



# SERVICE MANUAL

IMPORTANT INFORMATION, KEEP FOR OPERATOR

888-994-7636, fax 888-864-7636  
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THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

**FOR YOUR SAFETY** Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

**WARNING** Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

**NOTIFY CARRIER OF DAMAGE AT ONCE** It is the responsibility of the consignee to inspect the container upon receipt of same and to determine the possibility of any damage, including concealed damage. Groen suggests that if you are suspicious of damage to make a notation on the delivery receipt. It will be the responsibility of the consignee to file a claim with the carrier. We recommend that you do so at once.

Manufacture Service/Questions 888-994-7636.

This manual provides information for:

## SMARTSTEAM® PRO BOILERLESS STEAMER, DOMESTIC GSSP-BL-3E/3ES/5E/5ES/10ES & (2)GSSP-BL-3ES/5ES/10ES GSSP-BL-3G/3GS/5G/5GS/10GS & (2)GSSP-BL-3GS/5GS/10GS

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# INTRODUCTION

Since 1907 Groen has been in the business of designing and manufacturing the finest commercial appliances for the food service industry. Chefs, cooks and kitchen support personnel have come to depend upon the quality of construction and the reliability of operation.

Groen, in turn, depends upon our service centers and their field service personnel to keep the equipment in top operation condition. In order to do this, our designs are made with service and reliability in mind.

Once the Groen equipment is sold, manufactured, delivered and installed, our reputation is clearly in your hands. As part of our team, we value your efforts and input to our production design.

We will do all we can to make your job of keeping the equipment in perfect working order as easy as we can. Together, we will keep our customers satisfied.

## GROEN CERTIFIED SERVICE

The SmartSteam Pro Boilerless Steamer has been carefully designed to provide many years of efficient and reliable service. Part of the quality program is Groen Certified Service. This includes:

- Groen certifies that all equipment delivered to our customers has been inspected and tested for compliance with the specifications.
- Groen certifies that all parts required for service and maintenance will be readily available.
- Groen certifies that this manual will be updated by means of periodic service bulletins to provide the most up-to-date information for field maintenance and service personnel.

## WARRANTY & NON-WARRANTY REPAIR

Groen Warranty provisions are clearly presented in the customer's Operator Manual. Certain procedures for the cleaning and/or adjustment of the SmartSteam Pro Boilerless Steamer are presented in this manual for reference, but not warranty related.

## SAFETY

The Groen SmartSteam Pro Boilerless has been designed with safety in mind. This includes safety to the operating and maintenance personnel, safety to the facility in which the equipment is installed and safety to the equipment itself.

The steamer has been designed to the highest industry standards and has been certified by the National Sanitation Foundation Testing Laboratory (NSF), Underwriters Laboratory (UL) and/or CSA (gas).

The steamer contains several devices which are specially used to prevent unsafe conditions. If they are disconnected during service, make sure they are reinstalled properly and tested before the steamer is operated.

The safety precautions in the manuals are in accordance with ANSI 535 Standard. Three different signal words alert you to a hazardous situation: DANGER, WARNING, AND CAUTION.

**DANGER:** The signal word danger indicates that a hazardous situation exists and could result in serious injury or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- When you open the steamer door, be very careful to avoid escaping steam. Steam can cause burns.
- After removing the fan baffle partition, do not put your hands or other object into the cooking cavity until the fan comes to a complete stop. Rotating fan blades can cause severe injury!

**WARNING:** The signal word WARNING tells you that a possibly hazardous situation is present, and if not avoided, could cause serious injury or death.

- Always turn off steamer power before removing partitions or panels.

- Disconnect the steamer from the power source before performing any service.
- Unit has disconnect power switch located on the rear panel.

**CAUTION:** The signal word CAUTION warns you of a hazardous situation which, if not avoided, may result in minor or moderate injury.

- Steamer may be hot. Take precaution to prevent any contact with hot surfaces.
- Be sure all interior partitions have been installed before operating the steamer.
- All steamer operators and service personnel should be familiar with correct and safe operating procedures.
- Be sure steamer drain is not blocked as this could result in improper steamer operations.

Two other signal words, not directly related to personal safety, are also used in this manual: NOTICE and IMPORTANT

**NOTICE:** Notice is used to alert you to hazards that may result in component and/or equipment damage.

**IMPORTANT:** Important is used to highlight an operating or maintenance tip or suggestion.

## GLOSSARY OF TERMS

The following abbreviations and terms are used in this manual:

BTU	British Thermal Unit
GPM	Gallons per Minute
LED	Lighting Emitting Diode
MM	Millimeter
NEC	National Electric Code
N.P.T.	National Pipe Thread
NSF	National Sanitation Foundation
PSI	Pounds per Square Inch (Pressure)
U.L.	Underwriter's Laboratory, Inc.

## TOOLS & SUPPLIES

**CAUTION:** CARE SHOULD BE TAKEN IN USING THE CORRECT TOOLS AS INDICATED. USING THE WRONG TOOL MAY INFLICT DAMAGE TO THE PART BEING REMOVED, INSTALLED AND/OR ADJUSTED. MAKE SURE THAT THE CALIBRATIONS ON INSTRUMENTS ARE PERIODICALLY CHECKED FOR ACCURACY.

This section identifies the tools, instruments and supplies which will be required and useful in the inspection, repair and testing of the equipment described in this manual.

Most likely, many of these tools and supplies are already in your kits and are used in everyday maintenance. Make sure to only use the specified sealants, compounds and dressings recommended by Groen.

### REQUIRED TOOLS

- Screw Drivers: Flat Blade No.1 and No. 2
- Phillips No.1 and No. 2
- Socket Wrenches: ¼" through 7/8"
- Nutdrivers (metric and inches)
- Open Ended Wrenches
- Pipe Wrenches: 6" and 8" size
- Allen Wrenches: 1/16" through ¼"
- Slip Joint pliers: Channel Lock or Equivalent
- Wire Crimpers

## RECOMMENDED INSTRUMENTS

- Digital Multimeter: Fluke Model 77 or equivalent

## HELPFUL HARDWARE

- Extension Mirror
- Screw Starter
- Level: 18" Model
- Fuse Puller

## RECOMMENDED SUPPLIES

- Pipe Thread Compound: Brand: LACO Pipe Tite Stik No. 11176 or equivalent
- Motor Sealant Grease: Bel-ray
- 2" Aluminum Duct Tape
- Removable Thread Locker: Loctite Type 242 (Door), Loctite Type 222 (Exterior)
- Clear Silicone Sealant: Dow Corning Type 732
- Silicone Heat Sink Compound: Non-Fluid Oil Corp., Chemplex 1381
- High Temperature Anti-Seize and Lubricating Compound: Bostix NEVER SEEZ NSBT-16

## HOW TO USE THIS MANUAL

Read this manual completely before attempting any disassembly or repairs.

Please note the similarities and differences between the various models described in the manual.

Before making repairs, you should have knowledge of the steamer operation as described in the Operations Section of this manual and a good understanding of service techniques as presented by the Groen Service School.

This service manual should be taken with you on all service calls. Use the correct tools in accordance with the procedures shown and use only Groen Certified Replacement Parts when performing steamer repairs.

## OPERATION

**WARNING: ANY POTENTIAL USER OF THE EQUIPMENT MUST BE TRAINED IN SAFE AND CORRECT OPERATING PROCEDURES.**

**WARNING: WHEN YOU OPEN THE DOOR, STAY AWAY FROM THE STEAM COMING OUT OF THE UNIT. THE STEAM CAN CAUSE BURNS.**



**⚠ WARNING**  
**AVOID STEAM CONTACT**

## CONTROLS



Touchscreen Graphic Display

ON/OFF Push Button

Operator controls are on the front right of the unit.

The Groen SmartSteam Pro Boilerless control panel has the touchscreen graphic display and the ON/OFF push button.

The touchscreen graphic display allows the user to enter and exist the three cook modes (MANUAL, TIMED and HOLD) and select various settings with different menus with the controls. The display also provide several audio and/or visual indicators to the user as cleaning reminders, when the unit reached ready temperature, hours of operation, error codes, etc.

The ON/OFF button get the Groen SmartSteam Pro Boilerless ready for use or shuts it off.

### COOK MODE OPERATIONS

1. At the home screen or idle mode, the steam generator stay at a low boil or ready temperature.
2. When the TIMED button is pushed, time can be set by entering the time in the HH:MM format. The unit steams until the timer counts down to zero and goes into HOLD mode while timer counts up. At that time the STOP light illuminates and a beeper sounds.
3. When the MANUAL button is pushed, the unit steams continuously.
4. HOLD mode the steam generator maintains a warming temperature below the ready temperature.

## OPERATING PROCEDURE

1. Press the ON/OFF push button. The screen will display a self-diagnostic screen with progress bar. The drain will close and the steam generating reservoir will begin filling. When the low probe closes, drain will open until low probe is open. The drain will close and the steam generating reservoir fills to high probe until it closes, then the drain will open and the reservoir drains until high probe is open. Unit will continue to drain until low probe opens, then drain will close and reservoir will fill until the low probe closes, then heat will turn on if door is closed. Fill sequence is complete and the display screen will transition to MANUAL mode and preheating continues until READY icon turns on (about 10-15).
2. Load food into pans in uniform layers. Pans should be filled to about the same levels, and should not be mounted.
3. Open the door and slide the pans on to the supports. If you will only be steaming one pan, put it in the middle position. Some foods will cause foam. When cooking foods that foam, such as shrimp, put an empty solid 2 ½" deep pan in the bottom slot of the pan racks.
4. Close the door. When the READY indicator is lit, take one of the following steps:
  - If you want to steam the food for a certain length of time, push the TIMED button and set the desired time with the TIMER knob. The timer will automatically run the steamer for the set time and then go into HOLD. A beeper will sound. Then push "X" button to stop cancel "HOLD".
  - If you want to steam continuously, push MANUAL button. The unit will continue steaming until stopped.
  - Push "X" to stop producing steam.
5. To remove pans from cavity, open the door. Remove the pans from the steamer, using hot pads or oven mitts to protect your hands from the hot pans.
6. To shut off the unit, press the ON/OFF push button. The screen will display a shutdown screen with progress bar. The steam generating reservoir will begin filling to the high probe until it closes and then drains until the low probe opens and refills.

**NOTE:** If a large amount of shrimp is cooked in the steamer, foaming will occur because the steam lid actually gets so hot that the shrimp will cook on its surface and the shrimp proteins in the dripping will foam on the surface of the steam lid. \*To avoid this, use a catch pan to catch shrimp drippings and proteins to prevent foaming when cooking a large amount of shrimp.

## TYPICAL QUESTIONS

The following is a sequence of events typical to SmartSteam Pro Boilerless Steamers.

### COOKING FOOD

To use the steamer, ensure the cavity door is closed, press the ON/OFF push button to on (button light illuminates). The unit verifies the probes and drain using the following sequence. The drain valve is closed and the water enters the steam reservoir to the "fill" point. When the water level reaches the LOW level probe, the water fill valve closes and the drain valve opens until water drops off the LOW probe. At this point, the drain valve closes and the water valve opens to refill to the HIGH probe. Drain valve opens allowing water to drop off HIGH probe and the heater will operate. Water level will continue to drop off the LOW probe. Drain valve closes and water opens and refills until water reaches LOW probe, then water fill closes, stopping the entry of water into the steam reservoir.

A relay (electric) or gas valve (gas) energizes and provides power to the heating circuit for the steam reservoir. This heats the steam reservoir to boil the water-creating the required steam. When the cavity is heated above 180°F, the READY icon comes on with an audible alert indicating that the cooking can start. When it is desired to cook food in the cavity, the pans are inserted into the cavity and the door is closed.

Steamer starts in MANUAL mode and heat-up time is about 15 minutes after the steamer is switched on, if all above conditions are met.

When the MANUAL button is pushed, the heat remains on continuously and produces full steam.

When the TIMED button is pushed, the display allows time to be entered in hours and minutes, the heater turns on producing full steam, and the timer counts down to zero automatically switching to HOLD with audible alert and timer begins to count up. Heaters will cycle on and off to maintain cavity temperature between 160° and 170°F. At any time while in TIMED & HOLD mode, the "+1m" button will add one minute of cook timer or transition HOLD to TIMED mode for one minute turning heaters on producing full production.

When the door is open the display shows the door open icon. If "Compensating Timer" set to "On", the timer stops counting down, and the heater stops heating. Close the door to resume timing and heating. If "Compensating Timer" is set to "Off", then timer will continue to count down even if door opens and closes.

When the timer counts down to zero the display shows three dashes, the beeper sounds, and the heater cycles on and off slowly to keep the water temperature just above the ready temperature. Push the CANCEL button to stop the beeper.

The "X" button may be pushed at any time to stop the MANUAL or TIMES modes.

If the door is open during the cooking process, the door interlock switch causes power to be removed from the convection motor. The relay or gas valve opens the circuit of the source of heat, instantly reducing the heat from the steam reservoir.

### WATER ENTRY INTO STEAM RESERVOIR

**CAUTION:** A SCALED RESERVOIR OR DEBRIS WILL CAUSE ERROR CODES. WHEN A PROBE HAS EXCESSIVE SCALE IT WILL NOT FUNCTION PROPERLY.

**NOTICE:** WHEN POWERED OFF, THE CONTROLS EMPTY THE STEAM RESERVOIR.

On power up, the boiler goes through a fill/drain diagnostic to verify the condition of the water level probes and drain. If either probe is not responding, an error code is generated.

The LOW WATER probe determines if there is a full and proper level of water in the steam reservoir. If the water level goes down, the probe is open by the water level getting low. This causes the water fill valve for that steam reservoir to turn on to permit water to enter the steam reservoir.

Water will continue to enter the steam reservoir until the level of water is high enough to close the LOW WATER probe. This determines that the steam reservoir is full and the water supply solenoid valve is turned off stopping the water flow to the steam reservoir.

When the LOW WATER probe is open, there is a 3 second delay before the water fill valve opens. This is to take into account the rising and lowering of the water level due to the bubbling action of the boiling water in the steam reservoir. If the probe is open for more than approximately 3 seconds, then the water fill valve is activated.

### SERVICE CODES

Error codes are normally caused by probes or timing issues (fill time and drain time).

An error code is generated when the electronic controls are blind to the status of the steam reservoir (i.e., probes are not working) or by a blocked drain. The error may stop the machine from running and the error code number will be displayed as a pop-up message on the touchscreen. Error codes protect the steam reservoir from irreparable damage.

### HEATER CONTROL

**NOTICE:** IF THE DOOR IS OPEN, THE HEATING CIRCUIT WILL NOT BE ENERGIZED AND THE HEATING CIRCUIT WILL NOT TURN ON UNTIL THE DOOR IS CLOSED.

After the reservoir is initially filled and the diagnostic is complete, the relay (electric) or gas valve (gas) energizes providing power to the heating circuit. Then the control monitors the Ready Thermostat and determines when the cavity is in "ready" condition.

If the Ready thermostat is at the required temperature and the Home screen displayed (no cooking mode selected), the heater control cycles the heating

circuit power relay or gas valve and maintains the ready conditions by cycling the elements 18 seconds ON, 6 minutes OFF.

If the MANUAL mode is on, the heater control continuously turns on heat to produce steam.

If HOLD mode is on, the HOLD and READY thermostats operate the control the heat on the following conditions:

#### Scenario #1

1. When "HOLD" button is pressed, if HOLD and READY thermostats are closed then heat will turn on.
2. Heat will remain on until HOLD and READY thermostat opens.
3. When READY thermostat opens, heat turns off.
4. Heat will remain off until READY thermostat closes then heat ON/OFF cycle rate will initiate.
5. Heat cycle will continue until HOLD "X" is pressed to exit or the unit is turned off.
6. If the HOLD thermostat closes due to drop in temperature, and the READY thermostat is still closed, then the heat turns on and sequence returns to step 2.

#### Scenario #2

1. When "HOLD" button is pressed, if HOLD thermostat is open and READY thermostat is closed then heat will turn on.
2. Heat will remain on until READY thermostat opens.
3. When READY thermostat opens, heat turns off.
4. Heat will remain off until READY thermostat closes then heat ON/OFF cycle rate will initiate.
5. Heat cycle will continue until HOLD "X" is pressed to exit or the unit is turned off.
6. If the HOLD thermostat closes due to drop in temperature, and the READY thermostat is still closed, then the heat turns on and sequence returns to step 2.

#### Scenario #3

1. When "HOLD" button is pressed or "Timed Cook" mode expires, if HOLD and READY thermostats are open, then heat will turn off.
2. Heat will remain off until READY thermostat closes.
3. Heat will remain off until READY thermostat closes then heat ON/OFF cycle rate will initiate.
4. Heat cycle will continue until HOLD "X" is pressed to exit or the unit is turned off.
5. If the HOLD thermostat closes due to drop in temperature, and the READY thermostat is still closed, then the heat turns on and sequence returns to step 2.

A High-Limit thermostat is provided as a safety device on each steam reservoir to monitor the internal temperature of the steam reservoir. This temperature is set for 280°F and will shut down the steamer if there is very little or no water and the steamer cavity starts to overheat.

#### DRAINING WATER FROM THE STEAM RESERVOIR

When water or steam is drained from the reservoir, it passes through a water spray in the drain box controlled by a water solenoid valve to condense the steam before it exits the steamer drain box into the drain line.

A solenoid drain valve is connected to each steam reservoir. This valve is normally open, permitting water from the steam reservoir to drain out. When the unit is turned on, the steam generator drain valve closes and the steam reservoir starts to fill/drain, and the sequence runs until water reaches the proper level for cooking operation.

When the unit is turned off, the solenoid valve opens and drains the water from the steam reservoir. When water is drained from the steam reservoir, it passes through the drain box and then into the drain line.

When the unit is turned off by the ON/OFF push button, the steamer will fill to the high probe, drain, refill and drain. This is to remove the heat from the reservoir for cleaning and reduce any possible cavity warping.

\*If hot water is existing, the drain fan thermal switch could close and energize circuit giving error code 19.

#### LOW WATER LEVEL DETECTION

Because prolonged operation with less than the required amount of water in the steam reservoir could present a dangerous situation, the control takes action to prevent the situation.

If the low probe is satisfied, the heat turns on and continues operation. If the low probe is not satisfied, the control begins to operate unit on the HIGH water level probe for a period up to a 8 hours maximum.

## INSTALLING, CLEANING & TESTING

**WARNING:** THE UNIT MUST BE INSTALLED BY PERSONNEL WHO ARE QUALIFIED TO WORK WITH GAS, ELECTRICITY AND PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO THE EQUIPMENT. THE UNIT MUST BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES.

**CAUTION:** DO NOT INSTALL THE UNIT WITH THE REAR VENTS BLOCKED, OR WITHIN 2 INCHES OF A HEAT SOURCE SUCH AS A BRAISING PAN, DEEP FAT FRYER, CHARBROILER OR KETTLE. TO AVOID DRAINAGE PROBLEMS, LEVEL THE UNIT FRONT TO BACK, AND PITCH IT SLIGHTLY TO THE FRONT.

**WARNING:** TO AVOID DAMAGE OR PERSONAL INJURY, FOLLOW THE WIRING DIAGRAM EXACTLY WHEN CONNECTING THE UNIT.

**CAUTION:** EACH UNIT MUST HAVE A SEPARATE GROUND WIRE FOR SAFE OPERATION.

### ELECTRIC MODEL INSTALLATION

#### ELECTRICAL SUPPLY CONNECTION

1. Panel Removal – Right Side: Open the wiring and control panel by removing screws from the right side panel. Slide the panel forward and set it aside.
2. Supply Voltage: The unit must be operated at the rated name plate voltage. The name plate can be found on the right side panel.
3. Phase Selection: Refer to steamer wiring diagram (pages 15-16) and element wiring (pages 8-10).
4. Terminal Block: The terminal block for incoming power is located at the back of the control compartment, the ground terminal is located in the wiring compartment near the terminal block.
5. Supply Wire: The equipment grounding wire must comply with the National Electrical Code (NEC) requirements. The wiring diagram on the inside of the unit's right side cover gives directions for the proper connection of the terminal block to the supply power. The proper wire must be used or the unit will not meet Underwriters Laboratories and NEC requirements. The electric hole is sized for a 1" conduit fitting on the GSSP-BL-3E and GSSP-BL-5E. The electric hole is sized for a 1-1/4" conduit fitting on the GSSP-BL-10E.
6. Branch Circuit Protection: Each SmartSteam Pro Boilerless Steamer, including individual units of stacked models, should have its own branch circuit protection and ground wire. Current and power demands for each unit are as shown below.

## AMPERAGE/RESISTANCE CHART

Model	Voltage/Phase	Amperage	Resistance
GSSP-BL-3E	208 3-PHASE	25	8.3
GSSP-BL-3E	240 3-PHASE	22	10.9
GSSP-BL-3E	480 3-PHASE	11	43.6
GSSP-BL-3E	208 1-PHASE	44	4.7
GSSP-BL-3E	240 1-PHASE	38	6.3
GSSP-BL-5E	208 3-PHASE	34	6.1
GSSP-BL-5E	240 3-PHASE	29	8.3
GSSP-BL-5E	480 3-PHASE	15	32
GSSP-BL-5E	208 1-PHASE	58	3.6
GSSP-BL-5E	240 1-PHASE	50	4.8
GSSP-BL-10E	208 3-PHASE	59	3.5
GSSP-BL-10E	240 3-PHASE	51	4.7
GSSP-BL-10E	480 3-PHASE	26	18.5

## GAS MODEL INSTALLATION

Although Groen recommends the SmartSteam Pro Boilerless Steamer is installed near non-combustible surfaces, the following minimum clearances are to any surface, combustible or non-combustible.

Right Side: 2 inches

Left Side: 2 inches

Rear: 6 inches

However, for easy service, at least 6 inch clearance should exist for right side access to gas shut-off valve.

The unit must be installed in a well-ventilated room with an adequate air supply. The steamer must be installed beneath a ventilation hood since gas combustion products exit the appliance.

Any item which might obstruct the flow of air for combustion and ventilation must be removed. Do not obstruct the flue cover or rear vents after installation.

The area directly around the appliance must be cleared of all combustible material. The installation must conform with local codes or, in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1/NFPA 54, or the National Gas and Propane Installation Code, CAS B149.1.

The unit and its individual shutoff valve must be disconnected from the gas supply system during any pressure testing of that system which has test pressures in excess of ½ PSI (3.45kPa). It must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas piping system which has test pressures equal to or less than ½ PSI (3.45 kPa).

## ELECTRICAL SUPPLY CONNECTION

Provide 115 VAC, 60 HZ, 1 PH, 15 AMP service. Bring wire in through hole on the back panel. Each cavity requires a separate cord for connection. Local codes and/or the National Electrical Code should be observed in accordance with ANSI/NFPA 70. AN ELECTRICAL GROUND IS REQUIRED. The wiring diagram, located in the service compartment and in this manual. Maximum load is 2-1/2 AMPS. In Canada provide electrical service in accordance with the Canadian Electrical Code, CSA C22.2 part 1 and/or local codes.

## GAS SUPPLY CONNECTION

Connection to the gas supply shall be in accordance with the chart below. Supply pressure must be at least 4.5" W.C. (maximum 14" W.C.) for natural gas or 12" W.C. (maximum 14" W.C.) for LP gas. In Canada, the installation must conform to the Canadian Gas Code, CAN 1-B149. Installation Codes for Gas Burning Appliances and Equipment and/or local codes. Check all gas connections for leaks prior to unit operation.

## RATINGS FOR GAS CHART

Model	BTU	OPERATING PRESSURE	INCOMING GAS FEED RATE	
			MIN	MAX
3G Natural	54,000	4.30" WC	5"WC	14" WC
3G Propane	54,000	10.5" WC	12" WC	14" WC
5G Natural	58,000	4.30" WC	5"WC	14" WC
5G Propane	58,000	10.5" WC	12" WC	14" WC
10G Natural	100,000	4.30" WC	5"WC	14" WC
10G Propane	100,000	10.5" WC	12" WC	14" WC

## INSTALLATION

**NOTICE: THE QUALITY OF THE WATER IS A FACTOR IN THE PROPER PERFORMANCE OF THE STEAMER. THE WATER SUPPLY SHOULD HAVE A MINIMUM VALUE OF 30-40 PARTS PER MILLION OF TOTAL DISSOLVED SOLID (TDS).**

Many of the problems associated with the degraded performance or non-operation of the SmartSteam Pro Boilerless Steamer can be traced directly to improper installation and/or lack of proper and periodic cleaning-all of which is the responsibility of the customer.

This section is provided to determine that the equipment was installed correctly, to indicate the proper cleaning techniques ads to be used by Groen customers and steamer test procedures.

It is to be expressly noted that ALL work associated with the installation and cleaning of the SmartSteam Pro Boilerless Steamer is NOT covered by the Groen warranty provisions.

## WATER CONNECTION

Make sure that the incoming water connection is made with a ¾" N.H. COLD water supply hose. Rigid pipe is not required. The water pressure should be between 30 and 60 PSIG. Higher pressures will require the use of a pressure regulator. Make sure that all connections are tight with no leaks-no matter how small.

## LEVEL INSTALLATION

It is preferable that the steamer be installed level side to side (left to right) and slightly pitched (1 to 5 degrees) back to front, with the front always being lower than the rear. This allows the condensate water to go to the drain at the front of each cavity.

