



TCM ELECTRIC COMBI SERIES

TCM-61E-208/240 (VPJ071E-86)
TCM-101E-208/240 (VPJ101E-86)
TCM-102E-208 (VPJ102E-86)
TCM-102E-240 (VPJ102E-96)
TCM-102E-480 (VPJ102E-36)

- 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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SERVICE UPDATES

SERVICE UPDATES

May 2024

- Updated AUTO CLEANING SCREEN CONTROLS AND INFORMATION.

May 2023

- Updated SPECIFICATIONS.
- Updated FILTERED WATER PRESSURE RESTRICTOR.
- Updated CONTROL PANEL BOARD.
- Updated HEATING ELEMENTS.
- Updated FAN.
- Updated WIRING DIAGRAMS.
- Updated CAVITY FAN MOTOR.
- Updated DOOR SEAL.
- Updated SOLENOID VALVES.
- Updated CONVECTION MOTOR RESISTANCE.
- Updated HEATING ELEMENT TEST.
- Updated TEMPERATURE PROBE TEST.
- Updated FLUID DIAGRAMS.
- Updated OUTPUT CONTROL ASSEMBLY.
- Updated SOFTWARE VERSION HISTORY.
- Added ACCESS MAINTENANCE SCREENS.
- Updated TROUBLESHOOTING.
- Updated DIAGNOSTIC SCREENS.
- Updated ERROR HISTORY / COUNTER SCREENS AND INFORMATION.
- Updated ERROR SCREENS AND INFORMATION.

GENERAL

INTRODUCTION

- Multiple cooking capabilities from one piece of equipment: Baking, Steaming, Roasting, Grilling, Air-Fry, Rethermalization, Proofing, Finishing, Poaching, Stewing, Low Temp, Defrosting, Cook & Hold, and more.
- FastPAD® toughened glass control panel: comprising a large color LCD touch screen and coding turn/push knob.
- Auto reverse fan, adjustable from 1 to 100%.
- Rapid product drying by opening the motorized vent, for a crispier exterior.
- Automatic adjustment of the oven power to suit the load being cooked, for results that are always to the precise degree required.
- Automatically switches to energy saving mode after a period of inactivity (adjustable).
- Temperature with visual display of Set and Actual. User Interface including Manual displays for ABC, JET or ECO operator functions. ABC automatically adjusts humidity after setting temperature. ABC and JET features always on function, no start button to activate. JET for manual convection, steam and combi settings. ECO for required start button activation providing maximum energy savings.
- Full Cleaning System»: Automatic cleaning.

COOKING MODES

- Convection from 32 to 480°F - Saturated steam: steam to 200°F.
- Combi from 85 to 480°F (with humidity adjustable from 0 to 99%) - Low temperature: steam from 85 to 207°F.
- High temperature steam: steam from 208 to 220 °F.
- Regeneration.
- Delta T.

AUTOMATIC COOKING MODE

- 80 preloaded recipes as standard with the option to adjust the degree of cooking and the coloration.
- It is possible to create entirely personalized recipes.
- Displayed as text or as pictures via the library within the oven.
- Recipes are classified by family and / or in « my recipes ».

SERVICE MODE

- Toolbox screen to access error logs and service diagnostics.
- Transfer recipes and photographs via a computer.
- Parameters can be modified to give maximum personalization.
- Visual Diagnostic System: interactive screen intended for technicians.

FUNCTIONS

- Automatic oven cavity cooling, door closed: improved reactivity.
- Humidifier : provides instant steam (shot of vapor): ideal for bread.
- Hold function : temperature holding phase after cooking (semi static oven). Avoids the surface of the product drying out.
- Automatic rinse possible between cooking operations.
- Timer: continuous up to 99:00 hours and minutes with set, remaining or count time displayed.
- Timer reloads for batch cooking after completion of timed cycle (ABC).
- Multi timer: cooking times can be programmed for each level : bringing greater flexibility during service.
- Flashing LED lights & audible alarm system alert user when cooking cycle finished.

EQUIPMENT

- Cool touch athermic double glazed clipped door with left or right hand rotation of the handle to open, hinged to the left and a simple push closure. Opens to 180° with hinged internal glass to make cleaning easier.
- Cavity illumination by a strip of LEDs in the door.
- Features electrical protection, a door safety and thermal overload protection.

STANDARD SUPPLY

- 1 set of side support runners and racks.
- Core probe socket allowing the use of a removable core probe.
- USB port.

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. Ability to measure uF microfarids. 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

- Gas combustion analyzer and manometer.
 - Combustion analyzer Bacharach Fyrite Pro 125 Bacharach model# 24-8105 or Fyrite "Insight" Model 24-8251.
 - Manometer U tube Part No. TL-84908 or equivalent.
- Set of jeweler's screwdrivers.
- Thumb drive.
- RECTORSEAL 5® or equivalent NSF rated thread sealant.
- Rod / Gauges
 - Rod / gauge by 6mm diameter for electrode flame detection.
 - Rod / gauge by 3mm and 4mm diameters for ignition electrodes.
- High Temperature Silicone.
- High Temperature Quality Grease.
- Hub Puller.

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
Drain Line	Drain line pee trap must be installed at back of unit to open gap floor sink.

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 contaminants 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

Electrical			
Phase	AMP	kW	Overcurrent-Protective Device
Three phase 208V	86.1	31	100 A and RCD type AC
Three phase 240V	74.7	31	90 A and RCD type AC
Three phase 480V	37.5	33	50 A and RCD type AC

Water	
Pressure (Min / Max)	14.5 psi / 87psi (1.5 bar / 6 bar)
Treated Water Max Temperature	73°F (Factory Recommendation) NOTE: If water temperature is over 73°F but under 86°F, there is no incidence, but the high tolerance. If the water is over than 86°F, it could cause functioning concerns with the condenser. and or solenoid valve for water inlet which is 100% efficient with cold and ambient temperature of water.
Hardness (Treated water)	3.5 to 5.8 grains/gal (60 to 100 ppm)
Water quality	Chloride Cl ⁻ : ≤ 8.76 gr/gal (150 ppm) Chlorine Cl ₂ : ≤ 0.01 gr/gal (0.2 ppm) 6.5 ≤ PH ≤ 9
Conductivity	≥ 50 μS / cm
Connection	Male G 3/4" + GHT 3/4" Adapter
Drain Condensate Temperature	Approx. 208°F
Drain Connection	Vertical - Male G 1"½ (British) NOTE: Recommend fernco fitting with copper P-trap.

REMOVAL AND REPLACEMENT

SIDE PANEL



WARNING

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

1. Remove side panel mounting screws.

NOTE: Two flat screws and three hex screws located on bottom tabs.



Fig. 1

2. Angle panel to pull down lip on top of panel to pull off.
3. Reverse procedure to install.

BACK PANEL



WARNING

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

1. Remove right SIDE PANEL.
2. Remove rear left SIDE PANEL.
3. Remove back panel mounting screws.

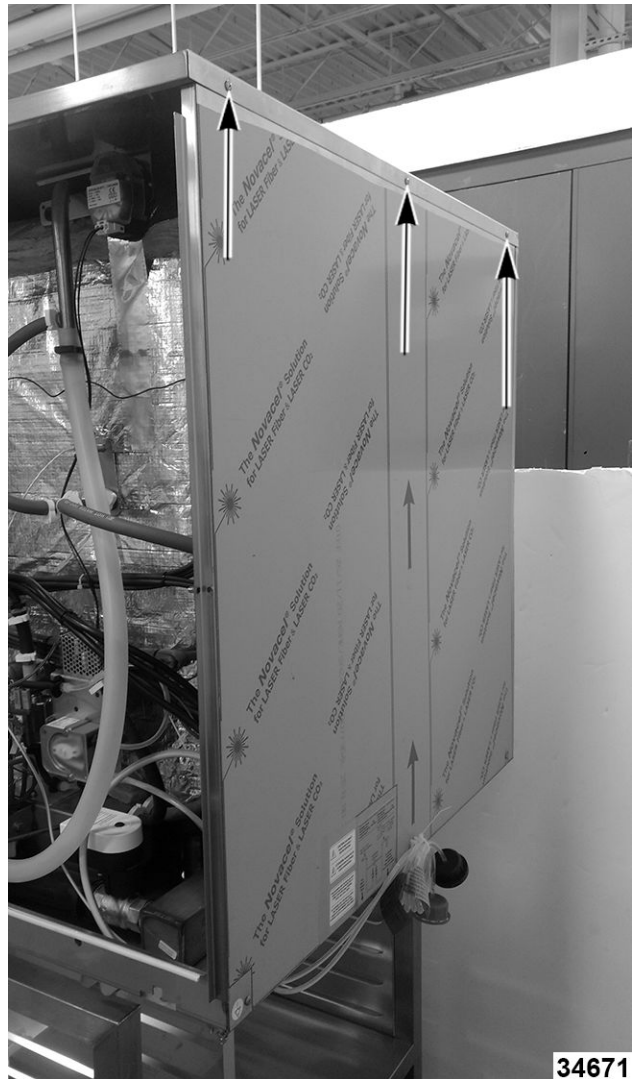


Fig. 2

4. Reverse procedure to install.

DOOR PANEL

1. Open door.
2. Remove door panel mounting screws on door side and inside on panel.

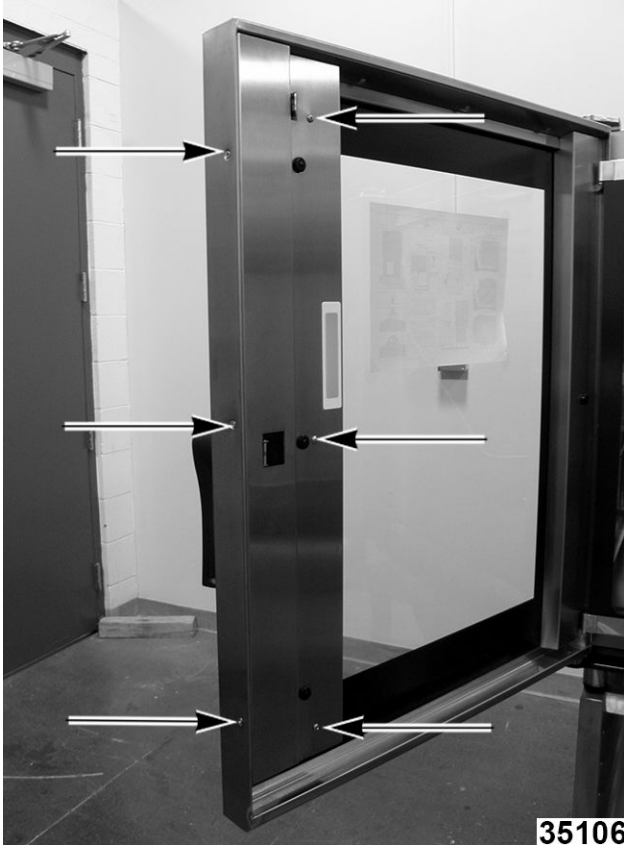


Fig. 3

3. Carefully remove panel.
4. Reverse procedure to install.

FRONT CONTROL PANEL



WARNING

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

NOTE: Access encoder, display board, and some connections to prevent right side panel removal.

1. Remove 7 mm bolt (1, Fig. 4) on bottom of front control panel.

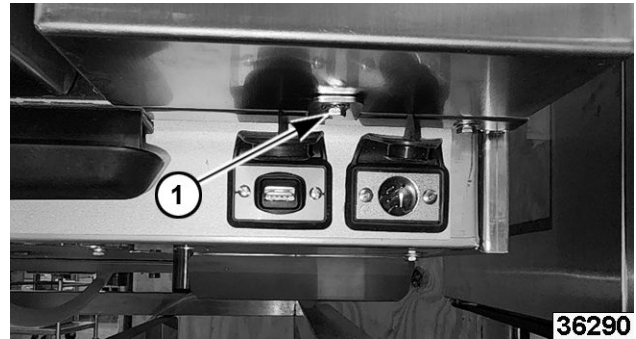


Fig. 4

2. Lift up on panel and turn right to open door.
3. Reverse procedure to install.
4. Verify proper operation.

STEAM AND WASH SOLENOID ASSEMBLY



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 PANEL.
3. Remove BACK PANEL.
4. Note and disconnect wiring from solenoids.



Fig. 5

5. Disconnect hoses fitting underneath bracket.



Fig. 6

6. Remove mounting screws.
7. Disconnect hoses on top.
8. Reverse procedure to install.

FILTERED WATER PRESSURE RESTRICTOR



⚠ WARNING

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

1. Remove BACK PANEL.
2. Shut off filtered and unfiltered water supplies.
3. Disconnect filtered water supply from oven inlet filter assembly.

NOTE: Unfiltered on left (1, Fig. 7), Filtered on right (2, Fig. 7).

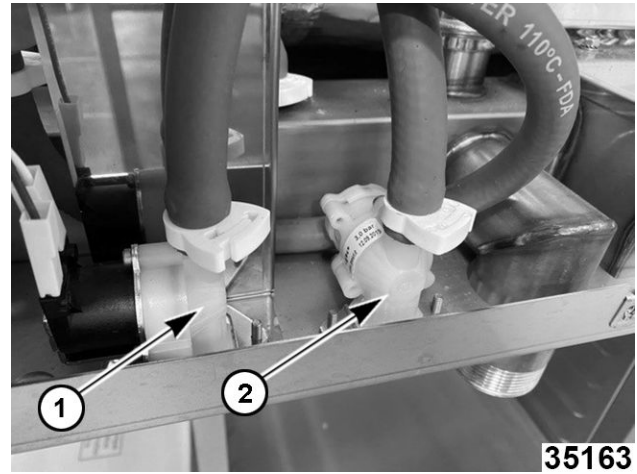


Fig. 7

4. Unthread inlet filter assembly from filtered water flow restrictor.
5. Disconnect hose from filtered water flow restrictor.
6. Remove fasteners and filtered water flow restrictor from frame.
7. Reverse procedure to install.

CONTROL PANEL BOARD



⚠ WARNING

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

1. Remove FRONT CONTROL PANEL.
2. Note and disconnect wiring (1, Fig. 8).



Fig. 8

34677

3. Remove rubber stops (2, Fig. 8).
4. Remove nuts and spacers (1, Fig. 9).

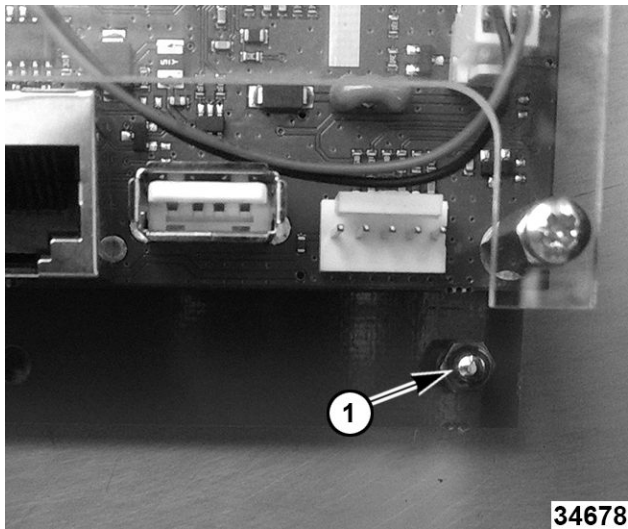


Fig. 9

34678

5. Remove board cover standoff screws.
6. Disconnect board (1, Fig. 10) buzzer (2, Fig. 10) wiring connector.

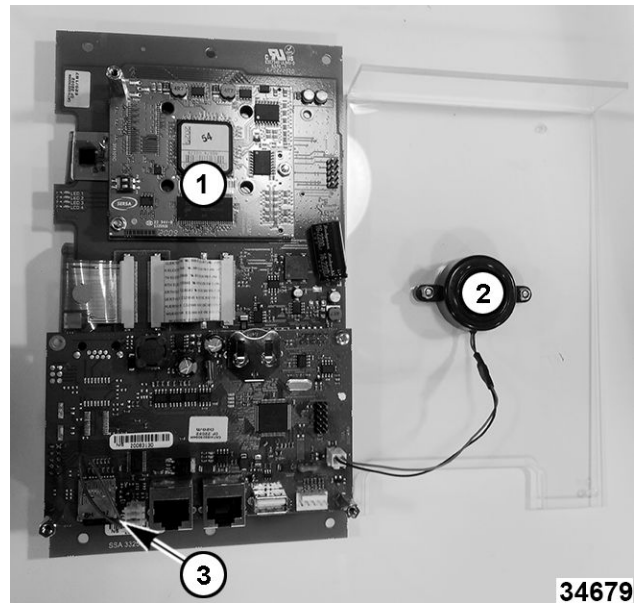


Fig. 10

34679

7. Remove jumper (3, Fig. 10) and install on new board if replacing board.
8. Reverse procedure to install.

NOTE: Control panel board has a battery back-up to restore memory.

ENCODER



WARNING

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

1. Pull encoder knob (1, Fig. 11) off control panel.

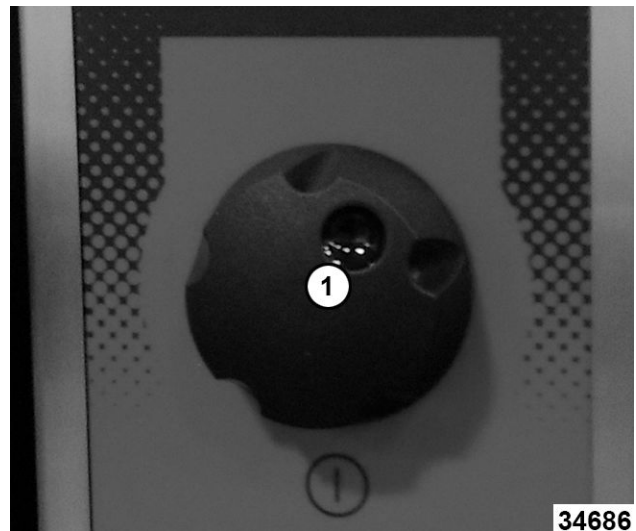


Fig. 11

34686

2. Remove nut and washer (Fig. 12).

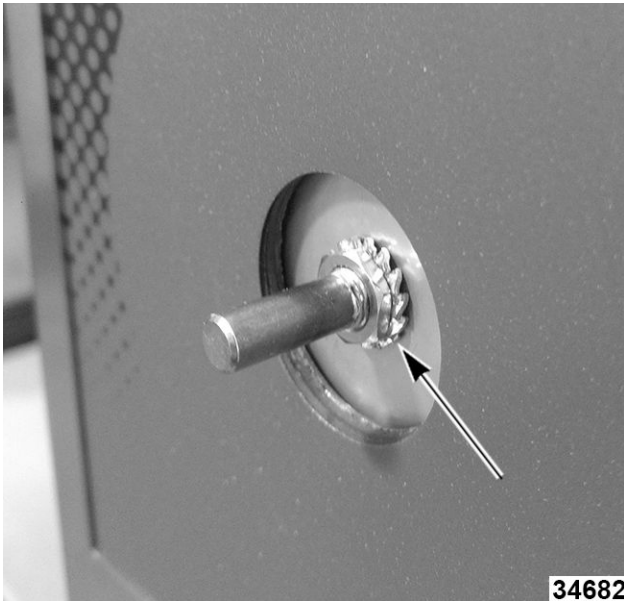


Fig. 12

3. Remove FRONT CONTROL PANEL.
4. Remove encoder from panel.

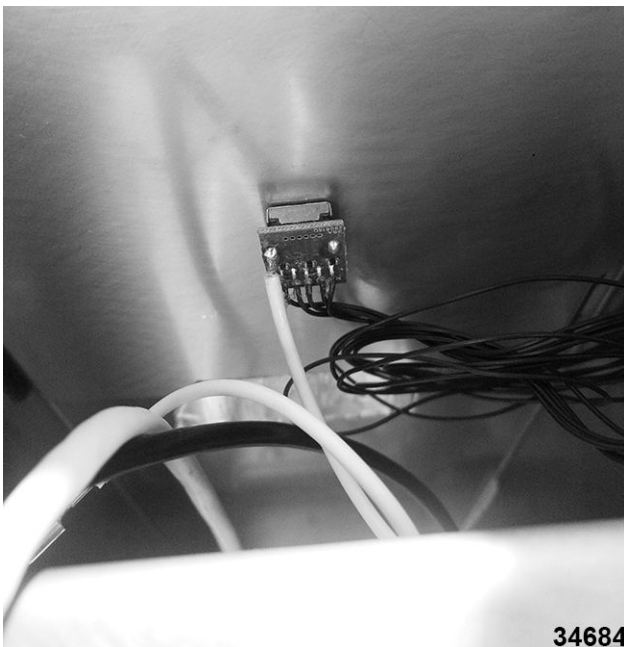


Fig. 13



Fig. 14

5. Reverse procedure to install.

NOTICE

Verify flat edges on encoder align with flat edges on mounting hole (Fig. 15) in panel.

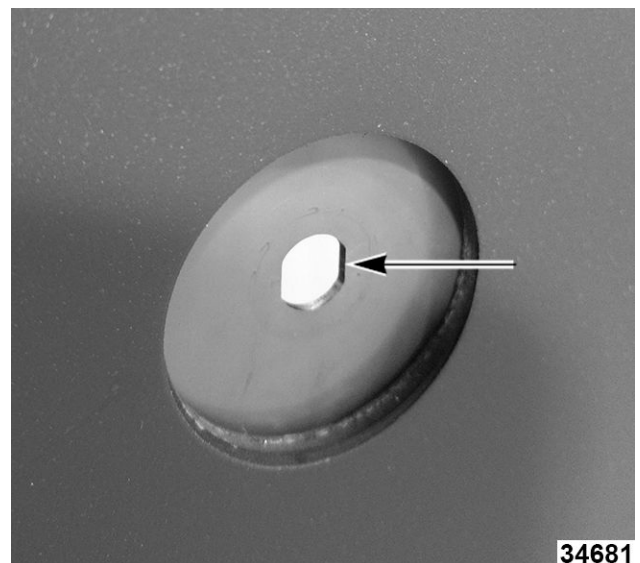


Fig. 15

BUZZER



WARNING

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

1. Remove RIGHT SIDE PANEL.

2. Locate buzzer on board and remove cover to access.

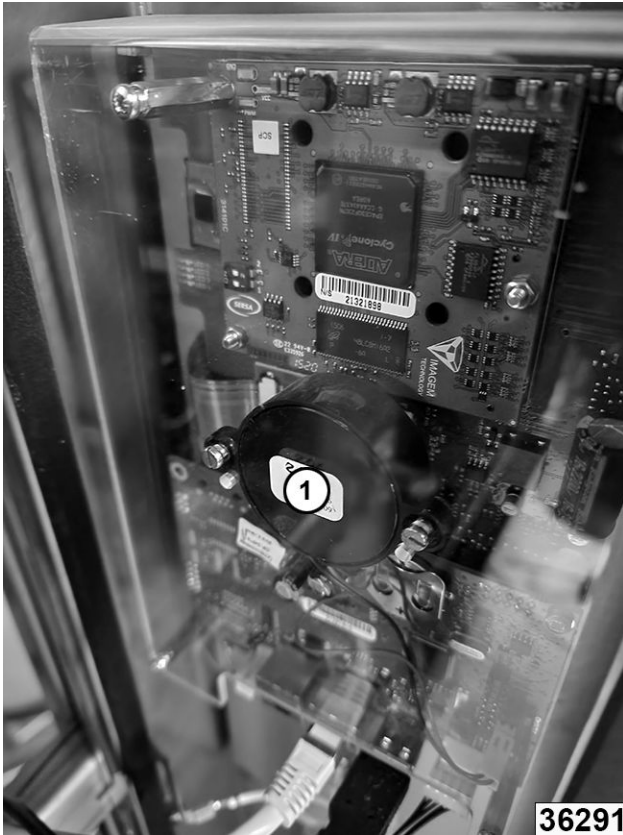


Fig. 16

3. Remove buzzer (2, Fig. 17) from board.

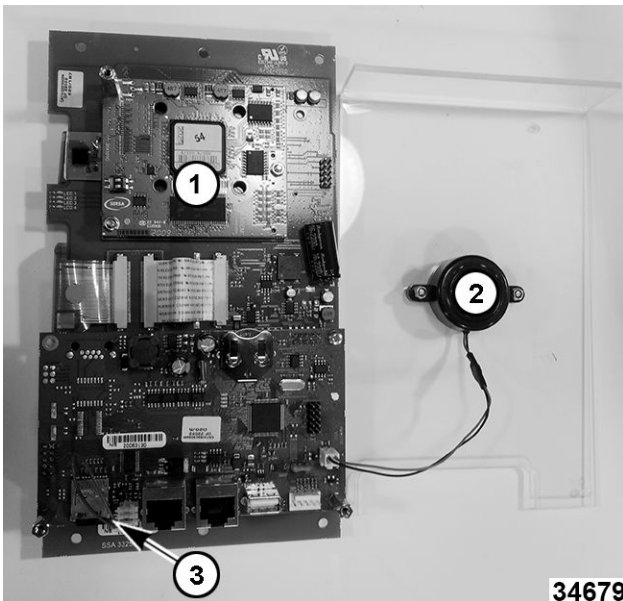


Fig. 17

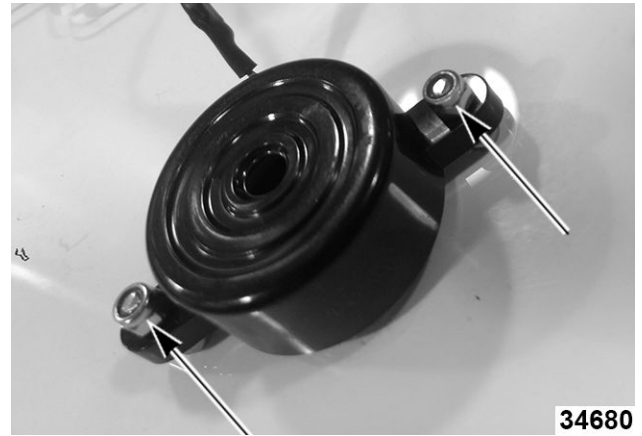


Fig. 18

4. Reverse procedure to install.
5. Verify proper operation.

HIGH LIMIT THERMOSTAT



⚠ WARNING

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

1. Remove RIGHT SIDE PANEL.
2. Note and disconnect wiring from high limit thermostat (1, Fig. 19).



Fig. 19

3. Remove BACK PANEL.
4. Cut insulation and slide bulb out from center of protective mounting bracket (1, Fig. 20).

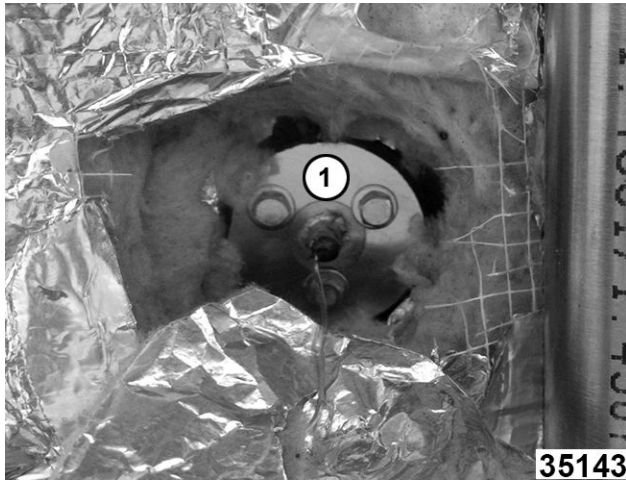


Fig. 20

5. Disconnect wiring of capillary bulb.
6. Connect wiring of bulb to re-install.
7. Apply silicone to end of capillary bulb (1, Fig. 20) to hold high limit in place on protective bracket.



