



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

### FOR YOUR SAFTEY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINTIY OF THIS OR ANY OTHER APPLIANCE.

### POST IN PROMINENT LOCATION

INSTRUCTIONS TO BE FOLLOWED IN THE EVENT USER SMELLS GAS. THIS INFORMATION SHALL BE OBTAINED BY CONSULTING YOUR LOCAL GAS SUPPLIER. AS A MINIMUM, TURN OFF THE GAS AND CALL YOUR GAS COMPANY AND YOUR AUTHORIZED SERVICE AGENT. EVACUATE ALL PERSONNEL FROM THE AREA.

### WARNING

IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

> WARNING RISK OF FIRE OR ELECTRIC SHOCK DO NOT OPEN

### **WARNING,** TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE CONTROL PANEL. NO USER-SERVICABLE PARTS INSIDE. REPAIRS SHOULD BE DONE BY AUTHORIZED SERVICE PERSONNEL ONLY.

### NOTICE

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

Lang 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 Lang 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 dealer for service or required maintenance. Please record the model number, serial number, voltage and purchase & Installation Information in the area below and have it ready when you call to ensure a faster service.

Model No.:	Purchased From:
Serial No.:	Location:
Voltage:	Purchase Date:
1-Phase or 3 Phase:	Installed Date:



### **PROBLEMS, QUESTIONS or CONCERNS**

Before you proceed consult you authorized Lang service agent directory or Call the Lang Technical Service & Parts Department at 314-678-6315.

### TABLE OF CONTENTS

Specifications
Equipment Description
Unpacking
Installation
Leg Installation
Stacking the Oven
Vent Cap Installation
Ventilation & Clearance9
Electrical Connection
Oven Voltage
Reversing the door
Initial Start-Up
Pre-Power On
Power On
General Operation & Programming
Control Panel
Status Display
Control Panel Buttons
Loading
Pace Timers
Program Enable Buttons 14
Shelf Position Buttons
Cleaning
Troubleshooting
Symptoms & Possible Causes 15
Wiring Diagram
Exploded View & Parts List 24 - 34

NOTICE Service on this or any other Lang appliance must be performed by qualified personnel only. Consult your Lang Authorized Service Agent Directory. You can call our toll free number 314-678-6315 or visit our website www.langworld.com for the service agent nearest you.

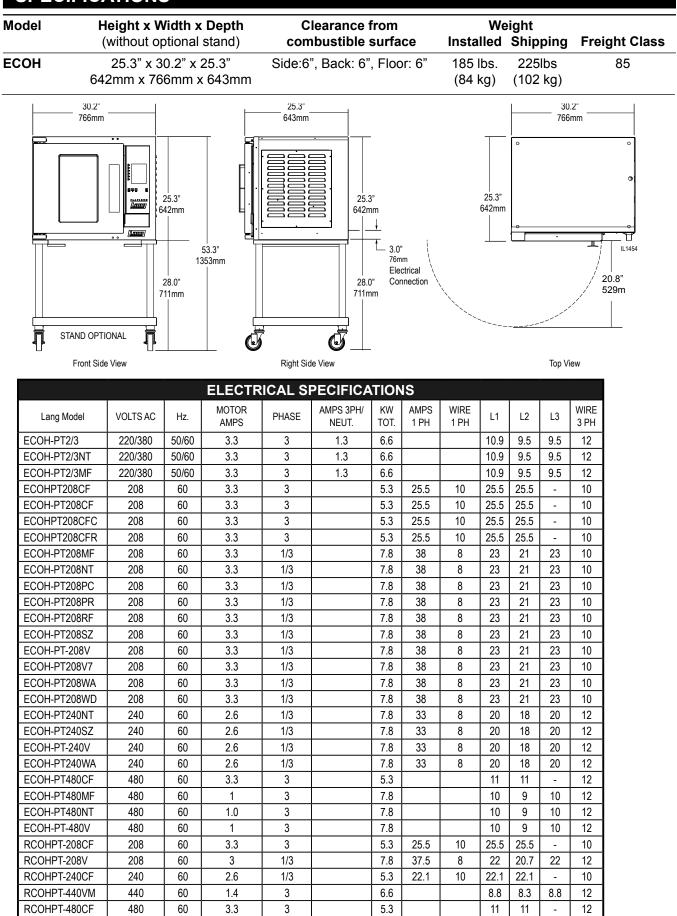
### SPECIFICATIONS

RCOHPT-480V

480

60

1.4



7.8

9.5

9

9.5

12

3

### **EQUIPMENT DESCRIPTION**

### **Exterior Construction**

The Top, Front, Back, and Sides are constructed of stainless steel with an aluminized bottom.

The oven exterior dimensions are:

30" (76.2 cm) Wide, 25.25" (74.3 cm) High, 26.5" (67.31 cm) Deep.

The oven door comes standard with a high temperature insulated window equipped with a polycarbonate handle.

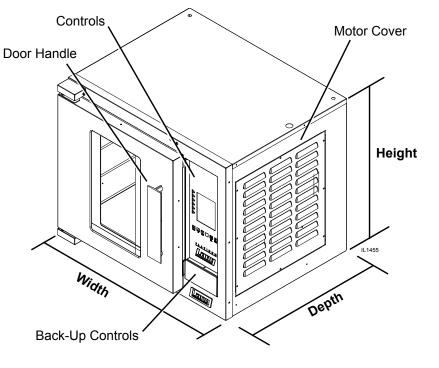
The oven cavity is insulated with high temperature insulation for efficiency and reduced heat loss.

### Interior Construction

The oven is designed for five shelves and comes with five Chrome Plated Racks.

The interior cooking chamber is constructed of stainless steel with dimensions of:

15" (38.1 cm) Wide, 20" (50.84 cm) High, 21" (53.38 cm) Deep.



Operation

The ECOH oven is a forced air convection oven with a vented oven cavity. The air is driven by a 1/3 HP fan motor.

### Controls

Pre-Programmable Product Selections Independent Shelf Timers for each Shelf. Shelf Compensation Timing for uniform baking.

### Technical

Oven operates as shipped 208V or 240V (single or three phase), or 480V (three phase).

The oven can be shipped with a Power Cord and Plug attached, but must be specified upon ordering (part number is listed in the Parts portion of this manual).

Floor space required is 42" (106.68cm) Wide, 32.5" (82.55cm) Deep.

The oven weighs approximately 225 lb. (102.5 Kilograms).

The ovens are stackable, stacking kit available upon request.

NOTICE The data plate is on the back side of the oven above the power cord. The oven voltage, wattage, serial number, wire size, and clearance specifications are on the data plate. This information should be carefully read and understood before proceeding with the installation.

### UNPACKING

### Receiving the Oven

Upon receipt, check for freight damage, both visible and concealed. Visible damage should be noted on the freight bill at the time of delivery and signed by the carrier's agent. Concealed loss or damage means it does not become apparent until the merchandise has been unpacked. If concealed loss or damage is discovered upon unpacking, make a written request for inspection by the carrier's agent within 15 days of delivery. All packing material should be kept for inspection. Do not return damaged merchandise to Star Manufacturing Company. File your claim with the carrier.



### Location

Prior to un-crating, move the oven as near to its intended location as practical. The crating will help protect the unit from the physical damage normally associated with moving it through hallways and doorways.

### Un-crating

The oven will arrive completely assembled inside a wood frame and strapped to a skid. Cut the straps and remove the wood frame.

The oven can now be removed from the skid.

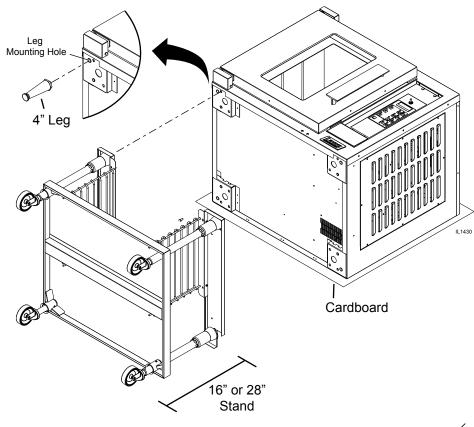


THE UNIT IS EXTREMELY HEAVY. FOR SAFE HANDLING, INSTALLER SHOULD **OBTAIN HELP AS NEEDED, OR EMPLOY APPROPRIATE MATERIALS** HANDLING EQUIPMENT (SUCH AS A FORKLIFT, DOLLY, OR PALLET JACK) TO CAUTION REMOVE THE UNIT FROM THE SKID AND MOVE IT TO THE PLACE OF INSTALLATION.

