ALTO-SHAAM

COMBITHERM®

SERVICE MANUAL

CT PROFORMANCE™	CTP6-10E	CTP6-10G
	CTP10-10E	CTP10-10G
	CTP7-20E	CTP7-20G
	CTP10-20E	CTP10-20G
	CTP20-10E	CTP20-10G
	CTP20-20E	CTP20-20G
CT CLASSIC™	CTC6-10E	CTC6-10G
	CTC10-10E	CTC10-10G
	CTC7-20E	CTC7-20G
	CTC10-20E	CTC10-20G
	CTC20-10E	CTC20-10G
	CTC20-20E	CTC20-20G

⚠ WARNING

Improper installation, alteration, adjustment, service, cleaning, or maintenance could result in property damage, severe injury, or death.

Read and understand the installation, operating and maintenance instructions thoroughly before installing, servicing, or operating this equipment.

24•7 Your Service Hotline 1-800-558-8744

Operation, Maintenance, Troubleshooting, and Wiring Diagrams

This manual covers the following CTP and CTC series models:

Control Type		Boiler-Free Models	Steam Generator Models
CTP	CT PROformance™ with PROtouch™ control	6-10E, 6-10G 10-10E, 10-10G 7-20E, 7-20G 10-20E, 10-20G 20-10E, 20-10G 20-20E, 20-20G	6-10EB 10-10EB 7-20EB 10-20EB 20-10EB 20-20EB
CTC	CT Classic with Classic manual control		

Please post the following instructions in a prominent location if the user smells gas.

DANGER

Before starting the appliance, make certain you do not detect the odor of gas.

If you smell gas:

- Shut off the gas supply immediately.
- Do not attempt to light any appliance.
- Do not touch any electrical elements.
- Extinguish any open flame.
- Evacuate the area.
- Use a telephone outside the property and immediately contact your gas supplier.
- If unable to contact your gas supplier, contact the fire department.

Additional Resources Available From Alto-Shaam

For Service Support

The Alto-Shaam Tech Team is available 24 hours a day, every day, to provide emergency Service and troubleshooting support. Our team of experts supports your demanding kitchen needs because your customers depend on it. Contact our Tech Team at 1-800-558-8744 (U.S. and Canada only) or 1-262-251-3800; follow the prompts for emergency service.

For Product Specs

Visit https://www.alto-shaam.com/en/resources to download spec sheets for all Alto-Shaam products.

For the Latest Software Updates

Download the latest version of appliance firmware and recipe management software at https://www.alto-shaam.com/en/customer-support/software-downloads.

For Genuine Alto-Shaam OEM Parts in Your Area

Visit https://www.alto-shaam.com/en/technical-service and use the LOCATE A SERVICE AGENT tool for a list of authorized distributors of genuine Alto-Shaam parts in your area.

If you require additional parts identification assistance, contact our parts team. You can reach the Parts Customer Service Team at:

partsdept@alto-shaam.com

Via phone at 1-262-251-3800 ext. 6709

Toll Free (U.S. & Canada only) at 800-558-8744 ext 6709.

- The appliance is intended to cook, hold or process foods for the purpose of human consumption. No other use for this appliance is authorized and is therefore considered dangerous. The appliance must not be used to cook food containing flammable materials (such as food with alcohol). Substances with a low flash point can ignite spontaneously and cause a fire.
- The appliance is intended for use in commercial establishments where all operators are familiar with the purpose, limitations, and associated hazards of this appliance. Operating instructions and warnings must be read and understood by all operators and users. Alto-Shaam recommends regular staff training to avoid the risk of accident or damage to the appliance. Operators must also receive regular safety instructions.
- Any troubleshooting guides, component views, and parts lists included in this manual are for general reference only and are intended for use by qualified and trained technicians.
- This manual should be considered a permanent part of this appliance. This manual and all supplied instructions, diagrams, schematics, parts lists, notices, and labels must remain with the appliance if the item is sold or moved to another location.

NOTICE: For equipment delivered for use in any location regulated by the following directive: 2012/95/EC WEEE

Do not dispose of electrical or electronic equipment with other municipal waste.

Knowledge of proper procedures is essential to the safe operation of electrically and/or gas energized equipment. The following signal words and symbols may be used throughout this manual.

⚠ DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE: Indicates information considered important, but not hazard-related (e.g., messages relating to property damage).

- To prevent serious injury, death or property damage, the appliance should be inspected and serviced at least every twelve (12) months by an authorized service partner or trained technician.
- **Only** allow an authorized service partner or trained technician to service or to repair the appliance. Installation or repairs that are not performed by an authorized service partner or trained technician, or the use of non-factory authorized parts will void the warranty and relieve Alto-Shaam of all liability.
- When working on this appliance, observe precautions in the literature, on tags, on labels attached to or shipped with the appliance and other safety precautions that may apply.
- If the appliance is installed on casters, freedom of movement of the appliance must be restricted so that utility connections (including gas, water, and electricity) cannot be damaged when the appliance is moved. If the appliance is moved, ensure that all utility connections are properly disconnected. If the appliance is returned to its original position, ensure that retention devices and utility connections are properly connected.
- **Only** use the appliance when it is stationary. Mobile appliance racks, mobile plate racks, transport trolleys, and appliances on casters can tip over when being moved over an uneven floor or threshold and cause serious injury.
- **Always** apply caster brakes on mobile appliances or accessories when these are not being moved. These items could move or roll on uneven floors and cause property damage or serious injury.
- Be extremely careful when moving appliances because the food trays may contain hot fluids that may spill, causing serious injury.
- **Always** open the appliance door very slowly. Escaping hot vapors or steam can cause serious injury or death.
- If the gas appliance is installed under an exhaust hood, the hood must be switched **On** when the appliance is in use to avoid the build up of combustion gases. Failure to do so may result in serious injury, death or property damage.
- Accumulations on the main burners of gas appliances can result in firing out of normal sequence. This delayed ignition creates an alarmingly loud sound. If your appliance makes an especially loud noise when starting up, shut down the appliance and call a qualified and trained service technician.
- NEVER place objects near the appliance exhaust vents. This area is hot and could be a potential ignition source for a fire.
- Do not allow objects to block or obstruct the area below the appliance base. This may result in fire, damage to the equipment, or serious injury.
- Do not use the attached hand-held hose to spray anything other than the interior of the appliance compartment.
- Do not use the attached hand-held hose on the surface of a hot cooking compartment. The sudden temperature change can damage the appliance interior. Allow the appliance to cool to 150°F (66°C) or lower before using the hand-held hose. Failure to observe this precaution can void the warranty.

⚠ WARNING

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

Children should be supervised to ensure that they do not play with the appliance.

⚠ WARNING

To prevent serious personal injury, death, or property damage:

Do not steam clean, hose down or flood the interior or exterior with water or liquid solution of any kind. **Do not** use water jet to clean. Failure to observe this precaution will void the warranty.

⚠ WARNING

To prevent **SERIOUS PERSONAL INJURY** or **PROPERTY DAMAGE**:

DO NOT handle pans containing liquid or semiliquid products positioned above the eye level of the operator. Such products may scald and cause serious injury.

⚠ WARNING

DO NOT obstruct or block exhaust flues or attach any flue extension that may impede proper burner operation, restrict the exhaust fumes and cause negative backdraft or the appliance to shut down. Failure to do so may result in serious injury or death.

⚠ WARNING

To prevent **serious personal injury**, **death**, or **property damage**:

The appliance must be cleaned thoroughly to avoid deposits of grease and or food residues inside the appliance that may catch fire. If fat deposits and/or food waste inside the appliance ignite, shut down the appliance immediately and keep the appliance door closed to extinguish the fire. If further extinguishing is required, disconnect the appliance from the main power and use a fire extinguisher (do not use water to extinguish a grease fire!). Failure to clean the appliance properly invalidates the warranty and relieves Alto-Shaam of all liability.

⚠ CAUTION

To prevent **personal injury** or **property damage**:

Always use hand protection when operating this appliance to avoid burns. Metal parts of this equipment become extremely hot when in operation.

⚠ CAUTION

To prevent **INJURY** or **PROPERTY DAMAGE**, make certain the area around the appliance is kept clear of combustible items.

NOTICE: Automatic steam venting is a standard safety feature built into all Combitherm oven models. This feature vents all steam from the oven compartment immediately before cooking time expires or set probe temperature is reached.

Automatic steam venting does not function if the oven door is opened before time expires or when the oven has been set to continuous operation.

NOTICE: Use authorized Combitherm oven cleaner only. Unauthorized cleaning agents may discolor or harm interior surfaces of the oven. Read and understand label and material safety data sheet before using the oven cleaner.

How To Turn On the Appliance

Before you begin

1. Turn on the exhaust hood.
2. Make sure that the water supply to the appliance is turned on.
3. Make sure that the electrical power supply to the appliance is turned on.
4. For gas appliances, make sure the gas supply valve is in the open position.

Steps

1. Press the ON/OFF button .

   The ON/OFF indicator glows green and the loading screen **(1)** displays while the controller software loads. When the software is 100% loaded, the home screen **(2)** displays.

   NOTE: If the appliance has a steam generator, the steam generator fills with water and the appliance heats the water to an initial temperature of 188°F (77°C).

How To Start a Manual Calibration

1. Make sure the appliance is off.
2. Press and hold the ON/OFF button for eight (8) seconds. The ON/OFF indicator glows red and the calibration prompt **(3)** displays.

   The prompt moves from the center to all four corners of the screen. This sequence repeats three (3) times. Then the calibration screen **(4)** displays.

   NOTE: The first time the appliance is turned on, or if the appliance loses power during startup, the touch screen calibration prompt **(3)** displays at the end of the next startup.

   NOTE: Touch the check mark icon to start the calibration immediately. Touch the cancel icon to cancel the calibration.

How To Calibrate the Touch Screen

1. Touch the target icon (+) each time it appears on screen. The icon appears in all four corners, then the center of the screen.

   NOTE: If the controller software has not been updated to the current version, the calibration stops when this step is complete. Download the current controller software from the Alto-Shaam website and install it.

2. The verification screen **(5)** displays. Touch all five target icons . The icons change to green boxes when they are touched.

   NOTE: The calibration screen and verification screen both display a 30-second countdown. If you do not touch all five icons before the countdown is complete, the controller stops the calibration. If you do not see the countdown, download the current controller software from the Alto-Shaam website and install it.

How To Turn Off the Appliance

1. Press and hold the ON/OFF button for five to ten (5-10) seconds.

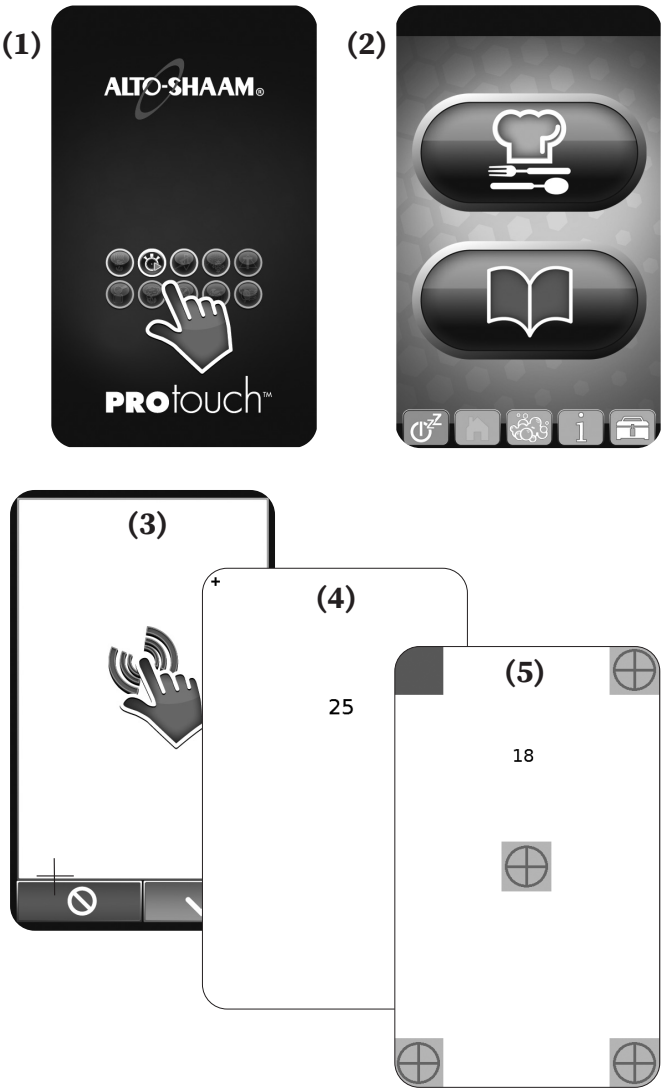
   NOTE: You cannot turn off the appliance during a cooking cycle.

DANGER

Before starting the appliance, make certain you do not detect the odor of gas.
If you smell gas:
- **Shut off the gas supply immediately.**
- **Do not attempt to light any appliance.**
- **Do not touch any electrical elements.**
- **Extinguish any open flame.**
- **Evacuate the area.**
- **Use a telephone outside the property and immediately contact your gas supplier.**
- **If unable to contact your as supplier, contact the fire department.**

CAUTION

Accumulations on the main burners of gas appliances can result in firing out of normal sequence. This delayed ignition creates an alarmingly loud sound. If your appliance makes an especially loud noise when starting up, shut down the appliance and call a qualified and trained service technician.



Software Updates

The PROtouch controller plays an important part in our continuous improvement process. New features and abilities can be loaded to your oven as they become available. Software for your oven can be accessed from the Alto-Shaam website, under Customer Support, then Software Downloads. http://www.alto-shaam.com/en/customer-support/software-downloads

Use a USB drive to copy the PROtouch software from the website to the USB drive.

Press the ON button to power the oven on.

Touch the utilities icon.

Touch the download icon.

Touch the download new software icon.

Most software updates will require the full oven update as shown below. Additional options are available if a special need arises. Call our Service Department for assistance with these special circumstances.

Remove the cover of the USB port on the oven.

Insert the USB drive. If the USB drive is not recognized by the Combitherm, a question mark will appear on screen. Try again with another USB drive or call Alto-Shaam Service.

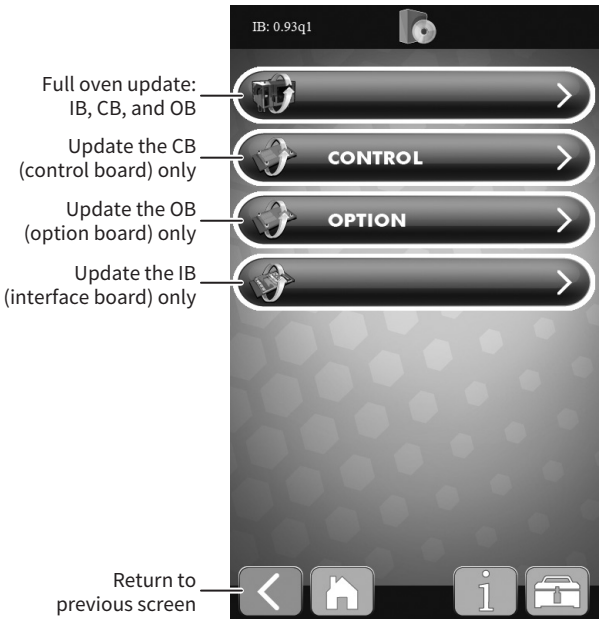
When the data has made a successful transfer to the USB drive, the screen will change.

Touch the green check mark icon to complete the process.

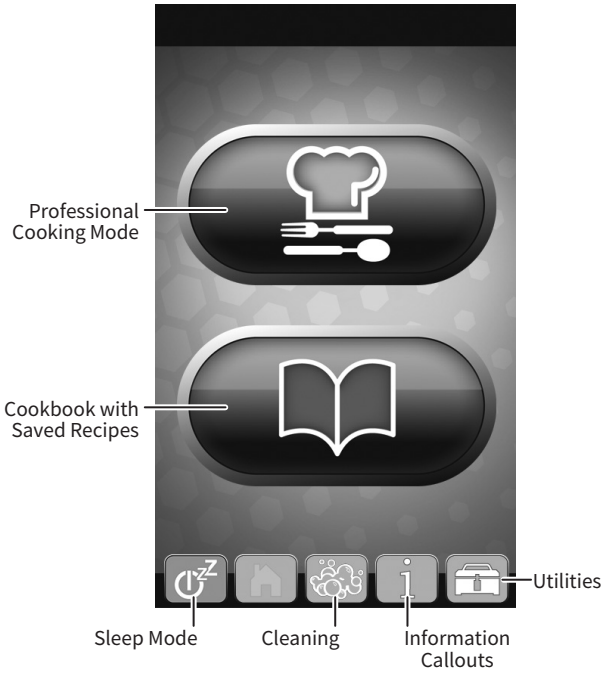
Remove the USB drive and replace the cover on the USB port on the oven.