Fig. 21

8. Slide new capillary bulb into bracket in oven.

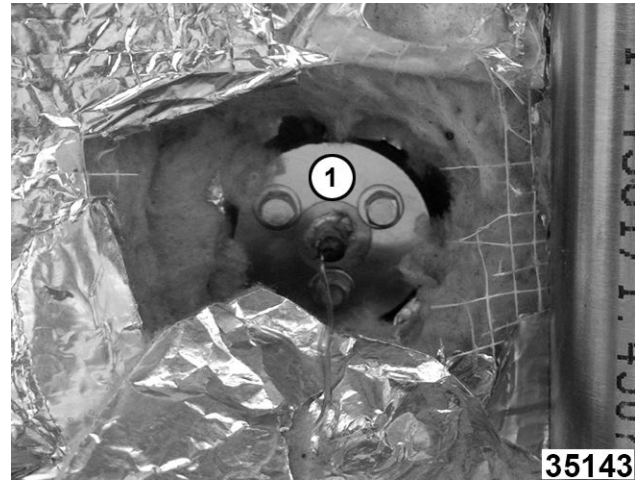


Fig. 22

9. Verify capillary bulb is flush against exterior top cavity surface.
10. Secure installation with heat tape.

NOTICE

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

11. Reverse procedure to install.

HEATING ELEMENTS



WARNING

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

HEATING ELEMENTS

NOTE: Same procedure for top and bottom heating element. Refer to HEATING ELEMENT TEST to verify function of elements.

1. Open door, remove racks in oven cavity and remove baffle by lifting up and out, Fig. 23.

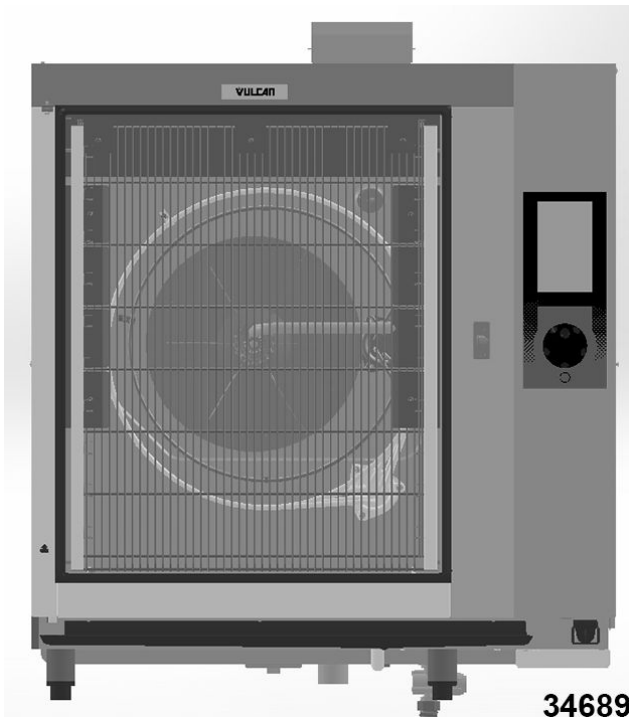


Fig. 23

- Remove water inlet pipe mounting screw (1, Fig. 24) to remove pipe.

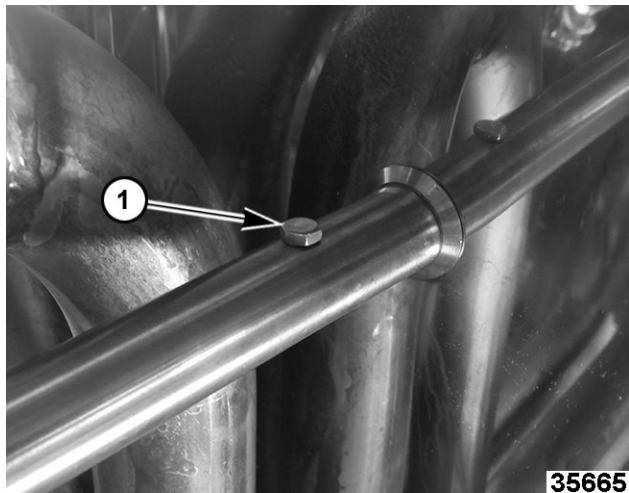


Fig. 24

- Remove BACK PANEL.
- Note wiring and element locations.
- Remove nuts and washers from elements.



Fig. 25

- Remove inner mounting screws from element being replacing.



Fig. 26

- Reverse procedure to install and verify proper operation.

NOTICE

It is recommended to change the seal when changing a element.

OUTPUT CONTROL ASSEMBLY



WARNING

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

1. Remove .
2. Note and disconnect wiring from board.

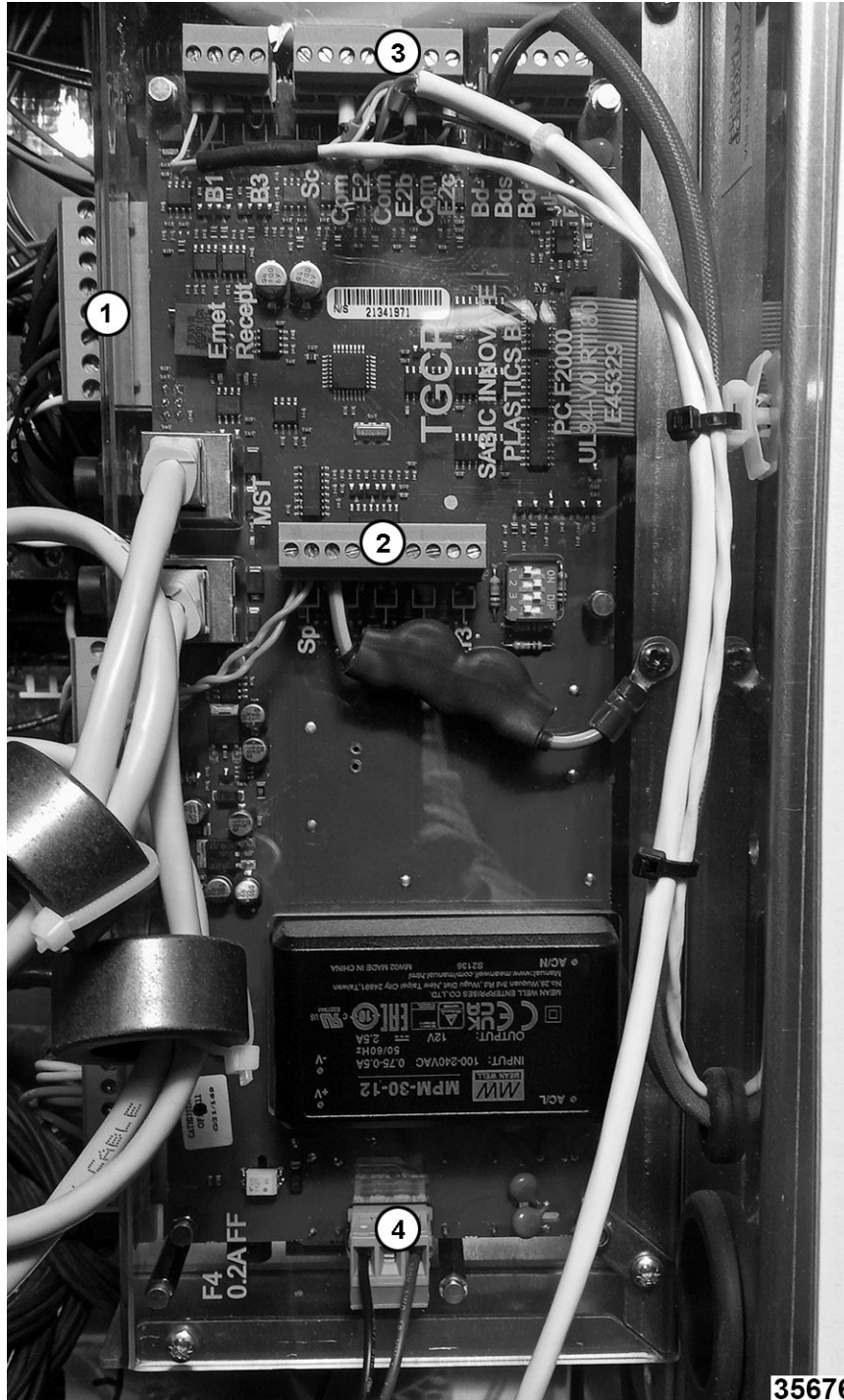


Fig. 27

- 1 - Output connectors.

- 2 - Door switch connector.
 - 3 - Core probe connector.
 - 4 - Supply connector.
3. Remove one screw from transformer. Pivot transformer up and to the right for board removal.



Fig. 28

4. Reverse procedure to install.

NOTICE

Verify configuration of the microswitches when installing new board.

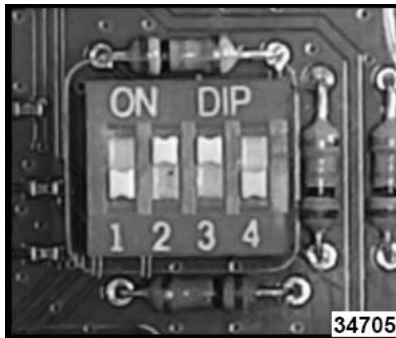
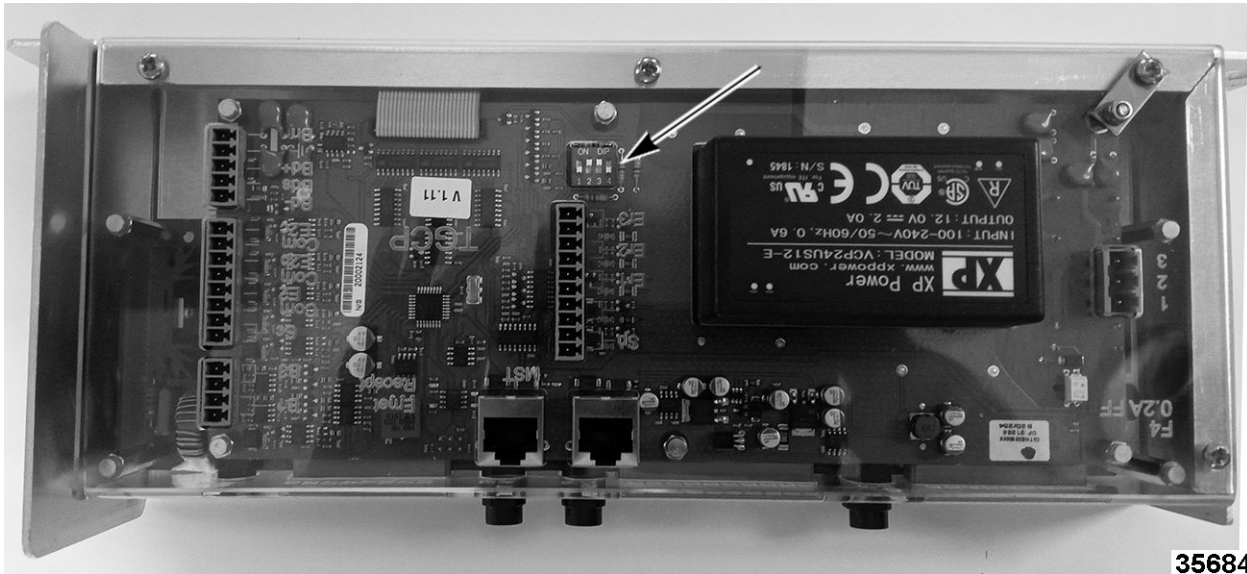


Fig. 29



35684

Fig. 30

OUTPUT CONTROL ASSEMBLY RELAY BOARD

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



WARNING

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

1. Remove OUTPUT CONTROL ASSEMBLY.
2. Remove screws and control output assembly back cover.

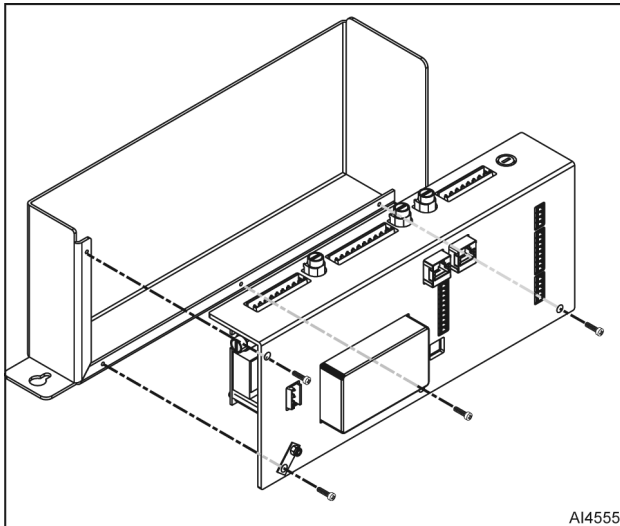


Fig. 31

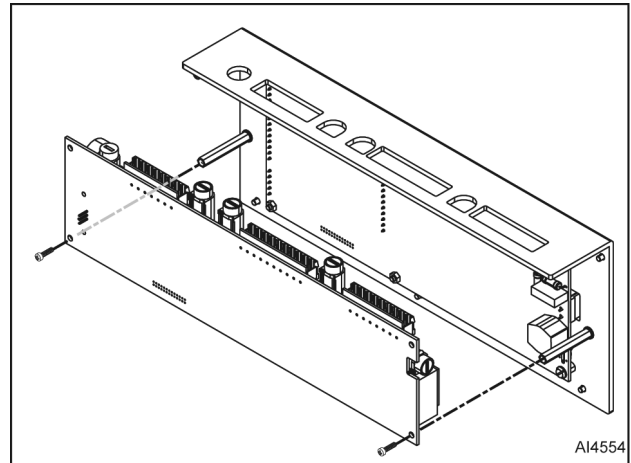


Fig. 32

FUSES



WARNING

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

1. Remove RIGHT SIDE PANEL.
2. Access fuses on side of output control assembly.

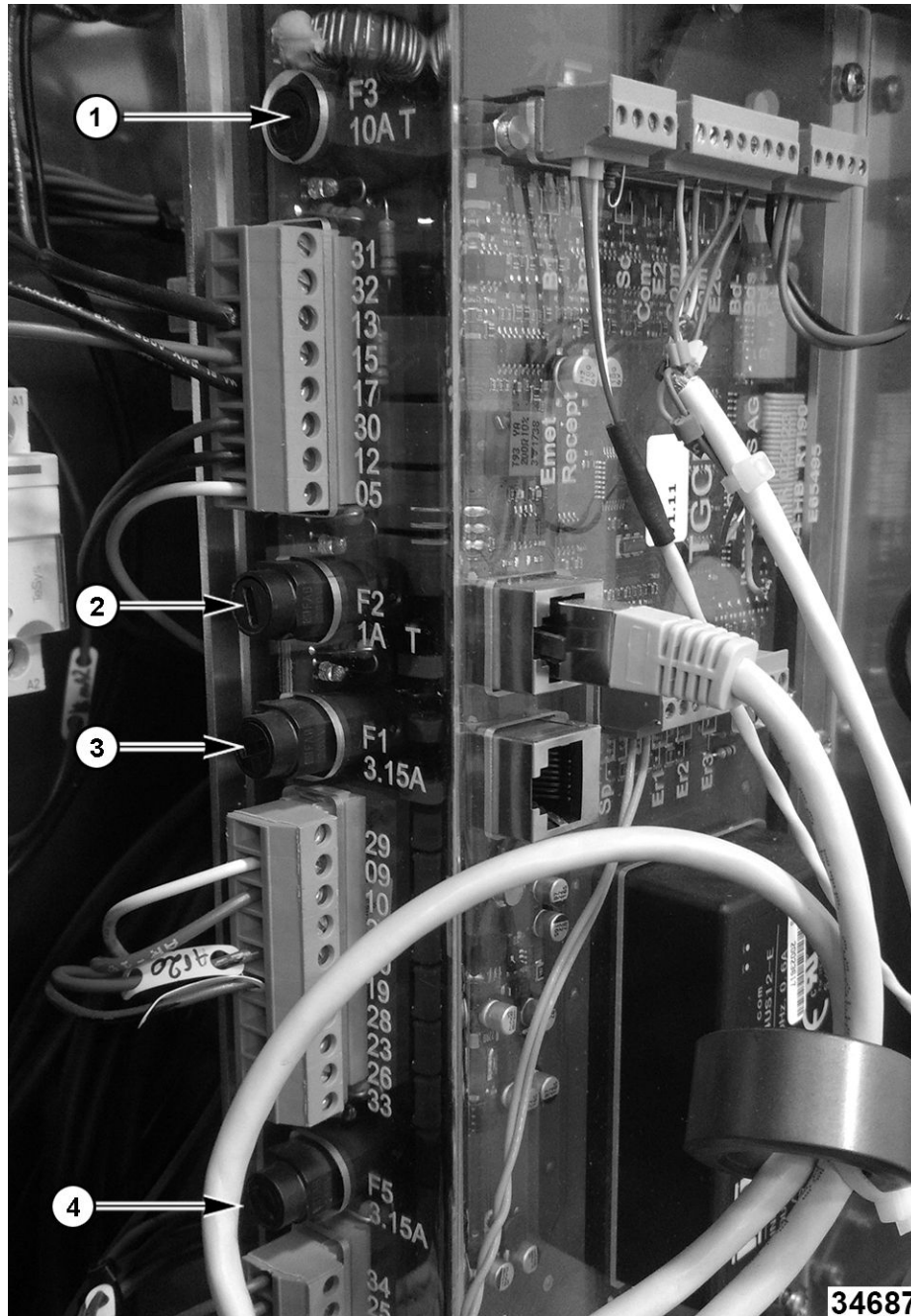


Fig. 33

- 1 - F3, 10 Amps, Time Delay
- 2 - F2, Amps, Time Delay
- 3 - F1, 3.15 Amps, LED

- 4 - F5, 3.15 Amps, Status LED
- On bottom end, not shown - F4m 3.15 Amps, Status LED

3. Reverse procedure to install.

RECIRCULATING WASH PUMP CAPACITOR



WARNING

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

NOTE: Test capacitor for operation before removing.

1. Remove RIGHT SIDE PANEL.
2. Note and disconnect capacitor wiring (1, Fig. 34).

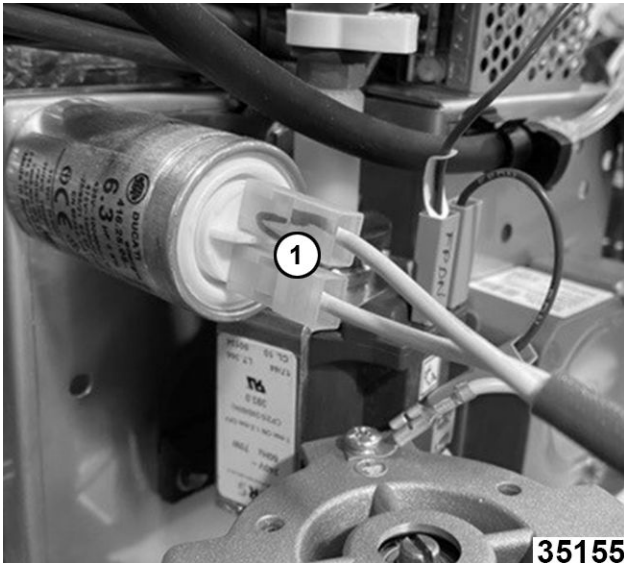


Fig. 34

3. Remove capacitor mounting nut behind bracket.

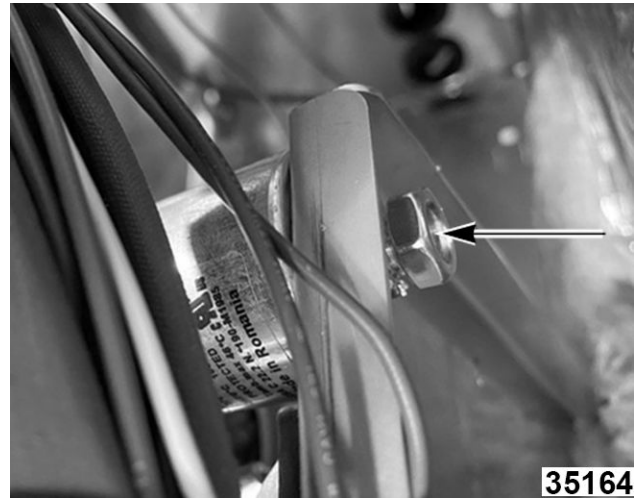


Fig. 35

4. Reverse procedure to install.

DOOR



WARNING

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

1. Remove RIGHT SIDE PANEL.
2. Note and disconnect LED strip wiring from power supply.

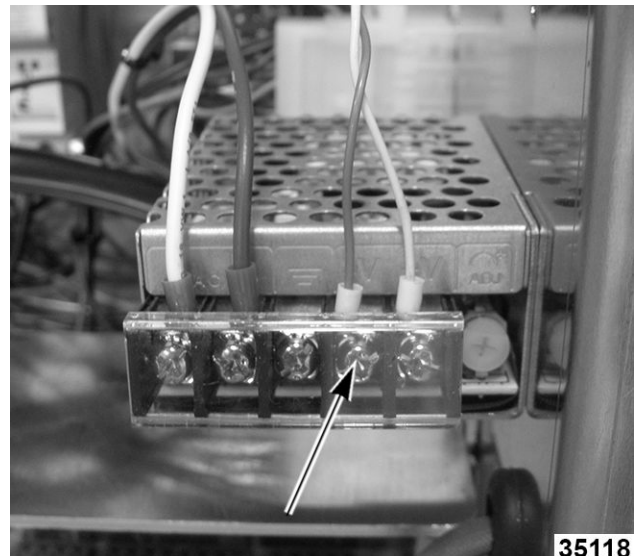


Fig. 36

3. Remove INTERNAL GLASS DOOR.
4. Remove hinge cover mounting screw and bolts.



Fig. 37

5. Note and disconnect power supply LED wiring (1, Fig. 38) from hinge.

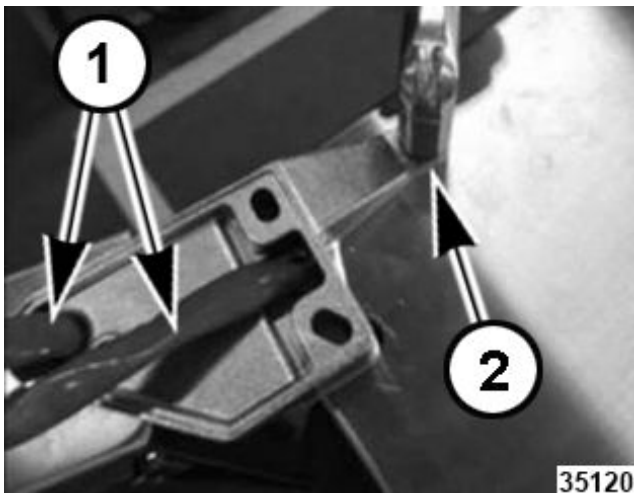


Fig. 38

6. Loosen hinge mounting screw (2, Fig. 38).
7. Lift door to remove from lower hinge, then release from top hinge.
8. Reverse procedure to install.

NOTE: Reuse brass spacers with new door.

NOTICE

Verify hinge cover is seated correctly.

9. Level door as needed.
 - A. Loosen hinge screws.
 - B. Position a level on top of door.
 - C. Lift door to level it and tighten screws.

DOOR (LED STRIP)



WARNING

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

1. Remove DOOR PANEL.
2. Remove inner panel mouting bracket. (Fig. 39).



Fig. 39

3. Unscrew LED strip.



Fig. 40

4. Locate wiring connector (1, Fig. 41). Mark wires.

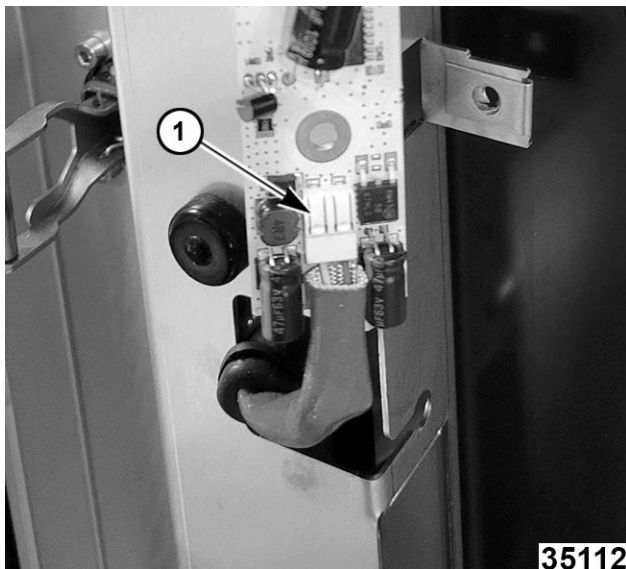


Fig. 41

5. Push on tab (1, Fig. 41) to disconnect wires (2, Fig. 41).

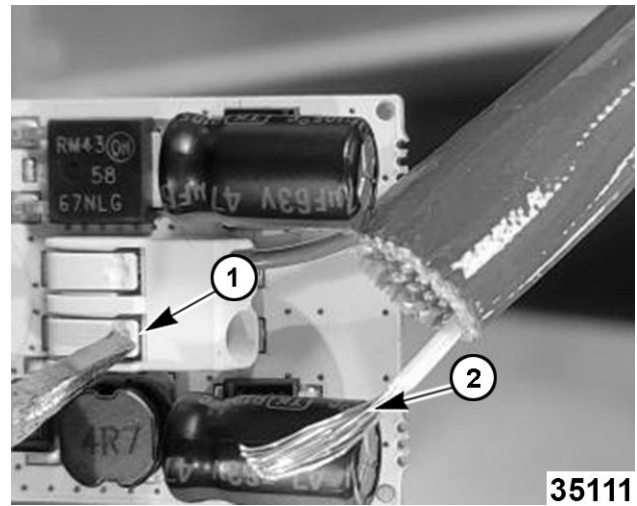


Fig. 42

6. Reverse procedure to install.

DOOR HANDLE AND LATCH

1. Remove DOOR PANEL.
2. Remove inner panel mounting bracket.



Fig. 43

3. Remove handle mounting screws.

NOTE: Door handle mounting screws use a star bit screwdriver.

