



**IMPORTANT FOR FUTURE
REFERENCE**

Please complete this information
and retain this manual for the life of
the equipment.

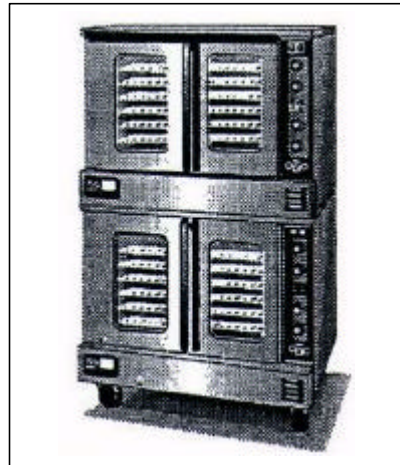
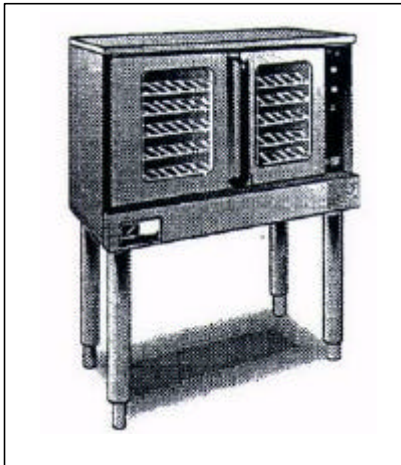
MODEL # _____

SERIAL # _____

DATE PURCHASED _____

OPERATOR'S MANUAL
INSTALLATION
OPERATION AND MAINTENANCE INSTRUCTIONS
MARATHONER GOLD
ELECTRIC CONVECTION OVEN

**MODELS: 10, 20,
PREFIX ES, EB
SUFFIX SC, CC, CH, PC, RT**



WARNING

Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury or death. Read the installation, operation and maintenance instructions thoroughly before installing and operating this equipment-

1100 Old Honeycutt Road • Fuquay-Varina, NC 27526
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**ELECTRIC CONVECTION OVEN
(MANUAL SECTION CO)**

SAFETY PRECAUTIONS

Before installing and operating this equipment, be sure everyone involved in its operation is fully trained and aware of precautions. Accidents and problems can be caused by failure to follow fundamental rules and precautions.

The following symbols, found throughout this manual, alert you to potentially dangerous conditions to the operator, service personnel, or to the equipment.



This symbol warns of immediate hazards which will result in severe injury or death.



This symbol refers to a potential hazard or unsafe practice which could result in injury or death.



This symbol refers to a potential hazard or unsafe practice which could result in injury, product, or property damage.



This symbol refers to information that needs special attention or must be fully understood, even though not dangerous.

WARNING FIRE HAZARD

For your safety, do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

Keep area around appliances free and clear from combustibles.

WARNING

Asphyxiation can result from improper ventilation. Do not obstruct the flow of combustion and ventilation air to and from your cooking equipment.

WARNING SHOCK HAZARD

Do not open panels that require the use of tools.

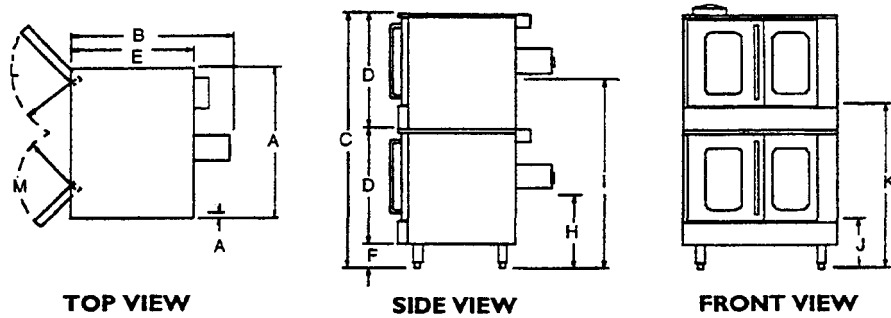
NOTICE

Be sure the Operator's Manual and important papers are given to the proper authority to retain for future reference.

Models: **ES-20**

EB-20

NOTE: Not for Scale. For Dimensional Purposes Only.



DIMENSIONS:

() = Millimeters

| Models | Exterior | | | | | | Electrical Connections | | | Oven Bottom | | Door Opening | |
|--------|--------------|-------------------|---------------|--------------|------------------|-------------|------------------------|------------------|-------------------|--------------|---------------|------------------|------------------|
| | Width A | Depth P | Height C | D | Dk. Depth E | Legs F | G | H | I | Height J | Height K | L | M |
| ES-20 | 38" (965) | 38 3/4" (984) | 64" (1626) | 29" (737) | 30" (762) | 6" (152) | 2" (51) | 16 1/2" (419) | 45 1/2" (1156) | 33" (838) | 42" (1067) | 18 5/8" (473) | 13 1/2" (343) |
| EB-20 | 38" (965) | 45 1/8" (1146) | 64" (1626) | 29" (737) | 36 3/8" (892) | 6" (152) | 2" (51) | 16 1/2" (419) | 45 1/2" (1156) | 33" (838) | 42" (1067) | 18 5/8" (473) | 13 1/2" (343) |

| Models | Oven Interior-Each | | | Pan Clearance | | Crate Size | | | Cubic Volume | Crated Weight |
|--------|--------------------|------------------|--------------|------------------|------------------|---------------|-------------------|---------------|---------------------------|---------------|
| | Width | Depth | Height | Width | Depth | Width | Depth | Height | | |
| ES-20 | 29- (740) | 22 1/2" (572) | 20" (510) | 28 1/4" (720) | 22" (559) | 55" (1397) | 45 1/2" (1156) | 45" (1143) | 65.2 cu. ft 1.85cu.m. | 1040lbs. |
| EB-20 | 29" (740) | 29" (740) | 20" (510) | 28 1/4" (720) | 28 1/4" (720) | 55" (1397) | 45 1/2" (1156) | 45" (1143) | 65.2cu.ffc 1.85 cu. m. | 1040lbs. |

| Electrical Data | | Amps Per Line | | | | |
|-----------------|--------------------|---------------|---------|----|----|------|
| | | 1 phase | 3 phase | | | |
| | Voltage | | X | Y | Z | Nuet |
| 12 kw | 208 VAC, 60 HZ | 58 | 34 | 34 | 31 | 0 |
| Heating | 220-240 VAC, 50 H2 | 46 | 28 | 28 | 24 | 0 |
| Elements | 240 VAC, 60 HZ | 50 | 30 | 30 | 26 | 0 |
| And | 380/220 VAC, 50 HZ | 32 | 17 | 17 | 21 | 4 |
| Controls | 415 240 VAC, 50 H2 | 50 | 15 | 15 | 19 | 4 |
| | 480 VAC, 60 H2 | 25 | 14 | 14 | 13 | 0 |

UTILITY INFORMATION:

STANDARD 1/2 horsepower, 2 speed motor, 1725/1140 R.P.M

LOCATION OF WIRING DIAGRAM ON UNIT:

The electrical diagram (Item "A") is located on the left side of the fold down control panel. To access the diagram remove screw at top of control panel (Item "B") on figure 1. Then pull control panel down by placing fingers under the lip portion at the top of the control panel and placing your thumb on front of the unit. Follow the arrow on figure 1.

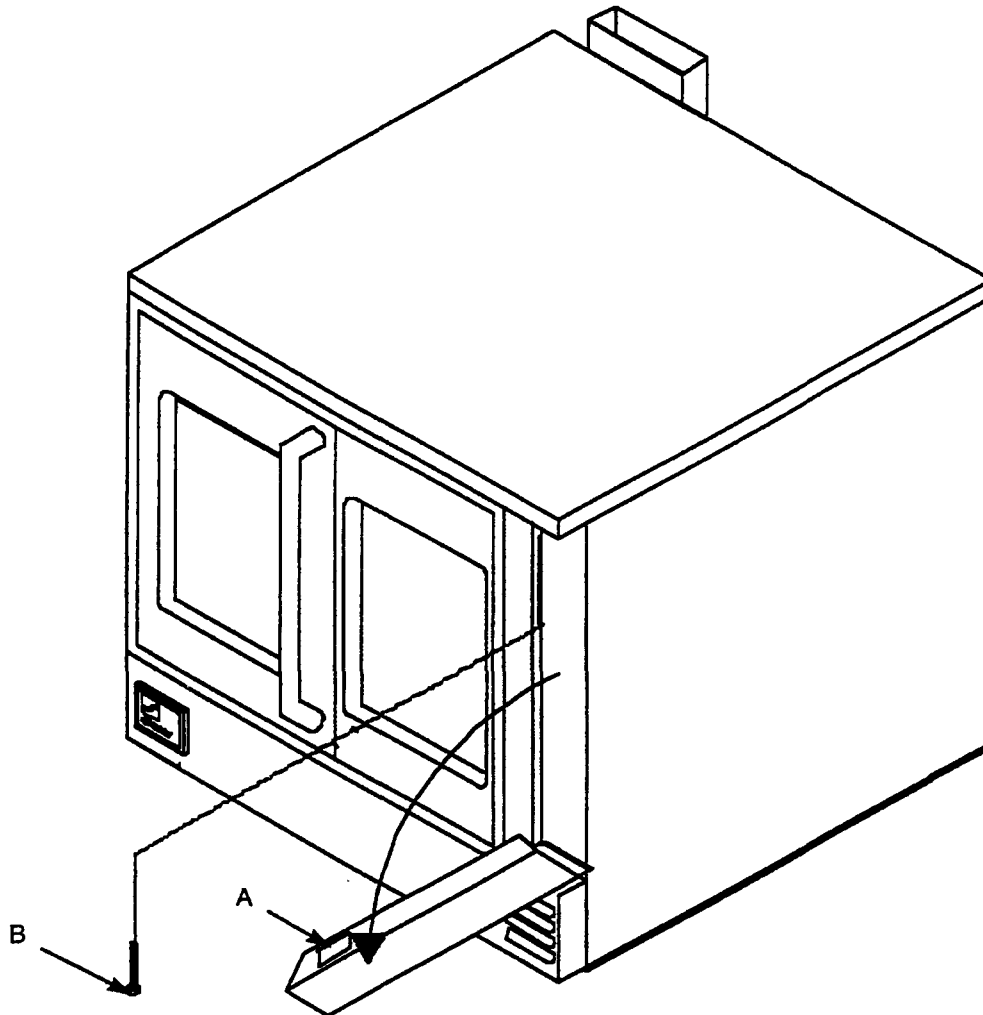


FIGURE 1

NOTICE

Southbend reserves the right to change specifications and product design without notice. Such revisions do not entitle the buyer to corresponding changes, improvements, additions, or replacements for previously purchased equipment.

NOTICE

These procedures must be followed by qualified personnel or warranty will be void.

GENERAL:

NOTICE

The unit, when installed, must be electrically grounded and comply with local codes, or in the absence of local codes with the National Electrical Code ANSI/NFPA 70-latest edition.

Canadian installation must comply with CSA-Standard C22.2 No. 109-M1981 Part II-Commercial Cooking Appliances.

ELECTRIC CONNECTION:

The electrical diagram is located on the fold down control panel. Refer to page 4 for location. Be sure that the input voltage and phase match the requirements shown on the serial plate. The serial plate is located behind the fold down control panel, mounted to the left side of the control compartment. A positive ground connection is essential.

SINGLE PHASE CONVERSION:

All units are shipped wired for single phase or three phase. This will be determined by the original factory order Refer to phase loading and line amperes chart on page 6, or on the wiring diagram for wire size and amp requirements.

208 AND HIGHER VOLTAGES:

Ovens rated at 208 volt or higher are supplied with a 3 or 4 pole terminal block. This terminal block can be accessed by removing the cover panel located on the rear of the control panel compartment. To connect the supply wires remove cover and route supply wires through hole above the connection cover with strain relief fitting. If necessary to remove body side to make connection refer to Step 1 below. Insert supply wires, one into each pole of the terminal block, and tighten screws in terminal block. Insert ground lug and tighten screw. Replace cover and turn power on to unit Test for proper operation.

NOTE: If the oven installation requires that you change the phase of the oven refer to the instructions below. If you are changing the phase on a unit rated at 415 volts refer to the wiring diagram for conversion.

To convert the phase of the oven first determine the field connection voltage and phase required. If the unit is currently installed **TURN OFF POWER SUPPLY BEFORE ATTEMPTING THIS CONVERSION.** If the unit is now being installed have the field power supply in place and ready to connect to the oven when the conversion is complete. Follow the appropriate directions below.

To convert from three phase to single phase:

Note: The unit built for three phase will have a small jumper wire attached with the element box cover to the rear of the oven. Removing the box will free the jumper wire. This wire is used when you convert the unit from three phase to single phase.

Step 1. Remove the right body side of the oven. This will require that you remove the combustion cover below the oven doors to access the screw which holds the front lower corner of the body side. Remove the screws that hold the back of the body side and remove the body side.

Step 2. Once the body side has been removed locate the wires that run from the contactor to the elements. The center wire (T2) that runs from the terminal block to the contactor and the corresponding center wire

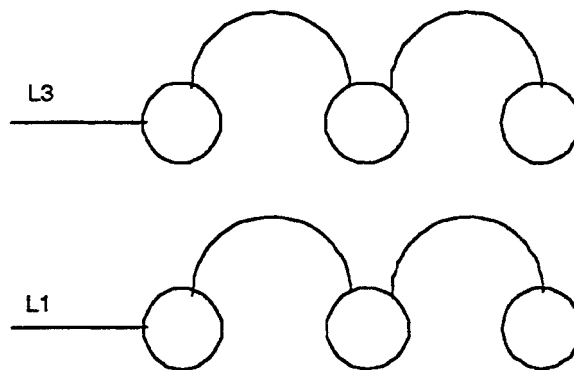


FIGURE 2.

(L2) that runs from the contactor to the elements should be removed.

Step 3. Remove the element box cover. Disconnect the wire (L2) from the element assembly and remove it from the oven.

Step 4. Rewire the element connections according to Figure 2. for single phase. Be sure to inspect the power supply and the wiring diagram on the unit to verify the wiring is correct.

Verify all wire connections are tight at the elements, contactor, and terminal block.

Step 5. Connect your power supply wires to the terminal block in the rear of the control compartment.

Step 6. Reinstall body side, combustion cover, and element box cover.

To convert from single phase to three phase

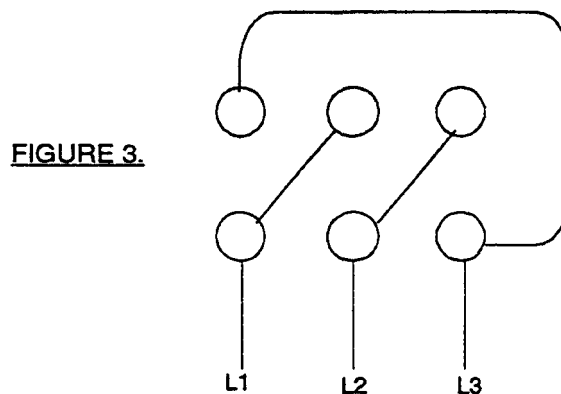
Note: The unit built for single phase will have two extra wires inside the control panel compartment. The extra wires are attached to the wires that run from the contactor to the elements. These wires will be used to convert the unit from single phase to three phase.

Step 1. Remove the right body side of the oven. This will require that you remove the combustion cover below the oven doors to access the screw which holds the front lower corner of the body side. Remove the screws that hold the back of the body side and remove the body side.

Step 2. Once the body side has been removed locate the wires that run from the contactor to the elements. The wires should have two extra wires (attached with wire ties) that are not presently being used. Cut the wire ties that are holding the extra wires and install the longer of the two wires to the center terminal of the contactor (L2). Step 3. Install the shorter of the two wires to the center terminals between the contactor(T2) and the terminal block. **Verify all wire connections are tight at the elements, contactor, and terminal block.**

Step 4. Remove the element box cover. Attach the wire you installed on (L2) to the element assembly refer to Figure 3.

Step 5. Rewire the element connections according to Figure 3. for three phase. Be sure to inspect the power supply and the wiring diagram on the unit to verify the wiring is correct. Step 6. Connect your power supply wires to the terminal block in the rear of the control compartment.



PHASE LOADING AND LINE AMPERES CHART

| PHASE LOADING AND LINE AMPERES AS SHOWN | | | | | | | | | | | |
|---|------------------|----------|------------------------------|-------|-------|----------------------------|------|------|-------------|---------------------------|--------------|
| VOLTAGE | | TOTAL KW | THREE PHASE LOADING KW/PHASE | | | NOMINAL AMPERES/ LINE WIRE | | | | MIN. SUPPLY WIRE AVG.SIZE | |
| | | | L1-L2 | L2-L3 | L1-L3 | THREE PHASE | | | SINGLE | THREE PHASE | SINGLE PHASE |
| | | | | | | LI | L2 | L3 | PHASE TOTAL | | |
| 480 | Heating Elements | 11-0 | 3.667 | 3.667 | 3.667 | 13.2 | 13.2 | 13.2 | 22.9 | 12 | 10 |
| | Motor & Controls | 0.9 | 0.0 | 0.0 | 0.0 | 22. | 0.0 | 22. | 2.2 | | |
| 415 | Heating Elements | 11.0 | 3.667 | 3.667 | 3.667 | 15.3 | 15.3 | 15.3 | 45.9 | 12 | 6 |
| | Motor & Controls | 0.9 | 0.0 | L3-N | 0.9 | 0.0 | 0.0 | 3.8 | 3.8 | | |
| 380 | Heating Elements | 11.0 | 3.667 | 3.667 | 3.667 | 16.7 | 16.7 | 16.7 | 28.9 | 12 | 8 |
| | Motor & Controls | 0.9 | 0.0 | L3-N | 0.9 | 0.0 | 0.0 | 4.1 | 4.1 | | |
| 240 | Heating Elements | 11.0 | 3.667 | 3.667 | 3.667 | 26.4 | 26.4 | 26.4 | 45.8 | 8 | 6 |
| | Motor & Controls | 0.9 | 0.0 | 0.0 | 0.9 | 3.8 | 0.0 | 3.8 | 3.8 | | |
| 220V 50 HZ | Heating Sements | 9.25 | 3.1 | 3.1 | 3.1 | 24.2 | 24.2 | 24.2 | 42.0 | 8 | 6 |
| | Motor & Controls | 0.9 | 0.0 | 0.0 | 0.9 | 4.1 | 0.0 | 4.1 | 4.1 | | |
| 208 | Heating Elements | 11-0 | 3.667 | 3.667 | 3.667 | 30.5 | 30.5 | 30.5 | 52.9 | 8 | 4 |
| | Motor & Controls | 0.9 | 0.0 | 0.0 | 0.9 | 4.3 | 0.0 | 4.3 | 4.3 | | |

CLEARANCES:

Minimum Clearances - Inches (mm)

| | From Combustible Construction | From Non-Combustible Construction |
|------------|----------------------------------|--------------------------------------|
| Back | 2"(51) | 2"(51) |
| Right Side | 0"(0) | 0"(0) |
| Left Side | 0"(0) | 0"(0) |
| Floor | 0"(0) | 0"(0) |

Clearance for proper air circulation for the motor is 2"(51 mm) from the back of the motor to the wall.

All units must be installed in such a manner that the flow of combustion and ventilation air are not obstructed. Provisions for an adequate air supply must be provided. Do not obstruct the front or rear of the unit, as combustion air enters through this area. Be sure to inspect and clean the ventilation system according to the ventilation equipment manufacturer's instructions.

Adequate clearance must be provided in the aisle and at the side and rear to allow the door to open sufficiently to permit the removal of the racks and for serviceability.

NOTICE

Floor drain must be located outside the confines of the equipment base, or damage to the equipment may occur.

Do not locate unit adjacent to any high heat or grease producing piece of equipment, such as a range top, griddle, fryer, etc., that could allow radiant heat to raise the exterior temperature of the — above 130°F (54°C).

DO NOT MOUNT ABOVE OTHER COOKING EQUIPMENT.

NOTICE

Local codes regarding installation vary greatly from one area to another. The National Fire Protection Association, Inc. states in its NFPA 96 latest edition that local codes are "authority having jurisdiction" when it comes to installation requirements for equipment. Therefore, installations should comply with all local codes.

EXHAUST FANS AND CANOPIES: Canopies are set over ranges, ovens, etc., for ventilation purposes. It is recommended that a canopy extend 6" past the appliance and be located 6'6" from the floor. Filter should be installed at an angle of 45 degrees or more with the horizontal. This position prevents dripping grease and facilitates collecting the run-off grease in a drip pan, usually installed with a filter. A strong exhaust fan tends to create a vacuum in the room and may interfere with burner performance or may extinguish pilot flames. Fresh air openings approximately equal to the fan area will relieve such a vacuum.