> ANY STAND, COUNTER OR OTHER DEVICE ON WHICH 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



### Leg Installation

4" legs are available for single countertop installations. Single and double deck installations require 16" or 28" stand installation, casters may also be used in certain situations.

To install the 4" legs, place some cardboard on the floor and gently tip the unit onto its back. Fasten the four, 4" legs into the threaded holes located on the bottom of the unit. Gently lift the oven into its operating position.

16" & 28" stand installation, after following the assembly instructions that were provided with the stand, gently lower unit on to some cardboard as shown here. Align the stand with the bottom of the unit and secure with the hardware provided. With the assistance of carefully raise the unit to its vertical position.

### **Stacking the Ovens**

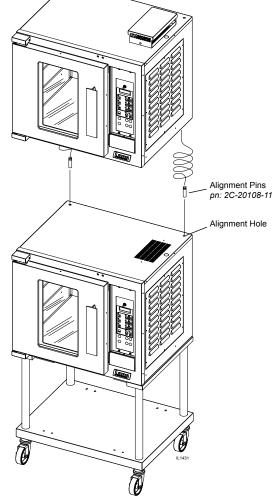
Two alignment pins (pn:2C-20108-11) are needed if you intend on stacking two ECOH on each other as shown. These pins must be requested at the time of purchase, or call your Lang authorized service agent, or Lang parts department at 314-678-6315, or a Lang Service Agent near you.

Having completed the previous step remove any and all button plugs from the lower unit, so the upper unit will lay properly.

Lay the upper unit on its back and screw the alignment pins into the two rear holes.

With assistance lift the upper unit onto the lower unit, being certain that the alignment pins go into the alignment holes, as shown here.

### NOTE: Each unit must have separate electrical connections



### **INSTALLATION** continued

### Ventilation and Clearances

Standard minimum clearance from combustible construction is as follows.

4" from side

### 4" from back

- 6" from floor
- These ovens may be set directly, without legs, on a curbed base or non-combustible floor.
- If the oven is set without legs on a non-combustible floor or a curbed base, maintain a 4-inch back clearance.
- If the oven is set directly against a non-combustible back wall, maintain a 6-inch clearance to the floor.
- Do not install the oven closer than 12 inches from an uncontrolled heat source (char broiler etc.) on the right side.
- Keep the area free & clear of combustible material, and do not obstruct the flow of combustion or ventilation air.
- The installation of any components such as a vent hood, grease extractors, and/or fire extinguisher systems, must conform to the applicable nationally 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.

### **Electrical Connection**

The electrical connection must be made 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).

The electrical service entrance is provided by a 1 1/4-inch knockout at the oven back directly behind the control compartment. A grounding lug is provided at the rear service entrance.

Certain units are provided with or can be purchased with a Cord & Plug kit (*Part number 9Q-ECOH-CK*). This kit includes a 48" cord with a NEMA L15-30P plug and is for 3 Phase units ONLY. In stacked situations each units needs to have separate cord & plug assemblies.

### Oven Voltage

The Lang Model ECOH ovens can be operated on 208, 240-volt (single or three phase), or 480-volt (three phase only) source. The Amp draw, KW rating, and phasing can be found in specification section of this manual.



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

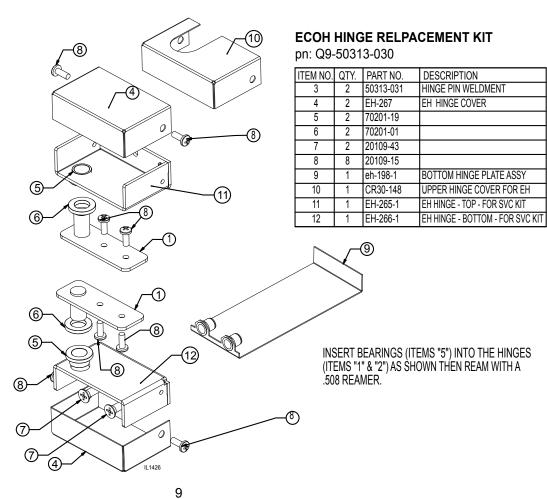


WARNING

NSTALLATION OF THE UNIT MUST BE DONE BY PERSONNEL QUAL-IFIED TO WORK WITH ELECTRICITY AND PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAM-AGE TO EQUIPMENT. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.

### **REVERSING THE DOOR**

- 1. Disconnect oven from power.
- 2. Remove the top and bottom door hinge covers (4) by removing the two 10-32 Phillip head screws (8).
- 3. Remove the top door hinge bracket (1) from the oven by removing the two ¼-20 Phillip head screws (7). The hinge should now slide off of the door pin (this will now be your right hand lower hinge)
- 4. Lift the door off the bottom pin and set aside.
- 5. Remove the bottom door hinge bracket (2) by removing the two ½-20 Phillip head screws (7) (this will now be your upper right hand hinge).
- 6. Remove the lower hinge mounting plate (9) by pulling it from behind the leg pad adapter on the bottom of the oven.
- 7. Remove the two Phillips head screws in the bottom right corner of the oven, where the new hinge will be placed.
- 8. Slide the hinge mounting plate (9) into place and mount the hinge bracket (this should be your old upper hinge) using two 1/4-20 (7) Phillips head screws.
- 9. Remove the two Phillips head screws in the upper right corner of the oven where the new hinge will be placed.
- 10. Rotate the door 180° and slide the door pin into the bottom hinge bracket.
- 11. Slide the upper door hinge (1) onto the upper door pin and then screw into place using two 1/4-20 Phillip head screws.
- 12. Place the top and bottom door hinge covers (4) back on the oven using two 10-32 Phillip head screws (8).



### **INITIAL START UP**

### Pre-Power On

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

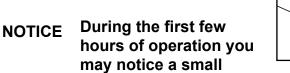
- The door opens and closes freely
- All racks are in the oven correctly
- All packing materials have been removed from the inside of the oven

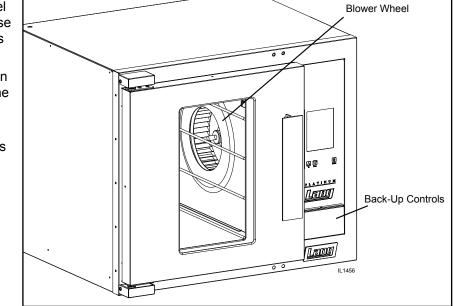
### Power On

Once the oven has been turned on verify that the blower wheel is spinning freely in a clockwise position and that the elements are heating properly.

Switch the back-up controls on and make certain it can run the unit,

Confirm that the thermostat knob in the back-up controls is move freely.





amount of smoke coming from the oven, and a faint odor from the smoke. This is normal for a new unit and will disappear after the first few hours of use.

### **GENERAL OPERATION & PROGRAMMING**

Convection ovens constantly circulate air over and around the product. This strips away the thin layer of moisture and cool air from around the product allowing heat to penetrate more quickly.

Always weigh your product. This will give you a more consistent size, color and quality.

To convert standard deck oven recipes, reduce the temperature 50 degrees and the time by 25%. Make minor adjustments as necessary.

The lower the oven temperature the more even the bake.

Check the product near the end of the initial cooking.

Do not open the oven door during baking, as this will change the baking characteristics of the oven and make it difficult to determine a final program.

If the product is overdone on the outside and underdone on the inside, reduce the baking temperature.

If the product is pulling away from the edge of the pan, the temperature is too high or the cooking time too long.

A convection oven is a mechanical piece of equipment. The same control settings will always give the same results. If the results vary, problems may be because of changes in the product preparation.

### ECOH-PT Control Panel

The control panel consists of the following items. Detailed operational descriptions are given later this section.

Power Switch: Turns the oven on and off

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

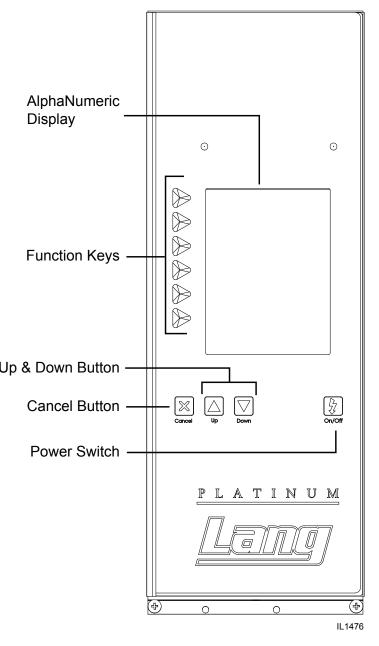
**Up & Down Buttons:** Allows you to scroll through the programming selections.

