Lincoln

Impinger® Conveyor Oven
Series 3200, Models 3240 –3255 –3270

Service Manual
Domestic & International

Part Number LIN_SM_0001 11/15

Manitowoc

Safety Notices

As you work on Lincoln equipment, be sure to pay close attention to the safety notices in this manual. Disregarding the notices may lead to serious injury and/or damage to the equipment.

Throughout this manual, you will see the following types of safety notices:

⚠ DANGER

Text in a Danger box alerts you to an eminent personal injury situation. Be sure to read the Danger statement before proceeding, and work carefully.

⚠ Warning

Text in a Warning box alerts you to a potential personal injury situation. Be sure to read the Warning statement before proceeding, and work carefully.

⚠ Caution

Text in a Caution box alerts you to a situation in which you could damage the equipment. Be sure to read the Caution statement before proceeding, and work carefully.

Procedural Notices

As you work on Lincoln equipment, be sure to read the procedural notices in this manual. These notices supply helpful information which may assist you as you work.

Throughout this manual, you will see the following types of procedural notices:

Important

Text in an Important box provides you with information that may help you perform a procedure more efficiently. Disregarding this information will not cause damage or injury, but it may slow you down as you work.

NOTE: Text set off as a Note provides you with simple, but 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.

⚠ Warning

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

⚠ 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.

⚠ Warning

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.

⚠ 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.

⚠ Warning

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

⚠ Warning

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

⚠ Warning

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

⚠ Caution

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

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

Table of Contents

Section 1
General Information

Model Number Key 7

Section 2
Installation

Exterior Dimensions – 3240 9
Exterior Dimensions – 3255 10
Exterior Dimensions – 3270 11
Canopy Ventilation Recommendations 12
Installation Requirements 13
- Gas Code Requirements 13
- Electrical Code Requirements 13
- Spacing Requirements 14
- Ventilation Requirements 14
- Restraint Requirement – Gas Oven(s) on Casters, U.S. and Australia 15

Installation 15
- Unloading 15
- Uncrating 15

Manual Gas Valve Installation 16
Stand and Finger Assembly 16
Installation Checklist 18
- Checklist 19

Start-Up Procedures 19
- Smoke Candle Test – Ventilation System Verification 19
- Finger Housing Baffle Plate Adjustments 20

Section 3
Operation

Sequence of Operation – Domestic 21
- Power Supply 21
- Control Box Auto Cool Down 21
- Main Fan Circuit 21
- Burner Circuit 21
- Temperature Control 21
- Conveyor Drive 22

Sequence of Operation – International 23
- Power Supply 23
- Control Box Auto Cool Down 23
- Main Fan Circuit 23
- Burner Circuit 23
- Temperature Control 23
- Conveyor Drive 23

Section 4
Maintenance

Preventive Maintenance 25
Daily Cleaning 25
Weekly Cleaning 26

Section 5
Troubleshooting

Troubleshooting Guide – Domestic 29
Troubleshooting Guide – International 33

Section 6
Controls

Oven Start-Up Instructions 37
To Turn A Conveyor Off Or Back On 38
Oven Shut-Down Instructions 38
Oven Control – Programming 38
Before Applying Power 38
Initializing A New Control 38
Setting Temperature Scale °F Or °C 38
Setting Bandwidth, Cut Out Voltage And Cut In Voltage 39
Setting Bake Time And Oven Temperature – Set Point Menu 39
Adjusting Temperature Offset 39

Section 7
Component Procedures

Burner Control – Honeywell – Domestic Only 41
Ignition Control – International Only 41
Burner Blower Motor 41
Hot Surface Ignitor – Domestic Only 41
Ignitor Sensor – International Only 41
Conveyor Drive Motor 42
Reversing Switch 42
Burner Reset Switch – International Only 42
Burner Alarm – International Only 42
Air Pressure Switch – International Only 42
Fuseholder 42
Burner Control Gas Valve (Dual Valve) –Domestic Only 43
Ignition Control Gas Valve (Dual Valve) – International Only 43
Modulating Gas Valve 44
Main Orifice 44
On – Off Switch (Power) 44
Oven Control Transformer 44
Burner Control Transformer – Domestic Only 45
Capacitor, Main Fan Motor (7.5 MFD/370V) 45
Relay 45
Thermostat, Cooling Fan 45
Oven Cavity Hi-Limit Thermostat – International Only 45
Cooling Fan Motor 45
Main Fan Motor 46
Thermocouple (Type K) 46
Bearing, Conveyor 47
Conveyor Control 47
Oven Control 47

Section 8
Charts

Gas Pressure Conversion **49**
Specifications **49**

Section 9
Diagrams

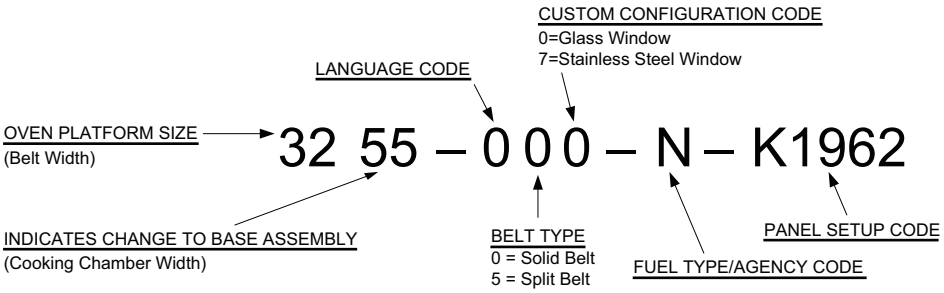
Wiring Schematics **53**
Domestic Model 3240 120V 60 Hz 1Ph Natural or Lp Gas 53
International Model 3240CE 230V 50 Hz 1Ph Natural or Lp Gas 54
Domestic Model 3255 120V 60 Hz 1Ph Natural or Lp Gas 55
International Model 3255CE 230V 50 Hz 1Ph Natural or Lp Gas 56
Domestic Model 3270 120V 60 Hz 1Ph Natural or Lp Gas 57
International Model 3255CE 230V 50 Hz 1Ph Natural or Lp Gas 58

THIS PAGE INTENTIONALLY LEFT BLANK

Section 1
General Information

Model Number Key

Example: 3255-000-N-K1962



Language Code

Code	Language	Country
0	English	Dom. & Int. Default
B	French	CE – France/Luxembourg
C	German	CE – Germany
D	Italian	CE – Italy
E	Spanish	CE – Spain
F	English	CE – UK/India/Africa/Hungary
G	Spanish	Mexico/Latin America
H	Portuguese	CE – Portugal
I	Not Used	---
J	Danish	CE – Denmark
K	Dutch & French	CE – Belgium
L	Dutch	CE – Netherlands
M	Greek	CE – Greece
N	Finnish	CE – Finland
O	Restricted	---
P	Norwegian	CE – Norway
Q	English	Japan
R	Swedish	CE – Sweden
S	English	Australia
T	Mandarin	China
U	Restricted	---
V	English	Pacific Rim/Korea
W	English	Middle East/Africa
X	Not Used	---
Y	Not Used	---
Z	Not Used	---

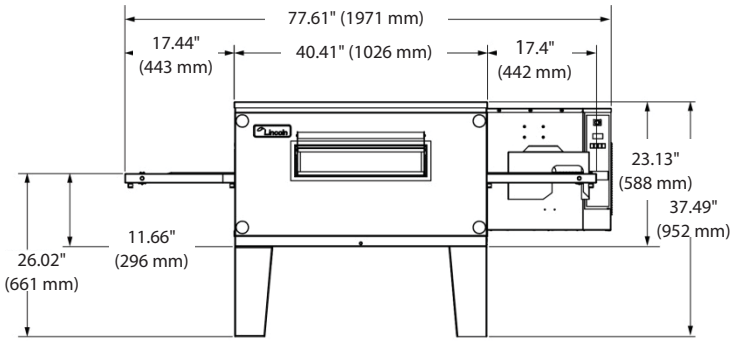
Fuel Type/Agency Code

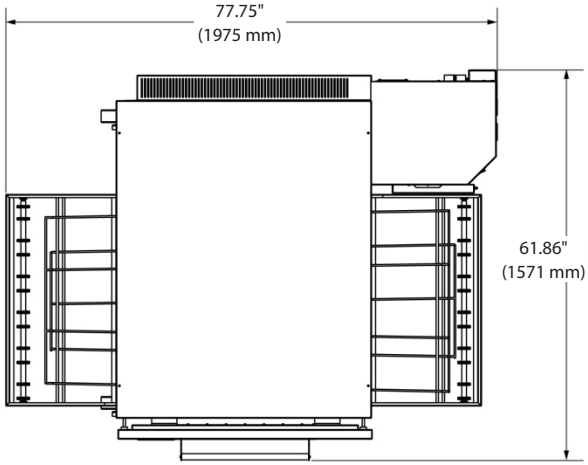
Code	Fuel Type
N	Natural Gas
L	LP Gas
NCE	Natural Gas CE Approved
LCE	LP Gas CE Approved

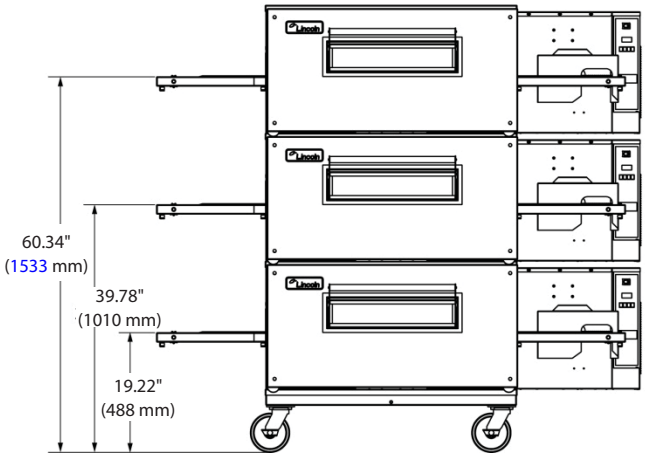
THIS PAGE INTENTIONALLY LEFT BLANK

Section 2
Installation

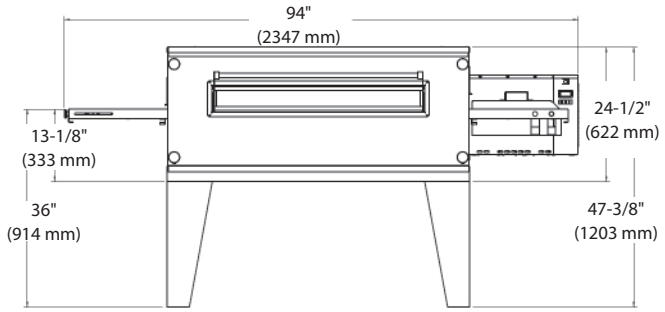
Exterior Dimensions – 3240

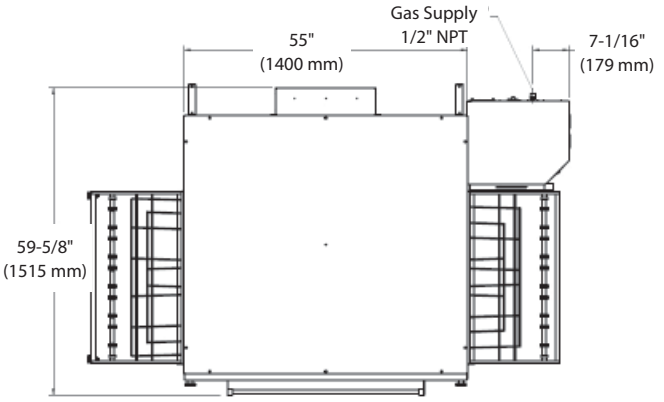


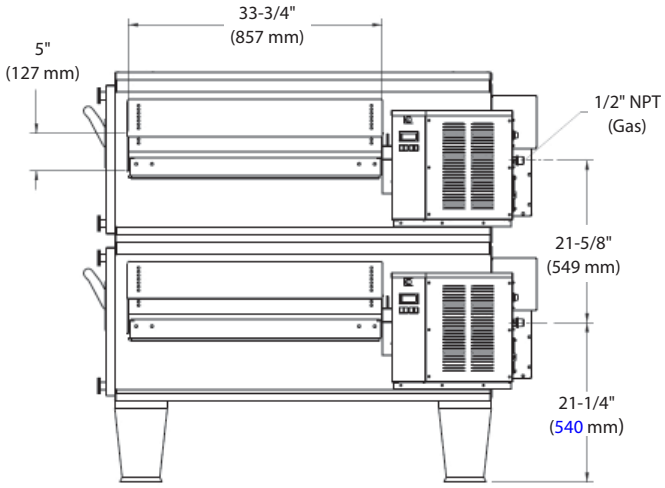


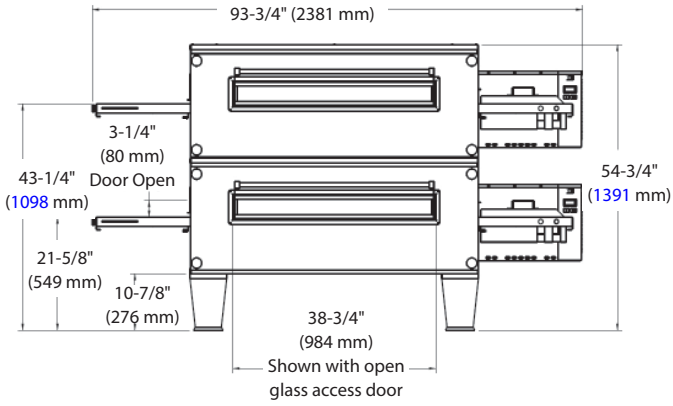


Exterior Dimensions – 3255

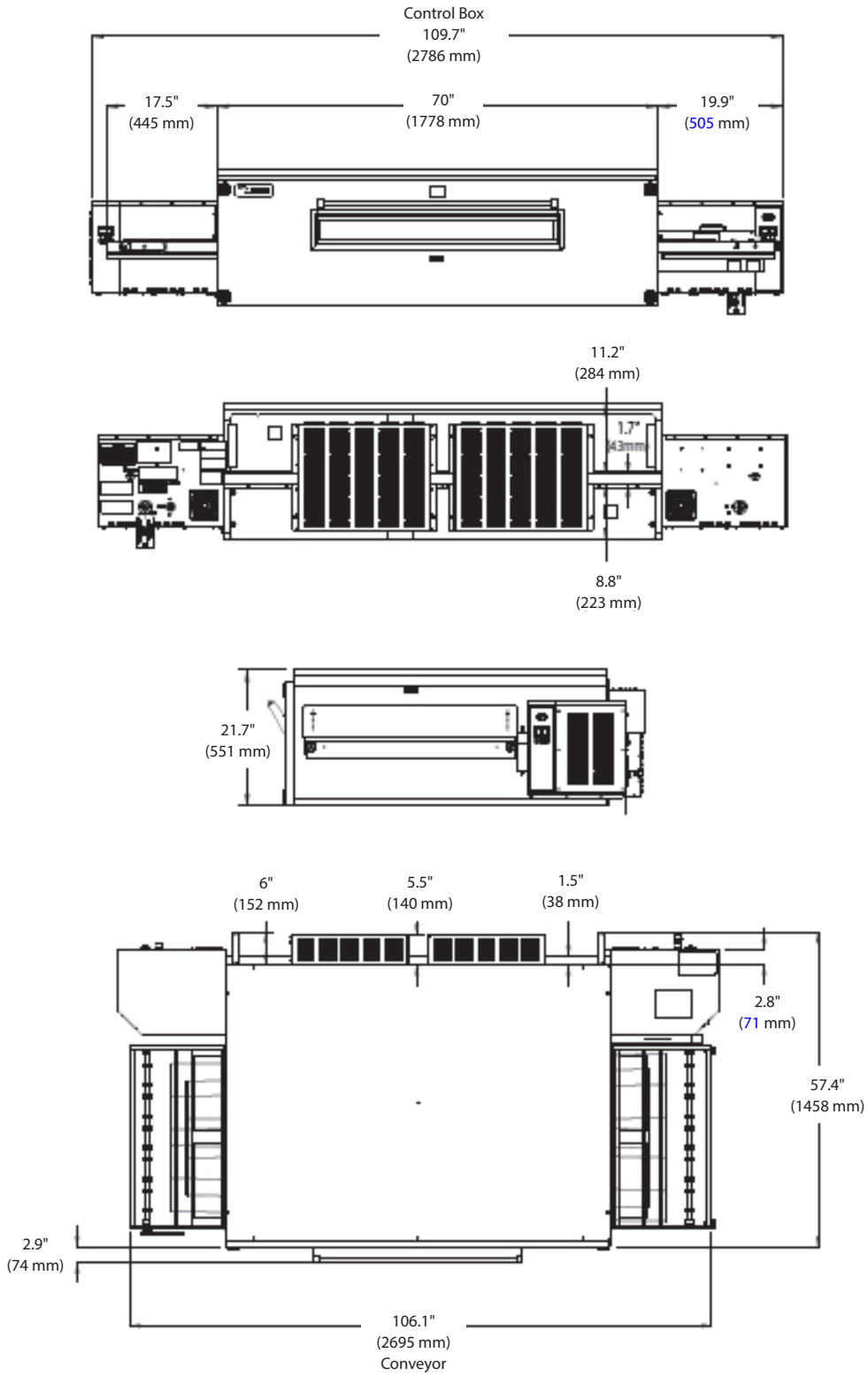




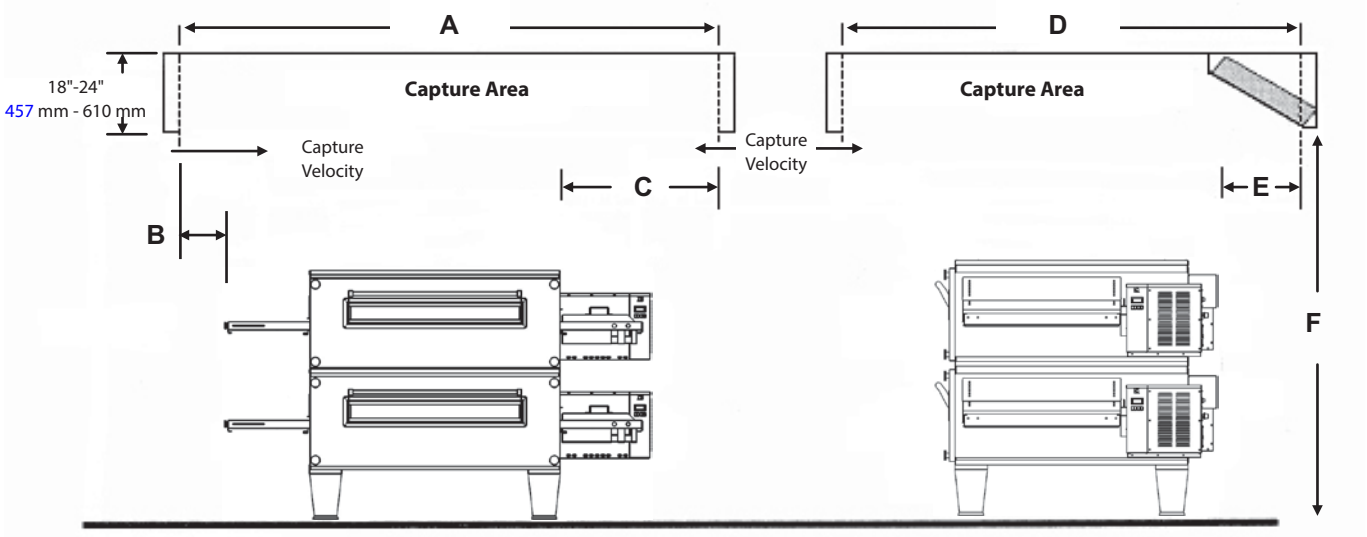




Exterior Dimensions – 3270



Canopy Ventilation Recommendations



Dimension	Single or Double Stack			Triple Stack *
	3240	3255	3270	
A	96 in (2438 mm)	108 in (2743 mm)	120 in (3048 mm)	10 ft (3039 mm)
B	8 in (203 mm)	8 in (203 mm)	8 in (203 mm)	22 in (559 mm)
C	22 in (559 mm)	22 in (559 mm)	22 in (559 mm)	22 in (559 mm)
D	80 in (2032 mm)	80 in (2032 mm)	80 in (2032 mm)	6 ft 8 in (2020 mm)
E	12 in (305 mm)	12 in (305 mm)	12 in (305 mm)	12 in (304 mm)
F	80 in (2032 mm)	80 in (2032 mm)	80 in (2032 mm)	6 ft 6 in AFF (1981 mm)
Exhaust Flow	1400 – 1600 CFM	1600 – 2000 CFM	1800 – 2400 CFM	—

AFF = Above Finished Floor

* Hood dimensions shown are for island mount - Size reductions may be possible for wall mount units.

