



## Vector™ Multi-Cook Oven

VMC-H2  
VMC-H3  
VMC-H4

VMC-H2H  
VMC-H3H  
VMC-H4H



### Structured Air Technology™

MN-39158

REV.01  
6/17

EN

# Manufacturer's Information

---

**Copyright**

© Copyright 6/17 by Alto-Shaam, Inc.

All rights reserved.

This manual or any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Alto-Shaam, Inc.

---

**Trademarks**

All trademarks referenced in this documentation are the property of their respective owners.

---

**Manufacturer**

Alto-Shaam, Inc.

P.O. Box 450

W164 N9221 Water Street

Menomonee Falls, WI 53052

---

**Original instructions**

The content in this manual is written in American English.

---

# Alto-Shaam 24/7 Emergency Repair Service

---

<b>Call</b>	Call 800-558-8744 to reach our 24-hour emergency service call center for immediate access to local authorized service agencies outside standard business hours. The emergency service access is provided exclusively for Alto-Shaam equipment and is available throughout the United States through Alto-Shaam's toll free number.
<b>Availability</b>	Emergency service access is available seven days a week, including holidays.

FOREWORD



Manufacturer's Information . . . . .	2
<b>Foreword</b>	<b>3</b>
Alto-Shaam 24/7 Emergency Repair Service . . . . .	3
<b>Table of Contents</b>	<b>5</b>
<b>Safety</b>	<b>7</b>
The Meaning of Signal Words . . . . .	7
Safety Precautions. . . . .	8
<b>Operation</b>	<b>11</b>
How to Turn On and Turn Off the Oven . . . . .	11
How to Update the Interface Board (IB) . . . . .	12
How to Update the Control Board (CB) . . . . .	14
How to Load Config Files . . . . .	16
<b>Components</b>	<b>19</b>
Component Identification . . . . .	19
Cavity Identification . . . . .	20
Front Panel Identification . . . . .	21
Back Panel Identification . . . . .	22
Component Access Panels Identification . . . . .	23
H4—Electrical Component Identification . . . . .	24
H3—Electrical Component Identification . . . . .	25
H2—Electrical Component Identification . . . . .	26
Electrical Components . . . . .	27
Left Service Panel Identification . . . . .	36
Left Service Panel Components . . . . .	37
Right Service Panel Identification . . . . .	40
Right Service Panel Components . . . . .	41
Internal Components Identification. . . . .	43
Internal Components . . . . .	44
<b>Theory</b>	<b>45</b>
Standby State . . . . .	45
On State . . . . .	46
Warm-Up State . . . . .	47
Idle State . . . . .	48
Cooking State . . . . .	49
Cooking State Complete . . . . .	50
Rapid ON/OFF State . . . . .	51
Cool Down State . . . . .	52
Cool Down State Complete. . . . .	53

# TABLE OF CONTENTS

<b>Maintenance</b>	<b>55</b>
Maintenance Schedule . . . . .	55
How to Clean the Oven. . . . .	56
<b>Troubleshooting</b>	<b>61</b>
The Oven will not Power Up . . . . .	61
The Oven will not Power Up Cont. . . . .	62
The Cavities will not Heat . . . . .	63
Cavity Blower Fans Inoperable . . . . .	66
Cavity Lights will not Illuminate. . . . .	68
The Check Fan Indicator Light is Illuminated . . . . .	69
The Cooling Fan(s) are Inoperable . . . . .	71
<b>Assembly/Disassembly</b>	<b>73</b>
Removing and Installing the Blower Motor . . . . .	73
Removing and Installing a Heater Element . . . . .	75
<b>Schematics</b>	<b>77</b>
VMC-H2 / VMC-H2H. . . . .	77
VMC-H3 / VMC-H3H. . . . .	78
VMC-H4 / VMC-H4H. . . . .	79

# The Meaning of Signal Words

Technical content produced by Alto-Shaam contains signal words where needed. These signal words must be obeyed to reduce the risk of death, personal injury, or equipment damage. The meaning of these signal words is explained below.

**DANGER**

Danger indicates a hazardous situation which, if not avoided, will result in serious injury or death.

**WARNING**

Warning indicates a hazardous situation which, if not avoided, could result in serious injury or death.

**CAUTION**

Caution indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTICE**

Notice indicates a situation which, if not avoided, could result in property damage.



Note indicates additional information that is important to a concept or procedure.

# Safety Precautions

---

**Before you begin**

Read and understand all instructions in this manual.

---

**Electrical precautions**

Follow these precautions while using the appliance:

- Connect the appliance to a properly grounded outlet. Do not use the appliance if it is not properly grounded. Consult an electrician if there is any doubt that the outlet used is properly grounded.
  - Do not attempt to service the appliance or its plug and cord.
  - Keep the cord away from hot surfaces.
  - Do not operate the appliance if it has a damaged cord or plug.
  - Do not immerse the cord or plug in water.
  - Do not let the cord hang over the edge of a table or counter.
  - Do not use an extension cord.
- 

**Usage precautions**

Follow these precautions when using the appliance:

- Only use this appliance for its intended use of heating or cooking.
  - Use utensils and protective clothing such as dry oven mitts when loading and unloading the appliance.
  - Do not cover or block any of the openings of this appliance.
  - Do not cover racks or any other part of this appliance with metal foil.
  - Do not use this appliance near water such as a sink, in a wet location, near a swimming pool, or similar locations.
  - Do not unplug or disconnect the appliance immediately after cooking. The cooling fans must stay on to protect electrical components.
- 

**Maintenance precautions**

Follow these precautions when cleaning and maintaining the appliance:

- Observe precautions in the manual, on tags, and on labels attached to or shipped with the appliance.
- Only clean the appliance when the main disconnect is in the OFF position.
- Do not store the appliance outdoors.
- Do not clean the appliance with metal scouring pads.
- Do not use corrosive chemicals when cleaning the appliance.
- Do not use the appliance cavity for storage.
- Do not leave flammable materials, cooking utensils, or food inside the appliance when it is not in use.
- Do not remove the top cover or side panels. There are no user-serviceable components inside.

**Operator training**

Before using the appliance:

- Read and understand the operating instructions contained in all the documentation delivered with the appliance.
  - Familiarize yourself with the location and proper use of all controls.
  - Keep this manual and all supplied instructions, diagrams, schematics, parts lists, notices, and labels with the appliance if the appliance is sold or moved to another location.
  - Contact Alto-Shaam for additional training if needed.
- 

**Operator qualifications**

Only trained personnel are permitted to use the appliance. They must meet the following qualifications:

- Have received proper instruction on how to use the appliance
- Are familiar with commercial kitchens and the appliances used within

The appliance must not be used by:

- Children
  - People impaired by drugs or alcohol
- 

**Condition of appliance**

Only use the appliance when:

- All controls operate correctly
  - The appliance is installed correctly
  - The appliance is clean
  - The appliance's labels are legible
- 

**Servicing the appliance**

- Only trained personnel are permitted to service or repair the appliance. Repairs that are not performed by an authorized service partner or trained technician, or the use of non-factory parts, will void the warranty and relieve Alto-Shaam of all liability.
  - To prevent serious injury, death or property damage, the appliance should be inspected and serviced at least every twelve (12) months by an authorized service partner or trained technician.
  - Contact Alto-Shaam for the authorized service partner in your area.
- 

**Personal Protective Equipment (PPE)**

Wear the following Personal Protective Equipment (PPE) while cleaning the appliance.

- Protective gloves
- Protective clothing
- Eye protection
- Face protection



# How to Turn On and Turn Off the Oven

## Before you begin

The oven must be connected to electric power.

## Turning ON the oven

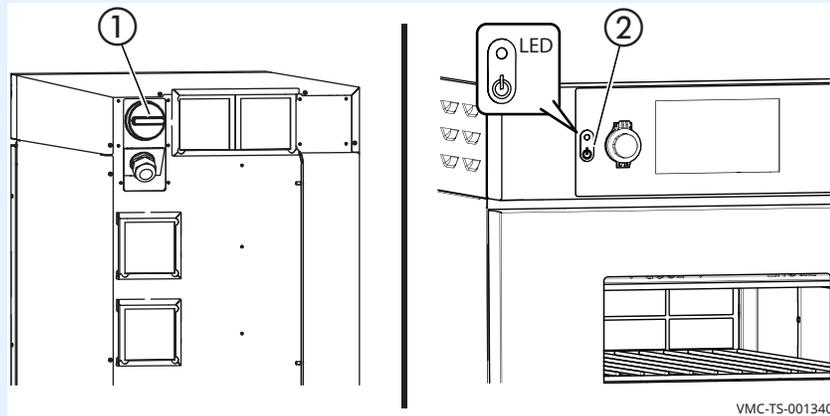
To turn on the oven, do the following.

Step	Action
1.	<p><b>Set</b> the main disconnect switch ① to the ON position.</p> <p><b>Press</b> the ON/OFF button ②. The LED on the button illuminates green.</p>

- Set** the main disconnect switch ① to the ON position.

**Press** the ON/OFF button ②. The LED on the button illuminates green.

**i NOTE:** The main disconnect switch is meant to be used during cleaning or service operations. For every day operation, it may be left in the ON position.



The oven is now on.

## Turning OFF the oven

To turn off the oven, do the following.

- Press and hold** the ON/OFF button ② until LED on button illuminates red.

The oven will automatically turn on the blowers for the cool down process. The screen will display a cool down prompt and ask for the door to be opened. The oven will shut down the blowers after the cool down is complete.

## Result

The oven is now off.



**CAUTION:** Electric power remains supplied to the oven even when the ON/OFF button is off.

To remove electric power from the oven, turn the main disconnect switch to the OFF position.

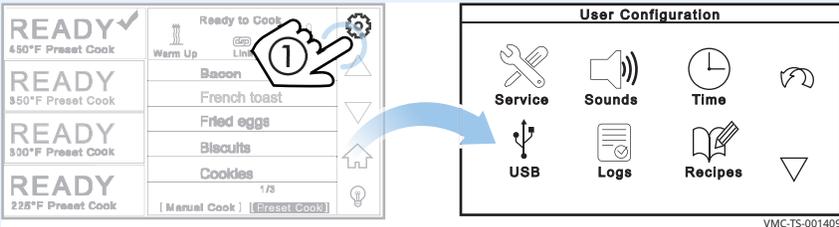
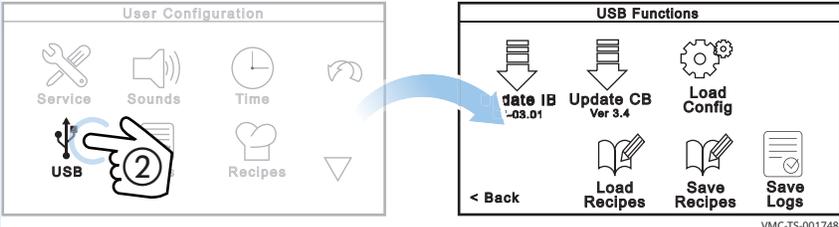
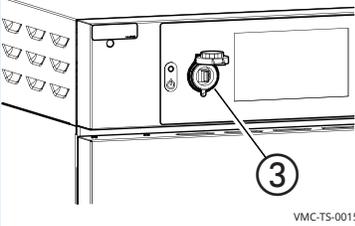
# How to Update the Interface Board (IB)

**Before you begin**

- You'll need a USB stick with the updated firmware.
- Make sure the oven is cool.

**Procedure**

To update the interface board, do the following.

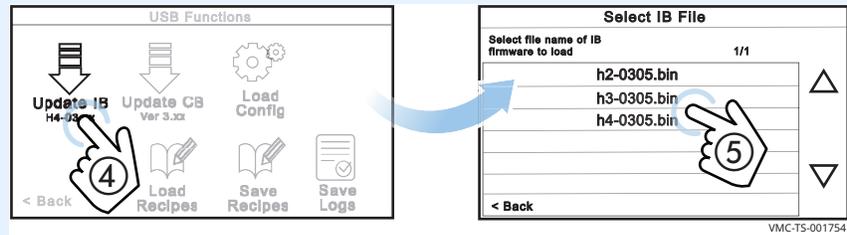
Step	Action
1.	<p><b>Touch</b> the gear icon ①. The "User Configuration" screen appears.</p>  <p style="text-align: right; font-size: small;">VMC-TS-001409</p>
2.	<p><b>Touch</b> the "USB" icon ②. The "USB Functions" screen appears.</p>  <p style="text-align: right; font-size: small;">VMC-TS-001748</p>
3.	<p><b>Plug</b> the USB stick into the port ③.</p>  <p style="text-align: right; font-size: small;">VMC-TS-001581</p>

*Continued on next page*

Continued from previous page

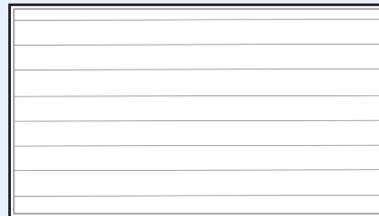
4. **Touch** the “Update IB” icon ④. The “Select IB File” screen appears.

**Touch** the desired firmware file ⑤ for your particular oven—choose by oven size. The oven loads the selected firmware.



The oven goes through the update process:

- The screen goes blank.
- The stripped screen appears for a few seconds.
- The screen goes blank.
- The logo screen appears for a few seconds.
- The oven turns off.



## Result

The interface board has now been updated.

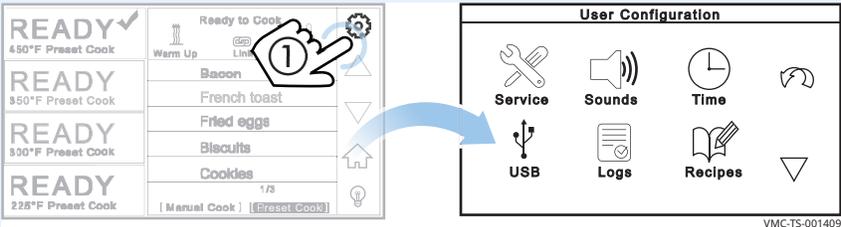
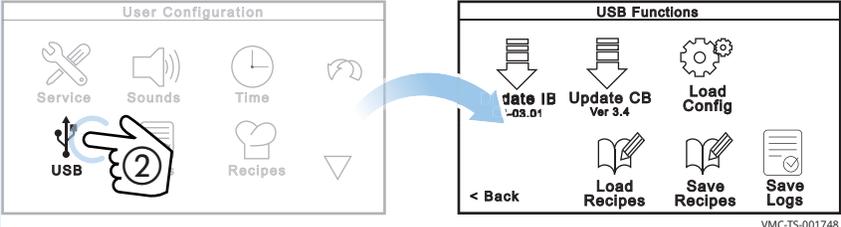
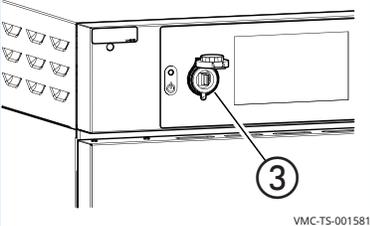
# How to Update the Control Board (CB)

**Before you begin**

- You'll need a USB stick with the updated firmware.
- Make sure the oven is cool.

**Procedure**

To update the control board, do the following.

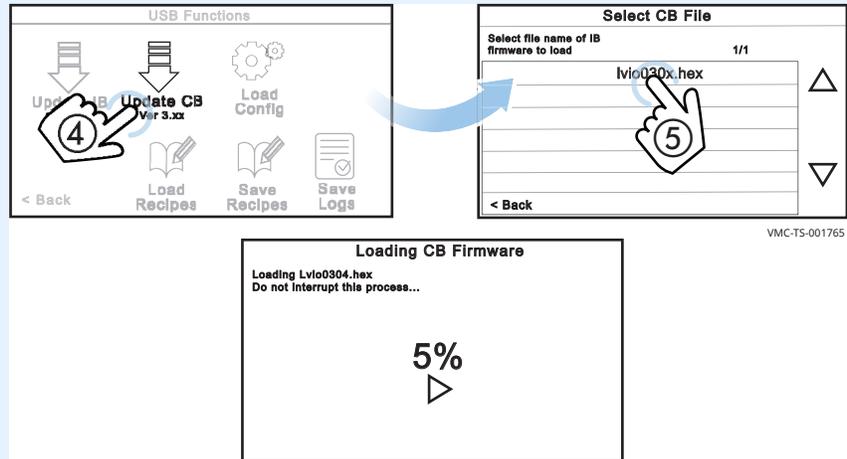
Step	Action
1.	<p><b>Touch</b> the gear icon ①. The "User Configuration" screen appears.</p>  <p style="text-align: right; font-size: small;">VMC-TS-001409</p>
2.	<p><b>Touch</b> the "USB" icon ②. The "USB Functions" screen appears.</p>  <p style="text-align: right; font-size: small;">VMC-TS-001748</p>
3.	<p><b>Plug</b> the USB stick into the port ③.</p>  <p style="text-align: right; font-size: small;">VMC-TS-001581</p>

*Continued on next page*

Continued from previous page

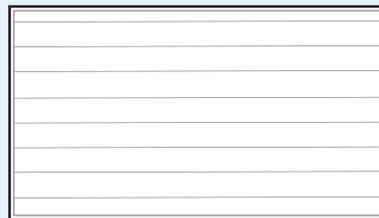
4. **Touch** the “Update CB” icon ④. The “Select CB File” screen appears.

**Touch** the desired firmware file ⑤ for your particular oven—choose by oven size. The oven loads the selected firmware.



The oven goes through the update process:

- The screen goes blank.
- The rainbow screen appears for a few seconds.
- The screen goes blank.
- The logo screen appears for a few seconds.
- The screen goes blank.



## Result

The control board has now been updated.

# How to Load Config Files

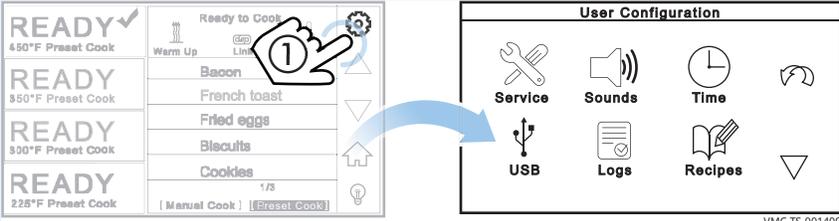
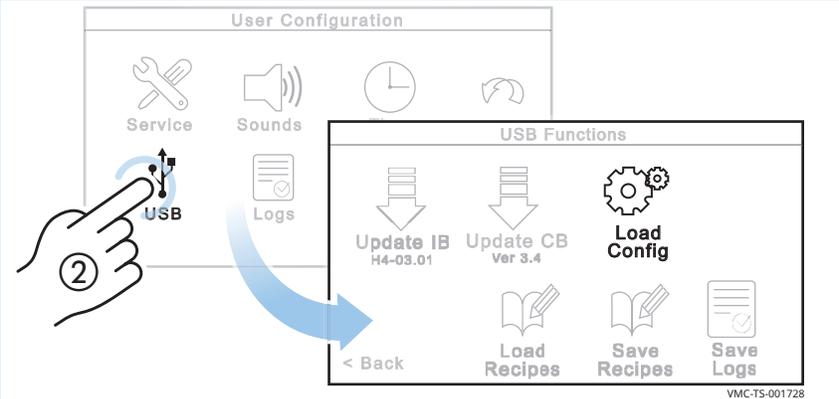
**Before you begin**

You'll need a USB stick with the config files.

