



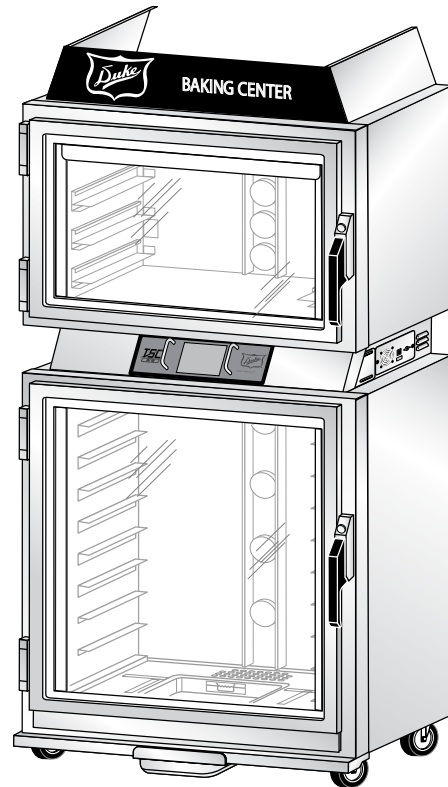
Your Solutions Partner

PROOFER OVEN WITH TOUCH SCREEN CONTROLS (TSC-M)

MODELS

TSC-6/18M

TSC-3/9M



Please read this manual completely before attempting to install, operate or service this equipment.

This document is prepared for trained Duke service technicians. It is not to be used by anyone not properly qualified to perform these procedures.

This Service Manual is not all encompassing. If you have not been trained on servicing this product, be sure to read the manual completely before attempting servicing. Be sure all necessary tools, test equipment, and skills are available. Those procedures for which you do not have the proper skills and test equipment must be performed only by a qualified Duke trained service technician.

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IMPORTANT WARNING AND SAFETY INFORMATION

THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL ELECTRICAL EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD STARTUP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.

READ THIS MANUAL THOROUGHLY BEFORE OPERATING, INSTALLING OR PERFORMING MAINTENANCE ON THE EQUIPMENT.

⚠ WARNING FAILURE TO FOLLOW ALL THE INSTRUCTIONS IN THIS MANUAL CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING ELECTRICAL CONNECTIONS SHOULD BE PERFORMED ONLY BY A CERTIFIED PROFESSIONAL.

⚠ WARNING ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRIC CODE AND/OR ALL LOCAL ELECTRIC CODES. FAILURE TO COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING BEFORE CONNECTING THE UNIT TO THE ELECTRICAL SUPPLY, VERIFY THAT THE ELECTRICAL AND GROUNDING CONNECTIONS COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRIC CODE AND/OR OTHER LOCAL ELECTRICAL CODES. FAILURE TO COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING BEFORE CONNECTING THE UNIT TO THE ELECTRICAL SUPPLY, VERIFY THAT THE ELECTRICAL CONNECTION AGREES WITH THE SPECIFICATIONS ON THE DATA PLATE. FAILURE TO COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING UL73 GROUNDING INSTRUCTIONS: THIS APPLIANCE MUST BE CONNECTED TO A GROUNDED, METAL, PERMANENT WIRING SYSTEM. OR AN EQUIPMENT-GROUNDING CONDUCTOR MUST BE RUN WITH THE CIRCUIT CONDUCTORS AND CONNECTED TO THE EQUIPMENT-GROUNDING TERMINAL OR LEAD ON THE APPLIANCE. FAILURE TO COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING APPLIANCES EQUIPPED WITH A FLEXIBLE ELECTRIC SUPPLY CORD, ARE PROVIDED WITH A THREE-PRONG GROUNDING PLUG. IT IS IMPERATIVE THAT THIS PLUG BE CONNECTED INTO A PROPERLY GROUNDED THREE-PRONG RECEPTACLE. FAILURE TO COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING IF THE RECEPTACLE IS NOT THE PROPER GROUNDING TYPE, CONTACT AN ELECTRICIAN. DO NOT REMOVE THE GROUNDING PRONG FROM THE PLUG. FAILURE TO

COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS PERFORM THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING BEFORE REMOVING ANY SHEET METAL PANELS OR SERVICING THIS EQUIPMENT, ALWAYS PERFORM THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. BE SURE ALL CIRCUITS ARE DISCONNECTED. FAILURE TO COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING DO NOT OPERATE THIS EQUIPMENT WITHOUT PROPERLY PLACING AND SECURING ALL COVERS AND ACCESS PANELS. FAILURE TO COMPLY WITH THIS PROCEDURE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING DO NOT USE OR STORE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

⚠ WARNING IN THE EVENT OF A POWER FAILURE, DO NOT ATTEMPT TO OPERATE THIS APPLIANCE. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.



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INTRODUCTION

INSTALLATION

For detailed installation instructions, refer to the Owner's Manual (120085).

OPERATION

For specific operating instructions, refer to the Owner's Manual (120085).

CLEANING

For specific instructions, refer to the Owner's Manual (120085).

SEQUENCE OF OPERATION

For specific instructions, refer to the Owner's Manual (120085).

TOOLS

STANDARD

- Standard set of hand tools.
- VOM with AC current tester. (Any quality VOM or DVM with a sensitivity of at least 20,000 Ohms per Volt can be used.)
- A ladder or other appropriate item to stand on, if servicing the top of the unit.

SPECIFICATIONS

US and Foreign Patents Pending TSC Model






Shipping Weight: Carton Box: 637 lbs / 288 kg

Shipping Weight: Wooden Crate: 772 lbs / 350 kg

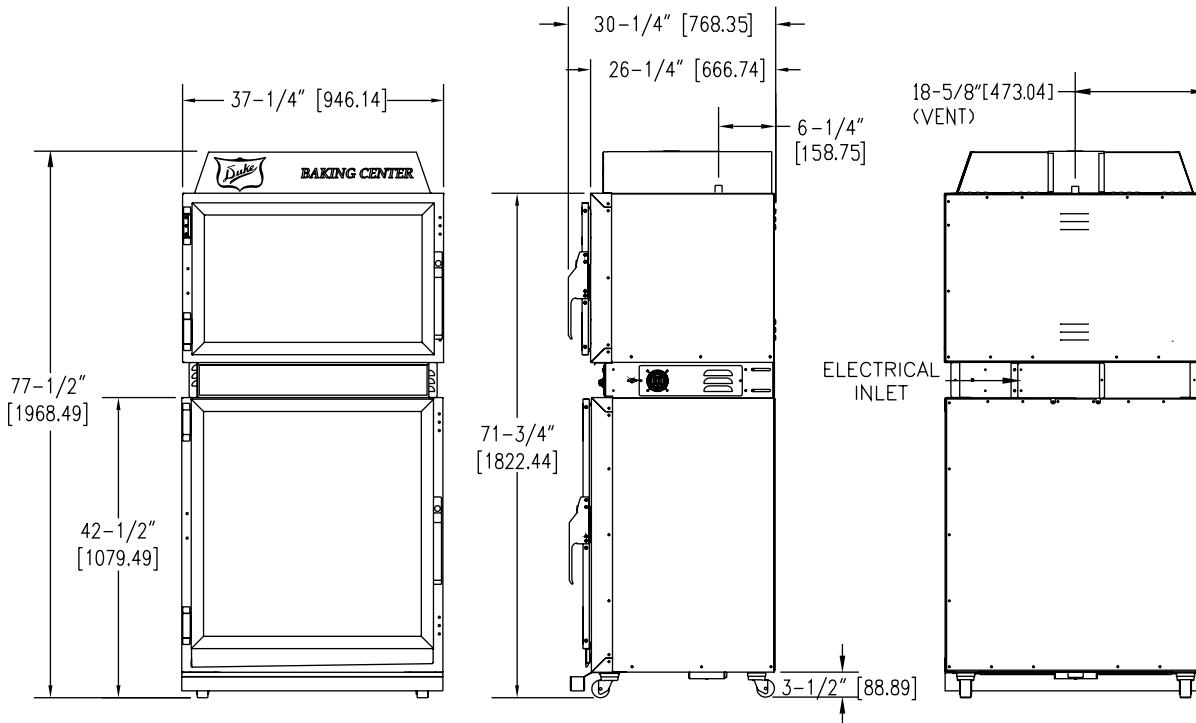
Electrical Specifications

AC VOLTAGE	HZ	PHASE	WATTS	AMPERAGE
208	60	1	6650	32
208	60	3P	6650	32 ▲1
240	50/60	1	7200	30
240	60	3P	7200	30 ▲1
380 – 415	50	3N	7200	30 ▲2
▲1: L1<15A, L2<15A, L3<25A		▲2: L1<15A, L2<15A, L3<15A, N=Common		

Compliance Declaration

	Standard: UL197	File: KNGT.E17421
	Standard: CSA-C22.2 No. 109	File: KNGT7.E17421
	Standard: ANSI / NSF 4	File: TSQT.E157479
	Directive 2006/95/EC: EN60335 -1:2002, A1, A2, A11, A12 EN 60335-2-42:2003	Directive 89/336/EEC: EN61000-6-1 EN61000-6-3
	WEEE RoHS Directive 2002/96/EC	

Dimensions



REMOVAL AND REPLACEMENT OF COMPONENTS

ELECTRICAL LOCKOUT/TAGOUT PROCEDURE



WARNING

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

The Electrical LOCKOUT/TAGOUT Procedure is used to protect personnel working on an electrical appliance. Before performing any maintenance or service that requires exposure to electrical components, follow these steps:

1. In electrical box, place appliance circuit breaker into OFF position.
2. Place a lock or other device on electrical box cover to prevent someone from placing circuit breaker ON.
3. Place a tag on electrical box cover to indicate that appliance has been disconnected for service and power should not be restored until tag is removed by maintenance personnel.
4. Disconnect appliance power cord from electrical outlet.
5. Place a tag on the cord to indicate that unit has been disconnected for service and power should not be restored until tag is removed by maintenance personnel.

COVERS AND PANELS



WARNING

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CAUTION: Interior components and surfaces may be hot if the unit has been in recent use.

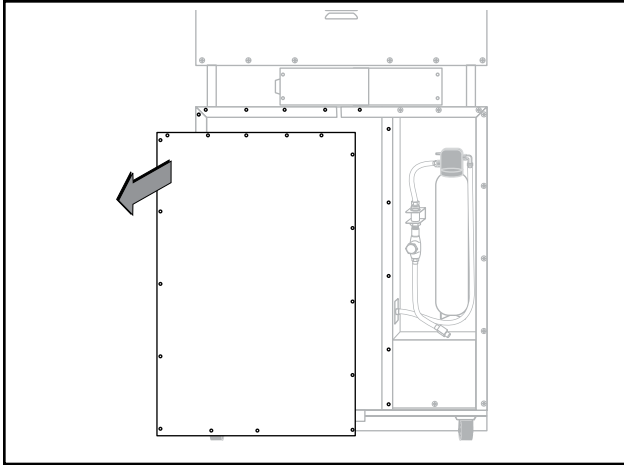
General Service Note: During its installation, this unit is required to be secured to the building structure. There is also a Restraining Device (a heavy, flexible metal cable) that was installed to prevent the unit from moving beyond a certain distance in order to prevent damage to the electrical conduit feeding it. Most service can be accomplished without moving the unit from its mounted position. However, if the unit is moved during service, then these securing devices must be reinstalled for continued protection against tip-over and to meet other compliance regulations.

Proofer Rear Panel



WARNING


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Proofer – Rear Panel Removed

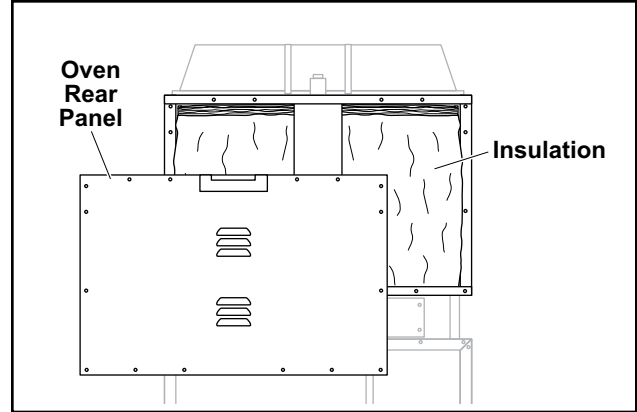
1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove all of the self-tapping sheet metal screws that secure the Left Rear Panel to the Proofer. Set aside for reuse.
3. To remove Water Filter Mounting Panel, turn off water supply and disconnect supply tube. Remove the left side rear panel as described in previous steps.
4. Remove all of the self-tapping sheet metal screws that secure the panel to the Proofer. The Water Filter system will come off with the panel.

Oven Rear Panel

 **WARNING**

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The Rear Panel provides access to the Oven Light Fixtures, Oven Light Fixture wiring harness, the Oven Heating Element connections and Element wiring harnesses.



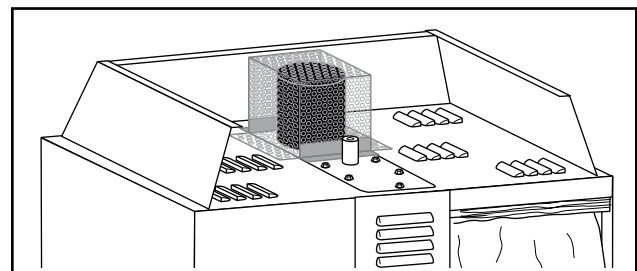
Oven – Rear Panel Removed

1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the screws securing the Oven Rear Panel. Retain for reuse.
3. Carefully remove the insulation to access to the Oven Heating Element connections and Oven Heating Element wiring harness. Retain the insulation for reuse.

Oven Fan Cage and Wire Harness Cover

 **WARNING**

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Oven Fan Cage and Wire Harness Cover


1. Place the unit's Power Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the four screws securing the Oven Fan Cage to top of the unit. Retain for reuse.
3. Remove the cage to gain access to the Oven Fan Motor.
4. Remove the screws securing the Oven Fan Wire Harness Cover to the top of the unit. Retain for reuse.
5. Remove the Oven Fan Wire Harness Cover to gain access to the wiring harness and connections.

1. Place the unit's Power Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the screw securing the Proofer Floor Panel.
3. Slide the panel out through the front of the unit being careful not to damage the fan blades or optimist nozzle.


Access to the Proofer Heater Elements, Opti-Mist Assembly and Proofer Circulating Fan is available with the Proofer Floor Panel removed.

Oven Ceiling Panel

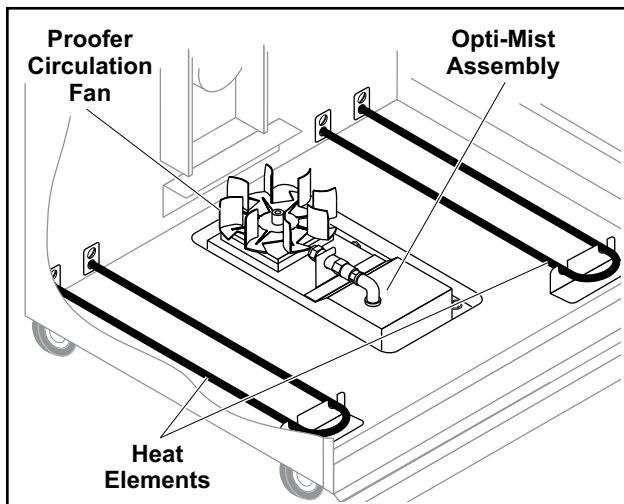
Proofer Floor Panel


WARNING

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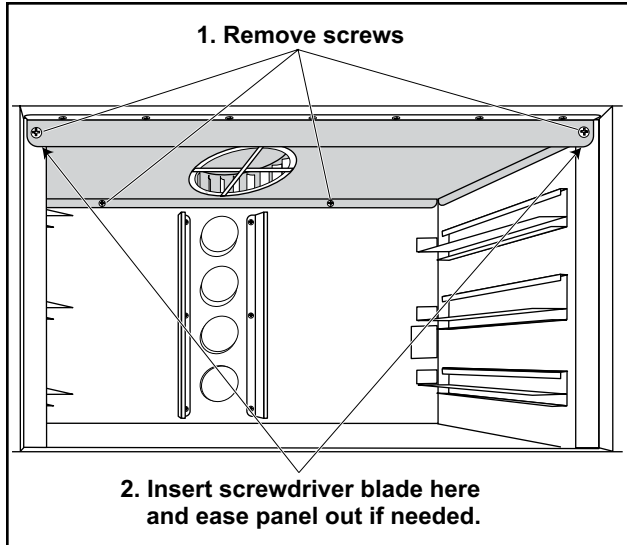

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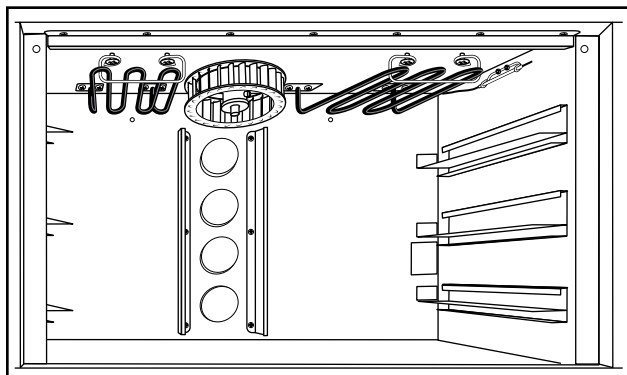


View of Proofer Components with Floor Panel Removed

1. Place the unit's Power Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the Oven Racks
3. Remove the screws securing the panel. Retain screws for reuse.
4. It may be necessary to pry the panel forward from the front of the unit. Be careful not to damage the fan blade when removing the panel.