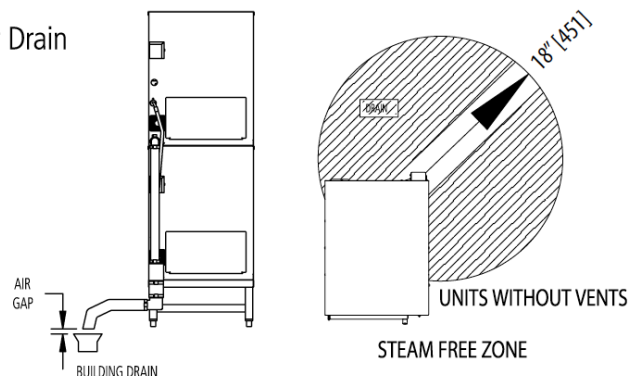
Make sure that all leg extensions are tight against the floor and that the steamer is supported on all four legs.

## DRAIN LINE INSTALLATION

The drain line should not be less than 1-1/2" – for single units, 2" (5E) – for double stacked units.

There must be a 2" air gap to the (non-pressurized) building drain. Make sure that the drain is sloped AWAY and DOWN from the steamer and that there are no obstructions in the line. Failure to observe these requirements may cause a water trap in the drain line and produce enough back pressure to prevent proper cavity draining –resulting in condensate water leaking from the door. Drain line must NOT be made of plastic pipe. It must be able to withstand boiling water.

## Proper Drain



Do not install rear of unit within 24" radius from the drain outlet to any steam producing device. Do not install steamer directly above steam venting floor drains.

If the floor drain "only" services this steamer, then the drain may be located within the steam-free zone. The steam-free zone must be covered if other appliances cause steam at the floor drain.

## INSTALLATION CHECKLIST

### General

- Refer to Installation on page 6
- Do not install steamer directly above steam venting floor drain
- Make sure the unit rear vents are not blocked and the unit is not within 2" of a heat source
- Make sure the steamer is level or pitched slightly forward
- Check that fan is clean and clear of foreign materials

### Gas Connection Checks

- Make sure installation conforms to local codes
- Make sure steamer is installed under a ventilation hood. Check that the flue and all vents are free of obstruction
- Check that gas supply is 5" W.C. (min) to 14" W.C. (max) for natural gas, and 12" W.C. (min) to 14" W.C. (max) for propane
- Check that gas supply piping is ½" NPT
- Verify operating gas pressure per chart on page 6

### Electrical Checks

- Make sure the steamer is properly grounded
- Verify that the electrical connections conform to all local codes and the NEC requirements
- Make sure the power supply branch circuit conforms to the specifications indicated on the steamer nameplate

### Steamer Door Check

- Make sure the door gasket is making good contact with the cavity frame
- Instruct operators to leave the door open when the steamer is shut down overnight or longer

### Cold Water Supply Connections

- Make sure plumbing connections conform to local codes
- If permitted by local codes, check that hose connection is flexible to allow steamer movement for servicing
- Check inlet water pressure is 30-60 PSIG
- Check that the water feed line is a minimum on ½" inside diameter
- Check water flow per Installation on page 6

### Drain Connections

- Make sure drain plumbing connections comply with local codes
- Make sure drain line is 1- 1/12" and 2- 1/2" on stacked units
- Check that drain line is suitable for boiling water. Make sure PVC is not being used for drain plumbing
- Check that drain line is pitched downward
- Make sure drain line is free of obstruction
- Make sure drain is not connected to a building drain

## GENERAL CLEANING

**WARNING: DISCONNECT THE POWER SUPPLY BEFORE CLEANING THE OUTSIDE OF THE STEAMER. KEEP WATER AND CLEANING SOLUTIONS OUT OF CONTROLS AND ELECTRICAL COMPONENTS. NEVER HOSE OR STEAM CLEAN ANY PART OF THE UNIT.**

**AVOID CONTACT WITH ANY CLEANSER, DELIMING AGENT OR DEGREASER AS RECOMMENDED BY THE SUPPLIER. MANY ARE HARMFUL. READ THE WARNINGS AND FOLLOW THE DIRECTIONS.**

**EVEN WHEN THE UNIT HAS BEEN SHUT OFF, DON'T PUT HANDS OR TOOLS INTO THE COOKING CHAMBER UNTIL THE FAN HAS STOPPED TURNING.**

**DON'T OPERATE THE UNIT UNLESS THE REMOVABLE PARTITION HAS BEEN PUT BACK IN ITS PROPER LOCATION.**

**DO NOT USE ANY CLEANING AGENT THAT CONTAINS ANY SULFAMIC AGENT OR ANY CHLORIDE, INCLUDING HYDROCHLORIC ACID (HCl). TO CHECK FOR CHLORIDE CONTENT, SEE ANY MATERIAL SAFETY DATA SHEETS PROVIDED BY THE CLEANING AGENT MANUFACTURER.**

**WARNING: DO NOT DISASSEMBLE PROBES DURING CLEANING AS BREAKAGE WILL RESULT. USE HOT WATER TO WASH OUT PIVOT JOINTS OF PROBE.**

To keep your SmartSteam Pro Boilerless Steamer in proper working condition, use the following procedure to clean this unit. This regular cleaning will reduce the effort required to clean the steam reservoir and cavity.

### SUGGESTED TOOLS

- Mild detergent or vinegar
- Stainless steel exterior cleaner such as Zepper
- Cloth of sponge
- Spray bottle
- Nylon pad
- Towels
- Plastic disposable gloves

### PROCEDURE EXTERIOR CLEANING

1. Prepare a warm solution of the mild detergent as instructed by the supplier. Wet a cloth with this solution and wring it out. Use the moist cloth to clean the outside of the unit. Use the moist cloth to clean the outside of the unit. Do not allow freely running liquid to touch the controls, the control panel, any electrical part, or on the side or rear panels.
2. To remove material which may be struck to the unit use a fiber brush, or a plastic or rubber scraper with a detergent solution.
3. Stainless steel surfaces may be polished with a recognized stainless steel cleaner such as "Zepper".

### PROCEDURE INTERIOR CLEANING

Clean the unit daily or as residue builds upon the bottom of the oven cavity.

1. Press OFF push button to turn the steamer off. Open the door.
2. Allow unit to shutdown, drain the water and allow the unit to cool before cleaning.
3. After the unit has cooled, remove steam lid, pan racks, and drain guard from the cavity.
4. Use a mild detergent to wipe down the steamer cavity and the probes on the right side wall. Clean steam lid, pan racks and drain guard. Use brush provided to clean out condensate and overflow drains.
5. Rinse the unit to remove detergent.
6. Reinstall drain guard, pan racks and steam lid. Unit is ready for use.

## HEAVY USER DELIMING MAINTENANCE PROGRAM

**WARNING: FOLLOW THE HANDLING INSTRUCTIONS PROVIDED WITH THE DELIMER/DESCALER, INCLUDING THE RECOMMENDATIONS FOR THE PROTECTIVE RUBBER GLOVES, PROTECTIVE CLOTHING/BOOTS AND PROTECTIVE EYEWEAR.**

**IMPORTANT: DO NOT USE ANY METAL MATERIAL (SUCH AS METAL SPONGES) OR METAL IMPLEMENTS (SUCH AS A SPOON, SCRAPER, OR WIRE BRUSH) THAT MIGHT SCRATCH ANY STAINLESS STEEL SURFACE. SCRATCHES MAKE THE SURFACE HARD TO CLEAN AND PROVIDE PLACES FOR BACTERIA TO GROW. DO NOT USE STEEL WOOL, WHICH MAY LEAVE PARTICLES IMBEDDED IN THE SURFACE WHICH COULD EVENTUALLY CAUSE CORROSION AND PITTING.**

**WARNING: ALLOW THE STEAMER TO COOL COMPLETELY BEFORE DELIMING. HOT SURFACES CAN CAUSE SEVERE BURNS.**

### PURPOSE

SmartSteam Pro Boilerless Steamers are designed to require only a daily cleaning of the steamer cavity, pan racks, steam lid and probes to maintain full performance. Daily cleaning may not be sufficient to control scale build-up, when a boilerless steamer is operated in a heavy duty, continuous operation in an area with extreme hard water.

The following procedure outlines steps for optional periodic deliming for steamers in heavy duty applications and extreme water conditions. The frequency of the deliming depends upon the severity of the scale build-up and individual operators.

### RECOMMENDED TOOLS & CLEANERS

- Nylon scrub pad, cloth or sponge: Scotch-Brite™ medium duty scrubbing sponges are preferred. DO NOT use metal scrub pads.
- Delimer/Descaler: Groen Delimer Descaler (PN 114800), Commercial Lime Away or any equivalent. DO NOT use any cleaning or deliming agent that contains Citric Acid, any Sulfamic agent or any chloride, including Hydrochloric Acid.
- Vinegar: Commercial vinegar (5 to 7% strength) has been used successfully by a number of SmartSteam users as a descaler. Follow the same instructions as when using delimer/descaler.

### CLEANING STEPS

If the “Delime” setting is set to “ON”, the “Delime” button will be available to initiate the delime process or a manual delime process can be performed by doing the following:

1. Press ON/OFF push button to turn the steamer off. Open the steamer door.
2. Allow the steamer to shutdown, drain and to cool completely before cleaning.
3. After the steamer has cooled completely, remove the pan and racks.
4. Remove any spilled foods from the steam lid. Remove the steam lid from the steam reservoir.
5. Press ON/OFF push button to turn the steamer on. Wait for the stem reservoir to start to fill.

**NOTE:** Use protective gear, including eye wear for the following steps involving delimer/descaler.

6. Add delimer/descaler (or vinegar) to the water in the steam reservoir, push TIMED, and set the timer for 20 minutes. Close the steamer door.

**NOTE:** ADDITIONAL AMOUNTS OF DELIMER AND LONGER TIME SETTINGS ARE NOT RECOMMENDED, THEY WILL NOT INCREASE THE EFFICIENCY OF THE PROCEDURE.

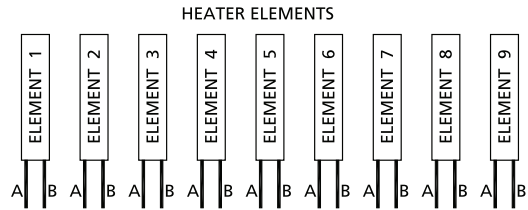
7. When the beeper sounds, press ON/OFF push button to turn the steamer off. Open the steamer door and wait for the steam reservoir to drain.
8. Press ON/OFF push button to turn the steamer on and wait for the steam reservoir to again fill with water. Use a nylon scrub pad to remove the loosened scale.
9. Press ON/OFF push button to turn the reservoir off and drain the water from the steam reservoir.

10. Wipe down steamer cavity and steam reservoir to remove all traces of scale and cleaning solution. Reinstall the pan racks and the steam lid.

**NOTE:** IF SCALE BUILD-UP REMAINS, REPEAT THE PROCEDURE (STEPS 5 - 10) AS NECESSARY.

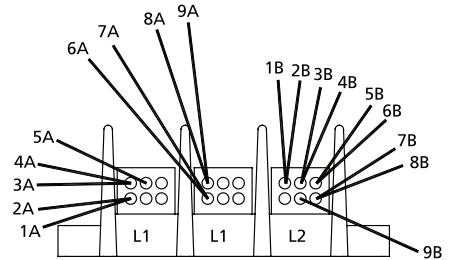
### ELEMENT WIRING

#### GSSP-BL-3E: 208/240V 1-PHASE



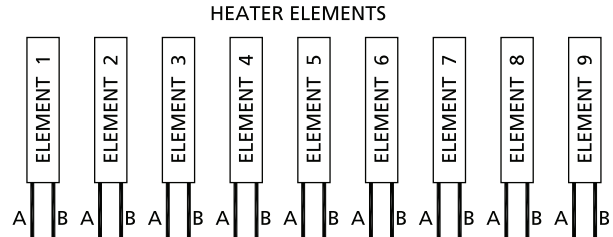
**LEGEND**  
A - RED  
B - WHITE

**NOTE:** WHEN CONVERTING FROM 3 PHASE TO 1 PHASE, ADD A JUMPER WIRE FROM A TO C ON TERMINAL BLOCK TB1 AS SHOWN ON THE WIRING DIAGRAM

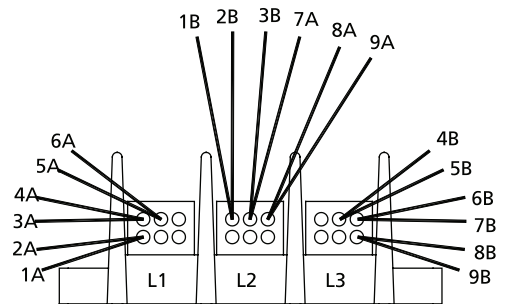


ELEMENT TERMINAL BLOCK

#### GSSP-BL-3E: 208/240V 3-PHASE

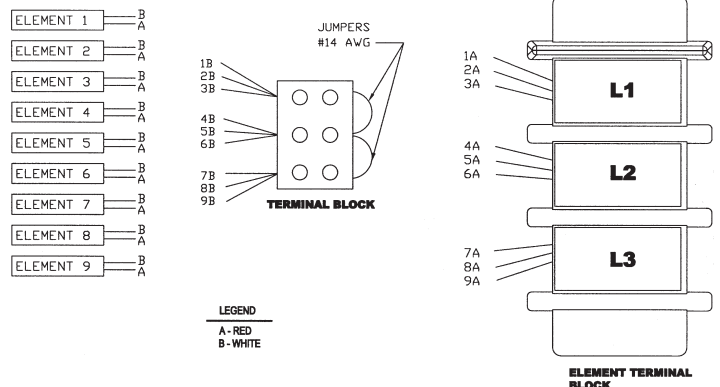


**LEGEND**  
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B - WHITE



TERMINAL BLOCK

#### GSSP-BL-3E: 480V 3-PHASE, USING 277V ELEMENTS IN WYE CONFIG.

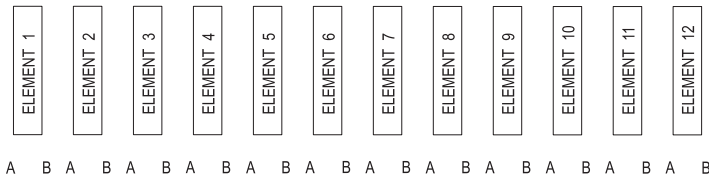


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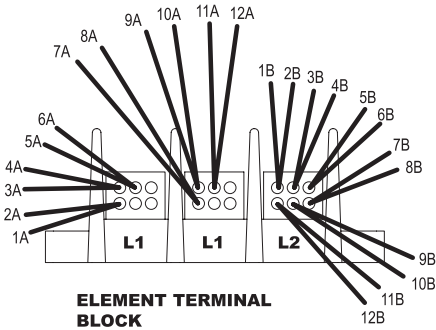
ELEMENT TERMINAL BLOCK

**GSSP-BL-5E: 208/240V 1-PHASE**

**HEATER ELEMENTS**

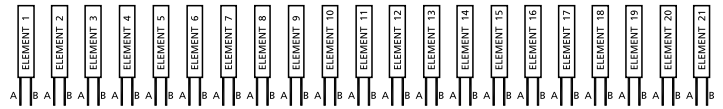


NOTE: WHEN CONVERTING FROM 3 PHASE TO 1 PHASE, ADD A JUMPER WIRE FROM A TO C ON TERMINAL BLOCK TB1 AS SHOWN ON THE WIRING DIAGRAM



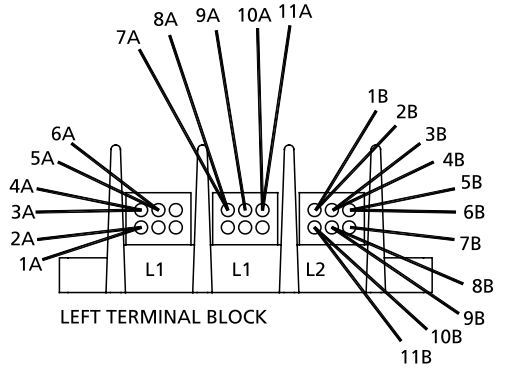
**GSSP-BL-10E: 208/240V 1-PHASE**

**HEATER ELEMENTS**



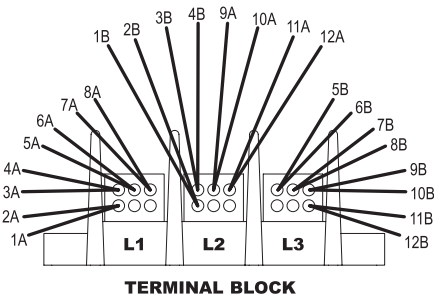
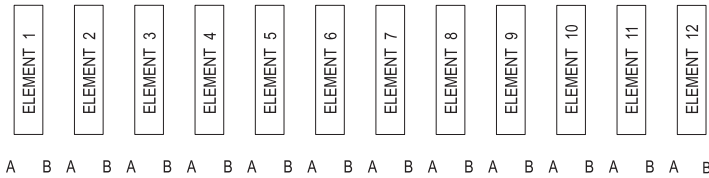
**LEGEND**

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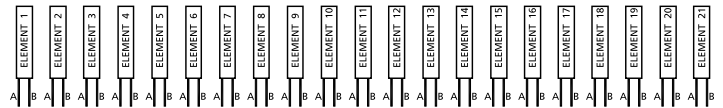
**GSSP-BL-5E: 208/240V 3-PHASE**

**HEATER ELEMENTS**



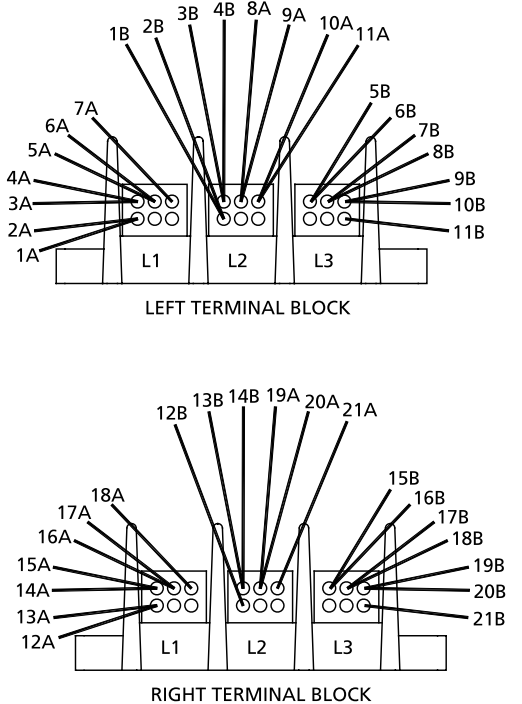
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**HEATER ELEMENTS**



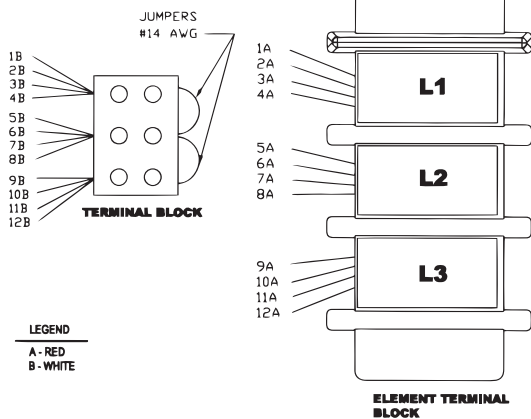
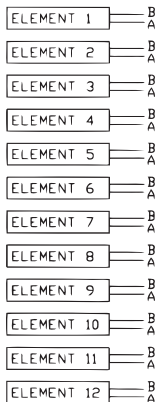
**LEGEND**

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B - WHITE



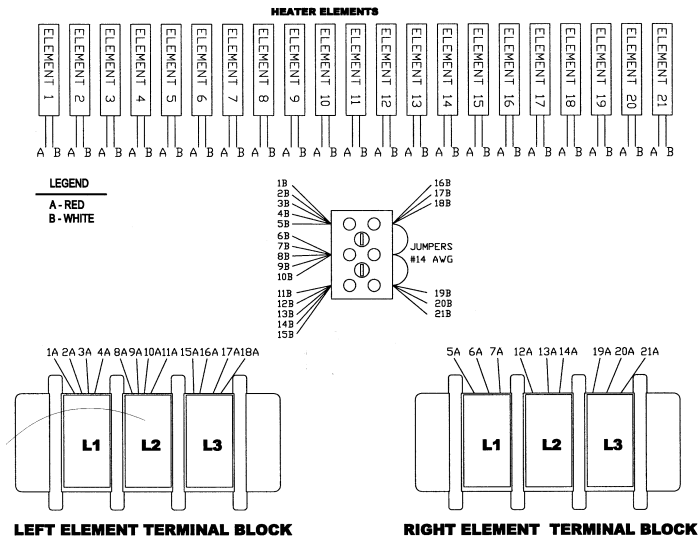
**GSSP-BL-5E: 480V 3-PHASE, USING 277V ELEMENTS IN WYE CONFIG.**

**HEATER ELEMENTS**



LEGEND  
A - RED  
B - WHITE

**GSSP-BL-10E: 480V 3-PHASE, USING 277V ELEMENTS IN WYE CONFIG.**



**TROUBLESHOOTING**

**DIAGNOSTICS**

1. Make sure lithium battery is installed in the back of the touchscreen display.
2. Apply power to the GSSP and turn the ON/OFF switch located on the rear back panel to "on". The touchscreen should start loading the application with progress bar. Once loading is complete the touchscreen should go blank. If the application screen does appear, then check the fuse and both circuit breakers (one left of the cavity fan motor and one on the control transformer).
3. Push the power button on the front of the unit. The green LED on the button should illuminate and "self-diagnostic" should appear. Note: Quickly press and hold the "menu" button until the unit displays "Entering Service Mode". If executed in time, no water should start filling into the reservoir.
4. Press "Service" and enter "9999" then press "Enter"; then press the down arrow until "Parameters" is shown. Press "Parameters" and enter "7256" then press "Enter". Select "Select Model" highlighted in blue and from the list select the appropriate model being tested and press "Save".
5. Press the "back" button and select "V\*\*\*\*\*" highlighted in blue for entering "Serial Number". Note: If it is a single cavity unit enter the serial number using this format: 0000XXXXXX-X (i.e., 00001234567-1); if it is double stacked cavity unit, the serial number format 00XXXXXX-X-T (i.e., 001234567-1-T). To "T" for top cavity or "B" for bottom, select for the last character hold to 2 or 8 button for at 1 second.
6. Press the "back" button and select "HH:MM" highlighted in blue for "Time". Enter time in HH:MM format and press am/pm for the appropriate and press "Save".
7. Press the "back" button and select "MM/DD/YYYY" highlighted in blue for "Date". Enter date in MM/DD/YYYY format and press "Save". Press "Accept" if date is correct or "Change" if date needs corrections.
8. Press the "back" button and select "MM/DD/YYYY" highlighted in blue for "Manufacturing Date". Enter date in MM/DD/YYYY format and press "Save". Press "Accept" if date is correct or "Change" if date needs corrections.

9. Press the "back" button to "Service" menu and select "Diagnostics". Before continuing visual check and make sure all harnesses are in place and the connectors are properly seated. "Board Communication" status should be "Active" in green for proper communication between touchscreen display and I/O board. Check I/O board for flashing blue LED. No communication or break in communication for more than 5 seconds will show "Lost" status.
10. Scroll down to "Control Voltage" and confirm the value for 24 VAC at the secondary of the control transformer. Values should be between 22 and 26 VAC and solid red LED on I/O board. Record value on sheet 8.
11. Check "Board Temp" value and confirm temperature in°F/C. The value should be between 70°F(21°C) and 149°F(65°C). Record value on sheet 8.
12. Check "High Limit Thermostat", "Ready Tstat", "Hold Tstat", and Condensate Tstat status and confirm their states. All thermostat status should read "Closed" on the touchscreen display.
13. Disconnect one wire lead from high limit thermostat, status should change next "High Limit Thermostat" from "Closed" to "Open" on the touch screen display. Reconnect lead and status should change back to "Closed".
  - Repeat step #13 for the following components:
    - Ready Thermostat
    - Hold Thermostat
    - Condensate Thermostat
14. Scroll up to "Circulation Fan" and turn it on for 10 seconds and off for 5 seconds. Repeat cycle 2 times. When fan is on there should be an orange LED on the I/O board and orange LED when it is off.
15. Turn on "Fill Valve" for 5-10 seconds and confirm the mA value. Values should be between 240 and 360 mA and solid red LED on I/O board. Then turn valve off and value should drop to 0 mA with red LED turned off on the I/O board.
16. Turn on "Drain Valve" for 5-10 seconds and confirm the mA value. Values should be between 480 and 720 mA and solid red LED on I/O board. Then turn valve off and value should drop to 0 mA with red LED turned off on the I/O board.
17. Turn on "Condensate Valve" for 5-10 seconds and confirm the mA value. Values should be between 240 and 360 mA and solid yellow LED on I/O board. Then turn valve off and value should drop to 0 mA with yellow LED turned off on the I/O board.
18. Turn on "Cooling Fan" for 5-10 seconds and confirm the mA value. Values should be between 50 and 260 mA (no LED on I/O board). Then turn valve off and value should drop to 0 mA.
19. Check "Water Level Low", "Water Level High", and "Water Level Overflow" probe status and confirm their states. All probe status should read "Open" on the touchscreen display and no LEDs on the I/O board should be illuminated.
20. With one end of a jumper wire attach or touch the metal tip of the low probe inside the cavity; with the other end of the jumper wire, ground to the cavity bottom, status should change next "Water Level Low" from "Open" to "Closed" on the touch screen display and the low probe orange LED should illuminate on the I/O board. Remove the jumper wire and "Water Level Low" from "Closed" to "Open" on the touch screen display and the low probe LED should turn off the I/O board.
  - Repeat step #20 for the following water level probes:
    - High water level probe (yellow LED)
    - Overflow water level probe (red LED)
21. Press back button to exit "Diagnostics" menu and affirm "Restart" to continue to functional test.