NOTE: Hood dimensions and the positioning of the hood over the oven will vary with hood manufacturers.

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.

Installation Requirements

⚠ DANGER

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

GAS CODE REQUIREMENTS

⚠ DANGER

Conversion of this appliance from one type of gas to another must only be performed by qualified, licensed, and authorized installation or service personnel. Conversion without the proper components may result in fire or explosion.

⚠ Warning

A manual shut-off valve must be installed in the gas supply (service) line upstream of this appliance and in a position where it can be reached quickly in the event of an emergency.

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 and local municipal building codes.

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.

NOTE: In the event that verification of pilot flame is needed, a small mirror may be utilized for verification.

If flexible services are provided, they must meet code requirements for such installation.

ELECTRICAL CODE REQUIREMENTS

⚠ Warning

This appliance must be grounded and all field wiring must conform to all applicable local and national codes. Refer to rating plate for proper voltage. It is the responsibility of the end user to provide the disconnect means to satisfy the authority having jurisdiction.

⚠ Warning

This equipment must be positioned so that the plug is accessible unless other means for disconnection from the power supply (e.g., circuit breaker or disconnect switch) is provided.

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.

1. 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 or triple stack and each oven has its own disconnection switch, all switches should be close together.

SPACING REQUIREMENTS

⚠Warning

To avoid instability the installation area must be capable of supporting the combined weight of the equipment and product. Additionally the equipment must be level side to side and front to back.

The oven must have 6 inches (152 mm) of clearance from combustible 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.

FOR PERMANENTLY INSTALLED OVENS: A permanently installed (unmovable) oven requires a minimum of 13 feet clearance on the right hand side to allow for conveyor removal, cleaning, and servicing.

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: 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 below.

Ventilation Guidelines

A ventilation hood is required to remove heat and cooking odors. 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. (NOTE: This oven is considered as "Light Duty for Baking" when evaluated for code vent requirements.) 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 1600 and 2800 CFM exhaust or more with 70% make-up air. (The "Efficiency" of various hood designs makes it necessary to specify such a wide range of ventilator CFM.) Make up air must be supplied by either a hood design or the HVAC system. This will vary with hoods from various manufacturers.

⚠Caution

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.

Ventilation System

NOTE: These ovens are considered "Light Duty for Baking" when evaluated for code vent requirements.

This information is shown as a guideline for ventilation.

1. Dimensions shown are for ovens without extension shelves. The outside end of the conveyor frame must be a minimum of 8 inches inside the canopy as shown.
2. The capture velocity across the lower edge of the canopy is to be 50 FPM at sides and front.
3. Use filters at rear exhaust area of hood, as shown.
4. At start-up, the CO level must be checked around the oven space under the canopy.
5. This level must be < 10ppm.
6. The ovens are to be centered in the canopy space left-to-right and front-to-back if possible.
7. A 6-inch space at rear of oven is recommended for utilities.
8. Recommend 70% make-up air provided outside of the canopy through perf metal diffusers directed straight down — not at the oven; located at front, sides or both.
9. Room air diffusers must not be directed onto the oven and should be positioned a minimum of 3 feet from the perimeter of the hood to keep them from affecting the oven.

RESTRAINT REQUIREMENT – GAS OVEN(S) ON CASTERS, U.S. AND AUSTRALIA

⚠ DANGER

Legs or casters must be installed and the legs or casters must be screwed in completely to prevent bending. When casters are installed the mass of this unit will allow it to move uncontrolled on an inclined surface. These units must be tethered/secured to comply with all applicable codes.

- The installation shall be made with a gas connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 latest version, and a quick disconnect device that complies with the Standard for Quick Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 latest version.

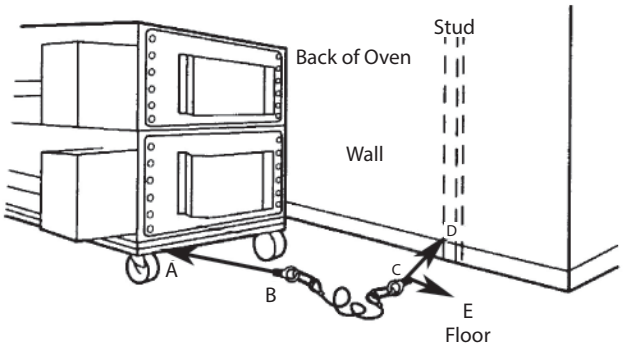
  IN CANADA: The installation shall be made with gas connectors that comply with Canadian Code CSA 6.16 latest version and quick disconnects complying to Canadian Code CSA 6.9 latest version.

  IN AUSTRALIA: To be installed in accordance with AS 5601-2004 and 4563-2004 Gas Installation Code.
- 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. Screw lifting eye "B" of cable assembly to hole "A".
2. Screw eye bolt "C" of cable assembly to stud in wall "D" or floor anchor "E".

NOTE: Installation point is the same for single or stacked ovens.



Installation

The instructions that follow are intended as a guide for preparing for the installation of the Impinger® Conveyor Ovens, Series 3240C, 3255 and 3270. First and foremost, each crate should be examined before signing the Bill of Lading to report any visible damage caused by the trucker in transit, and to account for the proper number of crates.

UNLOADING

When the oven arrives it should consist of:

1. A crate containing oven body, conveyor, fingers, crumb pans, and pan stops. (Some models may have the conveyor packed separately.)
2. A package containing the stand and top.

It is recommended that you have a material-handling device available to unload.

DO NOT LIFT EXCESSIVE WEIGHT!

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 COUTRIES: 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.

UNCRATING

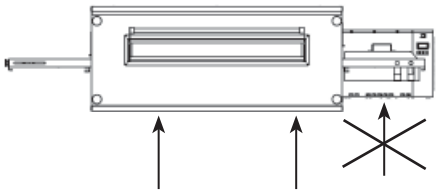
When you have all the crates unloaded, open the crates and remove the plastic covers. Inspect at once for concealed damage. If anything appears to be damaged, contact the appropriate persons immediately to file a damage claim. After completing this inspection, finish unpacking the oven and all other components. Be sure to remove the 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.

THE OVEN WILL CLEAR THROUGH A 30" (762 mm) DOORWAY BY USING THE FOLLOWING PROCEDURE:

1. Remove conveyor; see "Weekly Cleaning" section for instructions. (Some units may have conveyor packed separately.)
2. Remove thumb screws and baffle from the left side of the oven.

3. Place the left side on a four wheel moving dolly and it will clear a 30" (762 mm) doorway. Or oven can remain on skid and be tilted on its back. Then placed on two four-wheel dollies.

> **⚠ Caution**
>
> Do not lift the ovens using the control enclosure. Lift from the main oven cavity only. Damage may occur to the controls of the oven if lifted by the control enclosure.



Manual Gas Valve Installation

When installing the gas valve that is supplied with the oven it is our suggestion that an elbow be placed on the oven pipe first. This will allow the flexible hose to be attached in a downward direction, eliminating possible stress to the hose.

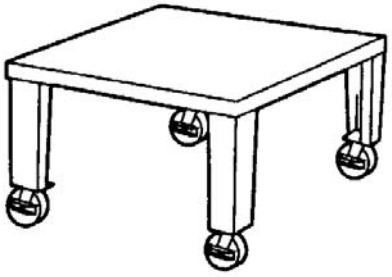
Specifications

Body: Stainless Steel	Power: Gas and/or Electric
DB Level: ≤ 71dba	Operating Temperature Range: 300°F - 600°F (149°C - 316°C)

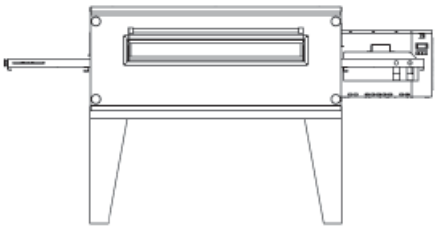
Stand and Finger Assembly

NOTE: 3255 is used for illustration.

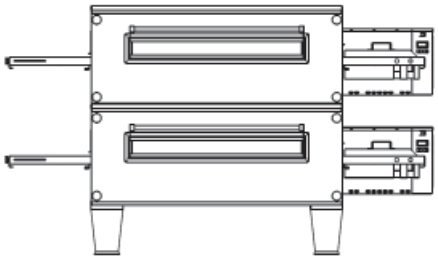
1. The stand is a 55" (1397 mm) x 49" (1245 mm) rectangle. Set it in place with a 55" side facing out. This will be the front of the oven. Using a carpenter's level, level all four (4) sides of the stand. To raise or lower the stand, use the leg adjusters. Ovens on casters require a level floor. NOTE: The oven top is packed with oven stand. Remove top from stand before assembly.



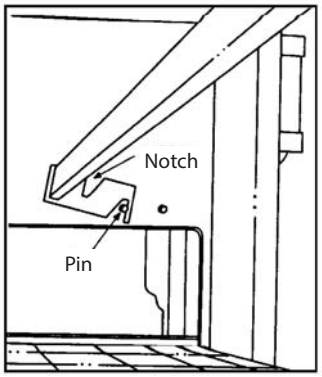
2. Remove the oven from the dolly and set it on the stand. The control panel should be on the right rear as you face the oven. Be sure that the oven sets squarely on the stand and is fully seated. For a single oven, install top. For double, see step 3.



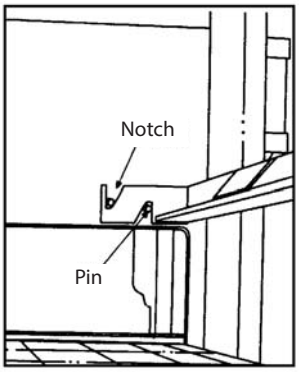
3. If you purchased a double stack oven, place the second oven on top of the first one. Be sure that it sets on squarely and is fully seated. The control panel goes on the right rear. Now install oven top.



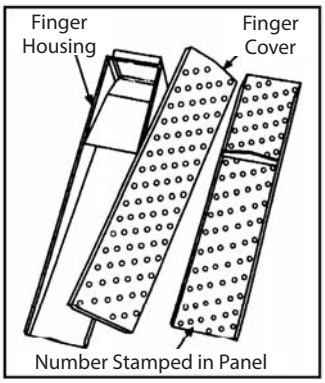
4. Before installing the retaining brackets in the oven(s), be sure all of the packing material is removed from the plenum shroud. Install the finger retaining brackets by placing them upside down and hooking the retaining pin as shown.



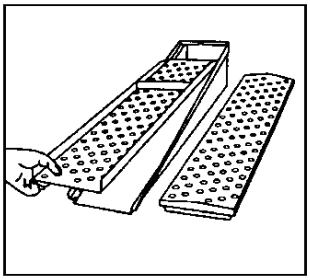
5. Rotate the finger brackets until the notches in the brackets sit on the retaining pins.



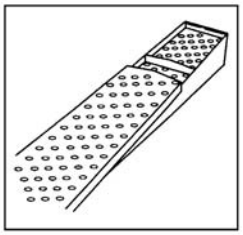
6. Assemble fingers as shown in steps 7 and 8.



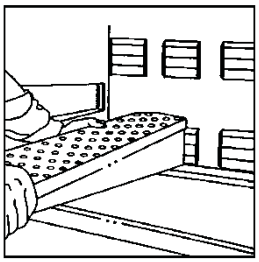
7. Insert columnating plate so the step goes under the lip of the finger housing and the plate lies flush with the housing side edge.



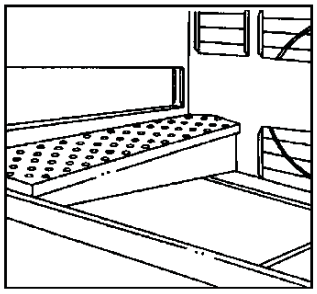
8. Install cover by sliding it on the small end.



9. Insert assembled finger through door opening starting with lower left. NOTE: The customer MUST tell you what position to place the assembled finger in, for their application.

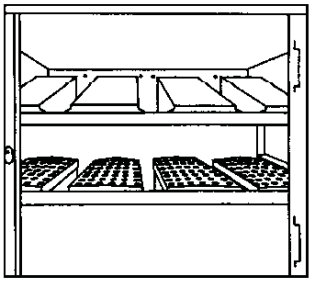


10. Install finger in the oven by sliding it over the plenum flange and setting the front bracket. BE SURE THAT THE FINGER SITS SQUARELY OVER THE PLENUM FLANGES AND THE HOLES POINT IN THE PROPER DIRECTION. Top fingers point down, bottom fingers point up.



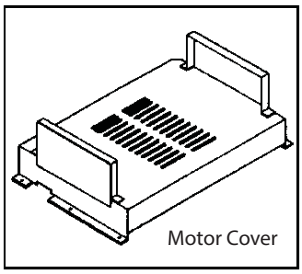
11. Repeat step 10 until all ten (10) fingers are installed.

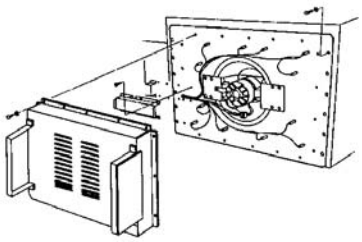
Install conveyor and crumb pans before operation. See "Weekling Cleaning" in Section 4 for instructions.



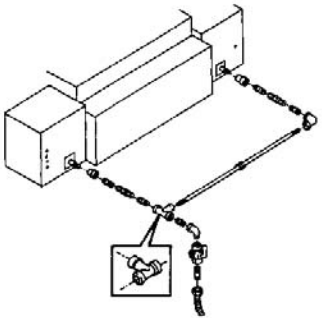
12. Attach Motor Cover as shown with bolts provided.

    You are now ready for services to be connected. This should be done by licensed electricians and plumbers. See "Specifications" section and "Installation Requirements" section for more information.





13. The gas piping manifold kit should be installed as shown.



Installation Checklist

⚠ DANGER

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

⚠ 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 an Authorized Service Technician 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 an Authorized Service Technician or a Lincoln Foodservice Products, LLC Service Representative.

CHECKLIST

- ☐ 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?

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.

Test Procedure:

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

1. 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. Open the optional access window in the oven door, or insert candle through conveyor opening.
4. 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 access window or door.)
5. Observe the smoke pattern coming out of the oven openings and the collection of this smoke by the ventilation system.
6. The ventilation system must capture all the smoke from the oven.

FINGER HOUSING BAFFLE PLATE ADJUSTMENTS

The finger housing has a baffle mounted inside to balance the air flow to the rear and front of the oven. If the product is cooking more or less in the rear of the oven than in the front, it is possible the finger housing baffle needs to be adjusted. If it is deemed necessary to adjust the air balancing baffle, be sure to adjust all ten finger housings to exactly the same opening. Determine if more air (heat) is required at front or rear of oven, then open or close off that air by bending the baffle in the proper direction. For additional information on how to adjust the Finger Housing Baffle Plate, contact the Lincoln Technical Service Department at 1-824-724-2273.

Section 3
Operation

Sequence of Operation – 3240/3270 Domestic

Model	Gas Type	Voltage	Hz.	Phase
3240	Natural Gas	120 VAC	60 Hz	1 Phase
3240	LP Gas	120 VAC	60 Hz	1 Phase
3270	Natural Gas	120 VAC	60 Hz	1 Phase
3270	LP Gas	120 VAC	60 Hz	1 Phase

POWER SUPPLY

Electrical power to be supplied to the oven by a three conductor cordset. Voltage from the black conductor to the white conductor to be 120 VAC.

- White conductor is Neutral
- Green conductor is Ground

MAIN FAN CIRCUIT

Power is permanently supplied through the fuse to the normally open double pole power switch, to a normally open set of contacts on the main fan relay and the normally open cooling fan thermostats. Closing the power switch supplies power to the coil of the time delay relay. These normally open contacts now close supplying power to the time delay which then supplies power to the main fan relay coil closing the normally open contacts and energizing the main fan motors.