**Procedure**

Config files are used to load the oven's menu.

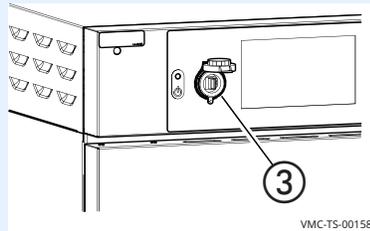
To load a menu to the oven, do the following.

Step	Action
1.	<p><b>Touch</b> the gear icon ①. The "User Configuration" screen appears.</p>  <p>VMC-TS-001409</p>
2.	<p><b>Touch</b> the "USB" icon ②. The "USB Functions" screen appears.</p>  <p>VMC-TS-001728</p>

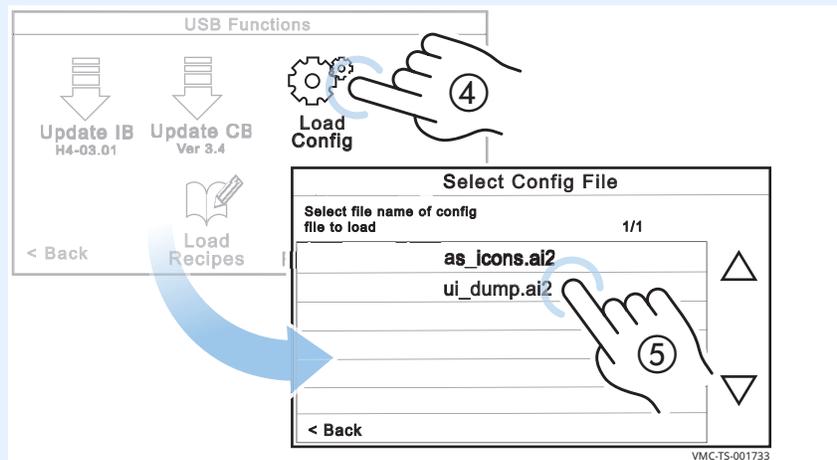
*Continued on next page*

Continued from previous page

3. **Plug** the USB stick into the port ③.

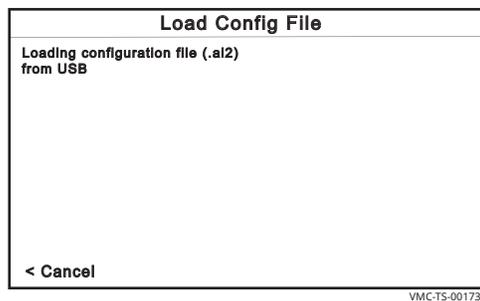


4. **Touch** the “Load Config” icon ④. The “Select Config File” screen appears.  
**Touch** the config file ⑤.



**“Loading Config File” screen**

The oven loads the selected config file. The “Load Config File” screen appears.



The oven turns off after the download is complete.

**Result**

The config files have now been loaded.



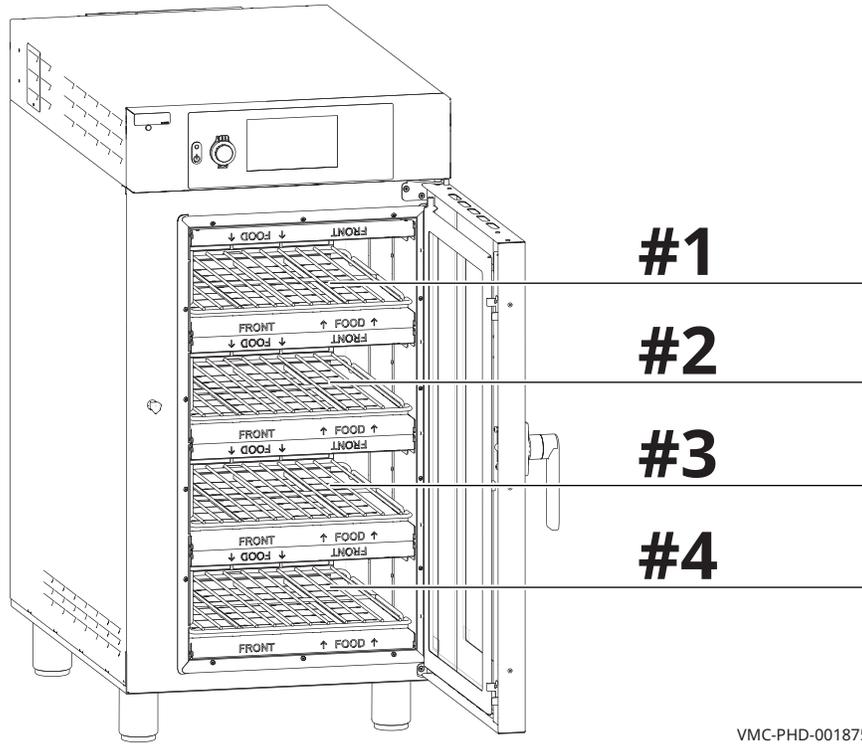
# Component Identification



COMPONENTS

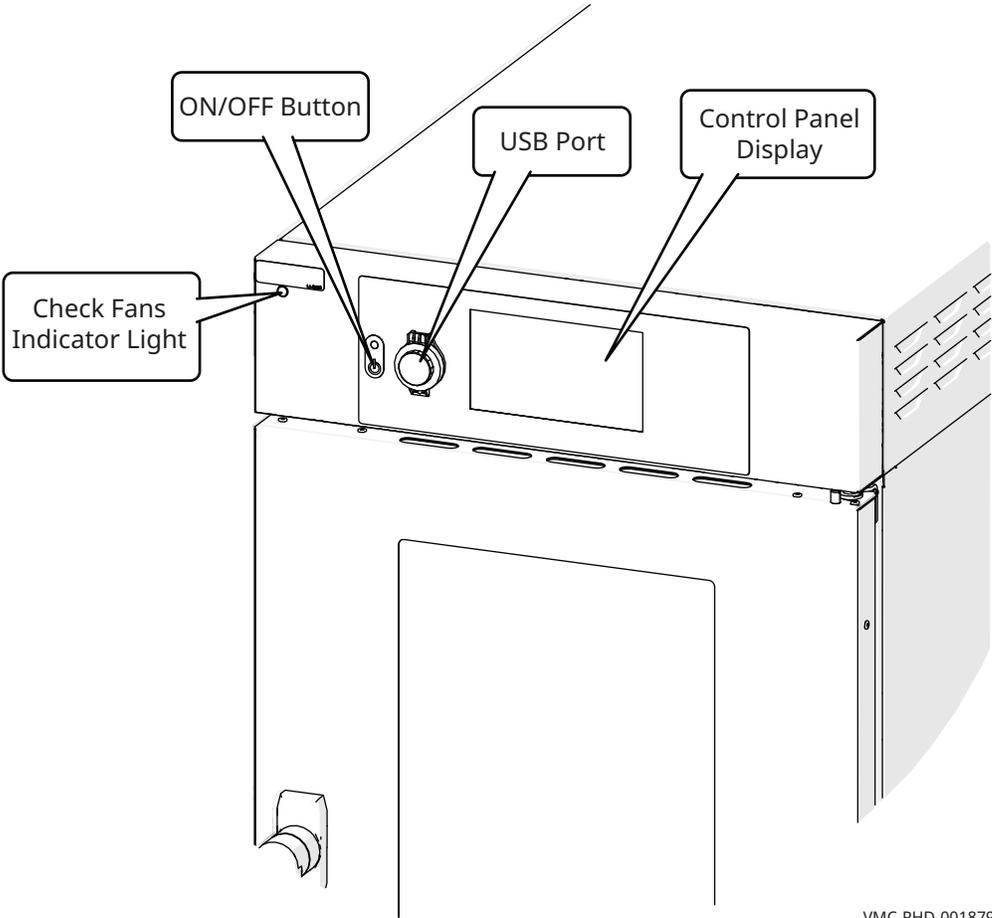
# Cavity Identification

Components will be identified in accordance with the cavity numbering illustrated here.



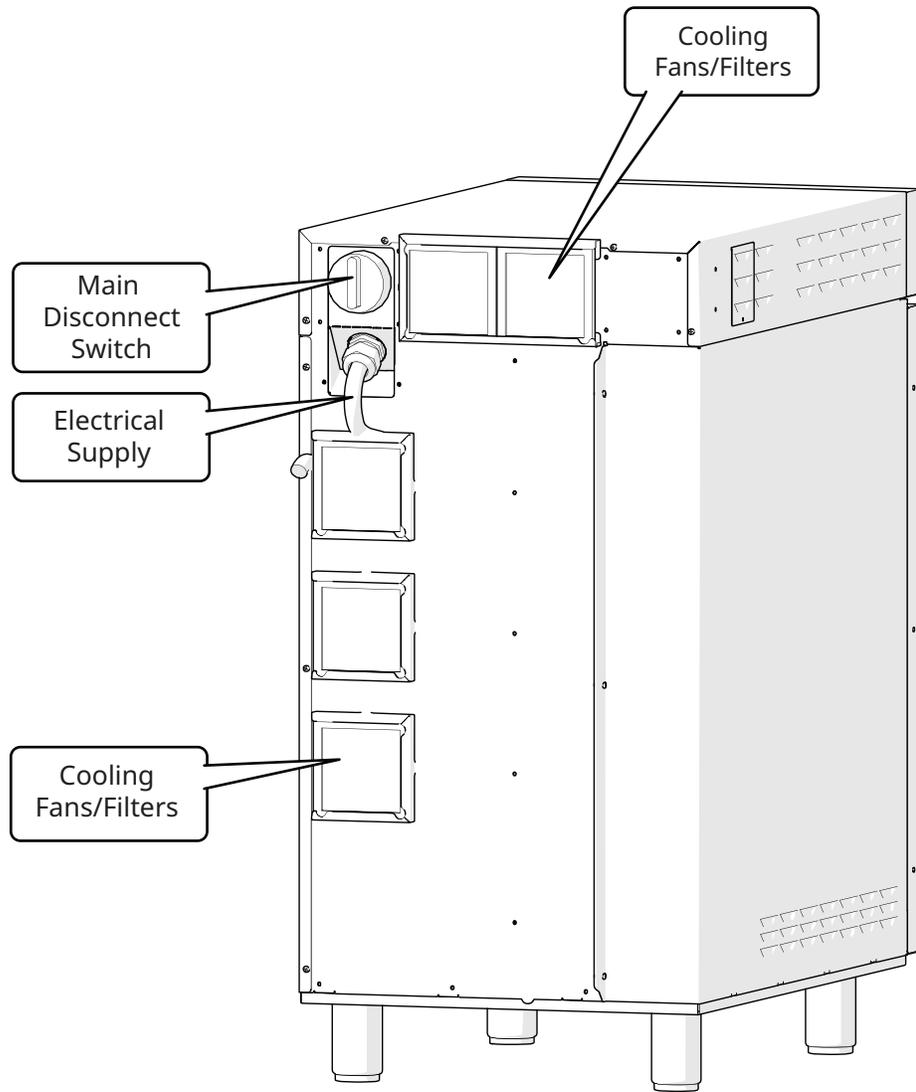
VMC-PHD-001875

# Front Panel Identification



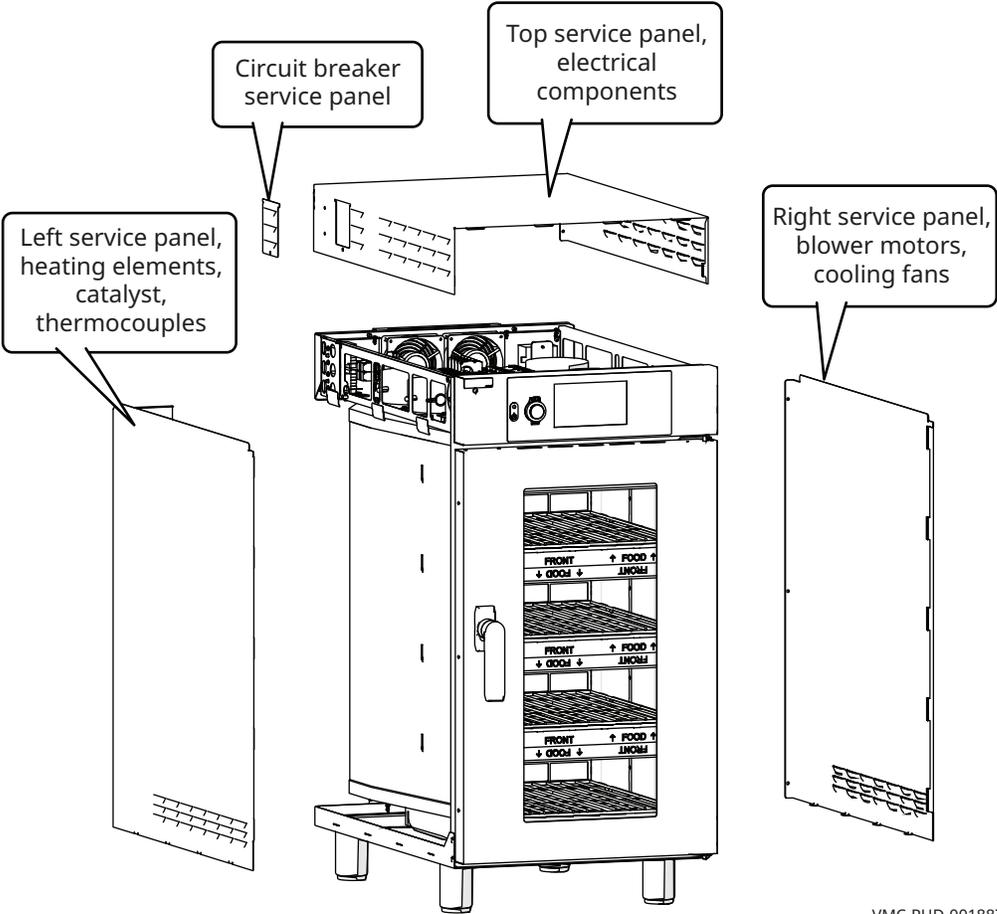
VMC-PHD-001879

# Back Panel Identification



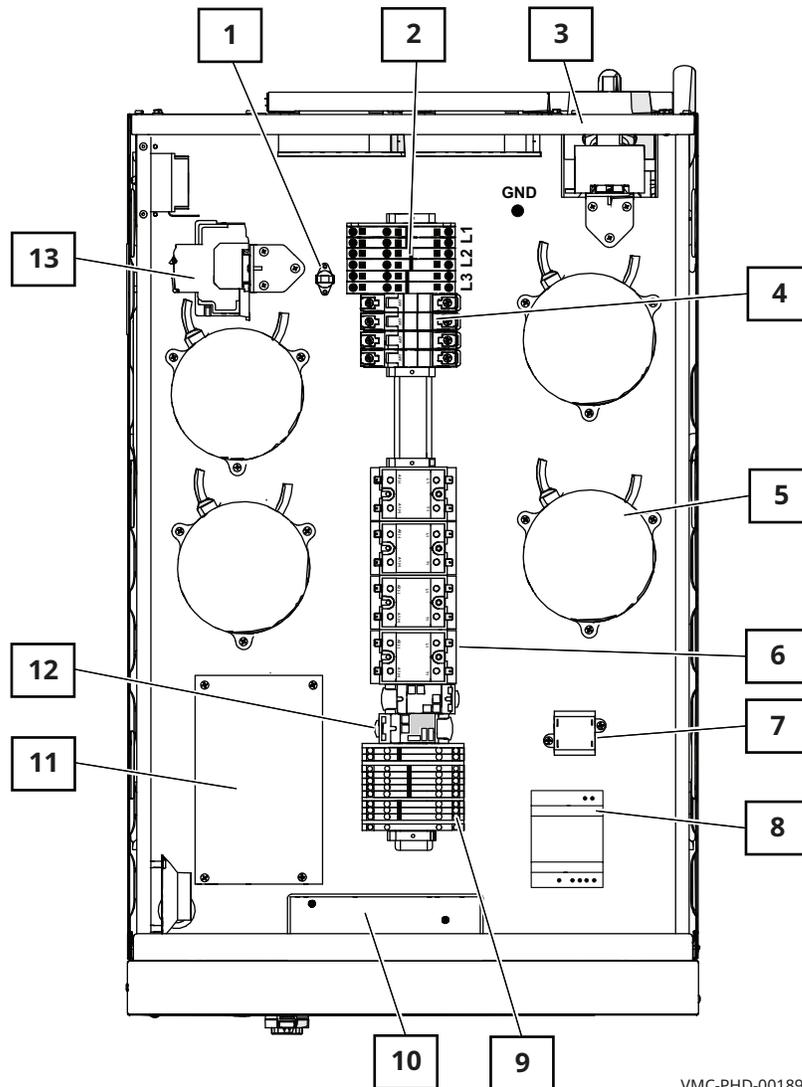
VMC-PHD-001883

# Component Access Panels Identification



VMC-PHD-001887

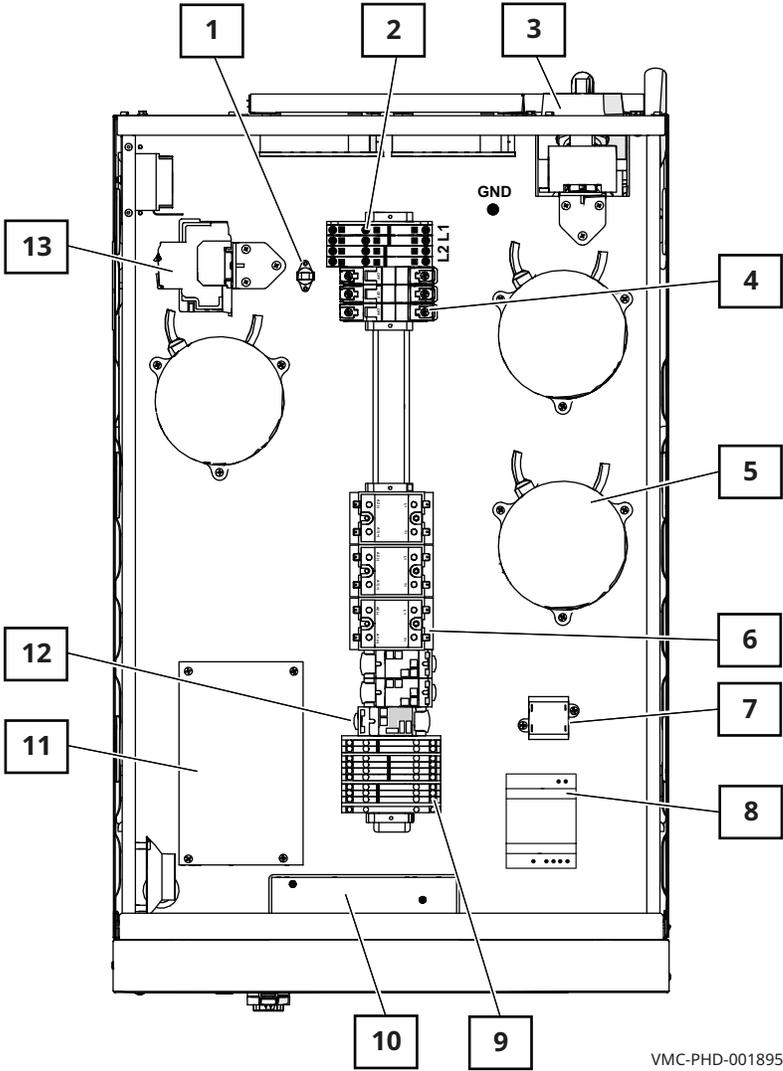
# H4—Electrical Component Identification



