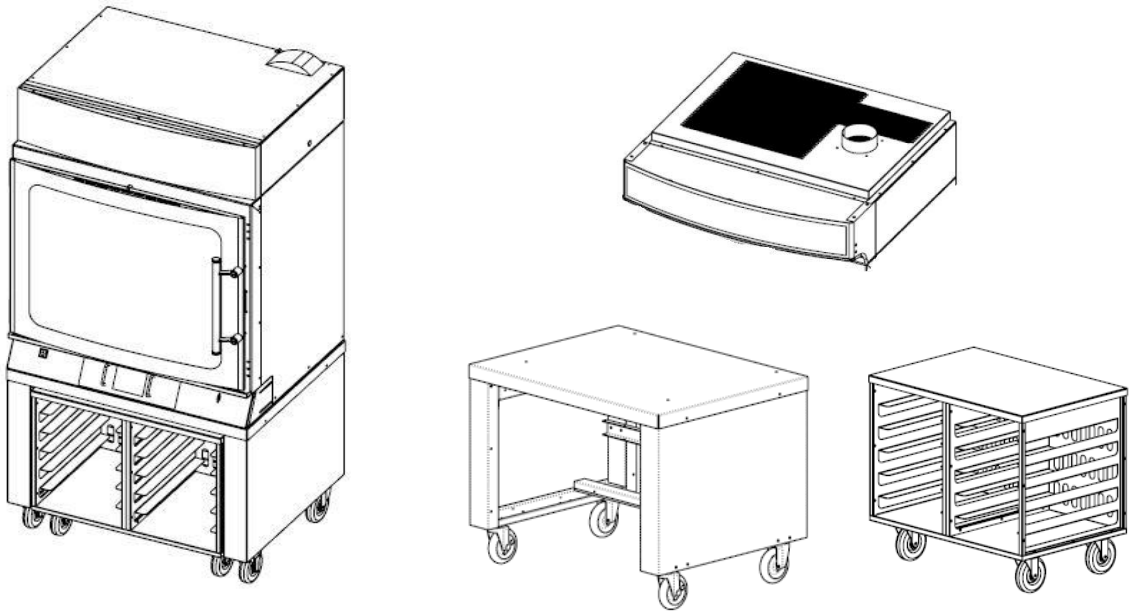
FLEXBAKE 5™ Proof and Bake Oven



Service Training Introduction

FLEXBAKE 5™ - SPECIFICATIONS

- Available in 208/240V, 1 or 3 phase , no cord supplied.
- Full color digital touch screen control.
- Oven accommodates half size baking sheet pans.
- Three 10 watt Halogen low voltage lights.
- Two (4) 1400 watt & (2) 1000 watt heating elements protected by high limit thermostats.
- FLEXBAKE 5™ is front/rear serviceable.
- All FB5 ovens require a RO water filter system provided by Duke Mfg.
- **Options:**
- Dual check valve backflow preventer for water supply
- IVS2 (Integrated Ventilation System)

FLEXBAKE 5™ - INSTALLATION

Unit Placement

- Do not install unit next to source of heat, such as deep fryer, etc.
- Install unit on level surface floor.
- Minimum Clearance of 6" (152mm) must be maintained between the unit and any combustible substance.
- Either side of the unit must remain open for proper airflow for electrical component cooling. One side may be installed without clearance. Maintain a minimum clearance of 2 inches on the rear of the unit for proper operation and cooling.

Connection of the unit to the mains supply **MUST** be performed by an authorized person in accordance with codes, standards, and laws governing the installation site using properly rated all poles mains protection, all poles mains disconnects, safety ground earthing, and shall be a minimum of 48" (1.2 meter) long to allow the equipment to be moved for cleaning.

USA and non-EU Countries must use flexible conduit within variances that may be required by local electric codes or regulations.

European Union (CE) installations must use HO7RN-F, 5G 2,5mm flexible cordage.

The Mains Supply safety / earth ground wire must be longer than mains conductors at the unit's interconnections to prevent stress under pull.

Contact Duke for service of IVS (Integrated Ventilation System) supply interconnection.

FLEXBAKE 5™ - INSTALLATION

INSTALLATION

1. This unit can be converted to other mains supply configurations by Duke Manufacturing approved service personnel. Call Duke Service Department for action if electrical rating tag information is not compatible with the available mains supply.

2. This unit is supplied with the national and international specified water supply interconnection. Local regulation variances or additional requirements must be evaluated prior to installation. New water supply line interconnection must be used when installing this unit.
   Maximum / minimum supply pressure specification is 65PSI (450KPa) / 40PSI (275KPa) for all system plumbing components. See **INSTALLATION OF REVERSE OSMOSIS (RO) SYSTEM** section prior to water supply interconnect.

3. This appliance must be secured to building structure. A restraining device kit (#153586) provided with the unit limits the movement of the appliance without transmitting stress to the mains supply. Installation instructions are in the kit.

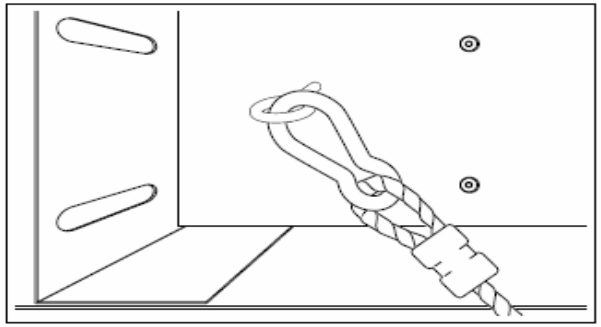


Figure: Restraining Device Kit (Part # 153586)

4. IMPORTANT: A minimum clearance of 6" (152mm) from the top of unit to the ceiling must be provided. Unit may be installed with minimal clearance on one side and rear of the cabinet.

5. Check the swing of the door. The hinge side can be changed by referring to the **Reversing Oven Door Swing Direction section of this manual.**

6. Check the door seal and make sure both doors close completely. If they do not close and seal properly, refer to the **Door Gasket Adjustment section of this manual.**

7. Place the wire racks in the oven.

FLEXBAKE 5™ - INSTALLATION

Water Supply Connection

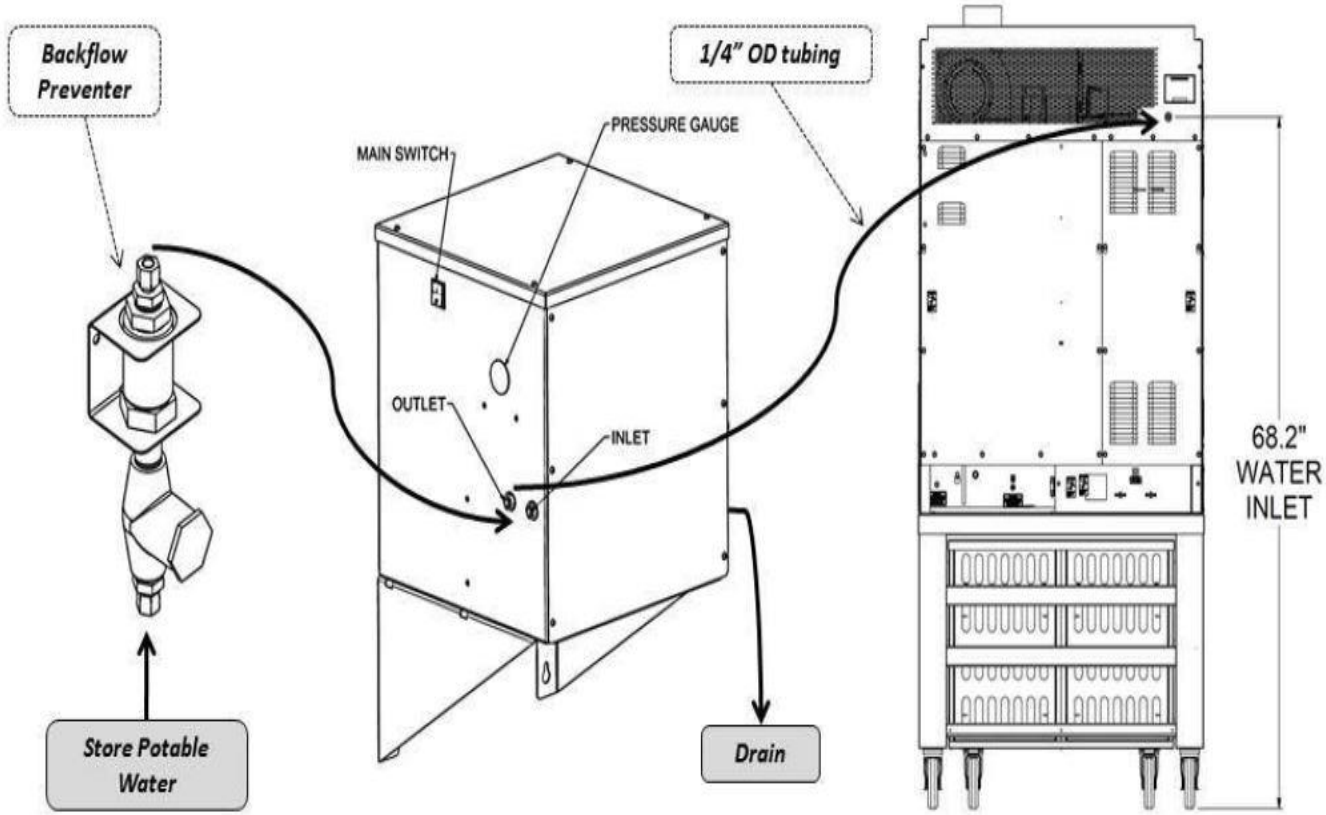
NOTE: The Duke Flexbake 5™ Proof and Bake Oven must be supplied with water from a Reverse Osmosis (RO) System.

