

Lincoln Aperion 24 Impinger® Conveyor Oven

Service Manual

For 60 HZ





Safety Notices

DEFINITIONS

▲ DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This applies to the most extreme situations.

A Warning

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

∴ Caution

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Notice

Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

NOTE: Indicates useful, extra information about the procedure you are performing.

Read These Before Proceeding:

▲ DANGER

Do not install or operate equipment that has been misused, abused, neglected, damaged, or altered/modified from that of original manufactured specifications.

Important

Read these instructions for use carefully so as to familiarize yourself with the appliance before connecting it to its gas container. Keep these instructions for future reference.

AWarning

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

A Warning

Authorized Service Representatives are obligated to follow industry standard safety procedures, including, but not limited to, local/national regulations for disconnection / lock out / tag out procedures for all utilities including electric, gas, water and steam.

A Warning

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision concerning use of the appliance by a person responsible for their safety. Do not allow children to play with this appliance.

A Warning

This equipment is intended for indoor use only. Do not install or operate this equipment in outdoor areas.

A Warning

Do not use electrical appliances or accessories other than those supplied by the manufacturer.

FOR YOUR SAFETY

Do Not Store Or Use Gasoline Or Other Flammable Vapors Or Liquids In The Vicinity Of This Or Any Other Appliance.

AWarning

Never use a high-pressure water jet for cleaning or hose down or flood interior or exterior of units with water. Do not use power cleaning equipment, steel wool, scrapers or wire brushes on stainless steel or painted surfaces.

! Caution

Maintenance and servicing work other than cleaning as described in this manual must be done by authorized service personnel.

/ Caution

Improper cleaning of oven could damage catalyst(s) in ventless models and will void unit warranty.

NOTE: Proper installation, care and maintenance are essential for maximum performance and trouble-free operation of your equipment. Visit our website www.wbtkitchencare.com for manual updates, translations, or contact information for service agents in your area.

Table of Contents

	Safety Notices	2
	Definitions	
Section 1		
General Informatio	an an	
General informatio	л	
	Purchaser's Responsibility	
	Additional Requirements	6
Section 2		
Installation		
		_
	Exterior Dimensions	
	Utility Specifications	
	Canopy Ventilation Recommendations	
	Installation Requirements	
	Gas Code Requirements	
	Electrical Code Requirements	
	Spacing Requirements	
	Ventilation Guidelines	
	Ventilation Requirements	
	Restraint Requirement – Oven(s) on Casters	
	Installation	
	Uncrating	
	Installation of 2424 Oven	
	For Countertop Installation	
	•	
	For Floor Installation	
	Start-Up Procedures	
	Smoke Candle Test – Ventilation System Verification	
	Installation Checklist	
	Checklist	
	CHECKIIST	1/
Section 3		
Sequence of Opera	ations	
	Unit Plugged Into Power	10
	Power Switch Turned On	
	Press & Go Button Selected	
	Chef Mode (Manual Mode) Selected	_
	Cher Wode (Wandar Wode) Selected	10
Section 4		
Maintenance		
	Operator Maintenance	20
	Cleaning Instructions	
	Daily Cleaning	
	Weekly Cleaning	
	Conveyor Removal	
	Finger Removal	
	Preventive Maintenance	

Section 5		
Troubleshooting		
_	General Issues	າວ
	UI Alarm Messages	
	Of Alum Wessuges	
Section 6		
Operation and P	rogramming	
	Introduction	29
	Startup	
	Recipe Selection (Press& Go Button)	
	ECO Mode	
	Manual Mode	31
	Changing Temperature and Cook Time (Belt Speed)	31
	Settings Mode	33
	Diagnostics Mode	36
	Oven Shut Down	37
Section 7		
	ation & Adjustments	
iterriovai, iristant	-	
	Solid State Relay - Replacement	
	Blower Motor Driver - Replacement	
	I-O Board - Replacement	
	24 Volt Power Supply - Replacement	
	Conveyor Motor Driver - Replacement	
	Dual Voltage Control Board - Replacement	
	Cooling Fan - Replacement	
	Heating Element - Replacement	
	Fan Motor - Replacement	
	Contactor - Replacement	
	Circuit Breaker - Replacement	
	Conveyor Motor - Replacement	
	Touchscreen - Replacement	
	On/Off Switch - Replacement	
	Fuse Holder - Replacement	
	USB Socket - Replacement	
	Terminal Block - Replacement	
	Cooling Fan Thermostat - Replacement	
	Cavity HI-Limit - Replacement	
	Control Box HI-Limit - Replacement	
	Thermocouple - Replacement	
	Conveyor Belt - Replacement	
	Conveyor Bearings - Replacement	
	Conveyor Shaft - Replacement	
	Conveyor Sprocket - Replacement	
	4A DC Circuit Fuse - Replacement	
		
Section 8		
Diagrams		
	Wiring Schematics	43
	-	

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Section 1 General Information

Purchaser's Responsibility

It is the responsibility of the purchaser:

- To see that the gas and electric services for the oven are installed on site in accordance with the manufacturer's specification.
- 2. To unload, uncrate, and install the oven in its proper location; in accordance with this installation/operation manual.
- 3. To see that the gas and electric services are connected properly by a qualified installer of your choice. For installation in the State of Massachusetts: Installation of this oven must be performed by a licensed plumber or gas fitter. All such connections must be in accordance with applicable code requirements. Refer to "Installation Requirements" section for specific information.
- 4. To arrange for inspection and operation check-out by an Authorized Service Technician as described below:

Do not attempt to operate the oven until connection of utility service has been fully inspected by a Factory Authorized Servicer or a Lincoln Foodservice Products, LLC Service Representative. This service is required by Lincoln Foodservice Products, LLC in order to assist the purchaser in proper start-up of the oven on site. Please note the specific details on the Warranty Policy and make sure that all connections are made to the proper utility services.

The warranty shall not apply if the oven(s) are started up and operated prior to the utilities and oven being inspected and check-out made by a Factory Authorized Servicer or a Lincoln Foodservice Products, LLC Service Representative.

ADDITIONAL REQUIREMENTS

- Obtain from your local gas provider and post in a prominent location instructions to be followed in the event gas odors are detected.
- It is required that the oven be placed under a ventilation hood to provide for adequate air supply and ventilation, unless the oven is a "ventless" model.
- Minimum clearances must be maintained from all walls and combustible materials. See "Spacing Requirements" section for more information.
- Keep the oven free and clear of combustible material.
- Adequate clearance for air openings to the combustion control chamber on the right side of the oven is required.
- Do not obstruct the ventilation holes in the control panels, as these provide the combustion air for the burner and cooling air for the controls.
- The oven is to be operated only on the type of gas and/or electricity as shown on the specification plate.
- The power burner will not operate and gas will not flow through the burner without electrical power.
- This manual should be retained for future reference.
- The electrical wiring diagram is located under the control box covers.

IN AUSTRALIA: Refer to Standard AS 5601. This standard specifies the requirements for piping, flues, ventilation and appliance installation associated with use of or intended use of fuel gases. The requirements of AS 5601 are to be used in conjunction with, but do not take precedence over, any statutory regulations that may apply in any area.

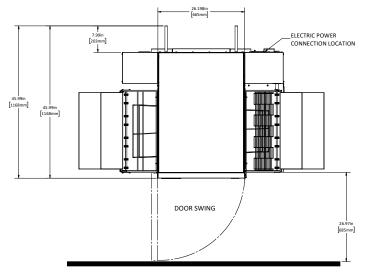
All ovens require separate service and dedicated neutral.

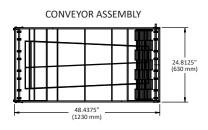
Gas Pressure Conversion

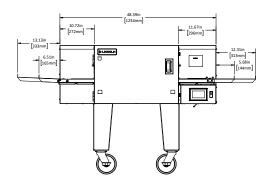
Inches of Water Column	kPa	m-Bar	Millimeters of Water Column
3.5	0.87	8.70	88.9
4.5	1.12	11.2	114.3
7	1.74	17.40	177.8
8	1.99	19.90	203.2
9.2	2.29	22.90	233.7
10	2.48	24.87	254.0
10.5	2.61	26.11	266.7
11	2.73	27.36	279.4
14	3.48	34.81	355.6
14.5	3.61	36.05	368.3

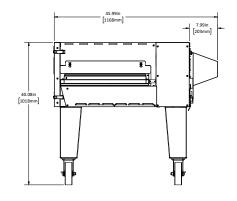
Section 2 Installation

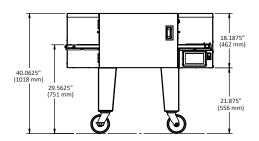
Exterior Dimensions











BODY:	Stainless steel. Easy open front for simple cleaning.			
POWER:	Electric, or Gas and Electric	Electric, or Gas and Electric		
CONVEYOR:	Stainless steel construction with flexible stainless steel	Stainless steel construction with flexible stainless steel belt, travel distances of 48 inches (1220 mm) with		
	24 inches (610 mm) in the baking area. Conveyor belt width is 24 inches (610 mm). Speed range: 20 seconds –			
	30 minutes.			
DB LEVEL:	≤ 70dba			
OPERATING TEMPERATURE	Gas 250° - 600°F (121° - 316°C) Electric 250° - 600°F (121° - 316°C)			
RANGE:				

NOTE: Specifications are subject to change. Above data should be used for estimating purposes only.

