merco

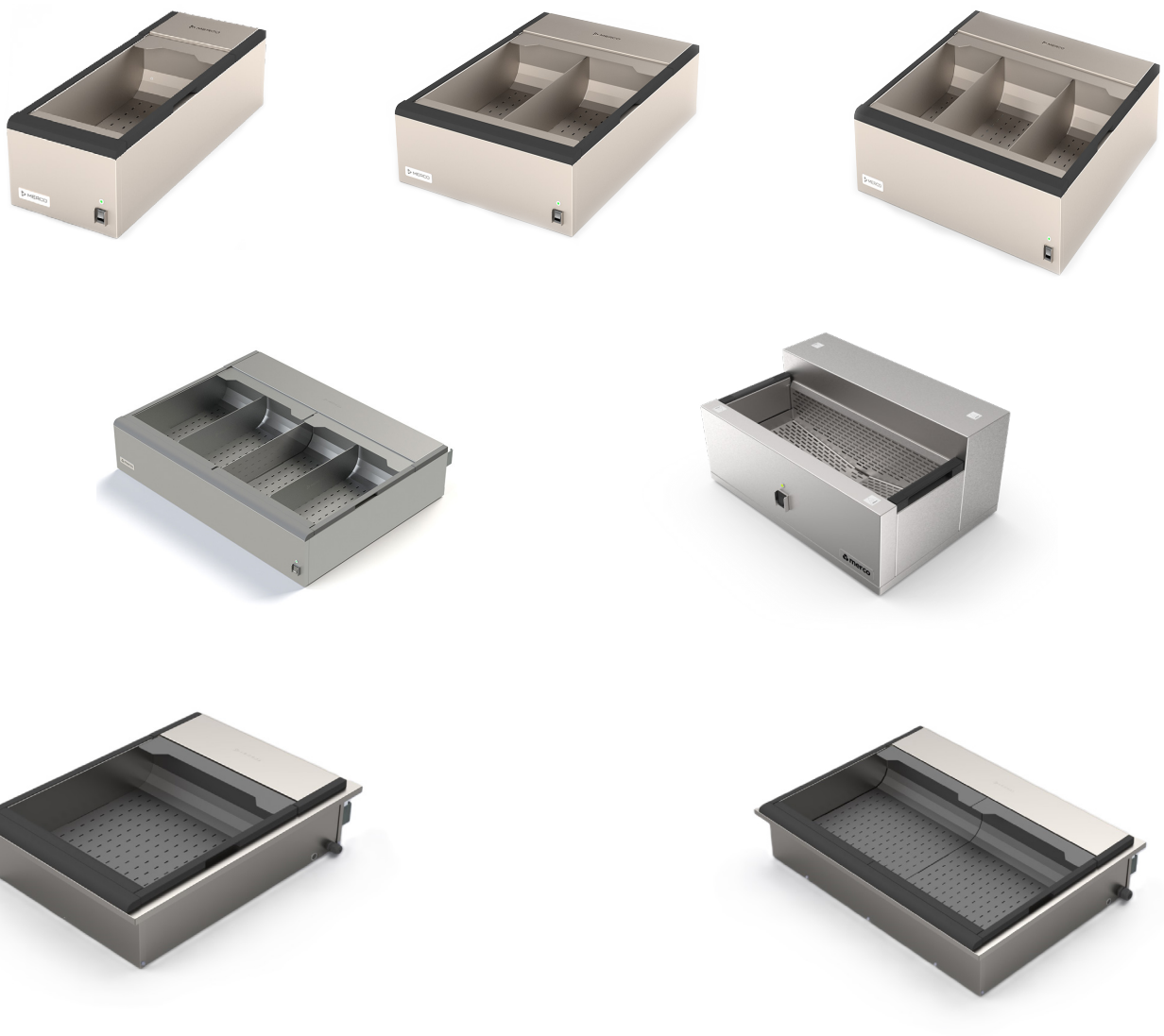
Serving Quality on Demand®

CrispyMax™

Crisp and Ready Serving Station

Service Manual

This manual is updated as new information and models are released. Visit our website for the latest manual.



8197929

Part Number: MER_SM_8197929 11/2024

WELBILT

Safety Notices

⚠Warning

Read this manual thoroughly before operating, installing or performing maintenance on the equipment. Failure to follow instructions in this manual can cause property damage, injury or death.

⚠ DANGER

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

⚠ DANGER

Keep power cord AWAY from HEATED surfaces. DO NOT immerse power cord or plug in water. DO NOT let power cord hang over edge of table or counter.

⚠Warning

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

⚠Warning

Do Not Store Or Use Gasoline Or Other Flammable Vapors Or Liquids In The Vicinity Of This Or Any Other Appliance. Never use flammable oil soaked cloths or combustible cleaning solutions, for cleaning.

⚠Warning

This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm. Operation, installation, and servicing of this product could expose you to airborne particles of glasswool or ceramic fibers, crystalline silica, and/or carbon monoxide. Inhalation of airborne particles of glasswool or ceramic fibers is known to the State of California to cause cancer. Inhalation of carbon monoxide is known to the State of California to cause birth defects or other reproductive harm.

⚠Warning

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

⚠Warning

Use caution when handling metal surface edges of all equipment.

⚠Warning

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

⚠Warning

DO NOT use this product near water – for example, near a kitchen sink, in a wet basement, near a swimming pool, or similar locations.

Notice

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

⚠Warning

Certain internal parts are intentionally not grounded and may present a risk of electrical shock only during servicing.

Service Personnel

DO NOT contact the following part while the appliance is energized: CONTROL BOARD HEAT SINK

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Section 1
General Information

Overview

The Merco Crispy Max is designed to warm prepared fried foods with a flow of heated air.

It's operated by a single switch. A small round LED above the power switch indicates the status of the unit.

Solid GREEN light: Normal Operation

Blinking GREEN light: Preheating

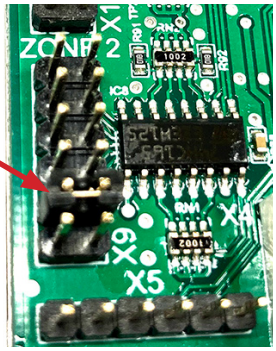
Blinking YELLOW light: Clean Filter; refer to User Manual or Scan QR Code on Unit

Blinking RED light: Error;
CALL SERVICE 877.392.7770

The heaters in 1 and 2 row models are 120V.
The heaters in 3 row models are 208-240V.