WALL EXHAUST FAN: The exhaust fan should be installed at least 2" above the vent opening at the top of the unit

In case of unsatisfactory performance on any appliance, check the appliance with the exhaust fan in the "OFF" position. Do this only long enough to check equipment performance. Then turn hood back on and let it run to remove any exhaust that may have accumulated during the test.

NOTICE

Proper ventilation is the owner's responsibility. Any problem due to improper ventilation will not be covered by warranty.

WARNING

Improper ventilation can result in personal injury or death. Ventilation which fails to properly remove flue products can cause headaches, drowsiness, nausea, or could result in death.

LEVELING:

Unit must be level to assure maximum performance. Improper leveling may void warranty.

TO INSTALL:

1. Remove crating with care. Remove all wood blocking, packing material and accessories.
2. The legs or stand should be installed after the unit has been uncrated, near the area where it will be used.
3. Raise unit sufficiently to allow legs to be installed with four bolts provided existing in base.
4. The legs can be adjusted to overcome an uneven floor. Use a spirit level in all directions on the middle oven rack.
5. When casters are supplied, the locking swivel type casters should be installed in the front.
6. Casters are provided with a zerk fitting for lubrication.

When a lift truck or other mechanical means are not available, and manual labor is involved, please consider the following suggestions.

1. Raise each corner or, if feasible, raise an entire side by "leaning" the unit.
2. For safety, "shore up" and support the raised section with an adequate blocking arrangement strong enough to support the load.
3. When long legs are being installed and the unit must be tipped beyond the stable point, lean unit against a strong wall or other suitable structure to prevent it from "falling over."
4. When absolutely necessary and unit must be placed "completely over," lay ONLY on its LEFT side or BACK. Take care to protect finish on left side. On back, provide means to keep load from resting on motor.
5. Bring unit to its straight position gently. NEVER DROP, or allow unit to FALL.

NOTE: An "open" storage rack arrangement may be incorporated on units supported by high legs. Directions and illustrations are provided on another sheet and are also provided with these parts. Refer to diagram titled "Assembly for open rack storage" in the installation section of this manual.

PERFORMANCE CHECK:

The following items should be checked within the first 30 days of operation by a qualified service technician.

1. Verify equipment is level.
2. Verify proper electrical characteristics - voltage, cycle, phase.
3. Check thermostat operation; calibrate if required.
4. Check ventilation.
5. Check electrical connections - external and internal.
6. Check door for proper alignment, tension, seal, and adjustment.
7. Check timers, switches and motor for proper installation and operation.
8. Check for any damage to unit from shipping or installation.
9. Check for proper clearance from combustible materials.

It is common on new products that a burn off time is necessary to dry out protective oil metal covering and to season insulation.

LEGS FOR SINGLE DECK OVENS

| ITEM | PART NUMBER | DESCRIPTION |
|------|-------------|----------------------------|
| * | 1146213 | 3/8 x 16 x 1 Hex Head Bolt |
| * | 1146513 | 3/8 Lock Washer |
| * | 1146522 | 3/8 Flat Washer |
| A | 1175090 | Single Deck Adj. Leg |
| B | 1174266 | Adj. Foot for Leg |
| † | 1173584 | Flanged Foot for Leg |

* Not shown (qty. 16 used per unit to attach legs to unit.)

† Flanged Foot is optional replacement for 1174266

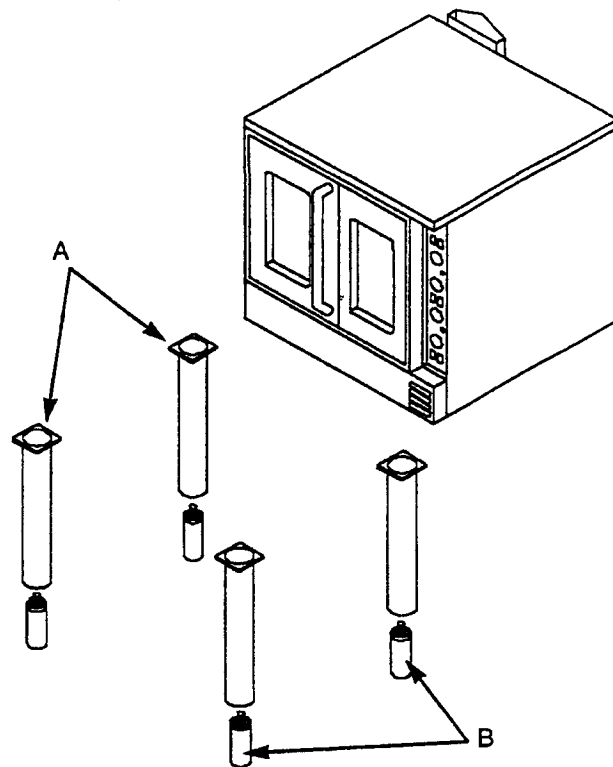


FIGURE 2

CASTERS FOR SINGLE DECK OVENS

| ITEM | PART NUMBER | DESCRIPTION |
|------|-------------|------------------------|
| * | 1146213 | 3/8x16x1 Hex Head Bolt |
| * | 1146513 | 3/8 Lock Washer |
| * | 1146522 | 3/8 Flat Washer |
| A | 1175089 | Single Deck Caster Leg |
| B | 1174263 | Caster w/o Brake |
| C | 1174264 | Caster with Brake |
| † | 1174265 | Caster Package |

* Not shown (qty. 16 used per unit to attach legs to unit.)

† This package contains 4 casters, 2 with locks, 2 with out locks no legs pads, bolts or washers are included with this package.

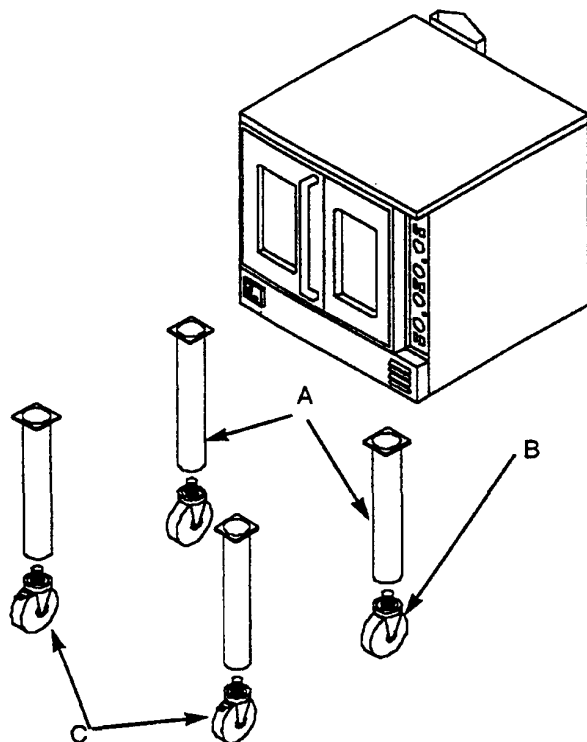


FIGURE 3

LEGS FOR DOUBLE STACKED OVENS

| ITEM | PART NUMBER | DESCRIPTION |
|------|-------------|------------------------|
| * | 1146213 | 3/8x16x1 Hex Head Bolt |
| * | 1146513 | 3/8 Lock Washer |
| * | 1146522 | 3/8 Flat Washer |
| A | 1172788 | Leg Pad |
| B | 1174259 | SS Leg, 3/4 Stud |
| † | 1174260 | Leg Package |

* Bolts, lock washers, and flat washers not shown.
Requires 4 of each per pad for a total of 16 each per double oven.
† This package consists of 4 legs only. No leg pads, bolts or washers are included in this package.

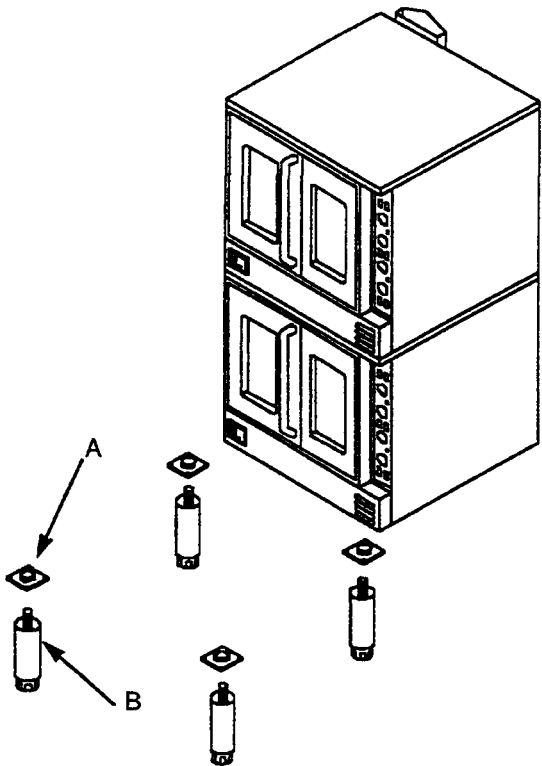


FIGURE 4

CASTERS FOR DOUBLE STACKED OVENS

| ITEM | PART NUMBER | DESCRIPTION |
|------|-------------|------------------------|
| * | 1146213 | 3/8x16x1 Hex Head Bolt |
| * | 1146513 | 3/8 Lock Washer |
| * | 1146522 | 3/8 Rat Washer |
| A | 1172788 | Leg Pad |
| B | 1174263 | Caster less Brake |
| C | 1174264 | Caster with Brake |
| † | 1174265 | Caster Package |

* Bolts, lock washers, and flat washers not shown.
Requires 4 of each per pad for a total of 16 each per double oven.
† This package consists of 4 legs only. No leg pads, bolts or washers are included in this package.

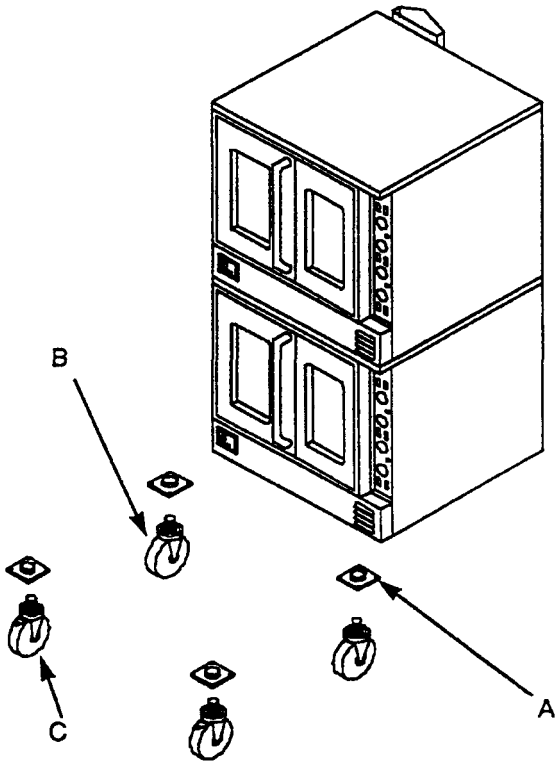


FIGURE 5

INSTRUCTIONS FOR STACKING UNITS IN THE FIELD

1. After uncrating units, identify the unit that is to be the bottom unit. This will be the oven that has leg pads bolted to the bottom of the oven.
2. The bottom unit will have a box of (4) legs (P/N 1174260) or (4) casters (P/N 1174265) depending on what was ordered with the oven. Remove and attach legs or casters to the bottom of the lower unit. The pads that the legs or casters thread into should already be bolted to the bottom of this oven.

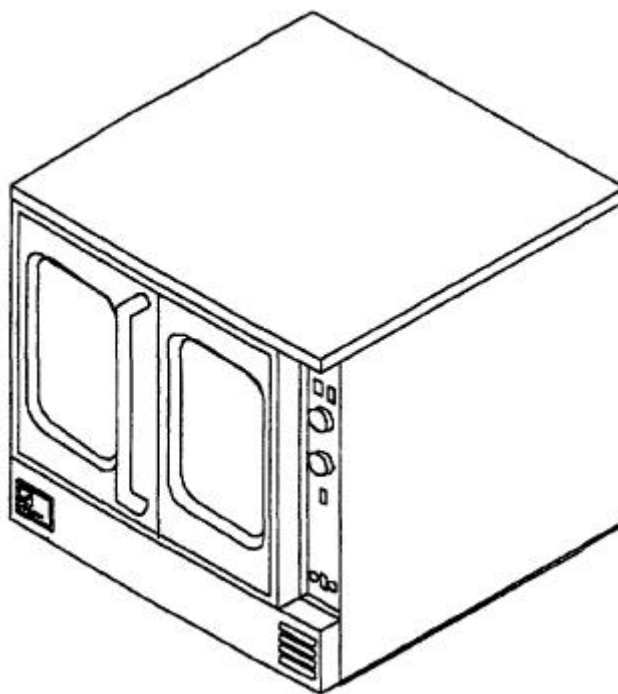


FIGURE 6

NOTICE

If installing casters, place the two (2) casters that have locks, on the front of the unit so it may be locked into position easily.

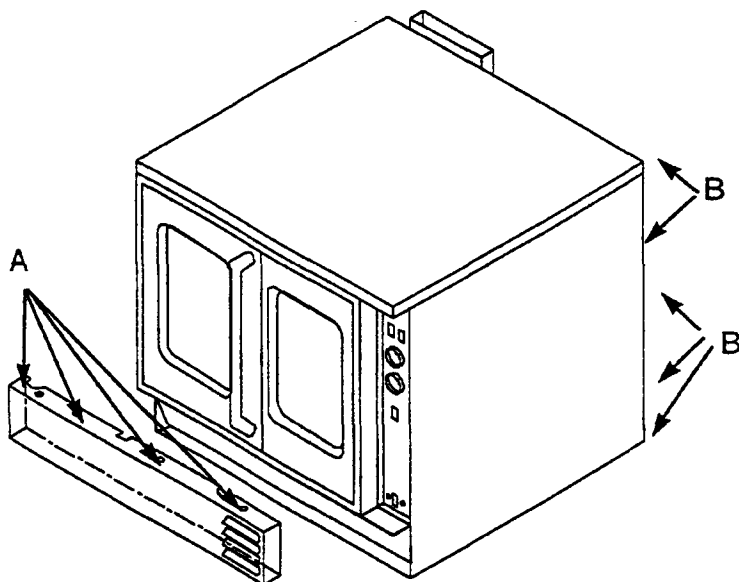
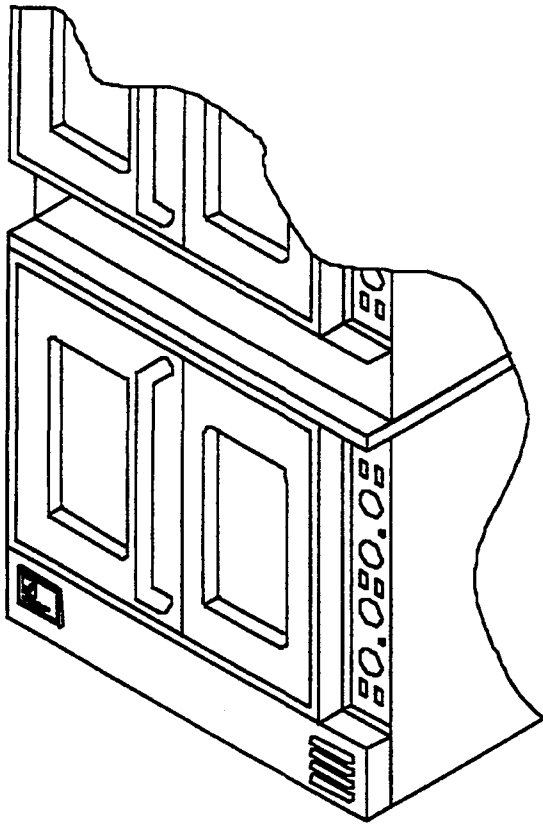


FIGURE 7

3. Next, locate and remove screws that hold the combustion chamber cover on bottom oven. Refer to figure 7, for screws (Items "A"). Once the screws are removed, lift up on the panel and pull forward to remove.
4. Remove screws (Item "B") from right body side. Remove right body side.



5. Next, lift the top unit and position it on top of the lower unit as shown in Figure 8.

FIGURE 8

6. Move to the rear of the unit and remove screws (Items "A" and "B") in Figure 9.
7. Place tie bracket, item "C" (P/N 1175085) on rear of unit. Line up holes in the tie bracket with holes in rear of unit. Refer to Figure 10. Reinsert the six screws taken out in Step 6 (Items "A" and "B").

Note: Leave screws (Items "A" and "B") loose until Step 8 is complete.

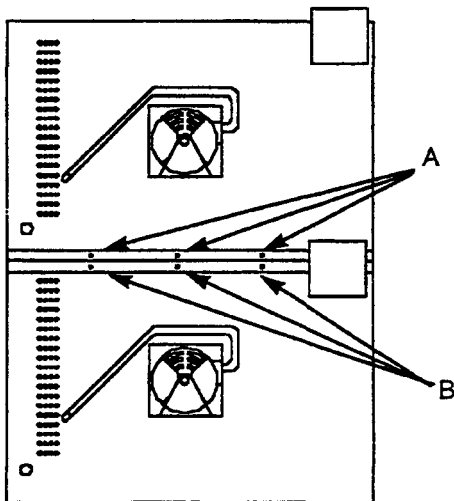


FIGURE 9

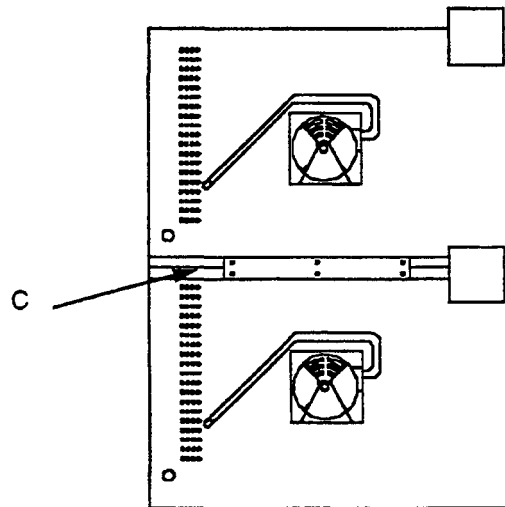


FIGURE 10

8. Insert 2 bolts (Item "A", Figure 11) through the top of the bottom oven and screw into threaded holes in bottom of top oven. Finish tightening bolts installed in Step 7.
9. Make field wire connections to terminal block while body side is removed.
10. Reinstall body sides and screws that were removed in steps 3 & 4.

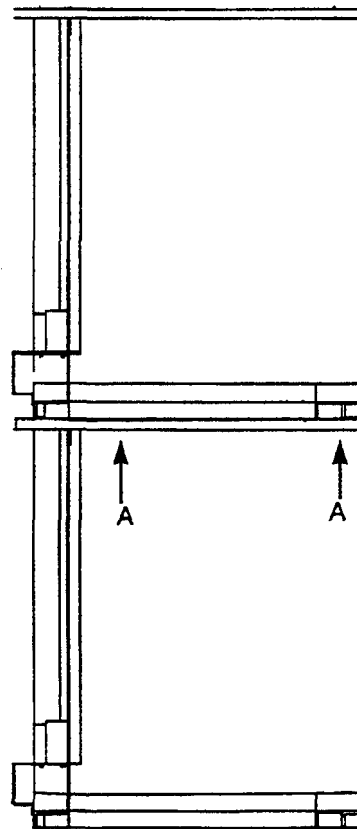
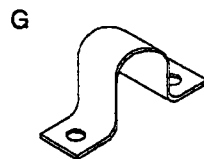
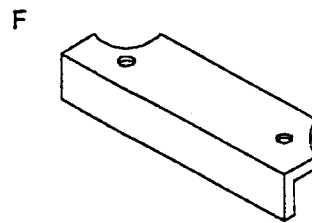
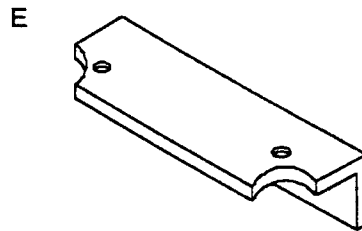
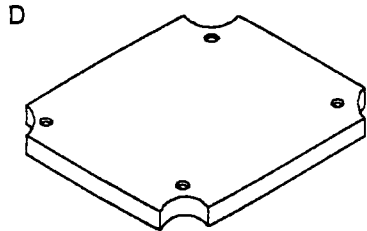
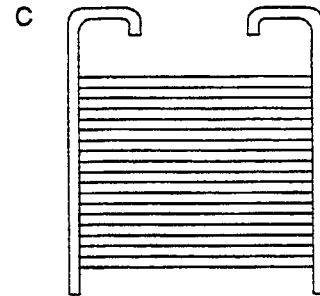
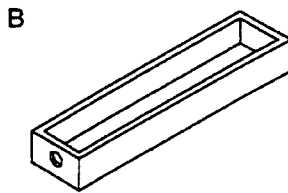
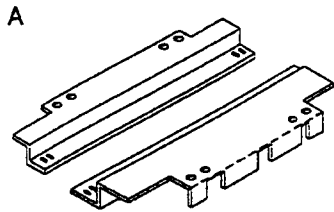


FIGURE 11

PARTS LIST FOR OPEN RACK STORAGE GUIDE
Includes Solid Shelf (Optional)

| ITEM | PART# | DESCRIPTION | 1175506 | 1175507 | 1175508 | 1175509 |
|------|---------|-------------------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|
| | | | 11 Position Shallow w/Shelf | 11 Position Deep w/Shelf | 11 Position Shallow w/Shelf | 11 Position Deep w/Shelf |
| | 1146304 | 10x1/2Phillips Screw | 18 | 18 | 18 | 18 |
| A | 1175296 | Rack Hanger | 2 | 2 | 2 | 2 |
| B | 1175514 | Stop Channel | 1 | 1 | 1 | 1 |
| C | 1175438 | Side Rack 11 Position Shallow | 2 | | 2 | |
| C | 1175439 | Side Rack 11 Position Deep | | 2 | | 2 |
| D | 1175294 | Shelf Shallow | 1 | | | |
| D | 1175295 | Shelf Deep | | 1 | | |
| E | 1175504 | Front Channel Frame | | | 1 | 1 |
| F | 1175505 | Rear Channel Frame | | | 1 | 1 |
| G | 6660 | Side Rack Clip | 4 | 4 | 4 | 4 |



ASSEMBLY INSTRUCTIONS FOR OPEN RACK STORAGE Includes Solid Shelf (Optional)

1. Refer to the parts chart on the first page, and verify that all parts and quantities are correct.
2. Attach frame hanger (1175296) (Item "A") to underside of oven. Be sure the flanged side of the rack hanger faces the front of the unit. Refer to figure 13.