The water inlet utilizes ¼" (6.35mm), OD plastic tubing. Install the tubing in a manner to ensure there are no kinks, strains, or tight bends. Leave sufficient length to allow unit movement for service and cleaning.

The tubing should be cut square and be free of any deformations at the connection points. All burrs and sharp edges should be removed for proper connection.

Insert the tubing through the compression fitting with the threads pointing towards the end of the tubing.

Push the tubing into the fitting as far as it will go and tighten the nut with a 9/16" (12.7mm), wrench. Do not over-tighten the nut. If leaks occur, further tighten the fitting until the leakage stops.



FLEXBAKE 5™ - INSTALLATION

Drain Tubing Connections

DRAIN TUBING CONNECTIONS

Packaged and shipped inside the oven is a drain tubing kit. Locate this tubing assembly and install as shown in the Figures below.

1. Push the two 1/2"ID x 5/8"OD tubes onto the 1/2" OD stainless steel drain tubes. The tubing assembly should be flush with the back of the oven and stand. Install a 5/8" snap-grip (ratchet) tube clamp on each tube and tighten with a pair of pliers to prevent any leaks.
2. Push the 1/4"ID x 3/8"OD tubing fully onto the open barb on the 'T' fitting.

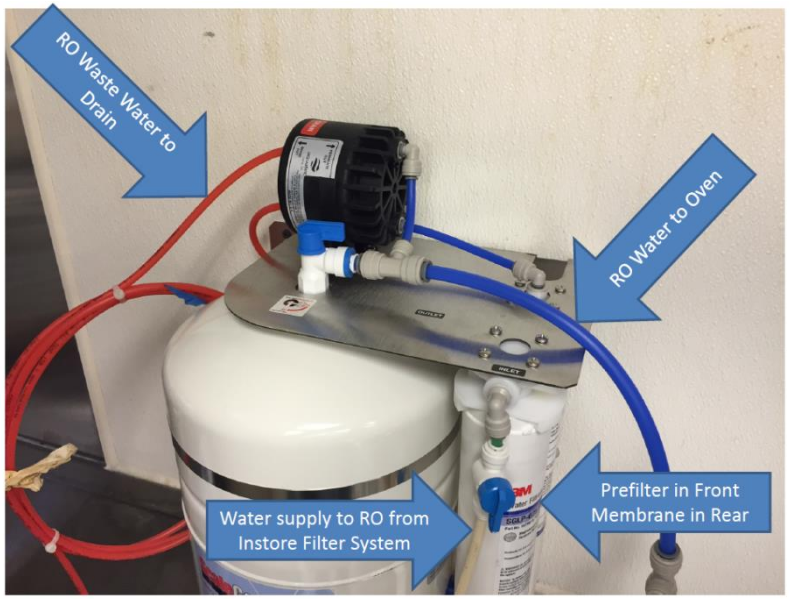
3. Push the 1/4"ID x 3/8"OD tubing onto the 1/4"OD drain tube on the upper vent box. Install a 3/8" snap-grip (ratchet) tube clamp on the tube and tighten with a pair of pliers to prevent any leaks.
4. Install the 2 loop clamps onto the 1/4"ID x 3/8"OD tubing and secure it with the existing screws.

5. Route the loose end of the 1/2"ID x 5/8"OD tube over the top horizontal brace on the back of the stand and toward the front of the unit. From the front, route the tube into the locating hole on the top of the drain pail handle.

6. Inspect the tube routing and make sure there are no kinks in the tubing.

FLEXBAKE 5™ – Reverse Osmosis (RO) Unit

- All FLEXBAKE 5™ require an RO system provided by Duke.
- RO Unit requires ¼” water supply line with minimum 60psi.
- RO Unit supplies water to the oven via a ¼” water line.
- RO Unit requires drain line to be run to a floor drain or sink.



FLEXBAKE 5™ – Baking Procedure

Proofing and baking bread all in one.

- Power on oven and select either full bake, half bake or cookie recipe.
- Oven will begin preheating or conditioning cycle.
- Once desired temperature is reached control will display ready.
- Load floor retarded bread (55-60 degrees F) into oven cavity and close the door.
- Start recipe.
- When appropriate the “add cheese” alarm will sound and display on screen.
- Open door and add cheese to desired products and close the oven door.
- Once recipe is completed the control will sound and prompt the user to remove the bread. From start to finish the total proof/bake time will be roughly 65 minutes.
- Before beginning a new batch of bread it will be necessary to allow the oven cavity to cool down. If next recipe is selected the control will automatically begin the cool down or you can manually select cool down.
- Once the oven cavity is at 115 degrees F the control will be ready. This will take approximately 7-12 minutes.
- After 3 cool downs have ran, the control will prompt the user to empty the drain pan located underneath the oven cavity on the right hand side of the oven stand.

FLEXBAKE 5™ - CARE AND CLEANING

DAILY CLEANING INSTRUCTIONS

1. Pour a large cup of hot water through the cavity bottom drain to flush any bread crumbs or seasoning from drain line.
2. Empty drain water pan.
3. Clean Drip Tray with clean damp cloth.
4. Clean stainless steel exterior with stainless steel cleaner or polish, or with hot soapy water followed by a clean water rinse.
5. Clean oven doors with a glass cleaner.
6. Clean oven interiors with a damp cloth. If heavy soil areas exist clean with hot soapy water and follow with clean damp cloth.

WEEKLY CLEANING INSTRUCTIONS

1. The Cool-Touch door has two window panes. The inner window can be easily separated from the outer window for cleaning. This is achieved by unlatching two clips and rotating the inner window on its hinges. After cleaning, the inner window frame is easily clipped to the outer window by squeezing the two windows together.
2. Inspect oven door gaskets for cuts, tears or any other damage.