VMC-PHD-001891

Ref.	Description	Ref.	Description
1	Check fans indicator light switch	8	12VDC power supply
2	Terminal boards	9	Terminal boards
3	Main disconnect switch	10	Interface board
4	Circuit breakers (heating elements)	11	Control board
5	Variable frequency drive (VFD)	12	Relays
6	Solid state relay (SSR)	13	Circuit breakers (control)
7	12VAC transformer	—	—

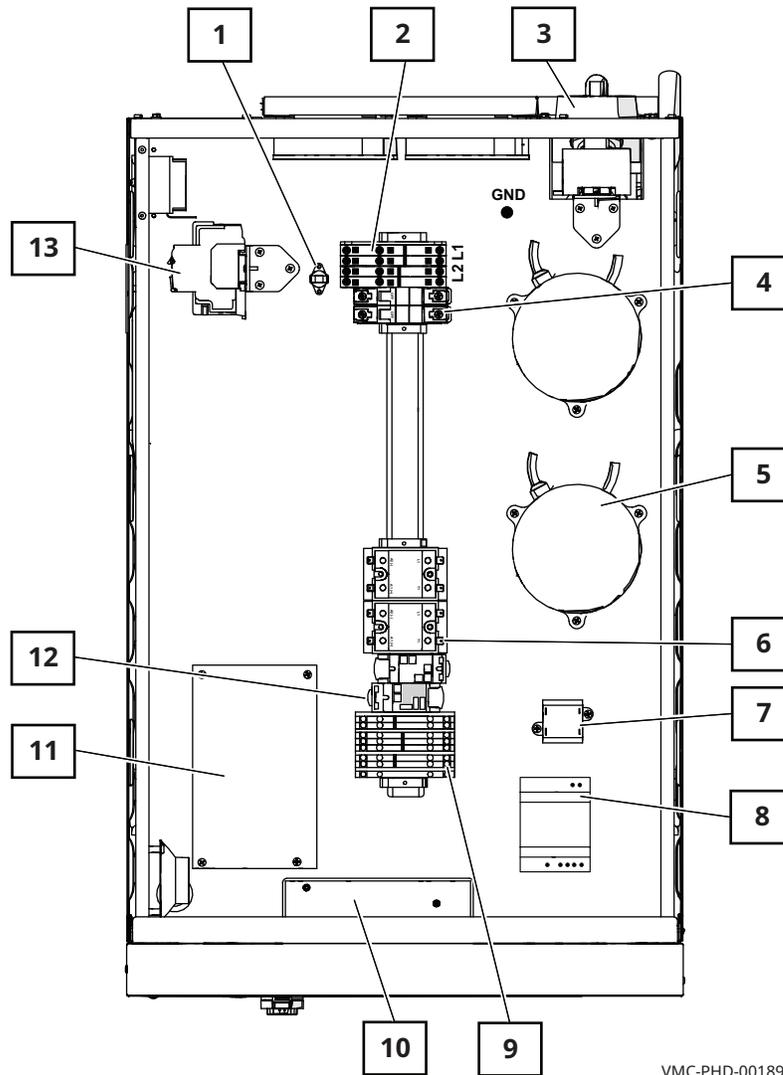
# H3—Electrical Component Identification



VMC-PHD-001895

Ref.	Description	Ref.	Description
1	Check fans indicator light switch	8	12VDC power supply
2	Terminal boards	9	Terminal boards
3	Main disconnect switch	10	Interface board
4	Circuit breakers (heating elements)	11	Control board
5	Variable frequency drive (VFD)	12	Relays
6	Solid state relay (SSR)	13	Circuit breakers (control)
7	12VAC transformer	—	—

# H2—Electrical Component Identification



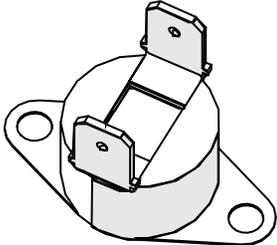
VMC-PHD-001899

Ref.	Description	Ref.	Description
1	Check fans indicator light switch	8	12VDC power supply
2	Terminal boards	9	Terminal boards
3	Main disconnect switch	10	Interface board
4	Circuit breakers (heating elements)	11	Control board
5	Variable frequency drive (VFD)	12	Relays
6	Solid state relay (SSR)	13	Circuit breakers (control)
7	12VAC transformer	—	—

# Electrical Components

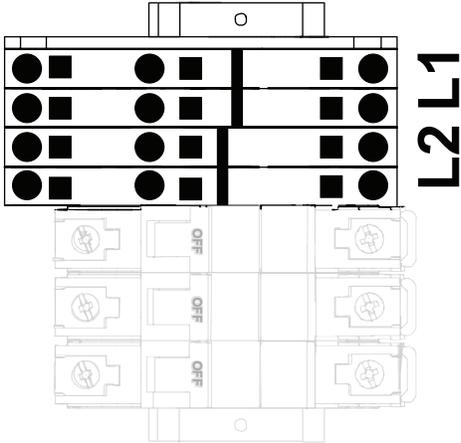
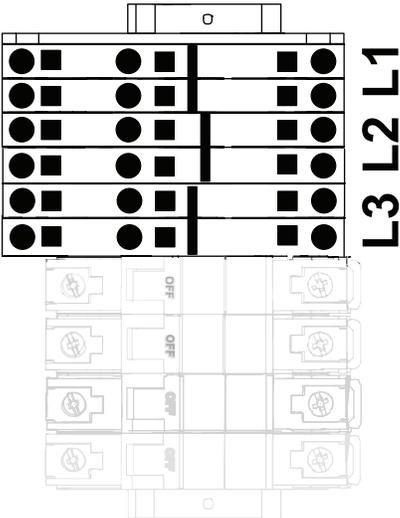
## Check Fans Indicator Light Switch

- The contacts close at or above 130°F / 54°C



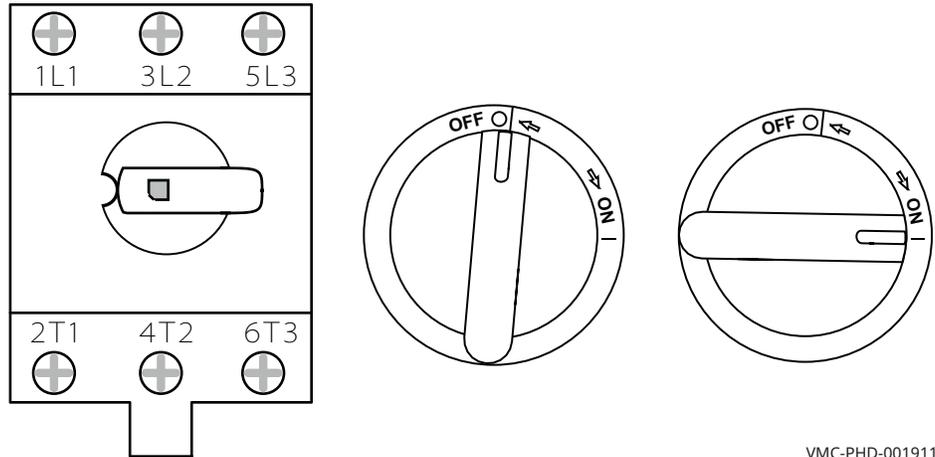
VMC-PHD-001903

## Terminal Boards



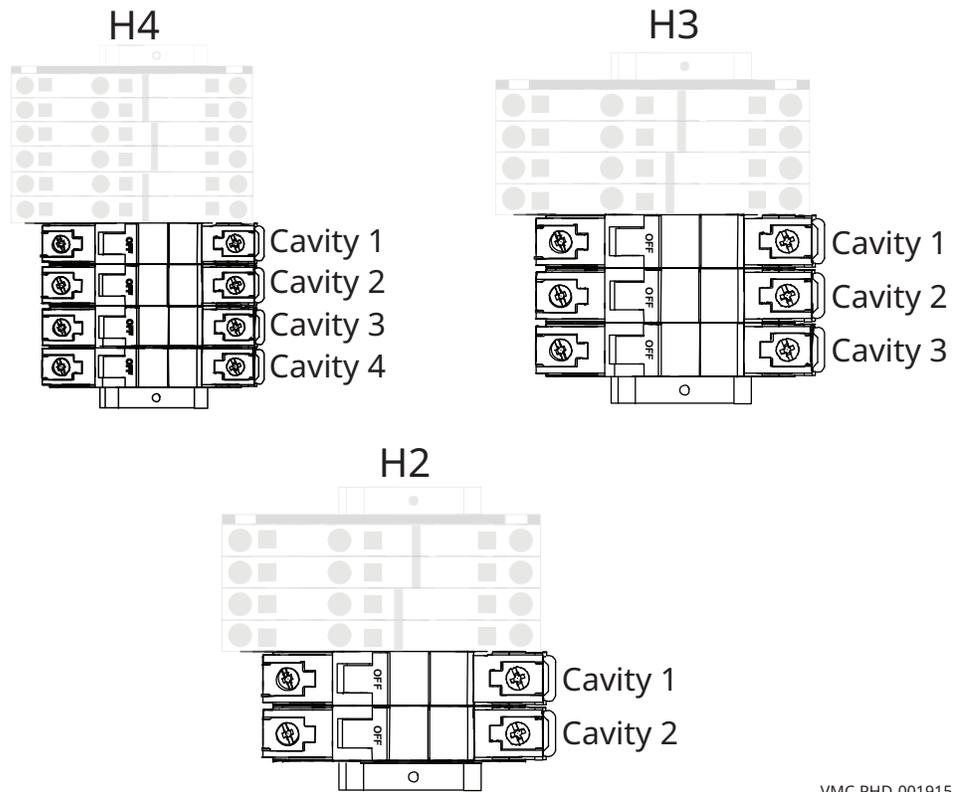
VMC-PHD-001907

## Main Disconnect Switch



VMC-PHD-001911

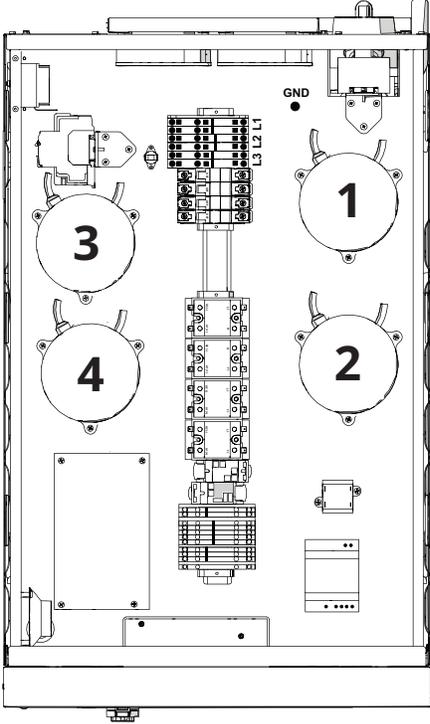
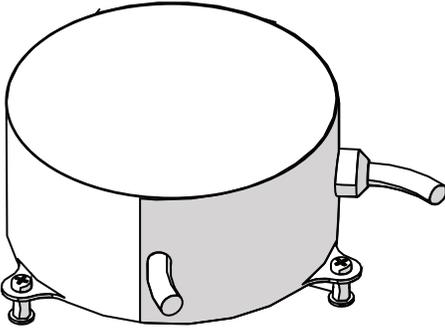
## Circuit Breakers (Heating Elements)



VMC-PHD-001915

# Variable Frequency Drive (VFD)

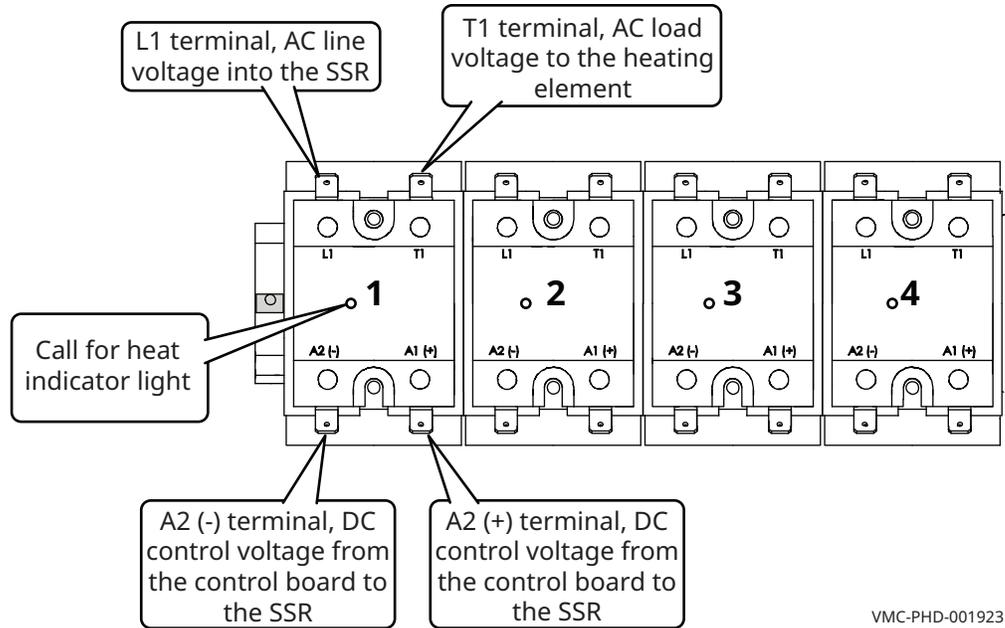
 **WARNING:** This equipment contains dangerous voltages. There are no serviceable parts inside of the VFD.



VMC-PHD-001919

# Solid State Relay (SSR)

Heater element control. One SSR for each cavity.

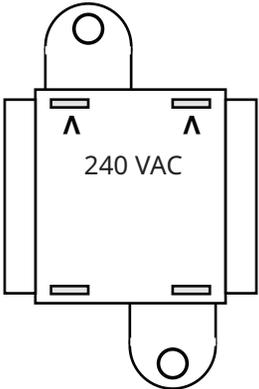


VMC-PHD-001923

# 12VAC Transformer

The transformer provides a voltage signal to the control board. The signal allows the control board to determine the incoming line voltage.

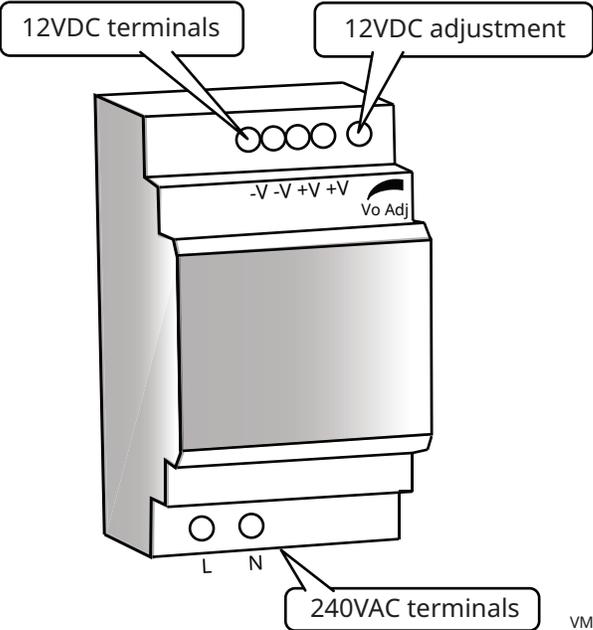
- Primary: 1700 Ohms
- Secondary: 6 Ohms



VMC-PHD-001927

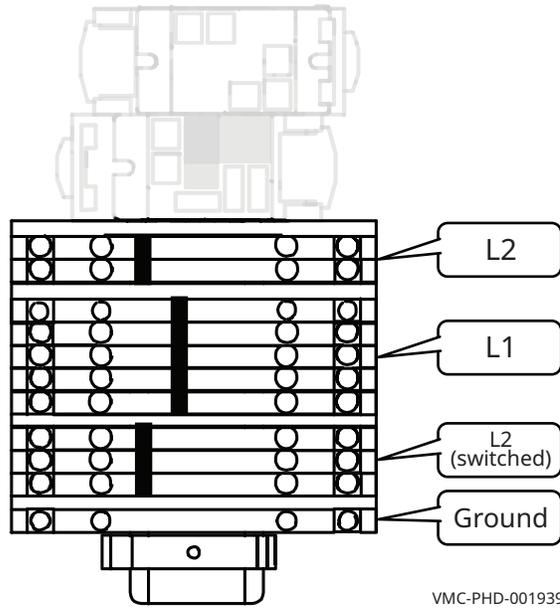
# 12VDC Power Supply

DC voltage to the control board and the ON/OFF switch.

