SERVICE MANUAL

Minijet V2s

V2MF061E-86
V2MF061E-86FD
SN START P-F43393A

- NOTICE -

This Manual is prepared for the use of trained Hobart Service Technicians and should not be used by those not properly qualified.

This manual is not intended to be all encompassing. If you have not attended a Hobart Service School for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained Hobart Service Technician.

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Document Title	**Document Type**
Minijet Parts Catalog	Parts Catalog

SERVICE UPDATES

MAY 2023

- New data module, SETTING FLOW METER FREQUENCY.
- Updated ERROR SCREENS AND INFORMATION.

AUGUST, 2022

- ADDED SERIAL NUMBER BREAKS.

GENERAL

INTRODUCTION

This guide provides service information for the Minijet Combi oven. These ovens include the following standard features.

- Multiple cooking capabilities including: Baking, Steaming, Roasting, Grilling, Air-Fry, Rethermalization, Proofing, Finishing, Poaching, Stewing, Low Temp, Defrosting, Cook & Hold, and more.
- Boilerless combi operation using direct steam creation for optimized cooking capability and production with minimal energy and water consumption.
- Capacity of (4) 12" x 20" x 2.5", (4) 13" X 18" X 1" or (6) 12" x 20" x 1" pans.
- Control via LCD touch screen display and an encoder turn/push knob.
- Temperature range of 80-482 °F with visual display of Set and Actual temperature readings.
- Timed operation up to 99:00 hours. Timer can display amount of time set, time remaining, or count time. The timer resets for batch cooking after completion of a timed cycle (ABC).
- Humidity range of 0-100%.
- Cavity blower with speed control and auto-reversing capability.
- Flashing LED lights and an audible alarm that alerts the user when the cooking cycle finished.

There are three primary interface screens: Auto, Manual, and Tool Box. The auto and manual interfaces contain various controls and icon associated with oven operation. The tool box interface contains icons and controls associated with configuring the oven.

TOOLS

Standard

- Standard set of hand tools.
- Metric set of hand tools.
- VOM with measuring micro amp current tester. Any VOM with minimum of CAT III 600V, CE certified. Sensitivity of at least 20,000 ohms per volt can be used. In addition, meter leads must also be a minimum of CAT III 600V.
- Clamp on type amp meter with minimum of NFPA-70E CAT III 600V, UL/CSA/TUV listed.
- Temperature tester (thermocouple type).
- Field service grounding kit.

Special

- Puller and M6x40 socket head screw to remove convection fan.

WATER QUALITY STATEMENT

The fact that a water supply is potable is no guarantee that it is suitable for steam generation. Proper water quality can improve the taste of the food prepared in the oven, reduce scale build-up or corrosion, and extend equipment life. Local water conditions vary from one location to another and can change throughout the year. The recommended water treatment for effective and efficient use of this equipment will vary depending on the local water conditions. Your water supply must be within the general guidelines outlined in the chart below at all times during use of this machine or service issues not covered under warranty may result.

NOTE: Failure to properly maintain water quality or preventative procedures for water can lead to issues not covered under warranty.

WATER SUPPLY GENERAL GUIDELINES CHART [1]	
Supply Pressure (dynamic flow)	30-60 psig
Hardness	less than 3 grains (17.1 ppm = 1 grain of hardness)
Silica	less than 13 ppm
Chloramines [2]	zero
Chlorides [2]	less than 30 ppm [3]
Total Chlorine [4]	zero
PH	range 7-8
Un-Dissolved Solids	less than 5 microns

[1] Testing of water is always done AFTER water filter or water treatment used. Water quality does change with usage and should be checked periodically to see if the condition worsens.

[2] A carbon block filter system should always be used to remove Chlorine and Chloramine. If a

water softener is used, a carbon block is still required. Check with your local water treatment specialist for proper sizing and replacement intervals for the carbon block cartridge.

[3] If the Chlorides exceed 30 ppm and the oven is used more than 8 hours during the day in steam or combination mode the cavity will require rinsing every 8 hours. Failure to do so will result in corrosion and rusting of the oven cavity and interior parts. A Reverse Osmosis water treatment system can be installed to eliminate chlorides from the water and reduce the hardness. Preventative washing and rinsing may be needed more than once a day to prevent compounding of contaminants inside cavity.

[4] Total Chlorine of 4.0 ppm is the max limit for the building water supply. A carbon block filter must still be used to remove all Chlorine and Chloramines from the water. Failure to do so will result in corrosion and rust in the cooking cavity which is not covered under warranty.

Water hardness should be treated by removing the impurities (water softener with carbon block or dechlorinator and/or in-line water treatment). Low water hardness may also require a water treatment system to reduce potential corrosion. Water treatment has been shown to reduce costs associated with machine cleaning, reduce deliming and reduce corrosion of metallic surfaces.

Daily washing and rinsing of the cavity is required. In some cases it may be needed more than once a day to prevent compounding of contaminants deposited inside cavity even with acceptable filtration. Failure to wash and rinse down the cavity daily could result in damage of the oven cavity and interior parts. A Reverse Osmosis water treatment system can be installed to eliminate chlorides or other contaminates from the water if needed.

STAINLESS STEEL STATEMENT

Stainless steel has a thin protective sheet formed on the metallic surface to protect it against corrosion. Anything facilitating its partial destruction (food residues, overflow of liquids, stagnant liquids, etc.) reduces the resistance of stainless steel to corrosion. While the composition of stainless steel enables it to withstand some chemical aggression better than classical steels, it is not indestructible. Three main factors contributing to corrosion should be watched for:

- Chemical environment.
- Temperature.
- Duration of contact.

The combination of these three factors may lead to the eventual destruction of parts of the equipment, even if they have been made in very high quality stainless steel. Generally, cleaning products, which are not appropriate or are improperly used, lack of maintenance, or extreme conditions of use are often found to be the cause of damage.

SPECIFICATIONS

⚠ WARNING

Electrical and grounding connections must comply with the applicable portions of the National Electrical Code and / or other local electrical codes.

ELECTRICAL CONNECTIONS

- Standard: 208/60/3 with 6-foot cord and LP-15-30P NEMA plug.
- Field convertible options: 208/60/1, 240/60/1 or 240/60/3.

SUPPLY

- 208 VAC.
  - 1 Phase / 5.2 kW / 25 Amp.
  - 3 Phase / 5.2 kW / 14.9 Amp.
- 240 VAC.
  - 1 Phase / 6.83 kW / 28.5 Amp.
  - 3 Phase / 6.83 kW / 16.8 Amp.

⚠ WARNING

Plumbing connections must comply with the applicable sanitary, safety and plumbing codes.

NOTICE

Failure to connect the filtered supply port to an approved filter system will void the warranty.

PLUMBING CONNECTIONS

SUPPLY

Filtered and unfiltered water line female fittings connect to ¾-inch male NHST fittings. The input supply must meet the criteria provided in WATER QUALITY STATEMENT.

DRAIN

The drain port is a 1¼-inch un-threaded adjustable copper elbow.

- Drain water can be condensate and at a very high temperature (140 °F). Use suitable materials in drain plumbing.
- The drain plumbing (not supplied) must include a trap. Refer to local codes and regulations.

AIR SUPPLY / EXHAUST

- The required flow rate of new air for combustion is 1.2 Cubic Feet / Minute (CFM) per kW of heat release rate.
- The steam exhaust flues are not to be connected tightly on to a hood or to an exhaust duct.

SOFTWARE

Minijet V2 Models Software - IHM223 UC222 FLA217 REL111.

- System reinitialization function.
  - Activation is done by 6 open/close oven door (closing of door contact, without handle locking), before the end of the software loading during the oven starting.
  - Action is validated and the following message will be displayed on oven restart.
  - Default settings done (including the starting again of the cycle in progress)
  - Parameters « customers », « technician » et « installation » are not changed.
- Oven serial number: BYP27529169i from 11/06/2019, all ovens with FastPAD CombiPlus touch screen are equipped with the new update UC129 - REL111 - LCD009. This update is retro compatible with all VISIOPAD ovens.
- Equipped with FastPAD touch screen.
- Improved communication management between SD card and the system, avoid losing recipe pictures or, sometime, system bug at the oven starting.
- Counter for functioning total hours.
- • Solving preheating function management in automatic recipes (AUTO mode):
  - 5 cooking steps, the preheating is activated only before the 1st cooking step.
- Counter updating which indicates the « days before maintenance » at one time a day.

SERIAL NUMBER BREAKS

NAME	SERIAL NUMBER	START DATE
UNIT ASSEMBLY	P27529623i	01/09/2019
CONTROL PANEL	P27529623i	01/09/2019
DOOR SUB-ASSEMBLY	P27529623i	01/09/2019
ELECTRIC CIRCUIT	P27529623i	01/09/2019
HYDRAULIC CIRCUIT	P27529623i	01/09/2019
MOTOR + FAN SUB-ASSEMBLY	P27529623i	01/09/2019
ELEMENT SUB-ASSEMBLY	P27529623i	01/09/2019
MOTORISED VENT VALVE SUB-ASSEMBLY	P27529623i	01/09/2019

REMOVAL AND REPLACEMENT OF PARTS

TOP COVER

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Unscrew and remove vent cover (1, Fig. 1).
2. Remove rubber boot (2, Fig. 1) from vent tube.
3. Remove screws, washers, and top cover.
4. Reverse procedure to install.

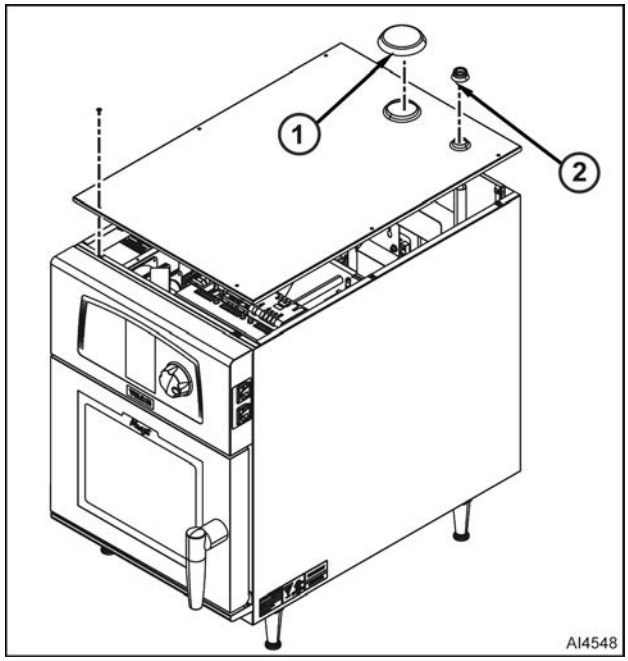

Fig. 1

BACK COVER

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER.
2. Remove screws and back cover (Fig. 2).
3. Reverse procedure to install.

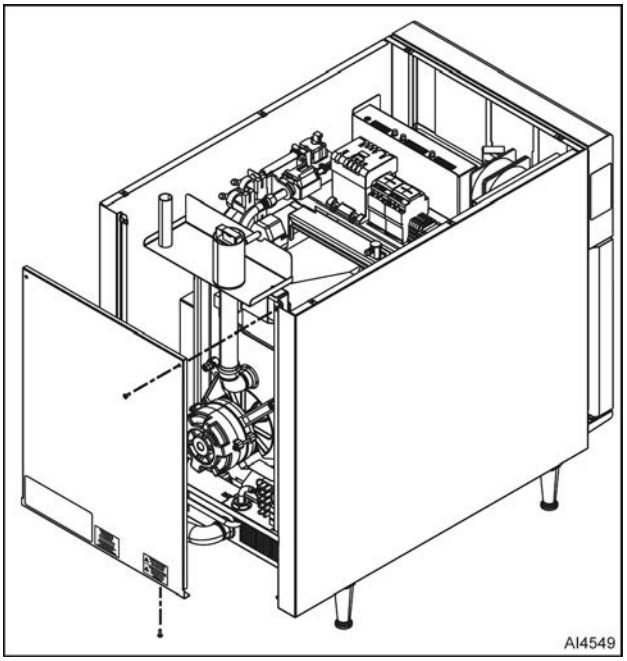

Fig. 2

SIDE PANEL

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER.
2. Remove screw securing side panel to back of unit, on side panel being removed.
3. Lift side panel up and out to unlatch from front frame (1, Fig. 3).

Fig. 3

4. Reverse procedure to install.

CONTROL PANEL

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER.
2. Remove control panel mounting screws.

Fig. 4

3. Allow panel to drop and rest on door hinge and pull forward to remove.
4. Reverse procedure to install.

ELECTRICAL PANEL DRAWER

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove CONTROL PANEL.
2. Disconnect ethernet and USB connectors from control panel and lay aside.
3. Disconnect door switch connector (1, Fig. 5) from board.

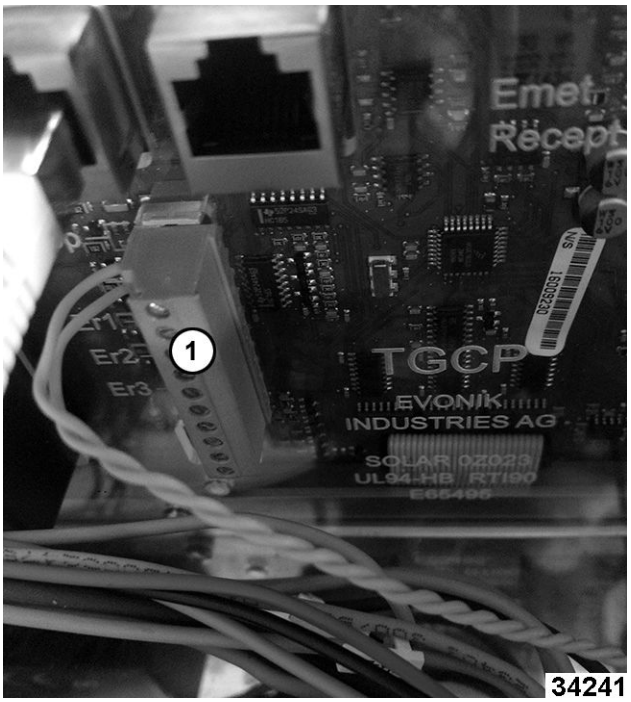

Fig. 5

4. Remove screw (1, Fig. 6) securing drawer.

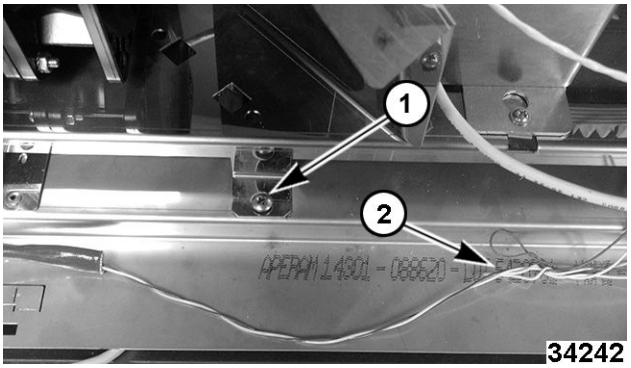

Fig. 6

5. Move door light wire (2, Fig. 6) out of the way and pull the drawer forward.

NOTICE

Do not pull drawer out more than eight inches.

6. Reverse procedure to install.

NOTICE

Take care not to catch wires in drawer when during installation.

ENCODER

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER.
2. Remove CONTROL PANEL.
3. Pull encoder knob (2, Fig. 7) and remove nut from encoder (1).
4. Disconnect encoder cable connector (4, Fig. 7) from touch panel / display assembly.
5. Disconnect spade lug (3, Fig. 7) from control panel frame.
6. Remove encoder from control panel.
7. Reverse procedure to install.

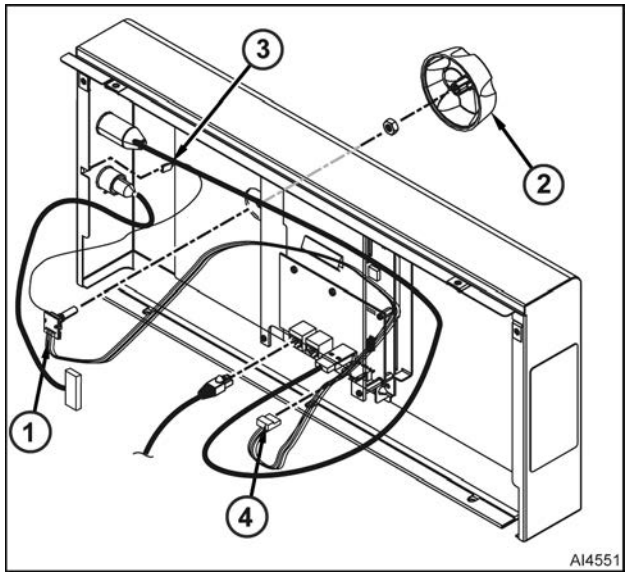

Fig. 7

TOUCH PANEL / DISPLAY ASSEMBLY

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER.
2. Remove CONTROL PANEL.
3. Disconnect external USB cable (1, Fig. 8) from touch panel / display assembly.
4. Disconnect Ethernet cable (2, Fig. 8) from touch panel / display assembly.
5. Disconnect encoder cable (3, Fig. 8) from touch panel / display assembly.
6. Remove blind nut and spring (4, Fig. 8).
7. Tilt and lift touch pad / display assembly (5, Fig. 8) from bracket (6).
8. Reverse procedure to install.

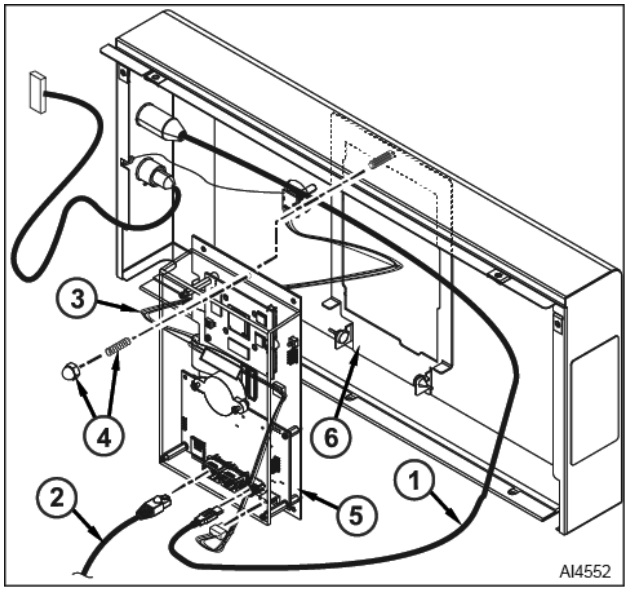

Fig. 8

BUZZER

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER.

2. Remove CONTROL PANEL.
3. Remove fasteners and cover from touch panel / display assembly.
4. Disconnect buzzer electrical cable connector (Fig. 9) from touch panel / display assembly.

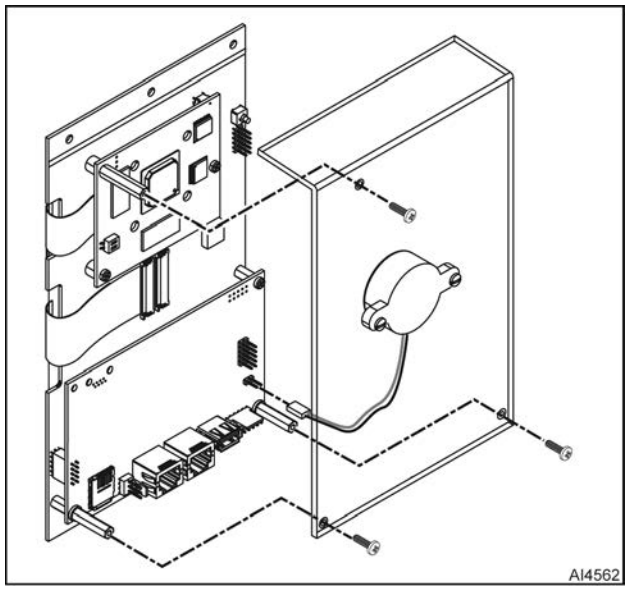

Fig. 9

5. Remove fasteners and buzzer (Fig. 10) from touch panel / display assembly cover.
6. Reverse procedure to install.

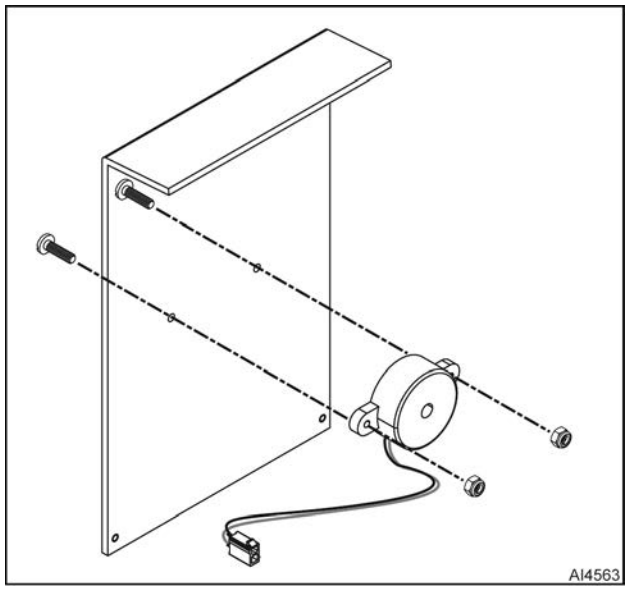

Fig. 10

OUTPUT CONTROL ASSEMBLY

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER or in stacked units access ELECTRICAL PANEL DRAWER.
2. Note and disconnect connectors from output control assembly (1, Fig. 11).

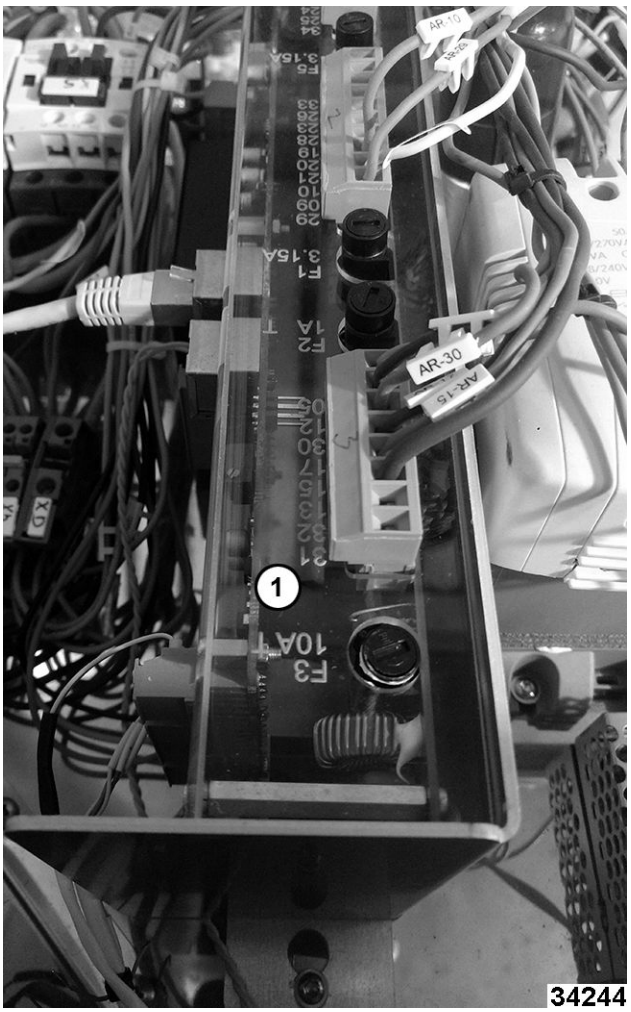

Fig. 11

3. Loosen two screws and slide output control assembly (1, Fig. 12) to front.

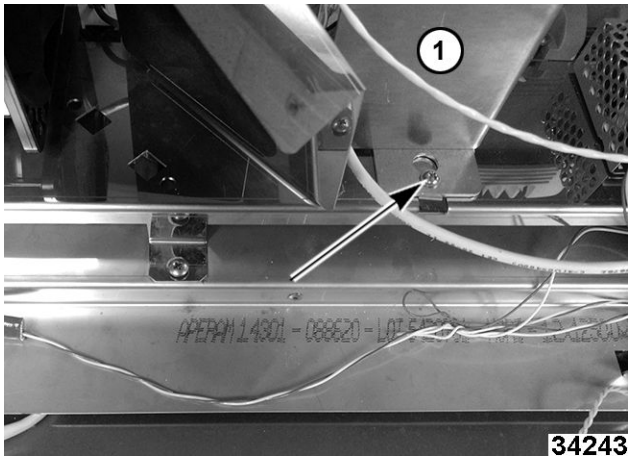

Fig. 12

4. Lift output control assembly out of oven.

NOTE: Verify no wires are trapped / pinched between output control assembly and frame.

5. Reverse procedure to install.

OUTPUT CONTROL ASSEMBLY RELAY BOARD

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER or in stacked units access ELECTRICAL PANEL DRAWER.
2. Remove OUTPUT CONTROL ASSEMBLY.
3. Remove screws and control output assembly back cover.