**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.

Alpha Numeric Display: Visual interface.

### **Typical Operation Sequence**

71 1			
ACTION	RESULT		
Press the on switch.	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 " <b>Preheating to</b> XXXF".		
Beeper sounds briefly.	Display says " <b>Ready</b> "		
Select Product to start.	Display shows possible product selection for that temperature.		
Select Product to start	Display says, "Select shelf"		
Press Product button next to desired shelf.	Display will show icon chosen and begin to count down.		
Beeper sounds continuously.	Display shows " <b>DONE</b> ", press button and remove product from that shelf.		
Oven is ready for another product.			
PLATI	NUM		



### **GENERAL OPERATION & PROGRAMMING CONT.**

### Loading

Here are some things to remember when loading your oven.

- When loading and unloading the oven, stage products and racks so the oven door is opened for the least amount of time.
- Be sure that racks are level within the oven.
- Bent or warped pans can greatly affect the evenness of the cook or bake.
- If using baker's parchment, be sure the parchment does not blow over the product. That will create an uneven bake.
- Load each shelf evenly. Spaces should be maintained equally between the pan and oven walls, front and back.
- Do not overload pan's this will create an uneven bake.
- For best baking results, load the oven from the center out during random loading.

### ALWAYS KEEP THE AREA NEAR THE APPLIANCE FREE FROM COMBUSTIBLE MATERIALS. KEEP FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID THE DANGER OF SLIPS OR FALLS.

# Record Your Menus Here Before Entering Your Program.

Record your specific menu items using the table below, prior to entering them into your units program. Keep for your records.

ex: Biscuits 11	Product Name
1	Icon No.
325°F	Cooking Temp
	Cooking Time
50%	Tier 1 Cooking Curve
H 100%	Cooking Curve Fan Speed
100%	Pulse Rate
	Cooking Temp
	Cooking Time
	Tier 2 Cooking Curve
	Fan Speed
	Pulse Rate
	Cooking Temp
	Cooking Time
	Tier 3 Cooking Curve
	Fan Speed Rate
	Pulse Rate

Product Icons: This list shows the icons available for your menu programs, they appear in the same order as shown here.

		4 Appetizer C, Option 2 24	5 Apple 25	6 Bagel A 26	7 Bagel B 27	8 Bagel C 28	9 Baked Potato 29	10 Banana 30	11 Biscuit 31	12 Bread French 32	13 Bread French Option 2 33	14 Bread Loaf 34	15 Bread Sourdough Round 35	16 Bread Stick 36	17 Brownies 37	18 Cake A Chocolate 38	10 Cake R White 30	
Icon No. Description 21 Casserole 22 Cheese Stick	Cheese Cake	I Cheery		Chicken Strips	Cinnamon Roll	3 Cinnamon Roll, Option 2	Cookie A	Cookie A, Option 2		Cookie C	3 Cookie Chocolate Chip	Cookie D	5 Cornbread	Doughnut	Doughnut, Option 2	3 Egg Dish	Egg Roll	
	43 French Fries		45 Hash browns	46 Hash browns, Option 2	47 Hoagie	48 Hot Dog	49 Lasagna	50 Lemon	51 Muffin A	52 Muffin B	53 Muffin C	54 Onion Rings	55 Onion Rings, Option 2	56 Pastry	57 Peanut	58 Pear	59 Pie A	
Icon No. Description 61 Pie C 62 Pie D	63 Pie Cherry	64 Pizza A	65 Pizza B	66 Pizza Cheese	67 Pizza Pepperoni	68 Pork Chop	69 Pot Pie	70 Potatoes	71 Pretzel	72 Quiche	73 Quiche, Option 2	74 Ribs	75 Roast Beef	76 Roll	77 Roll, Option 2	78 Sandwich A	79 Sandwich on Hoagie	
	81 Sausage		83 Seafood	84 Square	85 Star	86 Triangle	87 Vegetable	88	89 Vegetable	90 Birthday Cake								

### Platinum PROGRAMMING

### Platinum PROGRAMING

When using the Platinum 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 8 Select Product Name,
- Step 9 Select Product Temperature,
- Step 10 Select Tier Cook Time,
- Step 11 Select Cooking Curve,
- Step 12 Select Fan Speed,
- Step 15 Continue To Next Tier

Function Keys

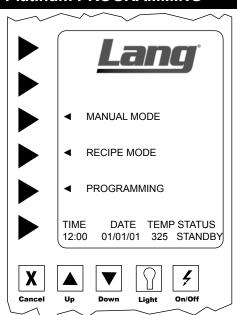
**Cooking Curve:** Cooking curve is a programmable function that adjusts the cooking time to compensate for planned times when the oven temperature would be lower than the programmed temperature.

(i.e. temperature loses 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).

**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.



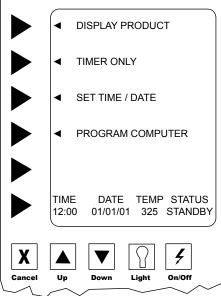
Step 1. Turn power switch on. If the oven is on, press cancel until the above screen is displayed.

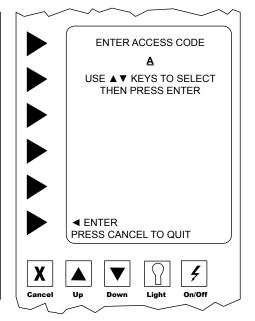
Step 2. Select PROGRAMMING

then

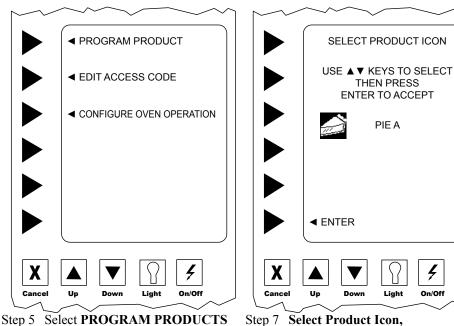
**CREATE NEW PRODUCTS** 

Step 6 Select





Step 4 Using the  $\blacktriangle \lor$  arrows, enter access code "A B C D E F" pressing ENTER after each letter.



Step 7 Select Product Icon, Step 8 This is the first screen in creating a product program. Press ▲ ▼ until you find a icon which resembles

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

**Note:** *Refer to the Chart on page 13 for a* selection of icons available.

SELECT PRODUCT NAME APPETIZER A USE ▲ ▼ KEYS TO SELECT PIE A ACCEPT ENTER Ļ X On/Off Cancel Up Light

> Select Product Name, This is where you enter the name of the product into the computer. Using the  $\blacktriangle \lor$  keys type over the default name, blank space is before the A and after the 9.

### Select ACCEPT to continue.

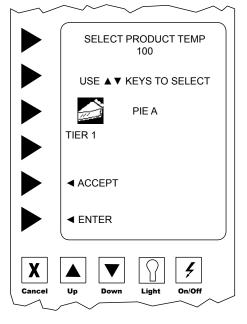
Note: Curser must be moved past the last digit to save the entire entry.

### your product.

Select PROGRAM COMPUTER

Step 3

### Platinum PROGRAMMING



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.

$\smile$ $\lor$		·
	SELECT TIER COOK TIME 00:45:00	
	USE ▲ ▼ KEYS TO SELECT	
	PIE A	
	TIER 1 TEMP: 320°F	
	▲ ACCEPT	
X	▲ ▼ ? 4	
Cancel	Up Down Light On/Off	
$\sim$ $\cup$		

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.

CORRECT?

USE ▲ ▼ KEYS TO SELECT

PIE A

NO

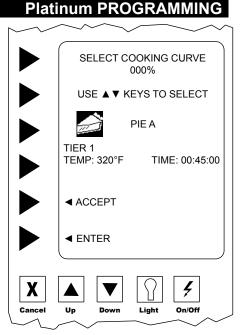
TIME: 00:45:00

Ļ

On/Off

RATE: 100%

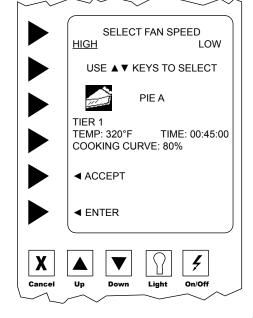
Select ACCEPT to continue.



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.



Step 12 Select Fan Speed,

Press the  $\blacktriangle \lor$  to move the curser between the HIGH and LO settings.

