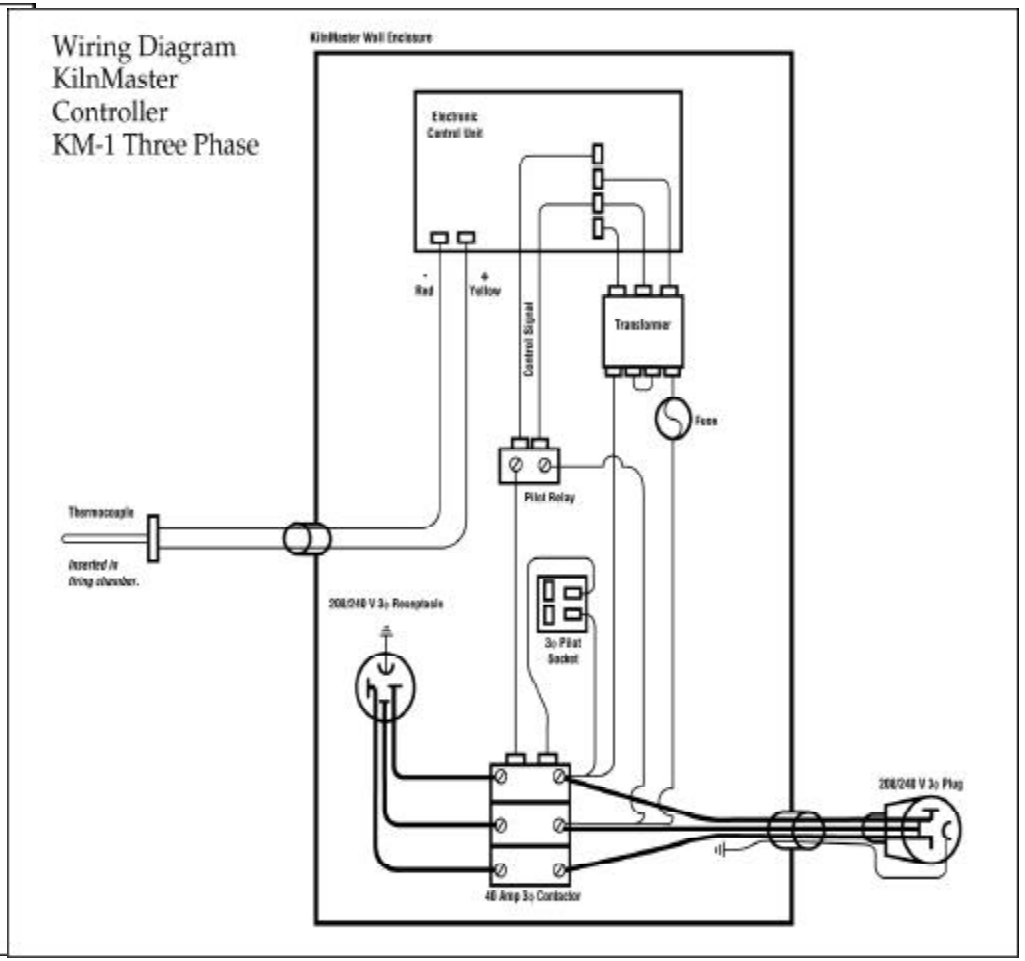
Wiring Diagram
Automatic Kiln
Models:
KM-1027, 3 Phase
KM-1227, 3 Phase



Wiring Diagram
KilnMaster
Controller
KM-1 Single Phase



Wiring Diagram
KilnMaster
Controller
KM-1 Three Phase



APPENDIX 6

Wall-Mounted KilnMaster UL Listing

The KM-1 wall-mounted KilnMaster controller is a UL-listed accessory when used with the following Skutt UL-listed kiln models.

1227-3, 280	240 or 208 volt
1227-3	240 or 208 volt 3 phase
1027-3	240 or 208 volt
1027-3	240 or 208 volt 3 phase
1027, 231, 235	240 or 208 volt
1027	240 or 208 volt 3 phase
1018-3	240 or 208 volt
1018, 231-18	240 or 208 volt
818-3	240 or 208 volt
818, 185	240 or 208 volt
818P-3	240 or 208 volt
818P, 181, 183	240 or 208 volt
714, 145	208-240 volt

APPENDIX 7

Set-up and specifications for Skutt PK production kilns

Skutt PK-production kilns are heavy duty, high capacity units designed to meet the needs of the high fire production potter, tile maker and light industrial user. These kilns are equipped with upgraded components and wiring that will allow them to high fire extremely dense loads in a relatively short time.