Oven Ceiling Panel Removal



Oven Components with Ceiling Panel Removed

Access to Oven Heating Elements, Fan Blade, Oven RTD and Hi Limit Thermostat, is available with the Oven Ceiling Panel removed.

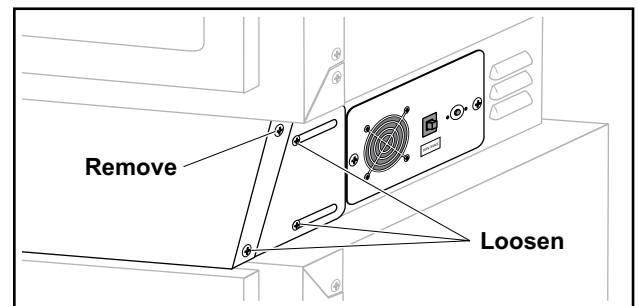
Electrical Compartment Access Panel

WARNING

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

It is not necessary to move the unit to gain access to the Electrical Component Compartment. It might become necessary to remove the unit from the wall if troubleshooting leads into other areas. Refer to the specific component section of this manual when replacing a component in the Electrical Compartment.

1. Place the unit's Power ON/OFF Switch in its OFF position and follow the proper Lockout/Tagout procedures.
2. Refer to the drawing and loosen the appropriate screws.



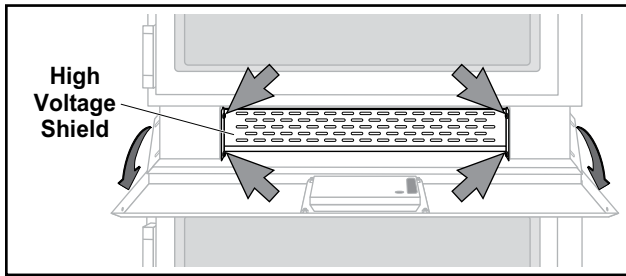
Electrical Compartment Access Panel Screw Locations

3. Also, referring to the drawing remove the two screws at the top of the Control Access Panel.
4. Pull the panel forward then pivot it downward.

CAUTION: DO NOT power on the unit while the Control Panel is in the open position.

5. To access electric components, remove the

four screws (2 on each side) and remove the High Voltage Shield.




High Voltage Shield

6. To troubleshoot for problems, use visual checks, an Ohmmeter and the proper Schematic for the version of the unit being serviced.

CAUTION: When closing the Control Panel, make sure that wires do not become pinched between the Control Panel and the cabinet surfaces.

7. Reverse steps 2 through 5 to secure the High Voltage Shield and Control Access Panel.

Rear Access Panel

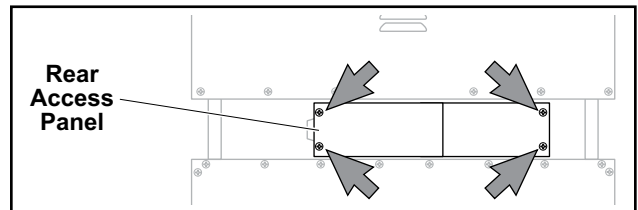
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The Rear Access Panel is located at the rear of the unit. It may be necessary to move the unit to gain access to this area. This unit makes use of a restraining device to protect the power cable and water supply line.


1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.

2. Remove the four screws securing the panel to the unit to gain access to the AC Power Connect Block.




Rear Access Panel Removal

AC INPUT VOLTAGE WIRING CONNECTIONS

 **WARNING**

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

 **WARNING**

IF ALUMINUM AC SUPPLY WIRE IS PRESENT, THE UNIT IS NOT PROPERLY WIRED AND MUST BE TAKEN OUT OF SERVICE UNTIL IT IS PROPERLY REWIRED USING COPPER WIRE.

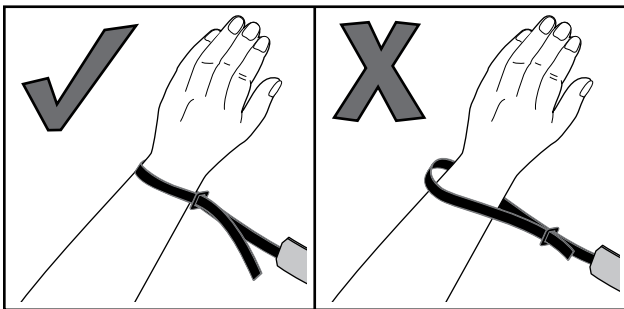
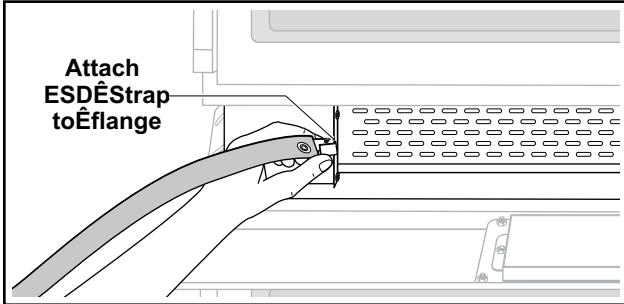
ESD WRIST STRAP

An ESD Wrist Strap (provided in replacement kit) is required when replacing certain components.

1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.
2. Open the Control Access Panel; refer to the

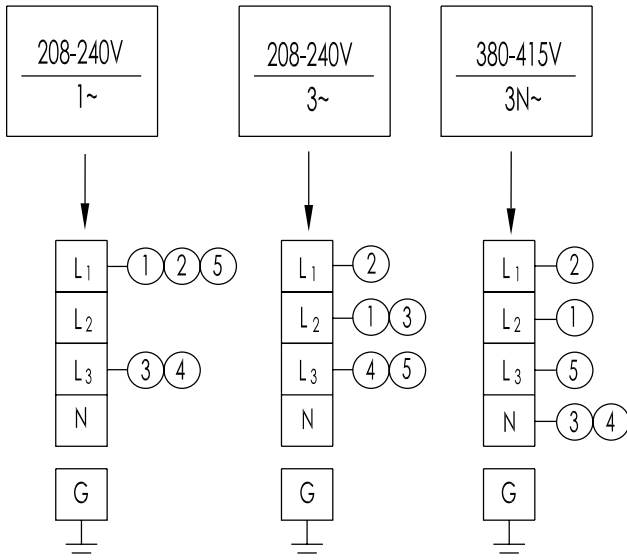
PANELS AND COVERS section of the manual for instructions.

3. Properly connect the ESD Wrist Strap to the unit and secure it properly on the wrist.



ESD Wrist Strap

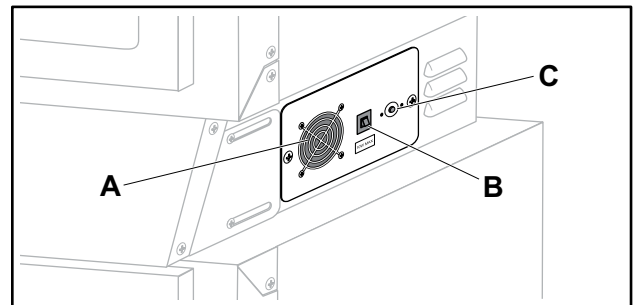
POSSIBLE WIRING BLOCK CONFIGURATIONS



Note: Also refer to the TSC OVEN LINE SUPPLY WIRING diagrams at the back of this manual.

1. Place the unit's Power ON/OFF Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the AC Connect Block Cover Plate.
3. Use a Voltmeter to check for the presence of voltage.
4. With AC power removed and proper Lockout and Tagout procedures applied, ensure that the contacts on the connect block are properly tightened.

Right Side Electrical Compartment Components



- A: Cooling Fan
- B: Proofer Lights Circuit Breaker
- C: High Limit Thermostat

Cooling Fan

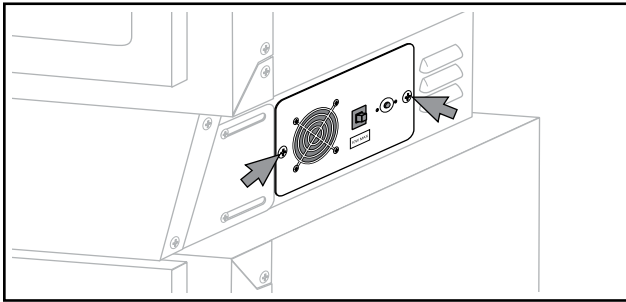
WARNING

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This fan is mounted on the electrical compartment on the right side of the unit.

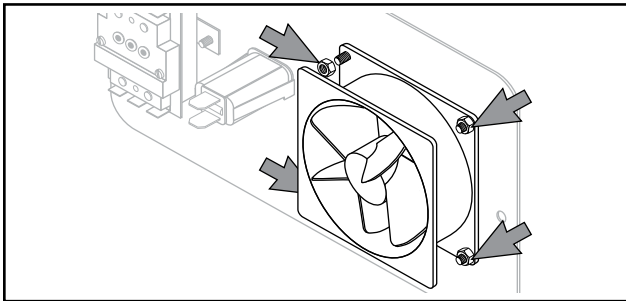
1. Place the unit's Power ON/OFF Switch in its OFF position, and follow the proper Lockout/Tagout procedures.

- Remove the two screws securing the Cooling Fan panel to the electrical compartment.



Cooling Fan Panel


- Tag and disconnect the cooling fan wires.
- Remove the four nuts securing the fan to the panel. Retain the nuts for reuse.



Cooling Fan

- Remove the fan.
- Reverse this procedure to install the replacement fan.
- Restore the unit to service and check for proper fan operation.

Proofer Lights Circuit Breaker

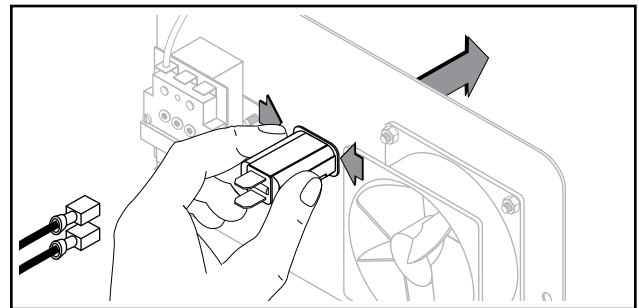
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Before changing the Proofer Lights Circuit Breaker, check the Proofer Lights Transformer for continuity.

Note: The Proofer Oven Light Bulbs must not be larger than 10 Watts.


- Place the unit's Power ON/OFF Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
- Remove the two screws securing the right side access panel and open panel.
- Disconnect the Proofer Lights Circuit Breaker Wires.
- Crimp the flanges on both sides of the breaker and push it out of the panel.



Rear view of panel

- Reverse this procedure to install the new Proofer Lights Circuit Breaker.
- Restore power to the unit and check for proper Proofer Lights operation.

High Limit Thermostat

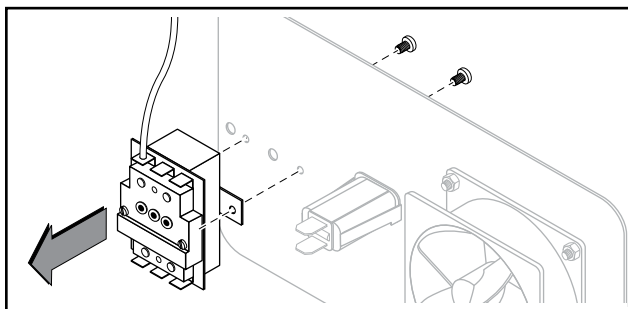
 **WARNING**

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- Place the unit's Power ON/OFF Switch in its

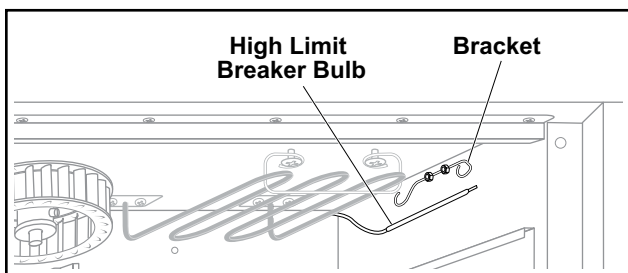
OFF position, and follow the proper Lockout/ Tagout procedures.

2. The High Limit Breaker is located next to the Cooling Fan and Proofer Lights Circuit Breaker on the right side of the unit.
3. Remove the two screws securing the right side access panel and open panel.
4. Mark and disconnect the High Limit Breaker Wires.
5. Loosen and remove the 2 mounting screws.



High Limit Thermostat


6. Open the oven door and locate the High Limit Breaker Bulb. Loosen the bracket and remove Bulb and capillary tube.



Location of High Limit Breaker Bulb

7. Reverse this procedure to install the new High Limit Breaker.
8. Restore power to the unit and check for proper operation.

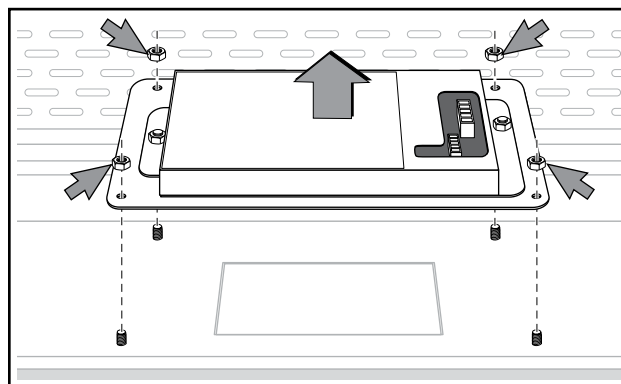
Touchpad Controller

 **WARNING**

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CAUTION: An ESD Wrist Strap (provided in replacement kit) is required when replacing Touchpad Controller.

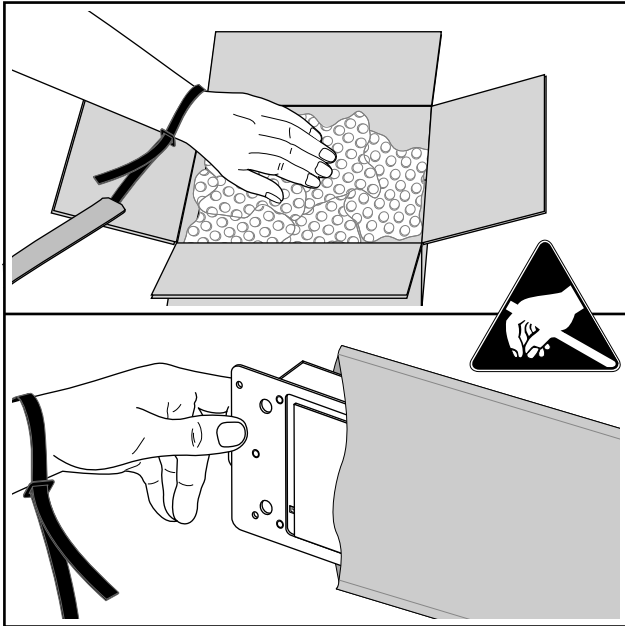
1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/ Tagout procedures.
2. Open the Control Access Panel; refer to the PANELS AND COVERS section of the manual for instructions.
3. Properly connect the ESD Wrist Strap to the unit and secure it properly on the wrist (see instructions on page 11).
4. Unplug all wire harnesses connected to the Touchpad Controller.
5. Remove and retain the four (4) hex nuts securing the Controller and remove the Controller.