NOTICE: After the software update has been completed, the oven may automatically initiate a shutdown and reboot sequence if required.

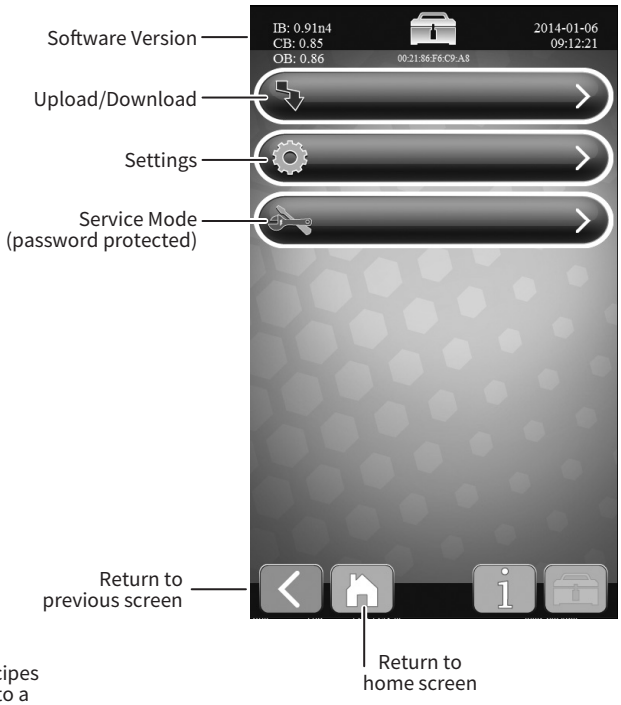
Software Upload Screen



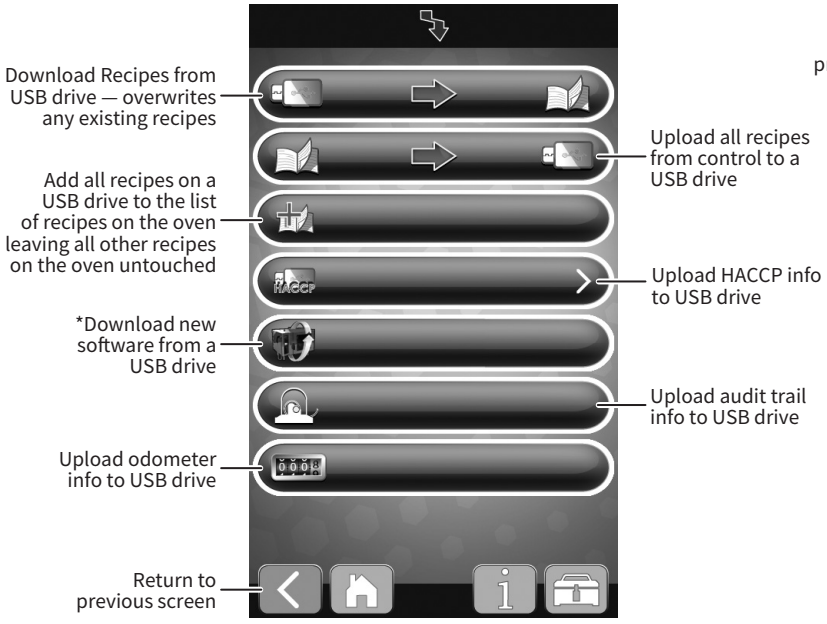
Control Panel Identification



Utility Screen



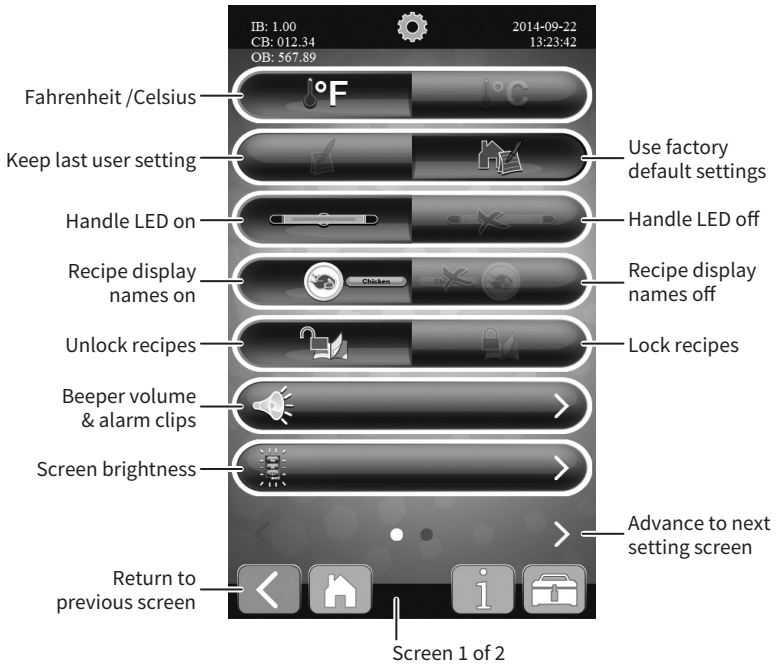
Upload/Download Screen



*The PROtouch control plays an important part in our continuous improvement process. New features and abilities can be loaded to your oven as they become available. Software for your oven can be accessed from the Alto-Shaam website, under Customer Support.

Control Panel Identification

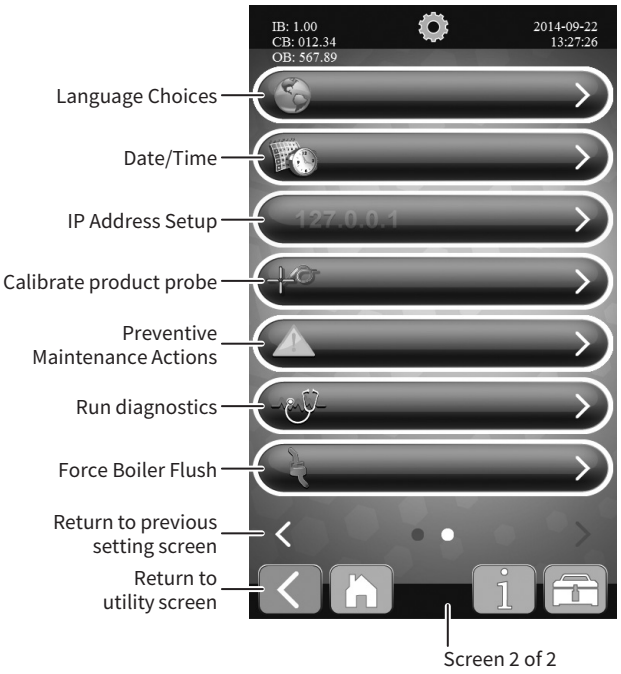
Settings Screen 1



When a setting has been selected, the graphic will be vibrant in color while the alternate choice will appear faded and gray. In the illustration at left, Fahrenheit, factory default setting, handle LED on, recipe display with text, and recipes are not locked have been chosen.

NOTE: A password is required to lock and unlock the recipes. Simply call an Alto-Shaam Culinary Chef for assistance.

Settings Screen 2



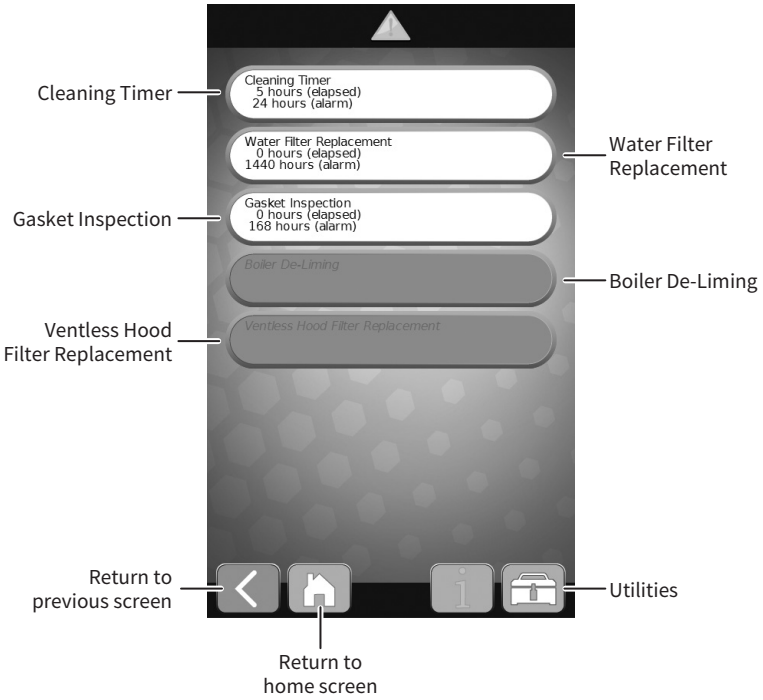
Language choices available:
English, French, German, Korean, Mandarin, Russian, or Spanish.

Time format available:
12-hour clock
24-hour clock

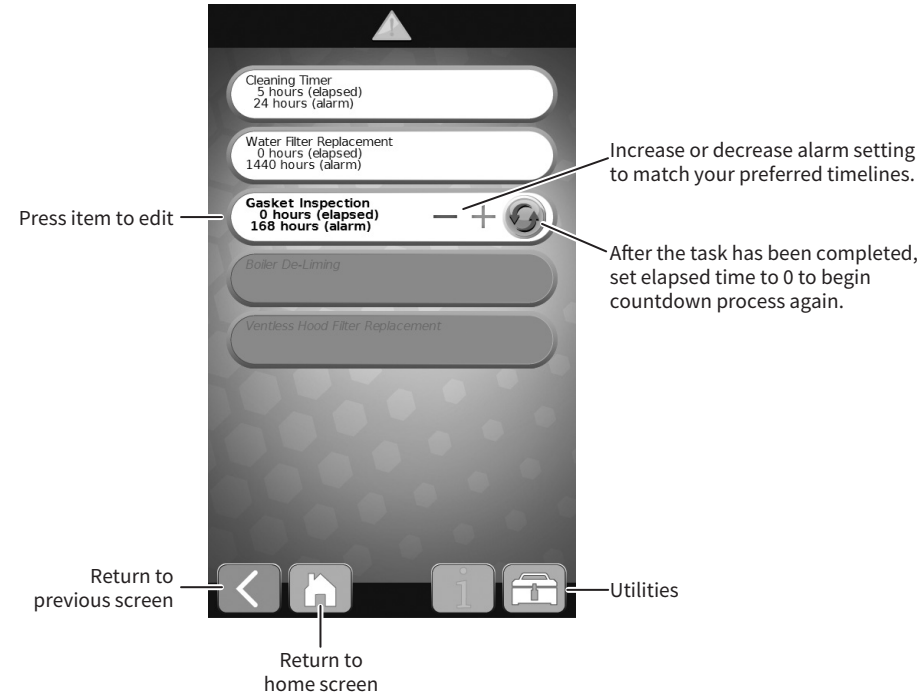
Different date formats available:
YYYY/MM/DD
MM/DD/YYYY
DD/MM/YYYY

Control Panel Identification

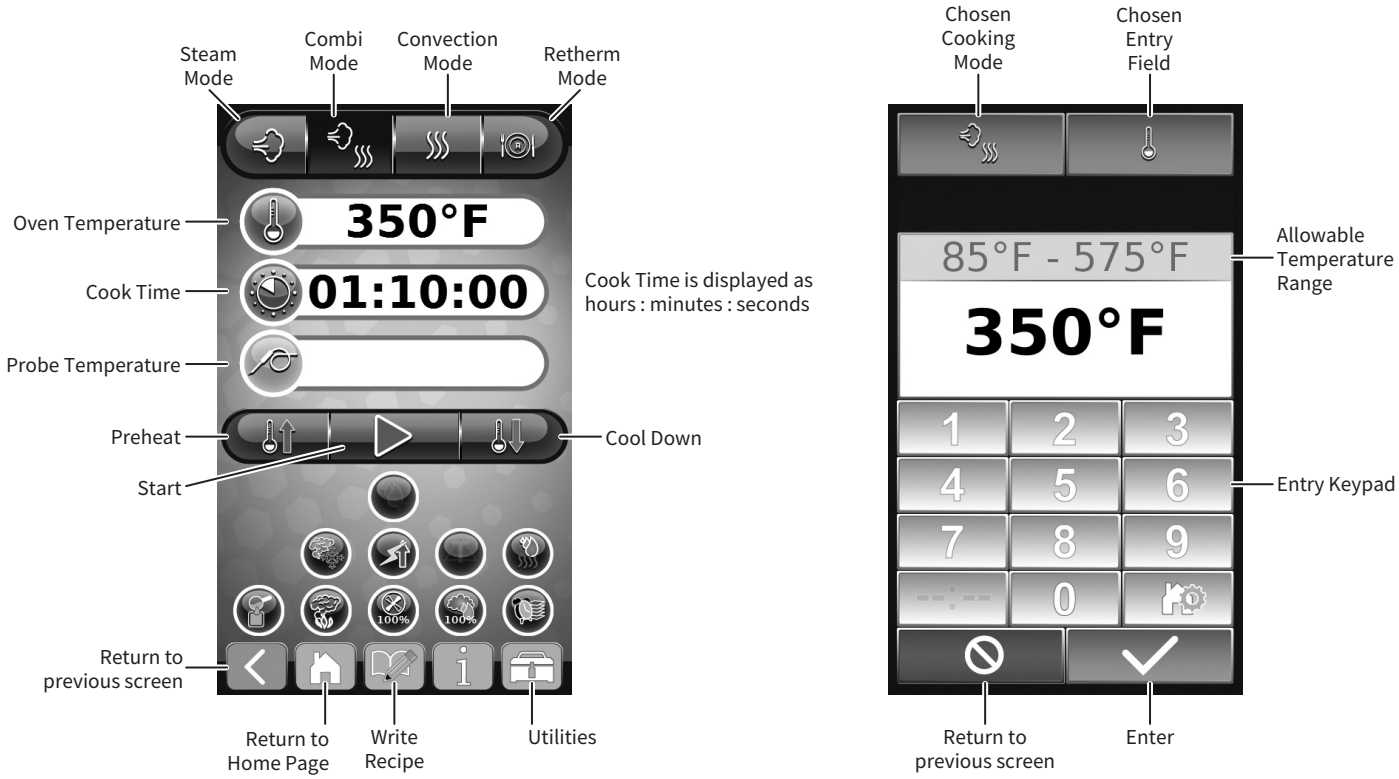
Preventative Maintenance Screen



Preventative Maintenance - Editing

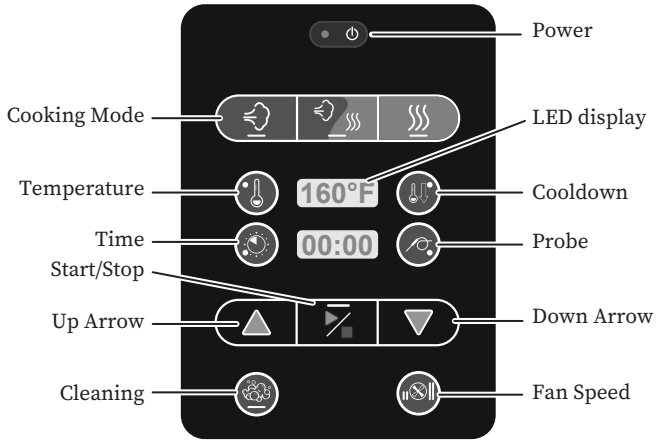


Cooking Screen Identification



NOTE: When a cooking mode has been selected, it will appear darker blue. When the cooking mode is calling for heat, it will appear red. When the cooking mode is calling for moisture, it will appear light blue. In the illustration above, Combi Mode has been chosen and is calling for heat. Also, the PROpower™ level has been chosen, and the fan speed has been set at 100%.