One control board is present in 1 and 2 row units.
Two control boards are present in 3 row units.

The control boards are identical. 1 and 2 lane units do not require jumpers. In 3 lane units the primary and secondary boards are set with a jumper. Below is a board with a jumper in the secondary position.



JUMPER SETTING

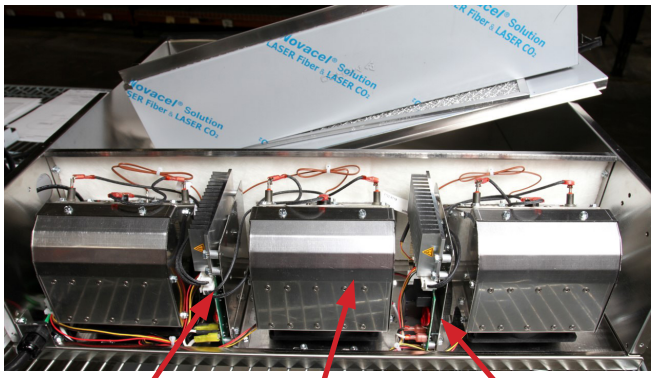
X9

4 LANE PRIMARY BOARD
1 LANE
2 LANE
3/4 SECONDARY BOARD
3 LANE PRIMARY BOARD

There are no power supplies or transformers; the control board generates DC power for fans and switch. Line voltage is used to operate the heater assembly

Component Identification

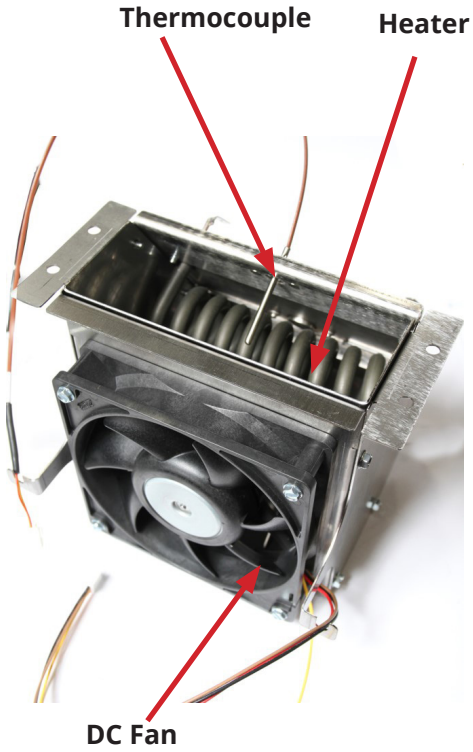
Side panels must be removed to access motor/ heater/control compartment.

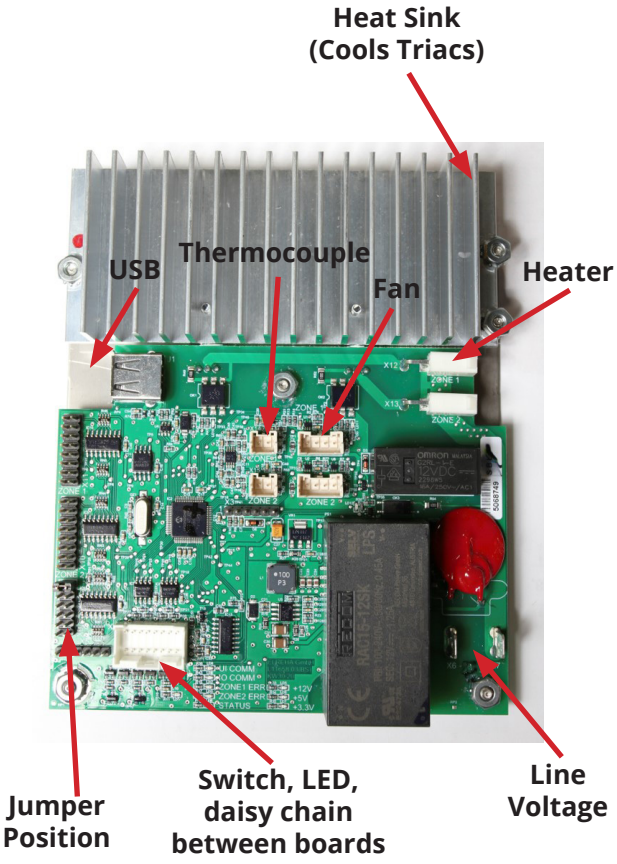


Primary Control Board

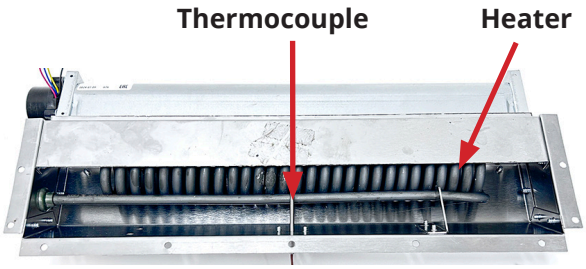
Heater Assembly

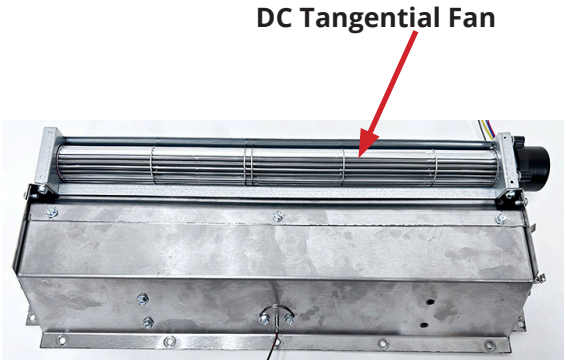
Secondary Control Board


Thermocouple
Heater
DC Fan


Heat Sink
(Cools Triacs)
USB
Thermocouple
Fan
Heater
Jumper
Position
Switch, LED,
daisy chain
between boards
Line
Voltage


Heater
Thermocouple
High Limit
Opens 275F ±6F


Thermocouple
Heater


DC Tangential Fan

Steps For Component Removal

1. Remove divider(s) if present.

2. Remove food tray.

3. Remove crumb tray.

4. Assemble in reverse order.

NOTE: Always allow sufficient time for unit to cool down prior to moving unit. Failure to do so could damage the heating element inside the unit.

