



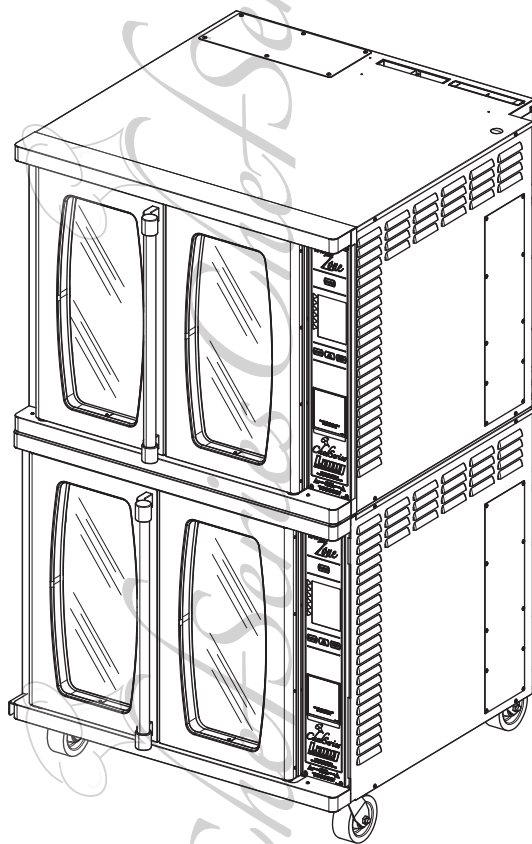
ELECTRIC FULL SIZE COMPUTERIZED CONVECTION OVEN

ECSF-ES

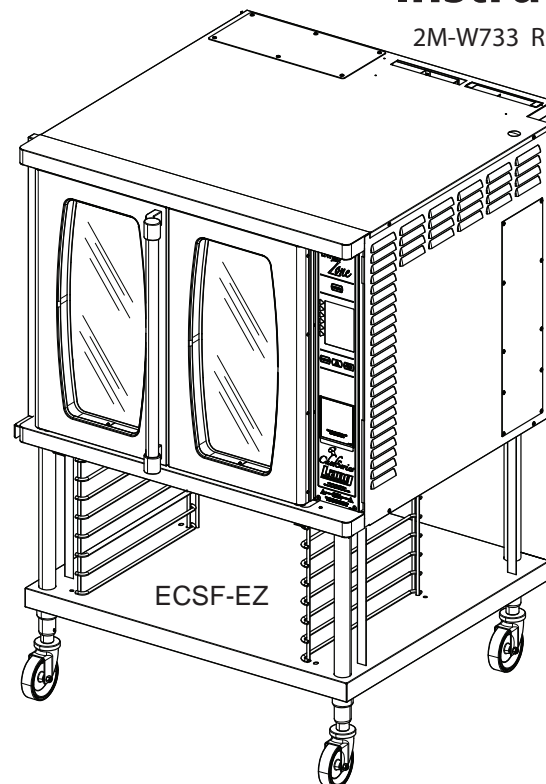
ECSF-EZ

Installation and Operation Instructions

2M-W733 Rev.C 1/07/10



ECSF-EZ



ECSF-EZ

SAFETY SYMBOL



These symbols are intended to alert the user to the presence of important operating and maintenance instructions in the manual accompanying the appliance.

RETAIN THIS MANUAL FOR FUTURE REFERENCE

NOTICE

Using any part other than genuine Star factory supplied parts relieves the manufacturer of all liability.

Star 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.

Due to periodic changes in designs, methods, procedures, policies and regulations, the specifications contained in this sheet are subject to change without notice. While Star Manufacturing exercises good faith efforts to provide information that is accurate, we are not responsible for errors or omissions in information provided or conclusions reached as a result of using the specifications. By using the information provided, the user assumes all risks in connection with such use.

MAINTENANCE AND REPAIRS

Contact your local authorized service agent for service or required maintenance. Please record the model number, serial number, voltage and purchase date in the area below and have it ready when you call to ensure faster service.

Model No. _____

Serial No. _____

Voltage _____

Purchase Date _____

Authorized Service Agent

Reference the listing provided with the unit

or

for an updated listing go to:

Website: www.star-mfg.com
E-mail Service@star-mfg.com
Telephone: (800) 807-9054 Local (314) 781-2777

The Star Service Help Desk

Business Hours: 8:00 am to 4:30 p.m. Central Standard Time

Telephone: (800) 807-9054 Local (314) 781-2777

Fax: (800) 396-2677 Local (314) 781-2714

E-mail Parts@star-mfg.com
Service@star-mfg.com
Warranty@star-mfg.com

Website: www.star-mfg.com

Mailing Address: Star Manufacturing International Inc.
10 Sunnen Drive
St. Louis, MO 63143
U.S.A

SPECIFICATIONS

| Model | Height x Width x Depth | Clearance from combustibile surface | Weight | | Freight Class |
|---------------|--|-------------------------------------|-----------------------|----------------------|---------------|
| | | | Installed | Shipping | |
| ECSF_1 | 36" x 40" x 40" (91.4cm x 101.6cm x 101.6cm) | Side:0, Back: 1, Floor: 4 | 525 lbs. (238 kg) | 590lbs (268 kg) | 70 |
| ECSF_2 | 74" x 40.4" x 40" (188cm x 102.6cm x 101.6cm) | Side:0, Back: 1, Floor: 4 | 1050 lbs. (476 kg) | 1180 lbs (535 kg) | 70 |

| ELECTRICAL REQUIREMENTS | | | | |
|-------------------------|--------------|----------|-------|-----------|
| Model | Voltage | Total kW | Phase | Amps/Line |
| ECSF_1 | 208V/50-60Hz | 12.3 | 3 | 35.5 |
| | 208V/50-60Hz | 12.3 | 1 | 59.0 |
| | 240V/50-60Hz | 16.2 | 3 | 40.5 |
| | 240V/50-60Hz | 11.0 | 1 | 46.0 |
| | 480V/50-60Hz | 16.2 | 3 | 20.0 |
| | 380V/60Hz | 10.4 | 3 | 16.3 |
| | 440V/60Hz | 13.7 | 3 | 18.7 |
| ECSF_2 | 208V/50-60Hz | 24.6 | 3 | 71.0 |
| | 208V/50-60Hz | 24.6 | 1 | 118.0 |
| | 240V/50-60Hz | 32.4 | 3 | 81.0 |
| | 240V/50-60Hz | 32.4 | 1 | 136.0 |
| | 480V/50-60Hz | 32.4 | 3 | 40.0 |
| | 380V/60Hz | 20.8 | 3 | 32.6 |
| | 440V/60Hz | 27.4 | 3 | 37.4 |

WATER QUALITY REQUIREMENTS

Waterline pressure and quality MUST meet Lang Manufacturing Specifications listed below. Contact your local water equipment system provider to assist you in determining your specific water quality, or contact Lang Technical support for assistance, 1-800-807-9054.

-IMPORTANT-

YOUR LOCAL WATER CONDITIONS MAY DAMAGE YOUR LANG EQUIPMENT. FAILURE TO PROPERLY TREAT WATER MAY RESULT IN DAMAGE AND MAY VOID SOME OR ALL OF THE WARRANTY.

WATER SPECIFICATIONS, after treatment the water must continuously be within the following parameters.

Cold Water: 20 to 80 PSI, 3 GPH minimum capacity

pH: 6.8 to 7.6

Conductivity: <1/500,000 ohms per inch

Total dissolved solids: < 100 PPM

Hardness: 2 to 4 grains per gallon

Maximum Salinity Ion Content

- Chlorine: < 0.5 PPM
- Chlorides: < 30 PPM
- Sulfates: < 40 PPM
- Iron: < 0.1 PPM
- Copper: < 0.05 PPM
- Manganese: < 0.05 PPM
- Chloramines: < 0.5 PPM

**WARNING**

THIS APPLIANCE MUST BE GROUNDED AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE APPLIANCE COULD RESULT IN ELECTROCUTION AND DEATH.

INSTALLATION OF THE UNIT MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY AND PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.

NOTICE

The data plate is located on the lower right side panel of the unit. The oven voltage, wattage, serial number, and clearance specifications are on the data plate. This information should be carefully read and understood before proceeding with the installation.

NOTICE

The installation of this unit must conform to applicable national, state and locally recognized installation standards.

NOTICE

The installation of any components such as a vent hood, grease extractors, fire extinguisher systems, must conform to their applicable National, State and locally recognized installation standards.

**CAUTION**

MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN TO WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNING AND FOLLOW THE DIRECTIONS OF THE LABEL OF THE CLEANER TO BE USED.

**WARNING**

KEEP WATER AND SOLUTIONS OUT OF CONTROLS. NEVER SPRAY OR HOSE CONTROL CONSOLE, ELECTRICAL CONNECTIONS, ETC.

BOTH HIGH AND LOW VOLTAGES ARE PRESENT INSIDE THE APPLIANCE WHEN THE UNIT IS PLUGGED/WIRED INTO A LIVE RECEPTACLE. BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY.

NOTICE

Never use chlorine sanitizer in contact with stainless steel surfaces longer than 10 minutes. Longer contact can cause corrosion.

NOTICE

Service this, or any other Lang appliance must be performed by qualified personnel only. Consult your LANG authorized service agent directory or call the factory at 1-800-807-9054, or log onto www.STAR-MFG.com for the service agent nearest you.



GENERAL INFORMATION

This equipment is designed and sold for commercial use only by personnel trained and experienced in its operation and is not sold for consumer use in and around the home nor for use directly by the general public in food service locations.

Before using your new equipment, read and understand all the instructions & labels associated with the unit prior to putting it into operation. Make sure all people associated with its use understand the units operation & safety before they use the unit.

All shipping containers should be checked for freight damage both visible and concealed.

This unit has been tested and carefully packaged to insure delivery of your unit in perfect condition. If equipment is received in damaged condition, either apparent or concealed, a claim must be made with the delivering carrier.

Concealed damage or loss - if damage or loss is not apparent until after equipment is unpacked, a request for inspection of concealed damage must be made with carrier within 15 days. Be certain to retain all contents plus external and internal packaging materials for inspection. The carrier will make an inspection and will supply necessary claim forms.

PURCHASER'S RESPONSIBILITY

It is the responsibility of the purchaser:

1. To see that the electric services for the oven are installed on site in accordance with the manufacturer's specifications.
2. To unload, uncrate, and install the oven in its proper location and in accordance with this installation operation manual.
3. To see that electric services are connected properly by a qualified installer of your choice.
4. To see that there is a water purification system supplying the oven that meets Lang Manufacturing Specifications. All connections must be in accordance with applicable code requirements.
5. To arrange for inspection and operation check-out by an authorized service technician.

UNCRATING

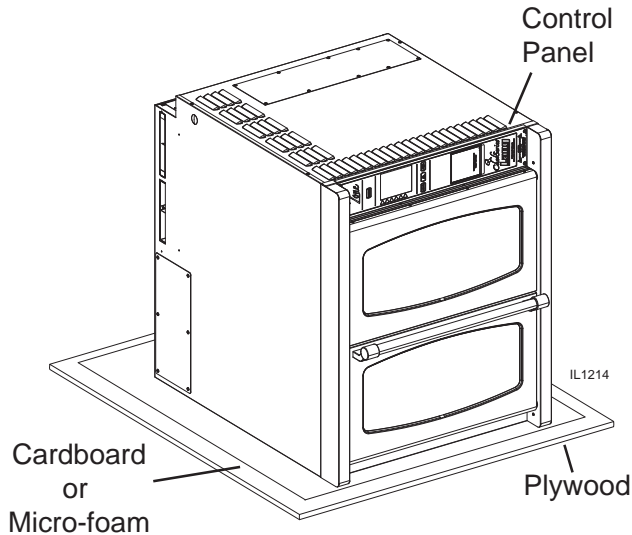
The oven will arrive completely assembled inside a wood frame. Prior to uncrating move the oven as close to its final location as practical. This will protect it from damage associated with moving (scratches, dings, dropping).



CAUTION

Some hardware, (i.e. casters, legs, stacking kits) may be shipped inside the oven. Please remove any items before continuing.

It may be necessary during the installation to place the unit on its side (i.e. leg, caster installation, fit through doors, etc) follow these guidelines to lessen the risk of damage to the unit.