Control Panel Identification



The **Steam** mode provides the operator with the ability to steam, poach, blanch, or sous vide. This mode will automatically steam at the boiling point of water; quick-steam above the boiling point for faster cooking results; or low temperature steam, below the boiling point, for more delicate products such as pâté, mousse, seafood, or custard.

The **Combination** mode will prove to be the most versatile and widely used mode the Combitherm oven has to offer. It will produce the best possible results on the widest variety of products — all within the shortest period of time. The unique control function of this mode enables the operator to roast or bake with a combination of steam and convection heat. In addition to shorter cooking times, this combination of steam and heat offers less product shrinkage and more moisture retention than obtained in a standard convection oven.

The **Convection** mode operates with hot circulated air within a temperature range of 85°F to 575°F (29°C to 300°C). For many applications, better results may be achieved with the Combination mode; therefore, the operator may want to consider using the Convection mode on a more limited basis.

NOTE: The oven will not operate in the event of a power failure.

Oven Cooldown Process:
- Cooking process must be inactive
- Press "Cooldown" button until LED lights (LED remains ON while in Cooldown mode)
- Press "Decrease Value" or "Increase Value" to adjust cooldown temperature
- Cook temperature display area is used to display cooldown temperature
- Display will show last valid cooldown temperature
- Cooldown temperature range is 85°F - 575°F (30°C - 300°C)
- Press "Start/Stop" until LED lights to accept cooldown temperature and initiate cooldown process
- Door must be open to start cooldown process; Cook time display area will display "door" if door is not open
- Cook temperature display area will display set cooldown temperature
- Cook time display area will display current cooldown temperature

Fahrenheit or Celsius Function - choose temperature format:
- Unit is not in a cooking or cleaning process
- Press "Set Cooking Temperature", "Decrease Value" and "Increase Value" buttons simultaneously for 1 second
- Cooking temperature display area will display last value "C" or "F"; Display will alternate between "C" and "F" every 2 seconds
- Press "Start/Stop" key when the display is showing the desired value ("C" or "F")

How To Turn On the Appliance

Before you begin

1. Turn on the exhaust hood.
2. Make sure that the water supply to the appliance is turned on.
3. Make sure that the electrical power supply to the appliance is turned on.
4. For gas applicances, make sure the gas supply valve is in the open position.

Steps

1. Press the ON/OFF button  .

   The ON/OFF indicator glows green.

   NOTE: If the appliance has a steam generator, the steam generator fills with water and the appliance heats the water to an initial temperature of 188°F (77°C).

NOTE: To power off the appliance, press and hold the Power button for 5 to 10 seconds to initiate the power shutdown sequence to the oven.

The oven will not shut down during a cooking cycle.

NOTICE: In the event of a power failure, the oven will not operate.

DANGER

Before starting the appliance, make certain you do not detect the odor of gas.
If you smell gas:
- **Shut off the gas supply immediately.**
- **Do not attempt to light any appliance.**
- **Do not touch any electrical elements.**
- **Extinguish any open flame.**
- **Evacuate the area.**
- **Use a telephone outside the property and immediately contact your gas supplier.**
- **If unable to contact your as supplier, contact the fire department.**

CAUTION

Accumulations on the main burners of gas appliances can result in firing out of normal sequence. This delayed ignition creates an alarmingly loud sound. If your appliance makes an especially loud noise when starting up, shut down the appliance and call a qualified and trained service technician.

How To Preheat the Appliance

Alto-Shaam recommends preheating the Combitherm® before cooking.

1. Press the **Power** button. 
2. Press the desired **Cook Mode** button.  Steam  Combi  Convection
3. Press the **Oven Temperature** button; adjust the temperature with the **Arrow** buttons. 
4. Press the **Cook Time** button; adjust the time with the **Arrow** buttons. 
5. Press the **Start/Stop** button. 

Cooking by Probe

1. Preheat the appliance.
2. Press the desired **Cook Mode** button.  Steam  Combi  Convection
3. Press the **Oven Temperature** button; adjust the temperature with the **Arrow** buttons. 
4. Press the **Probe Temperature** button; adjust the probe temperature with the **Arrow** buttons. 
5. Press the **Fan Speed** button to choose High Speed or Low Speed. 
6. Load food into the appliance and insert probe into the food.
7. Press the **Start/Stop** button. 

Cooking by Time

1. Preheat the appliance.
2. Press the desired **Cook Mode**.  Steam  Combi  Convection
3. Press the **Oven Temperature** button; adjust the temperature with the **Arrow** buttons. 
4. Press the **Cook Time** button; adjust the time with the **Arrow** buttons. 
5. Press the **Fan Speed** button to choose High Speed or Low Speed. 
6. Load food into the appliance.
7. Press the **Start/Stop** button. 

NOTE: In the event of a prolonged power failure during the cooking process, it is strongly recommended that you ensure the food is safe for consumption according to local health regulations.

Temperatures below 350°F (177°C) permit high speed fan and low speed fan operation. Temperatures at 350°F (177°C) or higher permit high speed fan operation.

⚠CAUTION: HOT

Burn hazard. Use caution when opening the oven door when the cooking chamber is hot.

Ventech and Ventch PLUS™ Ventless Hood

The Ventech hood captures all oven exhaust and grease-laden vapors, and condenses steam from oven operations. Grease-laden vapors are captured by the filters, drawn in by high flow-rate fans. The activated charcoal filters scrub the odors and clean the air before venting it out of the top of the oven. The steam is condensed out of the air through an active heat exchanger.

The Ventech Plus model includes an integrated HEPA filter for increased air purification.

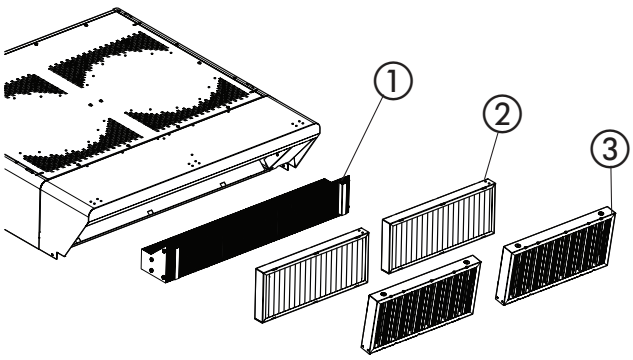
The Ventech hood operates throughout oven operation, detecting higher volumes of oven exhaust and adjusting its performance accordingly. It functions in a stacked configuration, and can be installed in the factory or in the field.

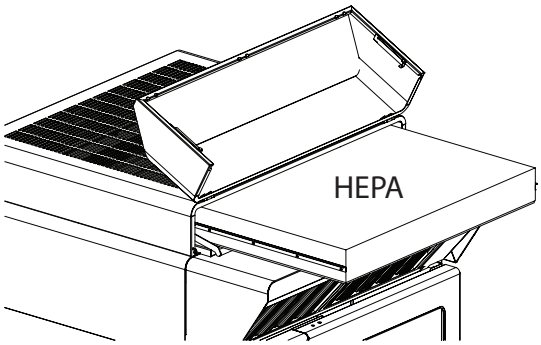
A pressure switch is used to detect the airflow through the hood. When the air flow is blocked an E101 error message on the oven control display. The filters will need to cleaned or replaced.

If the washable filter is not seated properly, an error code E102 appears on the oven control display during the selftest at the beginning of a cooking cycle or during the last two minutes of a cooking cycle.

When an E101 or E102 appears on the control display, a cook cycle cannot be started until the cause of the fault has been fixed.

For further reference, see the Ventech Condensation Hood Operator's Manual.





1	Condensation (optional)
2	Charcoal filter
3	Grease filter

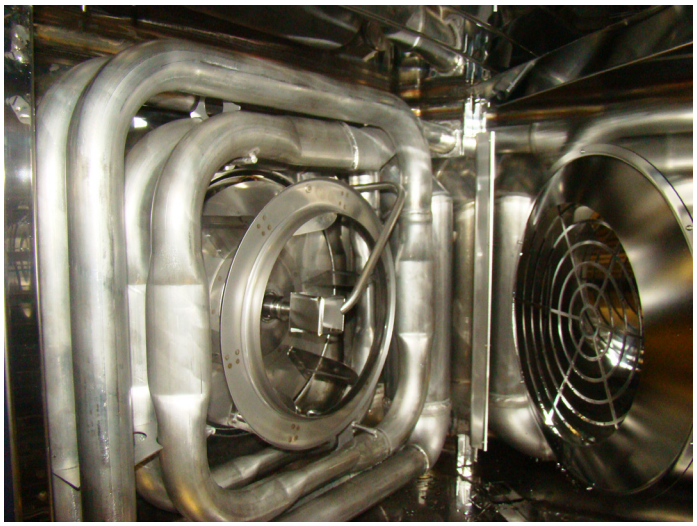
⚠ Warning
Fire hazard. Clean or replace the filters at regular intervals as stated in the maintenance section of this manual.

Weekly Maintenance

The heat exchanger on gas models and convection elements on electric models must be inspected every week.

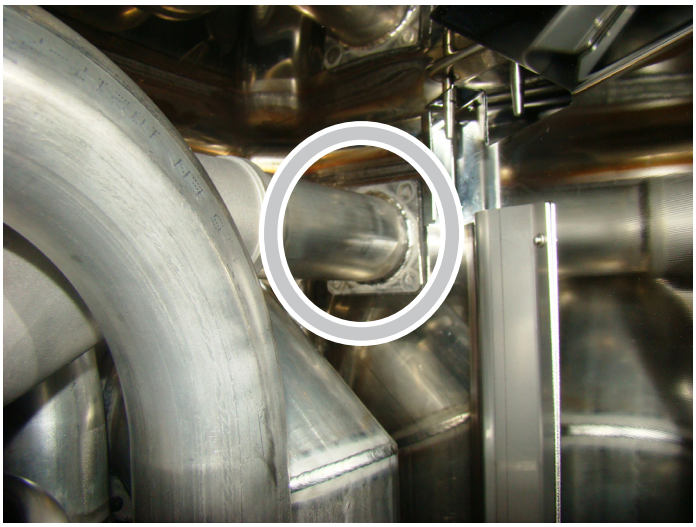
- Remove all wire shelves from inside the appliance.
- Remove left side rack from the oven cavity.
- Flip the tabs or loosen the thumb screws on the fan panel to the open position and swing the fan guard cover plate toward the back of the oven.
- Inspect the heat exchanger on gas models for signs of grease and/or carbon buildup, scale buildup, and any signs of major deformation. Refer to images A and B.
- Inspect and verify that the flue pipe seal is tight and intact. Refer to image C.
- Inspect the convection elements for signs of cracking, grease and/or carbon buildup, scale buildup, and any signs of major deformation. Refer to image D.

A



B

C



D

Daily Inspection

Unit Information

Business Name: _____ **Serial Number:** _____

Model Number: _____ **Daily Inspection Start Date:** _____

Daily Inspection Checklist

Inspect and clean:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Product probe (thermometer)							
Door gasket (inner door seal)							
Inner door glass							
Front drip tray							
Screen and overlay (inspect for cracks, peeling, moisture, etc.)							
Execute automatic wash cycle (with approved cleaning chemical ONLY)							
Employee initials							

Component Malfunction and Replacement

List details of the failure(s) next to the day they occurred. Leave blank if components are working properly.	
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

Weekly Inspection

Unit Information

Business Name: _____ **Serial Number:** _____

Model Number: _____ **Weekly Inspection Start Date:** _____

Weekly Inspection Checklist

Inspect - Oven cavity lamp	
Inspect - Oven cavity for signs of grease/carbon buildup	
Inspect - Loosen thumb screws to inspect behind the fan panel inside the oven cavity for signs of grease/carbon buildup	
Inspect - Loosen thumb screws to inspect behind the fan panel inside the oven cavity for signs of scale buildup	
G Inspect - The heat exchanger for any signs of major deformation. If yes, immediately remove from service and take corrective action steps.	
G Inspect - The heat exchanger for any loose/disconnected pipes or flanges. If yes, immediately remove from service and take corrective action steps.	
E Inspect - Convection elements for signs of cracking, deformation, or damage	
Clean ventless hood grease filters	
Employee initials	

G Gas units only E Electric units only

Component Malfunction and Replacement

List details of the failure(s) next to the day they occurred. Leave blank if components are working properly.	
Week 1	
Week 2	
Week 3	
Week 4	

Monthly Inspection

Unit Information

Business Name: _____ **Serial Number:** _____

Model Number: _____ **Monthly Inspection Start Date:** _____

Monthly Inspection Checklist

Inspect/Test - Proper draining of the oven cavity	
Inspect - All drain lines for leaks or clogs	
EB Descale the steam generator	
Inspect - Oven cavity for any signs of scale buildup	
Descale the oven interior	
Inspect ventless hood paper filter (replace as needed)	
Test ventless hood drain for proper drainage and signs of leaking	
Employee initials	

EB Electric boiler units only

Component Malfunction & Replacement

Summarize any component failure(s) that may have occurred during this month.

Yearly Inspection

Unit Information

Business Name: _____ **Serial Number:** _____

Model Number: _____ **12-Month Inspection Start Date:** _____

12-Month Inspection Checklist

Replace - Steam bypass hose	
Inspect - Cleaning pump hose	
Inspect/Test - Proper draining of the oven cavity	
Inspect - All drain lines for leaks or clogs	
Inspect - All solenoid hoses (both ends)	
Inspect - Upper browning valve hose	
Inspect - Low pressure relief valve & hose	
E Inspect - Convection element seal (from the electrical compartment)	
G Inspect - Gas heat exchanger seal (from the electrical compartment)	
Inspect - N6 oven temperature probe seal	
EB Descale the steam generator	
EB Remove & Inspect - Steam generator elements	
Inspect - Hand shower hose	
Inspect - Hand shower handle	
Inspect - Product probe	
Inspect - Water injection tube	
Inspect - Oven cavity for any signs of scale buildup	
Inspect - Oven cavity lamp	
Inspect - Oven cavity for signs of grease/carbon buildup	
Inspect - Behind the fan panel inside the oven cavity for signs of grease/carbon buildup	
Inspect - Behind the fan panel inside the oven cavity for signs of scale buildup	

EB Electric boiler units only **G** Gas units only **E** Electric units only

Unit Information

Business Name: _____ **Serial Number:** _____

Model Number: _____ **12-Month Inspection Start Date:** _____

12-Month Inspection Checklist

G Inspect - The heat exchanger for any signs of major deformation. If yes, immediately remove from service and take corrective action steps.	
G Inspect - The heat exchanger for any loose/disconnected pipes or flanges. If yes, immediately remove from service and take corrective action steps.	
G Inspect and Ensure - Exhaust pipes are exiting the oven cavity	
G Inspect - Heat exchanger flange gasket (replace as needed)	
G Inspect and Tighten - Heat exchanger flange bolts	
G Inspect and Tighten - Heat exchanger burner flange hardware & gasket (replace as needed)	
G Inspect and Tighten - Heat exchanger igniter flange hardware & gasket (replace as needed)	
G Inspect - Heat exchanger exhaust pipes (ensure they are exiting out past the oven cavity ceiling flange) - ESG models only	
G Inspect - Oven cavity ceiling flange & flange gasket - ESG models only	
G Tighten - Burner flange bolts	
G Tighten - Igniter flange bolts	
Inspect - Heat exchanger weep holes to ensure they are free of obstructions (if the hole is obstructed, immediately remove oven from service and replace the heat exchanger) - Not applicable to CTP/CTC models	
E Inspect - Convection elements for signs of cracking, deformation, or damage	
Replace - Oven lamp cover(s) & gasket(s)	
Descale the oven interior	
Inspect - Upper and lower door hinges and pins	
Inspect - Door gasket (replace as needed)	
Inspect - Door upper and lower hinges (replace as needed)	
Wipe the inner door glass	
Inspect - Front drip tray (clean as needed)	
Inspect - Front drip tray hose	
Inspect - Control overlay	
Inspect and Tighten - All electrical connections	
Inspect and Tighten - All cooling fans for proper operation	

EB Electric boiler units only **G** Gas units only **E** Electric units only

Unit Information

Business Name: _____ **Serial Number:** _____

Model Number: _____ **12-Month Inspection Start Date:** _____

12-Month Inspection Checklist

Inspect and Tighten - Door hinges and lower hinge pin bolt	
Inspect and Tighten - Door handle	
If there is a smoker, inspect the smoke element for visual signs of deformation, cracks or breaks (replace as needed)	
Review - Error code history	
Note the software version (update if not current)	
Record - Water pressure (static & dynamic)	
Record - Line voltage across all lines	
Record - Line voltage to ground on each line	
Record - Amperage across all three legs (when heating)	
Function test all components (list components)	
For ovens shipped to New Zealand or Australia, inspect the backflow preventer check valve per AS/NZ3500.1 and AS/NZ3500.2	

Component Failure and Replacement

Summarize any component failure(s) that may have occurred during this month.