Remove Touchpad Controller

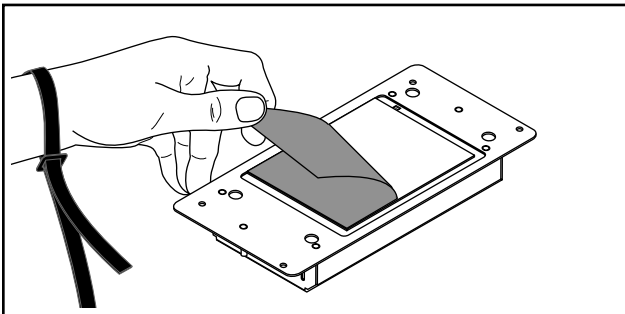
6. Lift the Touchpad Controller off its mounts.
7. Unpack the replacement Touchpad Controller.

Make sure the ESD wrist strap is properly attached for this procedure.



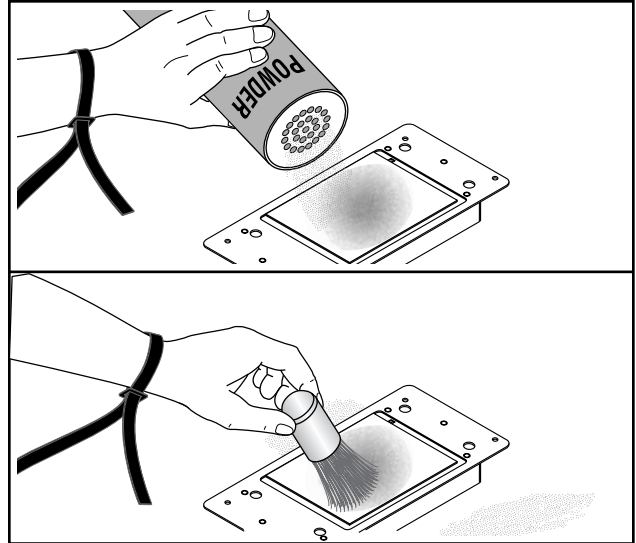
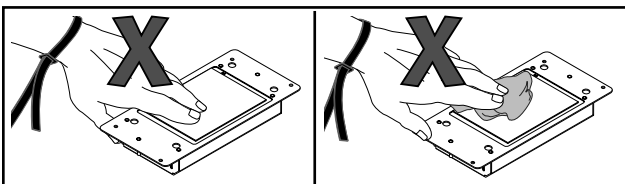
Unpack Replacement Touchpad Controller

8. Remove the Display Glass Protective Sheet.



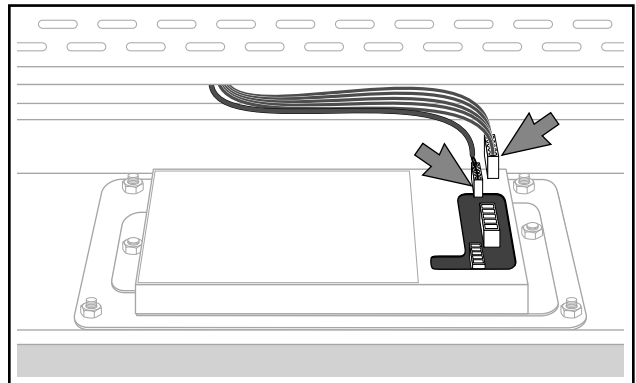
**Remove Protective Sheet.
Gently Clean Display Glass.**

9. To prevent static cling between the display and overlay, lightly dust the display glass with baby powder or talc powder. Gently remove powder by brushing with a cosmetic brush (as shown below). Do not wipe the display with hands or any cloth as this may scratch the glass. Additionally, do not put any powder on the overlay.



10. Place the new Touchpad Controller on the threaded mounts and replace the four (4) nuts. Do not over-tighten the nuts.

11. Reconnect all of the Touchpad Controller's wire harnesses.



Touchpad Controller Wire Harnesses

12. Close Electrical Compartment Access Panel but DO NOT reattach or tighten the screws.

13. Restore power to the unit.


14. Place Power ON/OFF Switch in ON position.

15. Touch the screen on the Touchpad Controller to access the main menu to ensure proper function.

16. Remove the ESD wrist device, close the compartment, reattach and tighten all of the screws removed or loosened earlier.

17. Restore power to unit and check it for proper operation.

PC I/O Board

 **WARNING**

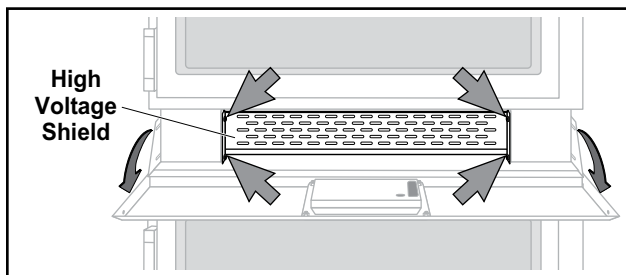
BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

CAUTION: An ESD Wrist Strap is required when replacing PC I/O Board.

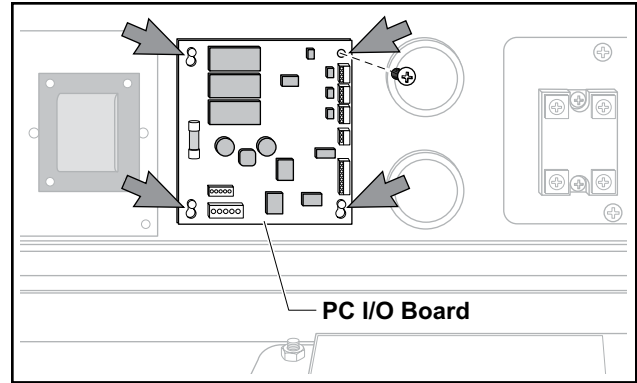
1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.
2. Open the Control Access Panel; refer to the PANELS AND COVERS section of the manual for instructions.

CAUTION: DO NOT power on the unit while the Control Panel is in the open position.

3. Remove the 4 screws securing the High Voltage Shield and remove the shield.




4. Properly connect the ESD Wrist Strap to the unit and secure it properly on the wrist (see instructions on page 11).
5. Mark and unplug all wires and wire harnesses connected to the Main PC Board.
6. The PC I/O Board is secured by 3 keyhole standoffs and 1 screw. Remove the screw, lift the board off the standoffs and release the board.



PC I/O Board

7. Remove the board from the unit.
8. Make sure the ESD Wrist Strap is properly attached. Remove the replacement PC I/O board from the packaging.
9. Align mounting holes and secure with screw.
10. Reattach all wires and wire harnesses.
11. Remove the ESD Wrist Strap and detach it from the unit.
12. Reinstall the High Voltage Shield and close the Control Access Panel.
13. Restore power to unit and test for proper operation.

PC 12V Power Board

 **WARNING**

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

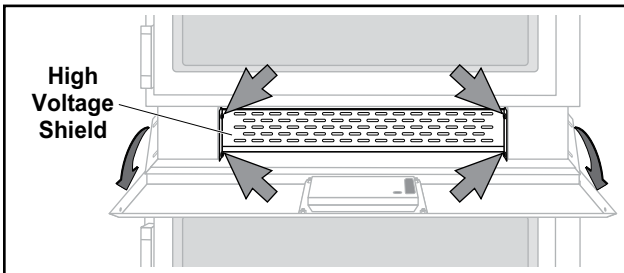
CAUTION: An ESD Wrist Strap is required when replacing PC I/O Board.

1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.

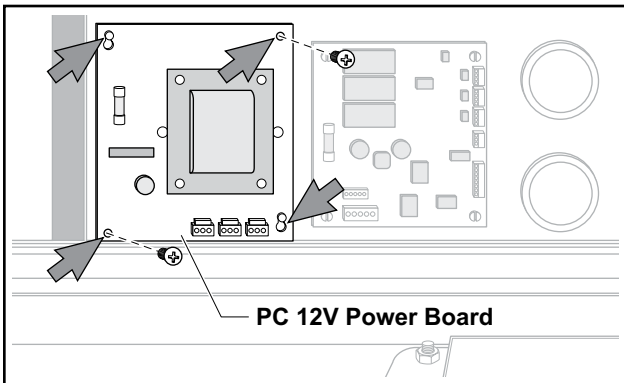
- Open the Control Access Panel; refer to the PANELS AND COVERS section of the manual for instructions.

CAUTION: DO NOT power on the unit while the Control Panel is in the open position.

- Remove the 4 screws securing the High Voltage Shield and remove the shield. (Refer to the PANELS AND COVERS section of the manual.)



- Properly connect the ESD Wrist Strap to the unit and secure it properly on the wrist (see instructions on page 11).
- Mark and unplug all wires and wire harnesses connected to the PC 12V Power Board.
- The PC 12V Power Board is secured with 2 keyhole standoffs and 2 screws. Remove the 2 screws, lift the board off the standoffs and remove the board.




PC 12V Power Board

- Remove board from unit.
- Make sure the ESD Wrist Strap is properly attached. Remove the replacement PC I/O board from the packaging.
- Install the replacement board and secure with the screws.

- Reattach all wires and wire harnesses.
- Remove the ESD Wrist Strap and detach it from the unit.
- Reinstall the High Voltage Shield and close the Control Access Panel.
- Restore power to unit and test for proper operation.

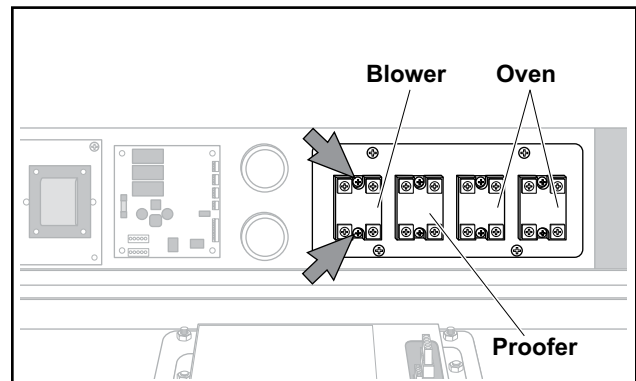
Solid State Relay (SSR)

 **WARNING**

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

Note: There are 4 SSR's in the unit:

- One controls the power to the Convection Blower.
- One controls the power to the Proofer Heating Element.
- Two control the power to the Oven Heating Element.



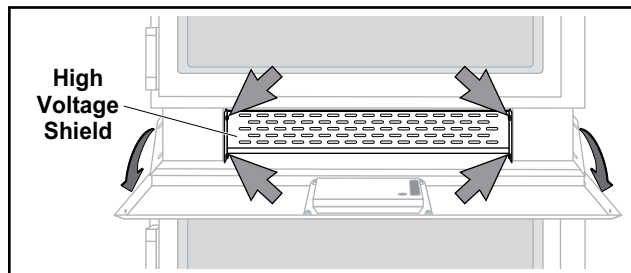
Location of Solid State Relays

- Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.

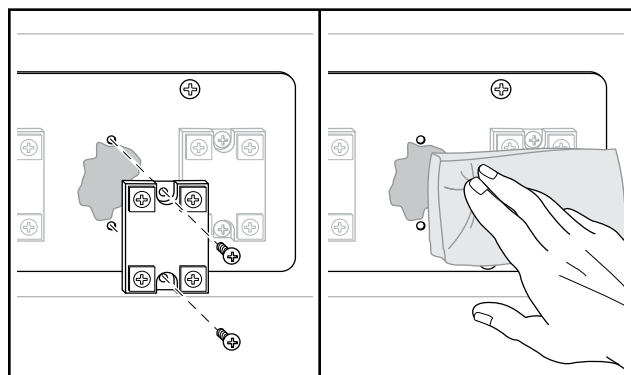
- Open the Control Access Panel; refer to the PANELS AND COVERS section of the manual for instructions.

CAUTION: DO NOT power on the unit while the Control Panel is in the open position.

- Remove the 4 screws securing the High Voltage Shield and remove the shield.



- Verify that there is NO POWER at the SSR.
- Mark and unplug all wires and wire harnesses connected to the SSR.
- Loosen and remove the 2 mounting screws.
- Remove the SSR from the unit.
- Clean the mounting surface.



Remove Heat Transfer Paste Residue

- Apply the pre-cut heat transfer pad to the surface and mount the SSR.
- Reverse these instructions to install replacement SSR.
- Restore power to unit and test for proper operation.

Proofer and Oven Light Transformers



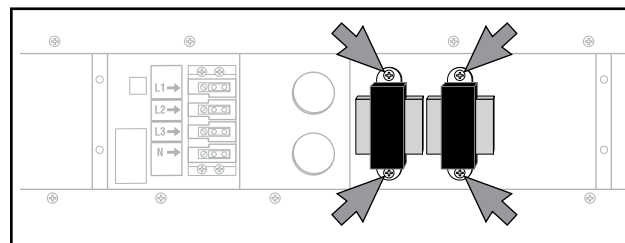
WARNING

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The Proofer and Oven lights use two separate transformers. Test the transformer in question before replacing it.

Note: The Proofer Lights are equipped with a circuit breaker that protects the transformer if lights with improper wattage ratings have been installed. Check this circuit breaker before replacing the transformer. Refer to the Proofer Lights Circuit Breaker section of this manual.

- Place the Power ON/OFF Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
- Open the Rear Access Panel. Refer to the PANELS AND COVERS section of the manual for instructions.
- Tag and disconnect failed transformer wires.
- Remove and retain the screws securing the transformer.



Proofer and Oven Light Transformers

- Reusing the screws, attach the new transformer
- Referring to the tags, connect the new transformer's wiring.
- Restore power to the unit and verify that the

Proofer/Oven lights are working properly.

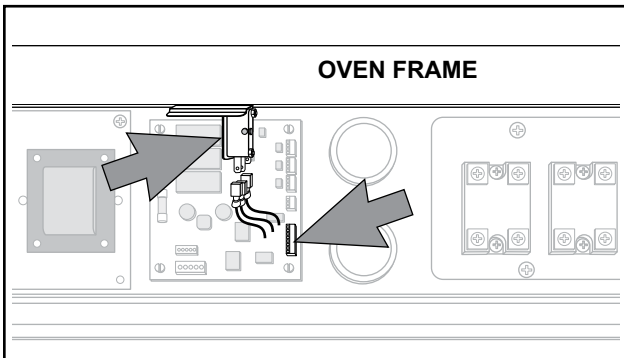
Oven Door Switch



WARNING

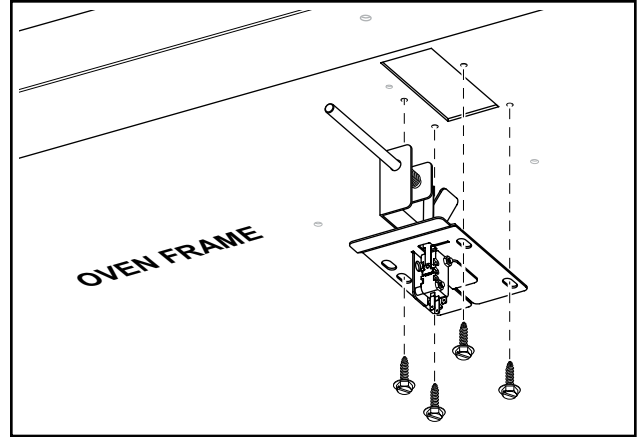
BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

Note: The Oven Door Switch is connected to the PC I/O Board.



Oven Door Switch Location

1. Place the unit's Power ON/OFF Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Open the electrical compartment; refer to the PANELS AND COVERS section of the manual for instructions.
3. Tag and disconnect the Oven Door Switch wires.
4. Remove the screws securing the Oven Door Switch assembly to the oven frame.