NOTE: All holes are pre-punched, and assembly should be done with the screws provided.

3. Attach frame hanger (117296) (Item "A"), to underside of oven. The rear frame hanger should be mounted so that the flanged side of the rack hanger faces the rear of the unit. Refer to figure 13.

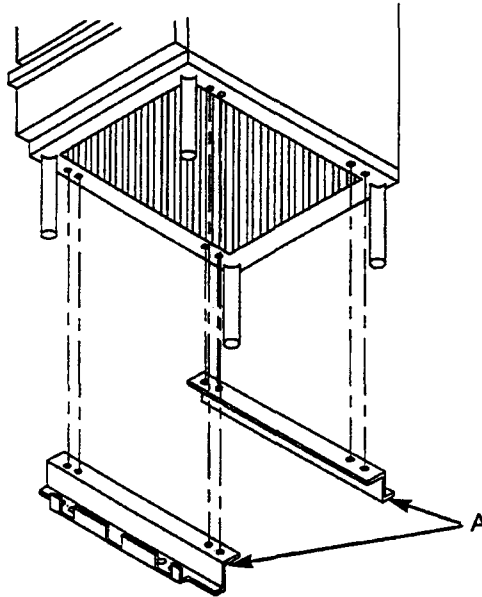


FIGURE 13

4. Hang rack guides from outside frame hanger holes for racks, or inside hanger holes for pans. Refer to figure 14.

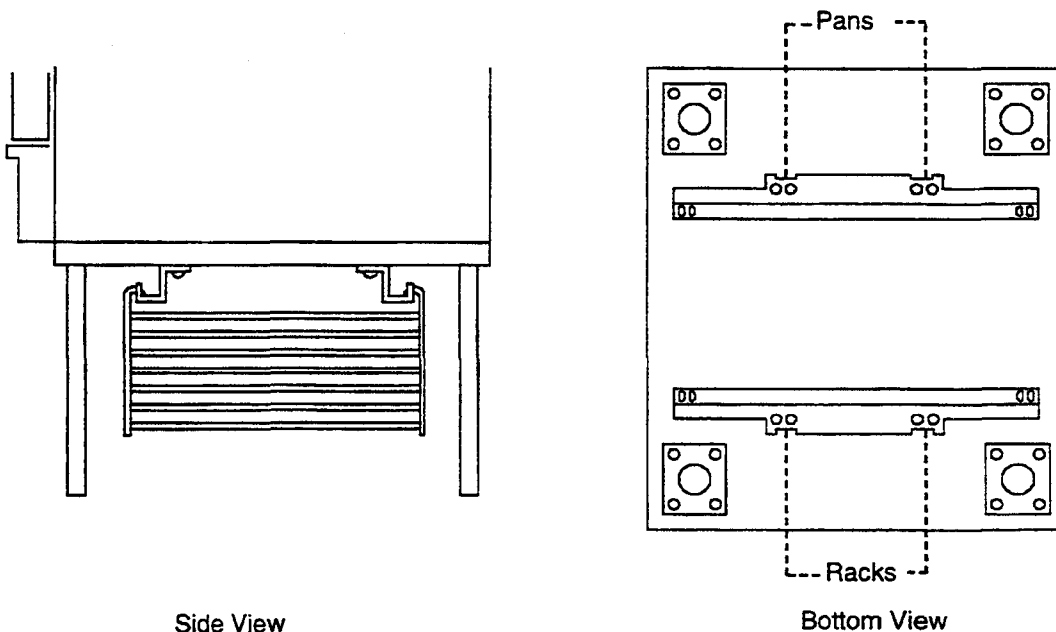


FIGURE 14

5. Insert bottom of rack guides into front and rear holes in shelf. If you have an open rack guide kit, insert bottom of rack guides in to holes in the left and right side of front and rear channel frames. Refer to figure 15.

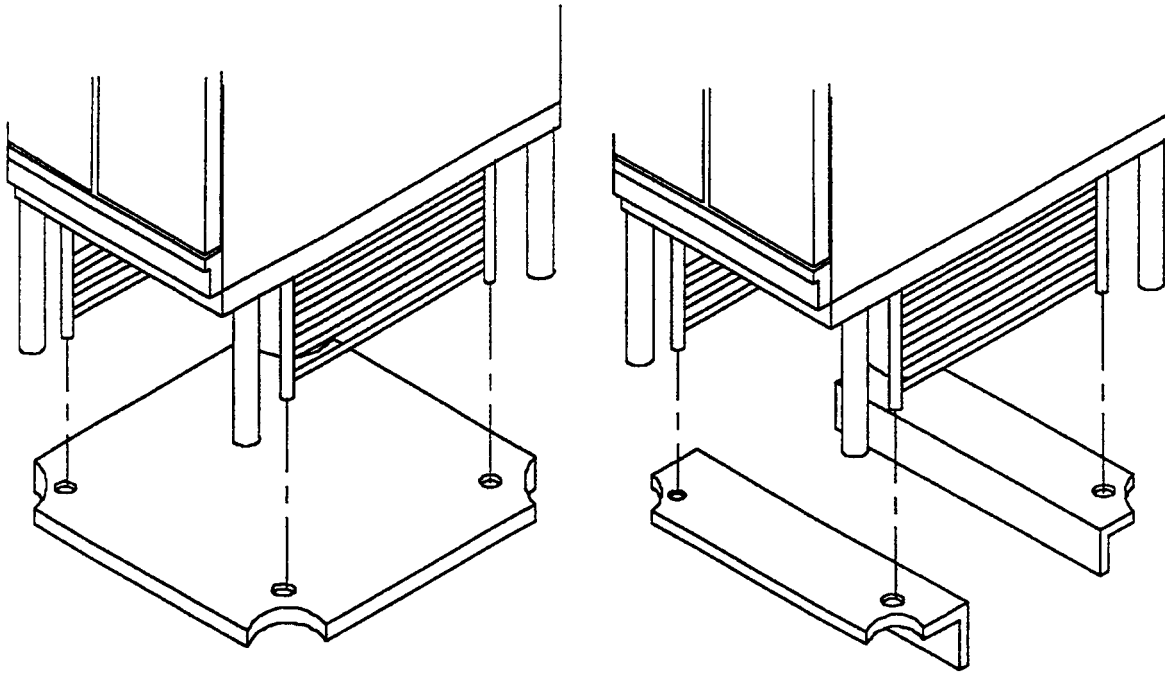


FIGURE 15 6. Secure bottom of rack guide to shelf or front and rear channel frames with side rack clips. Refer to figure 16.

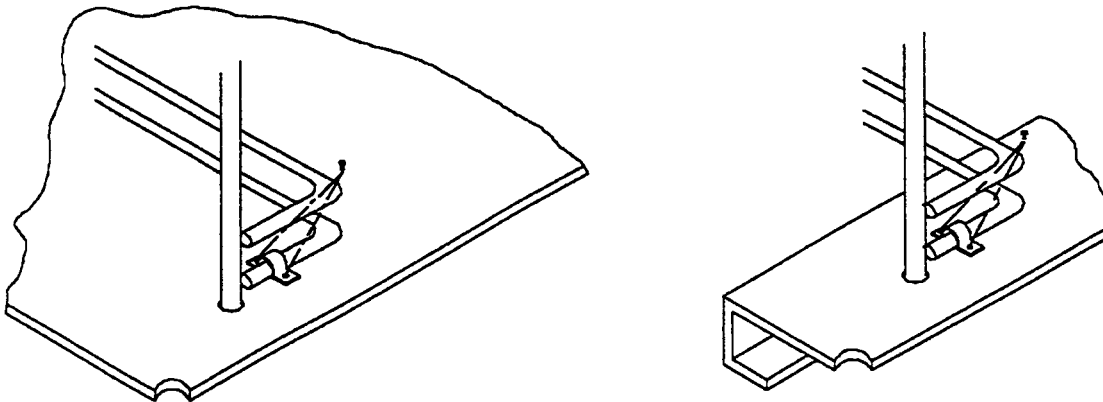


FIGURE 16

7. Install rack stop to rear frame hanger and rear of bottom shelf, or rear channel frame. Refer to figure 17.

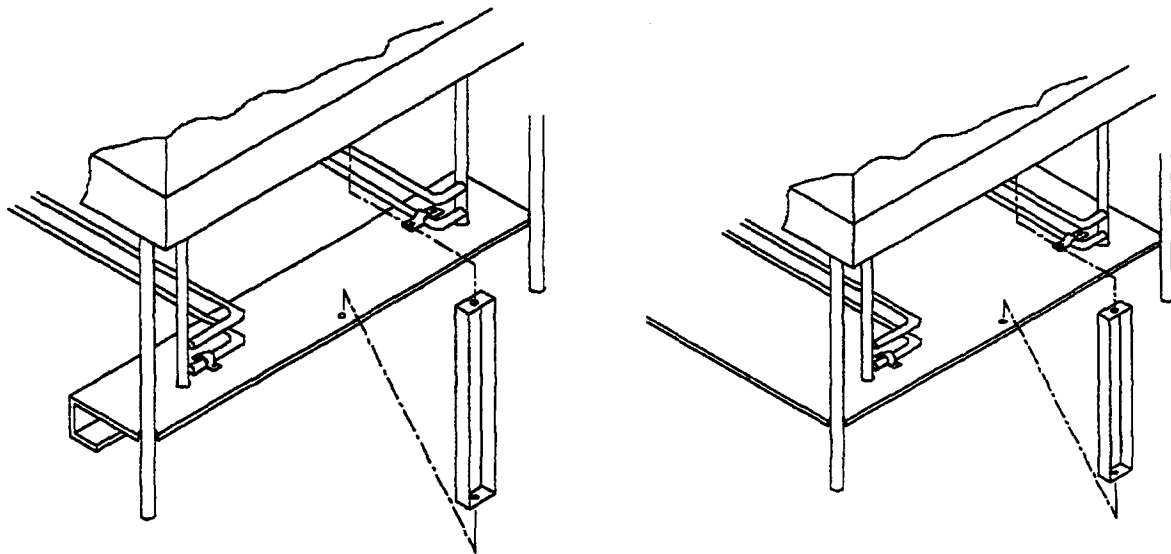


FIGURE 17

THEORY OF OPERATION

FOR STANDARD CONTROL UNITS - SC MODELS

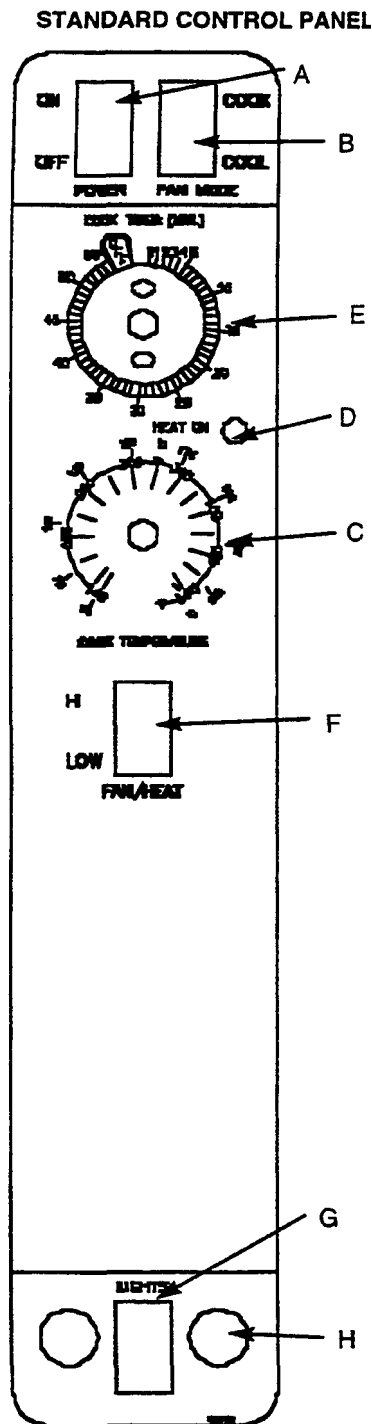


FIGURE 18

- A. On-Off Switch (Power)
- B. Cook-Cool Switch (Fan)
- C. 1 Hour Timer
- D. Heat On Indicator Light
- E. Cook Thermostat
- F. High Low Fan/ Heat Switch
- G. Light Switch (Momentary)
- H. Fuse (only on 208V or higher voltage ovens).

CONTROL FUNCTIONS:

- A. The "ON-OFF switch (top left) controls all power in the unit. In the "ON" position, power is made available to the lights, thermostat and motor circuitry.
- B. The "COOK-COOL" switch (top right) controls the fan relative to door position.
 - 1. In the "COOK" position, the fan and heat source are "ON" when the doors are closed. Opening the doors shuts off the fan and heat source.
 - 2. In the "COOL" position, the fan is on regardless of whether doors are open or closed (power switch "ON"). Opening doors shuts off heat source - fan remains on.
 - 3. General - Fan is always on when unit is "ON", unless in cook position and doors are open. Fan does not cycle with heat source. "COOL" position is useful for rapid cool down of oven after cooking is completed (doors open).
- C. The "COOK TEMPERATURE" control regulates the oven temperature. Setting the control to a position greater than the oven temperature energizes the heating source and illuminates the "HEAT ON" light.

NOTE: Once the set temperature is achieved, the heat source and light will go off, and then cycle as required to maintain set temperature.
- D. The "HEAT ON" indicator light cycles with the heat source and is illuminated when the heat source is on.
- E. The 1 Hour timer is only a time reminder. It has no control over oven.
- F. Fan "HI-LOW/ FAN HEAT switch allows selection of fan speed at user's preference.
- G. The LIGHT switch controls the interior oven lights. It is normally "OFF" and must be depressed continually to operate lights.

CONTROL OPERATION:

- A. Preheat - Oven preheats to "COOK" temperature setting.
 - 1. Turn power to "ON".
 - 2. Set cook temperature to desired temperature. When oven temperature is equal to the cook temperature control setting, the "HEAT-ON" light will go out. The oven is now preheated and product may be placed in oven.
 - 3. Choose HIGH or LOW fan / heat.
- B. Cook
 - 1. Preheat as above.
 - 2. Load oven. The "HEAT-ON" light will cycle on and off with the heat source.
 - 3. Use of timer as a REMINDER is optional. Timer does not control cook length.
- C. Rapid Cool Down
 - 1. Temperature control at full counterclockwise.
 - 2. COOK-COOL Switch - "COOL"
 - 3. Doors open.

FOR CYCLE CONTROL UNITS - SC MODELS

CONTROL FUNCTIONS:

- A. The "ON-OFF" switch (top left) controls all power in the unit. In the "ON" position, power is made available to the lights, thermostat and motor circuitry.
- B. The "COOK-COOL" switch (top right) controls the fan relative to door position.
 1. In the "COOK" position the fan and heat source are "ON" when the doors are closed. Opening the doors shuts off the fan and heat source.
 2. In the "COOL" position, the fan is on regardless of whether doors are open or closed (power switch "ON"). Opening doors shuts off heat source - fan remains on.
 3. General - Fan is always on when unit is "ON", unless in "COOK" position and doors are open. Fan does not cycle with heat source. "COOL" position is useful for rapid cool down of oven after cooking is completed (doors open).
- C. The timer is only a Time* reminder. It has no control over the oven heat.

NOTE: 'Once the set temperature is achieved, the heat source and light will go off, and then cycle as required to maintain set temperature.'
- D. The "HEAT ON" light indicates heat source is in operation.
- E. The "COOK TEMPERATURE" control regulates the oven temperature. Setting the control to position greater than the oven temperature energizes the heating source and illuminates the "HEAT ON" light.
- F. The "CYCLE TIMER" selects the cycle mode in the "ON" position and bypasses it in the "OFF" position.
- G. Fan "HI-LOW/ FAN SWITCH" switch allows selection of fan speed at user's preference.
- H. The "FAN DELAY TIMER". During the time period set on the timer, the blower cycles off and on in 20-70 second intervals set by the operator. *'When the timer times out the blower runs continuously in i normal cook mode.'*
- I. The "CYCLE TIMER" selects the cycling time of the blower, from 20 to 70 seconds.
- J. The LIGHT switch controls the interior lights. It is normally "OFF" and must be depressed continuously to operate lights.

CONTROL OPERATION:

The procedure for cooking only in a Cycle Control unit is the same as that of a Standard Control unit.

- A. Cycle
 1. Switch power on.
 2. Set COOK TEMPERATURE to desired temperature.
 3. The HEAT ON light will be off once the oven preheats to the set cook temperature.
 4. Load oven with the product.
 5. Switch CYCLE TIMER to ON.
 6. Set FAN DELAY TIMER to desired time.
 7. Set CYCLE TIMER to desired cycling.
 8. Once the FAN DELAY TIMER times out the oven will operate in a normal cook mode with the blower running continuously.
 9. Use of COOK TIMER as a REMINDER is optional. COOK TIMER does not control cook length.
 10. Remove product after it is cooked.
- B. Rapid Cool Down
 1. TEMPERATURE CONTROL at full counterclockwise.
 2. Cook-Cool Switch "COOL".
 3. Doors open.