Utility Specifications

Electric Ovens

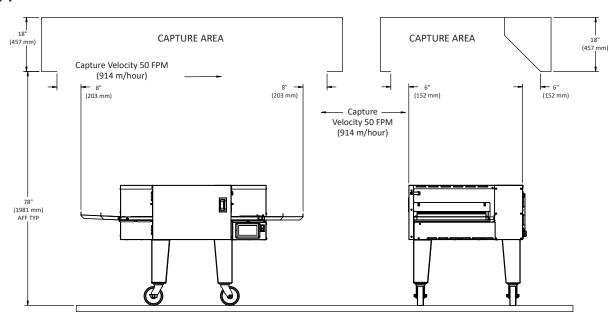
Model	Energy	Power	Voltage	Current	Phase	Hz	Recommended Electrical Specification
2424E	Electric	13 kW	208-240 VAC	48A	3	60	4 Wires, 3 Line +G

All ovens require separate service and dedicated neutral.

Notice

Do not install the (these) oven(s) in any area with an ambient temperature in excess of 95°F / 35°C. Doing so will cause damage to the unit.

Canopy Ventilation Recommendations



AFF = Above Finished Floor

NOTE: The drawing shown is a typical installation and is intended to be a guideline. Hood dimensions and the positioning of the hood over the oven will vary with hood manufacturers.

A smoke candle test is performed at Start-Up Checkout to verify proper hood operation. Refer to page 16.

NOTE: Lincoln can provide oven spec sheets that show the dimensions of the oven, kW or BTU ratings and other information that will be useful to both the ventilation hood supplier and the HVAC contractor. Section 2 Installation

Installation Requirements

A DANGER

All utility connections and fixtures must be maintained in accordance with local and national codes.

GAS CODE REQUIREMENTS

A Warning

A manual shut-off valve must be installed in the gas supply (service) line upstream of this appliance so that the test plug is on the oven side of the valve.

Safe and satisfactory operation of this oven depends to a great extent upon its proper installation, and it should be installed, as applicable in accordance with the National Fuel Gas Codes, ANSI Z223.1/NFPA 54, latest version, manufacturers' installation instructions, local municipal building codes, and ISO 203-1.

- 1. The oven and its individual shut off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.45 kPa).
- 2. The oven must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply system at test pressures equal to or less than 1/2 psig (3.45 kPa).

IN MASSACHUSETTS: The minimum length of a flexible gas supply hose is thirty-six (36") inches.

IN CANADA: The installation of these appliances is to be in accordance with CSA B.149.1 latest version – Natural Gas and Propane Installation Code – and/or local codes.

IN AUSTRALIA: To be installed in accordance with AS 5601-2004 and 4563-2004 Gas Installation Code.

ELECTRICAL CODE REQUIREMENTS

▲ Warning

This appliance must be properly grounded at time of installation. Failure to ensure that this equipment is properly grounded can result in electrocution, dismemberment or fatal injury.

When installed, this appliance must be electrically grounded and its installation must comply with the National Electric Code, ANSI-NFPA 70, latest edition, the manufacturers' installation instructions, and applicable local municipal building codes.

IN CANADA: All electrical connections are to be made in accordance with CSA C22.2 latest version – Canadian Electrical Code and/or local codes.

ALL OTHER COUNTRIES: Local gas and/or electrical codes will prevail.

- Strain Relief is provided with each oven. International Dealer/Distributors provide applicable power cord/plug for each customer.
- 2. All pole disconnection switch must have 3 mm open contact distance.
- 3. To prevent electrical shock, an equal potential bonding ground lug is provided in the back. This allows the oven to be connected to an external bonding system.
- 4. If used as double stack or triple stack¹ and each oven has its own disconnection switch, all switches should be close together.
- ¹ 2424 ventless ovens equipped with a catalyst(s) are approved for single oven ventless operation.

SPACING REQUIREMENTS

/ Caution

Oven must be operated on an approved base only.

The oven must have a minimum of 8 inches (203 mm) of clearance from all surfaces. In case other equipment is located on the right side of oven, a minimum clearance of 24 inches (609 mm) is required from that equipment.

FOR ALL OVENS: A 24-inch (609 mm) clearance at the rear of the oven must be obtainable for service access.

NOTE: Do not install this (these) oven(s) in any area with an ambient temperature in excess of 95°F/35°C. Doing so will cause damage to the unit.

VENTILATION REQUIREMENTS

A VENT IS REQUIRED, (unless the oven is a "ventless" model). Local codes prevail. These are the "authority having jurisdiction" as stated by the NATIONAL FIRE PROTECTION ASSOCIATION, INC. in NFPA 96 latest edition. In addition, to be in compliance with the NFPA 54 Section 10.3.5.2, this unit must be installed with a ventilation hood interlock that prevents the unit from operating when the ventilation hood is off. For further ventilation information, see Ventilation Guidelines.

VENTILATION GUIDELINES

For standard ovens, a ventilation hood is required to remove heat and cooking odors. Alternatively, optional electric "ventless" models are available which incorporate a catalyst to limit the emission of grease laden air to below 5mg/m³. Ventless ovens have been tested in accordance with UL710B & EPA-202 and are listed by UL to the KNLZ category. Ventless ovens should only be used for reheating purposes and should not be used to cook raw animal proteins, doing so may cause the appliance to exceed allowable grease laden air limits and/or cause damage to the catalyst. When permitted by local code(s) and used with appropriate food products, Lincoln "ventless" ovens are not required to be installed under a ventilation hood. For gas ovens, a ventilation hood is also required to remove the products of combustion. 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. A properly engineered and installed ventilation hood and HVAC system will expedite approval and reduce oven maintenance costs. Proper ventilation is the oven owner's responsibility.

The ventilation hood must operate in harmony with the building HVAC system. It typically requires between 750 and 2500 CFM (1274 and 4248 m³/hour) exhaust. (The "Efficiency" of various hood designs makes it necessary to specify such a wide range of ventilator flow.) Make up air must be supplied by either a hood design or the HVAC system. This will vary with hoods from various manufacturers.

Notice

Prevent airflow through the cooking tunnel. Air must NOT be directed onto the oven front or at side of cooking area or rear of oven.

Section 2 Installation

RESTRAINT REQUIREMENT – OVEN(S) ON CASTERS

• The installation shall be made with a gas connector that complies with the local codes for Connectors for Movable Gas Appliances, ANSI Z21.69 • CSA 6.16 latest version, and a quick disconnect device that complies with the local codes for Quick Disconnect Devices for Use with Gas Fuel, ANSI Z21.41 • CSA 6.9 latest version.

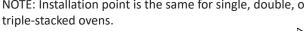
- The installation of the restraint must limit the movement of the oven(s) without depending on the connector, the quick disconnect device or its associated piping to limit the oven movement.
- If the restraint must be disconnected during maintenance or cleaning, it must be reconnected after the oven has been returned to its originally installed position.

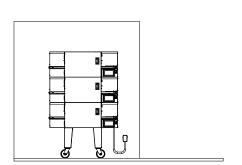
Procedure

- 1. Secure anchor wall/floor mount bracket "D" to wall stud "C" or floor "E".
- 2. Secure eye bolt "B" into threaded hole located in the oven bottom (See drawing below).
- 3. Attach restraint cable "A" with supplied carabiners to both the eye bolt "B" and wall/floor bracket "D".
- 4. Adjust/shorten restraint cable to limit oven movement.

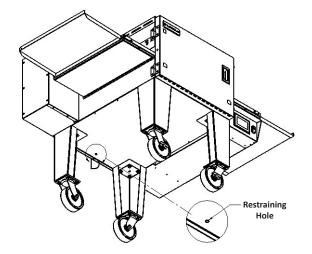
Wall

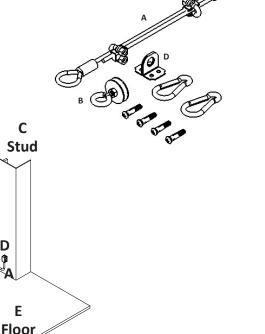
NOTE: Installation point is the same for single, double, or





Front of Oven





Installation

The instructions that follow are intended as a guide for preparing for the installation of the Lincoln Aperion Impinger® oven. First and foremost, each crate should be examined before signing the Bill of Lading to report any visible damage by the trucker in transit, and to account for the proper number of crates.

IF THERE IS APPARENT DAMAGE:

UNITED STATES AND CANADA: Arrangements should be made to file a claim against the carrier, as Interstate Commerce Regulations require that the consignee initiate a claim.

ALL SHIPMENTS TO OTHER COUNTRIES: Freight terms will be developed and extended on an individual basis.

Proper and secure storage facilities should be arranged for the oven(s). If necessary, protect it from outdoor or damp conditions at all times before installation.