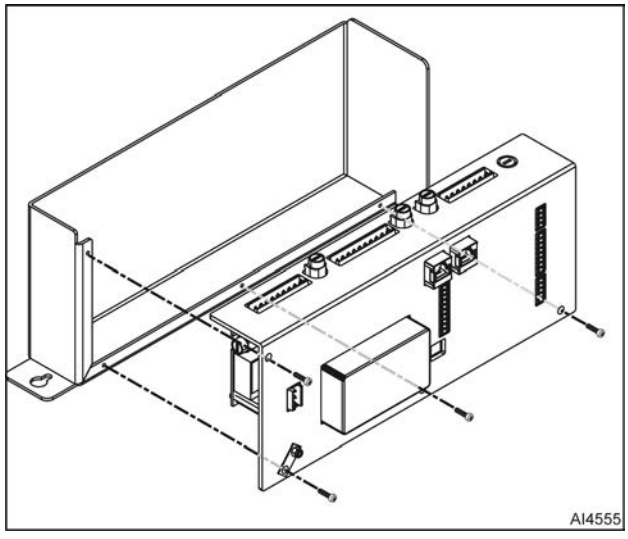

Fig. 13

4. Remove relay board from output control assembly.
5. Reverse procedure to install.

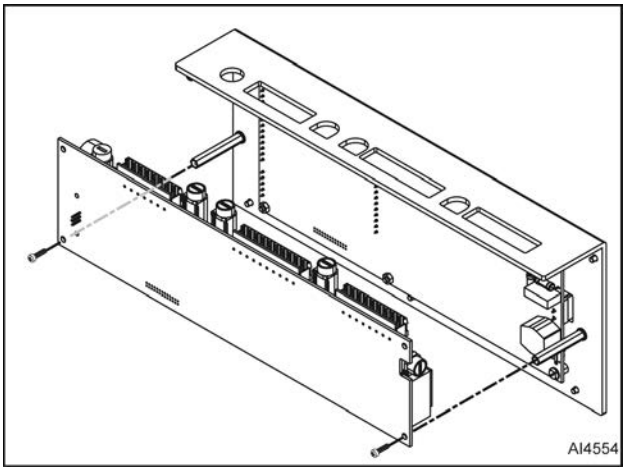

Fig. 14

TRANSFORMER - LIGHTS

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER or in stacked units access ELECTRICAL PANEL DRAWER.
2. Note and disconnect electrical cables from light transformer.
3. Remove light transformer mounting screws.

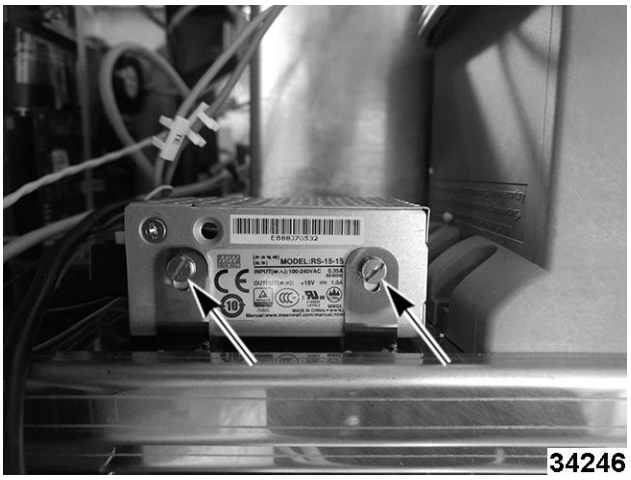

Fig. 15

4. Reverse procedure to install.

TRANSFORMER - PRIMARY

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER or in stacked units access ELECTRICAL PANEL DRAWER.
2. Note and disconnect electrical cables from primary transformer.
3. Remove transformer mounting screws.

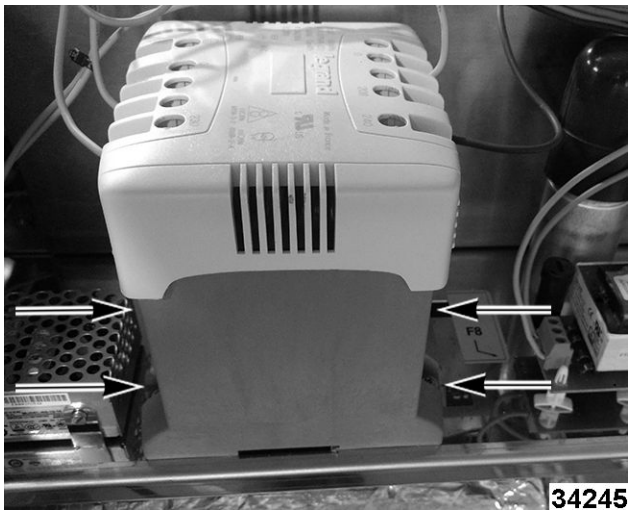

Fig. 16

4. Reverse procedure to install.

TRANSFORMER - VENT MOTOR

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER or in stacked units access ELECTRICAL PANEL DRAWER.
2. Note and disconnect electrical cables from vent transformer (1, Fig. 17).

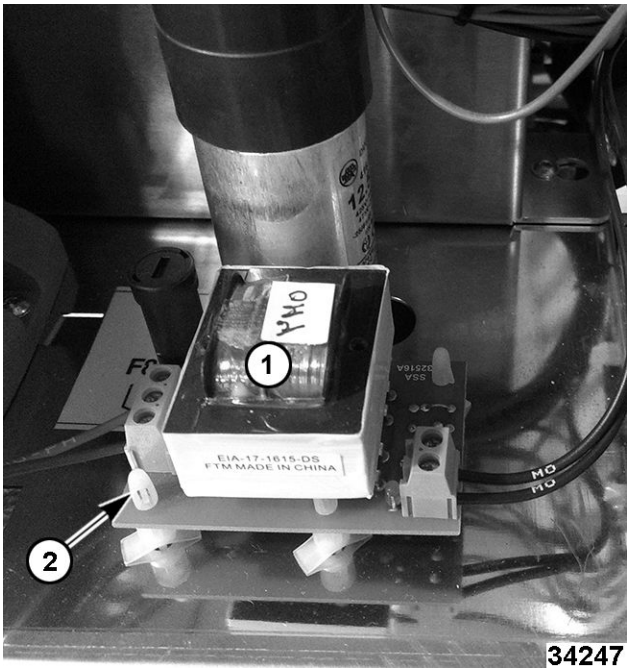

Fig. 17

3. Depress plastic stand-off (2, Fig. 17) tabs and remove vent transformer and circuit board.
4. Reverse procedure to install.

CONTACTOR

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

NOTE: There are two contactors. Ks is a safety contactor. Kr controls cavity heating.

1. Remove TOP COVER or in stacked units access ELECTRICAL PANEL DRAWER.
2. Note and disconnect all wires from contactor.
3. Remove contactor Ks:
   A. Push contactor (1, Fig. 18) towards **front** of oven until it releases from mounting base.

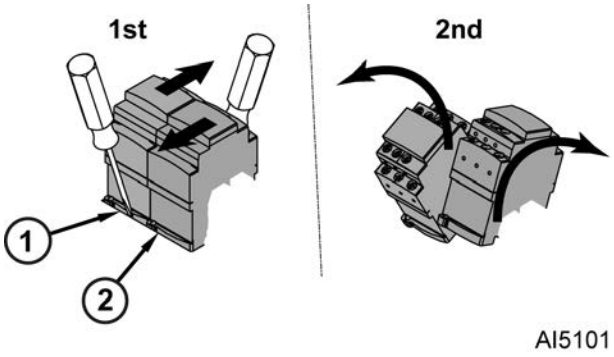

Fig. 18

B. Rotate contactor towards **back** of oven.

C. Lift contactor base tabs out of mounting plate slot.

4. Remove contactor Kr (2, Fig. 18) as follows:

   A. Use a screw driver to push contactor towards **back** of oven until it releases from mounting base.

   B. Rotate contactor towards **front** of oven.

   C. Lift contactor base tabs out of mounting plate slot.

5. Remove from contactor.

6. Reverse procedure to install.

ANTI-INTERFERENCE FILTER

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER or in stacked units access ELECTRICAL PANEL DRAWER.

2. Remove CONTACTOR.

3. Remove anti-interference filter (2, Fig. 19) from contactor (1, Fig. 19).

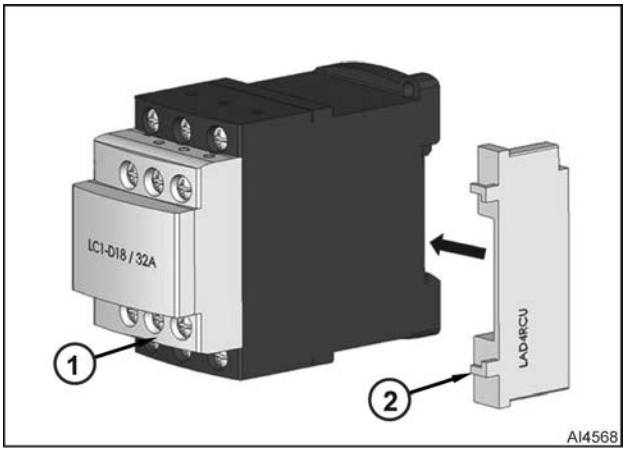

Fig. 19

4. Reverse procedure to install.

AXIAL FANS

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove CONTROL PANEL.

2. Note and disconnect electrical wires from axial fans.

3. Note direction of fan for reinstallation.

4. Remove fasteners and fan deflector from electronic mounting plate.

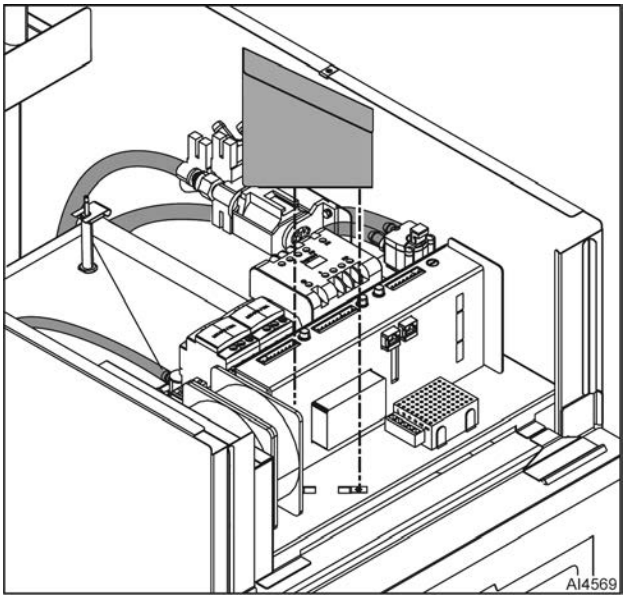

Fig. 20

5. Remove fasteners and axial fans from frame.

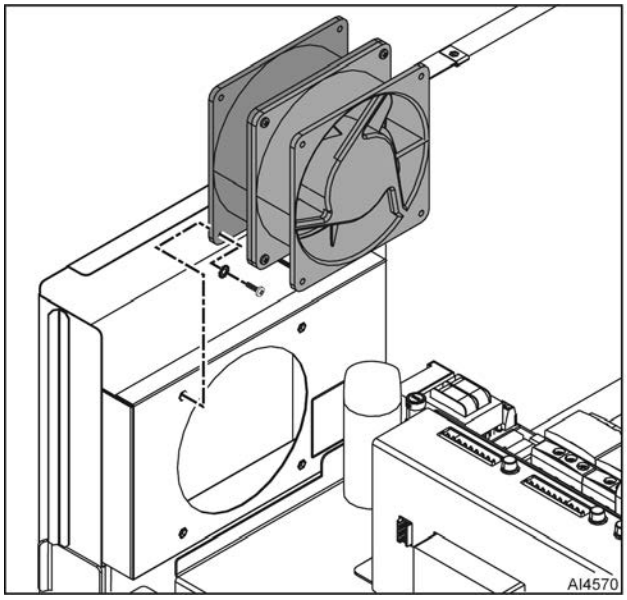

Fig. 21

6. Remove fasteners and separate axial fans.

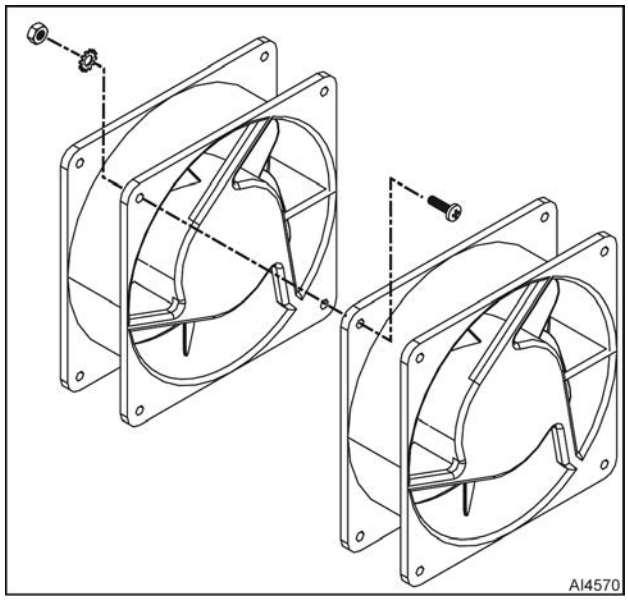

Fig. 22

7. Reverse procedure to install.

CAPACITOR

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove ELECTRICAL PANEL DRAWER.
2. Remove both AXIAL FANS.
3. Remove capacitor cover (2, Fig. 23).
4. Use shorting probe to discharge capacitor.
5. Note and disconnect electrical wires / spade lugs (1, Fig. 23) from capacitor.

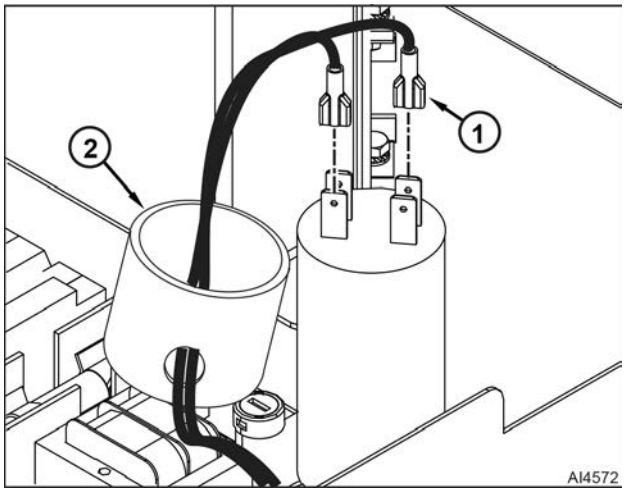

Fig. 23

6. Remove bolts that secure electronics mounting plate to frame.
7. Lift up left side of electronics mounting plate (2, Fig. 23) and loosen nut (1, Fig. 23) that secures capacitor to electronics mounting plate.
8. Slide capacitor out of electronics mounting plate.
9. Reverse procedure to install.

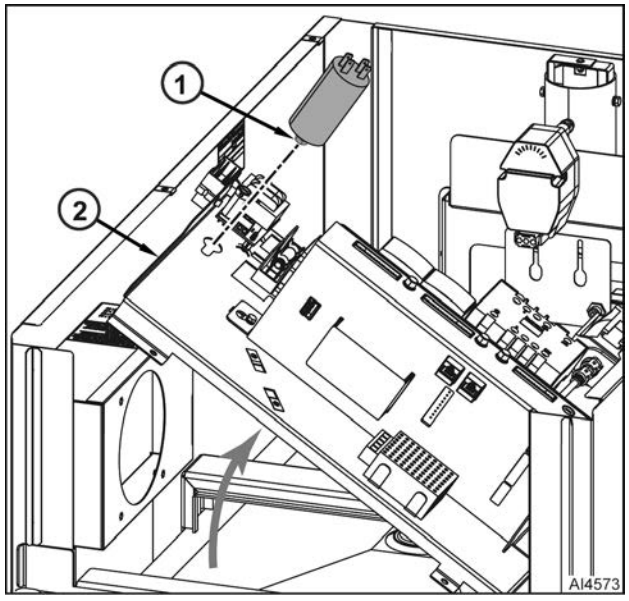

Fig. 24

CONVECTION FAN

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

NOTICE

To prevent damage, place cardboard on cavity surfaces during procedure.

1. Open oven door.

NOTE: Pull baffle plate out from bottom so water dispenser tube (2, Fig. 25) disengages from fluid manifold.

2. Remove bolts, washers, and baffle plate (1, Fig. 25) from oven cavity.

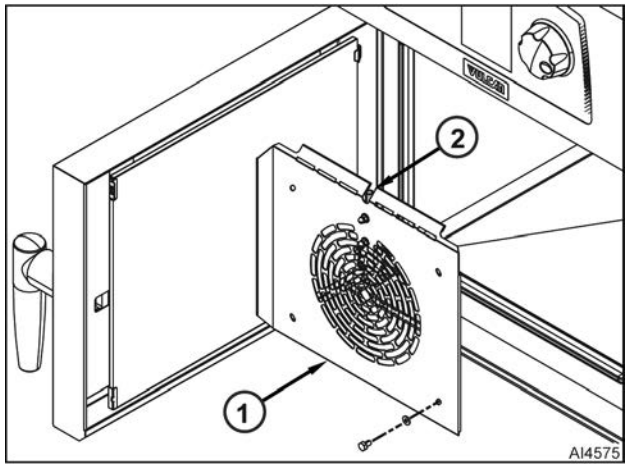

Fig. 25

3. Remove bolt, lock washer, atomizer, and flat washer (Fig. 26) from blower motor shaft.

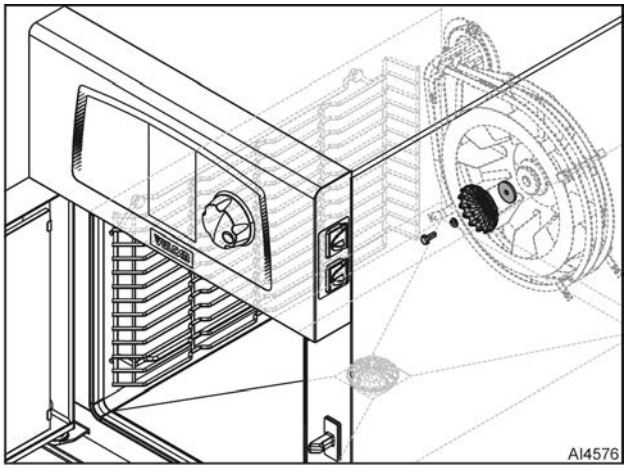

Fig. 26

NOTE: A M6x40 socket head screw must be used with puller to avoid damage to motor shaft.

4. Thread M6x40 socket head screw into motor shaft until it seats in shaft.
5. Place puller over blower fan hub. Ensure arms (2, Fig. 27) engage hub properly.

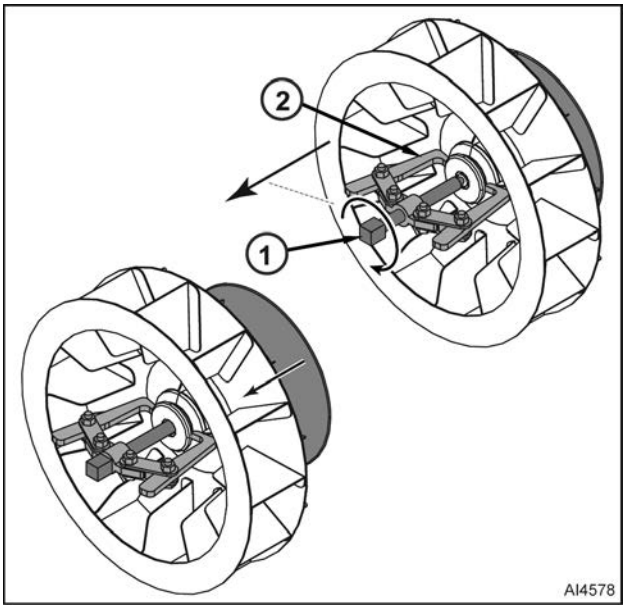

Fig. 27

6. Rotate puller shaft (1, Fig. 27) to break blower fan free of motor shaft.
7. Remove puller from blower fan.
8. Remove bolt from motor shaft.

NOTE: Hold blower fan while tightening bolt.

9. Reverse procedure to install.

CONVECTION FAN MOTOR

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

1. Remove baffle plate.
2. Remove TOP COVER and BACK COVER.
3. Remove CONVECTION FAN.
4. Disconnect connector from motor harness connector (Fig. 28).

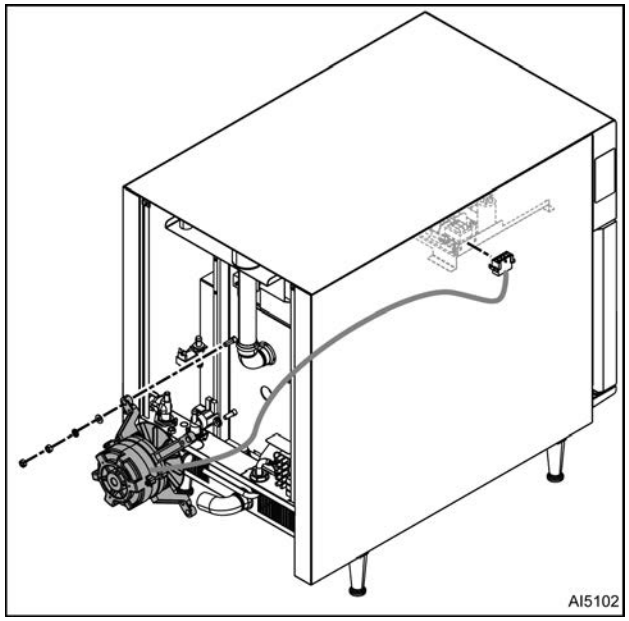

Fig. 28

5. Remove motor harness connector from electronics mounting plate.

NOTE: Motor shaft seal (2, Fig. 29) and wear ring (1, Fig. 29) should also be replaced when blower motor is replaced.

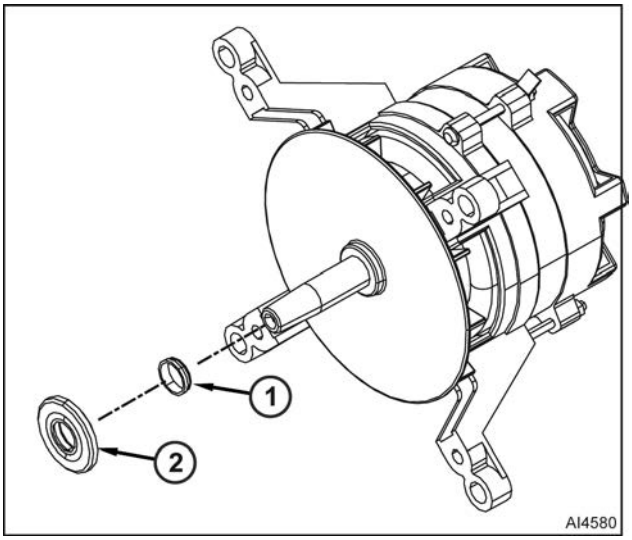

Fig. 29

6. Reverse procedure to install.

HEATING ELEMENT

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

NOTICE

To prevent damage, place cardboard on cavity surfaces during procedure.

1. Open oven door.
2. Remove bolts, washers, and baffle plate (1, Fig. 30) from oven cavity.

NOTE: Pull baffle plate out from bottom so water dispenser tube (2, Fig. 30) disengages from fluid manifold.

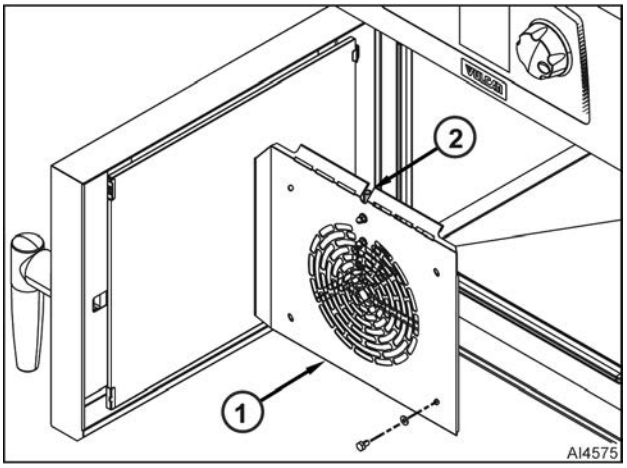

Fig. 30

3. Remove TOP COVER.
4. Remove BACK COVER.

NOTE: Use wrench to hold backing nut (1, Fig. 31) in place when removing leads / nuts (2, Fig. 31) from heating elements.

5. Note and disconnect electrical leads from heating element.

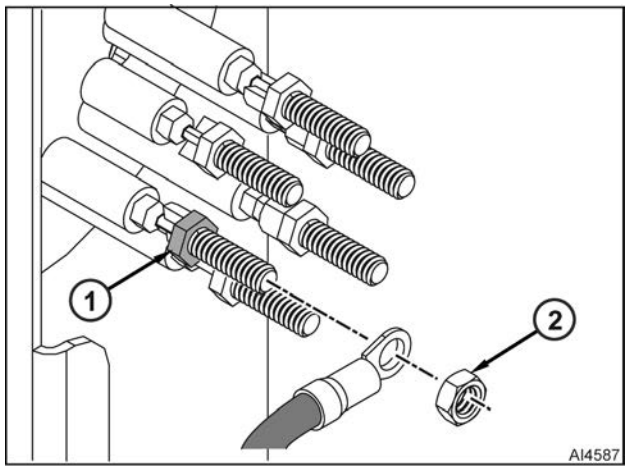

Fig. 31

6. Remove nut (Fig. 32) that secures heating element spacer to oven cavity.

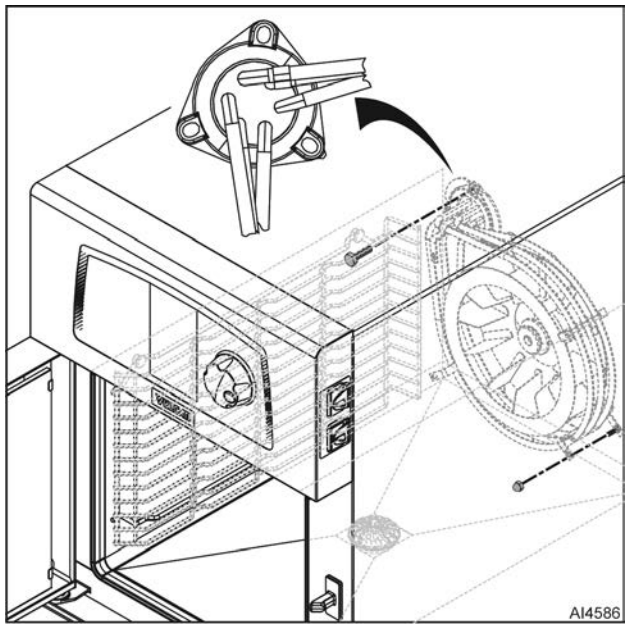

Fig. 32

7. Remove screws that secure heating element flange and gasket to oven cavity.

NOTE: It is recommended to remove blower fan to ease heating element installation.