BURNER CIRCUIT

Closing the Oven Power Switch also supplies power to the burner blower motors. NOTE: Some oven utilizes two (2) complete Burner/Temperature Control systems. The sequence of operations is the same for each system. Power is supplied, through the Centrifugal Switch of the Main Fan Motor (this switch closes when the Main Fan reaches approximately 900 R.P.M.) to the primary of Ignition Control Transformers. As the Burner Blower reaches approximately 1600 R.P.M., its internal centrifugal switch will close, supplying 24 VAC to the ignition control. The Ignition Control operates on both 24 VAC and 120 VAC. When the control is energized by 24 VAC, 120 VAC is switched to the Hot Surface Igniter for 45 seconds for Hot Surface Igniter warm up. The igniter glows red, 24 VAC is switched to the MV/PV gas valve which opens, and ignition will occur. If ignition does not occur in 6 seconds, the control will lock out. To recycle after lockout, turn off the main oven switch for 45 seconds and then turn the switch back on.

TEMPERATURE CONTROL

When the Oven Power Switch closes, power is supplied to the Oven Control Transformers which supply 24 VAC to the oven controls (TWO CONTROLS – one for the left side of oven, one for the right side of oven). The oven control is set to a desired temperature. Thermocouples will provide varying millivolts to the oven controllers. The oven controllers supply 3-24 VDC to the modulating valve to maintain desired temperature.

CONVEYOR DRIVE Line voltage is supplied to the conveyor motor. The conveyor speed is controlled by an increase or decrease in frequency for the conveyor controller.
Secondary voltage, 24 VAC, is supplied to the oven control. Setting the oven control to the desired time, outputs line voltage, through a reversing switch, to the conveyor motor.
Speed is monitored via frequency output from the hall effect sensor.

NOTE: The conveyor control uses a hall effect sensor and magnet mounted in the conveyor motor that senses the motor speed. Any change in motor load (± R.P.M.) is detected by the sensor and the frequency to the motor is adjusted accordingly.

CONTROL BOX AUTO COOL DOWN When the temperature in either one of the control boxes reaches 120°F ± 3°F (49°C ± 1.7°C), the cooling fan thermostats will switch power to the cooling fans. The thermostats will interrupt power to the cooling fans when the temperature falls to 100°F ± 3°F (37°C ± 1.7°C).

NOTE: Some models may be split belts but the Sequence of Operations will be identical for either Conveyor Drive.

Sequence of Operation – 3240/3270 International

Model	Gas Type	Voltage	Hz.	Phase
3240 CE	Natural Gas	230 VAC	50 Hz	1 Phase
3240 CE	LP Gas	230 VAC	50 Hz	1 Phase
3270 CE	Natural Gas	230 VAC	50 Hz	1 Phase
3270 CE	LP Gas	230 VAC	50 Hz	1 Phase

POWER SUPPLY Electrical power to be supplied to the oven by a three conductor service.

MAIN FAN CIRCUIT Power is permanently supplied through a 10 amp fuse, through the normally closed emergency stop button, to the normally open double pole power switch, to a normally open set of contacts on the main fan relay and the normally open cooling fan thermostats. Closing the power switch supplies line voltage to the coil of the time delay relay. These normally open contacts now close enabling the time delay which then supplies line voltage to the main fan relay. As these normally open contacts close, line voltage is supplied to the main fan motors.

BURNER CIRCUIT Closing the oven power switch supplies line voltage, through the main fan air pressure switch, through the normally closed oven cavity hi-limit thermostat, to the ignition control. The combustion motor is now energized; the normally open combustion air pressure switch closes upon sensing air. After a prepurge period between 30 and 60 seconds, the spark and main gas valve are energized. Ignition should now occur.

TEMPERATURE CONTROL When the Oven Power Switch closes, power is supplied to the Oven Control transformers which supply 24 VAC to the Oven Controls (TWO CONTROLS – one for the oven's left side, one for the oven's right side). The Oven Control is set to a desired temperature. Thermocouples will provide varying millivolts to the Oven Controllers. The Oven Controllers supply 3-24 VDC to the modulating valve to maintain desired temperature.

CONVEYOR DRIVE Line voltage is supplied to the conveyor motor. The Conveyor speed is controlled by an increase or decrease in frequency from the Conveyor Controller.
Secondary voltage, 24 VAC, is supplied to the oven control. Setting the oven control to the desired time, outputs line voltage, through a reversing switch, to the conveyor motor. Speed is monitored via a frequency output from the hall effect sensor.

NOTE: The conveyor control uses a hall effect sensor and magnet mounted in the conveyor motor that senses the motor speed. Any change in motor load (± R.P.M.) is detected by the sensor and the frequency to the motor is adjusted accordingly.

CONTROL BOX AUTO COOL DOWN When the temperature in either one of the Control Boxes reaches 49°C ± 1.7°C, (120°F ± 3°F) the Cooling Fan Thermostats will switch power to the Cooling Fans. The thermostats will interrupt power to the Cooling Fans when the temperature falls to 37°C ± 1.7°C (100°F ± 3°F).

NOTE: Some models may be split belts but the Sequence of Operations will be identical for either Conveyor Drive.

Sequence of Operation – 3255 Domestic

Model	Gas Type	Voltage	Hz.	Phase
3255	Natural Gas	120 VAC	60 Hz	1 Phase
3255	LP Gas	120 VAC	60 Hz	1 Phase

POWER SUPPLY Electrical power is supplied to the oven by a three conductor cordset. Voltage from the black conductor to the white conductor is 120VAC. The white conductor is neutral. The green conductor is ground

MAIN FAN CIRCUIT Electrical power is permanently supplied, through a 10 Amp fuse, to the normally open contacts of the oven power switch. Power is also supplied to the normally open control box cooling fan thermostat. Closing the oven power switch supplies 120VAC to the main fan motor and to the control box cooling fan. Closing the oven power switch also supplies 120VAC to the burner blower motor, the primary of the oven control transformer and to the centrifugal switch of the main fan motor.

BURNER CIRCUIT Closing the oven power switch supplies 120VAC to the burner blower motor and to the normally open centrifugal switch of the main fan motor. As the main fan motor reaches approx.900 RPM, the centrifugal switch closes supplying 120VAC to the oven control and to the primary of the burner transformer. The transformer secondary supplies 24VAC, through the centrifugal switch of the burner blower motor, to the ignition control.

IGNITION CONTROL When the ignition control is supplied with 24VAC, the pilot valve and spark igniter are energized. Ignition will now occur. After the pilot flame is proven, the main valve is energized.

TEMPERATURE CONTROL Closing the oven fan switch supplies 120VAC to the primary of the control transformer and, through the centrifugal switch of the main fan motor, to the oven control. Secondary voltage, 24VAC, is supplied to the oven control. The oven control is set to desired temperature. The thermocouple will provide varying millivolts to the oven control. The oven control supplies 120VAC to the temperature regulation valve at intermittent intervals to maintain the desired temperature. The display on the oven control will indicate when the temperature regulation valve is energized.
NOTE: The display also indicates oven temperature.

CONVEYOR DRIVE Closing the oven power switch supplies 120VAC to the conveyor motor and to the primary of the control transformer. Secondary voltage, 24VAC, is supplied to the oven control. Setting the oven control to the desired time outputs voltage, through a reversing switch, to the conveyor motor.
NOTE: The conveyor system uses a hall effect sensor and magnet to prove operation of the conveyor motor. If the conveyor motor is not running, "BELT JAM" is indicated on the display.

CONTROL BOX AUTO COOL DOWN When the temperature in the control box reaches 120°F ± 3° (48.9°C ± 1.7°C), When the temperature in the control box reaches 120°F ± 3° (48.9°C ± 1.7°C), the cooling fan thermostat will switch power to the control box cooling fan. The thermostat will interrupt power to the cooling fan when the control box temperature falls to 100°F ± 3° (37.0°C ± 1.7°C).

NOTE: Some models may be split belts but the Sequence of Operations will be identical for either Conveyor Drive.

Sequence of Operation – 3255 International

Model	Gas Type	Voltage	Hz.	Phase
3255 CE	Natural Gas	230 VAC	50 Hz	1 Phase
3255 CE	LP Gas	230 VAC	50 Hz	1 Phase

POWER SUPPLY

Electrical power to be supplied to the oven by a three conductor service .
Brown conductor is hot.
Blue conductor is neutral.
Green conductor is ground..

MAIN FAN CIRCUIT

Electrical power is permanently supplied, through the 10 Amp oven fuse, to a normally open contact of the oven power switch. Power is also supplied to the control box cooling fan. Closing the oven power switch supplies line voltage to the main fan motor. Closing the oven power switch also supplies line voltage to the heat circuit and to the primary of the oven control transformer.

BURNER CIRCUIT

Closing the oven power switch supplies line voltage through the main fan air pressure switch, through the normally closed oven cavity hi-limit thermostat. Through the gas pressure proving switch (gas pressure switch removed at S/N N31348) to the ignition control. The combustion motor is now energized, the normally open combustion air switch closes upon sensing air. After a pre-purge period between 30 and 60 seconds, the spark generator and the main gas valve are energized. Ignition will now occur

TEMPERATURE CONTROL

Closing the oven fan switch supplies line voltage to the primary of the control transformer and through the ignition control, to the oven control. Secondary voltage, 24VAC, is supplied to the oven control. The oven control is set to desired temperature. The thermocouple will provide varying millivolts to the oven control. The oven control supplies line voltage to the temperature regulation valve at intermittent intervals to maintain desired temperature. The display on the oven control will indicate when the temperature regulation valve is energized.

NOTE: The display also indicates oven temperature.

CONVEYOR DRIVE

Closing the oven power switch supplies line voltage to the conveyor motor and to the primary of the control transformer. Secondary voltage, 24VAC, is supplied to the oven control. Setting the oven control to the desired time outputs voltage, through a reversing switch, to the conveyor motor.
NOTE: The conveyor system uses a hall effect sensor and magnet to prove operation of the conveyor motor. If the motor is not running, "BELT JAM" is indicated on the display.

CONTROL BOX AUTO COOL DOWN

When the temperature in either one of the Control Boxes reaches 49°C ± 1.7°C, (120°F ± 3°F) the Cooling Fan Thermostats will switch power to the Cooling Fans. The thermostats will interrupt power to the Cooling Fans when the temperature falls to 37°C ± 1.7°C (100°F ± 3°F).

NOTE: Some models may be split belts but the Sequence of Operations will be identical for either Conveyor Drive.

THIS PAGE INTENTIONALLY LEFT BLANK

Section 4
Maintenance

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 debris 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 Authorized Service Agency to establish a proper program. If there are any questions that the service agency cannot answer, please contact the KitchenCare Technical Service Department at (844) 724-2273.

⚠ DANGER

Disconnect power supply before servicing or cleaning this unit. Safeguard power so it cannot be accidentally restored. Failure to do so could result in serious injury. There is more than one power supply connection point when ovens are stacked, so make sure that all switches are in "OFF" position before cleaning or maintenance.

⚠ DANGER

It is the responsibility of the equipment owner to perform a Personal Protective Equipment Hazard Assessment to ensure adequate protection during maintenance procedures.

To maintain maximum efficiency of the oven, all ventilation louvers on the oven must be cleaned regularly. Oven use and type of product will actually determine the frequency of cleaning. The conveyor drive chain must be checked during the weekly cleaning cycle to see if it has become loose. Loose chain operation will DAMAGE the conveyor drive motor.

If the oven fails to operate, check the circuit breaker to be sure it is turned on. Also, check the fuses on the control panel to be sure that they are good before you call the Authorized Service Agency. The name and phone number of the Authorized Service Agency will be located below the data plate.

⚠ Warning

Allow heated equipment to cool down before attempting to clean, service or move. Unit must be cool to touch and disconnected from power source.

⚠ Caution

Do not use caustic cleaners on any part of the oven or oven cavity. Use mild, non abrasive soaps or detergents, applied with a sponge or soft cloth. Never use sharp implements or harsh abrasives on any part of the oven.

Daily Cleaning

1. Clean exterior surfaces of the oven by wiping it down with a mild detergent and clean water, or a commercial stainless cleaner.
2. Clean crumb pans and guards by washing with a mild detergent solution and rinsing with clean water.
3. Clean the interior by sweeping up all loose particles, then wash with a mild detergent solution and rinse with clean water.
4. Clean the conveyor belt by wiping with a clean cloth or brushing with a soft wire brush. Lincoln catalog #369217.

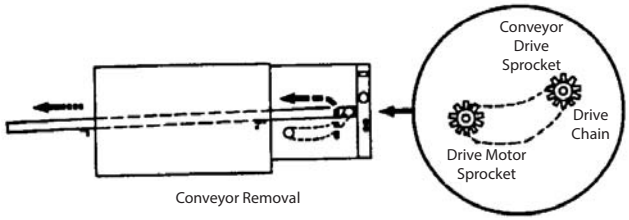
On exterior of oven, deposits of baked-on splatter, oil, grease, or light discoloration may be removed with any of several commercial cleaners. Consult with your local supplier.

⚠ Warning

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

Weekly Cleaning

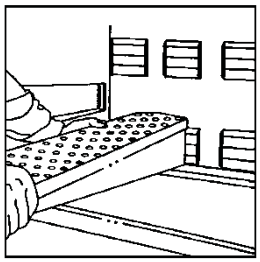
1. Remove conveyor chain guard. Remove crumb pans and take to the sink for cleaning.
2. Lift right end of conveyor and push in approximately 3" (76 mm). Remove drive chain.



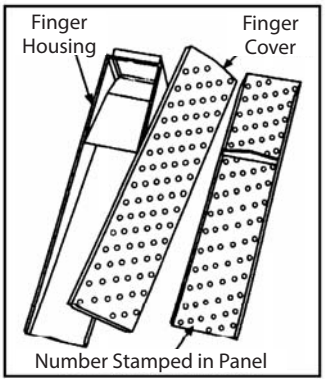
3. Pull conveyor out the right end. Place on table or work surface.
4. Inspect the chain for signs for wear. Replace if necessary.
5. Verify the drive sprocket on the conveyor motor is secure. Tighten if required.
6. Check conveyor motor fasteners to verify they are secure. Tighten if required.
7. With the conveyor removed, screw out the four knobs that hold the door and remove the door.

> **⚠ Caution**
>
> The door is very heavy and should be removed by more than one person. When reinstalling the door, failure to secure the door in the proper manner could result in the door falling and potential injury.

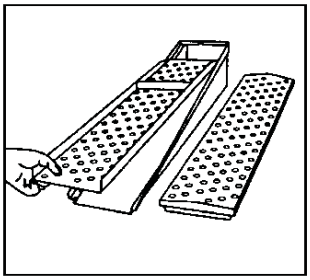
8. Remove the upper and lower finger assemblies and take to the sink. Note any particular placement of fingers that you may have, such as fully closed, half-closed, or fully open, columnating plates.



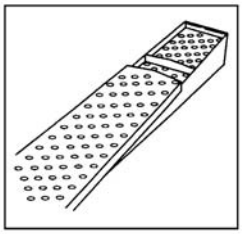
9. Disassemble fingers for cleaning.



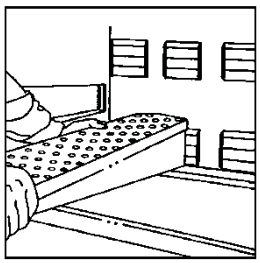
10. Clean fingers and crumb trays with a mild detergent solution, followed by a potable water rinse.
11. Clean the interior by sweeping up all loose particles, then wash with a mild detergent solution and rinse with clean water.
12. Clean the conveyor belt by wiping with a clean cloth or brushing with a soft wire brush. Lincoln catalog #369217.
13. Reassemble fingers. Insert columnating plate so the step goes under the lip of the finger housing and the plate lies flush with the housing side edge.



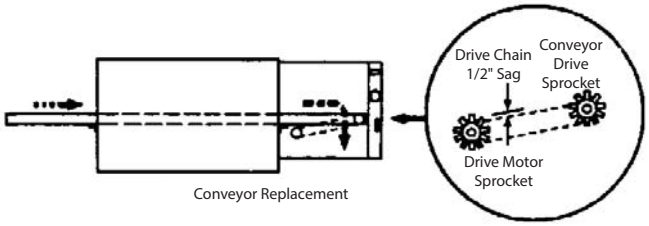
14. Install cover by sliding it on the small end.



15. Install top and bottom fingers in the oven by sliding them over the plenum flange and setting on the front bracket. BE SURE THAT THE FINGER SETS SQUARELY OVER THE PLENUM FLANGES AND THE HOLES POINT IN THE PROPER DIRECTION. Top fingers point down. Install in the same position they were removed from.



16. Install the door.
17. Reinstall the conveyor. Ensure front door is in place prior to installing the conveyor. Trying to install the conveyor without the door in place is very difficult and may cause damage to the unit. Insert the conveyor through the opening in the right side. Sprocket will be to the right side of the conveyor.



18. Slide conveyor through the oven chamber until the locking bar on the drive end of the conveyor is approximately 2" – 3" (50 – 76 mm) into the oven chamber. Install drive chain by placing it over the drive sprocket and placing it over the conveyor sprocket.
19. Lift conveyor just enough to allow you to pull the conveyor toward you until the locking bar is outside of the oven cavity. At the same time, push the conveyor downward so that the bar locks on the outside of the oven wall.
20. Inspect sprocket alignment and adjust if necessary.
21. Reinstall conveyor crumb pans and chain guard cover.
22. Reapply power.