Customer Signature: _____

Technician Signature: _____

Error Codes

ALWAYS verify the circuit breaker is turned “ON” and your unit is receiving power BEFORE calling your Authorized Alto-Shaam Service Agent.

NOTICE

This section is provided for the assistance of qualified and trained service technicians only and is not intended for use by untrained or unauthorized service personnel. Do not attempt to repair or service the oven beyond this point. Contact Alto-Shaam for the nearest authorized service agent. Repairs made by any other service agents without prior authorization by Alto-Shaam will void the warranty.

When the oven malfunctions, an error code will appear in the display.

Press the Start icon to acknowledge the error.

When the oven error notification has been acknowledged, the Combitherm will attempt to return to normal operation.

Error Code	Error Call Out in Display	Description of Error	Possible Cause(s) and Remedies
E01	Low Water steam generators	Applies only to roll-in models. Low water level in steam generator (boiler). Upper water level probe B1 is not satisfied within 5 minutes, after water solenoid valve Y1 is activated.	— Water supply is shut off. — Water pressure is low. — Water-level probe (B1) has calcium build-up. — Fill-water solenoid valve (Y1) has malfunctioned. — Drain pump elbow is leaking. — Steam generator drain cap is missing. — Steam generator drain pump has malfunctioned. — Drain pump elbow leaking. — Relay board has malfuntioned.
E02	Control Temperature High	Relay board temperature is higher than 176°F (80°C).	— Cooling fan has malfunctioned. — Cooling fan air intake blocked.
E03	Fan Motor Error	Applies to table-top models and upper fan motors on roll-in models. Convection fan motor does not spin after 60 seconds. Detected by the Hall Effect sensor.	— Motor or fan wheel locked. — If LED on motor control flashes, see error codes for motor control. — Hall Effect sensor does not detect motor rotation.
E04	Lower Fan Motor Error	Applies only to roll-in models. Lower convection fan motor does not spin after 60 seconds. Detected by the Hall Effect sensor.	— Motor or fan wheel locked. — If LED on motor control flashes, see error codes for motor control. — Hall Effect sensor does not detect motor rotation.
E05	VFD Comm Failure	Applies to table-top models and upper VFDs on roll-in models Communication error when VFD does not respond to a query on the CAN interface.	— Loss of power to VFD. — CAN cable disconnected. — VFD has malfunctioned. — Control board has malfunctioned.
E06	Lower VFD Comm Failure	Applies only to roll-in models. Communication error when VFD does not respond to a query on the CAN interface.	— Loss of power to VFD. — CAN cable disconnected. — VFD has malfunctioned. — Control board has malfunctioned.

CONTINUED ON NEXT PAGE

Error Codes

Error Code	Error Call Out in Display	Description of Error	Possible Cause(s) and Remedies
E07	Error Received from VFD	Applies to table-top models and upper VFDs on roll-in models. When VFD is flashing the green light.	— Refer to VFD error code list and match to number of blinks on the green LED of VFD.
E08	Error Received from Lower VFD	Applies only to roll-in models. When VFD is flashing the green light	— Refer to VFD error code list and match to number of blinks on the green LED of VFD.
E11	Convection Temperature High	In Combination program, cavity temperature N6 is measuring in excess of 600ºF (315ºC) for a minimum of 25 seconds. In Convection program, cavity temperature probe (N6) is measuring in excess of 600ºF (315ºC) for a minimum of 25 seconds.	— Convection element contactor locked/on. — Oven cavity temperature probe (N6) has malfunctioned.
E13	Steam generator temperature High	Steam generator temperature is more than 248ºF (120ºC) for more than 25 seconds, detected by probe (B4).	— Calcium build-up on water level probe. — Calcium build-up in steam generator. — Steam element contactor locked/on. — Boiler temperature probe (B4) has malfunctioned.
E15	Condensor Temperature High	Condensor-water temperature is more than 212ºF (100ºC) for more than 180 seconds, detected by B3 probe (B4).	— Water supply is shut off. — Plugged steam bypass hose. — Miswired condensor temperature probe (B3). — Condensor temperature probe (B3) has malfunctioned. — Cooling-water-solenoid valve (Y2) has malfunctioned.
E20	B11 Core Temperature Probe Single Point Fault	Single-point core-temperature probe malfunctioning or disconnected.	— Core-temperature probe (B11) not inserted into food correctly. — Core-temperature probe (B11) not connected to oven. — Clean probe receptacle pins with sandpaper if applicable. — Core-temperature probe (B11) has malfunctioned.
E21	N6 Cavity Probe Fault	Cavity-temperature probe malfunctioning or disconnected.	— Oven cavity temperature probe (N6) has malfunctioned. — Oven cavity temperature probe (N6) wires disconnected.
E22	B10 Core Temperature Probe Multi-point Fault	Multipoint core-temperature probe malfunctioned or disconnected.	— Multipoint core temperature probe (B10) malfunctioned. — Multipoint core temperature probe (B10) wires disconnected.
E23	B4 Steam Generator Probe Fault	Steam-generator temperature probe malfunctioned or disconnected.	— Boiler temperature probe (B4) has malfunctioned. — Boiler temperature probe (B4) miswired.
E24	B5 Bypass Probe Fault	Bypass steam-temperature probe malfunctioned or disconnected.	— Bypass steam temperature probe (B5) has malfunctioned. — Bypass steam temperature probe (B5) miswired.
E25	B3 Condensor Probe Fault	Condensor-water-temperature probe malfunctioned or disconnected.	— Condensor temperature probe (B3) has malfunctioned. — Condensor probe (B3) miswired.
E26	B10 - Point 1 - Core Temperature Probe Multipoint Fault	Multipoint core-temperature probe malfunctioned or disconnected.	— Multipoint core-temperature probe (B10) malfunctioned. — Multipoint core-temperature probe (B10) miswired.
E27	B10 - Point 2 - Core Temperature Probe Multipoint Fault	Multipoint core-temperature probe malfunctioned or disconnected.	— Multipoint core-temperature probe (B10) malfunctioned. — Multipoint core-temperature probe (B10) miswired.

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Error Codes

Error Code	Error Call Out in Display	Description of Error	Possible Cause(s) and Remedies
E28	B10 - Point 3 - Core Temperature Probe Multipoint Fault	Multipoint core-temperature probe malfunctioned or disconnected.	— Multipoint core-temperature probe (B10) malfunctioned. — Multipoint core-temperature probe (B10) wires disconnected.
E29	B10 - Point 4 - Core Temperature Probe Multipoint Fault	Multipoint core-temperature probe malfunctioned or disconnected.	— Multipoint core-temperature probe (B10) defective. — Multipoint core-temperature probe (B10) wires disconnected.
E34	Steam Generator Drain Pump Fault	If water level does not drop below lower water level probe after three minutes when steam generator drain pump is activated in cleaning program.	— Calcium build-up or blockage in steam generator drain pump. — Boiler drain pump has malfunctioned. — Water-level probe has malfunctioned.
E36	Steam Temperature High	In Steam program, cavity temperature probe N6 is measuring in excess of 395ºF (200ºC) for more than 60 seconds. In Combination program, cavity temperature probe N6 is measuring in excess of 600ºF (315ºC), for more than 60 seconds. In Retherm program, cavity temperature probe N6 is measuring in excess of 395ºF (200ºC), for more than 60 seconds. In Cleaning program, cavity temperature probe N6 is measuring in excess of 395ºF (200ºC), for more than 60 seconds.	— Water supply is shut off. — Water pressure is low. — Calcium build-up on water injection pipe. — Water flow restrictor has malfunctioned or has calcium build-up. — Water solenoid valve (Y1) has malfunctioned. — Steam by-pass hose blocked.
E40	B3 Fault	B3 probe shorted to ground.	— Probe (B3) miswired probe or has malfunctioned.
E41	B4 Fault	B4 probe shorted to ground.	— Probe (B4) miswired probe or has malfunctioned.
E42	B5 Fault	B5 probe shorted to ground.	— Probe (B5) miswired probe or has malfunctioned.
E43	N6 Fault	N6 probe shorted to ground.	— Probe (N6) miswired probe or has malfunctioned.
E44	N8 Fault	N8 probe shorted to ground.	— Probe (N8) miswired probe or has malfunctioned.
E45	B10 Fault	B10 probe shorted to ground.	— Probe (B10) miswired probe or has malfunctioned.
E46	B10 - Point 1 Fault	B10 probe shorted to ground.	— Probe (B10) miswired probe or has malfunctioned.
E47	B10 - Point 2 Fault	B10 probe shorted to ground.	— Probe (B10) miswired probe or has malfunctioned.
E48	B10 - Point 3 Fault	B10 probe shorted to ground.	— Probe (B10) miswired probe or has malfunctioned.
E49	B10 - Point 4 Fault	B10 probe shorted to ground.	— Probe (B10) miswired probe or has malfunctioned.
E51	No Water in Steam Generator	Applies only to roll-in models. Lower-water-level probe (B2) does not detect water within 5 minutes after water-solenoid-valve (Y1) is activated.	— Water supply is shut off. — Water pressure is low. — Water-level probe (B1) has calcium build-up. — Fill-water solenoid valve (Y1) has malfunctioned. — Drain pump elbow is leaking. — Steam generator drain cap is missing. — Steam generator drain pump has malfunctioned. — Drain pump elbow leaking. — Relay board has malfuntioned.
E53	Fan Motor High Temperatures	Applies to table-top models and upper fan motors on roll-in models. Fan motor does not spin, resulting in overheating. Detected by motor coil safety thermo element. Temperature is above 320°F (160°C).	— Motor high limit open or wired incorrectly. — If LED on motor control flashes, see error codes for motor control. — Motor or fan wheel locked. — Fan wheel damaged.
E54	Lower Fan-Motor High Temperature	Applies only to roll-in models. Lower fan motor does not spin, resulting in overheating. Detected by motor coil safety thermo element. Temperature is above 320°F (160°C).	— Motor or fan wheel locked. — If LED on motor control flashes, see error codes for motor control. — Motor high limit open or wired incorrectly. CONTINUED ON NEXT PAGE

Error Codes

Error Code	Error Call Out in Display	Description of Error	Possible Cause(s) and Remedies
E55	Vent Not Open	Applies to single-vent models and to lower vent on dual-vent models. 60 seconds after the venting motor is activated, the vent-motor monitoring switch did not open.	— Vent valve monitoring switch has malfunctioned. — Vent valve (motor) has malfunctioned.
E56	Vent 2 Not Open	Upper vent on dual-vent models 60 seconds after the venting motor is activated, the vent motor monitoring switch did not open.	— Vent valve monitoring switch has malfunctioned. — Vent valve (motor) has malfunctioned.
E57	No Rinse Water	Flow switch for solenoid valve (Y4) does not detect any water flow for a minimum of 60 seconds.	— Water supply is shut off. — Water pressure is low. — Flow switch is dirty or has malfunctioned.
E88	Gas Ignition Failure NOTE: If after 2 attempts to clear this error, the error appears a third time, remove the oven from service and immediately contact an Alto-Shaam authorized service provider.	Burner has failed to ignite.	Refer to detailed procedure titled “No Combustion on a Call for Heat” following these error codes.
E89	Upper Gas Ignition Failure NOTE: If after 2 attempts to clear this error, the error appears a third time, remove the oven from service and immediately contact an Alto-Shaam authorized service provider.	Applies to table-top models and upper igniters on roll-in models. Reset output from Ignition Module is ON	— Gas supply is shut off. — Gas supply is low. — Hot surface ignitor has malfunctioned. — Flame sensor has malfunctioned. — Heat exchanger is plugged. — Ignition control has malfunctioned. — Gas valve has malfunctioned. Refer to Troubleshooting
E90	Lower Gas Combustion Blower Not at Speed	Applies only to roll-in models. Speed is too slow.	— Power supply cable is not connected to combustion blower motor. — Speed control cable is not connected to combustion blower motor. — Combustion blower motor is blocked, rotation is impeded, or motor has malfunctioned. — Faulty control board.
E91	Upper Gas Blower Not at Speed	Table-top models or upper blowers on roll-in models. Speed is too slow.	— Power supply cable is not connected to combustion blower motor. — Speed control cable is not connected to combustion blower motor. — Combustion blower motor is blocked, rotation is impeded, or motor has malfunctioned. — Faulty control board.
E92	Communication Error CB does not properly respond	No response from the Control Board (CB) to the Interface Board (IB).	— Turn off oven. Disconnect power. Reconnect power. Turn oven on. — Check CAN cable connections between CB and IB. — CAN cable has malfunctioned. — Relay board, low voltage, connector defective. — Display board connector defective.
E93	Interface Board (IB) and Control Board (CB) are in different states	The IB is in a different running state than the CB for more than 20 seconds.	— Turn off oven. Disconnect power. Reconnect power. Turn oven on. — Check CAN cable connections between CB and IB. — CAN cable has malfunctioned. — Relay board, low voltage, connector defective. — Display board connector defective.
E94	Communication Error, TO Interface Board	No signal transfer for more than 20 seconds between the Interface Board (IB) and the Control Board (CB).	— Turn off oven. Disconnect power. Reconnect power. Turn oven on. — Check CAN cable connections. — CAN cable defective. — Relay board, low voltage, connector defective. — Display board connector defective.

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Error Codes

Error Code	Error Call Out in Display	Description of Error	Possible Cause(s) and Remedies
E100	One or more maintenance reminder has timed out.	When any maintenance reminder has expired without action having been taken by the operator.	— Enter maintenance reminder screen and address the item that has timed out and reset.
E101	Ventless Hood Fault - No Pressure	If the power switch or pressure switch is not closed.	— Check if filters are installed. — Check if filters are clogged. — Check operation of hood fan. — Check filter switch for proper operation. — Check pressure switch for proper operation.
E102	Ventless Hood Fault — Filters Not Present	If the air filter switches are not closed.	— Check if filters are installed. — Check if filters are clogged. — Check operation of hood fan. — Check filter switch for proper operation. — Check pressure switch for proper operation.
E103	Option Board Doesn't Send Switch Setting	Option Board (OB) not communicating with Control Board (CB).	— Check CAN cable connection between OB and CB. — Ensure CB dip switch is set to see an OB (ON position). — Incompatible OB and CB software (update software). — OB has malfunctioned. — CB has malfunctioned.
E104	Option Board Not Communicating	Option Board (OB) not communicating with Control Board (CB).	— Check CAN cable connection between OB and CB. — Ensure CB dip switch is set to see an OB (ON position). — Incompatible OB and CB software (update software). — OB has malfunctioned. — CB has malfunctioned.
E105	No or Low Water Pressure	Water pressure switch not activated.	— Water supply not connected. — Water supply is shut off. — Water supply to unit blocked or obstructed (check filter).
E108	Cooling Fan Failure	If the temperature on the control board (relay board) is greater than 140°F (60°C) and less than 176°F (80°C). (See error code E02.)	— Cooling fan has malfunctioned. — Cooling fan air intake blocked.
E109	High Limit Switch Press the high-limit reset switch only once. If the condition remains, contact Alto-Shaam service provider.	The High Limit Switch input to the CB (N7) is "open".	— Unit has experienced an overheat condition. — Cooling fan has malfunctioned. — Heat relay is stuck closed. — Connection between high limit switch and Control Board (CB) is faulty. — High limit switch has malfunctioned.
E200	The SD card has been detected to be larger than 2GB in size.	The SD card inserted is larger than 2GB in size.	— SD card is larger than 2GB in size. Contact service to order replacement SD card.
E210	VFD Under Voltage	Applies to table top and upper VFDs on roll-in models. VFD is in an under-voltage condition.	— Possible VFD malfunction.
E211	VFD Over Voltage	Applies to table top and upper VFDs on roll-in models. VFD is in an over-voltage condition.	— Possible VFD malfunction.
E212	VFD Overheating	Applies to table top and upper VFDs on roll-in models. VFD is in an overheat condition.	— Cooling fan has malfunctioned. — Cooling fan air intake blocked. — High-limit switch has malfunctioned. — Cooling fans damaged. — Possible VFD failure.