Placing the unit onto its side:

1. Have oven completely uncrated and sitting on its shipping crate.
2. When using a dolly, place a piece of plywood on top of the dolly to distribute the weight evenly. Also have a piece of cardboard or micro-foam between plywood and oven to protect the finish from scratches.
3. Carefully tilt the oven onto its **LEFT SIDE ONLY (or CONTROL SIDE UP)**

NOTE: Turning the unit onto its right side will damage the control panel.

4. Avoid sudden drops.



NEVER lay oven with the control side down, this will damage the controls.



CAUTION

THE OVEN WEIGHS 520 LBS (238KG). FOR SAFE HANDLING, INSTALLER SHOULD OBTAIN HELP AS NEEDED, OR EMPLOY APPROPRIATE MATERIALS HANDLING EQUIPMENT (SUCH AS A FORKLIFT, DOLLY, OR PALLET JACK) TO REMOVE THE UNIT FROM THE SKID AND MOVE IT TO THE PLACE OF INSTALLATION.

ANY STAND COUNTER OR OTHER DEVICE ON WHICH THE OVEN WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE OVEN.

SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.

INSTALLATION

The ovens are equipped for the voltage indicated on the nameplate mounted on the lower right side panel of the oven. They will operate on alternating current (AC) only. A cord & plug is not provided. Consult you local codes for proper plugs, receptacles, and wire specifications. For optimum performance have separate circuits breakers for each cavity.



WARNING

DO NOT CONNECT TO DIRECT CURRENT (DC).

The installation of the electric oven should conform to the:

NATIONAL ELECTRIC CODE AND ALL LOCAL ELECTRIC CODES AND ORDINANCES AND THE LOCAL ELECTRIC COMPANY RULES AND REGULATIONS.

VENTILATION & CLEARANCES

Local codes prevail. These are the “authority having jurisdiction” as stated by the National Fire Protection Association, Inc. in NFPA 96-Latest Edition. For further ventilation information see below.

A ventilation hood may be required to remove heat and cooking odors. The hood and HVAC installation must meet local codes to gain approval by the authority having jurisdiction. Requirements may vary throughout the country depending on the location by city, county, and state. Obtain information from the authority having jurisdiction to determine the requirements for your installation. Obtain information and review copies of codes or documents that will be used to inspect and approve your installation. Your ventilation hood supplier and HVAC contractor should be contacted to provide guidance.

Combustible clearances

0” from side
1” from back
4” from floor

Non-Combustible clearances

- 1” from back, 4” from floor
- Without legs; 2” from back



CAUTION

DO NOT install oven closer than 1” on the control side, from another oven.

DO NOT install oven closer than 12” on the control side, from a uncontrolled heat source (charbroiler, open flame, griddle, etc.), unless a Hi-Temperature Spacer is installed then it can be reduced to 1”.

AIR SUPPLY

Make certain not to obstruct the flow of combustion (gas) and ventilation air. Provisions for adequate air supply must be furnished.

LEGS & CASTER INSTALLATION

The legs supplied with the unit must be installed.

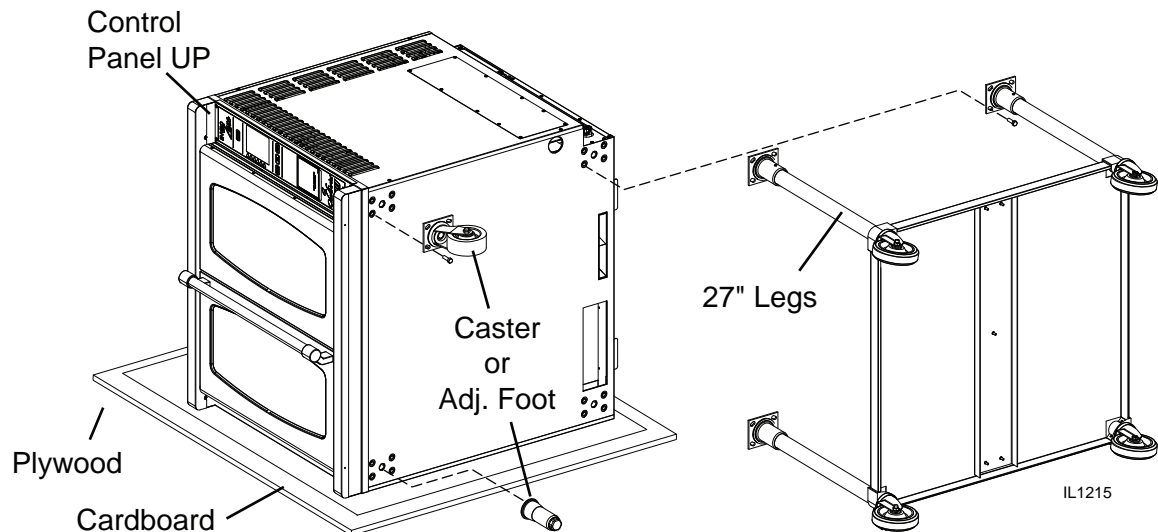
Legs are available for both the single and double deck installations.

SINGLE: require 27" legs or stands

DOUBLE: require 6" legs or casters.

To install the legs, place some cardboard on the floor and gently tip the oven onto its-back or non-control side. Fasten all four legs to the oven's corners using the sixteen 5/16" bolts provided in the leg kit. Once legs securely in place, with assistance lift the unit upright, the adjustable feet can be adjusted to level the unit. A torpedo level placed on the oven rack will assist in leveling the unit.

These units may be placed on a curbed base.



CAREFULLY TILT OVEN ONTO ITS LEFT SIDE (CONTROL SIDE UP) WHEN INSTALLING LEGS, FEET OR CASTERS. TURNING OVEN ONTO ITS RIGHT SIDE (CONTROL SIDE DOWN) WILL DAMAGE THE CONTROL PANEL.



PROPER LEVELING IS ESSENTIAL TO PROPER BAKING PERFORMANCE.

STACKING INSTRUCTIONS

Legs or casters must be installed on the lower oven prior to stacking. Remove the plug button from the top of the lower oven, and install a 1" plastic electrical bushing. With assistance, lift the top oven and place it in place on top of the lower oven.

Connect the two ovens by installing the strapping plates to both the left and right sides of the ovens. Attach the oven earthquake strap (not-supplied) to the eye bolt (supplied) at the bottom right rear corner of the top oven, and secure the strap to the wall once the oven has been carefully placed into position.

THE OVEN WEIGHS 520 LBS (238KG). FOR SAFE HANDLING, INSTALLER SHOULD OBTAIN HELP AS NEEDED, OR EMPLOY APPROPRIATE MATERIALS HANDLING EQUIPMENT (SUCH AS A FORKLIFT, DOLLY, OR PALLET JACK) TO REMOVE THE UNIT FROM THE SKID AND MOVE IT TO THE PLACE OF INSTALLATION.

ANY STAND COUNTER OR OTHER DEVICE ON WHICH THE OVEN WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE OVEN.

EARTHQUAKE STRAPS

If the oven is to be installed with casters, it must be secured to the building structure. To do this, attach an oven earthquake strap (not supplied) to the eye bolt (supplied) at the bottom right corner of the oven. For stacked ovens, attach the strap to the eye bolt of the uppermost oven. Connect the earthquake strap to the wall or other structure per instructions supplied with the strap.

DRAIN CONNECTION

Attach drain plumbing to the 3/4" NPTM oven drain fitting located at the lower rear right hand corner of the oven.

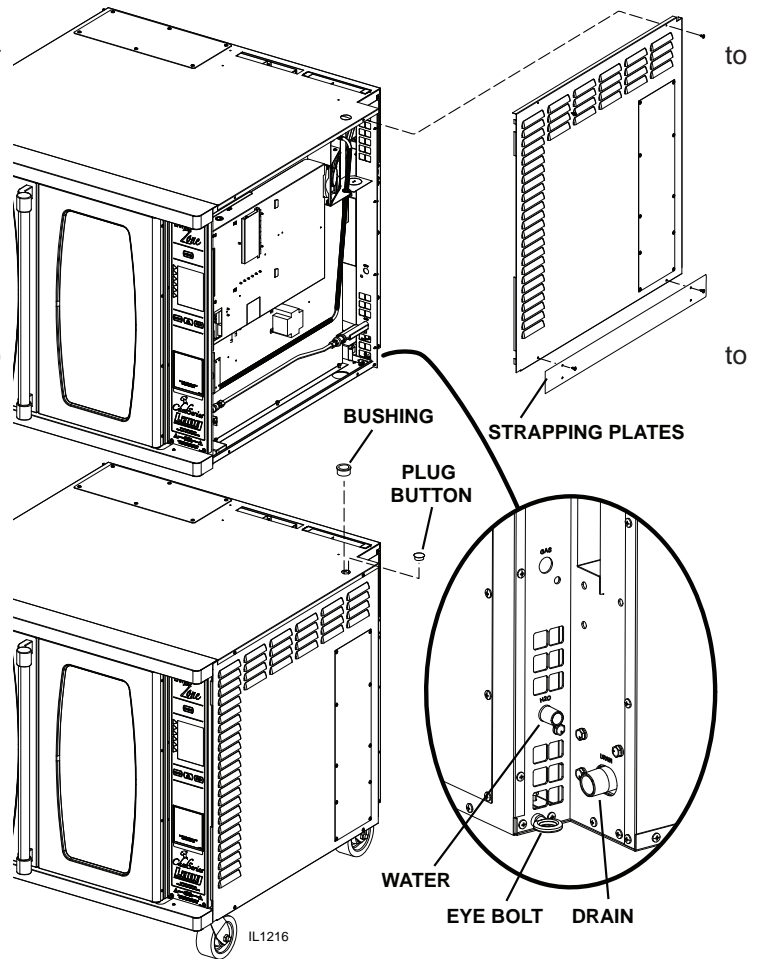
Drains need to have a vent pipe attached. Typical venting is accommodated by using a "T" off the drain pipe with an 8" to 10" open pipe in the top part of the "T". for stacking, the drains can be manifolded together with only the top drain vented.

WATER CONNECTION

It is vital that the water supply line be thoroughly flushed with clean water before being connected to the oven's water manifold.

After your water has been tested and meets the minimum requirements (see water requirements). Connect water supply to 3/8" NPTM fitting located at right rear corner of the oven. Once the water manifold and water supply are connected to the oven turn the oven ON and press the 1-shot steam button for 1 minute to remove the air and any impurities from the system.

The water must continuously be within the specifications (for this application) while this unit is in service. Periodic testing may be needed to verify any changes in water conditions.



ELECTRICAL CONNECTION

All electrical connections must be made by a licensed electrician and in accordance with local codes or in the absence of local codes with NFPA No. 70 latest edition (in Canada use: CSA STD. C22.1)

- IMPORTANT -

IF A SINGLE POWER SOURCE IS TO BE CONNECTED TO BOTH OVENS, REMOVE THE CONTROL SIDE PANELS AND RUN THE INTERCONNECTION WIRES THROUGH THE 1" PLASTIC ELECTRICAL BUSHING RUNNING BETWEEN THE TWO OVENS.

The electrical service entrance is provided by several knockouts in the top right rear corner of each oven. The 208/240 volt oven is a dual voltage oven and is shipped from the factory ready to run on either voltage without modification

Supply wire size must be large enough to carry the amperage load for the number of ovens being installed. Line current information for individual ovens can be found on the oven DATA PLATE. Follow the **ELECTRICAL SPECIFICATIONS** (in the front of the manual) as a guide to select proper wire sizes.

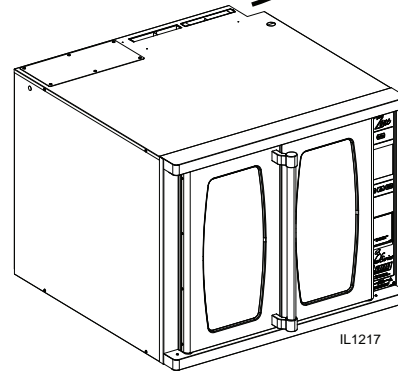
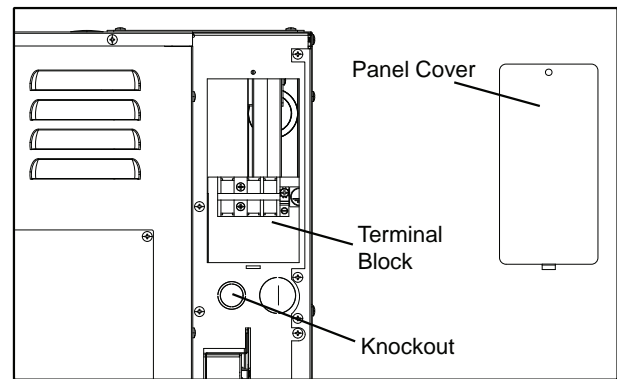
PHASE CONVERSION

The ECSF 208V / 240V ovens are shipped from the factory wired for either single-phase or three-phase, per the customer's specifications on their order. Factory settings for Voltage and Phase can be verified on the unit's data plate affixed to oven exterior.