CYCLE CONTROL CONTROL PANEL

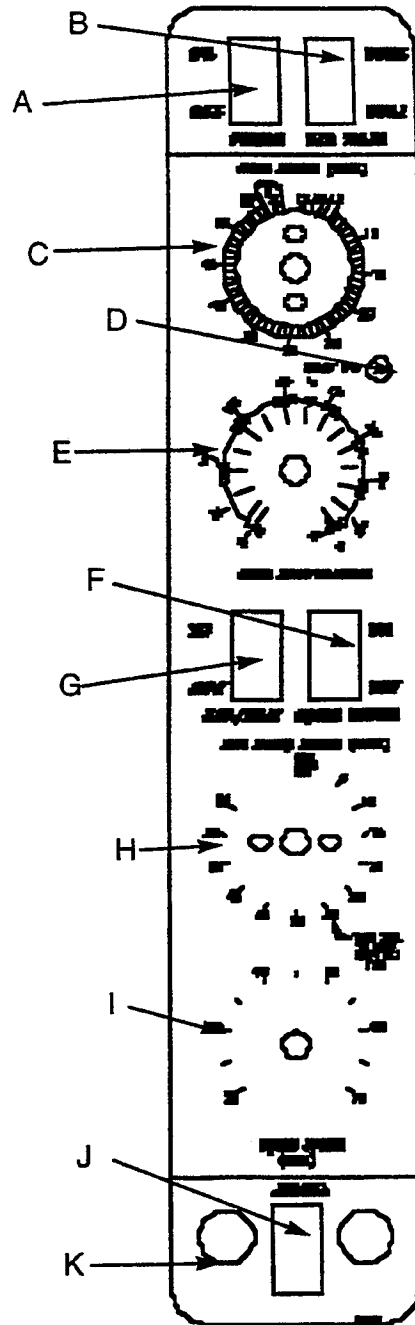


FIGURE 19

- A "On-Off" Switch (Power)
- B "Cook-Cool" Switch (Fan)
- C Cook Timer
- D Heat In Indicator Light
- E Cook Thermostat
- F "High-Low" Switch (Fan Speed)
- G "On-Off" Switch (Pulse Timer)
- H Fan Delay Timer
- I Pulse Timer
- J Light Switch (Momentary)
- K Fuse (only on 208V or higher voltage ovens)

FOR COOK AND HOLD CONTROL UNITS (ANALOG CONTROLS) - CM MODELS

COOK AND HOLD CONTROL PANEL

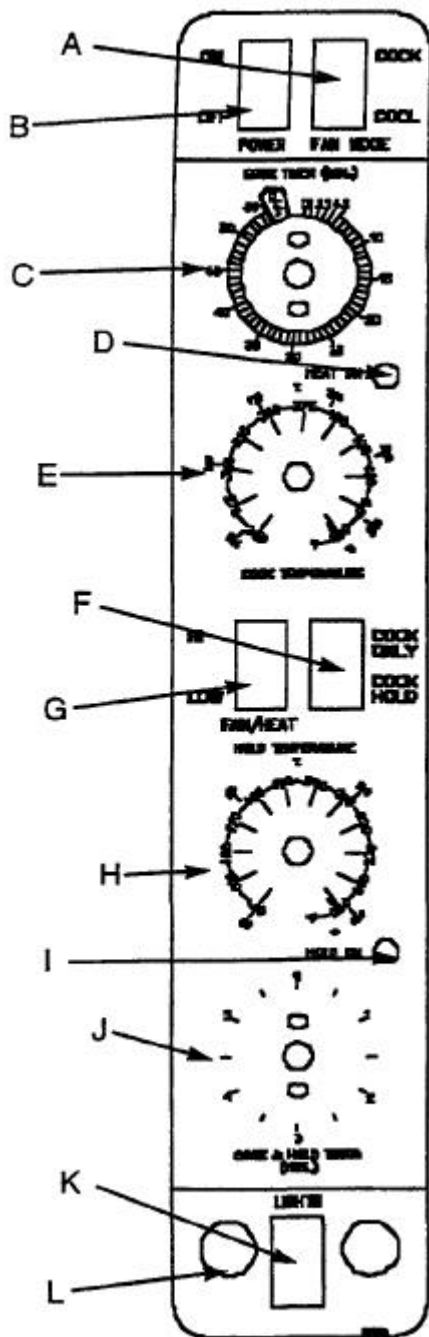


FIGURE 20

- A "On-Off" Switch (Power)
- B "Cook-Cool" Switch (Fan)
- C Cook Timer
- D Heat On Indicator Light
- E Cook Thermostat
- F Cook Only Cook Hold Switch
- G "High-Low" Switch (Fan Speed)
- H Hold Thermostat
- I Hold Indicator Light
- J Cook Hold Timer
- K Light Switch (Momentary)
- L Fuse (only on 208V or higher voltage ovens)

CONTROL FUNCTIONS:

- A. The "On-Off" switch (top left) controls all power in the unit. In the "On" position, power is made available to the lights, thermostat and motor circuitry.
- B. The "COOK-COOL" switch (top right) controls the fan relative to door position.
 - 1. In the "COOK" position the fan heat source are "On" when the doors are closed. Opening the doors shuts off the fan and heat source.
 - 2. In the "COOL" position, the fan is on regardless of whether doors are open or closed (power switch "ON"). Opening doors shuts off heat source - fan remains on.
 - 3. General - Fan is always on when unit is "On", unless in "Cook" position and doors are open. Fan does not cycle with heat source ("Cook" mode - Cook & Hold models). "Cool" position is useful for rapid cool down of oven after cooking is completed (doors open)
- C. The timer is only a "Time" reminder. It has no control over the oven heat.
- D. The "Heat on" light indicates heat source is in operation.
- E. The "Cook Temperature" control regulates the oven temperature. Setting the control to a position greater than the oven temperature energizes the heating source and illuminates the "Heat On" light. Once the set temperature is achieved, the heat source and light will go off, and then cycle as required to maintain set temperature.
- F. The "COOK ONLY-COOK HOLD", switch (middle-right) selects the mode of operation.
- G. Fan "HI-LOW/ FAN HEAT" switch allows selection of fan speed at users preference.
- H. The "HOLD TEMPERATURE" control regulates the oven temperature when the oven is in the hold mode.
- I. The "HOLD ON" light indicates oven is in the hold mode.
- J. The "COOK & HOLD TIMER" controls the cooking time from 0 up to 12 hours. Once the timer times out the cooking mode switches from cook to hold and the oven temperature control switches from the cook thermostat to the hold thermostat.
- K. The light switch controls the interior oven lights. It is normally "Off" and must be depressed continuously to operate the lights.
- L. Fuses (only used on 208V or higher voltage ovens) **CONTROL OPERATION:**

The procedure for cooking only in a "Cook and Hold" control unit is the same as that in a standard control unit with additional procedure of selecting "Cook Only" mode with the "Cook Only-Cook Hold" control switch.

- 1. COOK AND HOLD
 - a. Switch power on.
 - b. Select Cook Only mode with "Cook Only - Cook Hold" control switch.
 - c. Set cook temperature to desired temperature.
 - d. Set hold temperature to desired temperature.
 - e. The "Heat On" light will be off once the oven preheats to the set cook temperature.
 - f. Load oven with the product
 - g. Select cook-hold mode with cook-only-cook hold control switch.
 - h. Set the cook & hold timer to desired cooking time.
 - i. Once the cook & hold timer times out the oven temperature control will switch from cook temperature to hold temperature. The HOLD ON light will glow.
 - j. The oven will maintain hold temperature indefinitely.
 - k. Remove the product as needed.
- B. RAPID COOL DOWN
 - a. Temperature control at full counterclockwise.
 - b. Cook-Cool Switch "Cool".
 - c. Doors open.

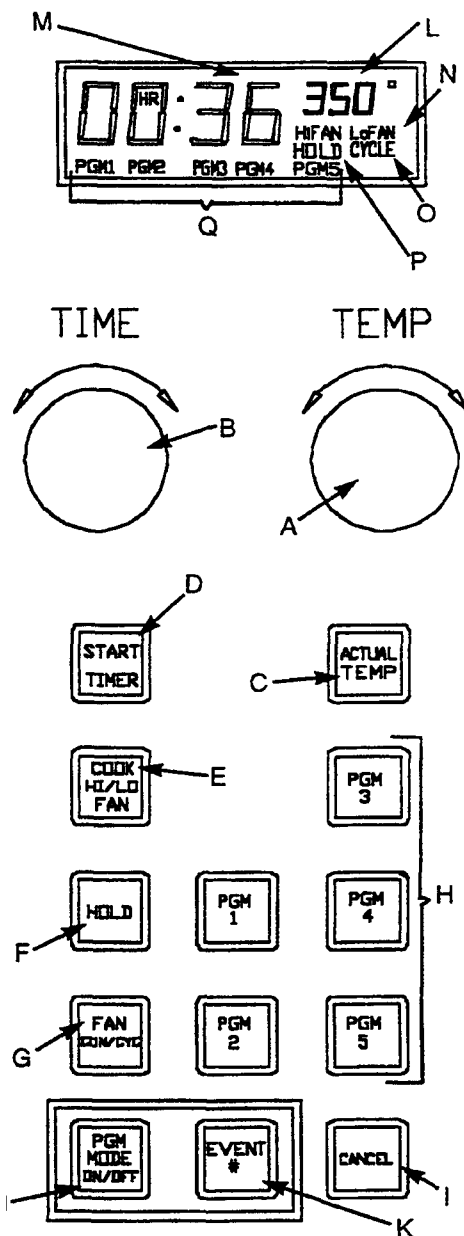
CONTROL FUNCTIONS:

The operation of the "ON-OFF" and "LIGHTS" switches are the same as described in the Standard Controls section.

The following functions are unique to the Cook & Hold programmable control:

The purpose of each button or knob is as follows:

- A. Temperature Adjustment Knob - used to set the desired cook or hold temperature.
- B. Time Adjustment Knob - Used to set the cook time.
- C. Actual Temperature Button - Used to read the oven interior temperature.
- D. Start Timer Button - Used to begin a timed cook sequence.
- E. Hi/Lo Fan Speed Button - Used to select High or Low fan speed.
- F. Hold Button - Used in Cook and Hold to select hold mode.
- G. Continuous/Cycling Fan Button - Used to select fan, continuous or cycling with heat source.
- H. Program Selector Button Used to select programs.
- I. Cancel Button - Used to cancel cooking sequence.
- J. Program Mode On/Off Button - Used to enter and exit programming mode.
- K. Event Selector Button - Used to step through program.
- L. Temperature Display - Indicates temperature set point.
- M. Time Display - Indicates cook time left in cook mode or how long product has been held in hold mode
- N. Fan Speed Indicator - Indicates High or Low Fan Speed.
- O. Fan Mode Indicator - Indicates Continuous or Cycling Fan.
- P. Hold Mode Indicator - Indicates when in hold mode. Flashes when hold mode will follow cook mode.
- Q. Program Indicator - Indicates which program is being used.

PROGRAMMABLE CONTROL PANEL**FIGURE 21**

- A Temperature Adjustment Knob
- B Time Adjustment Knob
- C Actual Temperature Button
- D Start Timer Button
- E Hi/Lo Fan Speed Button
- F Hold Mode Selector Button
- G Continuous/Cycling Fan Button
- H Program Selector Buttons
- I Cancel Button
- J Program Mode on/Off Button
- K Event Selector Button
- L Temperature Display
- M Time Display
- N Fan Speed Indicator
- O Fan Mode Indicator
- P Hold Mode Indicator
- Q Program Indicator

**TO OPERATE THE CONVECTION OVEN - PC MODELS FOLLOW THESE
STEP-BY-STEP INSTRUCTIONS**

PROGRAMMABLE CONTROL PANEL

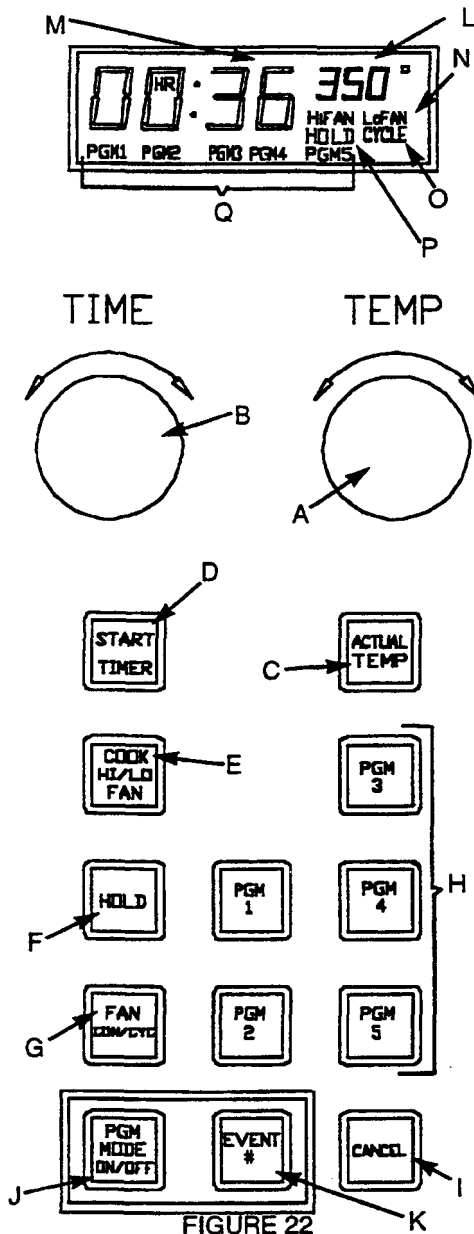


FIGURE 22

- A Temperature Adjustment Knob
- B Time Adjustment Knob
- C Actual Temperature Button
- D Start Timer Button
- E Hi/Lo Fan Speed Button
- F Hold Mode Selector Button
- G Continuous/Cycling Fan Button
- H Program Selector Buttons
- I Cancel Button
- J Program Mode On/Off Button
- K Event Selector Button
- L Temperature Display
- M Time Display
- N Fan Speed Indicator
- O Fan Mode Indicator
- P Hold Mode Indicator
- Q Program Indicator

PRE-HEAT/UNTIMED COOK:

1. Push power switch "on".
2. Adjust temperature knob until the temperature display indicates desired temperature.
3. Select fan speed. Shown in fan speed indicator (Item "N"), by pushing Hi/Lo fan speed button.
4. Select fan mode, shown by fan mode indicator (Item "O"), By pushing Continuous/Cycling fan button.

The oven will operate as **set** up even if the cancel button is pushed.

The temperature display will flash until the oven interior temperature reaches the set point temperature. This tells you the oven is ready to cook.

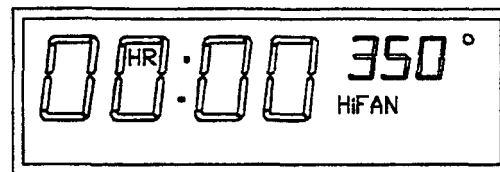


FIGURE 23

The above display shows an untimed bake at 350° hi-speed continuous fan.

TIMED COOK:

1. Follow steps 1 through 4 under pre-heat/ Untimed cook.
2. Adjust time adjustment knob, (Item "B"), until the time display (Item "M"), shows the desired cooking time.
3. Load the oven and push the start timer button, (Item "D").

The timer will stop when the oven doors are opened, and resume when they are closed. At the end of timed cook, the control will beep until the cancel button, (Item "C") is pushed.

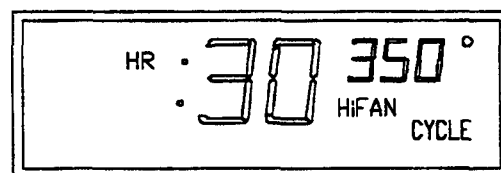


FIGURE 24

The above display shows a timed bake of 30 minutes at 350° hi that cycles with the heat source.

COOK & HOLD

1. Follow steps 1 and 2 of timed cook.
2. Push the hold button, (Item "F"), to enter hold mode.
3. Adjust temperature knob, (Item "A"), until temperature display, (Item "L"), indicates desired hold temperature.
4. Select continuous or cycling fan mode as you did for cook. Check fan mode indicator, (Item "N"). Fan speed is always low speed in hold mode.
5. Load the oven and press the start timer button, (Item "D").

During the cook cycle, the hold indicator, (Item "P"), will flash. When the cook timer times out, the control will beep three times and switch to hold mode.

The fan will operate continuously until the hold temperature is reached. The time display will indicate how long the product has been held.

CAUTION

Care should be exercised in holding products over extended periods of time or at very low holding temperatures, due to the possible bacteria growth. A competent authority on food bacteria growth should be consulted if in doubt regarding safe holding times and temperature.

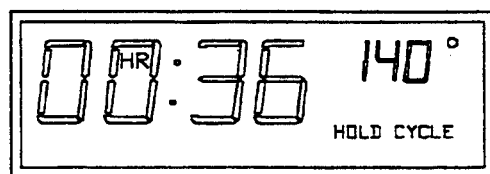


FIGURE 26

The above display is what you will see during the hold mode selection. It shows a 140° bold temperature with a fan that cycles with the heat source.

A cycling fan is useful in hold mode to reduce shrinkage.

RUNNING A PRE-PROGRAMMED SEQUENCE

1. Pre-heat oven according to pre-heat instructions.
2. Load oven.
3. Push desired program button, (Item "H").
4. Push timer start button, (Item "D"), to begin cooking.

RAPID COOL DOWN

1. Open doors.
2. Push continuous/cycling fan button, (Item "G").
3. The display will spell "cool."

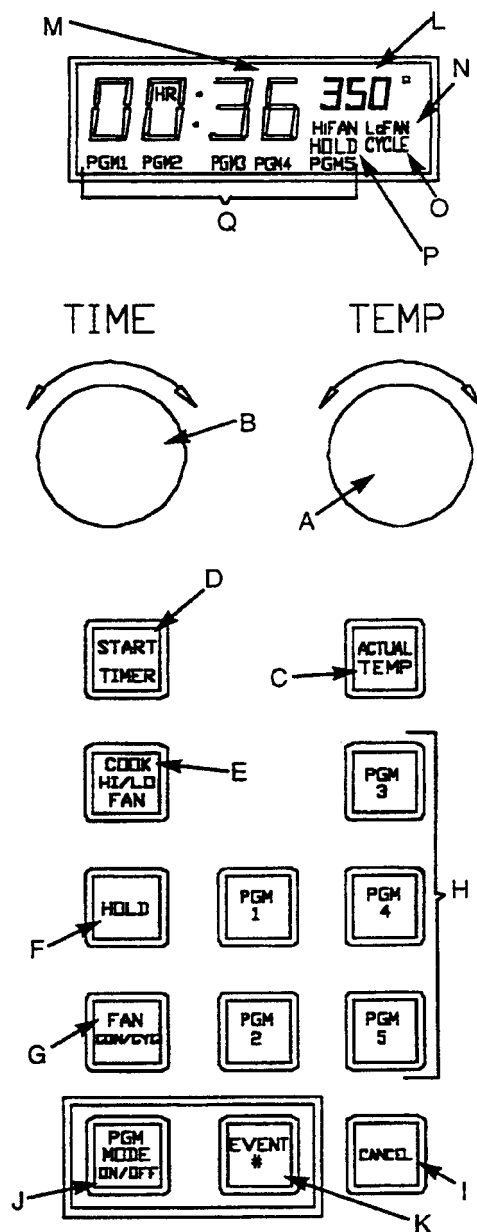


FIGURE 25

- A Temperature Adjustment Knob
- B Time Adjustment Knob
- C Actual Temperature Button
- D Start Timer Button
- E Hi/Lo Fan Speed Button
- F Hold Mode Selector Button
- G Continuous/Cycling Fan Button
- H Program Selector Buttons
- I Cancel Button
- J Program Mode on/off Button
- K Event Selector Button
- L Temperature Display
- M Time Display
- N Fan Speed Indicator
- O Fan Mode Indicator
- P Hold Mode Indicator
- Q Program Indicator

PROGRAMMABLE CONTROL PANEL

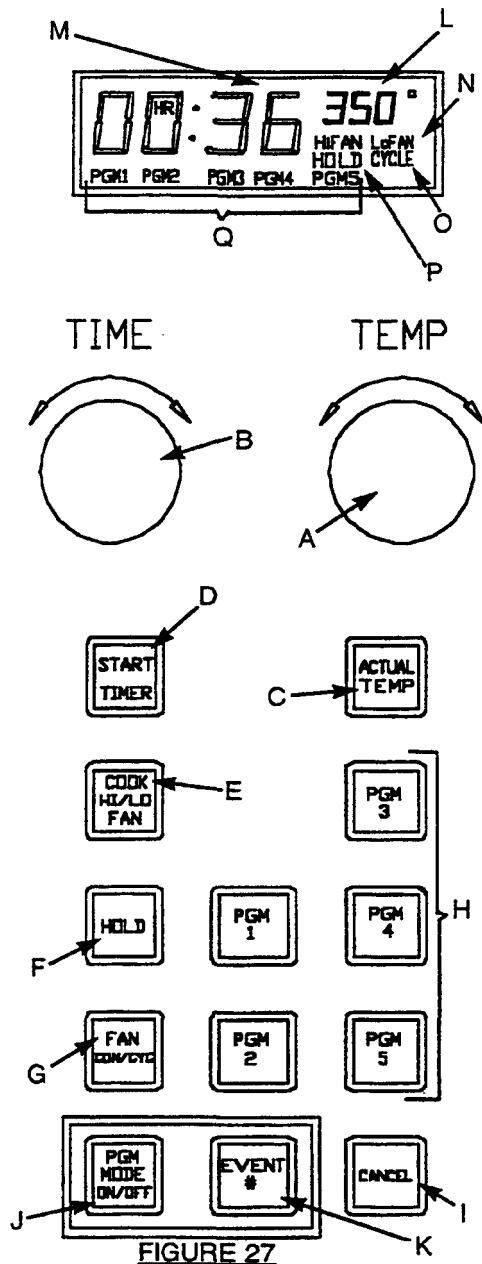


FIGURE 27

- A Temperature Adjustment Knob
- B Time Adjustment Knob
- C Actual Temperature Button
- D Start Timer Button
- E Hi/Lo Fan Speed Button
- F Hold Mode Selector Button
- G Continuous/Cycling Fan Button
- H Program Selector Buttons
- I Cancel Button
- J Program Mode on/Off Button
- K Event Selector Button
- L Temperature Display
- M Time Display
- N Fan Speed Indicator
- O Fan Mode Indicator
- P Hold Mode Indicator
- Q Program Indicator

TO PRE-PROGRAM THE CONTROL FOR FUTURE USE:

1. Push the program mode on/off button, (Item "J").
2. Select which program to set by pushing one of the five program buttons, (Item "H").