8. Pull heating element and gasket out from oven cavity.

9. Reverse procedure to install.

NOTE: When reinstalling, place spacer over stud and loosely install nut to support heating element.

VENT MOTOR

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER and BACK COVER.
2. Disconnect harness connector from vent motor.
3. Loosen bolt that secures coupling (2, Fig. 33) to vent motor shaft (1, Fig. 33).

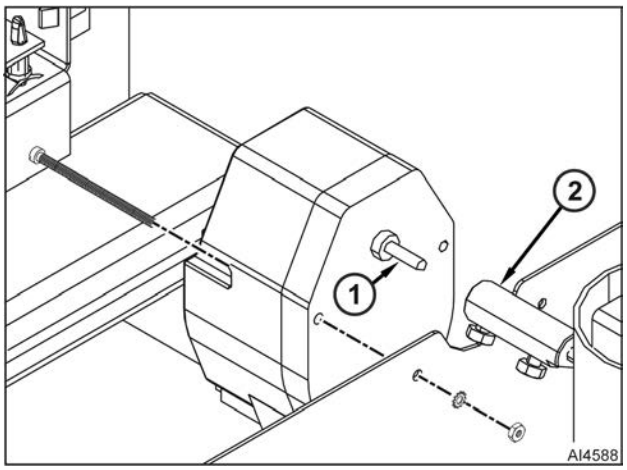

Fig. 33

4. Remove nuts, washers, and vent motor from oven frame.

NOTICE

Verify coupling shaft is properly seated and engaged in vent or oven will not operate properly.

5. Reverse procedure to install. Rotate coupling shaft (1, Fig. 33) to make sure vent (2, Fig. 33) goes up and down.

NOTICE

Verify coupling shaft bolt seats against flat of vent motor shaft.

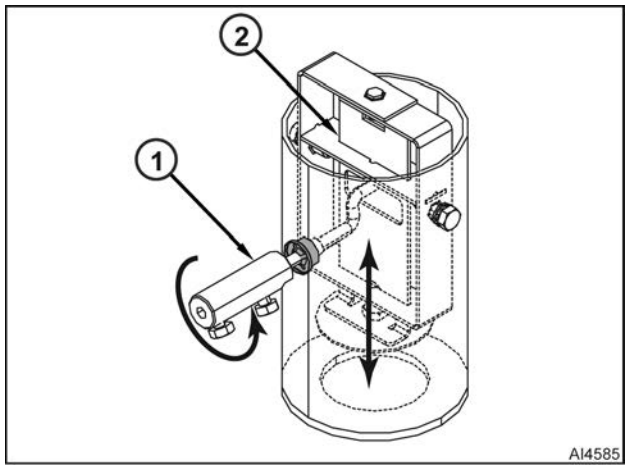

Fig. 34

CAVITY TEMPERATURE PROBE

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER and RIGHT SIDE PANEL.

NOTE: Document all electrical connections.

2. Disconnect cavity temperature probe lead from routing clips and output control assembly connector B1.
3. Remove holding clip (2, Fig. 35) and cavity temperature probe (1, Fig. 35).

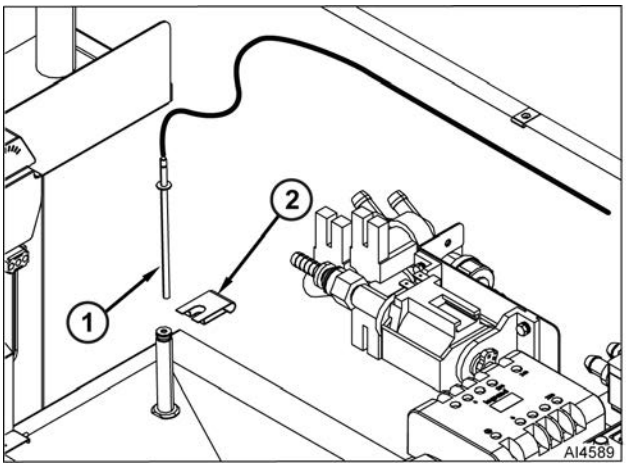

Fig. 35

4. Reverse procedure to install.

HIGH LIMIT SWITCH

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove TOP COVER and BACK COVER.
2. Cut tape and into insulation behind high limit bracket.
3. Cut insulation in front of the bracket.

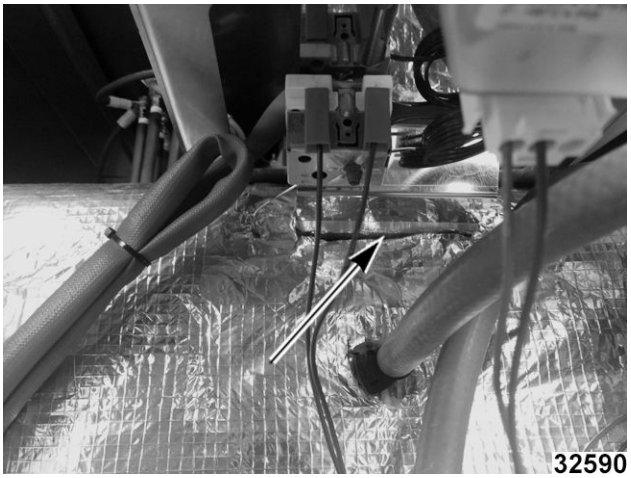

Fig. 36

4. Remove mounting bracket mounting screws.

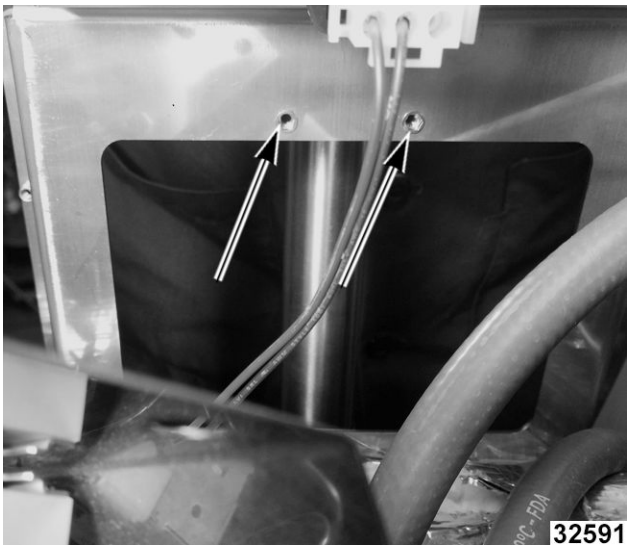

Fig. 37

5. Remove bracket.
6. Disengage the capillary bulb (1, Fig. 38).

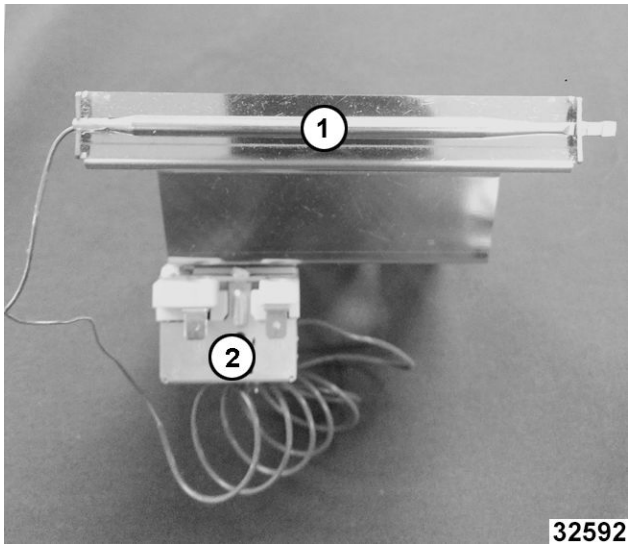

Fig. 38

7. Install high limit switch (2, Fig. 38) to bracket.
8. Insert capillary bulb into bracket.

Fig. 39

9. Insert bracket into insulation cut.
10. Verify capillary bulb is flush against exterior top cavity surface.
11. Set bracket in insulation and secure to installation with heat tape.

Fig. 40

12. Cut in insulation should be completely covered.

NOTE: Make sure insulation blanket covers capillary bulb and is sealed by high temperature tape.

13. Reverse procedure to install.

LED STRIP

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Open door.
2. Remove
3. Remove screws and inner panel (1, Fig. 41).

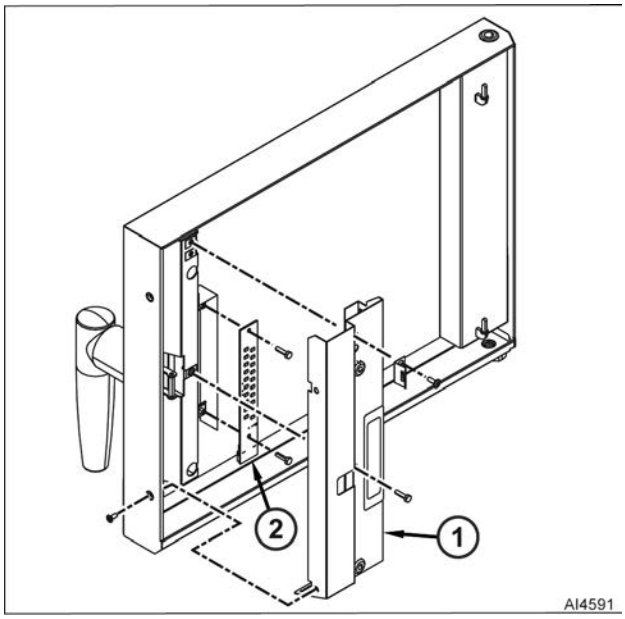

Fig. 41

4. Remove screws and LED strip (2, Fig. 41) from door.
5. Note and disconnect electrical leads from LED strip.
6. Reverse procedure to install.

INTERNAL GLASS DOOR

1. Open door.
2. Press on retaining clips and open inner glass door.

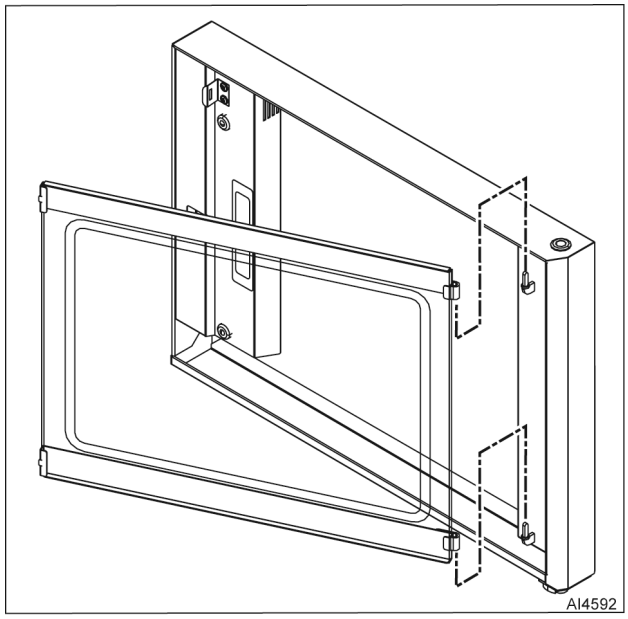

Fig. 42

3. Lift glass door off mounting pins.
4. Reverse procedure to install.

DOOR LATCH

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Open door.
2. Remove INTERNAL GLASS DOOR.
3. Remove screws, retaining clip, and inner panel (Fig. 43).

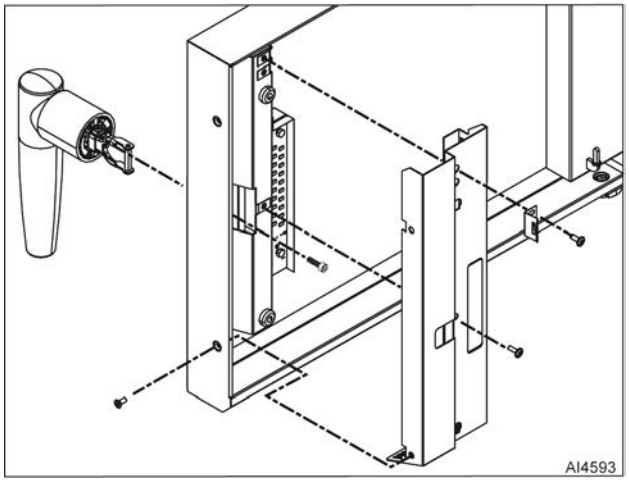

Fig. 43

4. Remove screws and door handle.
5. Remove screw and latch mechanism (1, Fig. 44) from door handle (2, Fig. 44).

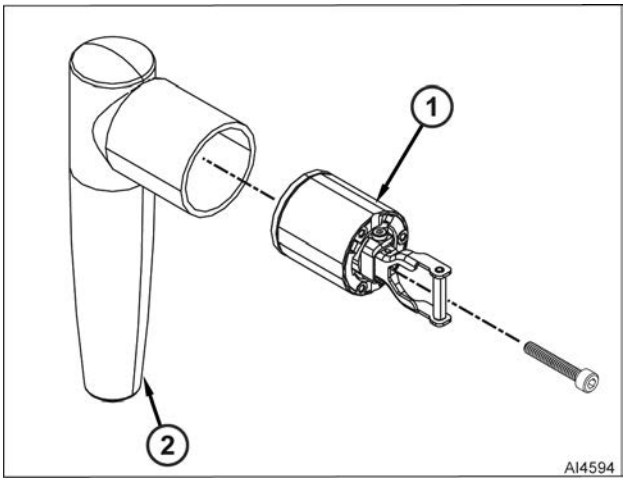

Fig. 44

6. Reverse procedure to install.

DOOR SWITCH

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove CONTROL PANEL or in stackable units access ELECTRICAL PANEL DRAWER.
2. Note and disconnect electrical leads from control output assembly connector.
3. Remove screw, washers, clamp (1, Fig. 45) and door sensor (2, Fig. 45) from oven frame.

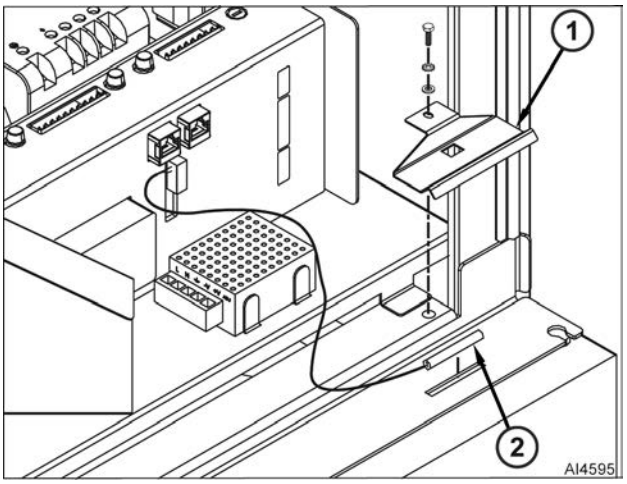

Fig. 45

4. Reverse procedure to install.

DOOR CATCH

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Open door.
2. Remove screws.

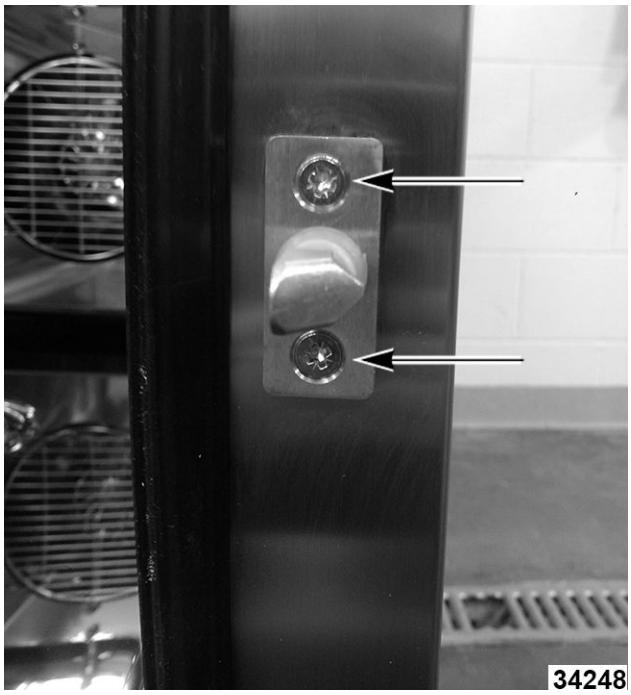

Fig. 46

3. Reverse procedure to install.

DOOR

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Open door.
2. Remove TOP COVER.
3. Remove CONTROL PANEL.
4. Remove INTERNAL GLASS DOOR.
5. Remove upper hinge mounting screws.

Fig. 47

6. Cut and remove wire tie from LED cable.

Fig. 48

7. Note and disconnect LED wiring (1, Fig. 49) and remove from lighting transformer.

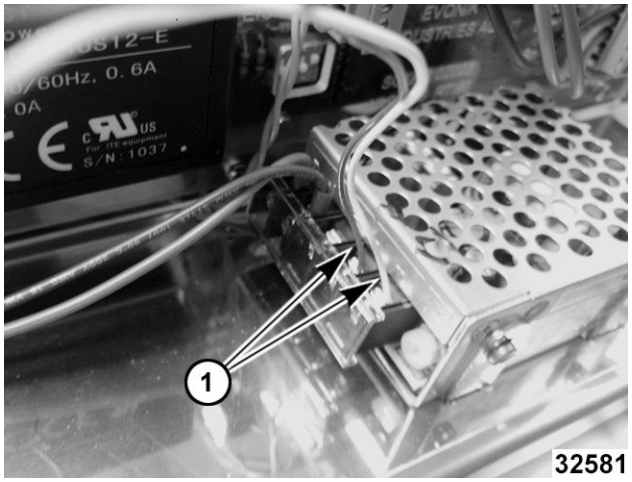

Fig. 49

8. Remove cable from top of oven.
9. Lift door upper-hinge assembly, while carefully holding door.
10. Remove door.
11. Reverse procedure to install.

NOTICE

Verify two brass spacers (Fig. 50) are installed correctly with internal glass.

Fig. 50

FILTERED WATER PRESSURE RESTRICTOR

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove BACK COVER.
2. Shut off filtered and unfiltered water supplies.
3. Disconnect filtered water supply from oven inlet filter assembly (1, Fig. 51).

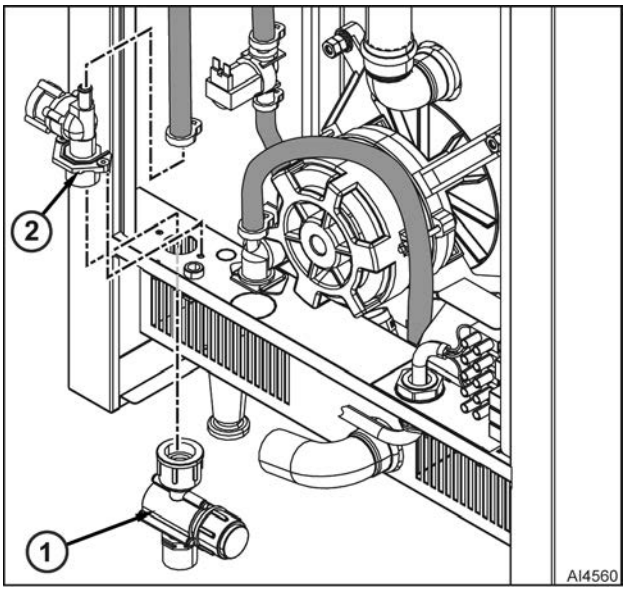

Fig. 51

4. Unthread inlet filter assembly (1, Fig. 51) from filtered water flow restrictor (2, Fig. 51).
5. Disconnect hose from filtered water flow restrictor.
6. Remove fasteners and filtered water flow restrictor from frame.
7. Reverse procedure to install.

FLOW METER

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Shut off filtered and unfiltered water supplies.

2. Remove RIGHT SIDE COVER and BACK COVER.
3. Remove hose clamps.
4. Note and disconnect wiring.
5. Remove flow meter (1, Fig. 52) from bracket.

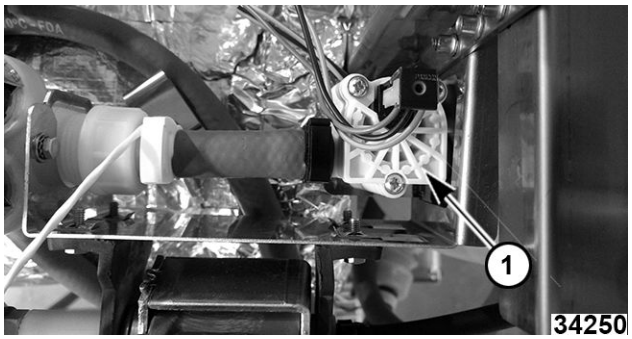

Fig. 52

6. Reverse procedure to install.

DETERGENT PUMP

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

⚠ WARNING

Remember the dangers identified on the safety data sheet for detergent:

- Harmful if swallowed.
- Avoid direct contact with these products.
- Can result in serious burns.
- Wear protective clothing, gloves, and hermetic protective goggles in accordance with the safety data sheet.
- Detergent will cause irritation and possible burns if in direct contact with the skin or eyes.
- Irritates the respiratory tracts.
- Risk of serious eye lesions.
- Do not inhale the mist or spray.
- Irritates the eyes.
- If case of contact with eyes rinse immediately with plenty of water and seek medical advice.
- Danger of eye and skin irritation or acid burns.
- In the event of an accident or sickness seek immediate medical attention.
- Dispose of the product and its container as hazardous waste.

1. Remove RIGHT SIDE.
2. Shut off filtered and unfiltered water supplies.
3. Disconnect hose from detergent pump (1, Fig. 53).

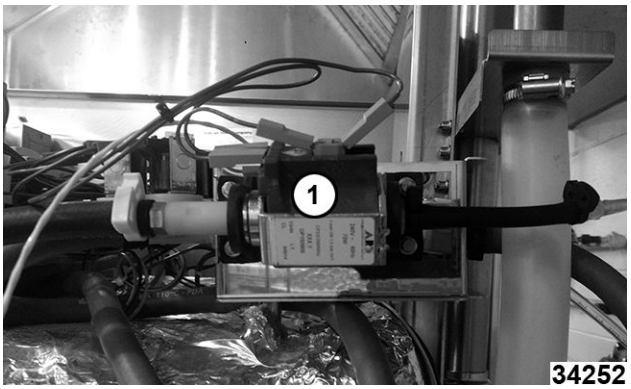

Fig. 53

4. Remove FLOW METER.
5. Note and disconnect electrical wires from detergent pump.
6. Remove screws, washers, and detergent pump from mounting bracket.
7. Reverse procedure to install.

3-WAY SOLENOID VALVE

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

NOTE: 3-way solenoid valve contains valves Yi, Yf, and Yn.

1. Remove TOP COVER and RIGHT SIDE.
2. Shut off filtered and unfiltered water supplies.
3. Remove flow meter hose (Fig. 54).

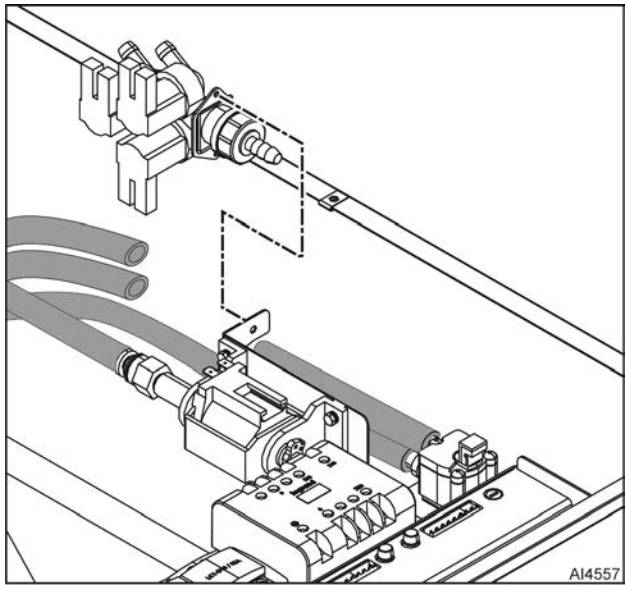

Fig. 54

4. Note and disconnect electrical cable from 3-way valve.
5. Remove fasteners and 3-way valve from mounting bracket.
6. Reverse procedure to install.

SOLENOID VALVE Yv

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove RIGHT SIDE.
2. Remove BACK COVER.
3. Shut off filtered and unfiltered water supplies.
4. Disconnect electrical cable from solenoid valve Yv (1, Fig. 55).

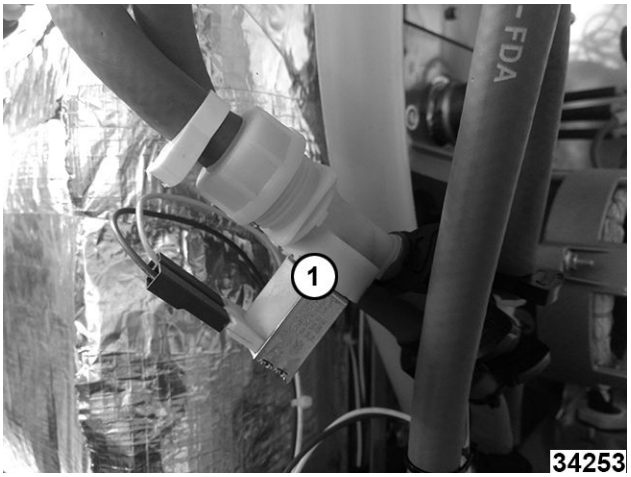

Fig. 55

5. Remove hose clamps and hoses from solenoid valve Yv.
6. Reverse procedure to install.

SOLENOID VALVE Yc

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove RIGHT SIDE.
2. Remove BACK COVER.
3. Shut off filtered and unfiltered water supplies.
4. Disconnect facility unfiltered water supply from solenoid valve Yc (1, Fig. 56).