Remove Screws from Oven Frame

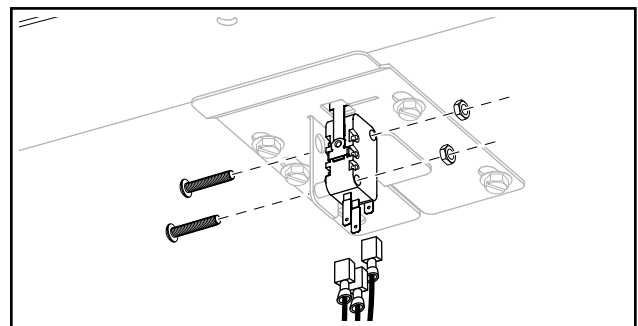
5. Pull switch down and out of the Oven Frame.
6. Reverse this procedure to install a new Oven Door Switch assembly.

NOTE: Take care in reattaching wires. Swapping wires will cause the oven to operate incorrectly.

7. Restore power to the unit, turn the oven on and open the oven door. If the switch is working properly the oven blower will turn off.

Door Switch Only Removal

1. To remove the door switch only, tag and disconnect the Oven Door Switch wires.
2. Loosen and remove the 2 machine screws and nuts securing the Door Switch to the bracket.

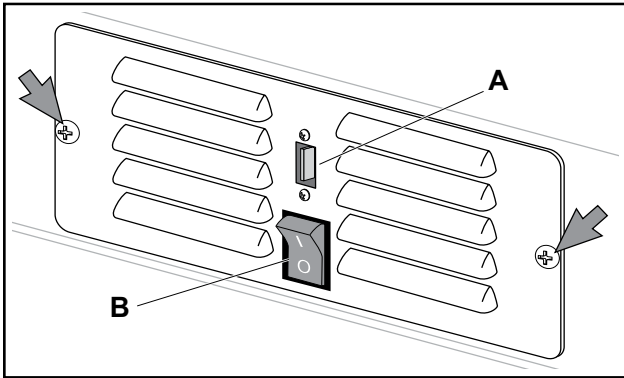


Remove Door Switch from Assembly Bracket

3. Remove the Door Switch.
4. Reverse steps 1 through 3 to install replacement door switch.


NOTE: Take care in reattaching wires. Swapping wires will cause the oven to operate incorrectly.

Left Side Louvered Access Panel



- A. USB Port
- B. ON/OFF Switch

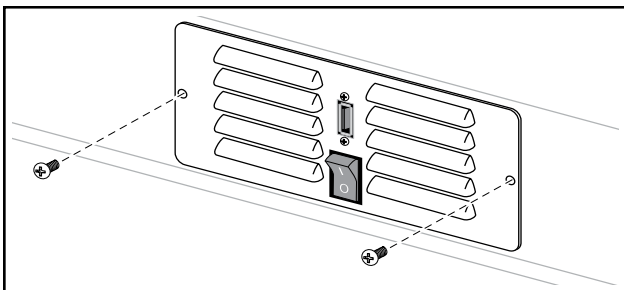
USB Port

 **WARNING**

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

The USB Port is mounted on the louvered panel on the left side of the unit.

1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the two screws securing the louvered panel and open panel to access the USB Port.

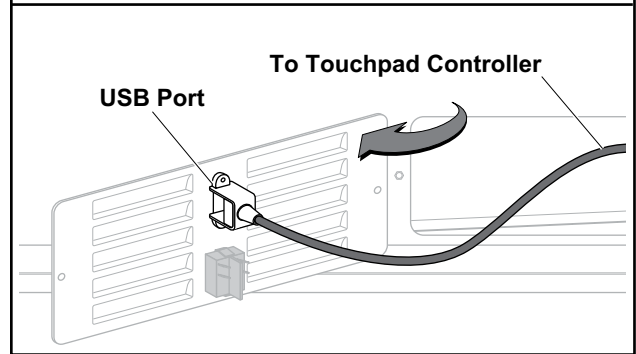
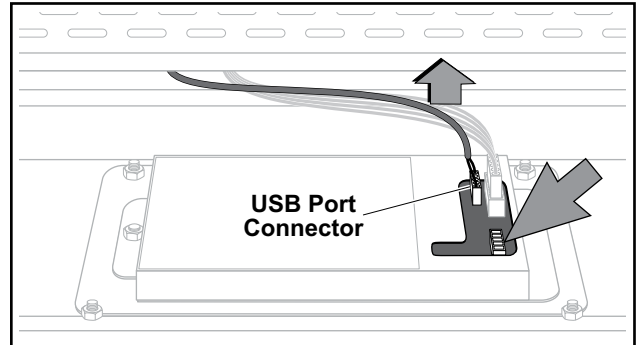


Remove Left Side Louvered Panel

3. Open the Control Access Panel; refer to the PANELS AND COVERS section of the manual for instructions.

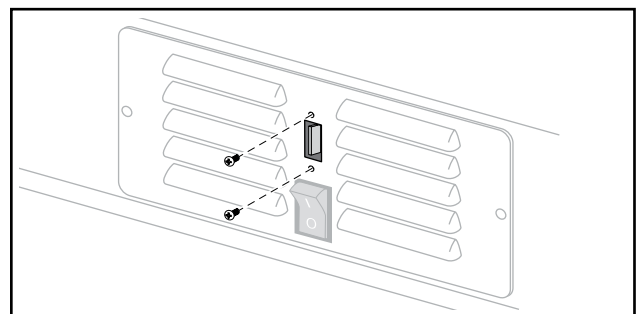
CAUTION: DO NOT power on the unit while the Control Panel is in the open position.

4. Disconnect the USB Port wire connector from back of Touchpad Controller.



USB Port Electrical Connection

5. Remove the 2 screws securing the USB Port to the Louvered Panel.



Remove USB Port

6. Reverse these procedures to install replacement USB Port.

Fuses



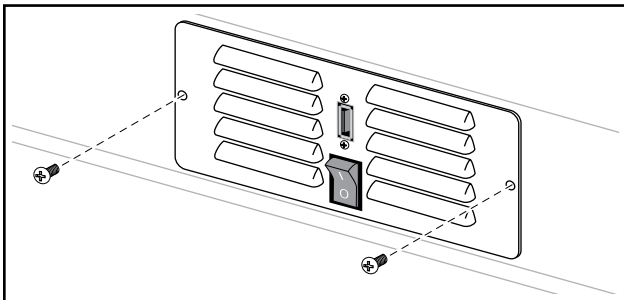
WARNING

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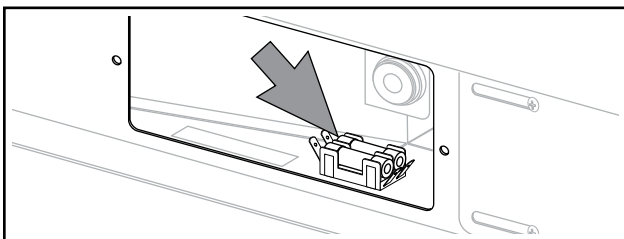
1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.

CAUTION: DO NOT power on the unit while the Control Panel is in the open position.

2. Remove the two screws securing the louvered panel on the left side of the unit and open panel to gain access to the Main Fuses.



3. Remove and Test each fuse

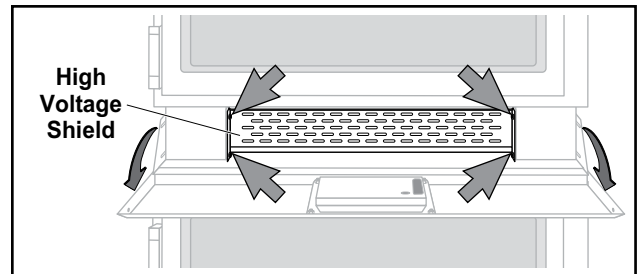


4. Replace with correctly rated fuse.

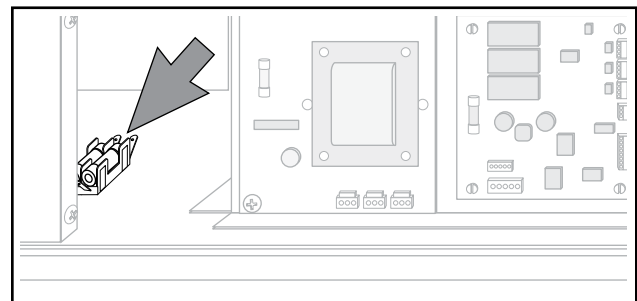
CAUTION: Never replace a fuse with a rating higher than the specified fuse. This may result in equipment damage or personal injury.

Alternate Access to Fuses

1. Open the Control Access Panel; refer to the PANELS AND COVERS section of the manual for instructions.
2. Remove the 4 screws securing the High Voltage Shield and remove the shield.



4. There are 2 fuses located to the left of the PC 12 V Power Board.




Alternate Access to Fuses Behind High Voltage Shield

5. Remove the fuse from fuse holder and test each fuse.
6. Reverse these instructions to replace fuses.
7. Restore power to unit and test for proper operation.

CAUTION: Never replace a fuse with a rating higher than the specified fuse. This may result in equipment damage or personal injury.

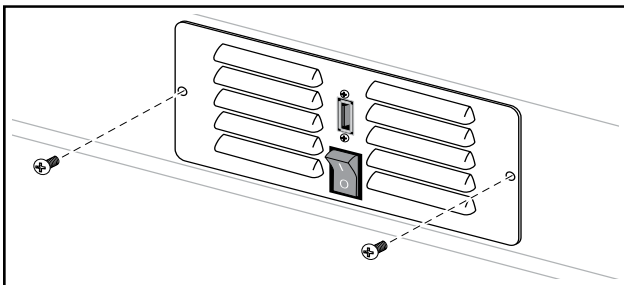
Power ON/OFF Switch

 **WARNING**

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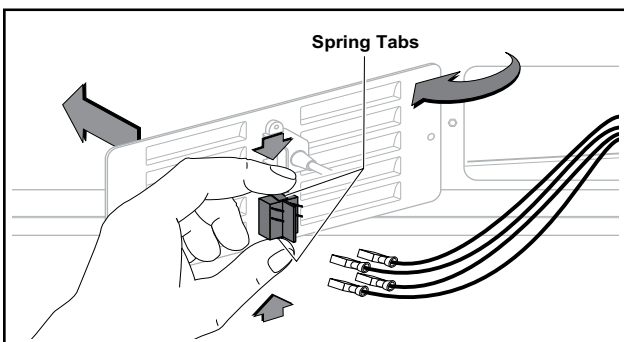
The Power ON/OFF Switch is mounted on the louvered panel on the left side of the unit.

1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the two screws securing the louvered panel and open panel to gain access to the Power ON/OFF Switch.



Remove Left Side Louvered Panel


3. Tag and disconnect the Power ON/OFF Switch wires.
4. Crimp the spring tabs on the switch and push it out of the louvered panel.



Remove Power ON/OFF Switch

5. Push the new switch into the hole, making sure it locks into position.
6. Reconnect the wires referring to the tags or circuit schematic.
7. Reinstall the Louvered Panel.
8. Restore power to the unit and check for proper operation.

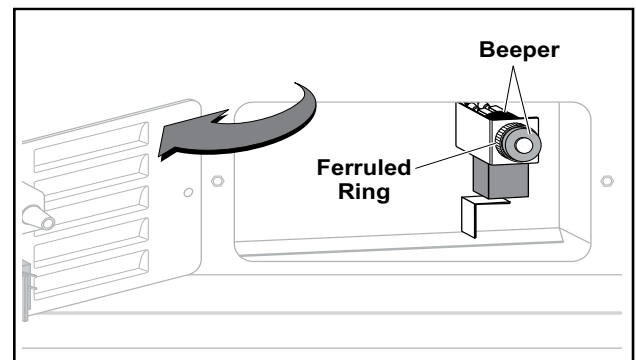
Beeper

 **WARNING**

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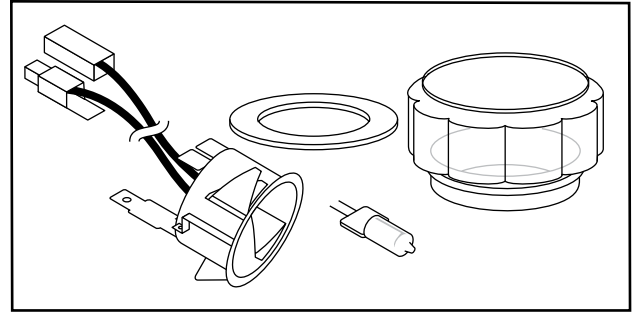
Beeper is located behind the louvered vent on the electrical compartment on the left side of the unit.

1. Place the unit's Power ON/OFF Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the two screws securing the louvered vent to the electrical compartment.
3. Move the louvered vent out of the way being careful not to damage the USB port wires or the ON/OFF Switch connections.




Beeper Location

4. Unscrew ferruled ring on the Beeper, being careful not to twist the Beeper and damage its wires.
5. Remove the Beeper from its mount.
6. Disconnect the wires.
7. Reverse this procedure to install the replacement Beeper.
8. Restore power to the unit and test the Beeper for proper operation.




Halogen Lamp Assembly

Proofer and Oven Halogen Lamps


 **WARNING**

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

 **WARNING**

THE UNIT MAY BE HOT, ALLOW IT TO COOL FOR AT LEAST 30 MINUTES BEFORE PROCEEDING.

CAUTION: Avoid touching the glass envelope of a Halogen bulb with your fingers as this will cause premature failure of the bulb. If the bulb has been touched, clean it off with an alcohol wipe.


 **WARNING**

REPLACEMENT BULBS MUST NOT EXCEED 10 WATTS. HIGHER WATTAGE BULBS WILL CAUSE DAMAGE TO THE TRANSFORMERS.

Replacing an internal Lamp does not require removal of any panels or covers.

1. Place the Power ON/OFF Switch in its OFF position.
2. Unscrew and remove the Lens Cover and Lens Gasket.
3. Unplug the failed bulb.
4. Insert the new bulb into its socket. Avoid touching the glass bulb with your fingers. Use a cloth or cloth gloves when installing a new bulb. If bulb is touched use an alcohol wipe to clean it.
5. Briefly turn unit on and check for proper bulb lighting.
6. Turn unit off.
7. Place the Lens Gasket on the Lens Cover. Make sure it is centered properly. If Lens Gasket is damaged replace it.
8. Screw the Lens Cover over the Bulb tight making sure the Lens Gasket seals against the Light Socket.
9. Replace any racks removed during this procedure.
10. Return the unit to service; ensure it is operating correctly.

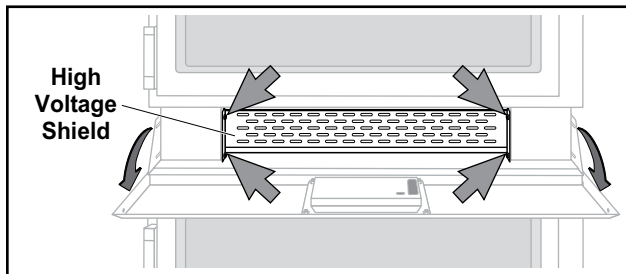
Oven Temperature Sensor (RTD)

 **WARNING**

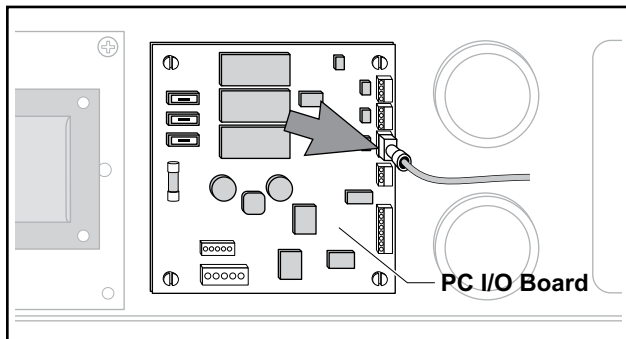
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CAUTION: DO NOT power on the unit while the Control Panel is in the open position.

1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.
2. Open the Electrical Compartment Access Panel; refer to the PANELS AND COVERS section of the manual for instructions.
3. Remove the High Voltage Shield.

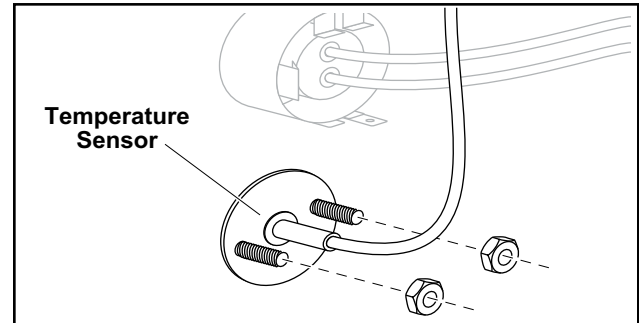


4. Unplug Sensor harness from PC I/O Board



Unplug Oven Temperature Sensor Harness


5. Remove the Oven Rear Panel. See instructions in section on COVER AND PANELS.
6. Remove necessary insulation.
7. Loosen and remove the 2 Hex nuts.