PACKING AND WEIGHTS

All uncrated components of the Lincoln Aperion Impinger® oven will pass through a 30" (762 mm) wide door. The Impinger® Conveyor Oven consists of:

Cartons	Weight of Each	Dimensions of Each
1 – oven	430 lbs.	41" x 59" x 18.75"
(domestic)	(195 kgs)	(1042 x 1499 x 476 mm)

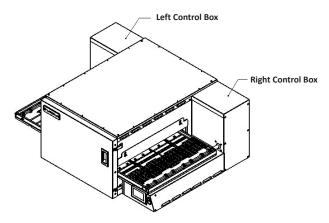
UNCRATING

When you have all the crates unloaded, open the crates and remove the plastic covers. Inspect at once for concealed damage. If anything appears to be damaged, contact the appropriate persons immediately to file a damage claim. After completing this inspection, finish unpacking the oven and all other components. Be sure to remove the packing cardboard from the plenum shroud. Move all components inside near the area where they will be assembled in the order in which they will be assembled.

Section 2 Installation

Installation of 2424 Oven

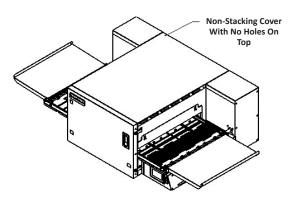
1. Using multiple people, a crane, or forklift remove the oven from the crate carefully. (Caution) Do not lift from the Left and Right Control Boxes.

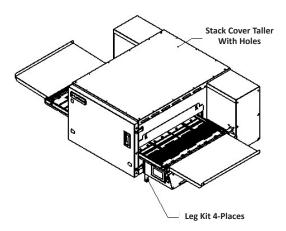


- Remove Front Door, Upper and Lower Fingers and Conveyor Assembly from the Top Unit. Removal of these items will make the installation of the Top Unit on the Bottom Unit easier to place.
- 3. Place the oven on temporary blocks

For Countertop Installation

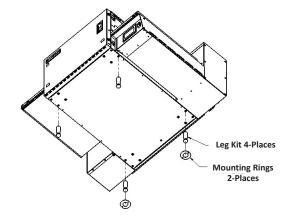
- 1. If oven is being placed on a countertop, use the Leg Kit with Mounting Rings on the Rear Legs of the Unit.
- If Stacking Option is being used, ensure the Leg Kits are on the Bottom unit. The Bottom Unit will have the Stack Top Cover Option installed.



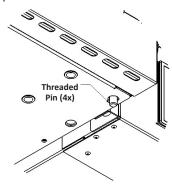


3. Position the oven on the countertop and carefully mark the position of the Rear Legs. Remove the oven from the countertop and position the mounting rings so that the large (center) hole is where the legs of the oven were marked. Mark the position of the two small holes and remove the mounting rings.

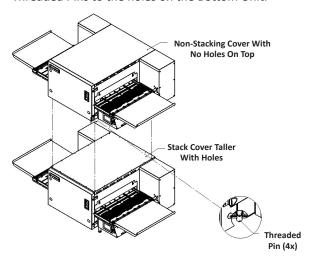
When installing on a heavy stainless steel or wood countertop, use appropriate rivets or screws for your installation. Use a 0.218" diameter drill (7/32") and drill at least 1/2" into a wood countertop or all the way through a steel countertop. Install the Mounting Rings to locate, so that the rear legs are in the large holes in the Mounting Ring.



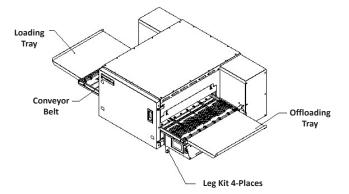
4. To add a Top Unit to the Stack Assembly. Ensure that the Threaded Pins are installed at the corners of the bottom of the Top Unit.



5. Using caution, lower the Top Unit using a portable crane or forklift, onto the Bottom Unit by lining up the Threaded Pins to the holes on the Bottom Unit.

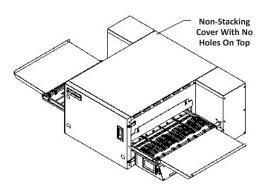


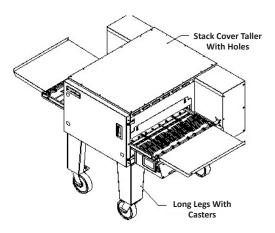
- 6. Once the units are in place, re-install the Finger Assemblies.
- 7. Install the Conveyor Belt assembly.
- 8. Install Front Door.
- Install Loading and Offloading Trays (Loading Tray Marked with I, Offloading Tray Marked II).



For Floor Installation

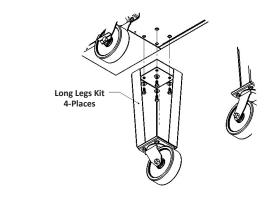
 When placing the Oven on the floor, use the Long Leg Kit with Casters on the Bottom Unit. If Stacking Option is being used, ensure the Long Leg Kits are on the Bottom unit. The Bottom Unit will have the Stack Top Cover Option installed.

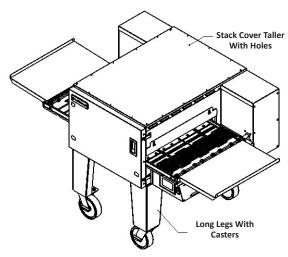




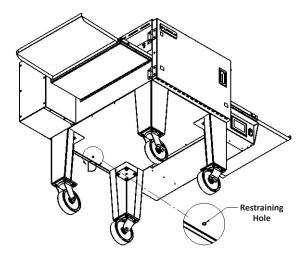
 Remove Front Door, Upper and Lower Fingers and Conveyor Assembly from the Top and Bottom Units. The removal of these items will make the installation of the Top Unit on the Bottom Unit easier to place. Section 2 Installation

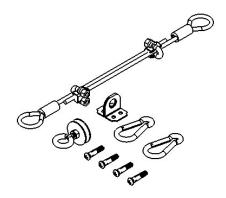
3. With the Bottom Unit on blocks, connect the Long Leg Kit to the bottom of the Bottom Unit in 4 places.



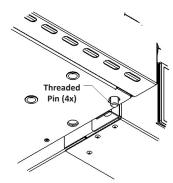


4. When using the Long Legs, the Unit must be restrained. Adjust and trim the Adjustable Restraining Cable Kit to secure the Unit to the wall or floor. Ensure that the Cable is short enough to limit the Oven Unit movement.

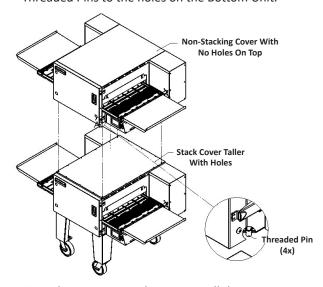




5. To add a Top Unit to the Stack Assembly. The Threaded Pins are pre-installed at the corners of the bottom of the Top Unit.

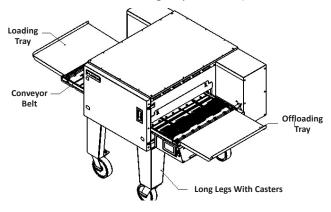


6. Using Caution, lower the Top Unit using a portable crane or forklift, onto the Bottom Unit by lining up the Threaded Pins to the holes on the Bottom Unit.



- 7. Once the units are in place, re-install the Finger Assemblies.
- 8. Install the Conveyor Belt assembly.
- 9. Install Front Door.

10. Install Loading and Offloading Trays (Loading Tray Marked with I, Offloading Tray Marked II).



Start-Up Checkout

You are now ready for the services to be connected. This should be done by a qualified plumber, electrician, or installer of your choice. For installation in the state of Massachusetts: installation of this oven must be performed by a licensed plumber or gas fitter. Refer to Utility Specifications and Installation Requirements sections for additional information.

Important

The manual shut-off valve must be installed so that the test plug is on the oven side of the valve.

Start-Up Procedures

SMOKE CANDLE TEST – VENTILATION SYSTEM VERIFICATION

Performance will be evaluated during Start-up Checkout by conducting a smoke candle test. The hood must capture all smoke from the oven. This is required to assure proper performance of the oven and to eliminate additional service calls that occur when ambient temperatures are too high. In all cases, the ambient temperature around the oven must be less than 95°F/35°C when the oven is operating. In certain localities, other chemical or gaseous methods of detecting adequate capture will be the requirement to meet the local code authority.

Oven Setup for this Test:

- This test is to be done on the bottom oven of a multiple oven system, or a single oven.
- The conveyor must be off.
- The oven temperature must be set and operating at 550°F/288°C.
- Set adjustable top and bottom fan speed to 100% maximum flow.

Test Procedure:

NOTE: Use Lincoln Smoke Candle #369361 (in Australia, an alternate method of coloring the air may be used).

- Wear heat resistant gloves to prevent burns to your hands.
- 2. Put the smoke candle in a cake pan approximately 8 inches (200 mm) x 8 inches (200 mm) x 2 inches (50 mm) deep or equivalent.
- 3. Light the fuse of the smoke candle and immediately put the pan and candle into the center of the oven cavity, on the conveyor belt. (Close the oven door or access window optional on later models).
- 4. Observe the smoke pattern coming out of the oven openings and the collection of this smoke by the ventilation system.
- The ventilation system must capture all the smoke from the oven.

Section 2 Installation

Installation Checklist

▲ DANGER

Check all wiring connections, including factory terminals, before operation. Connections can become loose during shipment and installation.

A Warning

On completion of any installation or service work, test for gas leaks before returning the equipment into service. Never use matches, candles, or any other ignition source to check for leaks. If gas odors are detected, shut off the gas supply to the appliance at the main shut-off valve and immediately contact the local gas company or an authorized service agency for service.