5. Ensure the food tray is inserted correctly. The front edge should be flush with the cabinet.

Correct placement of the food tray.

Incorrect placement of the food tray. Front edge is too high.

Incorrect placement of the food tray. Food tray is rotated 180˚

Section 2
Troubleshooting

Troubleshooting Chart

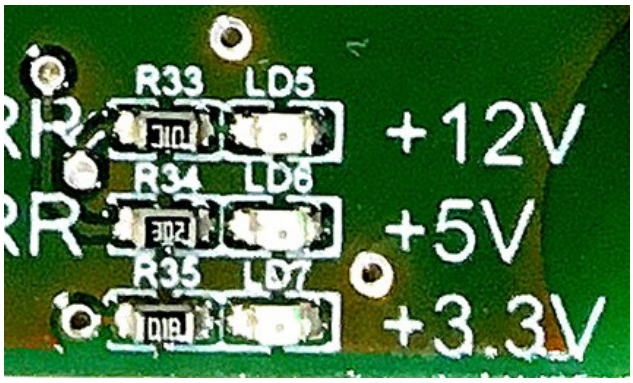
Problem	Probable Cause	Corrective Action
Machine doesn't operate.	No power.	Check power source. Verify voltage. Call for service.
Excessive time to reach temperature.	Improper food tray installation / Blocked airflow at rear of unit / Dirty or plugged air filter	Install food tray properly / Remove any airflow blockages / Clean and dry air filter then reinstall.
Low airflow volume.	Improper food tray installation / Blocked airflow at rear of unit / Dirty or plugged air filter (if applicable)	Install food tray properly / Remove any airflow blockages / Clean and dry air filter then reinstall (if applicable).
Airflow works but no heat.	Internal wiring.	Check wiring.
Degrading performance.	Grease or debris build-up.	Clear air intakes at front and rear of unit.

Sequence Of Operation

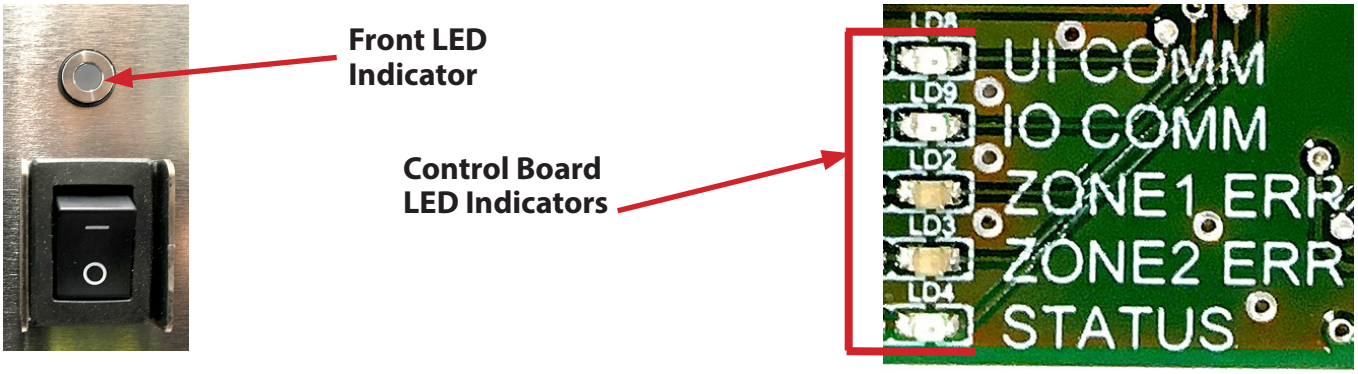
Power Supply	Electrical power is supplied to the unit by a 3 conductor service for single phase. Black conductor is hot. White conductor is neutral. Green and yellow conductor is ground. Power is permanently supplied to one of the normally open contacts of the main switch also to one side of the normally open contacts of the main heater relay.
Heating Circuit	Closing the main power switch feeds power through the normally closed high limit thermostat to the coil of the main relay. Its contacts now close supplying power to the main heater. Also for air circulation power is supplied to the main fan motor.

This unit has intelligent controls, software and a feedback loop that will automatically adjust for consistent performance across a range of voltages (110-120V / 200-240V, depending on the model)

When checking control boards, ensure that all three (3) voltage LEDS are illuminated.



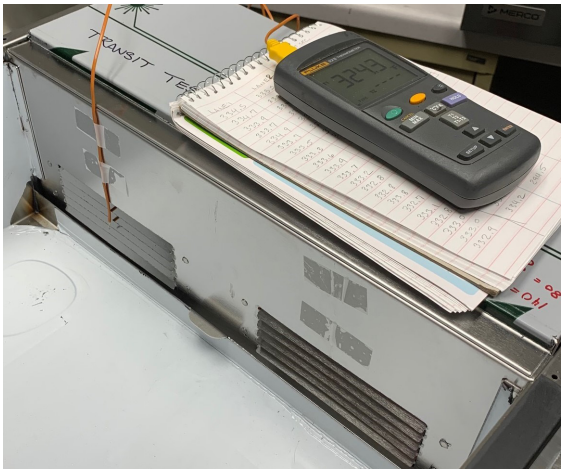
LED Troubleshooting Chart
for Units with serial number beginning with 2107 or before



Front LED	Control Board LED	Description	Probable Cause	Possible Parts Required	Service Procedure Status
Solid Green	Orange flashes -IO COMM (2 & 3 Lane only)	Normal Operation	N/A	N/A	N/A
Flashing Green	N/A	Preheating	N/A	N/A	N/A
Flashing Yellow	N/A	Filter Clog Warning	Filter may be clogged with debris.	Filter	Check and clean filter (if applicable). Replace if necessary (if applicable).
Flashing Red	N/A	Menu or Software update warning	Menu or Software update failed	N/A	Reload menu or software.
Flashing Red/ Green/ Yellow	N/A	Menu or Software update in process	N/A	N/A	N/A
Two (2) -Red flashes and a Three (3) second pause	One (1) -Zone 1 or 2 Error flash and a Three (3) second pause	Temperature Low Error -Temperature is < 25˚F below the setpoint for > 2 min.	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check heater, AC Harness or control board operation. Replace failed part
Two (2)- Red flashes and a Three (3) second pause	Two (2)- Zone 1 or 2 error flash and a Three (3) second pause	Temperature High Error -Temperature is > 25˚F above the setpoint for > 2 min.	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check heater, AC Harness or control board operation. Replace failed part.