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

# ► ENTER

YES

TIER 1

FAN: HI

TEMP: 320°F

CCURVE: 80%

▲ ACCEPT

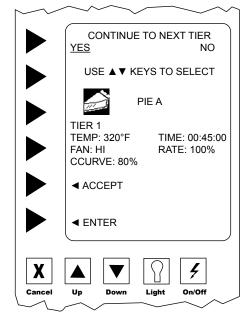
### Step 13 Correct

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

Selecting **YES** will advance the screen.

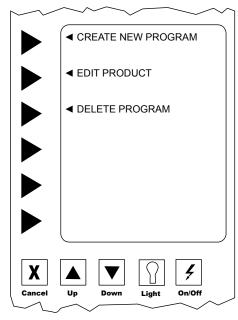
### 16

### Platinum PROGRAMMING

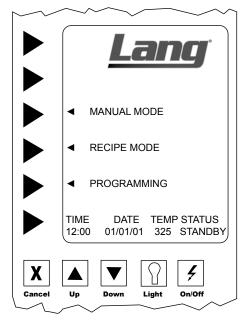


Step 15 Continue To Next Tier The cursor automatically appears on NO. Select ENTER or ACCEPT to end programming or

> move the curser  $\blacktriangle \lor$  to YES. This will allow your to enter another tier to this program, repeating steps 6 - 14 to program second tier.



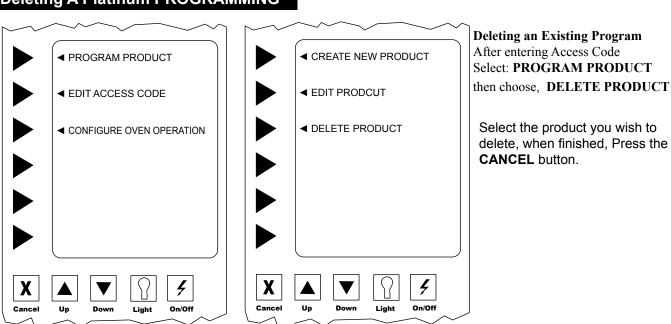
Step 16 After programing the last tier, the computer will automatically advance the screen to program more products. If no other products need to be programmed, select **CANCEL** three times to advance screen to the boot up screen.



### 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 run oven



### Deleting A Platinum PROGRAMMING

### MAINTENANCE

- 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.



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



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.

### Troubleshooting

### Symptoms & Possible Causes

The following are charts of Symptoms and Possible Causes to aid in diagnosing faults with your unit. Refer to the symptoms column to locate the type of failure then to the Possible Cause for the items to be checked. To test for a possible cause refer to test to identify test procedures. Test indicated with an "\*" should be done by a Lang factory authorized service representative.

Symptoms	Possible Cause	Possible Cause	Test	
	No power to cord outlet	Product is cooked too	No test available, operational	
	Oven unplugged from outlet	long	condition	
Power indicator is not lit	Failed Power cord or plug	Failed Probe	Check probe for proper resistance*	
	Failed power switch		Confirm that Circuit board is getting	
	Failed indicator light	Failed Circuit board	correct voltage and putting out correct voltage*	
	Power Switch is not "ON"		Check both Primary and Secondary	
	Failed Transformer	Failed Transformer	coils for correct voltage*	
	Failed Probe		Remove the wires from the	
Oven will not heat	Failed Circuit board		contactor coil and check for	
	Failed Contactor	Failed Contactor	continuity across the contactor coil connection*	
	Failed Over-temperature Thermostat		Ensure the contactor moveable	
	Failed Element		points move freely up and down*	
	Power Switch is not "ON"		Confirm that motor is getting correct voltage*	
Oven motor will not	Failed Transformer	Failed Motor		
run	Failed Contactor	Failed or disconnected	Check across the thermostat	
	Failed Motor	safety thermostat	connectors for continuity*	
	Product is cooked too long	Failed Element	Confirm that Elements are getting	
Product burning	Failed Probe		correct voltage and have continuity*	
	Failed Circuit board			
	Product is not cooked long enough			
Product is under done	Failed Probe			
	Failed Circuit board			

NOTICE

CE If an item on the list is followed by an asterisk (\*), the work should be done by a Lang factory authorized service representative.



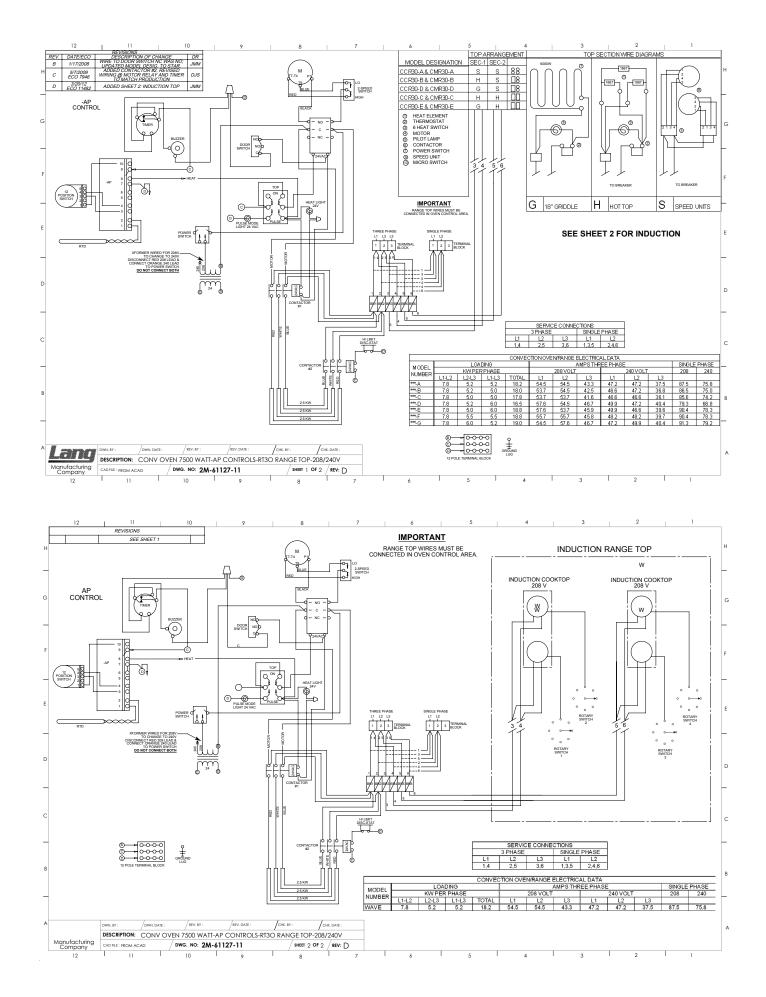
USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY LANG OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE BODILY INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

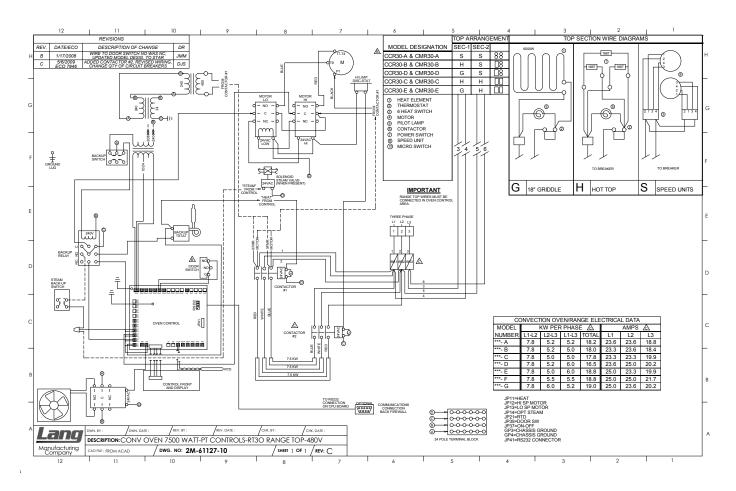
NOTICE

E Service on this or any other Lang appliance must be performed by qualified personnel only. Consult your Lang Authorized Service Agent Directory. You can call our toll free number 314-678-6315 or visit our website www.langworld.com for the service agent nearest you.