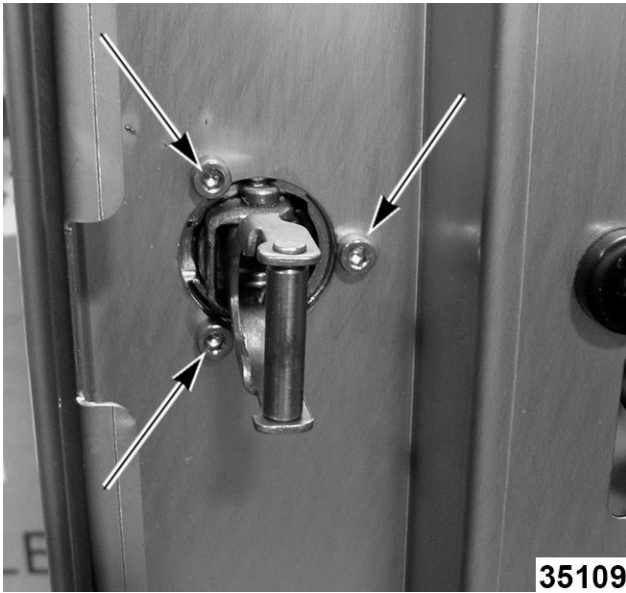


Fig. 44

4. Remove handle.

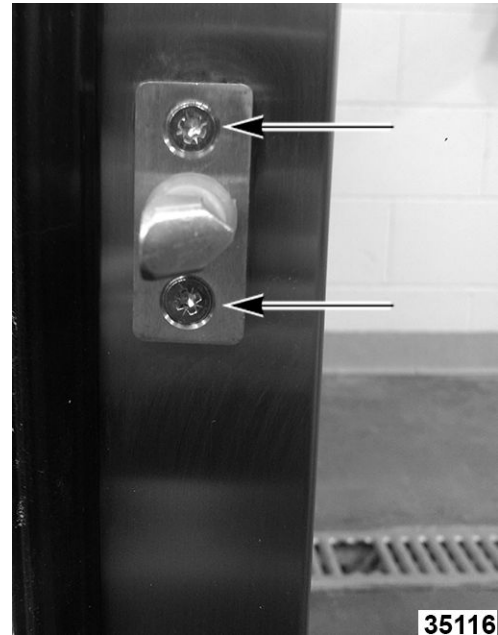


Fig. 46

3. Remove catch and shims (1, Fig. 47).



Fig. 45

5. Reverse procedure to install.

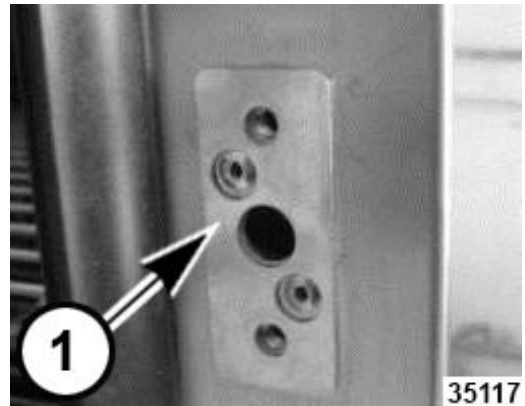


Fig. 47

4. Reverse procedure to install.

INTERNAL GLASS DOOR

1. Open door.
2. Locate upper and lower glass door mounting brackets.

DOOR CATCH

1. Open door.
2. Remove door catch mounting screws.

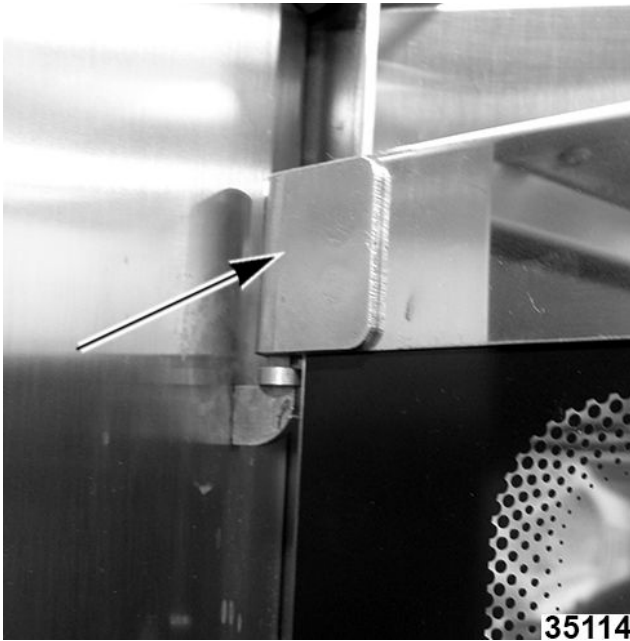


Fig. 48

3. Lift door (2, Fig. 49) off mounting pins (2, Fig. 49) on top and bottom. Verify brass spacers (3, Fig. 49) remains on pins.



Fig. 49

VENT MOTOR



WARNING

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

1. Remove SIDE PANEL.

2. Note and disconnect vent motor wiring.



Fig. 50

3. Loosen motor shaft bolt (1, Fig. 51).

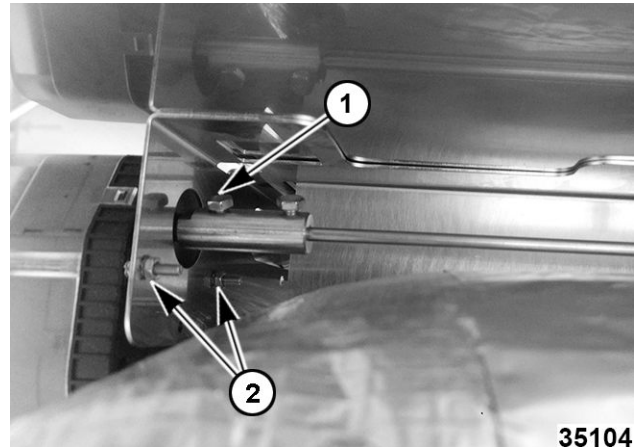


Fig. 51

4. Remove both mounting nuts (2, Fig. 51).
5. Reverse procedure to install.

FLOW METER



WARNING

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

1. Remove RIGHT SIDE PANEL.

- Remove electrical supply (1, Fig. 52) to flow meter.

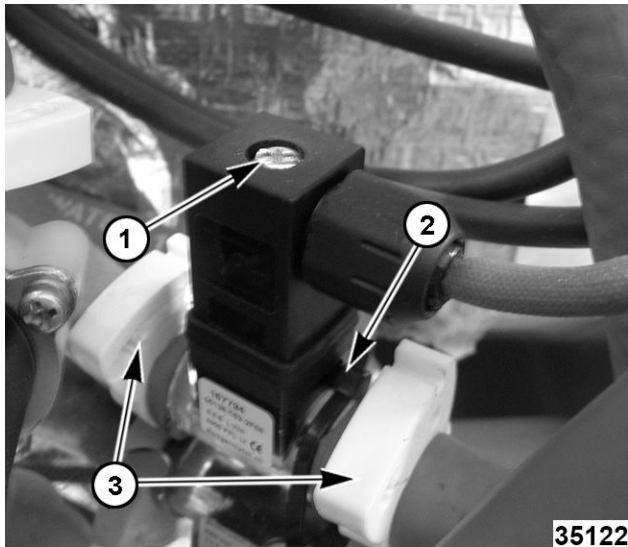


Fig. 52

- Remove cable tie (2, Fig. 52).
- Disconnect clamps (3, Fig. 52).
- Reverse procedure to install.

TEMPERATURE PROBE



WARNING

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

- Remove RIGHT SIDE PANEL.
- Note and disconnect temperature probe wiring.

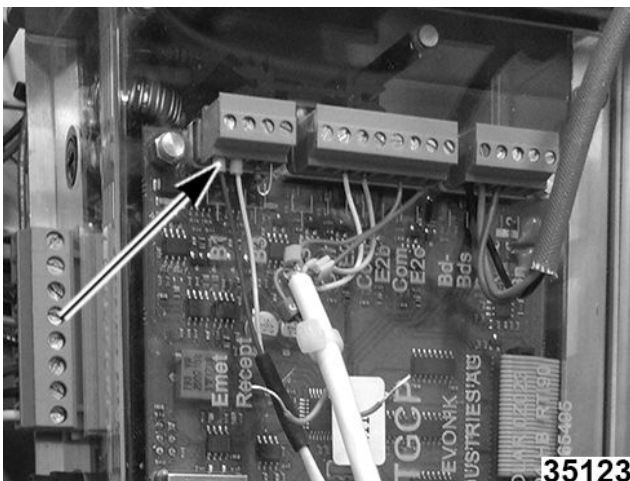


Fig. 53

- Remove holding clip (1, Fig. 54), probe and seal.

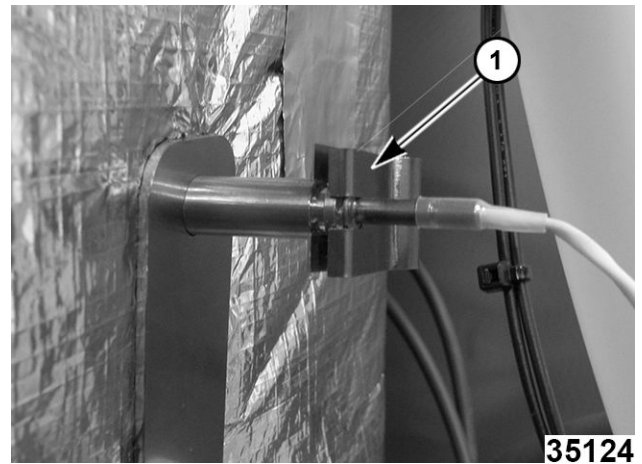


Fig. 54

- Reverse procedure to install.

NOTICE

The probe seal must always be changed if the probe is changed or removed for any reason (replaced or simply checked).

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 PANEL.
 2. Note and disconnect electrical wires from detergent pump.
 3. Shut off filtered and unfiltered water supplies.
 4. Disconnect hose clamps (1, Fig. 55) from detergent pump.

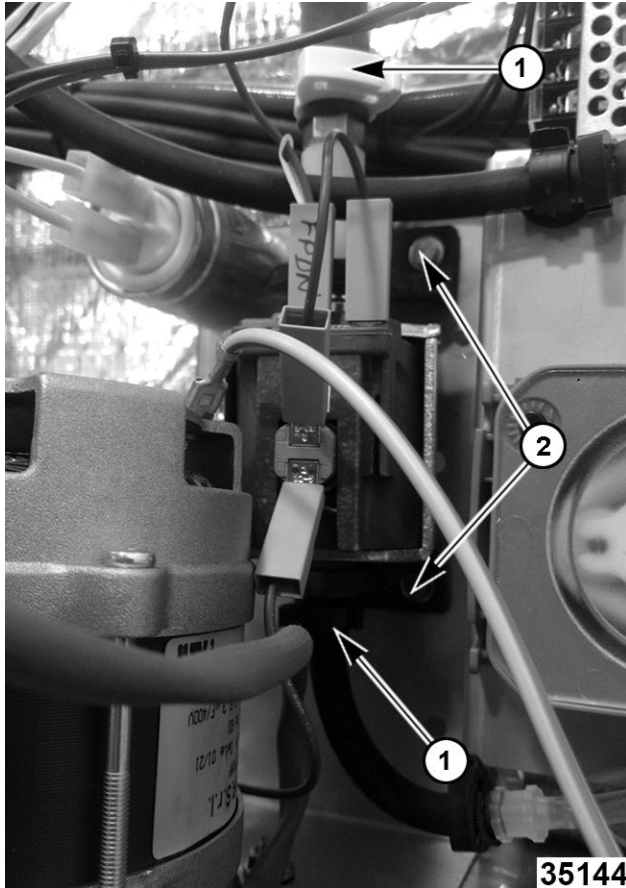


Fig. 55

5. Remove FLOW METER.
6. Remove screws, washers,(2, Fig. 55) and detergent pump from mounting bracket.
7. Reverse procedure to install.

DESCALE PUMP INTERNAL HOSE



WARNING

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

1. Remove RIGHT SIDE PANEL.
2. Remove cover mounting screws.

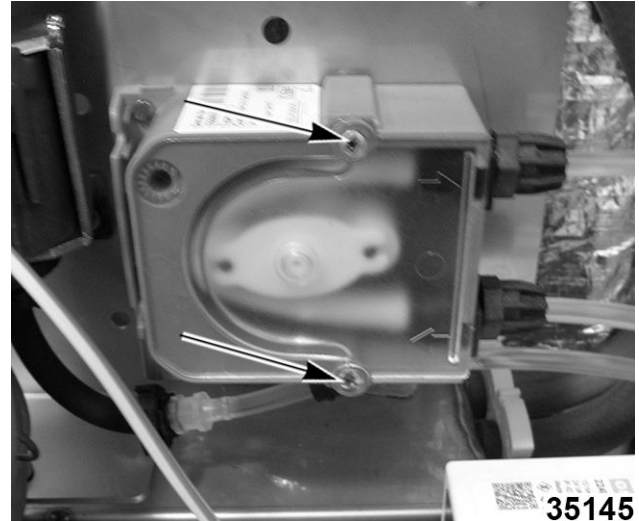


Fig. 56

3. Clamp inlet and outlet hose.
4. Remove hose from pump and disconnect nuts (1, Fig. 57).

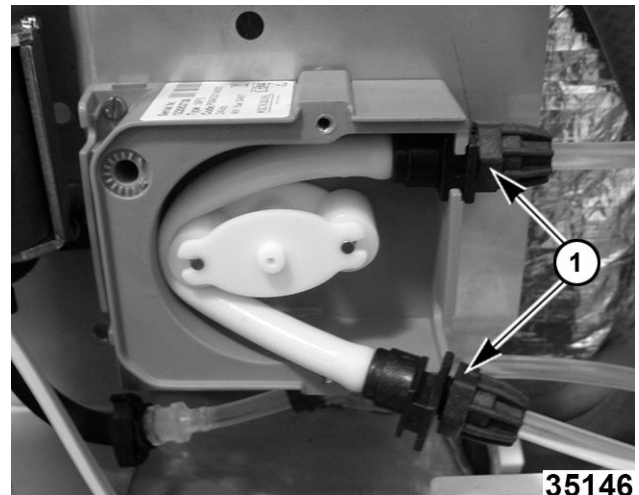


Fig. 57

5. Disconnect inlet and outlet hoses.
6. Reverse procedure to install.

DRAIN VALVE MOTOR



⚠ WARNING

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

1. Remove RIGHT SIDE PANEL.
2. Note and disconnect valve motor wiring.

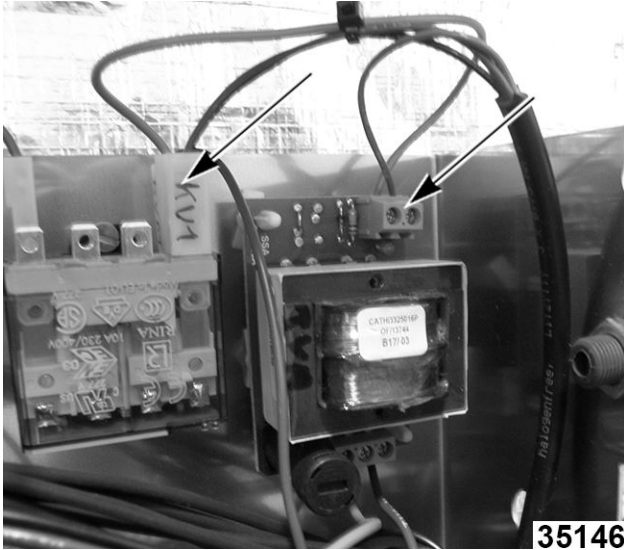


Fig. 58

3. Remove valve motor cover mounting screw and lift motor off valve.

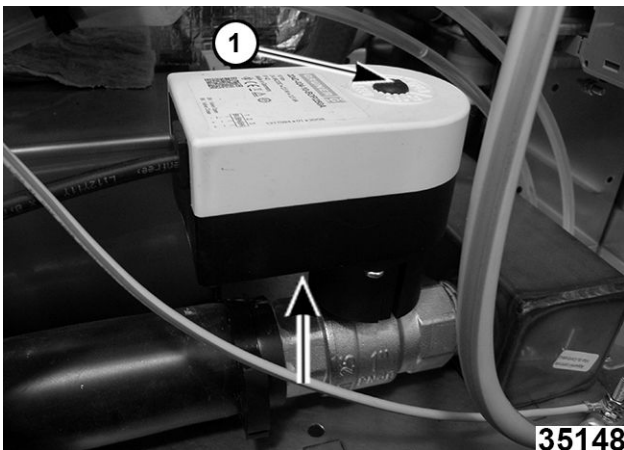


Fig. 59

4. Reverse procedure to install.

FAN



⚠ WARNING

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

1. Open oven door.

NOTICE

Lay cardboard on bottom of oven to protect surface during service.

2. Remove racks from oven.
3. Remove sheath (1, Fig. 60) mounting screws and lift off.



Fig. 60

4. Remove water inlet pipe mounting screw (1, Fig. 61) to remove pipe.

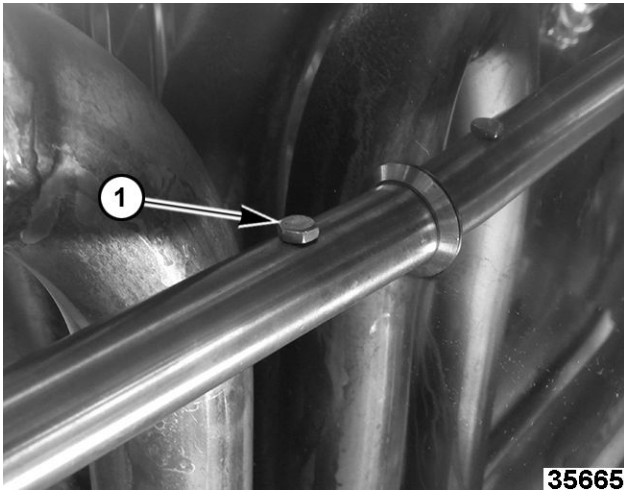


Fig. 61

5. Remove turbine (1, Fig. 62) mounting hardware, (screw, washer, atomizer, washer).

NOTE: Use 10 MM socket for bolt removal.

NOTE: Add heat for removal until turbine is released.

6. Remove turbine.
 - A. Align puller in place.
 - B. Hold turbine in place while turning screw on the hub puller with wrench until turbine is released.
 - C. Remove hub puller and turbine.
7. Reverse procedure to install.
 - Place fan on motor shaft and tap with mallet. install atomizer and hardware and torque bolt
 - Verify proper operation.

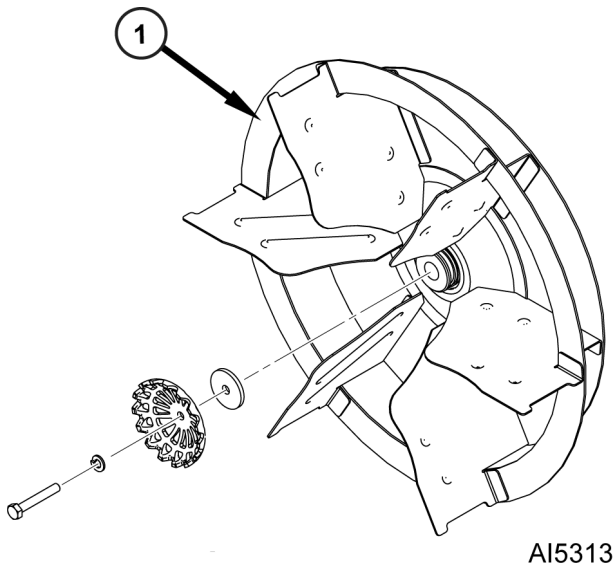
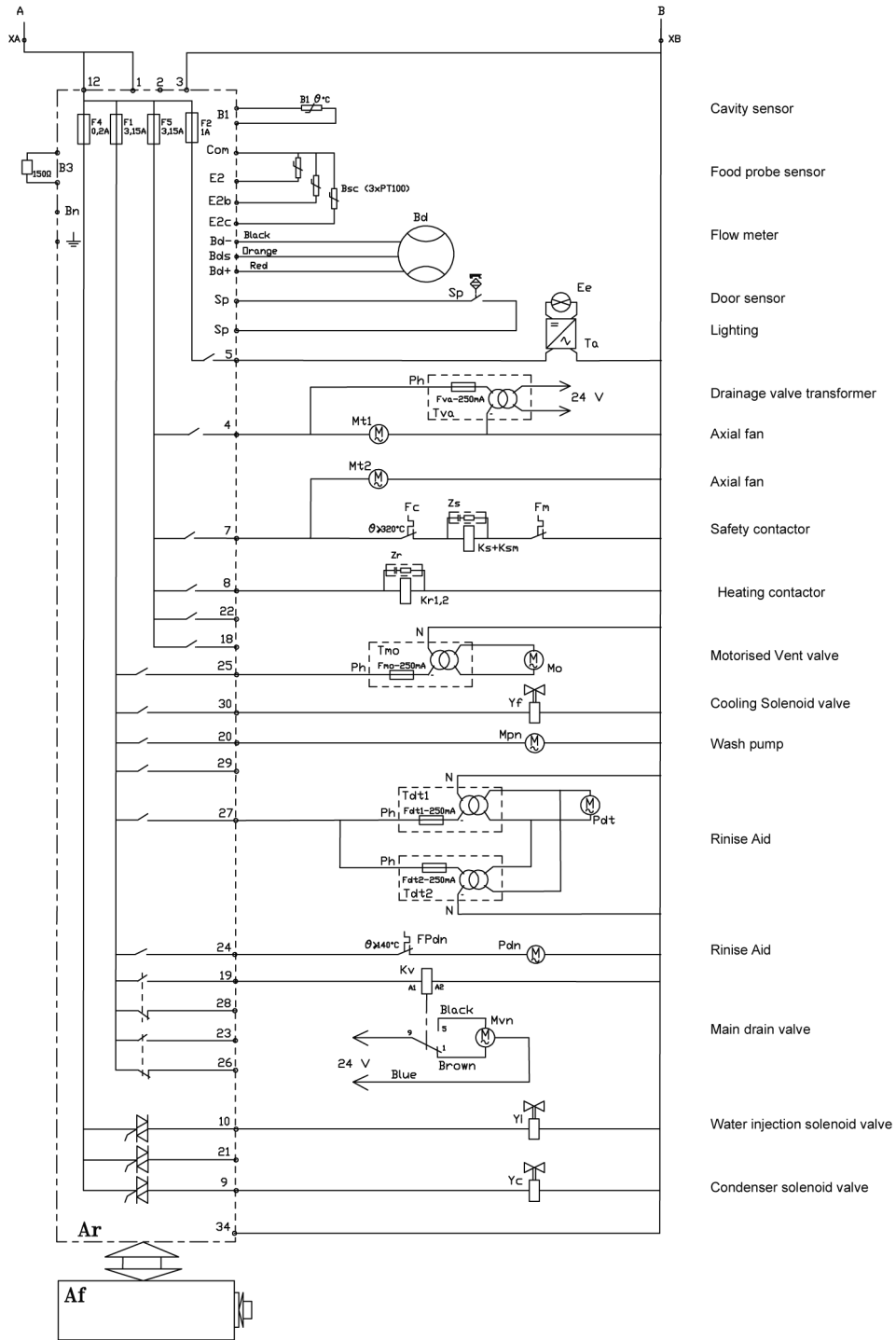