## ERROR CODES

Error #	Error Name/ Trouble Condition	Error Type	Displayed Error Description	Corrective Action
01	Low Probe Error - During Heating	Non Fatal	During heating, water detected at high probe for more than 10 seconds.	Clean all probes and drains.
02	Probe Error - Start up	Fatal	During startup, low, or high, or both probes are not detected (Open)	Clean all probes and drains.
03	Probe Error (Out Of Sequence) - Start up & Shutdown	Non Fatal or Warning	Probes are out of proper sequence during Start up or Shutdown	Clean all probes and drains.
04	Overflow Error	Fatal	Overflow probe is detected for more than 10 seconds.	Clean all probes and drains.
05	High Probe Error - No Call For Water -During Heating	Fatal	During heating, high probe is closed and unit has not called for water within 20 minutes.	Clean all probes and drains.
06	Probe Error - Hot Fill Time Exceeded -During Heating	Fatal	During heating or shutdown, probes not detected to stop water fill within 5 mins of the unit calling for water."	Clean all probes and drains.
07	High Probe Error - Delime Mode	Fatal	During delime mode, high probe not detected to stop water fill within 5 mins of the unit calling for water.	Clean all probes and drains.
08	Communication Failure	Fatal	I/O Board to Controller Board Communication has been disrupted . Error can only be cleared by cycling main power switch.	Make sure communication harness connections are secure; Replace communication
09	Control Voltage Error	Fatal	24 volt DC supply voltage is out of range	
10	Drain Time Exceeded	Fatal	During Startup, Shutdown or Delime mode, drain time on the low or high probe exceeds 10 minutes.	Clean all probes and drains.
11	Control Temperature Exceeded	Fatal	I/O board has exceed preset temperature of 185°F/85°C	Ensure the unit has proper clearances; Ensure the cooling fan is operational or not blocked.
12	Low Voltage	Fatal	Transformer output voltage is between 19 and 20.5 V	Ensure incoming voltage supply is within 10% rating on data plate.
13	Low Voltage	Fatal	Transformer output voltage is below 19V	Ensure incoming voltage supply is within 10% rating on data plate.

Error #	Error Name/ Trouble Condition	Error Type	Displayed Error Description	Corrective Action
14	High Voltage	Fatal	Transformer output voltage is above 31 V	Ensure incoming voltage supply is within 10% rating on data plate.
15	Fill Valve Failure	Fatal	Fill Valve / Fill Valve circuit current is out of range for the current state of the valve. Standard operating current is between 150mA to 500mA.	Check for proper voltage going to fill valve from I/O board; Ensure fill valve is operation and current value is within range.
16	Drain Valve Failure	Fatal	Drain Valve / Drain Valve circuit current is out of range for the current state of the valve. Standard operating current is between 250mA and 900mA.	Check for proper voltage going to drain valve from I/O board; Ensure drain valve is operation and current value is within range.
17	Condensate Valve Failure	Fatal	Condensate Valve / Condensate Valve circuit is out of range for the current state of the valve. Standard operating current is between 150mA and 500mA.	Check for proper voltage going to condensate valve from I/O board; Ensure condensate valve is operation and current value is within range.
18	Cooling Fan Failure	Fatal	Cooling Fan / Cooling Fan circuit is out of range for the current state of the valve. Standard operating current is between 50mA and 260mA.	Check for proper voltage going to the cooling fan from I/O board; Ensure cooling fan is operational and current value is within range.
19	Cooling Fan Failure	Fatal	Drain Tstat Triggered due to excess heat (due to Muffin Fan Failure )	Ensure drain thermostat is closed. Allow drain box to cool or manually fill cavity with cool water. Check continuity on harness between I/O board connector and terminals at drain thermostat.
20	Maximum Temperature Exceeded	Fatal	Hi limit Tstat Triggered due to excess heat	Ensure hi limit thermostat is closed. Allow cavity to cool or manually fill cavity with cool water. Check continuity on harness between I/O board connector and terminals at hi limit thermostat.

Error #	Error Name/ Trouble Condition	Error Type	Displayed Error Description	Corrective Action
21	Heating Circuit Failure	Fatal	Heating circuit current is out of range for the current state of the circuit . Standard operating current is between 200 mA to 1000 mA (Electric Model)  Standard operating current is between 200 mA to 900 mA (Gas Model)	Check for proper voltage going to contactor coil or ignition relay from I/O board; Ensure heating relay is operation and current value is within range. Ensure gas supply is on; Check for proper voltage going to gas valve from I/O board; Ensure gas valve is operation and current value is within range. Check for faulty ignition module, igniter or flame sensor.
22	Low Probe Error - No Call For Water -During Heating	Non Fatal	During heating, low probe is shorted and unit has not called for water within 20 minutes.	Clean all probes and drains.
N/A	Unit Will Not Turn On	Fatal	N/A	Check for loss of supply voltage or blown fuse; Faulty transformer primary or secondary side of transformer; Power switch on rear panel is set to "off". Make sure hi limit and drain thermostats are closed.

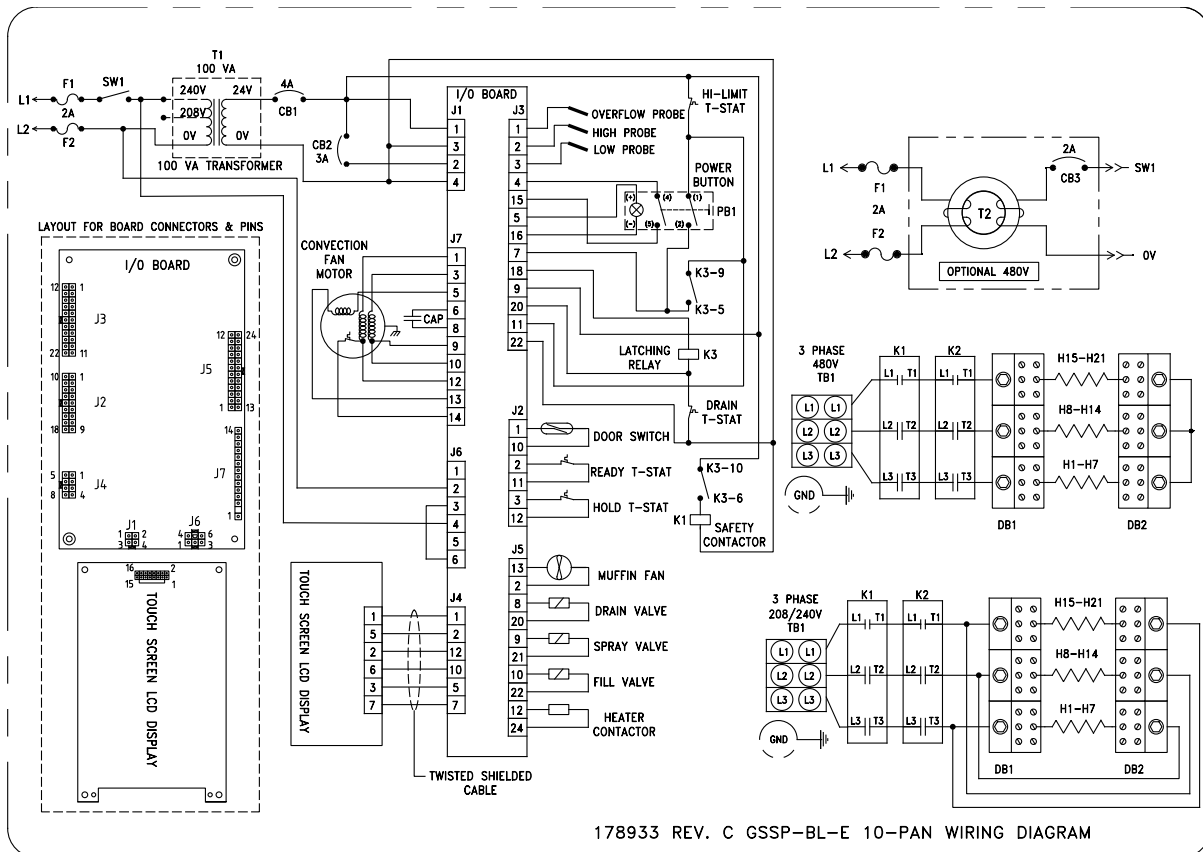
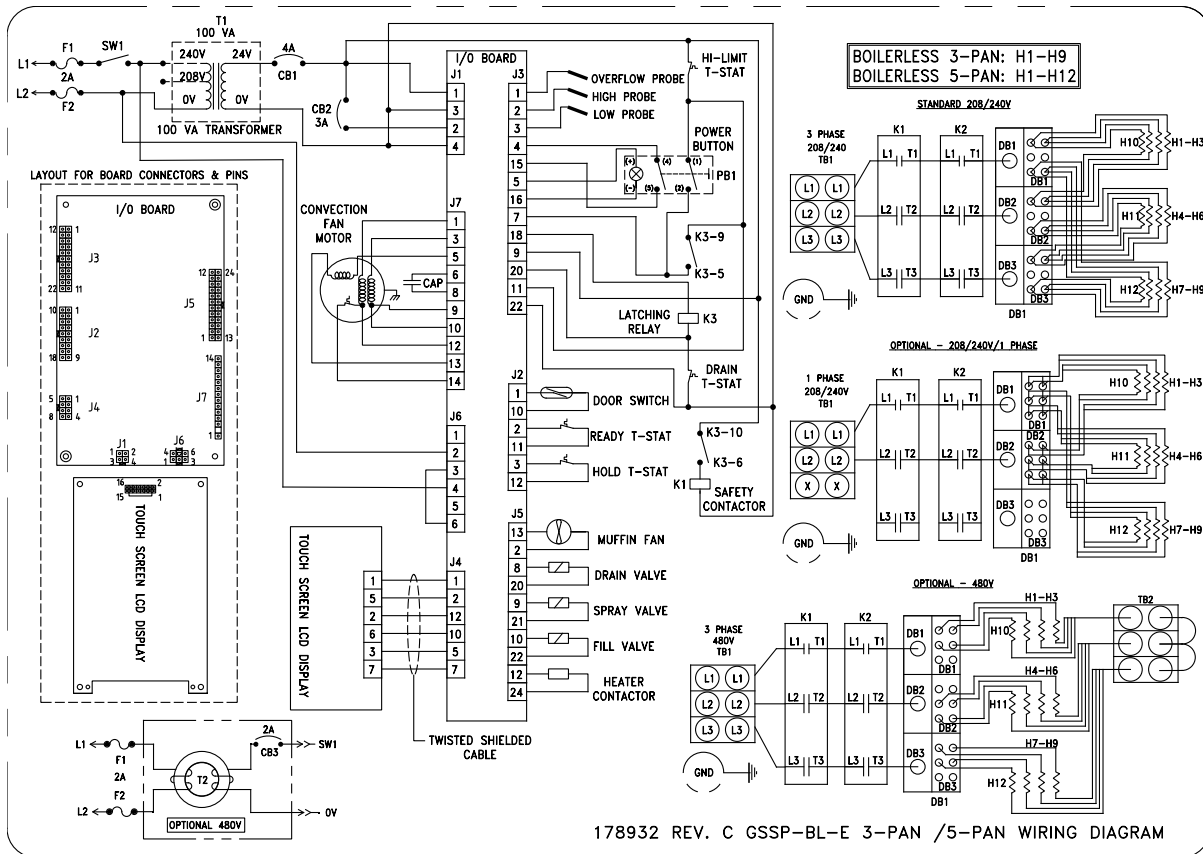
### GAS ORIFICE SIZE CHART (ALTITUDE ABOVE SEA LEVEL IN FEET)

Natural	5G Size	5G P/N	10G Size	10G P/N	3G Size	3G P/N
Blank	Blank	145645	Blank	145645	Blank	145645
0-2000	#39 (.0995)	145646	#41 (.0960)	145993	2.40 mm (.0945)	147132
2001-4000	#40 (.0980)	145647	3/32 (.0938)	145648	2.35 mm (.0925)	147133
4001-6000	3/32 (.0938)	145648	2.25 mm (.0886)	145994	2.25 mm (.0886)	145994
6001-8000	2.3 mm (.0906)	145649	2.15 mm (.0846)	145995	#44 (.0860)	147134
Propane	5G Size	5G P/N	10G Size	10G P/N	3G Size	3G P/N
0-2000	1.65 mm (.0650)	145716	1.45 mm (.0571)	145996	#53 (.0595)	145986
2001-4000	1/16 (.0625)	145717	#54 (.0550)	145997	1.50 mm (.0591)	145719
4001-6000	1.55 mm (.0610)	145718	1.35 mm (.0531)	145998	1.45 mm (.0571)	145996
6001-8000	1.50 mm (.0591)	145719	#55 (.0520)	145999	#54 (.0550)	145997

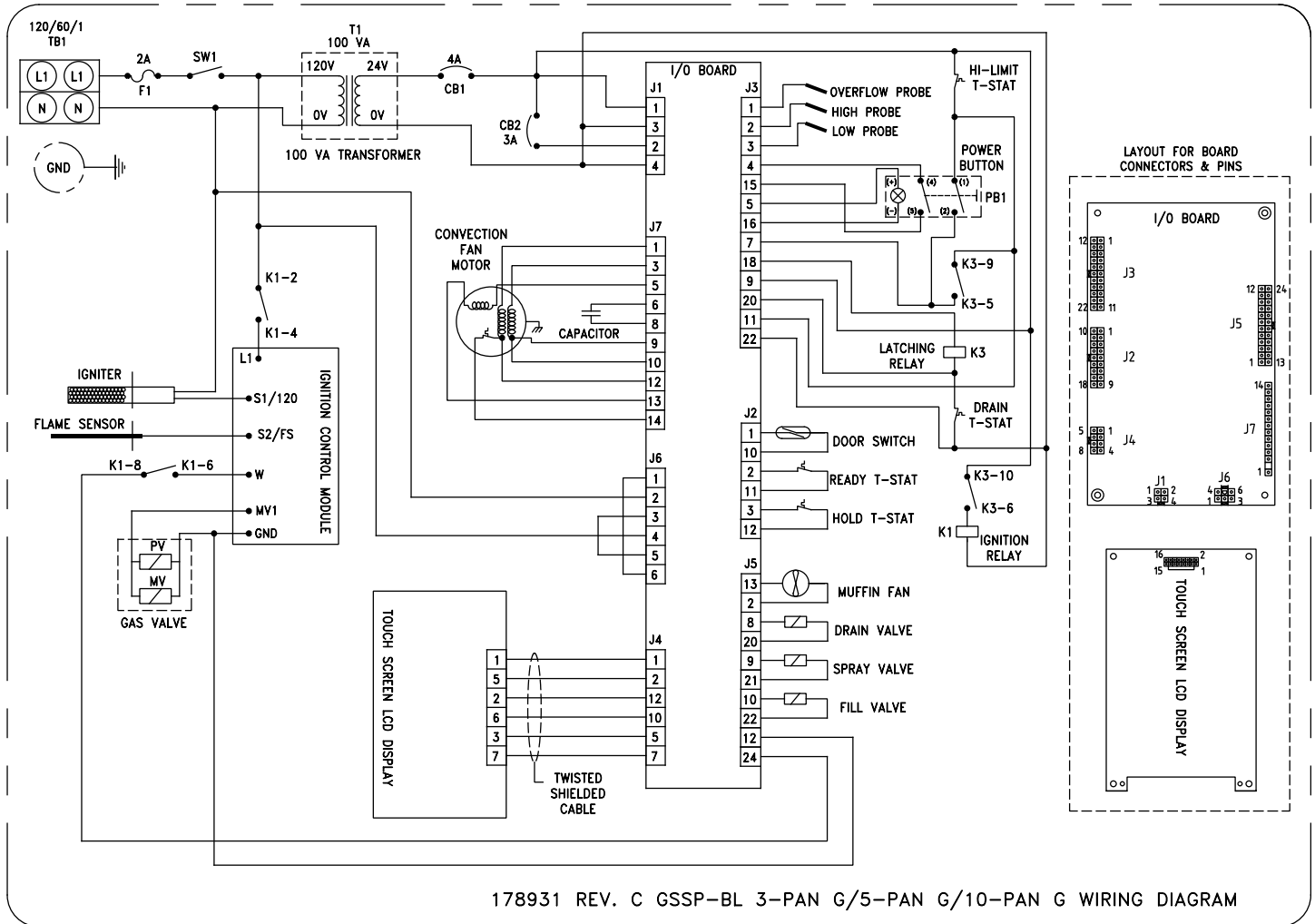
### AMPERAGE/RESISTANCE CHART

Model	Voltage/Phase	Amperage	Resistance
GSSP-BL-5E	208 Three Phase	34	6.1
GSSP-BL-5E	240 Three Phase	29	8.3
GSSP-BL-5E	480 Three Phase	15	32
GSSP-BL-5E	208 Single Phase	58	3.6
GSSP-BL-5E	240 Single Phase	50	4.8
GSSP-BL-3E	208 Three Phase	25	8.3
GSSP-BL-3E	240 Three Phase	22	10.9
GSSP-BL-3E	480 Three Phase	11	43.6
GSSP-BL-3E	208 Single Phase	44	4.7
GSSP-BL-3E	240 Single Phase	38	6.3
GSSP-BL-10E	208 Three Phase	59	3.5
GSSP-BL-10E	240 Three Phase	51	4.7
GSSP-BL-10E	480 Three Phase	26	18.5

# Wiring Diagram & Schematics



# Wiring Diagram & Schematics



178931 REV. C GSSP-BL 3-PAN G/5-PAN G/10-PAN G WIRING DIAGRAM

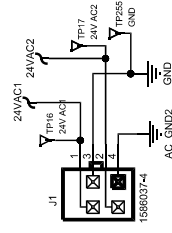
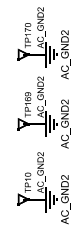
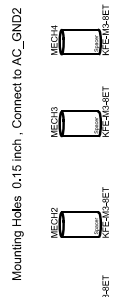
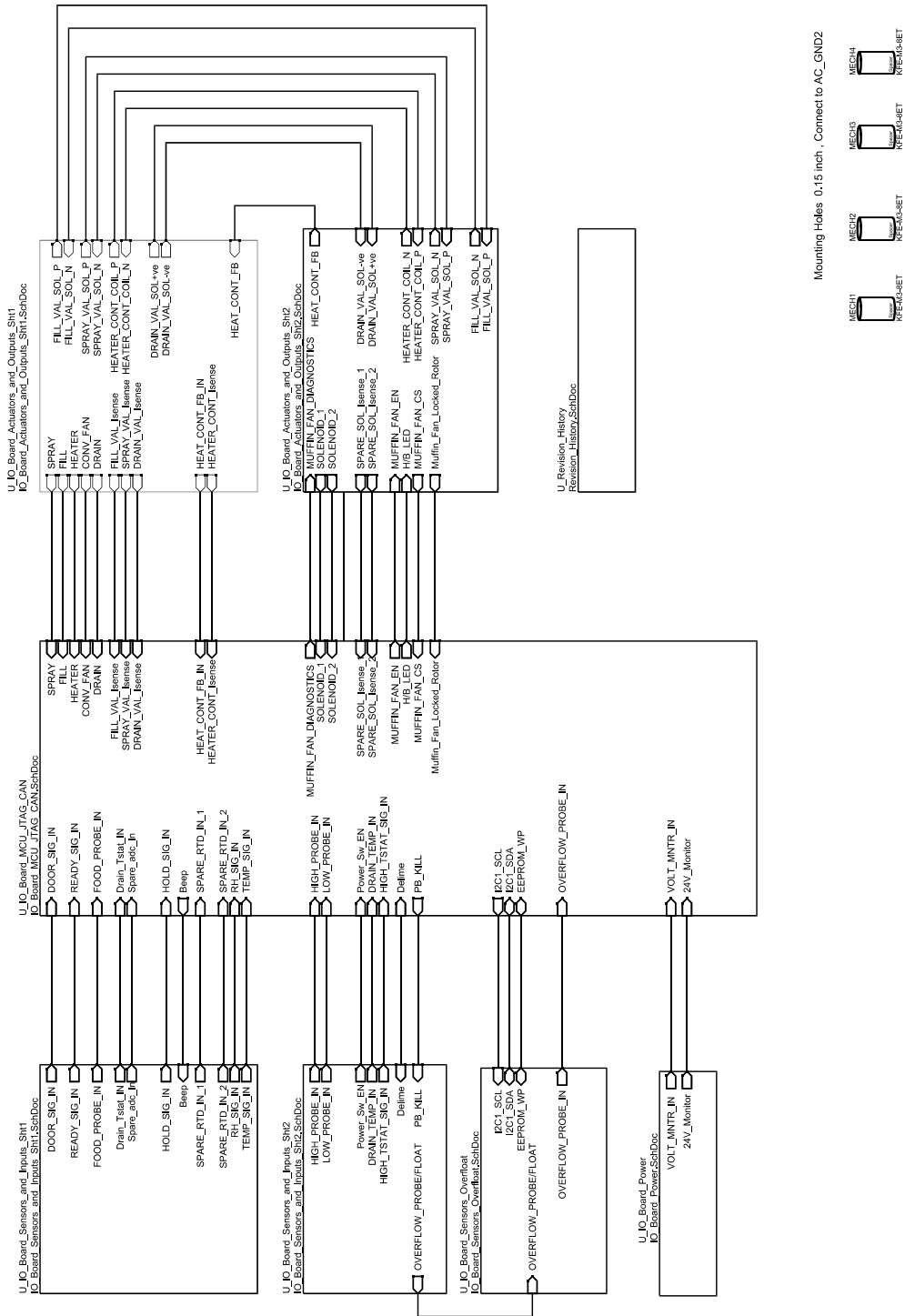






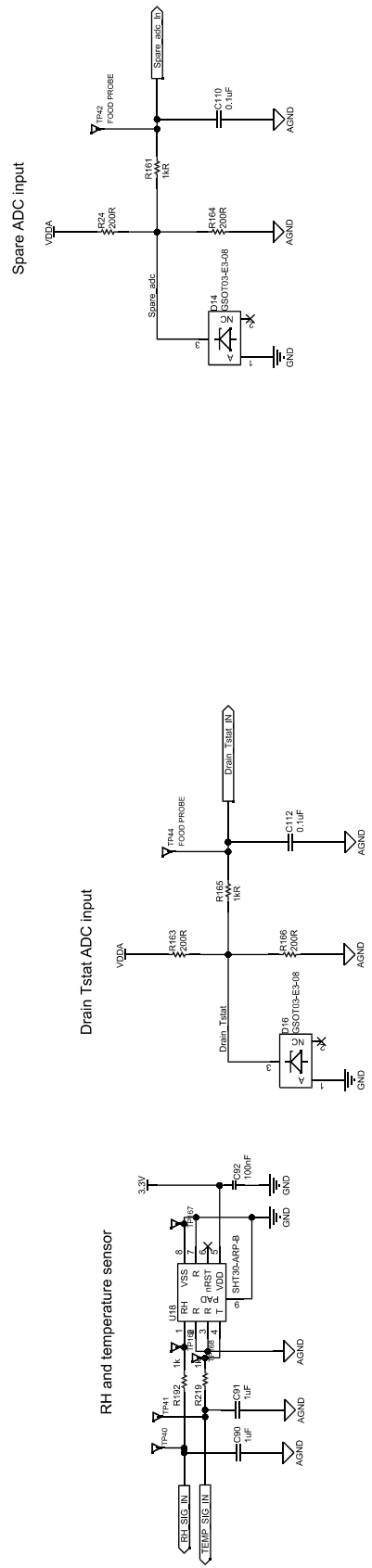
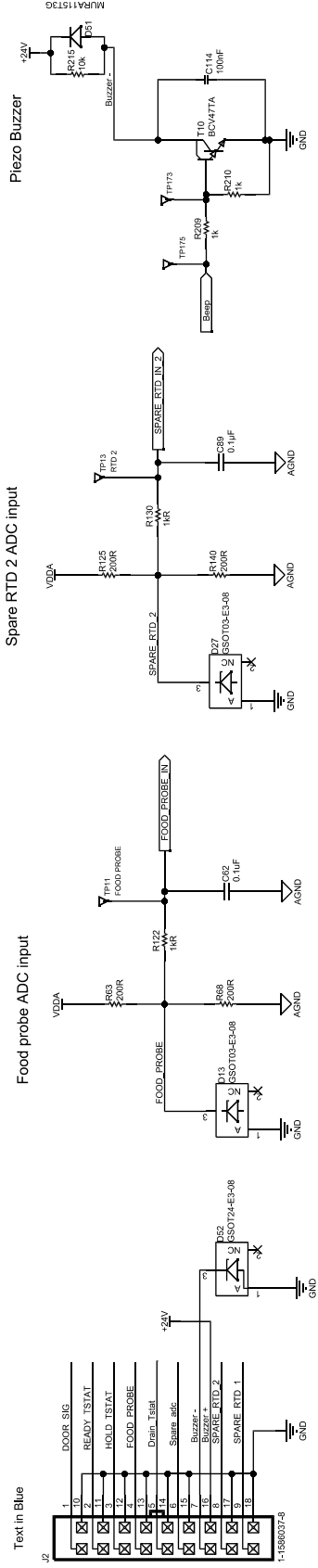
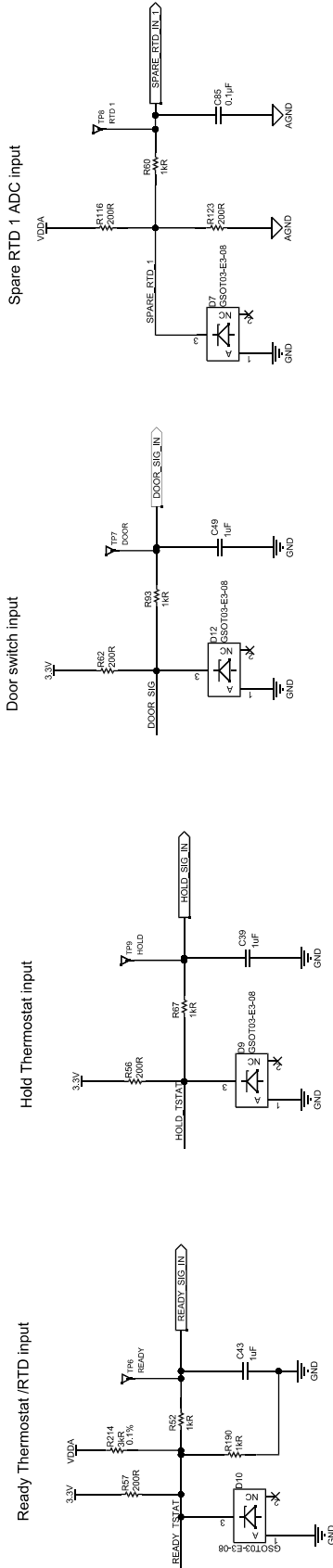