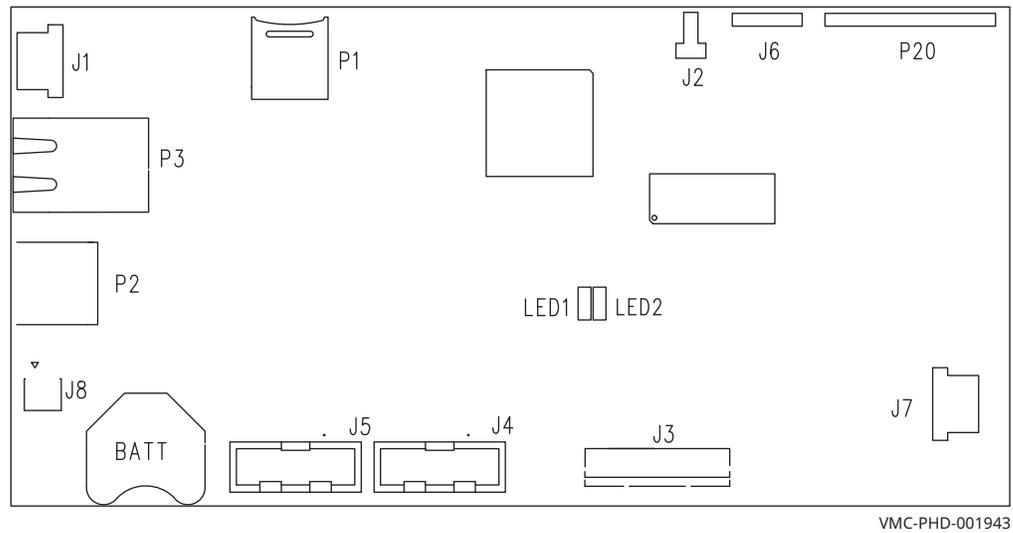


VMC-PHD-001935

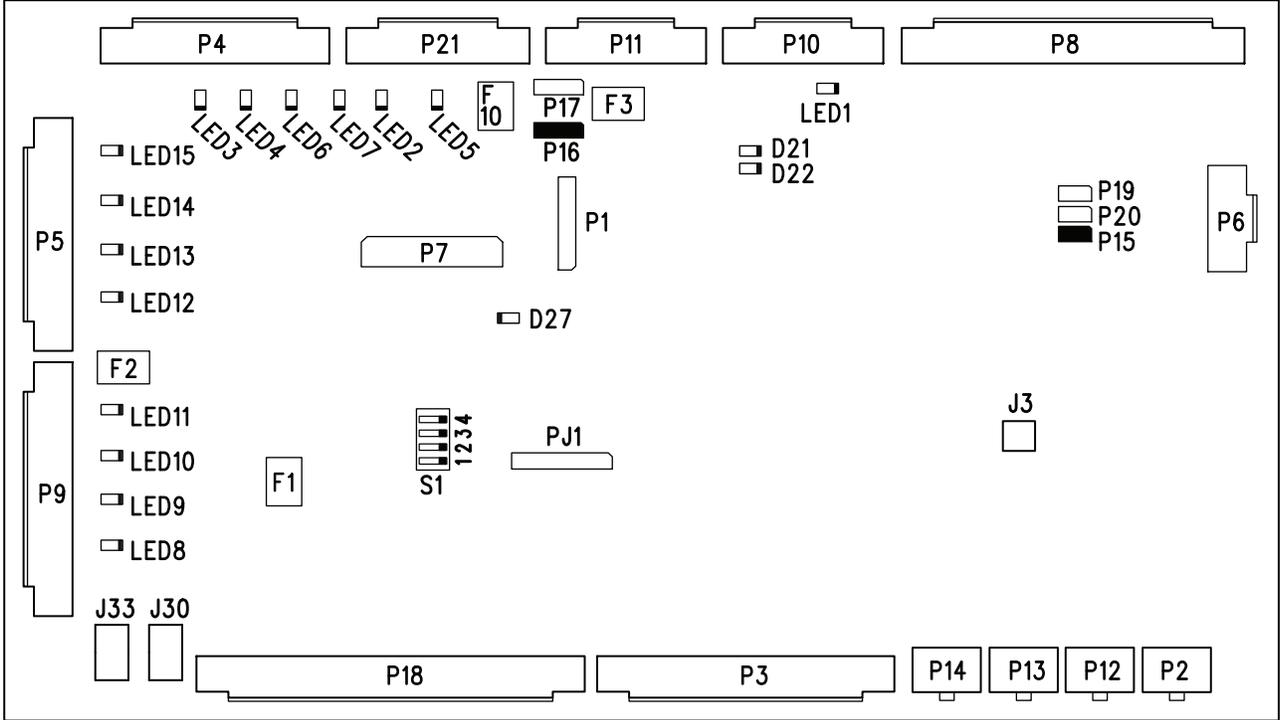
## Terminal Boards



## Interface Board

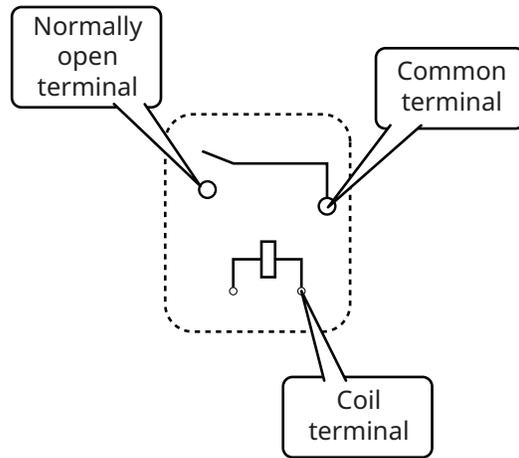
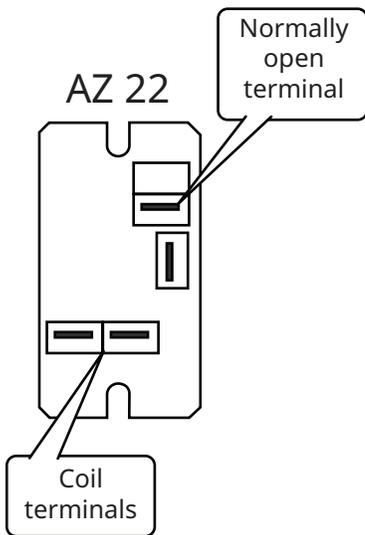
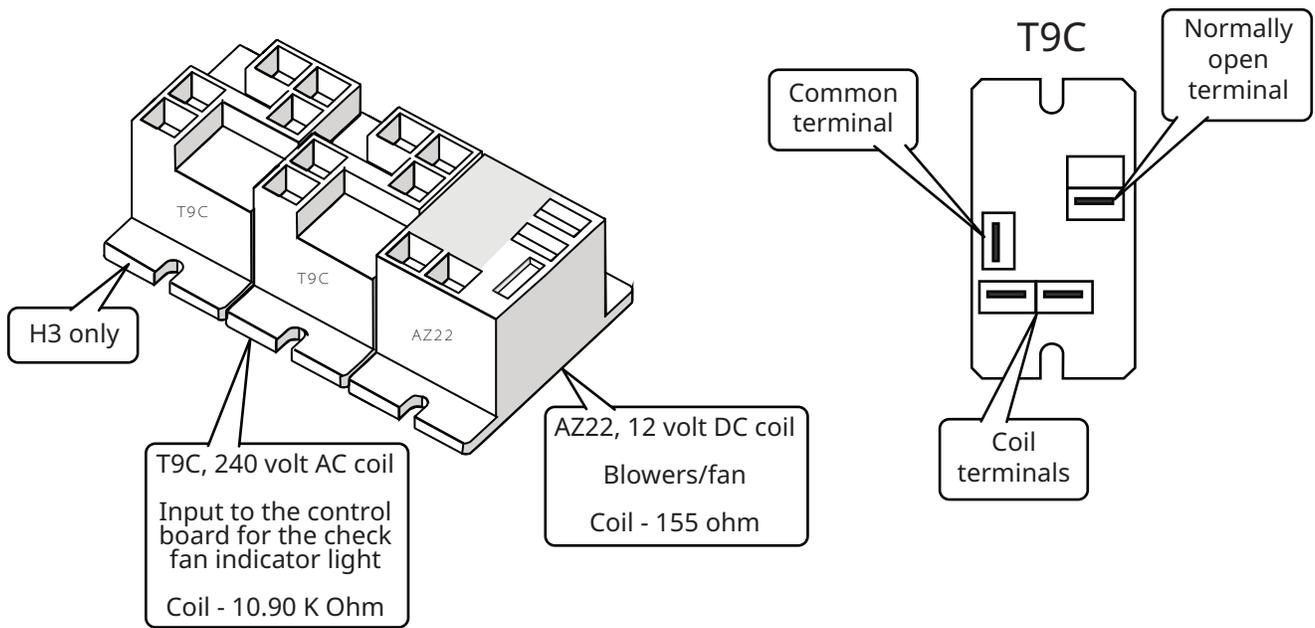


# Control Board



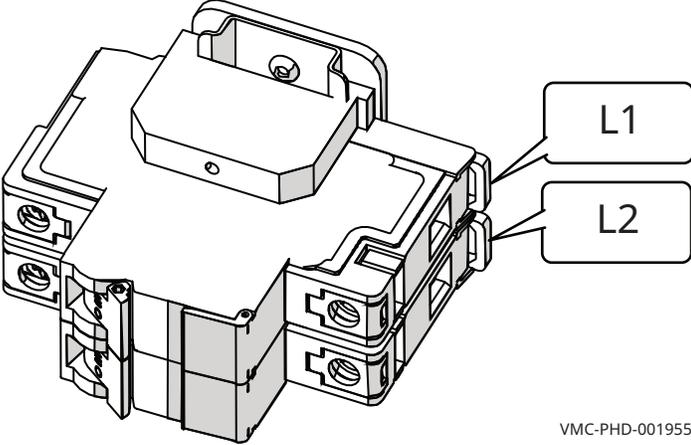
VMC-PHD-001947

# Relays



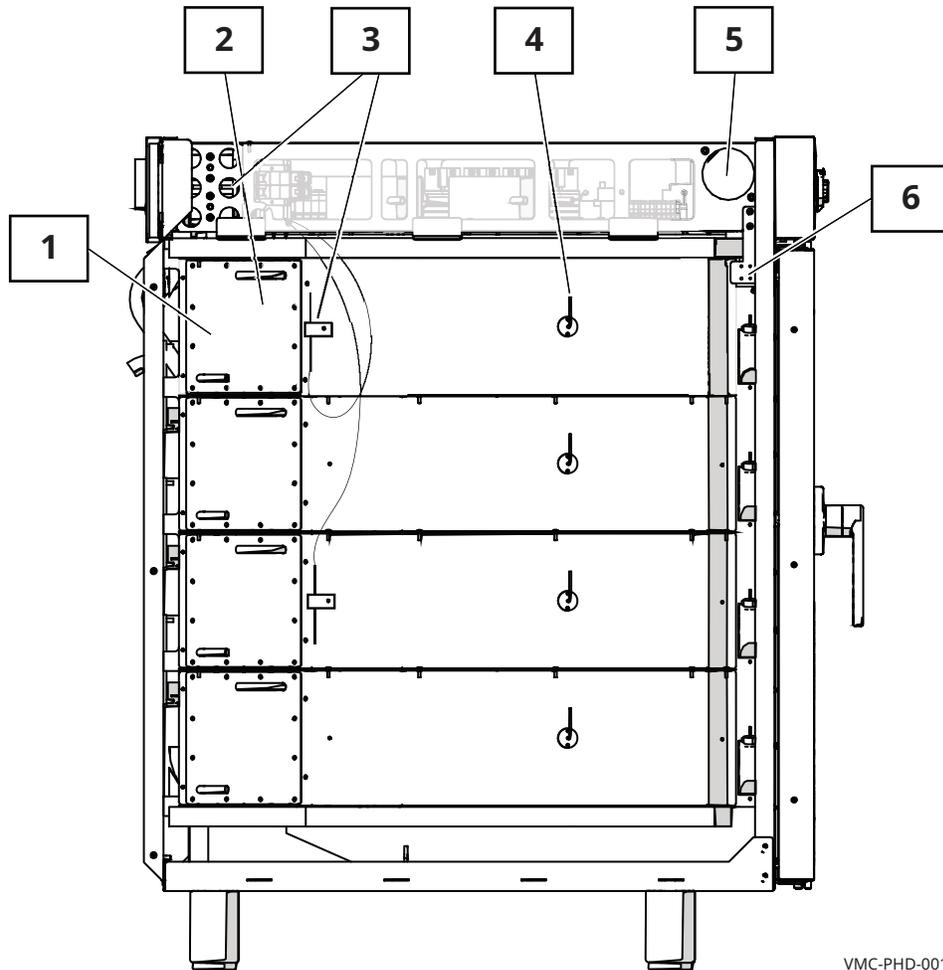
VMC-PHD-001951

# Circuit Breakers (Control)



VMC-PHD-001955

# Left Service Panel Identification

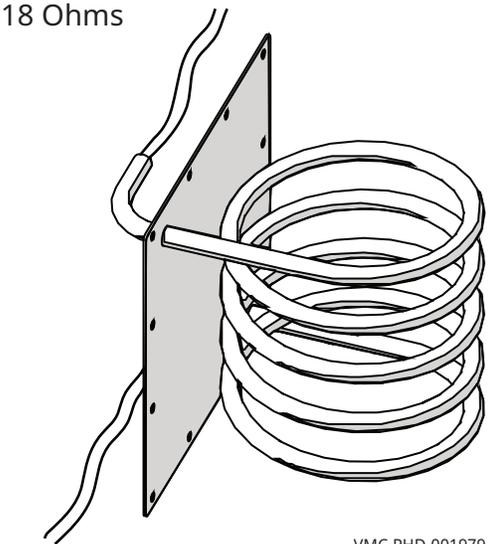


VMC-PHD-001963

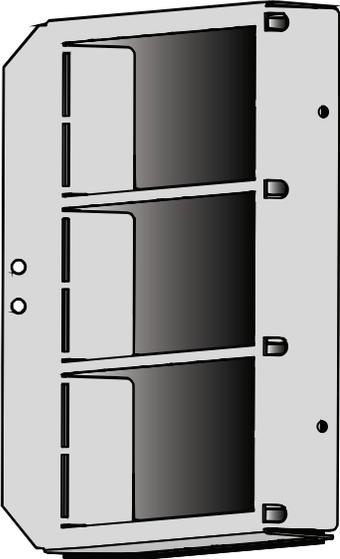
Ref.	Description
1	Cavity heating element
2	Catalyst
3	High limits
4	Cavity air temperature probe
5	Speaker
6	Door Switch

# Left Service Panel Components

## Cavity Heating Element



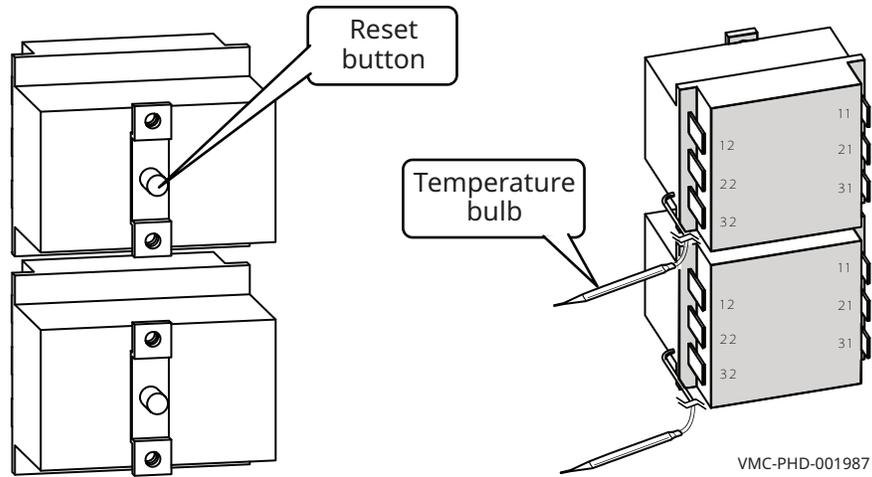
## Catalyst



# High Limits

Resettable

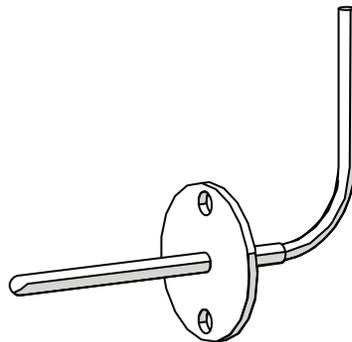
Contacts open at 572°F / 300°C



# Cavity Air Temperature Probe

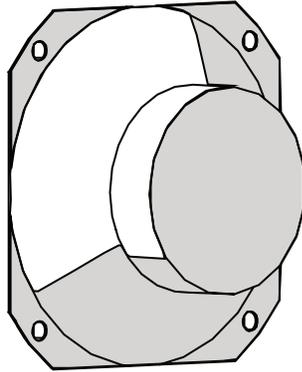
K Type Thermocouple

100°C	4.096 MV	100°F	1.521 MV
200°C	8.138 MV	200°F	3.820 MV
300°C	12.209 MV	300°F	6.094 MV



## Speaker

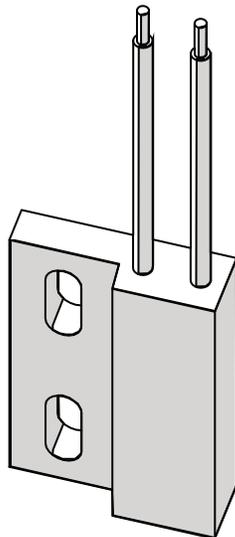
8 Ohms



VMC-PHD-001995

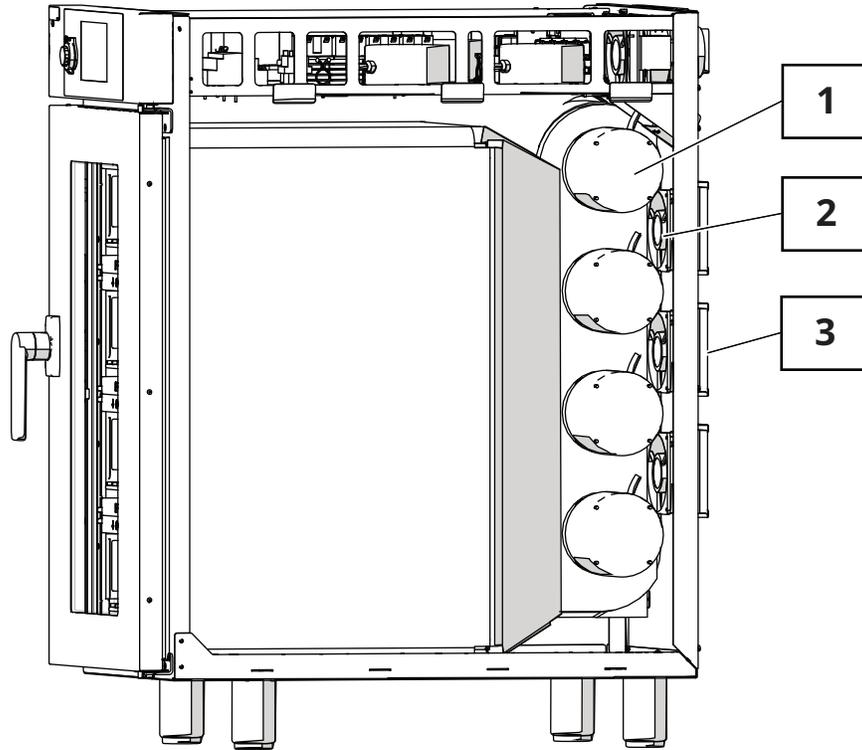
## Door Switch

- **Door closed** - 0 Ohms - 0 VDC across terminals 1 and 2 of connector P3 on the control board.
- **Door open** - Infinite Ohms - 8 VDC across terminals 1 and 2 of connector P3 on the control board.