The KM-1227PK is a twelve sided kiln similar in capacity to our KM-1227—27″ deep and 9.92 cu. ft.

The KM-1231PK is 31″ deep and offers 11.57 cu. ft. of capacity.

Both PK-kilns are available in single and three phase, 240V or 208V.

FIRING

Skutt PK kilns feature our KilnMaster controller, so operation is identical to other KM kilns. Even though the earlier sections of this manual do not refer specifically to the PK-kiln line, you may follow all the instructions on programming and firing routines.

KILN IMPROVEMENTS

If you are an intensive kiln user, you might find a PK-kiln to be the appropriate choice for your next kiln purchase. Here are some the differences from our standard KM-kiln line:

First, PK kilns are designed to fire full, Cone 10 loads without stalling on the high end. To do so, they are equipped with industrial gauge wiring and three types of elements for better firing balance. Because of their high rating, electrical codes require that they be direct wired by an electrician; therefore no plug is included.

Mercury displacement relays are used for longer life and quieter operation.

The hinged control box is larger, and compression connectors are used on the feeder wires for easier element replacement.

Finally, Model KM-1231PK comes with an additional stand for bottom slab support under heavy loads. This extra stand is not included when the kiln is ordered with a Skutt EnviroVent, which provides all the support needed.

Unpacking and Moving PK Kilns

Follow the general instructions on kiln set-up found on pages 8 and 9 of this manual. You will probably want to separate the kiln into sections when you set it up or move it to a different location. These instructions are slightly different than for standard KM kilns.

Caution: Before disassembling any PK-kiln, be sure to turn off power to the kiln by throwing the circuit breaker or removing the fuse on its circuit. Do not restore power to the kiln until it is fully reassemble.

Note: The mercury relays in the switch box must be operated only with the switch box in a normal, vertical orientation.

1. **To separate a PK kiln into sections:**

a. Remove the screws from the side of the switchbox.

b. Swing the panel to the side.

c. Use a screwdriver to loosen the terminal block connector screws which secure the color coded feeder wires.

d. Loosen screws until the wires pull freely from the lugs. Repeat for each set of wires.

e. Slide the thermocouple connectors off the terminal strip.

f. Lift the box up to remove it.

g. Unhook the drawpull catches and lift the sections using the handles provided.

2. **To reassemble PK kilns:**

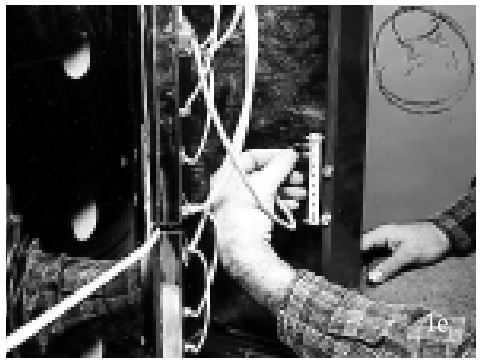
a. Stack the sections in original sequence.

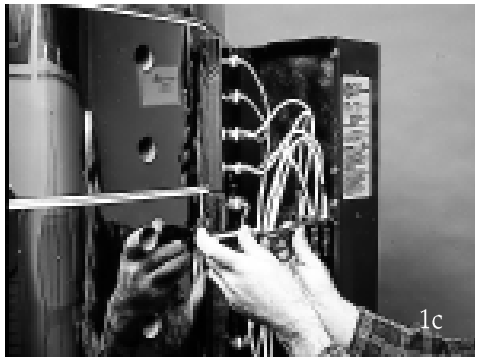
b. Place the switchbox on its hinges.

c. Reattach the feeder wires. Group wires with the same color code together, insert the wires and tighten the set screws with a screwdriver. **Make sure the connection is very tight** to avoid electrical problems. The placement of wires (once grouped by color) on the terminal block is not critical on these kilns.

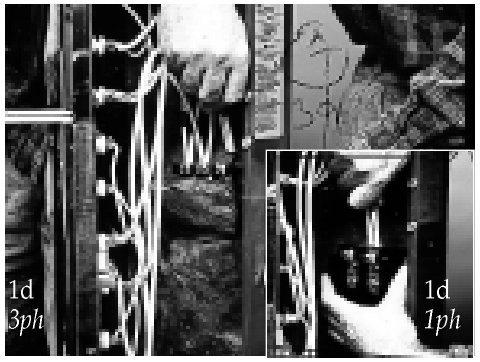
d. Reattach the screws which secure the switchbox to the kiln jacket.