# Wiring Diagram & Schematics



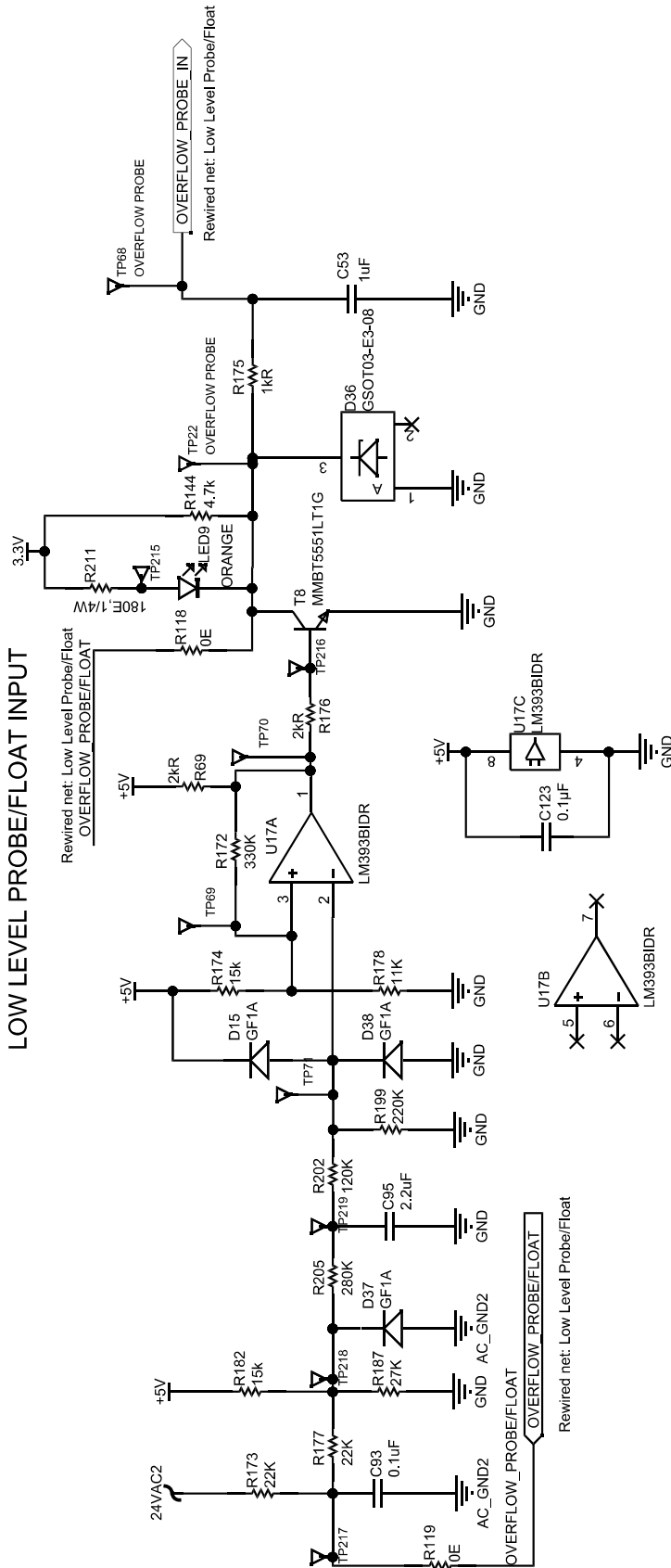
Note : All the Test Points need to Be assigned to a Circular Pad

# Wiring Diagram & Schematics

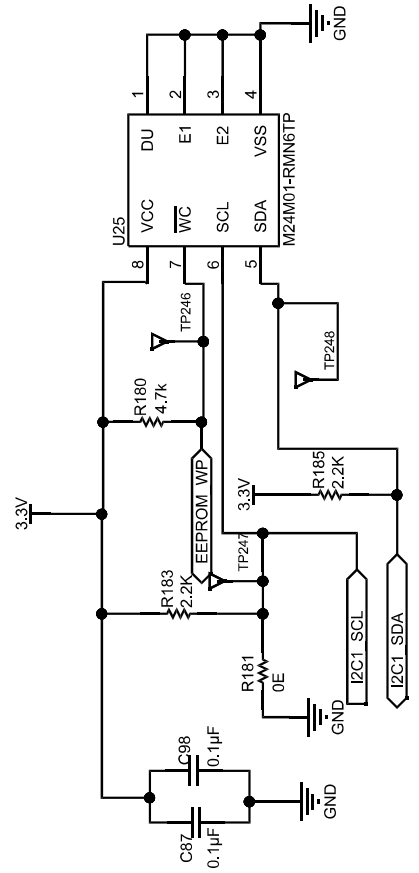




## LOW LEVEL PROBE/FLOAT INPUT



## EEPROM



## ASSEMBLY / DISASSEMBLY

**WARNING: AFTER SERVICING GAS PIPING ON GAS MODELS, CHECK FOR GAS LEAKS BEFORE PUTTING UNIT BACK IN SERVICE.**

**WARNING: DISCONNECT THE STEAMER FROM ELECTRIC POWER BEFORE BEGINNING ANY SERVICE PROCEDURES.**

### GENERAL INFORMATION

This section provides common removal and installation procedures for parts.

The following procedures are based upon having access to the steamer on all four sides. If the steamer is installed between other appliances and there is not enough room on the sides for access, the steamer must be pulled out from its position to gain proper access.

Care should be taken in moving the steamer so as not to stress or pull on the electrical, gas and water connections.

### CAVITY COMPARTMENT SIDE PANELS

For part number, see section on the steamer model parts list.

#### REMOVAL

1. With a Phillips screw driver remove the two 10-32 screws on the lower edge of the panel and one at the top edge (at the center of the top panel overhang). The panel is retained to the steamer by these three screws and three spring-like clips at the rear edge.
2. Once the screws are removed, the panel can be pulled forward about 1 inch, then lowered from behind the top panel overhang.

### TOP COVER

For part number, see section on the steamer model parts list.

**NOTE:** Under normal conditions the top should never have to be removed. The most likely reason for removing it is if the panel itself has been damaged by a falling object.

1. Remove right side and left side panels.
2. At the front on each side, remove the #10-32 screw securing the top to the front panel (see illustration).

### STEAMER DISPLAY CONTROL

#### REMOVAL

1. Unplug the display control harness from I/O board.
2. Using Phillips screw driver, carefully remove the four or five screws (number depends on model) holding the control display enclosure to the front panel. Carefully make sure harness and USB cable passes through hole in front panel.
3. Using a Phillips screw driver, remove the four M3 screws and carefully remove board. Disconnect control harness and USB cable from board.

#### INSTALLATION

1. Position the board on four studs on control enclosure.
2. Secure the board to control enclosure with four 3M screw and tighten with Phillips screw driver.
3. Connect harness and USB cable to control board. Install control enclosure housing while carefully inserting harness and cable through the holes in the front panel and securing with #10-32 screws.
4. Connect control harness to I/O board.

### I/O BOARD

#### REMOVAL

1. Unplug all connectors.
2. Using a 5/26" socket, remove four 6/32" lock nuts and remove the board from four studs on the high voltage panel.

### INSTALLATION

1. Position the board on four studs on the high voltage panel.
2. Install 6/32" lock nuts onto the studs and tighten in place using a 5/16" socket.
3. Insert all jacks in the same connector locations as per removal. Press firmly to make sure the jack is fully seated on the board.

### STEAM RESERVOIR DRAIN VALVE

When the steam reservoir drain valve is de energized or (OPEN) the silicone hose can freely slide through the valve housing. The steam reservoir drain valve is located to the right of the steamer cavity.

#### REMOVAL

1. Turn off power and disconnect steamer from the branch circuit. Remove right side panel. Let steamer drain completely.
2. Using spring clamp pliers, disconnect ONE END of the silicone drain hose by loosening the drain hose clamp from the drain fitting coming from the cavity drain. Remove clamp.
3. Unplug the valve electrical wires.
4. With a 5/16 inch nutdriver, remove the two 10-32 screws holding the drain valve to the bracket steamer base.
5. Remove the two 10-32 screws and remove the valve from the bracket.
6. Loosen the clamp and remove the other end of the silicone hose from the drain box. Inspect the hose for any damages or lime buildup. Clean or replace the hose if required, then reattach to the steam reservoir drain fitting.

#### INSTALLATION

1. Attach new drain valve to valve bracket. Slide the silicone hose through the drain valve housing and install hose clamp over the exposed end of the hose. Check that the hose is straight and not twisted.
2. Fit the exposed end of the silicone hose onto the elbow of the cavity drain. Using spring clamp pliers, position and tighten the hose clamp.
3. Plug the electrical leads of the valve into the wiring harness. Connect steamer to branch circuit, and turn on power.

#### TESTING

Operate steamer and allow steam reservoir to fill. Check for leaks and observe if drain valve fully closes. Turn off steamer and observe that drain valve opens and the steam reservoir drains.

1. Reinstall right side panel.

### DOOR REMOVAL/INSTALLATION/ALIGNMENT

For part number, see section on the steamer model parts list.

#### REMOVAL

1. To remove the door, turn off the steamer power and allow the steamer to cool. Then open the door and, while supporting the weight of the door, remove hinge pin or remove door-to-hinge bolts.
2. Place the door on a flat, clean table or similar support, with gasket facing up. Be careful not to scratch door surface.
3. Inspect door gasket for signs of cuts, or other defects which may impair its function. Replace if necessary. **NOTE:** Gasket not covered under terms of warranty.

#### INSTALLATION

1. To install the door, apply NEVER-SEEZ lubricant to hinge pin. Align door with hinge and insert hinge pin, or apply Loctite 242 to the door-to-hinge bolts, then install door and mounting bolts. Snug bolts only, Do **NOT** tighten mounting bolts at this time.

#### ALIGNMENT

1. Place a piece of masking tape over the door latch pin (bullet) hole in the door.

2. Close the door until the door latch pin just penetrates the masking tape. Make sure the door pin contacts only the door latch spring.
3. If door pin does not strike the center of the masking tape or spring hole in the U-channel. Loosen the hinge-to-oven bolts and align the door to the door pin. Tighten hinge-to-oven mounting bolts.
4. You should be able to pull a dollar bill or comparable piece of paper with some effort, from between the gasket and steamer cavity with the door closed. To adjust the hinge side, loosen the door-to-hinge bolts and align the door gasket with the oven cavity. Tighten the door-to-hinge mounting bolts.
5. Operate steamer and check for leaks.

## DOOR REVERSAL PROCEDURES

1. Turn off steamer power and allow steamer to cool.
2. To remove door, support door while removing hinge-to-steamer bolts.
3. Place door with hinge on a flat, clean table (or similar support), with the gasket facing up. Be careful not to scratch the door surface. **NOTE:** Do not remove the hinge from the door.
4. Note and record distance between jam nut and end of door locking pin (bullet). This information will be needed during bullet installation in Step 6.
5. Loosen jam nut with a 1/2 inch wrench, remove door latch pin and jam nut.
6. Coat latch pin threads with NEVER-SEEZ high temperature (1800 degree F) anti-seize and lubricating compound. Install door latch pin and jam nut directly across steamer cavity from old bullet location. Install these two items so that jam nut-to-end of bullet distance is approximately the same as measured in Step 4.
7. Remove the two 1/4-20 truss head screws from above and below the old bullet location and install them above and below the new bullet location.
8. Remove screws and U-channel from the door. Take magnet and block assembly from present location and place it at the opposite end of the door channel, with magnet facing outward from the door.
9. Remove screws. Remove door handle from cam.
10. Apply NEVER-SEEZ high temperature (180°F) anti-seize and lubricating compound to the cam and Loctite 242 to screw threads.
11. Turn handle and cam 180° from their original positions and install them on the door with screws. Be sure handle and cam move smoothly.
12. Be sure door handle is in the DOWN position. Turn U-channel 180° from its original position, hold door spring in U-channel open with a screwdriver or similar tool, and install U-channel.
13. Check operation of the cam. Push up on the door handle and check if the spring opens. If the spring does not open, cam and spring are NOT correctly aligned and problem must be corrected.
14. Apply a light amount of Loctite 242 to screws, then install screws.
15. Apply Loctite 242 to the hinge-to-steamer bolts, then install door and hinge mounting bolts. Do **NOT** tighten mounting bolts at this time.
16. Align door to steamer. Refer to Alignment procedure above. **NOTE:** There is a door switch inside the front panel of the steamer, on each side of the cavity. It is pre-wired in parallel, so no wiring change is necessary when the door is reversed.
17. Close steamer door and operate steamer. If steamer fan does not operate, check location of door magnet and try operation again. If fan operation problem still exists, refer to the Troubleshooting section.
18. Allow steamer to operate for approximately 5 minutes, and then check for leaks. If there are no leaks, the steamer is ready for operation. If there are leaks around the door, recheck door alignment, and if necessary, door gasket installation.

## DOOR SWITCH

One normally open door switch is factory-installed on each side of the steamer cavity. Activated (that is, closed) by the proximity of the door magnet, they are wired in parallel so that only one switch at a time will affect steamer operation.

1. Remove the side panel for access to the door switch that is to be replaced.
2. Unplug the door switch leads from the steamer harness.
3. The switch is held in place with two small 4-40 screws. With a slotted screwdriver, remove these screws and the switch may be removed.
4. To install the switch use the two 4-40 screws and a screwdriver with a screwstarter features.
5. Connect switch leads to steamer harness.
6. Test steamer operation.
7. Replace side panel.

## DOOR GASKET

For part number, see section on the steamer model parts list. Door Gasket not covered under terms of warranty.

### REMOVAL

1. Turn off steamer power and allow to cool.
2. Remove the door using ne of these following two methods:
  - Support door weight and remove hinge pin or
  - Support weight of the door and remove the two door-to-hinge bolts
3. Place the door on a flat, clean smooth table or similar support with handle hanging over edge. Be careful not to scratch the door.
4. Remove four (or eight) 8-32 truss head screws and remove inner door panel.
5. Remove and discard door gasket.
6. Clean back of the inner door panel. Be sure old sealant is completely removed.

### INSTALLATION

1. Install new door gasket around inner panel as shown in the illustration. Be sure the inner door panel flange is fully inserted into the door gasket groove.
2. Apply a high temperature silicone sealant, such as a GE RTV 159 or equivalent, to the four door spacers.
3. Apply Loctite 242 to inner door panel mounting screws.
4. Install inner door panel and door gasket on the door spacers, and tighten mounting screws.
5. Align door with hinge and insert hinge pin OR apply Loctite 242 to the door-to hinge bolts, then install door and mounting bolts. Do **NOT** tighten bolts at this time.
6. Align door to steamer and tighten bolts.

Please refer to Alignment procedure above.

## PROBE

### REMOVAL

1. Turn off the steamer power and disconnect the steamer from the branch circuit.
2. Remove the right side cover from the steamer.
3. Disconnect the water level probe harness wire.
4. Using a 11/16" open wrench, loosen water probe.
5. Remove the probe from the cavity.

### INSTALLATION

1. Apply a small amount of sealant to threads on new water probe.
2. Insert new probe into threaded coupling and tighten with the 11/16" open wrench.

3. Attach the harness wire.
4. Turn on the branch circuit power supply.
5. Turn ON the steamer and test.

## **ELEMENT**

### **REMOVAL**

1. Turn off the steamer power and disconnect the steamer from the branch circuit.
2. Using a screwdriver, remove both left and right side panels.
3. Remove rear element access panel.
4. Fold insulation out of the way.
5. Remove element insulation cover by removing the 6ea 7/16" x 32 nuts using a ratchet and 7/16" socket.
6. Remove element insulation.
7. Loosen but do not remove the element brackets using the 6 remaining 7/16" x 32 nuts using a ratchet and 1/16" socket.
8. Trace the wires of the element back to the element terminal block and remove the wires with a #2 flat blade screwdriver.
9. Slide the element out from the back of the unit through the element access area to replace.

### **INSTALLATION**

1. Slide the new element into the appropriate opening of the element bracket through the rear access panel.
2. Install the element wires into the element terminal block from which the original element terminal block was installed using a #2 flat blade screwdriver.
3. Tighten the 7/16" x 32 nuts supporting the element brackets using a ratchet and 7/16" socket.
4. Replace element insulation.
5. Replace element insulation cover and secure using a ratchet and the remaining 7/16" x 32 nuts.
6. Replace and secure rear element access panel using a #2 flat blade screwdriver and the 5-10/32" screws.
7. Recheck all wire connections and screws.
8. Using a screwdriver, replace both left and right side panels.
9. Reconnect power supply.

## **BURNER**

### **REMOVAL**

1. Disconnect power and gas supplied to the unit.
2. Remove the left side panel by removing the three exterior screws.
3. Remove the side access panel by removing the two 10x32 nuts.
4. Unplug the HIS and flame sensor.
5. Remove the 5-14" screws on the holding plate near the ignition tube and on the bottom of the holding plate.
6. Loosen the 3/4" compression fitting on the ignition tube and move it toward the base.
7. Slide the burner out the left side of the unit.

### **INSTALLATION**

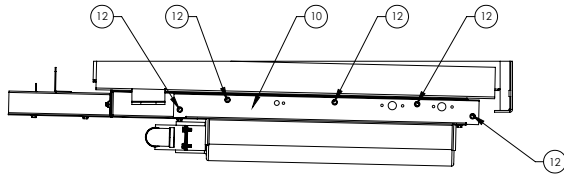
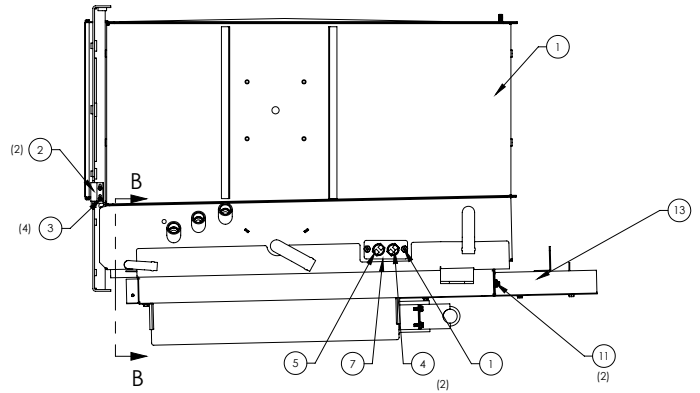
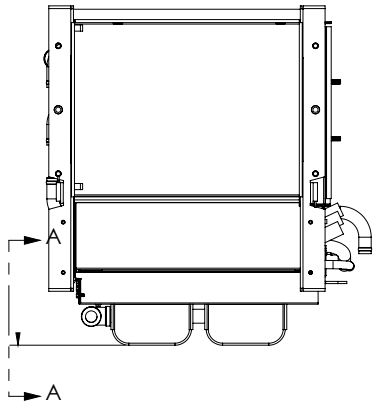
1. Slide the new burner into the left side of the unit.
2. Attach the ignition tube and tighten the 3/4" compression fitting.
3. Install the 5-14" screws into the holding plate.

4. Plug in the HIS and flame sensor.
5. Turn on gas supply and power the unit.
6. NOTE: The ignition tube does not receive gas until the burners are active.
7. Install the side access panel with the 2 10x32 nuts.
8. Re-install the left side panel with the three exterior screws.

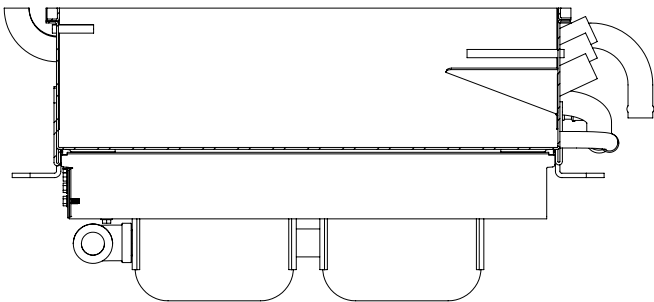
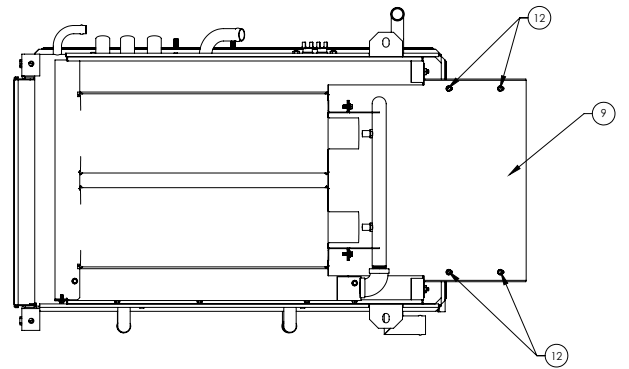
**GSSP-BL-3G/5G  
GAS CAVITY ASSEMBLY**

178125

**Parts List**



SECTION A-A



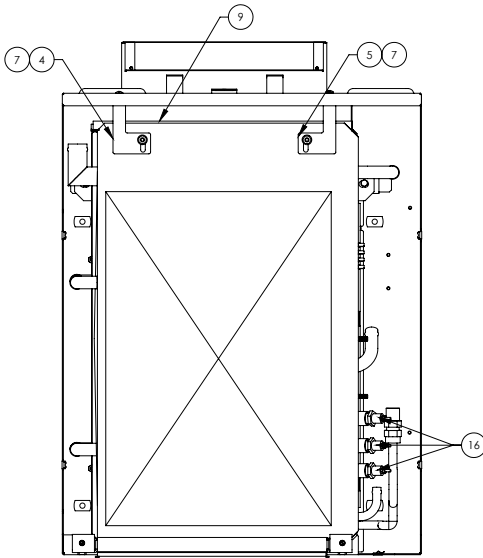
SECTION B-B  
SCALE 1 : 2

13	146507	WELDMENT, FLUE EXTENTION, SSB-5G	1
12	144110	SCREW, #8 X 1/2 HEX HD SLOT MACHINE SELF, 410SS	11
11	071256	NUT HEXHEAD KEPS 10-32	2
10	145088	WELDMENT, LEFT COMB CHAMBER ACCESS	1
9	143986	WELDMENT, FLUE EXTENSION BRACKET BOTTOM	1
8	143976	BURNER ASSEMBLY, INFRARED	1
7	178091	PLATE, READY & HOLD SENSOR, GSSP	1
6	069784	8-32 KEPS NUT	2
5	178089	THERMOSTAT, HOLD, GSSP	1
4	147285	THERMOSTAT, READY, SSB-3/5	1
3	096841	SCREW #4-40 X 1/4" HEX MS	4
2	096857	SWITCH, DOOR	2
1	177842	WELDMENT, CAVITY ASM, GSSP-BL, 3 PAN GAS	1
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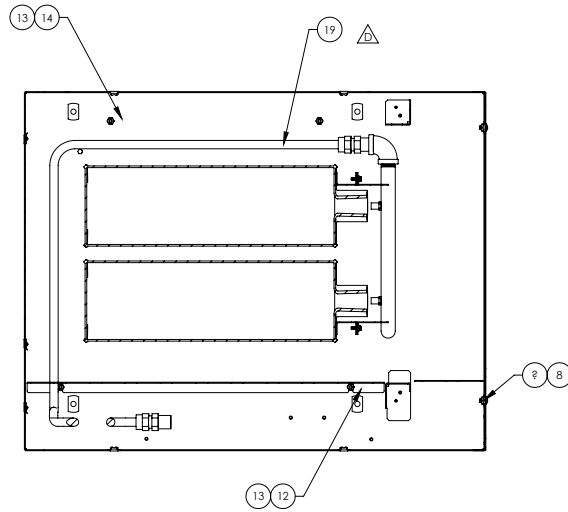
**GSSP-BL-3G/5G  
BASE & CAVITY ASSEMBLY**

178124

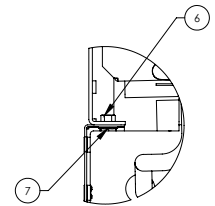
**Parts List**



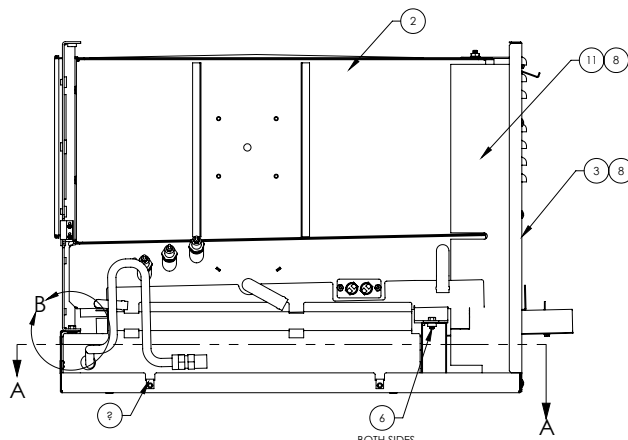
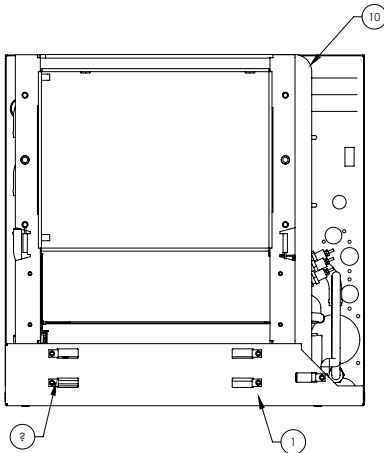
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SECTION A-A  
INSULATION HIDDEN