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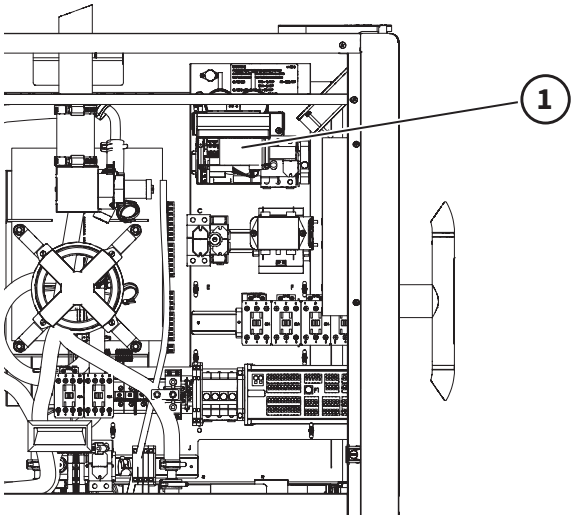
Error Codes

Error Code	Error Call Out in Display	Description of Error	Possible Cause(s) and Remedies
E213	Motor Over Current	Applies to table top and upper VFDs on roll-in models. VFD is in an over-current condition.	— Blocked fan wheel. — VFD malfunction. — Convection motor malfunction.
E214	VFD Current Peak	Applies to table top and upper VFDs on roll-in models. VFD current peak detected.	— Blocked fan wheel. — VFD malfunction. — Convection motor malfunction.
E215	VFD EEPROM Error	Applies to table top and upper VFDs on roll-in models. VFD EEPROM error detected.	— Possible VFD malfunction.
E216	VFD Over Current	Applies to table top and upper VFDs on roll-in models. VFD over current detected.	— Blocked fan wheel. — VFD malfunction. — Convection motor malfunction.
E217	VFD Short Circuit	Applies to table top and upper VFDs on roll-in models. VFD Short Circuit detected.	— Possible VFD malfunction.
E218	VFD Voltage Error	Applies to table top and upper VFDs on roll-in models. VFD voltage does not correspond to jumper settings.	— VFD voltage jumper is not in correct position. — Possible VFD malfunction. — VFD power source is not correct.
E220	Lower VFD Under Voltage	Applies only to roll-in models. Lower VFD has detected an under-voltage situation.	— Possible Lower VFD malfunction.
E221	Lower VFD Over Voltage	Applies only to roll-in models. Lower VFD has detected an over-voltage situation.	— Possible Lower VFD malfunction.
E222	Lower VFD Overheating	Applies only to roll-in models. Lower VFD has detected an overheat situation.	— Unit has experienced an overheat condition. — Defective high limit switch. — Defective cooling fans. — Possible Lower VFD malfunction.
E223	Lower Motor Over Current	Applies only to roll-in models. Lower Motor over current detected.	— Blocked fan wheel. — Possible lower VFD malfunction.
E224	Lower VFD Current Peak	Applies only to roll-in models. Lower VFD current peak detected.	— Possible Lower VFD malfunction.
E225	Lower VFD EEPROM Error	Applies only to roll-in models. Lower VFD EEPROM Error detected.	— Possible Lower VFD malfunction.
E226	Lower VFD Over Current	Applies only to roll-in models. Lower VFD over current detected.	— Possible Lower VFD malfunction.
E227	Lower VFD Short Circuit	Applies only to roll-in models. Lower VFD short circuit detected.	— Possible Lower VFD malfunction.
E228	Lower VFD Voltage Error	Applies only to roll-in models. Lower VFD voltage does not correspond to jumper settings.	— Lower VFD voltage jumper is not in correct position. — Possible Lower VFD malfunction.
E289	Unknown Error from VFD	VFD has provided an unknown error.	— Possible VFD malfunction.
E290	Unknown Error from Lower VFD	Lower VFD has provided an unknown error.	— Possible Lower VFD malfunction.

Touch Motor Control Error Codes

The LED is located on the variable frequency drive (VFD) ① of the oven.

Type of Error	Indication	Cause of Error
Undervoltage	LED flashing sequence, with 1 flash per period.	Voltage of intermediate circuit is less than 250V.
Overvoltage	LED flashing sequence, with 2 flashes per period.	Voltage of intermediate circuit exceeds 445V.
Excess Temperature	LED flashing sequence, with 3 flashes per period.	Temperature sensor in the power unit is more than 199°F (93°C).
Current Peak	LED flashing sequence, with 4 flashes per period.	Blocked motor, detected by current peak monitoring from 900 rpm rotating field.
Overcurrent	LED flashing sequence, with 5 flashes per period.	Intermediate circuit current exceeds 4.0A.
Short-circuit	LED flashing sequence, with 6 flashes per period.	Release of interrupt at intermediate circuit current larger than 53.0A.
Power on	LED flashing sequence, with 7 flashes per period.	Effective mains voltage does not correspond to jumper setting 115V/230V.
Watchdog	LED flashing sequence, with 8 flashes per period.	Watchdog of the microcontroller released, program crash.



Maintenance Codes	
1001	Descale steam genertor.
1002	Check water filter.
1003	Cleaning is past due.
1004	Check ventless hood filter.
1005	Inspect door gasket.

- All troubleshooting trees based on a 7-20 208/240V 3ph model running at “ECO” power setting unless otherwise noted.

PROformance: Appliance Dead — No Display or Operation

Is power connected to the appliance?	No	Install power to the appliance, turn on main circuit breaker or plug in the appliance.
Yes		
Is there correct voltage at the power source (outlet)?	No	Inspect and/or reset the circuit breaker.
Yes		
Is there correct voltage at the main terminal block (L1/2/3)?	No	Repair or replace the faulty cord, plug, or wiring.
Yes		
Is there voltage at the F1 fuse block?	No	Repair the wiring.
Yes		
Is there continuity through the terminal module 8A fuse?	No	Replace the fuse and test.
Yes		
Is there voltage across L/N at the power supply?	No	Inspect/Repair wiring between terminal block 33-3 and power supply terminal L, and between terminal block terminal 27-1 and power supply terminal N.
Yes		
Is there 12 VDC output from the power supply?	No	Replace faulty power supply.
Yes		
Is there 12 VDC across the Control Board (CB) terminal X07 pins 1-4?	No	Repair wiring between power supply and the Control Board (CB) terminal X07.
Yes		
Is there 12 VDC across Interface Board (IB) terminal X07 pins 1-4?	No	Repair the wiring between Control Board (CB) X07 and Interface Board (IB) X07.
Yes		
Inspect, test and repair or replace the following connections and components as needed.		
Is the ethernet connection between the Interface Board (IB) X06 and the Control Board (CB) X15 okay?	No	Repair the ethernet connection.
Yes		
Is the Interface Board (IB) or touch display backlight cable connection X04 okay?	No	Repair the cable connection X04.
Yes		
Is the Interface Board (IB) or touch display connector cable X03 okay?	No	Repair cable connection X03.
Yes		
Is the Interface Board (IB) or touch display or LVDS cable X01 okay?	No	Repair the LVDS cable X01.
Yes		
Is the Interface Board (IB)on/off board input at X05 okay?	No	Repair on/off input X05.

PROformance, Electric, Boiler-Free: No Steam Production — Steam at 212°F (100°C)

Is the convection fan motor spinning?	No	See “Convection Motor Is Not Spinning”.
Yes		
Is the B5 probe below set point?	No	The appliance will not call for steam production until the B5 probe is below set point. If the B5 probe is reading incorrectly, test the probe and replace it if necessary.
Yes		
Are the K41 and K44 convection element contactors being energized?	No	Check for voltage across the coil of K41 and K42 convection element contactors. If voltage is present, replace faulty contactor(s). If voltage is not present, determine which leg is missing and correct. • A1 is L1 and it is supplied to K41 from the CB terminal X02 pin 1. • A1 is L1 and it is supplied to K44 from the CB terminal X02 pin 2. • A2 is L2 and it is supplied to K45 from the N4 high limit terminal 11 and then jumped over to A2 on K44.
Yes		
Is there line voltage being supplied to terminals 2-4-6 on the K41/K44 contactors?	No	Repair the wiring issue between the main terminal blocks 1-1, 6-1, 11-1 and the K41/K44 contactors.
Yes		
Is there line voltage across terminals 1-3-5 on the K41/K44 contactors?	No	Replace faulty contactor(s)
Yes		
Is there voltage across the element loops at the convection elements?	No	Repair the wiring between contactors and elements.
Yes		
Are all element loops drawing current?	No	Replace the faulty element assembly.
Yes		
Is the Y1 solenoid being energized?	No	Determine which line is missing at the solenoid: • A1 is L1 supplied from Control Board (CB) terminal X04 pin 3. • A2 is L2 supplied from Y3, A2 is supplied from terminal block 27-17.
Yes		
Is the solenoid valve opening?	No	Replace faulty solenoid.
Yes		
Is water going through the flow control valve?	No	Inspect, clean, or replace flow control valve as necessary.
Yes		
Is water being injected into the fan wheel inside the appliance?	No	Correct the obstruction between the flow control valve and the injection tube.
Yes		
Appliance should begin producing steam in 2-5 minutes.		

PROformance, Electric, Boiler-Free: No Steam Production — Steam Below 212°F (100°C)

Is the convection fan motor spinning?	No	See “Convection Motor Is Not Spinning”.
Yes		
Is the N6 probe below set point?	No	The appliance will not call for steam production until the N6 probe is below set point. If the N6 probe is reading incorrectly, test the probe and replace it if necessary.
Yes		
Are the K41 and K44 convection element contactors being energized?	No	Check for voltage across the coil of the K41 and K42 convection element contactors. If voltage is present, replace faulty contactor(s). If voltage is not present, determine which leg is missing and correct. • A1 is L1 and it is supplied to the K41 contactor from the Control Board (CB) terminal X02 pin 1. • A1 is L1 and it is supplied to the K44 contactor from the CB terminal X02 pin 2. • A2 is L2 and it is supplied to K45 from the N7 high limit terminal 11 and then jumped over to A2 on the K22.
Yes		
Is line voltage being supplied to terminals 2-4-6 on the K41/K44 contactors?	No	Repair the wiring issue between main terminal blocks 1-1, 6-1, 11-1 and the K41/K44 contactors.
Yes		
Is there line voltage across terminals 1-3-5 on the K41/K44 contactors?	No	Replace faulty contactor(s).
Yes		
Is there voltage across element loops at the convection elements?	No	Repair the wiring between contactors and elements.
Yes		
Are all element loops drawing current?	No	Replace faulty element assembly.
Yes		
Is the Y1 solenoid being energized?	No	Determine which line is missing at the solenoid. • A1 is L1 supplied from CB terminal X04 pin 3. • A2 is L2 supplied from Y3/A2 supplied from terminal block 27-17.
Yes		
Is the Y1 solenoid valve opening?	No	Replace faulty solenoid.
Yes		
Is water going through the flow control valve?	No	Inspect, clean, replace flow control valve as necessary.
Yes		
Is water being injected into the fan wheel inside the appliance?	No	Correct obstruction between flow control valve and injection tube.
Yes		
Appliance should begin producing steam in 2-5 minutes.		

PROformance, Electric: No Convection Heat

Is the convection fan motor spinning?	No	See “Convection Motor Is Not Spinning”.
Yes		
Is the N6 oven temperature probe below set point?	No	The convection element contactors will not be energized until the N6 probe is below set point.
Yes		
Are the K41 and K44 convection element contactors closed?	No	Check for voltage across the coil of the K41 and K42 convection element contactors. If voltage is present, replace faulty contactor(s). If voltage is not present, determine which leg is missing and correct. • A1 is L1 and it is supplied to the K41 contactor from the Control Board (CB) terminal X02 pin 1. • A1 is L1 and it is supplied to the K44 contactor from the CB terminal X02 pin 2. • A2 is L2 and it is supplied to K45 from the N7 high limit terminal 11 and then jumped over to A2 on the K44. Reset High Limit if tripped.
Yes		
Is there line voltage being supplied to terminals 2-4-6 on the K41/K44 contactors?	No	Repair wiring issue between terminal blocks 1-1, 6-1, 11-1 and K41/K44 contactors
Yes		
Is there line voltage across terminals 1-3-5 on the K41/K44 contactors?	No	Replace faulty contactor(s).
Yes		
Is there voltage across element loops at the convention elements?	No	Repair the wiring between contactors and elements.
Yes		
Are all element loops drawing current?	No	Replace faulty element assembly.

PROformance: Convection Motor Is Not Spinning (E03/E04)

Is the motor fan wheel physically blocked?
- Yes → Remove the obstruction from the fan wheel and retest.
- No ↓

Is the Controller Area Network (CAN) connection cable properly seated at Variable Frequency Drive (VFD) S600 terminal and the Control Board (CB) terminal X16?
- No → Repair the connection and retest.
- Yes ↓

Is there continuity from end to end on all CAN cable wires?
- No → Replace the faulty CAN cable and retest.
- Yes ↓

Reconnect the cable, making a good electrical connection. Does the problem persist?
- No → The appliance should operate properly.
- Yes ↓

When running a cook mode, does the fan start to spin?
- No → Replace the faulty motor.
- Yes ↓

With the motor running, does the Revolutions Per Minute (RPM) appear in the service mode?
- No → Check the Hall Effect sensor wiring from the motor.
- Yes → Replace the VFD.

PROformance: No Grease Collection Operation

Is the appliance equipped with a grease collection (GC) pump?
- No → Grease collection system is not available.
- Yes ↓

Is the control set up to operate a GC system?
- No → Turn on grease collection in option set up screen.
- Yes ↓

Is grease collection activated in the cooking program?
- No → Activate grease collection in the program and retest.
- Yes ↓

Is the grease collection pump being energized on its timed cycle?
- No → Determine which leg of the power is missing and correct.
  - A1 is L1 being switched from Control Board (CB) terminal X02 which is supplied by Option Board (OB) terminal X02 pin 1.
  - A2 is L2 supplied by CB terminal X02 pin 3 which is supplied from OB terminal X02 pin 4.
- Yes ↓

Is the grease collection pump running?
- No → Replace the faulty grease collection pump.
- Yes → Remove pump and clear obstruction between condensate pan and pump, or between pump and grease collection bin.

PROformance: No Liquid Clean Injection

Is the appliance equipped with a Liquid Cleaning (LC) system?
- No → Liquid cleaning system is not available.
- Yes ↓

Is the control set up to operate liquid cleaning chemical injection?
- No → Turn on liquid clean injection in option set up screen.
- Yes ↓

Is the Peristaltic Pump (P. Pump) being energized on its timed cycle?
- No → Determine which leg of the power is missing and correct.
  - A1 is L1 supplied from the Option Board (OB) terminal X01 pin 6.
  - A2 is L2 supplied from the Terminal block (TB) 45 pin 6.
- Yes ↓

Is the P. Pump running?
- No → Replace the faulty liquid cleaning injection pump.
- Yes ↓

Is the liquid cleaning pump hose connected to a chemical jug?
- No → Connect the hose to the chemical jug and retest.
- Yes ↓

Is there chemical inside the chemical jug?
- No → Replace the chemical jug and retest.
- Yes ↓

Is the hose between the pump and the liquid chemical jug free of obstruction or pinching?
- No → Replace or correct as needed.
- Yes ↓

Are you able to prime the cleaning pump through the service mode function?
- No → Inspect the Peristaltic Pump hose and replace as needed.
- Yes → Retest the cleaning cycle.

PROformance: No Smoke Production During the Smoke Cycle

Make sure the smoke tray is installed with pre-soaked wood chips and that the smoke icon has been selected on the touch control.

Steam production and humidity control vents take priority over smoke production.

Is the smoke relay coil being energized?

No

Determine which side of the coil voltage is missing and correct.

- Terminal 14 of the smoke relay is L1 supplied from the Option Board (OB) X01 pin 2.
- Terminal 12 of the smoke relay is L2 supplied from the terminal block 45 pin 6.

Yes

Is L2 being supplied to terminal 12 on the smoke relay?