Fig. 62

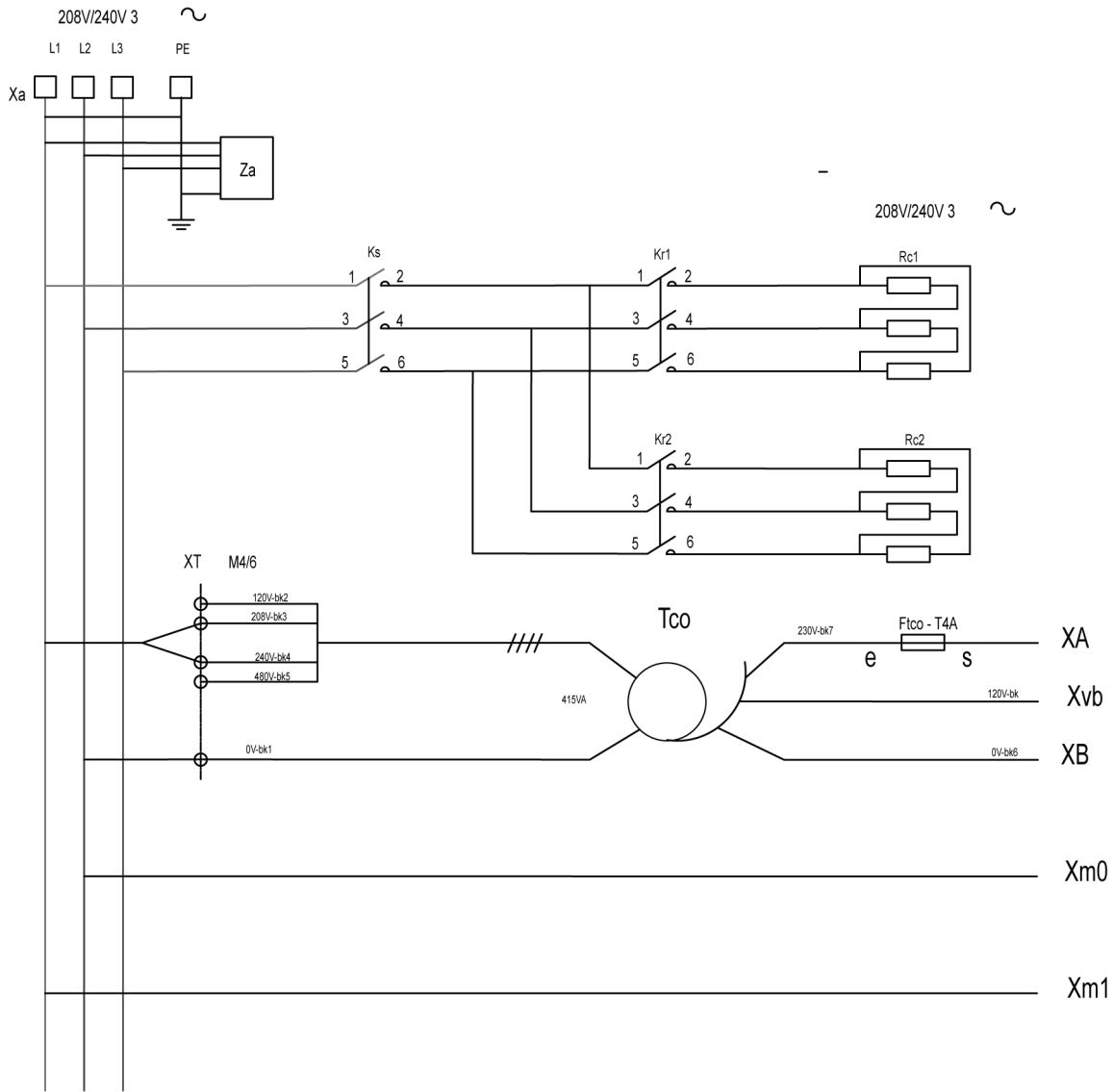
WIRING DIAGRAMS



VPJ102E COMBI ELECTRIC MODEL 208V - 240V.
Derived from 978180

A15124

Fig. 63

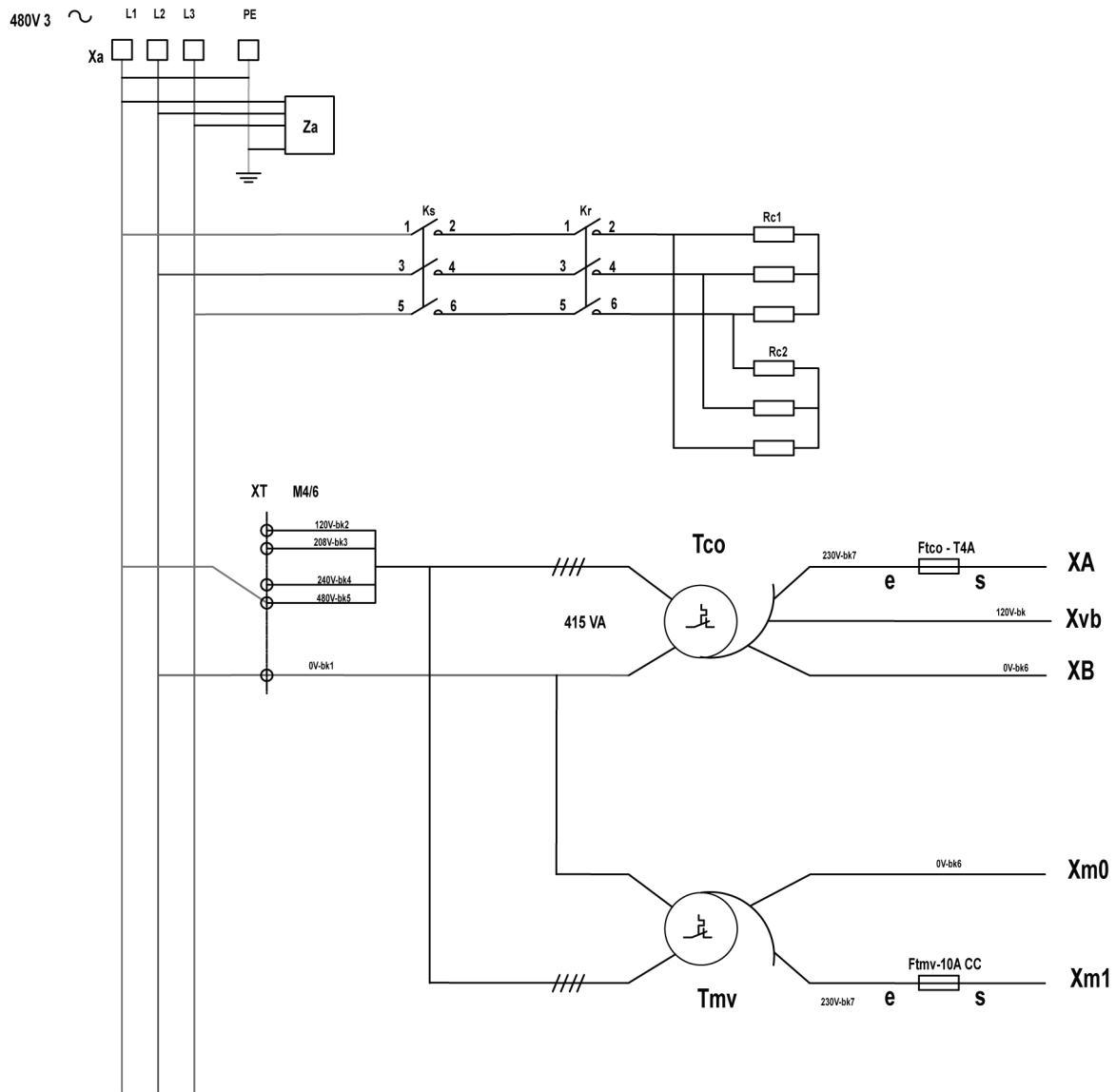


TCM Models

DERIVED FROM Schematic_Power_208_240V

AI5384

Fig. 64

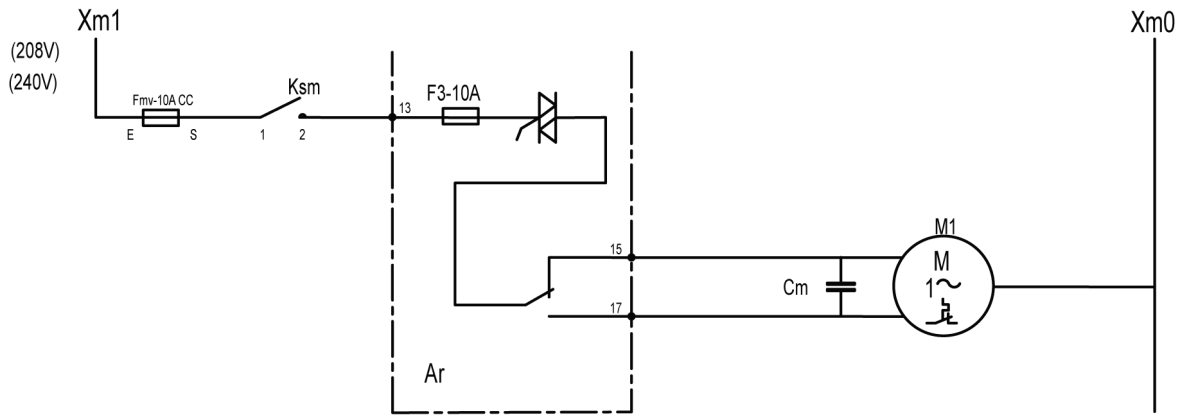


TCM Models

DERIVED FROM Schematic_Power_480V

AI5383

Fig. 65

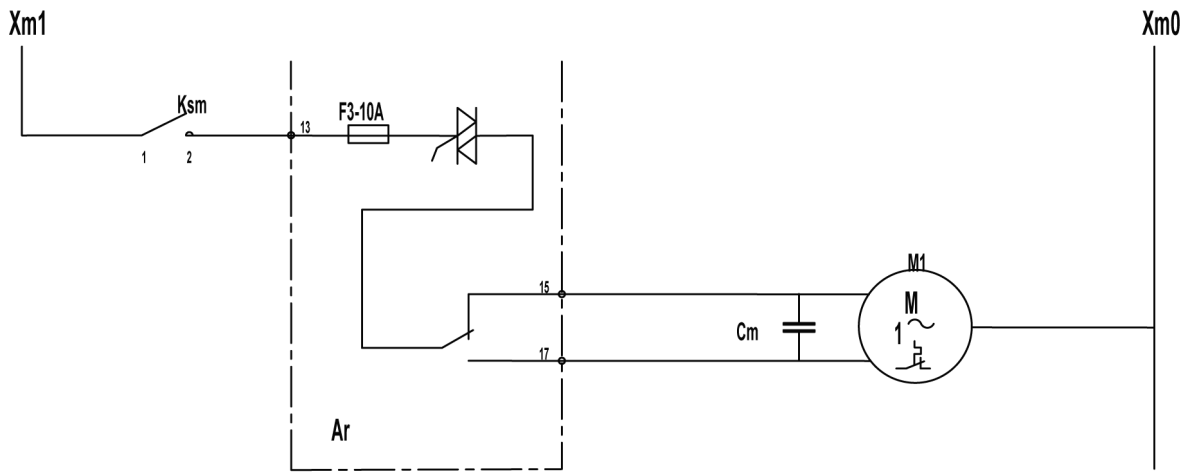


TCM Models

DERIVED FROM Schematic_Ventilation_208_240V

AI5382

Fig. 66

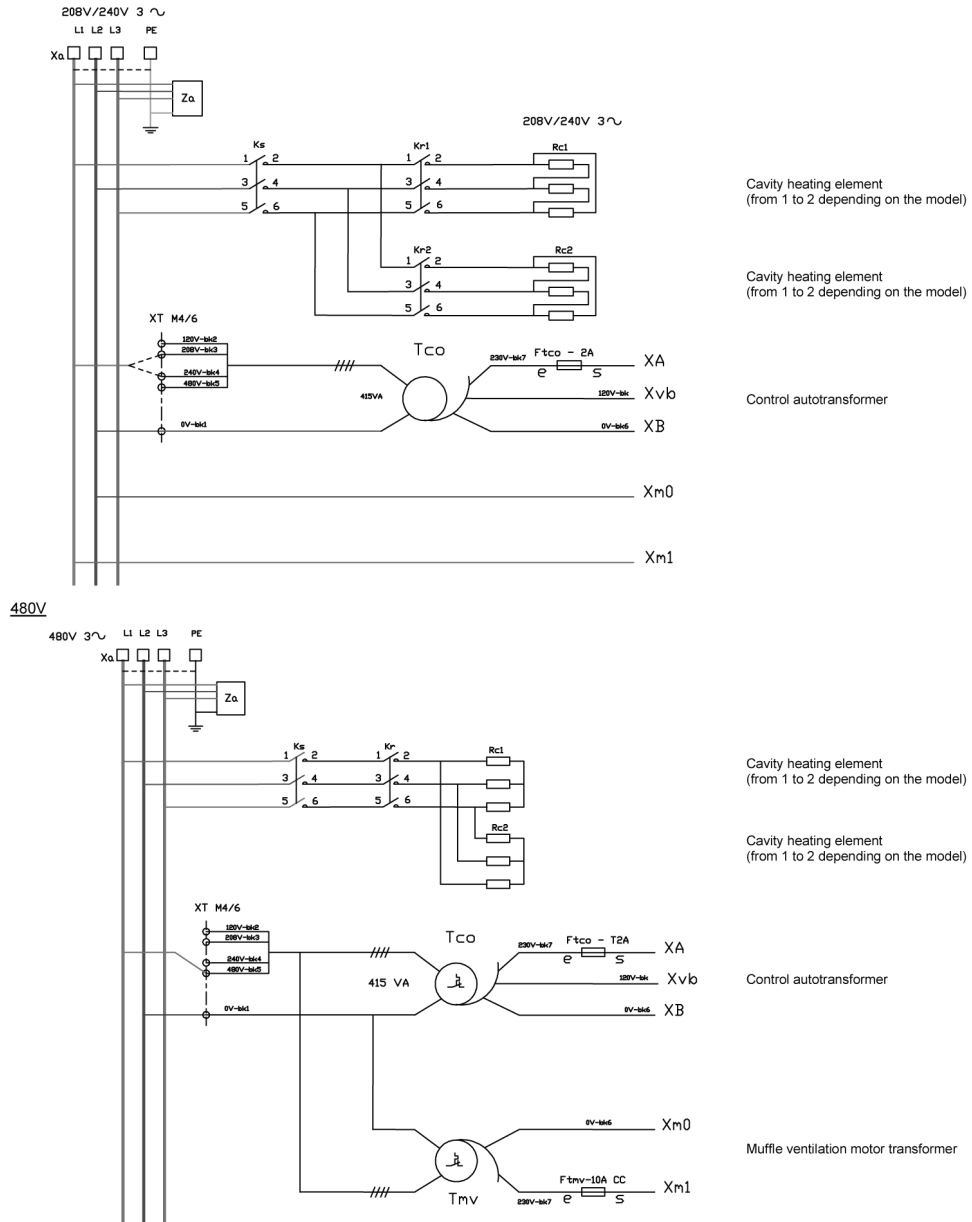


TCM Models

DERIVED FROM Schematic_Ventilation 480V

AI5381

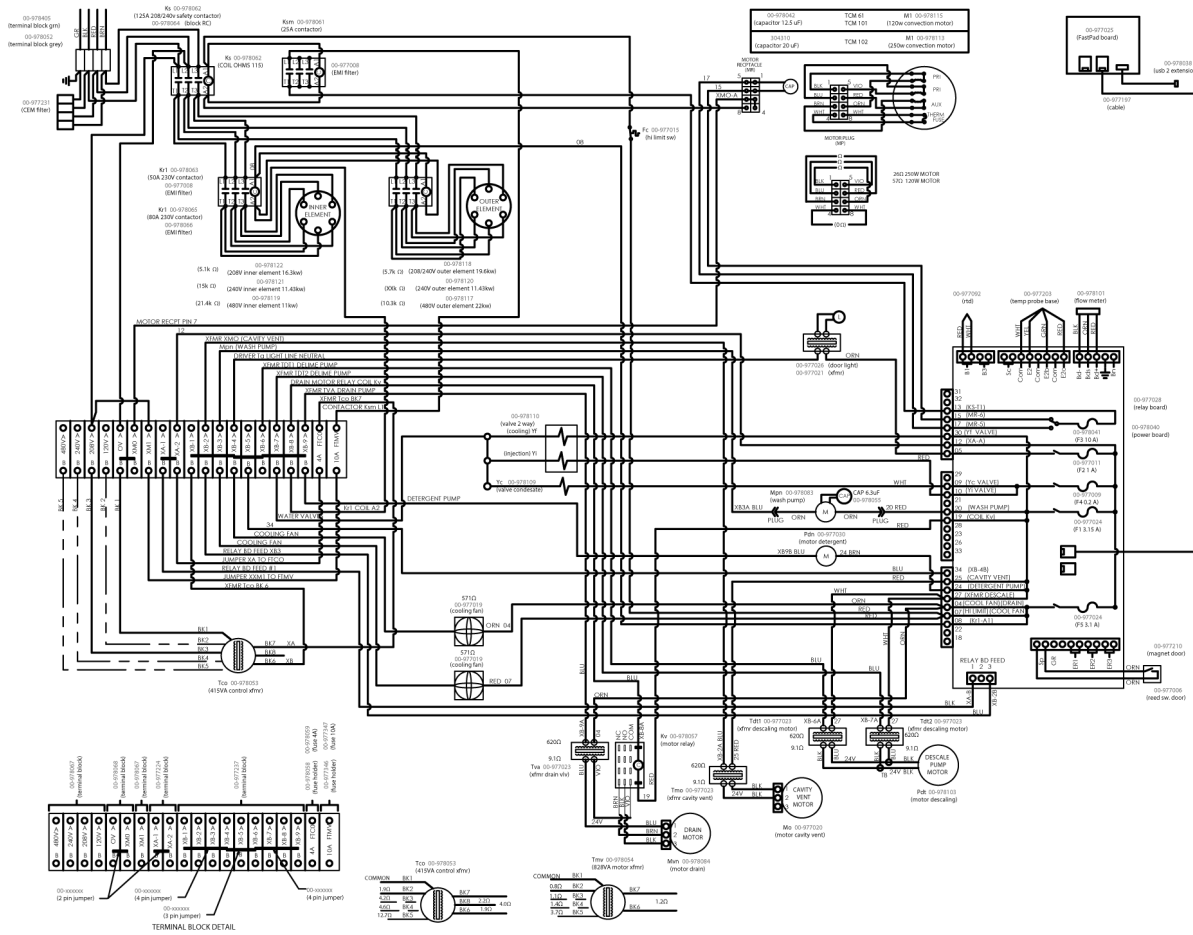
Fig. 67



POWER DIAGRAM THREE PHASE 208V & 240V
DERIVED FROM 978181

AI5125

Fig. 68



TCM ELECTRIC - WIRING DIAGRAM
 DERIVED FROM TCM ELECTRIC WIRE DIAGRAM_A3

AI5518

Fig. 69

Large TCM Electric Wire Diagram Link

MOTOR SHAFT SEAL



WARNING

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

1. Remove HEATING ELEMENTS.
2. Remove FAN.
3. Remove shaft seal and wear ring.

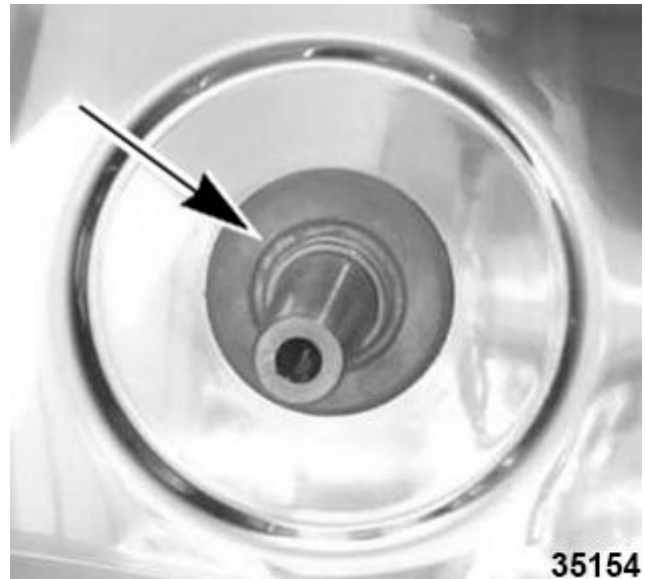


Fig. 70

NOTICE

Wear ring (1, Fig. 71) should also be replaced when changing shaft seal (2, Fig. 71).

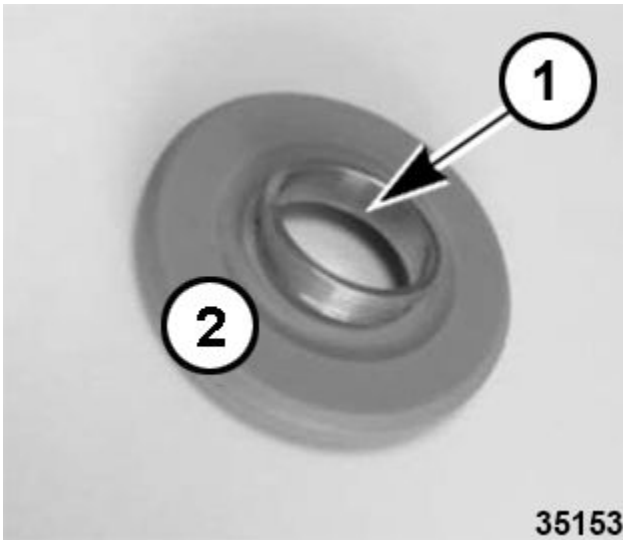


Fig. 71

4. Lubricate motor shaft with high temperature food quality grease.
5. Rotate assembly on motor shaft before fitting onto fan.

NOTICE

Motor shaft seal and wear ring should not rotate with shaft.

6. Reinstall HEATING ELEMENTS.
7. Verify proper operation.

CAVITY FAN MOTOR



WARNING

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

1. Remove .
2. Remove MOTOR SHAFT SEAL.
3. Remove RIGHT SIDE PANEL.
4. Remove BACK PANEL.
5. Note and disconnect motor wiring.
6. Remove motor mounting screws and washers.

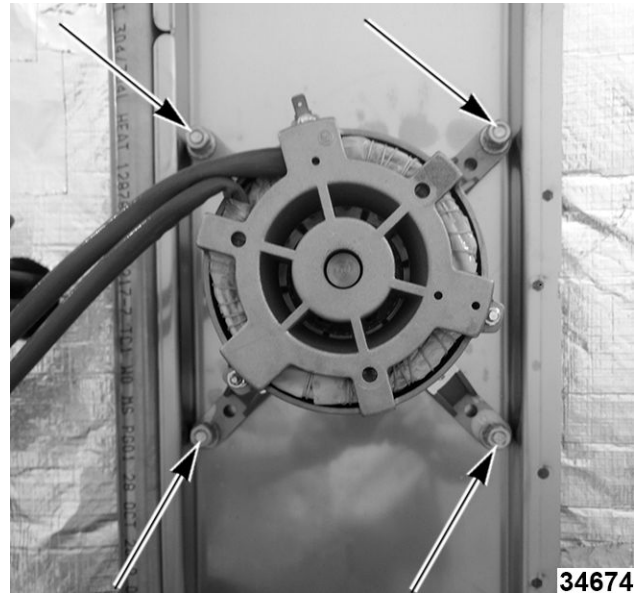


Fig. 72

7. Carefully pull motor downwards and out to remove.
8. Reverse procedure to install.

DOOR SEAL

1. Open door.
2. Pinch door seal (1, Fig. 73) in each corner and pull out.

NOTE: Areas shown in Fig. 73 and Fig. 74 add high temperature silicone to prevent leaking.

UPPER DOOR SEAL SHOWN IN Fig. 73



Fig. 73

LOWER DOOR SEAL SHOWN IN Fig. 74



Fig. 74

3. Remove seal from sides, top and bottom.
4. Install all four corners.

5. Install seal on sides, top and bottom.

SERVICE PROCEDURES AND ADJUSTMENTS

SOLENOID VALVES



WARNING

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

1. Disconnect supply power.
2. Remove .
3. Locate solenoid to check.
 - Access Yi (1, Fig. 75), Yf (2, Fig. 76) and Yc (3, Fig. 77).
 - Verify readings in below.

Connection	Reading
Yf	4307 ohms
Yi	4338 ohms
Yc	4338 ohms



Fig. 76

Yi

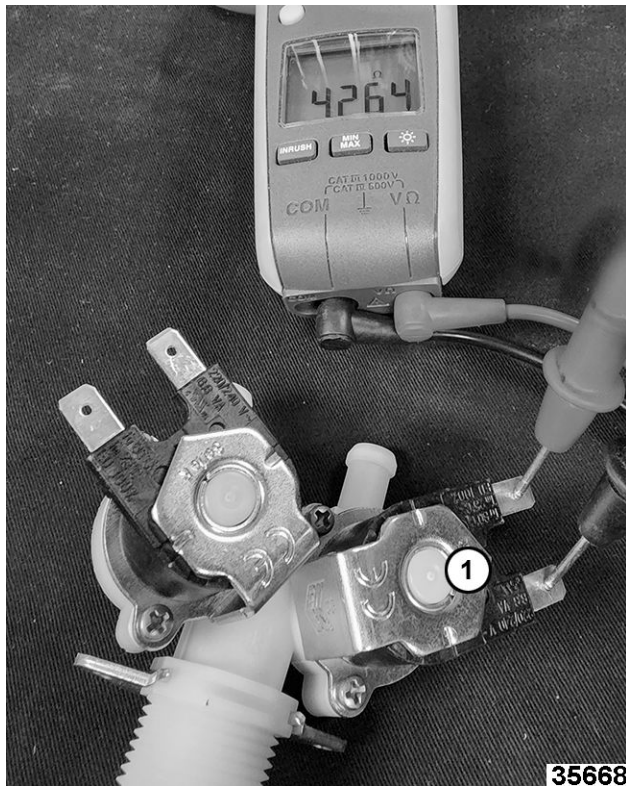


Fig. 75

Yc



Fig. 77

Yf

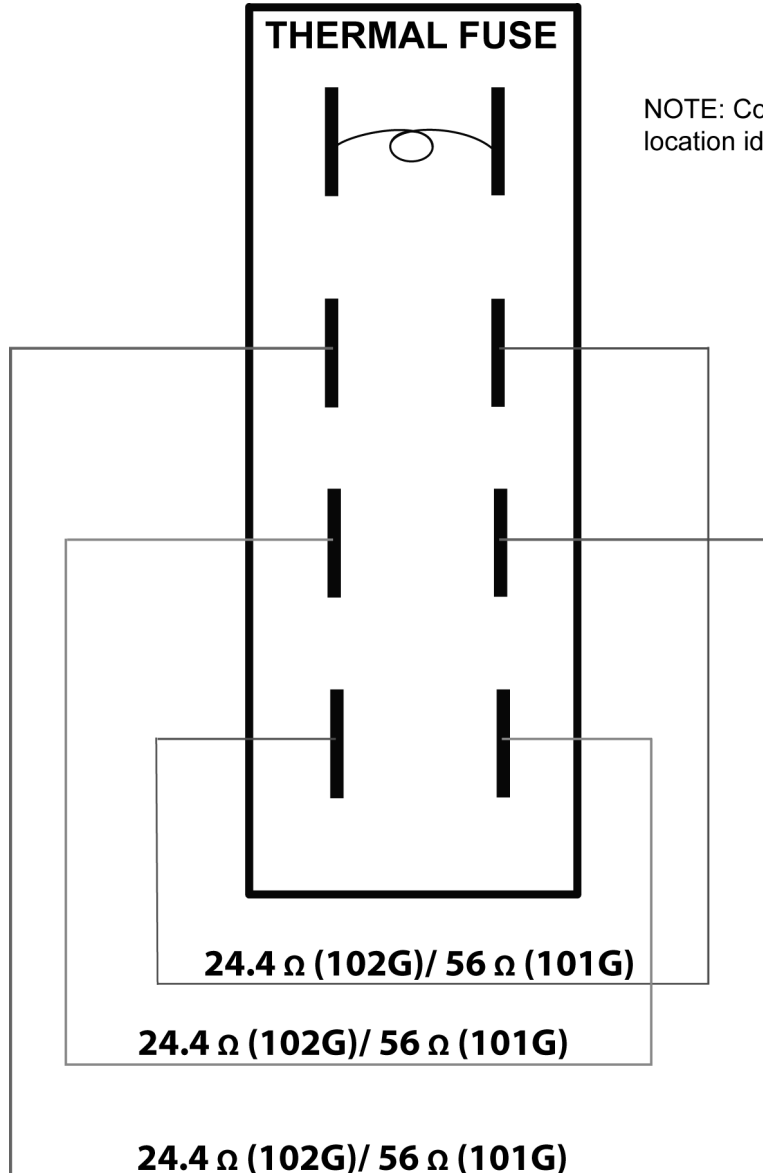
CONVECTION MOTOR RESISTANCE



WARNING

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

1. Disconnect supply power.
2. Unplug convection fan motor.
3. Test connections. Verify 24.4 / 56Ω (Model Variable).
4. Install back cover and verify proper operation.