DO NOT ATTEMPT TO OPERATE THE OVEN until connection of utility service and installation has been fully inspected (START-UP CHECKOUT) by a Factory Authorized Servicer or a Lincoln Foodservice Products, LLC Service Representative. This service is required by Lincoln Foodservice Products, LLC in order to insure the oven(s) is properly installed and in working order. The warranty becomes effective upon verification of proper installation.

The warranty shall not apply if the oven is started up and operated prior to the "START-UP CHECKOUT" being performed by a Factory Authorized Servicer or a Lincoln Foodservice Products, LLC Service Representative.

CHECKLIST

Are the supplied rear bumpers installed to the rear cover of the unit?
Are the correct clearances maintained?
Does the ventilation system meet the requirements?
Are the legs and caster securely fastened?
Is the unit level?
Has the restraint been installed to prevent uncontrolled movement?
Have all electrical connections been made and the unit is grounded?
Does each oven have a separate disconnect switch?
Have all wiring connections including the factory connections been checked?
Has the supply voltage been tested and verified it matches the name plate voltage?
Has a shutoff valve been installed in the gas line ahead of the unit?
Has the manifold gas pressure been set to match the rating on the nameplate?
Have all gas connections been tested for leaks?
Are the retaining brackets and finger assemblies correctly installed and positioned?
Is the belt tension correct?
Have access panels been installed and secured?
Has a smoke candle test been performed?
Has the unit been tested for correct operation?
Has the owner been instructed in the correct operation of the unit?
Has this manual been given to the store owner?

Section 2 Installation

Section 3 Sequence of Operations

Unit Plugged Into Power

- · Both L1 and L3 10A fuses energized
- Safety Contactor Engaged/Energized (If oven high limit capillary and both component hi-limits are not tripped and the 30A circuit breaker is in the ON position)
- Oven High Limit Capillary Thermostat (SW3) Energized with L3
- Component High Limit Thermostats (SW4, SW5) Energized with L3
- Circuit Breaker (CB1) Energized with L3
- All three SSRs are energized with L1, L2, L3 Power
- Motor Driver 1 and 2 Energized with L1 and L3 Power
- Dual Voltage Board (E5) energized with L1 and L3 Power
- 24VDC Power Supply Energized with L1 and L3 Power
- DC 4A fuse Energized, which protects the DC components: cooling fans, UI and IO board
- Main Rocker Power Switch Input Energized with 24VDC.
- Cooling Fan Thermostat (SW2) Energized with 24VDC

Power Switch Turned ON

- Cooling Fans 1 through 5 are Energized with 24VDC
- IO Board Energized
- IO Board Boots UP UI
- UI initiates with Welbilt BOOT screen
- UI Loads to Home Screen after small delay in time
- Optional Motor Drive STR8 (E6) Energized with 24VDC

NOTE: See Section 8 - Wiring Schematics for reference.

- 1. Press and Go Selected
 - UI displays Recipes
 - 1.1 Recipe Selected
 - Unit enters pre-heating mode
 - Motor blowers ramp up to Pre-Heat Speed (50%)
 - · Conveyor belt is OFF
 - Call for Heat sent to SSRs: all elements are energized
 - **1.2** Once Pre-Heating is complete, Recipe Mode is engaged
 - Oven will ramp up to recipe upper and lower motor speed setpoints (%)
 - Oven will maintain temperature setpoint
 - Conveyor will turn on to recipe cook time speed
 - **1.3** Eco Mode Button: temperature set point will be maintained, but blower motor speed will be set to 40% and the conveyor belt will be OFF
- 2. Chef Mode (Manual Mode) Selected
 - 2.1 Enter Temperature Set Point
 - 2.2 Enter Upper and Lower Motor Speed (%)
 - 2.3 Enter Conveyor belt speed (min:sec)
 - **2.4** In this mode, temperature and motor speed values will change automatically when on this screen, but these set points can be saved into a recipe when the save button is pressed
 - 2.5 Save Button Pressed
 - Select Recipe
 - Change icon or color if applicable
 - Press the save button

NOTE: See Section 6 - Controls for UI screens and their sequence.

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Section 4 Maintenance

Operator Maintenance

A DANGER

Disconnect power supply before servicing or cleaning this oven. Safeguard power so it cannot be accidentally restored. Failure to do so could result in dismemberment, electrocution, or fatal injury.

This Lincoln oven was designed and engineered for maximum durability and performance with minimum maintenance. There is no lubrication required.

However, to achieve the maximum efficiency of the oven, it is necessary to keep it clean. For cleaning instructions, see below. The frequency listed is only the factory's minimum recommendations. Your use and type of products should be used to guide the frequency of cleaning.

If the oven fails to operate, check the circuit breaker and gas valve (for Natural Gas and LP Gas models) to be sure they are turned on. Also, check the On/Off switch and fuses in the control box prior to calling the Factory Authorized Servicer. The name and phone number of the Factory Authorized Servicer should be on the oven or contact Lincoln Technical Support at 1-844-724-2273 for the name of the nearest Factory Authorized Service provider.

CLEANING INSTRUCTIONS

The Lincoln Aperion Impinger® oven contains electrical components. Before cleaning the oven, switch off and disconnect the oven from the electrical supply.

NOTE: Ensure that the oven is cool before disconnecting power supply for cleaning. Pre-opening is an ideal time to inspect and clean your oven.

No electrical components should be subjected to moisture. It is, therefore, important that the oven is wiped down carefully. NEVER throw buckets of water over or into the oven cavity or subject it to pressure washing from a hose or pressure spray. If water or other liquid is spilled in the oven, make sure that none has entered the plenum or control box area before turning the oven on. If in doubt, call your service provider.

/ Caution

Oven must be cool. Do not use power cleaning equipment, steel wool, or wire brushes on stainless steel surfaces.

Notice

Do not use caustic or alkaline cleaners on interior of units or on catalyst(s) of ventless ovens. These cleaners can damage the finished surfaces of the unit interior and exterior. Lincoln Oven Cleaner has been developed specifically for use on this oven and is recommended for daily and weekly cleaning.

Daily Cleaning

- Clean exterior surfaces of the oven by wiping down with Lincoln Oven Cleaner or a mild detergent and clean water, or a commercial stainless cleaner.
- Remove and clean crumb pans from below conveyor assembly and conveyor end stops or optional entry/exit shelves with Lincoln oven cleaner and rinse with clean water.
- Clean the interior by sweeping up loose particles, then wipe with Lincoln oven cleaner and rinse with clean water.
- 4. Clean the conveyor belt by wiping with a clean cloth or nylon bristle brush (ensure oven belt is cool to touch if using a brush to avoid melting bristles).

Do not spray chemicals or cleaning liquids directly on catalyst(s) in ventless ovens.

A Warning

When using cleaning solutions, be sure they meet local and national health standards.

Section 4 Maintenance

Weekly Cleaning

- Remove oven door by unfastening the latching mechanism on the right side of door (facing oven). Hold door from bottom and right side and lift carefully to disengage the hinges. Clean all exterior surfaces of door and pass through window (available option on future models) with Lincoln Oven Cleaner and rinse with clean water.
- 2. Remove conveyor, disassemble and clean with Lincoln Oven Cleaner. Rinse with clean water and allow to dry before reinstalling.
- Remove fingers, disassemble and clean with Lincoln Oven Cleaner. Rinse with clean water and allow to dry.
 Do not allow housings to soak in water for a prolonged time.
- Clean fan air intakes at rear of oven and in control box with damp cloth to remove dust and any grease buildup.

NOTE: Be sure to clean and inspect your kitchen ventilation hood (if equipped), in accordance with the ventilation hood manufacturer's specifications.

Conveyor Removal

- Remove oven door by unfastening the latching mechanism on the right side of door (facing oven). Hold door from bottom and right side and lift carefully to disengage the hinges. Set aside for cleaning.
- 2. Pull conveyor out from baking chamber by lifting upward and then forward.
- 3. Set on table or 3 compartment sink for cleaning.
- 4. Re-install in reverse order.

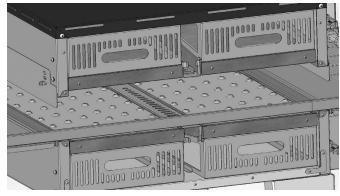
Finger Removal

⚠ Caution

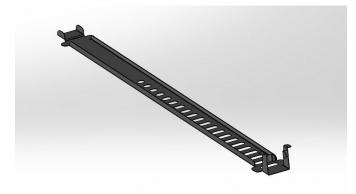
Oven must be cool to prevent burns. Use protective gloves to avoid cuts from edges.

The Lincoln Aperion Impinger® oven comes with 4 identical finger assemblies comprising a housing and cover and 2 identical baffles that are located between the top and bottom housings. Housings, covers and baffles are interchangeable. There are 2 top and 2 bottom housings – see diagrams below.

Open Door.
 NOTE: Door may be removed by lifting from hinges – see instructions under weekly cleaning.



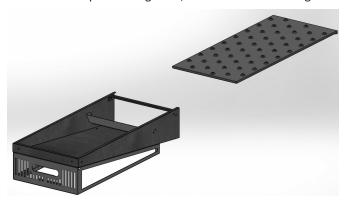
2. Remove top and bottom air return baffles by pinching the retaining arms slightly together and pulling down (top baffle) or up (bottom baffle).