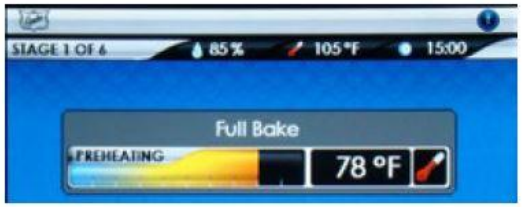
FLEXBAKE 5™ - Control

Boot Screen

Automatically Transitions to Main Screen

Oven Cool Down

Recipe Preheat Screen
(if under temp. setpoint)



Count Down Timer
(with Progress Bar)

FLEXBAKE 5™ - KEY FEATURES

PIN Controlled programming

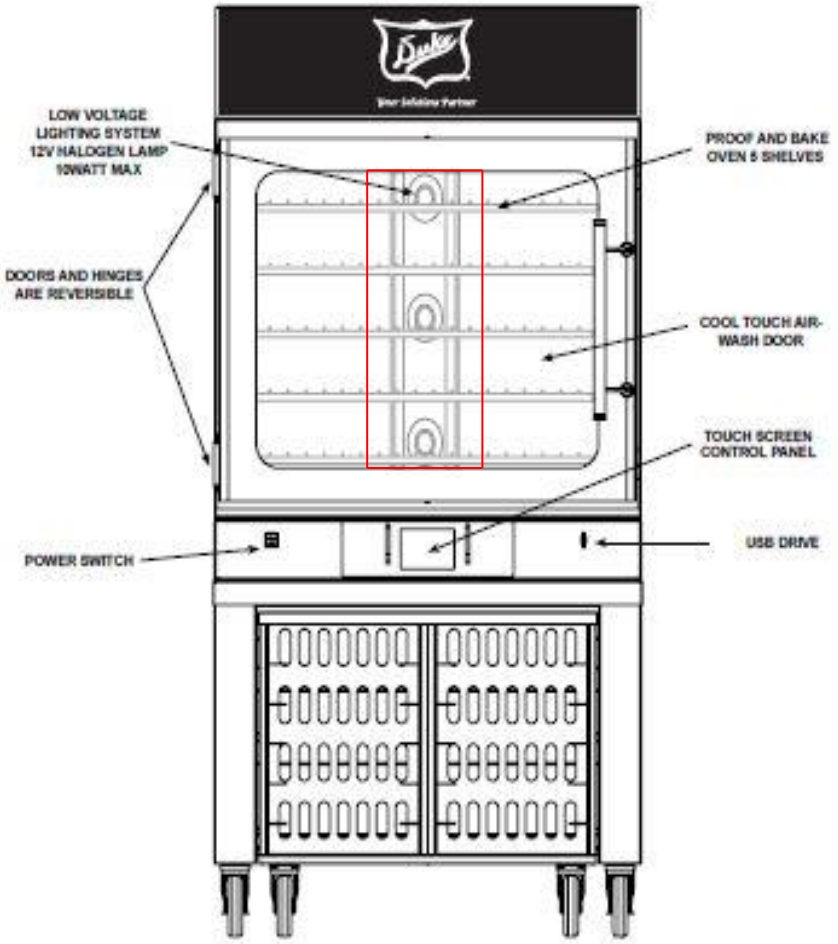
Allows only authorized employees or managers to access programming functions

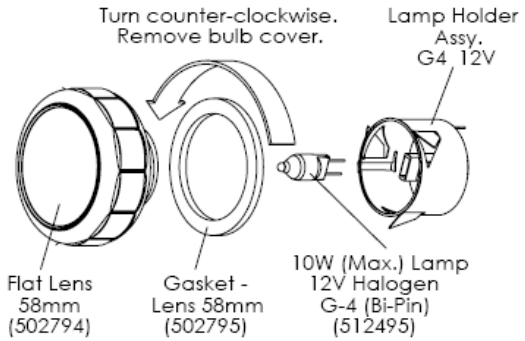
Special Functions

- Provides access for - Programming
- Training
- Preventive Maintenance Tutorials
- Diagnostics – On screen troubleshooting

FLEXBAKE 5™ - Bulb, Globe & Fixture

- **FLEXBAKE 5™ Halogen Lamps (3) (Part# 512495 / Assembly #502792)**
  - Very easy to access in the interior of the Oven
  - **<u>REPLACEMENT BULBS MUST NOT EXCEED 10 WATTS</u>**. Higher wattage bulbs will cause damage to the transformers.
  - **<u>DO NOT TOUCH THE HALOGEN LAMPS WITH BARE HANDS</u>!** The oil on human skin will shorten the life of the Bulbs.

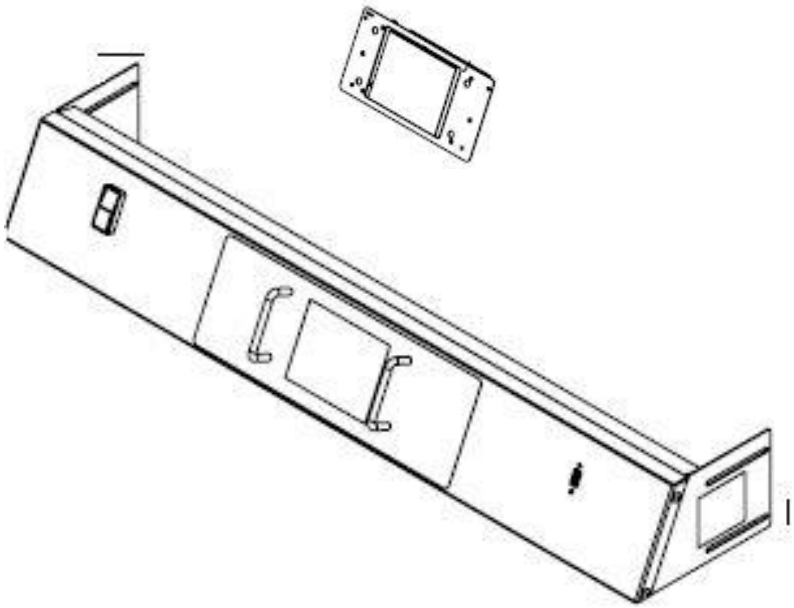




FLEXBAKE 5™ - SERVICEABILITY

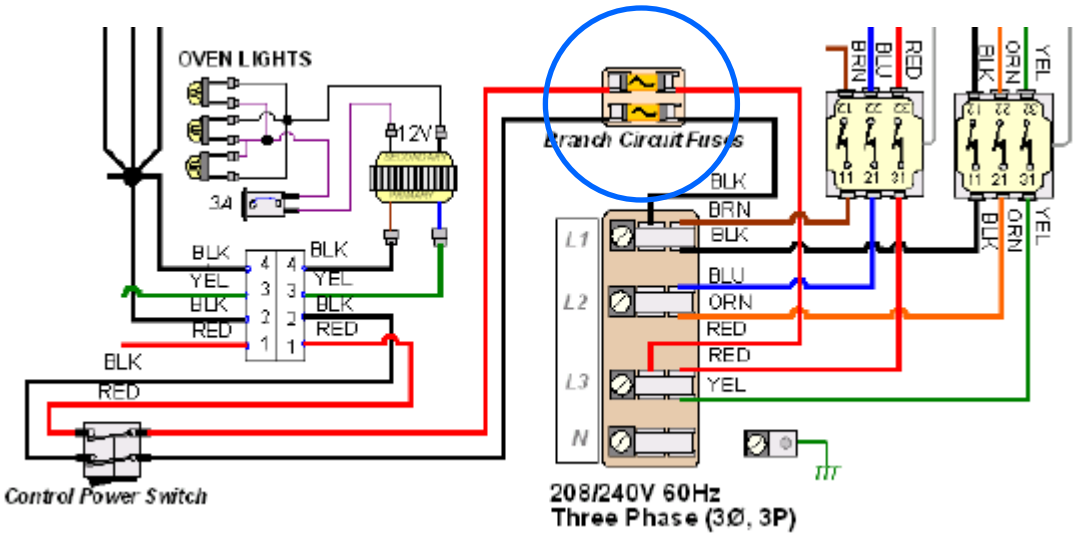
Serviceability

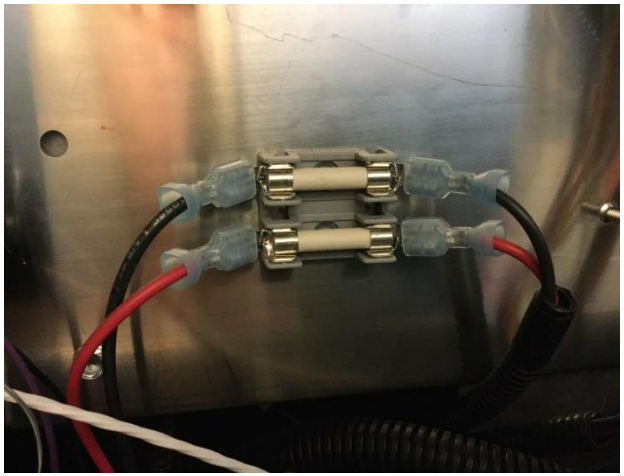
- All key components are easily accessible
- The front control cover pivots down for easy access to control board, door switch and buzzer. Remove right rear panel for easy access to electrical compartment Relays, IO boards, PCB, fuses and cooling fans.