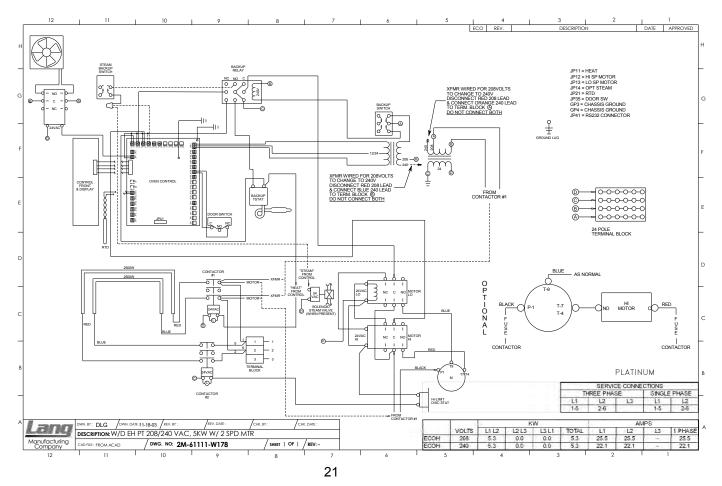


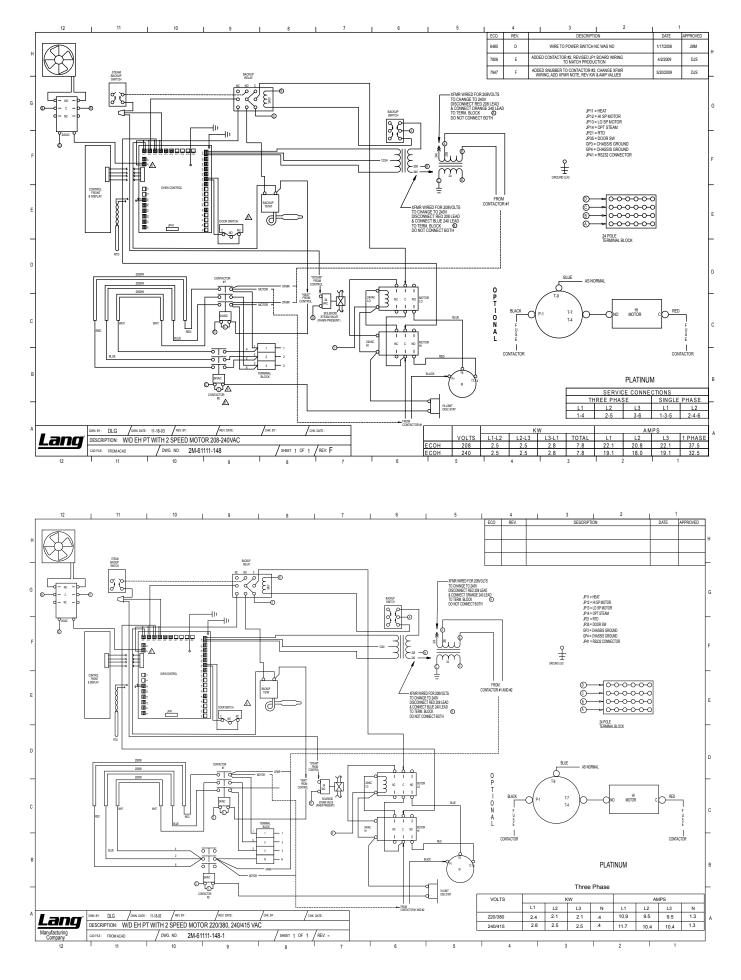
BOTH HIGH AND LOW VOLTAGES ARE PRESENT INSIDE THIS APPLIANCE WHEN THE UNIT IS PLUGGED/WIRED INTO A LIVE RECEPTACLE. BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY.

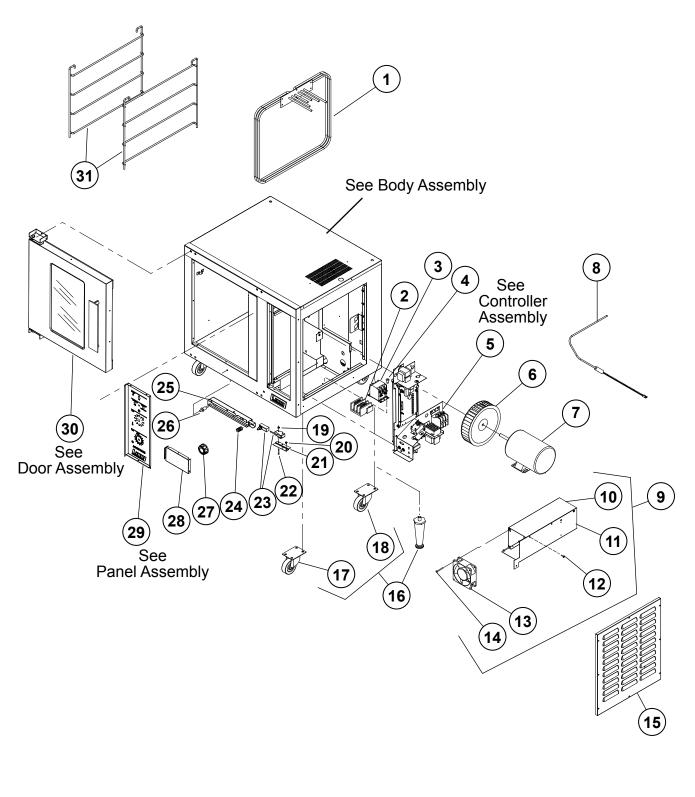




Wiring Diagram for: ECOH-PT208CF









ECOH Complete Assembly



### Model No: ECOH & RCOH, AP, PP & PT CONTROLS Commercial & Marine Half Size Economy Convection Oven

Fig No	PART NO	Qty	DESCRIPTION	Application			
	2N-11090-20		ELMNT EHS 208V 7.5KW	208V/208VM			
4	2N-11090-21		ELMNT EHS 240V 7.5KW	240V, ECOH-AP208FA, ECOH-AP2/3FA, ECOH-PP2/4BK, ECOH-AP-2/3, RCOHAP-2/3V			
1	2N-11090-22	1	ELMNT EHS OVEN 480VAC 7.5KW	440VM, 480V, 480VM			
	2N-11090-23		ELMNT EHS OVEN 208VAC 5.0 KW	RCOHAP-208KR, RCOHRAP208KR, RCOHPT-208CF, RCOH-AP-208CF			
	2N-11090-24		ELMNT EHS OVEN 240VAC 5.0	ECOH-AP240CF, RCOHAP-240CF, RCOHPT-240CF			
	2E-30500-15		TRM BLOCK 4 POLE 115AMP	ECOH-AP-2/3			
	2E-30500-07		TRM BLOCK 3PLELRGE 125AMP	ECOHPT208CFR, RCOHPT-208CF, RCOHPT-240CF, RCOHAP-208CF			
2	2E-30500-09	1	TRM BLOCK 3 POLE SMALL 95	ECOH-AP-208V/208M/240V/208DR, ECOH-AP-480V480/M, RCOHAP- 208V/VM, RCOHAP-240VM, RCOHAP-440VM, RCOHAP-480V/VM, RCOHAP-480V/480M, RCOHRAP-480V/480M, RCOHPT-440VM			
3	2E-30700-06	1	CONTC3POLE35A, 24VAC	ECOH-AP-208V/VM, 240V/VM, 440M, 480V/VM, ECOH-AP2/3FA, ECOH-AP208CF, ECOH-AP208DR, ECOH-PP208/240V, ECOH-PT-208/240V			
4	2C-20102-08	2	SCRW PHD ST 8-32X.375	ECOH-AP-208V/VM, 240V/VM, 440M, 480V/VM, ECOH-AP2/3FA, ECOH-AP208CF, ECOH-AP208DR,			
	Q9-60101-767		PANEL EH 208/240V	ECOH-AP-208, 208M, 240V, 208DR			
	Q9-EHPAP-GFA		PANEL EH 220/380V ACCU-PLUS FA	ECOH-AP208FA, ECOH-AP2/3FA			
	Q9-EHPAPRT-C		PANEL EH 208/240V AP W/RT30	RCOHAP-208KR, RCOHAP-208V, RCOHRAP208KR			
	Q9-EHPAP-U		PANEL EH 480 VOLT ACCU-PLUS	ECOH-AP-480M, 480V, RCOHAP-480V, 480VM, RCOHRAP-480M, 480V			
5	Q9-EHPPP-C		PANEL EH 208/240V PURPLE w/COOLING FAN ASSY	ECOH-PP-208V, 208BK, 208WB, 240BK, 240WB (Before 6-01-2009)			
5	Q9-EHPPP-C-W1		PANEL EH 208/240V PP	ECOH-PP-208V, 208BK, 208WB, 240BK, 240WB, (After 6-01-2009)			
	Q9-EHPPP-C-S		PANEL EH 208/240V PURPLE w/o COOLING FAN ASSY	ECOH-PP-208V, 208BK, 208WB, 240BK, 240WB			
	Q9-EHPPT-C	1	PNEL ASSY EHS-PT 208/240/480V	ECOH-PT, RCOHPT (Before 6-01-2009)			
	Q9-EHPPT-C-W1	]	PANEL EH 208/240V PT	ECOH-PT, RCOHPT (After 6-01-20090			
	Q9-EHPPP-CE		PANEL EH PURPLE PLUS - CE	ECOH-PP2/4BK			
6	2U-71500-06	1	BLOWER WHEEL EHS OVEN	ALL			
	2U-30200-16		MOTOR 1/3HP 460V/1/60HZ 2SP	ECOH-AP-480V, ECOH-AP-480M, ECOH-PT-480V, ECOH-PT480CF, ECOH-PT480MF, RCOHAP-480V, RCOHAP-480M, RCOHRAP-480M, RCOHRAP-480V, RCOHPT-440VM, RCOHPT-480CF			
7 1 2U-30200-17		1	MTR 1/3HP208/240V1PH2SPD	ECOH-AP-208M, ECOHAP-208V, ECOH-AP-240V, ECOH-AP208DR, ECOH-PP-208V, ECOH-PP208BK, ECOH-PP208WB, ECOH-PP240BK, ECOH-PP240WB, ECOH-PT-208V, ECOH-PT-240V, ECOH-PT208CF, ECOH-PT208MF, ECOH-PT208NT, ECOH-PT208RF, ECOH-PT208SZ, ECOH-PT208V7, ECOH-PT208WA, ECOH-PT208WD, ECOH-PT240SZ, ECOH-PT240WD, ECOHPT208CF, ECOHPT208CFC, ECOHPT208CFR, RCOHAP-208KR, RCOHAP-208V, RCOHPT-208CF, RCOHPT-208V, RCOHPT-240CF, RCOHRAP208KR, ECOH-AP208FA, ECOH-AP2/3FA, ECOH-PP2/4BK, ECOH-AP-240CF			
8	2E-41100-12	1	SENSOR EHS OVEN 450 DEG	ALL			
9	Q9-EH-268	AR	EH COOLING FAN ASSY	ECOH-PP-208/240V, ECOH-PT-208/240/480V, RCOHPT-208/240CF/ 480CF, ECOH-PP2/4BK			
10	Q9-EH-268-2	1	AIR DUCT BACK	ECOH-PP-208/240V, ECOH-PT-208/240/480V, RCOHPT-208/240CF/480CF			
11	Q9-EH-268-1	1	AIR DUCT FRONT	ECOH-PP-208/240V, ECOH-PT-208/240/480V, RCOHPT-208/240CF/480CF			
12	2C-20103-02	6	SCRW SM PLT 10 X .5 PHLSL	ECOH-PP-208/240V, ECOH-PT-208/240/480V, RCOHPT-208/240CF/480CF			