Air Return Baffle x 2

Maintenance Section 4

3. Remove top 2 housings first, then bottom 2 housings.



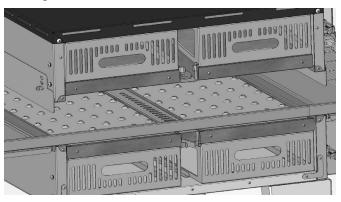
Bottom Finger Assembly

Disassemble fingers by sliding cover off the housing.
 NOTE: Components are tight fitting. Use gloves to protect your hands when disassembling fingers.



Finger Housing x 4

5. Re-assemble and re-install in reverse order. Ensure return air baffles are installed between top and bottom finger assemblies.



Preventive Maintenance

Although this oven has been designed to be as trouble-free as possible, periodic preventive maintenance is essential to maintain peak performance. It is necessary to keep the motors, fans, and electronic controls free of dirt, dust and grease build-up to ensure proper cooling. Overheating is detrimental to the life of all components mentioned. The periodic intervals for preventive cleaning may vary greatly depending on the environment in which the oven is operating. You must discuss the need for preventive maintenance with your Factory Authorized Servicer to establish a proper program. If there are any questions that the service agency cannot answer, please contact the KitchenCare Technical Service Department at 1-844-724-2273.

Section 5 Troubleshooting

General Issues

Problem	Cause	Correction
UI blank	Oven not plugged in, panel breaker tripped	Check panel breaker and plug
		Ensure input voltage is within specifications
	Faulty fuses/fuse holder	Replace fuses on back panel
		Replace DC fuse located inside the control box
		Inspect fuse holders for cracks and replace if needed
	Wiring Issue	Inspect UI cable for damage
		Unplug and plug the UI cable back in
		Replace UI cable
	Faulty UI	Check for cracks or damaged screen
		Check cable connection to UI for fit
		Install new UI with correct software revision
	Faulty power switch	Check continuity through switch. Check for incoming
		24VDC on terminals. Replace if needed.
	Faulty DC power supply	Check for steady 208-240VAC input between blue
		(N) and black (L) wires
		Check for steady 24VDC output between red (+V)
		and black (-V) wires
		Check for physical damage on the circuit board.
		Replace if needed
	Faulty IO board	Check for 24VDC input on black (-V) and red (+V)
	,	wires
		Check cable connection to UI for fit
		Inspect IO board for damage and replace if needed
UI screen locked up, frozen,	Software issue	Turn OFF the unit using the power switch, turn the
nonresponsive to touch		unit back ON after 30 seconds.
·	Damaged or cracked touchscreen	Install new UI with correct software revision
Unable to read USB	Faulty flash drive	Retry with known good quality flash drive
	Incorrect USB format	Make sure flash drive is formatted using FAT32
	USB cable disconnected	Check if USB connector is seated properly
	Faulty UI	Check for cracks or damaged screen
	,	Check cable connection to UI for fit
		Install new UI with correct software revision
Unable to load USB files	Faulty flash drive	Retry with known good quality flash drive
	Files on flash drive incorrect or corrupt	Delete all files on flash drive and reload updated files
	Faulty USB socket	Inspect USB socket for damage and replace if needed

Troubleshooting Section 5

Problem	Cause	Correction
Conveyor does not move	Temperature set point has not been reached	If using the Press & Go menu recipes, wait until UI
		displays the "Ready" status message
	Coupling loose or disconnected	Tighten set screw on coupling
	Belt link loose or disconnected	Replace belt link
	Conveyor has stretched from use	"Use thumb screws to tighten belt
		Remove adequate number of links to tight the belt "
	Incorrectly installed	Verify conveyor belt orientation. Shaft should be
		inserted into motor coupling
	Software issue	Turn OFF the unit using the power switch, turn the
		unit back ON after 30 seconds.
		Go to Manual Mode and change belt speed
	Failed or failing conveyor stepper motor	Check for resistance on red and blue and again at
		yellow and white. Resistance should be $.65\Omega$ (±10%).
		Check for opens, shorts or grounds
		Change conveyor belt direction in the UI's Settings
		Menu
	Faulty IO board and/or built-in motor drive	Check for 24VDC input on black (-V) and red (+V)
		wires
		Check wires are connected properly
		Inspect IO board for damage and replace if needed
	Faulty stepper drive (STR8)	Check LEDs to identify alarm codes. Faults disable
		the motor and can be cleared by cycling power to
		the drive.
		Try the built-in self test. Anytime switch 8 is moved
		to the ON position, the drive will automatically
		rotate the motor back and forth, two turns in each
		direction. This feature can be used to confirm the
		motor is correctly wired, selected and operational.
		Check for 24VDC input on black (-V) and red (+V)
		wires
		Check wires are connected properly
		Inspect stepper motor drive for damage and replace
		if needed

Section 5 Troubleshooting

Problem	Cause	Correction
"Unable to reach or maintain	"Circuit breaker at the back of the oven tripped	Reset circuit breaker at the back of the oven. If
emperature"	Contactor disengaged "	circuit breaker trips again there is an overload on
		one of the SSR branches or the dual voltage board is
		malfunctioning (not regulating the heating element
		current)
		Measure SSRs output current. Inspect SSRs for
		damage. Replace if needed.
		Measure heating elements resistance, make sure
		it is within specifications: approx. 5.4 Ω in each
		branch, for example; between wires 7 and 8 (branch
		1), between wires 9 and 10 (branch 2) and between
		wires 11 and 12 (branch 3). Inspect heating element
		for damage, replace if needed.
	"Component high limit thermostat tripped (in	Turn the power switch OFF and wait for the machine
	left tower or right tower)	to cooldown (this may take upwards of one hour).
	Contactor disengaged "	Turn the power switch ON and select a recipe.
		Inspect the component high limit thermostat (in left
		tower and right tower) connections for damage
		Check if cooling fans are working properly. If the
		condition persists, replace the component high limit
		thermostat.
	"Oven high limit capillary thermostat tripped	Turn the power switch OFF and wait for the machine
	(heating element area)	to cooldown (this may take upwards of one hour).
	Contactor disengaged "	Reset the high limit capillary thermostat located
	contactor disengaged	on the machine rear panel. Inspect the high limit
		capillary thermostat connections for damage. Turn
		the power switch ON. Check that both blower
		motors are ON. If the condition persists, replace the
		high limit capillary thermostat.
	Blower motors not running (no air noise)	Turn OFF the unit using the power switch, turn the
		unit back ON after 30 seconds.
		Access the UI Settings Screen. Enter Service
		Password. Select the Calibration screen and then
		select the Fan Test screen. Turn motor OFF and then
		ON. Check RPM values are not "0". Check for alarm
		codes (Status Code)
		Check motor drive is powered. Check the motor
		drive status led codes. Confirm there are no alarm
		codes
		Check if motor attempts to move
		Check wires are connected properly
		Check for opens, shorts or grounds
		Check motor resistance: 9.72Ω
		WITH OVEN UNPLUGGED: Turn fan blade to check
		for locked rotor.
		"Check motor drives DIP switch configuration:
		Upper drive: switch 2 ""ON""
		Lower drive: switch 1 and 2 ""ON"""
		Replace motor drive
	Incorrect model selected in UI	Turn OFF the unit using the power switch, turn the
		unit back ON after 30 seconds. The model displayed
		in the UI initialization screen should be 2424. If it
		isn't go to UI settings and select the correct model.

Troubleshooting Section 5

Problem	Cause	Co	rrection		
"Unable to reach or maintain	Defective thermocouple/ thermocouple wiring	Verify both thermocoup	les are connected to the	e IO	
temperature"		board			
		Inspect the thermocoup	le wires and connectors	s.	
		Check wires are not cut			
		Check resistance for ope 14Ω	en probe. Resistance: 70	Ω -	
		Check DC voltage between	en red and yellow wire	s. Use	
		chart based on 72°F am			
		proper reading:		, ¬	
		0.8mV @ 72°F	7.1mV @ 400°F		
		2.8mV @ 200°F	8.2mV @ 450°F		
		4.0mV @ 250°F	9.3mV @ 500°F		
		5.1mV @300°F	10.4mV @ 550°F		
		6.0mV @ 350°F	11.5mV @ 600°F		
		Check for opens, shorts			
	Faulty/damaged dual voltage board	Check for steady 208-24		N1	
		and PIN3 (3-position cor			
		Check for 3.3VDC-5VDC			
		dual voltage board (whe		t)	
		Check for approximately			
		Check SSRs LEDs are tur	-		
		continuously when ther			
		Check DIP switch config	uration: switch 3 and 2	"OFF"	
		and switch 1 "ON" Check for physical damage on the circuit board.			
	Vitabaa waatilati aa affaati aa taasaa aatuusa	Replace if needed			
	Kitchen ventilation affecting temperatures	Check make up air from ventilation hood or air conditioning vents are directed away from the ove			
	Possible incorrect temperature calibration	Check calibration and re-calibrate unit if needed			
Uneven heating	Possible incorrect temperature calibration Fingers incorrectly installed			u	
Oneven heating	Door not closed or does not close properly	Make sure fingers are installed correctly Verify door is closed correctly. Check latches and hinges. Check if there is excessive gap between door			
	boot not closed of does not close properly				
		and cavity	evecesive Pab service.		
	Air return bracket missing or unseated	Verify if air return bracket is present and installed correctly			
	0				
Overcooked or undercooked	Incorrect temperature setting	Make sure oven temper	ature calibration is corr	ect	
product	Incorrect upper and/or lower fan speed	Make sure both upper a			
		operating correctly			
	Incorrect conveyor speed	Make sure the conveyor	is properly calibrated		
	Defective thermocouple/ thermocouple wiring	Verify both thermocoup board	les are connected to the	e IO	
		Inspect the thermocoup	ole wires and connectors	S.	
		Check wires are not cut	or disconnected		
		Verify temperature calib	oration		
No control box cooling	Faulty DC power supply	Check for steady 208-24	OVAC input between bl	ue	
		(N) and black (L) wires			
		Check for steady 24VDC	output between red (+	·V)	
		and black (-V) wires			
		Check for physical dama	ige on the circuit board.		
		Replace if needed			
	Faulty cooling fan(s)	Check for 24VDC to fan(
		Check fans for opens, sh			
		WITH OVEN UNPLUGGE	D: Turn fan blade to che	eck	
		for locked rotor			
	Faulty fuses/fuse holder	Replace DC fuse located			
		Inspect fuse holders for	cracks and replace if ne	eeded	