No

Repair the wiring issue between terminal 12 on the smoke relay and the terminal block 45 pin 5.

Yes

Is L2 being supplied to smoke relay pin 8?

No

Replace the faulty smoke relay.

Yes

Is there line voltage across the smoke element?

No

Determine which leg is missing and correct.

- L1 is constantly supplied to the smoke element from fuse F8 (replace fuse if blown).
- L2 is supplied from the smoke relay pin 8. Repair wiring as needed.

Yes

Is the smoke element drawing current?

No

Replace the faulty element.

Yes

Smoke production should be taking place.

PROformance and Classic: No Condensate Cooling (E15)

Is the B3 probe above the set point?	No	Condensate cooling is not active unless the B3 probe is above the set point.
Yes		
Is the incoming water line connected to the untreated water inlet on the back of the appliance?	No	Connect the cold water supply line to the untreated water inlet and test.
Yes		
Is the untreated water supply turned on?	No	Turn on the untreated water supply line.
Yes		
Is there line voltage across the Y2 solenoid?	No	Determine which leg is missing and correct: • A1 is L1 supplied from the Control Board (CB) terminal X04 pin 1 • A1 is L2 supplied from the terminal block 27-17
Yes		
Is the Y2 solenoid opening?	No	Replace the faulty solenoid.
Yes		
Is there water at the condensate cooling injection port?	No	Repair or remove the obstruction between the Y2 solenoid and the cooling port.
Yes		
Is the injection pipe clear of obstructions?	No	Clean the cooling injection pipe.
Yes		
Is the condensate pan drain hose plugged?	No	Unplug the drain hose and retest.
	Yes	Inspect and/or replace the B3 probe and its wiring.

PROformance and Classic: No Rinse Water During the Cleaning Cycle

Is the Wash Cycle Rinse Water Y3 solenoid being energized on its timed cycle?

No → Determine which leg of the power is missing at the Y3 solenoid and correct.
- A1 is L1 supplied from the Control Board (CB) terminal X04 pin 2.
- A2 is L2 supplied from terminal block 27-17.

Yes

Is the Y3 solenoid opening?

No → Replace the faulty solenoid.

Yes

Is there water at the rinse water flow control valve?

No → Repair the hose between the Y3 solenoid and rinse flow control valve.

Yes

Is the rinse flow control valve clean of debris?

No → Clean or replace the rinse flow control valve.

Yes

Is water at the injection pipe of the appliance?

No → Clean or repair water manifold and/or hose from manifold to the injection pipe.

Yes

Is the injection pipe clear of debris?

No → Repair or replace the injection pipe as needed.

Yes

The rinse water plumbing should be working properly.

PROformance and Classic: Cleaning System is Not Operating

Is the Y4 cleaning pump being energized at its timed cycle?
- No: Determine which leg of the power is missing at the Y4 solenoid and correct.
  - A1 is L1 from the Control Board (CB) terminal X03 pin 3.
  - A2 is L2 supplied from the Control Board (CB) terminal X03 pin 5 which is supplied from the CB terminal X03 pin 6.
- Yes

Is the Y4 cleaning pump running?
- No: Replace the faulty cleaning pump.
- Yes

Is there cleaning water at the pump inlet?
- No: Make sure the condensate pan clean out hose is unplugged and that the Y2 cooling water solenoid is operating properly.
- Yes

Is there cleaning water at the water manifold inlet from the Y4 pump?
- No: Inspect or replace the hose between Y4 cleaning pump and the water manifold. If the hose is okay, replace the faulty Y4 cleaning pump.
- Yes

Is there cleaning water at the injection pipe?
- No: Remove the obstruction between the water manifold and the injection pipe.
- Yes

Is the injection pipe clear of debris?
- No: Clean or replace the injection pipe as needed.
- Yes

The cleaning pump and plumbing circuit should be working properly.

PROformance, Electric with Boiler: No Steam Generator Fill

Are the High Water Level Probe B1 and Low Water Level Probe B2 reading empty?	No	The control will not energize the Y1 fill solenoid until the water level drops below the B2 sensing probe. If the tank is known to be empty, investigate for scale build up and/or a shorted water level probe.
Yes		
Is the Y1 steam injection solenoid being energized?	No	Determine which side of the solenoid coil voltage is missing and correct: • A1 is L1 supplied from Control Board (CB) terminal X04 pin 3. • A2 is L2 supplied from A2 Y3 which is supplied from terminal block 27-17.
Yes		
Is the Y1 solenoid opening?	No	Make sure the connected water pressure does not exceed 90 psi and/or replace the faulty solenoid.
Yes		
Is the generator filling with water? (It should take approximately 45 seconds to satisfy the B2 sensing probe.)	No	Check for an obstruction or leak between the Y1 solenoid and the steam generator. Also check if the water supply is turned off or disconnected, or check for a plugged filter cartridge.
Yes		
Is the B2 water level probe satisfied? If not, water should be exiting the steam exit port inside the appliance cavity.	No	Investigate for scale build up inside the tank, around the water level probes and/or faulty water level probe assembly.
Yes		
Is the B1 water level probe satisfied? The B1 water level probe should satisfy approximately 10-15 seconds after B2.	No	Investigate for scale build up inside the tank, around the water level probes and/or faulty water level probe assembly.
Yes		
Does the Y1 solenoid de-energize?	No	Investigate the Control Board (CB).
Yes		
Does the Y1 solenoid close and stop the fill cycle?	No	Ensure the water pressure meets minimum and maximum requirements and/or replace the faulty solenoid valve.
Yes		
The fill cycle is complete.		

PROformance with Boiler Option: No Steam Production — Steam at 212°F (100°C)

Is the convection fan motor spinning?	No	See “Convection Motor Is Not Spinning”.
Yes		
Are the Boiler Water Level probes B1 and B2 satisfied?	No	Troubleshoot the boiler not filling.
Yes		
Is the Steam Bypass Probe B5 below the set point?	No	Appliance will produce steam if B5 is above set point. If B5 should go below set point, inspect B5 and its wiring. Correct or replace as needed.
Yes		
Are the coils for the Boiler Element Contactor K1 and K2 closed?	No	Check for voltage across the coil of the K1 and K2 boiler element contactors. If voltage is present, replace the faulty contactor. If voltage is not present, determine which leg is missing and correct. • A1 is L1 supplied to the K1 boiler element contactor from Control Board (CB) terminal X01 pin 2. • A1 is L1 supplied from the K1 boiler element contactor A1 to the K2 contactor A1. • A2 is L2 supplied from the N9 boiler high limit terminal 12 (reset the N9 boiler high limit if it is tripped) to the K2 contactor and then jumped to K1 boiler element contactor A2.
Yes		
Is there line voltage across terminals 1/3/5 of the K1 and K2 boiler element contactors?	No	Repair any wiring issues between terminal blocks TB1-2, TB6-2, TB11-2 and K1 and K2 boiler element contactors.
Yes		
Is there line voltage across terminals 2/4/6 of the K1 and K2 boiler element contactors?	No	Replace the faulty contactor(s).
Yes		
Is there voltage across the immersion element loops?	No	Repair any wiring issue between the K1 and K2 boiler element contactors and the immersion elements.
Yes		
Are the element loops drawing current?	No	Replace the faulty immersion element(s).
Yes		
After 5 minutes, is steam being produced in the appliance?	No	Check inside the boiler for scale build up around the elements and descale as needed.
Yes		
The steam cycle is working.		

Classic, Boiler Free: Appliance Dead — No Display or Operation

Is power connected to the appliance?	No	Install power to the appliance, turn on main circuit breaker or plug in the appliance.
Yes		
Is there correct voltage at the power source (outlet)?	No	Inspect and/or reset the circuit breaker.
Yes		
Is there correct voltage at the main terminal block (L1/2/3)?	No	Repair or replace the faulty cord, plug, or wiring.
Yes		
Is there voltage at the F1 fuse block?	No	Repair the wiring.
Yes		
Is there continuity through the terminal module 8A fuse?	No	Replace the fuse and test.
Yes		
Is there voltage across L/N at the power supply?	No	Inspect and repair the wiring between terminal block 33-3 and the power supply terminal L, and between the terminal block 27-1 and the power supply terminal N.
Yes		
Is there 12 VDC output from the power supply?	No	Replace the faulty power supply.
Yes		
Is there 12 VDC across Control Board (CB) terminal X07 pins 1-4?	No	Repair the wiring between the power supply and the CB terminal X07.
Yes		
Is the 12 VDC across Interface Board (IB) terminal X01 pins 1-4?	No	Repair the wiring between the CB X07 and the IB X01.
Yes		
Inspect, test, repair, or replace the following connections and component as needed.		
Is the ethernet connected between the IB (X05) and the CB (X15)?	No	Connect the ethernet cable between the IB X05 and the CB X15.
Yes		
Is the IB on/off board input X06?	No	Repair the IB on/off input X07.
Yes		
The appliance should be working.		

Classic, Electric, Boiler-Free: No Steam Production — Steam at 212°F (100°C)

Is the convection fan motor spinning?	No	See “Convection Motor Is Not Spinning”.
Yes		
Is the Steam Bypass Probe B5 below the set point?	No	The appliance will not call for steam production until the B5 probe is below the set point. If the B5 probe is reading incorrectly, test the probe and replace the probe if necessary
Yes		
Is the Convection Element Contactor K41 closed?	No	Check for voltage across the coil of K41. If voltage is present, replace the faulty contactor. If voltage is not present, determine which leg is missing and correct: • A1 is L1 and it is supplied to the K41 contactor from the Control Board (CB) terminal X02 pin 1. • A2 is L2 and it is supplied to the K41 convection element contactor from the Cavity High Limit Reset N7 terminal 11. Reset the High Limit if it is tripped.
Yes		
Is there line voltage being supplied to terminals 2-4-6 on the K41/K44 contactors?	No	Repair the wiring issue between the main terminal blocks 1-1, 6-1, 11-1 and the K41 contactors.
Yes		
Is there line voltage across terminals 1-3-5 on the K41 contactor?	No	Replace the faulty contactor(s).
Yes		
Is there voltage across element loops at the convection elements?	No	Repair the wiring between the contactors and the elements.
Yes		
Are all element loops drawing current?	No	Replace the faulty element assembly.
Yes		
Is the Steam Injection Solenoid Y1 being energized?	No	Determine which line is missing at the solenoid. • A1 is L1 supplied from CB terminal X04 pin 3 • A2 is L2 supplied from Y3/A2 which is supplied from terminal block 27-17
Yes		
Is the Y1 solenoid valve opening?	No	Replace the faulty solenoid.
Yes		
Is water going through the steam water flow control?	No	Inspect, clean, or replace the steam water flow control as necessary.
Yes		
Is water being injected into the fan wheel inside the appliance?	No	Correct the obstruction between the flow control valve and the injection tube.
Yes		
The appliance should begin producing steam in 5 minutes.		

Classic: No Low Speed Convection Motor Operation (E03/E04)

Does the motor fan wheel spin freely?	No	Remove the obstruction and/or replace the convection motor as needed.
Yes		
Is the K51 low speed contactor being energized?	No	Determine which leg of power is missing and correct: • A1 is L1 supplied from the Control Board (CB) terminal X01 pin 3 through the N/C contacts 21/22 on the K50 contactor (K51 will not energize if K50 is energized). • A2 is L2 supplied from K50 A2 which is supplied terminal block TB 27-19.
Yes		
Is the K51 contactor closing?	No	Replace the faulty contactor.
Yes		
Is there line voltage across terminals 1/3/5 on the K51 contactor?	No	Test for blown F4/F6/F7 fuse(s) and/or repair the wiring issue between the fuses, K50, or K51 contactors.
Yes		
Is there line voltage across terminals 2/4/6 on the K51 contactor?	No	Replace the faulty contactor.
Yes		
Is there line voltage across the black/blue/brown wires at the convection motor?	No	Repair the wiring issue between the K51 contactor and the convection motor.
Yes		
Is the convection motor running?	No	Replace the faulty convection motor and the capacitors as applicable.
Yes		
The low speed convection motor is operating.		

Classic: No High Speed Convection Motor Operation (E03/E04)

Does the motor fan wheel spin freely?
- No → Remove the obstruction and/or replace the motor as needed.

Yes

Is the K50 high speed contactor being energized?
- No → Determine which leg of power is missing and correct:
  - A1 is L1 supplied from Control Board (CB) terminal X01 pin 2.
  - A2 is L2 supplied from terminal block TB 27-19.

Yes

Is the K50 contactor closing?
- No → Replace the faulty contactor.

Yes

Is there line voltage across terminals 1/3/5 on the K50 contactor?
- No → Test for blown F4/F6/F7 fuse(s) and/or repair the wiring issue between fuses and K50.

Yes

Is there line voltage across terminals 2/4/6 on the K50 contactor?
- No → Replace the faulty contactor.

Yes

Is there line voltage across the red/white/yellow wires at the convection motor?
- No → Repair the wiring issue between K50 and the convection motor.

Yes

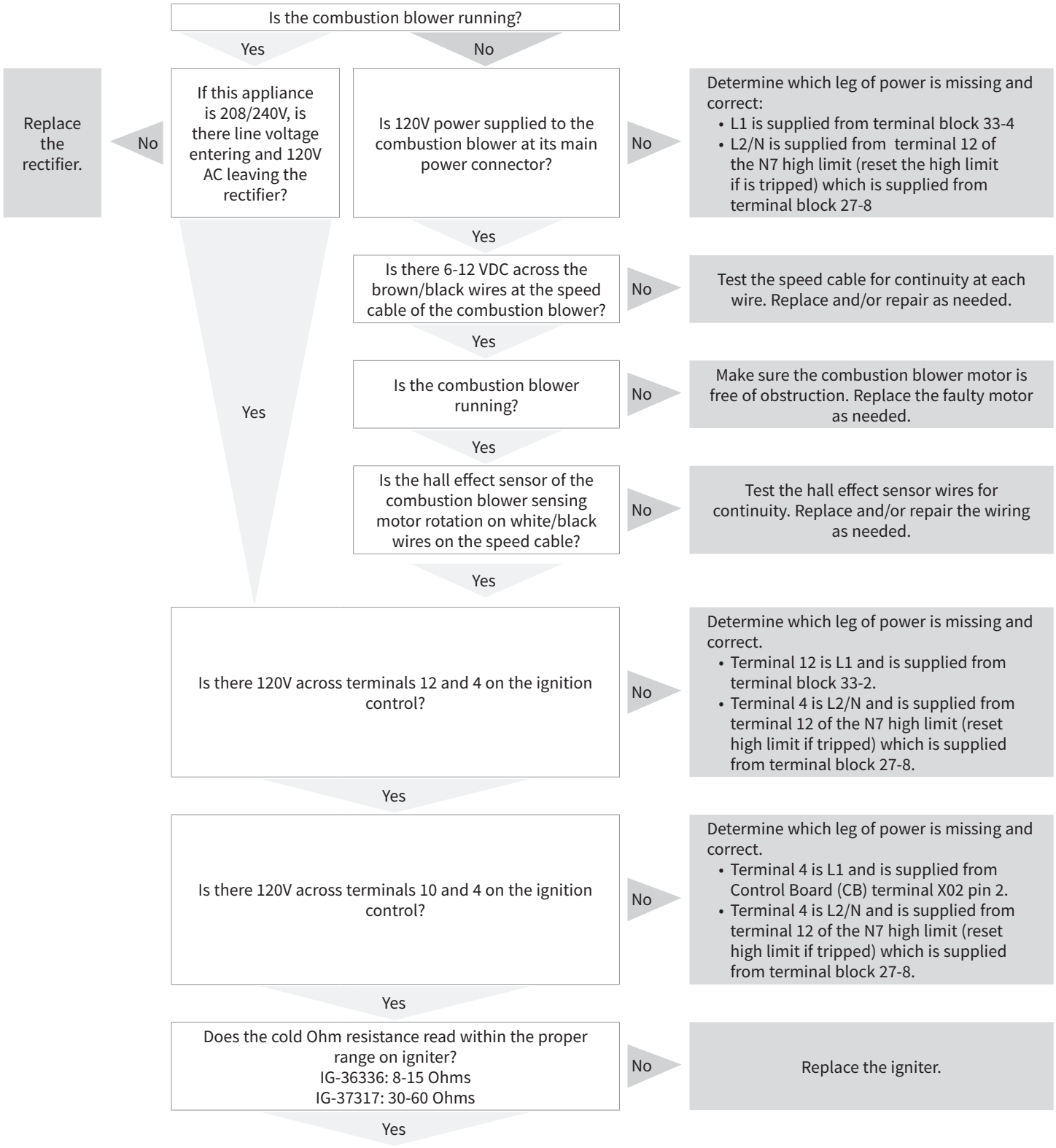
Is the motor running?
- No → Replace the faulty motor and capacitors as applicable.