Remove Hex Nuts from Sensor

8. Remove the Sensor from the oven.
9. Clean the mounting surface of any residual sealant.
10. Use a heat resistant silicone sealer on the mounting flange.
11. Mount the replacement sensor on the mounting studs and secure with hex nuts.
12. Route the sensor wire under the oven section to the front of the unit.
13. Plug harness into PC I/O Board.
14. Replace insulation and all panels.
15. Restore power to unit and test for proper function. See section Verifying and Calibrating the Controller.

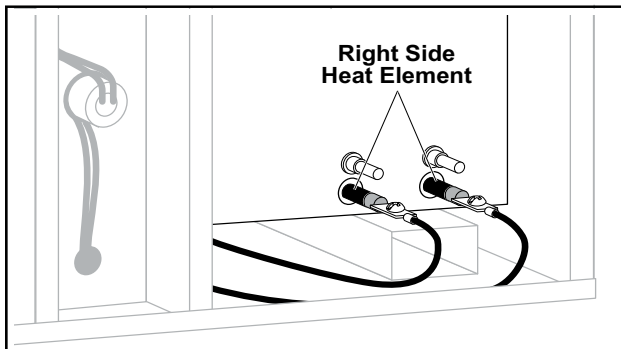
Proofer Heat Elements

 **WARNING**

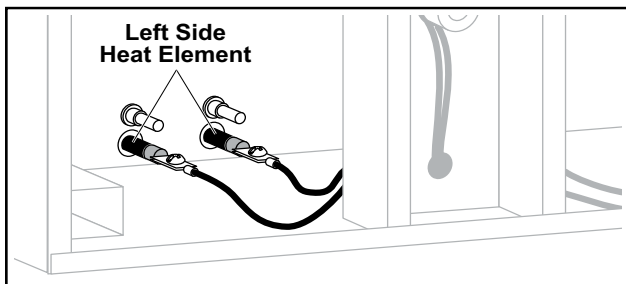
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There are two Heater Elements, one on the left rear and one on the right rear of the Proofer section. It is not necessary to replace both elements if only one has failed.

1. Remove the Proofer Rear Panel. Refer to the PANELS AND COVERS section of this manual for specific instructions.
2. Remove the Proofer Floor Panel. Refer to the PANELS AND COVERS section of this manual for specific instructions.
3. Tag and disconnect the wires from the suspect Proofer Heat Element.

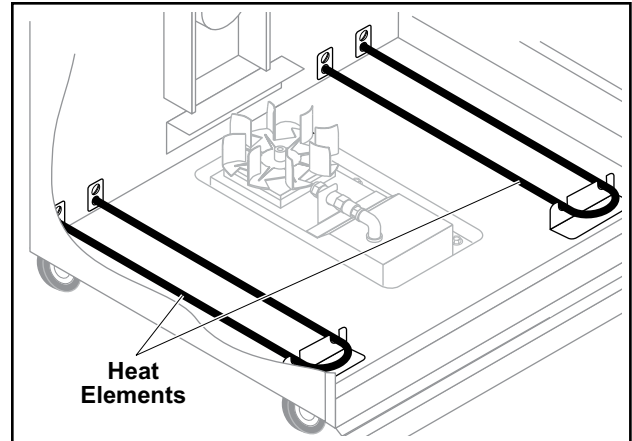


Proofer Heat Element Connections – Rear Right Side



Proofer Heat Element Connections – Rear Left Side


4. Using an Ohmmeter check for continuity; if element tests OK, repeat procedure on other element.
5. Remove two screws, one at each end of the heater element. Retain screws for reuse.



Location of Proofer Heat Elements

6. Pull the Proofer Heater Element away from the back wall.
7. Install the elements, use a heat resistant silicone sealer on the element plates and reattach the supporting wire forms.
8. Reverse the procedure to install the replacement Proofer Heater Element.
9. Tighten the heater element connections to 30 inch pounds torque.
10. Temporarily restore power to the unit and verify both Proofer Elements are working properly.
11. Place Power ON/OFF Switch back in the OFF position.
12. Replace the Proofer Floor Panel and Proofer Back Panel.
13. Restore the unit to its power source.

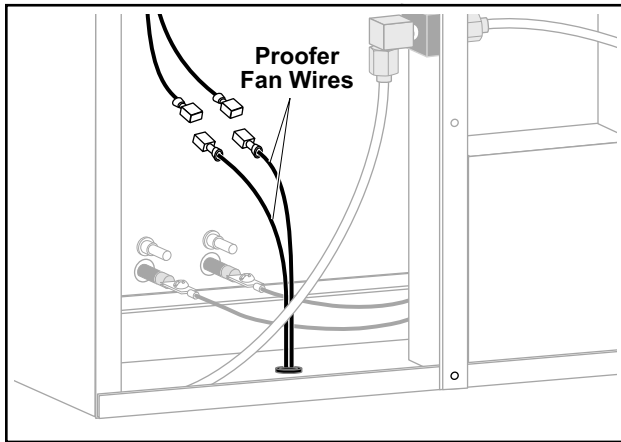
Proofer Circulation Fan

 **WARNING**

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

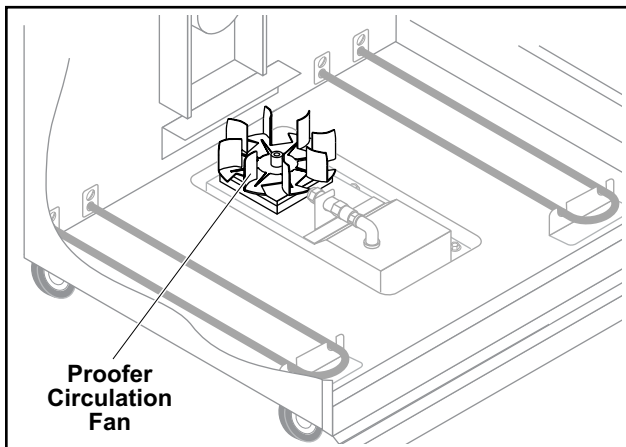
The Proofer Circulation Fan is located in the floor of the Proofer. The floor panel must be removed to gain access to the Proofer Circulation Fan.

1. Place the unit's Power ON/OFF Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the Proofer Floor Panel. Refer to the PANELS AND COVERS section of this manual for specific instructions.
3. Remove the Proofer Back Panel. Refer to the PANELS AND COVERS section of this manual for specific instructions.
4. Disconnect the Proofer Circulation Fan wires, located at the back of the Proofer.



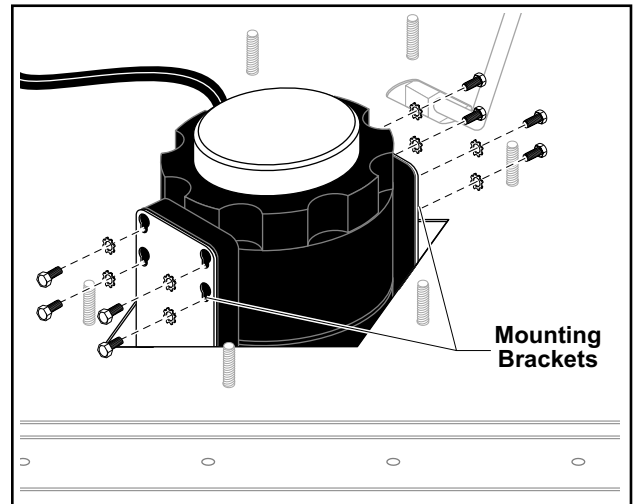
Circulation Fan Wires

5. Using the correct Allen wrench remove the fan blade.



Proofer Circulation Fan Location


6. Remove the eight hex head screws that secure the fan and mister mounting plate to the floor of the proofer.
7. Using a putty knife carefully pry the mounting plate away from the silicone sealer used to seal it to the floor.
8. Carefully lift the mounting plate being careful not to damage the water line to the mister.



Bottom View of Circulation Fan

9. Remove the eight hex head screws that secure the fan motor to its mounting brackets and remove the fan. Make sure the silicone rubber grommet comes out with the fan.
10. Place the silicone rubber grommet on the shaft of the new fan motor.
11. Attached the motor to its mounting brackets.
12. Reinstall the mounting plate to the floor of the oven. Make sure the fan wires and the water line are not damaged during this operation. Use heat resistant silicone sealer on the mounting plate to prevent water leaks.
13. Reconnect the fan wires.
14. Temporarily restore the power to the unit and check for proper fan operation
15. Place the Power ON/OFF Switch back in the OFF position.
16. Reattach the rear panel.
17. Reattach the Proofer Floor.
18. Restore the unit to its power source.

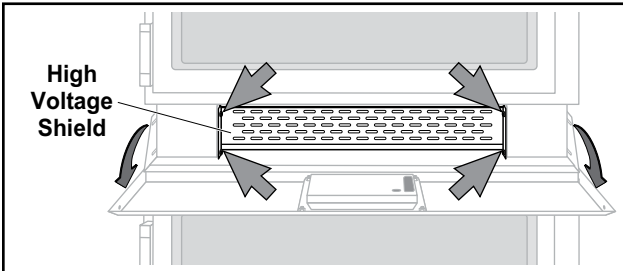
Proofer Temperature Sensor (RTD)

 **WARNING**

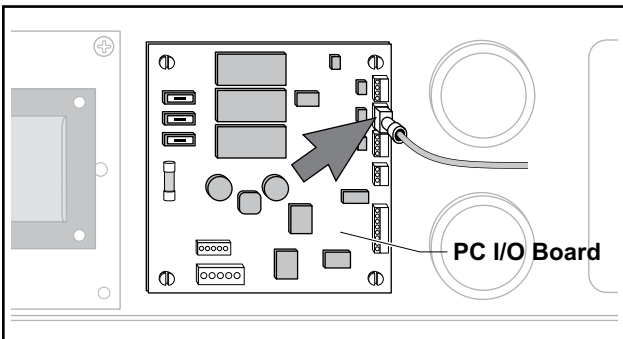
BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

CAUTION: DO NOT power on the unit while the Control Panel is in the open position.

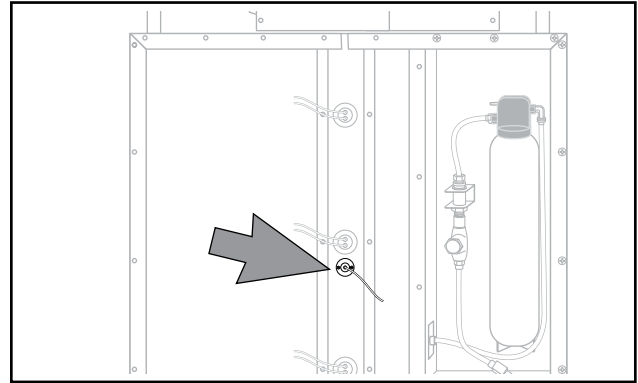
1. Place the unit's Power ON/OFF Switch in the OFF position, and follow the proper Lockout/Tagout procedures.
2. Open the Electrical Compartment Access Panel ; refer to the Panels and Covers section of the manual for instructions.
3. Remove the High Voltage Shield.



4. Unplug Sensor harness from PC I/O Board.

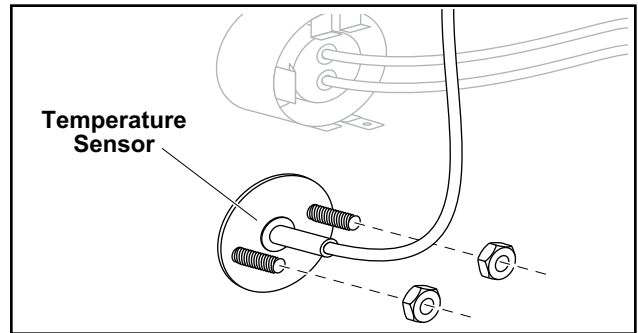


5. Remove the Proofer Rear Panel. See instructions in COVERS AND PANELS section.



Proofer Temperature Sensor Location

6. Loosen and remove the 2 hex nuts.



Remove Hex Nuts from Sensor

7. Remove the Sensor from the oven.
8. Clean the mounting surface of any residual sealant.
9. Use a heat resistant silicone sealer on the mounting flange.
10. Mount the replacement sensor on the mounting studs and secure with hex nuts.
11. Route the sensor wire under the oven section to the front of the unit.
12. Plug harness into PC I/O Board.
13. Replace insulation and all panels.
14. Restore power to unit and test for proper function. See section VERIFYING AND CALIBRATING THE CONTROLLER.

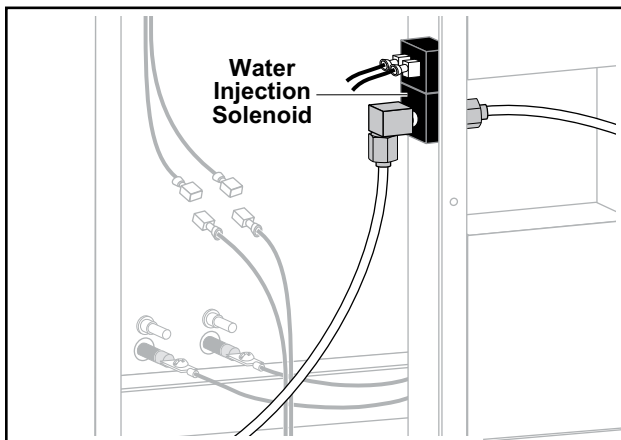
Water Injection Solenoid



WARNING

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The Water Injection Solenoid is located in the back of the unit if the Proofer section. Before replacing the Water Injection Solenoid try cleaning the Opti-Mist Nozzle and filter. Water flow can be tested with the Opti-Mist Nozzle removed, this should be done prior to replacing the Water Injection Solenoid



Water Injection Solenoid Location

1. Place the unit's Power ON/OFF Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the Proofer rear panel. Refer to the PANELS AND COVERS section of this manual for specific instructions.
3. Turn off the water supply.
4. Disconnect the solenoid wires.
5. Remove water supply lines at the solenoid.
6. Remove Water Injection Solenoid from unit.
7. Install the new Water Injection Solenoid.

8. Reattach the water lines.
9. Reconnect the solenoid wires.
10. Turn water supply on and check for leaks.
11. Temporarily restore power to the unit.
12. Turn the unit on.
13. Check the Opti-Mist Nozzle for water. This may take a few seconds as the system purges the air out of the water lines.
14. If OK, turn power off.
15. Reattach all panels.
16. Restore power to the unit and ensure it is operating correctly.

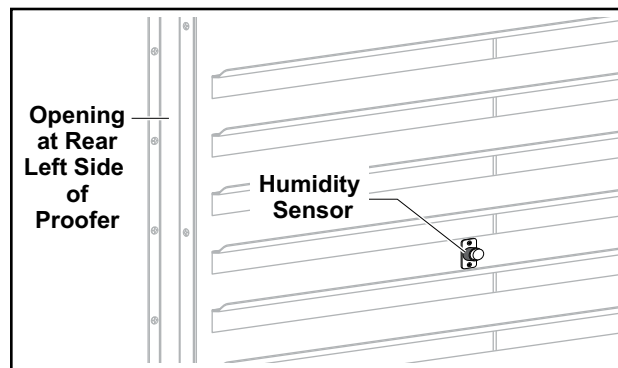
Humidity Sensor



WARNING

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The Humidity Sensor is located on the inside of the Proofer Cabinet on the upper left side of the inside wall.