THIS PAGE INTENTIONALLY LEFT BLANK

Section 5
Troubleshooting

Troubleshooting Guide – 3240/3270 Domestic

Model	Gas Type	Voltage	Hz	Phase
3240	Natural Gas	120 VAC	60 Hz	1 Phase
3240	LP Gas	120 VAC	60 Hz	1 Phase
3270	Natural Gas	120 VAC	60 Hz	1 Phase
3270	LP Gas	120 VAC	60 Hz	1 Phase

Problem	Cause	Correction
Oven fan will not run	Incoming Power Supply	Check breakers, reset if required. Check power plug to be sure it is firmly in receptacle. Measure the incoming power. Call power company if needed.
	Fuse, 15 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Main Oven Switch	Check continuity between switch terminals. Replace if necessary.
	Time Delay Relay	Check for 120 VAC to the relay coil. If voltage is not present, trace wiring back to the oven power switch. If voltage is present, check to insure contacts are closing.
	Time Delay	120 VAC is permanently supplied to the time delay. If no voltage is present, trace wiring back to fuse and incoming power. Neutral side of time delay coil is switched by the time delay relay. When the time delay is enabled, it supplies 120 VAC to coil of main fan relay.
	Main Fan Relay	Check for 120 VAC to main fan relay coil. If no voltage is present, trace back to time delay. If 120 VAC is supplied to main fan relay coil, ensure the contacts of main fan relay are closing by checking for 120 VAC on terminals #4 to a neutral and #8 to a neutral (these are the terminal numbers on the main fan relay). If contacts are not closing, replace the relay. Each terminal supplies a main fan motor with 120 VAC.
	Main Fan Motor	Check for 120 VAC at motor. If voltage is present and motor doesn't turn, WITH POWER OFF check for opens, shorts, or grounds. Turn fan blade to check for locked rotor. Replace as needed.
	Capacitor	**WARNING:** Capacitor has a stored charge, discharge before testing. Check for shorts or grounds, replace as needed. Inspect for any visible damage. If the top of the capacitor appears to be swollen, replace capacitor.
No control box cooling	Incoming Power	Check main circuit breakers and reset, if required. Call power company if needed.
	Fuse, 15 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Main Oven Switch	Check continuity between switch terminals. Replace if necessary.
	Cooling Fan(s)	120 VAC should now be at the fan motor. If voltage is present and motor doesn't turn, WITH POWER OFF, check motors for shorts or opens. Check for locked rotor. Replace if necessary.
No automatic control box cooling	Incoming Power Supply	Check circuit breakers. Reset if required. Call power company if needed.
	Fuse, 15 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Cooling Fan Thermostat	Check the cooling fan thermostat. (Thermostat closes at 120°F and opens at 100°F.) With the cooling fan thermostat preheated, check for continuity. If switch is open, replace.
	Cooling Fan(s)	120 VAC should be at the motor. If voltage is present, WITH POWER OFF, check for locked rotor. Check motor for shorts, opens, or grounds.

Problem	Cause	Correction
Oven will not heat	Gas Supply	Check manual gas valves and flexible gas line connection. Also check for adequate gas supply. NOTE: Natural Gas supply to oven – min. 7 in. W.C.; LP Gas supply to oven – min. 11 in. W.C.
	Main Fan	If not operating, refer to "Oven fan will not run".
NOTE: These ovens utilize 2 complete burner/temperature control systems. Each system will follow the same troubleshooting sequence.		
Oven will not heat	Centrifugal Switch of Main Fan Motor	Check for 120 VAC supplied to the centrifugal switch. If voltage is not present, trace the wiring back to the oven power switch. Check for 120 VAC out of the centrifugal switch. If voltage is supplied to the centrifugal switch, and motor is running but there is no voltage out of the centrifugal switch, replace the fan motor. (NOTE: See Schematic Diagram of proper wire numbers on motors.)
	Burner Blower Motor	If no 120 VAC to blower motor, trace wiring back to oven power switch. Check for 120 VAC supply to the burner blower motor, if 120 VAC is present and motor does not turn, replace the motor.
	Burner Transformer	Check for 120 VAC to primary of the 24 VAC ignition control transformer. If voltage is not present, trace wiring back to the centrifugal switch of main fan motor. If voltage is present, check for 24 VAC at the secondary. If no secondary voltage is present, replace the transformer.
	Centrifugal Switch of Burner Blower Motor	Check for 24 VAC supply to the centrifugal switch of burner blower motor (see Schematic for proper wire numbers). If no voltage is present, trace wiring back to the transformer. If voltage is present, check for 24 VAC at the output of the centrifugal switch. If there is no output and the burner blower motor is running, replace the burner blower motor.
	Ignition Control	Check for 24 VAC supply to the ignition control at terminals marked 24V and 24V. If voltage is not present, trace wiring back to the centrifugal switch of burner blower motor. Check for 120 VAC supply to the ignition control at terminals L1 and L2. If no voltage is present, trace wiring back to oven power switch. If the above checks are okay, proceed. When 24 VAC is applied, the ignition control should switch 120 VAC to the hot surface igniter for 45 seconds. Check across the (2) terminals marked HSI. If no voltage is present, replace the ignition control.
	Hot Surface Igniter (Located inside Burner Assembly)	If 120 VAC is present at HSI terminals, visually check to see that the hot surface igniter is heating (igniter may be viewed through port glass in end of burner tube). The igniter should glow bright red. Check all connections to be sure they are tight. If the igniter does not heat, replace.
	Ignition Control	After 45 seconds of hot surface igniter pre-heat, the ignition control will switch 24 VAC to the gas control valves for 6 seconds. Check for 24 VAC output from the ignition control and across terminals marked "valve" and "valve". If no voltage is present, replace the ignition control. NOTE: The ignition control contains a safety lockout circuit. If a flame is not detected within 6 seconds after the gas control valve is energized, the ignition control will lockout. To reset, turn the power switch "off", wait 45 seconds and switch the system "on" to retry ignition.
	Dual Gas Valves	Check for 24 VAC supplied to the pilot/main gas valves (dual valve). If voltage is present, the valves should open. Check the output gas pressure at the pressure tap located on the burner manifold. Gas pressure should measure approximately 3.5" W.C. NAT and 10" W.C. LP. If there is no gas pressure and 24 VAC is supplied to valves, check piping for obstructions.

Problem	Cause	Correction
Flame will not stay on	Hot Surface Igniter	The ignition control will keep the gas control valves energized for 6 seconds. At the end of 6 seconds the hot surface igniter must sense a flame or the ignition control will go to into lockout. (The ignition control requires a minimum of 0.8 micro-amps D.C.) If you detect a flame but only for the 6 second trial, check the flame sensing operation. Connect a digital multimeter (capable of measuring D.C. micro-amps) between the "ground" terminal on the ignition control and the ground lead. NOTE: This is a current measurement and the meter must be connected in series. NOTE: The D.C. micro-amp test must be conducted in series. NOTE: The D.C. micro amp test must be conducted with the oven in low flame (bypass) operation. Set the temperature control to its lowest setting.
	Power Supply / Polarity	If there is sufficient micro-amp current and the 120 VAC polarity is correct but the flame will not stay lit, check for proper ground connection for the ignition control. If ground is good, replace the ignition control.
NOTE: Flame should be lit at this time.		
Low flame is on but no main flame	Oven Control	Adjust temperature to maximum setting and check for 3-24 VDC at terminals J2-6 & J2-9 on oven control. If 3-24 VDC is present and unit is not heating, refer to "Modulating Valve" for next check. If 3-24 VDC is not present, proceed.
	Thermocouple Probe	WITH POWER ON AND THERMOCOUPLE LEADS ATTACHED TO THE TEMPERATURE CONTROL BOARD: Measure the D.C. millivolt output of these leads. Refer to thermocouple chart in *Component Procedures* section of service manual for proper readings. If these readings are not achieved, replace the thermocouple. If these readings are achieved with temperature at maximum setting, replace the oven control.
	Modulating Valve	With temperature at maximum setting, check for 3-24 VDC at the modulating valve. If no voltage is present, trace wiring back to the oven control terminals J2-6 & J2-9. If voltage is present, check the output gas pressure at the pressure tap located on the burner manifold. If voltage is present and gas pressure is not exceeding 0.6 in. W.C. at the burner manifold, replace modulating valve.
Intermittent heating	Thermal/Overload of Main Fan and Burner Blower Motors	The main fan motors and the burner blower motors are equipped with internal thermal protection and will cease to operate if overheating occurs. As the motors overheat and then cool, this will cause the units to cycle on and off intermittently. Improper ventilation or improper maintenance may cause this. Also, most of the problems listed under "Oven will not heat" can cause intermittent failure.
Conveyor will not run (Split Belt ovens have two conveyor systems)	Power Supply	Check incoming voltage supply at line 1 to neutral. There should be a voltage reading of 120 VAC. If not present, check breakers.
	15 Amp Fuse	Check and/or replace.
	Fuse Holder	Check and/or replace.
	Main Fan Switch	Check continuity between switch terminals.
	Oven Control Transformer	Check for supply voltage to primary of transformer. If no voltage is present, trace wiring back to the main oven switch. If voltage is present, check for 24 VAC at transformer secondary. If there is primary voltage but no secondary voltage, replace transformer. If secondary voltage is present, proceed.
	Switch, Conveyor Reversing	Check for continuity between switch terminals. Replace switch as needed.

Problem	Cause	Correction
Conveyor will not run (cont.)	Conveyor Motor	Check for supply voltage to the motor. If no voltage is present, trace wiring back to the reversing switch. If no voltage at switch, replace conveyor control. If voltage is present, check motor windings for opens or shorts. WITH POWER OFF: Check the motor windings as follows: Grey to Black – 38 ohm approx. Grey to Brown – 38 ohm approx. Brown to Black – 75 ohm approx. If any of the above fail, replace motor.
	Conveyor Motor Capacitor	Check for shorts or grounds. Replace capacitor as needed. **WARNING:** Capacitor has a stored charge. Discharge before testing!
	Conveyor	Check for any mechanical problems in the conveyor assembly. Check for damaged or torn belting. Check conveyor shaft bearings for damage or excessive wear. Repair or replace conveyor components as needed.
	Oven Control	Check output voltage from oven control to hall effect sensor (sensor is located in conveyor motor). Measure voltage at the motor connector, red wire and yellow wire. Voltage should be approx. 10 VDC. If no voltage is present, trace wiring back to the oven control. If there is no voltage output present at the oven control, replace the oven control.
Conveyor runs but no speed control	Motor, Conveyor	If there is voltage supplied to the hall effect sensor, check for frequency output from the hall effect sensor. Measure frequency across the yellow and white wires at the motor connector. Frequency readings should be between 25 – 500 Hz. If these readings are not achieved, replace the conveyor motor. If these readings are achieved, proceed.
	Oven Control	If the hall effect sensor readings are correct but there is no speed indicated on the display, replace the oven control.

Troubleshooting Guide – 3240/3270 International

Model	Gas Type	Voltage	Hz.	Phase
3240 CE	Natural Gas	230 VAC	50 Hz	1 Phase
3240 CE	LP Gas	230 VAC	50 Hz	1 Phase
3270 CE	Natural Gas	230 VAC	50 Hz	1 Phase
3270 CE	LP Gas	230 VAC	50 Hz	1 Phase

Problem	Cause	Correction
Oven fan will not run	Incoming Power Supply	Check breakers, reset if required. Check power plug to be sure it is firmly in receptacle. Measure the incoming power. Call power company if needed.
	Fuse, 10 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Emergency Stop Button	This is a normally closed switch. Be sure button is re-set. Check continuity between switch terminals. If switch is open, replace Emergency stop button.
	Main Oven Switch	Check continuity between terminals. Replace if necessary.
	Time Delay Relay	Check for line voltage to the relay coil. If voltage is not present, trace wiring back to the oven power switch. If voltage is present, check to ensure contacts are closing. Replace as needed.
	Time Delay	Line voltage is permanently supplied to terminal #1 of the time delay. If no voltage present, trace wiring back to fuse and incoming power. Neutral side of time delay coil is switched by the time delay relay. When the time delay is enabled, line voltage is supplied to coil of main fan relay.
	Main Fan Relay	Check for line voltage to main fan relay coil. If no voltage is present, trace wiring back to time delay. If line voltage is supplied to main fan relay coil, ensure the contacts of main fan relay are closing by checking for output voltage from relay contacts. If contacts are not closing, replace relay. Each terminal supplies a main fan motor with line voltage.
	Main Fan Motor	Check for line voltage at motor. If voltage is present and motor doesn't turn, WITH POWER OFF, check for opens, shorts, or grounds. Turn fan blade to check for locked rotor. Replace as needed.
	Capacitor	**WARNING:** Capacitor has a stored charge, discharge before testing. Check for shorts or grounds, replace as needed. Inspect for any visible damage. If the top of the capacitor appears to be swollen, replace capacitor.
No control box cooling	Incoming Power	Check main circuit breakers and reset, if required. Call power company if needed.
	Fuse, 10 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Main Oven Switch	Check continuity between terminals. Replace if necessary.
	Cooling Fan(s)	Line voltage should now be at the fan motor. If voltage is present and motor doesn't turn, WITH POWER OFF, check motors for shorts or opens. Check for locked rotor. Replace if necessary.
No automatic control box cooling	Incoming Power Supply	Check circuit breakers. Reset if required. Call power company if needed.
	Fuse, 10 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Cooling Fan Thermostat	Check the cooling fan thermostat. Thermostat closes at 49°C (120°F) and opens at 37°C (100°F). With the cooling fan thermostat preheated, check for continuity. If switch is open, replace.
No automatic control box cooling (cont.)	Cooling Fan(s)	Line voltage should be at the motor. If voltage is present, WITH POWER OFF, check for locked rotor. Check motor for shorts, opens, or grounds.

Problem	Cause	Correction
Oven will not heat	Gas Supply	Check manual gas valves and flexible gas line connection. Also check for adequate gas supply. NOTE: NAT Gas supply to oven – min. 7" W.C. (1.74 kPa); LP Gas supply to oven – min. 11" W.C. (2.73 kPa)
	Main Fan	If not operating, refer to "Oven fan will not run".
NOTE: These ovens utilize 2 complete burner/temperature control systems. Each system will follow the same troubleshooting sequence.		
Oven will not heat (cont.)	Air Pressure Switch of Main Fan Motor	Check air pressure switch terminals for supply voltage to terminals COM and NO. If voltage is present on one side only, check for air tube blockage or misalignment. If these are okay, adjust air pressure switch or replace switch as needed.
	Oven Cavity Hi-Limit Thermostat	Terminals are normally closed, opens at 350°C (660°F). If open, reset and test oven for proper operation. If thermostat will not hold for maximum temperature and oven is not exceeding control setting, check for proper location of the capillary bulb in its spring holder. If above checks are okay, replace hi-limit thermostat.
	Ignition Control	Check for supply voltage to ignition control at terminal #1 and neutral. If no voltage is present, trace wiring back to hi-limit thermostat. If voltage is present, check for supply voltage to burner blower motor at terminal #8 and neutral. If no voltage is present, wait 30 seconds reset ignition control, and re-try. If the above fails, replace ignition control.
	Burner Reset Switch	Switch is normally open. Check to see that the switch closes when reset button is pushed. Replace as needed.
	Burner Blower Motor	Check for supply voltage to burner blower motor. If no voltage is present, trace wiring back to ignition control. WITH POWER OFF: Turn blower wheel to check for locked rotor. If supply voltage is present and motor does not run, replace burner blower motor.
	Air Pressure Switch of Burner Blower Motor	Check for air pressure switch to be switching from "NC" to "NO". Check for air tube blockage or misalignment. Adjust air pressure switch. If the above fails, replace air pressure switch.
	Ignition Control	A pre-purge time of 30 to 60 seconds occurs after burner blower motor starts. Check for high voltage spark output from the ignition control. If there is no high voltage spark output, check the reset button for the ignition control. If there is still no high voltage output, replace the ignition control.
	Spark Cable	Check spark cable for loose terminations. Verify resistance to be between 514Ω and 1068Ω. Replace if necessary.
	Igniter / Sensor Assembly (Located inside Burner Assembly)	Check for visible damage to the igniter/sensor assembly. If there is visible damage to the igniter/sensor assembly, replace. Check the spark gap, 0.096" (2.44 mm). If there is no visible damage to the components, and no spark, replace the igniter/sensor assembly. Also check for frayed or damaged wires in burner tube. Replace components as needed.
	Ignition Control	Gas valve should open as the ignition control generates the high voltage spark. Check for supply voltage to pilot valve at terminal #5 and neutral. If no voltage is present, check reset button for the ignition control. If there is still no voltage to the pilot valve, replace ignition control.
	Gas Control Valves	Check for supply voltage to pilot valve at terminal #5 to neutral, if there is no voltage, trace wiring back to ignition control. If there is supply voltage, connect a manometer to the pressure tap fitting in the gas line. If there is voltage to the pilot valve, but there is no gas pressure, replace gas valve.

Problem	Cause	Correction
Flame will not stay on	Flame Sensor	To check flame sensor operation, connect a digital multimeter (capable of measuring D.C. microamps) between the flame sensor wire and flame sensor connection on the ignition control. Flame sensor current is to be 0.7 microamps, minimum. If these readings are not achieved, replace igniter/sensor assembly. Also check for any type of damage to flame sensor wire and connections. NOTE: The D.C. microamp test must be conducted with the oven in low flame (bypass) operation.
	Power Supply	Set the temperature to the lowest temperature setting. If there is sufficient microamp current, but the flame will not stay lit, check for proper polarity of the power supply.
	Ignition Control	If there is sufficient microamp current, and there is proper polarity of the power supply, but the burner will not stay lit, check the reset button for the ignition control. If the above test is okay, replace the ignition control.
NOTE: Flame should be lit at this time.		
Low flame is on but no main flame	Control Transformer	Check for supply voltage to primary of control transformer. If no voltage is present, trace wiring back to EMI filter. If voltage is present, check for 24 VAC at transformer secondary. If there is primary voltage, but no secondary voltage, replace control transformer.
	Oven Control	Adjust temperature to maximum setting and check for 3-24 VDC at terminals J2-6 & J2-9 on oven control. If 3-24 VDC is present and unit is not heating, refer to "Modulating Valve" for next check. If 3-24 VDC is not present, proceed.
	Thermocouple Probe	WITH POWER ON AND THERMOCOUPLE LEADS ATTACHED TO THE TEMPERATURE CONTROL BOARD: Measure the D.C. millivolt output of these leads. Refer to thermocouple chart in *Component Procedures* section of service manual for proper readings. If these readings are not achieved, replace the thermocouple. If these readings are achieved with temperature at maximum setting, replace the oven control.
	Modulating Valve	With temperature at maximum setting, check for 3-24 VDC at the modulating valve. If no voltage is present, trace wiring back to the oven control terminals J2-6 & J2-9. If voltage is present, check the output gas pressure at the pressure tap located on the burner manifold. If voltage is present and gas pressure is not exceeding 0.5" W.C. (0.12 kPa) NAT or 0.6" W.C. (0.15 kPa) LP at the burner manifold, replace modulating valve.
Intermittent heating	Thermal/Overload of Main Fan and Burner Blower Motors	The main fan motors and the burner blower motors are equipped with internal thermal protection and will cease to operate if overheating occurs. As the motors overheat and then cool, this will cause the units to cycle on and off intermittently. Improper ventilation or improper maintenance may cause this. Also, most of the problems listed under "Oven will not heat" can cause intermittent failure.
Conveyor will not run (Split Belt ovens have two conveyor systems)	Power Supply	Check incoming voltage supply at line 1 to neutral. There should be a line voltage reading. If not present, check breakers.
	10 Amp Fuse	Check and/or replace.
	Fuse Holder	Check and/or replace.
	Main Fan Switch	Check continuity between switch terminals.
	Oven Control Transformer	Check for supply voltage to primary of transformer. If no voltage is present, trace wiring back to the main oven switch. If voltage is present, check for 24 VAC at transformer secondary. If there is primary voltage but no secondary voltage, replace transformer. If secondary voltage is present, proceed.
	Switch, Conveyor Reversing	Check for continuity between switch terminals. Replace switch as needed.