Yes

The high speed motor is operating.

PROformance and Classic Gas: No Combustion On A Call For Heat (ovens manufactured before 7/12/2019)

- All GAS troubleshooting trees based on a 7-20 120V 1PH model running at “ECO” power setting unless otherwise noted.
- The gas pressure to the appliance should be tested first to ensure that the connected pressure falls between the minimum/maximum pressures called out in the installation manual for the appliance.



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Is 120V power supplied to the igniter?

No → Repair the wiring issue between the igniter and the control. Replace the ignition control as required.

Yes

Is the igniter drawing 1.5 amps?

No → Test the continuity of the igniter, replace if required.

Yes

Is the gas valve opening? To test for this, remove the igniter wire and smell for gas at the outlet of the heat exchanger flue.

No → Replace the faulty ignition control and/or gas valve.

Yes

Is the burner igniting? Measure the micro amps in series with the ignition module and the flame sensor.

No → Inspect the burner. Adjust tune of burner to achieve combustion per Alto-Shaam specific tuning instruction.

Yes

Is the flame signal above 0.5uA being sensed?

No → Inspect the flame sensor and the flame sensor wiring by taking a resistance reading from the flame sensing tip to the end of the connector.

Yes → Test the flame signal input at CB.

- 0VDC = Flame being sensed at the Ignition Control (IC), the ignition trial is successful.
- 5VDC = Flame is not being sensed at the ignition control.
- If a flame is present, and microamps are measuring above 0.5uA, replace the ignition control.
- If a flame is present but the micro amps are below 0.5uA, inspect the flame sensor and the associated wiring.

PROformance, Gas: No Convection Heat

Is the convection fan motor spinning?
- No → See “Convection Motor Is Not Spinning”.
- Yes ↓

Is the N6 oven temperature probe below the set point?
- No → The convection element contactors will not be energized until the N6 oven temperature probe is below the set point.
- Yes ↓

Is the burner igniting?
- No → See “No Combustion On A Call For Heat”.
- Yes ↓

Appliance is heating properly.

Classic, Gas: No Convection Heat

Is the convection fan motor spinning?
- No → See “No High Speed Convection Motor Operation”.
- Yes ↓

Is the N6 oven temperature probe below the set point?
- No → The convection element contactors will not be energized until the N6 oven temperature probe is below the set point.
- Yes ↓

Is the burner igniting?
- No → See “No Combustion On A Call For Heat”.
- Yes ↓

The appliance is heating properly.

PROformance, Gas, Boiler-Free: No Steam Production — Steam at 212°F (100°C)

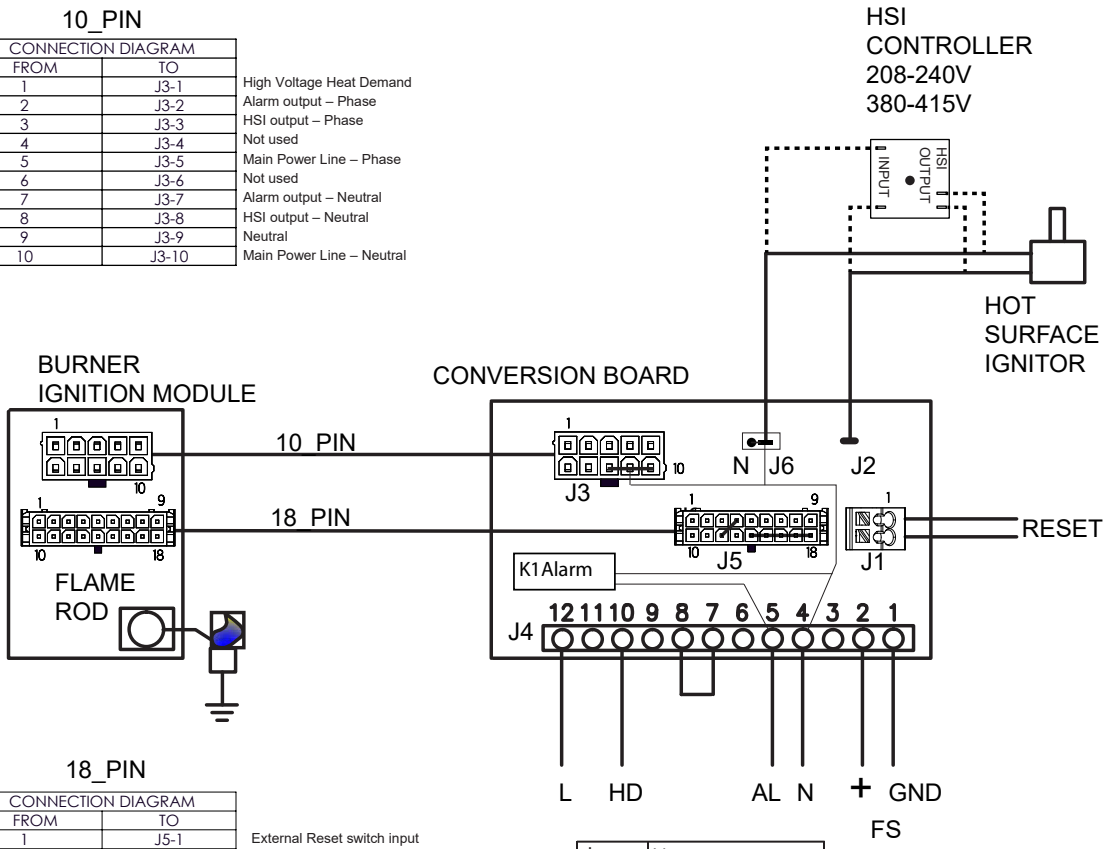
Is the convection fan motor spinning?	No	See “Convection Motor Is Not Spinning”.
Yes		
Is the Steam Bypass Temperature Probe B5 below the set point?	No	The appliance will not call for steam production until the B5 probe is below the set point. If the B5 probe is reading incorrectly, test the probe and replace if necessary.
Yes		
Is the burner igniting?	No	See “No Combustion On A Call For Heat”.
Yes		
Is the Filtered Steam Injection Solenoid Y1 being energized?	No	Determine which line is missing at the Y1 solenoid. • A1 is L1 supplied from the Control Board (CB) terminal X04 pin 3. • A2 is L2 supplied from Y3/A2 which is supplied from terminal block 27-17.
Yes		
Is the Y1 solenoid valve opening?	No	Replace the faulty solenoid.
Yes		
Is water flowing though the flow control valve?	No	Inspect, clean, replace the flow control as necessary.
Yes		
Is water being injected into the fan wheel inside the appliance?	No	Remove the obstruction between the flow control valve and the injection tube.
Yes		
The appliance should begin producing steam in 5 minutes.		

PROformance and Classic Gas ovens with a conversion board along with a 10 Pin and an 18 Pin connector on the burner ignition module

10_PIN

CONNECTION DIAGRAM	
FROM	TO
1	J3-1
2	J3-2
3	J3-3
4	J3-4
5	J3-5
6	J3-6
7	J3-7
8	J3-8
9	J3-9
10	J3-10

High Voltage Heat Demand
Alarm output – Phase
HSI output – Phase
Not used
Main Power Line – Phase
Not used
Alarm output – Neutral
HSI output – Neutral
Neutral
Main Power Line – Neutral



18_PIN

CONNECTION DIAGRAM	
FROM	TO
1	J5-1
2	J5-2
3	J5-3
4	J5-4
5	J5-5
6	J5-6
7	J5-7
8	J5-8
9	J5-9
10	J5-10
11	J5-11
12	J5-12
13	J5-13
14	J5-14
15	J5-15
16	J5-16
17	J5-17
18	J5-18

External Reset switch input
NC
Flame on (open collector)
High Limit switch input – HL
NC
NC
NC
NC
NC
NC
Supply (24V)
High Limit switch – supply (24V)
Supply (6V)
GND
GND – External Reset switch
GND
GND
GND

L	Line
HD	Heat demand
AL	Alarm
N	Neutral
GND	Ground
FS	Flame sense
HSI	Hot surface ignitor

Timings	Value
Waiting time	0 s (adjustable)
Glowing time	21 s (see NOTE)
Safety time	5 s
Number of ignition trials	2
Flame failure response time	1 s
Stabilization time	0 s
Post purge time	-
Pump over run time	-
Anti cycling time	-

NOTE: Duration of Glowing = Glowing time + minimal 4 s in Safety time

PROformance and Classic Gas with a conversion board, along with a 10 Pin and an 18 Pin connector on the burner ignition module manufactured beginning 7/12/19*:

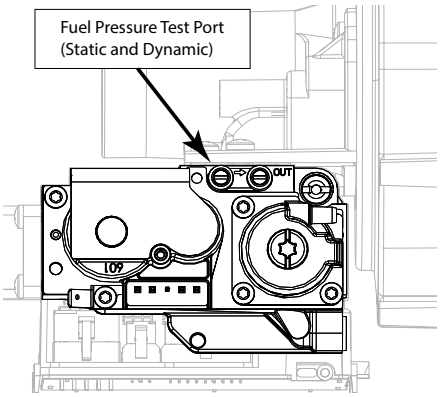
No Combustion On A Call For Heat

**except ovens manufactured under deviations 1738 and 1895*

All GAS troubleshooting trees are based on a 7-20 120V 1PH model running at "ECO" power setting unless otherwise noted.

Required steps before beginning:

1. Test static and dynamic gas pressures to the oven. Gas pressure is measured in inches of water column (w.c.) or millibars (mbar).



- Static gas pressure = between 5.5" w.c. (13.7 mbar) and 14" w.c. (34.9 mbar)
- Dynamic gas pressure = between 5.5" w.c. (13.7 mbar) and 14" w.c. (34.9 mbar) for natural gas (NG), or between 9" w.c. (22.4 mbar) and 14" w.c. (34.9 mbar) for liquefied petroleum (LP).

2. Check supply voltage to oven and make sure it corresponds to the voltage listed on the model tag.

IMPORTANT NOTE: Leave manometer connected **at all times** while troubleshooting the gas system.

Measure the gas supply to the oven.
• Is the dynamic pressure above the minimum requirement?

No → Correct the gas supply pressure before moving ahead with diagnostics.

Yes

With the oven turned off, remove the hot surface ignitor wires from J2 and J6 on the conversion board.
(On 208-415 voltage ovens, remove the wires from the output terminals of the HSI controller.)
Measure the ohm value of the ignitor at room temperature.
• Is the ohm reading between 30 to 60 ohms?

No → Replace the ignitor if the ohm measurement is outside of the 30 to 60 ohm range at room temperature.

Yes

Test continuity between pins 4 and 5 through the K1 relay on conversion board J4.
• Is there continuity?

No → K1 relay is faulty. Replace conversion board.

Yes

Turn power on to the oven.
• Is an E88 error code visible on the controller, or is the reset light illuminated?

If YES, continue to **E88 Prior to a call for heat.**

No → Proceed to the troubleshooting steps below the boxed section titled **E88 Prior to a call for heat**.

Continued from previous page

E88 Prior to a call for heat

Inspect the conversion board J5 (18 pin) connector.
• Is the J5 connector fully seated?

No → Press J5 connector in on the conversion board and the ignition module. Call for heat and test burner ignition function.

Yes

Clear the oven display of errors by pressing the check mark.
• Is the reset light on the ignition module still on?

No → Call for heat and test burner ignition function.

Yes

Press and hold the reset button for a minimum of 3 seconds to perform a hard reset.
• Is the reset light on the ignition module still on?

No → Call for heat and test burner ignition function.

Yes

Remove the J5 connector from the conversion board.
• Is there resistance between pins 4 and 12 on the conversion board?

No → If the circuit is open (OL), replace the conversion board.

Yes

Check that the Molex pins are fully seated on both ends of the 18-pin harness. Check all wires for continuity.
• Is there continuity on all wires?

No → Secure the pins back into the Molex connection or replace the 18-pin wire harness.

Yes

Check pins on the ignition module. Replace the ignition module if the connections and wiring are correct.
After replacing ignition module, call for heat and confirm burner ignition function.

Continue with troubleshooting procedure below.

With the oven power on, measure the AC voltage at the conversion board connector J4 pins 12 and 4.
• Is 120VAC voltage present?

No → Reset the cavity high limit. Check that the connection at TB33 pin 2 is making good contact and has 120VAC.

Yes

Measure AC voltage between pins 5 and 10 on the conversion board J3.
• Is 120VAC voltage present?

No → Check all pin connections in connectors J3 on the conversion board.
If all connections are good and seated properly, replace the conversion board.

Yes

Measure AC voltage between pins 5 and 10 on the ignition control module 10 pin connector.
• Is 120VAC voltage present?

No →
- Check all pin connections in connectors J3 on the conversion board and the 10-pin connector on the ignition control module.
- Check continuity of the wires in the 10-pin harness. If there is no continuity, replace the 10-pin wire harness.

Yes

Start a demand for heat. Measure AC voltage between pins 10 and 4 of connector J4 on the conversion board.
• Is 120VAC voltage present?

No → Measure AC voltage at control board connector X01 pin 1.
- If 120VAC is present, measure voltage at control board connector X02 pin 1 while in a call for heat. (If oven is a floor model, also measure voltage at connector X02 pin 2.)
- If 120VAC is not present at X02 pin 1 or 2, replace the control board.
- If 120VAC is present at X02 pin 1 or 2, trace the wire to the conversion board and repair or replace the open wire.

Yes

Continued on next page

Continued from previous page

Measure AC voltage between pins 1 and 10 of connector J3 on the conversion board.
• Is 120VAC voltage present?

No → Check pin connection in connector J3 on the conversion board. If connection is good and seated properly, replace the conversion board.

Yes

Measure AC voltage between pins 1 and 10 of the 10-pin connector on the burner ignition module.
• Is 120VAC voltage present?

No → Check all pin connections in the 10-pin connector. Make sure the connector is fully seated into the ignition module. Check continuity of wires in the 10-pin harness. Replace 10-pin harness if faulty.

Yes

Measure AC voltage between pins 3 and 10 of the 10-pin connector on the burner ignition module.
NOTE: This only occurs when the oven is actively calling for heat and the burner has not yet lit.
• Is 120VAC voltage present?

No → Check all pin connections in the 10-pin connector. Make sure the connector is seated into the ignition module.
If all connections are good, replace the ignition module.

Yes

Measure AC voltage output from the ignition module between pins 3 and 10 on conversion board J3.
NOTE: This only occurs when the oven is actively calling for heat and the burner has not yet lit.
• Is 120VAC voltage present?

No → Make sure all pins on connector J3 are good and seated properly. Check continuity of wires in the 10-pin harness. If no continuity, replace the 10 pin wire harness.

Yes

Measure AC voltage between terminals J2 and J6 (N test point) on the conversion board.
NOTE: This only occurs when the oven is actively calling for heat and the burner has not yet lit.
• Is 120VAC voltage present?

No → AC voltage is fed to J2 internally through the conversion board. Replace the conversion board.
NOTE: 208-240V ovens include a voltage conversion board which must also be tested and replaced if necessary.

Yes

Allow the ignitor to preheat for approximately 21 seconds.
• Does the gas valve open?

A pressure drop on the incoming side of the valve indicates the gas valve is opening. Verify dynamic gas pressure is above the minimum requirement.

No → If the gas valve does not open, there is likely an ignition module or gas valve issue.
- Remove the ignition module from the gas valve and inspect the 5 pins for damage.
- Take a resistance reading between the left two pins and the right two pins. These should not be open.
- Check each pin to ground. The only pin that should have continuity to ground is the center pin. If the gas valve coils are open or shorted to ground, replace the gas valve.

NOTE: If the gas valve opens but the dynamic pressure drops below minimum, there is a gas supply issue.

Yes

• Measure the flame sensor current.
• Is the flame sensor current at or above 1 micro amp?

No → Remove the flame sensor.
Make sure the spacing from burner is correct.
Clean, adjust or replace the flame sensor as needed.