DETAIL B  
SCALE 1 : 2  
BOTH SIDES



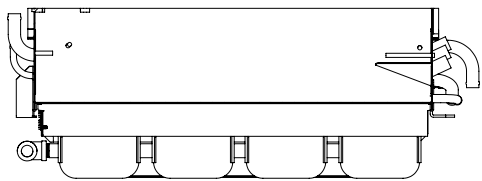
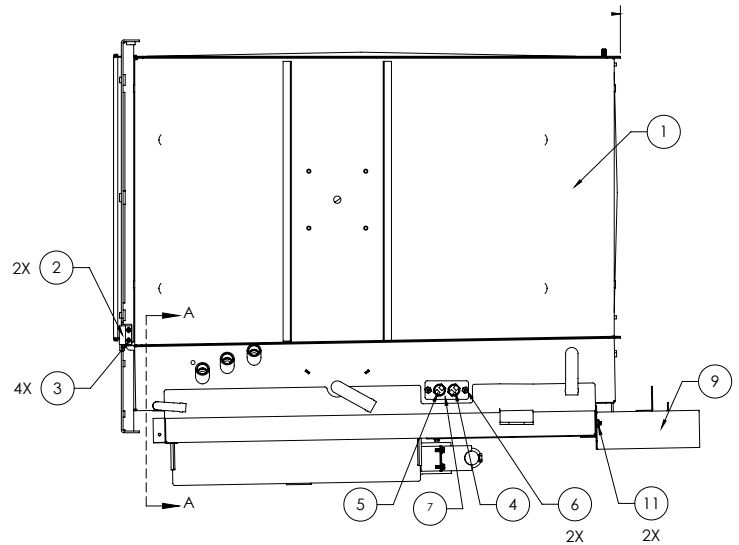
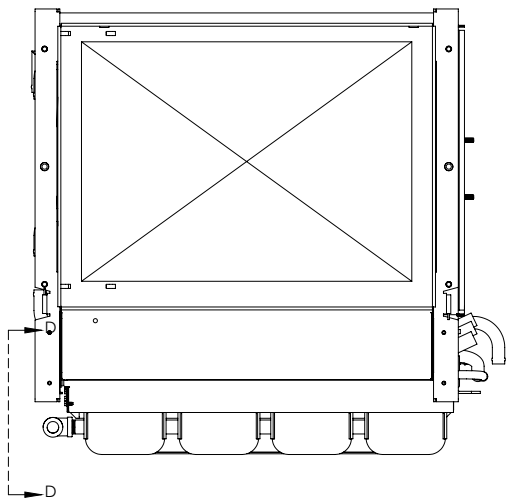
INSULATION HIDDEN

19	179951	HI-TEMP, FLEX TUBE, BURNER INTAKE 48"	1
18	179084	DRAIN GUARD & PROBE BAFFLE, GSSP-BL	1
17	078938	PIPE DOPE (NOT SHOWN)	.03 OZ
16	141285	WATER PROBE	3
15	FA NUT0404	NUT, #10 "U" TINNEMAN	11
14	144127	PANEL, BOTTOM LEFT FIREWALL, SSB-5G	1
13	071256	NUT HEXHEAD KEPS 10-32	4
12	143657	PANEL, BOTTOM RIGHT FIREWALL, SSB-3/5G	1
11	143889	PANEL, REAR FIREWALL, SSB-3G/E	1
10	149373	INSULATION, SIDE, SSB-3E/G	1
9	143893	INSULATION, BACK, SSB-3E/G	1
8	004173	SCREW, TRS HEAD 10-32 X 3/8	7
7	NT1101	NUT- HEXSERRATEDZINC 1/4-20	4
6	005608	SCREW, HEX HEAD CAP, 1/4"-20	4
5	142744	BRACKET, LEFT HAND	1
4	142745	BRACKET, LEFT HAND	1
3	178040	WELDMNT, REAR PANEL & FLUE SUPPORT, GSSP-BL, 3 PAN, GAS	1
2	178125	CAVITY ASSEMBLY, GSSP-BL-3G	1
1	177826	WELDMNT, BASE PAN ASM, GSSP, 3/5 PAN	1
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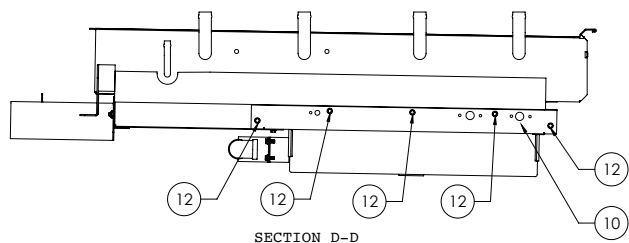
**GSSP-BL-10G  
GAS CAVITY ASSEMBLY**

178908

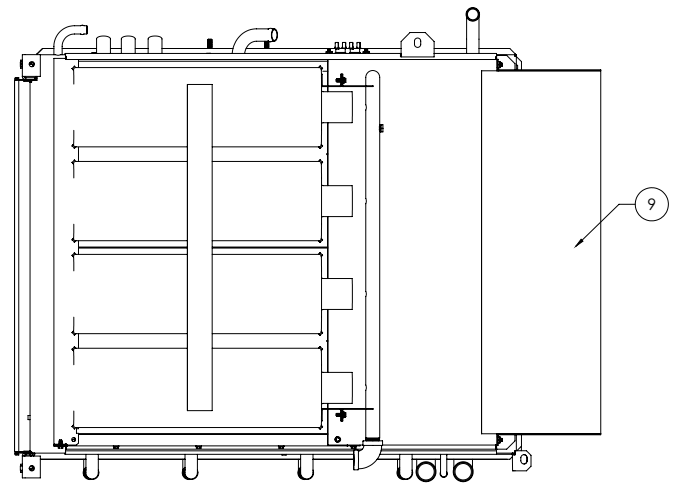
**Parts List**



SECTION A-A



SECTION D-D

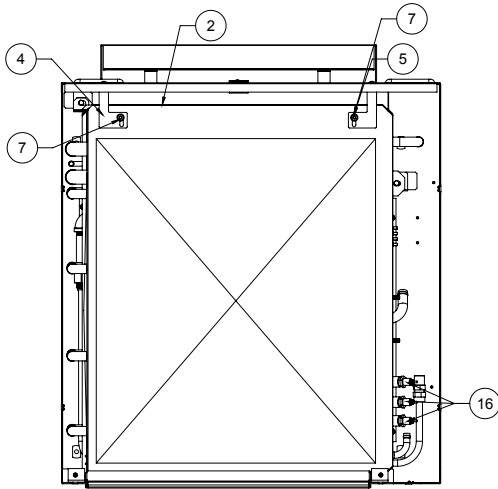


12	144110	SCREW, #8 X 1/2 HEX HD SLOT MACHINE SELF, 410SS	6
11	071256	NUT HEXHEAD KEPS 10-32	2
10	145158	WELDMENT, LEFT COMB CHAMBER ACCESS	1
9	145257	WELDMENT, HORIZONTAL FLUE SSB-10G	1
8	145074	BURNER ASSEMBLY, INFRARED	1
7	178091	PLATE, READY & HOLD SENSOR. GSSP	1
6	069784	8-32 KEPS NUT	2
5	178089	THERMOSTAT, HOLD, GSSP	1
4	147285	THERMOSTAT, READY, SSB-3/5	1
3	096841	SCREW #4-40 X 1/4" HEX MS	4
2	096857	SWITCH, DOOR	2
1	177855	WELDMENT, CAVITY ASM, GSSP-BL-10G	1
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.

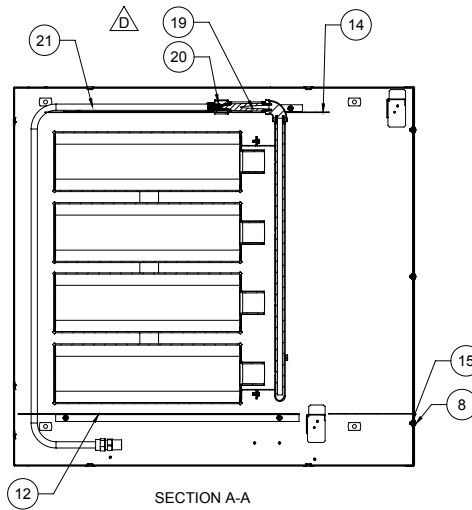
**GSSP-BL-10G  
BASE & CAVITY ASSEMBLY**

178909

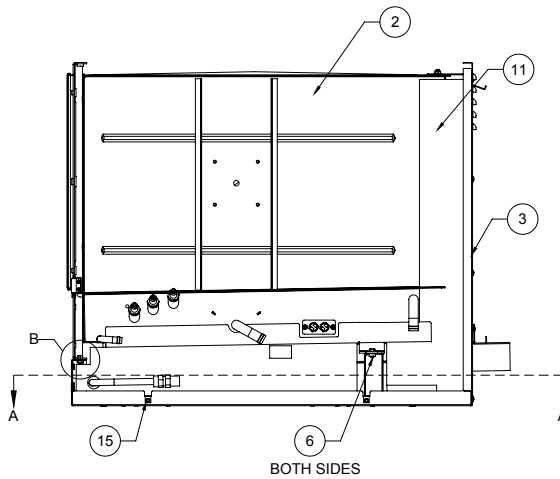
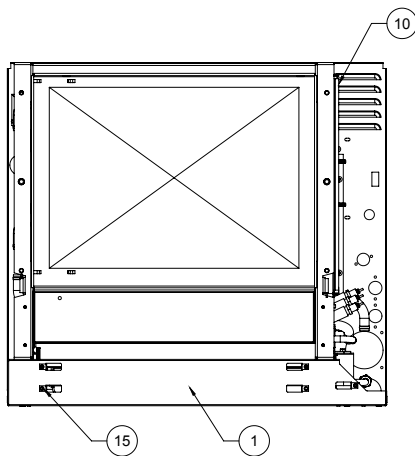
**Parts List**



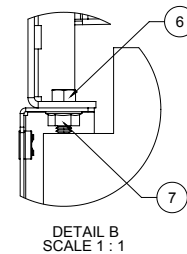
INSULATION HIDDEN



SECTION A-A  
INSULATION HIDDEN



BOTH SIDES  
INSULATION HIDDEN



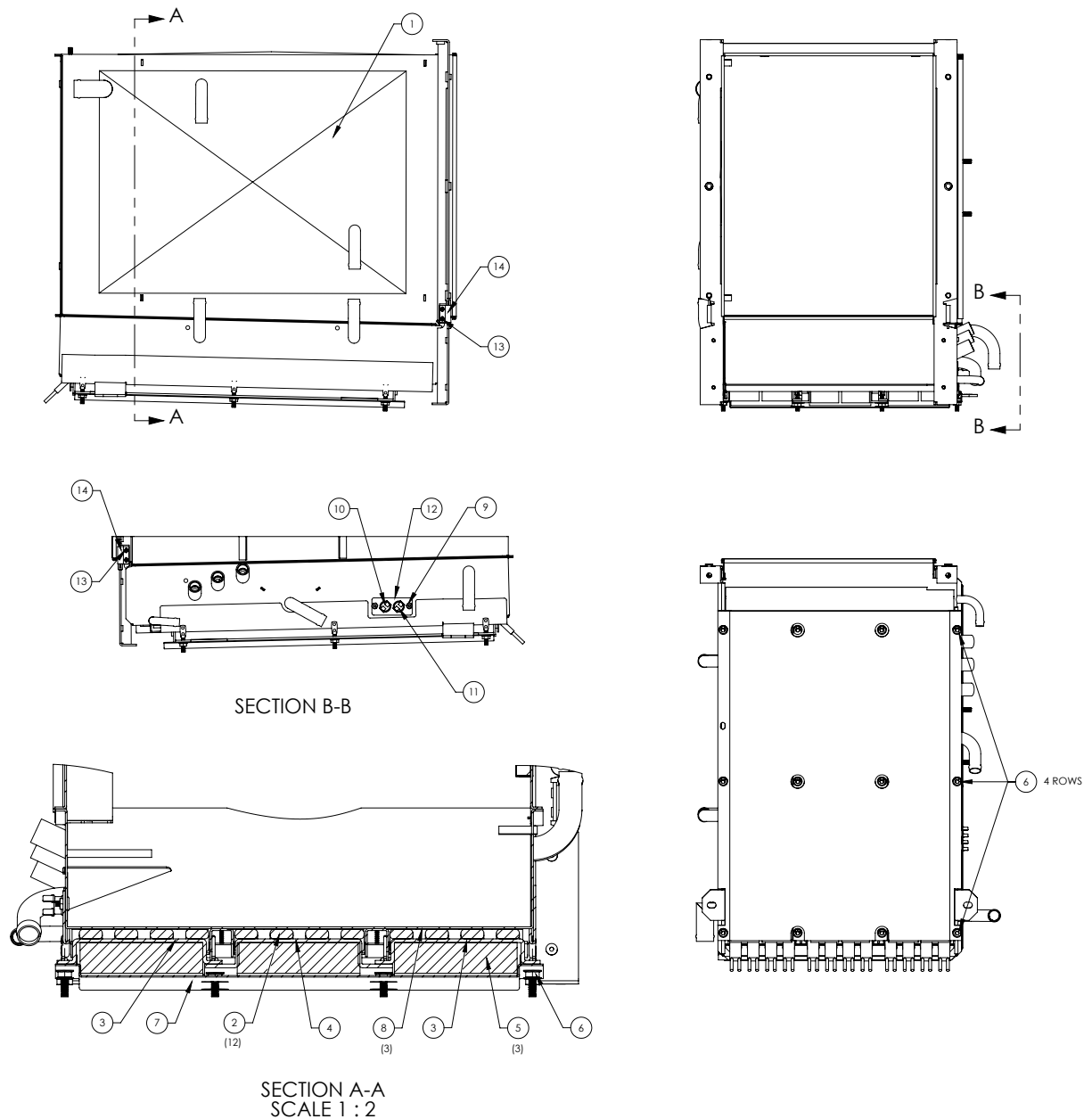
DETAIL B  
SCALE 1 : 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178855	WELDMENT, CAVITY ASM, GSSP, 10 PAN	1
2	178908	CAVITY ASM, GSSP-BL-10G	1
3	178042	WELDMENT, REAR PANEL & FLUE SUPPORT, GSSP-BL-10G	1
4	142745	BRACKET, LEFT HAND PANEL	1
5	142744	BRACKET, RIGHT HAND PANEL	1
6	005608	SCREW, HEX HEAD CAP, 1/4"-20	4
7	NT1101	NUT- HEXSERRATEDZINC 1/4-20	4
8	004173	SCREW, TRS HEAD 10-32 X 3/8	8
9	143870	INSULATION, CAVITY BACK, SSB-10	1
10	149464	INSULATION, TOP & SIDE, SSB-10	1
11	145624	PANEL, REAR FIREWALL, SSB-10	1
12	145148	PANEL, BOTTOM RIGHT FIREWALL, SSB-10E	1
13	071256	NUT HEXHEAD KEPS 10-32	4
14	145149	PANEL, BOTTOM LEFT FIREWALL, SSB-10G	1
15	FA NUT0404	NUT, #10 "U" TINNEMAN	12
16	141285	WATER PROBE	3
17	078938	PIPE DOPE (NOT SHOWN)	.03 oz
18	179084	DRAIN GUARD & PROBE BAFFLE, GSSP-BL	1
19	005554	NIPPLE BLK 1/2" NPT X 4" LONG	1
20	179969	37DEG. 1/2" OD FLARE X 1/2" NPTF GAS CONNECTOR	1
21	179951	HI-TEMP, FLEX TUBE, BURNER INTAKE 48"	1

**GSSP-BL-5E  
ELECTRIC CAVITY ASSEMBLY**

178183

**Parts List**

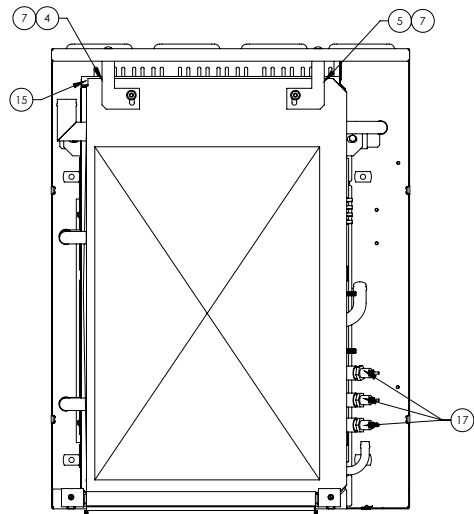


14	096857	SWITCH, DOOR	2
13	096841	SCREW #4-40 X 1/4" HEX MS	4
12	178091	PLATE, READY & HOLD SENSOR, GSSP	1
11	147285	THERMOSTAT, READY, SSB-3/5	1
10	178089	THERMOSTAT, HOLD, GSSP	1
9	069784	8-32 KEPS NUT	2
8	147693	SHEET, GRAPHITE	3
7	141538	PANEL, INSULATION HOLD-DOWN	1
6	NT1101	NUT- HEXSERRATEDZINC 1/4-20	12
5	140178	INSULATION	3
4	141536	BRACKET, ELEMENT HOLD-DOWN, MIDDLE	1
3	141537	BRACKET, ELEMENT HOLD-DOWN, LEFT & RIGHT SIDE	2
2	REF.	ELEMENT	12
1	177848	WELDMENT, CAVITY ASM, GSSP-BL, 5 PAN, ELECTRIC	1
ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.

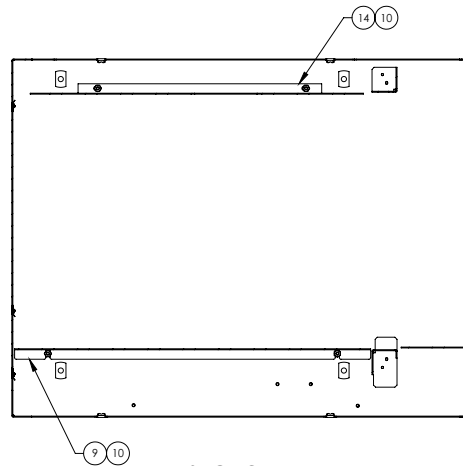
**GSSP-BL-5E  
BASE & CAVITY ASSEMBLY**

178182

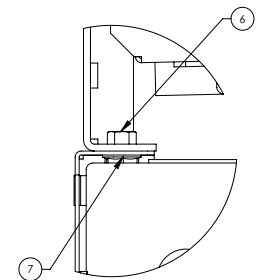
# Parts List



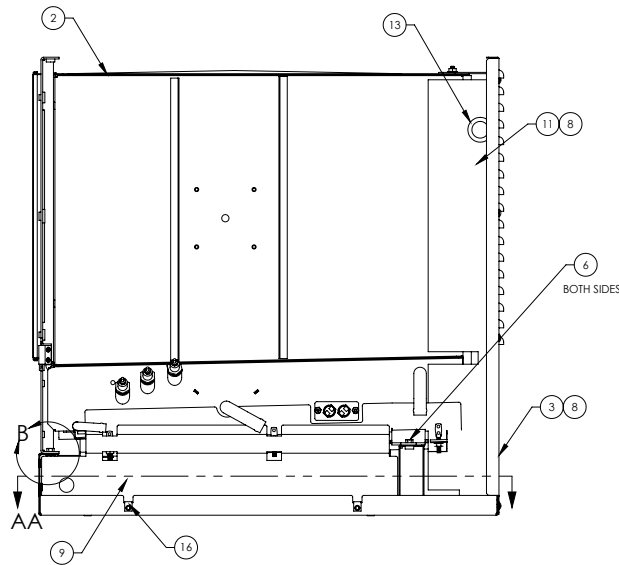
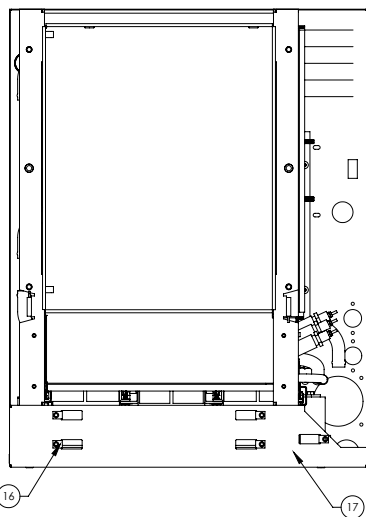
INSULATION HIDDEN



SECTION A-A  
INSULATION HIDDEN



DETAIL B  
SCALE 1 : 1  
BOTH SIDES



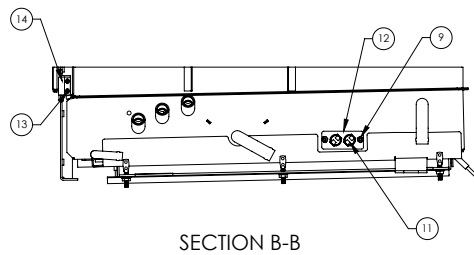
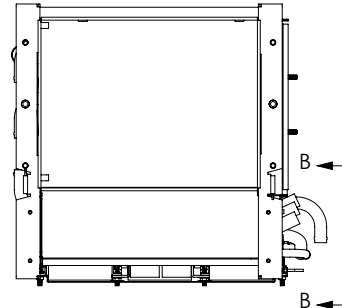
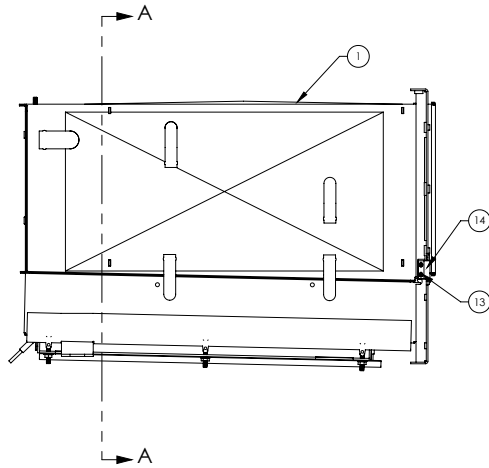
INSULATION HIDDEN

20	179084	DRAIN GUARD & PROBE BAFFLE, GSSP-BL	1
19	078938	PIPE DOPE (NOT SHOWN)	.03 OZ
18	042359	TAPE, DUCT, 3" (NOT SHOWN)	100 IN.
17	<a href="#">141285</a>	WATER PROBE	3
16	FA NUT0404	NUT, TINNEMAN, #10	11
15	<a href="#">142624</a>	INSULATION, BACK SSB-5	1
14	<a href="#">145160</a>	PANEL, BOTTOM LEFT FIREWALL, SSB-5E	1
13	097015	SNAP BUSHING 1-3/8" INCH	1
12	<a href="#">149465</a>	INSULATION, TOP & SIDE, SSB-5	1
11	143655	PANEL, REAR FIREWALL	1
10	071256	NUT HEXHEAD KEPS 10-32	4
9	143657	PANEL, BOTTOM RIGHT FIREWALL, SSB-3/5G	1
8	004173	SCREW, TRS HEAD 10-32 X 3/8	6
7	<a href="#">NT1101</a>	NUT- HEXSERRATEDZINC 1/4-20	4
6	085199	SCREW HEX HEAD 1/4-20 X 3/8	4
5	142744	BRACKET, RIGHT HAND PANEL	1
4	142745	BRACKET, LEFT HAND PANEL	1
3	178034	WELDMNT, REAR PANEL, GSSP-BL, 5 PAN, ELECTRIC	1
2	178183	CAVITY ASSEMBLY, GSSP-BL-5E	1
1	177826	WELDMNT, BASE PAN ASM, GSSP, 3/5 PAN	1
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.