1a


1e


1c


1f


1d 3ph

1d 1ph

Connecting PK Kilns

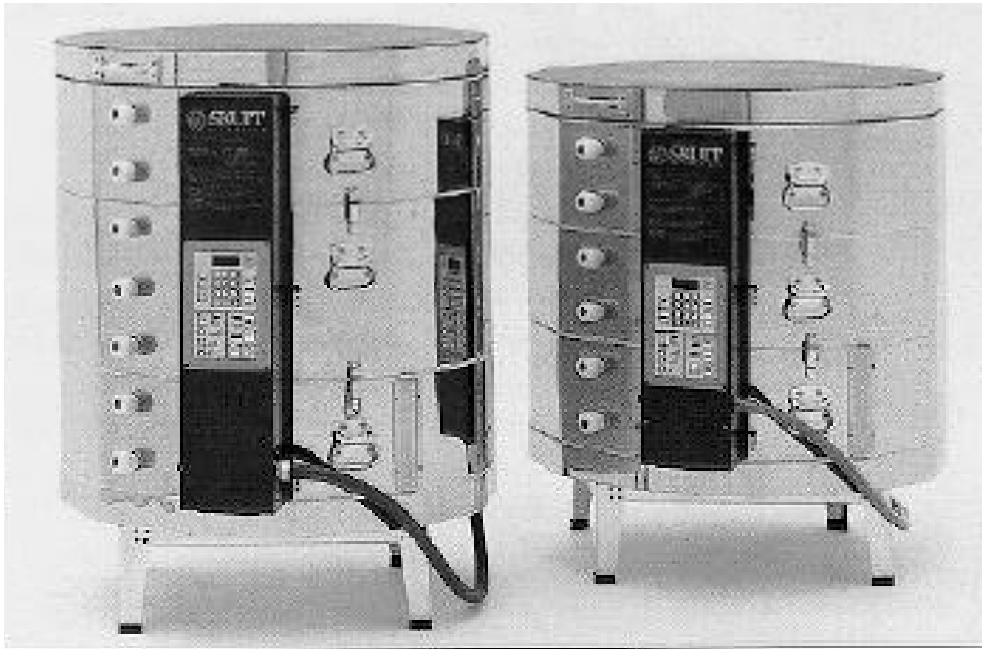
As mentioned earlier, PK kilns must be direct wired or "hard wired" into your studio electric system by a qualified electrician. Flat and Phillips screwdrivers are the only tools required.

At the time of connection, your electrician should also check your electric wiring which supplies the kiln, to be sure that the copper wire size and breaker size are adequate for your PK kiln electrical requirements as shown in the table at right.

Electrical requirements for Skutt PK Production Kilns

Model	Volts	Amps	Watts	Max. Cone	Copper Wire Size*	Fuse or Breaker Size
KM-1231PK	240	72	17300	10	2	90
KM-1231PK	208	80	16640	10	2	100
KM-1231PK-3ph	240	44.5	17300	10	6	60
KM-1231PK-3ph	208	51.5	17300	10	6	60
KM-1227PK	240	60	14300	10	4	80
KM-1227PK	208	69	14300	10	2	90
KM-1227PK-3ph	240	40	14300	10	6	50
KM-1227PK-3ph	208	46.7	14300	10	6	60

***An electrician will need to make the electrical connection.** The kilns are "hard wired" to allow for greater amperage. For each additional 50 feet use heavier wire, numerically two numbers*