Branch Fuses - Part #120103

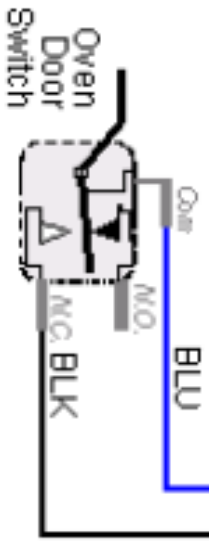
- Two 12.5 amp fuses protect the power supply PCB and control circuit
- Located in bottom of rear electrical access panel

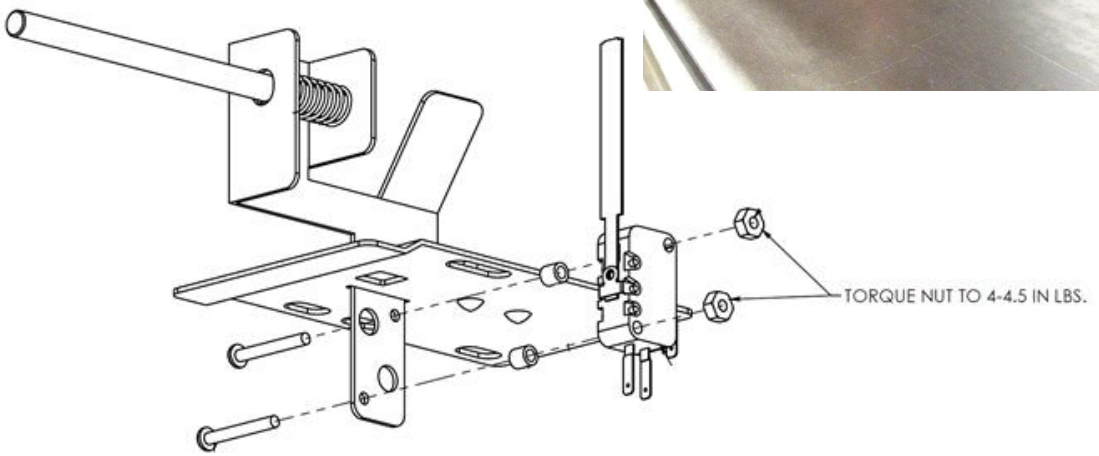




Door Switch – Part #512569

- **Door Switch**
  Very easy to access behind the LCD Controller
  - Interrupts power to the Oven Blower Motor and Heaters when the door is opened while in operation
  - Torque in-place to 4.5 in-lb





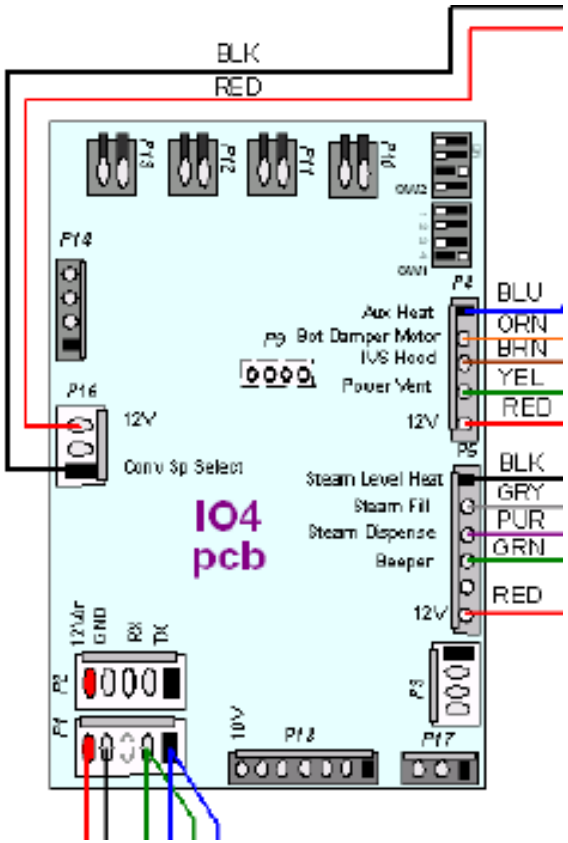
RTD - Part #512777

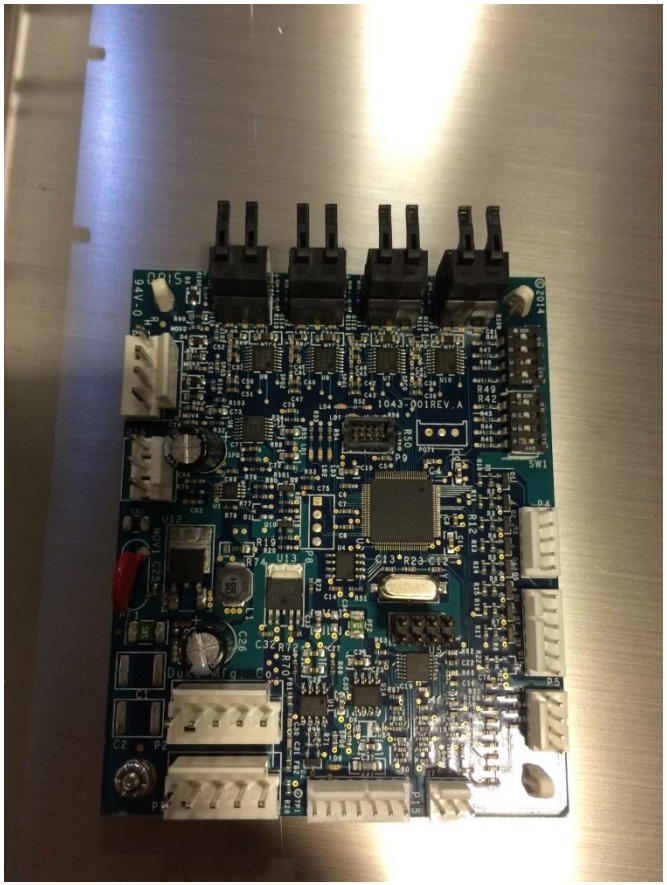
- Access by removing rear panel.
- Remove two screws from inside oven cavity, break silicone seal and unplug from IO board.
- It will be necessary to apply RTV silicone to replacement base plate

Rear View

IO4 Board – Part #514801

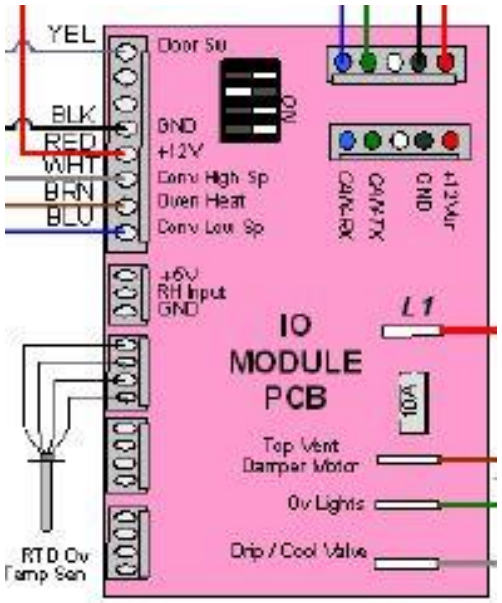
The 12vdc supplied IO4 Board triggers the Relay Board and Element Relays with 12vdc to turn on the IVS Hood Fan, Aux. Heat (2 x 1000w Elements), Lower Damper Motor, Cool Down Fan. **ESD Required**