VMC-PHD-001999

# Right Service Panel Identification

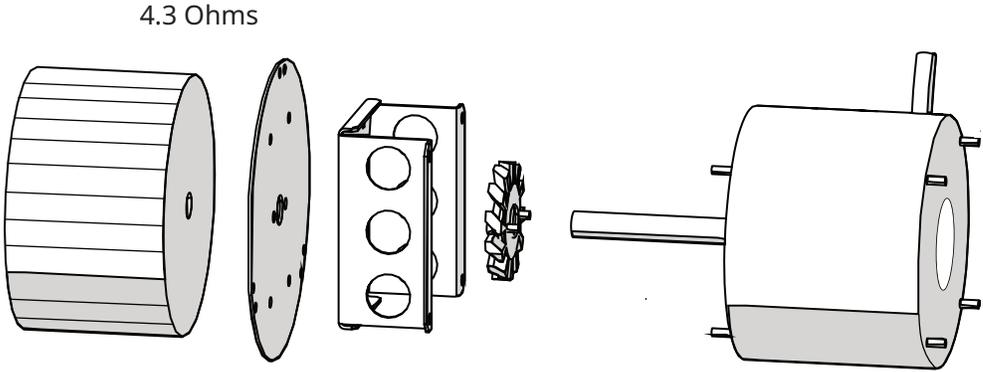


VMC-PHD-002003

Ref.	Description
1	Blower motor
2	Fans
3	Filter—cooling air

# Right Service Panel Components

## Blower Motor



VMC-PHD-002007

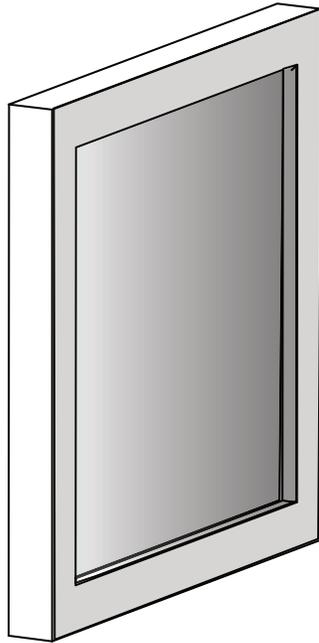
## Fans

- Impedance protected
- 240 Volt
- 581 Ohm



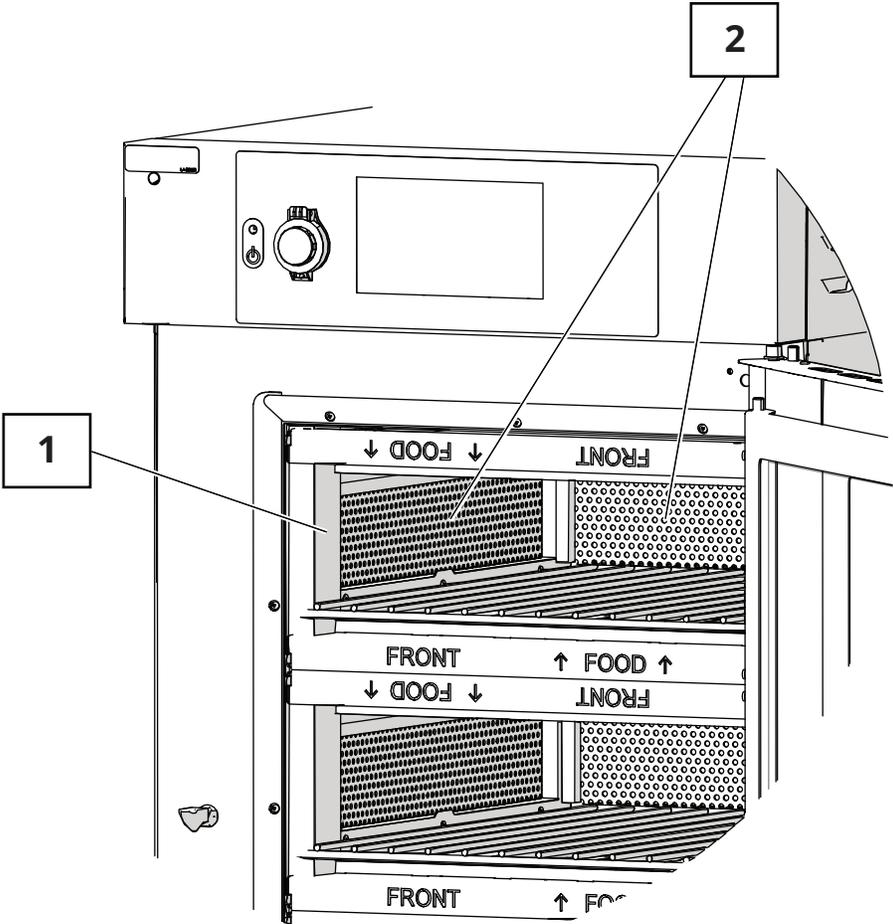
VMC-PHD-002011

## Filter—Cooling Air



VMC-PHD-002015

# Internal Components Identification



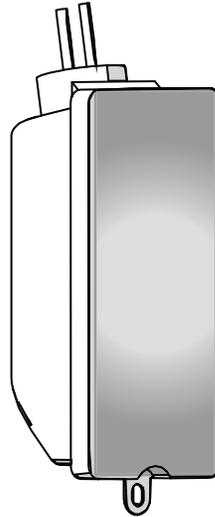
VMC-PHD-002019

Ref.	Description
1	Cavity light
2	Filters

# Internal Components

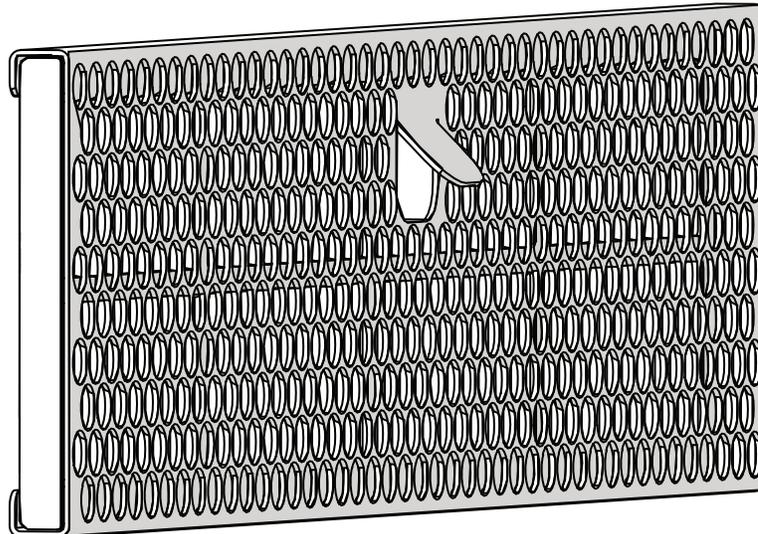
## Cavity Light

12 VDC



VMC-PHD-002023

## Filters



VMC-PHD-002027

# Standby State

## Background

The main disconnect switch is in the ON position, the display is not illuminated.



**CAUTION:** Voltage is present at the following components:

- Distribution blocks
- Circuit breakers
- Heater elements, one wire on each element
- Check indicator light
- Thermal switch for the check fan indicator light
- Transformer
- Control board power supply
- Cavity high limit switches

Each cavity will transition if the cavity temperature is greater than 170°F to the cool down state.

Component	State
Control panel	OFF
LCD backlight	OFF
Heaters	OFF
Cooling fans	OFF
Blower	OFF
Buzzer / speaker	OFF

# On State

## Background

The main disconnect switch is in the ON position, the display is illuminated. The logo will appear along with the firmware versions on the display. After five seconds, the LCD will display the home screen.



**CAUTION:** Voltage is present at the following components:

- Distribution blocks
- Circuit breakers
- Heater elements, one wire on each element
- Check indicator light
- Thermal switch for the check fan indicator light
- Transformer
- Control board power supply
- Cavity high limit switches

Component	State
Control panel	ON
LCD backlight	ON
Heaters	OFF
Cooling fans	OFF
Blower	OFF
Buzzer / speaker	OFF

# Warm-Up State

## Background

Pressing “Warm Up” will automatically begin warming all cavities up to their pre-programmed default temperature setpoints. It should take approximately 10-15 minutes for the oven to reach temperature.

The “Temps” icon in the User Configuration screen allows the user to change the individual cavity preheat temperatures.

The cavity blower fans are driven at 70% rotation speed by the VFDs.

Component	State
Control panel	Countdown
LCD backlight	ON
Heaters	ON
Cooling fans	ON
Blower	ON, at 70%
Buzzer / speaker	OFF

# Idle State

---

## Background

As each cavity reaches its temperature setpoint, it will start a 5 minute countdown to allow the cavity temperature to stabilize.

The cavity blower fans are driven at 30% rotation speed by the VFDs.

Component	State
Control panel	ON
LCD backlight	ON
Heaters	ON, maintaining the temperature setpoint requirements
Cooling fans	ON
Blower	ON, at 30%
Buzzer / speaker	OFF

# Cooking State

## Background

Each cavity is independently controlled. The current cavity is indicated by the red check mark on the display. Opening the door will pause the cook. The oven will keep track of how long the door is open and automatically add time to any current cooks to compensate for the temperature loss.

The cavity blower fans are driven at rotation speed by the VFDs to meet the requirements of the cook setting.

Component	State
Control panel	ON
LCD backlight	ON
Heaters	ON, maintaining the cooking temperature setpoint
Cooling fans	ON
Blower	ON, based on cook setting requirements, minimum 10%
Buzzer / speaker	OFF
Cavity light	User controlled

# Cooking State Complete

## Background

At the end of the cook, the oven buzzer/speaker will sound an alert and the cavity light will flash.

The cavity blower fans are driven at 30% rotation speed by the VFDs.

Component	State
Control panel	ON
LCD backlight	ON
Heaters	ON, maintaining the temperature setpoint
Cooling fans	ON
Blower	ON, at 30%
Buzzer / speaker	Beeps until the door is opened
Cavity light	Blinks until the door is opened

# Rapid ON/OFF State

## Background

Each cavity will transition to the rapid ON/OFF state if the cavity temperature is greater than 20°F away from the temperature setpoint.

The cavity blower fans are driven at 70% rotation speed by the VFDs.

Component	State
Control panel	ON
LCD backlight	ON
Heaters	ON, cavity temperature is > 20°F below the temperature setpoint OFF, cavity temperature is > 20°F above the temperature setpoint
Cooling fans	ON
Blower	ON, at 70%
Buzzer / speaker	OFF
Cavity light	Blinks until the door is opened

# Cool Down State

---

## Background

The oven will automatically turn on the blowers for the cool down process.

The oven will take roughly 2 hours to cool down to a cavity temperature of 140°F with the door open.

The screen will display a cool down prompt and ask for the door to be opened. The oven will shut down once the cool down is complete.

The cavity blower fans are driven at 50% rotation speed by the VFDs.

Component	State
Control panel	ON
LCD backlight	ON
Heaters	OFF
Cooling fans	ON
Blower	ON, at 50%
Buzzer / speaker	OFF

# Cool Down State Complete

---

## Background

The oven transitions to the OFF state after 20 minutes.

Component	State
Control panel	ON
LCD backlight	ON
Heaters	OFF
Cooling fans	OFF
Blower	OFF
Buzzer / speaker	OFF



# Maintenance Schedule

## Daily

Before cleaning, ensure the oven is cooled down and off (inside of cavity will be 140°F or less).

Remove any spills with disposable paper wipes or a damp cloth.

Wipe the outside of the oven with a damp cloth.

Use stainless steel cleaner on the outside of the oven for a nice shine to finish off daily cleaning activities.

## Weekly

Before cleaning, ensure the oven is cooled down to a maximum of 140°F and turned off.

Carefully spray the approved oven cleaner onto any external areas affected by grease.

Do not spray the cleaner directly into the fan openings located in the rear of the oven.

Use a non-abrasive scrub pad/sponge to clean the affected areas.

## Monthly

Before cleaning, ensure the oven is cooled down to a maximum of 140°F and turned off.

Open the oven door so that the inside of the cavity is exposed.

Remove jet plates and cook racks.

Spray the approved oven cleaner onto the jet plates.

Allow the cleaner to sit for 3-5 minutes.

Apply pressure and use a scrub pad to wipe away grease residue.

Use the jet plate cleaning procedure on the visible parts of the cavity.

**WARNING:** Using improper cleaning procedures could damage the catalyst and void the warranty.

Place clean jet plates back into position. Take care to ensure the plates are not installed upside down. The nozzles on the plate should be pointing toward the food of their respective cavity. Shut and latch the front door.

Inspect and clean the cooling fan filters.

Inspect and clean the cavity filters.

## Yearly

Must be performed by a qualified professional.

Check and tighten wire connections on the disconnect switch, and internal circuit breakers.

Inspect oven for grease build up and clean as necessary.

Clean and check operation of the cooling fans.

From the service screen, record the amp draw on the work order of all elements individually.

Record the incoming voltage on the work order.

# How to Clean the Oven

## Caution



**CAUTION:** Burn hazard. The oven, utensils, and racks become hot during use.

Allow the oven, utensils, and racks to cool before cleaning.  
Wear eye protection and hand protection when cleaning.

## NOTICE

Using improper cleaning procedures could damage the catalyst and void the warranty.

Do not spray the catalyst with water or cleaning solution.

Do not spray cleaner into the oven while the recirculation blower is running.

Only use spray cleaner when the electric power is completely removed from the oven.

Do not use steel pads, wire brushes, or scrapers when cleaning.

## Before you begin

Make sure that the oven is turned off and cool (inside cavity is less than 140°F).

## Daily cleaning procedure

To clean the oven daily, do the following.

Step	Action
1.	<b>Remove</b> any spills with disposable paper wipes or a damp cloth.
2.	<b>Wipe</b> the outside of the oven with a damp cloth.
3.	<b>Wipe</b> the outside of the oven with a stainless steel cleaner.

*Continued on next page*

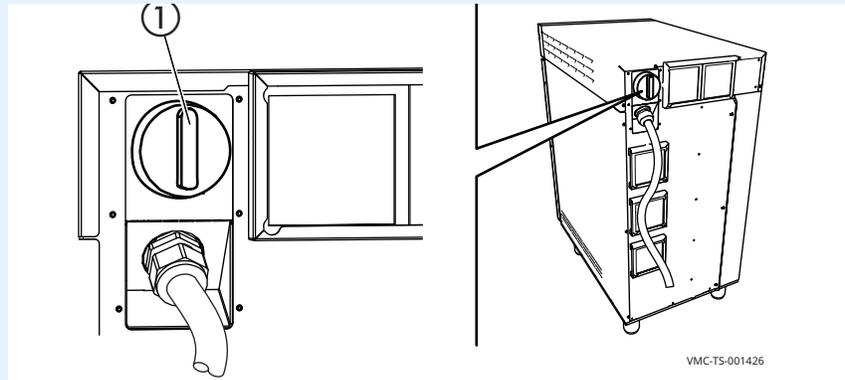
Continued from previous page

**Weekly cleaning procedure**

To clean the oven weekly, do the following.

**Step Action**

1. **Set** the main disconnect switch ① to the OFF position.



2. **Spray** the exterior areas of the oven with EcoLab Greaselift or Chemco Dirt Buster III oven cleaner.

**NOTICE** Do not spray directly into the fan openings on the rear of the oven.  
 Use only non-caustic cleaners.  
 Do not use cleaners that contain sodium hydroxide (lye) or phosphorus.

3. **Wipe** the exterior areas of the oven with a non-abrasive nylon scrub pad.

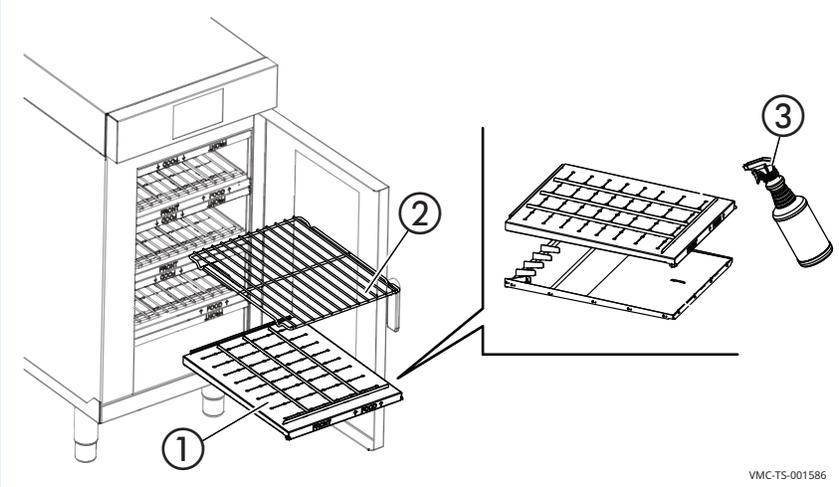
4. **Set** the main disconnect switch ① to the ON position if complete.

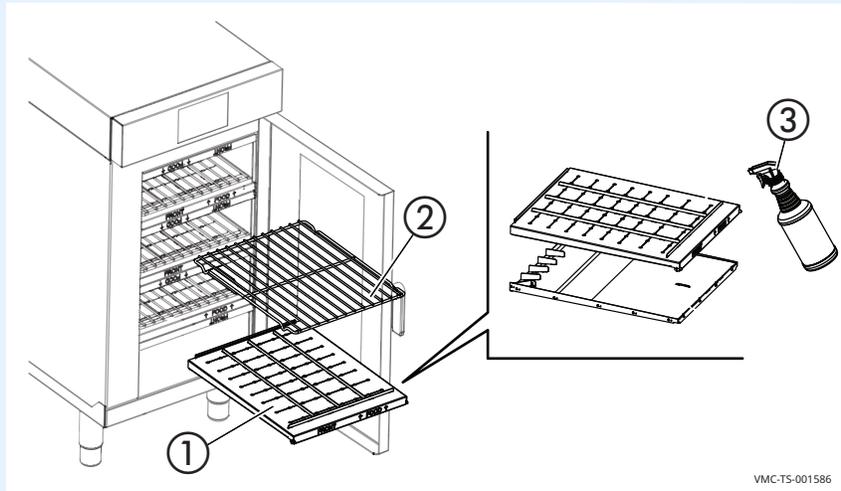
Continued on next page

Continued from previous page

## Monthly cleaning procedure

To clean the oven monthly, do the following.