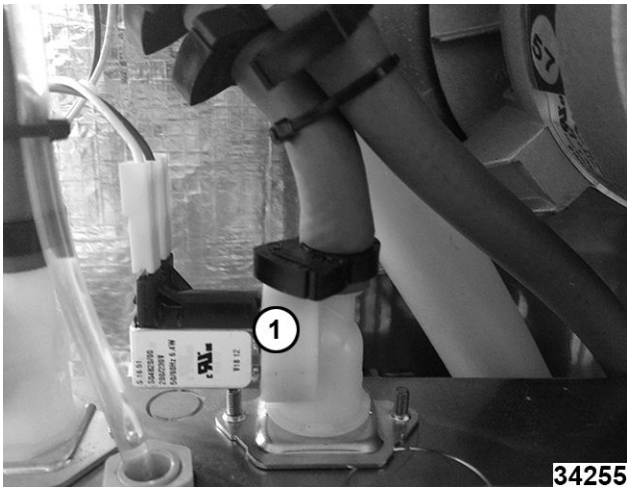

Fig. 56

5. Disconnect hose from solenoid valve Yc.
6. Note and disconnect electrical cable from solenoid valve Yc.

7. Remove fasteners and solenoid valve Yc from frame.
8. Reverse procedure to install.

SERVICE PROCEDURES AND ADJUSTMENTS

HEATING ELEMENT TEST

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Disconnect supply power.
2. Remove BACK COVER.
3. Check resistance.
   - Remove one wire on one side of the element to prevent a false reading.
   - Verify 17.7 ohms.

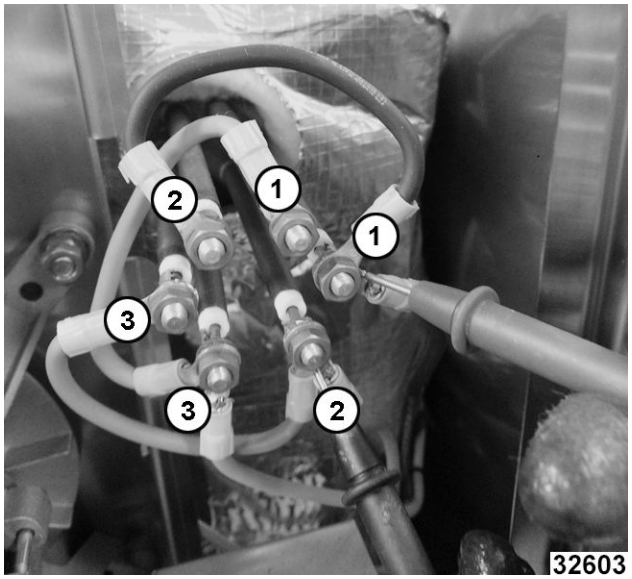

Fig. 57

4. Check continuity on new heating elements before installing as shown in Fig. 58, Fig. 59, and Fig. 60.

Fig. 58

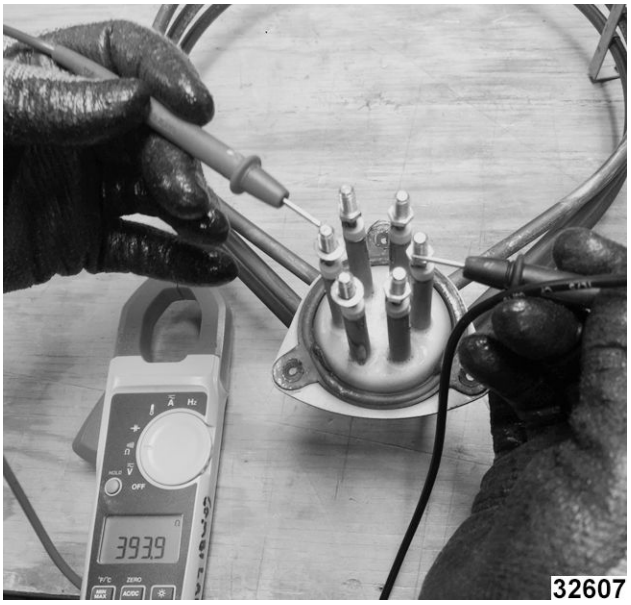

Fig. 59

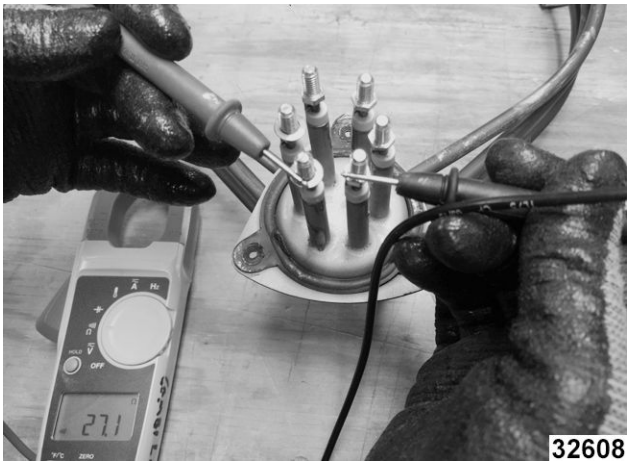

Fig. 60

5. Install covers and verify operation.

SOLENOID VALVES

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Disconnect supply power.
2. Locate solenoid to check.
   - Remove TOP COVER to access Yi (pink), Yn (green), and Yf (blue).

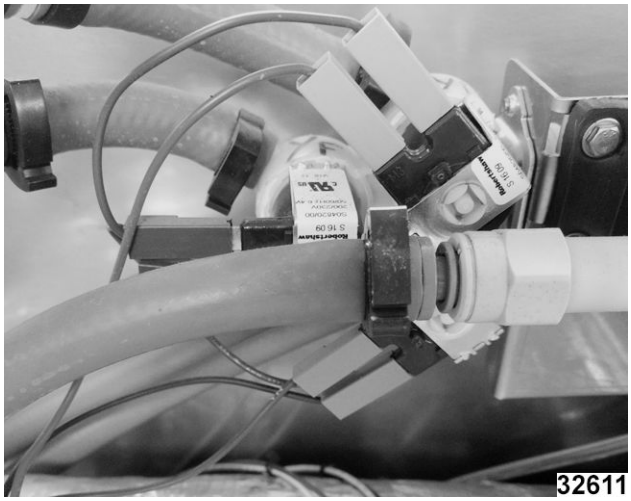

Fig. 61

- Disconnect and verify readings in TOP TABLE below.

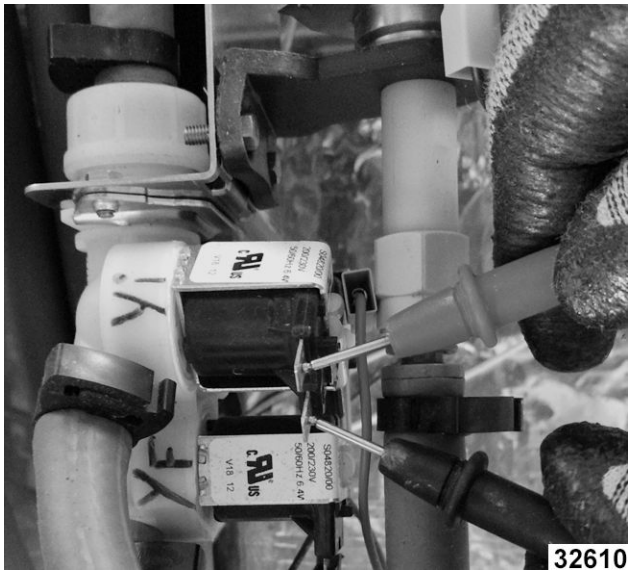

Fig. 62

- Remove BACK COVER to access Yellow and Brown.

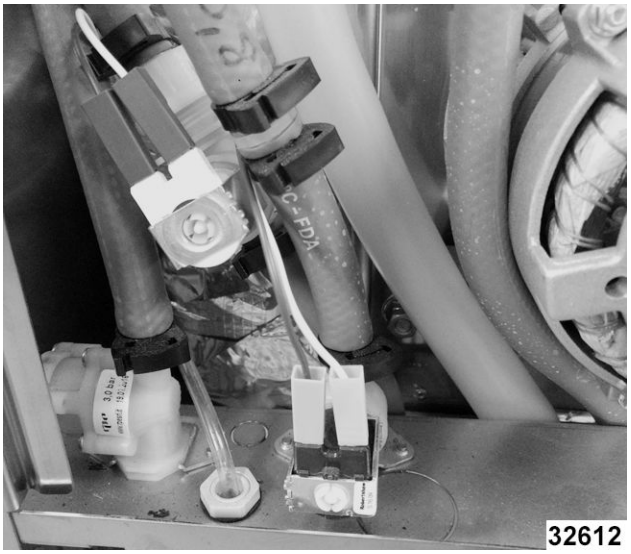

Fig. 63

- Disconnect and verify readings in BACK TABLE below.

TOP		
Color	**Connection**	**Reading**
Green	Yn	2900 ohms
Blue	Yf	2898 ohms
Pink	Yi	2901 ohms

BACK	
Color	**Reading**
Yellow	3.62 kilohms
Brown	3.84kilohms

CONVECTION MOTOR RESISTANCE

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Disconnect supply power.
2. Remove TOP COVER.
3. Unplug convection fan motor (1, Fig. 64).

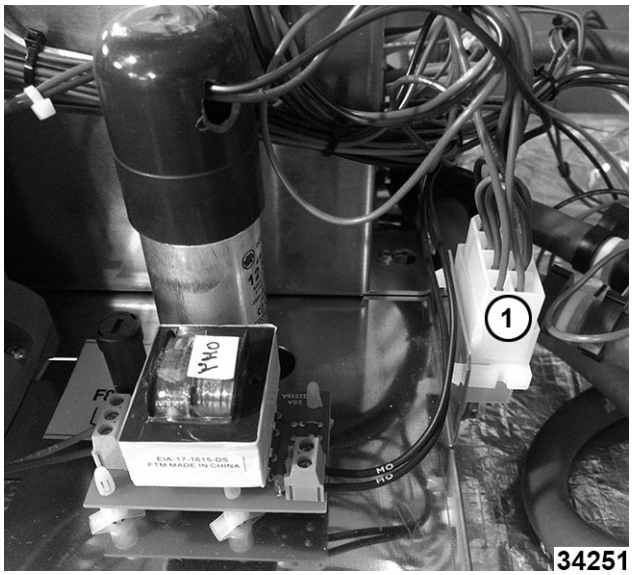

Fig. 64

4. Test connections. Verify 56Ω.

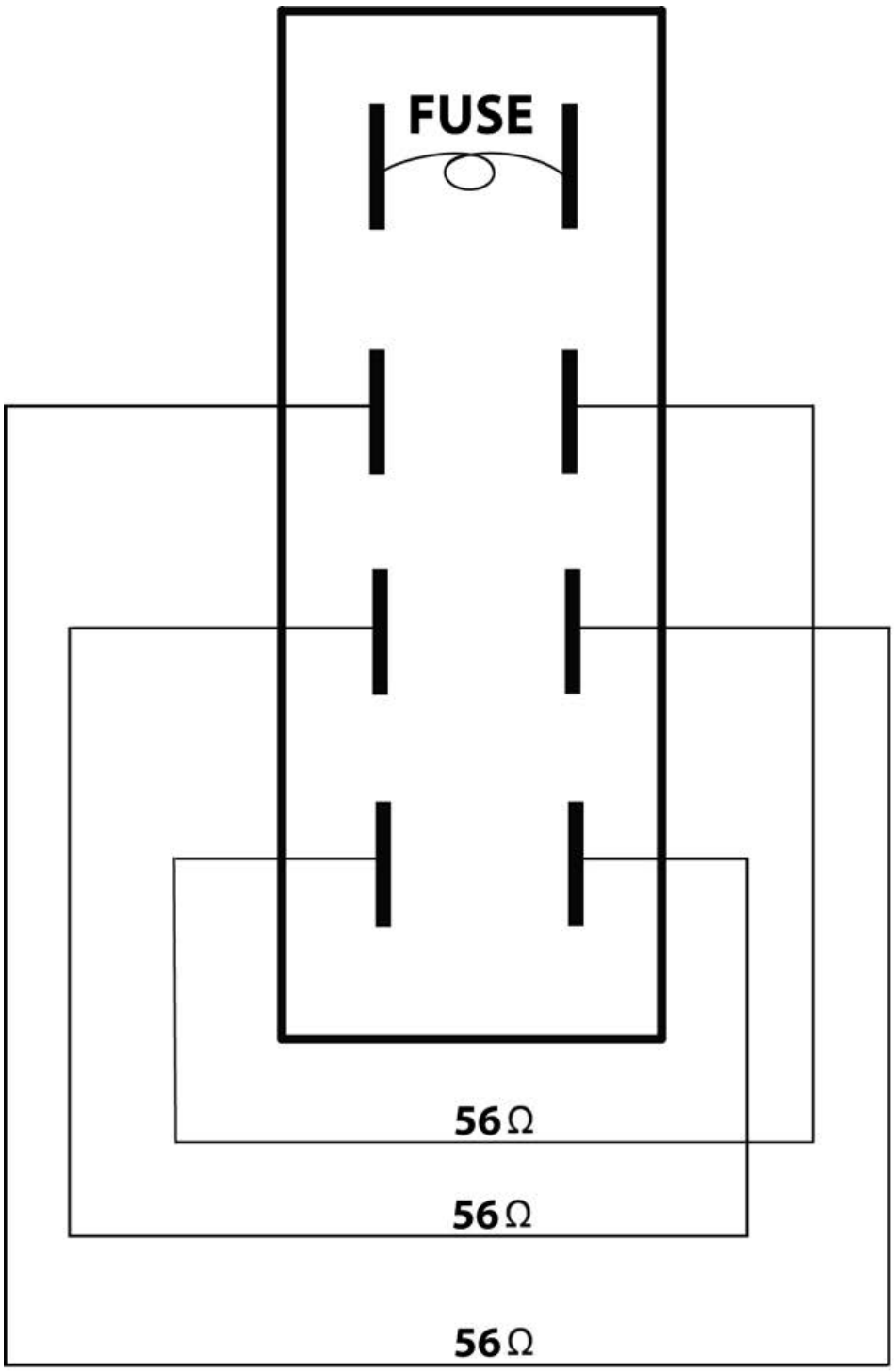

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Fig. 65

ELECTRICAL OPERATION

COMPONENT FUNCTION

Axial Fans (Mt1 and Mt2) . . . . . . Provides cooling air flow to oven electronics.

Blower Motor (M1) . . . . Used to rotate blower fan inside of oven cavity. The motor has an internal thermal protection device (Fm1) that opens if the motor overheats. It is self-resetting once the motor cools.

Capacitor (Cm1) . . . . . . Provides starting boost to blower motor.

Cavity Temperature Sensor (B1) . . . . . . RTD style monitors the oven cavity temperature and provides an input to the output control assembly.

Cleaning Port . . . . . . Supplies detergent / water to clean cooking compartment.

Contactor (Kr) . . . . . . Heat control contactor. Supplies power to heating elements as long as contactor Ks is closed.

Contactor (Ks) . . . . . . Safety contactor. Opens when commanded by an error condition.

Core Sensor Probe (Xsc) . . . . . . Optional temperature probe used to determine internal temperature of item being cooked.

Detergent Pump (Fdn) . . . . . . Supplies detergent to cooking compartment. The pump has a thermal protection device (FPdn) that opens if the pump overheats. It is self-resetting once the pump cools.

Door Sensor (Sp) . . . . . Reed switch located above door and connected to the output control assembly. Opens when the door opens.

Encoder (Part of Af) . . . . . . Provides mechanical input to touch panel / display assembly.

Flow Meter (Bd) . . . . . . Measures filtered water supply flow rate.

Fuse F1 . . . . . . 3.15-amp fuse located in output control assembly. Protects:

- Solenoid valve Yv (drain cleaning valve).
- Vent motor transformer Tmo and vent motor Mo.
- 3-way solenoid valve Yn (cleaning valve).
- 3-way solenoid valve Yf (cooling valve).
- Detergent pump temperature sensor FPdn.
- Detergent pump Pdn.

Fuse F2 . . . . . . 1-amp time delay fuse located in output control assembly. Protects:

- LED lighting Ee.
- Lighting transformer Te.

Fuse F3 . . . . . . 10-amp fuse located in output control assembly. Protects blower motor M1.

Fuse F4 . . . . . . 0.2-amp ultra fast fuse located in output control assembly. Protects:

- 3-way solenoid valve Yi (injection / steam valve).
- Solenoid valve Yc (condensate cooling valve).

Fuse F5 . . . . . . 3.15-amp fuse located in output control assembly. Protects:

- Blower motor over-temperature sensor Fm1.

	• High-limit switch Fc. • Safety contactor Ks. • Heat Control contactor Kr. • Axial fans Mt1 and Mt2.
Fuse F6	2-amp fuse located in fuse block. Protects oven against input power disruptions.
Fuse F7	1-amp time delayed fuse located in fuse block. Protects output control assembly.
Fuse F8	0.25-amp fuse located on vent motor transformer board. Protects vent motor transformer / motor.
Fuse F9	10-amp fuse located in fuse block. Protects blower motor M1.
Heating Elements (RC1)	Resistance-type heating elements. Located in rear of cooking compartment. Elements surround blower fan.
High Limit Switch (Fc)	Monitors cavity internal temperature. When temperature exceeds 608 °F, it opens and removes power to the heating elements.
Injection Port	Supplies filtered water to cooking compartment for steam generation.
Lighting Transformer (Te)	Reduces / converts 230 VAC power to 15 VDC for use by lighting LEDs.
Output Control Assembly (AR)	Incorporates two primary components: • Control board. • Relay board. The control board monitors physical input signals and operator commands. It then signals the relay board to change various components states (valves open / close, pumps run, etc.).
Pressure Restrictor . . .	Limits filtered water supply pressure to 43 Psi.
Primary Transformer (Ta)	Converts facility input voltage to 230 VAC for use by oven electronic / electrical components.
Solenoid Valve (Yc) . . .	Supplies water to condensate drain when open (water flow).
Solenoid Valve (Yf) . . .	Part of 3-way valve. Supplies cooling water to cooking compartment injection port when open (water flow).
Solenoid Valve (Yi) . . .	Part of 3-way valve. Supplies water to cooking compartment injection port for steam generation when open (water flow).
Solenoid Valve (Yn)	Part of 3-way valve. Supplies water to mix with detergent for cooking compartment cleaning when open (water flow).
Solenoid Valve (Yv) . . .	Supplies water /detergent to cooking compartment cleaning port when closed (no water flow). Supplies water / detergent to condensate drain when open (water flow).
Suppressors (Zr / Zs)	An AC filter network that provides relay contact protection, noise circuit reduction, and EMI/RFI reduction. It is placed across the contactor coil.
Touch Panel / Display Assembly (Af)	Acts as primary operator input and monitoring interface. Provides both mechanical (via encoder) and touch screen inputs. It provides monitoring of operational state as well.
Vent Motor (Mo)	Used to position a restrictor plate in the vent to provide additional control of cavity temperature.
Vent Motor Transformer (Tmo) . . .	Reduces 230 VAC to 24 VAC for use by vent motor.

USB Port . . . . . . Used to allow updating of software / firmware. Also allows for downloading of preset cooking instructions.

OUTPUT CONTROL ASSEMBLY

Refer to table below and Fig. 66 for output control assembly connection information.

Terminal	Associated Fuse	Input / Output	Function
1	NA	Input	AC line voltage (L2)
2	NA	N/A	N/A
3	NA	Input	AC line voltage (L1)
4	F5	Output	Axial fan Mt1 control
5	F2	Output	LED cavity lighting control
7	F5	Output	Axial fan Mt2 control
			Convection Fan Motor M1 control (thermal switch Fm1)
			Convection Fan Motor M1 control (high limit switch Fc)
			Safety contactor Ks control
8	F5	Output	Heater contactor Kr control
9	F4	Output	Condensate valve Yc control
10	F4	Output	Injection valve Yi control
12	F7	Input	Stepped down AC power
13	F9 (External) / F3 (Internal)	Input	AC line voltage (L2)
15	F3 (Internal)	Output	Convection Fan Motor M1 power (clockwise rotation)
17	F3 (Internal)	Output	Convection Fan Motor M1 power (counter-clockwise rotation)
24	F1	Output	Detergent supply valve Yv
25	F1 (Internal) / F8 (External)	Output	Vent motor Mo
27	F1 (Internal)	Output	Cleaning valve Yn
29	F1 (Internal)	Output	Detergent pump Pdn
30	F1 (Internal)	Output	Cooling valve Yf
34	NA	Input	Stepped down AC power
B1	NA	Input	Cavity temperature probe B1
BD- / BDs / BD+	NA	Input	Flow meter signal
E2 / E2b / E2c/ COM	NA	Input	Core probe
Sp	NA	Input	Door position

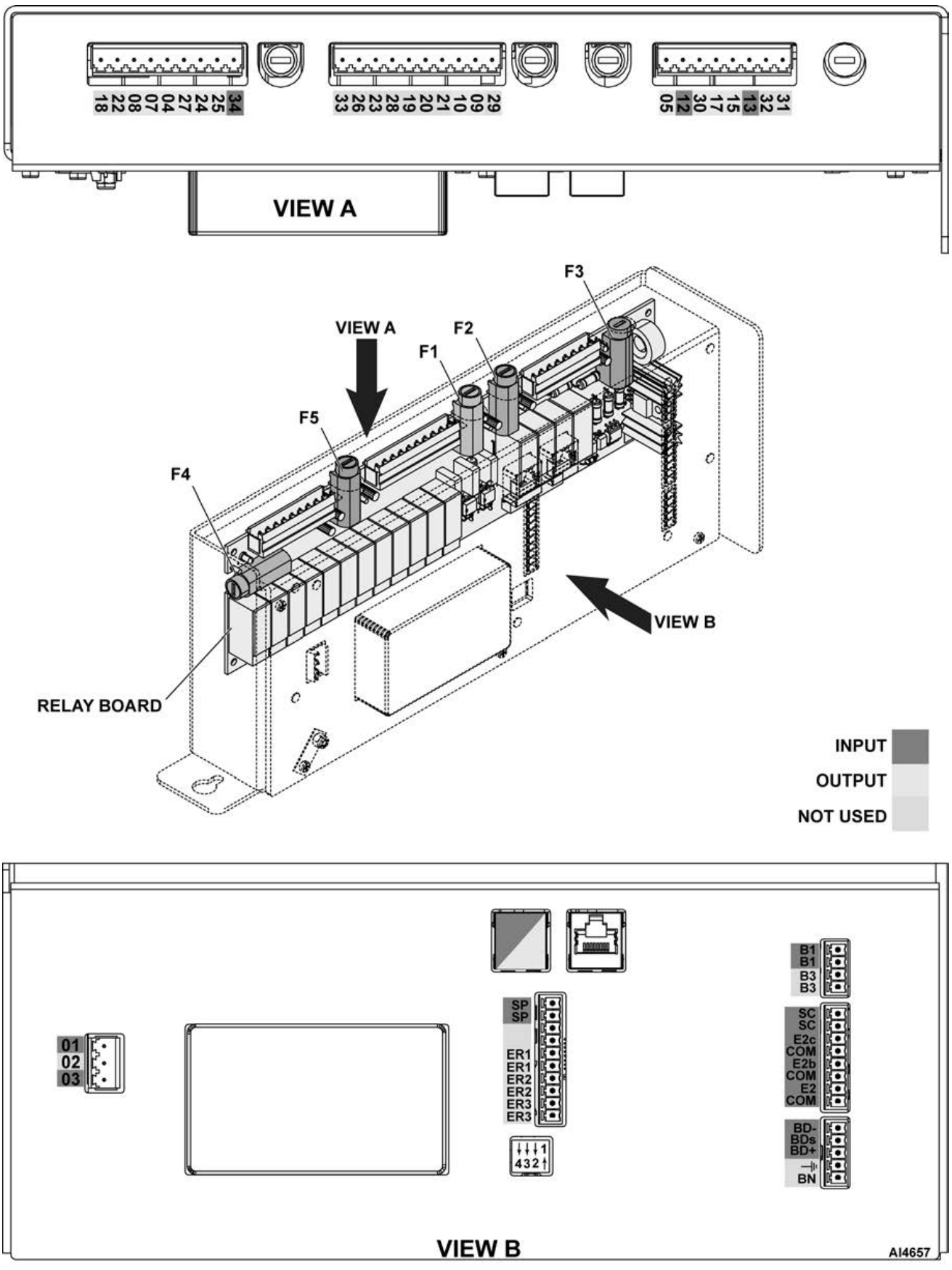

18 22 08 07 04 27 24 25 34
33 26 23 28 19 20 21 10 09 29
05 12 30 17 15 13 32 31
VIEW A
F3
VIEW A
F2
F1
F5
F4
VIEW B
RELAY BOARD
INPUT
OUTPUT
NOT USED
01 02 03
SP SP
ER1 ER1 ER2 ER2 ER3 ER3
4 3 2 1
B1 B1 B3 B3
SC SC E2c COM E2b COM E2 COM
BD- BDs BD+ BN
VIEW B
AI4657

Fig. 66

SEQUENCE OF OPERATION

CONDITIONS

Unit connected to facility power and properly grounded.

- Supply voltage (208 or 240 VAC, single or three phase) connected to supply terminal strip (Xq).
- Supply voltage and neutral from terminal strip (Xq) to supply filter (Za).
- Supply voltage from supply terminal strip (Xq) to safety contactor (KS).
- Supply voltage from supply terminal strip (Xq) to output control assembly (Ar) terminal 1.
- Supply voltage neutral from supply terminal strip (Xq) to output control assembly (Ar) terminal 3.
- Supply voltage through fuse (F6) and terminal strip (Xb-1) to primary transformer (Ta).
- Primary transformer (Ta) output (230 VAC) connected through fuse (F7) to output control assembly (Ar) terminal 12.
- Primary transformer (Ta) neutral output connected through terminal strip Xb-2, 3, 4, and 5 to various components and output control assembly (Ar) terminal 34.

Unit connected to facility cold water supply.

- Supply water (30-60 psi) connected through input water filter and pressure restrictor to flow meter (Bd).
- Supply water connected from flow meter (Bd) to injection valve (Yi), cooling valve (Yf), and cleaning valve (Yn).
- Supply water connected to condensate cooling valve (Yc).