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PAGE	1
OF	2

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### PARTS LIST

### Model No: ECOH & RCOH, AP, PP & PT CONTROLS Commercial & Marine Half Size Economy Convection Oven

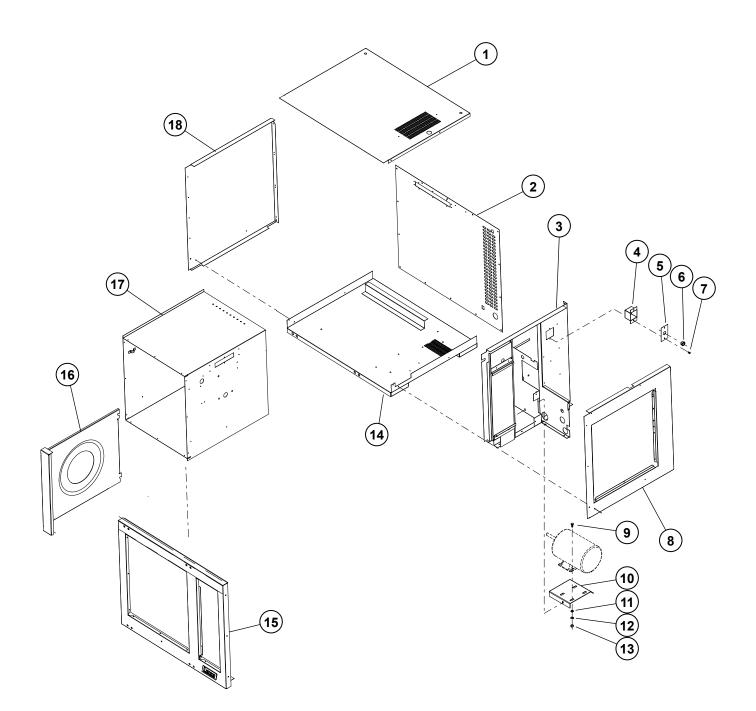
Fig No	PART NO	Qty	DESCRIPTION	Application		
13	2U-30200-46	1	MTR W/FAN AXIAL 220VAC70C	ECOH-PP-208/240V, ECOH-PT-208/240/480V, RCOHPT-208/240CF/480CF		
14	2C-20109-31	4	SCRW S/S 8-32 X 1-3/4 T/H PHIL	ECOH-PP-208/240V, ECOH-PT-208/240/480V, RCOHPT-208/240CF/480CF		
15	Q9-60102-1368		MTR COVER EH (EH-141) & HRDW	ALL		
	2A-72500-02		LEG 4 SS MM	ECOH-AP208DR, ECOH-PT208V7		
	2A-72500-05	1 4	LEG 4 W/BOLT DOWN ADJ	ECOH-AP-208M, RCOHAP-440/480VM, RCOHRAP-480M		
16	9Q-ECOH-C4		CASTERS (SET OF 4)	sold as an accessory with most units		
	Q9-EHS-4C	1	CASTERS (SET OF 4)	RCOHAP-208KR, RCOHAP-208V, RCOHAP-480V, RCOHPT-208CF, RCOHPT-208V, RCOHPT=240CF, RCOHPT-480CF		
17	2P-72901-17	2	CSRT SWVL W/BRK 35/16TRD	RCOHAP-208KR, RCOHAP-480V, RCOHPT-208CF		
18	2P-72900-04	2	CSTER RIGID 3,5/16WTRD	RCOHAP-208KR, RCOHAP-480V, RCOHPT-208CF		
19	2C-20301-10	2	NUT HEX 6-32 PLTD	ECOH, RCOH		
20	2C-20101-65	2	SCRW MS PLT 10-32 X .25 THD	ECOH, RCOH		
21	Q9-EH-356	1	SWITCH BRACKET	ECOH, RCOH		
22	2C-20101-17	2	SCRW RND MS 6-32X1 PLTD	ECOH, RCOH		
	2E-30301-17		SWT MICRO PLUNGER XLH	V-27971 & W-48418, Pre 2007		
23	Q9-51100-18	1	SWITCH ARM, MICRO	ECOH, RCOH		
24	2P-51001-12	1	SPRG COMPRSN.665ID X 1.4 LONG	ECOH, RCOH		
25	Q9-EH-250	1	WELD SWITCH ARM	ECOH, RCOH		
26	Q9-EH-350	1	SWITCH PLUNGER - ASSY	ECOH, RCOH		
27	Y9-70701-18	1	KNOB ASSY 450°	ECOH-AP, ECOH-PT, ECOH-PP, RCOH-AP, RCOH-PT		
28	Q9-60102-112	1	SWITCH DOOR - ASSY EH	ECOH-PP-208V		
	Q9-60101-765		ECOH-PT / EHS-PT CNTROL FRONT	ECOH-PT, RCOH-PT		
29	Q9-60101-766	1	ECOH-PP / EHS-PP CNTRL FRONT	ECOH-PP		
30	Q9-51100-53	1	DOOR ASSY EHS/GHS WINDOW	ALL		
24	2B-50200-83		RACK SLIDE EHS	ECOH-AP, ECOH-PT, ECOH-PP, RCOH-AP, RCOH-PT		
31	2B-50200-83-1	2	EH RACK SLIDE - PICADILLY	ECOH-AP240RS		
NI	2B-50200-34	5	RACK HALF SIZE OVENS	ECOH-AP, ECOH-PT, ECOH-PP, RCOH-AP, RCOH-PT		
NI	2C-20108-01	2	STACKING PINS	ALL		
NI	2E-31200-02	1	LUG GROUNDING UL APPROVED	ALL		
NI	2E-31800-01	6	CB 250V50A 1 POLE CRLNGSW	RCOHAP-208KR, RCOHAP-208V, RCOHPT-208CF		
NI	2E-31800-04	2	CB 480V 50A 3 POLE	RCOHAP-480V		
NI	2E-31800-04	1	CB 480V 50A 3 POLE	RCOHPT-440VM		
NI	2E-60101-75	1	EHS CORD KIT BK/DENNY'S	ECOH-PP208BK, ECOH-PP2/4BK, ECOH-PT208PC, ECOH-AP240CF		
NI	2K-70801-03	1	SNAP BUSH 3/8 SB375-4 BLK	ECOH-PP-208V		
NI	2K-70801-04	AR	SNAP BUSH 3/4 SB750-10	ECOH		
NI	2M-61111-135	1	WD EHS-AP 208V-240VAC	ECOH-AP-208V		
NI	2M-61111-148	1	WD EHS-PP 208-240VAC 2SPD	ECOH-PP-208V		
NI	2M-61111-163	1	WD EHS-AP 480V	ECOH-AP-480M		
NI	Q9-60102-97	1	DOOR SEAL EH w/ mnting hardware			
NI	Q9-EH-550	1	WIRING HARNESS, ELEMENT	ALL		
NI	Q9-EH-551	1	WIRING HARNESS, HIGH VOLT	ALL		
NI	Q9-EH-553	1	WIRING HARNESS, LOW VOLT	ALL		
NI	Q9-EH-554	1	WIRING HARNESS, PWR SWITCH	ALL		