PCB IO Module - Part #514800

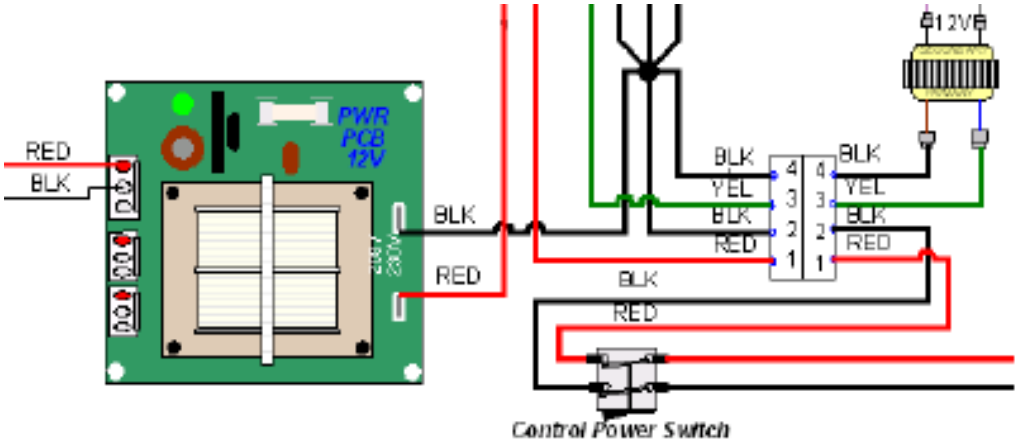
PCB IO board is supplied with 208/240v.
The RTD terminates at the I/O board.
Triggers both of the (4x1400w) element relays with 12vdc.
Triggers 12vdc to relay board for High and Low Convection Blower speeds.
Provides 208/240v to light transformer, water solenoid valve and upper damper motor.
Protected with fuse **ESD Required**

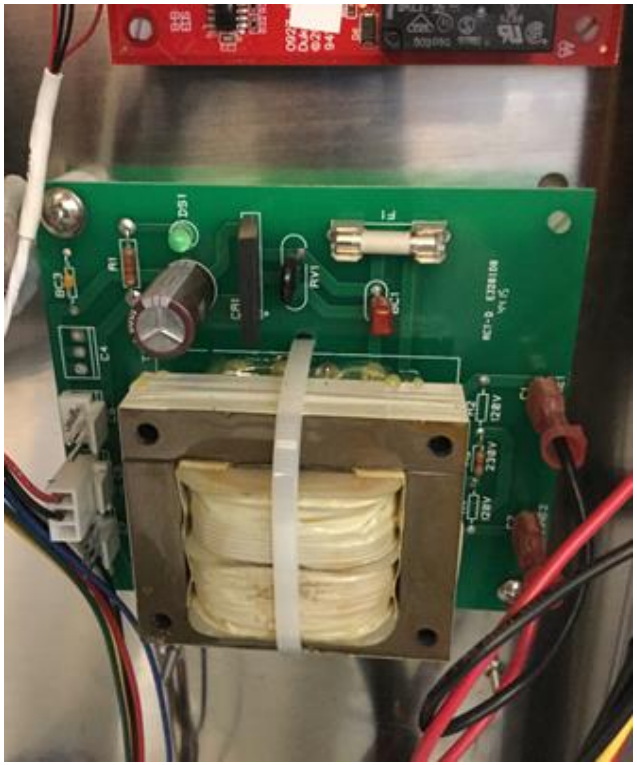


12v Power Supply PCB - Part #120011

- Supplied 208/240v when power switch is turned on
- Supplies 12vdc to IO Module, IO4 PCB, and TSC
- Protected with fuse

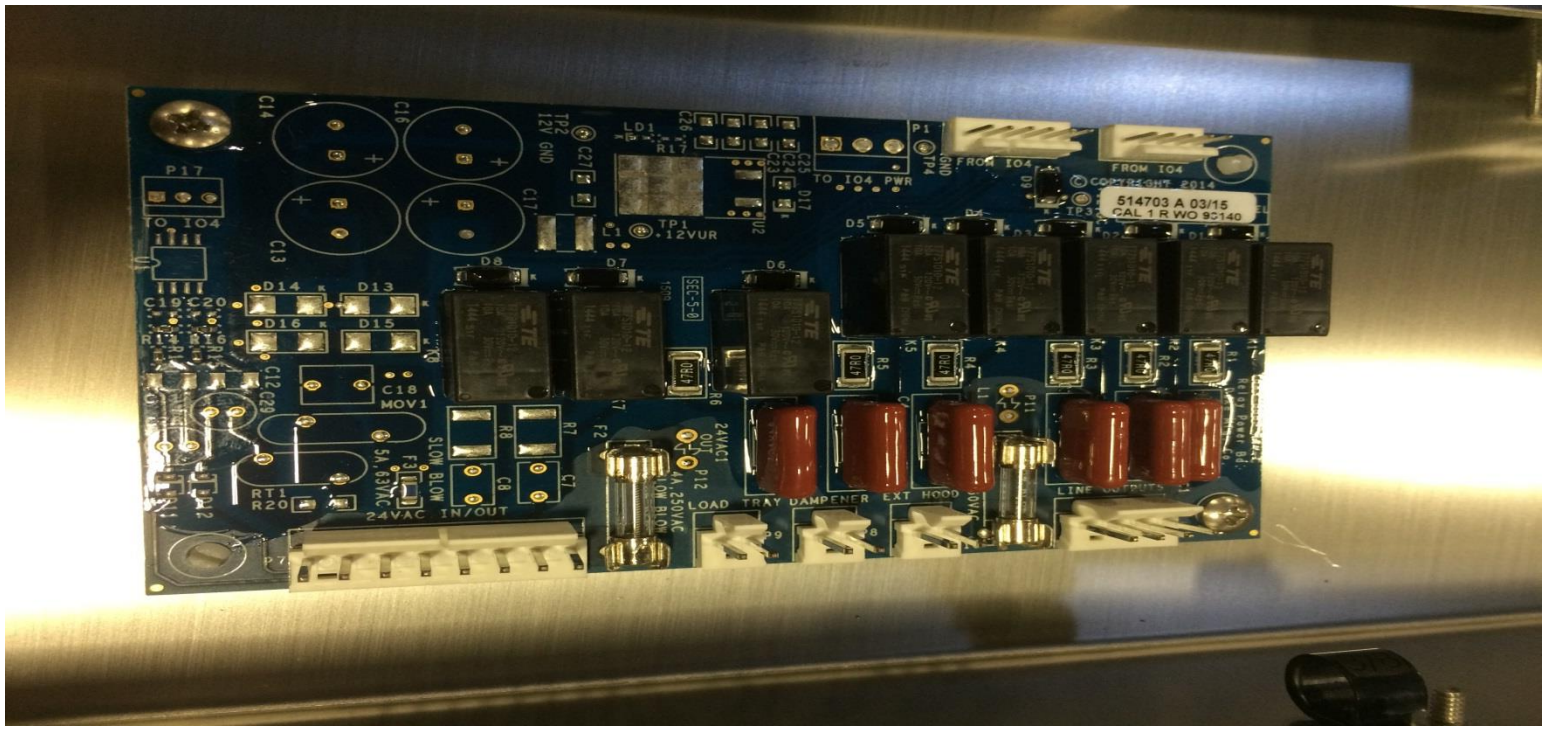
ESD Required





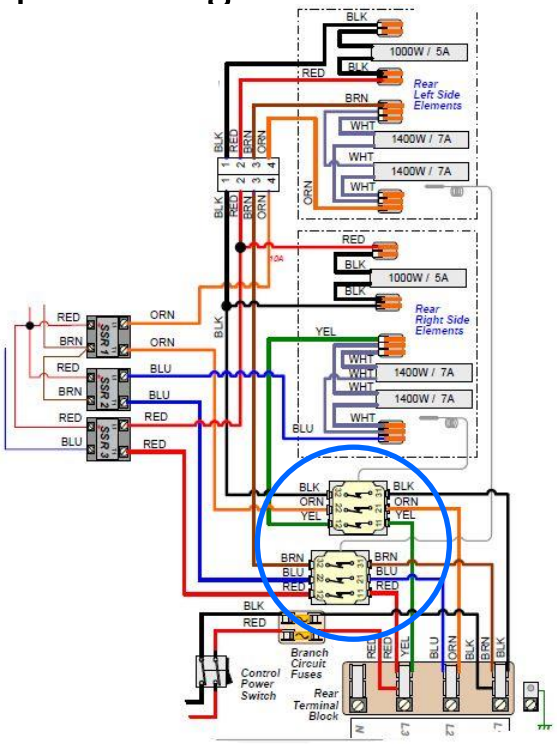
Relay Board - Part #514703

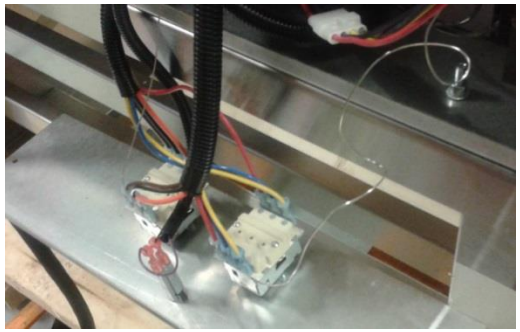
- Supplies 208/240v to Convection Motor, winding interlock relay coil, Lower Damper Motor, IVS Blower Motor, Cool Down Fan
- Fuse protected **ESD Required**