If the phase requires modification, it can be accomplished by rearranging the element wires at the service entrance terminal block. Correct connections are shown Below.

The ECSF 480V ovens are three phase only.

NOTE: Re-phasing the oven is not chargeable to Lang Manufacturing as warranty



| Service Entrance Terminal Block Connections | | |
|--|------------------|--------------|
| 208-240V Single Phase | | |
| L1 1A, 3A, 5A | L2 2A, 4A, 6A | L3 |
| 208-240V Three Phase | | |
| L1 1A, 4A | L2 2A, 5A | L3 3A, 6A |
| 480V Three Phase | | |
| L1 1A, 4A | L2 2A, 5A | L3 3A, 6A |

INITIAL START-UP

Pre-Power ON

After the oven is installed and connected to power, prior to turning on, verify the following:

- The doors open and close freely.
- All racks are in the oven correctly.
- All packing materials have been removed from the inside of the oven.
- Power is applied to the oven.
- Water is connected and turned on.
- Drains are connected.

NOTICE

During the first few hours of operation you may notice a small amount of smoke coming from the oven, and a faint odor. This is normal for a new oven and will disappear within a few hours of operation.

Enviro-STAR

Control Panel Definitions:

Power, - on/off button

Note: Fan remains on until oven cools down to 250°F

1-Shot Steam - Provides single shot of steam to the cooking chamber between 1 to 20 seconds. To adjust hold down button and turn knob until desired time displays on LED.

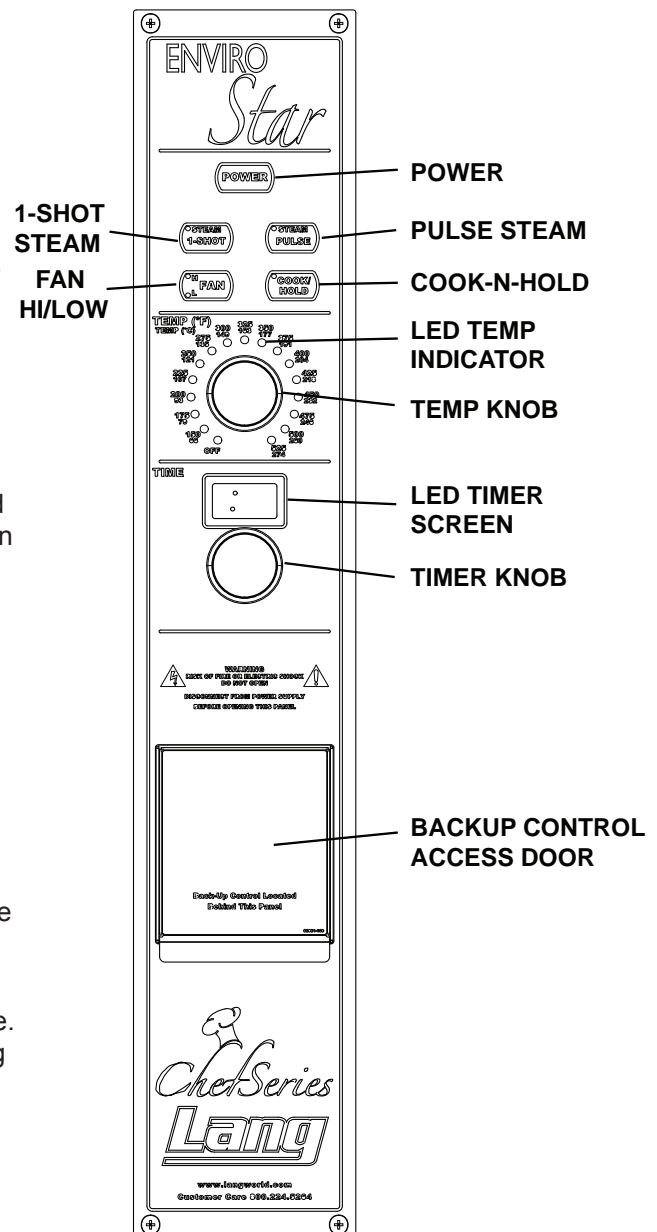
Pulse Steam - Sends Steam Shots in non-adjustable 1 second duration, to the cooking chamber. Adjust the Pulse Steam time between 1 to 120 minutes by holding down the button and turning knob until the desired time is displayed on the LED.

FAN - Fan has two speeds (L=LOW, H=HIGH)

Note: the fan will reverse directions periodically during operations, this provides for a more consistent bake.

COOK-N-HOLD - Once the cooking has completed the unit will beep 5 times (1-Shot Steam or Pulse Steam) this feature will reduce the oven temperature to 150°F and the cook-n-hold light will turn off. The oven will remain at 150°F until the user begins another cooking cycle or the unit is turned off.

Note it may take as long as 1-hour for it to reach 150°F depending on the set cooking temperature. This time must be taken into account when using the Cook-N-Hold feature.



Enviro-STAR

Control Panel Definitions (Continued)

LED Temperature Indicator – Indicates the current temperature.

- V1.12 blinks with a call for heat,
- Solid means oven on set point.

Temperature Knob – Use to set oven temperature.

LED Timer Screen – Multifunctional digital readout.

- Reads out the time remain in the current cooking cycle.
- Reads out time when setting “Pulse Steam” interval time.
- Reads out time when setting “1 Shot Steam” duration.

Timer Knob – Sets cook time, Pulse Steam interval time and 1 Shot Steam duration.

Back UP Controls – Allows oven operation utilizing a completely separate set of manual controls. Operation in Back-Up Mode is described in the “Operation with Back Up Controls” section.

Initial Power On Test:

1. Follow these steps to verify the basic operation and temperature control capability of oven.

- a) Turn Power On. Verify interior light and display comes on.
- b) Set temperature to 300°F. Verify Temperature Indicator light is blinking.
- c) Verify oven reaches set point & signals ‘Ready’ with an audible tone with in 12 Minutes. (starting with a cold oven)
- d) Set timer to 10 Minutes and verify fan stops and reverses direction after approximately 108 seconds. (complete reversing cycle takes 2 minutes.)
- e) Open door and verify the Fan and Time Display stops then restarts when door is closed.
- f) Turn timer to zero, temp to zero.
- g) Confirm fan stays on until temp cools to below approximately 250°F.

For units with water hookup for Steam.

2. Identify water purification system used: _____
(write “none” if no water treatment system is in use.)

3. Flush water system to clear tainted water from the install process. _____.

- a) Put oven into Back-Up Mode and set temperature to approx. 400°F. (Listen for contactor changing states)
- b) Once up to temp, Use the steam bypass switch (spring loaded toggle switch in the Back Up Access area) to flush the water through the oven for 1 minute.
- c) Check water drain for proper operation.

Enviro-ZONE

Control Panel Definitions:

Power – On/Off button. When switched on, the control will turn on the interior light and the display. The fan is left off until there is a call for heat or a timer is started.

When the “Power” button is pushed to turn the oven off, the interior lights turn off, the front display turn off.

Up – Allows you to scroll up.

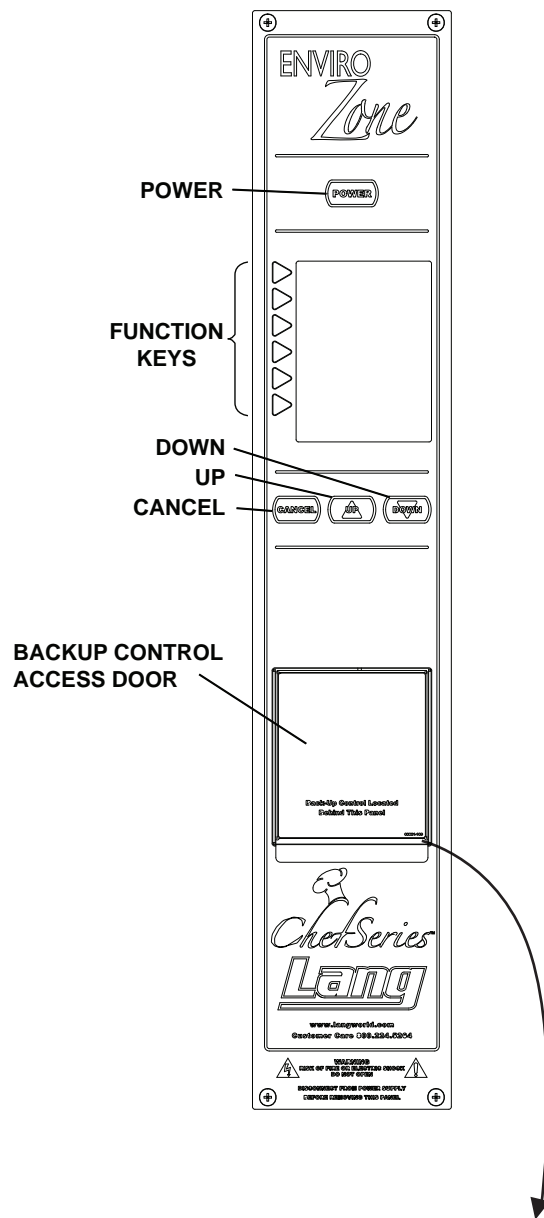
Down – Allows you to scroll down.

Cancel – When scrolling through menus this will allow you to back up to the previous menu. In program mode this will allow you to back up to the previous step.

Function Keys – Keys are active when a program option is displayed on the display adjacent to that key.

Back UP Controls – Allows oven operation utilizing a completely separate set of manual controls.

Operation in Back - Up Mode is described in the “Operation with Back Up Controls” section of this manual.



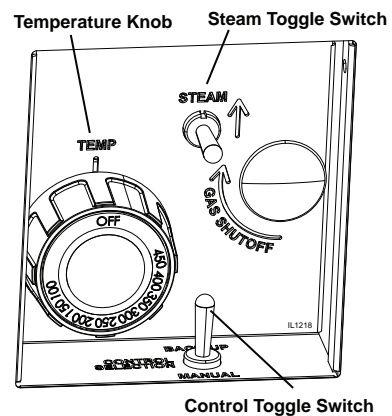
OPERATION WITH BACK UP CONTROLS

During Back-Up operation, the main control panel is disabled by removing its power allowing operator to utilize a completely separate set of controls.

On both the Enviro-Zone & Enviro-Star models, the back-up controls are located behind the Access Door located just below the Control Panel. Inside you will find a Temperature Control Knob, a Back-Up Control toggle switch and a spring loaded Back-Up Steam toggle switch.

To enable Back-Up operation, throw the Back-Up Control toggle switch to the ON position. The oven's convection fan will come on at High speed / CCW and the heat can be controlled using the Temperature Knob. Steam may be applied manually using the Back-Up Steam toggle switch.

Unlike normal operation, the Back-Up mode does not employ energy saving processes or allow the fan to reverse direction or change speeds.



ECSF back-up Controls

Enviro-ZONE

Initial Power On Test:

- 1) Energize Oven and verify the basic operation and temperature control capability of oven.
 - a. Turn Power On. Verify interior lights and the display comes on. _____
 - b. Install a Temperature Meter thermocouple in center of oven cavity. _____
 - c. Using 'Run Oven' / 'Manual Program', set temperature to 300°F. _____
 - d. Verify oven reaches set point & signals 'Ready' with an audible tone with in 12 Minutes. (starting with a cold oven) _____
 - e. Press Manual Program again. Using the enter key and up button, enter time 00:10:00, Press 'Accept' and then select shelf "C". Verify the shelf timer starts count down; Verify the fan stops and reverses direction after approximately 108 seconds. (complete reversing cycle takes 2 minutes.) _____
 - f. Verify the measured temperature at the transition point (when heat contactor changes states.) matches the temperature on the display panel. _____
 - g. Open door and verify the Fan stops then restarts when door is closed. _____
 - h. Press Cancel several times to return to "Run Oven" menu. _____
 - i. Confirm fan stays on until temp cools to below approximately 250°F. _____

For units with water hookup for Steam.