Unit connected to drain.

- Drain connected to condensate drain fitting.

Unit connected to detergent supply.

- Detergent connected to detergent pump (Pdn).

POWER ON

1. Power, water, drain, and detergent are connected as noted in CONDITIONS.
2. All fuses are good.
3. Output control assembly (Ar) outputs are as follows:
    - Terminal 4: Voltage Present, 230V .
        - Axial fan (Mt1) rotating.
    - Terminal 5: Voltage Present, 15V.
        - LED lights on.
    - Terminal 7: Voltage Present, 230V.
        - Axial fan (Mt2) rotating.
        - Thermal switch (Fm1) closed.
        - Safety contactor (Ks) closed.
        - Voltage Present limit switch (Fc) closed.
    - Terminal 8: Voltage NOT Present, 230V.
        - Heat control contactor (Kr) open.
    - Terminal 9: Voltage NOT Present, 230V.
        - Condensate valve (Yc) closed (no flow).
    - Terminal 10: Voltage NOT Present.
        - Injection valve (Yi) closed (no flow), 230V.
    - Terminal 24: Voltage NOT Present.
        - Cleaning valve (Yv) closed (no flow).
    - Terminal 25: Voltage NOT Present.
        - Vent motor (Mo) stationary.
    - Terminal 27: Voltage NOT Present.
        - Wash valve (Yn) closed (no flow).
    - Terminal 29: Voltage NOT Present.
        - Detergent pump (Pdn) stationary.
    - Terminal 30: Voltage NOT Present.
        - Cooling valve (Yf) closed (no flow).
4. Output control assembly (Ar) inputs are as follows:
    - Terminal B1: Cavity temperature sensor (B1).
        - Resistance dependent on cavity temperature.
    - Terminals E2, E2b, E2c: core probe temperature sensor (Xsc).

- If core probe not connected - 0 VAC.
- If core probe connected - voltage dependent on probe temperature.

- Terminals Bd+, Bds, Bd-: flow meter (Bd).
  - No supply water flow: 0 Hz.
- Terminals Sp: door sensor (Sp).
  - Door open - infinite Ohms.
  - Door closed - 0 Ohms.

5. No supply voltage to heating elements.

NOTE: Convection Fan Motor (M1) rotates whenever safety contactor (Ks) is closed.

6. Convection Fan Motor (M1) rotating.

HEAT

1. Power, water, drain, and detergent are connected as noted in CONDITIONS.
2. All fuses are good.
3. Output control assembly (Ar) outputs are as follows:
   - Terminal 4: Voltage Present, 230V.
     - Axial fan (Mt1) rotating.
   - Terminal 5: Voltage Present, 15V.
     - LED lights on.
   - Terminal 7: Voltage Present, 230V
     - Axial fan (Mt2) rotating.
     - Thermal switch (Fm1) closed.
     - Safety contactor (Ks) closed.
     - Voltage Present limit switch (Fc) closed.
   - Terminal 8: Voltage Present / Voltage NOT Present.
     - Heat control contactor (Kr) opens and closes dependent on temperature.
   - Terminal 9: Voltage NOT Present.
     - Condensate valve (Yc) closed (no flow).
   - Terminal 10: Voltage NOT Present.
     - Injection valve (Yi) closed (no flow).
   - Terminal 24: Voltage NOT Present.
     - Cleaning valve (Yv) closed (no flow).
   - Terminal 25: Voltage Present/Voltage NOT Present.
     - Vent motor (Mo) operates as required by software program.
   - Terminal 27: Voltage NOT Present.
     - Wash valve (Yn) closed (no flow).
   - Terminal 29: Voltage NOT Present.
     - Detergent pump (Pdn) stationary.
   - Terminal 30: Voltage NOT Present.
     - Cooling valve (Yf) closed (no flow).
4. Output control assembly (Ar) inputs are as follows:
   - Terminal B1: cavity temperature sensor (B1).
     - Resistance dependent on cavity temperature.
   - Terminals E2, E2b, E2c: core probe temperature sensor (Xsc).
     - If core probe not connected - 0 VAC.
     - If core probe connected - voltage dependent on probe temperature.
   - Terminals Bd+, Bds, Bd-: flow meter (Bd).
     - No supply water flow: 0 Hz.
   - Terminals Sp: Door sensor (Sp).
     - Door must be closed - 0 Ohms.
5. Heat control contactor (Kr) is pulsed by output control assembly (Ar) terminal 8. The pulse rate is determined by internal electronics dependent on the cavity temperature as determined by cavity temperature sensor B1.
6. Supply voltage is applied (pulsed) to heating elements through heat control contactor (Kr).
   A. At initial heating, supply voltage pulse rate is low (long ON time, short OFF time).
   B. As temperature rises, supply voltage pulse rate increases (shorter ON time and / or longer OFF time).
   C. At desired temperature, supply voltage is applied / removed as required to keep the temperature within the specified range.

NOTE: Convectional fan motor (M1) operates whenever safety contactor (Ks) is closed).

7. Convectional fan motor (M1) rotating.

HEAT AND HUMIDITY

1. Power, water, drain, and detergent are connected as noted in CONDITIONS.
2. All fuses are good.
3. Heat operation is as noted in HEAT.
4. Output control assembly (Ar) outputs are as follows:
    - Terminal 4: Voltage Present, 230V.
        - Axial fan (Mt1) rotating.
    - Terminal 5: Voltage Present, 15V.
        - LED lights on.
    - Terminal 7: Voltage Present, 230V.
        - Axial fan (Mt2) rotating.
        - Thermal switch (Fm1) closed.
        - Safety contactor (Ks) closed.
        - High limit switch (Fc) closed.
    - Terminal 8: Voltage Present (230V) / Voltage NOT Present.
        - Heat control contactor (Kr) opens and closes dependent on temperature.
    - Terminal 9: Voltage Present (230V) / Voltage NOT Present..
        - Condensate valve (Yc) closed (no flow).
    - Terminal 10: Voltage Present, 230V.
        - Injection valve (Yi) closed (flow at 8.5 oz. per minute).
    - Terminal 24: Voltage NOT Present.
        - Cleaning valve (Yv) closed (no flow).
    - Terminal 25: Voltage Present (24V) / Voltage NOT Present.
        - Vent motor (Mo) operates as required by software program.
    - Terminal 27: Voltage NOT Present.
        - Wash valve (Yn) closed (no flow).
    - Terminal 29: Voltage NOT Present.
        - Detergent pump (Pdn) stationary.
    - Terminal 30: Voltage NOT Present.
        - Cooling valve (Yf) opens and closes (Voltage NOT Present at 17 oz. per minute) as directed by software program.
5. Output control assembly (Ar) inputs are as follows:
    - Terminal B1: cavity temperature sensor (B1).
        - Resistance dependent on cavity temperature.
    - Terminals E2, E2b, E2c: core probe temperature sensor (Xsc).
        - If core probe not connected - 0 VAC.
        - If core probe connected - voltage dependent on probe temperature.
    - Terminals Bd+, Bds, Bd-: flow meter (Bd).
        - Supply water flow - frequency dependent on flow rate.
    - Terminals Sp: door sensor (Sp).
        - Door must be closed - 0 Ohms.

NOTE: Convection motor (M1) rotates whenever safety contactor (Ks) is closed.

6. Convection motor (M1) rotating.

CLEAN

1. Power, water, drain, and detergent are connected as noted in POWER ON.
2. All fuses are good.
3. Output control assembly (Ar) outputs are as follows:
    - Terminal 4: Voltage Present, 230V.
        - Axial fan (Mt1) rotating.
    - Terminal 5: Voltage Present, 15V.
        - LED lights on.
    - Terminal 7: Voltage Present, 230V.
        - Axial fan (Mt2) rotating.
        - Thermal switch (Fm1) closed.
        - Safety contactor (Ks) closed.
        - High limit switch (Fc) closed.
    - Terminal 8: Voltage NOT Present.
        - Heat control contactor (Kr) open.
    - Terminal 9: Voltage NOT Present.

- Condensate valve (Yc) closed (no flow).
- Terminal 10: Voltage Present, 230V.
  - Injection valve (Yi) closed (no flow).
- Terminal 24: Voltage NOT Present.
  - Cleaning valve (Yv) open (flow at 169 oz. per minute).
- Terminal 25: Voltage NOT Present.
  - Vent motor (Mo) stationary.
- Terminal 27: Voltage NOT Present.
  - Wash valve (Yn) closed (no flow).
- Terminal 29: Voltage Present, 230V.
  - Detergent Pump (Pdn) operating.
- Terminal 30: Voltage NOT Present.
  - Cooling valve (Yf) closed (no flow).

4. Output control assembly (Ar) inputs are as follows:
   - Terminal B1: cavity temperature sensor (B1).
     - Resistance dependent on cavity temperature.
   - Terminals E2, E2b, E2c: core probe temperature sensor (Xsc).
     - If core probe not connected - 0 VAC.
     - If core probe connected - voltage dependent on probe temperature.
   - Terminals Bd+, Bds, Bd-: flow meter (Bd).
     - Supply water flow - frequency dependent on flow rate.
   - Terminals Sp: door sensor (Sp).
     - Door must be closed - 0 Ohms.
5. Water / detergent dispensed into cavity and flows into condensate drain.
6. Water / detergent flows from condensate drain into facility drain.

NOTE: Convectional Fan motor (M1) rotates whenever safety contactor (Ks) is closed.

7. Convectional Fan motor (M1) rotating.

OTHER

1. Power, water, drain, and detergent are connected as noted in CONDITIONS.
2. All fuses are good.

DOOR OPEN

1. Output control assembly (Ar) outputs are as follows:
   - Terminal 4: Voltage NOT Present, 230V.
     - Axial fan (Mt1) not rotating.
   - Terminal 5: Voltage Present, 15V.
     - LED lights on.
   - Terminal 7: Voltage NOT Present.
     - Axial fan (Mt2) not rotating.
     - Thermal switch (Fm1) closed.
     - Safety contactor (Ks) open.
     - Voltage Present (230V) . limit switch (Fc) closed.
   - Terminal 8: Voltage NOT Present.
     - Heat control contactor (Kr) open.
   - Terminal 9: Voltage NOT Present.
     - Condensate valve (Yc) closed (no flow).
   - Terminal 10: Voltage NOT Present.
     - Injection valve (Yi) closed (no flow).
   - Terminal 24: Voltage NOT Present.
     - Cleaning valve (Yv) closed (no flow).
   - Terminal 25: Voltage NOT Present.
     - Vent motor (Mo) stationary.
   - Terminal 27: Voltage NOT Present.
     - Wash valve (Yn) closed (no flow).
   - Terminal 29: Voltage NOT Present.
     - Detergent Pump (Pdn) stationary.
   - Terminal 30: Voltage NOT Present.
     - Cooling valve (Yf) closed (no flow).
2. Output control assembly (Ar) inputs are as follows:
   - Terminal B1: cavity temperature sensor (B1).
     - Resistance dependent on cavity temperature.
   - Terminals E2, E2b, E2c: core probe temperature sensor (Xsc).
     - If core probe not connected - 0 VAC.

    - If core probe connected - voltage dependent on probe temperature.
- Terminals Bd+, Bds, Bd-: flow meter (Bd).
    - No supply water flow: 0 Hz.
- Terminals Sp: door sensor (Sp).
    - Door open - infinite Ohms.

3. With contactors Kr and Ks open, no supply voltage to heating elements.

NOTE: Convectional Fan motor (M1) rotates whenever safety contactor (Ks) is closed.

4. Convectional Fan motor (M1) not rotating.

CAVITY OVER TEMPERATURE

1. Output control assembly (Ar) outputs are as follows:
    - Terminal 4: Voltage Present, 230V.
        - Axial fan (Mt1) rotating.
    - Terminal 5: Voltage Present, 15V.
        - LED lights on.
    - Terminal 7: Voltage Present, 230V.
        - Axial fan (Mt2) rotating.
        - Thermal switch (Fm1) closed.
        - Safety contactor (Ks) open.
        - Voltage Present, limit switch (Fc) open.
    - Terminal 8: Voltage NOT Present.
        - Heat control contactor (Kr) open.
    - Terminal 9: Voltage NOT Present.
        - Condensate valve (Yc) closed (no flow).
    - Terminal 10: Voltage NOT Present.
        - Injection valve (Yi) closed (no flow).
    - Terminal 24: Voltage NOT Present.
        - Cleaning valve (Yv) closed (no flow).
    - Terminal 25: Voltage NOT Present.
        - Vent motor (Mo) stationary.
    - Terminal 27: Voltage NOT Present.
        - Wash valve (Yn) closed (no flow).
    - Terminal 29: Voltage NOT Present.
        - Detergent pump (Pdn) stationary.
    - Terminal 30: Voltage NOT Present.
        - Cooling valve (Yf) closed (no flow).
2. Output control assembly (Ar) inputs are as follows:
    - Terminal B1: cavity temperature sensor (B1).
        - Resistance dependent on cavity temperature.
    - Terminals E2, E2b, E2c: core probe temperature sensor (Xsc).
        - If core probe not connected - 0 VAC.
        - If core probe connected - voltage dependent on probe temperature.
    - Terminals Bd+, Bds, Bd-: flow meter (Bd).
        - No supply water flow: 0 Hz.
    - Terminals Sp: door sensor (Sp).
        - Door closed - 0 Ohms.
3. With contactors Kr and Ks open, no supply voltage to heating elements.

NOTE: Convectional Fan motor (M1) rotates whenever safety contactor (Ks) is closed.

4. Convectional Fan motor (M1) not rotating.

CONVECTIONAL FAN MOTOR OVER TEMPERATURE

1. Output control assembly (Ar) outputs are as follows:
    - Terminal 4: Voltage Present, 230V.
        - Axial fan (Mt1) rotating.
    - Terminal 5: Voltage Present, 15V.
        - LED lights on.
    - Terminal 7: Voltage Present.
        - Axial fan (Mt2) rotating.
        - Thermal switch (Fm1) open.
        - Safety contactor (Ks) open.
        - Voltage Present. limit switch (Fc) closed.
    - Terminal 8: Voltage NOT Present.
        - Heat control contactor (Kr) open.
    - Terminal 9: Voltage NOT Present.
        - Condensate valve (Yc) closed (no flow).
    - Terminal 10: Voltage NOT Present.
        - Injection valve (Yi) closed (no flow).
    - Terminal 24: Voltage NOT Present.

    - Cleaning valve (Yv) closed (no flow).
  - Terminal 25: Voltage NOT Present.
    - Vent motor (Mo) stationary.
  - Terminal 27: Voltage NOT Present.
    - Wash valve (Yn) closed (no flow).
  - Terminal 29: Voltage NOT Present.
    - Detergent pump (Pdn) stationary.
  - Terminal 30: Voltage NOT Present.
    - Cooling valve (Yf) closed (no flow).

2. Output control assembly (Ar) inputs are as follows:
   - Terminal B1: cavity temperature sensor (B1).
     - Resistance dependent on cavity temperature.
   - Terminals E2, E2b, E2c: core probe temperature sensor (Xsc).
     - If core probe not connected - 0 VAC.
     - If core probe connected - voltage dependent on probe temperature.
   - Terminals Bd+, Bds, Bd-: flow meter (Bd).
     - No supply water flow: 0 Hz.
   - Terminals Sp: door sensor (Sp).
     - Door closed - 0 Ohms.
3. With contactors Kr and Ks open, no supply voltage to heating elements.

NOTE: Convectional Fan motor (M1) rotates whenever safety contactor (Ks) is closed.

4. Convectional Fan motor (M1) not rotating.

WIRING / FLUID DIAGRAMS

WIRING DIAGRAMS

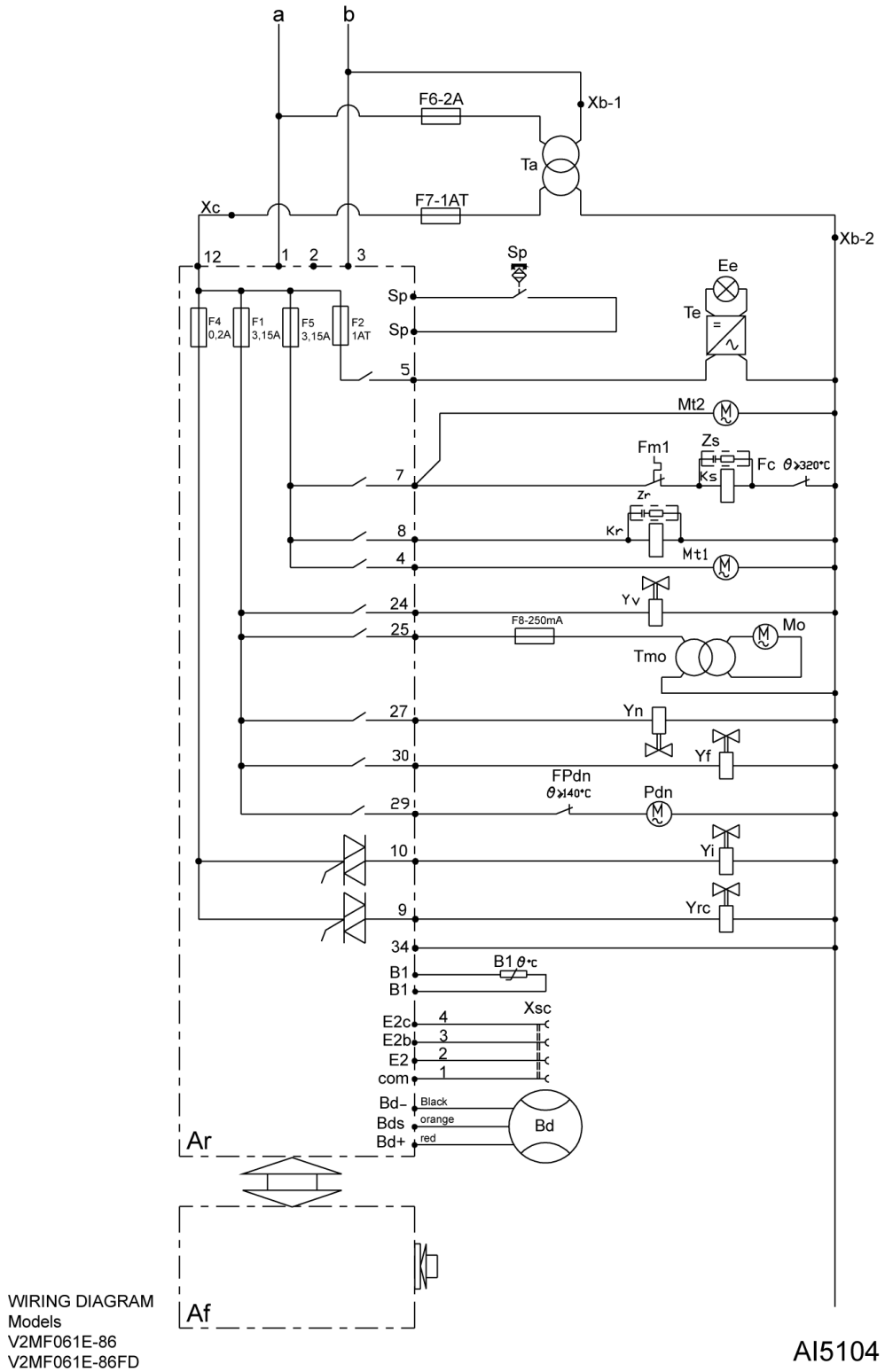


Fig. 67

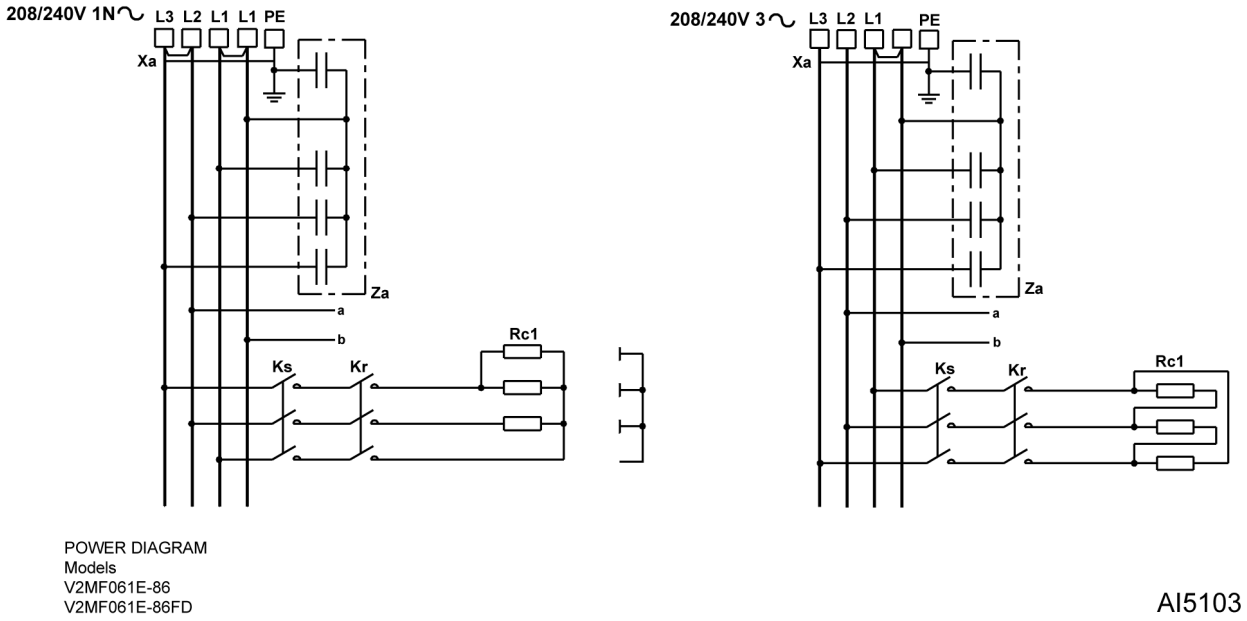


Fig. 68

FLUID DIAGRAM

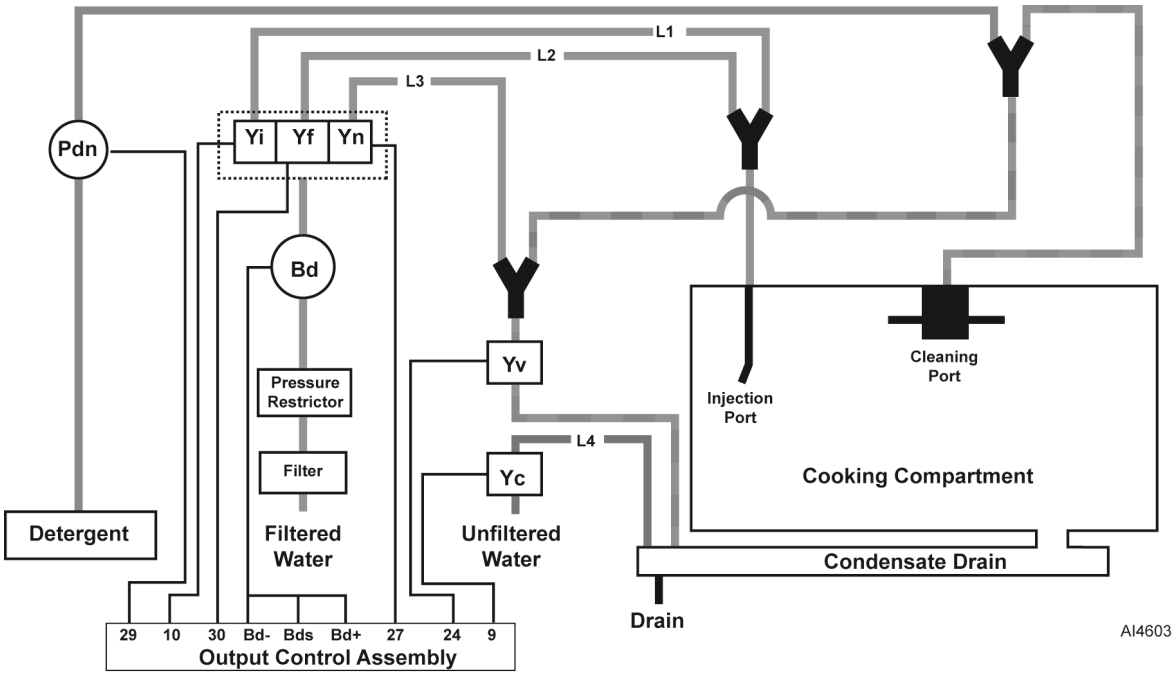


Fig. 69

Reference Designator	Nomenclature
Bd	Flow Meter
Pdn	Detergent Pump
Yc	Condensate Cooling Valve Solenoid
Yf	Cooling Valve Solenoid

Reference Designator	Nomenclature
Yi	Injection Valve Solenoid
Yn	Cleaning Valve Solenoid
Yv	Detergent Supply Valve Solenoid

Operation	Yi	Yf	Yn	Yv	Yc	Pump
Injection	Open (L1 Flow @ 8.5 Oz / Min)	CLOSED (No Flow)	CLOSED (No Flow)	CLOSED (No Flow)	CLOSED (No Flow)	Inactive
Cooling	CLOSED (No Flow)	OPEN (L2 flow @ 17 Oz / Min)	CLOSED (No Flow)	CLOSED (No Flow)	CLOSED (No Flow)	Inactive
Cleaning	CLOSED (No Flow)	CLOSED (No Flow)	OPEN (L3 Flow @ 169 Oz / Min)	CLOSED (No Flow)	CLOSED (No Flow)	Active
Drain	CLOSED (No Flow)	CLOSED (No Flow)	CLOSED (No Flow)	OPEN (Gravity Flow)	OPEN (L4 Flow @ 27 Oz / min	Inactive