Problem	Cause	Correction
Conveyor will not run (cont.)	Conveyor Motor	Check for supply voltage to the motor. If no voltage is present, trace wiring back to the reversing switch. If no voltage at switch, replace conveyor control. If voltage is present, check motor windings for opens or shorts. WITH POWER OFF: Check the motor windings as follows: Grey to Black – 116 ohm approx. Grey to Brown – 116 ohm approx. Brown to Black – 230 ohm approx. If any of the above fail, replace motor.
	Conveyor Motor Capacitor	Check for shorts or grounds. Replace capacitor as needed. **WARNING:** Capacitor has a stored charge. Discharge before testing!
	Conveyor	Check for any mechanical problems in the conveyor assembly. Check for damaged or torn belting. Check conveyor shaft bearings for damage or excessive wear. Repair or replace conveyor components as needed.
	Oven Control	Check output voltage from oven control to hall effect sensor (sensor is located in conveyor motor). Measure voltage at the motor connector, red wire and yellow wire. Voltage should be approx. 10 VDC. If no voltage is present, trace wiring back to the oven control. If there is no voltage output present at the oven control, replace the oven control.
Conveyor runs but no speed control	Motor, Conveyor	If there is voltage supplied to the hall effect sensor, check for frequency output from the hall effect sensor. Measure frequency across the yellow and white wires at the motor connector. Frequency readings should be between 25 – 500 Hz. If these readings are not achieved, replace the conveyor motor. If these readings are achieved, proceed.
	Oven Control	If the hall effect sensor readings are correct but there is no speed indicated on the display, replace the oven control.

Troubleshooting Guide – 3255 Domestic

Model	Gas Type	Voltage	Hz	Phase
3255	Natural Gas	120 VAC	60 Hz	1 Phase
3255	LP Gas	120 VAC	60 Hz	1 Phase

Problem	Cause	Correction
Oven fan will not run	Incoming Power Supply	Check breakers, reset if required. Check power plug to be sure it is firmly in receptacle. Measure the incoming power. Call power company if needed.
	Fuse, 10 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Main Oven Switch	Check for 120VAC supply to switch. If no voltage is present, trace wiring back to fuse holder. Check continuity between switch terminals. Replace switch as needed.
	Motor, main fan	Check for 120VAC supply to the motor. If no voltage is present, trace wiring back to the switch. Check motor for opens, shorts or grounds. WITH POWER OFF: Turn fan blade to check for locked rotor. .
No control box cooling	Incoming Power	Check circuit breaker, reset if required. Check power plug to be sure it is firmly in receptacle. Measure incoming power, call power co. if needed
	Fuse, 15 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Main Oven Switch	Check for 120VAC supply to switch. If no voltage is present, trace wiring back to fuse holder. Check continuity between switch terminals. Replace switch as needed.
	Cooling Fan(s)	Check for 120VAC supply to the cooling fan. If no voltage is present, trace wiring back to the oven power switch. If voltage is present and motor does not run, check for opens, shorts or grounds. WITH POWER OFF: Check for locked rotor
No automatic control box cooling	Incoming power supply	Check circuit breaker, reset if required. Check power plug to be sure it is firmly in receptacle. Measure incoming power. Call power co. if needed.
	Cooling fan thermostat	Check cooling fan thermostat (thermostat closes at 120°F and opens at 100°F). With cooling fan thermostat pre-heated, check for continuity. If thermostat is open, replace cooling fan thermostat.
Control box cooling fan continues to run	Cooling fan thermostat	See "Cooling fan thermostat" (NOTE: Thermostat will remain closed if control box temperature remains above 120°F.
Oven will not heat	Main fan	If not operating, refer to "Oven fan will not run".
	Gas supply	Check for adequate gas supply to oven
	Centrifugal switch of main fan motor	Check for 120VAC at wire #5 (input to centrifugal switch, located at 6-pin connector inside motor cover near main fan motor) to neutral. If no voltage is present, trace wiring back to oven power switch. If voltage is present, check for 120VAC at wire #9 (output of centrifugal switch) to neutral. If no voltage is present at wire #9, and the motor is running, replace the main fan motor.
	Burner blower motor	Check for 120VAC supplied to burner blower motor. If no voltage is present, trace wiring back to primary of control transformer. If voltage is present and motor is not running, check for opens, shorts or grounds. WITH POWER OFF: Turn motor to check for locked rotor. Replace burner blower motor as needed.
	Burner transformer	Check for 120VAC supplied to primary of burner transformer. If no voltage is present, trace wiring back to centrifugal switch of main fan motor. If voltage is present, check for 24VAC supply at transformer secondary. If there is primary voltage but no secondary voltage, replace burner transformer.

Problem	Cause	Correction
Oven will not heat	Centrifugal switch of burner blower motor	Check for 24VAC at motor connector, wire #19 (input to centrifugal switch) to neutral. If no voltage is present, trace wiring back to burner transformer. If voltage is present, check for 24VAC at wire #20 (output of centrifugal switch) to neutral. If no voltage is present at wire #20 and motor is running, replace burner blower motor.
	Ignition control	Check for 24VAC supply to the ignition control. If no voltage is present, trace wiring back to centrifugal switch of burner blower motor. If voltage is present, check for 24VAC at pin #3 and ground (pilot valve). NOTE: The Honeywell ignition control has a 30 second pre-purge (time delay) built in. If voltage is not present, replace ignition control. If the pilot valve is energized, check to see that the high voltage igniter circuit is also energized. To check, disconnect the igniter lead from the ignition control.
	No pilot flame	If the ignition control is supplied with 24Vac and the pilot valve (internal to valve assembly) and igniter circuits are energized, visually check for pilot flame. This may be done by opening the small inspection door on the end of the burner, or by opening the main oven door and looking under the lower finger housings on the right side of the oven. If no pilot flame is visible, check the pilot shut-off valve.
	Pilot shut-off valve	Check to see that the pilot shut-off valve is open (shut-off valve is located between valve assembly and burner).
	Pilot tube	Check for gas pressure at the pilot tube. Disconnect pilot tube at burner and connect a manometer to pilot tube. If no gas pressure is present during ignition, check for blockage in pilot tube or pilot shut-off valve. If these are clear, and there is gas supplied to the oven, replace the gas valve.
	Pilot orifice	If there is gas pressure at the pilot tube, check the pilot orifice for obstructions. Replace as needed.
	Burner igniter	Check the burner igniter head for any obstructions, also check for frayed or broken wire. Check spark gap (gap should be .100 to .125 inch). If there is visible damage, replace burner igniter.
	NOTE: Flame should be on at this time	
Pilot flame, but no main flame	Control transformer	Check for 120VAC supply to the primary of the control transformer. If no voltage is present, trace wiring back to the oven power switch. If voltage is present, check foe 24VAC at the transformer secondary. If there is primary voltage, but no secondary voltage, replace control transformer.
	Oven control	Check for 24VAC supply to oven control. If no voltage is present, trace wiring back to control transformer. If 24VAC is present, check for a read-out on the display. If there is 24VAC supplied, but there is no read-out on the display, replace oven control. If there is a read-out on the control, set the control to maximum temperature (see Installation operations manual for temperature adjustment). With the control set at maximum temperature, check for 120VAC at the temperature regulation valve. If there is voltage at the temperature regulation valve, proceed to "Temperature regulation valve" for next check. If there is no voltage at the temperature regulation valve, trace wiring back to the oven control. If there is no voltage output at the oven control, check the read-out on the oven control. If the control reads "PROBE FAIL", this indicates that the thermocouple has failed or become disconnected from the oven control.

Problem	Cause	Correction
Pilot flame, but no main flame	Thermocouple	Check to be sure that the thermocouple is securely connected to the oven control. If the thermocouple is connected to the oven control, and the control indicates "PROBE FAIL", disconnect the thermocouple from the oven control and measure the resistance of the thermocouple. The thermocouple should read approx. 11Ω. If these readings are not achieved, replace the thermocouple. If these readings are correct, proceed.
	Oven Control	If the thermocouple checks good, but the oven control display indicates that there is a thermocouple failure, replace the oven control. If the oven control indicates a temperature reading, but the oven will not heat, proceed. to next step.
	Thermocouple	WITH POWER ON AND THERMOCOUPLE ATTACHED TO THE OVEN CONTROL: Measure the DC millivolt output of the thermocouple. Refer to the thermocouple chart (located in the "Removal" section of the manual) for proper millivolt readings. If these readings are not achieved, replace thermocouple.
	Oven control	If the thermocouple checks good, but there is no 120VAC output to the temperature regulation valve, replace the oven control. If there is 120VAC output to the temperature regulation valve, proceed. to next step
	Temperature Regulation Valve	Check for 120VAC supplied to the temperature regulation valve. If voltage is present, listen for valve to open and close. Also check for opens or shorts in the operating coil. Replace temperature regulation valve as needed.
Intermittent heating	Thermal/overload of main fan and burner blower motors	The main fan motor and burner blower motor are equipped with internal thermal protection and will cease to operate if overheating occurs. As the motors overheat and then cool, this will cause the heating system to cycle on and off intermittently. Improper ventilation or lack of preventive maintenance may cause this problem. Also, most of the problems listed under "Oven will not heat" can cause intermittent failure.
Conveyor will not run	Incoming power supply	Check circuit breaker, reset if required. Check power plug to be sure it is firmly in receptacle. Measure incoming power, call power company if needed.
	Fuse, 10 Amp	Check, replace if necessary.
	Fuse holder	Check, replace if necessary.
	Switch, oven power	Check for 120VAC supply to switch. If no voltage is present, trace wiring back to fuse holder. Check continuity between switch terminals. Replace switch as needed.
	Control transformer	Check for 120VAC supply to the primary of the control transformer. If no voltage is present, trace wiring back to the oven power switch. If voltage is present, check foe 24VAC at the transformer secondary. If there is primary voltage, but no secondary voltage, replace control transformer.
	Conveyor motor	Check for 120VAC supply to conveyor motor at wire #6 to neutral. If no voltage is present, trace wiring back to oven power switch. If voltage is present and motor will not run, check the motor windings for opens or shorts. WITH POWER OFF: Check the motor windings as follows: Grey to black - 38Ω approx. Grey to blue - 38Ω approx. Blue to black - 75Ω approx. If any of the above fails, replace conveyor motor.
	Capacitor, conveyor motor	Check for shorts or grounds. Replace capacitor as needed. WARNING: Capacitor has a stored charge, discharge before testing.
	Switch, conveyor reversing	Check continuity between switch terminals. Replace as needed.
	Oven control	If there is 120VAC supplied to the motor, and the motor, capacitor, and reversing switch check good, replace the oven control.

Conveyor motor runs, but there is no speed display	NOTE: Display will indicate "BELT JAM"	
	Oven control	Check for output voltage from oven control to hall effect sensor (sensor is located in conveyor motor). Measure voltage at the motor connector, red wire and yellow wire. Voltage should be approx. 10VDC. If no voltage is present, trace wiring back to oven control. If there is no voltage present at the oven control, replace the oven control..
	Conveyor motor	If there is voltage supplied to the hall effect sensor, check for a frequency output from the hall effect sensor. Measure frequency across the yellow and white wires at the motor connector. Frequency reading should be approx. 25 – 100 Hz. If these readings are not achieved, replace conveyor motor. If these readings are achieved, proceed.
	Oven control	If the hall effect sensor readings are correct, but there is no speed indicated on the display, replace the oven control.

Troubleshooting Guide – 3255 International

Model	Gas Type	Voltage	Hz	Phase
3255	Natural Gas	230 VAC	50 Hz	1 Phase
3255	LP Gas	230 VAC	50 Hz	1 Phase

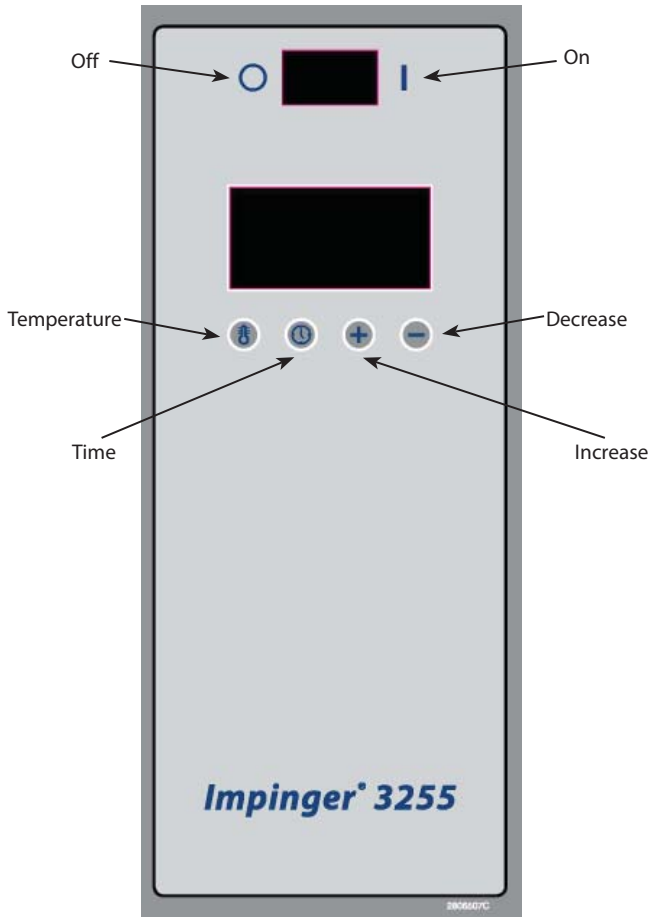
Problem	Cause	Correction
Oven fan will not run	Incoming Power Supply	Check breakers, reset if required. Check power plug to be sure it is firmly in receptacle. Measure the incoming power. Call power company if needed.
	Fuse, 10 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Main Oven Switch	Check for line voltage supply to switch. If no voltage is present, trace wiring back to fuse holder. Check continuity between switch terminals. Replace switch as needed.
	Motor, main fan	Check for line voltage supply to the motor. If no voltage is present, trace wiring back to the switch. Check motor for opens, shorts or grounds. WITH POWER OFF: Turn fan blade to check for locked rotor. .
No control box cooling	Incoming Power	Check circuit breaker, reset if required. Check power plug to be sure it is firmly in receptacle. Measure incoming power, call power co. if needed
	Fuse, 10 Amp	Check, replace if necessary.
	Fuse Holder	Check, replace if necessary.
	Main Oven Switch	Check for line voltage supply to switch. If no voltage is present, trace wiring back to fuse holder. Check continuity between switch terminals. Replace switch as needed.
	Cooling Fan(s)	Check for line voltage supply to the cooling fan. If no voltage is present, trace wiring back to the oven power switch. If voltage is present and motor does not run, check for opens, shorts or grounds. WITH POWER OFF: Check for locked rotor
No automatic control box cooling	Incoming power supply	Check circuit breaker, reset if required. Check power plug to be sure it is firmly in receptacle. Measure incoming power. Call power co. if needed.
	Cooling fan thermostat	Check cooling fan thermostat (thermostat closes at 50°C and opens at 38°C). With cooling fan thermostat pre-heated, check for continuity. If thermostat is open, replace cooling fan thermostat.
Control box cooling fan continues to run	Cooling fan thermostat	See "Cooling fan thermostat" (NOTE: Thermostat will remain closed if control box temperature remains above 50°F.
Oven will not heat	Main fan	If not operating, refer to "Oven fan will not run".
	Gas supply	Check for adequate gas supply to oven
	Air pressure switch	Check air switch terminals for supply voltage to terminals COM and NO. If voltage is present on one side only, check for air tube blockage or misalignment. If these are okay, adjust air pressure switch or replace switch as needed.
	Oven cavity hi-limit thermostat	Terminals are normally closed, opens at 350°C (660°F). If open, reset and test oven for proper operation. If thermostat will not hold for maximum temperature, and oven is not exceeding control setting, check for proper location of the capillary bulb in its spring holder. If above checks are okay, replace hi-limit thermostat.
	Ignition control	Check for supply voltage to ignition control at terminal #1 and neutral. If no voltage is present, trace wiring back to hi-limit thermostat. If voltage is present, check for supply voltage to burner blower motor at terminal #8 and neutral. If no voltage is present, wait 30 seconds, reset ignition control, and re- try. If the above fails, replace ignition control.