Programs 1 and 2 have six events; 3,4 and 5 have four events. The program will step through each event from 1 through the end.

The temperature display will flash alternately between E1 (Event 1) and the temperature setpoint. It will also flash which program you are programming, (Item "Q").

3. First decide whether this event is a cook or hold event. All hold events should be the last event since they will continue until the cancel button, (Item "I"), is pushed. In hold mode the pan only operates on low speed.
4. Adjust the temperature knob, (Item "A"), until the temperature display, Item "L", indicates the desired temperature.
5. Adjust the time knob, (Item "B"), until the time display, (Item "M"), indicates the desired cook time.
6. Select the fan speed with the Hi-Lo fan button, (Item "E"). Check the fan speed indicator, (Item "N").
7. Select Continuous or Cycling fan with the Continuous/Cycling Fan button, (Item "G"). Check the fan mode indicator, (Item "O").
8. Push the event button, (Item "K"), to go to the next event.
9. Repeat steps 3 through 8 until finished. You can check a program by repeatedly pushing the event button, (Item "K"), to step through the program.
10. When done, push the Program Mode On/Off button, (Item "J"), to exit the program mode.

RACK TIMER CONTROL OPERATION - RT MODELS

BUTTON DESCRIPTION:

The purpose for each button or knob is as follows:

- A. Temperature Setpoint Display - Indicates temperature setpoint. Flashes till setpoint is reached.
- B. Fan Speed Indicator - Indicates fan speed is either Hi or Low speed.
- C. Fan Mode Indicator - Indicates fan mode is either continuous or cycles with heat source.
- D. Timer Display - Displays remaining time for the rack with least remaining cook time. It will also display the rack number when the timer has timed out, to indicate which rack has finished.
- E. Rack Indicators - Indicates which racks are being timed. The rack that is next to finish flashes.
- F. Temperature Adjustment Knob - Used to set desired cook temperature.
- G. Timer Adjustment Knob - Used to set the desired cook time.
- H. Timer Selector Buttons - Used to select which timer will be used for the product to be cooked.
- I. Cancel Button - Used to cancel cooking sequence or individual rack timing.
- J. Fan Speed Selector Button - Used to select the High or Low speeds.
- K. Fan Mode Selector Button - Used to select continuous or cycling fan mode (see fan mode indicator).
- L. Rack Selector Buttons - Used to select which rack the pan will be cooked.
- M. Actual Temperature Button • When pressed changes the Temperature Setpoint Display (Item "A") to read the actual oven interior temperature.

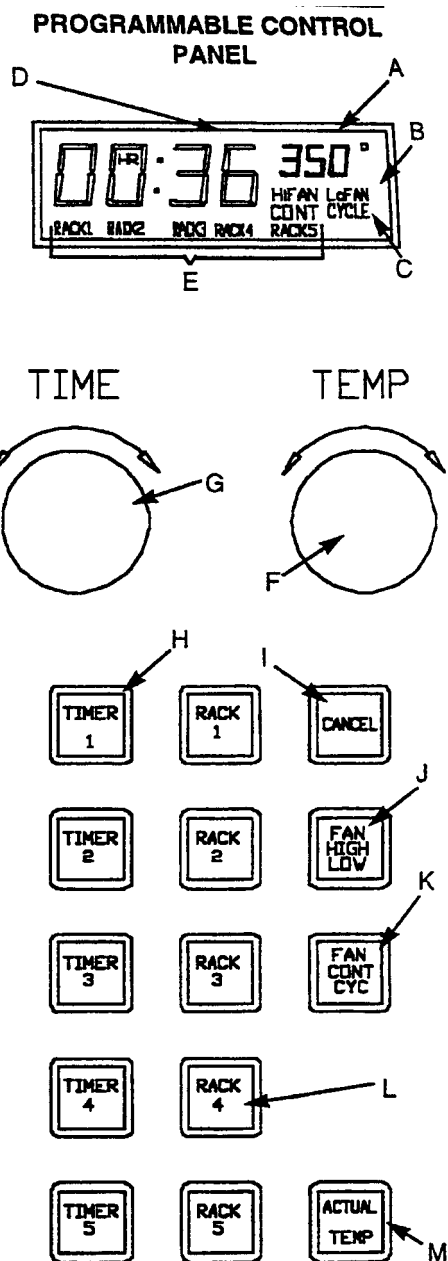


FIGURE 28

- A Temperature Setpoint Display
- B Fan Speed Indicator
- C Fan Mode Indicator
- D Timer Display
- E Rack Indicators
- F Temperature Adjustment Knob
- G Timer Adjustment Knob
- H Timer Selector Buttons
- I Cancel Button
- J Fan Speed Selector Button
- K Fan Mode Selector Button
- L Rack Selector Button
- M Actual Temperature Button

GENERAL:

The Southbend Rack Track timer convection oven is designed to monitor and time five independent cooking racks in the oven. It accomplishes this by using five independent timers that can be preset. The oven also has a sixth adjustable setting that can be set by the time setting adjustment knob.

The control maintains the cooking temperature during the cook cycle that is simply dialed into the control during preheat of the oven. Each rack is then cooked at this temperature for the amount of time set by the user.

OVEN OPERATION:

The control has two rotary dials. The right rotary dial adjusts the oven temperature. Turn the dial clockwise to turn the oven on if the temperature readout reads "000" or to increase the setpoint to a higher temperature. The three temperature digits located in the upper right of the display, indicate the set cooking temperature. The left rotary dial adjusts the time display.

The oven will heat when the set temperature is higher than the actual oven temperature. When the "Actual Temp" key is pressed, the actual oven interior temperature is displayed. The Rack Track timer convection oven is capable of timing five racks or pans independently. The advantage is that a small batch cooking is possible within a convection oven. You can cook one pan at a time or in large batches. Generally you will want to identify each of the rack timers with a rack within the oven. For example, You may want to use Rack #1 for the top pan, Rack #2 for the second from the top pan and on down to Rack #5 for the Bottom pan. By doing this, you will be able to place a pan in the convection oven and have it tell you when it is done cooking.

USING THE CONTROL:

The simplest way to begin learning the rack timer is to start pressing some buttons.

First to turn the oven on, press the power switch "On." Then adjust the Temperature Adjustment Knob" (Item "P" figure 28) until the "Temperature Setpoint Display" (Item "A" figure 28) reads the desired cooking temperature. As an example, let's select 325°F or 163°C. Now press the "Fan Mode Selector Button" (Item "K" figure 28) until the "Fan Mode Indicator" (Item "C" figure 28) reads "Cont" for continuous fan. Next press the "Fan Speed Selector Button" (Item "J" figure 28) until the "Fan Speed Indicator" (Item "B" figure 28) reads "HiFan" for high speed fan. Your display will look like figure 29.

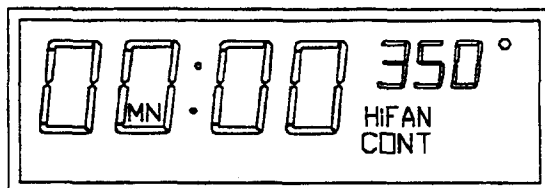


FIGURE 29

The oven will heat up until the setpoint is reached; the "Temperature Setpoint Display" will then stop flashing and the control will beep. Now the oven is ready to load. After you have loaded rack number 1, adjust the Timer Adjustment Knob" (Item "G" figure 28) until the Timer Display" (Item "D" figure 28) reads the desired cook time. For our example, We will use 6 minutes. Then immediately press the "Rack Selector Button" (Item "L" figure 28) of the rack that you loaded. The oven is now timing and the display will look like figure 30.

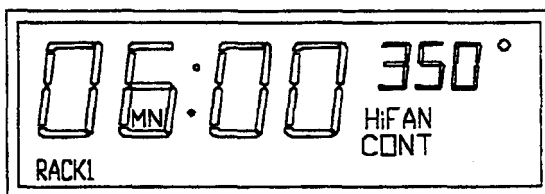


FIGURE 30

The Flashing "Rack Indicator" (Item "E" figure 28) Tells you that rack number is being timed and that it is the next to finish. Once the timer times out, the Timer Display" (Item "D" figure 28) will display which rack should be removed and the oven will beep until the "Cancel" (Item T figure 28) button is pressed.

This procedure can be repeated each time preparation of a product is completed and is ready for the oven. Each rack can be loaded at any time and the control will keep track of each pan to tell you when it is ready. The remaining time for any rack may be checked by pressing the corresponding "Rack #" button. The time display will then indicate the remaining time. You can also cook each pan for a different time, because you dial in the cook time for each load. However, the cook temperature must remain the same for each batch. This may require varying the cook temperature slightly for some products.

SETTING THE FIVE TIMERS:

You have seen how you can dial in a different temperature for each load and how the oven times each pan independently. Remember that all products being loaded into the oven must require the same cooking temperature during the same period of time. The oven is also provided with five timers that you can set. These are Timer Selector Buttons" (Item "H° figure 28). These are used to quickly set the cook time after a pan is loaded. To set the time for each of these buttons, simply press the timer button while you adjust the Timer Adjustment Knob" and then release the button. To check the timer setting, press the timer button. Each timer can be used for a different product you cook. To use these buttons, follow the steps:

1. Turn the oven on by pressing the "ON" switch.
2. Adjust the cook temperature dial to preheat the oven. The "Temperature Setpoint Display" will stop flashing when the oven is preheated, and the oven will beep.
3. Load the oven with one to five pans.
4. Press the desired timer button.
5. Press the corresponding Rack # button.
6. Repeat steps 4 and 5 until all the pans are being timed.
7. When the timer times out, Press the cancel button and remove pan. This rack is now available for another pan.

NOTICE

If unit is equipped with Fastron Programmable Control consult instruction book Part Number 229-50796,Rev.A which is packed with the unit and available from your Southbend Parts Distributor or Southbend.

COOKING TIPS

BAKING AND ROASTING:

The convection oven is a different type of oven which offers many features and advantages to the food service operation. The operation of the oven is not difficult to understand or control.

The moving air strips away the insulating layer of moisture on the products allowing heat to penetrate faster for quicker baking and roasting. Due to these differences in the method of cooking in a convection oven, procedures and techniques may require some modification for successful results. A general rule which will assist in better operation is cooking time will be less and temperatures should be 25 to 75° lower than those called for in standard recipes.

TIME AND TEMPERATURES:

Time and temperatures are important Use our schedule of suggested times and temperatures as a guide. Actually, the time and temperature best suited will depend on such factors as size of load and mixture of recipe (particularly moisture). Once your specific requirement of time and temperature has been established, you will find the experience with succeeding loads to be similar.

OVERLOADING:

Do NOT overload the oven. The size of the load which can be done satisfactorily depends largely on the product. As a rule, five racks can be successfully used for shallow cakes, cookies, pies, etc. For deeper cakes, such as angel food, use only three racks because of the size of the pan and space required for raising. For hamburger patties, fish sticks, cheese sandwiches, etc., a full complement of racks and pans is satisfactory. Basically, space your pans as evenly as possible and leave room for air circulation. Do not use a deep pan for shallow cakes or cookies, etc., as air circulation across the surface of the product is essential.

GUIDE TO BAKING TIMES AND TEMPERATURES:

HOLD ONLY - Any food item prepared in steam table pans can be held until served by setting the hold thermostat at 160°F. This would include stuffed pork chops, oysters Rockefeller, or any vegetable entree.

STANDARD CONVECTION OVEN OPERATION - As a guide, set oven temperatures 25° - 75° lower than called for in recipes using non-convection ovens - i.e., range or deck ovens.

Time and temperature will vary depending upon load, mix, size, portion, temperature of product and other factors. Use this chart to develop your own cooking techniques.

Rack loading and position may effect product results. Experimentation may be necessary to suit individual requirements

COOKING TIPS

MARATHONER GOLD COOK TIMES STANDARD INPUT AND FASTHERM

| PRODUCT | TIME | TEMPERATURE | NUMBER |
|-----------------------------------|----------------------------|----------------|----------|
| | ES-10 EB-10 ES-20 EB-20 | ES-10 EB-10 | OF RACKS |
| BAKED GOODS | | | |
| Bread, 2 lbs. Loaf | 30 min. | 375°F | 3 |
| Biscuits | 5-10min. | 350°F | 5 |
| Combread | 18 min. | 350°F | 5 |
| French Bread | 8 min. | 375°F | 5 |
| Sheet Cake | 15-18 min. | 300°F | 5 |
| Cream Puffs | 20 min. | 325°F | 5 |
| Brown/Serve Rolls | 5 min. | 400°F | 5 |
| Ginger Bread | 18 min. | 300°F | 5 |
| Yeast Rolls Sheet Pans | 14-16 min. | 325°F | 5 |
| Pineapple Upside-Down Cake | 25-30 min. | 300°F | 5 |
| Apple Turnovers | 15-18 min. | 325°F | 5 |
| Fruit Cobble | 20-23 min. | 350°F | 5 |
| Brownies | 15 min. | 350°F | 5 |
| Danish Pastry | 12 min. | 325-F | 5 |
| Pie Shells | 12 min. | 350°F | 5 |
| Fruit Pies | 25-30 min. | 350°F | 5 |
| Pumpkin Pies | 25-30 min. | 275°F | 5 |
| Fresh Apple Pies | 35 min. | 375°F | 5 |
| Frozen Berry Pies | 40 min. | 375°F | 5 |
| Frozen Fruit Pies | 45 min. | 375°F | 5 |
| POTATOES | | | |
| Baked Potatoes -10 oz. | 40-45 min. | 450°F | 5 |
| Baked Potatoes • 6-8 oz. | 30-35 min. | 450°F | 5 |
| Scalloped Potatoes | 28 min. | 325°F | 5 |
| Macaroni and Cheese | 25 min. | 350°F | 5 |
| Stuffed Peppers | 18 min. | 350°F | 5 |
| Toasted Cheese Sandwich | 8 min. | 375°F | 5 |
| MEATS | | | |
| Top Round -18-20 lbs. (medium) | 5hrs. | 225°F | 1 |
| Prime Ribs (rare) | 4hrs. | 225°F | 1 |
| Burger Patties 4 oz. | 5 min | 350°F | 5 |
| Fish Cakes | 10-12 min | 350°F | 5 |
| Turkey 10-12 lbs. | 3hrs. | 225°F | 1 |

SUGGESTIONS:

| | |
|---|--|
| If cakes are dark on the sides and not done in the center | lower oven temperature |
| If cake edges are too brown | reduce number of pans or lower oven temperature |
| If cakes have a light outer color | raise temperature |
| If cakes settle slightly in the center | bake longer or raise oven temperature slightly Do not open doors except to load or unload product |
| If cake ripples | overloading pans or batter is too thin |
| If cakes are too coarse | lower oven temperature |
| If pies have uneven color | reduce number of pies per rack or eliminate use of bake pans |
| If meats are browned and not done in center | lower oven temperature and roast longer |
| If meats are well done and not browned | raise temperature Limit amount of moisture |
| If meats develop hard crust | reduce temperature or place pan of water in oven |
| If there is excess meat shrinkage | lower oven temperature |
| Brown sugar topping or meringue blow off | after oven is preheated, turn off oven and put in meringue until set |
| If rolls have uneven color | reduce number or size of pans |

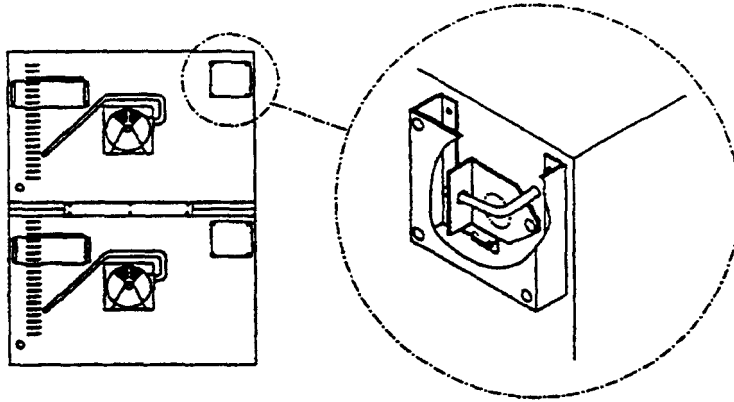
HELPFUL SUGGESTIONS

These are some helpful suggestions which will assist in getting the best possible performance from the convection oven:

1. Preheat oven thoroughly before use. When re-thermailizing frozen products, oven should be preheated 50 degrees higher than cooking temperature to compensate for heat loss during and after loading.

Thermostat must be returned to cooking temperature after loading.

2. The load should be centered on the racks to allow for proper heat circulation around the sides. Don't cover shelves completely.
3. This unit has a moisture vent located on the left hand rear of the oven. This vent is controlled by the small black knob located on the upper left hand corner of the oven. This vent should be closed when doing fine baking. This vent should be open when cooking products with a high moisture content. Refer to figure __.



ADJUSTMENTS

NOTICE

Service work should be performed only by a qualified technician who is experienced in, and knowledgeable of, the operation of commercial gas, electric, and steam cooking equipment. Contact the Authorized Southbend Service Agency for reliable service, dependable advice or other assistance, and for genuine factory parts.

Warranty will be void and the manufacturer is relieved of all liability if:

(A) Service work is performed by other than a qualified technician.

OR

(B) Other than genuine Southbend replacement parts are installed.

GENERAL:

When any difficulty arises it is always a good idea to check that the unit has been connected to the type of voltage for which it is **was** supplied. This can be done by examining the serial plate located behind the fold down control panel. The serial plate is mounted on the left side of the control compartment. It will list the type of voltage for which the unit was manufactured.

Wiring diagrams for the unit are located at the rear of the "SERVICE" section in this manual and attached to the side wall of the fold down control panel.

TEMPERATURE CONTROLLER ADJUSTMENT:

(Units without "PC" or "RT" suffix)

The calibration of the temperature controller should not be changed until sufficient experience with cooking results has definitely proved that the temperature controller is not maintaining proper oven temperatures. Before any recalibration is attempted, the oven temperature should be checked by this procedure:

1. The oven must be empty of all trays or pans.
2. Place a pyrometer couple or a reliable mercury oven-type thermometer at the center of the middle rack.
3. Set the indicator on the knob to 400° F.
4. The amber "heat on" light will go out when oven temperature is reached.
5. Allow three cycles for the temperature to stabilize.
6. Read the pyrometer or the thermometer immediately after the light goes out for the third time, and again immediately after it comes on the next time.
7. If the average of these readings varies by more than 10° from the dial setting, recalibrate by following the instructions outlined below.
8. Recalibration should be attempted only by a competent service man.

TO RECALIBRATE:

1. Loosen two set screws that secure the temperature knob to the temperature control.
2. Remove knob from shaft of temperature controller. Be careful not to rotate knob when removing.
3. Replace the knob with the indicator pointed directly at the temperature measured at center of the oven.
4. Recheck calibration.

ADJUSTMENTS

WARNING

Adjustments and service work may be performed only by a qualified technician who is experienced in, and knowledgeable with, the operation of commercial gas cooking equipment. However, to assure your confidence, contact your authorized Southbend service agency for reliable service, dependable advice or other assistance, and for genuine factory parts.

WARNING SHOCK HAZARD

De-energize all power to equipment before cleaning the equipment.

Consult the Southbend Authorized Parts/Service Distributor list for the Authorized Service Representative in your area-If this is not available, call the Service Department at Southbend, 1-800-348-2558 for their name and number.

WARNING

All adjusting and service should be performed by a person knowledgeable in making such adjustments. If in doubt - call your Authorized Service Agency.

PERFORMANCE STANDARD

To heat oven from 75°F to 350°F

| | |
|-------|-------------|
| ES-10 | 7-8 minutes |
| EB-10 | 7-8 minutes |

* Note: Preheat time will vary depending on voltage and/or ventilation.

MAINTENANCE

CAUTION

Whenever servicing or cleaning the oven, the main power supplies to the oven must be

At least twice a year have your Southbend Authorized Service Agency or another qualified service technician clean and adjust the unit for maximum performance.

Southbend equipment is sturdily constructed of the best materials and is designed to provide durable service when treated with ordinary care. To expect the best performance, your equipment must be kept in good condition and cleaned daily. Naturally, the periods for this care and cleaning depend on the amount and degree of use.

Following daily and periodic maintenance procedures will enhance the long-life of your equipment. Climatic conditions (salt air, seasonings, water quality) may require more thorough and frequent cleaning or the life of the equipment could be adversely affected.

Daily: Wash exposed cleanable areas. Monthly: Clean around burner air mixers, louvered panels, and pilots where grease or lint may have accumulated.

OVEN INTERIOR: Standard Finish

Linings, which are finished with a porcelain enamel coating, encourage frequent cleaning. "Spillovers" should be cleaned from the bottom as soon as possible to prevent carbonizing and a burnt-on condition. Grease or any residue should be cleaned from the side lining as soon as it accumulates. Usually a soap or detergent solution is strong enough. For stubborn accumulations, commercial oven cleaners are recommended.