Yes

Is the oven heating?

No → Replace the faulty ignition module.

Yes

The burner system is operating properly.

Classic, Gas, Boiler-Free: No Steam Production — Steam at 212°F (100°C)

Is the convection fan motor spinning?	No	See “No High Speed Convection Motor Operation”.
Yes		
Is the Steam Bypass Temperature Probe B5 below the set point?	No	The appliance will not call for steam production until the B5 probe is below the set point. If the B5 probe is reading incorrectly, test the probe and replace if necessary.
Yes		
Is the burner igniting?	No	See “No Combustion On A Call For Heat”.
Yes		
Is the Filtered Steam Injection Solenoid Y1 being energized?	No	Determine which line is missing at the Y1 solenoid. • A1 is L1 supplied from Control Board (CB) terminal X04 pin 3. • A2 is L2 supplied from Y3/A2 which is supplied from terminal block 27-17.
Yes		
Is the Y1 solenoid valve opening?	No	Replace the faulty solenoid.
Yes		
Is water going through the flow control valve?	No	Inspect, clean, replace the flow control valve as necessary.
Yes		
Is water being injected into the fan wheel inside the appliance?	No	Remove the obstruction between the flow control valve and the injection tube.
Yes		
The appliance should begin producing steam in 5 minutes.		

PROformance, Gas, Boiler-Free: No Steam Production — Steam Below 212°F (100°C)

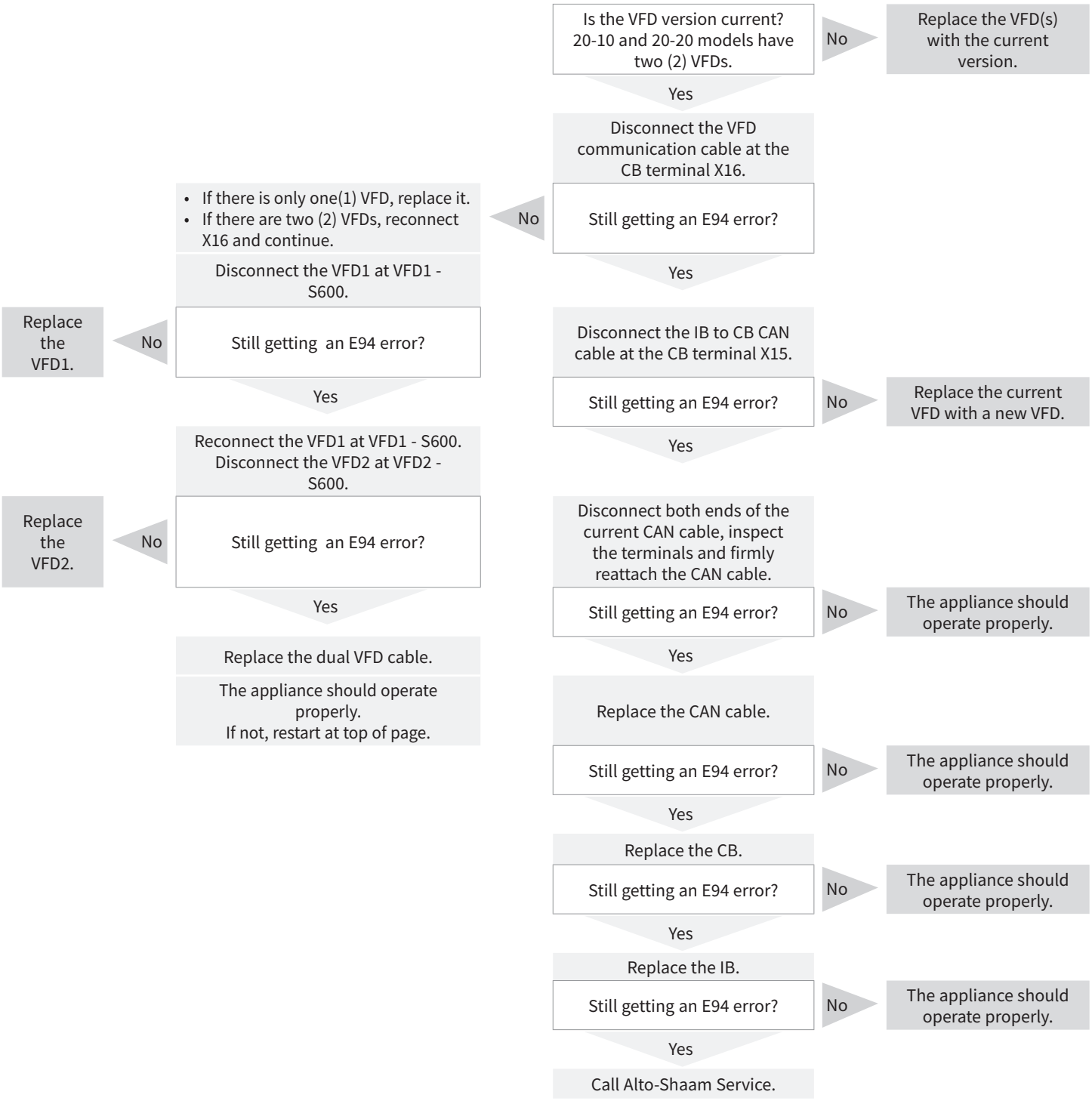
Is the convection fan motor spinning?	No	See “Convection Motor Is Not Spinning”.
Yes		
Is the Oven Cavity Temperature Probe N6 below the set point?	No	The appliance will not call for steam production until the N6 probe is below the set point. If the N6 probe is reading incorrectly, test the probe and replace if necessary.
Yes		
Is the burner igniting?	No	See “No Combustion On A Call For Heat”
Yes		
Is the Filtered Steam Injection Solenoid Y1 being energized?	No	Determine which line is missing at the Y1 solenoid. • A1 is L1 supplied from Control Board (CB) terminal X04 pin 3. • A2 is L2 supplied from Y3/A2 which is supplied from terminal block 27-17.
Yes		
Is the Y1 solenoid valve opening?	No	Replace the faulty solenoid.
Yes		
Is water going through the flow control valve?	No	Inspect, clean, replace the flow control valve as necessary.
Yes		
Is water being injected into the fan wheel inside the appliance?	No	Remove the obstruction between the flow control valve and the injection tube.
Yes		
The appliance should begin producing steam in 5 minutes.		

Classic, Gas Boiler-Free: No Steam Production — Steam Below 212°F (100°C)

Is the convection fan motor spinning?	No	See “No High Speed Convection Motor Operation”.
Yes		
Is the Oven Cavity Temperature Probe N6 below the set point?	No	The appliance will not call for steam production until the N6 probe is below the set point. If the N6 probe is reading incorrectly, test the probe and replace if necessary.
Yes		
Is the burner igniting?	No	See “No Combustion On A Call For Heat”.
Yes		
Is the Filtered Steam Injection Solenoid Y1 being energized?	No	Determine which line is missing at the Y1 solenoid. • A1 is L1 supplied from Control Board (CB) terminal X04 pin 3. • A2 is L2 supplied from Y3/A2 which is supplied from terminal block 27-17
Yes		
Is the Y1 solenoid valve opening?	No	Replace the faulty solenoid.
Yes		
Is water going through the flow control valve?	No	Inspect, clean, or replace the flow control valve as necessary.
Yes		
Is water being injected into the fan wheel inside the appliance?	No	Remove the obstruction between the flow control valve and the injection tube.
Yes		
The appliance should begin producing steam in 5 minutes.		

Error Code E94

Request E94 service kit (includes Interface Board (IB), Control Board (CB), Controller Area Network (CAN) cable, and Variable Frequency Drive (VFD) and dispatch service agent.



Error Code E05/E06

Request E05 service kit and dispatch service agent.

Is the Variable Frequency Drive (VFD) address jumper properly populated on the board?
- No → Add or remove the jumper and retest.
- Yes ↓

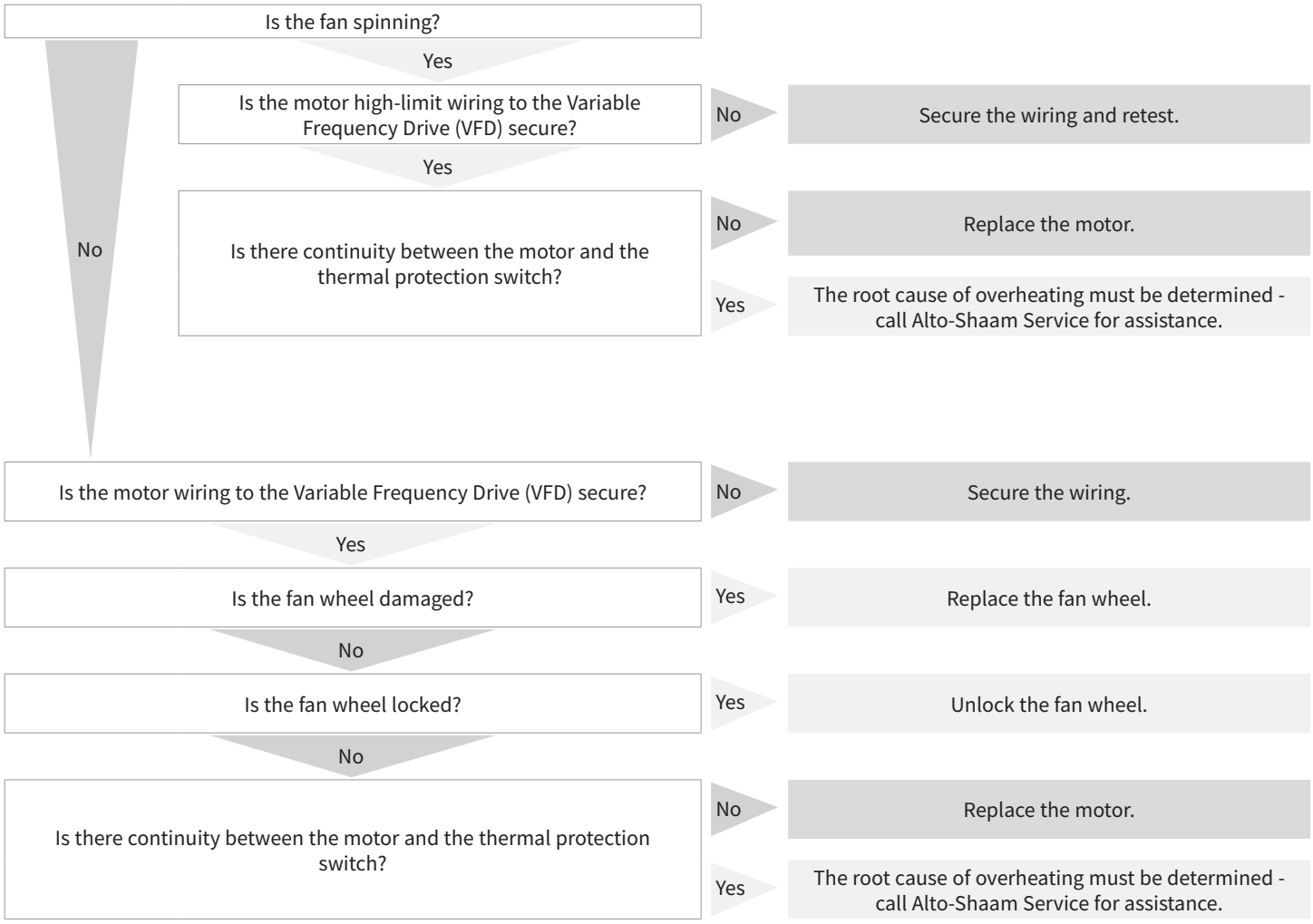
Is S905 populated with the jumper (on single VFD systems) or the last VFD (on dual VFD systems)?
- No → Populate and retest.
- Yes ↓

Is the LED on the VFD illuminated?
- No → Check the fuses for continuity, replace the blown fuses. L1 is supplied from the F4 fuse. L2 is supplied by terminal 5 of RL Y50. Retest.
- Yes ↓

Is voltage supplied to the VFD on terminal S105 L1/L2?
- No → Replace the VFD.

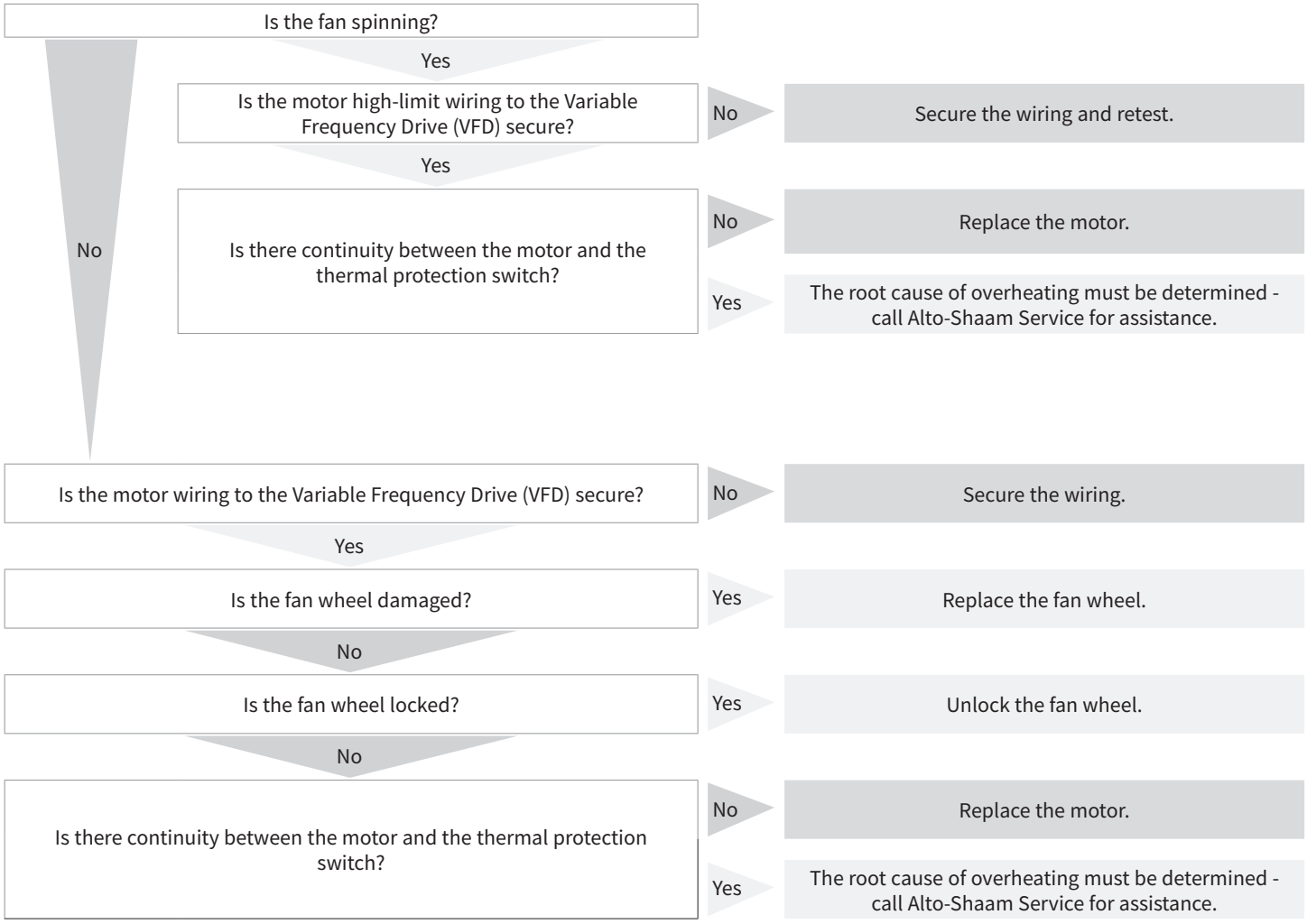
PROformance: Fan Motor Temperatures E53 and E54

E53 = Single/Upper Fan Motor High Limit / E54 = Lower Fan Motor High Limit



Classic: Fan Motor Temperatures E53 and E54

E53 = Single/Upper Fan Motor High Limit / E54 = Lower Fan Motor High Limit



Name	Date	Issue	Actions Taken	Resolved?

Wiring Diagrams

Scan the QR code below or click **here** to view or download the latest wiring diagrams for Combitherm ovens.

Service Log

Notes

Notes

Notes

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