- 2) Identify water purification system used: _____
(write "none" if no water treatment system is in use.)
- 3) Flush water system to clear tainted water from the install process. _____.
 - a. Put oven into Back-Up Mode and set temperature to approx. 400°F.
 - b. Once up to temp, Use the steam bypass switch (spring loaded toggle switch) to flush the water through the oven for 1 minute.
 - c. Check water drain for proper operation.

OPERATION

Enviro-STAR Typical Operation Sequence:

| ACTION | RESULT |
|---|--|
| Press the POWER button | Front panel lights up. |
| Select Fan Speed HI or Fan Speed LO. | Selected Fan Speed light will be lit. |
| Adjust to desired temperature between 125° F and 525°F. (Minimum suggested temperature for operation with Steam is 250°F.). | Fan and heat come on. Fan will reverse direction every 2 minutes (approximately) through out cooking process. |
| Set Pulse Steam by pressing and holding Pulse Steam button and selecting between 1 and 120 minutes interval between pulses | Pulse Steam light will stay on. Digital display will momentarily show selected interval between steam pulses. |
| Temperature reaches Set Point. | Set point reached within 12 minutes and audible tone signals. |
| Load Product into Oven. | See Hints & Suggestions – “Loading the Oven.” |
| Set Timer Knob to desired cook time. | Time starts timing down on digital display. If Pulse Steam has been enabled, a 1 second shot of steam will be applied at the selected interval. |
| Set Cook n Hold (Optional) | Cook n Hold light comes on to indicate feature is enabled. |
| Cooking timer times out. | Audible tone signals cook time complete. If Cook n Hold feature is enabled, the oven temperature will drop no lower than 150°F with the 150° time light on solid until the timer is reset. The Cook n Hold light will go out at end of timer. |
| Unload Oven | See Hints & Suggestions – “Unloading the Oven” |

Enviro-ZONE Typical Operation Sequence:

| ACTION | RESULT |
|---|--|
| Press the “POWER” button | Control Panel comes on, display says “LANG, Run Oven, Time/Date/Program. |
| Select “RUN OVEN”. | Display will show a list of product to choose. |
| Select Product button next to Icon desired. | Display says “Preheating to xxx°F”. |
| Beeper sounds briefly. | Display says “Ready”. |
| Select Function to start. | Display shows possible product selection for that temperature. |
| Select Function to start. | Display says “Select Shelf”, Place Product in oven on selected shelf. |
| Press Function Button next to desired shelf | Display will show icon chosen and begin to count down. |
| Beeper sounds continuously. | Display shows “DONE” press button and remove product from that shelf. |
| Oven is ready for another program. | |

MAINTENANCE

- Water filters and conditioners should be inspected and replaced per their manufacturers recommendations.
- Oven interiors should be wiped down daily and thoroughly cleaned weekly using warm water and mild detergent. **DO NOT use caustic cleaners.**
- The appliance should be thoroughly checked at six-monthly intervals by a qualified technician (heating unit, mechanical stability, corrosion...) with particular emphasis on all control and safety devices.

CLEANING

- Always start with a cold oven.
- The stainless exterior can easily be cleaned using stainless steel cleaner.
- Always follow the cleaner manufacturer's instructions when using any cleaner.
- Care should be taken to prevent caustic cleaning compounds from coming in contact with the fan wheel.
- The oven racks, rack slides, may be cleaned outside the oven cavity using oven cleaner.
- Using any harsh chemicals will result in the removal of the ETC coating and etching of the porcelain below it. The oven interior should only be cleaned using a mild soap and a non metal scouring pad. **DO NOT use caustic cleaners.**
- Always apply stainless steel cleaners when the oven is cold and rub in the direction of the metal's grain.



WARNING

KEEP WATER AND SOLUTIONS OUT OF CONTROLS. NEVER SPRAY OR HOSE CONTROL CONSOLE.



CAUTION

MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN TO WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING.

CAREFULLY READ THE WARNING AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER TO BE USED.

NEVER LEAVE A CHLORINE SANITIZER IN CONTACT WITH STAINLESS STEEL SURFACES LONGER THAN 10 MINUTES. LONGER CONTACT CAN CAUSE CORROSION.

CONVECTION OVEN BAKING GUIDE

CONVECTION OVENS IN GENERAL

- Convection ovens constantly circulate air over the product. This strips away the thin layer of moisture laden air from the top of the product allowing heat to penetrate more quickly. This allows cooking times to be shortened and cooking temperatures reduced in convection ovens. Introducing Steam into the cooking process prevents the bake from losing moisture and allows for a better product.
- Applying steam to dough during first 5 minutes, allows the yeast to work a little longer, allowing for better oven spring and loaf volume keeping the outer layer flexible and moist. Once the outside layer of the dough sets, gases in the loaf can no longer expand to increase the loaf size.
- Steaming the dough as it bakes also gelatinizes starch on the outside layer, producing a bread with a crisp crust and a brown crust color in varying degrees; too much steam results in an undesirable crust. Steam also helps to prevent wild breaks in the loaves because it delays the setting of the bread's crust, allowing it more time to bake and brown. However, in contrast, during the last stages of baking, a dry oven is required when the crust is browning; after the steam is removed, the gelatinized layer dries out forming a thick crunchy crust.
- The convection oven is an electro-mechanical piece of equipment and is designed to produce a consistent result. Variations in results are therefore more likely due to differences in the preparation process.

DEFINITIONS

EnviroZone & EnviroStar

Cooking Time & Temperature: To convert standard deck oven recipes to convection oven recipes, start by reducing the cooking temperature by 50 °F and the time by 25%.

Fan Speed Functions: The convection fan is programmable as either HI or LO speed. Most baking is done with the fan speed set to high. Delicate products (i.e. Meringue pie) may require use of the low fan speed setting.

EnviroZone

Cooking Curve: Cooking curve is a programmable function that adjusts the cooking time to compensate for planned times when the oven temperature would be lower than the programmed temperature. (i.e. temperature losses during loading and unloading). Cooking Curve 40%, is the most commonly used. Cooking Curve settings from 0% (no time adjustment) to 100% (max time adjustment) are available. As a general rule the longer the cooking time the lower the cooking curve, the shorter the cooking time the higher the cooking curve.

Pulse Fan Function: A Fan Pulse Rate setting allows the fan to be programmed to cycle on and off at regular intervals during the period in the cooking cycle when there is no heat applied. (The computer will not allow the fan to be OFF whenever the heat is ON).

Steam Programming: (Optional) One Second shots of steam can be introduced at programmable intervals. Steam is typically only used when wanting to maintain moisture or achieve a specific result.

Tier Cooking: "Tiered" programming is the ability to change the cooking temperature or fan function while cooking. *(i.e. some products may require high heat and the fan to be LO for the first half of the cooking cycle. Tier 1 would be programmed with the Heat up and the fan LO and Tier 2 would then be programmed with the heat lowered and the fan HI for the remainder of the cycle.)* Multiple shelf baking function is disabled when using Tier Baking programs.

Vent Programming: The vent can be programmed to be either open or closed. Most baking should be done with the vent closed. Open the vent only with high moisture products to avoid seepage of condensed moisture around the front of the door.

BAKING HINTS

- Always maintain a consistent cooking process. Establish a process that works for you, write it down and stick to it. Consistency in your cooking processes is very important to the quality of your bake.
- Always weigh your product. This will give you a more consistent size, color and quality.
- Do not overload pans or space product unevenly in the pan as this will create a uneven bake.
- Bent or warped pans can greatly affect the evenness of the bake.
- Always use the oven lights to view the product through the oven door windows. Do not open the oven doors during baking as this will change the baking characteristics and produce erratic results.
- If using baker's parchment, be sure the parchment does not blow over the product or obstruct air flow in any way. This will create a uneven bake. Never use aluminum foil in your convection oven.
- Use proper sheet pans for baking. i.e. Aluminum pans have better heat transference than steel pans and therefore yield much better bake results.

LOADING THE OVEN

- When loading the oven, stage products and racks so the oven doors are opened for the least amount of time during the loading process to minimize the loss of heat inside the oven.
- Center each pan on the oven shelves. Spaces should be maintained equally between the pan edges and the oven walls, front and back. This will allow for an even distribution of airflow. The better the air flow around the product, the better and more consistent the bake.
- Load the pans on the shelves as close to equal distant apart as possible. Even vertical spacing of the pans on shelves 1 thru 6 inside the oven is important to the proper circulation of air and therefore will have an effect on the quality of your bake.
 - When loading the oven randomly, (Different times for different shelves) load the oven from the center shelf out with even vertical spacing.
 - When loading multiple pans at the same time, load the shelves spaced as equal distant as possible with even vertical spacing.

UNLOADING THE OVEN

- Unload the top shelf before the bottom shelves. This is necessary because it is a characteristic of all ovens that, after the fan shuts down, rising heat and the hot oven ceiling causes the top shelf to bake quicker. This characteristic is more pronounced when baking at higher temperatures and/or for prolonged periods of time.
- Always stage your product racks so that you can unload quickly with the door open for a minimal amount of time. This is to preserve the temperature inside the oven cavity for your next round of baking.



CAUTION

ALWAYS KEEP THE AREA NEAR THE UNIT FREE FROM COMBUSTIBLE MATERIALS.

KEEP FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY TO AVOID THE DANGER OF SLIPS OF FALLS.

EnviroZONE PROGRAMING

When using the EnviroZone Control Panel follow these simple steps.

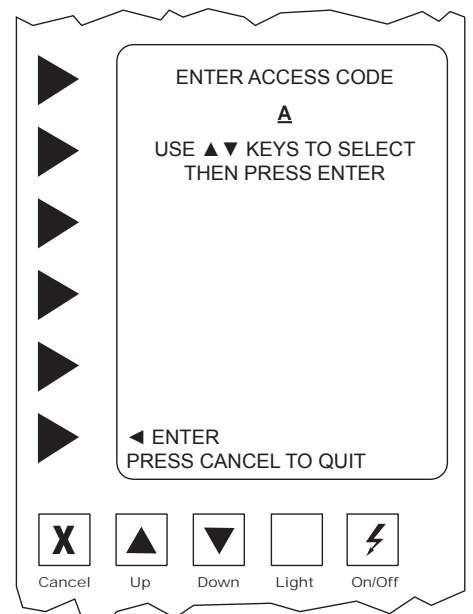
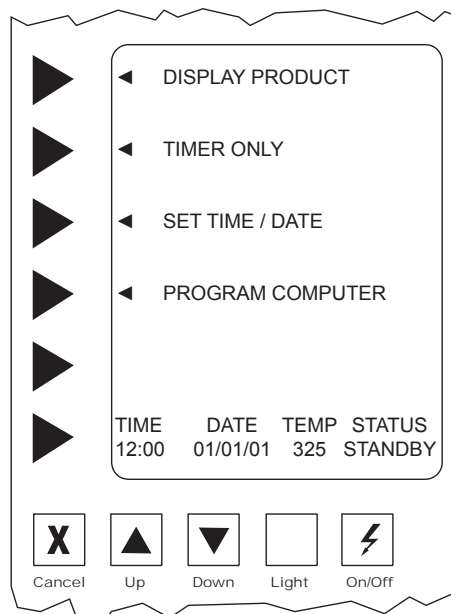
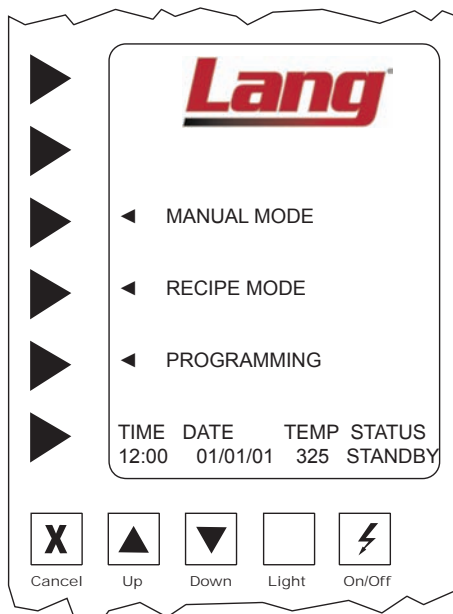
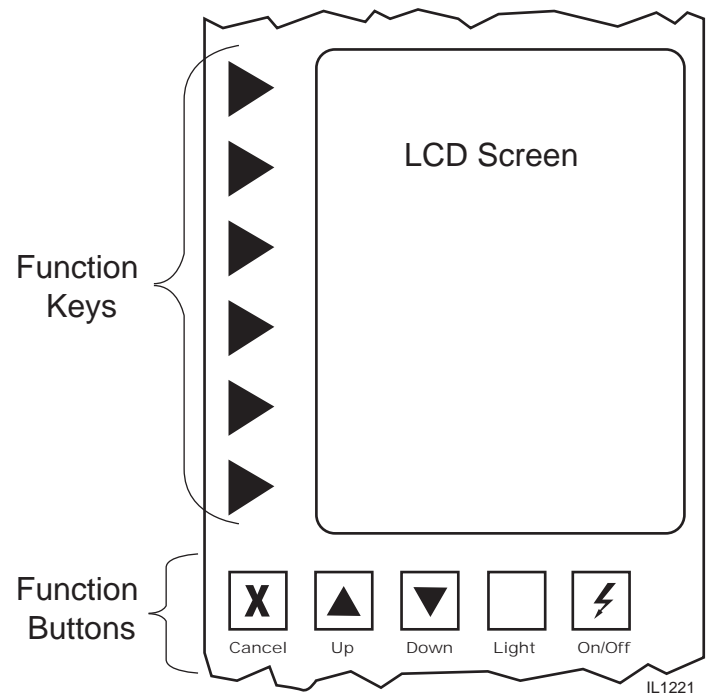
Function Keys: Are active when selecting an option that is displayed on the LCD Screen.