NOTE: Colors added for location identification only.

AI5389

Fig. 78

HEATING ELEMENT TEST



⚠ WARNING

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

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

Voltage	Resistance (Ohms)
	Value
208V	7.5
208V / 240V	8.6
277V (480V)	10.1
240V	15.1
480V	20.9

Inner Elements Shown in [Fig. 79](#).

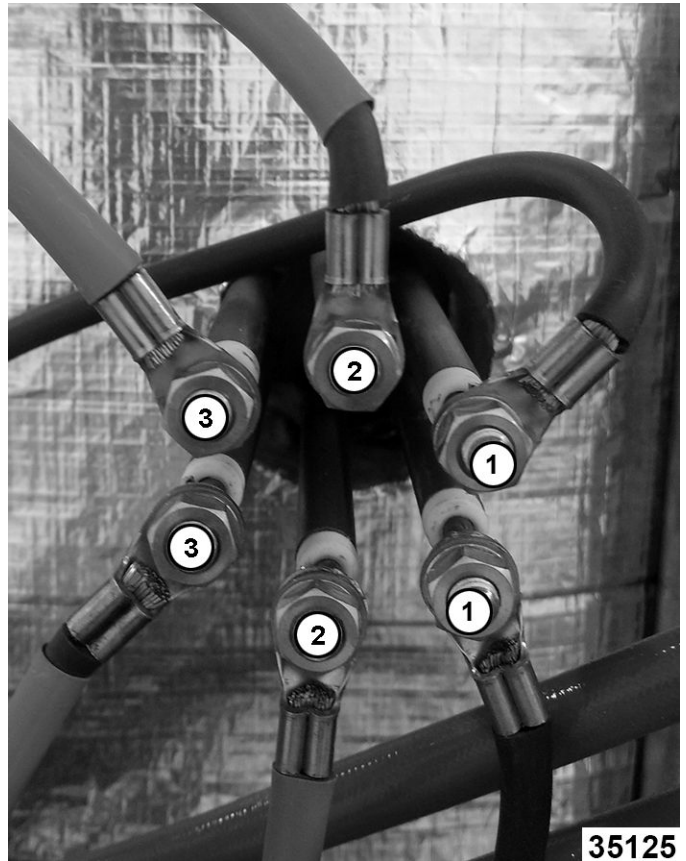


Fig. 79

Outer Elements shown in [Fig. 80](#).

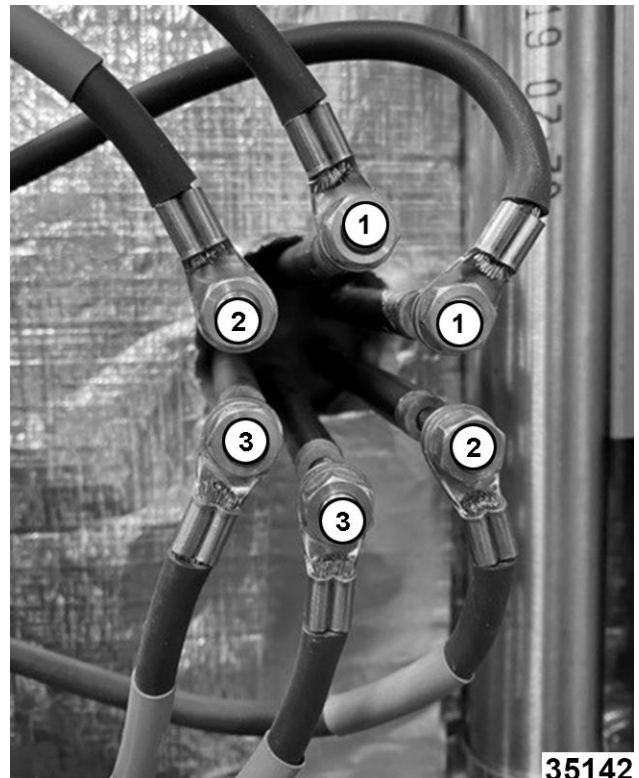


Fig. 80

4. Check continuity on new heating elements before installing.
5. Install covers and verify operation.

	06 1 (HS)		10 1 (HS)		10 2 (FS)		
	208	240	208	240	208	240	480
Heating Elt 1(kW)	8.6	11.4	14.7	19.6	14.7	19.6	22
Heating Elt 2(kW)					16.3	11.4	11
kW	8,6	11,4	14,7	19,6	31,0	31,0	33

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 RIGHT SIDE PANEL.
2. Remove OUTPUT CONTROL ASSEMBLY.
3. Remove appropriate connector from output control assembly (Fig. 81).

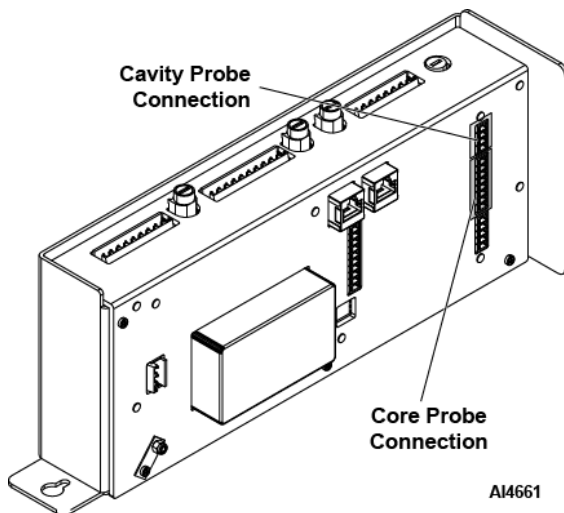


Fig. 81

4. Using a VOM meter, check resistance between temperature probe leads.
5. Compare measured resistance.
6. Replace probe if the resistance is greater 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	100.43	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. 82

DIAGRAMS

FLUID DIAGRAMS

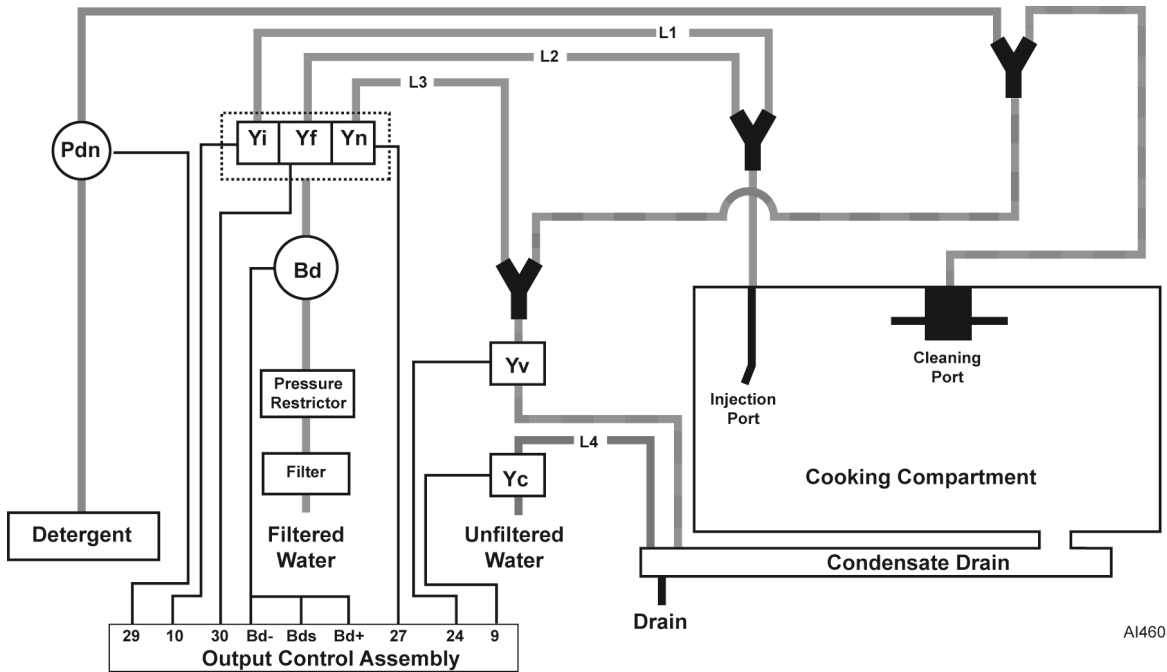
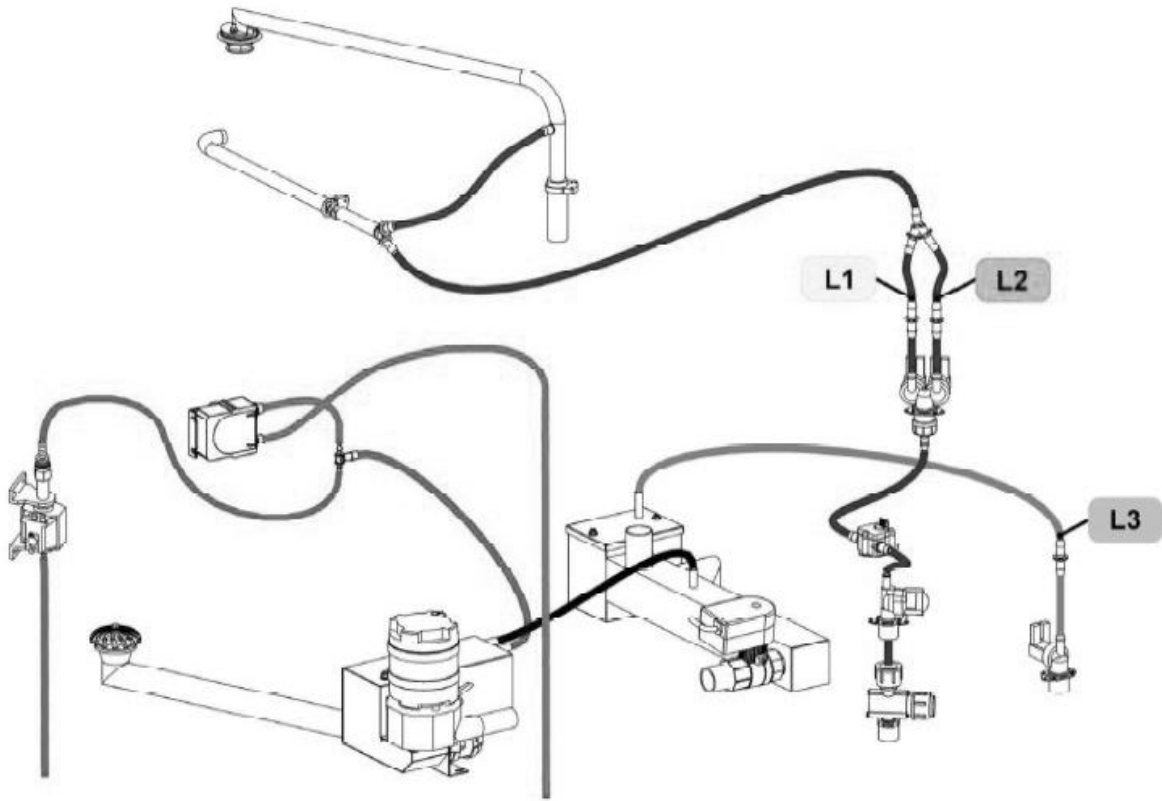


Fig. 83

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

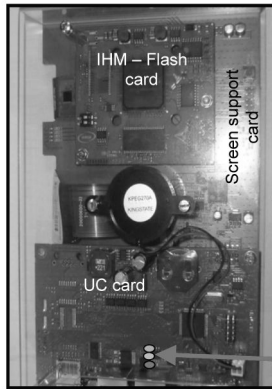
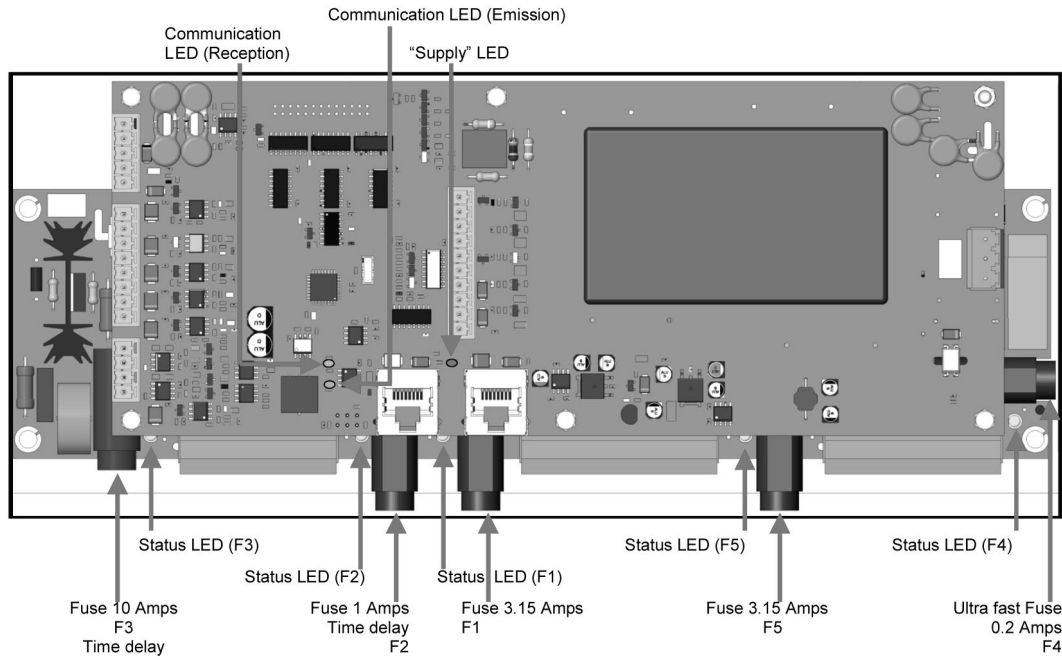


35088

6 AND 10 LEVEL OVENS

Flow Restrictors		6 Level 1/1 Electric	10 Level 1/1 Electric	10 Level 2/1 Electric
Injection	L1	0.25 l/min	0.5 l/min	0.8 l/min
Cooling	L2	1.2 l/min	1.2 l/min	1.2 l/min
Condenser	L3	1.2 l/min	1.2 l/min	1.2 l/min

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. 85

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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • Blower motor over-temperature sensor Fm1.

	<ul style="list-style-type: none"> • High-limit switch Fc. • Safety contactor Ks. • Heat Control contactor Kr. • Axial fans Mt1 and Mt2.
Fuse F6	4-amp fuse located in fuse block. Protects oven against input power disruptions.
Fuse F8	10-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, RC2)	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 554 °F, it opens and removes power to the heating elements. E68 Error code for high limit switch.
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: <ul style="list-style-type: none"> • Control board. • Relay board. <p>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.).</p>
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) ...	Drain solenoid. Supplies water to condensate drain when open (water flow).
Solenoid Valve (Yf) ...	Cooling solenoid. Part of 3-way valve. Supplies cooling water to cooking compartment injection port when open (water flow).
Solenoid Valve (Yi) ...	Injection solenoid. Part of 3-way valve. Supplies water to cooking compartment injection port for steam generation when open (water flow).
Solenoid Valve (Yn)	Cleaning solenoid. Part of 3-way valve. Supplies water to mix with detergent for cooking compartment cleaning when open (water flow).
Solenoid Valve (Yv) ...	Drain solenoid. 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.

COMPONENT LOCATIONS

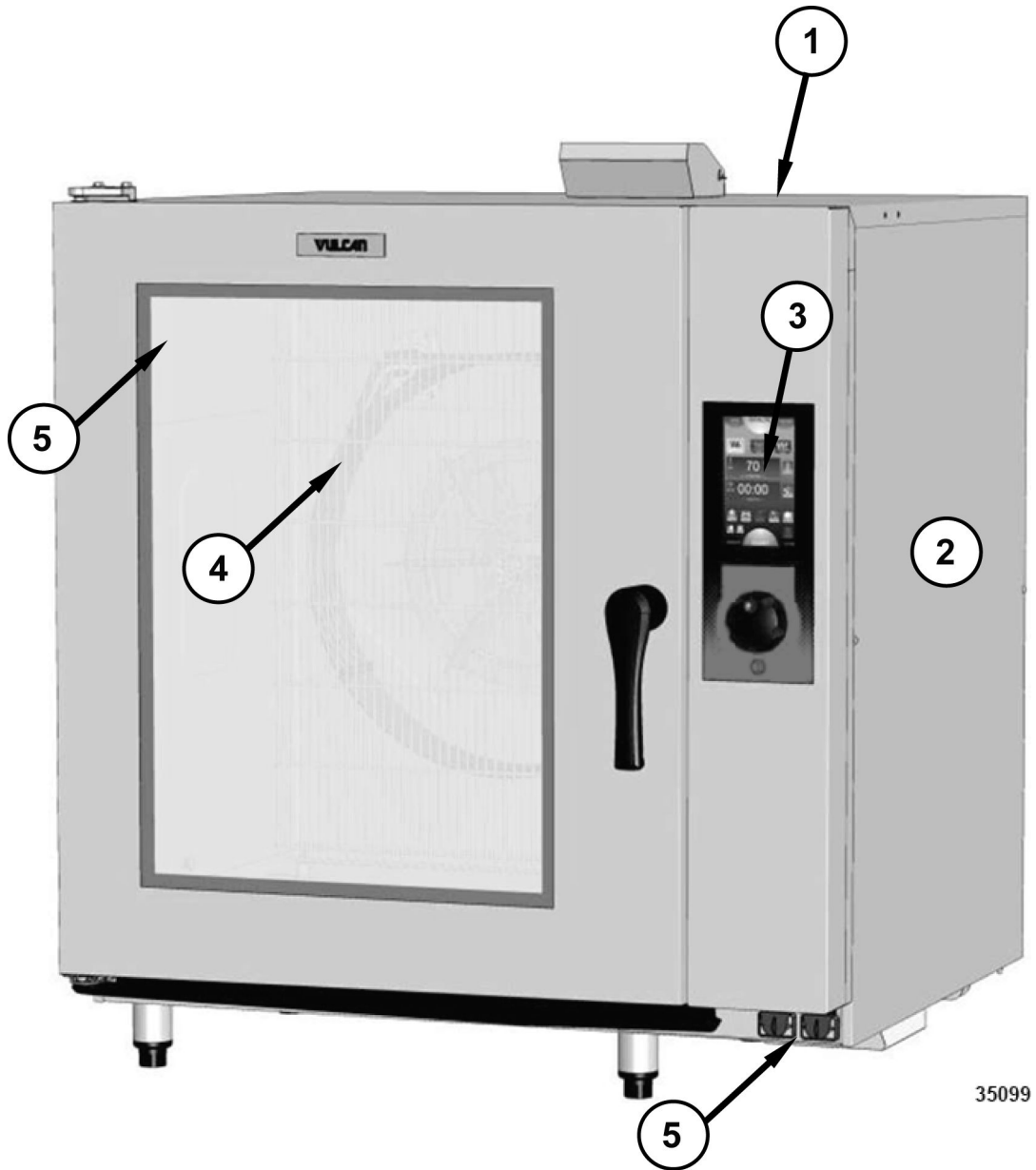


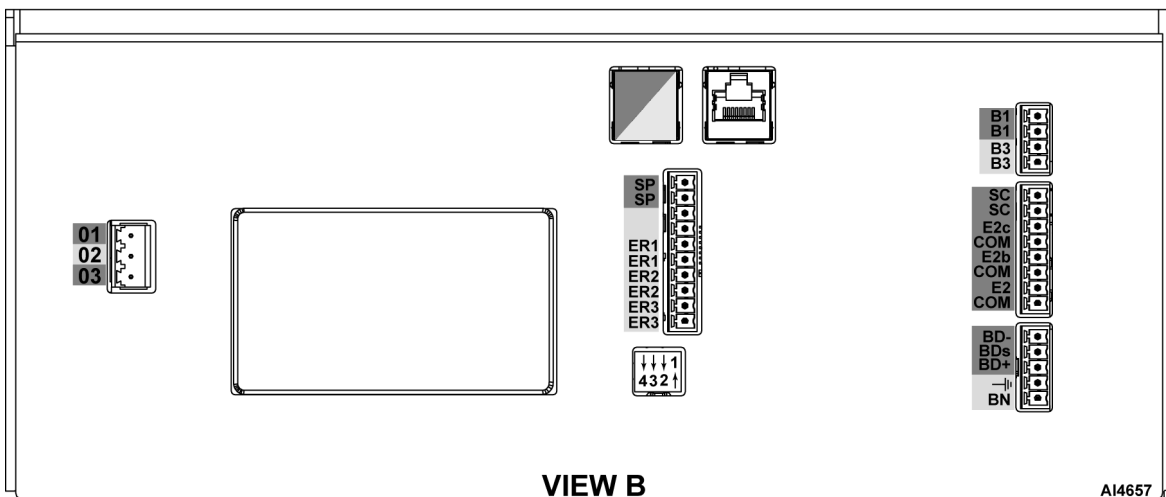
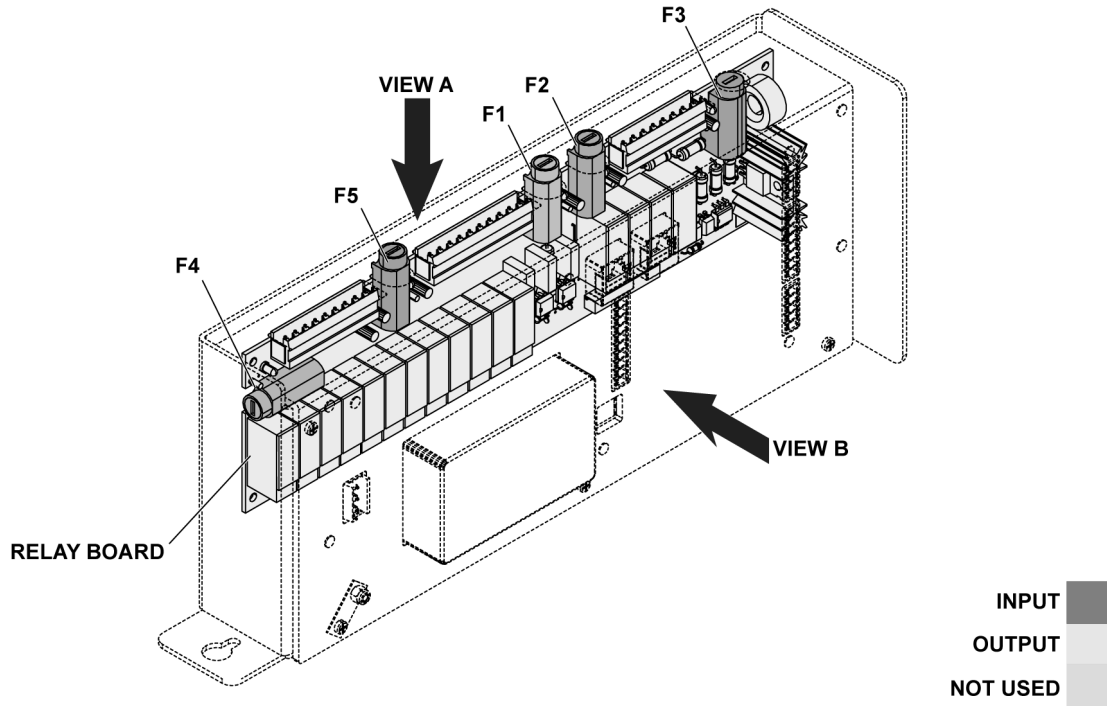
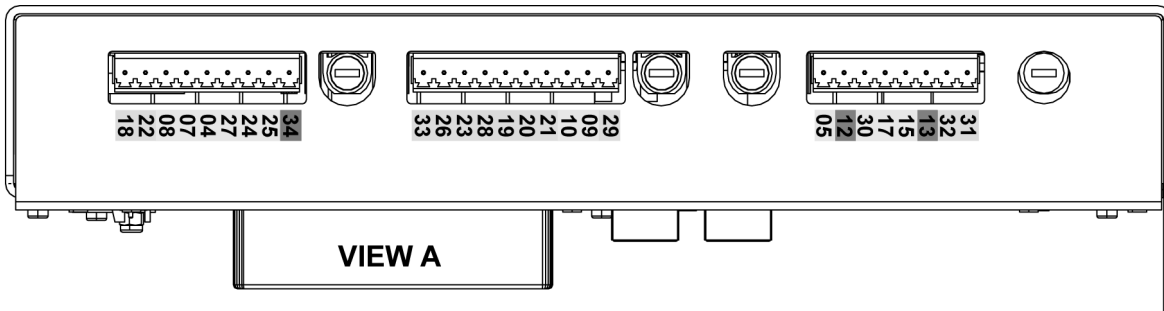
Fig. 86

Item	Components
1	Solenoid valve Motor

Item	Components
2	Flo Meter Solenoid Cleaning and Descaling Pump Temperature Probe Vent Valve Motor Contactors Boards
3	Control Board Coder
4 NOTE: Behind ventilation duct	Heating Elements Fan Motor Shaft Seal
5 NOTE: In the door.	LED Strip Closing Mechanism Internal Glass USB Product Probe

OUTPUT CONTROL ASSEMBLY

Refer to table (OUTPUT CONTROL ASSEMBLY) below and for output control assembly connection information.