Problem	Cause	Correction
Oven will not heat	Burner reset switch	Switch is normally open. Check to see that the switch closes when reset button is pushed. Replace as needed.
	Burner blower motor	Check for supply voltage to burner blower motor. If no voltage is present, trace wiring back to the ignition control. WITH POWER OFF: Turn blower wheel to check for locked rotor. If supply voltage is present and motor does not run, replace burner blower motor.
	Burner blower motor air pressure switch	Check for air pressure switch to be switching from "NC" to "NO". Check for air tube blockage or misalignment. Adjust air pressure switch. If the above fails, replace air pressure switch.
	Ignition control	A pre-purge time of 30 to 60 seconds occurs after burner blower motor starts. Check for high voltage spark output from the ignition control. If there is no high voltage spark output, check reset button for the ignition control. If there is still no high voltage output, replace the ignition control.
	Igniter/sensor assembly	Check for visible damage to the igniter/sensor assembly. If there is visible damage to the igniter/sensor assembly, replace. If there is no visible damage to the components, and no spark, replace the igniter/sensor assembly. Also check for frayed or damaged wires in burner tube. Replace components as needed.
	Ignition control	Gas valve should open as the ignition control generates the high voltage spark. Check for supply voltage to pilot valve at terminal #5 and neutral. If no voltage is present, check reset button for the ignition control. If there is still no voltage to the pilot valve, replace ignition control.
	Gas valve	Check for supply voltage to pilot valve terminal #5 to neutral, if there is no voltage, trace wiring back to ignition control. If there is supply voltage, connect a manometer to the pressure tap fitting on the gas valve. If there is voltage to the pilot valve, but there is no gas pressure, replace gas valve.
	Pilot tube	Check for gas pressure at pilot tube. Disconnect pilot tube at burner and connect manometer. If there is no gas pressure, check for blockage in pilot tube. Repair or replace as needed.
	Pilot Orifice	If there is gas pressure at the pilot tube, check the pilot orifice for damage or obstructions. Replace pilot orifice as needed.
Flame will not stay on	Flame sensor	To check flame sensor operation, connect a digital multimeter (capable of measuring D.C. microamps) between the flame sensor wire and the flame sensor connection on the ignition control (terminal #13). Flame sensor current is to be 0.7 microamps, minimum. If these readings are not achieved, replace igniter/sensor assembly. Also check for any type of damage to flame sensor wire and connections. NOTE: The D.C. microamp test must be conducted with the oven in low flame (bypass) operation.
	Power supply	Set the temperature to the lowest temperature setting. If there is sufficient microamp current, but the flame will not stay lit, check for proper polarity of the power supply.
	Ignition control	If there is sufficient microamp current, and there is proper polarity of the power supply, but the burner will not stay lit, check the reset button for the ignition control. If the above test is okay, replace the ignition control.
	NOTE: Flame should be on at this time	

Problem	Cause	Correction
Low flame is on, but no main flame	Control transformer	Check for supply voltage to primary of control transformer. If no voltage is present, trace wiring back to oven power switch. If voltage is present, check for 24VAC at transformer secondary. If there is primary voltage, but no secondary voltage, replace control transformer.
	Oven control	Check for 24VAC supply to oven control. If no voltage is present, trace wiring back to control transformer. Check for supply voltage to oven control. If no voltage is present, trace wiring back to ignition control. If voltage is present, check for a read-out on the display. If there is no read-out on the display, replace oven control. If there is a read-out on the display, set the oven control to maximum temperature (see installation operations manual for temperature adjustment). With the oven control at maximum temperature, check for supply voltage to the temperature regulation valve. If there is voltage at the temperature regulation valve, proceed to "Temperature regulation valve ". If there is no voltage at the temperature regulation valve, trace wiring back to the oven control. If there is no voltage output at the oven control, check the read-out on the oven control. If the oven control reads "PROBE FAIL" this indicates that the thermocouple has failed or become disconnected from the oven control
	Thermocouple	Check to see that the thermocouple is securely connected to the oven control. If the thermocouple is connected to the oven control, and the display indicates "PROBE FAIL", disconnect the thermocouple from the oven control and measure the resistance of the thermocouple. The thermocouple should read approximately 11Ω. If these readings are not achieved, replace the thermocouple. If these readings are correct, proceed.
	Oven control	If the thermocouple checks good, but the oven control display indicates that there is a thermocouple failure, replace the oven control. If the oven control indicates a temperature reading, but the oven will not heat, proceed.
	Thermocouple	WITH POWER ON AND THERMOCOUPLE ATTACHED TO THE OVEN CONTROL: Measure the DC millivolt output of the thermocouple. Refer to the thermocouple chart (located in the "Removal" section of the manual) for proper millivolt readings. If these readings are not achieved, replace thermocouple.
	Oven control	If the thermocouple checks good, but there is no supply voltage output to the temperature regulation valve, replace the oven control. If there is supply voltage output to the temperature regulation valve, proceed.
	Temperature regulation valve	Check for supply voltage to the temperature regulation valve. If voltage is present, listen for valve to open and close. Also check for opens or shorts in the operating coil. Replace temperature regulation valve as needed.
Intermittent heating	Thermal/overload of main fan and burner blower motor	The main fan motor and burner blower motor are equipped with internal thermal protection and will cease to operate if overheating occurs. As the motors overheat and cool, this will cause the heating system to cycle on and off intermittently. Improper ventilation or lack of preventive maintenance may cause this problem. Also most of the problems listed under "Oven will not heat" can cause intermittent failure.

Problem	Cause	Correction
Conveyor will not run	Incoming power supply	Check circuit breaker, reset if required. Check power plug to be sure it is firmly in receptacle. Measure incoming power, call power company if required.
	Fuse, 10 Amp	Check, replace if necessary.
	Fuse holder	Check, replace if necessary.
	Switch, oven power	Check for line voltage supplied to switch. If no voltage is present, trace wiring back to fuse holder. Check continuity between switch terminals. Replace switch as needed.
	Control transformer	Check for supply voltage to primary of control transformer. If no voltage is present, trace wiring back to oven power switch. If voltage is present, check for 24VAC at transformer secondary. If there is primary voltage, but no secondary voltage, replace control transformer.
	Conveyor motor	Check for supply voltage to the conveyor motor at terminal #6 to neutral. If no voltage is present, trace wiring back to oven power switch. If voltage is present, but the motor will not run, check the motor windings for opens or shorts. If any of the above checks fail, replace conveyor motor.
	Capacitor, conveyor motor	Check for shorts or grounds. Replace capacitor as needed. WARNING: Capacitor has a stored charge, discharge before testing.
	Switch, conveyor reversing	Check continuity between switch terminals. Replace switch as needed.
	Oven control	If there is voltage supplied to the motor, and the motor capacitor and reversing switch check good, replace the oven control.
Conveyor motor runs, but there is no speed display	NOTE: Display will indicate "BELT JAM"	
	Oven control	Check for output voltage from oven control to hall effect sensor (sensor is located in the conveyor motor). Measure voltage at the motor connector, red wire and yellow wire. Voltage should be approx. 10VDC. If no voltage is present, trace wiring back to oven control. If there is no voltage output at the oven control, replace oven control.
	Conveyor motor	If there is voltage supplied to the hall effect sensor, check for a frequency output from the hall effect sensor. Measure frequency across the yellow and white wires in the motor connector. Frequency reading should be approx. 25-100 Hz. If these readings are not achieved, replace conveyor motor. If the readings are achieved, proceed.
	Oven control	If the hall effect sensor readings are correct, but there is no speed indicated on the display, replace the oven control.

Section 6
Controls



NOTE: While this illustration features the 3255 display panel, the 3240C & 3270 display panel includes a similar design.

⚠Warning

The front of the oven is hot during operation. Care should be used when working around the oven. When using the front access door, be sure to secure the access door in its proper location when done. Failure to secure the door could result in the door falling open and potential burns.

Oven Start-Up Instructions

⚠Warning

All covers and access panels must be in place and properly secured, before operating this equipment.

1. Turn oven on. After the oven is turned on, it is in cooking mode. To set the time and temperature you must be in programming mode.
2. To get to program mode, press and hold the time and temperature buttons for approximately 6 seconds. While pressing the buttons, the display will say "Hold Key and Wait." The display will then say "Please Release" after the buttons have been held long enough. After you release the buttons you will be in programming mode.
3. The display will say "Set Point Temperature or Time to Select Function." If no buttons are pressed within 4 seconds the display will revert back to cooking mode. It will automatically save the last settings that were entered before reverting to cooking mode.
4. To set the temperature, press the Temperature button. The set point temperature will be displayed and the temperature may be increased or decreased by pressing the Increase or Decrease buttons.
5. To set the belt time, press the Time button. The display will indicate which belt is being set. Press the Increase and Decrease buttons to increase or decrease time. Press the Time button again to toggle between belts.
6. To save settings and return to cooking mode leave the control alone for 4 seconds and it will revert to cooking mode.

To Turn A Conveyor Off Or Back On

(When configured with split belt)

1. When the oven is turned on, all belts will automatically begin running. To turn one belt off, press and hold one of the buttons.
2. While pressing the button, the display will show which belt is being turned off. You will need to continue holding the button for approximately four seconds.
3. The display will show "Please Release" when it is time to let go of the button. The belt will turn off.
4. To turn the belt back on, press and hold the same button that you did before.

Oven Shut-Down Instructions

1. Turn the ON/OFF switch to the "OFF" position. The oven will now shut down and cease operation.

Oven Control – Programming

NOTE: All bake times should be within 10 seconds of set bake time. Cavity temperature should be calibrated to within 5°F of set temperature. For temperature calibration, allow oven temperature to stabilize for, at minimum, 30 minutes. Before checking conveyor speed, allow conveyor to run for 10 minutes.

BEFORE APPLYING POWER

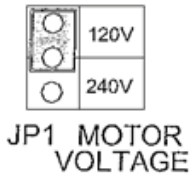
Before applying power to the oven, ensure proper voltage jumper setting for 120V or 240V and that the 50 Hz / 60 Hz jumper setting is correct. Jumpers are located on conveyor control boards.

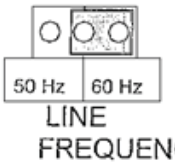
INITIALIZING A NEW CONTROL

1. To initialize a new control, hold the two center buttons in, then turn unit on. Release buttons.
2. Select the correct oven model number (e.g. 3255 or 3270) by toggling the (+) or (-) buttons. When correct model # is selected, press the **TEMP** button to store.
3. Select the proper belt configuration for this oven by toggling the (+) or (-) buttons. Press the **TEMP** button to store.
4. Allow control sufficient time to update programming. Shut off main fan switch. Initialization of control is now complete.

SETTING TEMPERATURE SCALE °F OR °C

1. Press and hold the two right-hand buttons to enter sub-level program. The prompt **"Technicians Only"** will be displayed. Momentarily, a second prompt **"Please Release Buttons"** will be displayed.
2. After releasing the buttons, quickly press the **TIME** button and the (+) button to enter the program.
3. After **Sub Program Menu** is displayed, press and release the **TEMP** button.
4. Press the (+) or (-) buttons to toggle choices between °F and °C.
5. After desired scale is selected, allow control to revert back to normal operating mode.





50Hz - JUMPER JP2 LEFT TWO POSITIONS
60Hz - JUMPER JP2 RIGHT TWO POSITIONS

120VAC - JUMPER JP1 TOP TWO POSITIONS
240VAC - JUMPER JP1 BOTTOM TWO POSITIONS

SETTING BANDWIDTH, CUT OUT VOLTAGE AND CUT IN VOLTAGE

1. Press and hold the two right-hand buttons to enter sub-level program. The prompt **"Technicians Only"** will be displayed. Momentarily, a second prompt **"Please Release Buttons"** will be displayed.
2. After releasing the buttons, quickly press the **TIME** button and the (+) button to enter the program.
3. After **Sub Program Menu** is displayed, press the **Temp** button in steps until BANDWITH appears.
4. Adjust with the (+) and (-) buttons to a BANDWITH setting of 6 if in °F mode and 3 if in °C mode.
5. Press the **TEMP** button in steps until THE CUTOUT VOLTAGE appears.
6. With the (+) and (-) buttons, adjust THE CUTOUT VOLTAGE to 3.0.
7. Press the **TEMP** button in steps until THE CUT IN VOLTAGE appears.
8. With the (+) and (-) buttons, adjust THE CUT IN VOLTAGE to 4.5.

SETTING BAKE TIME AND OVEN TEMPERATURE – SET POINT MENU

1. Press and hold the **TIME** and **TEMP** buttons to enter Set Point Menu.
2. Once in Set Point Menu, press **TEMP** button and adjust temperature using (+) or (-) buttons.
3. Press **TIME** button while still in Set Point Menu and adjust time using the (+) or (-) buttons. Pressing the **TIME** or **TEMP** button will show the respective setting.
4. Once desired settings are programmed, allow control to revert back to normal operating mode.

NOTE: While in this mode, continue to press the **TIME** button to toggle between different conveyors.

ADJUSTING TEMPERATURE OFFSET

1. Press and hold the two right-hand buttons to enter sub-level program. The prompt **"Technicians Only"** will be displayed. Momentarily, a second prompt **"Please Release Buttons"** will be displayed.
2. After releasing the buttons, quickly press the **TIME** button and the (+) button to enter the program.
3. After Sub Program Menu is displayed, press the **TEMP** button to access the following temperature features: SCALE (°F or °C), HI TEMP, LOW TEMP, OFFSET (+ or -) MANUFACTURE MODE (Inactive or Active). NOTE: DO NOT change SCALE after it has been set or settings will reset to default values.
4. To adjust the temperature offset, access the OFFSET display in the Sub Level Program Menu.
5. If cavity temperature is above the set temperature, decrease (- button) the offset value. If cavity temperature is below the set temperature, increase (+ button) the offset value. The amount of offset needed should be the difference between the cavity temperature and the set temperature.
6. Allow oven to reach set temperature and verify cavity temperature. Readjust offset as necessary.

NOTE:

- HI TEMP and LOW TEMP are not normally changed unless requested by the customer. Accessing these displays and pressing the (+) or (-) buttons will change indicated setting accordingly.
- MANUFACTURE MODE is not normally used and, as such, the feature should be set to "clear".
- While in the Sub Program Menu, pressing the TIME button will access the time features: HI TIME and LOW TIME. These are not normally changed unless requested by the customer. Accessing these displays and pressing the (+) or (-) buttons will change each indicated setting accordingly.

THIS PAGE INTENTIONALLY LEFT BLANK

Section 7
Component Procedures

⚠ Warning

Before removing or installing any component in the Impinger Oven, be sure to disconnect all electrical power and shut off gas supply.

Burner Control – Honeywell – Domestic Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove wires from control while noting wire number and location for reassembly.
3. Remove two (2) screws from control and replace.
4. Reassemble in reverse order and check system operation.

Ignition Control – International Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove wires from control while noting wire number and location for reassembly.
3. Remove one (1) mounting screw and remove ignition control from gas valve.
4. Reassemble in reverse order and check system operation.

Burner Blower Motor

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Unplug motor connector.
3. Remove three (3) screws from blower tube at burner housing.
4. Remove air shutter assembly from old motor for installation on new motor assembly.
5. Reassemble in reverse order and check system operation.

NOTE: Check air shutter adjustment. It should be set at half open.

Hot Surface Ignitor – Domestic Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Disconnect gas line at union.
3. Remove four (4) nuts from burner orifice bracket.
4. Remove tube for bypass flame.
5. Unplug connector at burner housing.
6. Remove three (3) screws from burner housing end cap and remove hot surface igniter and burner tube assembly.
7. Replace igniter assembly and reassemble in reverse order.

⚠ Caution

Use care not to damage new igniter. Also, never touch igniter with bare hands.

NOTE: Check all gas line fittings for leaks. Make sure connector is seated properly.

Ignitor Sensor – International Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove gas valve assembly (see gas valve).
3. Remove screws from burner tube and pull burner assembly out.
4. Remove wire connectors from igniter sensor assembly.
5. Remove screws from mounting bracket and remove assembly.
6. Reassemble in reverse order and check system operation.

NOTE: After installation, check all gas line fittings for leaks.

Conveyor Drive Motor

REPLACEMENT

With Power Off:

1. Shut off power at main breaker.
2. Remove drive chain and drive sprocket from conveyor motor.
3. Remove control panel top and front cover.
4. Disconnect motor connector (6 pin connector).
5. Remove four (4) mounting bolts and remove conveyor motor.
6. Reassemble in reverse order.

Reversing Switch

REPLACEMENT

With Power Off:

1. Shut power off at main breaker.
2. Remove control panel top.
3. Disconnect wiring from reversing switch and mark all wiring for reassembly. (See schematic diagram for wire numbers.)
4. Remove mounting nut from reversing switch and remove reversing switch and reversing switch cover.
5. Reassemble in reverse order.

REVERSING CONVEYOR DIRECTION

1. Shut off power at oven switch.
2. Set reversing switch in the other position.
3. Turn oven "on" and check for proper operation.

Burner Reset Switch – International Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Disconnect wires from ignition control (see ignition control). Note wire number and location for reassembly.
3. Pull off black operating knob and remove hex mounting nut.
4. Reassemble in reverse order.

Burner Alarm – International Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove two (2) wires from alarm. Note wire number and location for reassembly.
3. Remove retainer cover from alarm and remove assembly from control box.
4. Reassemble in reverse order and check system operation.

Air Pressure Switch – International Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Disconnect wires from switch making note of wire number and location for reinstallation.
3. Remove air tube from switch assembly.
4. Remove mounting screws to remove air pressure switch.
5. Reassemble in reverse order. Make sure air tube is not blocked or misaligned.

ADJUSTMENT

To adjust air pressure switch, remove cover from the switch to expose adjusting screw. To increase sensitivity, turn screw counter-clockwise. To decrease sensitivity, turn screw clockwise. Check for proper line voltage switching from N.C. to N.O. as the air pressure switch closes.

Fuseholder

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove two (2) wires, and note wire number and location.
3. Remove mounting nut on back side of fuse holder and push out.
4. Reinstall in reverse order and check system operation.

Burner Control Gas Valve (Dual Valve) – Domestic Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove incoming gas line.
3. Remove screws from incoming nipple mounting bracket.
4. Remove incoming nipple.
5. Remove bypass tube assembly.
6. Disconnect pipe union.
7. Disconnect wiring from control valve (four [4] push-on connectors). Disconnect wiring from modulating valve (2 wires) making note of wire numbers and location for reinstallation.
8. Remove both valves. Replace control valve (valves are connected by a 1/2 inch pipe nipple).
9. Reassemble in reverse order and check system operation.
10. Set manifold pressure on gas valve. Pressure should be 3.5 in. W.C. natural gas, 10 in. W.C. L.P. on a cool oven heating up on full flame.

NOTE: Inlet gas pressure must be a minimum of 7 in. W.C. natural gas and 11 in. WC. L.P.

NOTE: After installation, check all gas line fittings for leaks.