PK Kiln Elements

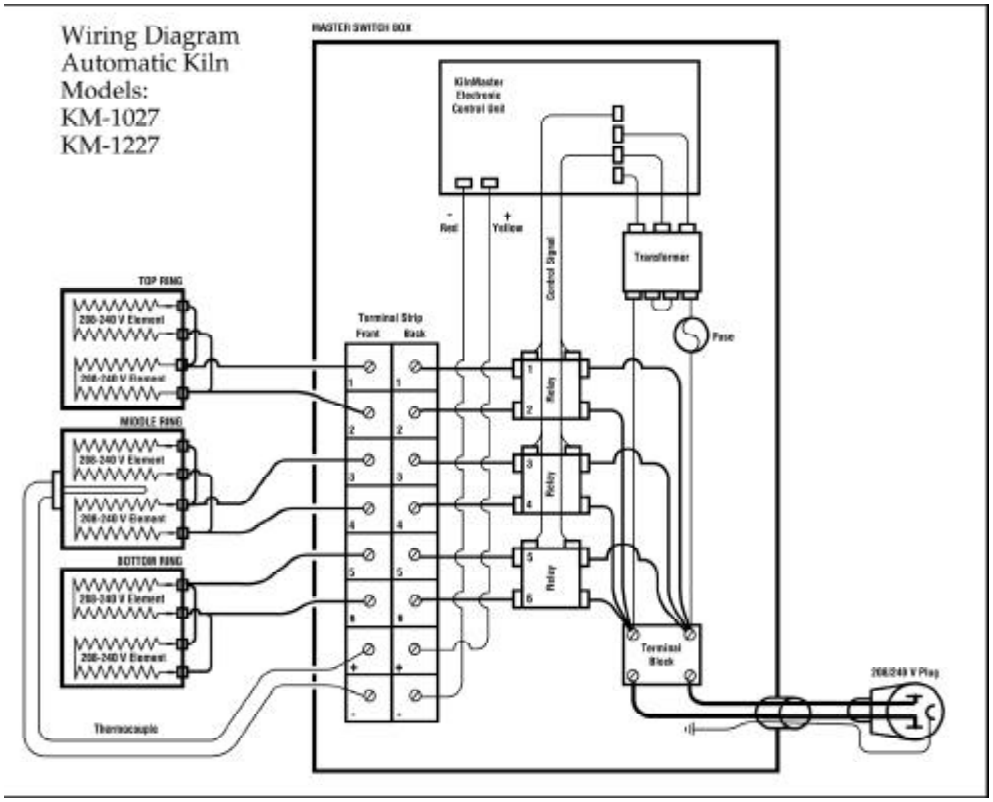
To achieve optimum heat distribution, there are three types of elements in the production kilns : Top/Bottom, Intermediate, and Center. The tables below show the proper placement and type when replacing elements.