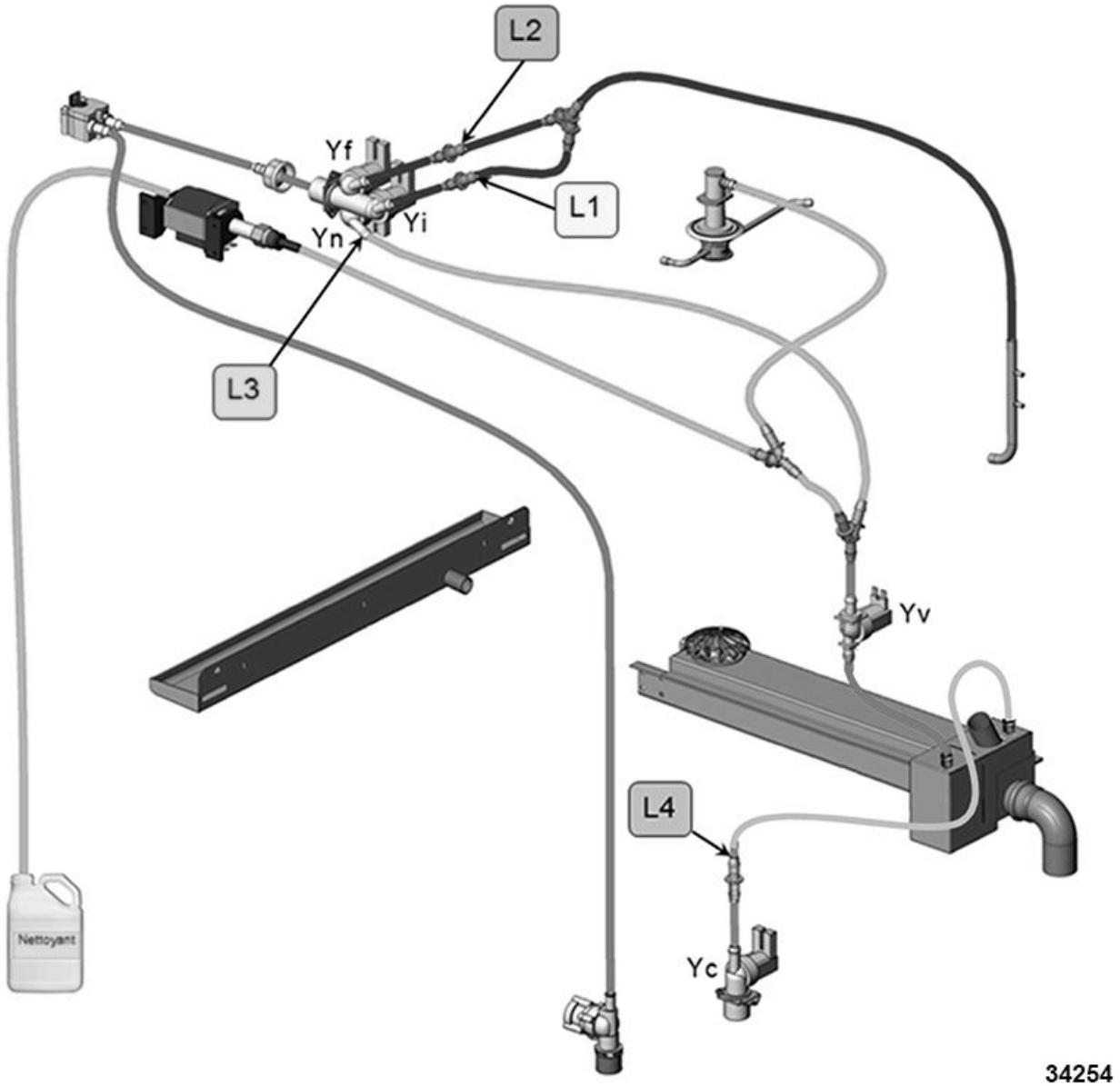


Fig. 70

FLOW RESTRICTORS			
Injection	**Cooling**	**Cleaning**	**Drain**
L1	L2	L3	L4
0.25 l/min	0.5 l/min	5 l/min	.8 l/min

DISPLAY SCREEN CONTROLS AND INFORMATION

AUTO SCREEN CONTROLS AND INFORMATION

The **AUTO** screen (Fig. 71) provides user access to pre-programmed functions, settings, and recipes. Additional information regarding the features and functions of this screen is available in the USER GUIDE.

Fig. 71

NOTE: Units are shipped with zero "my recipes" so this may be empty.

MANUAL SCREEN CONTROLS AND INFORMATION

The **MANUAL** screen (Fig. 72) provides user access to manually controlled functions and settings. Additional information regarding the features and functions of this screen is available in the USER GUIDE.

Fig. 72

TROUBLESHOOTING

⚠ WARNING

Certain procedures in this section require electrical test or measurements while power is applied to the machine. Exercise extreme caution at all times and follow Arc Flash procedures. If test points are not easily accessible, disconnect power and follow Lockout/Tagout procedures, attach test equipment and reapply power to test.

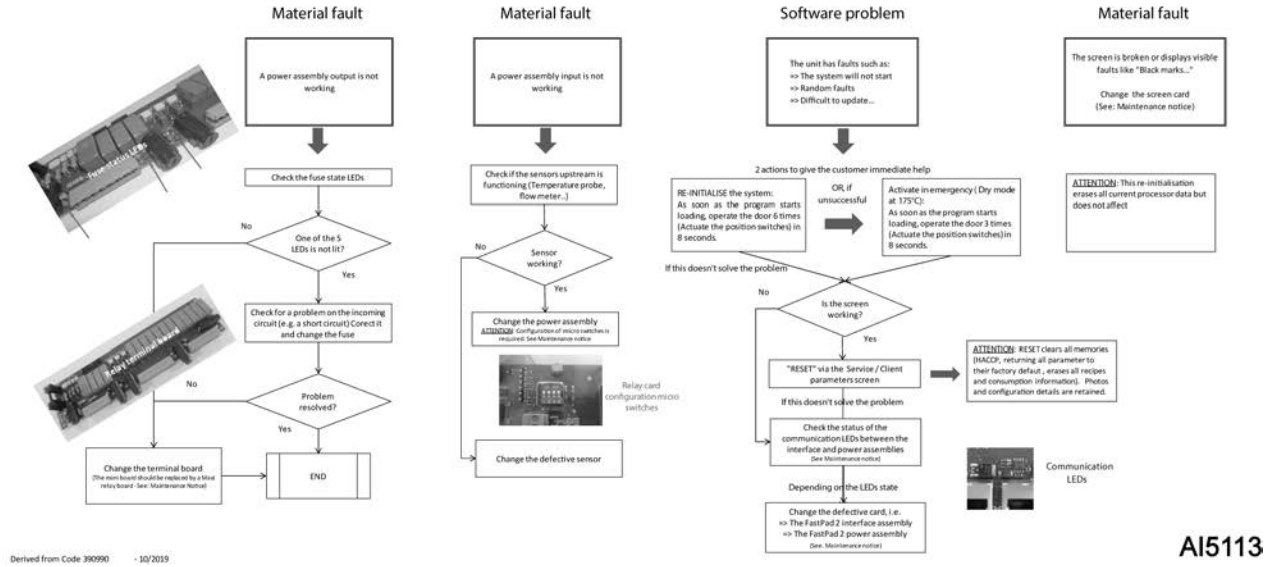


Fig. 73

TOOL BOX SCREEN CONTROLS AND INFORMATION

The **TOOL BOX** screen (Fig. 74) provides access to additional screens used to configure the oven as well as user documentation.

Fig. 74

The primary Tool Box screen provides:

- Auto clean schedule (if enabled). See for information on configuring the schedule.
- Manual Cleaning icon (if enabled).
- Access to the User Manual. See AUTO CLEANING SCREEN CONTROLS AND INFORMATION for additional information.
- Access to the Data Exchange screen. See DATA EXCHANGE CONTROLS AND INFORMATION for additional information.
- Access to the Client Parameters screens. See CLIENT PARAMETER SCREEN CONTROLS AND INFORMATION for additional information.
- Access to Installation Parameters screen. See INSTALLATION PARAMETERS SCREEN CONTROLS AND INFORMATION for additional information.
- Access to Technical Parameters screens. See for additional information.
- Service and Culinary contact phone numbers. This information is configured in Client Parameters.
- Scheduled service information. The service periodicity is configured in Technical Parameters.

In addition, the oven's serial number, output control software version, and touch screen display software version are provided as well.

AUTO CLEANING SCREEN CONTROLS AND INFORMATION

Checking / setting auto cleaning parameters is required if:

- Output Control Assembly is replaced.
- Touch Pad / Display Assembly is replaced.
- FastPAD software / firmware is updated.

1. Access the **Auto Cleaning** screen as follows:
   A. Select **TOOL BOX** (1, Fig. 75) icon.

Fig. 75

   B. If **Rinsing** (2, Fig. 75) and **Cleaning** (3) icons are shown, select **Auto Cleaning** icon (4) to activate login screen.
   C. On login screen, enter password (**CHEF**) (1-4, Fig. 76).
   D. Select √ (5, Fig. 76) icon.

Fig. 76

2. Once the password is entered, the **Auto Cleaning** screen Fig. 77 will become active.
3. Set / change **Auto Cleaning** screen parameters by:
   - Selecting the **CLEAN** icon under the desired day and toggling the level (Light / Medium / Intense / None).
   - Selecting the **HOUR** icon and entering the start time (Hours : Minutes)

Fig. 77

4. If the schedule is valid (able to be performed based on operating schedule) the **Valid** icon turns ON.
5. Press START to save the auto cleaning schedule.
6. The display returns to the primary **TOOL BOX** screen.

MANUAL CLEANING SCREEN CONTROLS AND INFORMATION

Checking / setting manual cleaning parameters is required if:

- Output Control Assembly is replaced.
- Touch Pad / Display Assembly is replaced.
- FastPAD software / firmware is updated.

1. Access **Manual Cleaning** screen as follows:
   A. Select **TOOL BOX** (1, Fig. 78) icon.

Fig. 78

B. If **Rinsing** icon (2, Fig. 78) and **Auto Cleaning schedule** are shown, select **Manual Cleaning** icon (4) to activate login screen..

C. On login screen, enter password (**CHEF**) (1-4, Fig. 79).

D. Select √ (5, Fig. 79) icon.

Fig. 79

2. Select the desired cleaning action / time (Fig. 80).
    - Pressing **RINSING** then **START** icons initiates a 1.0 second rinse.

NOTE: Cleaning cycles are in minutes.

- Pressing **CLEANING** icon provides 4 possible actions:
    - **LIGHT**: a cycle of 11.0 cleaning, 4.0 seconds rinsing, then draining.
    - **MEDIUM**: a cycle of 20.0 cleaning, 4.0 seconds rinsing, then draining.
    - **INTENSE**: a cycle of 31.0 cleaning, 4.0 seconds rinsing, then draining.
    - **PRIMING CLEANING**: initiates the LIGHT cleaning cycle/

3. Press **START** icon to initiate desired cycle.
4. After cleaning cycle completes, the primary **TOOL BOX** screen becomes active.

Fig. 80

USER MANUAL INFORMATION

The **User Manual** screen (Fig. 81 (provides access to embedded videos and Frequently Asked Questions (FAQ).

Fig. 81

DATA EXCHANGE CONTROLS AND INFORMATION

Checking / setting data exchange information is required if:

- Output Control Assembly is replaced.
- Touch Pad / Display Assembly is replaced.
- FastPAD software / firmware is updated.

1. Access **Data Exchange** screen as follows:
   A. Select **TOOL BOX** (1, Fig. 82) icon.

Fig. 82

B. Select **Data Exchange** (2, Fig. 82) icon.

C. Enter password (**CHEF**) (1-4, Fig. 83).

Fig. 83

D. Select √ (5, Fig. 83) icon.

2. Configure, upload, export, and view data exchange information (Fig. 84) by selecting the appropriate icon.

Fig. 84

- HACCP (Hazard Analysis and Critical Control Point). When set to ON, the oven records HACCP data for either viewing or export. When active, the sample time can be set from 5 to 240 seconds by rotating the encoder.
- Radio. This feature does not work in this configuration.
- Recipes.
  - Selecting **Upload** icon loads recipes from a flash drive inserted in the USB port.
  - Selecting **Export** icon downloads recipes to a flash drive inserted in the USB port.
- HACCP.
  - Selecting **Export** icon downloads HACCP data to a flash drive inserted in the USB port.
  - Selecting **VIEW** icon activates a screen to show HACCP data.
- Consumptions.
  - Selecting **Export** icon downloads oven operational information to a flash drive inserted in the USB port.
  - Selecting **VIEW** icon activates a screen to show oven operational information data.
- Pictures.
  - Selecting **Upload** icon loads photos from a flash drive inserted in the USB port.
  - Selecting **Export** icon downloads photos to a flash drive inserted in the USB port.
  - Selecting **VIEW** icon activates a screen to show photos.
- User Manual.
  - Selecting **Export** icon downloads user manual information to a flash drive inserted in the USB port.
  - Selecting **VIEW** icon activates the user manual screen.
- User Profile.
  - Selecting **Upload** icon loads user data from a flash drive inserted in the USB port.
  - Selecting **Export** icon downloads user data to a flash drive inserted in the USB port.

3. Select **Back** icon to return to primary **TOOL BOX** screen.

CLIENT PARAMETER SCREEN CONTROLS AND INFORMATION

Checking / setting client parameters is required if:

- Output Control Assembly is replaced.
- Touch Pad / Display Assembly is replaced.
- FastPAD software / firmware is updated.

NOTE: There are three screens associated with client parameter controls and settings.

1. Access **Client Parameters** screens as follows:
   A. Select **TOOL BOX** (1, Fig. 85) icon.

Fig. 85

B. Select **Client Parameters** (2, Fig. 85) icon.

C. Enter password (**CHEF**) (1-4, Fig. 86).

Fig. 86

D. Select √ (5, Fig. 86) icon.

2. Set / change screen 1 client parameters (Fig. 87) by either:

- Selecting the icon directly.
  - Screen Beep
  - Auto Winter / Summer Hour
  - Oven Preheat (enable / disable)
  - Boiler preheating (Not used in this configuration)
  - Preheating before cooking
  - Delta T Mode
- Selecting the icon and rotating the encoder dial to set the desired value.
  - Language
  - Brightness
  - Sound level
  - No. of end of cooking beeps

- Date / Hr
- Oven Preheat (temperature)
- Hold
- Default core temperature

Fig. 87

3. Select **Next** icon to show client parameters screen 2.
4. Set / change screen 2 client parameters (Fig. 88) by either:
   - Selecting the icon directly.
     - Default Mode
     - Manual Type Mode
     - Cooling in MANUAL Mode
     - Message (text with keypad entry)
     - RECIPES
       - Client recipe name (text with keypad entry)
       - Authorization
       - Display
       - Library
     - Recipes sort by family
     - Screen saver (enable / disable)
   - Selecting the icon and rotating the encoder dial to set the desired value.
     - Humidification rate for Regeneration
     - Screen saver (after)

Fig. 88

5. Select **Next** icon to show client parameters screen 3.
6. Set / change screen 3 client parameters (Fig. 89) by either:
   - Selecting the icon directly.
     - Measuring Units
     - Convection only
     - Auto restart
     - Cooling of condensates

- Water treatment capacity (reset)
- Rest
- Modify PIN no. (text with keypad entry)

- Selecting the icon and rotating the encoder dial to set the desired value.
  - Prices
  - Number of weeks to keep after HACCP export
  - Cleaner container volume
  - Water treatment capacity

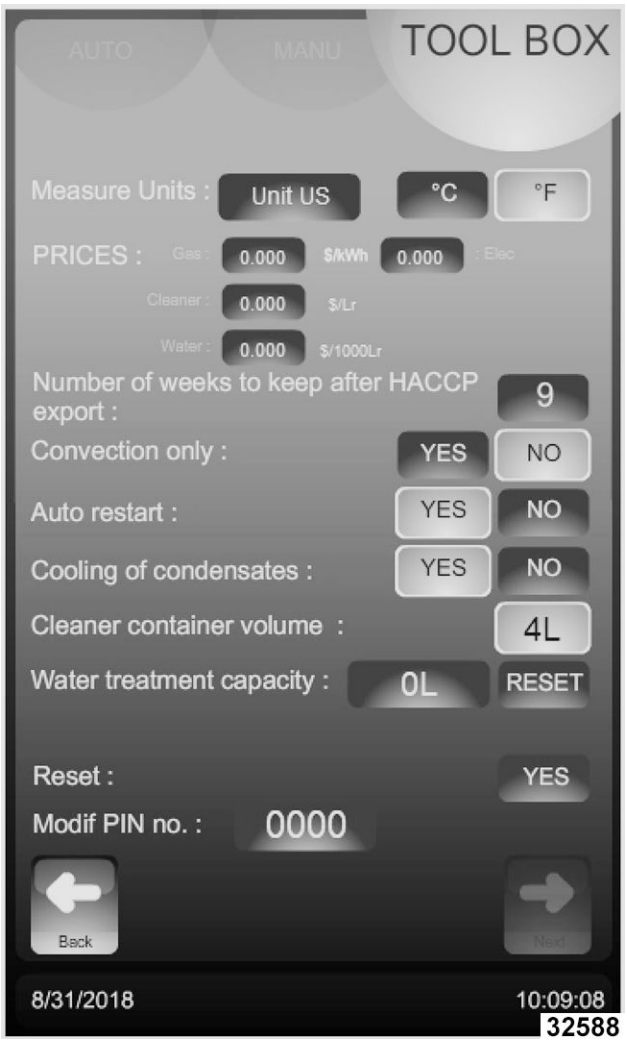


Fig. 89

7. Select **Back** icon to return to primary **TOOL BOX** screen.

INSTALLATION PARAMETERS SCREEN CONTROLS AND INFORMATION

Checking / setting client parameters is required if:

- Initial installation is performed.
- Output Control Assembly is replaced.
- Touch Pad / Display Assembly is replaced.
- FastPAD software / firmware is updated.

1. Access **Installation Parameters** screen as follows:
   A. Select **TOOL BOX** (1, Fig. 90) icon.

Fig. 90

   B. Select **Installation Parameters** (2, Fig. 90) icon.
   C. Enter password (**INSB**) (1-4, Fig. 91).

Fig. 91

D. Select √ (5, Fig. 91) icon.

2. Set / change installation parameters (Fig. 92) by either:

- Selecting the icon directly.
  - Reset remaining time before service Yes / No).
  - Maintenance company.
    - Contact (text with keypad entry).
    - Tel. no (text with keypad entry).
    - Culinary advisor Tel. no (text with keypad entry).
- Selecting the icon and rotating the encoder dial to set the desired value.
  - Service every (hours).
  - Hours / Days (average length of daily operation).
  - Water hardness (ppm).

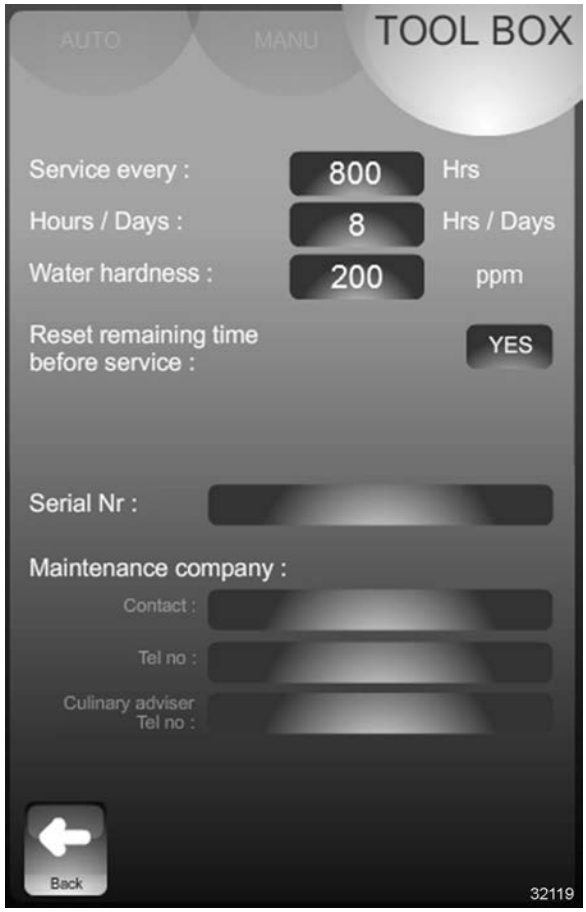


Fig. 92

3. Select **Back** icon to return to primary **TOOL BOX** screen.

TECHNICAL PARAMETERS SCREEN CONTROLS AND INFORMATION

Checking / setting technical parameters is required if:

- Output Control Assembly is replaced.
- Touch Pad / Display Assembly is replaced.
- FastPAD software / firmware is updated.

NOTE: There are five primary and two secondary screens associated with technical parameter controls and settings.

1. Access Technical Parameters screens as follows:

   A. Select **TOOL BOX** (1, Fig. 93) icon.

Fig. 93

B. Select **Technical Parameters** (2, Fig. 93) icon.

C. Enter password (**SAVB**) (1-4, Fig. 94).

Fig. 94

D. Select √ (5, Fig. 94) icon.

2. Select the appropriate icon to set / change technical parameters (Fig. 95):

- Brand.
- Model.
- Stacked.
- Energy.
- Hz.
- Steam.
- Cleaning.
- Default Display.
- Core Probe.

Fig. 95

3. Select **Update** icon to load parameters.
4. Select **Next** icon to activate **Error History / Counters** screen (Fig. 96). Additional information is found in .

Fig. 96

5. Select **Next** icon to show **State of Inlets** screen (Fig. 97). Additional information is available in .

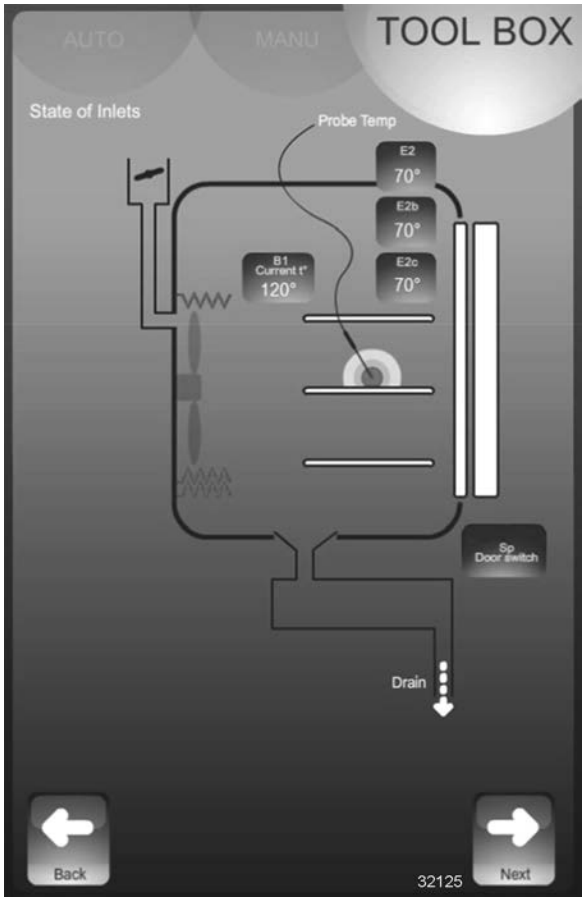


Fig. 97

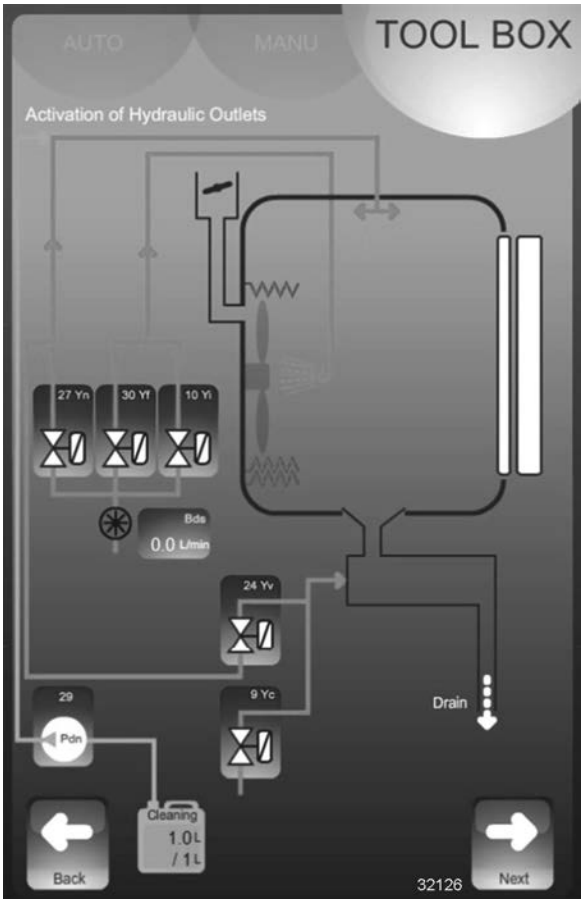


Fig. 98

6. Select **Next** icon to show **Activation of Hydraulic Outputs** screen (Fig. 98). Additional information is available in .

7. Select **Next** icon to show **Activation of Power Outputs** screen (Fig. 99). Additional information is available in .

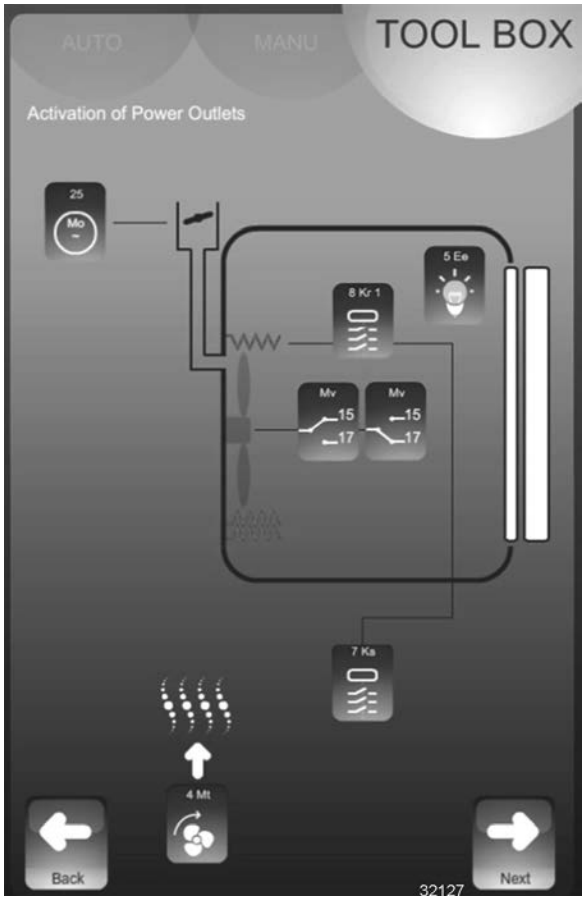


Fig. 99

8. Select **Back** icon to return to primary **TOOL BOX** screen.

WATER TREATMENT COUNTER

NOTE: This only functions if there are two separate supplies to the oven.