The rack slide frames are readily removable by merely raising to disengage them from their sockets. Turn the power switch to the "OFF" position and allow the oven to cool before applying any cleaners.

Foreign matter may collect on the blades of the blower wheel and reduce the circulation. When this becomes apparent, turn the power switch to the "OFF" position. Remove the rear lining which is secured by thumb screws near each corner. Then, use a stiff brush on each blade and finally wash with soap and water.

EXTERIOR:

STAINLESS STEEL: To remove normal dirt, grease, or product residue from stainless steel, use ordinary soap and water (with or without detergent) applied with a sponge or cloth. Dry thoroughly with a clean cloth.

Never use vinegar or any corrosive cleaner.

To remove grease and food splatter or condensed vapors that have baked onto the equipment, apply cleanser to a damp cloth or sponge and rub cleanser on the metal in the direction of the polishing lines on the metal. Rubbing cleaners as gently as possible in the direction of the polished lines will not mar the finish of the stainless steel. NEVER RUB in A CIRCULAR MOTION. Soil and burnt deposits which do not respond to the above procedure can usually be removed by rubbing the surface with SCOTCK-BRITE scouring pads or STAINLESS scouring pads. DO NOT USE ORDINARY STEEL WOOL, as any particles left on the surface will rust and further spoil the appearance of the finish. NEVER USE A WIRE BRUSH, STEEL SCOURING PAD (EXCEPT STAINLESS), SCRAPER, FILE OR OTHER STEEL TOOLS. Surfaces which are marred collect dirt more rapidly and become more difficult to clean. Marring also increases the possibility of corrosive attack. Refinishing may then be required.

CONTROL PANEL: The textured control panel should be cleaned with warm water and mild soap. Never use cleaning solvents with a hydrocarbon base.

VENT SYSTEM: At least twice a year, the unit's venting system should be examined and cleaned.

MOTOR: Lubrication information can be found on the permanent label located on motor.

MAINTENANCE

DAILY CLEANING

- ∞ Remove the pan supports. Wash separately in a sink with a mild detergent and warm water. Dry thoroughly with a clean cloth.
- ∞ Wash interior surfaces, with a mild detergent and warm water. Rinse with clean water. Dry thoroughly with a clean cloth. If discoloration starts due to build up of seasonings or food products, remove by using Scotch- Brite scouring pad. Then wash, rinse, and dry as above.
- ∞ Wipe exterior surface with a clean damp cloth.
- ∞ Return all cleaned parts to the unit, placing them in their proper positions.
- ∞ LEAVE THE DOOR OPEN AT NIGHT AFTER CLEANING. This allows the unit to dry thoroughly after cleaning and also prolongs the life of the door gasket.

HELPFUL HINT: To Remove Heat Tint

To remove heat tint: Darkened areas sometimes appear on stainless steel surfaces where the area has been subjected to excessive heat. These darkened areas are caused by a thickening of the protective surface of the stainless steel and are not harmful. Heat tint can normally be removed by the foregoing, but tint which does not respond to this procedure calls for a vigorous scouring in the direction of the polish lines using SCOTCH-BRITE scouring pads, or a STAINLESS scouring pad in combination with a powdered cleaner. Heat tint action may be lessened by not applying or by reducing heat to equipment during slack periods.

CAUTION

DO NOT USE ordinary steel wool as any particles left on the surface will rust.

NEVER USE a wire brush, steel or abrasive scouring pad (except stainless), scraper, file or other steel tools. Surfaces which are marred collect dirt more rapidly and become more difficult to clean. Marring also increases the possibility of corrosive attack.

DO NOT clean door gasket with a high chlorine solution or bleach.

NEVER use any corrosive cleaner. Use only cleaners approved for stainless steel.

WARNING

Improper cleaning can result in expensive repairs or electrical shock. Do not get water on electrical controls or motors.

PARTS -- ACCESSORIES



NOTICE

INSTALLATION OF OTHER THAN GENUINE SOUTHBEND PARTS WILL VOID THE WARRANTY ON THIS EQUIPMENT.

The serial plate with voltage, model, and serial information is located inside of the control panel. It is mounted to the left side of control compartment. There is also an Identification Plate mounted to the front of the oven that will supply model and serial number.

Replacement parts may be ordered through a Southbend Authorized Parts and Service Distributor.

When ordering parts, please supply the Model Number, Serial Number, Part Number, Description, Finish, and Electrical Characteristics as applicable.

Consult the Southbend Authorized Parts/Service Distributor list for the Authorized Parts supplier in your area. If this list is not available, call the Service Department at Southbend, 1-800-348-2558 for same.

MODEL PREFIXES

ES= Standard Depth

EB = Bakery Depth

MODEL SUFFIX'S

- SC = Standard Controls
- CC = Cycle Controls
- CH = Cook and Hold Controls (Analog)
- PC = Programmable Controls
- RT = Rack Track Controls

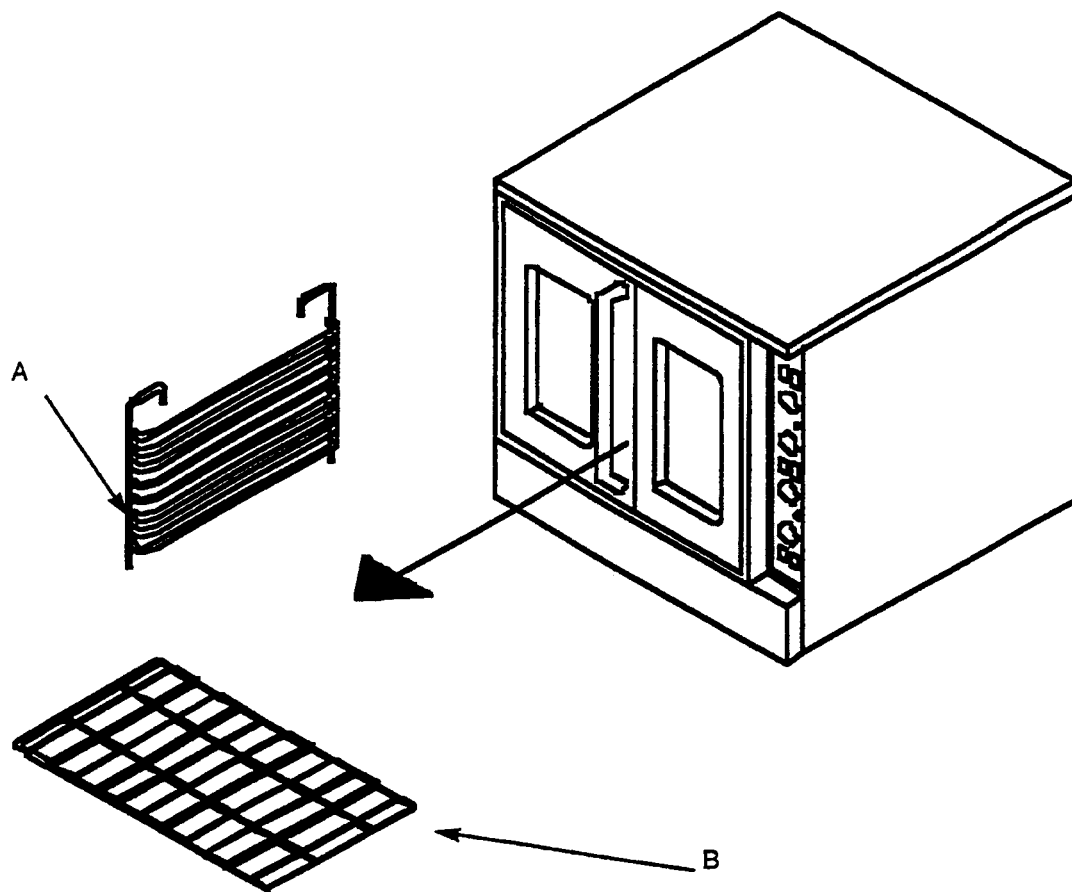
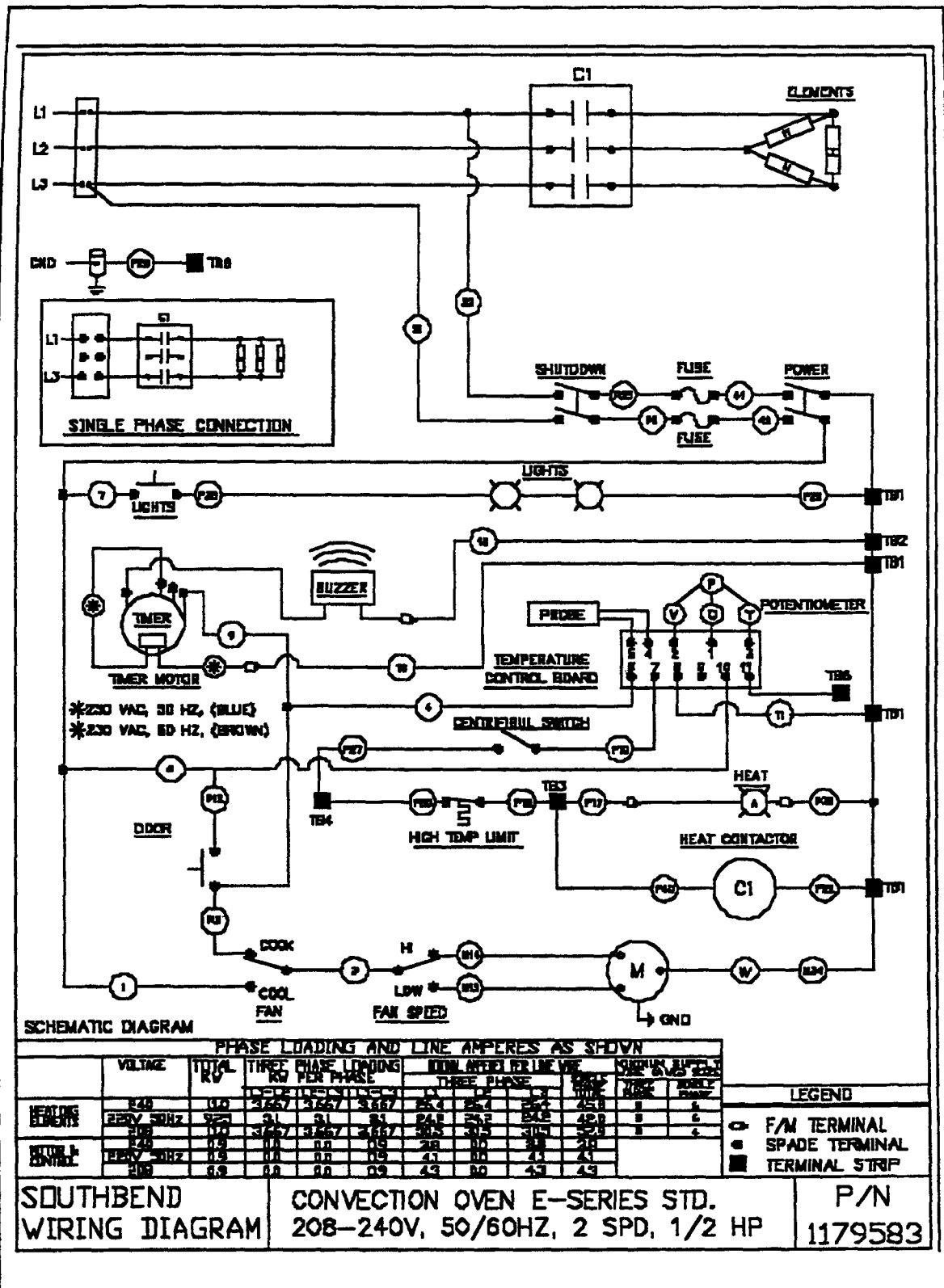


FIGURE 31

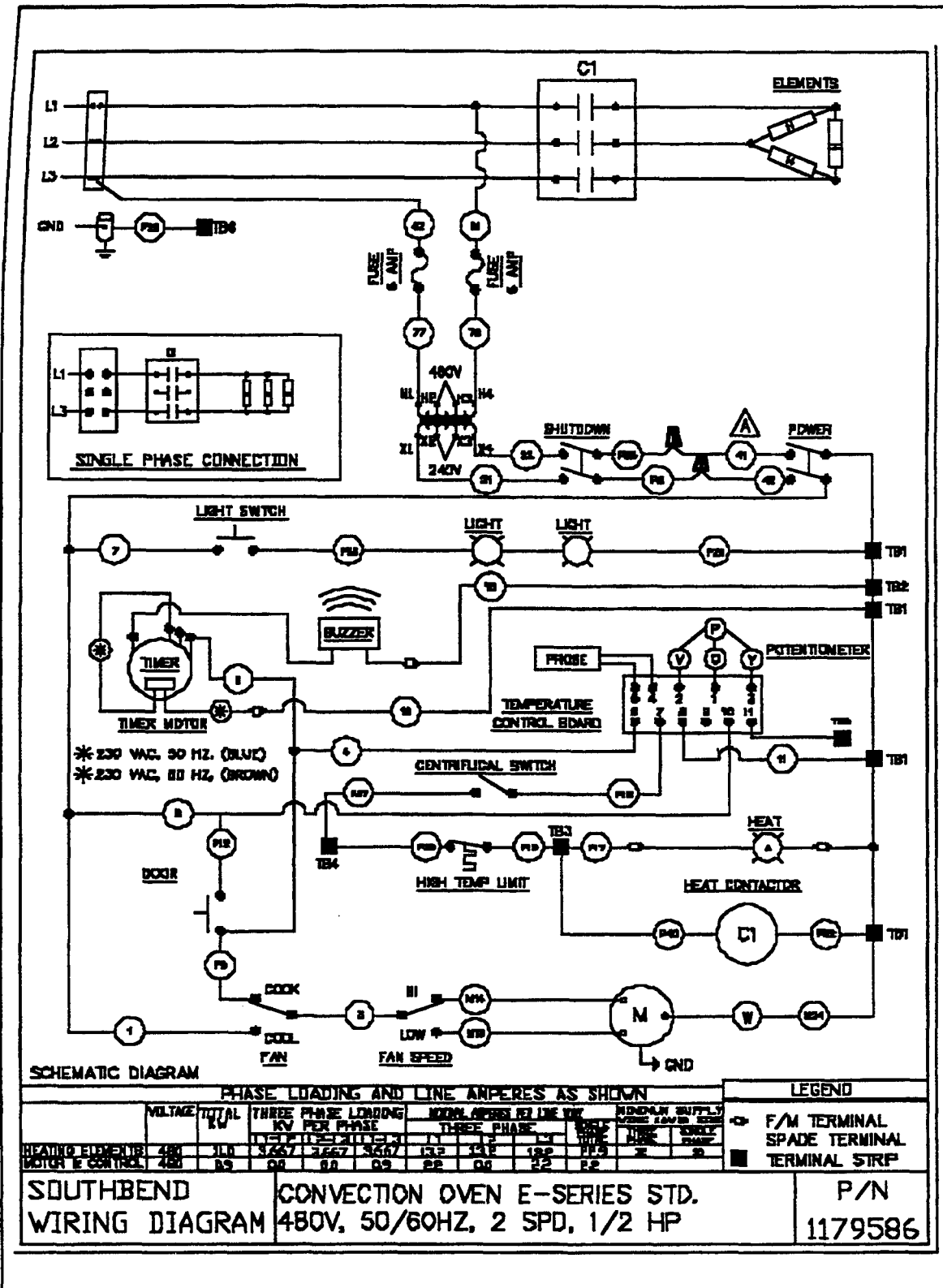
| ITEM | PART NUMBER | DESCRIPTION | ES | EB |
|------|-------------|------------------------|----|----|
| A | 1175438 | Rack Guide 11 Position | ¥ | |
| | 1175439 | Rack Guide 11 Position | | ¥ |
| B | 1175440 | Oven Rack | ¥ | |
| | 1175441 | Oven Rack | | ¥ |

KNOB CHART

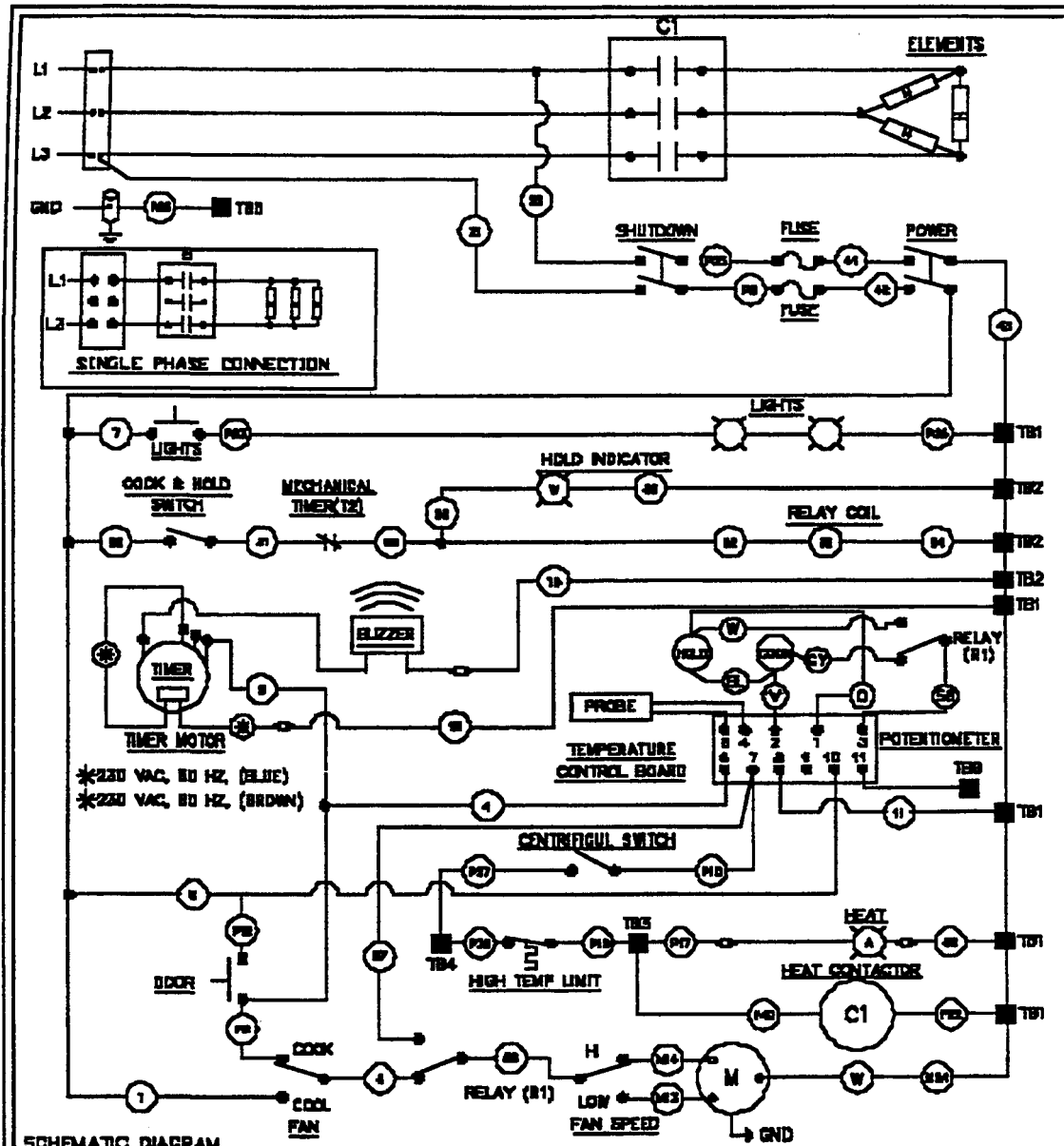
| CONTROL PANEL | TIMER | TEMPERATURE | HOLD TIMER | HOLD TEMPERATURE | 240V |
|----------------------|---------|-------------|------------|------------------|------|
| Standard Controls SC | 1172130 | 1170337 | - | - | ¥ |
| Cook & Hold CH | 1172130 | 1170337 | 1172130 | 1170337 | ¥ |
| Cycle Controls CC | 1172130 | 1170337 | 1172130 | 1170337 | ¥ |
| Rack Track RT | 1172275 | - | - | - | ¥ |
| Programmable PC | 1172275 | - | - | - | ¥ |