VIEW B

AI4657

Fig. 87

Terminal	Associated Fuse	Input / Output	Function
1	NA	Input	AC line voltage (L2)
2	NA	N/A	N/A

Terminal	Associated Fuse	Input / Output	Function
3	NA	Input	AC line voltage (L1)
4	F5	Output	Axial / Cooling Fan
5	F2	Output	LED cavity lighting control
7	F5	Output	Axial / Cooling Fan
			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

SOFTWARE

SOFTWARE VERSION HISTORY

N°: CH003-SWPC Date: 2020-12

- Update V1.75, Improvement of the Windows 10 compatibility.
- Combi ovens produced after the 2016, 1st of September (P27524470I).
- This new version of FASTPAD PC improve the compatibility with Windows 10:
 - Recipes to be prepared on a PC.
 - Recipes to be exported from the PC to the appliance.
 - Recipes that are on the appliance to be backed up on PC - Recipes to be shared or distributed.
 - HACCP data to be viewed and backed up. Consumption data for each appliance to be tracked and backed up.
 - The control and personalization of the photo gallery displayed with the recipes.
 - The technical documentation for the appliance can be viewed and backed up.

Checking the Software Version

NOTE: The version of software can be seen in the "TOOLBOX" tab next to the serial number of the unit. Each card is identified by its assigned software number :

- Screen card sub-assembly.
- Power card.

NOTE: Insert USB in front on lower right side.



Fig. 88

NOTE: Check the following numbers according to their corresponding update file numbers :

- Standard update file labels :
- MAJ_FPV2_IHMwww_UCxxx_FLAYyy_RELzzz_GTvvv
- IHM Nr www
- UC Nr xxx
- Fla Nr yyy
- Rel Nr zzz

PROGRAMING

Setting the Software Language

1. Select "TOOL BOX" menu.
2. Select "Client parameters" screen.
3. Enter the password «CHEF» : Permanent password (lower or uppercase).
4. Validate "V".
 - When finished, if the code is correct access the menu in not re-enter the PIN number.
5. Modify programed language if necessary.
 - A. (En : English by default).
 - B. Select the zone of the value to be changed.
6. Adjust the value using the coder knob.



Fig. 89

Oven Settings

1. Select the "TOOL BOX" menu.
2. Select the "Technician parameters" screen.
3. Enter the password : «SAVB» - Validate "V": When finished, if the code is correct access the menu in not re-enter the PIN number.
4. Reconfigure the oven.
 - A. Select the zone of the value to be changed.
 - B. Adjust the value using the coder knob.



Fig. 90



Fig. 91

- Commercial Brand of the oven.
- Model: Number of levels and size.

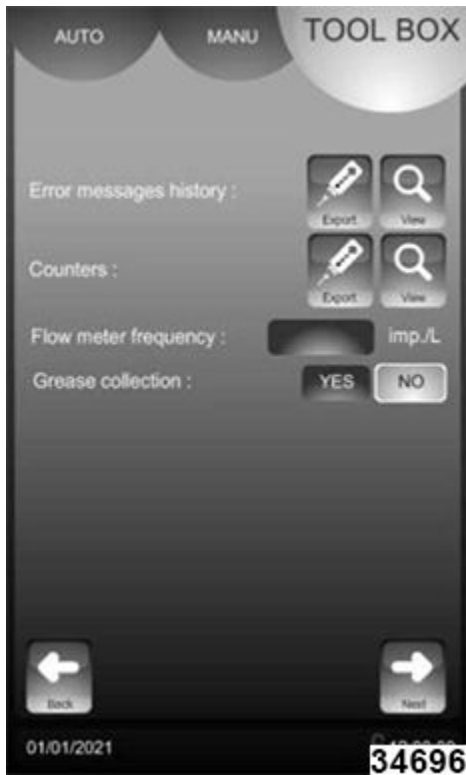


Fig. 92

- Export historic error messages to USB stick (Excel compatible format).
- Export historic counter data to USB stick (Excel compatible format).
- Flowmeter frequency equal to 4100 Imp/L.



Fig. 93

Error Message History

- Displays the list of error messages in the order they appeared.
- Communication signal quality screen card/ power card.
- For a QOS <80% see error E46.
- Pressing «Return» takes you back to the previous screen.

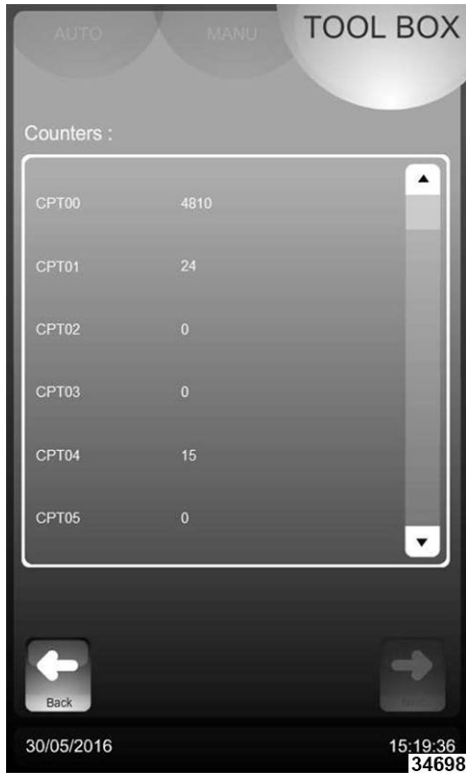


Fig. 94

- CPT00 Total hours of operation.
- CPT01 Hours in convection mode.
- CPT02 Hours in steam mode.
- CPT03 Hours in combination mode.
- CPT04 Number of door openings.
- CPT05 Number of gas safety activations (when error E67 appeared).
- CPT06 Time that the electronics have operated at over 70°C in hours.
- CPT07 Time output S21 has operated in hours.
- CPT08 Time output S10 has operated in hours.
- CPT09 Timeout S30.

1. Select the "TOOL BOX" menu.
2. Select the "Client parameters" screen.
3. Enter the password «CHEF»: Permanent password (lower or uppercase).
4. Validate "V": When finished, if the code is correct access the menu in not re-enter the PIN number.

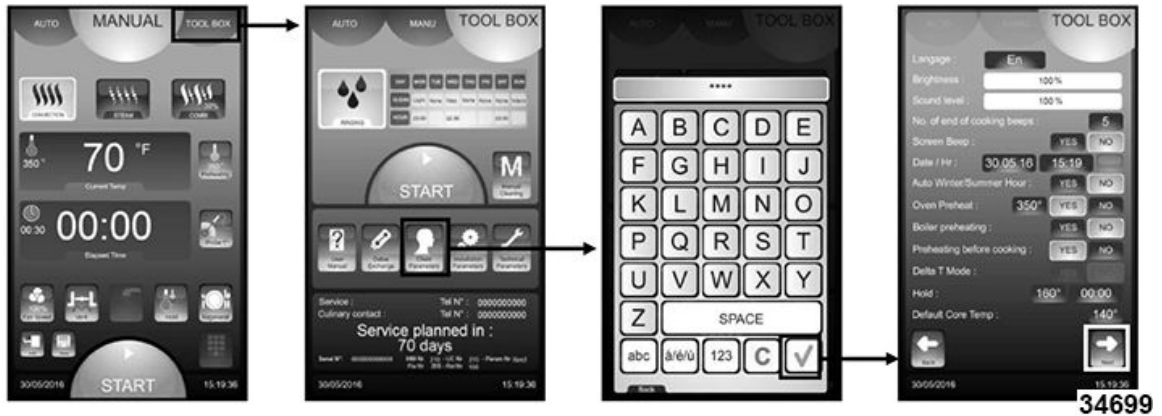


Fig. 95

5. To modify or enter the value for the capacity of the water treatment system (in liters).
6. Set to zero by default (if the oven does not have a dedicated water treatment system).
 - A. Select the zone to be changed.
 - B. Adjust with the coder knob.

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

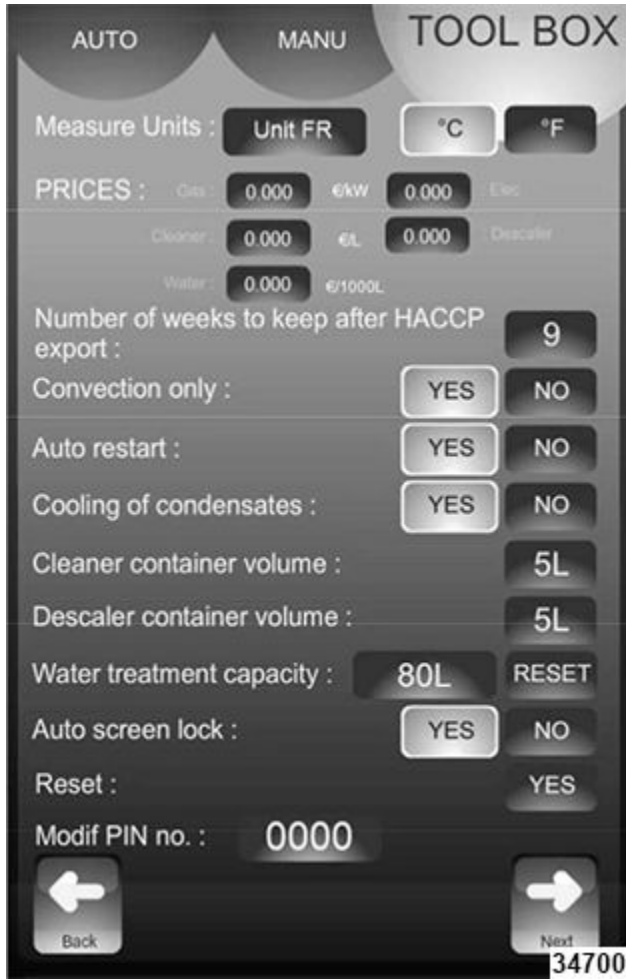


Fig. 96

- The water treatment system's capacity in liters.
- Reset.
- By default, set to zero (if there is dedicated treated water supply to the oven).

NOTICE

If water treatment capacity meter is equal to or less than 0, you will find in the error codes, error i8.

Screen Card Settings

NOTE: Screens are common to several models. Once a screen has been programmed to control an oven it cannot be fitted to any other type of equipment. If necessary it must be returned to the factory for re-initialisation.

Required for configuration:

- Blank USB stick.
- Max capacity = 32 Gb Formatted for FAT32 (Default unit allocation size = 4096 bytes) or formatted for FAT (Default size = 32 Kb).
- Minimum of 5 Mb of free space is required.

Configuration

1. Insert USB stick.
2. Turn oven on.
3. Select language on installation screens (French or English).
4. Select type of device and OK.

NOTE: If device doesn't match or is not found, turn power off and check the position of micro switches.

5. Wait for configuration phases to auto run.
6. Remove USB stick.
7. Follow instructions to configure interface.

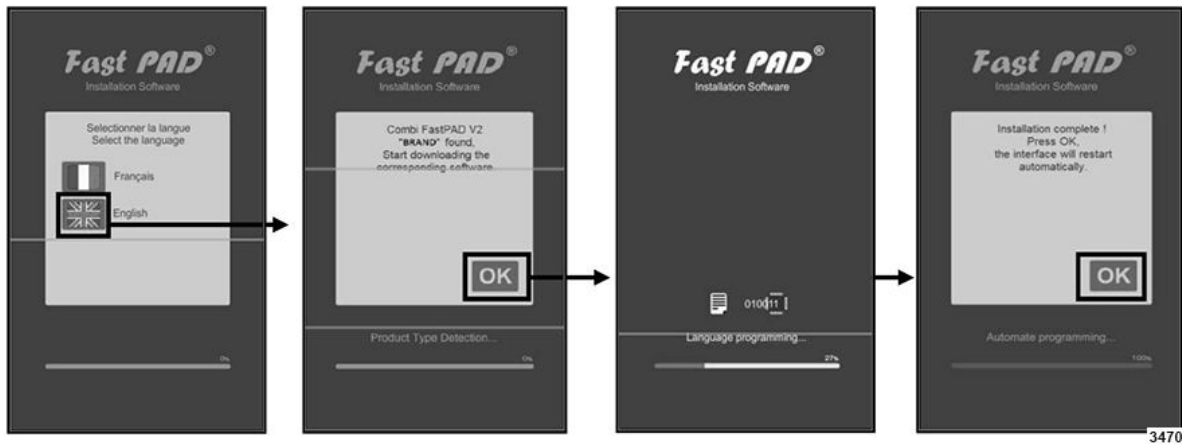


Fig. 97

SOFTWARE UPDATE PROCEDURE

NOTE: New units may require software Updates during start-up or installation.

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.

Software Version (Example shown, software updates frequently.)

IHM Nr 229	UC Nr 224 - Param Nr Abs
Fla Nr 221	Rel Nr 114 - Gaz Nr 106

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 > Combi Ovens > Minijet Combi Oven.

NOTE: Alternate Software Location: <https://itwfeg.webdamdb.com/bp/#/assets>

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

2. Safely eject USB flash drive from PC.
3. Verify oven is plugged in.
4. Open door.

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

5. Disconnect gas control card RJ45 cable.
6. Press encoder dial (black knob) to turn oven on. After screen loads, press pause on touch screen to bypass preheat.
7. Select Tool Box on screen display.



Fig. 98

8. Insert flash drive lower front of oven.



Fig. 99

9. Select YES on update message (Fig. 100) displayed on screen.



Fig. 100

NOTE: Wait approximately 7-10 minutes for software to update. In some cases software may require multiple updates to complete the update sequence. **VERIFY** all yellow numbers match the current code before assuming software has been updated completely.

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.
12. Enter SAVBcheck mark to enter the toolbox mode.

13. Select Client Parameters on screen.



Fig. 101

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



Fig. 102

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



Fig. 103

16. Select Technical Parameters.



Fig. 104

Example shown, software updates frequently.

IHM Nr 218

UC Nr 218

FLA Nr 212

REL Nr 109

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



Fig. 105

18. Verify Settings is lit on Tool Box screen.

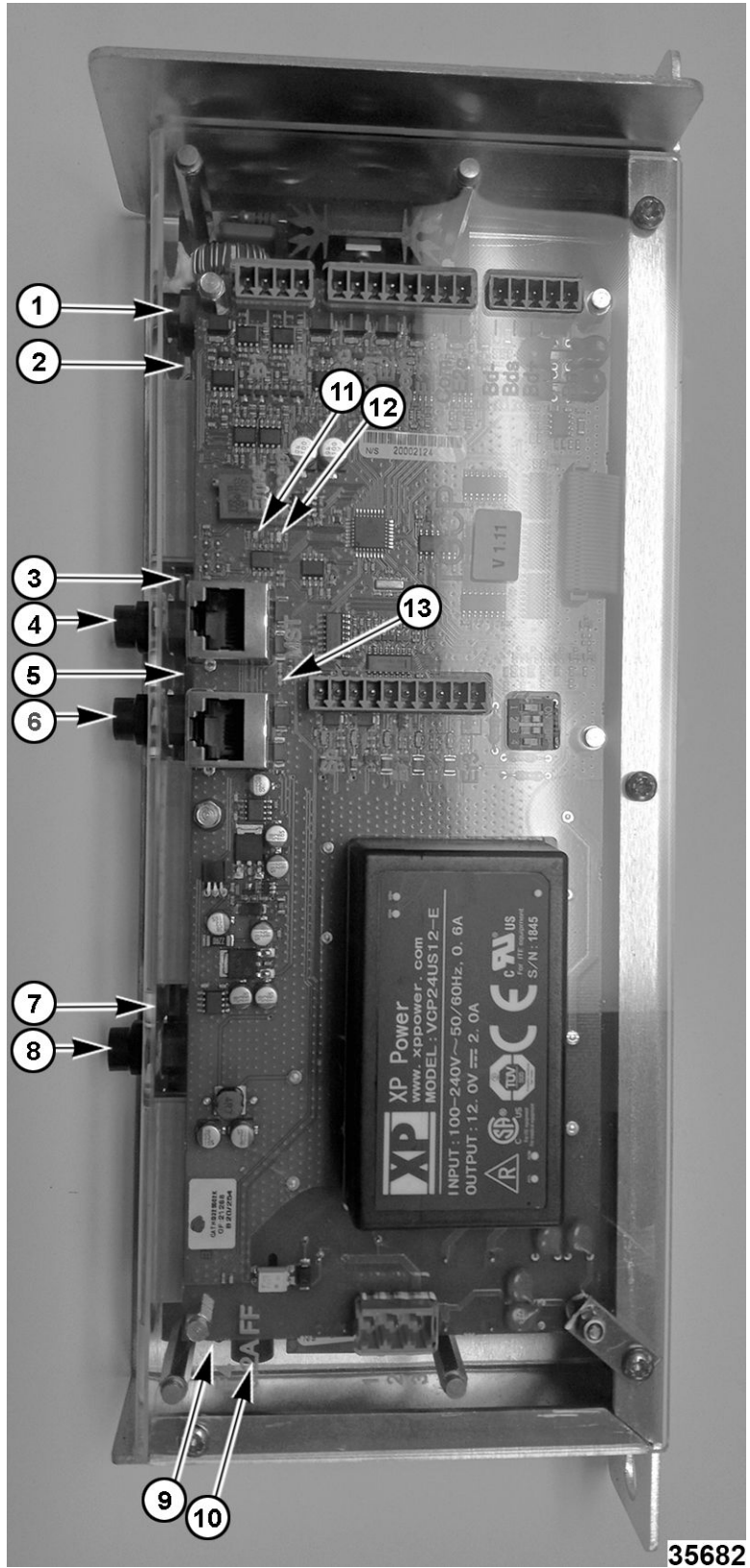


Fig. 106

19. Verify model being serviced is showing on Manual screen.

NOTE: Software has been loaded successfully.

BOARDS



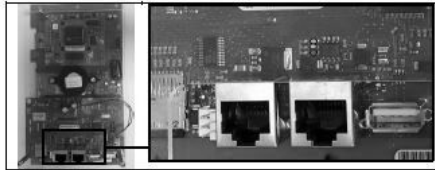
POWER SUPPLY BOARD

Item	Description
1	Fuse 10 Amp, F3, Time delay
2	Status LED, F3
3	Status LED, F2
4	Fuse 1 Amps, Time Delay, F2
5	Status LED, F1
6	Fuse 3.15 Amps, F1
7	Status LED, F5
8	Fuse 3.15 Amps, F5
9	Status LED, F4
10	Ultra Fast Fuse 2 Amps, F4
11	Communication LED, Reception
12	Communication LED, Emission
13	Supply, LED

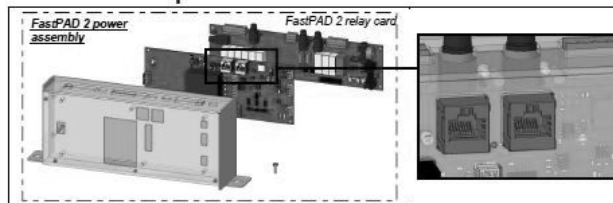


A flashing LED is considered active as is a steady one.

Diagnostic of electronic faults:



FastPAD 2 screen card	Ensemble puissance FastPAD 2	Diagnostic	Actions
		- FastPad 2 Power assembly OK - FastPad screen OK	- Fonctioning normally
		- Supply fault	- Check the voltage between terminals 1 and 3 on the relay card
		- Problem communicating with the FastPAD screen	- Replace the FastPAD screen card and or the interconnecting cable
		- FastPad 2 UC power card defective	- Replace FastPAD 2 power assembly
		- Screen non function	- Replace the FastPAD screen
		- Interconnecting Cable between the screen and power assembly faulty	- Replace the interconnecting cable



35681

Fig. 108

DISPLAY SCREEN CONTROLS AND INFORMATION

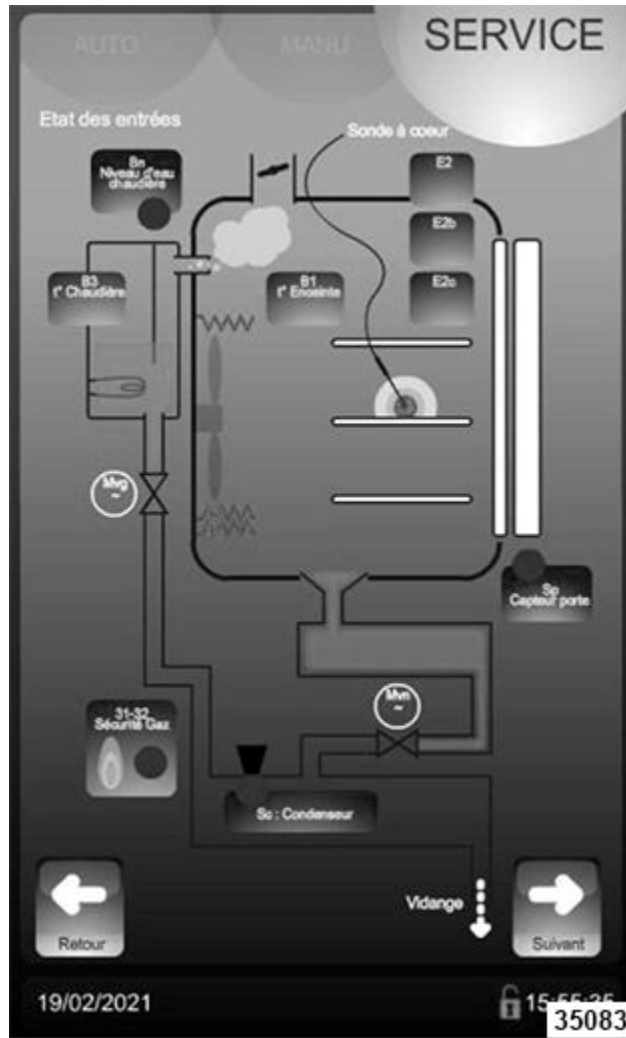
ACCESS MAINTENANCE SCREENS

Verify 2 electronic cards are functioning with client information and error messages displayed, activate diagnostic assistance module which consists of 3 screens. This will allow you to control the input and output appliances and peripherals feeding the cards:

- Screen 1 gives control of temperature, door, water level.
 - Screen 2 gives control of outputs to ventilation, heating, lighting, safety contactor, the vent outlet.
 - Screen 3 gives control of hydraulics outputs, solenoids, wash pump and wash tank.
1. Go to "TOOL BOX" screen.
 2. Select "Technical Parameters".
 3. Enter password "SAVB" password.
 4. Validate "V": If code is correct the menu can be accessed. If not return to inputting the PIN.
 5. Press "Next". Scroll through the different screens using "Next" button.

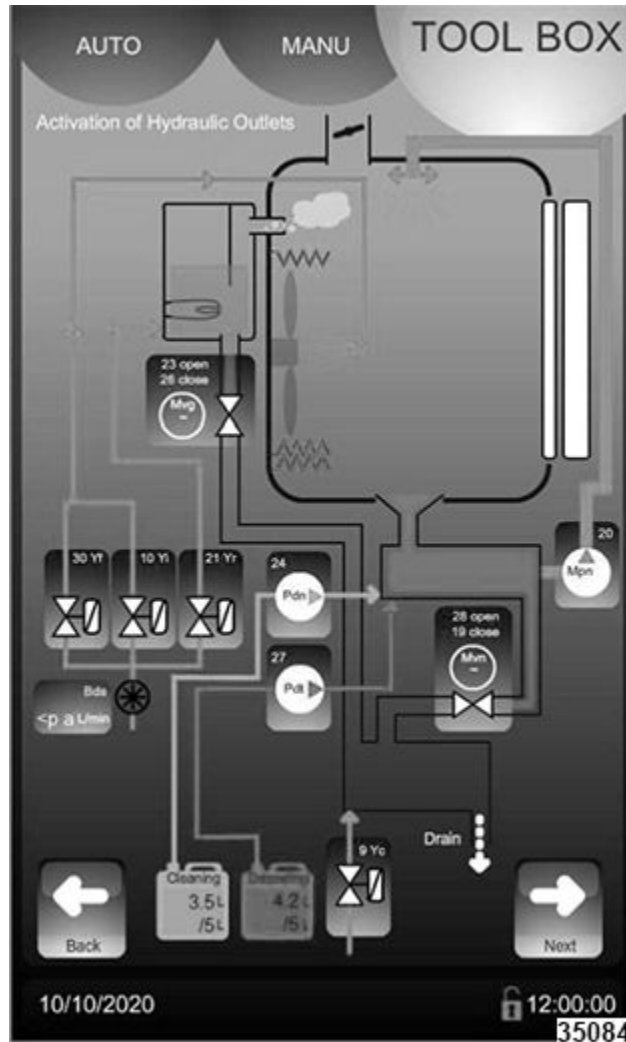


Fig. 109



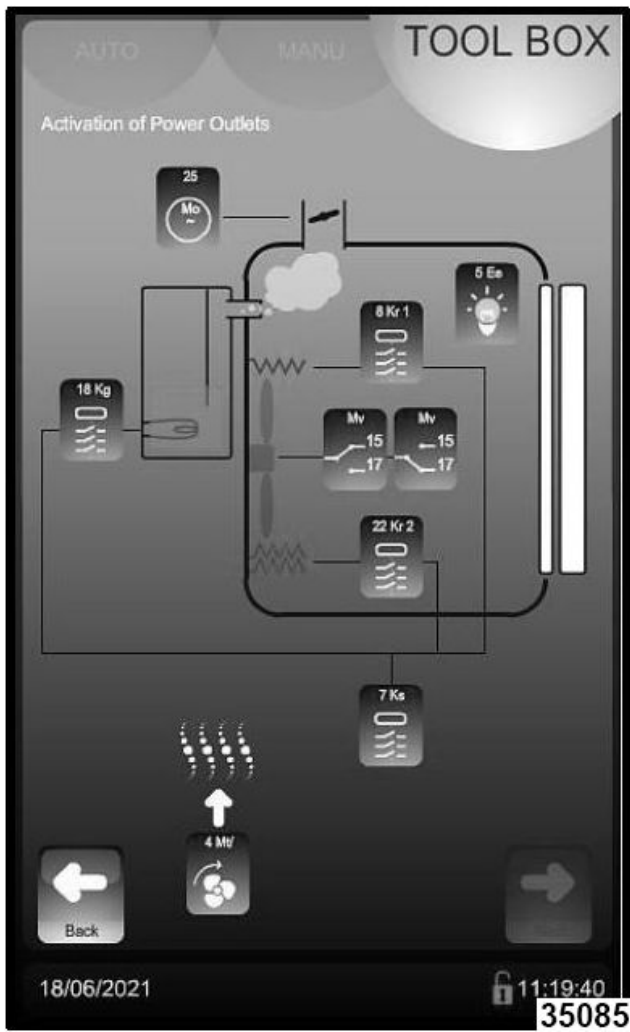
ENTRY SCREEN

Entries	Normal State
B1 E2-E2b-E2c Sp	Cavity Temperature Core Probe Temperature 0 = Door Open 1 = Door Closed
31-31	0 = Normal Operation 1 = Gas Safety Activated



HYDRAULIC OUTPUT ACTIVATION SCREEN

Touch	Power Card Output No.	Components	Function	Valves Open Flow
Pdn	24	Detergent Pump	one press = 0.5s of operation	Active
Pdt	27	Descaling Pump	one press = 0.5s of operation	L3 Flow @ 169 Oz / Min.
Yf	30	Cooling Solenoid	one press = 1 min. of operation	L2 flow @ 17 Oz / Min.
Yi	10	Water Injection	one press = 1 min. of operation	L1 Flow @ 8.5 Oz / Min.
Bds	Bds	Solenoid Flow Meter	Indicates actual flow rate	NA
Yc	9	Condenser Solenoid	one press = 1 min. of operation	L4 Flow @ 27 Oz / Min.
Mvn	19-28	Drain Valve	One press = open and close cycle	Gravity Flow
Mpn	20	Wash Pump	one press = 0.5s of operation	Active



ELECTRIC OUTPUT ACTIVATION SCREEN

Touch	Power Card Output No.	Components	Function
Mo	25	Vent Motor	one press = start /
Ee	5	Lighting	one press = stop
Kr1	8	Contactor	one press = 0.5s of operation
Kr2	22	Fan	one press = 0.5s clockwise
Mv	15	Fan	one press = 0.5s anti clockwise
Mv	17	Safety Contactor +	one press = 0.5s of operation
Ks	7	Technical Ventilation 2	one press = start /
Mt	4	Technical Ventilation	one press = stop

AUTO SCREEN CONTROLS AND INFORMATION

The **AUTO** screen (Fig. 113) 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. 113

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

MANUAL SCREEN CONTROLS AND INFORMATION

The **MANUAL** screen (Fig. 114) 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. 114

TOOL BOX SCREEN CONTROLS AND INFORMATION

The **TOOL BOX** screen (Fig. 115) provides access to additional screens used to configure the oven as well as user documentation.