Hi-Limit Reset - Part #512765

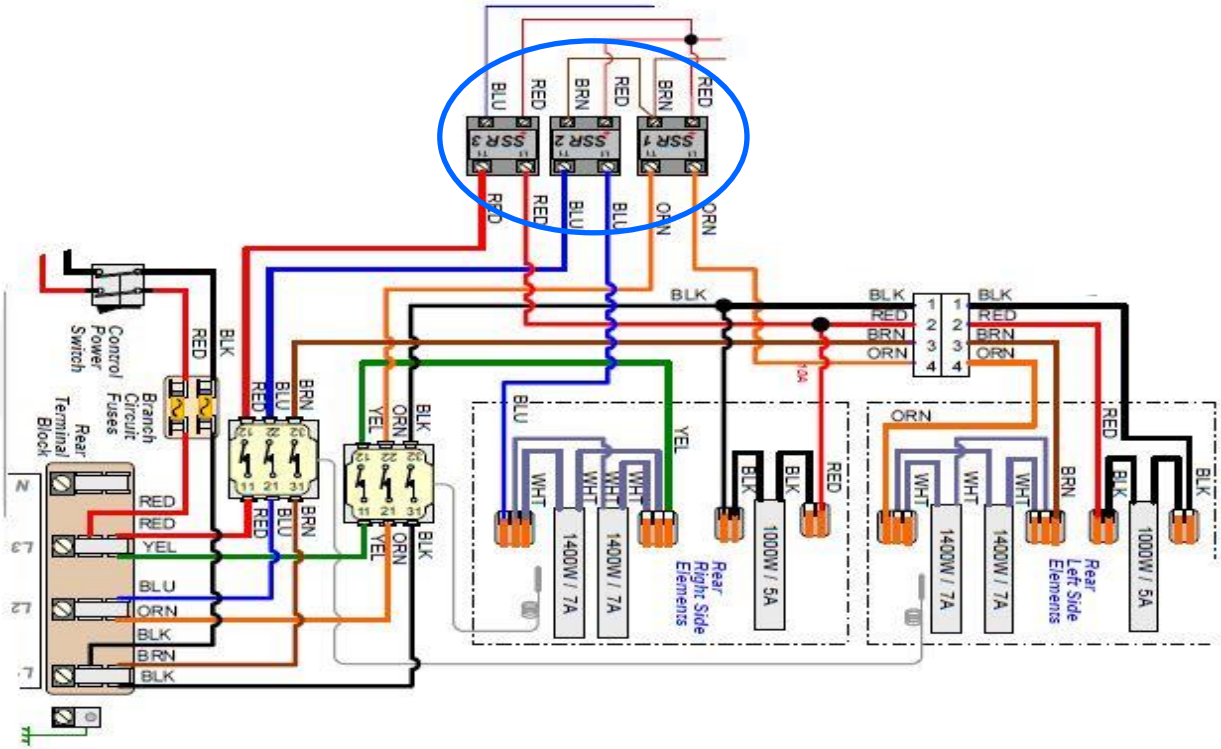
- There are two Hi-Limits which interrupt power supply to the element relays if the oven temp exceeds 450 degrees F.
- The Hi-Limit Bulbs are located on the right and left side interior wall behind the removable panels
- Hi-Limits are mounted on the rear lower access panel just to the right of the input voltage.





Solid State Relay - Part #120005

- There are 3 Element Relays
- Top relay powers the left hand 1400w Elements
- Middle relay powers the right hand 1400w Elements
- Bottom relay powers the left and right 1000w Auxiliary Elements
- At call for heat - relays are triggered by 12vdc from the IO Module
- Incoming line voltage powers Relays through the Hi-Limits

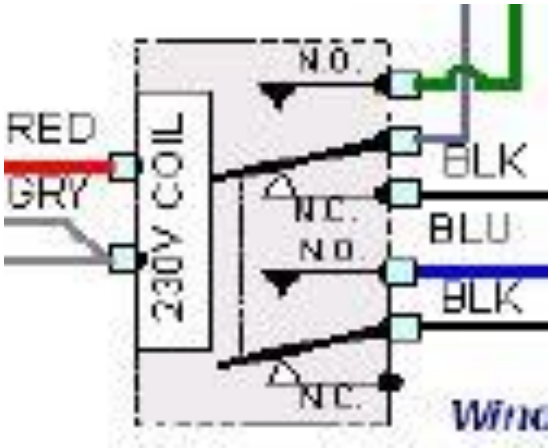


Element Assembly - Part #514090 (208V) / #514215 (240V)

- Element assemblies consist of 3 Firebar heaters, 2 outer 1400w main heaters and 1 center auxiliary 1000w heater
- Voltage specific, but right hand and left hand are same part
- Access by removing oven interior top and side panels
- Access to connections thru rear electrical panel

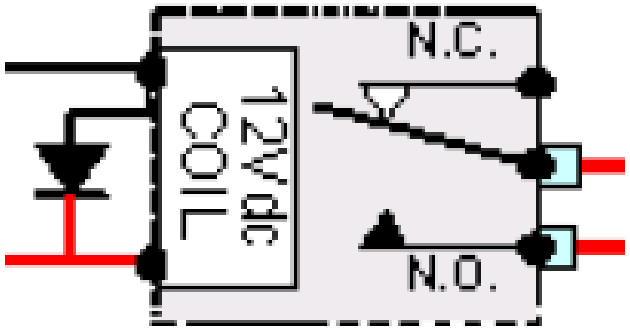
WINDING INTERLOCK RELAY – Part #512781

- 208/240V to coil from speed select relay during low speed operation only
- Not energized during high speed operation
- Mounted on top of oven near the convection motor



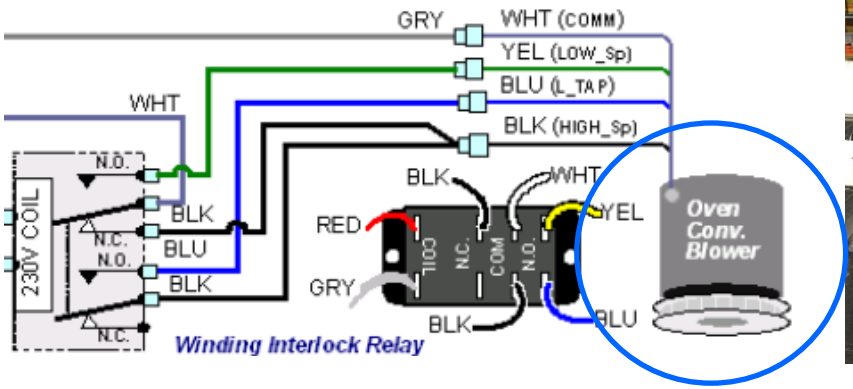
SPEED SELECT RELAY – Part #514798

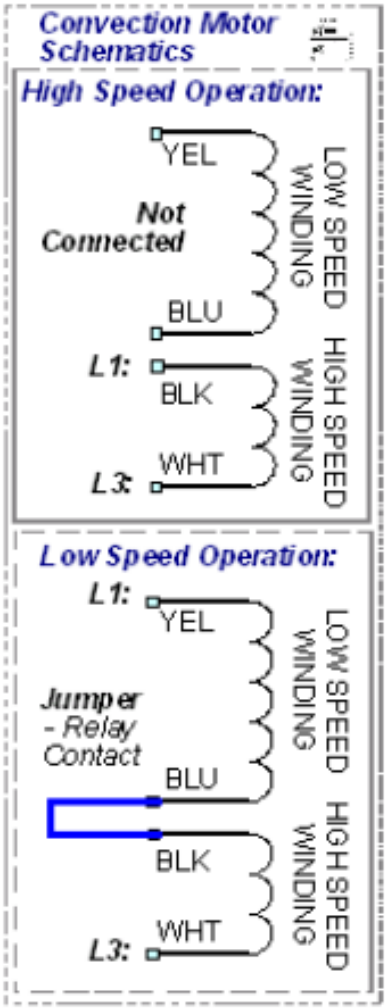
- 12VDC supplied to coil from IO4 board during low speed operation
- Located in rear control panel