Function Buttons:

Cancel: During Program Mode it will take you to the next step, otherwise it will take you back to the previous menu.

Up & Down: Will move you through the selections/settings displayed on the LCD Screen which will be used when programming your specific requirements. (Example: access codes, temperature settings, cooking time, curve , fan speed etc.)

On/Off: Main Power Switch



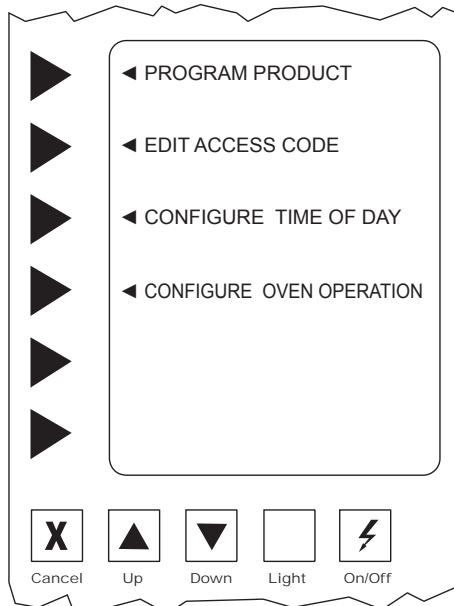
Step 1. Turn power switch on. If the oven is on, press cancel until the above screen is displayed.

Step 2. Select **PROGRAMMING**

Step 3 Select **PROGRAM COMPUTER**

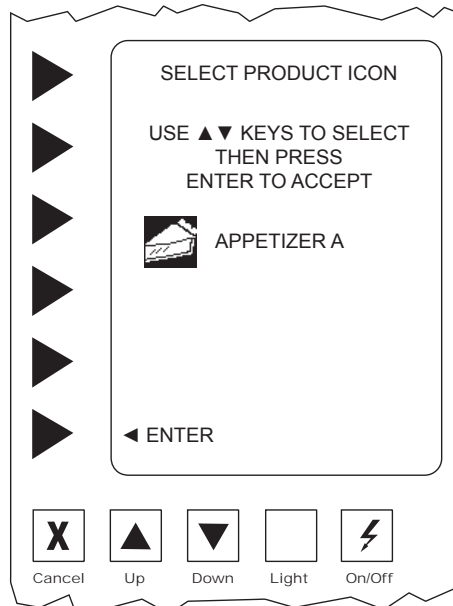
Step 4 Using the ▲▼ arrows, enter access code "A B C D E F" hitting **ENTER** after each letter.

EnviroZONE PROGRAMING



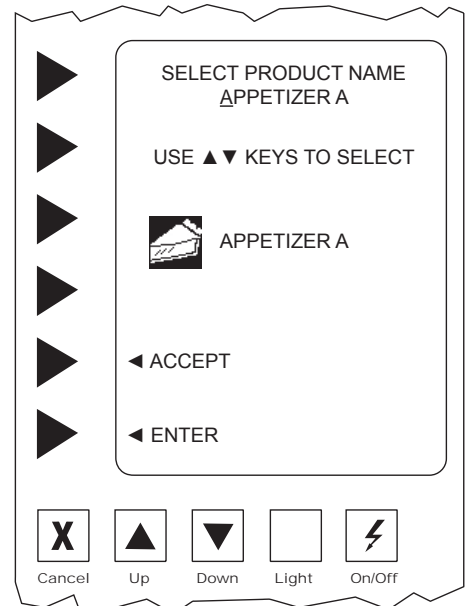
Step 5 Select **PROGRAM PRODUCTS** then

Step 6 Select **CREATE NEW PRODUCTS**



Step 7 **Select Product Icon,**
This is the first screen in creating a product program. Press ▲▼ until you find a icon which resembles your product.

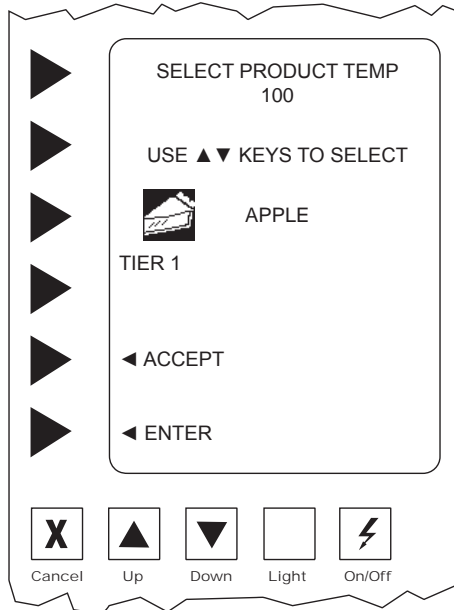
Select **ENTER** to accept the icon and move to the next screen.



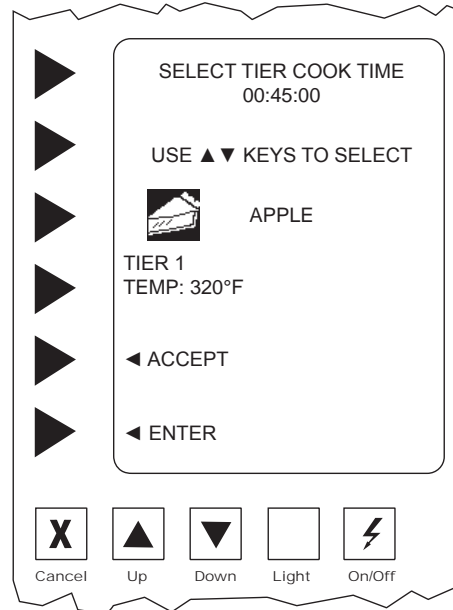
Step 8 **Select Product Name,**
This is where you enter the name of the product into the computer. Using the ▲▼ keys type over the default name, blank space is before the A and after the 9.

Select **ACCEPT** to continue.

Note: Curser must be moved past the last digit to save the entire entry.



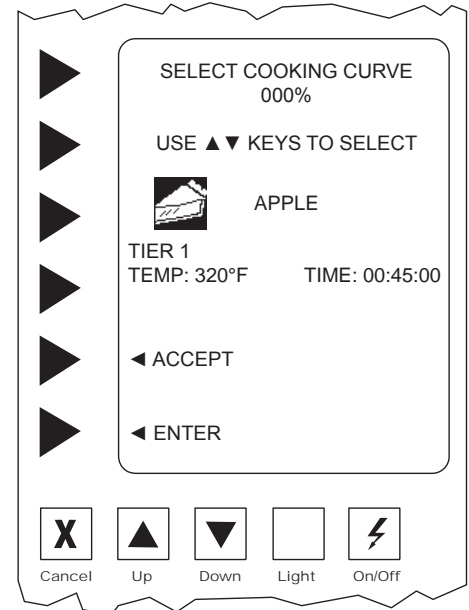
Step 9 **Select Product Temperature,**
Press the ▲▼ to select the first digit, then press **ENTER** to move to the next digit. It will automatically move to the next screen after the third digit.



Step 10 **Select Tier Cook Time,**
Time is entered in hours:minutes:seconds. The maximum is 12:59:59.

Select **ENTER** to move the cursor to the place you want to enter the number.

Select **ACCEPT** to continue.

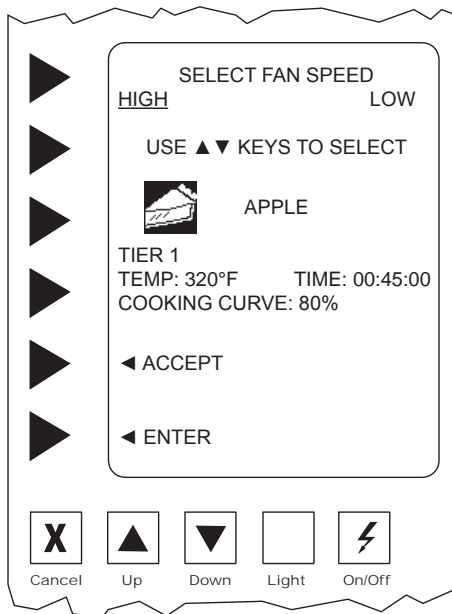


Step 11 **Select Cooking Curve,**
press ▲▼ to select the numbers, press the **ENTER** to move the cursor to the next space.

Cooking Curve may be any number between 0% and 100%.

Select **ACCEPT** to continue.

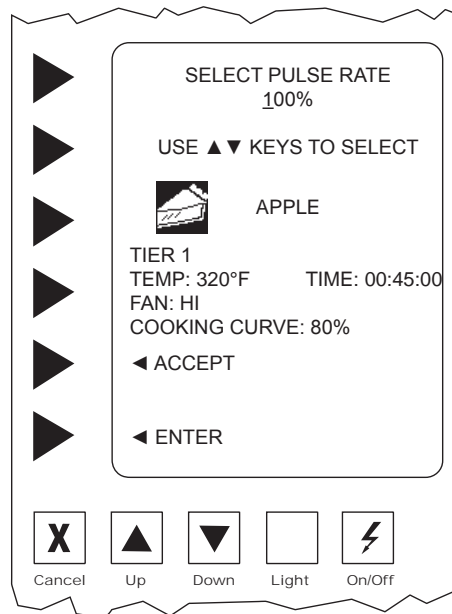
EnviroZONE PROGRAMING



Step 12 Select Fan Speed,

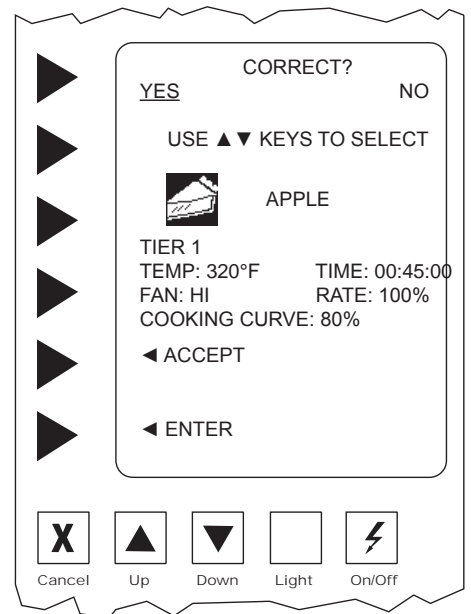
Press the ▲▼ to move the cursor between the HIGH and LO settings.

Press **ENTER** to make your selection and move to the next screen.



Step 13 Select Pulse Rate,

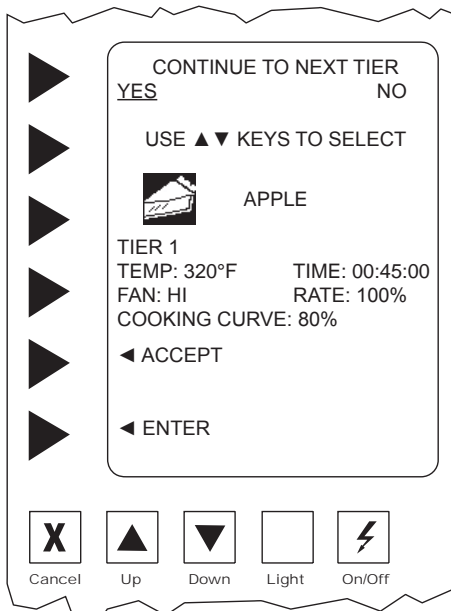
Press the ▲▼ to select the first digit, then press **ENTER** to move to the next digit. It will automatically move to the next screen after the third digit.