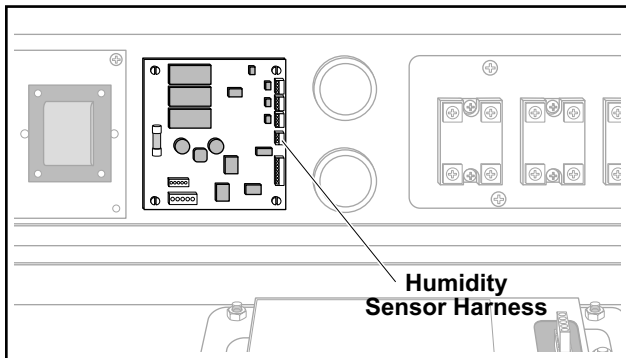


Location of Humidity Sensor

1. Place the unit's Power ON/OFF Switch in its OFF position, and follow the proper Lockout/

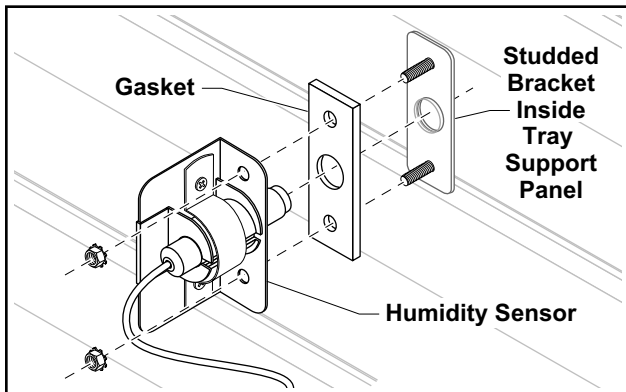
Tagout procedures.

2. Remove the Proofer rear panel. Refer to the PANELS AND COVERS section of this manual for specific instructions.
3. Remove the four screws securing the left side tray support panel and remove the panel.
4. Unplug the sensor from the PC I/O Board. The PC I/O board is mounted in the Electrical Compartment at the front of the unit. Refer to the PANELS AND COVERS section of the manual for instructions.



Location of the Humidity Sensor PC Board Connection

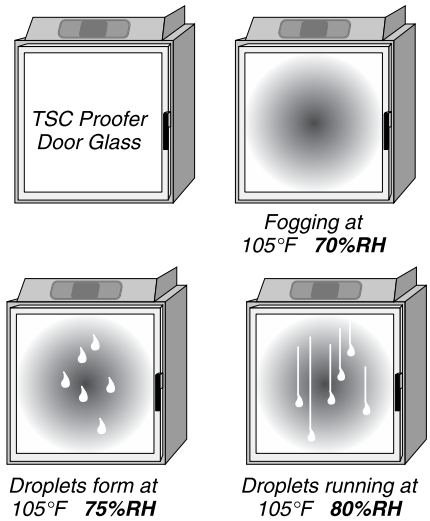
5. Carefully remove the old Humidity Sensor. It is secured to the side by two (2) nuts which attach to the studded bracket.



Remove Nuts from Studded Bracket

6. Feed the new Humidity Sensor wires through the hole in the side wall and reattach the two (2) nuts.
7. Connect the sensor wires.
8. Reattach tray support and Proofer rear panel.

9. Restore the unit to its power source and verify it is operating correctly.

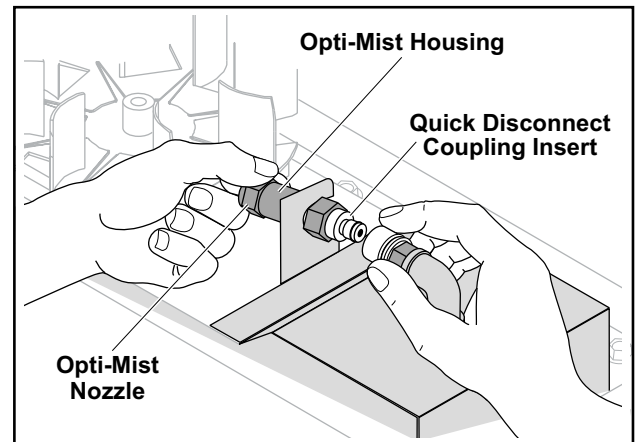


Opti-Mist Nozzle

Note: It is not necessary to disconnect the unit from its power source for this procedure.

Also see Duke Publication 512419 for this procedure.

1. Turn power to the Proofer off by using the Touch Screen Display. It is not necessary to turn off water supply to the unit.
2. Remove necessary racks and the Proofer Floor Panel to gain access to the Opti-Mist Nozzle assembly.
3. Use quick disconnect lever to remove the coupling and nozzle assembly by pushing lever down and sliding the assembly straight out.



Opti-Mist Nozzle Quick Disconnect

4. Remove the Quick Disconnect Coupling from the Opti-Mist Nozzle.
5. Remove the Coupling Body.
6. Place Teflon tape on the threads of the new Coupling Body and the new Quick Disconnect Coupling.
7. Using the appropriate open end wrench reattach the Coupling Body to the pipe elbow in the Proofer floor.
8. Using the appropriate wrenches screw the new Quick Disconnect Coupling onto the new Opti-Mist Nozzle.
9. Using the quick disconnect feature attach Opti-Mist Nozzle assembly to Coupling Body.
10. Using the Touch Screen Display, turn the Proofer on, allow the water system to purge and check for proper Opti-Mist Nozzle spray.
11. Using the Touch Screen Display, turn the Proofer off and wait for the fan to stop turning.
12. Reattach the Proofer Floor Panel and slide in all of the racks removed earlier.

Oven Heat Elements

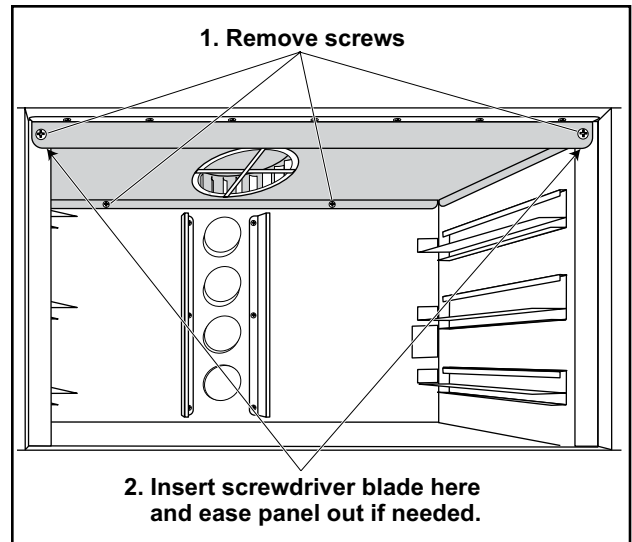


WARNING

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There are two Oven Heat Elements, one on each side of oven. The elements are behind the Oven Ceiling Panel.

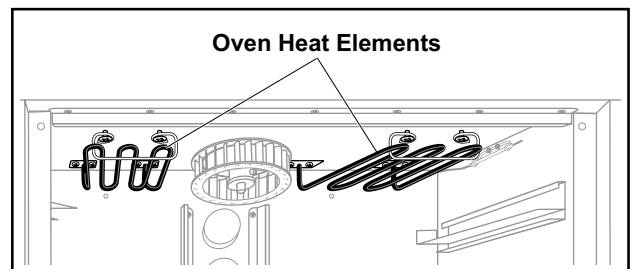
1. Place the unit's Power Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the Oven Ceiling Cover; refer to the PANELS AND COVERS section of this manual for specific instructions.



Oven Ceiling Panel Removal

CAUTION: Use care when removing the Oven Ceiling Panel to prevent damage to the fan blades.

3. Remove four screws, two at each end of the suspect element. Retain screws for reuse.



Oven with Oven Ceiling Panel Removed

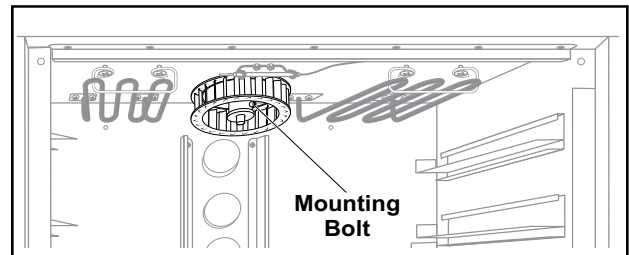
4. Remove the wire form supports.
5. Drop the element away from the top wall, being careful not to damage the wire connected to each end of the element. It may be necessary to pry the element free as a heat resistant silicone sealer may have been used on the element plate.

Caution: Pull enough wire through holes so as to not have it pull back into hole when it is removed, as that will likely require you to remove a top panel in order to retrieve the wire.

6. Tag and disconnect the element wires.

7. Using an Ohmmeter, check the element for continuity.
8. Repeat these steps on the remaining element if needed.
9. Connect the element wires. Torque the wire connections to the elements to 30 inch pounds of torque.
10. Install the elements, use a heat resistant silicone sealer on the element plates and reattach the supporting wire forms.
11. Reattach the Oven Ceiling Panel and replace any racks removed during this procedure.
12. Restore the unit to its power supply, turn the oven on using the Touch Pad Display and ensure it is working properly.

4. Tag and disconnect wires to blower motor.
5. Using an Ohmmeter test the motor for short circuits or open conditions. If motor fails these tests, it must be replaced.
6. Remove bolt that secures the Oven Blower wheel to blower motor. Retain the bolt for reuse.



Oven Blower wheel Mounting Bolt

Oven Blower Motor



WARNING

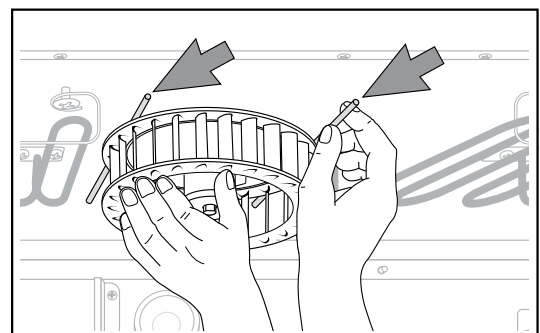
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CAUTION: Removing the Oven Circulation Fan requires the use of a ladder. Use ladder safety protocols while working on this area of the unit.

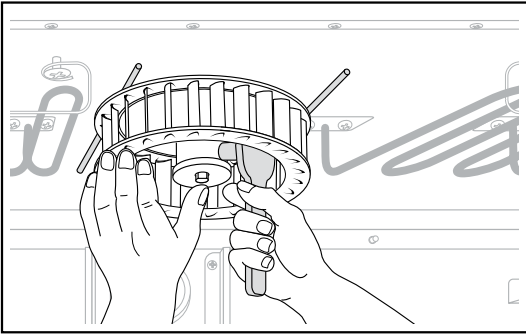
Oven Blower Motor is located on the top of unit.

1. Place the unit's Power Switch in its OFF position, and follow the proper Lockout/Tagout procedures.
2. Remove the Oven Fan Cage and Wire Harness Cover on the top of the unit. Refer to the PANELS AND COVERS section of this manual for specific instructions.
3. Remove the Oven Ceiling Panel; refer to the PANELS AND COVERS section of this manual for specific instructions.

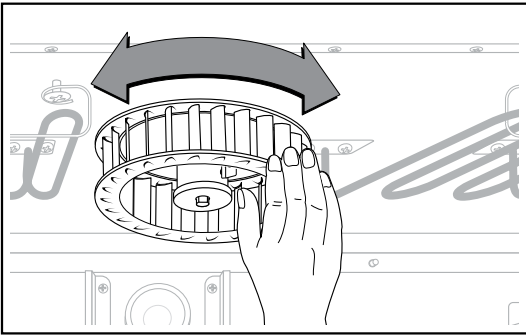
7. Remove the Oven Blower wheel.
8. Remove the four bolts securing the Oven Blower Motor to the top of the Oven.
9. Lift motor out of unit from the top. Use caution and be careful as the fan motor is heavy.
10. Remove Blower Motor Start Capacitor and test it before replacing the motor. See the OVEN BLOWER MOTOR START CAPACITOR section of this manual for testing capacitor.
11. Replace the motor if it is defective.
12. Using the tags or referring to the proper schematic, reconnect the wires.
13. Reattach the blower wheel as follows:
 - a. Install blower wheel onto the shaft and place 3/16" diameter wooden dowel spacers on the left and right sides of the blower wheel. Place the dowel rods to the outer rim of the blower wheel for proper spacing.



- b. Using torque wrench and socket tighten blower wheel assembly screw to 165 inch lbs. (19Nm)




- c. Remove wooden spacers after tightening the screw to the proper torque. Spin blower wheel to ensure the wheel doesn't rub anywhere and spins freely.



- 14. Reattach panels and covers removed earlier.
- 15. Restore power to the unit, turn the oven on and ensure the fan is operating correctly.

Oven Blower Motor Start Capacitor

 **WARNING**

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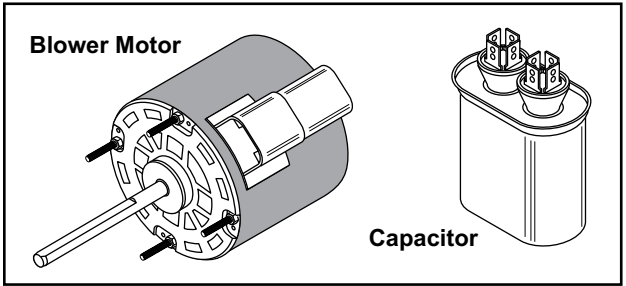
 **WARNING**

**SHOCK HAZARD:
THE CAPACITOR MAY CARRY A CHARGE.
IT MUST BE PROPERLY DISCHARGED
BEFORE HANDLING ITS CONNECTIONS.**

The Oven Blower Motor Start Capacitor is mounted on the fan motor. The fan motor must be removed to gain access to the capacitor refer to steps 1 through 9 of the *OVEN BLOWER MOTOR* section of this manual for removal of the blower motor.

Note: These procedures assume the motor has been previously removed.

- 1. With the blower motor removed from the unit, remove the capacitor housing cover and slide the capacitor out the housing. Be careful not to damage the wires.

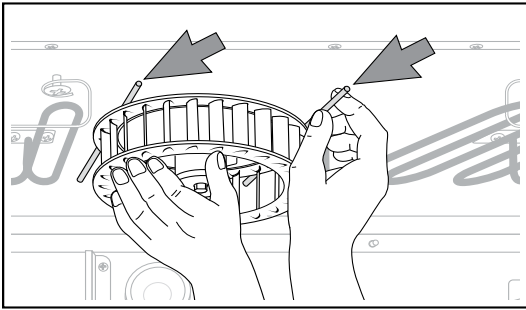


Blower Motor & Capacitor

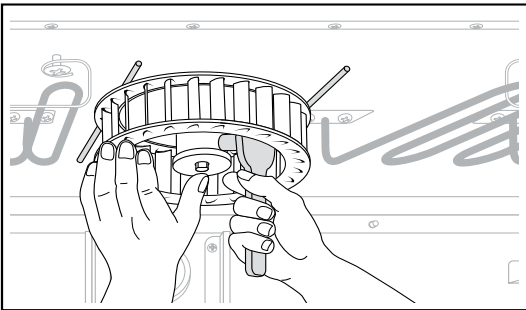
- 2. Discharge the capacitor by shorting a screwdriver with an insulated handle across the capacitor terminals.
- 3. Tag and disconnect wires from the capacitor.
- 4. Using an Ohm Meter set on 1K Ohms test the capacitor, it should start at zero and rapidly go to infinity.
- 5. If the capacitor fails this test, it must be replaced, if the capacitor passes this test the blower motor is defective and must be replaced per the instructions in the *OVEN BLOWER MOTOR* section of this manual.
- 6. Using the tags connect the capacitors wires.
- 7. Insert the capacitor into its housing on the blower motor.
- 8. Install the blower motor.

9. Referring to the tags or correct schematic, reconnect the blower motor wires.
10. Attach the Blower Wheel as follows:

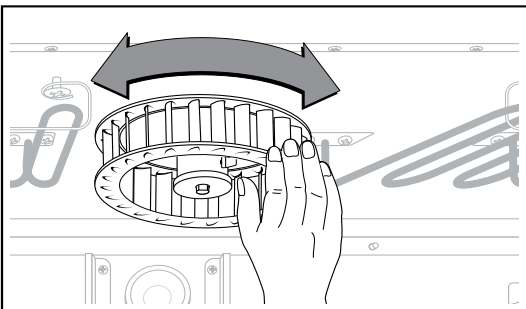
- a. Install blower wheel onto the shaft and place 3/16" diameter wooden dowel spacers on the left and right sides of the blower wheel. Place the dowel rods to the outer rim of the blower wheel for proper spacing.



- b. Using torque wrench and socket tighten blower wheel assembly screw to 165 inch lbs. (19Nm)



- c. Remove wooden spacers after tightening the screw to the proper torque. Spin blower wheel to ensure the wheel doesn't rub anywhere and spins freely.



11. Install the Oven Ceiling panel.
12. Restore power to the unit and turn the oven on using the Touch Screen Control, ensure the fan is operating correctly.