Fig. 115

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 for additional information.
- Access to the Data Exchange screen. See for additional information.
- Access to the Client Parameters screens. See for additional information.
- Access to Installation Parameters screen. See 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. 116) icon.



Fig. 116

- B. If **Rinsing** (2, Fig. 116) 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. 117).
- D. Select √ (5, Fig. 117) icon.



Fig. 117

2. Once the password is entered, the **Auto Cleaning** screen Fig. 118 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)

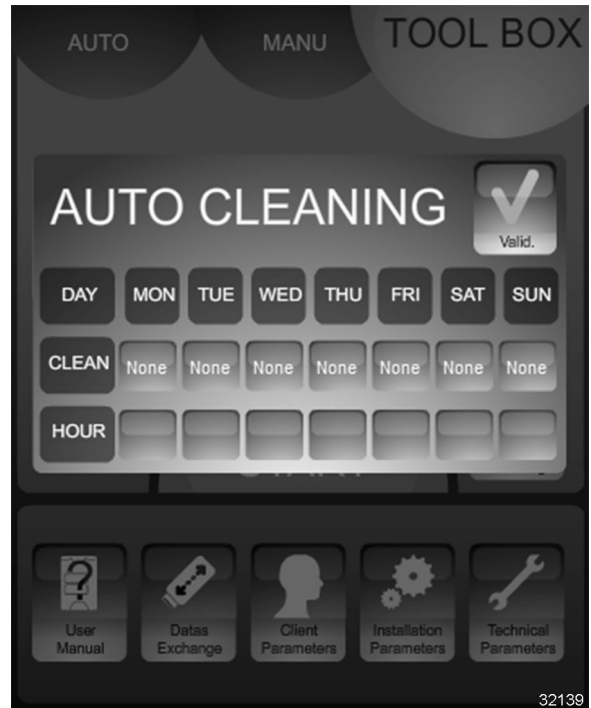


Fig. 118

4. If the schedule is valid (able to be performed based on operating schedule) the **Valid** icon turns ON.
5. Press the valid **CHECK MARK** to save the auto cleaning schedule.
6. The display returns to the primary **TOOL BOX** screen.
7. Auto clean will operate when the display is in **AUTO** or **TOOL BOX**.

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. 119) icon.



Fig. 119

- B. If **Rinsing** icon (2, Fig. 119) 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. 120).
- D. Select √ (5, Fig. 120) icon.



Fig. 120

2. Select the desired cleaning action / time (Fig. 121).
 - 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.

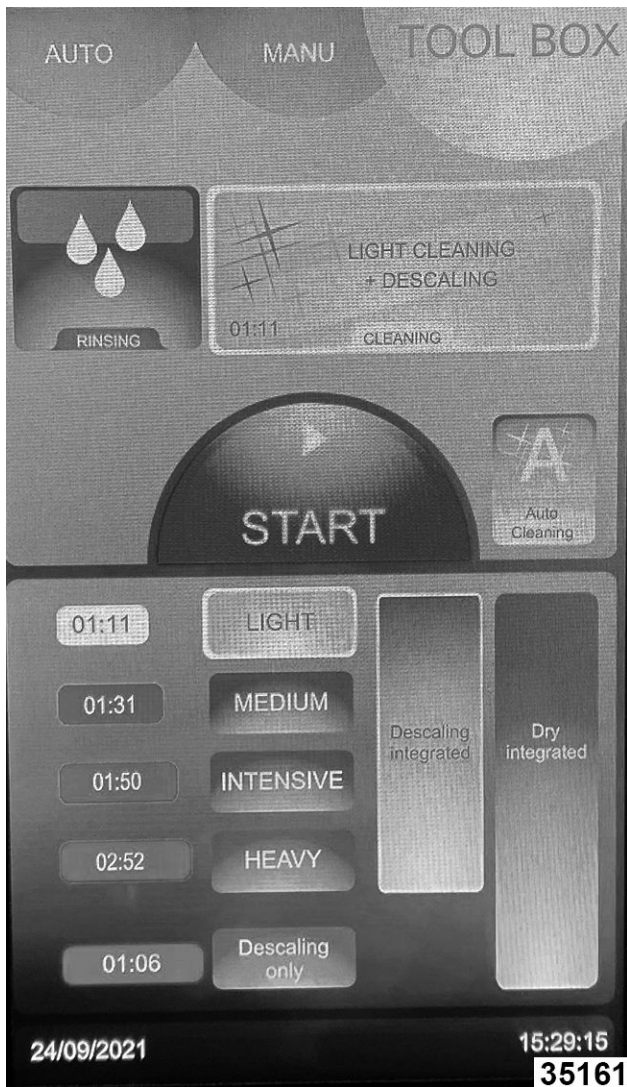


Fig. 121

USER MANUAL INFORMATION

The **User Manual** screen (Fig. 122) provides access to embedded videos and Frequently Asked Questions (FAQ).

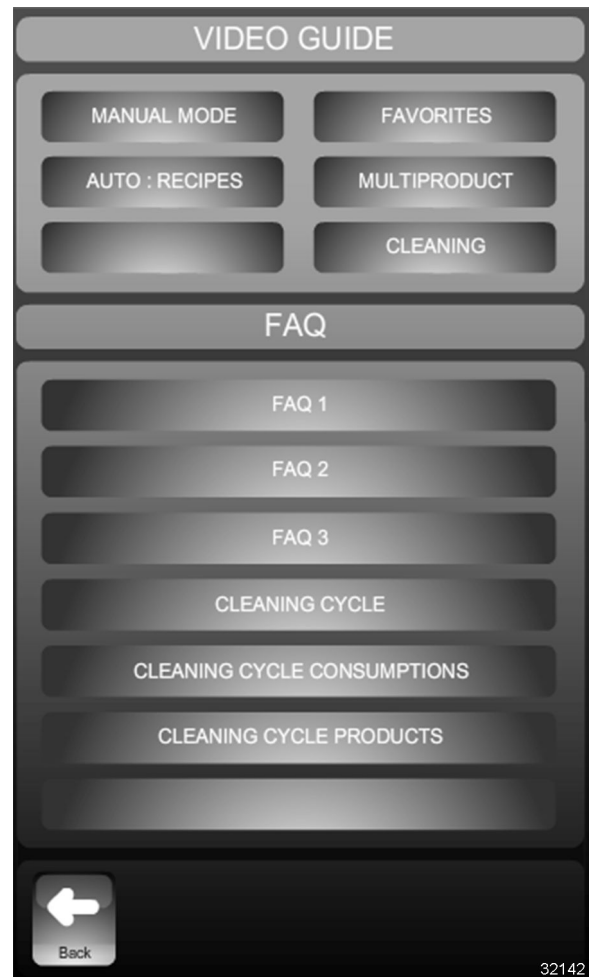


Fig. 122

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. 123) icon.



Fig. 123

- B. Select **Data Exchange** (2, Fig. 123) icon.
- C. Enter password (**CHEF** □) (1-4, Fig. 124).



Fig. 124

- D. Select ✓ (5, Fig. 124) icon.
2. Configure, upload, export, and view data exchange information (Fig. 125) by selecting the appropriate icon.



Fig. 125

- 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. 126) icon.



Fig. 126

- B. Select **Client Parameters** (2, Fig. 126) icon.
- C. Enter password (**CHEF** □) (1-4, Fig. 127).



Fig. 127

- D. Select ✓ (5, Fig. 127) icon.
- 2. Set / change screen 1 client parameters (Fig. 128) 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

- 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. 128

3. Select **Next** icon to show client parameters screen 2.
4. Set / change screen 2 client parameters (Fig. 129) 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



Fig. 129

5. Select **Next** icon to show client parameters screen 3.
6. Set / change screen 3 client parameters (Fig. 130) 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)
1. 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. 130

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. 131) icon.



Fig. 131

- B. Select **Installation Parameters** (2, Fig. 131) icon.
- C. Enter password (**INSB**) (1-4, Fig. 132).



Fig. 132

- D. Select \checkmark (5, Fig. 132) icon.
2. Set / change installation parameters (Fig. 133) 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).

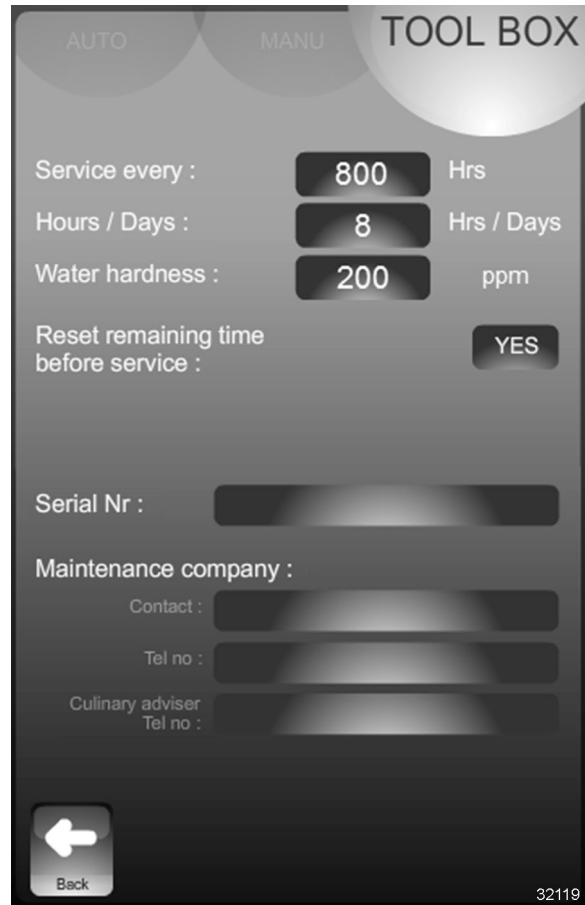


Fig. 133

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. 134) icon.



Fig. 134

- B. Select **Technical Parameters** (2, Fig. 134) icon.
- C. Enter password (**SAVB**) (1-4, Fig. 135).



Fig. 135

- D. Select \checkmark (5, Fig. 135) icon.
2. Select the appropriate icon to set / change technical parameters (Fig. 136):
 - Brand.
 - Model.
 - Stacked.
 - Energy.
 - Hz.
 - Steam.
 - Cleaning.
 - Default Display.
 - Core Probe.



Fig. 136

3. Select **Update** icon to load parameters.
4. Select **Next** icon to activate **Error History / Counters** screen (Fig. 137).

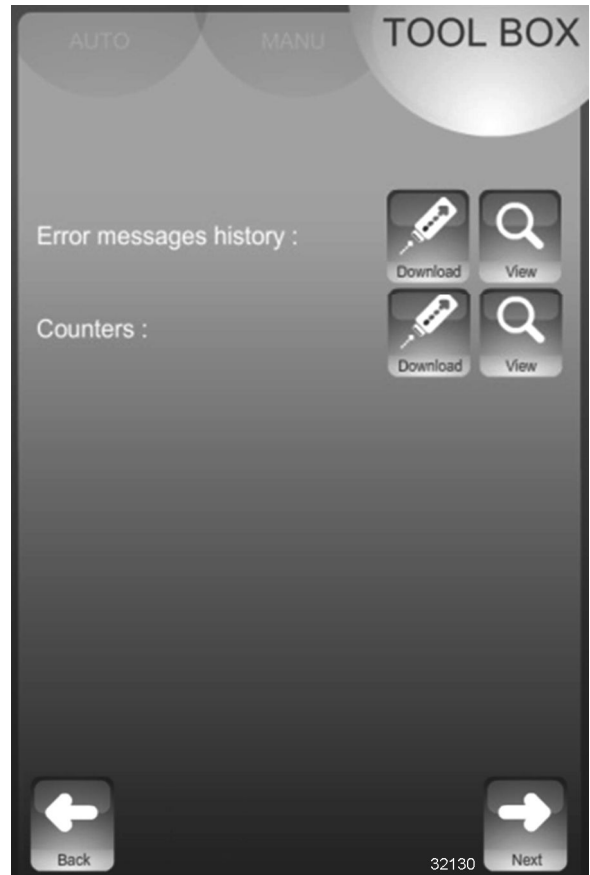


Fig. 137

5. Select **Next** icon to show **State of Inlets** screen (Fig. 138).

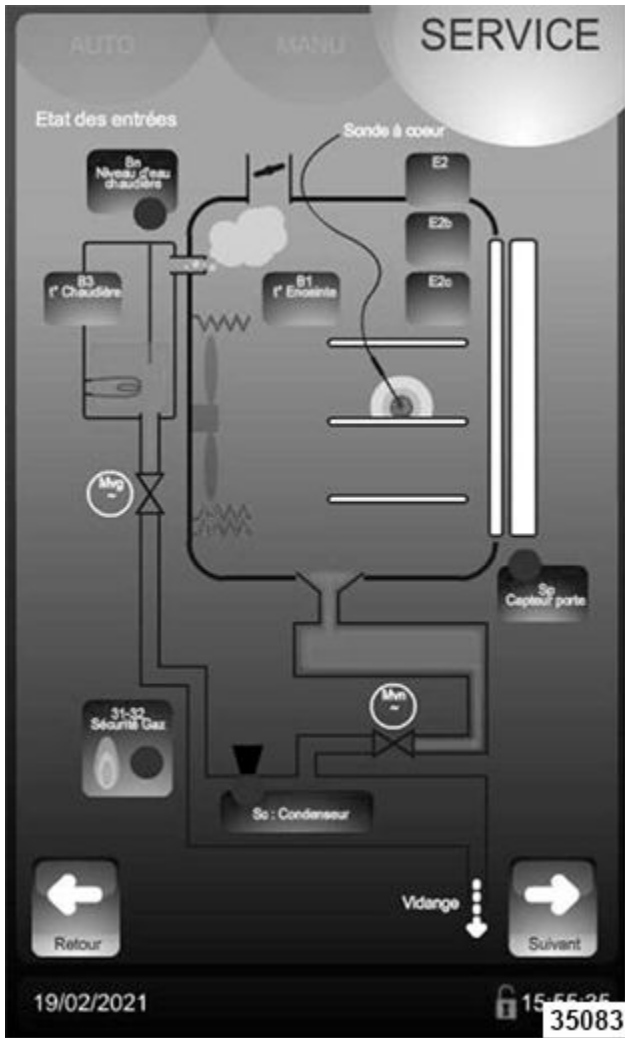


Fig. 138

6. Select **Next** icon to show **Activation of Hydraulic Outputs** screen (Fig. 139).

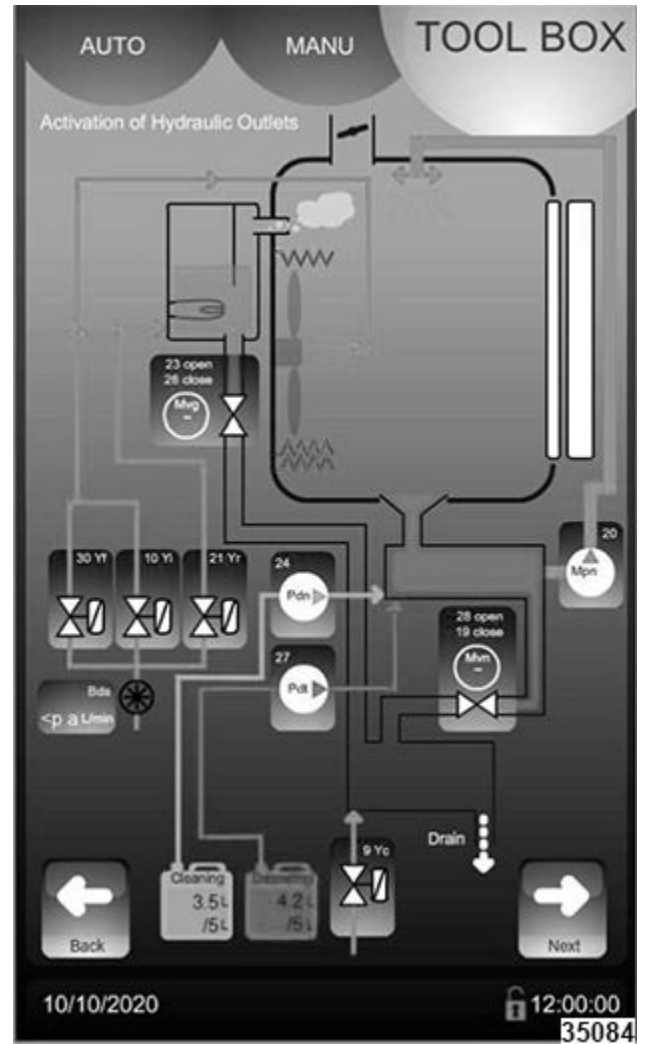
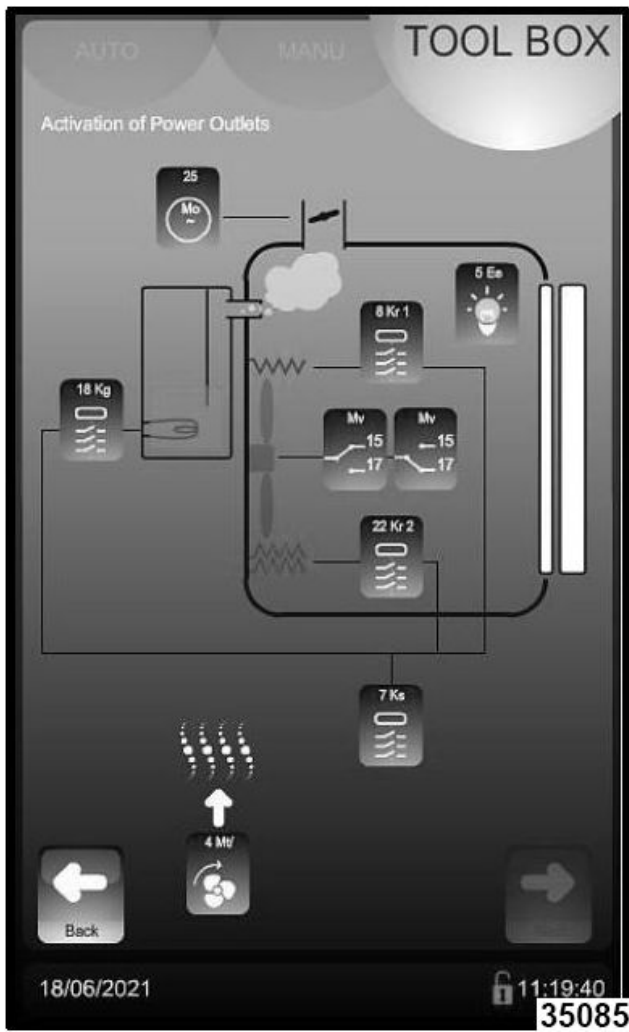


Fig. 139

7. Select **Next** icon to show **Activation of Power Outputs** screen (Fig. 140).



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

Fig. 140

WATER TREATMENT COUNTER

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

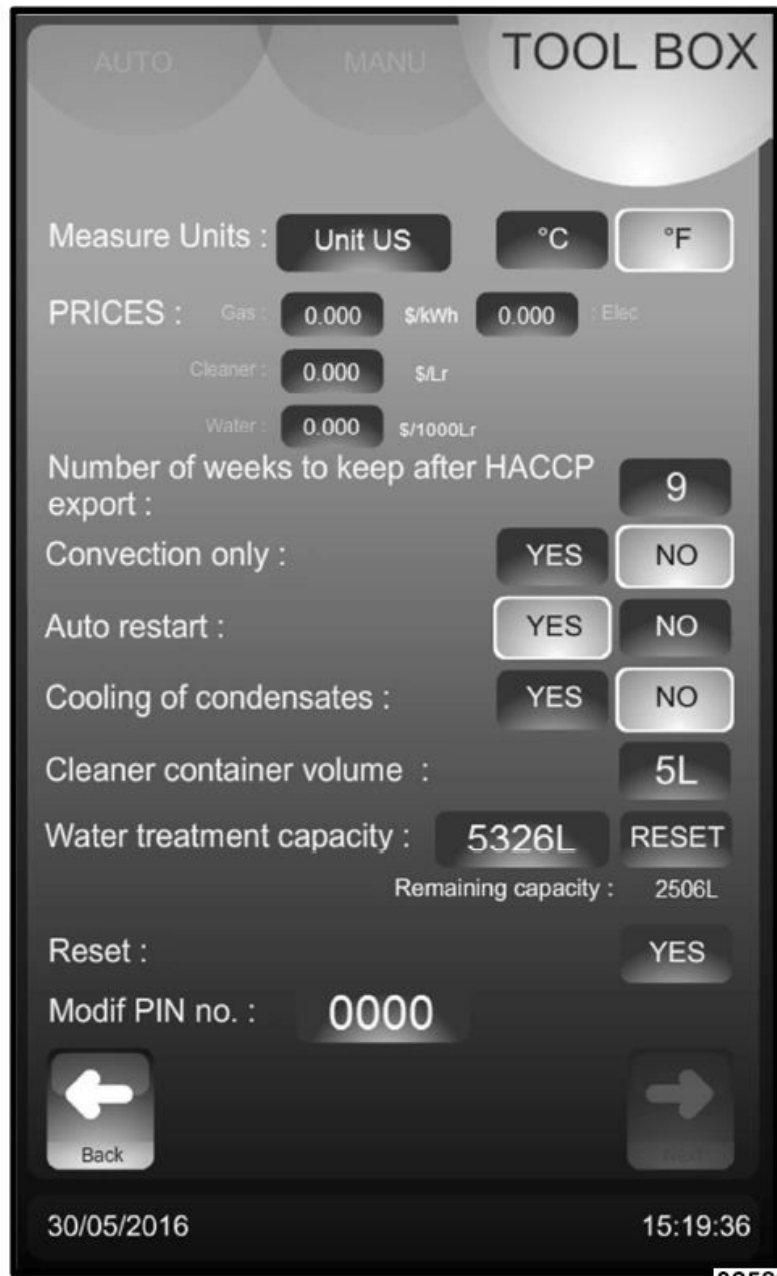
1. Open service tab.
2. Select the Client parameters button.
3. Enter "CHEF" PIN code « permanent » (lower or uppercase).
4. Validate "V": When entered if code is correct, access the menu, if not, re-enter PIN code.



Fig. 141

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 ».



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Fig. 142

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.

Full Size PDF Chart

• [TCM Troubleshooting Chart](#)

RAPID GUIDE FOR ELECTRONIC BREAKDOWNS

Combi ovens



Before using this guide the breakdown diagnostic should be done to determine that the problem is not electromechanical but is the result of a failure of an electronic module. This guide defines which modules should be replaced, depending on the fault, to limit After Sales costs.