Section 5 Troubleshooting

UI Alarm Messages

UI Alarm Message	Cause	Correction	Motor Drive Status LED
"TC#1 and TC#2 Error"OR "TC#1 Error"OR "TC#2 Error" OR "Err" in the set point temperature field (manual or recipe mode)	One or two thermocouples disconnected	Verify both thermocouples are connected to the IO Board Inspect the thermocouple wires and connectors to verify wires are not cut or disconnected Automatic recovery when fault condition is removed	NA
"Upper Blower SC: 0x01"OR "Lower Blower SC: 0x01"	Upper or lower motor phase to phase short circuit		"Red 1 Sec ON/OFF"
"Upper Blower OC: 0x02 (Warning)"OR "Lower Blower OC: 0x02 (Warning)"	"Upper or lower motor current overload (120% of full load) *The motor speed is reduced to maintain the current limit "	"Check the door is closed. Inspect door latches "Make sure fingers are installed correctly Turn OFF the unit using the power switch, turn the unit back ON after 30 seconds. "If motor is making excessive noise or vibrating excessively, replace motor assembly. "Replace motor drive	"Red ON continuously"
"Upper Blower OC: 0x03"OR "Lower Blower OC: 0x03"	Upper or lower motor current overload (drive/motor in overload for greater than 6 seconds)	Check the door is closed. Inspect door latches Make sure fingers are installed correctly Turn OFF the unit using the power switch, turn the unit back ON after 30 seconds. "If motor is making excessive noise or vibrating excessively, replace motor assembly. " WITH OVEN UNPLUGGED: Turn fan blade to check for locked rotor. Replace motor drive	"Red 0.25 Sec ON/OFF"
"Upper Blower UV: 0x04"OR "Lower Blower UV: 0x04"	Upper or lower drive undervoltage (line voltage less than 151VAC)	"Ensure input voltage is within specifications " Automatic recovery when the line voltage is greater than 174VAC	"Red/Yellow 0.25 Sec ON/OFF"

Troubleshooting Section 5

UI Alarm Message	Cause	Correction	Motor Drive Status LED
"Upper Blower OV: 0x06"OR "Lower Blower OV: 0x06"	Upper or lower drive overvoltage (line voltage greater than 283VAC)	"Ensure input voltage is within specifications	"Red/Yellow 1 Sec ON/OFF"
		Verify the 115VAC jumper is NOT	
		placed in the drive Automatic recovery when the line	
		voltage is less than 265VAC	
"Upper Blower Communication Error"	Modbus communication error	Make sure all communication	"Green/Red
OR "Lower Blower Communication		cables are plugged in	1 Sec ON/OFF"
Error"		Unplug and plug the	
		communication cables back in Verify cables are not cut or	
		damaged	
		Inspect drive's RJ45 jacks. Verify	
		jacks are not damaged, dirty or	
		loose	
		Replace communication cables	
		Automatic recovery when fault condition is removed	
"Upper Blower Motor Phase loss (0	Upper or lower motor phase	Check motor is connected to drive	"Yellow
RPM)"OR "Lower Blower Motor	disconnected	Inspect motor wires and	Blinking rapidly "
Phase loss (0 RPM)"		connectors for damage	
		Check for opens, shorts or	
		grounds	
		Turn OFF the unit using the power	
		switch, turn the unit back ON after 30 seconds.	
		Replace motor drive	-
"Upper Blower Motor Failure (Low	Upper or lower motor not moving	Turn OFF the unit using the power	NA
RPM)"OR "Lower Blower Motor	1	switch, turn the unit back ON after	
Failure (Low RPM)"		30 seconds.	
		Access the UI Settings Screen.	
		Enter Service Password. Select the	
		Calibration screen and then select the Fan Test screen. Turn motor	
		OFF and then ON. Verify RPM	
		values are not "0".	
		Verify if there are other alarm	
		messages. Verify the motor drives	
		status led code, as a Blower Motor	
		Failure Alarm is usually linked to a	
		drive failure. Check for opens, shorts or	
		grounds	
		Replace motor drive	

Section 6 **Operation and Programming**



Introduction

This section will guide you on the operation of the easyTouch controls on your new Lincoln Aperion Impinger® oven.

Startup

- 1. Ensure that your oven is connected to an electrical supply. Move the On/Off switch to the ON position
 - The display screen will energize and show the Lincoln oven model number and current software version. (Figure 1) This screen will transition after a few seconds to the Home Screen.



Figure 1

NOTE: The oven will not start pre-heating until you have selected a recipe.

2. The Home screen displays 4 buttons: Press & Go, which takes you to the Recipes screen; Manual mode; the Settings screen; and the Diagnostics button, which provides basic information about your oven. (Figure 2)

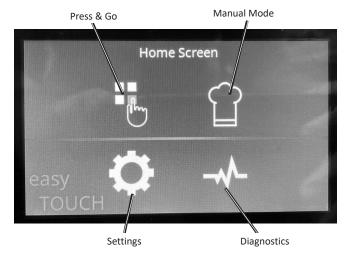


Figure 2

RECIPE SELECTION (PRESS & GO BUTTON)



1. Touch the Press & Go button to display the 8 pre-set recipes. Press any of the 8 numbered buttons to select the recipe. (Figure 3 and Figure 4)

The display screen will change to show the settings for the recipe selected.

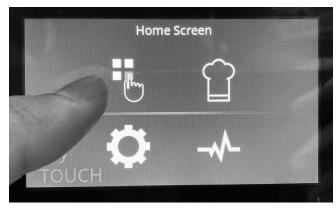


Figure 3



Figure 4

- The oven is now in pre-heat mode and the oven heaters will start-up. The temperature settings appear on the screen. You will see the temperature of the oven and the temperature increasing up to the set-point. The conveyor does not move in pre-heat mode.
 - A. To exit pre-heat mode, press and hold the "X" button until the screen returns to Home Screen.



Figure 5

- B. When the oven reaches the set-point temperature, the conveyor belt will start to move. The display will show the selected set-point temperature, fan speeds, and belt speed (cook time).
- 3. Oven Soak allow the oven cavity to soak for an additional 5-10 minutes before loading food
- 4. Load Food The oven is now ready for cooking. Please use the proper equipment to load and unload food from the conveyor. The conveyor will be hot to the touch. Pans or trays exiting the oven will be VERY HOT and are a burn hazard. Please use an oven mitt, pan gripper or other utensil to remove.



Figure 6

ECO MODE

Eco mode allows the operator to save energy by stopping the conveyor belt from moving during less busy operating times.

- Press the Leaf button on upper left side of the Recipe -Ready screen (Figure 7). The screen will change to Eco Mode (see Figure 8). The conveyor will stop moving while the temperature in the cavity should remain unchanged.
- 2. To re-start the conveyor, press the X button on the Eco Mode screen and the Recipe screen will re-appear.



Figure 7



Figure 8

MANUAL MODE

Manual mode allows the operator to change the temperature, upper and lower fan speeds, and cook time to revise or create a new recipe.

CHANGING TEMPERATURE AND COOK TIME (BELT SPEED)

1. Press the Chef's Hat or Manual mode button on the Home screen. (Figure 9 and Figure 10)

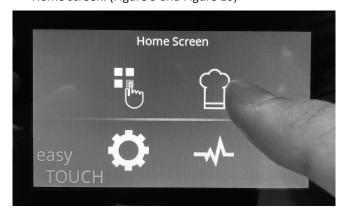


Figure 9



Figure 10

2. **Set Temperature:** Press the temperature button to change temperature. Touch the numbers to correspond to the temperature required. Press 2-5-0 for 250 degrees and then touch the check mark to save the new temperature or X to return to the original setting. (Figure 11 and Figure 12)



Figure 11



Figure 12

- 3. **Set Cook Time:** Press the cook time button (looks like a conveyor belt) to change cook time. Touch the numbers to correspond to the cook time required. Press 0-2-0-0 for 2 minutes and then touch the check mark to save the new cook time or X to return to the original setting. (Figure 13 and Figure 14)
- 4. You can return to the Home screen at any time by pressing the Back button or arrow on the lower left of the screen.