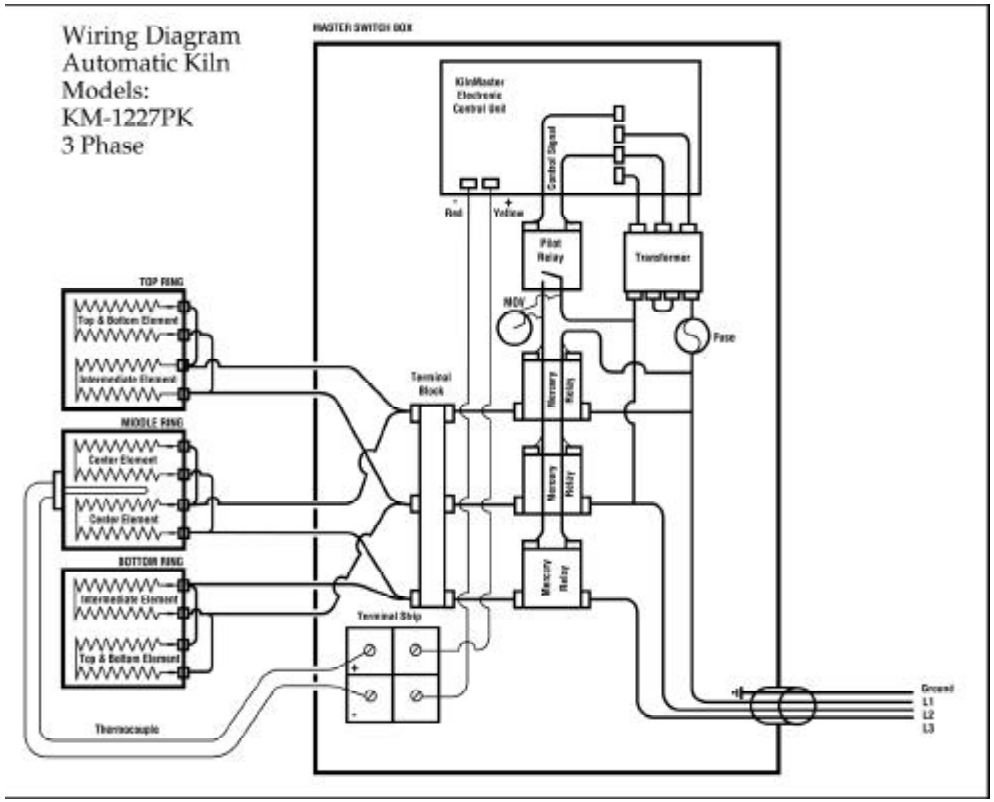
KM-1227PK

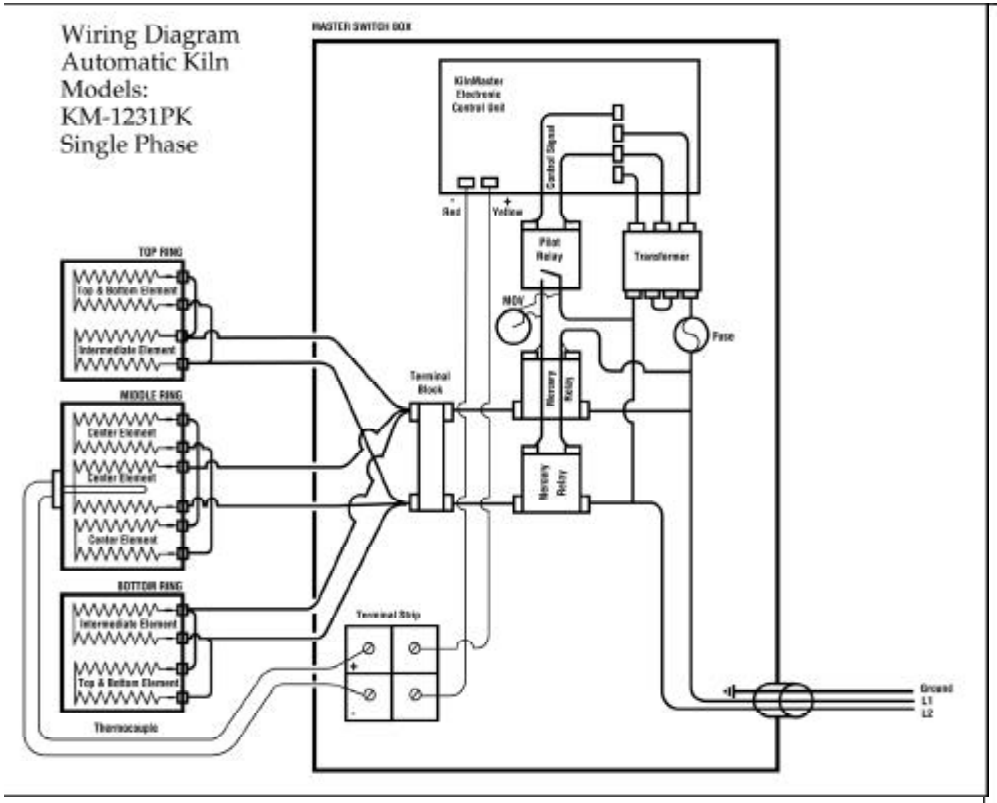
Section	Element	Position
Upper	Top/Bottom	1
	Intermediate	2
Master	Center	3
	Center	4
Lower	Intermediate	5
	Top/Bottom	6