Step 14 Correct

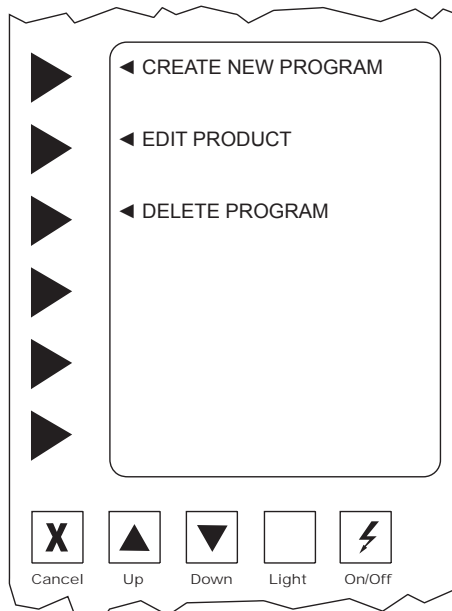
The computer is asking if the display is correct. If any part of the program is incorrect press ▲▼ **NO**, and you will be taken back to Step 7.

Selecting **YES** will advance the screen.

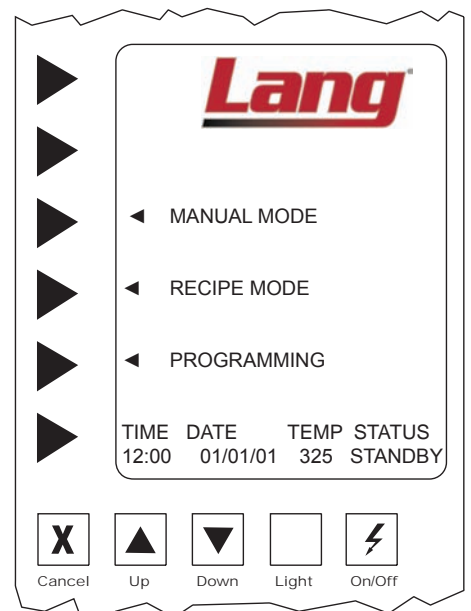


Step 15 Continue To Next Tier

The cursor automatically appears on **NO**. Select **ENTER** or **ACCEPT** to end programming or move the cursor ▲▼ to **YES**. This will allow you to enter another tier to this program, repeating steps 6 - 14 to program second tier.



Step 16 After programming the last tier, the computer will automatically advance the screen to program more products. If no other products need to be programmed, select **CANCEL** three times to advance screen to the boot up screen.



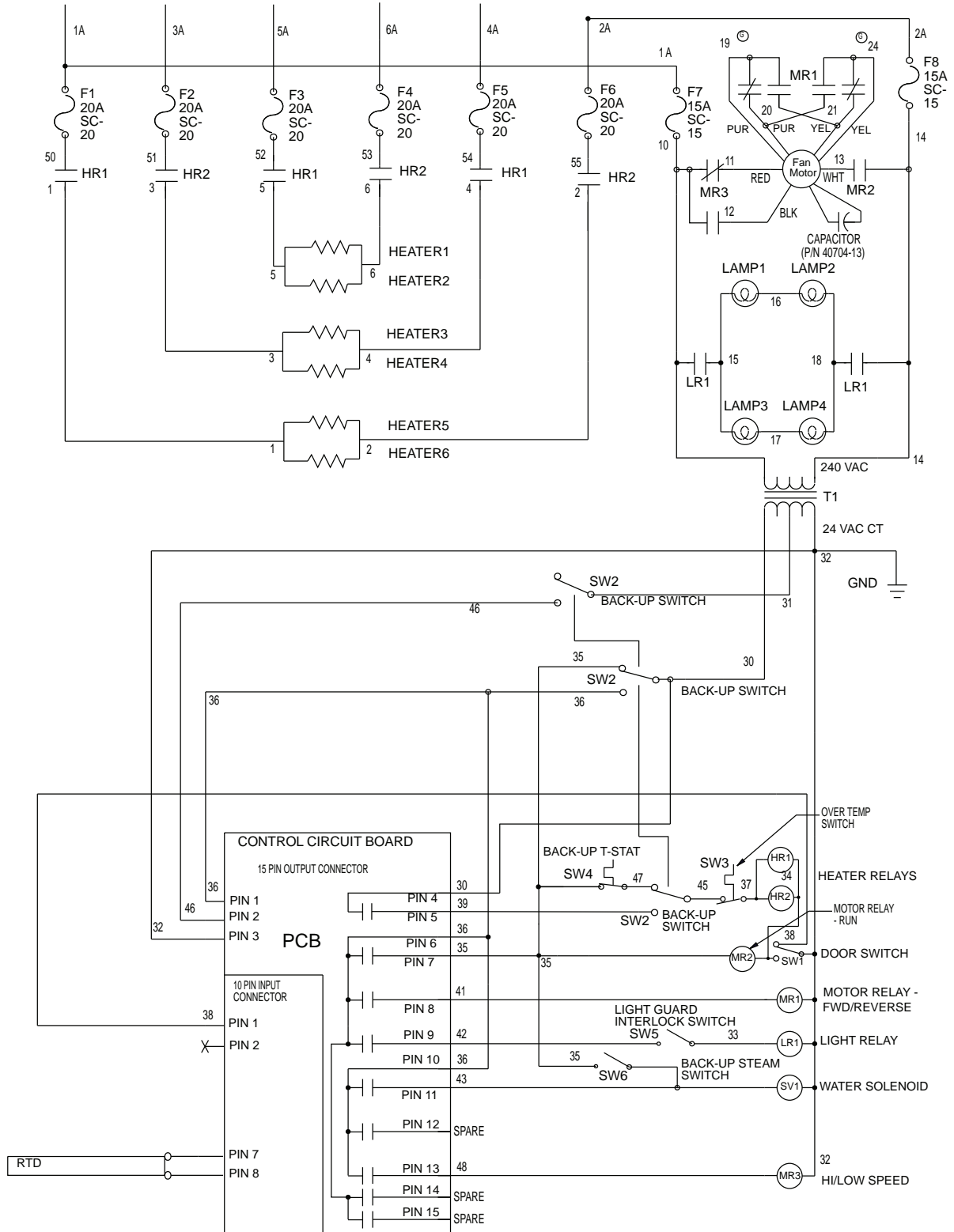
Step 17 Boot-up Screen

You may now preheat the oven for any product you have programmed.

Step 18 Select **MANUAL** or **RECIPE MODE** to begin using oven.

ECSF-ES (OCE) ENVIRO STAR 208-240V SINGLE AND THREE PHASE

| SERVICE ENTRANCE TERMINAL BLOCK CONNECTIONS | | | | | |
|---|----------|----|----------------------|-------|-------|
| 208-240V SINGLE PHASE | | | 208-240V THREE PHASE | | |
| L1 | L2 | L3 | L1 | L2 | L3 |
| 1A,3A,5A | 2A,4A,6A | | 1A,4A | 2A,5A | 3A,6A |



| | | |
|--|---|---------------------|
| Lang A Division of Star Mfg., Inc. | DWN. BY: HJP | DWN. DATE: 8/10/05 |
| | DESCRIPTION: WD ECSF-ES ENVIRO STAR 208-240V SINGLE AND THREE PHASE | |
| | CAD FILE: FROM SOLIDWORKS | DWG. NO: 146-799-01 |
| | SHEET 1 OF 1 | REV: G |

SERVICE ENTRANCE TERMINAL BLOCK CONNECTIONS

The diagram shows a power distribution system with five feeders (1A, 3A, 5A, 6A, 4A) and six heaters (HEATER1 to HEATER6). Each feeder has a 20A SC-20 fuse (F1-F5) and a battery (HR1 or HR2). The heaters are connected in a complex network between the feeders and a common ground line.

- Feeder 1A:** Contains fuse F1 (20A SC-20) and battery HR1. Terminal 50 is connected to terminal 1.
- Feeder 3A:** Contains fuse F2 (20A SC-20) and battery HR2. Terminal 51 is connected to terminal 3.
- Feeder 5A:** Contains fuse F3 (20A SC-20) and battery HR1. Terminal 52 is connected to terminal 5.
- Feeder 6A:** Contains fuse F4 (20A SC-20) and battery HR2. Terminal 53 is connected to terminal 6.
- Feeder 4A:** Contains fuse F5 (20A SC-20) and battery HR1. Terminal 54 is connected to terminal 4.

The heaters are connected as follows:

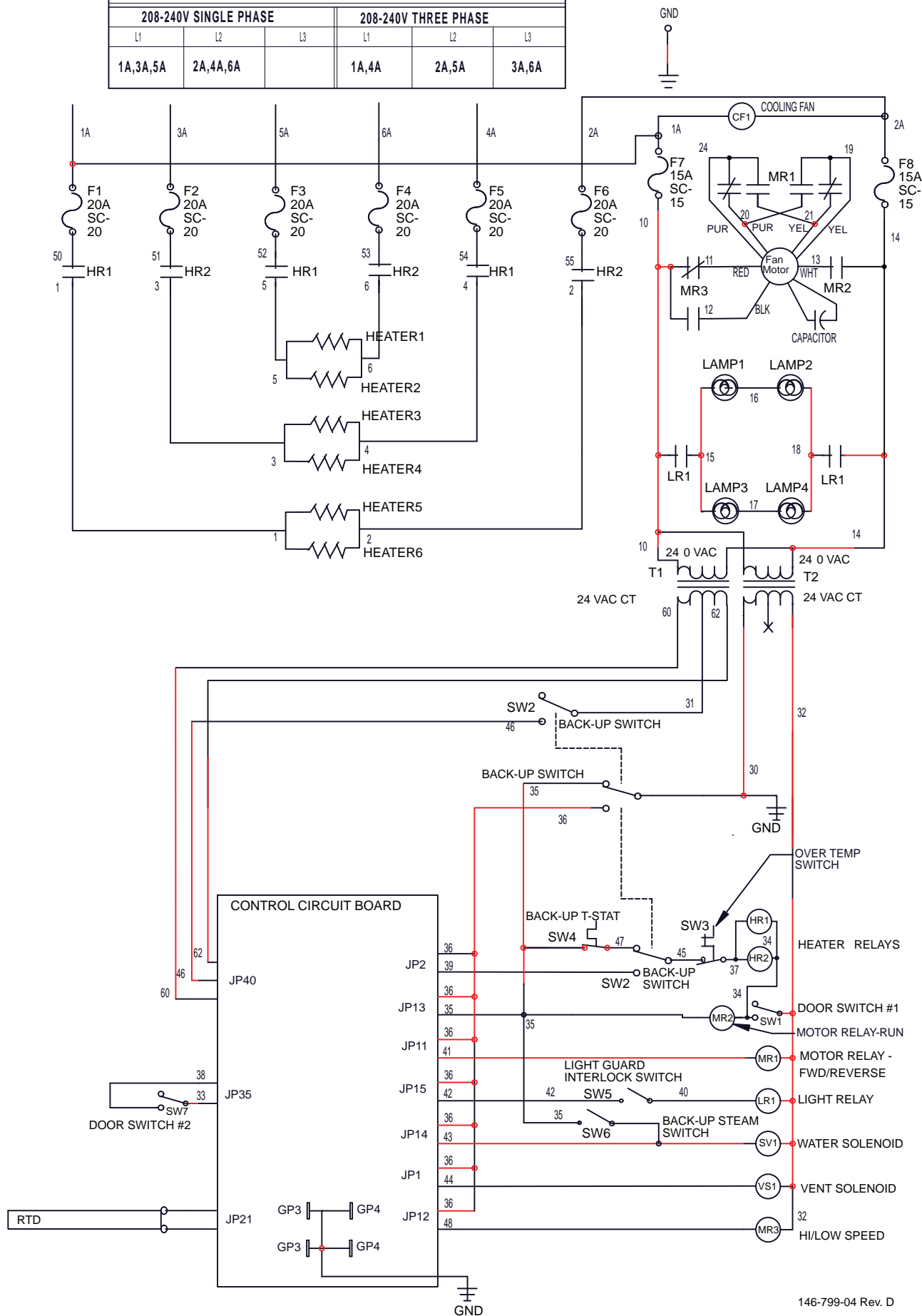
- HEATER1:** Connected between terminal 5 and terminal 7.
- HEATER2:** Connected between terminal 3 and terminal 7.
- HEATER3:** Connected between terminal 1 and terminal 8.
- HEATER4:** Connected between terminal 6 and terminal 8.
- HEATER5:** Connected between terminal 9 and terminal 4.
- HEATER6:** Connected between terminal 2 and terminal 4.