Convection Blower Motor – Part #514070 (208V) / #514217 (240V)

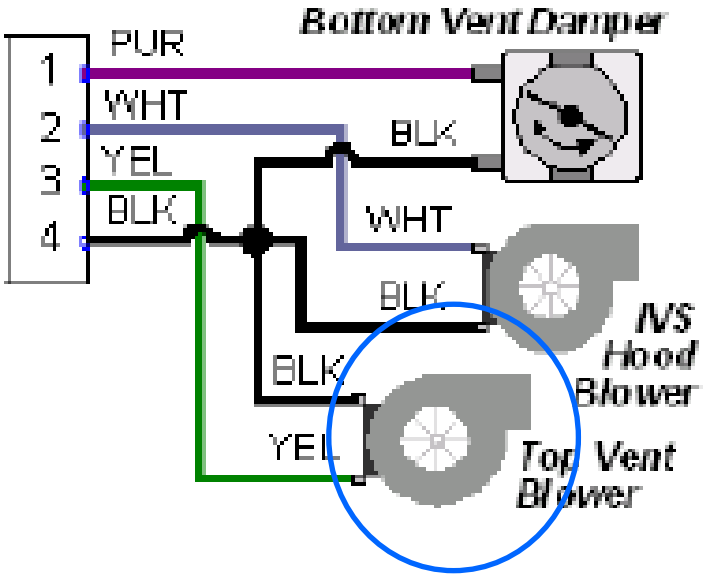
- 208/240V supplied by RPB Relay board
- 2 speed motor
- Speed switched thru winding interlock relay
- 30 second delay when changing speeds

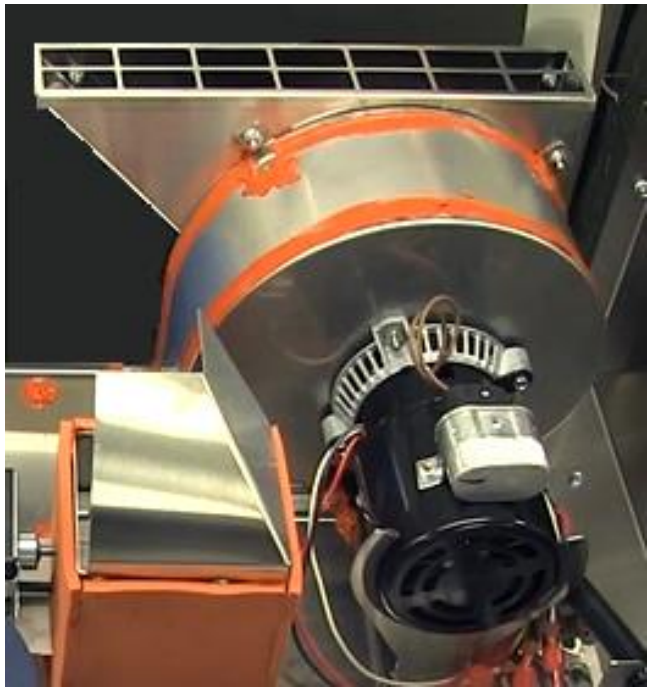




Cool Down Blower – Part #514710

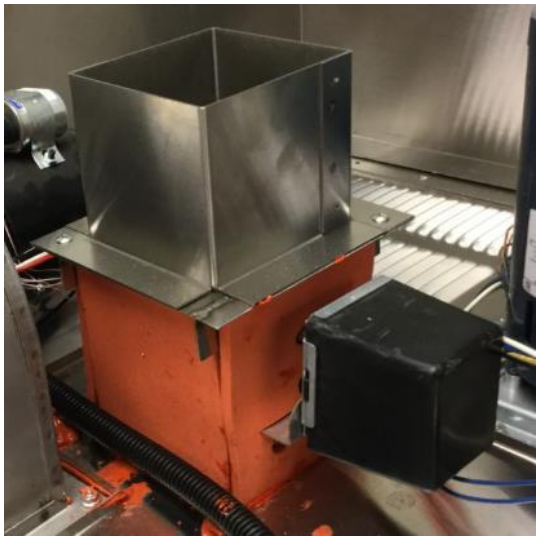
- 208/240V supplied from RPB Relay board
- Located on top of oven at rear left hand side
- Runs during cool down and cooling portion of conditioning cycles

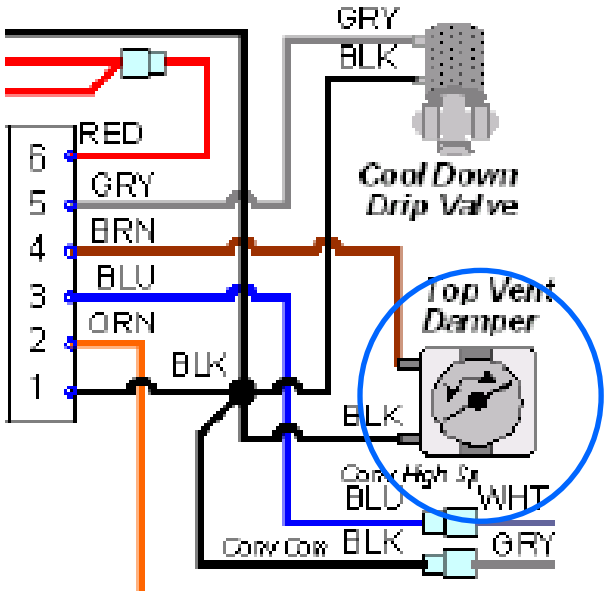


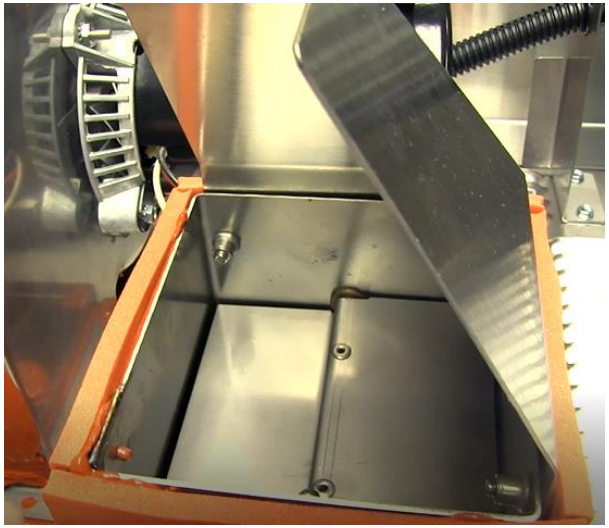


Top Vent Damper – Part #514810 (208V) #514829 (240V)

- 208/240V Supplied from I/O board
- Powered on, open during cool down cycle
- Located on top the oven