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PAGE	2
OF	2

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ECOH Body Assembly

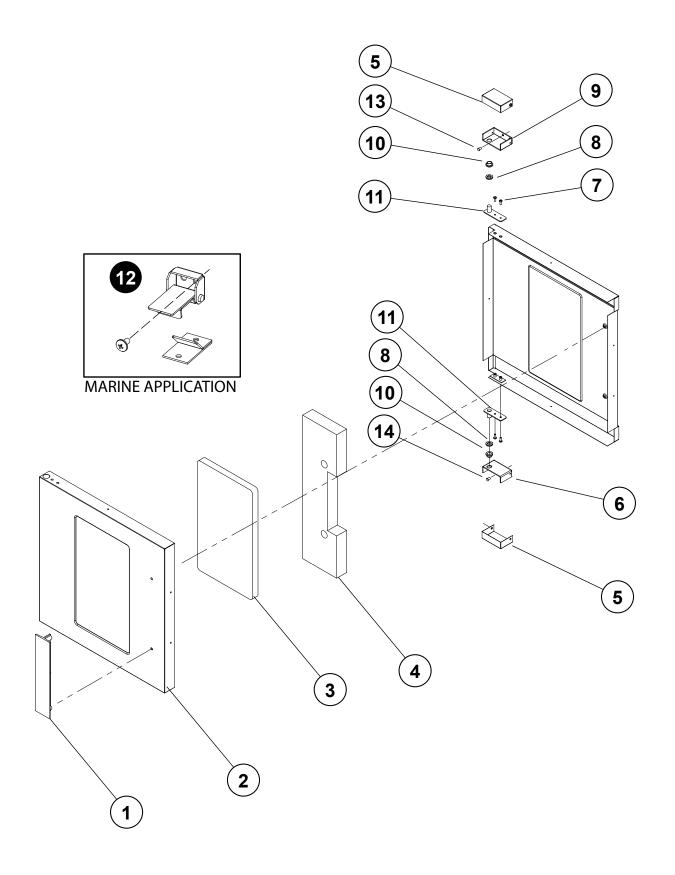


### PARTS LIST

### Model No: ECOH & RCOH, AP, PP & PT BODY PANELS Commercial & Marine Half Size Economy Convection Oven

Key Number	Part Number	Qty Per	Description				
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16 17 18	Q9-60102-136 Q9-60102-1361 Q9-EH-119-2 Q9-EH-136 2K-70801-04 2C-20103-02 Q9-60102-1364 2C-20104-41 Q9-EH-209 2C-20201-09 2C-20201-09 2C-20301-06 Q9-EH-104-2 Q9-EH-452-2 Q9-EH-452-3 Q9-EH-452-3 Q9-EH-374-3 Q9-60102-1365	1 1 1 1 1 2 1 4 1 1 1 1 1 1 1 1 1	BODY TOP EH & HRDW BODY BACK EH & HRDW FIREWALL - ASSY SAFETY STAT BOX ASSY SAFETY STAT COVER SNAP BUSH 3/4 SB750-10 BLK SCRW SM PLT 10 X .5 PHLSL BODY R/H SIDE EH & HRDW SCRW MACH 1/4-20X5/8 H/H MOTOR MOUNT WSHR PLT 5/16 LOCK SPLIT WSHR PLT 5/16 FLAT SAE NUT HEX 5/16-18 PLTD BOTTOM SPOT WELD FRONT - ASSY REVERSIBLE BAFFLE STD BAFFLE ASSY STEAM CAN ASSY STD - INEW RACK BODY L/H SIDE EH & HRDW	ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL			
	IMPORTANT: WHEN ORDERING, SPECIFY VOLTAGE OR TYPE GAS DESIRED PAGE 1   INCLUDE MODEL AND SERIAL NUMBER OF 1   Some items are included for illustrative purposes only and in certain instances may not be available. Image: Comparison of the standard series of the standa						





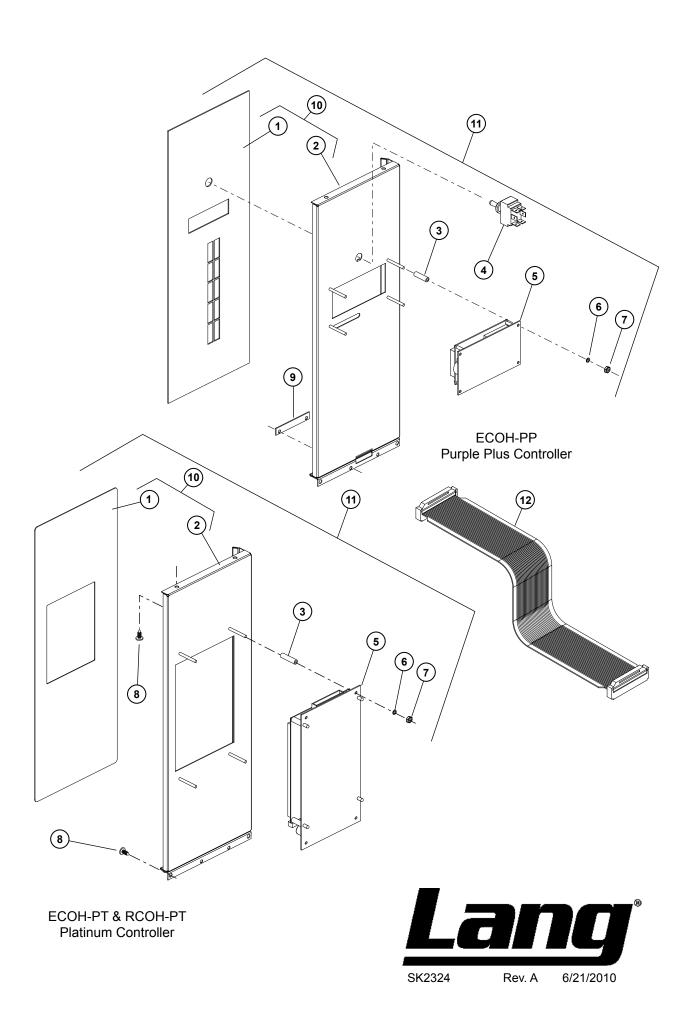
ECOH, RCOH Door Assembly



### Model No: ECOH & RCOH, AP, PP & PT DOOR ASSEMBLY Commercial & Marine Half Size Economy Convection Oven

Key Number	Part Number	Qty Per	Description					
1 2 3 4 5 6 7 8 9 10 11 12 13 14	2R-50800-12 Q9-60102-1362 2Q-71301-04 2H-60106-17 Q9-EH-267 Q9-EH-266 2C-20109-15 2P-70201-01 Q9-EH-265 2P-70201-19 Q9-50313-031 Q9-60102-370 2C-20109-30 2C-20109-43	1 1 2 1 4 2 1 2 2 1 2 2	DOOR T HANDLE 11 1/2 LNG OUTER DOOR EH NO/LOGO WINDOW ASSY 9-5/8X16-5/8 INSULATION KIT EHS DOOR - HINGE COVER HINGE BOTTOM SCRW PHD MS SS 10-32X1/2 BRNZBR.505IDX.8750DX.175 HINGE TOP BRNZBRFLN1/2IDX5/80DX3/8 HINGE PIN - WELD DOOR LATCH ASSY SCRW MS SS 10-32 X .75 PH FLT SCRW SS 1/4-20 S 3/4 FLTHD PHIL	ALL ALL ALL ALL ALL ALL ALL ALL ALL ALL				
COMPLET	TE DOOR ASSY Q9-51100-53 Q9-F6-423	1	COMPLETE DOOR ASSY W/WINDOW COMPLETE DOOR ASSY W/OUT WINE					
IMPOR	ED	PAGE <u>1</u> OF <u>1</u>						
Some ite	Some items are included for illustrative purposes only and in certain instances may not be available.							