[illegible]

ECSF-EZ (OCE) ENVIRO ZONE 208-240V THREE PHASE

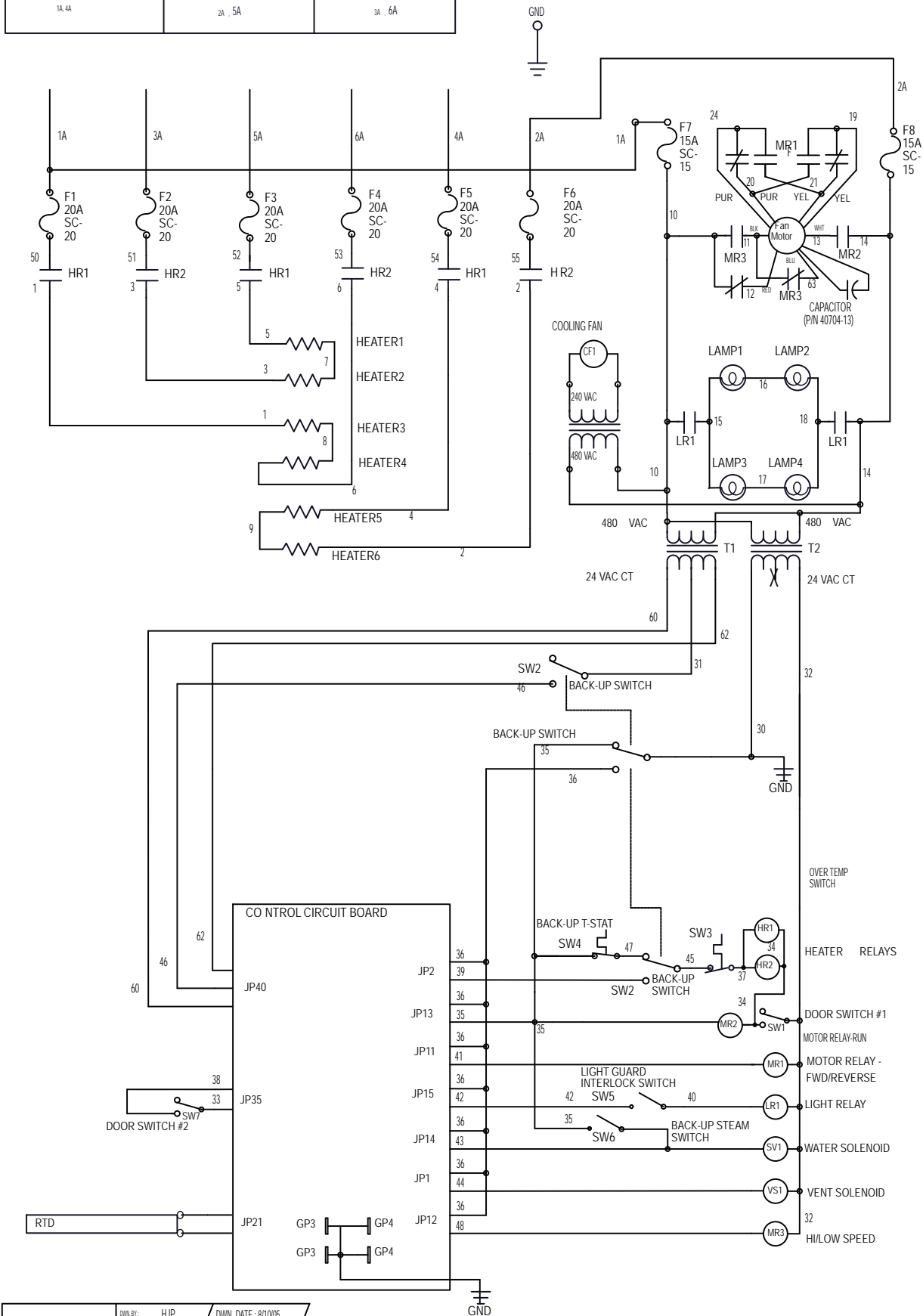
WIRING DIAGRAM

| SERVICE ENTRANCE TERMINAL BLOCK CONNECTIONS | | | | | |
|---|----------|----|----------------------|-------|-------|
| 208-240V SINGLE PHASE | | | 208-240V THREE PHASE | | |
| L1 | L2 | L3 | L1 | L2 | L3 |
| 1A,3A,5A | 2A,4A,6A | | 1A,4A | 2A,5A | 3A,6A |

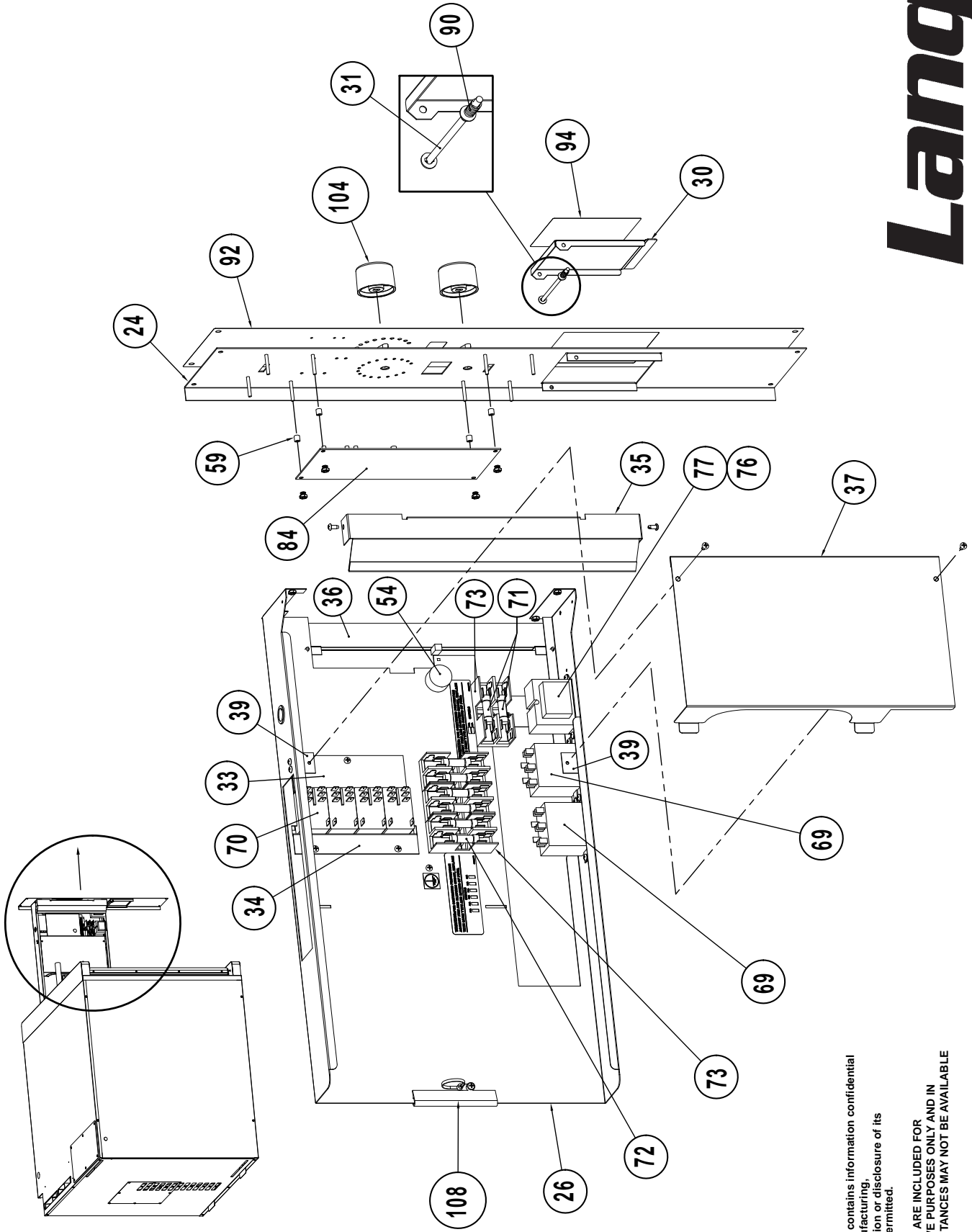


| SERVICE ENTRANCE TERMINAL BLOCK CONNECTIONS | | |
|---|-------|-------|
| 480V THREE PHASE | | |
| L1 | L2 | L3 |
| 1A 4A | 2A 5A | 3A 6A |

WIRING DIAGRAM



| | | |
|-------------|--|---------------------|
| Lang | DWY: HJP | DWN. DATE: 8/10/05 |
| | DESCRIPTION: WD: ECSF / OCE ENVIRO ZONE 480V THREE PHASE | |
| | QDFILE: FROM SOLIDWORKS | DWG. NO: 146-799-05 |
| | SHEET 1 OF 1 | REV: E |



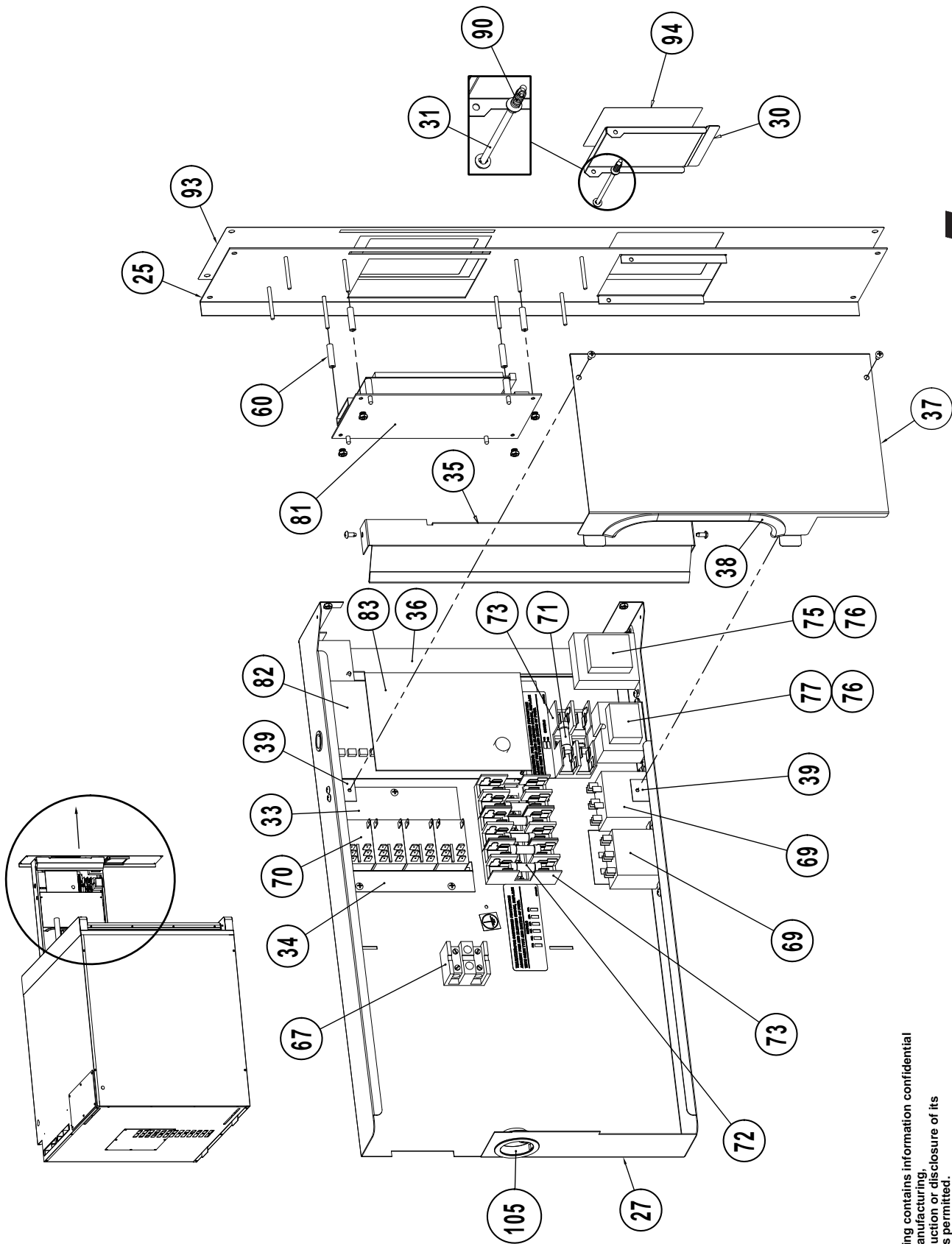
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MODEL: ECSF-ES (OCE) Enviro-STAR Control Panel/Board