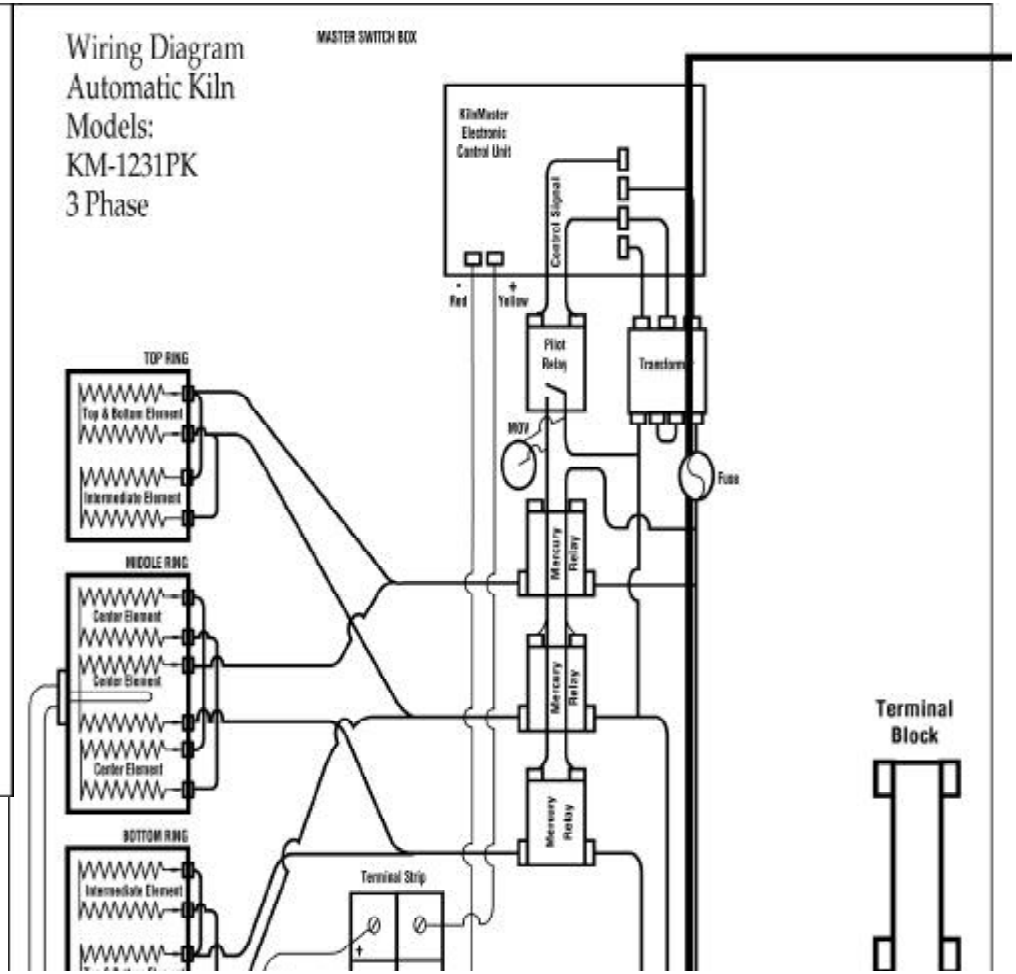
KM-1231PK

Section	Element	Position
Upper	Top/Bottom	1
	Intermediate	2
Master	Center	3
	Center	4
	Center	5
Lower	Intermediate	6
	Top/Bottom	7


Wiring Diagram
Automatic Kiln
Models:
KM-1027
KM-1227
MASTER SWITCH BOX
KilnMaster
Electronic
Control Unit
- Red
+ Yellow
Control Signal
Transformer
Fuse
TOP RING
200-240 V Element
200-240 V Element
MIDDLE RING
200-240 V Element
200-240 V Element
BOTTOM RING
200-240 V Element
200-240 V Element
Terminal Strip
Front
Back
Relay
Relay
Relay
Terminal
Block
208/240 V Plug
Thermocouple


Wiring Diagram
Automatic Kiln
Models:
KM-1227PK
3 Phase
MASTER SWITCH BOX
KilnMaster
Electronic
Control Unit
Control Signal
- Red
+ Yellow
Pilot
Relay
Transformer
MDV
Fuse
TOP RING
Top & Bottom Element
Intermediate Element
MIDDLE RING
Center Element
Center Element
BOTTOM RING
Intermediate Element
Top & Bottom Element
Terminal
Block
Mercury
Relay
Mercury
Relay
Mercury
Relay
Terminal Strip
Thermocouple
Ground
L1
L2
L3


Wiring Diagram
Automatic Kiln
Models:
KM-1231PK
Single Phase
MASTER SWITCH BOX
KilnMaster
Electronic
Control Unit
Control Signal
Red
Yellow
Pilot
Relay
Transformer
MOV
Fuse
TOP RING
Top & Bottom Element
Intermediate Element
MIDDLE RING
Center Element
Center Element
Center Element
BOTTOM RING
Intermediate Element
Top & Bottom Element
Thermocouple
Terminal
Block
Mercury
Relay
Mercury
Relay
Terminal Strip
Ground
L1
L2


Wiring Diagram
Automatic Kiln
Models:
KM-1231PK
3 Phase
MASTER SWITCH BOX
KilnMaster
Electronic
Control Unit
Control Signal
Red
Yellow
Pilot
Relay
Transformer
MOV
Fuse
TOP RING
Top & Bottom Element
Intermediate Element
MIDDLE RING
Center Element
Center Element
Center Element
BOTTOM RING
Intermediate Element
Mercury
Relay
Mercury
Relay
Mercury
Relay
Terminal Strip
Terminal
Block