Step	Action
1.	<p><b>Set</b> the main disconnect switch to the OFF position.</p> <p><b>Remove</b> the jet plates ① and cook racks ②.</p>
<p> <b>CAUTION:</b> Personal injury hazard. The jet plates may have sharp edges. Use hand protection when handling the jet plates.</p>	
	
2.	<p><b>Separate</b> the jet plates.</p> <p><b>Spray</b> the jet plates with EcoLab Greaselift or Chemco Dirt Buster III ③ oven cleaner. Let the cleaner work for 3-5 minutes.</p>
3.	<p><b>Wipe</b> the jet plates with a non-abrasive nylon scrub pad.</p>
4.	<p><b>Re-install</b> the jet plates and cook racks.</p>
<p> <b>NOTE:</b> Make sure the jet plates are installed correctly. The nozzles on the jet plates should be pointing towards the food.</p>	



VMC-TS-001586

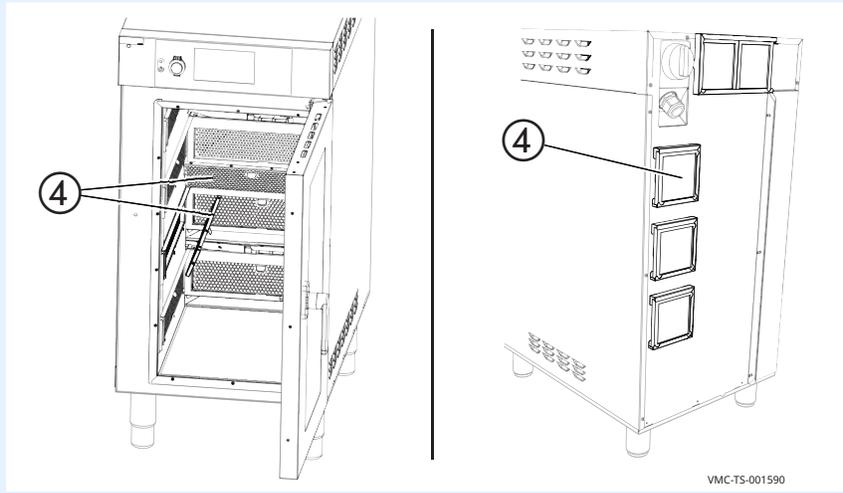


Continued on next page

Continued from previous page

**Cleaning the filters**

5. **Remove** the filters ④.



6. **Clean** the filters in a dishwasher.

**NOTE:** Replace the filters at least once a year.

7. **Re-install** the filters.
8. **Set** the main disconnect switch to the ON position if complete.

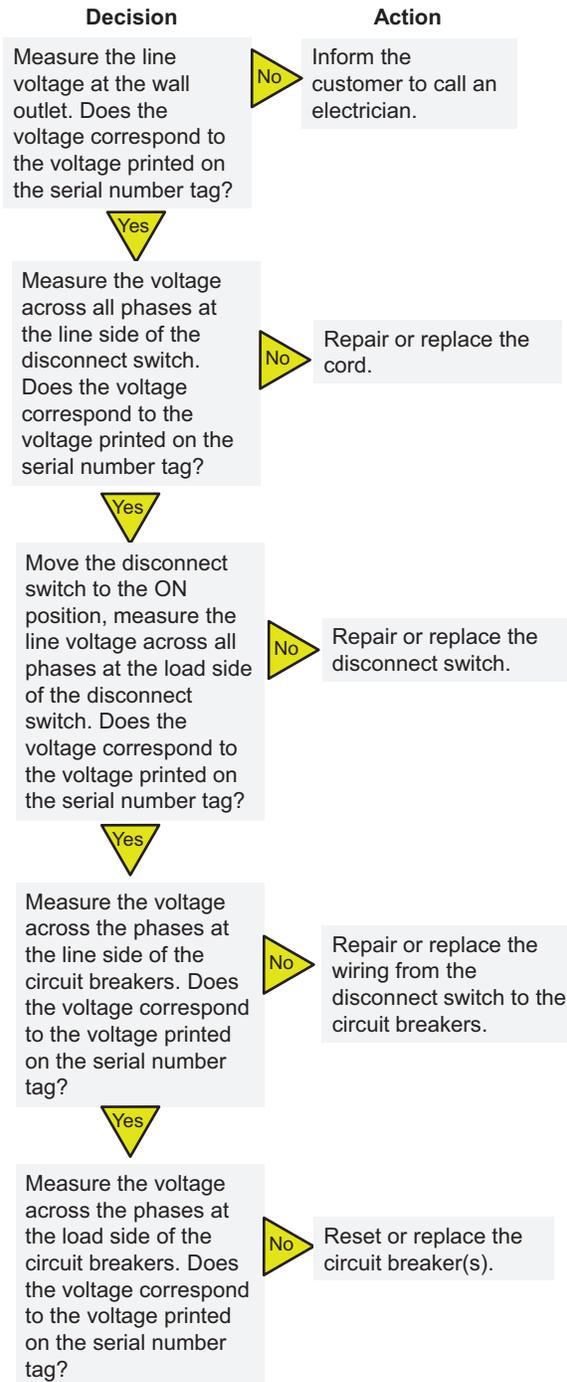
**Result**

The oven is now clean.



# The Oven will not Power Up

Before troubleshooting a will not power up condition, remove the circuit breaker service panel on the left side of the oven. Move the circuit breakers to the OFF position. Then, move the circuit breakers to the ON position.



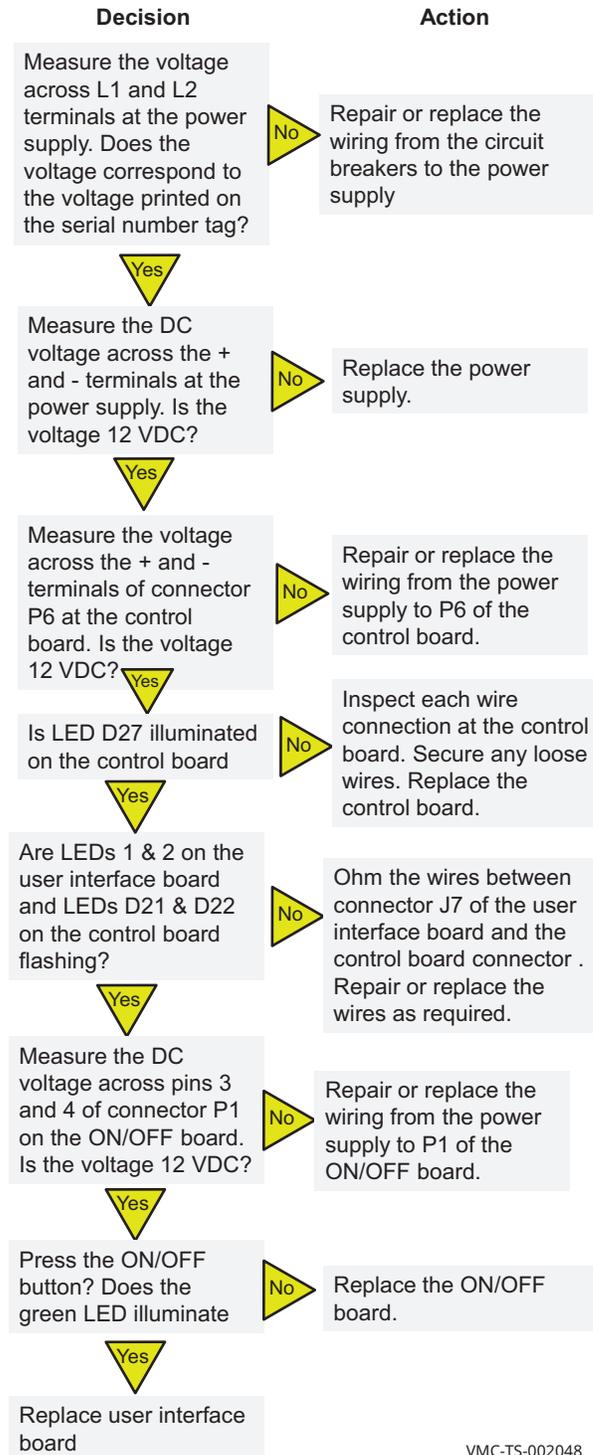
VMC-TS-002044

Continued on next page

TROUBLESHOOTING

Continued from previous page

# The Oven will not Power Up Cont.

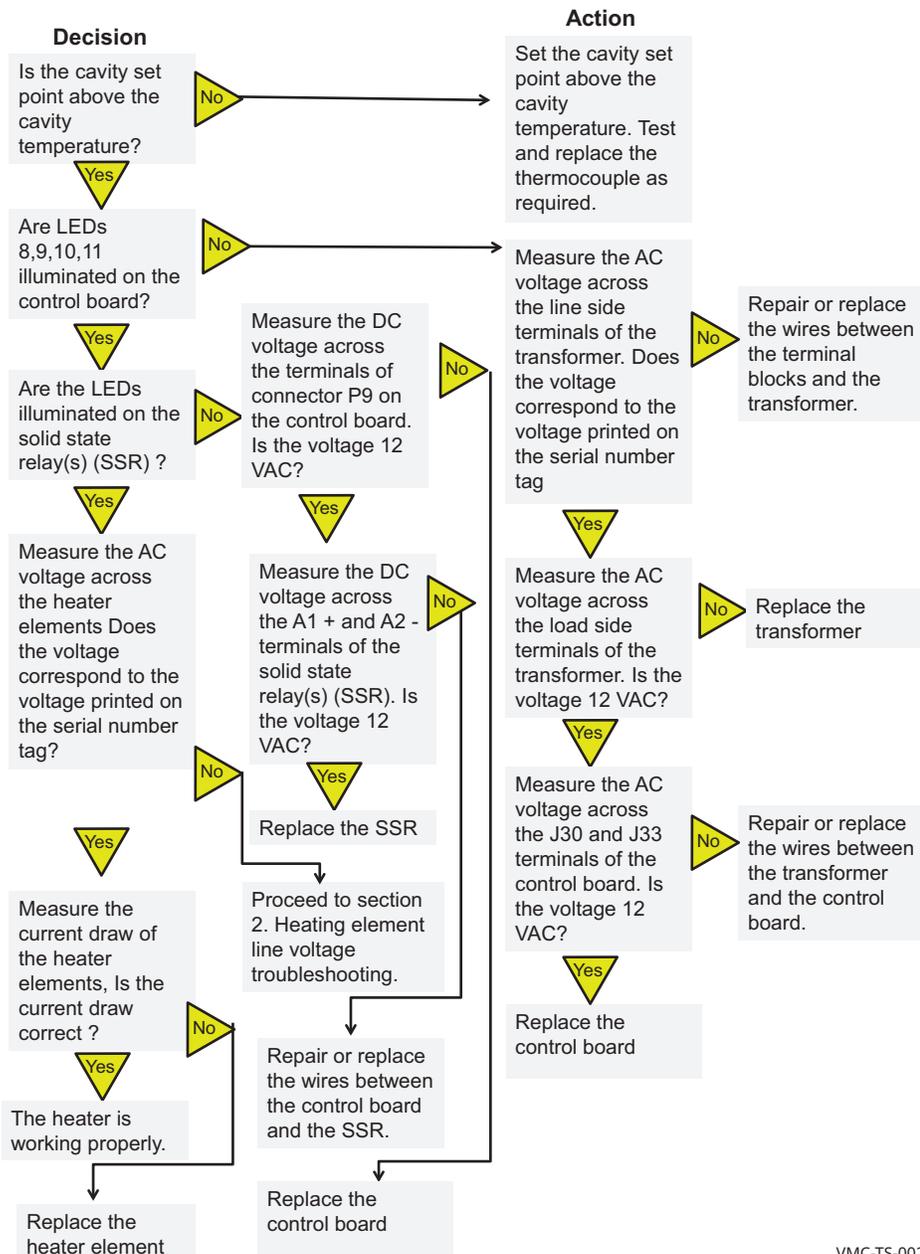


VMC-TS-002048

# The Cavities will not Heat

Before troubleshooting a no heat condition, locate the temperature high limits and reset any tripped high limit as required. Locate the circuit breakers and reset any tripped circuit breaker as required. This troubleshooting is divided into two sections, section 1. Heating element control voltage troubleshooting, section 2. Heating element line voltage troubleshooting. Put the oven into a heating mode.

## 1. Heating element control voltage troubleshooting



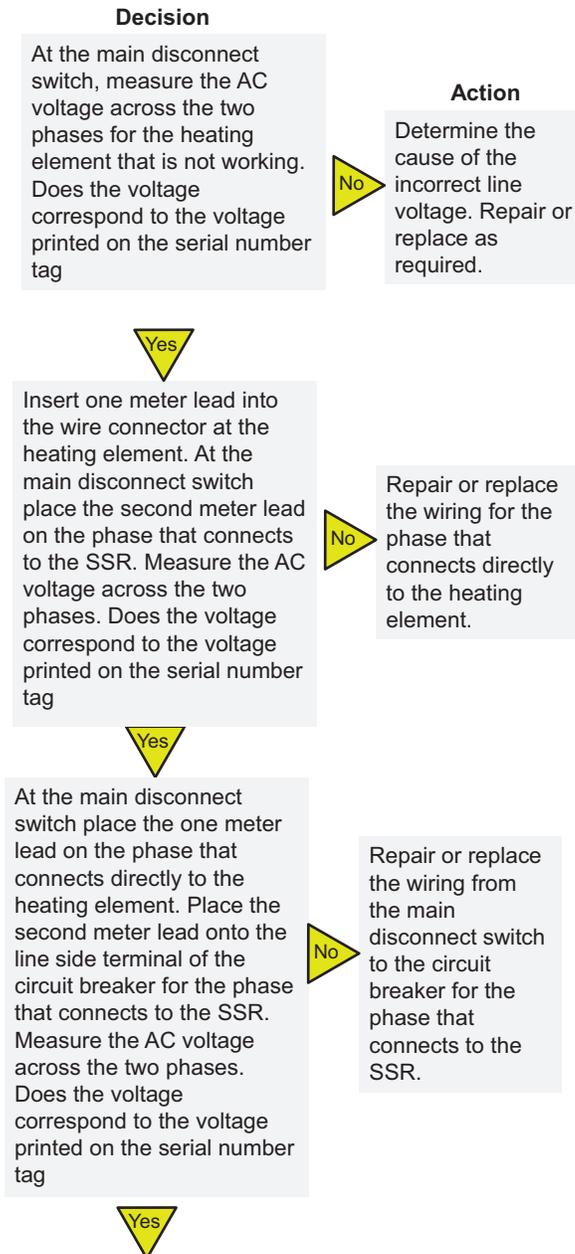
VMC-TS-002052

Continued on next page

Continued from previous page

The heating elements require two phases of line voltage to operate. One phase originates at the main disconnect switch and is connected through a terminal board and then directly to the heating element. The second phase originates at the main disconnect switch and is connected through a terminal board, circuit breaker, cavity high limit and then to a solid state relay (SSR). The SSR controls the on time of the second phase of line voltage to the heating element. At the main disconnect switch determine which phase connects directly to the heating element. At the main disconnect switch determine which phase connects to the L1 terminal of the SSR.

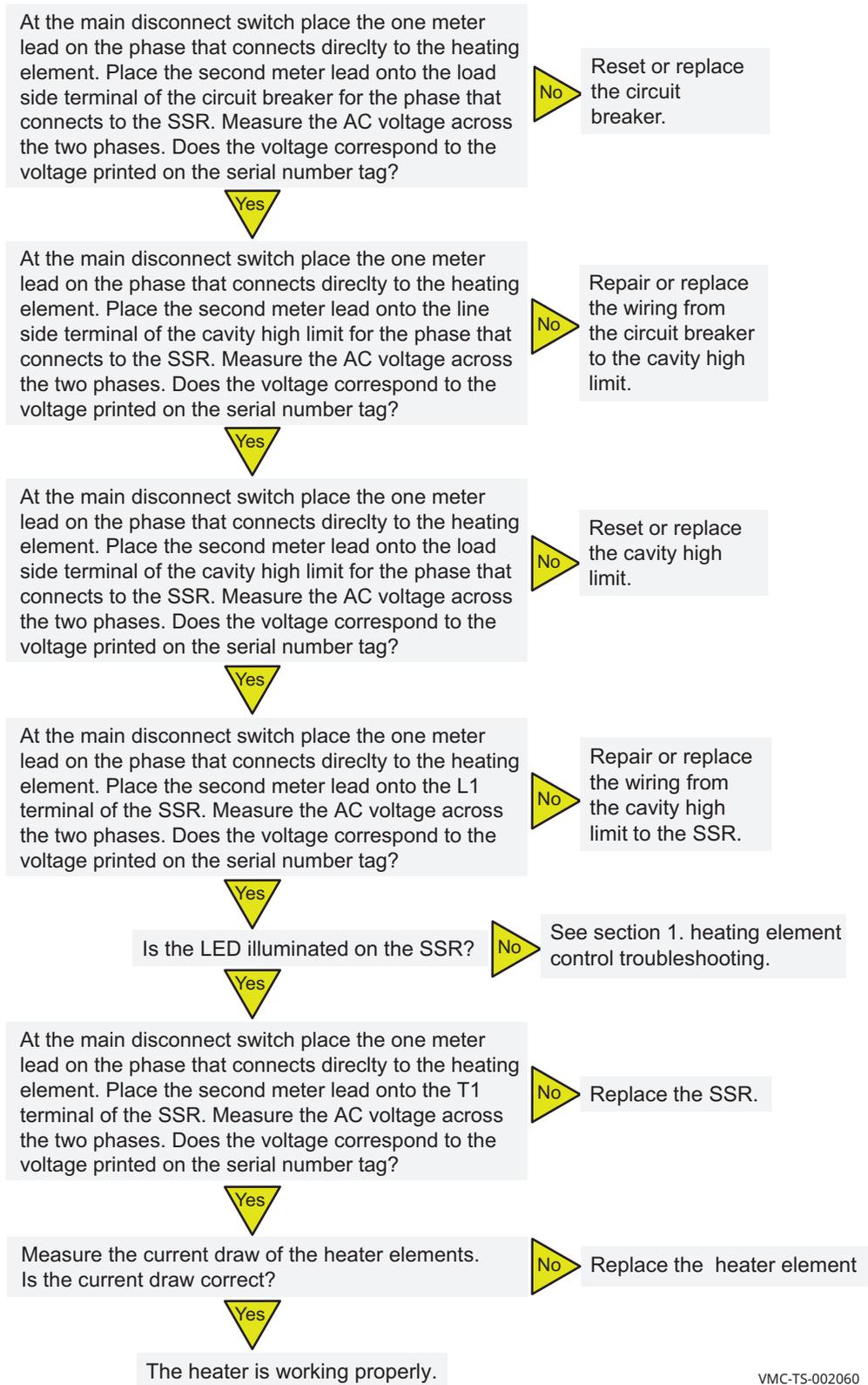
## 2. Heating element line voltage troubleshooting