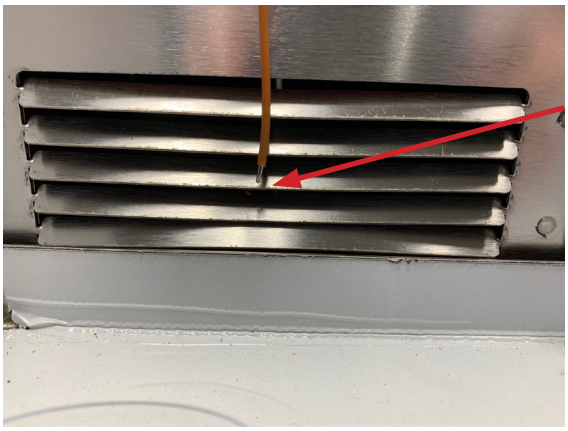
Front LED	Control Board LED	Description	Probable Cause	Possible Parts Required	Service Procedure Status
Three (3)- Red flashes and a Three (3) second pause	One (1) -Zone 1 or 2 error flash and a Three (3) second pause	Thermocouple error	Open Thermocouple or Control Board failure	Thermocouple/ Control Board	Check thermocouple and control board operation. Replace failed part.
Four (4) -Red flashes and a Three (3) second pause	One (1) -Zone 1 or 2 error flash and a Three (3) second pause	Low Fan Speed error	Fan or Control Board failure	Fan/Control Board	Check fan and control board operation. Replace failed part.
Four (4)- Red flashes and a Three (3) second pause	Two (2) -Zone 1 or 2 error flash and a Three (3) second pause	High Fan Speed error	Fan or Control Board failure	Fan/Control Board	Check fan and control board operation. Replace failed part.
Five (5)- Red flashes and a Three (3) second pause	N/A	Control Board to Control Board Communication error	DC Cable or Control Board failure	DC Cable/ Control Board	Check DC cable between IO boards and control board operation. Replace failed part.
Continuous fast pulses of green	N/A	Successful menu/software update	N/A	N/A	N/A
Six (6)- Red flashes and a Three (3) second pause	N/A	Incorrect wire connection issue.	Heater or thermocouple connected to incorrect zone connection.	N/A	Check wiring diagram for correct connections.
Seven (7)- Red flashes and a Three (3) second pause	N/A	Compartment temperature is too high.	Air filter intake may be blocked.	Air Filter	Ensure the air intake is not blocked. Ensure the cabinet is not placed up against a wall or fryer blocking the air intake.

Measuring Air Temperature



To determine if the CrispyMax is delivering the correct air temperature, use a thermocouple to measure the air temperature.

1. Remove the holding pan to access the air grill.
2. Tape a thermocouple over the air grill as shown, ensuring that the thermocouple does not touch the grill. The thermocouple should be centered in the center of the grill, in front of the third fin down.
3. Let the holding station temperature stabilize and take reading.
4. If the temperature is 270F (132C) or higher, the unit is working properly. If the temperature is lower than 270F (132C), there may be an issue. There may be a slightly different temperature depending on product menu setpoint temperatures.



Updating Software

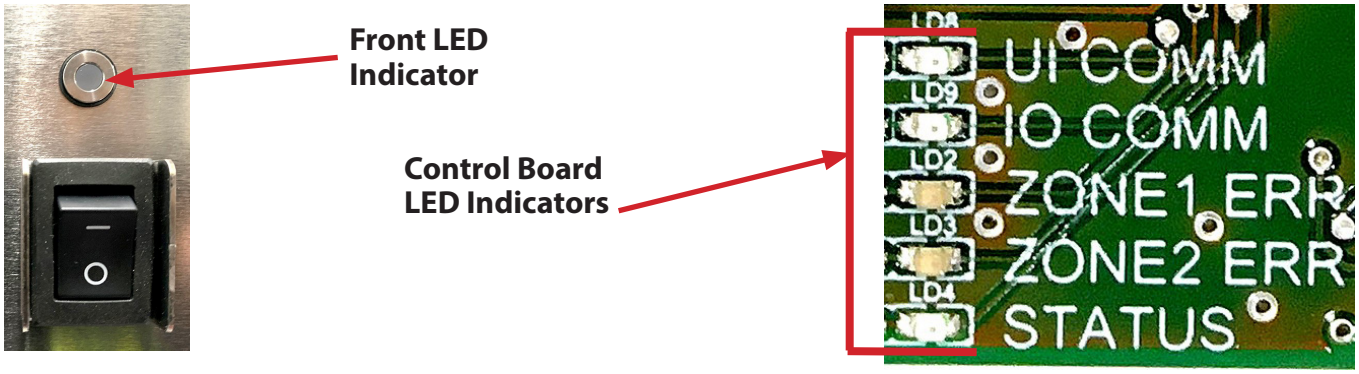
1. Connect the power cord on the unit to the wall.
2. Ensure the power switch on the front of the unit is in the **OFF** position (Indicator LED is off).
3. Insert the USB drive into the USB slot with the software file.
4. The indicator LED will alternate between green, amber and red, indicating the software update is in progress.
5. The indicator LED will display (see **Note 1** below), when successful.
6. If the file was invalid or corrupt, the indicator LED will display continuous fast red pulses.
7. Remove the USB and switch on the power switch.

Updating Menus

1. Connect the power cord on the unit to the wall.
2. Ensure the power switch on the front of the unit is in the **OFF** position (Indicator LED is off).
3. Insert the USB drive into the USB slot with the menu file.
4. The indicator LED will display (see **Note 1** below), when successful.
5. If the file was invalid or corrupt, the indicator LED will display continuous fast red pulses.
6. Remove the USB and switch on the power switch.