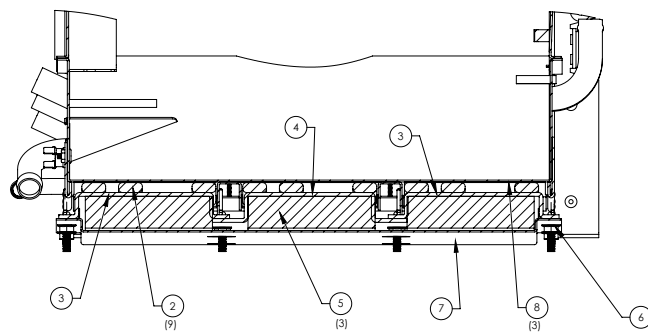
**GSSP-BL-3E  
ELECTRIC CAVITY ASSEMBLY**

178114

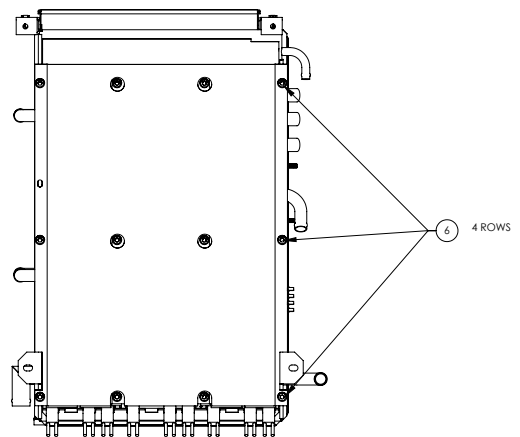
**Parts List**



SECTION B-B



SECTION A-A  
SCALE 1:2

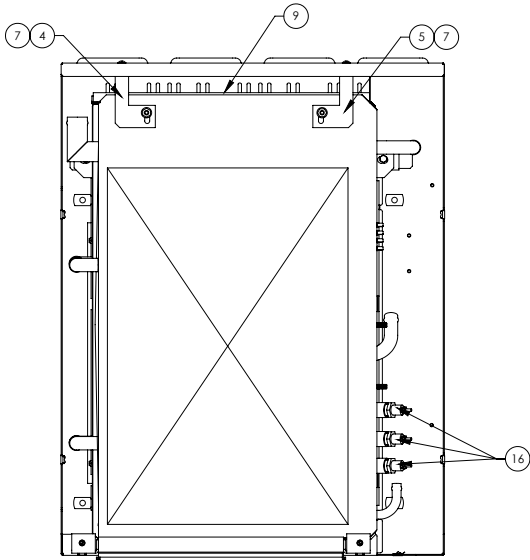


14	096857	SWITCH, DOOR	2
13	096841	SCREW #4-40 X 1/4" HEX MS	4
12	178091	PLATE, READY & HOLD SENSOR, GSSP	1
11	147285	THERMOSTAT, READY, SSB-3/5	1
10	178089	THERMOSTAT, HOLD, GSSP	1
9	069784	8-32 KEPS NUT	2
8	147693	SHEET, GRAPHITE	3
7	141538	PANEL, INSULATION HOLD-DOWN	1
6	NT1101	NUT- HEXSERRATEDZINC 1/4-20	12
5	140178	INSULATION	3
4	141536	BRACKET, ELEMENT HOLD-DOWN, MIDDLE	1
3	141537	BRACKET, ELEMENT HOLD-DOWN, LEFT & RIGHT SIDE	2
2	REF.	ELEMENT	9
1	177837	WELDMENT, CAVITY ASM, GSSP-BL, 3 PAN, ELECTRIC	1
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.

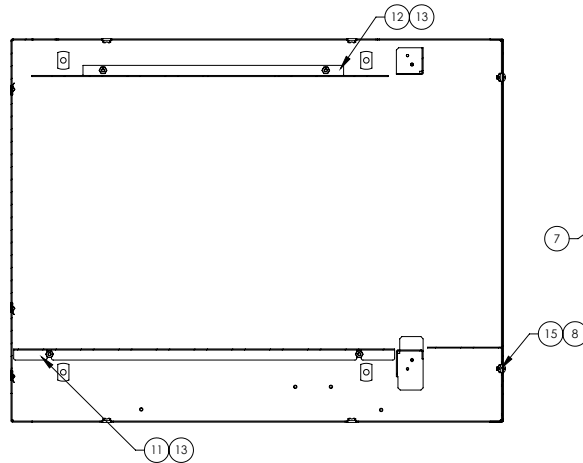
**GSSP-BL-3E  
BASE & CAVITY ASSEMBLY**

178113

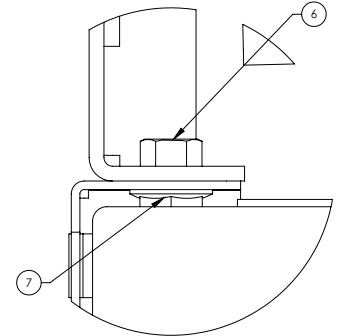
**Parts List**



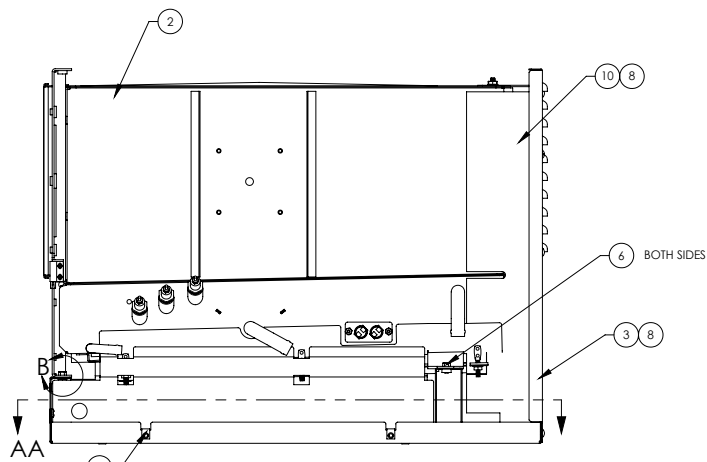
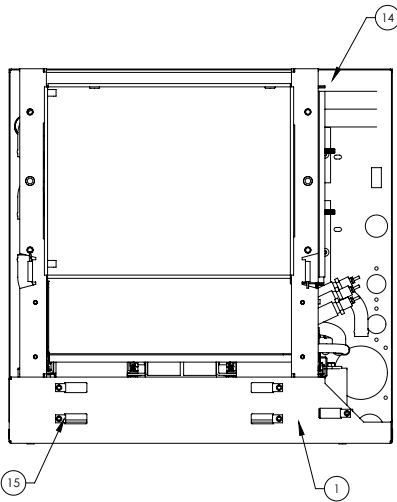
INSULATION HIDDEN



SECTION A-A  
INSULATION HIDDEN



DETAIL B  
SCALE 2 : 1  
BOTH SIDES



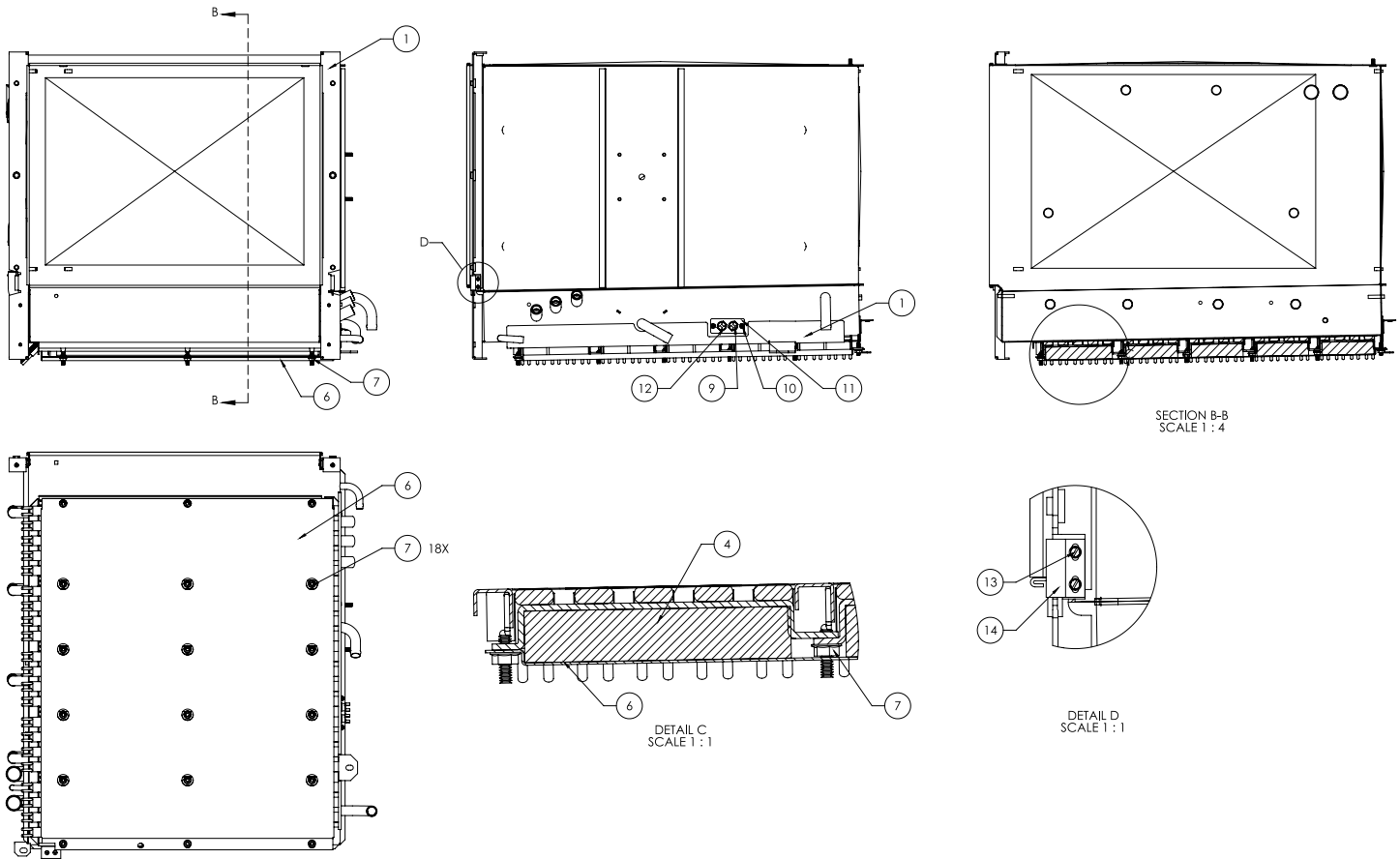
INSULATION HIDDEN

18	078938	PIPE DOPE (NOT SHOWN)	.03 OZ
17	179084	DRAIN GUARD & PROBE BAFFLE, GSSP-BL	1
16	141285	WATER PROBE	3
15	FA NUT0404	NUT, TINNEMAN, #10	11
14	149373	INSULATION, SIDE, SSB-3E/G	1
13	071256	NUT HEXHEAD KEPS 10-32	4
12	145160	PANEL, BOTTOM LEFT FIREWALL, SSB-5E	1
11	143657	PANEL, BOTTOM RIGHT FIREWALL, SSB-3/5G	1
10	143889	PANEL, REAR FIREWALL, SSB-3G/E	1
9	143893	INSULATION, BACK, SSB-3G/E	1
8	004173	SCREW, TRS HEAD 10-32 X 3/8	6
7	NT1101	NUT- HEXSERRATEDZINC 1/4-20	4
6	085199	SCREW HEX HEAD 1/4-20 X 3/8	4
5	142744	BRACKET, RIGHT HAND	1
4	142745	BRACKET, LEFT HAND	1
3	177832	WELDMENT, REAR COVER ASM, GSSP, 3 PAN, ELECTRIC	1
2	178114	CAVITY ASSEMBLY, GSSP-BL-3E	1
1	177826	WELDMENT, BASE PAN ASM, GSSP, 3/5 PAN	1
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.

**GSSP-BL-10E  
ELECTRIC CAVITY ASSEMBLY**

178201

**Parts List**



SECTION B-B  
SCALE 1 : 4

DETAIL C  
SCALE 1 : 1

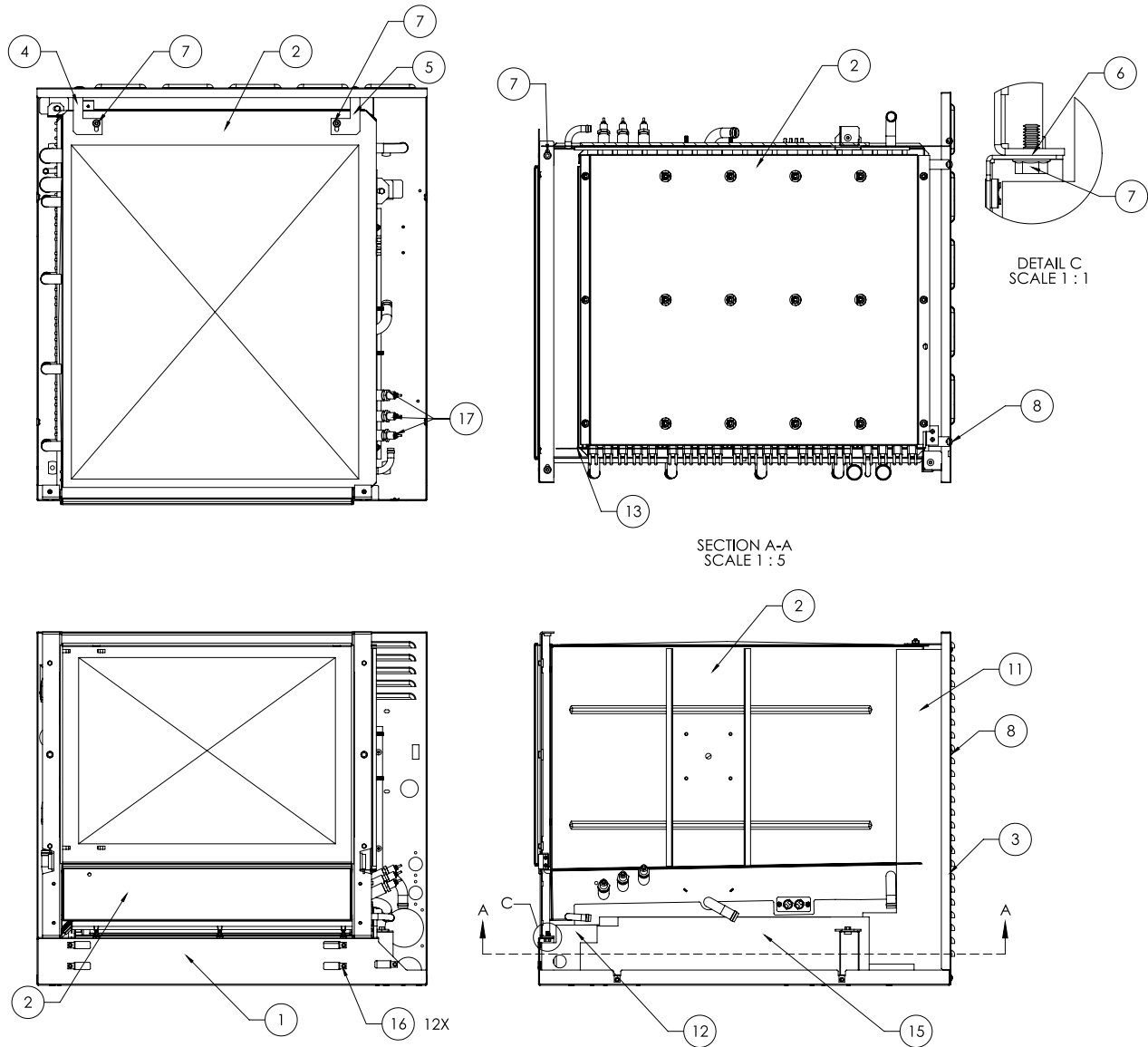
DETAIL D  
SCALE 1 : 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	177856	WELDMENT, CAVITY ASSY, GSSP-BL-10E	1
2	145509	BRACKET, ELEMENT HOLD-DOWN, LEFT & RIGHT SIDE	1
3	145508	BRACKET, ELEMENT HOLD-DOWN, LEFT & RIGHT SIDE	4
4	145510	INSULATION	1
5	140178	INSULATION	4
6	145316	PANEL, INSULATION HOLD-DOWN	1
7	NT1101	NUT- HEXSERRATEDZINC 1/4-20	18
8	147693	SHEET, GRAPHITE	6
9	147285	THERMOSTAT, READY, SSB-3/5	1
10	069784	8-32 KEPS NUT	2
11	178091	PLATE, READY & HOLD SENSOR, GSSP	1
12	178089	THERMOSTAT, HOLD, GSSP	1
13	096841	SCREW #4-40 X 1/4" HEX MS	4
14	096857	SWITCH, DOOR	2

**GSSP-BL-10E  
BASE & CAVITY ASSEMBLY**

178200

**Parts List**

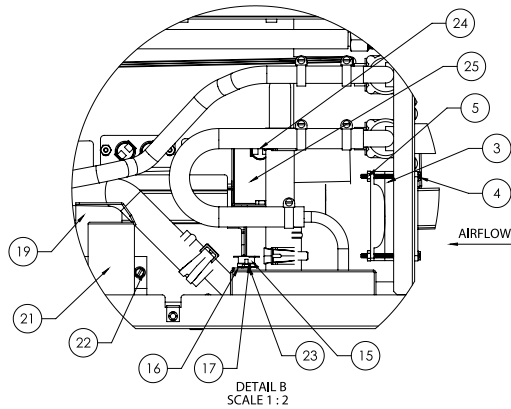
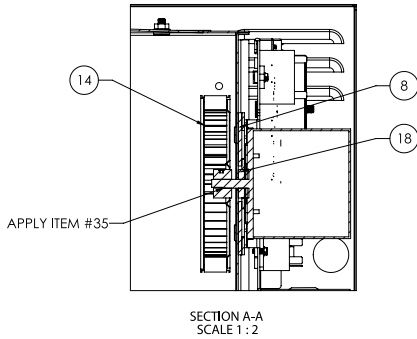
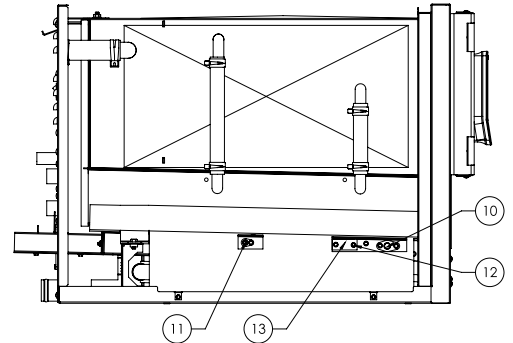
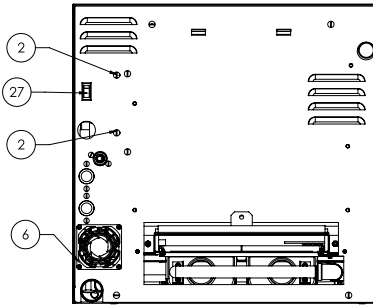
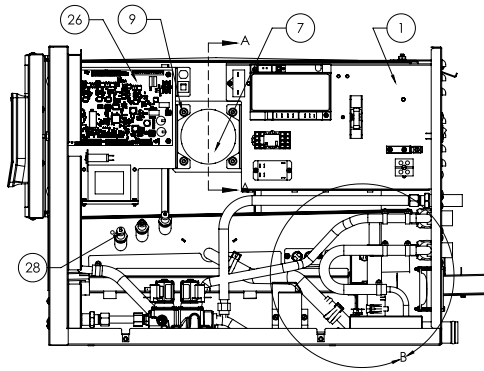


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178855	PANEL WELDMNT, BASE PAN, GSSP 10 PAN	1
2	178201	CAVITY ASM, GSSP-BL-10E	1
3	178045	PANEL, WELDMNT, BACK, GSSP-BL-10E	1
4	142745	BRACKET, LEFT HAND PANEL	1
5	142744	BRACKET, RIGHT HAND PANEL	1
6	085199	SCREW HEX HEAD 1/4-20 X 3/8	4
7	NT1101	NUT- HEXSERRATEDZINC 1/4-20	4
8	004173	SCREW, TRS HEAD 10-32 X 3/8	7
9	143870	INSULATION, CAVITY BACK, SSB-10	1
10	178857	INSULATION, TOP & SIDE, GSSP 10	1
11	145624	PANEL, REAR FIREWALL, SSB-10	1
12	145148	PANEL, BOTTOM RIGHT FIREWALL, SSB-10E	1
13	145324	PANEL, BOTTOM LEFT FIREWALL, SSB-10E	1
14	071256	NUT HEXHEAD KEPS 10-32	4
15	144482	INSULATION, RIGHT SIDE FIREWALL, SSB-10E	1
16	FA NUT0404	NUT, #10 "U" TINNEMAN	12
17	141285	WATER PROBE	3
18	042359	TAPE, DUCT, 3" (NOT SHOWN)	100 IN
19	078938	PIPE DOPE (NOT SHOWN)	.03 OZ
20	179084	DRAIN GUARD & PROBE BAFFLE, GSSP-BL	1

**GSSP-BL-3G/5G/10G  
ELECTRICAL ASSEMBLY**

178120

**Parts List**

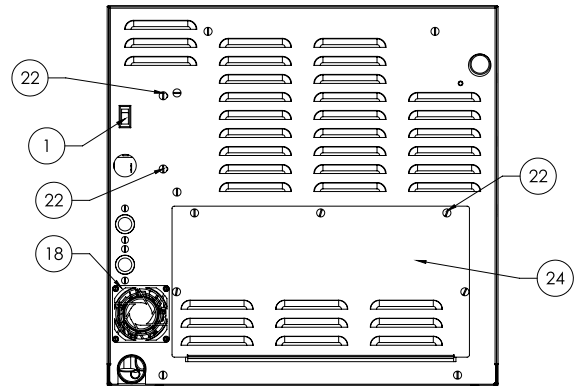
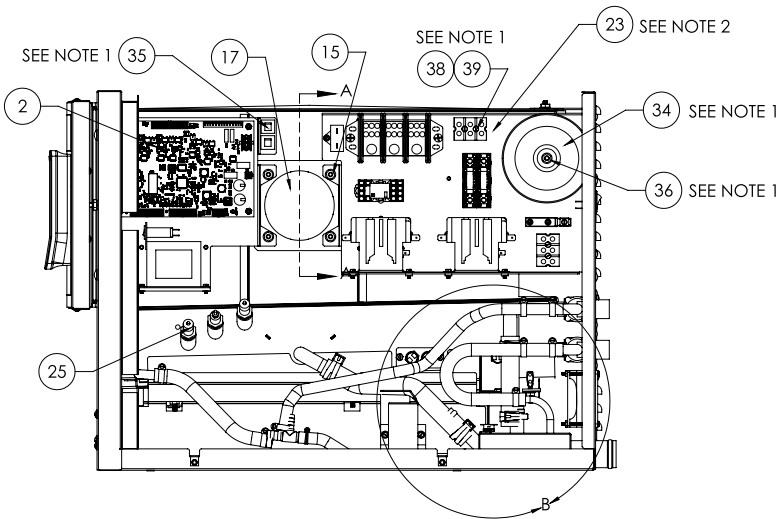
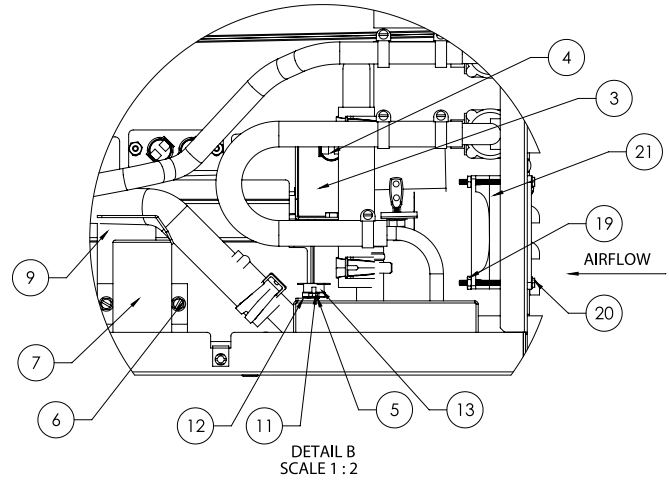
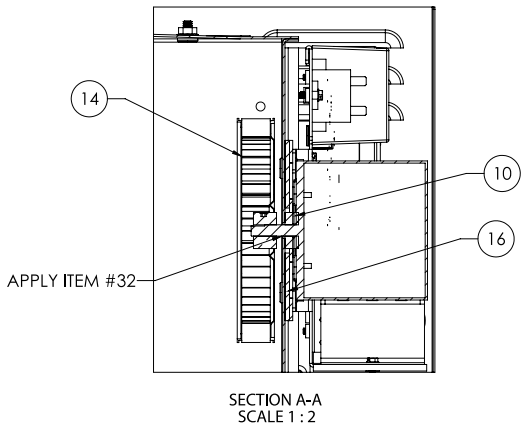


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178128	HIGH VOLTAGE ELECTRICAL ASM, GSSP-BL, 3/5G	1
2	004173	SCREW, TRS HEAD 10-32 X 3/8	2
3	178955	FAN, 24VDC MUFFIN 80MM, GSSP	1
4	140182	SCREW, 6-32 X 2 LG HEX HD SLOT	4
5	071289	NUT HEXAGON KEPS 6-32	4
6	143664	GUARD, 80MM FAN, PLASTIC	1
7	146880	MOTOR ASM., STEAMER BLOWER	1
8	094135	MOTOR INSULATOR	1
9	NT1101	NUT-HEXERRATEDZINC 1/4-20	4
10	143559	IGNITER, HOT SURFACE	1
11	148617	FLAME SENSOR, HOT SURFACE, SSB	1
12	144110	SCREW, #8 X 1/2 HEX HD SLOT MACHINE SELF, 410SS	5
13	145035	COVER, VIEW PORT, COMBUSTION CHAMBER	1
14	096790	WHEEL ASM BLOWER (STEAMER)	1
15	178090	THERMOSTAT, DRAIN, GSSP	1
16	145249	SHIM, THERMOSTAT, DRAIN BOX, SSB	1
17	071297	NUT HEXAGON KEPS 4-40	2
18	096868	SEAL STEAMER MOTOR	1
19	143982	WELDMENT, DRAIN VALVE BRACKET	1
20	071256	NUT HEXHEAD KEPS 10-32	2
21	071234	VALVE-DRAIN 1/2" ID	1
22	069773	SCREW, WASHER HEAD CAP, SLOTTED	2
23	126026	WASHER, #6 NYLON	2
24	144484	THERMOSTAT, HI-LIMIT, SSB-3/5	1
25	146620	BRACKET, HI-LIMIT, SSB-5E	1
26	178115	I/O BOARD ASM, GSSP, 3/5/10 PAN	1
27	EL SWT140	SWITCH, ROCKER RSCA201-VB-B-1VN*	1
28	101143	BOOT, PLASTISOL	3
29	178262	HARNESS, WIRE J1 (NOT SHOWN)	1
30	178263	HARNESS, WIRE J2 (NOT SHOWN)	1
31	178264	HARNESS, WIRE J3 (NOT SHOWN)	1
32	178265	HARNESS, WIRE J4 (NOT SHOWN)	1
33	178267	HARNESS, WIRE J5, 120, GAS (NOT SHOWN)	1
34	178270	HARNESS, WIRE J6, 120, GAS (NOT SHOWN)	1
35	099948	LUBRICANT MOTOR SHAFT SEAL	.1 oz