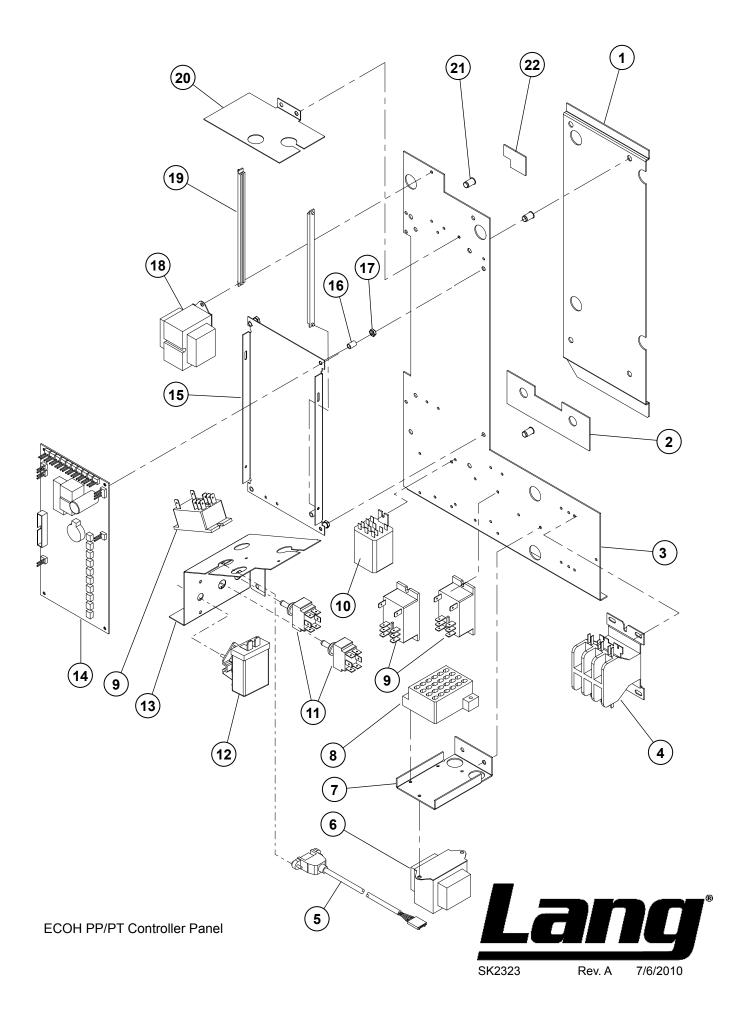




### Model No: ECOH & RCOH, PP & PT CONTROL ASSEMBLY Commercial & Marine Half Size Economy Convection Oven

Key Number	Part Number	Qty Per	Description	
			Description SWITCH LBL EH 4X20 SWITCH LBL EH PLATINUM ECOH-PP / EHS-PP CNTRL FRNT W/PROTO CONTORL PANEL - EH-PT SPACER NYLON #6 1/4 X 1″ SWT TOG ON-ON DPDT BLK DSPLY 4X20 MDL DA170-001 ( <i>NO CABLE</i> ) DSPLY 320X240 DB170-001 .140#6IDX.2500DX.032 NUT HEX 6-32 PLTD NUT HEX 6-32 PLTD SCRW SM PLT 10 X .5 PHLSL TP A COMPUTER STRIP HOLDER ECOH-PP / EHS-PP FRNT W/LABEL ECOH-PT / EHS-PT FRNT W/LABEL ECOH-PT / EHS-PT CONTROL FRONT CABLE ASSY - RIBBON 12 PT PRODUCT STRIP PURP BK OBS PRDCT STRIP-BLU/PURP COMPH	ECOH-PP ECOH-PT, RCOHPT ECOH-PP ECOH-PT, RCOH-PT ECOH-PP, ECOH-PT, RCOH-PT ECOH-PP ECOH-PT, RCOH-PT ALL ECOH-PP ECOH-PT, RCOH-PT ALL ECOH-PP ECOH-PP ECOH-PP ECOH-PT, RCOH-PT ECOH-PP ECOH-PP, ECOH-PT, RCOH-PT ECOH-PP ECOH-PP ECOH-PP ECOH-PP ECOH-PP ECOH-PP
	INCLUDE MODE	L AND SE	►Y VOLTAGE OR TYPE GAS DESIRED RIAL NUMBER purposes only and in certain instances ma	PAGE <u>1</u> OF <u>1</u>





### Model No: ECOH & RCOH, PP & PT CONTROL PANEL ASSEMBLY Commercial & Marine Half Size Economy Convection Oven

Key Number	Part Number	Qty Per	Description						
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 NI NI NI NI NI NI NI NI	Q9-EH-495 Q9-EH-495-1 Q9-EH-505 2E-30700-06 2J-31110-W1 2E-31400-07 Q9-EH-507 2E-30503-01 2E-30701-05 2E-30600-02 2E-30600-07 2E-30303-06 2E-30303-06 2E-30303-06 2E-30303-09 PS-40102-W26 Q9-EH-509 PS-40102-W26 Q9-50307-47 2A-20501-01 2C-20301-10 Y9-31400-26-1 2E-31400-28 2E-41800-02 Q9-EH-513 2C-20306-03 Q9-EH-495-2 Q9-40102-51-1 Q9-ECCOPPT-C Q9-ECCOPPT-C Q9-ECCOPPT-C Q9-ECCOPPT-U 2E-30303-05 2E-30500-15 2E-30702-02 Q9-40705-03	1 1 1 1 1 1 1 1 2 1 1 2 2 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1	COMPUTER CONTROL SLIDE SLIDE CLIP A COMPONENT MOUNT C,P,PP CONTC3POLE35A24VAC50/60HZ USB PNL MNT CABLE TO SOCKET XFORMR120-208-240/24V40VA TERMINAL BLOCK MOUNT TRM BLOCK 24 POS QK CON CONTC 2POLE 30A 24VAC P & CONTC 2POLE 30A 24VAC P & RELAY 240VAC 3FORMC FLNG RELAY 240VAC STORMC FLNG RELAY 240VAC FLANGE MNT SWT TOG ON-ON DPDT BLK SWT TOG ON-ON DPDT BLK SWT TOG ON-ON DPDT BLK STAT ADJ 450 DEG 48 PILOT SWITCH BRACKET MAIN BOARD, MDL.CA170-001 CPU MOUNT SPCR FBR 1/4 OD #8 ID 3/8 NUT HEX 6-32 PLTD XFORMR 208-240/24-12 40VA XFORMR208-240/24-12 40VA XFORMR208-240/24-12 40VA XFORMR208-240/24-12 40VA XFORMR208-240/24-12 40VA XFOR FBR 1/4 OD #8 ID 3/8 NUT HEX 6-32 PLTD XFORMR 208-240/24-12 40VA XFOR SUB COMBER SHIELD AVK CAD 10-32 1ST GRP SLIDE CLIP B FILTER BOARD PHANTOM - PANEL ECCO 208/240V PANEL ECC	ECOH-PP, ECOH-PT, RCOH-PT ECOH-PP, ECOH-PT, RCOH-PT ECOH-PP					
	IMPORTANT: WHEN ORDERING, SPECIFY VOLTAGE OR TYPE GAS DESIRED PAGE 1   INCLUDE MODEL AND SERIAL NUMBER OF 1   Some items are included for illustrative purposes only and in certain instances may not be available. Value								



### **STAR INTERNATIONAL HOLDINGS INC. COMPANY**

Star - Holman - Lang - Wells - Bloomfield - Toastmaster 10 Sunnen Drive, St. Louis, MO 63143 U.S.A. (314) 678-6303 www.star-mfg.com