Lang

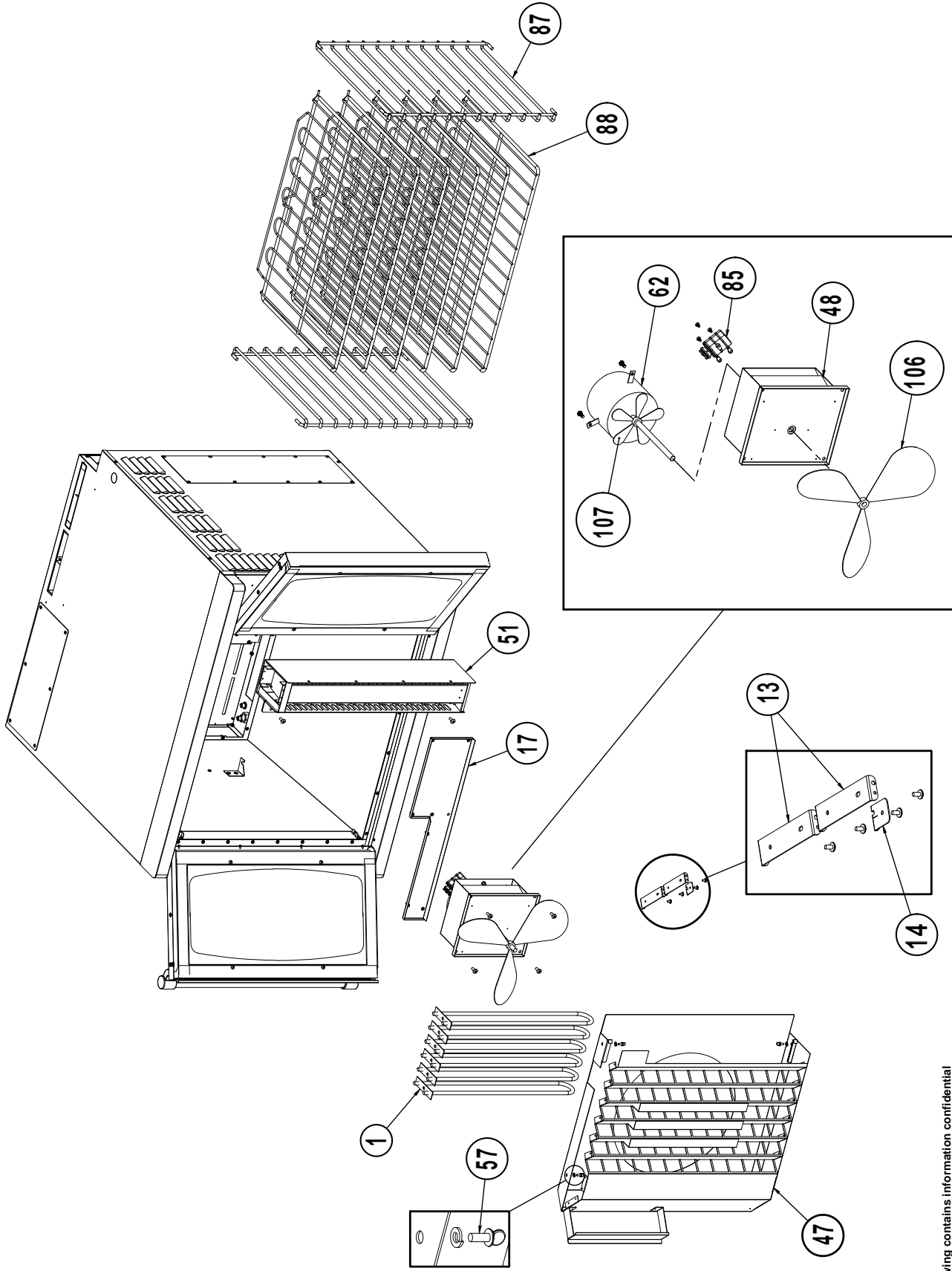
SK2215 REV. - 8/28/06



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MODEL: ECSF-EZ (OCE) Enviro-ZONE Control Panel/Board



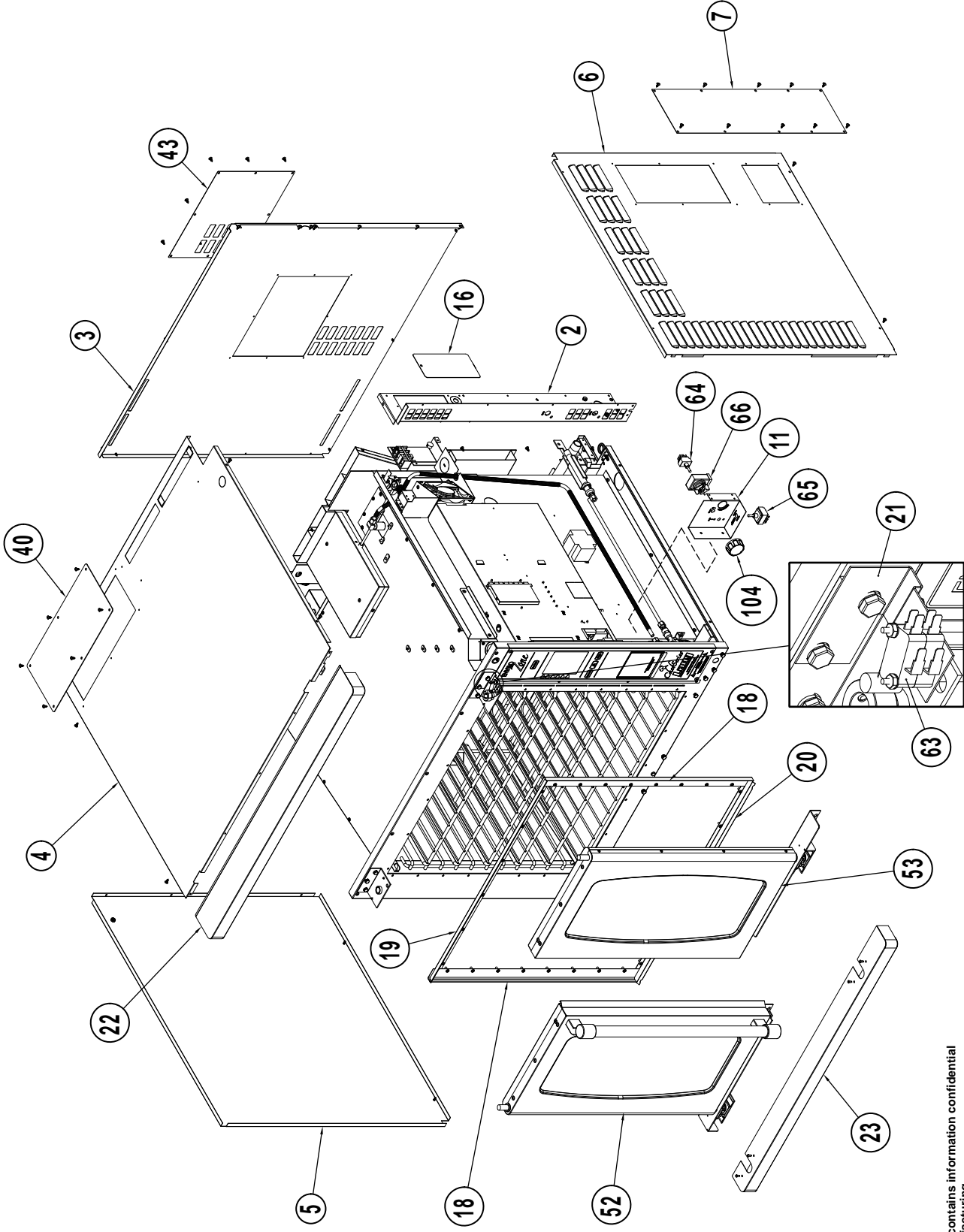
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Lang[®]

MODEL: ECSF (OCE) Front Detail

SK2217 REV. - 8/28/06



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MODEL: ECSF (OCE) Skins Exploded View



NI = NOT ILLUSTRATED



ECSF-ES - ECSF-EZ Electric Full Size Convection Oven Parts List

| Fig No. | Part Number | Quantity Per | Description | Fig No. | Part Number | Quantity Per | Description |
|---------|---------------|--------------|----------------------------|--------------|---------------|--------------|------------------------------|
| 83 | 2J-40102-51 | 1 | CIRBD FILTER | 103 | Y9-70701-17-1 | 1 | KNOB 450ø B PHANTOM |
| 84 | 2J-40102-W64 | 1 | CONTROL - OCE/OCG | 104 | 2R-70701-45-1 | 2 | BKNOB RED TOP 6MM W/D |
| 85 | 2E-40704-13 | 1 | CAP - 5 MFD 370V AC | 105 | 2K-70801-08 | 3 | SNAP BUSH 1 3/4 SB1750-22 |
| 86 | 2E-41100-38 | 1 | SENSOR TEMP OCE/OCG | 105 | 2K-70801-08 | 4 | SNAP BUSH 1 3/4 SB1750-22 |
| | 2E-41100-41 | 1 | SENSOR TEMP OCE/OCG | 106 | 2U-71500-16 | 1 | FAN - NCO 16 IN |
| 87 | 2B-50200-103 | 2 | RACK SLIDE OCE/OCG | 107 | 2U-71500-17 | 1 | FAN - NCO 6 IN |
| 88 | 2B-50200-20 | 6 | RACK ECCO/GCCO OVEN | 108 | Q9-EH-502-1 | 1 | TRIMLOCK 4 |
| 89 | Q9-50312-02-1 | 2 | DOOR CHAIN AND TURNBCKL | 109 | 2T-30401-30 | 1 | STAT FXD 550 DEG OPEN |
| 90 | 2P-51001-19 | 1 | SPRING SWT DR HINGE EHS | 110 | Q9-30401-30-2 | 1 | SWT KIT STAT FXD 550 DEG |
| 91 | 2P-51001-38 | 2 | SPRING VENT | | | | |
| 92 | 2M-60301-162 | 1 | LABEL PANEL OCE/G ENVIRO | NI | 1P-72602-37 | 6 | GSKT HITEMP OCE ELEMENT |
| 93 | 2M-60301-166 | 1 | LABEL PANEL OCE &G ENVIRO | NI | 2H-60106-73 | 1 | INSULATION KIT OCE - BODY |
| 94 | 2M-60301-169 | 1 | LABEL OCE ACCESS DR W/BUP | NI | Q9-146-724 | 1 | SAFETY STAT ASSY |
| 95 | 2K-70101-03 | 1 | BRAS TBEELBOW 1/4NPT-3/8CC | NI | Q9-146-749 | 1 | WINDOW RING ASSY |
| 96 | 2K-70101-54 | 1 | BRAS TBE UNION 3/8CCX1/4 | NI | Q9-60102-006 | | Ferrite kit - OCE XFMR INPUT |
| 97 | 2K-70302-36-1 | 1 | PIPE NIPPLE 3/4NPT X 8BLK | | | | |
| 98 | 2K-70302-53 | 1 | PIPE COUPLING 3/8X1-3/16 | LAMP FIXTURE | | | |
| 99 | 2K-70303-03 | 2 | PIPE COUPLING 1/4 NPT | NI | 2S-31602-08-1 | 4 | 250V BULB {FOR 31602-08} |
| 100 | 2K-70305-05 | 1 | PIPE 90ø ELBOW 3/4 BLK | NI | 2S-31602-09-1 | 4 | 130V BULB {FOR 31602-09} |
| 101 | 2V-70403-05 | 1 | SOLENOID WATER | NI | 2S-31602-08-2 | 4 | LAMP GLOBES |
| 102 | 2V-70403-07 | 1 | SOLENOID PULL 24VAC | NI | 2S-31602-08 | 4 | LAMP FIXTURE RANGE W/250V |
| | | | | NI | 2S-31602-09 | 4 | LAMP FIXTURE RANGE W/130V |
| | | | | | | | 480V Units |
| | | | | | | | 208-240V Units |
| | | | | | | | 480V Units |
| | | | | | | | 208V-240V Units |