1. Open service tab.
2. Select the Client parameters button.
3. Enter "CHEF" PIN code « permanent » (lower or uppercase).
4. Validate “V”: When entered if code is correct, access the menu, if not, re-enter PIN code.

Fig. 100

Water Treatment Capacity

A. Modify or enter value for the capacity of the water treatment system (in liters).
   1) Select zone to be changed.
   2) Adjust using coder knob.

5. After regeneration of water treatment, reset the counter as required.
   A. Press « RESET ».
   B. Confirm by pressing « YES ».

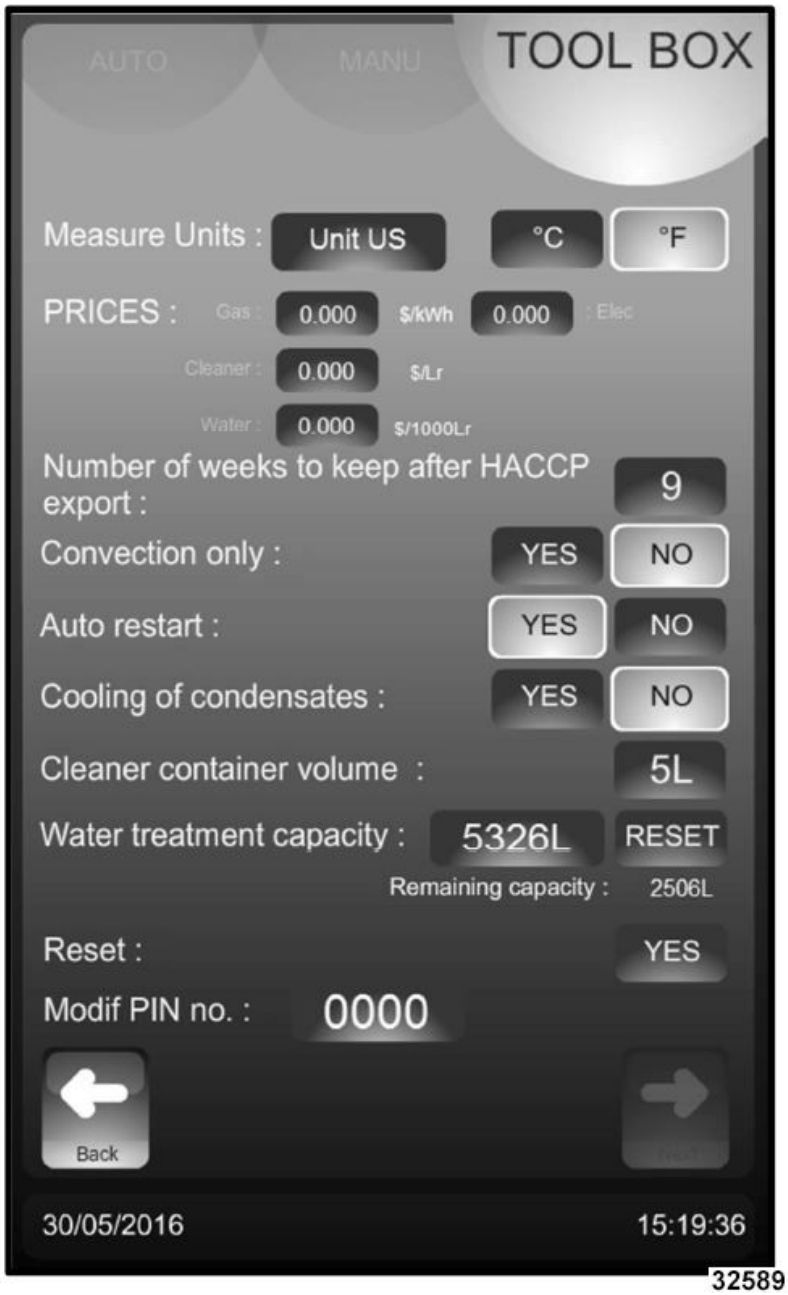

AUTO
MANU
TOOL BOX
Measure Units :
Unit US
°C
°F
PRICES :
Gas :
0.000
$/kWh
0.000
: Elec
Cleaner :
0.000
$/Lr
Water :
0.000
$/1000Lr
Number of weeks to keep after HACCP export :
9
Convection only :
YES
NO
Auto restart :
YES
NO
Cooling of condensates :
YES
NO
Cleaner container volume :
5L
Water treatment capacity :
5326L
RESET
Remaining capacity :
2506L
Reset :
YES
Modif PIN no. :
0000
Back
30/05/2016
15:19:36
32589

Fig. 101

SETTING FLOW METER FREQUENCY

1. Go to **TOOL BOX** screen.
2. Select Technical Parameters screen.
3. Enter password (**SAVB**) and green check.
4. Validate (**V**). If the code is correct, menu can be accessed. If not, return to inputting the PIN.
5. Press **NEXT**.
6. Under **Flow Meter Frequency**, turn encoder knob down to **236** value.

Fig. 102

DIAGNOSTICS

ERROR SCREENS AND INFORMATION

1. There are three colors of screens associated with equipment errors.
   - A **GREEN** screen (Fig. 103) is displayed to provide information that does not impact operation.

Fig. 103

   - A **YELLOW** screen (Fig. 104) is displayed when errors occur that impact operation but do not shut down operation.

Fig. 104

   - A **RED** screen (Fig. 105) is displayed when errors occur that impact and shut down operation.

Fig. 105

Refer to:

- TABLE below for error information.
- WIRING DIAGRAMS for component wiring and connections.
- OUTPUT CONTROL ASSEMBLY for output control assembly connections.

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
i28	Core probe not connected (**RED** error screen).	Cooking stops. Waiting for a core probe to be connected.	Core probe not connected, or open or shorted.	Perform TEMPERATURE PROBE TEST.
E30	Electronics overheating (**YELLOW** error screen).	Cooking continues.	Drawing in hot air.	Installation problem: check for external heat source nearby.
			Air inlet obstructed.	Clean oven air vents.

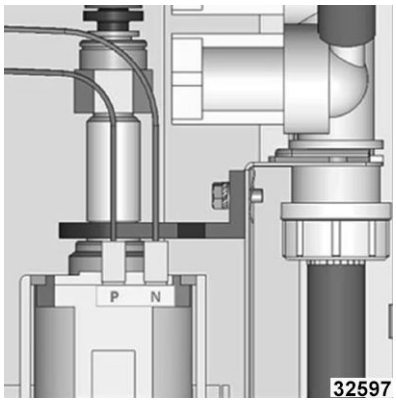
			Axial cooling fan(s) Mt1 and / or Mt2 not functioning.	Check axial cooling fan input power.
				• If present, replace fan(s).
				• If not present, check:
				  • output control assembly relay board fuse F5.
				  • output control assembly relay board output 7 (Mt2 power).
				  • output control assembly relay board output 4 (Mt1 power).

				If items listed above are OK, replace output control assembly.

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
i31	Electronics overheating: Temperature reduced to 356 °F (**YELLOW** error screen).	Cooking continues with cavity temperature reduced to 356 °F.	See error E30.	See error E30.
i33	Core probe non function or not plugged (**RED** error screen).	Cooking stops.	Core probe disconnected during a cooking cycle.	Perform TEMPERATURE PROBE TEST.
			Faulty core probe.	
E46	Electronic communication fault (Bus RS485) (**RED** error screen).	**NOTE:** Cooking possible with reduced functionality at up to 347 °F. Cooking stops.	Loss of communication between the output control assembly and touch screen / display assembly.	Check communication LEDs on output control assembly and touch screen / display assembly. Refer to OPERATION / DIAGNOSTIC INDICATORS.
				Check / replace Ethernet cable.
E53	Short circuit of coil or motor or baffle non function (**RED** error screen).	Cooking stops.	**Fuse F5 open.**	
			Output control assembly relay board output 7 shorted to ground.	If shorted to ground, check: • connecting wiring. • axial fan Mt2 motor. • contactor Ks coil. • blower motor thermal switch FM1. • high limit switch Fc.
				If items listed above are OK, replace output control assembly.
			Output control assembly relay board output 8 shorted to ground.	If shorted to ground, check: • connecting wiring. • contactor Kr coil.
				If items listed above are OK, replace output control assembly.
			Output control assembly relay board output 4 shorted to ground.	If shorted to ground, check: • connecting wiring. • axial fan Mt1 motor.
				If items listed above are OK, replace output control assembly.
			Fuse F3 open.	

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
			Output control assembly relay board outputs 15 or 17 shorted to ground.	If shorted to ground, check: • connecting wiring. • blower motor M1. • capacitor CM1.
				If items listed above are OK, replace output control assembly.
			Fuses F3 and F5 OK, E53 displayed.	
			Contactor Ks does not close during the oven initialization when the door is closed.	Check for defective: • connecting wiring. • blower motor thermal switch FM1. • safety contactor Ks. • output control assembly relay board (output 7).
				If items listed above are OK, replace output control assembly.
			Contactor Ks closes during the oven initialization when the door is closed.	Check for defective: • fuse F9. • capacitor CM1. • blower motor M1. • output control assembly relay board output 15.
				If items listed above are OK, replace output control assembly.
			E53 appears during operation.	
			Blower motor thermal switch FM1 opens.	Check: • blower fan / motor turn freely with no signs of binding. • blower motor M1 windings resistance. • blower motor thermal switch FM1.
				If blower motor and thermal switch are OK, replace output control assembly.
E61	Ambient probe short circuit (**RED** error screen).	Cooking stops.	Cavity temperature probe poorly connected / open.	Perform TEMPERATURE PROBE TEST. **NOTE:** Check what temperature the probe is reading in the inputs screen (TECH parameters) Check the wires are tightened on connection B1 on the relay card.
			Cavity temperature probe short circuited.	

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
E62	Ambient probe faulty or poorly connected (**RED** error screen).	Cooking stops.	Cavity temperature probe poorly connected (connection to relay card).	
			Probe wiring broken.	**NOTE:** Check what temperature the probe is reading in the inputs screen (TECH parameters) Disconnect (B1) from the card. Check the value of the PT 100 probe on the terminal screws (see the table for corresponding values). If values are incorrect, change the probe, if the probe is functioning, replace the relay card.
E68	Cavity at +554 °F (**RED** error screen).	Cooking stops.	Heating contactor Kr failure (always closed).	Toggle heat on and off. Refer to DIAGNOSTIC SCREENS **Actuation of Power Outlets** (Kr1 function).
				Turn off oven and check: • heating contactor Kr contacts (should be open). • heating contactor Kr coil (should be open).
				Check contactor Kr coil.
				If items listed above are OK, replace output control assembly.
E72	Electronics at over 167 °F (**RED** error screen).	Cooking stops.	See error E30.	See error E30.
E73	Detergent pump faulty or on permanently (**RED** error screen).	Cooking stops.	**Pump is on when a cleaning cycle is not running.**	
			Relay card is stuck on or detection electronics not working.	Check if the pump is running all the time after the oven is turned on. If so replace the FastPad relay card.
			Open circuit.	
			Relay card is stuck on or detection electronics not working.	Check if the pump is running all the time after the oven is turned on. If so, replace the FastPad relay card.
			Pump working.	

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
			Pump badly connected.	Check the connections for Phase and Neutral to the pump.  **Fig. 106**
i81	Water flow problem.	Cooking will be degraded.	Fuse F1 open.	Output control assembly relay board output 24. If shorted to ground, check: • connecting wiring. • valve Yv solenoid.
				Output control assembly relay board output 25. If shorted to ground, check: • connecting wiring. • fuse F8. • vent motor Mo.
				Output control assembly relay board output 27. If shorted to ground, check: • connecting wiring. • valve Yn solenoid.
				Output control assembly relay board output 29. If shorted to ground, check: • connecting wiring. • detergent pump thermal overload switch FPdn. • detergent pump Pdn.
				Output control assembly relay board output 30. If shorted to ground check: • connecting wiring. • valve Yc solenoid.

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
				If output control assembly relay board outs are OK, replace output control assembly.
			Fuse F4 open.	Output control assembly relay board output 9. If shorted to ground check: • connecting wiring. • valve Yf solenoid.
				Output control assembly relay board output 10. If shorted to ground check: • connecting wiring. • valve Yi solenoid.
				If output control assembly relay board outs are OK, replace output control assembly.
			Water supply problem.	Check the water supply to the unit: minimum flow 5 liters/minute and minimum pressure 1.5 bars. Check that the filter isn't clogged and the state of the pressure limiter. Check the state of the flow limiters.
			Solenoid has failed.	Check solenoids Yi, Yf, and Yn S10, S30 and S27 from the output activation screen in (TECH parameters). Measure the volume of water recovered in 1 minute.
			Flow meter inoperative.	Check flow meter operation. Refer to DIAGNOSTIC SCREENS **Activation of Hydraulics** screen. Activate Yi and check BDS. flow rate.
E82	Solenoid leaking (**RED** error screen).	Cooking stops.	Valve(s) leaking.	Check Yi (injection valve), Yf (cooling valve), and Yn (cleaning valve), for leakage.
				Check valve operation. Refer to DIAGNOSTIC SCREENS **Activation of Hydraulics** screen. Activate Yf, Yi, Yf, and Pdn (Yn) and check valve activation.
			Flow meter inoperative.	Check flow meter operation. Refer to DIAGNOSTIC SCREENS **Activation of Hydraulics** screen. Activate Yi and check BDS. flow rate.

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
			Output control assembly relay board.	Check: • output control assembly fuse F1. • output control assembly relay board output 9 (Yc). • output control assembly relay board output 10 (Yi). • output control assembly relay board output 27 (Yn). • output control assembly relay board output 30 (Yf).

Error history information may be accessed via ERROR HISTORY / COUNTER SCREENS AND INFORMATION.

ERROR HISTORY / COUNTER SCREENS AND INFORMATION

Error and counter screens are access via the **Technical Parameters** screen. Refer to TECHNICAL PARAMETERS SCREEN CONTROLS AND INFORMATION for information on how to activate the screens.

NOTE: Error and / or counter information can be viewed or downloaded.

ERROR HISTORY / COUNTER SCREENS

1. Select Error message history **View** icon (Fig. 107) to view error history. Select **Download** icon to download an Excel-compatible spreadsheet to a USB drive.

Fig. 107

2. Select Counters **View** icon (Fig. 107) to view operational counter information. Select **Download** icon to download an Excel-compatible spreadsheet to a USB drive.

ERROR HISTORY SCREEN

When the error messages history **VIEW** icon is selected, a list of errors (Fig. 108) is displayed.

Fig. 108

Refer to:

- TABLE for error information.
- WIRING DIAGRAMS for component wiring and connections.
- OUTPUT CONTROL ASSEMBLY for output control assembly connections.

COUNTER SCREEN

When the Counter **VIEW** icon is selected, a list of operational counters (Fig. 109) is displayed.

Fig. 109

Refer to the following table for counter information.

Counter	**Information (All Time Provided in Hours)**
CPT00	Total operating time.
CPT01	Convection mode operating time.
CPT02	Steam mode operating time.
CPT03	Combi mode operating time.
CPT04	Number of door openings.
CPT05 *	Number of gas security inlet errors (Error 57).
CPT06	Hot electronics (> 158 °F [70 °C]) operating time.
CPT07 *	Output control assembly relay board output 21 operating time.
CPT08	Valve Yi operating time.
CPT09	Valve Yf operating time.

***** Function not used in Minijet configuration.

DIAGNOSTIC SCREENS

NOTE: Refer to TECHNICAL PARAMETERS SCREEN CONTROLS AND INFORMATION for information on how to access the diagnostic screens. Refer to OUTPUT CONTROL ASSEMBLY for information about output control assembly connections.

1. The **State of Inlets** screen (Fig. 110) provides the following indications:
   - **B1** (1, Fig. 110) - Cavity temperature (monitored by output control assembly input B1).
   - **E2 / E2b / E2c** (2, Fig. 110) - Core probe(s) temperature (monitored by output control assembly input E2, E2b, E2c).
   - **SP** (3, Fig. 110) - Door position (monitored by output control assembly input SP).

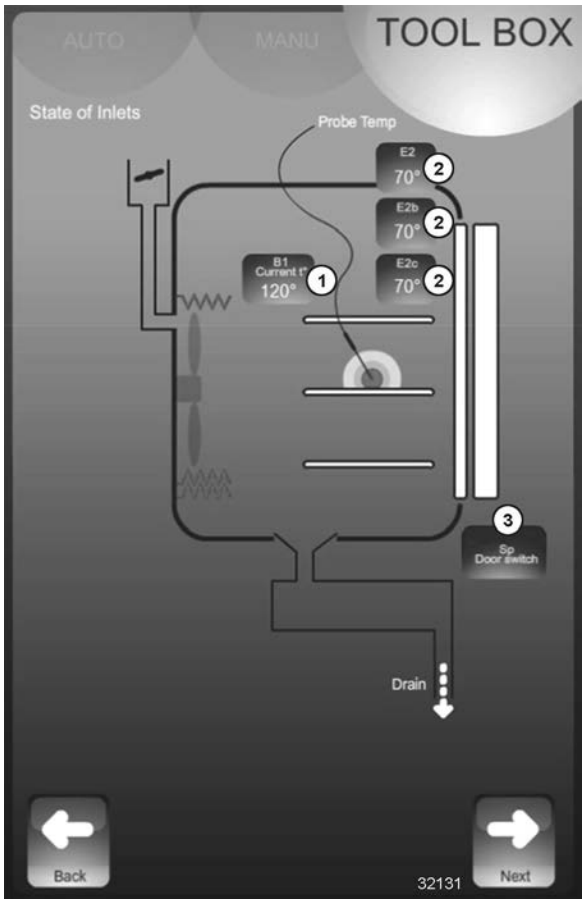


Fig. 110

2. The **Activation Hydraulic Outlets** screen (Fig. 111) provides the following indications / controls:
   - **BDS** (1, Fig. 111) - Flow meter (monitored by output control assembly input BDS).
   - **Yn** (2, Fig. 111) - Cleaning valve (controlled by output control assembly relay board output 27).
   - **Yf** (3, Fig. 111) - Cooling valve (controlled by output control assembly relay board output 30).
   - **Yi** (4, Fig. 111) - Injection valve (controlled by output control assembly relay board output 10).
   - **Yv** (5, Fig. 111) - Detergent valve (controlled by output control assembly relay board output 24).
   - **Yc** (6, Fig. 111) - Condensate cooling valve (controlled by output control assembly relay board output 9).
   - **Pdn** (7, Fig. 111) - Detergent pump (controlled by output control assembly relay board output 29).

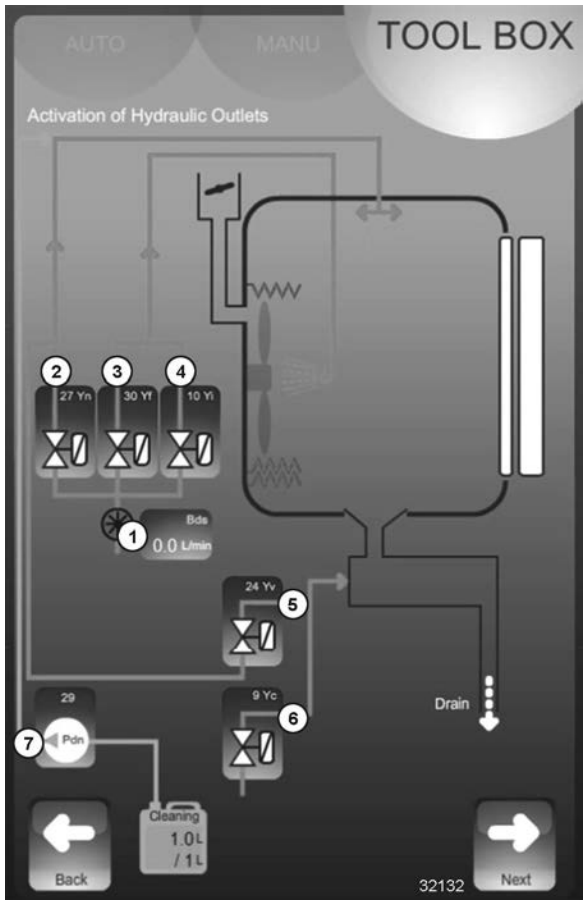


Fig. 111

NOTE: Door should be closed during all tests.

A. Touch **Yn** to open cleaning valve for 0.5 second. Monitor flow via Bds reading.

B. Touch **Yf** to open cooling valve for 60 seconds. Monitor flow via Bds reading.

C. Touch **Yi** to open injection valve for 60 seconds. Monitor flow via Bds reading.

D. Touch **Yv** to open detergent valve for 0.5 second.

E. Touch **Yc** to open condensate cooling valve for 60 seconds.

F. Touch **Pdn** to turn on detergent pump for 0.5 second.

3. The **Activation of Power Outlets** screen (Fig. 112) provides the following indications / controls:

- **Mo** (1, Fig. 112) - Vent motor (controlled by output control assembly relay board output 25).
- **Ee** (2, Fig. 112) Cavity lamp (controlled by output control assembly relay board output 5).
- **Kr1** (3, Fig. 112) - Heater contactor (controlled by output control assembly relay board output 8).
- **Mv15** (4, Fig. 112) - Blower motor (Mt1) clockwise rotation (controlled by output control assembly relay board output 15).
- **Mv17** (5, Fig. 112) - Blower motor (Mt1) counterclockwise rotation (controlled by output control assembly relay board output 17).
- **Ks** (6, Fig. 112) - Safety contactor (controlled by output control assembly relay board output 7).
- **Mt** (7, Fig. 112) - Axial fan (Mt2) (controlled by output control assembly relay board output 4).

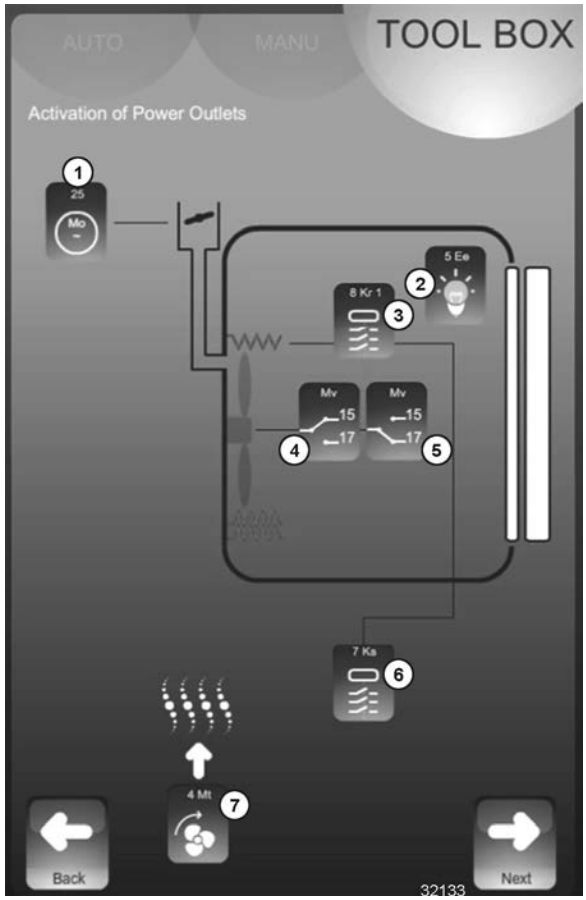


Fig. 112

NOTE: Door should be closed during all tests.

A. Touch **Mo** to turn on vent motor. Release **Mo** to allow vent flap to return to home position.

B. Touch **Ee** to toggle cavity lamp ON / OFF.

C. Touch **Kr1** to turn on heater contactor for 0.5 second.

D. Touch **Mv15** to turn on blower motor (clockwise rotation) for 0.5 second.

E. Touch **Mv17** to turn on blower motor (counter-clockwise rotation) for 0.5 second.

F. Touch **Ks** to turn on safety contactor for 0.5 second.

G. Touch **Mt** to toggle axial fan Mt2 ON / OFF.

OPERATION / DIAGNOSTIC INDICATORS

The oven contains several assemblies that provide either operational or diagnostic indicators. The assemblies are:

- Output Control Assembly.

- Touch Panel / Display Assembly.

Output Control Assembly

The output control assembly contains two assemblies, the output control board and the relay board. Both boards have LEDs that provide operational information.

The output control board has a power indicator LED (1, Fig. 113) and a pair of communication indicator LEDs (2, Fig. 113). The power indicator LED is ON when supply voltage is applied to the output control assembly. The communication LEDs flash when the output control assembly is communicating with the touch panel / display assembly.

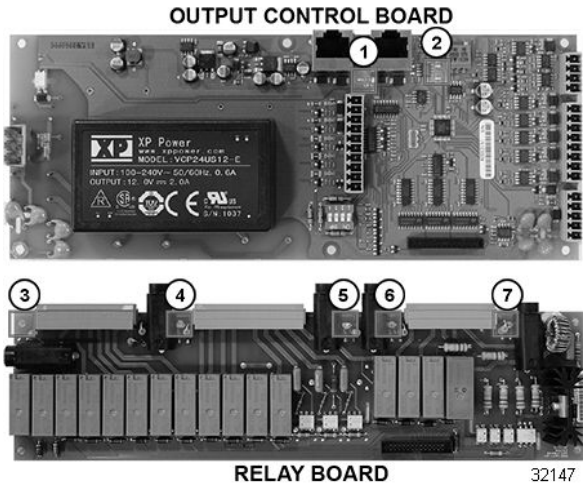


Fig. 113

The relay board has four LEDs that provide a quick means of determining if the relay board fuses are good.