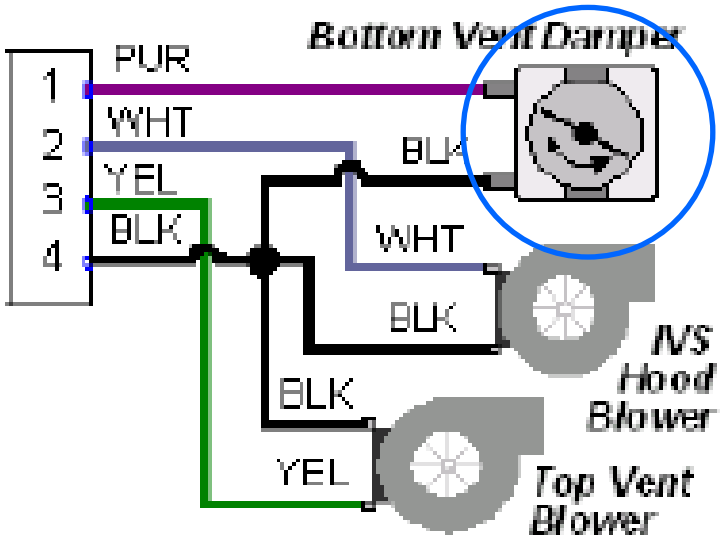


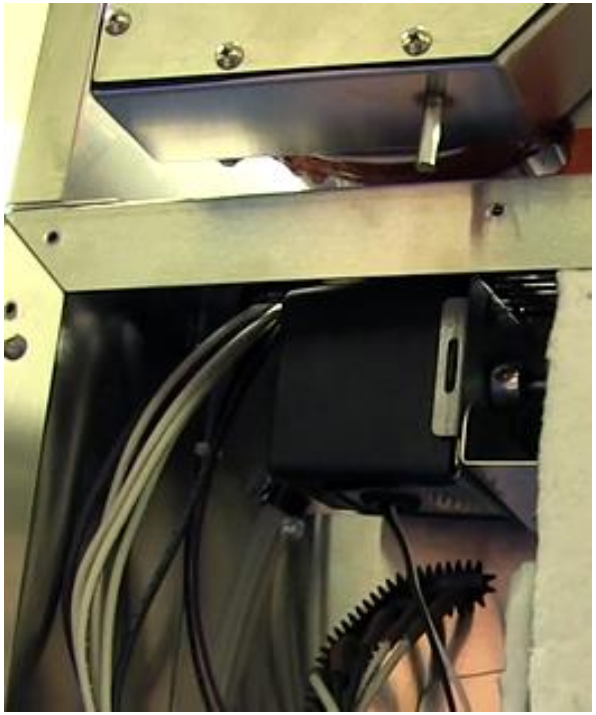




Bottom Vent Damper – Part #514810

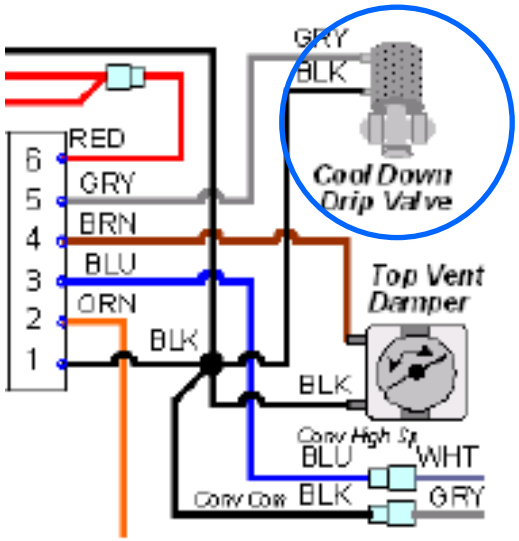
- 208/240V supplied from the RPB Relay board
- Powered on, open during cool down and cooling portion of conditioning cycles
- Mounted behind rear left hand access panel





Cool Down Drip Valve – Part #514731

- 208/240V supplied from the I/O Board
- ¼” water line supplies water from RO unit
- Energized during the cool down, conditioning, and proofing cycles
- Located on top of the oven

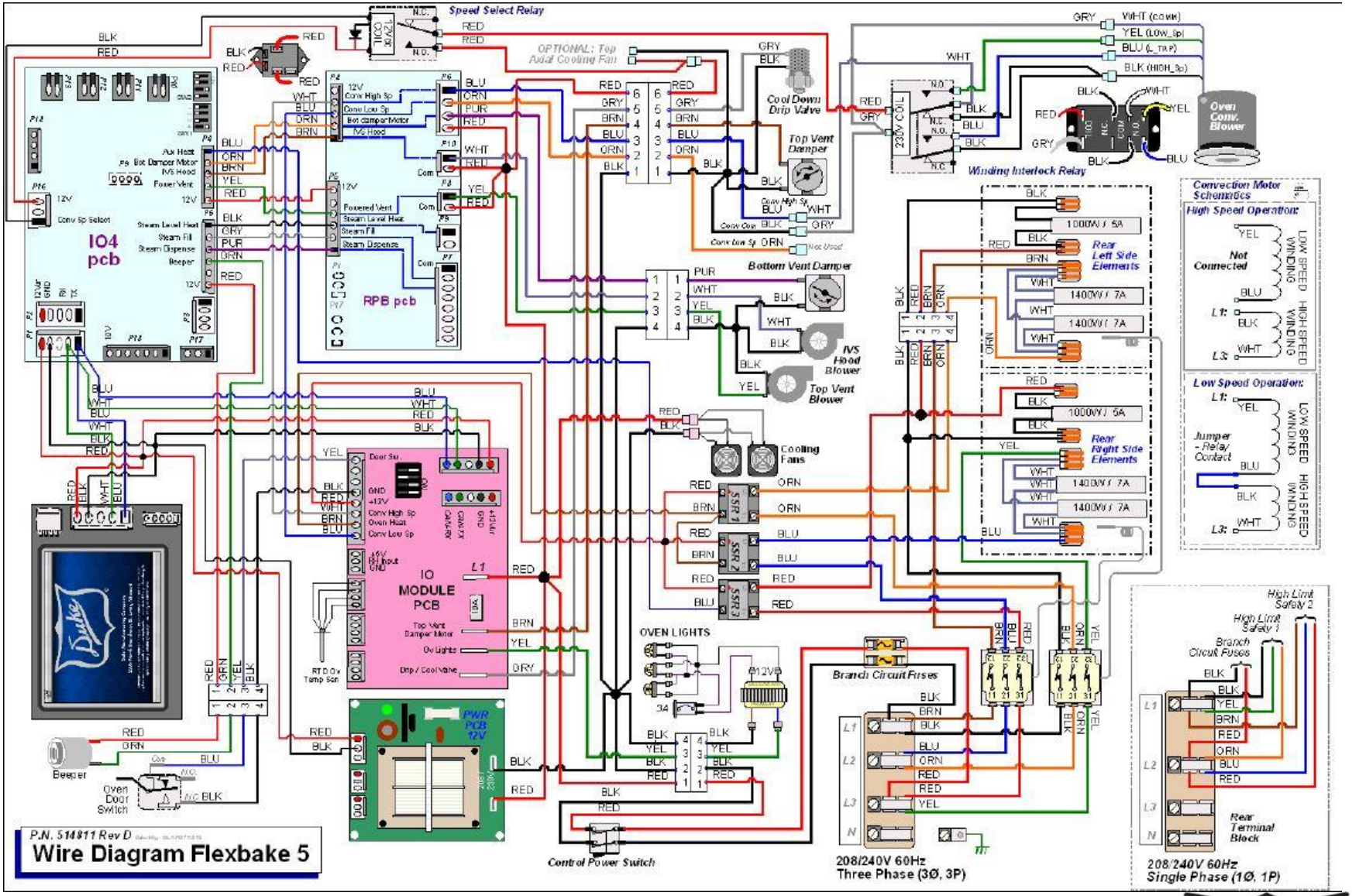


FLEXBAKE 5™ - TROUBLESHOOTING

TECHNICAL TROUBLESHOOTING - FLEXBAKE 5™ Proof and Bake Oven

Cool down cycle takes excessive time	• Determine what temp the oven gets to in 10 minutes. • Confirm water is running inside oven for 7 minutes, if not check that the RO unit has water to it and is supplying water out to oven. • Confirm the convection and cool down motors are running. • Confirm that dampers for convection and cool down blowers are open. • Confirm what equipment is around oven, possibly causing hot air at cool down blower intake. • Determine if oven has hood or other ventilation over it and it is running properly.
High limit reset on back of oven trips	• Confirm convection blower is running – if not correct issue. • If running – visually inspect elements and check amp draw. • If elements are good – replace high limit thermostat. • Verify the SSR relays are not shorted closed.
Convection motor will not run on high speed	• Confirm voltage to motor *(Black and White wires)*. • If no voltage at motor – confirm that neither speed select relay nor winding interlock relay are energized. • Confirm 208/240V output from "Hi Speed" terminal on RPB Relay Board *(Blue wire)*. • If no output voltage – confirm 12V output from red I/O board, "Conv High Speed" terminal *(White wire)*. • Check motor capacitor – should be 15 MFD, +/- 0.5MFD.
Convection motor will not run on low speed	• Confirm voltage to motor *(Yellow and White wires)*. • If no voltage to motor – confirm winding interlock relay and speed select relay are energized. • If not – check for 12vdc to coil of the speed select relay. • If no voltage to coil – check I/O 4 board. • Confirm motor shaft spins freely.

FLEXBAKE 5™ - Wiring Diagram



WRAP UP