**GSSP-BL-3E/5E  
ELECTRICAL ASSEMBLY**

178110

**Parts List**

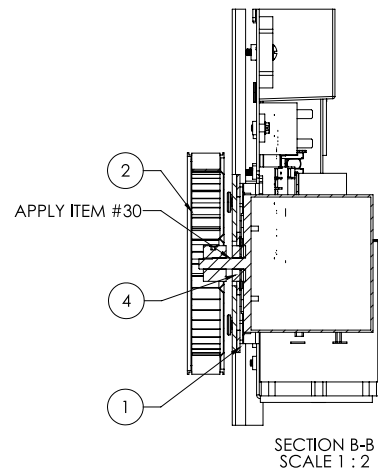
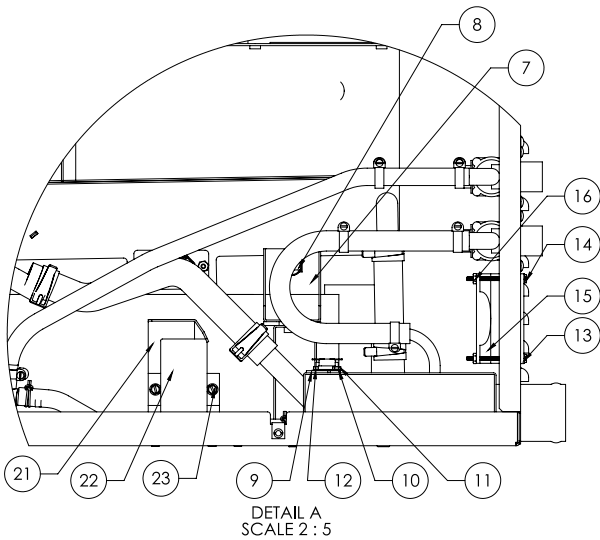
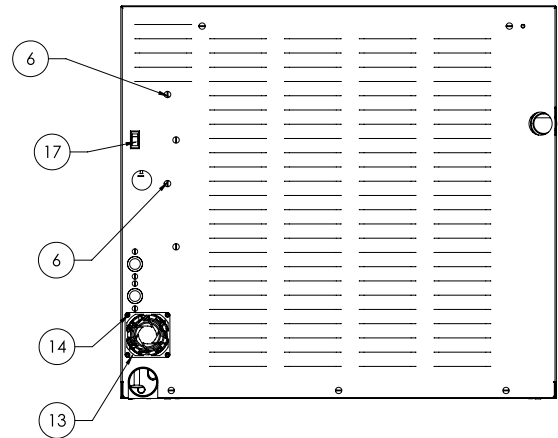
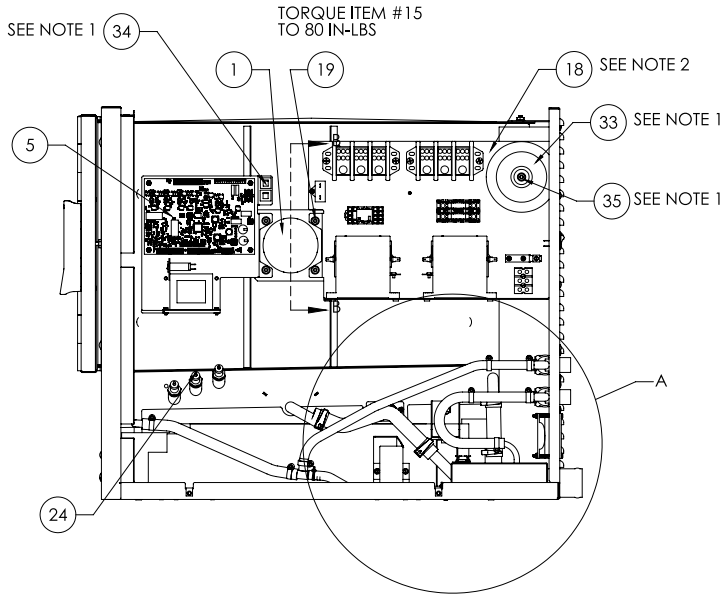


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	EL SWT140	SWITCH, ROCKER RSCA201-VB-B-1VN*	1
2	178115	I/O BOARD ASM, GSSP, 3/5/10 PAN	1
3	146620	BRACKET, HI-LIMIT, SSB-5E	1
4	144484	THERMOSTAT, HI-LIMIT, SSB-3/5	1
5	126026	WASHER, #6 NYLON	2
6	069773	SCREW, WASHER HEAD CAP, SLOTTED	2
7	071234	VALVE-DRAIN 1/2" ID	1
8	071256	NUT HEXHEAD KEPS 10-32	2
9	143982	WELDMENT, DRAIN VALVE BRACKET	1
10	096868	SEAL STEAMER MOTOR	1
11	071297	NUT HEXAGON KEPS 4-40	2
12	145249	SHIM, THERMOSTAT, DRAIN BOX, SSB	1
13	178090	THERMOSTAT, DRAIN, GSSP	1
14	096790	WHEEL ASM BLOWER (STEAMER)	1
15	NT1101	NUT- HEXSERRATEDZINC 1/4-20	4
16	094135	MOTOR INSULATOR	1
17	146880	MOTOR ASM., STEAMER BLOWER	1
18	143664	GUARD, 80MM FAN, PLASTIC	1
19	071289	NUT HEXAGON KEPS 6-32	4
20	140182	SCREW, 6-32 X 2 LG HEX HD SLOT	4
21	178955	FAN, 24VDC MUFFIN 80MM, GSSP	1
22	004173	SCREW, TRS HEAD 10-32 X 3/8	7
23	178126	HIGH VOLTAGE ELECTRICAL ASM, GSSP-BL, 3/5E	1
24	141963	PANEL, ELEMENT ACCESS	1
25	101143	BOOT, PLASTISOL	3
26	178262	HARNESS, WIRE J1 (NOT SHOWN)	1
27	178263	HARNESS, WIRE J2 (NOT SHOWN)	1
28	178264	HARNESS, WIRE J3 (NOT SHOWN)	1
29	178265	HARNESS, WIRE J4 (NOT SHOWN)	1
30	178266	HARNESS, WIRE J5, 208/240/480, ELECTRIC (NOT SHOWN)	1
31	178455	HARNESS, POWER, GSSP-BL, 3/5 PAN (NOT SHOWN)	1
32	099948	LUBRICANT MOTOR SHAFT SEAL	.1 oz
33	178268	HARNESS, WIRE J6, 208/240, ELECTRIC (NOT SHOWN, SEE NOTE 3)	REF.
34	119856	TOROID, 1-3/8 ID 2-3/8 OD X	REF.
35	119836	CIRCUIT BREAKER, 2 AMP, RESETTABLE	REF.
36	NT1101	NUT- HEXSERRATEDZINC 1/4-20	REF.
37	178269	HARNESS, WIRE J6, 480, ELECTRIC (NOT SHOWN, SEE NOTE 1)	REF.
38	003888	TERMINAL BLOCK 3-POLE	REF.
39	005056	SCREW ROUND HEAD 8-32 1 1/4"	REF.

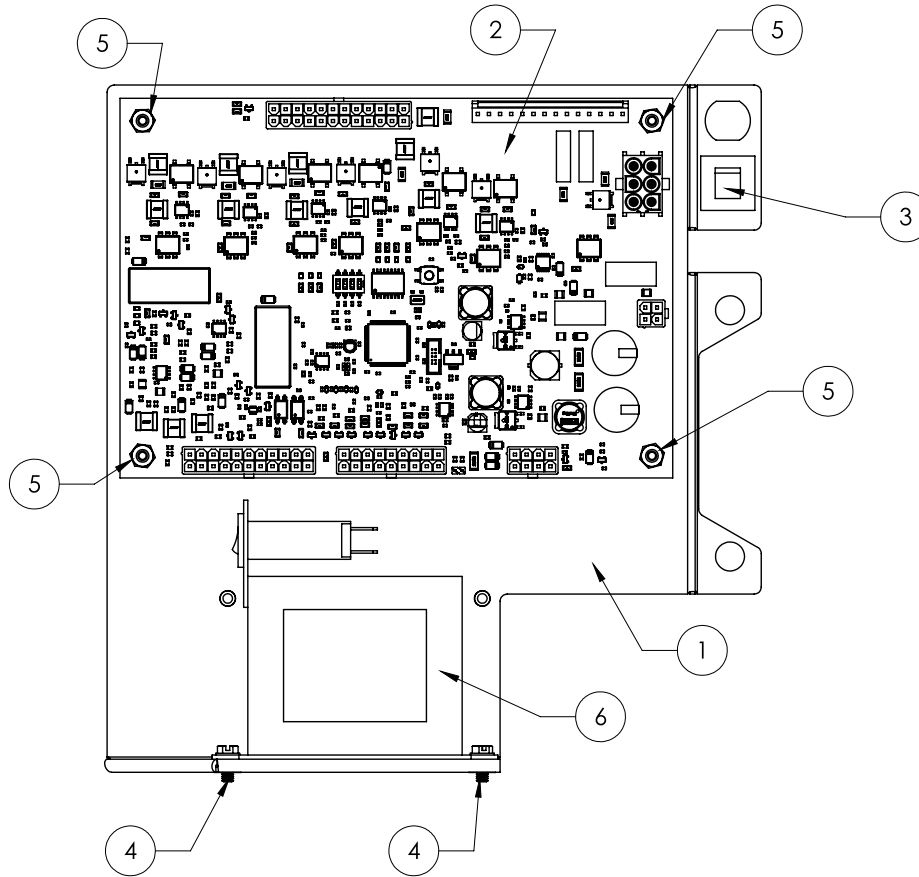
**GSSP-BL-10E  
ELECTRICAL ASSEMBLY**

178864

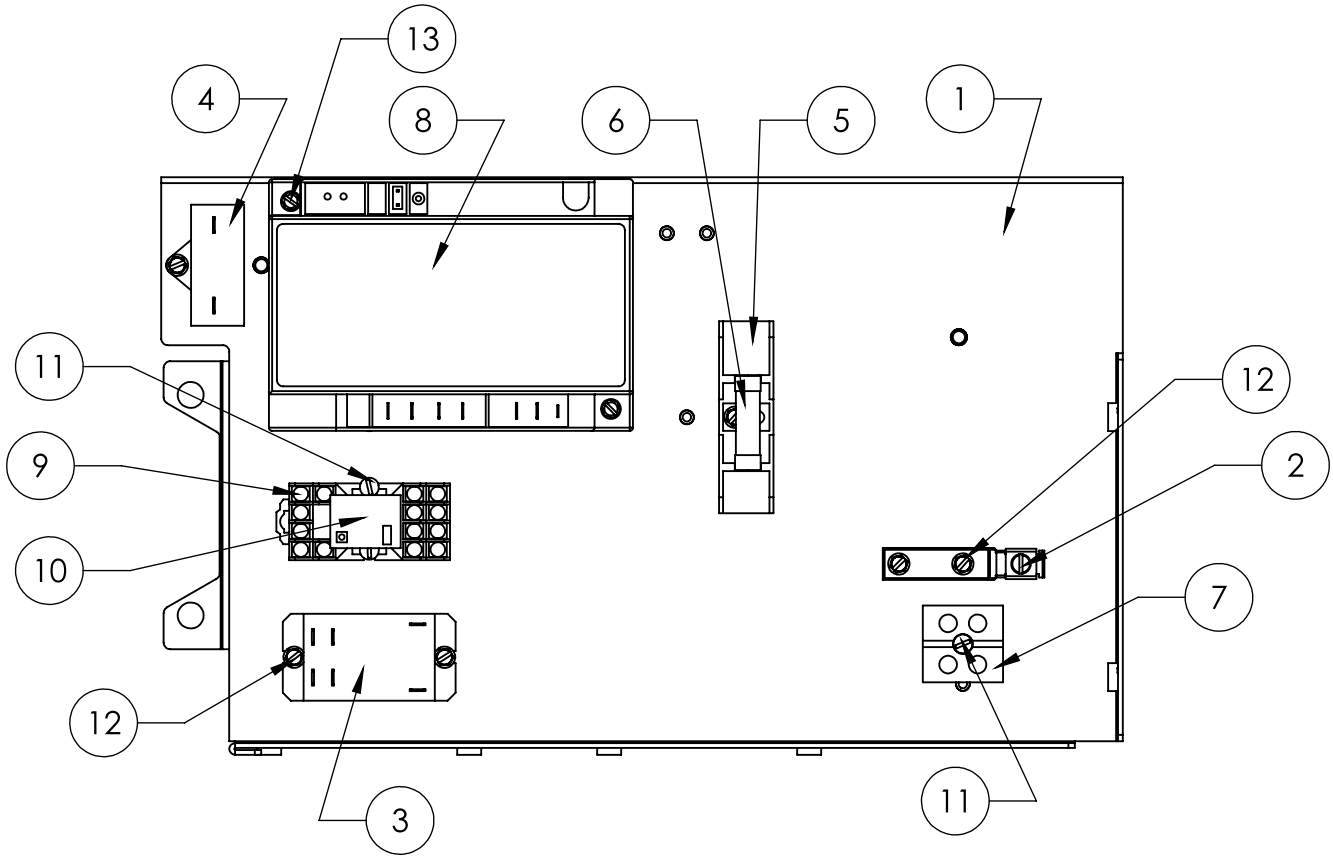
**Parts List**



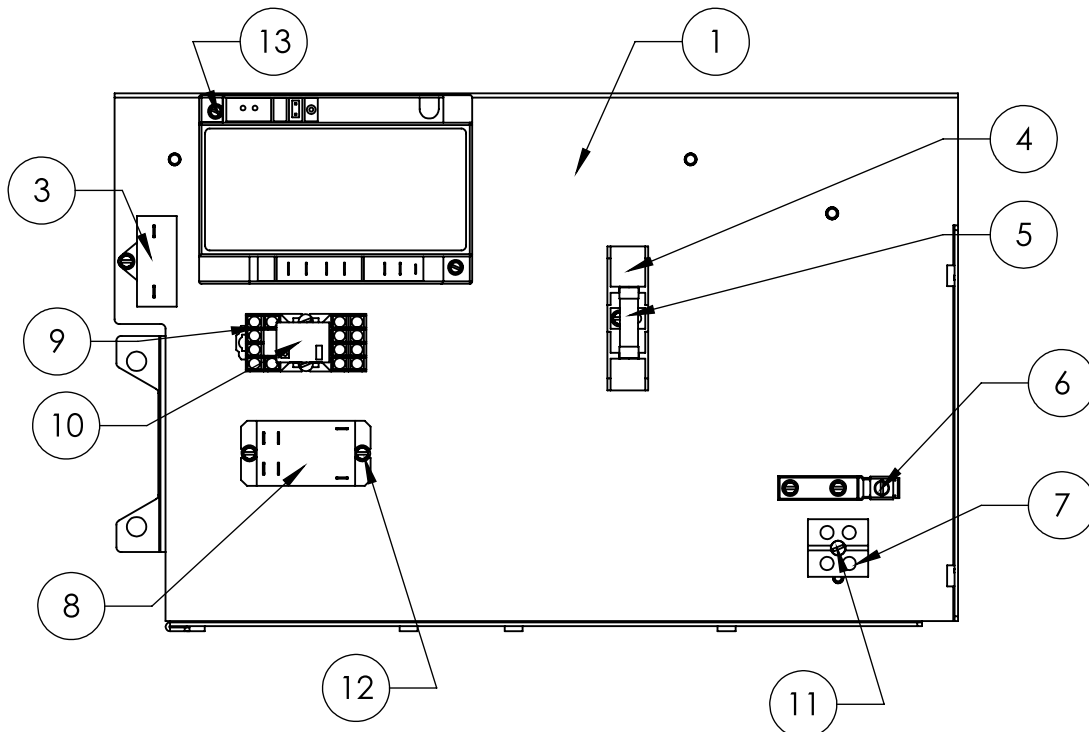
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	146880	MOTOR ASM., STEAMER BLOWER	1
2	096790	WHEEL ASM BLOWER (STEAMER)	1
3	094135	MOTOR INSULATOR	1
4	096868	SEAL STEAMER MOTOR	1
5	178115	I/O BOARD ASM, GSSP-BL	1
6	004173	SCREW, TRS HEAD 10-32 X 3/8	2
7	146620	BRACKET, HI-LIMIT, SSB-5E	1
8	144484	THERMOSTAT, HI-LIMIT, SSB-3/5	1
9	145249	SHIM, THERMOSTAT, DRAIN BOX, SSB	1
10	126026	WASHER, #6 NYLON	2
11	003121	NUT, HEXAGON, #4-40	2
12	178090	THERMOSTAT, DRAIN, GSSP	1
13	143664	GUARD, 80MM FAN, PLASTIC	1
14	140182	SCREW, 6-32 X 2 LG HEX HD SLOT	4
15	177564	FAN, 24VDC, 80MM	1
16	071289	NUT HEXAGON KEPS 6-32	4
17	EL SWT140	SWITCH, ROCKER RSCA201-VB-B-1VN*	1
18	178127	HIGH VOLTAGE ELECTRICAL ASM, GSSP, 10E	1
19	NT1101	NUT- HEXSERRATEDZINC 1/4-20	4
20	101143	BOOT, PLASTISOL	3
21	143982	BRACKET, DRAIN VALVE	1
22	071234	VALVE-DRAIN 1/2" ID	1
23	069773	SCREW, WASHER HEAD CAP, SLOTTED	2
24	071256	NUT HEXHEAD KEPS 10-32	2
25	178262	J1 WIRE HARNESS	1
26	179025	J2 WIRE HARNESS, GSSP-BL-10 PAN	1
27	179026	J3 WIRE HARNESS, GSSP-BL-10 PAN	1
28	178265	J4 WIRE HARNESS	1
29	179027	J5 WIRE HARNESS, 208V/240V/480V, GSSP-BL-10E	1
30	099948	LUBRICANT MOTOR SHAFT SEAL	.1 oz
31	179029	J6 WIRE HARNESS, 208V/240V, GSSP-BL-10E	REF.
32	179032	HARNESS, POWER, 208V/240V, GSSP-BL-10E	REF.
33	119856	TOROID, 1-3/8 ID 2-3/8 OD	REF.
34	119836	CIRCUIT BREAKER, 2 AMP, RESETTABLE	REF.
35	NT1101	NUT- HEX, SERRATED, ZINC, 1/4-20	REF.
36	179030	J6 WIRE HARNESS, 480V, GSSP-BL-10E	REF.
37	179033	HARNESS, POWER, 480V, GSSP-BL-10E	REF.



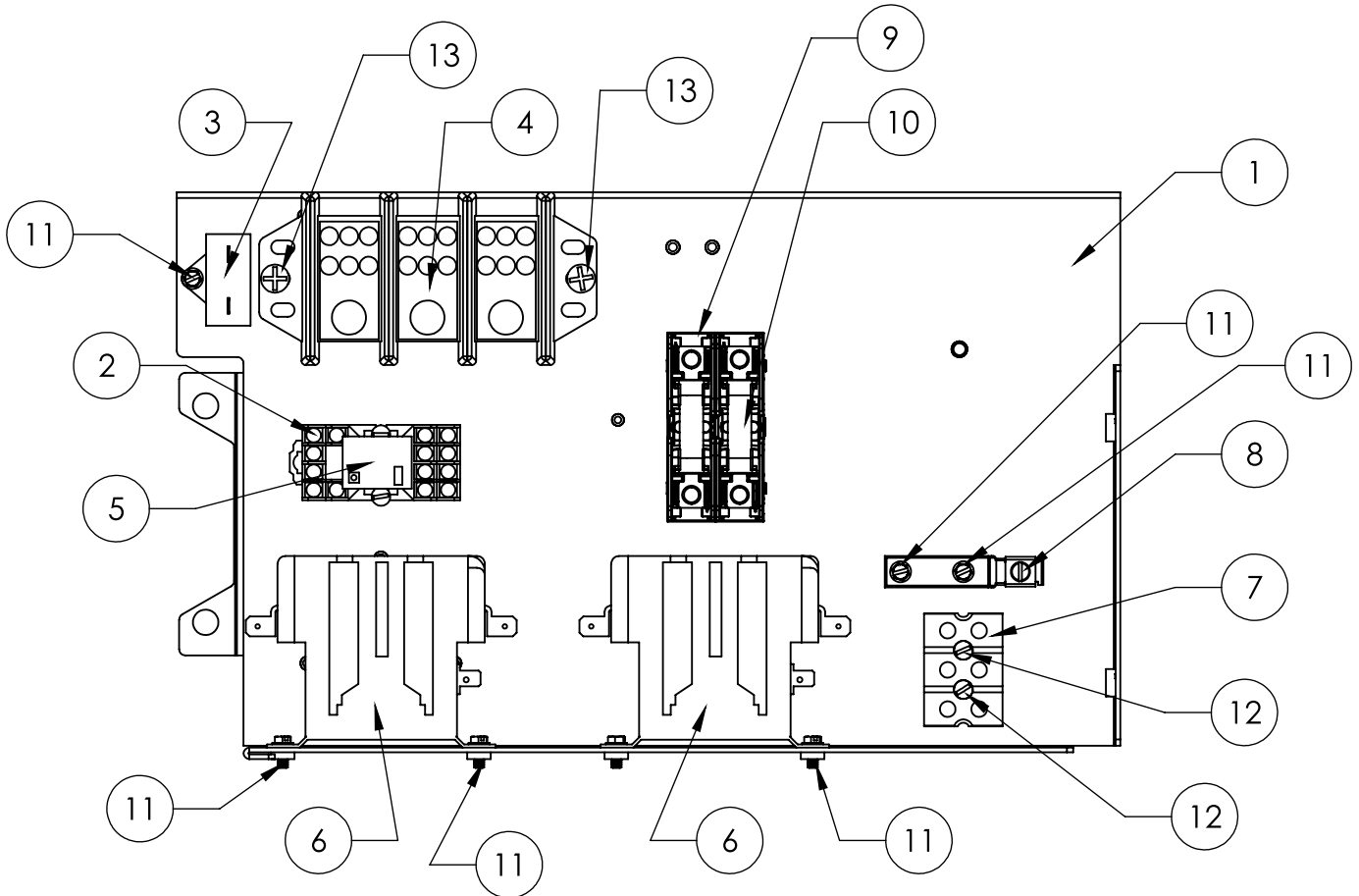
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178051	WELDMNT, I/O BOARD PANEL, 3/5/10 PAN	1
2	178098	ASSEMBLY, I/O BOARD	1
3	178166	CIRCUIT BREAKER, 3 AMP, RESETTABLE	1
4	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"	2
5	119855	NUT, 6-32 LOCK INSERT	4
6	178093	TRANSFORMER, 100 VA	1



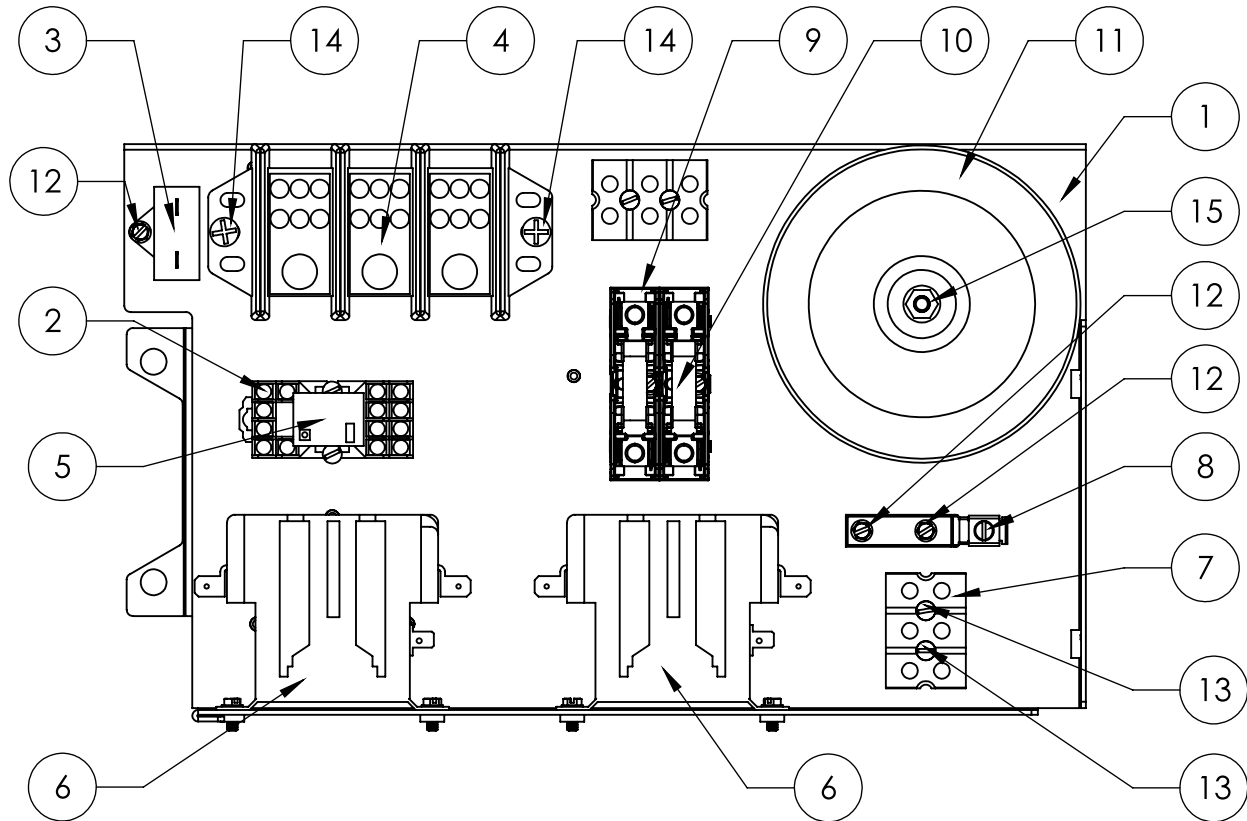
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178049	PANEL WELDMENT, HIGH VOLTAGE, GSSP-BL, 3/5 PAN	1
2	106412	MECHANICAL LUG,GROUND, #2 - #8	1
3	119814	RELAY, 24 VAC DPST	1
4	096812	CAPACITOR FOIL 6 MFD	1
5	077840	FUSEBLOCK 1 POLE	1
6	182092	FUSE, 2 AMP, TIME DELAY	1
7	003887	TERMINAL BLOCK 2P	1
8	155489	IGNITION MODULE, SSB 3/5/10 G	1
9	178164	SOCKET, RELAY	1
10	178165	RELAY, 4PDT, 24VAC	1
11	005056	SCREW ROUND HEAD 8-32 1 1/4"	3
12	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"	6
13	069787	SCREW, 6-32	2