VMC-TS-002056

Continued on next page

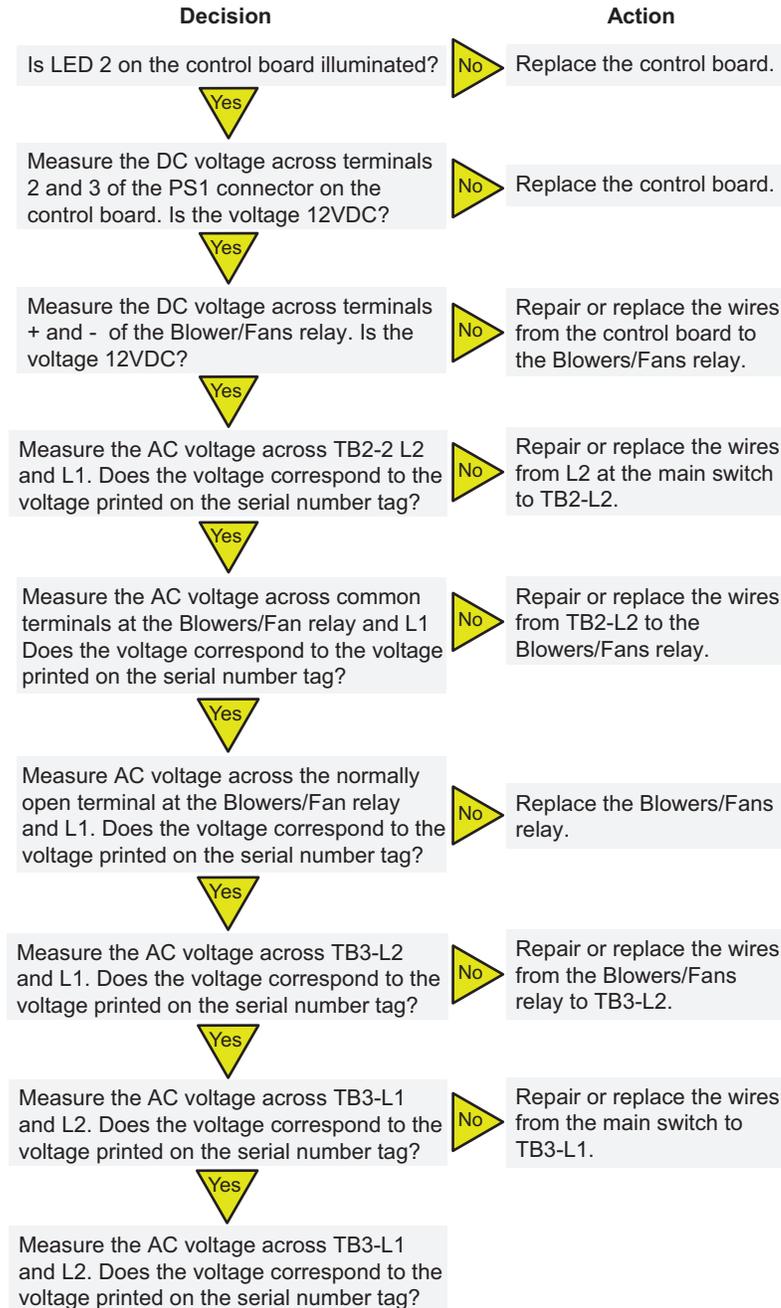
Continued from previous page



VMC-TS-002060

# Cavity Blower Fans Inoperable

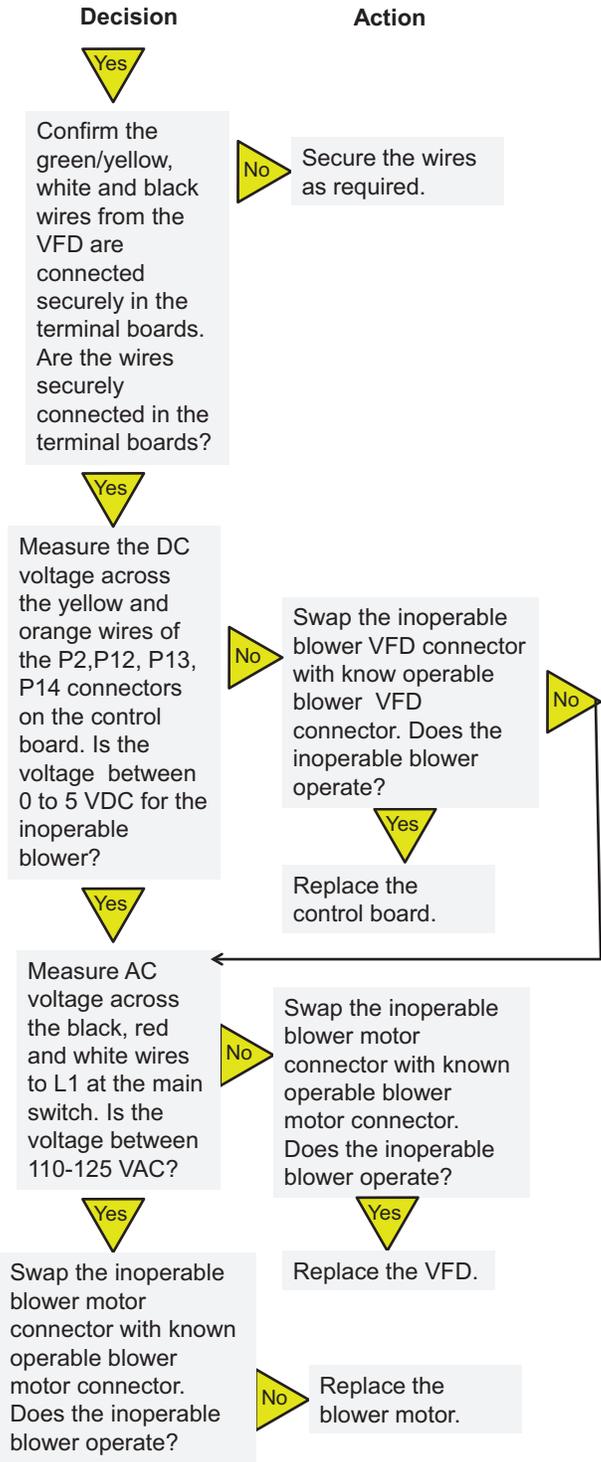
Before troubleshooting an inoperable blower fan, the cavity(ies) must be in a cook or warm up mode. Locate the circuit breakers and reset any tripped circuit breaker as required.



VMC-TS-002068

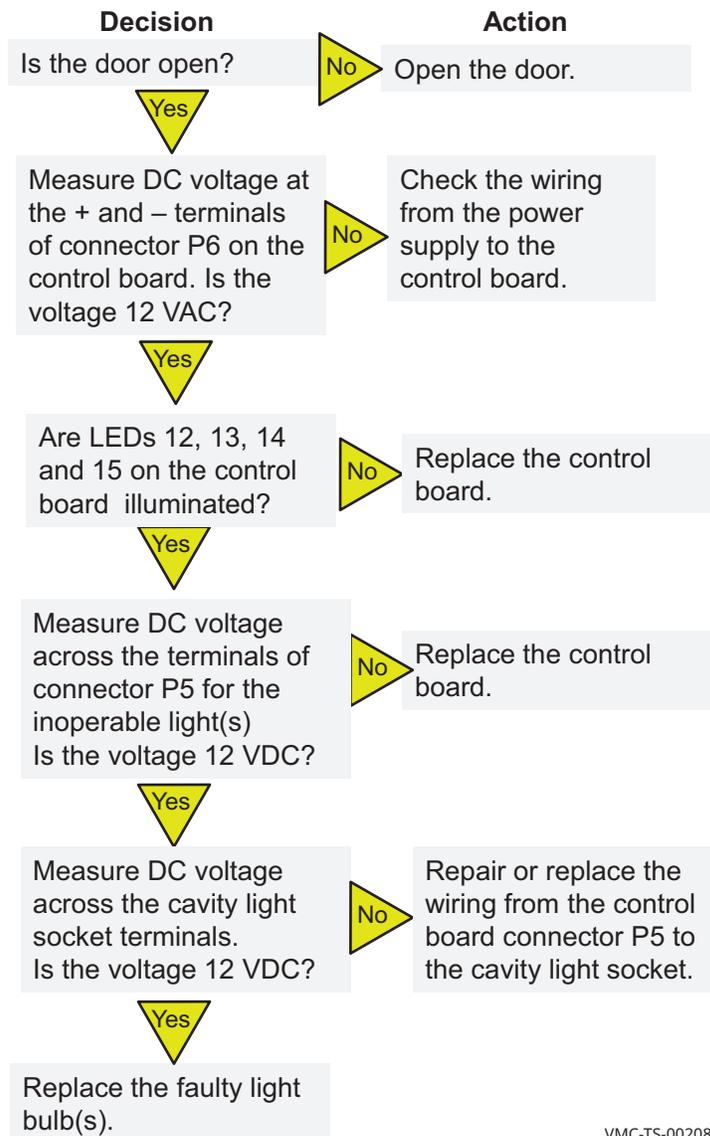
Continued on next page

Continued from previous page



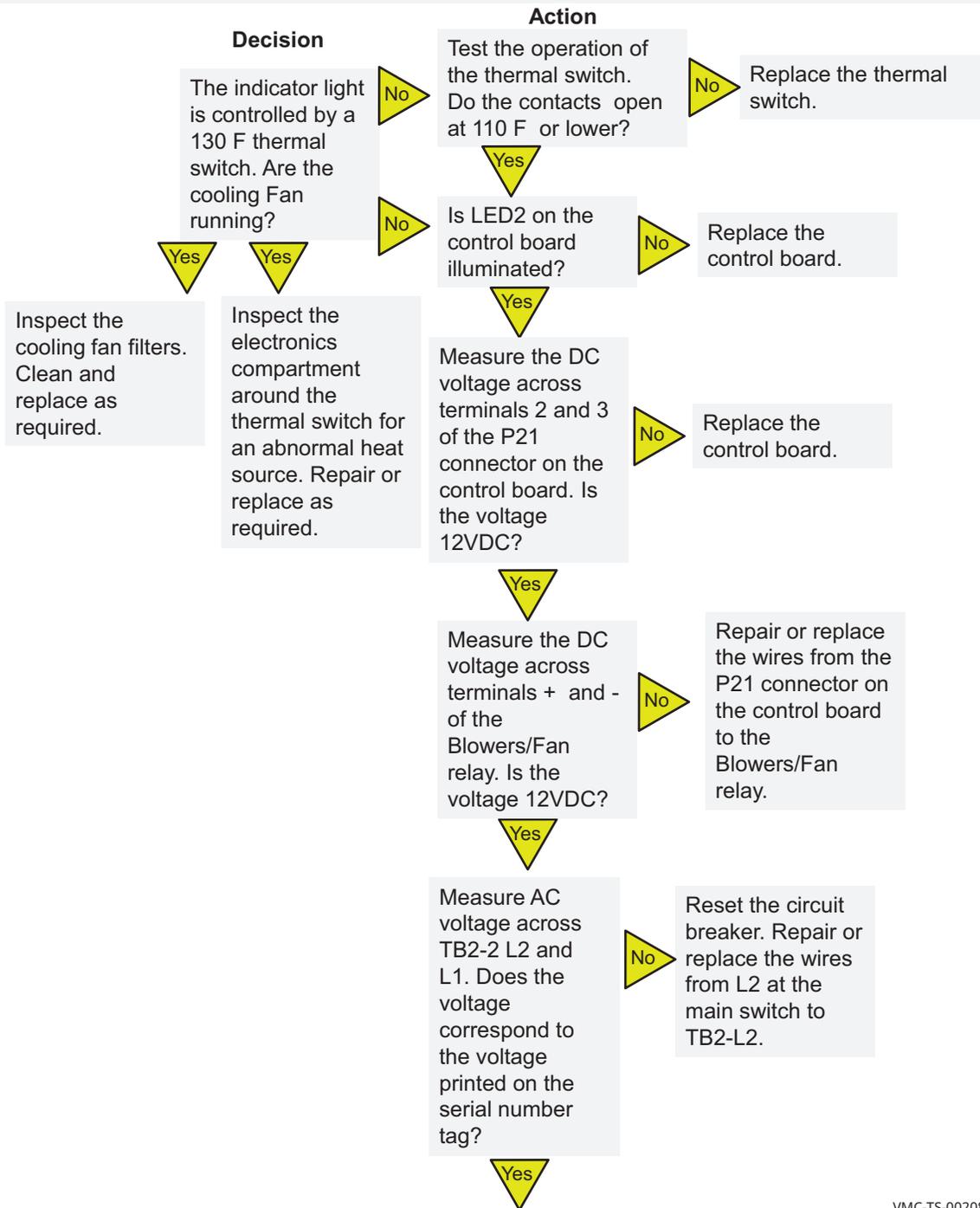
VMC-TS-002076

# Cavity Lights will not Illuminate



# The Check Fan Indicator Light is Illuminated

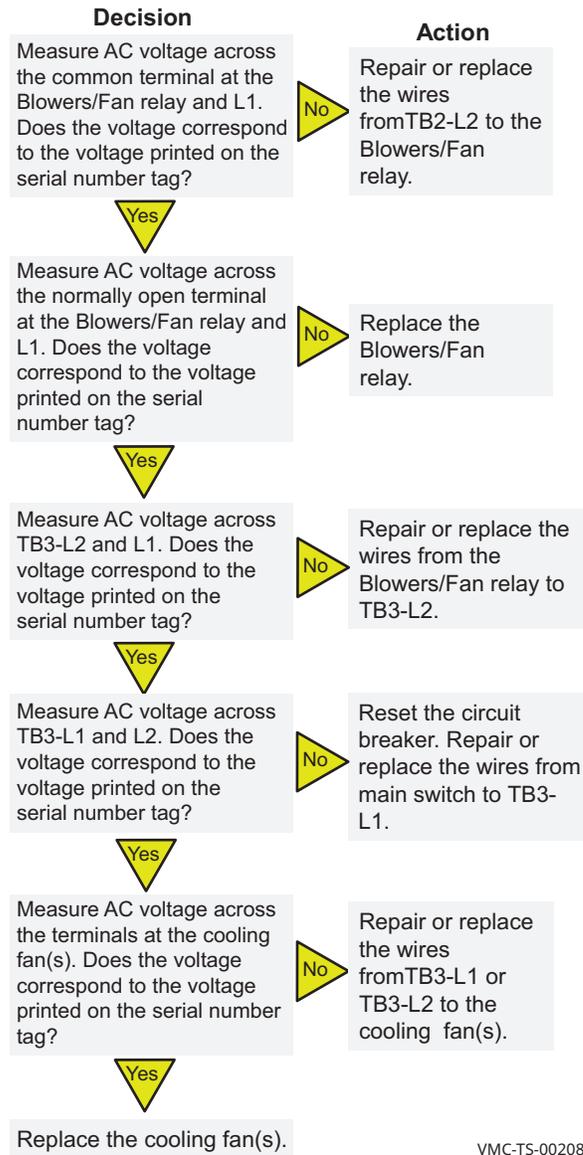
Before troubleshooting the cause of the fan indicator light illumination, the oven must be in a cook or warm up mode.



VMC-TS-002082

Continued on next page

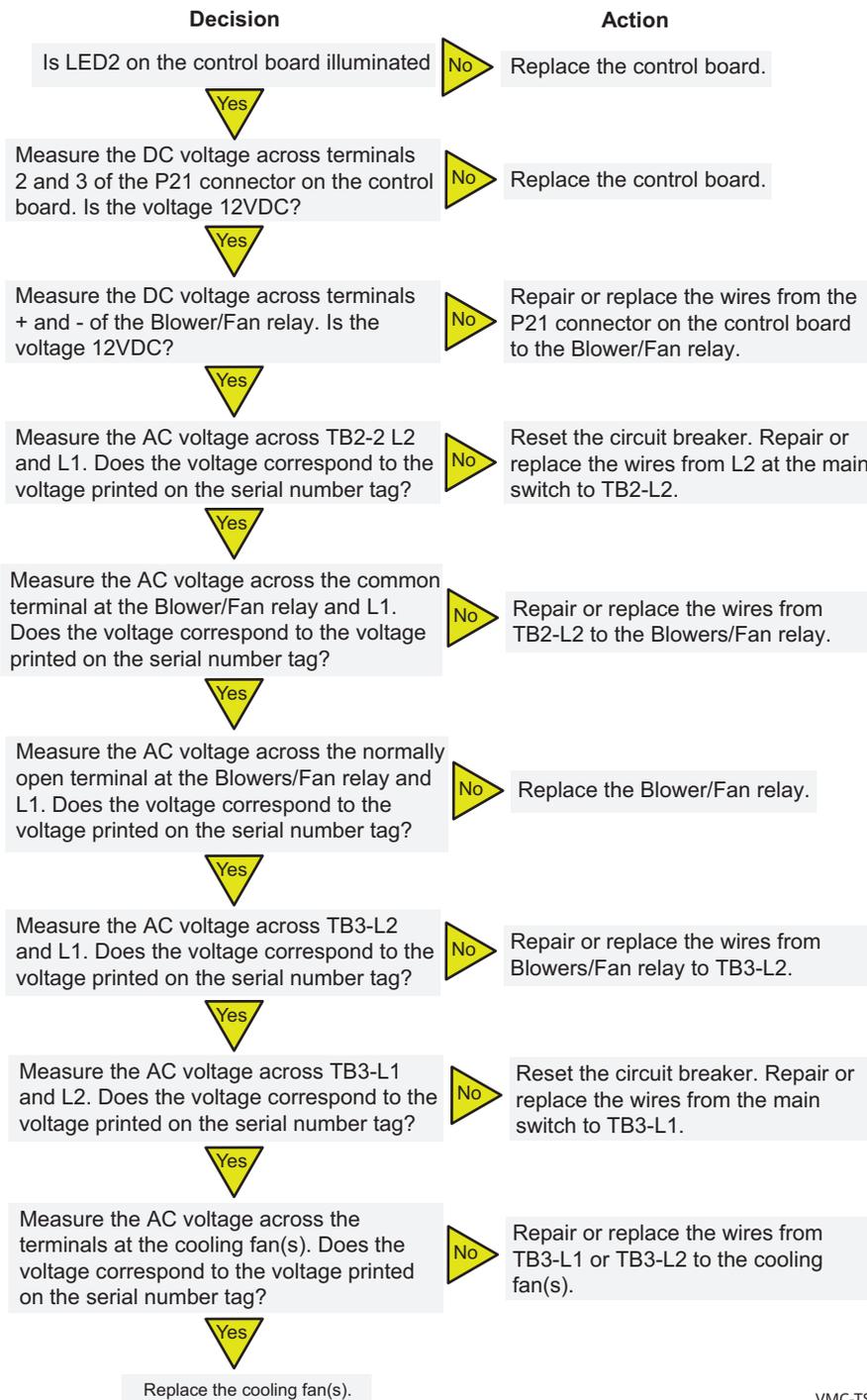
Continued from previous page



VMC-TS-002084

# The Cooling Fan(s) are Inoperable

Before troubleshooting the cause of an inoperable fan, the oven must be in a cook or warm up mode.