WIRING DIAGRAMS
208-240 VOLT
STANDARD CONTROLS (SC)
PART #1179583



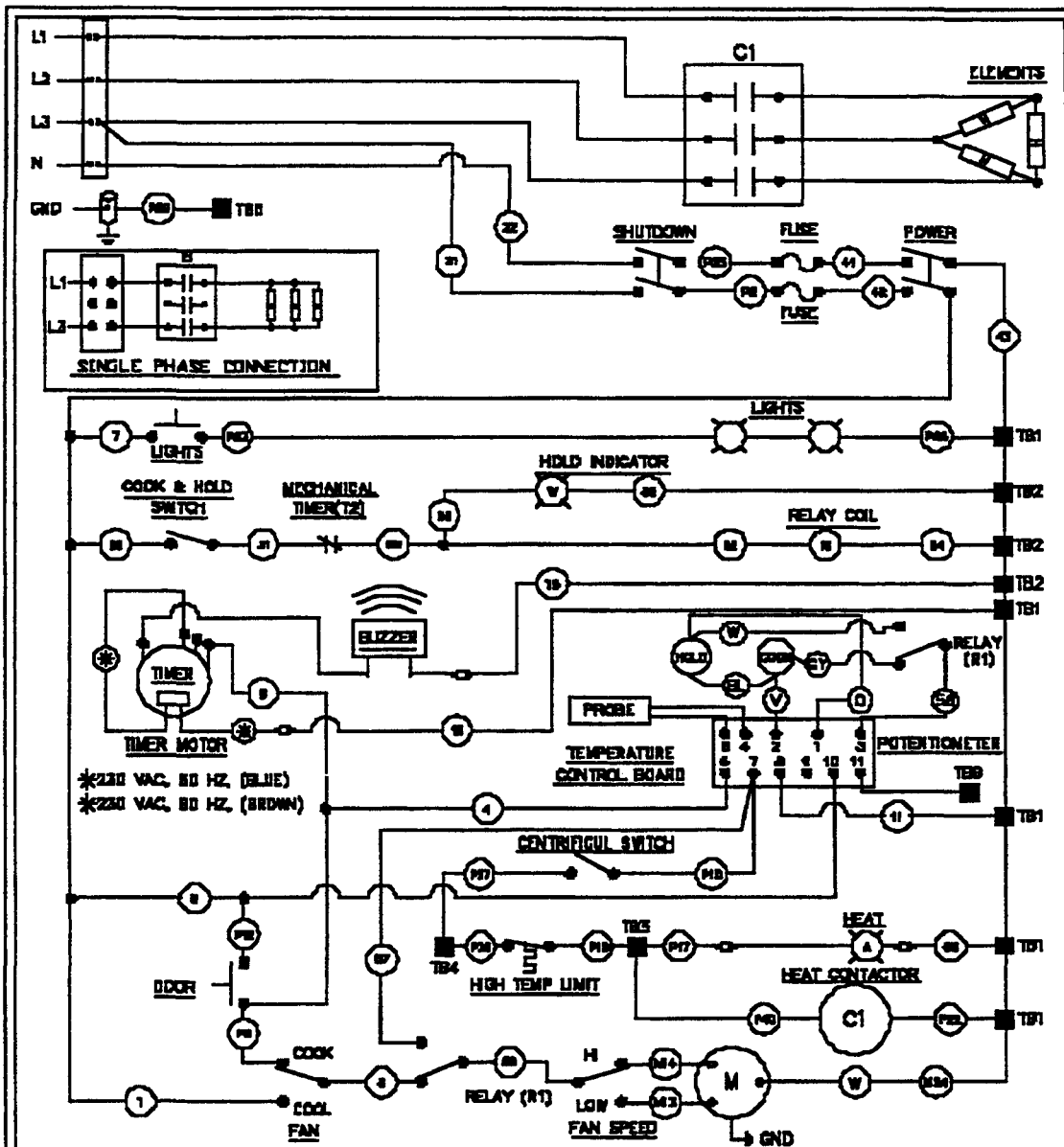
WIRING DIAGRAMS
 380 VOLT
 STANDARD CONTROLS (SC)
 PART #1179588



| PHASE LOADING AND LINE AMPERES AS SHOWN | | | | | | | | | | | |
|---|--------------|----------|----------------------------------|------|------|--------------------------------------|------|------|------------------------------------|-----|-----|
| | VOLTAGE | TOTAL KW | THREE PHASE LOADING KW PER PHASE | | | NORMAL MODEL BY LINE USE THREE PHASE | | | MINIMUM SUPPLY LINE LOADS BY PHASE | | |
| HEATING ELEMENTS | 240 | 11.0 | 3.67 | 3.67 | 3.67 | 12.0 | 12.0 | 12.0 | 4.0 | 4.0 | 4.0 |
| | 208V 50/60HZ | 9.25 | 3.1 | 3.1 | 3.1 | 10.0 | 10.0 | 10.0 | 3.3 | 3.3 | 3.3 |
| MOTOR & CONTROL | 240 | 0.3 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 |
| | 208V 50/60HZ | 0.3 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 |

| | | |
|-----------------------------|---|---------|
| SOUTHBEND WIRING DIAGRAM | CONVECTION OVEN E-SERIES C & H. 208-240V, 50/60HZ, 2 SPD, 1/2 HP | P/N |
| | | 1179603 |

WIRING DIAGRAMS
 208-240 VOLT
 COOK & HOLD (CH)
 PART #1179603



SCHEMATIC DIAGRAM

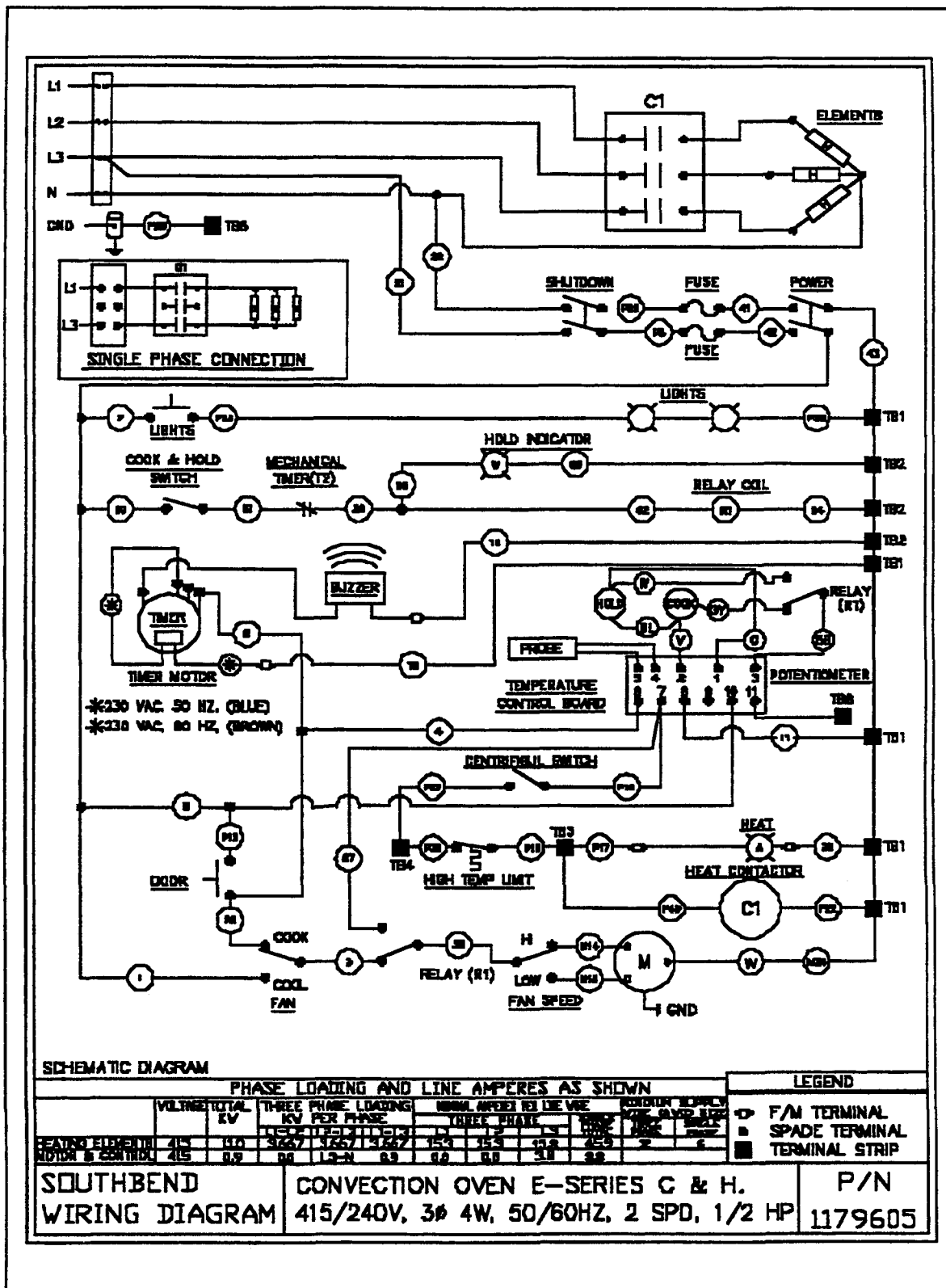
| PHASE LOADING AND LINE AMPERES AS SHOWN | | | | | | | | | | LEGEND | |
|---|---------|----------|----------------------------------|-------|-------|-------------------------|------|------|-------------------|--------------|--------------|
| LOADING ELEMENTS | VOLTAGE | TOTAL KW | THREE PHASE LOADING KW PER PHASE | | | WIRE SIZE REL LINE VOLT | | | CONDUIT SIZE INCH | | F/M TERMINAL |
| | | | 120/208V | 240V | 480V | 120V | 240V | 480V | THREE PHASE | SINGLE PHASE | |
| HEATING ELEMENTS | 208 | 11.0 | 3.667 | 3.667 | 3.667 | 16/2 | 16/2 | 16/2 | 3/4" | 1/2" | + |
| MOTOR & CONTROL | 208 | 0.9 | 0.3 | 1.2 | 0.9 | 16/2 | 16/2 | 16/2 | 3/4" | 1/2" | + |
| | | | 0.3 | 1.2 | 0.9 | 16/2 | 16/2 | 16/2 | 3/4" | 1/2" | + |

SOUTHBEND
WIRING DIAGRAM

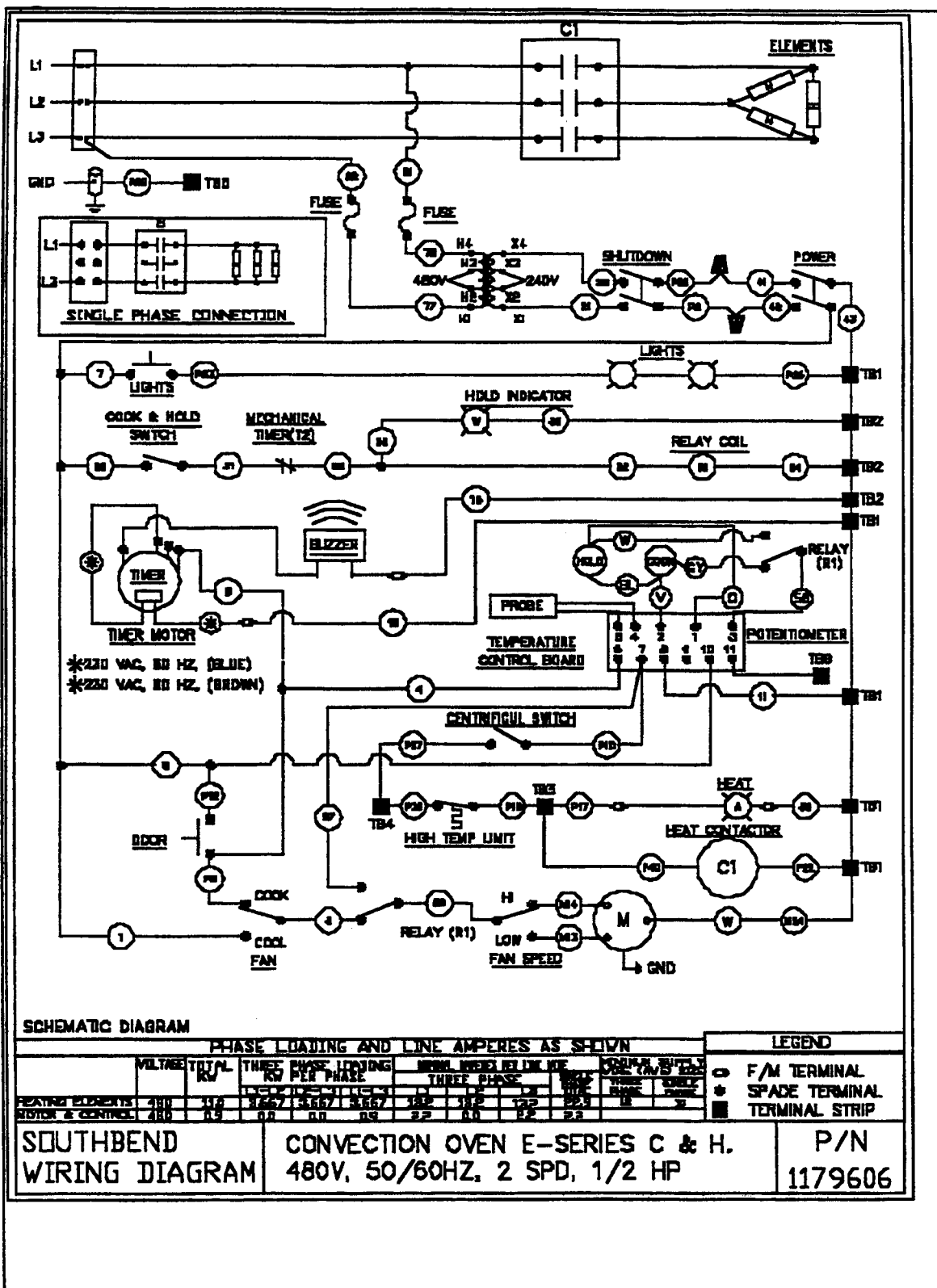
CONVECTION OVEN E-SERIES C & H.
380/220V, 3 ϕ 4W, 50/60HZ, 2 SPD, 1/2 HP

P/N
1179604

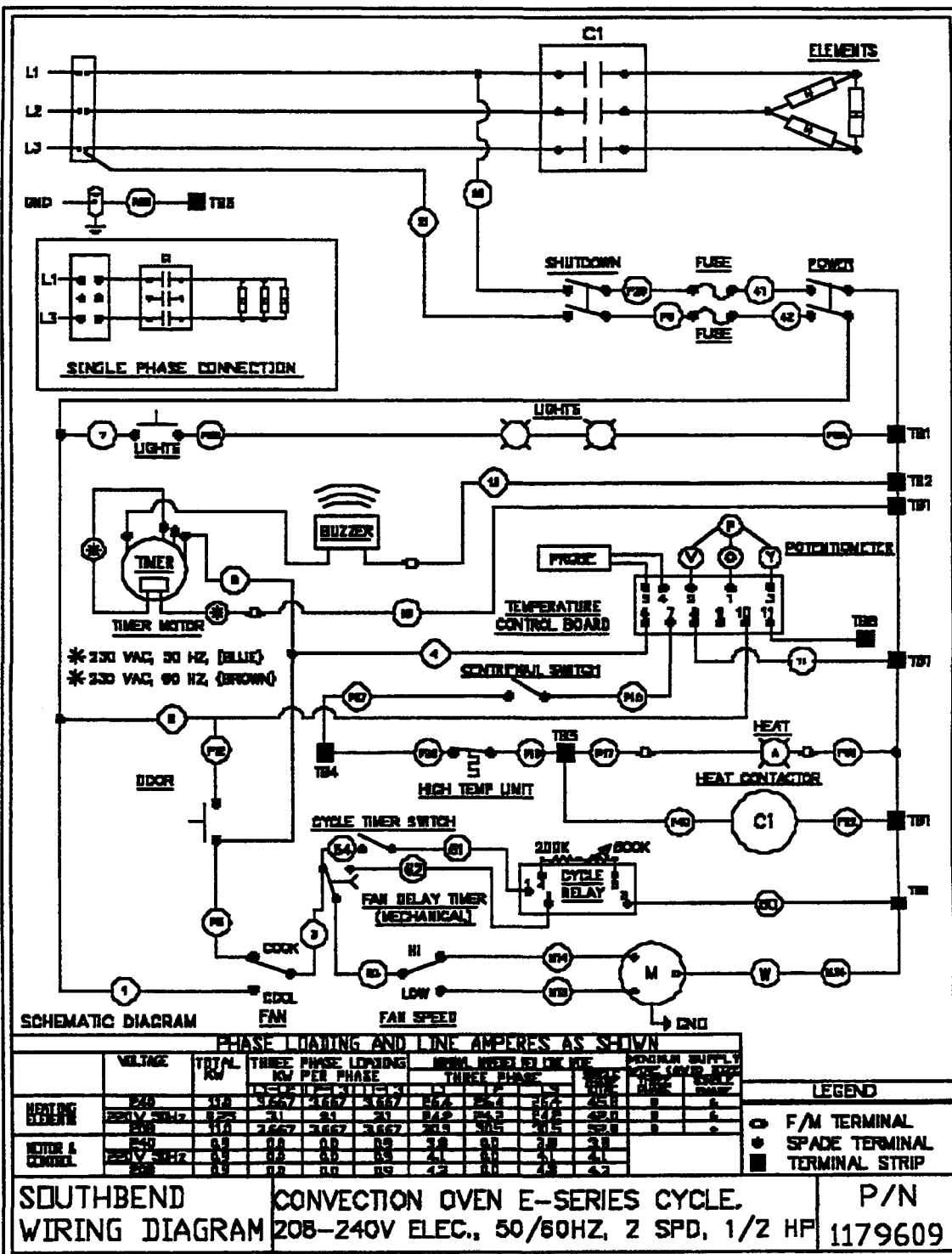
WIRING DIAGRAMS
380 VOLT
COOK & HOLD (CH)
PART #1179604



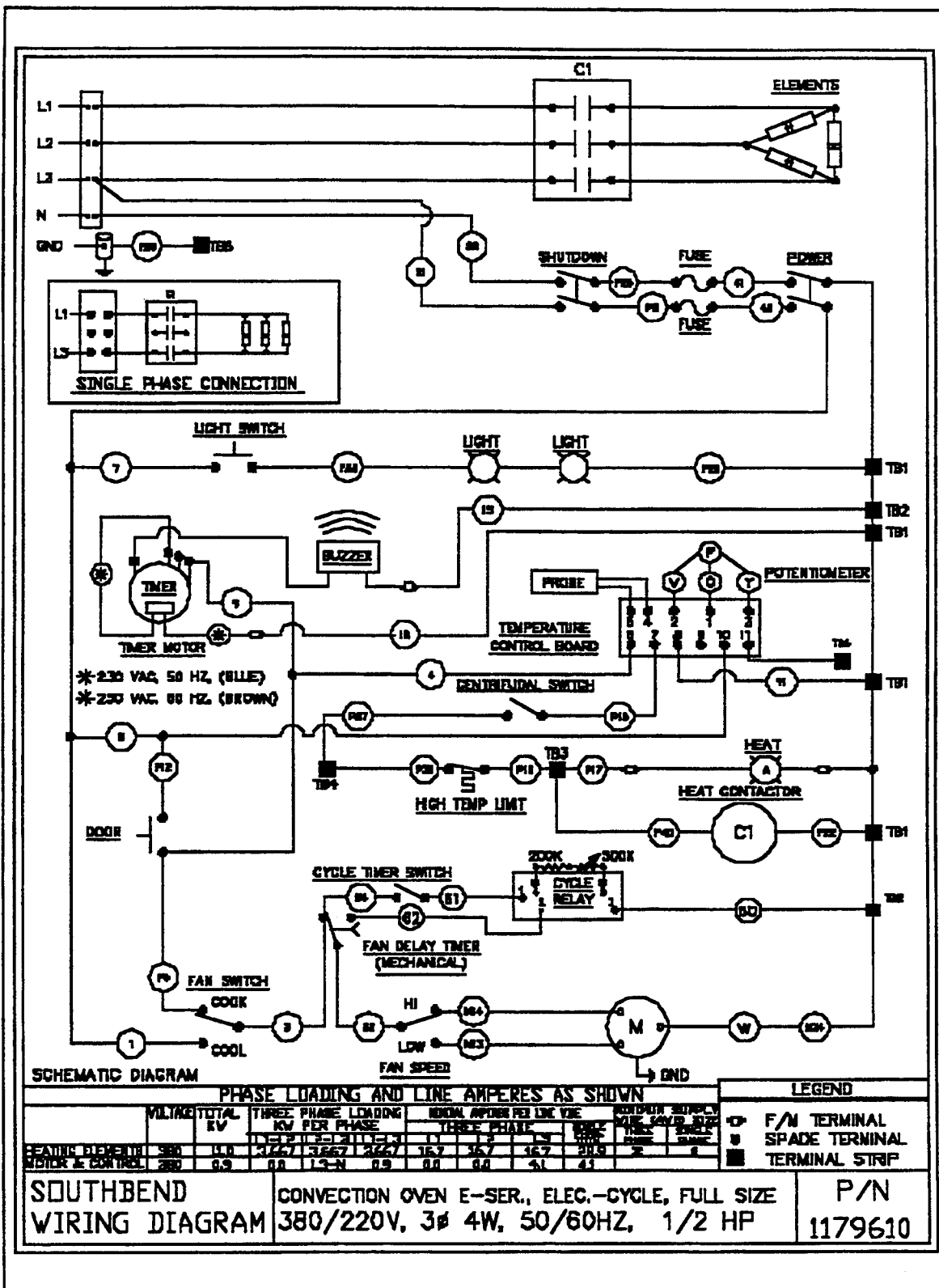
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415 VOLT
COOK & HOLD (CH)
PART #1179605