Note 1:
The indicator LED will display:
- Fast continuous green pulses on units with software prior to serial number beginning with 2107 or before.
- 5 green pulses every 3 seconds on units with software after serial number beginning with 2108 or after.

LED Troubleshooting Chart
for Units with serial number beginning with 2108 or later



Front LED	Control Board LED	Description	Probable Cause	Possible Parts Required	Service Procedure Status
Solid Green	Orange flashes -IO COMM (2 & 3 Lane only)	Normal Operation	N/A	N/A	N/A
Flashing Green	N/A	Normal Preheating	N/A	N/A	N/A
Flashing Yellow	N/A	Filter Clog Warning	Filter may be clogged with debris.	Filter	Check and clean filter (if applicable). Replace if necessary (if applicable).
Flashing Red	N/A	Menu or Software update warning	Menu or Software update failed	N/A	Reload menu or software.
Flashing Red/ Green/ Yellow	N/A	Menu or Software update in process	N/A	N/A	N/A
One (1) -Amber flash, Two (2) -Red flashes and a Three (3) second pause	One (1) -Zone 1 Error flash and a Three (3) second pause	Temperature Low Error -Temperature is < 25˚F below the setpoint for > 2 min. Zone 1	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check Zone 1 heater, AC Harness or control board operation. Replace failed part.

Front LED	Control Board LED	Description	Probable Cause	Possible Parts Required	Service Procedure Status
Two (2) -Amber flashes, Two (2) -Red flashes and a Three (3) second pause	One (1) -Zone 2 Error flash and a Three (3) second pause	Temperature Low Error -Temperature is < 25˚F below the setpoint for > 2 min. Zone 2	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check Zone 2 heater, AC Harness or control board operation. Replace failed part.
Three (3) -Amber flashes, Two (2) -Red flashes and a Three (3) second pause	One (1) -Zone 1 Error flash and a Three (3) second pause on secondary control board	Temperature Low Error -Temperature is < 25˚F below the setpoint for > 2 min. Zone 3	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check Zone 3 (zone 1 on secondary board) heater, AC Harness or control board operation. Replace failed part.
Four (4) -Amber flashes, Two (2) -Red flashes and a Three (3) second pause	One (1) -Zone 2 Error flash and a Three (3) second pause on secondary control board	Temperature Low Error -Temperature is < 25˚F below the setpoint for > 2 min. Zone 3	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check Zone 4 (zone 2 on secondary board) heater, AC Harness or control board operation. Replace failed part.
One (1) -Amber flash, Two (2) -Red flashes and a Three (3) second pause	Two (2) -Zone 1 Error flashes and a Three (3) second pause	Temperature High Error -Temperature is > 25˚F above the setpoint for > 2 min. Zone 1	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check Zone 1 heater, AC Harness or control board operation. Replace failed part.
Two (2) -Amber flashes, Two (2) -Red flashes and a Three (3) second pause	Two (2) - Zone 2 Error flashes and a Three (3) second pause	Temperature High Error -Temperature is > 25˚F above the setpoint for > 2 min. Zone 2	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check Zone 2 heater, AC Harness or control board operation. Replace failed part.
Three (3) -Amber flashes, Two (2) -Red flashes and a Three (3) second pause	Two (2) - Zone 1 Error flashes and a Three (3) second pause on secondary control board	Temperature High Error -Temperature is > 25˚F above the setpoint for > 2 min. Zone 3	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check Zone 3 (zone 1 on secondary board) heater, AC Harness or control board operation. Replace failed part.