4 electronic modules to cover After Sales requirements				
In 80% of power assembly faults changing the relay terminal board is sufficient	In only 20% of cases it is necessary to change the complete power assembly, twice as expensive as the relay board alone.	8 times out of 10 software errors can be resolved with a USB stick	In only 20% of interface fault cases is it necessary to change the complete interface assembly, twice as expensive as the screen alone.	In 80% of interface equipment faults changing the screen is sufficient
Relay terminal board FastPad 2 maxi - Code 309663	Power module FastPad 2 maxi - Code 309635	Use an empty USB2 stick, formatted for FAT 32 Max. capacity 32 Gb	Interface assembly FastPad 2 - Code 309634	FastPad 2 screen - Code 309646

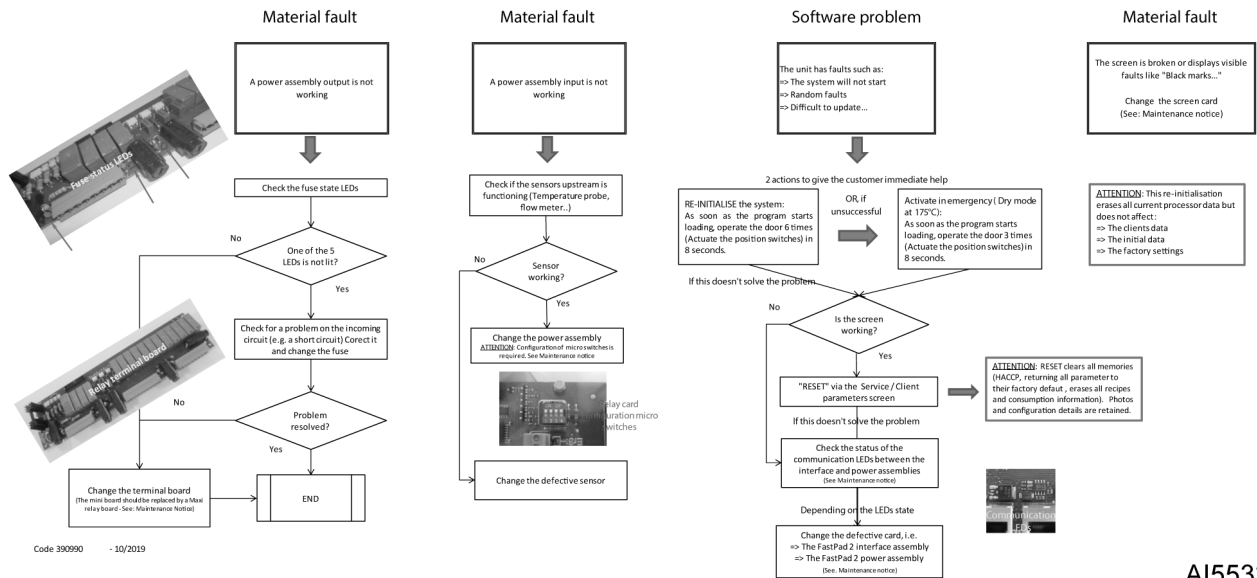
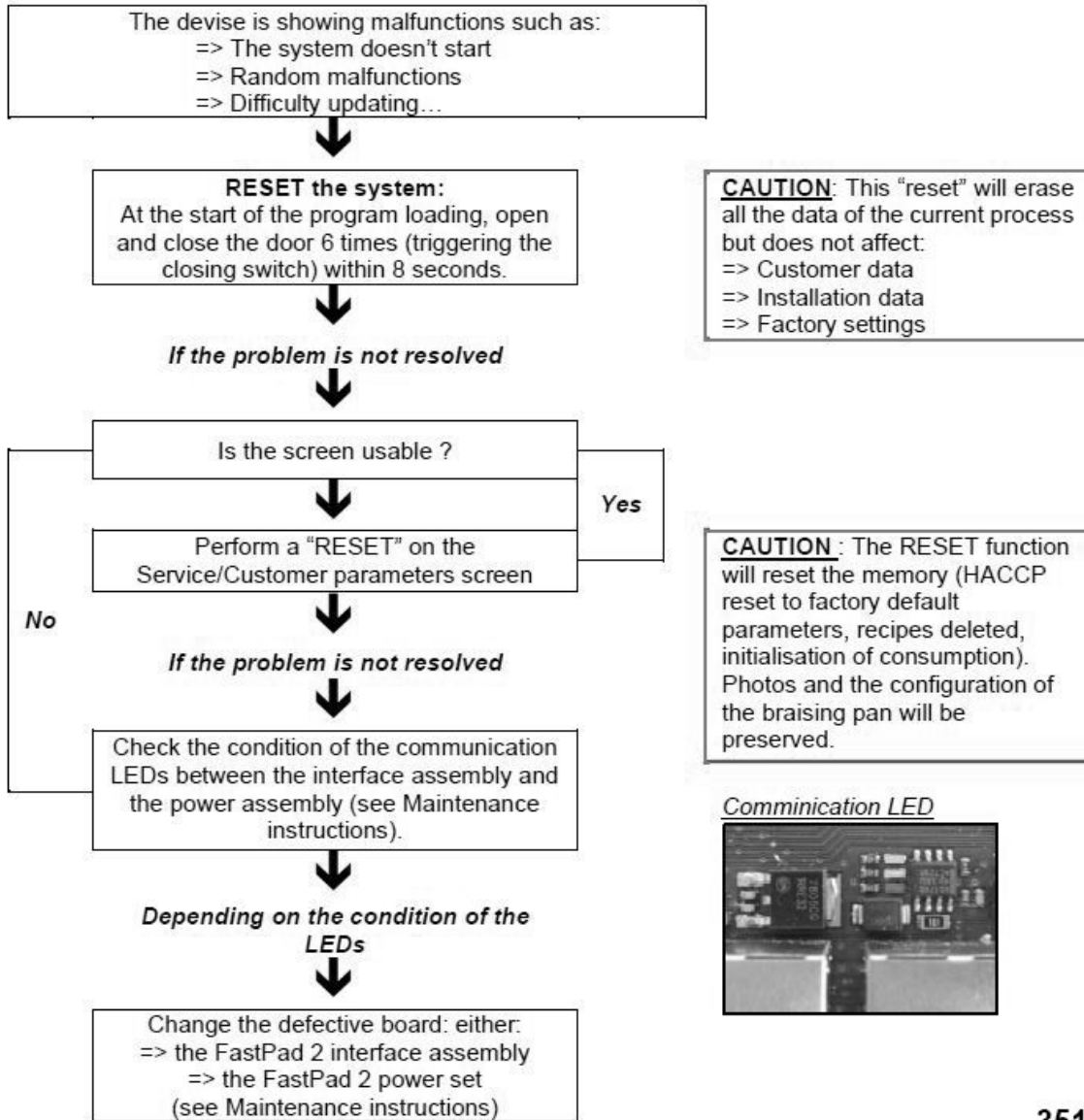


Fig. 143

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SOFTWARE PROBLEM OR SOFTWARE UPDATE FAILURE

CONNECTIVITY PROBLEM : DATA ON SMARTCONNECT365.COM ABSENT

NOTE: The client is no longer receiving data from smartconnect356.com. Check the technician's "ITW COOKING APP" for possible causes in "Connection states". Software downloadable from Hobart Service Resource Center.

1. Connection to the client's network "Disconnected".
 - If Gateway is connected via WiFi, verify signal strength is good.

NOTE: Intensity received by the module should be between -30dBm and -67dBm, Below this level [-70dBm and under], WiFi connection is not reliable.

- If Gateway is connected via ethernet, Verify there are no interruptions on wire link between oven and client's "box".
2. Cloud connection "Disconnected".
 - Issue lies between the customer's "box" and the internet. Refer to customer's network administrator.
 3. Connection to equipment "Disconnected".
 - Verify "orange" and "green" communication LEDs are flashing.
 - Verify cable connecting module to appliance is fully inserted.
 - Switch oven off and on again at power supply.

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.

- The **State of Inlets** screen (Fig. 145) provides the following indications:
 - B1** - Cavity temperature (monitored by output control assembly input B1).
 - E2 / E2b / E2c** - Core probe(s) temperature (monitored by output control assembly input E2, E2b, E2c).
 - SP** - Door position (monitored by output control assembly input SP).

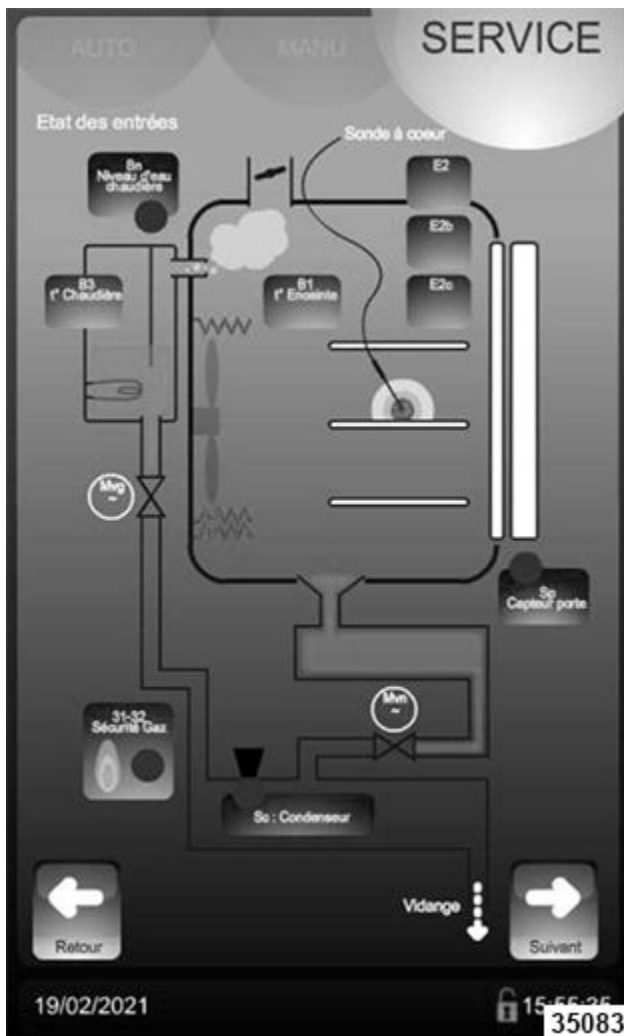


Fig. 145

- The **Activation Hydraulic Outlets** screen (Fig. 146) provides the following indications / controls:
 - Touch **Yn** to open cleaning valve for 0.5 second. Monitor flow via Bds reading.

- BDS** - Flow meter (monitored by output control assembly input BDS).
- Yn** - Cleaning valve (controlled by output control assembly relay board output 27).
- Yf** - Cooling valve (controlled by output control assembly relay board output 30).
- Yi** - Injection valve (controlled by output control assembly relay board output 10).
- Yv** - Detergent valve (controlled by output control assembly relay board output 24).
- Yc** - Condensate cooling valve (controlled by output control assembly relay board output 9).
- Pdn** - Detergent pump (controlled by output control assembly relay board output 29).

NOTE: Door should be closed during all tests.

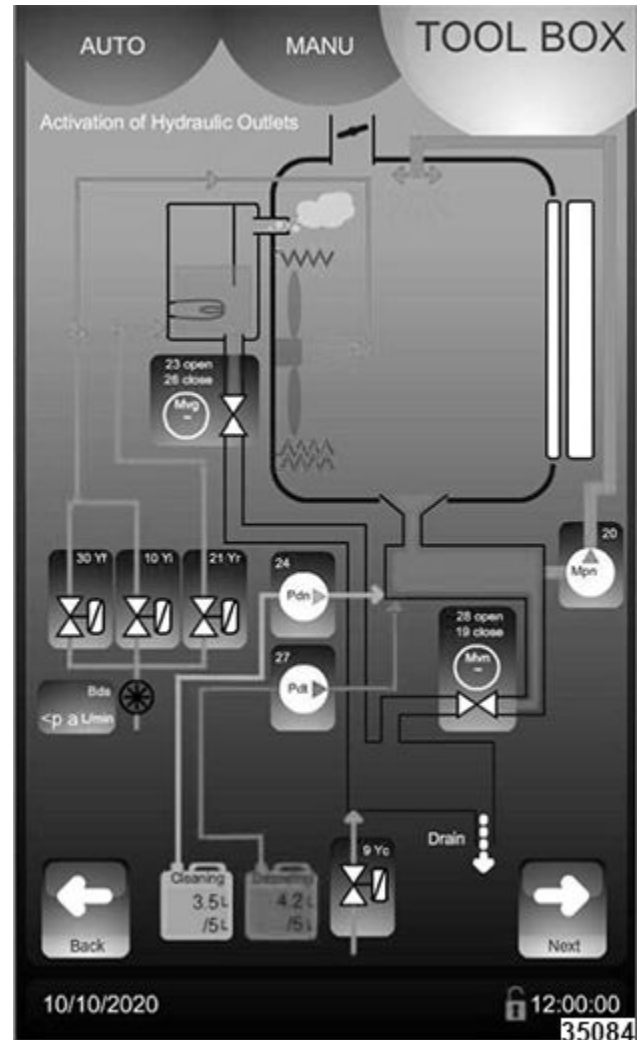


Fig. 146

- 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. 147) provides the following indications / controls:

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

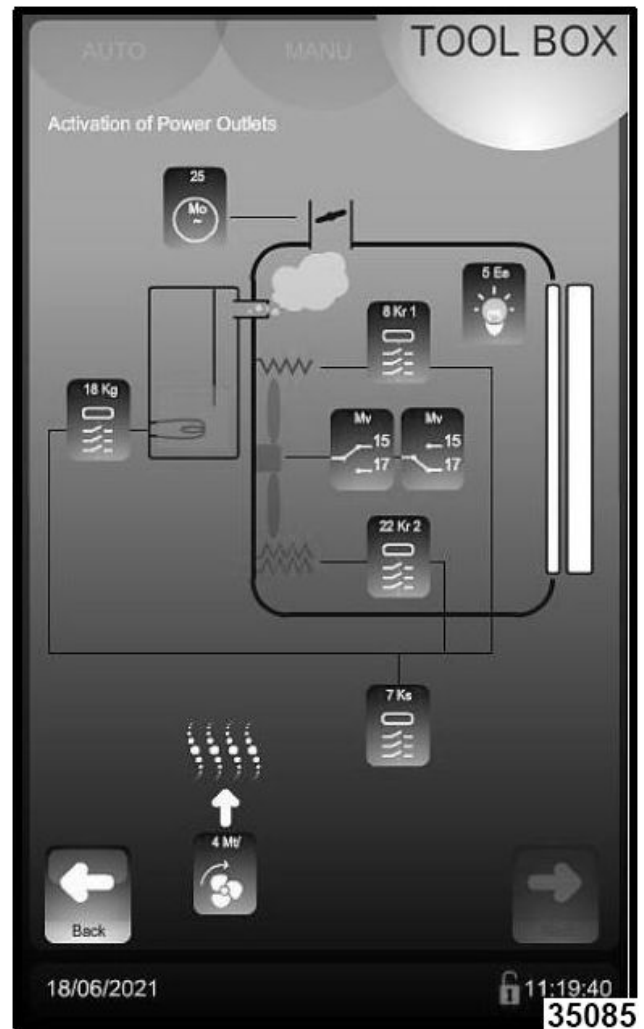


Fig. 147

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.

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. 148) to view error history. Select **Download** icon to download an Excel-compatible spreadsheet to a USB drive.

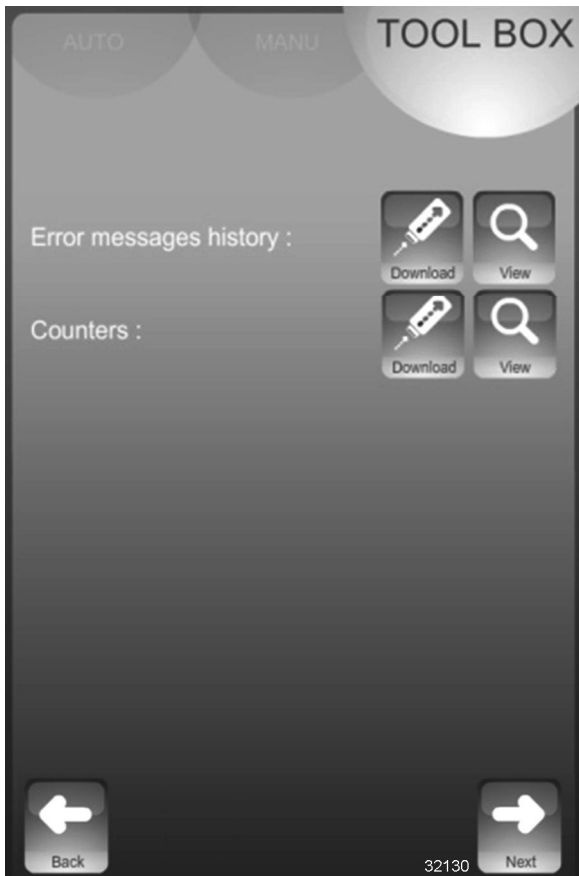


Fig. 148

2. Select Counters **View** icon (Fig. 148) 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. 149) is displayed.

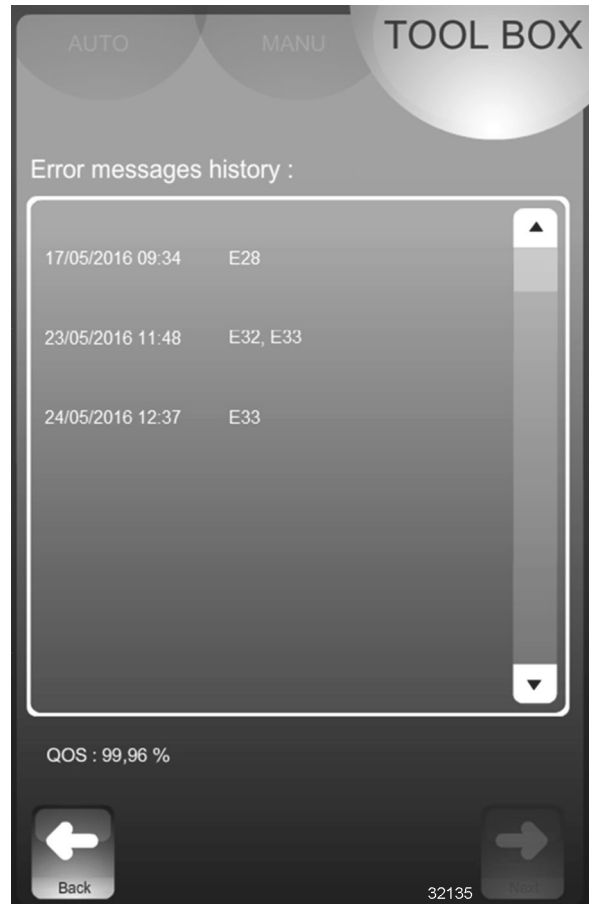


Fig. 149

Refer to:

- [TABLE](#) for error information.
- Refer to 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. 150) is displayed.



Fig. 150

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.
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.
CPT10	Total operating time cooling + cleaning.

Counter	Information (All Time Provided in Hours)
CPT11	Number of litres remaining in the water treatment system.

* Function not used in Minijet configuration.

ERROR SCREENS AND INFORMATION

- There are three colors of screens associated with equipment errors.
 - A **GREEN** screen (Fig. 151) is displayed to provide information that does not impact operation.



Fig. 151

- A **YELLOW** screen (Fig. 152) is displayed when errors occur that impact operation but do not shut down operation.

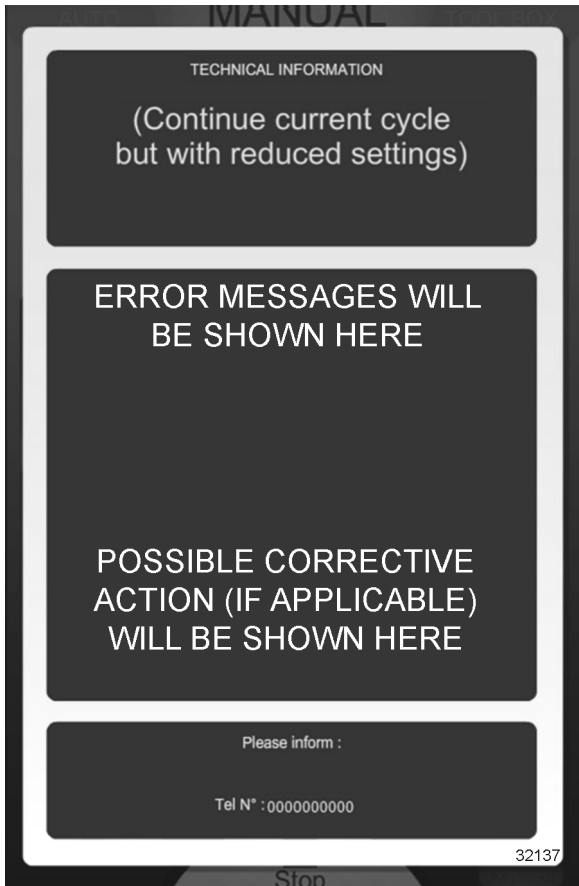


Fig. 152



Fig. 153

- A **RED** screen (Fig. 153) is displayed when errors occur that impact and shut down operation.

Refer to:

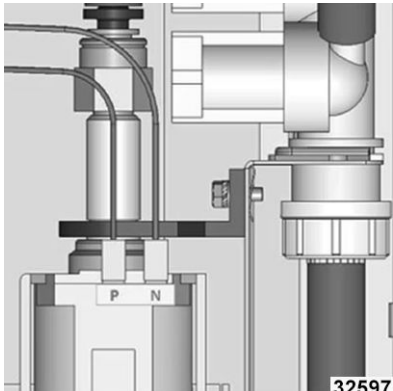
- TABLE below for error information.
- Refer to wiring diagrams for component wiring and connections.
- OUTPUT CONTROL ASSEMBLY for output control assembly connections.

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 <u>TEMPERATURE PROBE TEST</u> .
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.

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
			Axial cooling fan(s) Mt1 and / or Mt2 not functioning.	<p>Check axial cooling fan input power.</p> <ul style="list-style-type: none"> If present, replace fan(s). If not present, check: <ul style="list-style-type: none"> 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). <p>If items listed above are OK, replace output control assembly.</p>
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.	<p>Core probe disconnected during a cooking cycle.</p> <p>Faulty core probe.</p>	Perform <u>TEMPERATURE PROBE TEST</u> .
E32	Two faulty measurement points.	Probe disconnected during cooking.	Defective core probe.	Connect the probe and check the values of E2 – E2b – E2c on the input screen. If “-“ is shown, disconnect the connector (E2) from the card. . Check the values of the PT 100 probe (on the terminal block screws). If the value is incorrect, change the probe. If not check the connections or replace the FastPAD 2 power unit.
E46	Electronic communication fault (Bus RS485) (RED error screen).	<p>NOTE: Cooking possible with reduced functionality at up to 347 °F.</p> <p>Cooking stops.</p>	Loss of communication between the output control assembly and touch screen / display assembly.	<p>Check communication LEDs on output control assembly and touch screen / display assembly.</p> <p>Check / replace Ethernet cable.</p>

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • connecting wiring. • axial fan Mt1 motor.
			If items listed above are OK, replace output control assembly.	
			Fuse F3 open.	
			Output control assembly relay board outputs 15 or 17 shorted to ground.	If shorted to ground, check: <ul style="list-style-type: none"> • connecting wiring. • blower motor M1. • capacitor CM1.
			If items listed above are OK, replace output control assembly.	
			Verify cavity fan motor is reversing direction every 4 minutes.	
			Fuses F3 and F5 OK, E53 displayed.	
Contactor Ks does not close during the oven initialization when the door is closed.	Check for defective: <ul style="list-style-type: none"> • 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.				

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
			Contactor Ks closes during the oven initialization when the door is closed.	Check for defective: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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. Cavity temperature probe short circuited.	Perform . 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.
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: <ul style="list-style-type: none"> • heating contactor Kr contacts (should be open). • heating contactor Kr coil (should be open).

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
				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.	
			Pump badly connected.	Check the connections for Phase and Neutral to the pump.  32597 Fig. 154
i81	Water flow problem.	Cooking will be degraded.	Fuse F1 open.	Output control assembly relay board output 24. If shorted to ground, check: <ul style="list-style-type: none"> connecting wiring. valve Yv solenoid. Output control assembly relay board output 25. If shorted to ground, check: <ul style="list-style-type: none"> connecting wiring. fuse F8. vent motor Mo.

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
				<p>Output control assembly relay board output 27. If shorted to ground, check:</p> <ul style="list-style-type: none"> • connecting wiring. • valve Yn solenoid.
				<p>Output control assembly relay board output 29. If shorted to ground, check:</p> <ul style="list-style-type: none"> • connecting wiring. • detergent pump thermal overload switch FPdn. • detergent pump Pdn.
				<p>Output control assembly relay board output 30. If shorted to ground check:</p> <ul style="list-style-type: none"> • connecting wiring. • valve Yc solenoid.
				<p>If output control assembly relay board outs are OK, replace output control assembly.</p>
			Fuse F4 open.	<p>Output control assembly relay board output 9. If shorted to ground check:</p> <ul style="list-style-type: none"> • connecting wiring. • valve Yf solenoid.
				<p>Output control assembly relay board output 10. If shorted to ground check:</p> <ul style="list-style-type: none"> • connecting wiring. • valve Yi solenoid.
				<p>If output control assembly relay board outs are OK, replace output control assembly.</p>
			Water supply problem.	<p>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.</p>
			Solenoid has failed.	<p>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.</p>
			Flow meter inoperative.	<p>Check flow meter operation. Refer to DIAGNOSTIC SCREENS Activation of Hydraulics screen. Activate Yi and check BDS. flow rate.</p>

ERROR CODE	MESSAGE ON SCREEN	CONSEQUENCES	PROBABLE CAUSE	POSSIBLE SOLUTION
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.
			Output control assembly relay board.	Check: <ul style="list-style-type: none"> • 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).
i83	Water treatment capacity reached 0.	Risk of damaging the oven.	The capacity of the water treatment system has been reached or exceeded.	The water treatment system meter has reached OL. Check the water treatment system and replace/recharge if required, then reset the meter in customer settings.
i84	Number of maintenance days at 0.	Risk of damaging the oven.	The countdown to the next service has been reached and exceeded.	Carry out planned preventative maintenance operations, then reset the counter within installation parameters.
i97	Connectivity error.	Connectivity not working.	Identification data incorrect (the data contained in the GATEWAY configuration doesn't match the data on the screen.	If GATEWAY was previously configured on another oven: <ul style="list-style-type: none"> • Follow GATEWAY configuration procedure and scan the QR code which corresponds to oven. • If screen was changed, fill in oven's technical data.
i98	Connectivity error.	No consequence.	Connected appliance: technical parameters cannot be changed.	Pop-up will simply inform technician why parameters can't be changed.

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