Ignition Control Gas Valve (Dual Valve) – International Only

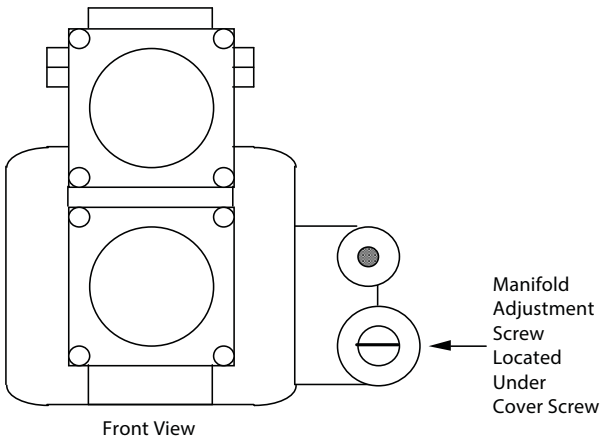
REPLACEMENT

With Power Off:

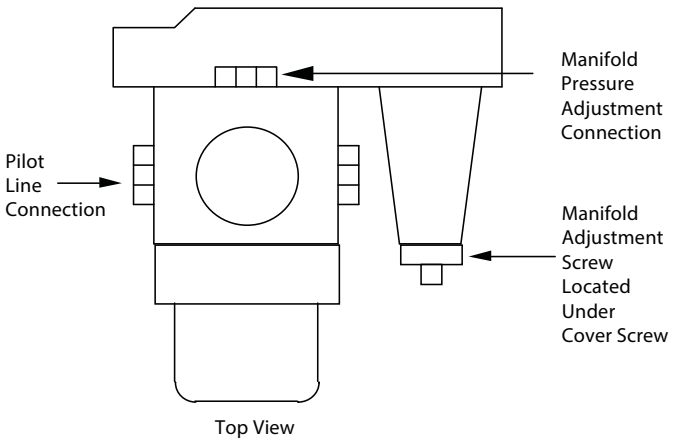
1. Remove appropriate control box cover.
2. Remove incoming gas line.
3. Remove screws from incoming nipple mounting bracket.
4. Remove incoming nipple.
5. Remove wiring from ignition control (mounted on gas valve). Mark all wiring for reassembly.
6. Remove gas valve and piping assembly.
7. Remove piping from gas valve.
8. Remove ignition control from gas valve and reinstall on new gas valve.
9. Reassemble in reverse order and check system operation.
10. Set manifold pressure on gas valve. Pressure should be 3.5" W.C. (0.87 kPa) natural gas., 10" W.C. (2.48 kPa) L.P. on a cool oven heating up on full flame.

NOTE: Inlet gas pressure must be a minimum of 7" W.C. (1.74 kPa) natural gas and 11" W.C. (2.73 kPa) L.P.

NOTE: After installation, check all gas line fittings for leaks.



Front View



Top View

Modulating Gas Valve

REPLACEMENT

NOTE: Valves are different part numbers on left side versus right side due to the location of the adjustment screw. Likewise natural gas valves are different part numbers than LP valves.

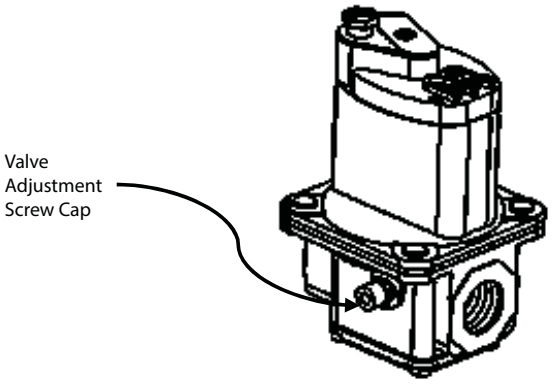
With Power Off:

1. Remove appropriate control box cover.
2. Remove incoming gas line.
3. Remove screws from incoming nipple mounting bracket.
4. Remove incoming nipple.
5. Disconnect pipe union.
6. Disconnect wiring from control valve. Disconnect wiring from modulating valve (2 wires/screw connections) making note of wire numbers and location for reinstallation.
7. Remove both valves. Replace modulating valve (valves are connected by a 1/2 inch pipe nipple).
8. Reassemble in reverse order and check system operation.
9. Verify manifold pressure on the burner. Pressure should be 3.5" W.C. (0.87 kPa) natural gas, 10" W.C. (2.48 kPa) L.P. at the manifold pressure tap on a cool oven heating up on full flame.

ADJUSTMENT

1. Disconnect 1 wire from modulating valve.
2. Remove cap from valve adjustment screw and adjust manifold pressure to 0.5" W.C. (0.12 kPa) natural gas and 0.6" W.C. (0.15 kPa) L.P. Turn screw CW to increase pressure and CCW to decrease pressure.
3. Replace cap and supply wire.

NOTE: Inlet gas pressure must be a minimum of 7" W.C. (1.74 kPa) natural gas and 11" W.C. (2.73 kPa) L.P. After installation, check all gas line fittings for leaks.



Main Orifice

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove bypass tube assembly.
3. Remove four (4) nuts from burner orifice bracket.
4. Disconnect pipe union.
5. Remove assembly and replace main orifice.
6. Reassemble in reverse order and check system operation.

NOTE: Check all gas line fittings for leaks.

On – Off Switch (Power)

REPLACEMENT

With Power Off:

1. Remove control box cover.
2. Remove wires from back of switch being sure to note wire number and location.
3. Depress spring clips on side of switch and push out.
4. Reassemble in reverse order and check system operation.

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

Oven Control Transformer

REPLACEMENT

With Power Off:

1. Remove control box cover and front panel.
2. Remove wires from transformer being sure to note color and location of wires for reinstallation.
3. Remove two (2) screws from transformer base and replace assembly.
4. Reassemble in reverse order and check system operation.

Burner Control Transformer – Domestic Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove wires on primary side, note color and location.
3. Remove wires on secondary side at ignition control (Honeywell) being sure to note color and location.
4. Remove two (2) screws from transformer base and replace assembly.
5. Reinstall in reverse order and check system operation.

Capacitor, Main Fan Motor

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.

> **⚠Warning**
>
> Capacitor has a stored charge. Discharge before handling or testing.

2. Remove two (2) wires from capacitor being sure to note the wire number and location.
3. Cut two (2) tyraps securing capacitor to base and replace.
4. Reinstall in reverse order and check system for operation.

Relay

REPLACEMENT

With Power Off:

1. Remove control box cover.
2. Remove wires from relay being sure to note the wire numbers and location for reinstallation.
3. Remove two (2) screws from relay base and replace relay.
4. Reassemble in reverse order making sure wire connectors are properly seated.
5. Check system operation.

Thermostat, Cooling Fan

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove two (2) wires from thermostat, note wire number and location.
3. Remove two (2) mounting screws and replace thermostat.
4. Reassemble in reverse order and check system operation.

Oven Cavity Hi-Limit Thermostat – International Only

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover. Remove motor cover and remove oven back to access hi-limit thermostat.
2. Remove wires from thermostat, note wire numbers and location for reinstallation.
3. Remove screws from bracket and remove thermostat.
4. Reassemble in reverse order and check system operation.

NOTE: Depress reset button to ensure thermostat is set for operation.

Cooling Fan Motor

REPLACEMENT

With Power Off:

1. Remove appropriate control box cover.
2. Remove mounting screws.
3. Unplug electrical connector and remove fan motor assembly.
4. Reassemble in reverse order and check system operation.

NOTE: Verify that air is flowing from the outside to the inside of the control box.

Main Fan Motor

REPLACEMENT

With Power Off:

1. Shut off gas supply and remove gas line and manifold lines from back of oven.
2. Remove screws from motor cover housing and lift off.
3. Unplug power connector, thermocouple, and motor connectors.
4. Remove eight (8) bolts from oven back (4 left, 4 right) and lift out.
5. Remove one (1) screw from fan hub and slide fan blade off of motor shaft.
6. Remove eight (8) mounting bolts and remove motor assembly from back assembly.
7. Remove four (4) mounting nuts, loosen band clamp, and remove motor from mounting assembly.
8. Reinstall mounting assembly to new motor.
9. Reassemble in reverse order.

NOTE:

- Make sure motor is centered in back of housing.
- Position of the fan on the motor shaft will be 2.0" from the top of the oven-back cone to the blade spider assembly on the fan hub (see illustration below).
- Make sure all connectors are properly seated and making good contact.
- When reinstalling gas manifold across back of oven, check all fittings for leaks.

10. Check system operation (allow 30-minute preheat for all checks).

Thermocouple (Type K)

REPLACEMENT

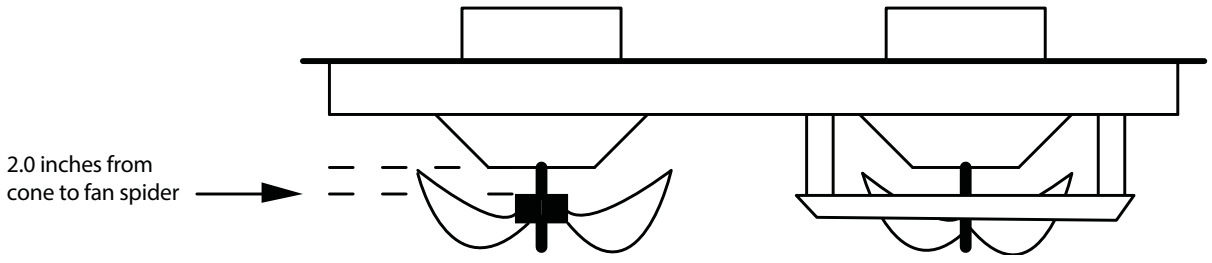
With Power Off:

1. Remove appropriate control box cover. Remove motor cover and remove oven back to access thermocouple. NOTE: Removal of oven back assembly is required to replace thermocouples.
2. Thermocouple is connected directly to the oven control board, remove wire connection.
3. Remove thermocouple from wire form in oven chamber and remove from chamber through control box.
4. Reassemble in reverse order making sure bulb is placed securely in the wire form in the oven chamber.
5. Check System operation, recalibrate as needed.

NOTE: Right hand and left hand thermocouples have different connectors on the wire ends and must be ordered accordingly.

Thermocouple Measurement

Temperature °F (°C)	D.C. Millivolts (Appox.)
200° (93°)	3.82
250° (121°)	4.96
300° (149°)	6.09
350° (177°)	7.20
400° (204°)	8.31
450° (232°)	9.43
500° (260°)	10.56
550° (288°)	11.70
600° (316°)	12.85



Bearing, Conveyor

REPLACEMENT

With Power Off:

1. Remove conveyor from oven and place on a flat work surface.
2. Remove connecting links from conveyor belting.
3. Remove conveyor belting from conveyor.
4. Remove mounting screws that holds bearing assembly to the conveyor frame. Move drive shaft or idle shaft toward center of conveyor and shaft with bearing will slip out of holding bracket.
5. Replace bearing and reassemble.

Conveyor Control

REPLACEMENT

With Power Off:

1. Shut off power at main breaker.
2. Remove control box cover.
3. Remove wiring from appropriate conveyor control and mark all wiring for reassembly.
4. Remove conveyor control by pulling control from the mounting pins. Remove control from oven.
5. Reassemble in reverse order and set the new control dipswitch settings. See *Controls* section or more information.
6. Test system for proper operation.
    - Single Belt or Front Belt – Dip Switch 1 will be ON and 2, 3, and 4 are OFF.
    - Back Belt – (ON SECOND CONVEYOR CONTROL) Dip Switch 2 ON and 1, 3 and 4 are OFF.

Oven Control

(See *Controls* section for programming)

REPLACEMENT

With Power Off:

1. Shut off power at main switch and unplug unit from wall.
2. Remove appropriate control box cover and front panel.
3. Remove all wiring connections and mark for reassembly.
4. Remove oven control by removing 2 nuts and pulling control from the mounting pins.
5. Before installing new oven control, set voltage jumper (located at the bottom center of the oven control) to the proper voltage (120V / 240V) position. Install the four pushbutton extensions (included with the oven control) by pushing the extensions onto the four set buttons on control.
6. Reassemble in reverse order and check system operation.

NOTE: Temperature calibration now required. Please see *Controls* section.

THIS PAGE INTENTIONALLY LEFT BLANK

Section 8
Charts

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
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

Specifications

Electrical Service – All Models

	Voltage (AC)	Phase	Hz	Model 3240/3255 Amps	Model 3270 Amps
Single Oven	120	1	60	6.0	14.0
Double Stack	120	1	60	12.0	28.0
Triple Stack	120	1	60	18.0	42.0
International Ovens (Single Stack)	230/240	1	50	3.15	7.3

General Information – 3240 Natural Gas Ovens

Model	Energy	Power	Voltage	Current	Phase	Hz	Gas Supply Pressure	Gas Pipe Size (NPT)
Single Oven	Nat. Gas	115,000 BTU	120 VAC	6 Amps	1	60 Hz	8 – 14" W.C.	1"
Double Stack	Nat. Gas	230,000 BTU	120 VAC	12 Amps	1	60 Hz	8 – 14" W.C.	1-1/4"
Triple Stack	Nat. Gas	345,000 BTU	120 VAC	18 Amps	1	60 Hz	8 – 14" W.C.	1-1/2"
Single Oven	Nat. Gas G20	31 kW (HI) 144 MS/hr 3.88 m3/hr	230 VAC	3.15 Amps	1	50 Hz	2.00 - 3.48 kPa	1"
Single Oven	Nat. Gas G25	26 kW (HI)	230 VAC	3.15 Amps	1	50 Hz	2.00 - 3.48 kPa	1"

General Information – 3240 Propane Gas Ovens

Model	Energy	Power	Voltage	Current	Phase	Hz	Gas Supply Pressure	Gas Pipe Size (NPT)
Single Oven	L.P. Gas	115,000 BTU	120 VAC	6 Amps	1	60 Hz	11.5 – 14" W.C.	3/4"
Double Stack	L.P. Gas	230,000 BTU	120 VAC	12 Amps	1	60 Hz	11.5 – 14" W.C.	1"
Triple Stack	L.P. Gas	345,000 BTU	120 VAC	18 Amps	1	60 Hz	11.5 – 14" W.C.	1-1/4"
Single Oven	L.P. Gas G30	37 kW (HI) 2.315 kg/hr	230 VAC	3.15 Amps	1	50 Hz	2.85 – 3.48 kPa	3/4"
Single Oven	L.P. Gas G31	31 kW (HI) 144 MS/hr 1.14 m3/hr 2.545 kg/hr	230 VAC	3.15 Amps	1	50 Hz	2.85 – 3.48 kPa	3/4"

General Information – 3255 Natural Gas Ovens

Model	Energy	Power	Voltage	Current	Phase	Hz	Gas Supply Pressure	Gas Pipe Size (NPT)
Single Oven	Nat. Gas	145,000 BTU	120 VAC	6 Amps	1	60 Hz	8 – 14" W.C.	1"
Double Stack	Nat. Gas	290,000 BTU	120 VAC	12 Amps	1	60 Hz	8 – 14" W.C.	1-1/4"
Triple Stack	Nat. Gas	435,000 BTU	120 VAC	18 Amps	1	60 Hz	8 – 14" W.C.	1-1/2"
Single Oven	Nat. Gas	42.5 kW (HI) 153 MS/h 4.44 m3/hr	230 VAC		1	50 Hz	2.00 - 3.48 kPa	1"

General Information – 3255 Propane Gas Ovens

Model	Energy	Power	Voltage	Current	Phase	Hz	Gas Supply Pressure	Gas Pipe Size (NPT)
Single Oven	L.P. Gas	145,000 BTU	120 VAC	6 Amps	1	60 Hz	11.5 – 14" W.C.	3/4"
Double Stack	L.P. Gas	290,000 BTU	120 VAC	12 Amps	1	60 Hz	11.5 – 14" W.C.	1"
Triple Stack	L.P. Gas	435,000 BTU	120 VAC	18 Amps	1	60 Hz	11.5 – 14" W.C.	1-1/4"
Single Oven	L.P. Gas G30	42.5 kW (HI) 153 MS/h 1.30 m3/hr 3.208 Ks/hr	230 VAC	3.15 Amps	1	50 Hz	2.85 – 3.48 kPa	3/4"
Single Oven	L.P. Gas G31	42.5 kW (HI) 153 MS/h 2.918 Ks/hr	230 VAC	3.15 Amps	1	50 Hz	2.85 – 3.48 kPa	3/4"

General Information – 3270 Natural Gas Ovens

Model	Energy	Power	Voltage	Current	Phase	Hz	Gas Supply Pressure	Gas Pipe Size (NPT)
Single Oven	Nat. Gas	150,000 BTU	120 VAC	14 Amps	1	60 Hz	8 – 14" W.C.	1"
Double Stack	Nat. Gas	300,000 BTU	120 VAC	28 Amps	1	60 Hz	8 – 14" W.C.	1-1/4"
Triple Stack	Nat. Gas	450,000 BTU	120 VAC	42 Amps	1	60 Hz	8 – 14" W.C.	1-1/2"
International (Single Stack)	Nat. Gas	43.9 kW Hi 158.26 MJ 4.59 m3/hr	230/240 VAC	7.3 Amps	1	50 Hz	17.4 mbar 2.00 – 3.48 kPa	1"

General Information – 3270 Propane Gas Ovens

Model	Energy	Power	Voltage	Current	Phase	Hz	Gas Supply Pressure	Gas Pipe Size (NPT)
Single Oven	L.P. Gas	150,000 BTU	120 VAC	14 Amps	1	60 Hz	11.5 – 14" W.C.	3/4"
Double Stack	L.P. Gas	300,000 BTU	120 VAC	28 Amps	1	60 Hz	11.5 – 14" W.C.	1"
Triple Stack	L.P. Gas	450,000 BTU	120 VAC	42 Amps	1	60 Hz	11.5 – 14" W.C.	1-1/4"
International (Single Stack)	L.P. Gas G30	43.9 kW Hi 158.26 MJ 1.3 m^3/hr 3.32 kg/hr	230/240 VAC	7.3 Amps	1	50 Hz	27.4 mbar 2.85 – 3.48 kPa	3/4"
Single Stack	LP Gas G31	43.9 kW Hi 158.26 MJ 1.3 m^3/hr 3.01 kg/hr	230/240 VAC	7.3 Amps	1	50 Hz	27.4 mbar 2.85 – 3.48 kPa	3/4"

NOTE: For proper operation, the gas valve requires a nominal inlet pressure of 7 inches H2O column for natural gas and 11 inches of H2O column for L.P. gas, unless otherwise specified. A minimum inlet pressure of 1.0 inch of H2O above the manifold setting (NAT. manifold 3.5" H2O, L.P. manifold 10" H2O) must be maintained with no pressure drop from the no load to full load condition. The maximum inlet pressure must be maintained at or below 1/2 PSIG (14.5 inches H2O column). Refer to the Gas Pressure Conversion chart for pressure conversions.