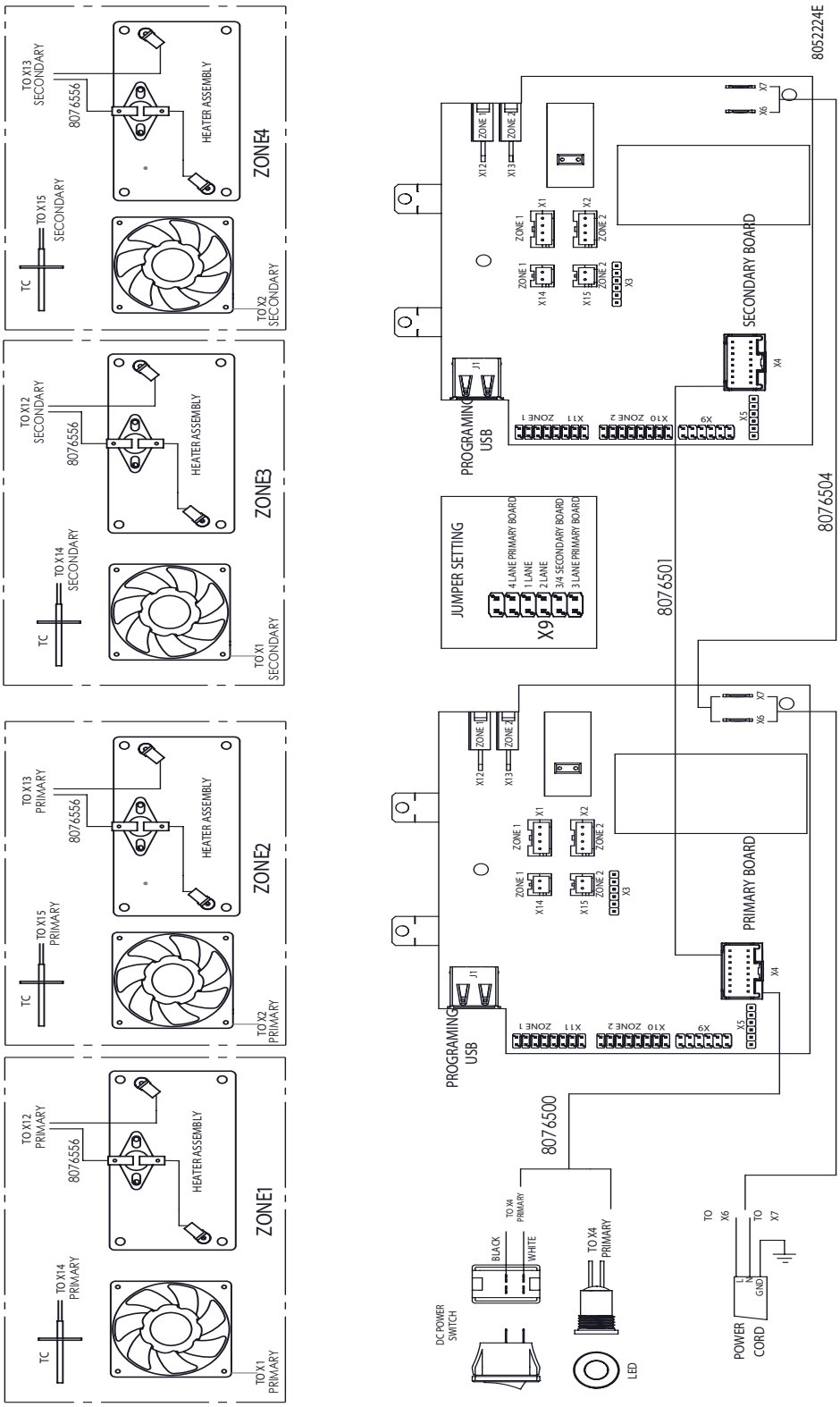
Front LED	Control Board LED	Description	Probable Cause	Possible Parts Required	Service Procedure Status
Four (4) -Amber flashes, Two (2) -Red flashes and a Three (3) second pause	Two (2) - Zone 2 Error flashes and a Three (3) second pause on secondary control board	Temperature High Error -Temperature is > 25˚F above the setpoint for > 2 min. Zone 3	Heater, AC Harness or Control Board failure	Heater, AC Harness, Control Board	Check Zone 4 (zone 2 on secondary board) heater, AC Harness or control board operation. Replace failed part.
One (1) -Amber flash, Three (3)- Red flashes and a Three (3) second pause	One (1) -Zone 1 Error flash and a Three (3) second pause	Thermocouple error	Open Thermocouple or Control Board failure	Thermocouple/ Control Board	Check Zone 1 thermocouple and control board operation. Replace failed part.
Two (2) -Amber flashes, Three (3)- Red flashes and a Three (3) second pause	One (1) -Zone 2 Error flash and a Three (3) second pause	Thermocouple error	Open Thermocouple or Control Board failure	Thermocouple/ Control Board	Check Zone 2 thermocouple and control board operation. Replace failed part.
Three (3) -Amber flashes, Three (3)- Red flashes and a Three (3) second pause	One (1) -Zone 1 Error flash and a Three (3) second pause on secondary control board	Thermocouple error	Open Thermocouple or Control Board failure	Thermocouple/ Control Board	Check Zone 3 (zone 1 on secondary board) thermocouple and control board operation. Replace failed part.
Four (4) -Amber flashes, Three (3)- Red flashes and a Three (3) second pause	One (1) -Zone 2 Error flash and a Three (3) second pause on secondary control board	Thermocouple error	Open Thermocouple or Control Board failure	Thermocouple/ Control Board	Check Zone 4 (zone 2 on secondary board) thermocouple and control board operation. Replace failed part.

Front LED	Control Board LED	Description	Probable Cause	Possible Parts Required	Service Procedure Status
One (1) -Amber flash, Four (4) -Red flashes and a Three (3) second pause	One (1) -Zone 1 Error flash and a Three (3) second pause	Low Fan Speed error Zone 1	Fan or Control Board failure	Fan/Control Board	Check Zone 1 fan and control board operation. Replace failed part.
Two (2) -Amber flashes, Four (4) -Red flashes and a Three (3) second pause	One (1) -Zone 2 Error flash and a Three (3) second pause	Low Fan Speed error Zone 2	Fan or Control Board failure	Fan/Control Board	Check Zone 2 fan and control board operation. Replace failed part.
Three (3) -Amber flashes, Four (4) -Red flashes and a Three (3) second pause	One (1) -Zone 1 Error flash and a Three (3) second pause on secondary control board	Low Fan Speed error Zone 3	Fan or Control Board failure	Fan/Control Board	Check Zone 3 (zone 1 on secondary board) fan and control board operation. Replace failed part.
Four (4) -Amber flashes, Four (4) -Red flashes and a Three (3) second pause	One (1) -Zone 2 Error flash and a Three (3) second pause on secondary control board	Low Fan Speed error Zone 3	Fan or Control Board failure	Fan/Control Board	Check Zone 4 (zone 2 on secondary board) fan and control board operation. Replace failed part.
One (1) -Amber flash, Four (4) -Red flashes and a Three (3) second pause	Two (2) -Zone 1 Error flashes and a Three (3) second pause	High Fan Speed error Zone 1	Fan or Control Board failure	Fan/Control Board	Check Zone 1 fan and control board operation. Replace failed part.
Two (2) -Amber flashes, Four (4) -Red flashes and a Three (3) second pause	Two (2) - Zone 2 Error flashes and a Three (3) second pause	High Fan Speed error Zone 2	Fan or Control Board failure	Fan/Control Board	Check Zone 2 fan and control board operation. Replace failed part.
Three (3) -Amber flashes, Four (4) -Red flashes and a Three (3) second pause	Two (2) - Zone 1 Error flashes and a Three (3) second pause on secondary control board	High Fan Speed error Zone 3	Fan or Control Board failure	Fan/Control Board	Check Zone 3 (zone 1 on secondary board) fan and control board operation. Replace failed part.