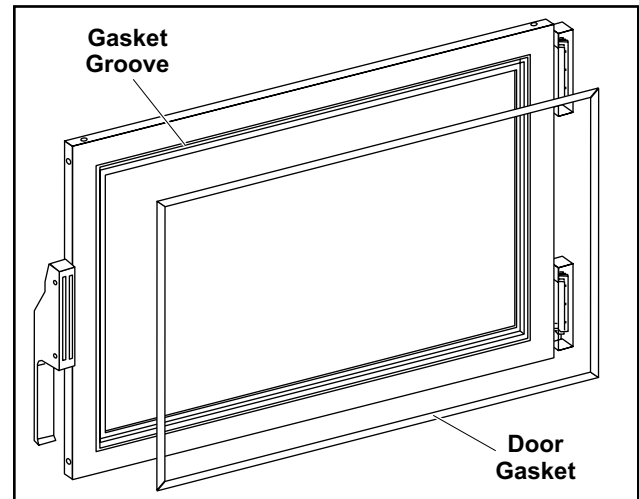
DOOR GASKET REPLACEMENT



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1. Place the unit's Power Switch in its OFF position.
2. Remove the old gasket by pulling it out of the groove in the door frame.
3. Clean groove with a screwdriver or other flat-bladed tool to remove any dirt or gasket pieces.
4. Press the new gasket into the groove. Make sure it is fully seated in the groove and flat against the door frame.




Door and Gasket

5. Check the door adjustment to make sure there are not any leaks or that the new gasket is not compressed too much, making the door hard to close. Refer to the DOOR GASKET COMPRESSION CHECK section of this manual for further instructions.

ADJUSTMENTS

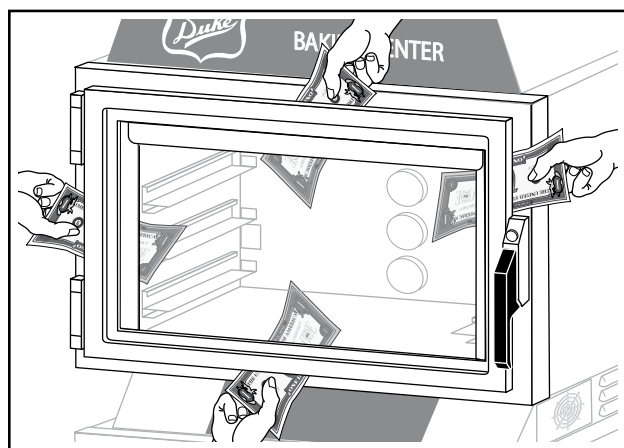
DOOR GASKET COMPRESSION CHECK

The Door Gasket Compression Check may be performed on all styles of Proofer Oven doors.



WARNING

THE OVEN OR PROOFER MAY BE HOT! ALLOW THE UNIT TO COOL BEFORE BEGINNING ANY DOOR ADJUSTMENT PROCEDURES.




Door Gasket Compression Check

Perform the following procedure to determine if door adjustments are necessary:

1. Close the door with a dollar bill between the gasket and the front of the oven. There should be resistance when the dollar bill is pulled free of the door.
2. Perform this check in several places and readjust the door if necessary using one or both of the procedures below.

PROOFER DOOR GASKET ADJUSTMENT

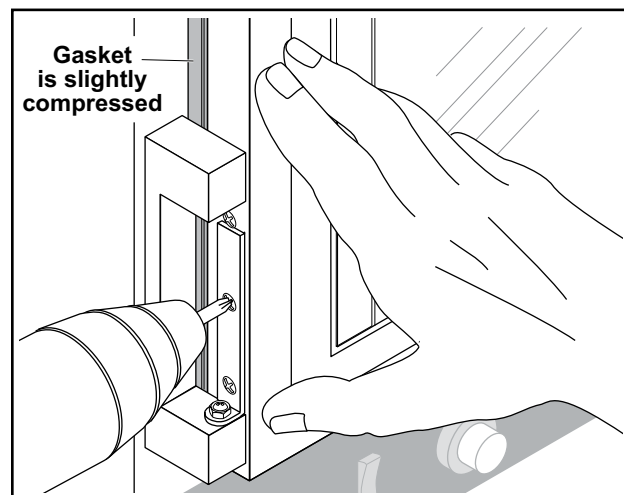


WARNING

THE PROOFER MAY BE HOT! ALLOW THE UNIT TO COOL BEFORE BEGINNING ANY DOOR ADJUSTMENT PROCEDURES.

To adjust the door on the hinge side, use this procedure:

1. With the door closed, remove the hinge covers and loosen (don't remove) the six screws that hold the hinges to the door.



Loosen Door Hinges

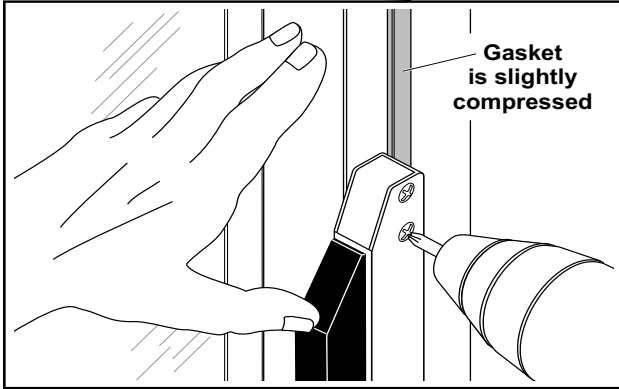
2. With the screws loosened, the door can be move in and out on its frame. Move the door to the desired position.

Note: When adjusting the doors in and out position, don't over compress the gasket. This will cause the door to bind on the hinge side.

3. Once the door is positioned properly, tighten the screws and replace the hinge covers.

The door can also be adjusted on the handle side:


1. Loosen, but do not remove, the two screws that hold the handle in place.



Door Handle Adjustment

2. Adjust the handle to its proper position.
3. Tighten the screws.

OVEN AIR WASH DOOR ADJUSTMENT



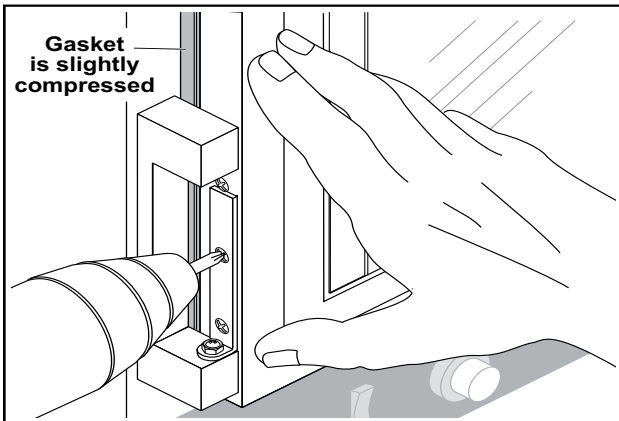
WARNING

THE OVEN MAY BE HOT! ALLOW THE UNIT TO COOL BEFORE BEGINNING ANY DOOR ADJUSTMENT PROCEDURES.

Air Wash Door Adjustment – Hinge Side

To adjust the Hinge Side of the door, use this procedure.

1. If open, close and latch the door.
2. Remove the Hinge Covers.
3. Loosen the screws on the hinges.



Door Adjustment – Hinge Side

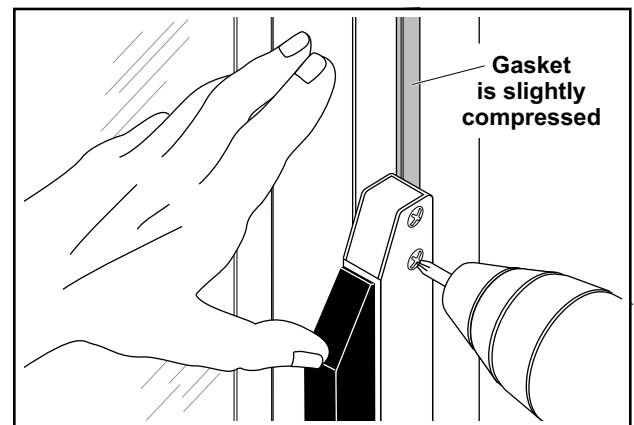
4. Adjust the door position by moving the doorframe to seal any gap between the gasket and the oven front near the hinges. Tighten the hinge screws.
5. Perform the DOOR GASKET COMPRESSION CHECK.
6. If needed, repeat the above procedure or go to step 7. Otherwise, replace the Hinge Covers.
7. Perform the Air Wash Door Adjustment – Handle Side procedure, below. (Do not replace the hinge covers yet.)

CAUTION: Be careful not to over-compress the gasket or it will cause the door to bind near the hinges.

Air Wash Door Adjustment – Handle Side

To adjust the Handle Side of the door, use this procedure.

1. If open, close and latch the door. Ensure that the inner and outer doors are latched together.
2. Loosen the screws along the outer edge of the Door Handle.
3. Adjust the door position by moving the doorframe to seal any gap between the gasket and the oven front near the handle.
4. Tighten the screws.



Door Adjustment – Handle Side

5. Perform the DOOR GASKET COMPRESSION CHECK.
6. If needed, repeat the above procedure or go


to the AIR WASH DOOR ADJUSTMENT – HINGE SIDE procedure.

7. If the Door Handle Adjustment Slots become exposed, use Silicone Sealer to seal the openings.
8. Install the Hinge Covers if they were removed.


CAUTION: Be careful not to over-compress the gasket or it will cause the door to bind near the hinges.

VERIFYING AND CALIBRATING THE CONTROLLER


Accessing Actual Temperatures and Humidity

To access the Actual Oven Temperature as well as the Proofer’s actual temperature and Humidity, first press the  button.



This screen will appear. Press the  button.



This screen will appear. Press .



This screen will appear.



The display will show the sensor readings from the temperature sensors on the oven and proofer sections and the humidity in the proofer.

Use a digital thermometer or other accurate temperature measuring device to verify that the temperatures are within 3°F of tolerance.

Install a thermocouple in the center of the middle rack of the proofer and oven; close the oven and proofer doors.

Turn on the TSCM's oven and proofer sections and allow the unit to operate for a minimum of 10 minutes

If there is a discrepancy greater than +/-3°F, proceed to the following section, TEMPERATURE CALIBRATION.



The system status will show which system is activated by an Orange indicator.

TEMPERATURE CALIBRATION

The TSCM Baking Center maintains temperature set points at the center of the oven and proofer sections. The TSCM temperature sensors are factory calibrated for an offset response to equate the center chamber temperatures to the TSC displayed values.

The temperature sensors are tight tolerance components and the offset temperature response is factory programmed in the TSCM controller's nonvolatile memory allowing interchange of sensors and/or control software revision upgrades without temperature calibration impact.

Field recalibration will only be required if the factory settings were manually field modified. Should temperature calibration of the unit be in question, the following procedure should be followed to


validate/modify as needed.

Equipment:


FLUKE Model 54 Thermal meter with two J-type thermocouples or equivalent test equipment with +/- 1% tolerance

Procedure:


1. Install a thermocouple in the center of the middle rack of the proofer and oven; close the oven and proofer doors.
2. Turn on the TSCM's oven and proofer sections and allow the unit to operate for a minimum of 10 minutes
3. Enter the TSCM calibration screens (see below)
4. Monitor the TSCM displayed temperatures until they reach set points of 350°F for the oven and 105°F for the proofer
5. If display and actual temperature are within +/- 3°F, no calibration adjustment is necessary
6. Repeat the process a minimum of two times with a minimum of 15 minutes to stabilize after each calibration adjustment.

Press the  button to enter the Special Functions screen located at the far right-hand side of the upper tool bar



Press the  button to enter the Factory Pin Code screen.





Use keypad to Enter Pin Code "9898".
Press .



Press .



When Sensor Calibration screen is displayed, use  or  to match temperature of digital thermometer.



Press  to save.



Press  to exit.



MAINTENANCE

STAINLESS STEEL CARE

Cleaning

Stainless steel contains 70-80% iron, which will rust if not properly maintained. It also contains 12-30% chromium, which forms an invisible passive, protective film that shields against corrosion. If the film remains intact, the stainless steel will remain intact. However, if the film is damaged, the stainless steel can break down and rust. To prevent stainless steel breakdown, follow these steps:

CAUTION: Never use any metal tools. Scrapers, files, wire brushes or scouring pads (except for stainless steel scouring pads) will mar the surface.

CAUTION: Never use steel wool, which will leave behind particles that rust.

CAUTION: Never use acid-based or chloride-containing cleaning solutions, which will break down the protective film.

CAUTION: Never rub in a circular motion.

CAUTION: Never leave any food products or salt on the surface. Many foods are acidic. Salt contains chloride.

For routine cleaning, use warm water, mild soap or detergent and a sponge or soft cloth.

For heavy-duty cleaning, use warm water, a degreaser and a plastic, stainless steel or Scotch-Brite pad.

Always rinse thoroughly. Always rub gently in the direction of the steel grain.

Preserving & Restoring

Special stainless steel polishing cleaners can preserve and restore the protective film.

Preserve the life of stainless steel with a regular application of a high quality stainless steel polishing cleaner as a final step to daily cleaning.

If signs of breakdown appear, restore the stainless steel surface. First, thoroughly clean, rinse and

Heat Tint

Darkened areas, called heat tint, may appear on stainless steel exposed to excessive heat, which causes the protective film to thicken. It is unsightly but is not a sign of permanent damage.

To remove heat tint, follow the routine cleaning procedure. Stubborn heat tint will require heavy-duty cleaning.

To reduce heat tint, limit the exposure of equipment to excessive heat.

WATER FILTER REPLACEMENT

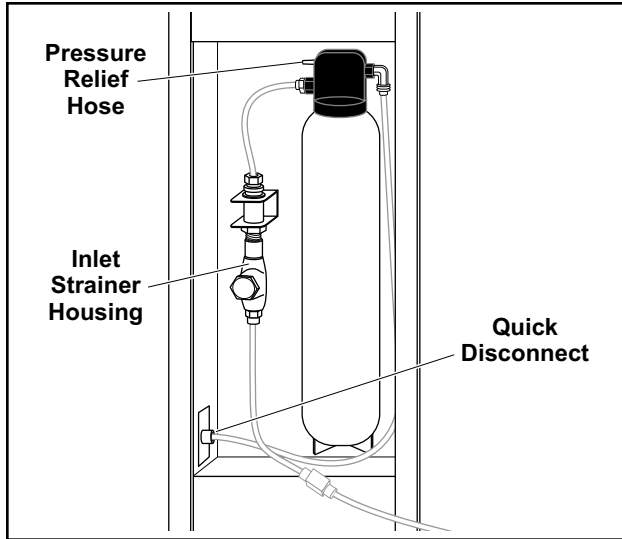


WARNING

BEFORE PERFORMING ANY SERVICE THAT INVOLVES ELECTRICAL CONNECTION OR DISCONNECTION AND/OR EXPOSURE TO ELECTRICAL COMPONENTS, ALWAYS FOLLOW THE ELECTRICAL LOCKOUT/TAGOUT PROCEDURE. DISCONNECT ALL CIRCUITS. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

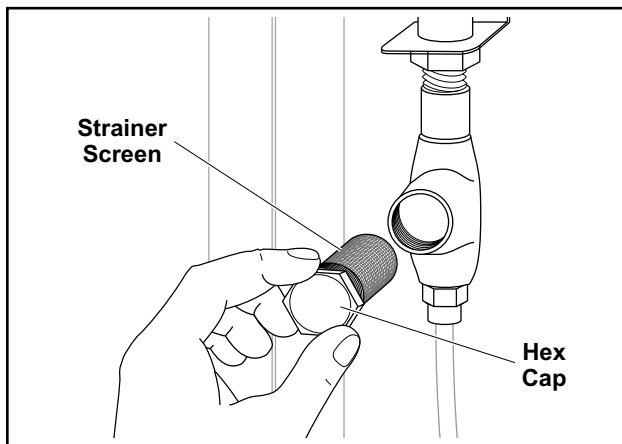
The water filter located at the rear of the unit in the Proofer Section.

1. Turn off water supply to oven.
2. Disconnect Wall Brackets if installed.
3. Using the Touch Screen Display, turn off power to Proofer Oven.
4. Remove old filter by rotating cartridge clockwise slowly until pressure starts to release, stop and let pressure and excess water drain through pressure release hose. Once water has stopped draining, continue turning to the left and pull downward.