VMC-TS-0002086



# Removing and Installing the Blower Motor

## Before you begin

- The oven must be disconnected from electric power.
- Have a replacement blower motor.

## Procedure

To remove and install the blower motor, do the following.



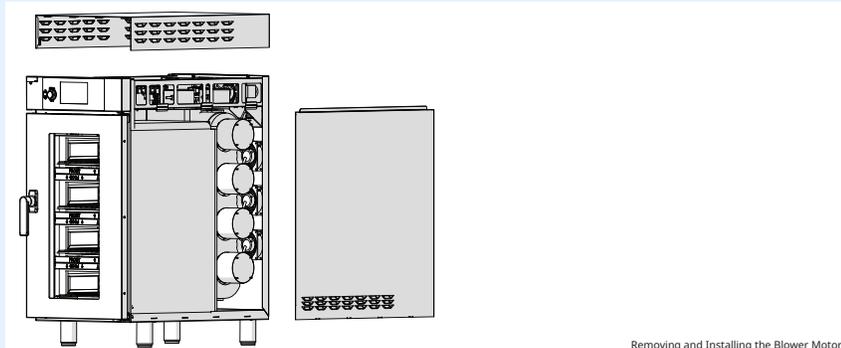
**WARNING:** Electric shock hazard.

Disconnect the oven from electric power before servicing the oven.

### Step

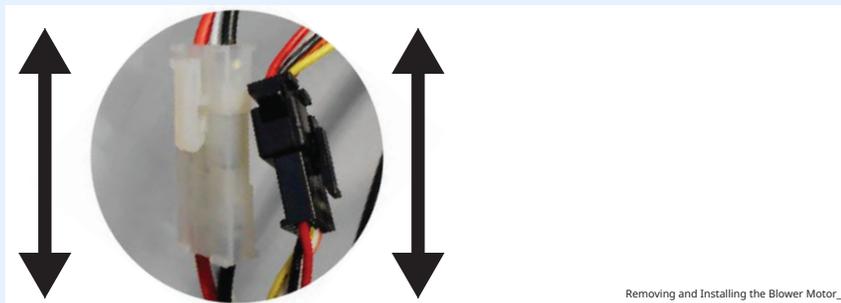
### Action

1. **Remove** the top and right side service panels.



Removing and Installing the Blower Motor

2. **Disconnect** the motor wire connectors.

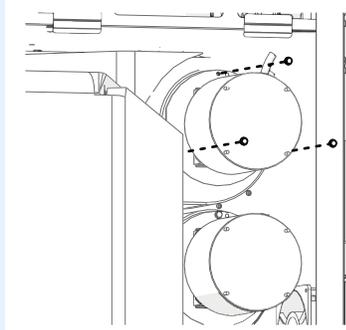


Removing and Installing the Blower Motor\_2

*Continued on next page*

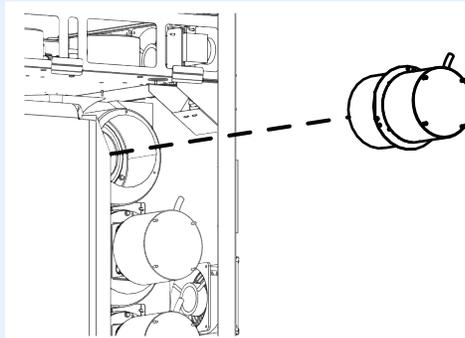
Continued from previous page

3. **Cut** the insulation around the motor.  
**Remove** the three mounting screws.



Removing and Installing the Blower Motor\_3

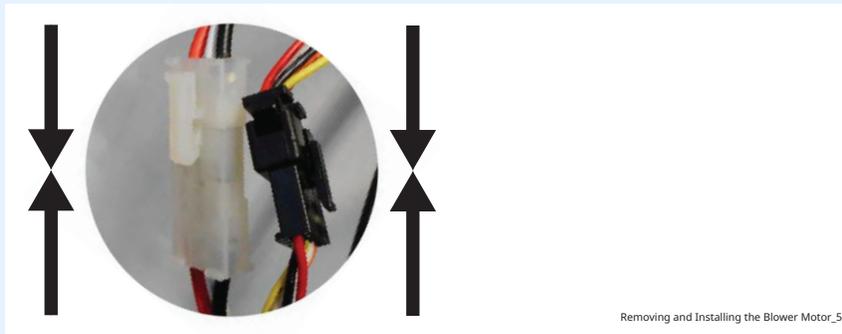
4. **Remove** the motor and blower wheel from the housing.  
**Install** the new motor. Tape all seams in the insulation.



Removing and Installing the Blower Motor\_4

5. **Re-install** the three mounting screws.

6. **Re-connect** the motor wire connectors.



Removing and Installing the Blower Motor\_5

7. **Re-install** the top and right side service panels.  
**Connect** electric power to the appliance and test all functions.

## Result

The blower motor has been replaced.

# Removing and Installing a Heater Element

## Before you begin

- The oven must be disconnected from electric power.
- Have a replacement heater element.

## Procedure

To remove and install a heater element, do the following.



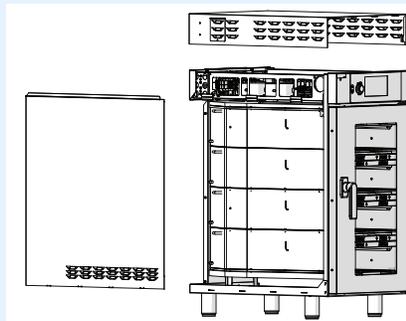
**WARNING:** Electric shock hazard.

Disconnect the oven from electric power before servicing the oven.

### Step

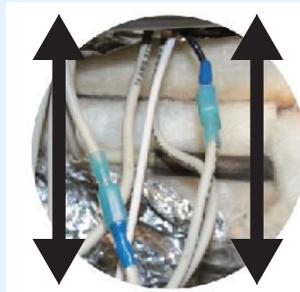
### Action

1. **Remove** the top and left side service panels.



Removing and Installing a Heater Element

2. **Disconnect** the heater element wires.

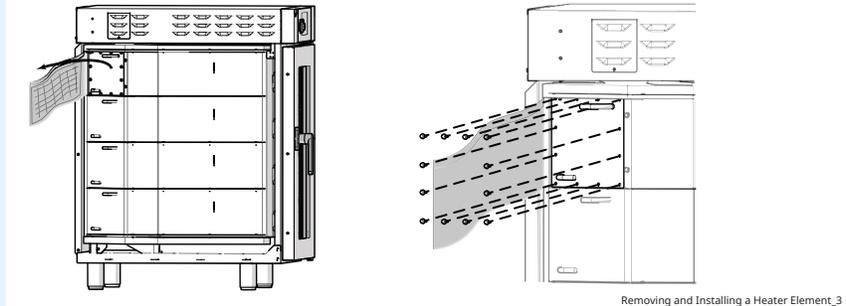


Removing and Installing a Heater Element\_2

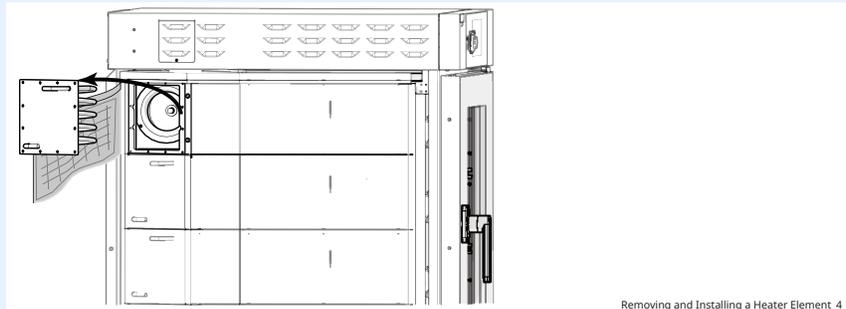
*Continued on next page*

Continued from previous page

3. **Cut** the insulation around the heater element panel.  
**Move** the insulation away from the heater element panel.  
**Remove** the screws securing the heater element panel.

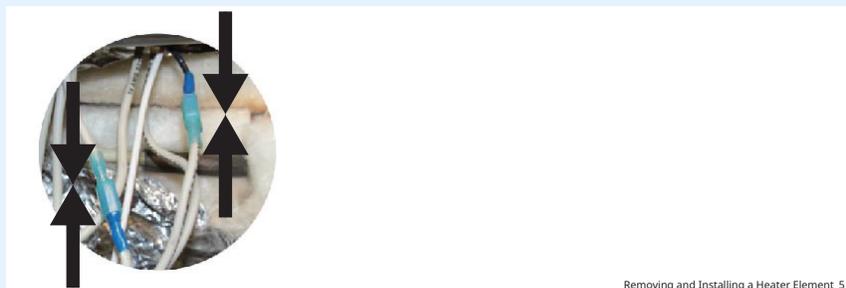


4. **Remove** the heater element from the oven.  
**Install** the new heater element into the oven.



5. **Re-install** the screws securing the heater element panel.  
**Re-install** the insulation over the heater element panel. Tape all the seams in the insulation.

6. **Re-connect** the heater element wires.



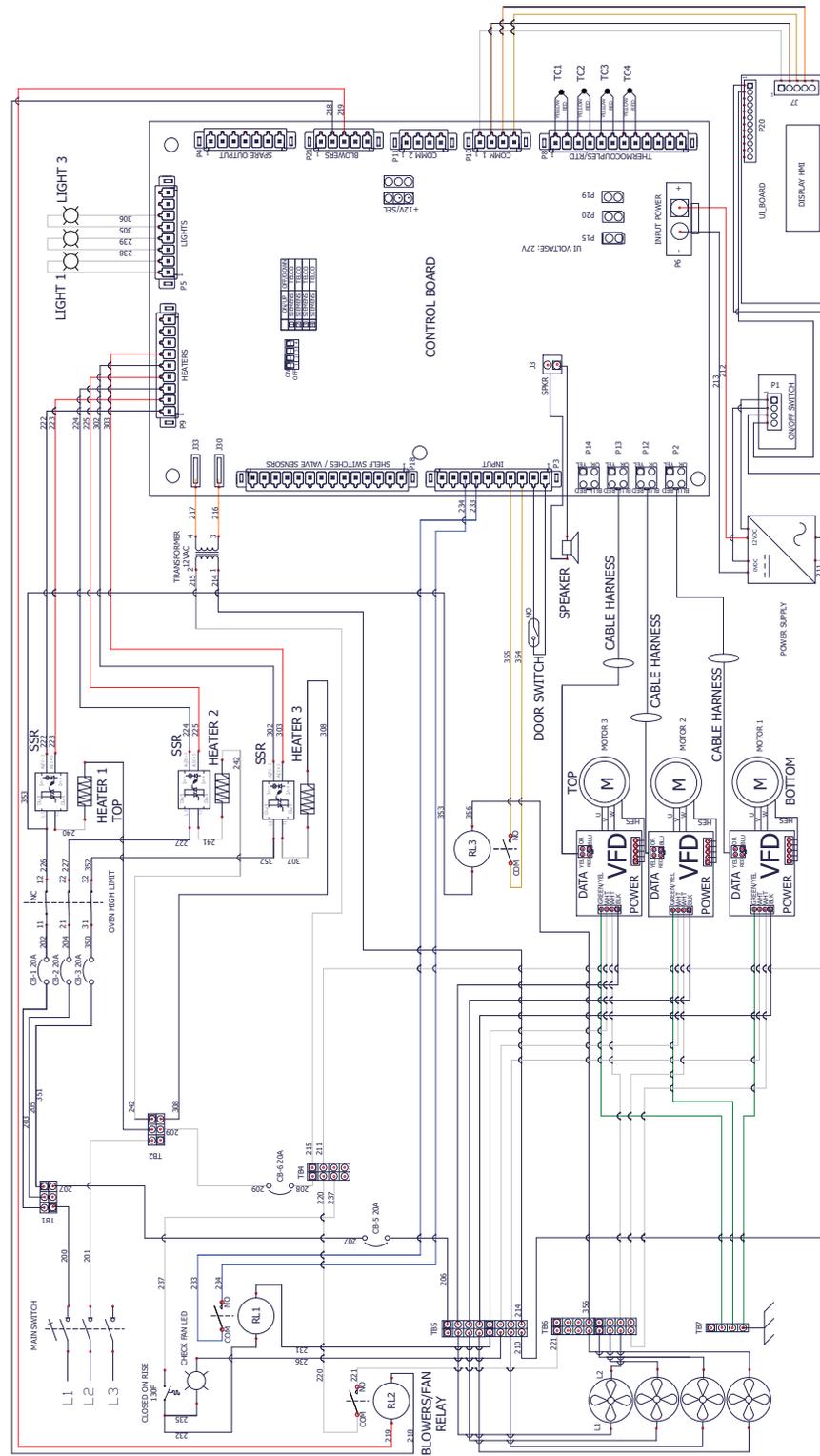
7. **Re-install** the top and left side service panels.  
**Connect** electric power to the appliance and test all functions.

## Result

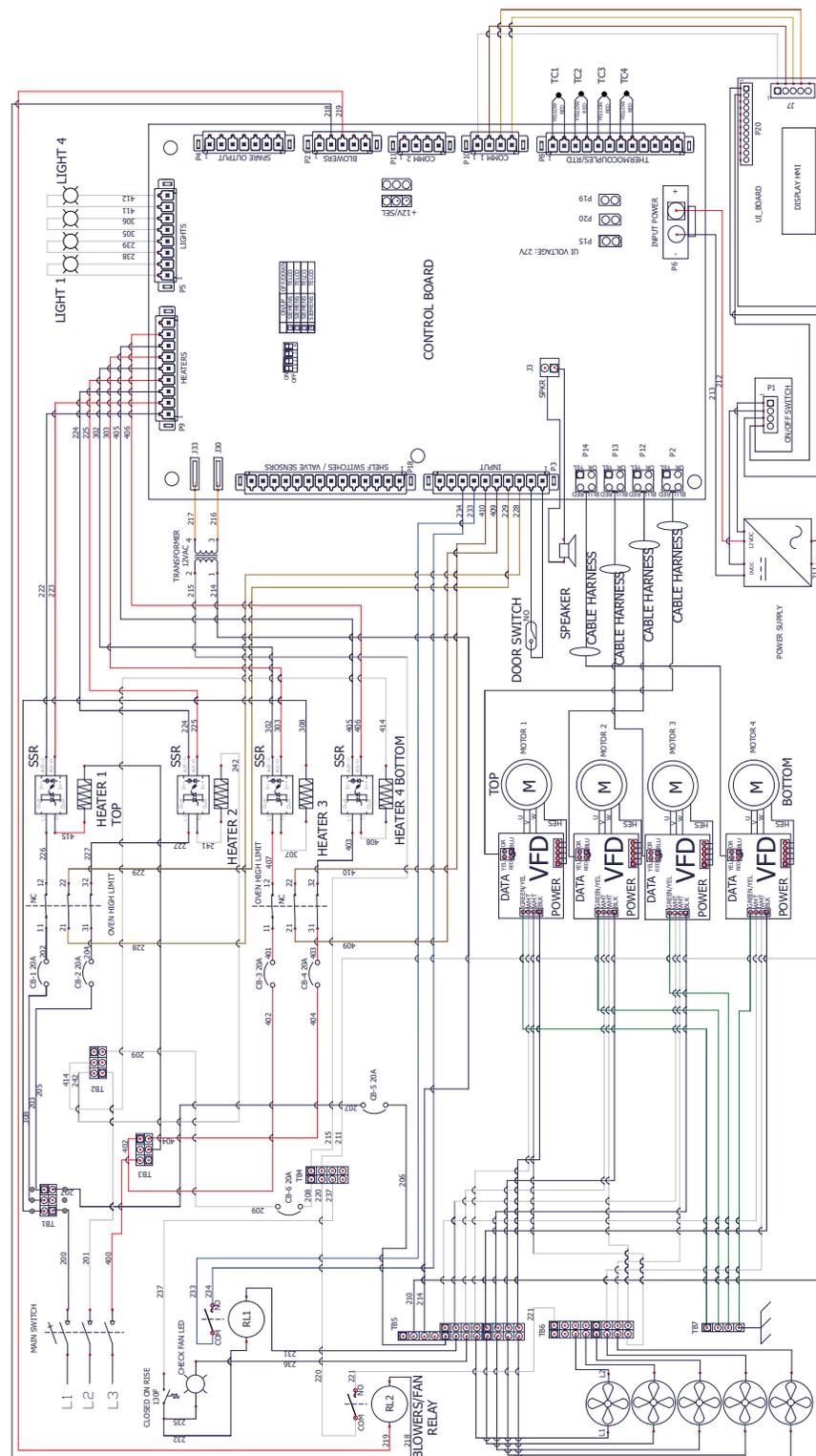
The heater element has been replaced.



# VMC-H3 / VMC-H3H



# VMC-H4 / VMC-H4H





### **Alto-Shaam World Headquarters**

W164 N9221 Water Street, PO Box 450  
Menomonee Falls, WI 53052-0450, U.S.A.  
Phone 800-558-8744; +1-262-251-3800

#### **Alto-Shaam Asia**

Shanghai, China  
Phone +86-21-6173 0336

#### **Alto-Shaam Canada**

Concord, Ontario Canada  
Toll Free Phone 866-577-4484  
Phone +1-905-660-6781

#### **Alto-Shaam Central & South America**

Miami, FL USA  
Phone +1-954-655-5727

#### **Alto-Shaam Middle East & Africa**

Dubai, UAE  
Phone +971 4 321 9712

#### **Alto-Shaam France, L.L.C.**

Aix en Provence, France  
Phone +33(0)4-88-78-21-73

#### **Alto-Shaam GmbH**

Bochum, Germany  
Phone +49(0)234-298798-0

#### **Alto-Shaam Mexico**

Leon, Mexico  
Phone +52 1 477-754-1305

#### **Alto-Shaam Russia**

Moscow, Russia  
Phone +7-903-793-2331