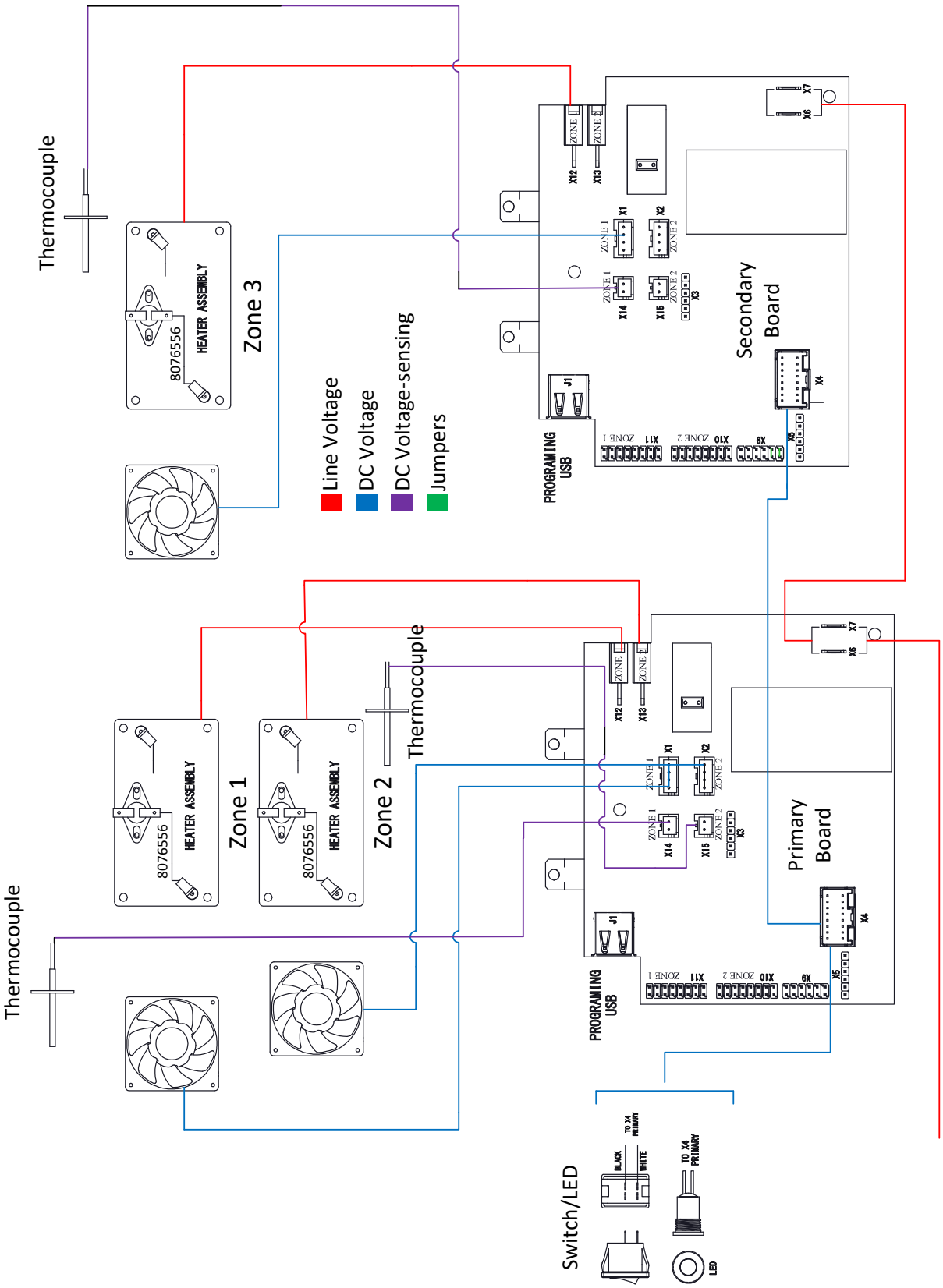
Front LED	Control Board LED	Description	Probable Cause	Possible Parts Required	Service Procedure Status
Four (4) -Amber flashes, Four (4) -Red flashes and a Three (3) second pause	Two (2) - Zone 2 Error flashes and a Three (3) second pause on secondary control board	High Fan Speed error Zone 3	Fan or Control Board failure	Fan/Control Board	Check Zone 4 (zone 2 on secondary board) fan and control board operation. Replace failed part.
Five (5)- Red flashes and a Three (3) second pause	N/A	Control Board to Control Board Communication error	DC Cable or Control Board failure	DC Cable/ Control Board	Check DC cable between IO boards and control board operation. Replace failed part.
Five (5)- Green flashes and a Three (3) second pause	N/A	Successful menu/software update	N/A	N/A	N/A
Six (6)- Red flashes and a Three (3) second pause	N/A	Incorrect wire connection issue.	Heater or thermocouple connected to incorrect zone connection.	N/A	Check wiring diagram for correct connections.
Seven (7)- Red flashes and a Three (3) second pause	N/A	Compartment temperature is too high.	Air filter intake may be blocked.	Air Filter	Ensure the air intake is not blocked. Ensure the cabinet is not placed up against a wall or fryer blocking the air intake.