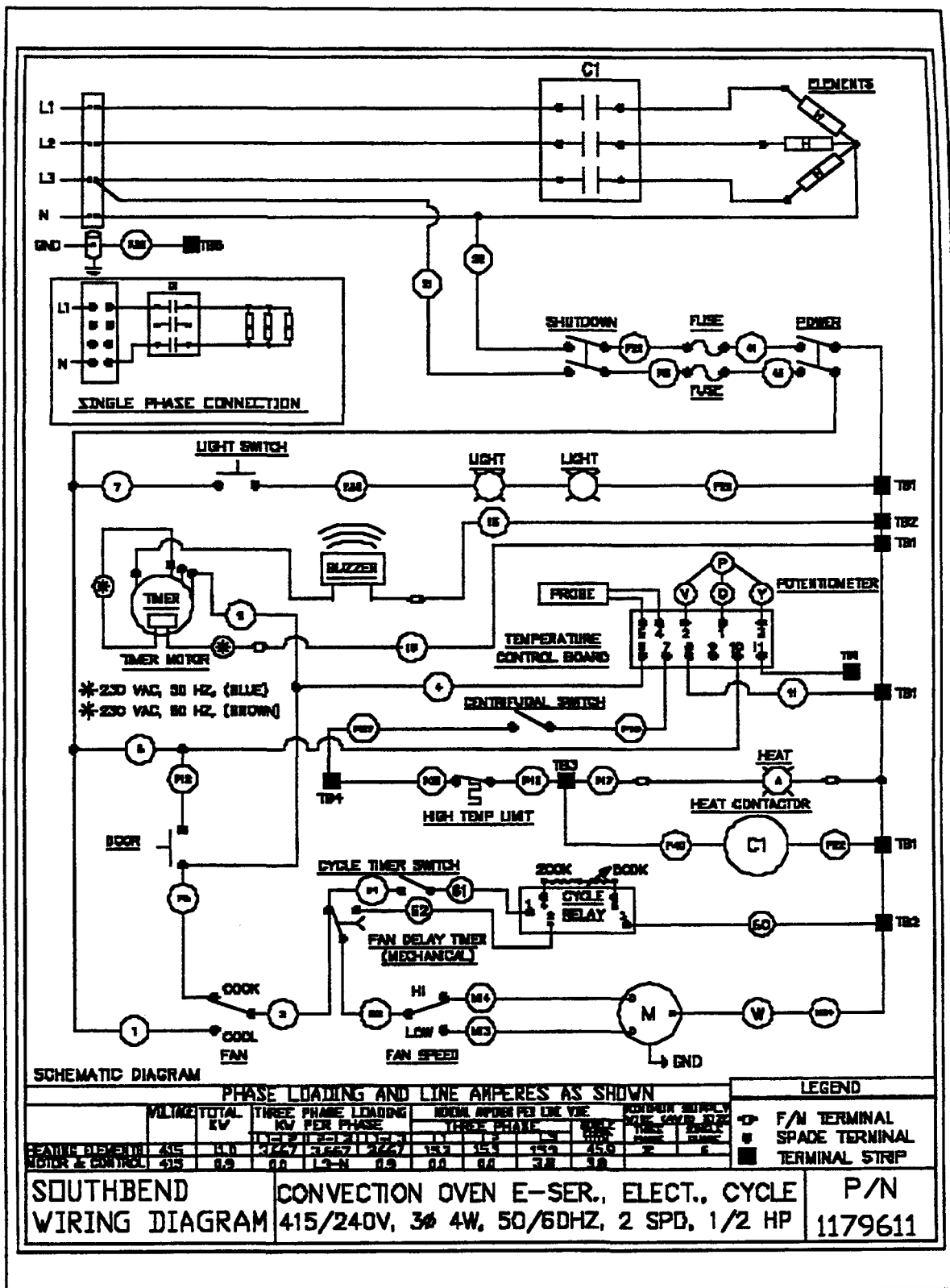
WIRING DIAGRAMS
480 VOLT
COOK & HOLD (CH)
PART #1179606



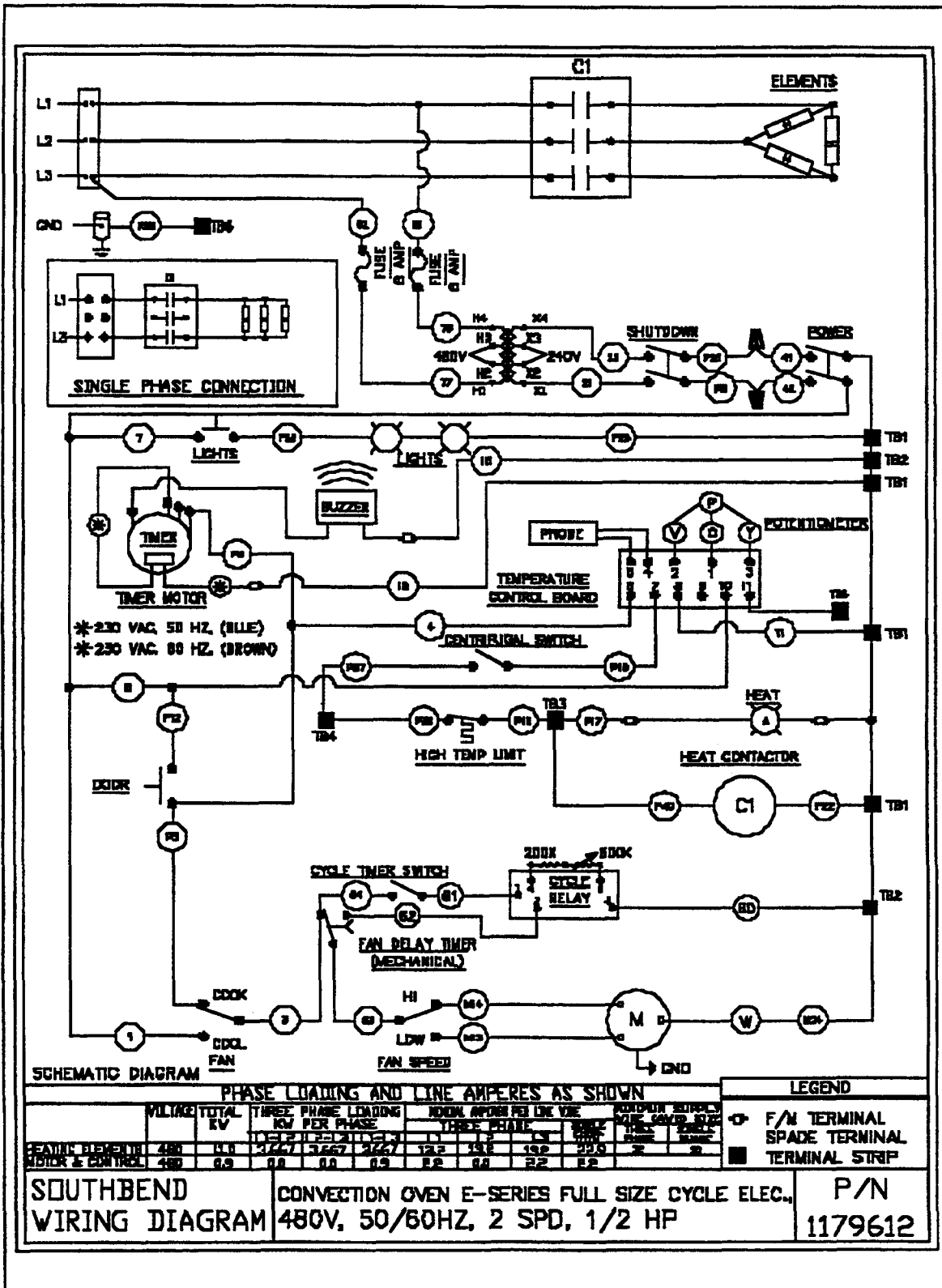
WIRING DIAGRAMS
208-240 VOLT
CYCLE CONTROLS (6C)
PART #1179609



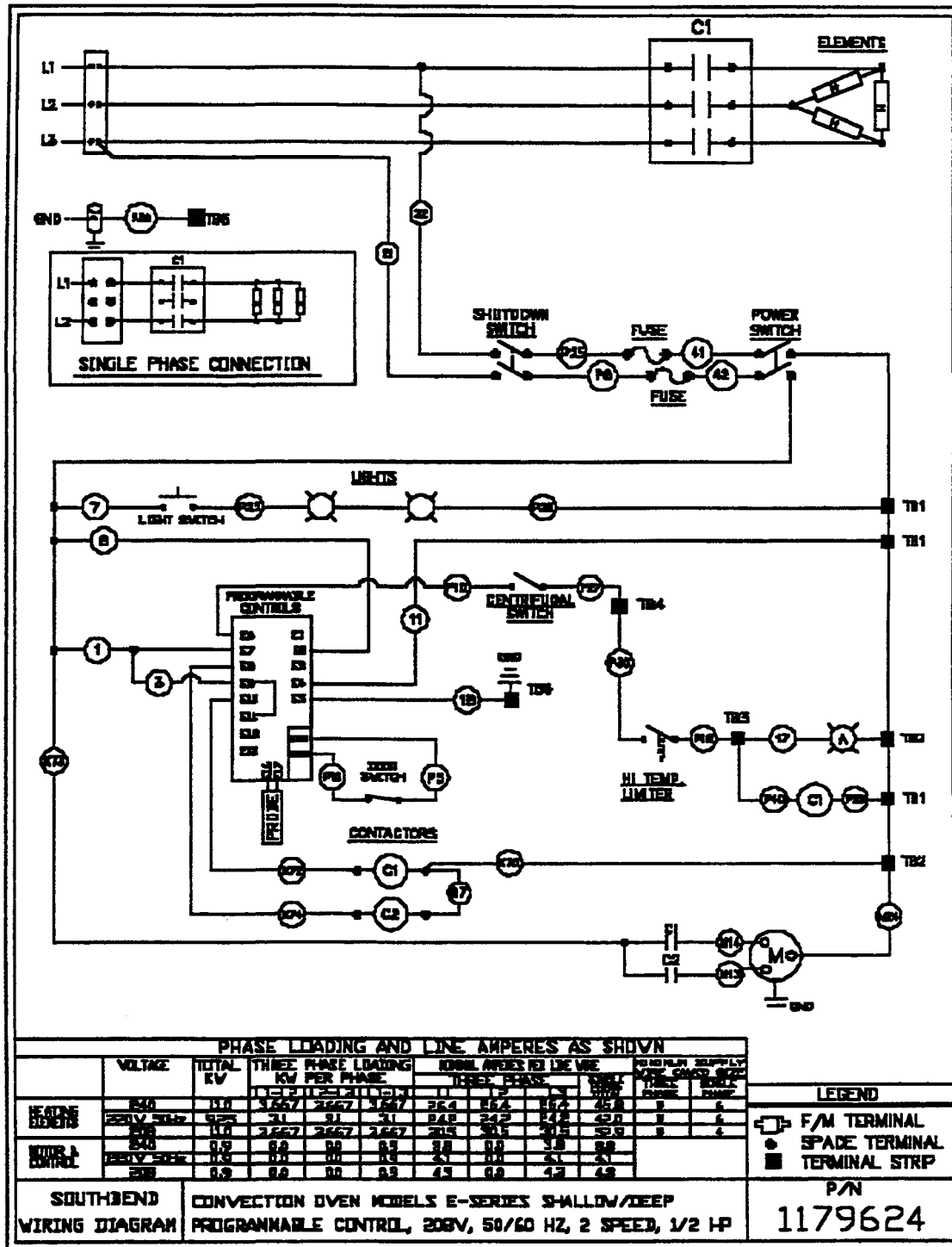
WIRING DIAGRAMS
380 VOLT
CYCLE CONTROLS (CC)
PART #1179610



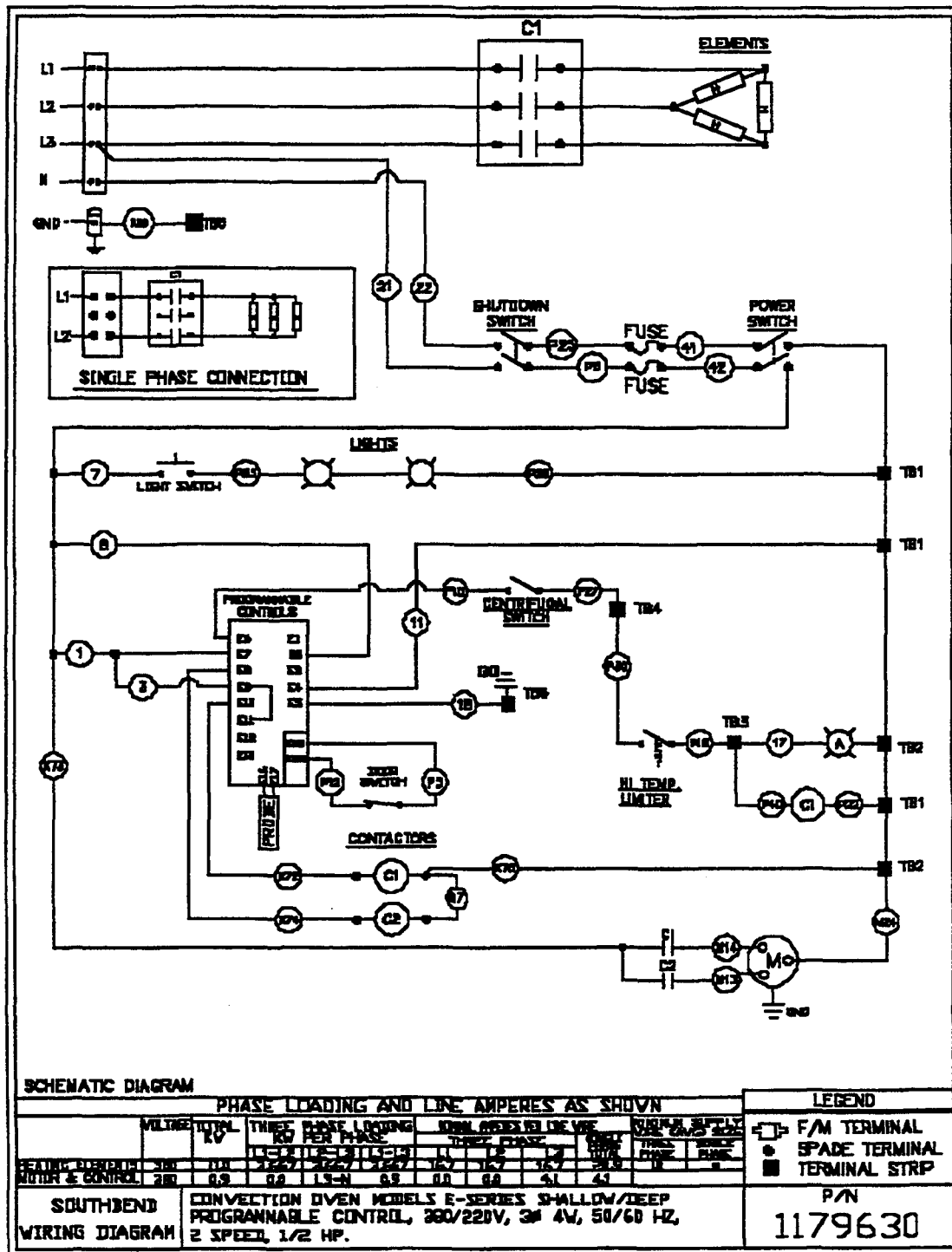
WIRING DIAGRAMS
 415 VOLT
 CYCLE CONTROLS (CC)
 PART #1179611



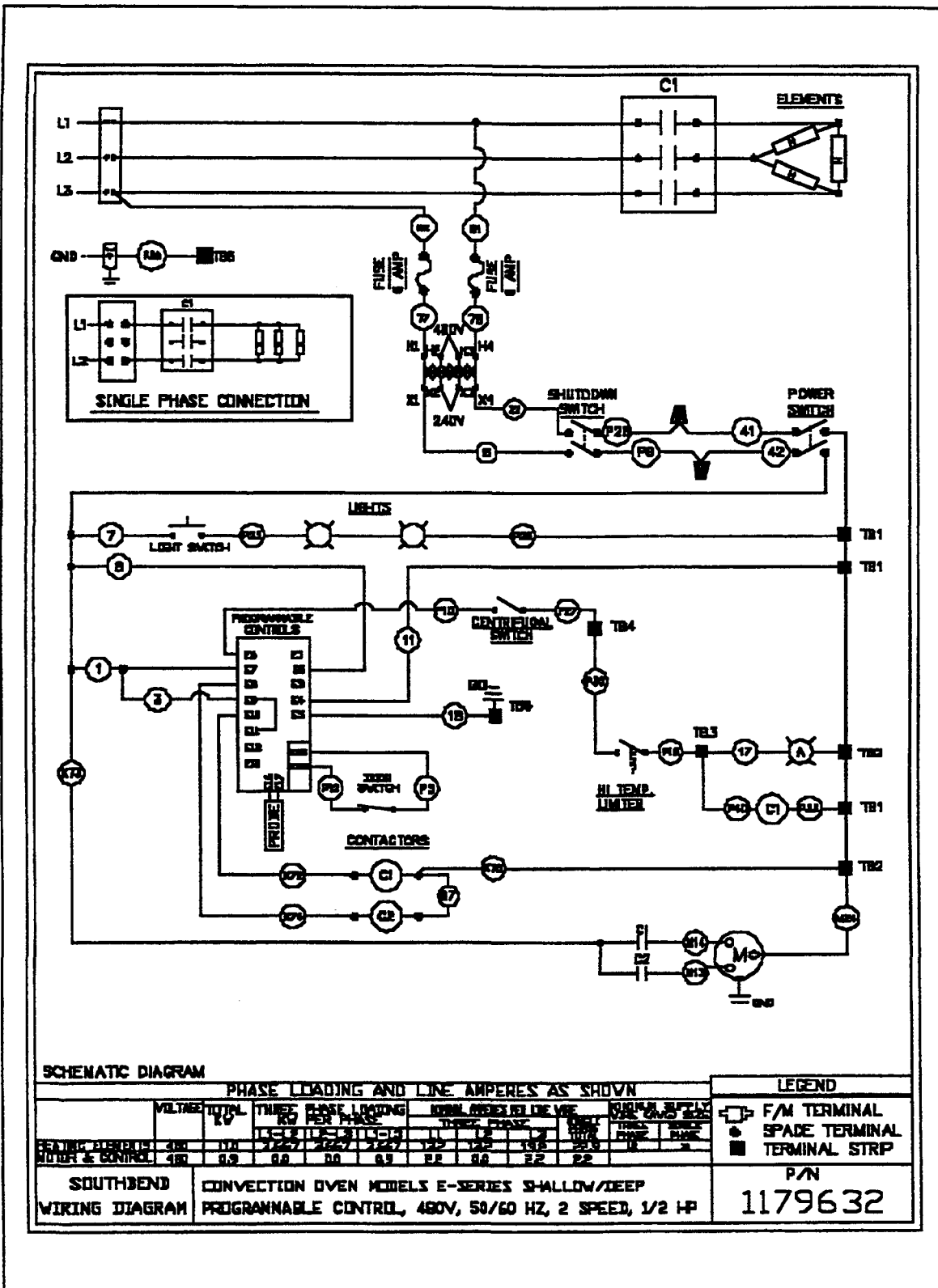
WIRING DIAGRAMS
480 VOLT CYCLE
CONTROLS (CC)
PART #1179612



WIRING DIAGRAMS
208-240 VOLT
PROGRAMMABLE CONTROLS & RACK TRACK (PC & RT)
PART #1179624



WIRING DIAGRAMS
380 VOLT
PROGRAMMABLE CONTROLS & RACK TRACK (PC & RT)
PART #1179630



WIRING DIAGRAMS
 480 VOLT
 PROGRAMMABLE CONTROLS & RACK TRACK (PC & RT)
 PART #1179632

A product with the Southbend name incorporates the best in durability and low maintenance. We all recognize however, that replacement parts and occasional professional service may be necessary to extend the useful life of this unit. When service is needed, contact a Southbend Authorized Service Agency, or your dealer. To avoid confusion, always refer to the model number, serial number, and type of your unit.



SOUTHBEND
REGISTERED TO ISO 9001
CERTIFICATE NO. A2062



Certification No. FM25780



Southbend Registered to ISO 9001