THIS PAGE INTENTIONALLY LEFT BLANK

Section 9
Diagrams

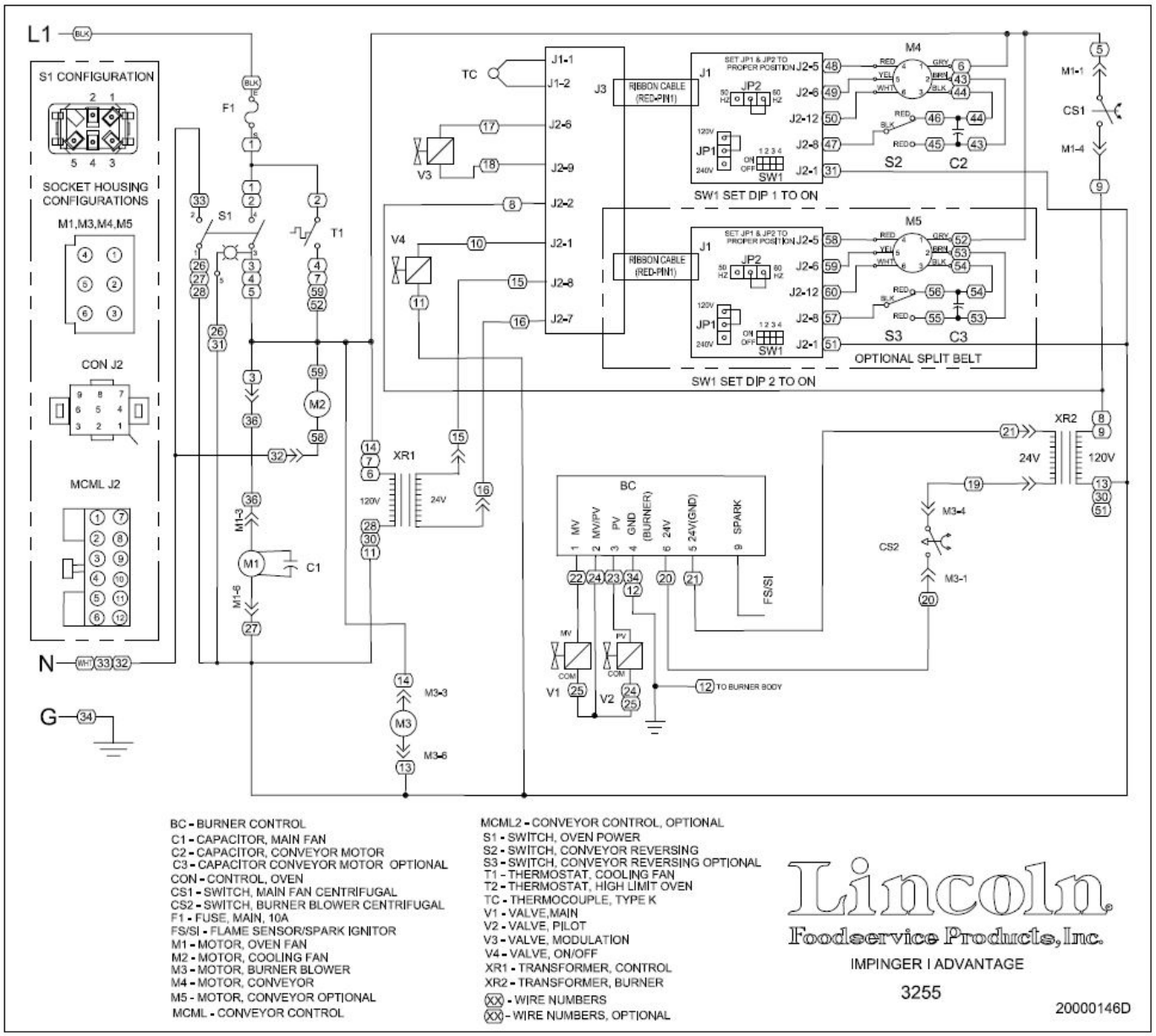
Wiring Schematics

IMPINGER 3240 SERIES GAS OVENS – S/N 1505230001584 & ABOVE
MODELS 3240-00x-N-Kxxxx, 3240-00x-L-Kxxxx

Wiring Schematics

IMPINGER 3240 SERIES ELECTRIC OVENS
MODELS 3240-00x-R-Kxxxx, 3240-00x-V-Kxxxx

DOMESTIC MODEL 3255 120V 60 HZ 1PH NATURAL OR LP GAS

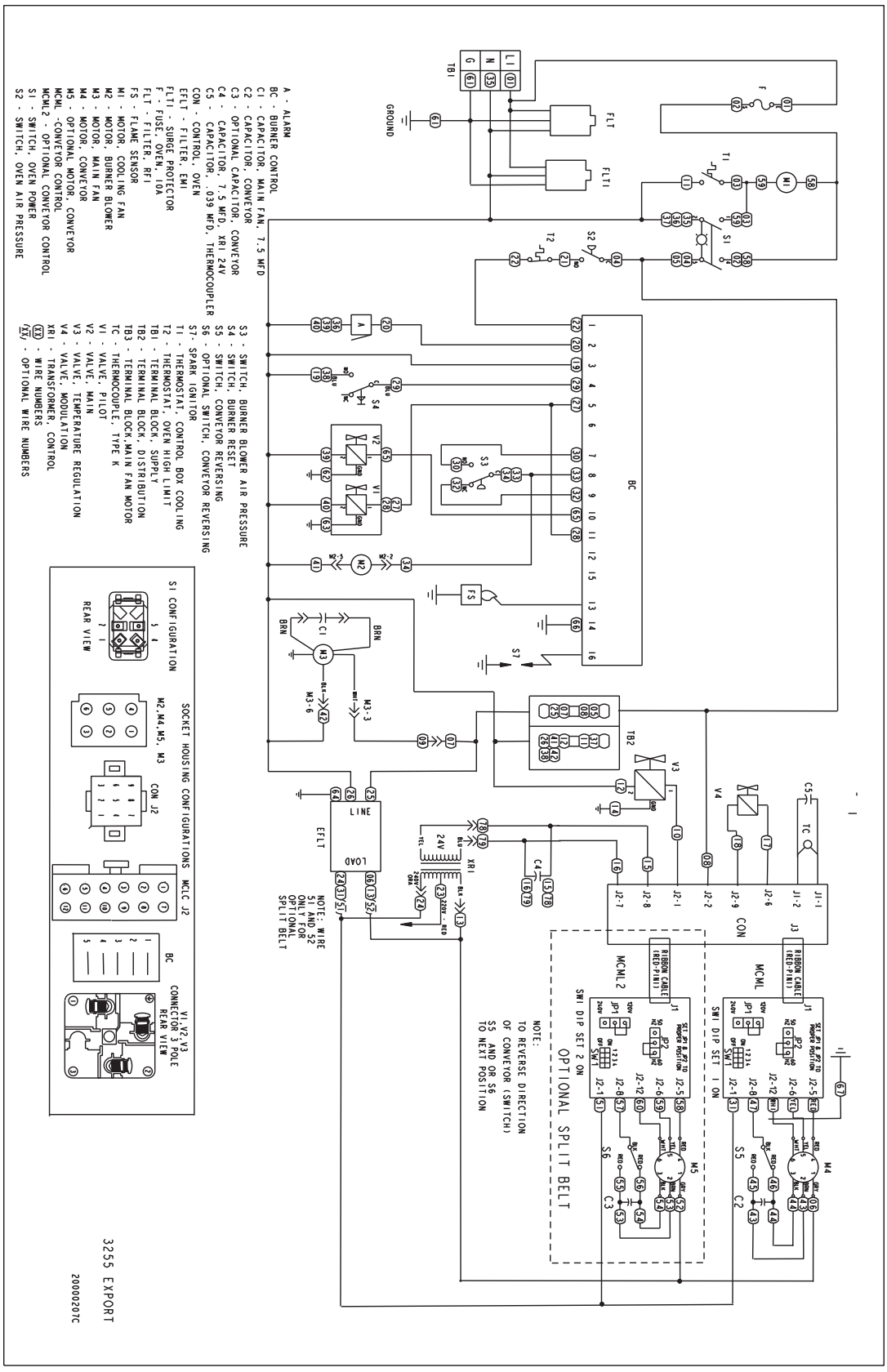


BC - BURNER CONTROL
C1 - CAPACITOR, MAIN FAN
C2 - CAPACITOR, CONVEYOR MOTOR
C3 - CAPACITOR CONVEYOR MOTOR OPTIONAL
CON - CONTROL, OVEN
CS1 - SWITCH, MAIN FAN CENTRIFUGAL
CS2 - SWITCH, BURNER BLOWER CENTRIFUGAL
F1 - FUSE, MAIN, 10A
FS/SI - FLAME SENSOR/SPARK IGNITOR
M1 - MOTOR, OVEN FAN
M2 - MOTOR, COOLING FAN
M3 - MOTOR, BURNER BLOWER
M4 - MOTOR, CONVEYOR
M5 - MOTOR, CONVEYOR OPTIONAL
MCML - CONVEYOR CONTROL

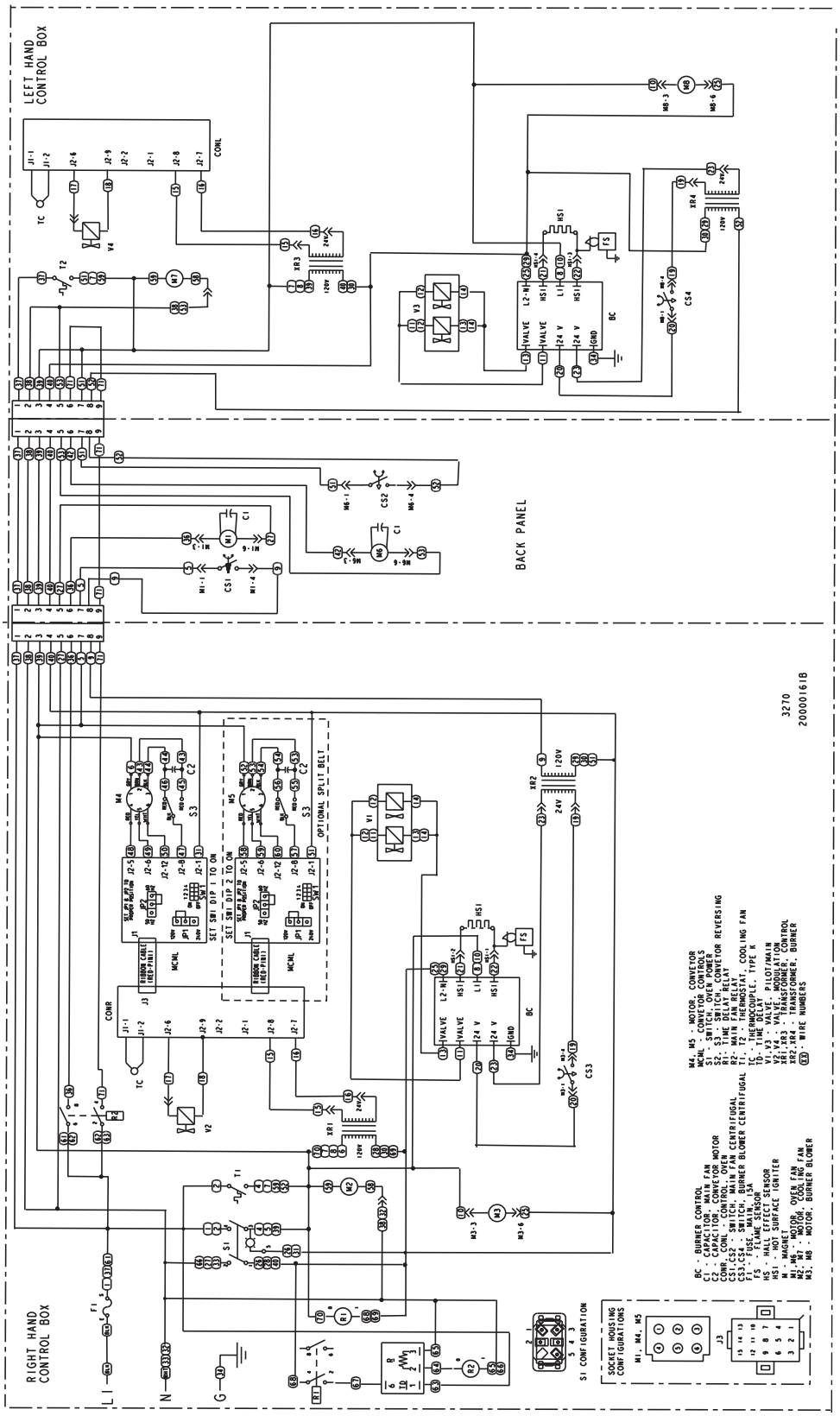
MCML2 - CONVEYOR CONTROL, OPTIONAL
S1 - SWITCH, OVEN POWER
S2 - SWITCH, CONVEYOR REVERSING
S3 - SWITCH, CONVEYOR REVERSING OPTIONAL
T1 - THERMOSTAT, COOLING FAN
T2 - THERMOSTAT, HIGH LIMIT OVEN
TC - THERMOCOUPLE, TYPE K
V1 - VALVE,MAIN
V2 - VALVE, PILOT
V3 - VALVE, MODULATION
V4 - VALVE, ON/OFF
XR1 - TRANSFORMER, CONTROL
XR2 - TRANSFORMER, BURNER
(XX) - WIRE NUMBERS
(XX) - WIRE NUMBERS, OPTIONAL

Lincoln Foodservice Products, Inc.
IMPINGER I ADVANTAGE
3255
20000146D

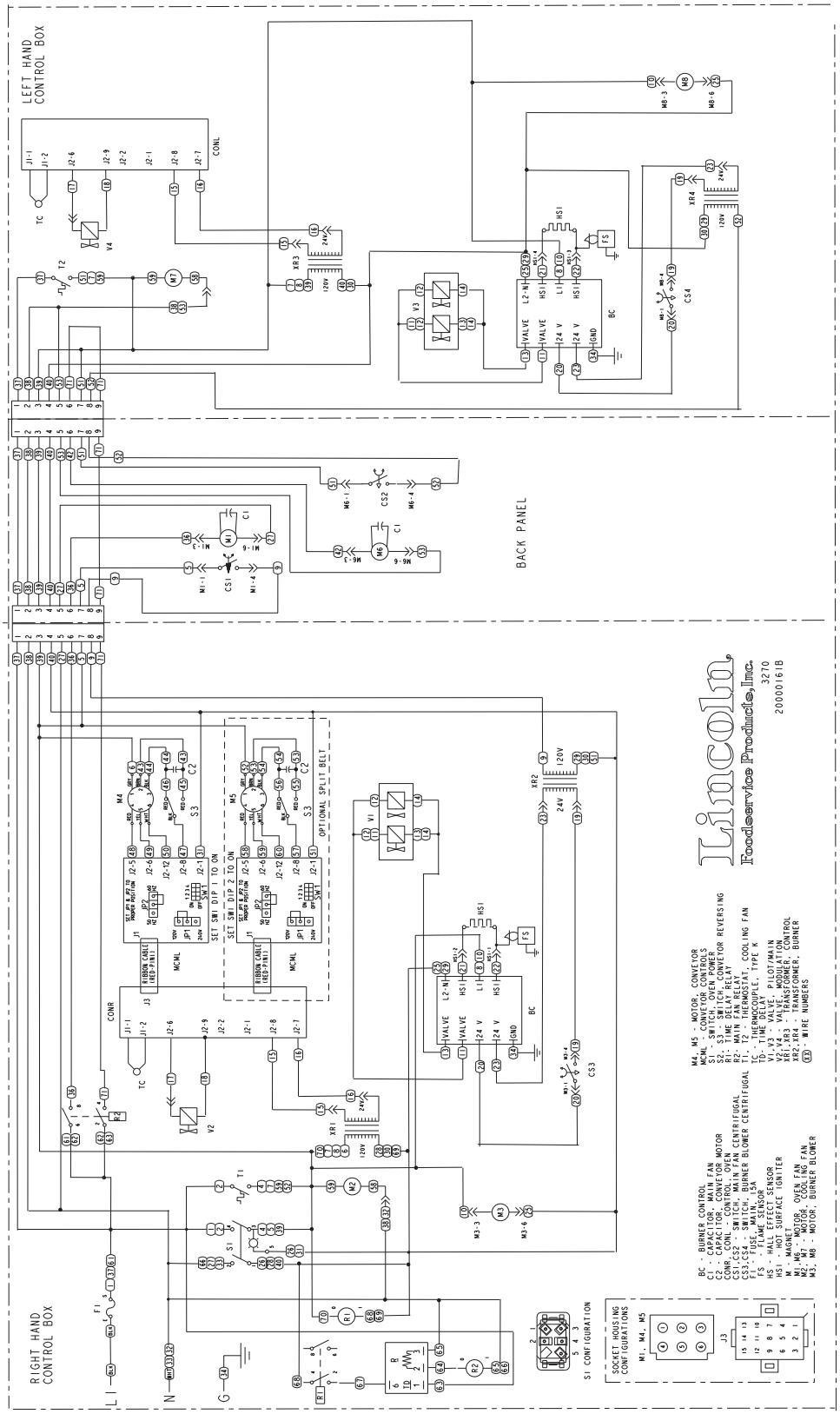
INTERNATIONAL MODEL 3255CE 230V 50 HZ 1PH NATURAL OR LP GAS



DOMESTIC MODEL 3270 120V 60 HZ 1PH NATURAL OR LP GAS



INTERNATIONAL MODEL 3270CE 230V 50 HZ 1PH NATURAL OR LP GAS



LINCOLN
1333 EAST 179TH STREET, CLEVELAND, OH 44110

800-338-2204
WWW.LINCOLNFP.COM

Part Number LIN_SM_0001 11/15