Water Filter

5. Install new filter by removing sanitary cap from top of new Cartridge, insure two black O Rings are in place, then lift up into filter head and rotate Cartridge 1/4 turn counter clockwise until it comes to a complete stop.
6. Remove Inlet Strainer by loosening Hex Cap on Inlet Strainer housing.

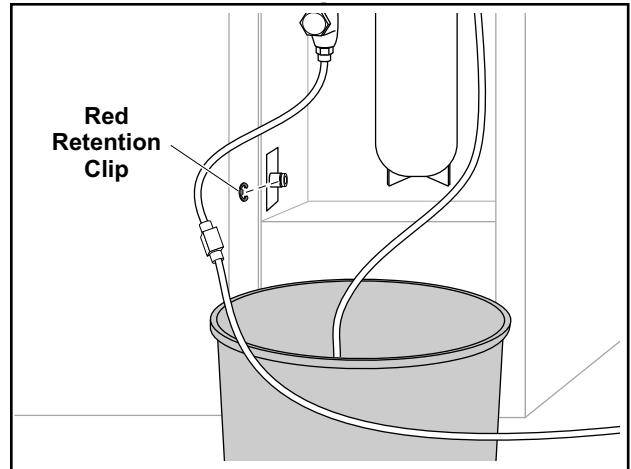


Inlet Strain & Screen

7. Remove and flush the strainer screen with warm water.
8. Replace Strainer screen and Hex Cap.
9. Flush 2 gallons of water through the new filter before using proofer to purge air from filter.
10. Remove hose from bottom of proofer by removing red retention clip then push in quick

disconnect fitting and pull hose out.

11. Place hose into a bucket and turn on water. It will take a minute for the filter to fill before water flows out of hose into container.



Purging Air From Water Filter

12. Once filter is flushed with 2 gallons of water, turn off water supply again, insert hose into quick disconnect, replace red retention clip by slightly pulling hose.
13. Turn water supply on and check for leaks at connection fittings and Inlet Strainer Housing Hex Cap.
14. Reconnect Wall Brackets if installed.
15. Turn on power to Proofer Oven using the Touch Screen Display

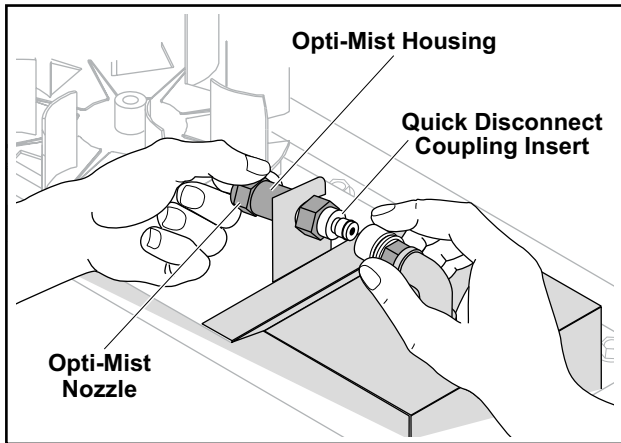
CLEANING THE OPTI-MIST NOZZLE

Note: It is not necessary to disconnect the unit from its power source for this procedure.

Also see Duke Publication 512419 for this procedure.

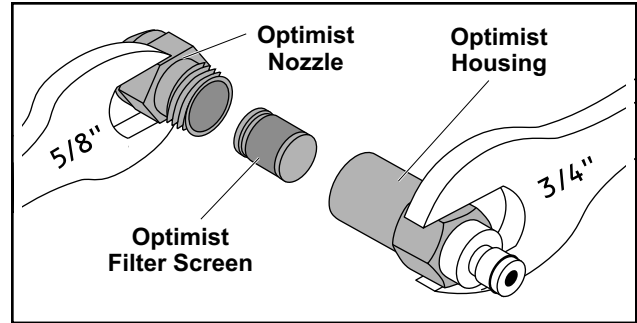
1. Turn power to the Proofer off by using the Touch Screen Display. It is not necessary to turn off water supply to the unit.
2. Remove necessary racks and the Proofer Floor Panel to gain access to the Opti-Mist Nozzle assembly.
3. Use quick disconnect lever to remove the

coupling and nozzle assembly by pushing the lever down and sliding assembly straight out.



Opti-Mist Nozzle Quick Disconnect

4. Use 3/4" and 5/8" wrenches to remove the nozzle from its body, remove, clean and re-install the filter.



Opti-Mist Nozzle Disassembled

5. Soak nozzle in vinegar for 4-8 hours. Wipe residue from nozzle and rinse in clean water. Do not insert objects into nozzle outlet as this can change the water spray performance. Replace nozzle assembly if mineral deposits from hard water cannot be removed.
6. Reinstall nozzle by inserting into quick-connect fitting until fully seated.
7. Using the Touch Screen Display, turn the Proofer on, allow the water system to purge and check for proper Opti-Mist Nozzle spray.
8. Using the Touch Screen Display, turn the Proofer off and wait for the fan to stop turning. Reattach the Proofer Floor Panel and slide in all of the racks removed earlier.

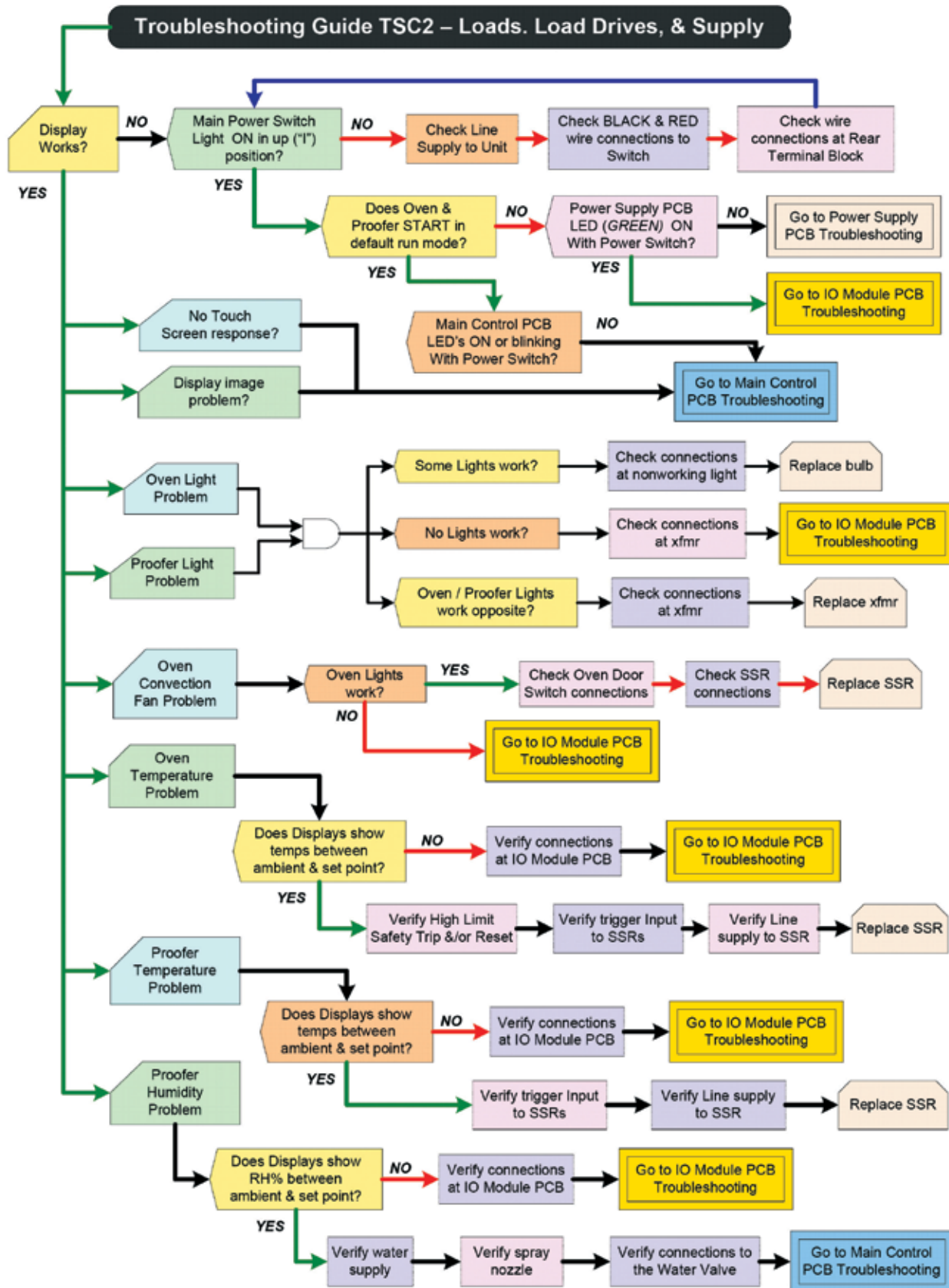
TROUBLESHOOTING

TROUBLESHOOTING GUIDE

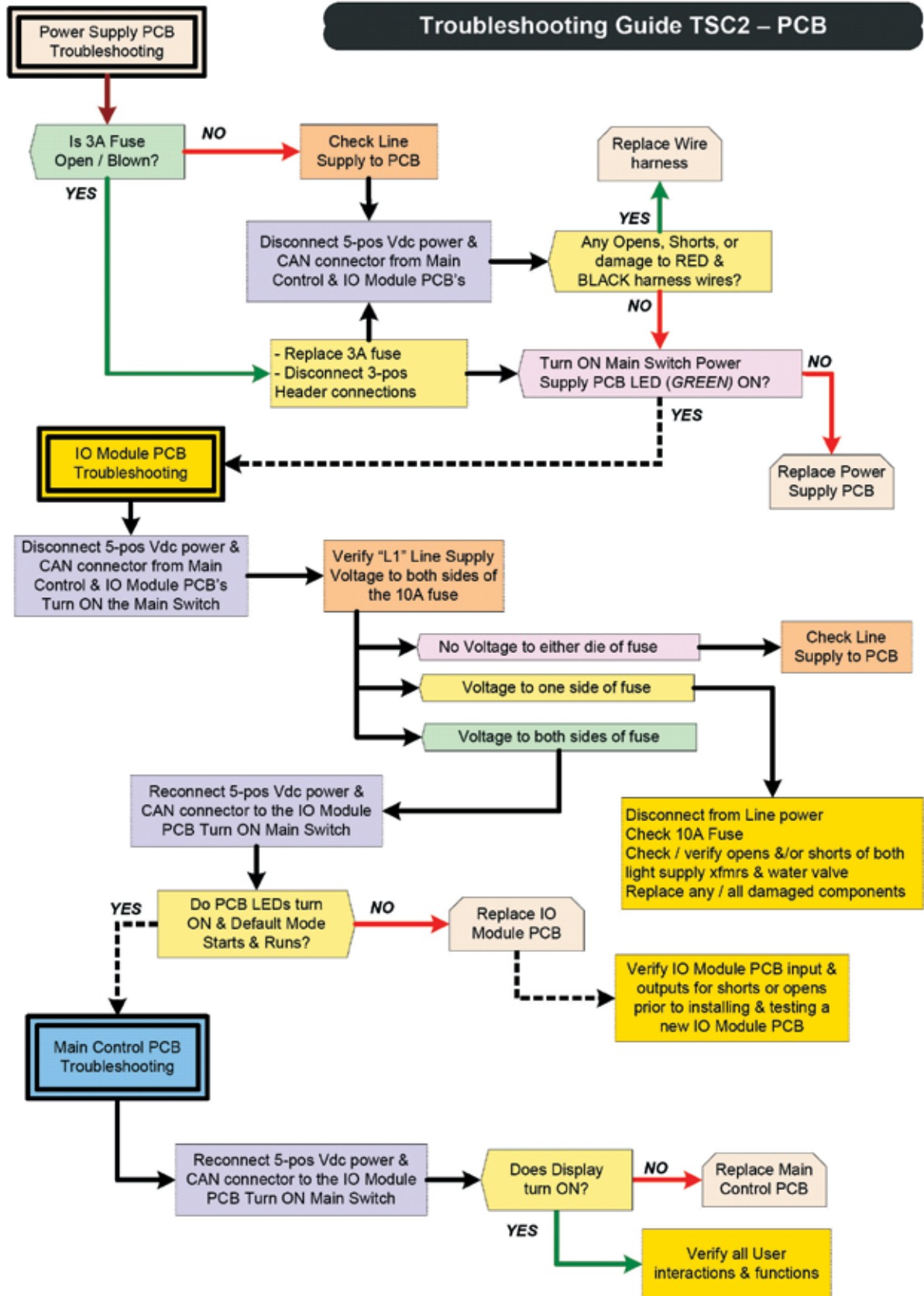
SYMPTOM	CAUSE	REMEDY
Unit does not turn on	Power ON/OFF Breaker not in ON Position No Power to unit Touch Screen Control Defective	Place ON/OFF Breaker in ON position. Check Breaker at Breaker Box. See TROUBLESHOOTING FLOW CHART.
Oven/Proofer Lights not working	Power ON/OFF Breaker not in ON position No Power to unit	Place the Power ON/OFF Breaker in ON position. Check Breaker at Breaker Box.
Oven Lights work but Proofer Lights not working	Proofer Lights Circuit Breaker is open Defective Proofer Lights Transformer	Reset Proofer Lights Circuit Breaker. If problem persists, check lights – lights should not exceed 10 Watts. Replace transformer.
Proofer Lights work but Oven Lights not working	Defective Oven Lights Transformer	Replace transformer.
Proofer Humidity insufficient	Humidity not set properly on Touch Screen Control Water supply not turned on Opti-Mist Nozzle dirty/clogged Defective Water Injection Solenoid Defective Humidity Sensor Defective PC I/O Board	Set/reset humidity using Touch Screen Control. Turn on water supply. Clean Opti-Mist Nozzle and filter. Replace Water Injection Solenoid. Replace Humidity Sensor. Replace PC I/O Board.
Proofer Humidity too high	Humidity not set properly on Touch Screen Control Opti-Mist Nozzle damaged Defective Humidity Sensor Defective PC I/O Board	Set/reset humidity using Touch Screen Control. Replace Opti-Mist Nozzle assembly. Replace Humidity Sensor. Replace PC I/O Board.
Proofer does not heat	Proofer door not closed Proofer not turned on Proofer temperature not set correctly Defective heater element(s)	Ensure door is closed and seals properly. Turn Proofer on using Touch Screen Control. Set/reset temperature using Touch Screen Control. Replace defective heater element(s).
Proofer does not proof evenly	Proofer door not closed Debris caught in fan blade Defective Door Gaskets Defective Circulation Fan	Ensure door is closed and seals properly. Clean fan blades. Replace gaskets. Replace Circulation Fan.
Oven does not heat	Oven door open Oven not turned on Temperature not set Hi Limit Breaker requires reset Defective Hi Limit Thermostat Defective Oven Heat Element(s)	Ensure oven door is properly closed. Use Touch Screen Control to turn oven on. Use Touch Screen Control to set/reset oven. Reset Hi Limit Breaker. Replace Hi Limit Thermostat. Replace Oven Heat Element(s).

SYMPTOM	CAUSE	REMEDY
Oven Blower does not operate	Oven door open Defective Oven Door Switch Defective Oven Blower Relay Defective fan motor	Ensure oven door is properly closed. Replace Oven Door Switch. Replace Oven Blower Relay. Replace motor.
Oven does not bake evenly	Door not sealing properly Defective door gaskets Debris in Blower Wheel Blower not running One oven heat element not working	Adjust door. Replace gaskets. Clean Blower Wheel. See "Oven Blower does not operate" troubleshooting. Replace defective heat element.
Proofer/Oven Beeper not audible	Beeper turned off Defective Beeper	Using Touch Screen Control, turn Beeper on. Replace Beeper.
Electrical Compartment Cooling Fan not operating	Loose fan wires Defective fan motor	Check wiring. Replace fan motor.
Oven/Proofer Working but no display	Touch Screen not activated	Turn on using Touch Screen Control.
Oven/Proofer ON/OFF switch in ON position no display no heat	Defective Touch Screen Control	See TROUBLESHOOTING FLOW CHART.

TROUBLESHOOTING FLOW CHART



TROUBLESHOOTING FLOW CHART (CONT.)





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