Figure 13



Figure 14

5. **Set Fan Speeds:** Press the top fan button to set the upper fan speed. Press 5-0 for 50% fan speed and then touch the check mark to save the new upper fan speed or X to return to the original setting. Press the lower fan button to set the lower fan speed. Press 8-0 for 80% fan speed and then touch the check mark to save the new lower fan speed or X to return to the original setting. (Figure 15 and Figure 16)



Figure 15



Figure 16

6. Save Recipe: Press the Save icon in the Manual Mode screen (Figure 16). The screen will transition to a numbered screen (Figure 17). Select the Recipe number and press the check mark. The icon and border color can be changed by selecting the Change Icon and/or Change Color buttons (Figure 18). Press the check mark to save the recipe. The screen will transition to Figure 19.



Figure 17



Figure 18



Figure 19

SETTINGS MODE

Settings mode allows the operator to change the oven settings such as Temperature unit of measure or Belt direction. The factory temperature unit of measure is Fahrenheit.

1. Press the Cog or Settings mode button on the Home screen. (Figure 20 and Figure 21)

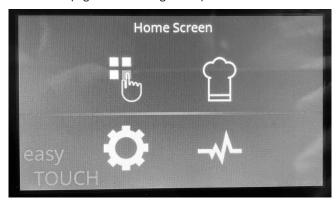


Figure 20



Figure 21

2. Enter the password by touching the numbers on the password screen. The password is: 4-5-8-7-5-6. This password is pre-set at the factory and is not changeable. (Figure 22)

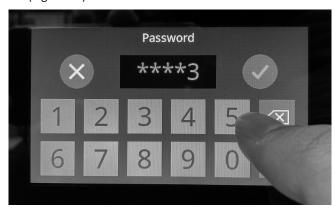


Figure 22

 Temperature Unit of Measure - Touch the white circle in the oval button on the Settings display that shows the temperature measure. The Fahrenheit or Celsius symbol will change to correspond to the desired temperature unit of measure. (Figure 23)



Figure 23

- Belt Direction Touch the white circle in the oval button on the Settings display that looks like a mini conveyor.
 The mini conveyor will change to correspond to the desired belt direction. The new belt direction is now set.
- 5. Software Update Press the "Software" button highlighted below in (Figure 24) to update the UI to the newest version.

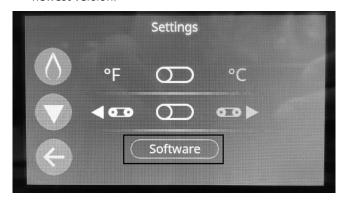


Figure 24

To perform an update, a USB drive containing the update must be plugged into the back of the touch screen. If a USB drive is not plugged in, or if the drive does not contain the files for a software update, the screen as shown in (Figure 25) will display, once the "Software" button is pressed.



Figure 25

Once a USB drive with the correct files is plugged in and the "Software" button is pressed, the following screen will appear as shown below. To proceed with the update, press the "V" button. To cancel the update, press the "X" button. (Figure 26)



Figure 26

6. Model Selection – From the settings main menu, Press the "▼" twice as highlighted in (Figure 27) below.

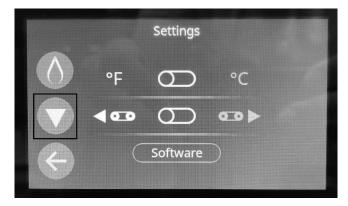


Figure 27

The model setup screen is used to select which Lincoln oven the UI should be configured for. This should be set to "2424" as shown below in (Figure 28). Beside the model selected is the split belt toggle. This should be set to "x2" if the oven is in a split belt configuration. This should be configured immediately on the first startup and after any UI updates.

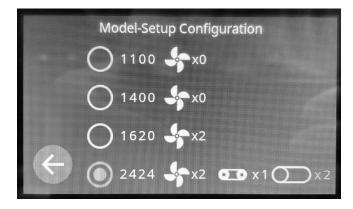


Figure 28

7. Temperature Calibration – From the settings main menu click the temperature calibration button, highlighted below in (Figure 29).

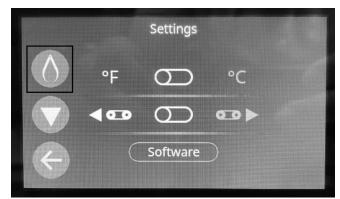


Figure 29

In the temperature calibration screen the upper and lower fan speed are set to 100% and the set point temperature to 500°F. Once the oven has reached the set point temperature, wait 5-10 minutes to allow the temperature to stabilize as shown in (Figure 30).

Measure the temperature inside the cavity with a probe and a thermometer. Place the probe 10'' in from either side, centered from front to back. Use the " \blacktriangle " and " \blacktriangledown " buttons to match the temperature displayed on the screen to the temperature shown on the thermometer.

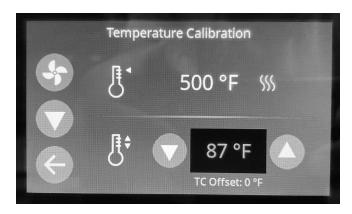


Figure 30

8. Fan Test – From the temperature calibration screen, press the fan test button, highlighted in (Figure 31) below.

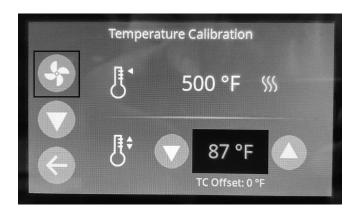


Figure 31

The fan test screen sets the upper and lower blower fan speed to 50%. In (Figure 32) as shown below, the upper blower fan is turned off and the lower blower fan is turned on. The RPM, Current, Voltage, and Status code should be like the upper blower values when turned off and like the lower blower values when turned on.

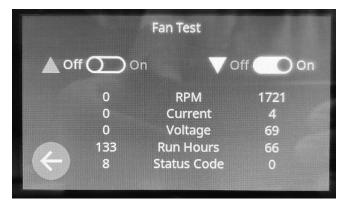


Figure 32

9. Conveyor Belt Calibration - From the temperature calibration screen press the "▼" button as highlighted below in (Figure 33).

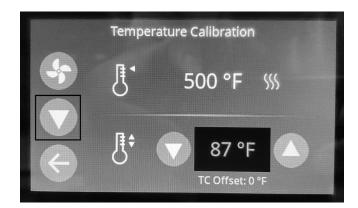


Figure 33

In manual mode, set the conveyor belt speed to 05:00. Measure how long it takes for the belt to travel from one side of the cavity to the other. Use the " $\mathbf{\nabla}$ " and " $\mathbf{\Delta}$ " to set the calibration factor according to the table below and reference (Figure 34).

Measured Time	Calibration Value
4:30	0.900
4:35	0.915
4:40	0.935
4:45	0.950
4:50	0.970
4:55	0.985
5:00	1.000
5:05	1.015
5:10	1.030
5:15	1.050
5:20	1.065
5:25	1.085
5:30	1.100



Figure 34

10. Conveyor Length Setting – From the conveyor belt calibration screen, press the "▼" as highlighted below in (Figure 35).

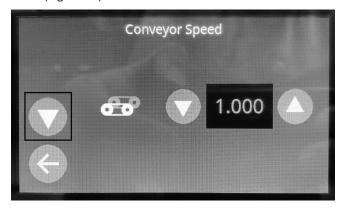


Figure 35

The screen as shown below in (Figure 36), is used to set the exterior cavity length. The exterior cavity length of the 2424 is 26" so this value should be set to 26".



Figure 36

DIAGNOSTICS MODE



Diagnostics mode allows the operator to view basic information about your oven including software revisions and temperature offsets.

1. Press the Diagnostics button on the Home screen to access this mode as shown below in (Figure 37).



Figure 37

2. Press the Back button or arrow to return to the Home screen. (Figure 38)

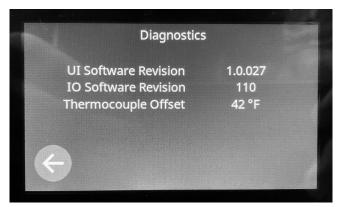


Figure 38

OVEN SHUT DOWN

1. To shut down your oven, press the Back Button to return to the Home screen. The conveyor should stop moving; however, the cooling fan will continue to run if the oven is hot. (Figure 39)



Figure 39

2. Turn OFF the On/Off switch. (Figure 40)

Your oven is now turned off. Please keep the oven connected to an electrical source to enable the cooling fans to continue to operate to cool down the oven. The fans could run for up to an hour after turning off the oven to cool the oven and protect critical components.



Figure 40

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Section 7 Removal, Installation & Adjustments

SOLID STATE RELAY - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- 5. Mark all wire leads for reassembly.
- 6. Remove plastic cover on solid state relay and disconnect all leads on solid state relay.
- 7. Remove two screws that hold the solid-state relay in place. Remove solid-state relay.
- 8. Remove protective tape from bottom heat sink of new solid-state relay.
- 9. Reassemble in reverse order.
- 10. Check oven for proper operation.