Section 3
Wiring Diagrams

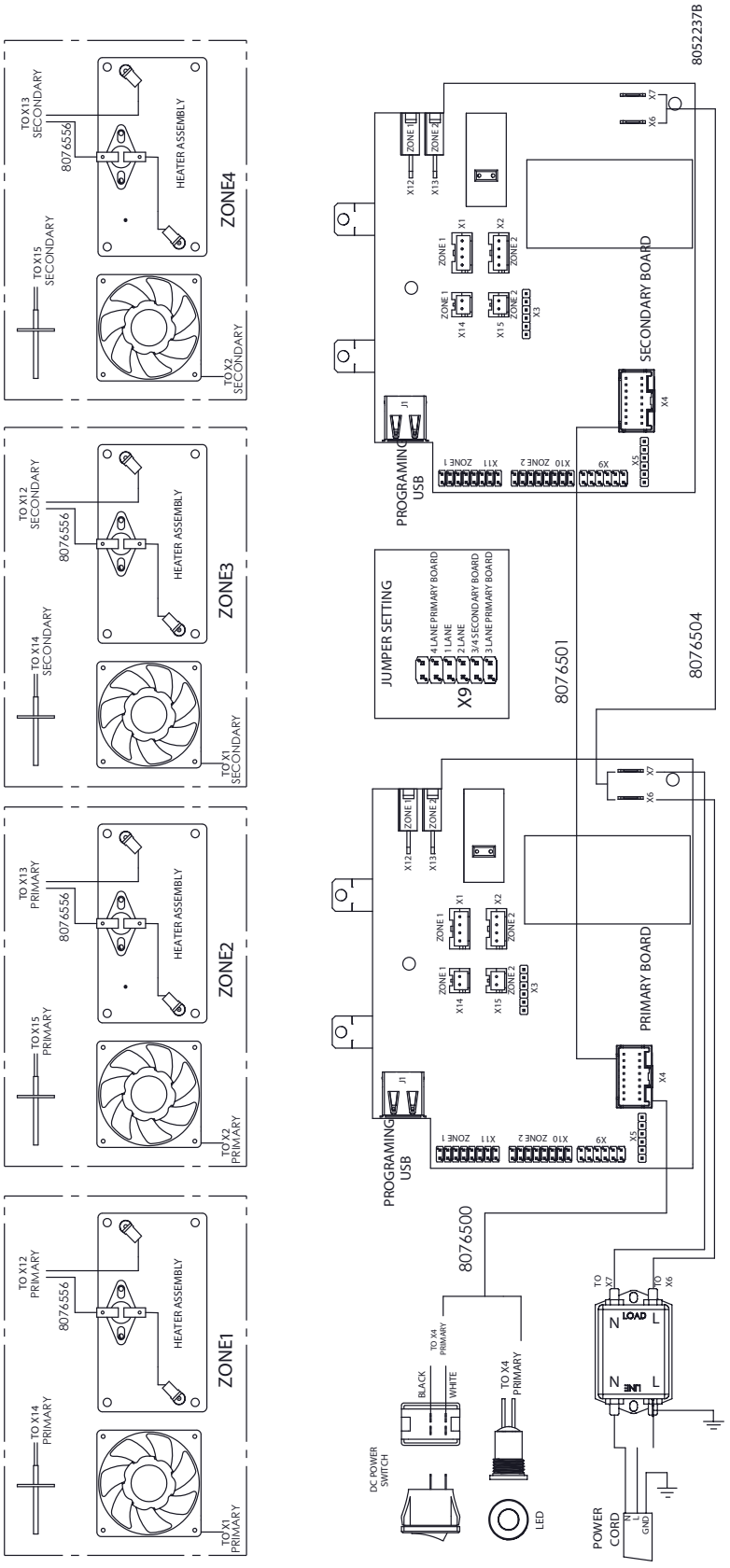
CrispyMax Wiring Non-CE



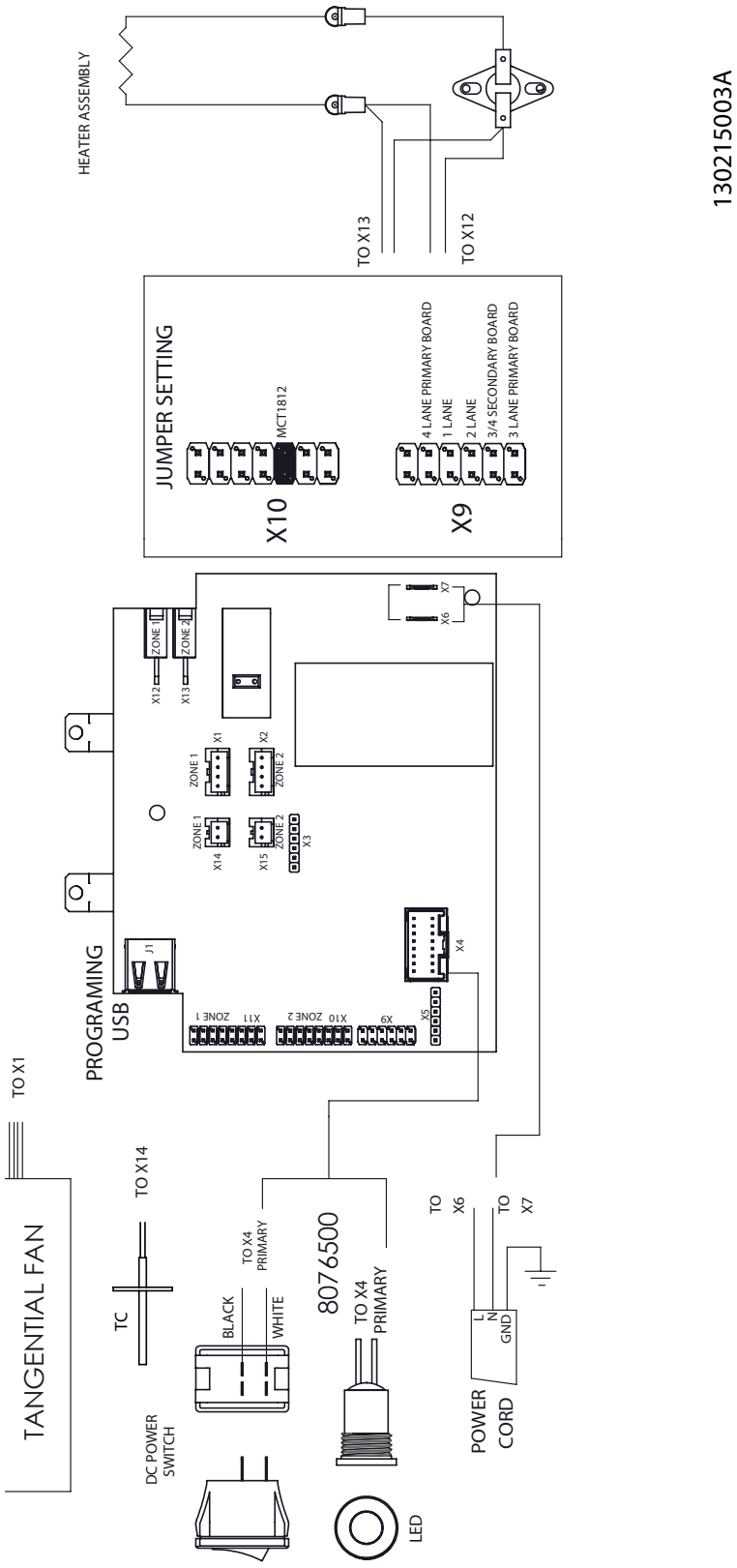
CrispyMax Wiring with voltages



CrispyMax Wiring CE



CrispyMax MCT1812 Wiring Diagram



MERCO
8700 LINE AVENUE, SHREVEPORT, LA 71106-6800
MERCO SALES: 800.221.4583
MERCO SERVICE: 877.392.7770
WWW.MERCOPRODUCTS.COM

Serving Quality on Demand®

Part Number: MER_SM_8197929 11/2024