- Fuse F4 LED (3, Fig. 113) is ON if F4 is good.
- Fuse F5 LED (4, Fig. 113) is ON if fuse F5 is good.
- Fuse F1 LED (5, Fig. 113) is ON if fuse F1 is good.
- Fuse F2 LED (6, Fig. 113) is ON if fuse F2 is good.

An additional LED is provided (7, Fig. 113), however it does not turn ON in this configuration.

Touch Panel / Display Assembly

The touch panel / display assembly uses LEDs to provide both diagnostic and communication information. The primary board has four diagnostic indicator LEDs (1, Fig. 114). The communications board has four diagnostic LEDs (2) and two communication indicator LEDs and a power indicator LED (3).

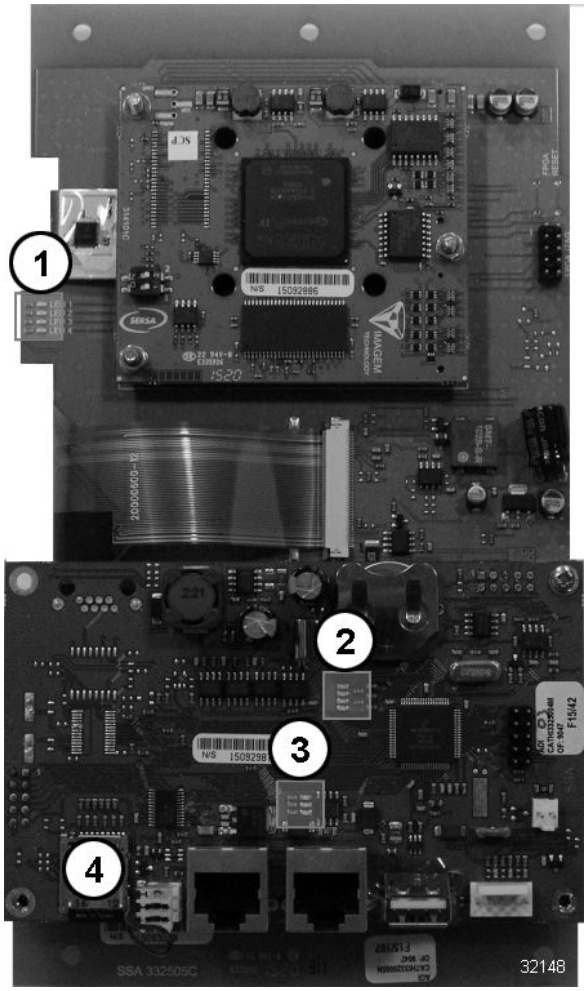


Fig. 114

Power / Communications LEDs

- The YELLOW (send) and GREEN (receive) LEDs flash when output control and touch panel / display assemblies are communicating.
- The RED (power) LED is on steady whenever power is applied to the assembly.

Refer to Fig. 115 for communication / power LED indications.

Touch Panel / Display Assembly	Output Control Assembly	Diagnostic Indication
R ● Y ○ G ●	R ● Y ○ G ●	1
R ○ Y ○ G ○	R ○ Y ○ G ○	2
R ○ Y ○ G ○	R ● Y ○ G ○	3
R ● Y ○ G ●	R ● Y ○ G ●	4
R ● Y ○ G ○	R ● Y ○ G ○	5
R ● Y ○ G ●	R ● Y ○ G ○	6

AI4658

Fig. 115

1. Normal operation. Both output control and touch panel / display assemblies are operating normally.
2. Supply fault. No power to output control assembly. Check for voltage at output control assembly terminals 1 and 3.
   - Power present - replace output control assembly.
   - No power - check fuses F6 and F7, primary transformer Ta, and interconnecting wiring.
3. Communications fault. No communications between output control and touch panel display assemblies.
   - Replace Ethernet cable.
   - Replace touch panel display assembly.
4. Communications fault. No communications between output control and touch panel display assemblies.
   - Replace Ethernet cable.
   - Replace output control assembly.
5. Touch panel / display assembly fault. Replace assembly.
6. Communications fault. No communications between output control and touch panel display assemblies. Replace Ethernet cable.

Touch Panel / Display Diagnostic LEDs

There are two sets of diagnostic LEDs located on the touch panel / display assembly. One set (1, Fig. 114) is on the primary board and the other set (3) is on the communications board.

Refer to Fig. 116 for touch panel display assembly **COMMUNICATIONS** board LED indications.

Touch Panel / Display Assembly Communications Board LEDs	Diagnostic Indication
1 ON 2 ON 3 ON 4 ON	1
1 OFF 2 OFF 3 ON 4 ON	2
1 OFF 2 OFF 3 OFF 4 OFF	3
1 FLASH 2 OFF 3 OFF 4 OFF	4
1 OFF 2 OFF 3 OFF 4 FLASH	5

AI4659

1. All four LEDS turn ON at power application then turn OFF sequentially - normal operation. Touch panel / display assembly operating normally.
2. One (or more) LEDs remain on-communications board failure. Replace touch panel / display assembly.
3. All four LEDS off during operation - normal operation. Touch panel / display assembly operating normally.
4. LED 1 flashes during operation - communications fault.
   - Check Ethernet cable connections.
   - Replace Ethernet cable.
   - Replace output control assembly.
5. LED 4 flashes during operation - communications fault.
   - Reseat SD card (4, Fig. 114).
   - Replace touch panel / display assembly.

Refer to Fig. 117 for touch panel display assembly **PRIMARY** board LED indications.

Touch Panel / Display Assembly Primary Board LEDs	Diagnostic Indication
1 ON 2 ON 3 ON 4 ON	1
1 FLASH 2 FLASH 3 ON 4 ON	2
1 OFF 2 OFF 3 OFF 4 OFF	3
1 OFF 2 OFF 3 OFF 4 OFF	4

AI4660

Fig. 117

1. All four LEDS ON at power application. Communications board µSD card fault.
   - Reseat SD card (4, Fig. 114).
   - Replace touch panel / display assembly.
2. LED 1 and 2 flash, 3 and 4 ON - communications board failure. Replace touch panel / display assembly.
3. All four LEDS off , no display - primary board failure. Replace touch panel / display assembly.
4. All four LEDS OFF - normal operation. Touch panel / display assembly operating normally.

TEMPERATURE PROBE TEST

There are two temperature probes: core and cavity. The cavity probe is permanently mounted in the oven cavity. The core probe is connected via a connector on the front panel of the oven.

Cavity Probe Test

1. Remove TOP COVER or ELECTRICAL PANEL DRAWER.
2. Remove appropriate connector from output control assembly (Fig. 118).

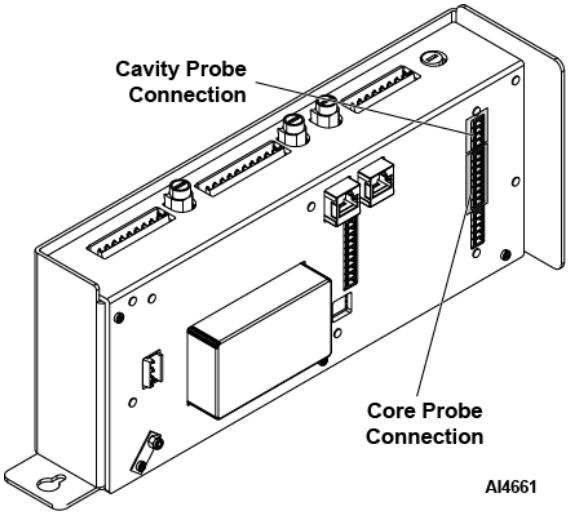


Fig. 118

3. Using a VOM meter, check resistance between temperature probe leads.
4. Compare measured resistance to PT100 PROBE CHECK.
5. Replace probe if the resistance is grater than 5% different than value provided in chart.

Core Probe Test

The core probe must be checked using physical conditions. Use of a temperature tester is required. The core probe temperature is displayed on the technical parameters screen as readings E2, E2b, and E2c.

1. Place core probe and temperature tester probe in a pan of ice water. Both probes should measure the same temperature within 5 °F.
2. Place core probe and temperature tester probe in a pan of boiling water. Both probes should measure the same temperature within 5 °F.
3. If temperature difference is greater than 5 °F, replace core probe.
4. If the core probe temperature is not present or does not change, check wiring between front panel connector and output control board assembly.

PT100 PROBE CHECK

The PT100 probe resistance determines temperature. It has a resistance of 100 Ω at 32 °F (-0 °C) and 138.5 Ω at 212 °F (100 °C) . The sensor is linear and its connections are not polarized. See table below for temperature / resistance ratio.

Temperature in °F relative to Resistance in Ω for PT100 probe										
°F	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
30			100.00	100.22	10043	100.65	100.87	101.08	101.30	101.52
40	101.73	101.95	102.17	102.39	102.60	102.82	103.04	103.25	103.47	103.69
50	103.90	104.12	104.33	104.55	104.77	104.98	105.20	105.42	105.63	105.85
60	106.06	106.28	106.50	106.71	106.93	107.14	107.36	107.58	107.79	108.01
70	108.22	108.44	108.66	108.87	109.09	109.30	109.52	109.73	109.95	110.16
80	110.38	110.60	110.81	111.03	111.24	111.46	111.67	111.89	112.10	112.32
90	112.53	112.75	112.96	113.18	113.39	113.61	113.82	114.04	114.25	114.47
100	114.68	114.90	115.11	115.33	115.54	115.75	115.97	116.18	116.40	116.61
110	116.83	117.04	117.26	117.47	117.68	117.90	118.11	118.33	118.54	118.75
120	118.97	119.18	119.40	119.61	119.82	120.04	120.25	120.47	120.68	120.89
130	121.11	121.32	121.53	121.75	121.96	122.17	122.39	122.60	122.81	123.03
140	123.24	123.45	123.67	123.88	124.09	124.31	124.52	124.73	124.94	125.16
150	125.37	125.58	125.80	126.01	126.22	126.44	126.65	126.86	127.07	127.29
160	127.50	127.71	127.92	128.14	128.35	128.56	128.77	128.99	129.20	129.41
170	129.62	129.84	130.05	130.26	130.47	130.68	130.90	131.11	131.32	131.53
180	131.74	131.96	132.17	132.38	132.59	132.80	133.01	133.23	133.44	133.65
190	133.86	134.07	134.28	134.49	134.71	134.92	135.13	135.34	135.55	135.76
200	135.97	136.18	136.40	136.61	136.82	137.03	137.24	137.45	137.66	137.87
210	138.08	138.29	138.50	138.72	138.93	139.14	139.35	139.56	139.77	139.98
220	140.19	140.40	140.61	140.82	141.03	141.24	141.45	141.66	141.87	142.08
230	142.29	142.50	142.71	142.92	143.13	143.34	143.55	143.76	143.97	144.18
240	144.39	144.60	144.81	145.02	145.23	145.44	145.65	145.86	146.07	146.28
250	146.49	146.70	146.90	147.11	147.32	147.53	147.74	147.95	148.16	148.37
260	148.58	148.79	149.00	149.20	149.41	149.62	149.83	150.04	150.25	150.46
270	150.67	150.87	151.08	151.29	151.50	151.71	151.92	152.13	152.33	152.54
280	152.75	152.96	153.17	153.38	153.58	153.79	154.00	154.21	154.42	154.62
290	154.83	155.04	155.25	155.46	155.66	155.87	156.08	156.29	156.49	156.70
300	156.91	157.12	157.32	157.53	157.74	157.95	158.15	158.36	158.57	158.78
310	158.98	159.19	159.40	159.60	159.81	160.02	160.23	160.43	160.64	160.85
320	161.05	161.26	161.47	161.67	161.88	162.09	162.29	162.50	162.71	162.91
330	163.12	163.33	163.53	163.74	163.95	164.15	164.36	164.56	164.77	164.98
340	165.18	165.39	165.60	165.80	166.01	166.21	166.42	166.63	166.83	167.04
350	167.24	167.45	167.65	167.86	168.07	168.27	168.48	168.68	168.89	169.09
360	169.30	169.50	169.71	169.92	170.12	170.33	170.53	170.74	170.94	171.15
370	171.35	171.56	171.76	171.97	172.17	172.38	172.58	172.79	172.99	173.20
380	173.40	173.61	173.81	174.01	174.22	174.42	174.63	174.83	175.04	175.24
390	175.45	175.65	175.86	176.06	176.26	176.47	176.67	176.88	177.08	177.28
400	177.49	177.69	177.90	178.10	178.30	178.51	178.71	178.92	179.12	179.32
410	179.53	179.73	179.93	180.14	180.34	180.54	180.75	180.95	181.15	181.36
420	181.56	181.76	181.97	182.17	182.37	182.58	182.78	182.98	183.19	183.39
430	183.59	183.80	184.00	184.20	184.41	184.61	184.81	185.01	185.21	185.42
440	185.62	185.82	186.03	186.23	186.43	186.63	186.83	187.04	187.24	187.44

32140

Fig. 119

SOFTWARE

SOFTWARE UPDATE PROCEDURE

1. Copy new software file from Hobart resource center. Instructions for downloading files are located on the Hobart Service Resource Center, under Cooking > Software Updates > General.

NOTE: Once the file is copied to the USB drive, proceed to the next step.

2. If you are replacing the main board and updating the software do the following.

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures.

A. Check the position of output control assembly microswitches (1, Fig. 120). Make sure 1 is OFF and 2, 3, and 4 are ON.

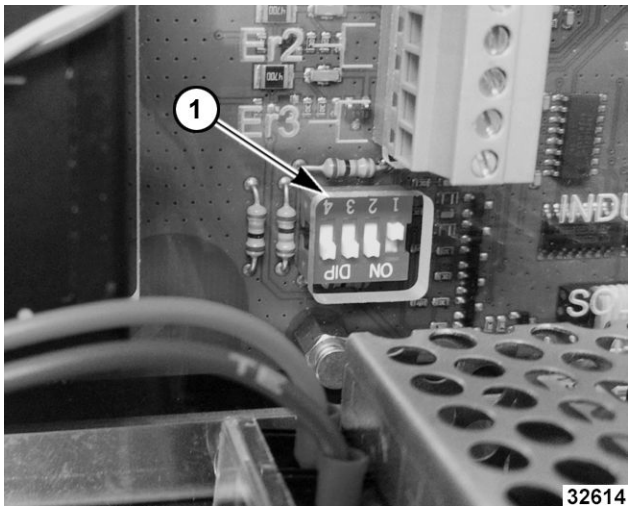


Fig. 120

B. Press encoder dial to turn oven ON.

3. Safely eject USB flash drive from PC.

4. Verify oven is plugged in.

5. Open door.

NOTE: Opening the door will keep the oven from heating during this procedure.

6. Push black knob (1, Fig. 121) to turn on.

Fig. 121

7. Select Tool Box on screen display.

Fig. 122

8. Insert flash drive (1, Fig. 123) lower front of oven.

Fig. 123

9. Select YES on update message (Fig. 124) displayed on screen.

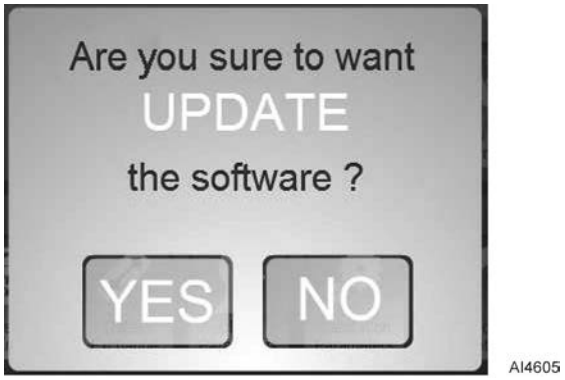


Fig. 124

NOTE: Wait approximately 12 minutes for software to update.

NOTICE

Removal of USB flash drive or input power while loading software may result in corrupted installation.

10. Remove USB flash drive after updating is complete.
11. Select Tool Box on screen and verify software has updated.

NOTE: The version of software can be seen on TOOLBOX screen next to serial number of the unit. Each card is identified together with its software number:

- IHM Nr: Touch panel / display assembly SD card.
- UC Nr: Touch panel / display assembly communications board.
- Param Nr: Touch panel / display assembly primary board.
- Fla Nr: Output control assembly board.
- Rel Nr: Output control assembly relay board.

Fig. 125

Current Software	
IHM Nr 218	UC Nr 218
Fla Nr 212	REl Nr 109

12. Select Client Parameters on screen.

Fig. 126

13. Enter: **0000** and select **green check mark**.

Fig. 127

14. Select Next. Verify EN, ABC and JET are selected. Verify COMMON is not selected. Push Back button twice.

Fig. 128

15. Select Technical Parameters.

Fig. 129

Current Software

IHM Nr 218	UC Nr 218
FLA Nr 212	REL Nr 109

16. Enter: **SAVB** and select **green check mark**.

Fig. 130

17. Verify Settings is lit on Tool Box screen.

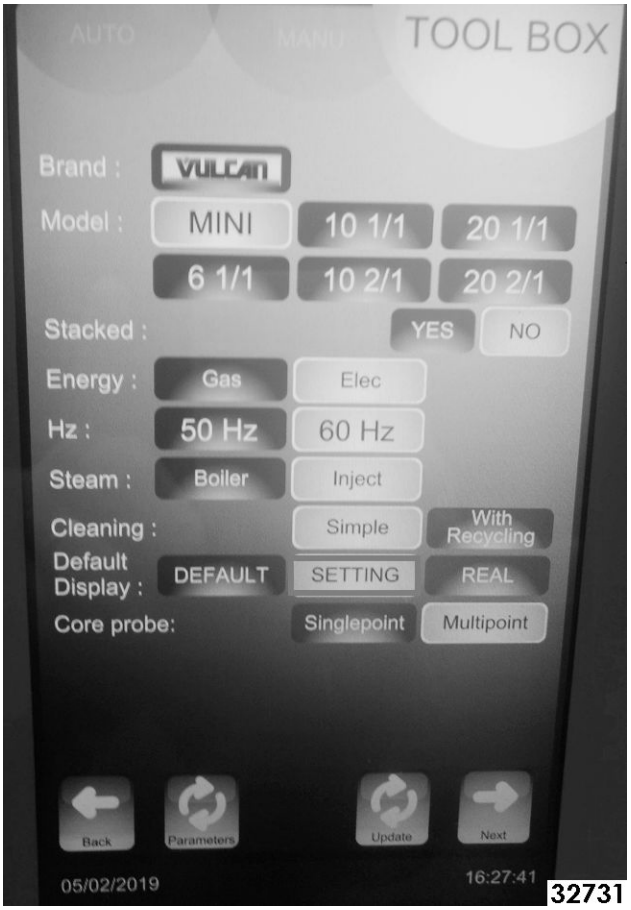


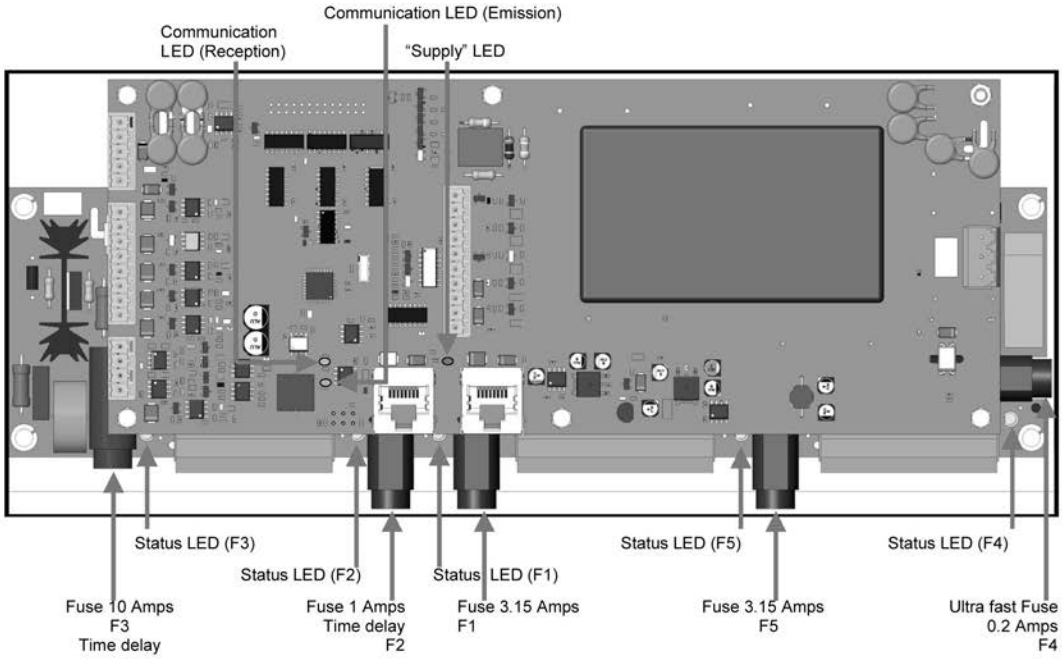
Fig. 131

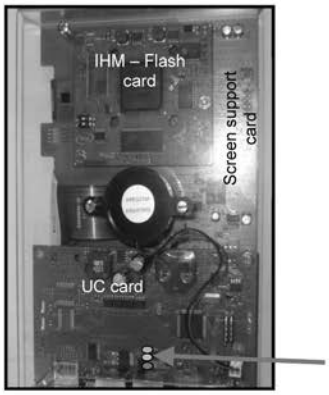
18. Verify **ABC JET** is showing on Manual screen.

Fig. 132

NOTE: Software has been loaded successfully.

BOARDS





Significance of the LEDs on the electronic relay card and the graphic facia card:

LED Red	Power on	LED steady	
LED yellow/Orange	Emitting	LED steady or flashing	
LED Green	Receiving		

Facia card	Relay card	Diagnostic	Actions
R Y G	R Y G	- Relay card OK - Facia card OK	- Functioning normally
		- Supply fault	- Check the voltage between terminals 1 and 3 on the relay card
	R	- Problem communicating with the screen	- Replace the screen and/or the cable between the cards
R G	R G	- Primary card (of relay card) non function	- Replace the primary card (the relay card)
R	R	- Screen non function	- Replace the screen
R G	R	- Cable between screen and relay cards	- Replace the interconnecting cable

AI5105

Fig. 133

TROUBLESHOOTING

TROUBLESHOOTING

⚠ WARNING

Certain procedures in this section require electrical test or measurements while power is applied to the machine. Exercise extreme caution at all times and follow Arc Flash procedures. If test points are not easily accessible, disconnect power and follow Lockout/Tagout procedures, attach test equipment and reapply power to test.

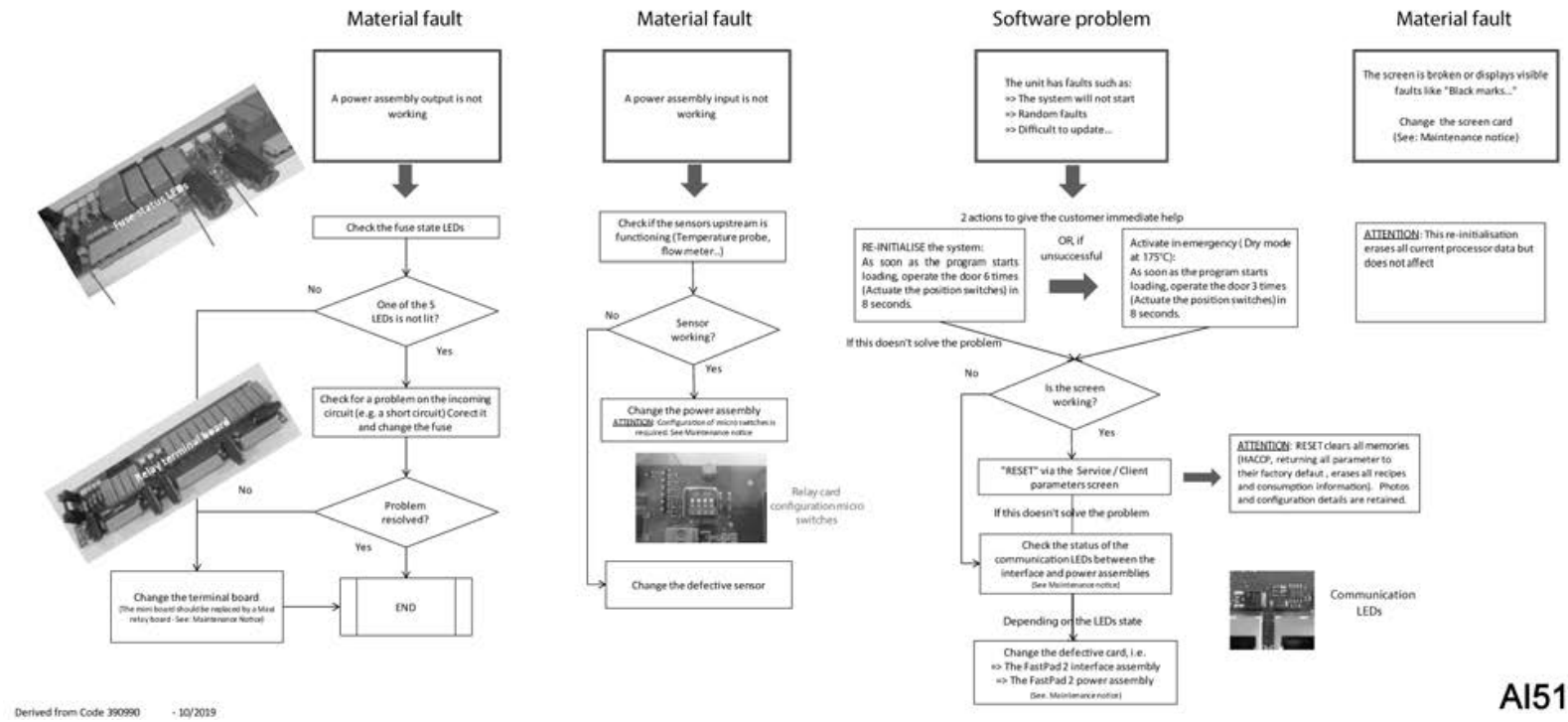


Fig. 134