BLOWER MOTOR DRIVER - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front and rear control box covers.
- 5. Mark all wire leads for reassembly and disconnect all wire leads to motor driver.
- Remove four nuts that hold the motor driver in place. Remove motor driver.
- 7. For upper fan motor in right control tower, inspect DIP switch on new motor driver and be sure that only DIP switch 2 is in the (ON) position. DIP switches 1, 3 and 4 will be set to (OFF).
- 8. For lower fan motor in left control tower, inspect DIP switch on new motor driver and be sure that DIP switches 1 and 2 are in the (ON) position. DIP switches 3 and 4 will be set to (OFF).
- 9. Reassemble in reverse order.
- 10. Check oven for proper operation.

I/O BOARD - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- 5. Mark all wire leads for reassembly and disconnect all wire leads to I/O board.

- 6. Remove I/O board from the six snap in connectors.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

24 VOLT POWER SUPPLY - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- 5. Mark all wire leads for reassembly and disconnect wire leads to power supply.
- 6. Remove four screws that hold power supply in place. Remove power supply.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

CONVEYOR MOTOR DRIVER – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- 5. Mark all wire leads for reassembly and disconnect wire leads to the conveyor motor driver.
- 6. Remove two screws that hold conveyor motor driver in place. Remove conveyor motor driver.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

DUAL VOLTAGE CONTROL BOARD – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- 5. Mark all wire leads for reassembly and disconnect wire leads to the dual voltage control board.
- Remove dual voltage control board from four snap in connectors.
- 7. Check position of DIP switches: switch 1 "ON" and switches 2 and 3 "OFF.
- 8. Reassemble in reverse order.
- 9. Check oven for proper operation.

COOLING FAN – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly, if needed.
- 4. Remove appropriate control box cover
- Mark all wire leads for reassembly and disconnect wire leads to the cooling fan.
- 6. Note: direction of old fan before removing.
- 7. Remove four screws that hold cooling fan in place. Remove cooling fan.
- 8. Reassemble in reverse order.
- 9. Check oven for proper operation.

HEATING ELEMENT – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- Remove sixteen screws at rear panel and remove rear panel.
- 4. Remove twenty-seven screws to heating element assembly. Remove element assembly.
- Mark all wire leads for reassembly and disconnect wire leads.
- Remove six screws that hold heating element in place. Remove heating element.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

FAN MOTOR – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove appropriate control tower cover.
- Mark all wire leads for reassembly and disconnect wire leads.
- Remove four screws that hold fan motor in place. Remove fan motor.
- Reassemble in reverse order. (For fan in left control tower, be sure that the open end of fan motor assembly is facing upward upon installation. For fan in right control tower, open end of fan motor assembly will face downward.)
- 7. Check oven for proper operation.

CONTACTOR – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove right control tower cover.
- 4. Remove six screws that hold service panel in place.
- Mark all wire leads for reassembly and disconnect wire leads.
- 6. Remove four screws that hold contactor in place. Remove contactor.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

CIRCUIT BREAKER – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove right control tower cover.
- 4. Remove six screws that hold service panel in place.
- Mark all wire leads for reassembly and disconnect wire leads.
- Remove six screws that hold circuit breaker in place. Remove circuit breaker.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

CONVEYOR MOTOR – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove right control tower cover.
- 5. Remove coupling from motor.
- 6. Mark all wire leads for reassembly and disconnect wire leads.
- 7. Remove four screws that hold conveyor motor in place. Remove conveyor motor.
- 8. Reassemble in reverse order.
- 9. Install coupling on to new motor.
- 10. Check oven for proper operation.

TOUCHSCREEN - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- Mark all wire leads for reassembly and disconnect wire leads.
- 6. Remove six screws that hold touchscreen in place. Remove touchscreen.
- 7. Reassembly in reverse order.
- 8. Check oven for proper operation.

ON/OFF SWITCH – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- Mark all wire leads for reassembly and disconnect wire leads.
- Depress spring clips on top and bottom of on/off switch. Remove on/off switch.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

NOTE: Make sure switch housing is fully seated in control box housing.

FUSE HOLDER - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove the front control tower cover.
- Mark all wire leads for reassembly and disconnect wire leads.
- 5. Remove nut on backside of desired fuse holder. Remove fuse holder.
- 6. Reassembly in reverse order.
- 7. Check oven for proper operation.

USB SOCKET – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- Remove nut on backside of USB socket. Remove USB socket.
- 6. Reassemble in reverse order.
- 7. Check oven for proper operation.

TERMINAL BLOCK – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove right control tower cover.
- 4. Remove six screws that hold service panel in place.
- 5. Mark all leads for reassembly and disconnect wire leads.
- 6. Remove two screws on back of service panel.
- 7. Remove terminal block from bracket.
- 8. Reassemble in reverse order.
- 9. Check oven for proper operation.

ALARM - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove right control tower cover.
- 4. Remove six screws that hold service panel in place.
- 5. Mark all leads for reassembly and disconnect wire leads.
- 6. Remove screws that hold alarm in place. Remove alarm.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

COOLING FAN THERMOSTAT – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove right control tower cover.
- 4. Mark all leads for reassembly and disconnect wire leads.
- 5. Remove two screws that hold cooling fan thermostat in place. Remove thermostat.
- 6. Reassemble in reverse order.
- 7. Check oven for proper operation.

CAVITY HI-LIMIT – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- Remove sixteen screws at rear panel and remove rear panel.
- 4. Remove twenty-seven screws to heating element assembly. Remove element assembly.
- 5. Remove four screws to blower motor housing. Remove housing.
- Remove two screws to cavity hi limit cover. Remove cover.
- 7. Loosen two screws that hold cavity hi limit in place. Remove the hi limit.
- 8. Reassemble in reverse order.
- 9. Check oven for proper operation.

CONTROL BOX HI-LIMIT – REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- Remove appropriate control tower cover.
- Remove two screws that hold hi limit in place. Remove the hi limit.
- 5. Reassemble in reverse order.
- 6. Check oven for proper operation.

THERMOCOUPLE - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- For right side thermocouple, remove right side control tower cover and front cover.
- For left side thermocouple, remove left side control tower cover.
- Remove two screws that hold thermocouple in place. Remove the thermocouple.
- 6. Reassemble in reverse order.
- 7. Check oven for proper operation.

CONVEYOR BELT – REPLACEMENT

- 1. Remove conveyor assembly from oven cavity and place on flat work surface.
- Remove four connecting links from conveyor belt. Remove conveyor belt.
- 3. Reassemble in reverse order.

4. Check conveyor for proper operation.

CONVEYOR BEARINGS – REPLACEMENT

- Remove conveyor assembly from oven cavity and place on flat work surface.
- Remove four connecting links from conveyor belt. Remove conveyor belt.
- 3. Remove two screws on each end of appropriate shaft. Remove shaft.
- 4. Remove bearings from shaft.
- 5. Reassemble in reverse order.
- 6. Check conveyor for proper operation.

CONVEYOR SHAFT – REPLACEMENT

- 1. Remove conveyor assembly from oven cavity and place on flat work surface.
- Remove four connecting links from conveyor belt. Remove conveyor belt.
- Remove two screws on each end of appropriate shaft. Remove shaft.
- 4. Reassemble in reverse order.
- 5. Check conveyor for proper operation.

CONVEYOR SPROCKET – REPLACEMENT

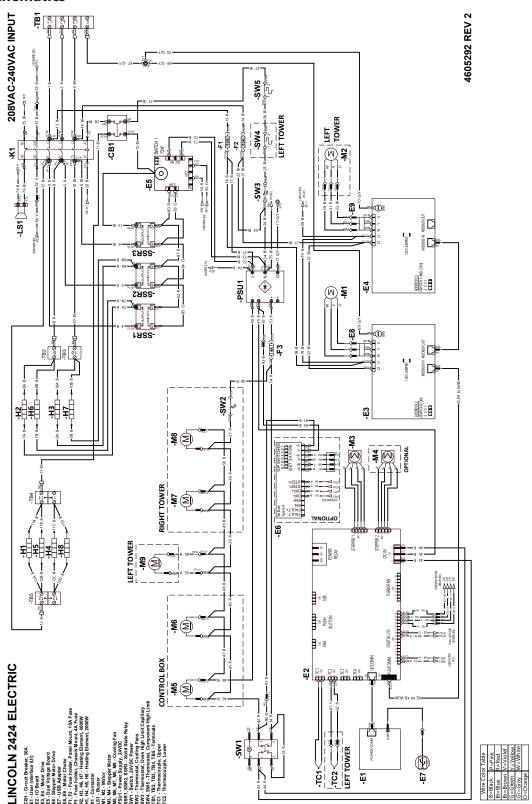
- Remove conveyor assembly from oven cavity and place on flat work surface.
- Remove four connecting links from conveyor belt. Remove conveyor belt.
- Remove two screws on each end of appropriate shaft. Remove shaft.
- 4. Remove sprocket from shaft.
- 5. Reassemble in reverse order.
- 6. Check conveyor for proper operation.

4A DC CIRCUIT FUSE - REPLACEMENT

- 1. Shut off power at main breaker.
- 2. Unplug power cord from power supply.
- 3. Remove conveyor assembly.
- 4. Remove front control box cover.
- 5. Remove fuse from fuse holder.
- 6. Replace fuse.
- 7. Reassemble in reverse order.
- 8. Check oven for proper operation.

Section 8 Diagrams

Wiring Schematics



Notes

Notes

Notes

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