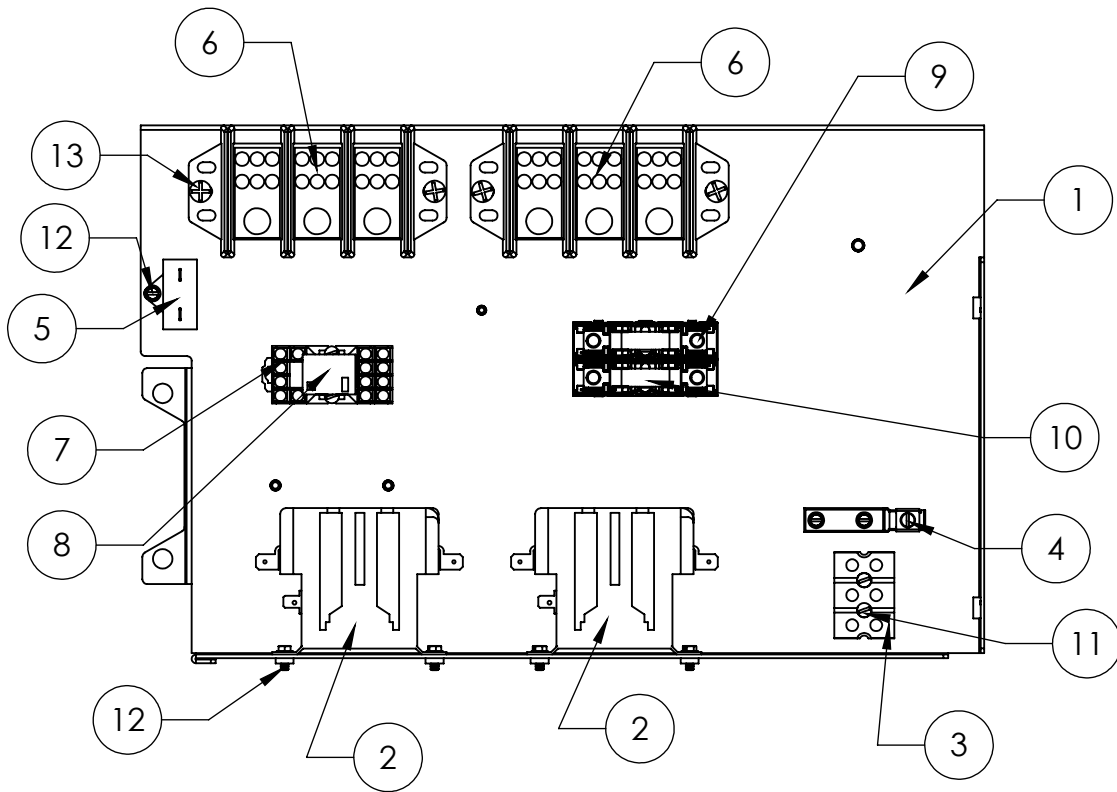
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178047	PANEL WELDMENT, HIGH VOLTAGE, GSSP, 10 PAN	1
2	155489	IGNITION MODULE, SSB 3/5/10 G	1
30	96812	CAPACITOR FOIL 6 MFD	1
4	077840	FUSEBLOCK 1 POLE	1
5	182092	FUSE, 2 AMP, TIME DELAY	1
6	106412	MECHANICAL LUG,GROUND, #2 - #8	1
7	003887	TERMINAL BLOCK 2P	1
8	119814	RELAY, 24 VAC DPST	1
9	178164	SOCKET, RELAY	1
10	178165	RELAY, 4PDT, 24VAC	1
11	005056	SCREW ROUND HEAD 8-32 1 1/4"	3
12	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"	6
13	069787	SCREW, 6-32	2



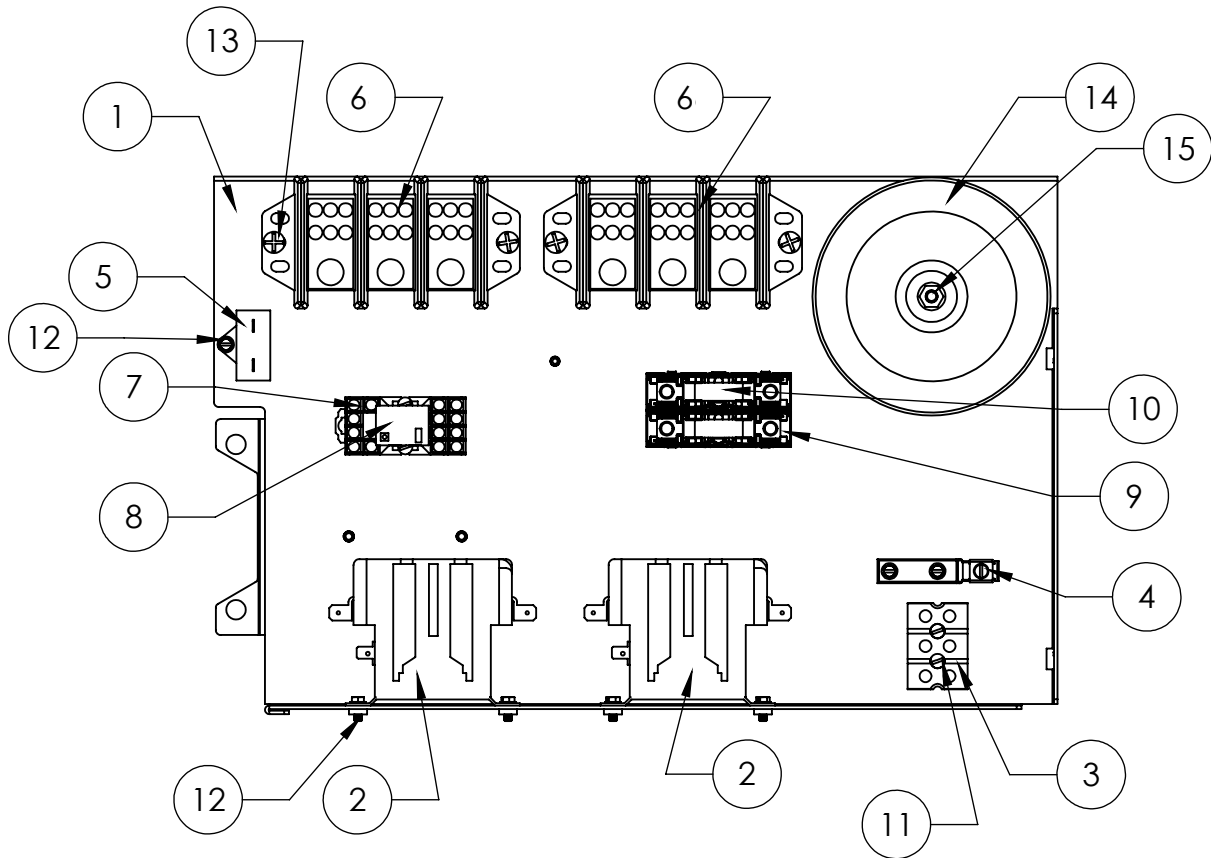
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178049	PANEL WELDMENT, HIGH VOLTAGE, GSSP-BL, 3/5 PAN	1
2	178164	SOCKET, RELAY	1
3	096813	CAPACITOR FOIL 3 MFD	1
4	070185	TERMINAL BLOCK	1
5	178165	RELAY, 4PDT, 24VAC	1
6	145081	CONTACTOR, 50 FLA 3P HCOIL	2
7	003888	TERMINAL BLOCK 3-POLE	1
8	106412	MECHANICAL LUG,GROUND, #2 - #8	1
9	096809	FUSE BLOCK, 2 POLE, CLASS CC	1
10	182092	FUSE, 2 AMP, TIME DELAY	2
11	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"	9
12	005056	SCREW ROUND HEAD 8-32 1 1/4"	4
13	116100	SCREW, #10-32 X .75	2



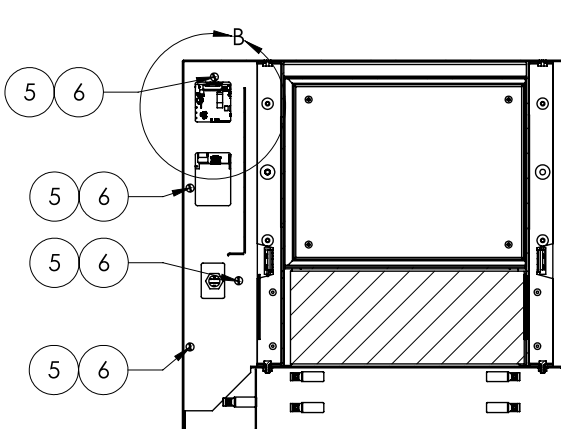
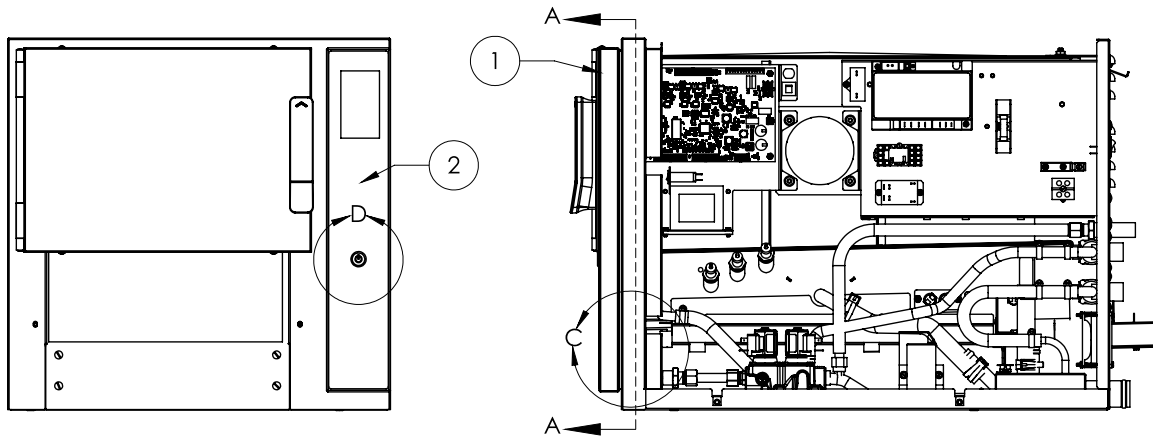
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178049	PANEL WELDMENT, HIGH VOLTAGE, GSSP-BL, 3/5 PAN	1
2	178164	SOCKET, RELAY	1
3	096813	CAPACITOR FOIL 3 MFD	1
4	070185	TERMINAL BLOCK	1
5	178165	RELAY, 4PDT, 24VAC	1
6	145081	CONTACTOR, 50 FLA 3P HCOIL	2
7	003888	TERMINAL BLOCK 3-POLE	2
8	106412	MECHANICAL LUG,GROUND, #2 - #8	1
9	096809	FUSE BLOCK, 2 POLE, CLASS CC	1
10	182092	FUSE, 2 AMP, TIME DELAY	2
11	119856	TOROID, 1-3/8 ID 2-3/8 OD X	1
12	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"	9
13	005056	SCREW ROUND HEAD 8-32 1 1/4"	6
14	116100	SCREW, #10-32 X .75	2
15	NT1101	NUT- HEXSERRATEDZINC 1/4-20	1
16	119836	CIRCUIT BREAKER, 2 AMP, RESETTABLE (NOT SHOWN, SEE NOTE 1)	1



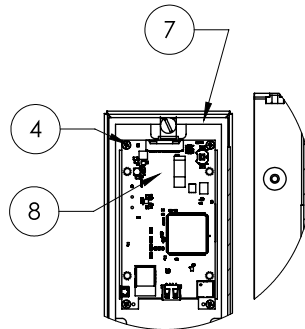
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178047	PANEL WELDMENT, HIGH VOLTAGE, GSSP, 10 PAN	1
2	145081	CONTACTOR, 50 FLA 3P HCOIL	2
3	003888	TERMINAL BLOCK 3-POLE	1
4	106412	MECHANICAL LUG,GROUND, #2 - #8	1
5	096813	CAPACITOR FOIL 3 MFD	1
6	070185	TERMINAL BLOCK	2
7	178164	SOCKET, RELAY	1
8	178165	RELAY, 4PDT, 24VAC	1
9	096809	FUSE BLOCK, 2 POLE, CLASS CC	1
10	182092	FUSE, 2 AMP, TIME DELAY	2
11	005056	SCREW ROUND HEAD 8-32 1 1/4"	4
12	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"	9
13	116100	SCREW, #10-32 X .75	4



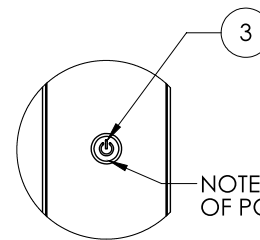
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178047	PANEL WELDMENT, HIGH VOLTAGE, GSSP, 10 PAN	1
2	145081	CONTACTOR, 50 FLA 3P HCOIL	2
3	003888	TERMINAL BLOCK 3-POLE	1
4	106412	MECHANICAL LUG,GROUND, #2 - #8	1
5	096813	CAPACITOR FOIL 3 MFD	1
6	070185	TERMINAL BLOCK	2
7	178164	SOCKET, RELAY	1
8	178165	RELAY, 4PDT, 24VAC	1
9	096809	FUSE BLOCK, 2 POLE, CLASS CC	1
10	182092	FUSE, 2 AMP, TIME DELAY	2
11	005056	SCREW ROUND HEAD 8-32 1 1/4"	4
12	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"	9
13	116100	SCREW, #10-32 X .75	4
14	119856	TOROID, 1-3/8 ID 2-3/8 OD X	1
15	NT1101	NUT- HEXSERRATEDZINC 1/4-20	1
16	119836	CIRCUIT BREAKER, 2 AMP, RESETTABLE (NOT SHOWN, SEE NOTE 1)	1



SECTION A-A



DETAIL B  
SCALE 1 : 4



DETAIL D  
SCALE 1 : 4

NOTE ORIENTATION  
OF POWER SWITCH

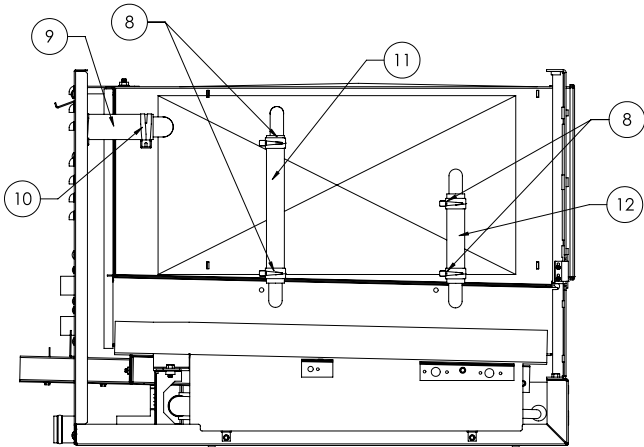
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	177992	WELDMENT, CONTROL PANEL ASM, 3 PAN	1
2	178023	OVERLAY, GSSP, 3 PAN STEAMER	1
3	178088	SWITCH, POWER, ON/OFF	1
4	178175	SCREW, M3 X 0.5MM THD X 6 MM LG, PHILLIPS, PAN HEAD	4
5	FA NUT0404	NUT, #10 U" TINNEMAN	4
6	004173	SCREW, TRS HEAD 10-32 X 3/8	4
7	178456	GASKET, CONTROL ENCLOSURE, GSSP, 3 PAN	1
8	178096	ASSEMBLY, CONTROL BOARD, 4.3 LCD, TOUCH SCREEN	1
9	179085	USB CORD, CONTROL BOARD, 4.3 LCD, TOUCH SCREEN	1

**GSSP-BL  
PLUMBING ASSEMBLY**

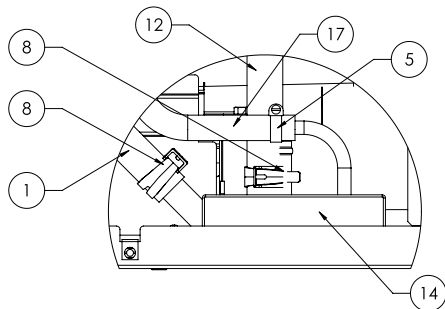
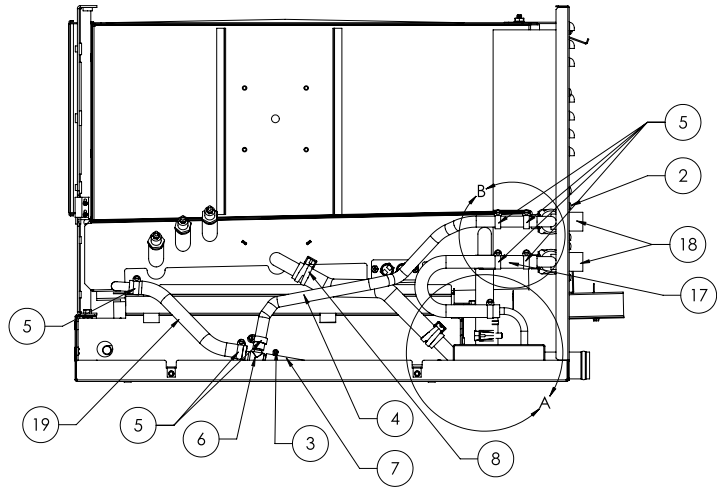
178123

**Parts List**

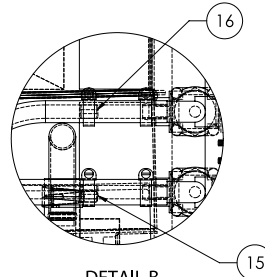
LEFT SIDE  
INSULATION HIDDEN



RIGHT SIDE  
INSULATION HIDDEN



DETAIL A  
SCALE 1 : 2



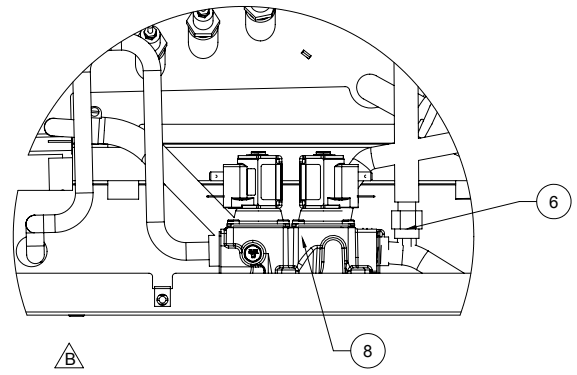
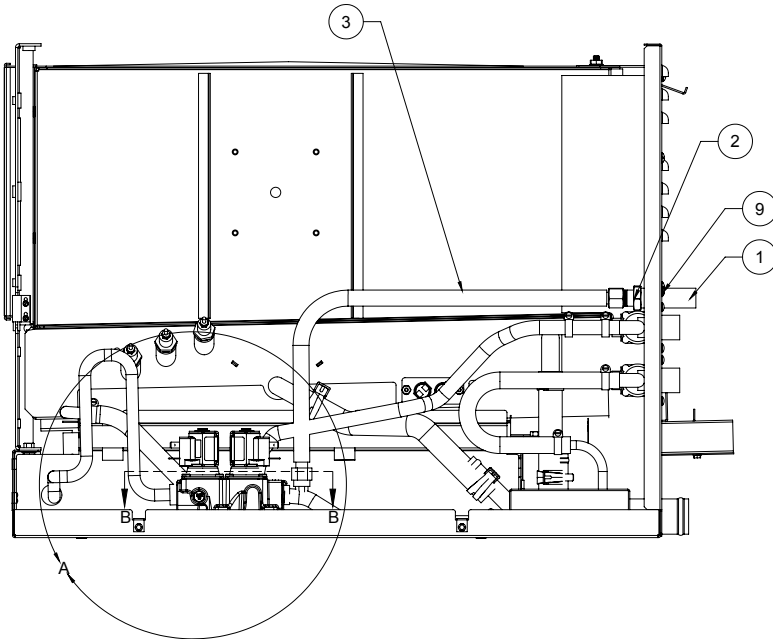
DETAIL B  
SCALE 1 : 2

ITEM NO.	PART NUMBER	DESCRIPTION	Default/QT Y.
1	150672	HOSE, CONDENSATE DRAIN SSB	1
2	005764	SCREW TRUSS HEAD MACHINE	4
3	127527	CLAMP, HOSE, DOUBLE WIRE	2
4	140170	HOSE, WATER FILL	1
5	093482	CLAMP HOSE LOW PRESSURE	8
6	162889	BRASS TEE, 1/2 X 3/8 X 1/2 BARBED	1
7	140172	HOSE, DRAIN	1
8	138457	CLAMP, CONSTANT TENSION CTB-27	8
9	147566	HOSE, SHORT VENT	1
10	127525	CLAMP, CONSTANT TENSION	2
11	149375	HOSE, LONG STEAM INLET	1
12	140164	HOSE, SHORT STEAM INLET	2
13	071256	NUT HEXHEAD KEPS 10-32	1
14	150659	WELDMENT, DRAIN MANIFOLD ASSY, SSB-3/5E&G	1
15	147371	REDUCER, FLOW	1
16	144481	REDUCER, WATER FLOW, .110 ID	1
17	140169	HOSE, DRAIN COOLING	1
18	100934	VALVE, SINGLE WAY AK MUELLER	2
19	143974	HOSE, 1/2 CAVITY DRAIN	1

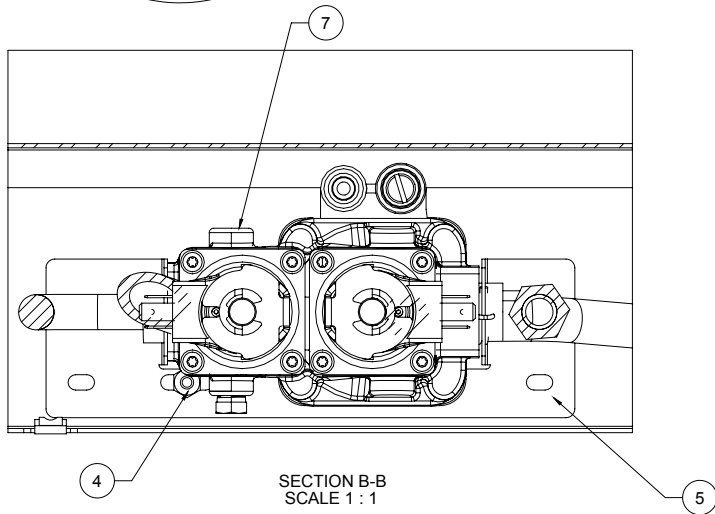
**GSSP-BL-3G/5G/10G  
GAS SUPPLY PIPING ASSEMBLY**

178122

# Parts List



DETAIL A  
SCALE 1 : 2



SECTION B-B  
SCALE 1 : 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	178465	GAS INLET PIPING ASM, 1/2" NPT, GSSP	1
2	<a href="#">171044</a>	CONNECTOR FEMALE 1/2" TUBE X 1/2" NPT	1
3	<a href="#">NT1561-02</a>	FLEXIBLE TUBE, GAS, 22" LONG	1
4	071256	NUT HEXHEAD KEPS 10-32	1
5	174356	BRACKET GAS VALVE	1
6	061163	ELBOW 90 DEG 1/2 NPT X 1/2 CC	1
7	010286	PLUG PIPE 1/8" NPT RECESSED HEX	1
8	098443	VALVE GAS JOHNSON CONTROLS NAT	1
9	005764	SCREW TRUSS HEAD MACHINE	2
10	078938	PIPE DOPE	.01 oz

# GRAPHIC USER INTERFACE

## GENERAL NOTES

Minimum touch area is 40 (.312") x 40 (.312") pixels. Actual icons may be smaller.

All buttons will invert their format when pressed and an audible beep will be heard to indicate actuation.

Menu items will change from black text to gray text when pressed and an audible beep will be heard to indicate actuation. Menu items with user selectable field will change from blue text to gray when pressed and an audible beep will be heard. Black text will not change.

Menu, back arrow and "X" buttons will invert their format when pressed and an audible beep will be heard to indicate actuation. Background touch area will change to white and shape will change to black.

When a button is pressed, action occurs upon release or if held for a preset period of time. Beep can be turned off in Settings.

Menus will scroll via button push only. Arrow buttons on lists will increment list 1 item per push or will continue to scroll up or down when held. When the top of the list is reached, scrolling will stop and the up arrow will not be displayed.

When the bottom of the list is reached, scrolling will stop and the down arrow will not be displayed. On the Select Name screen, the list is continuous and either arrow button will continuously scroll the list.

Display will dim to Level 1 after 10 minutes of non-use unless in a cook screen. Touching the screen or any popup will increase screen brightness to preset level.

User changeable items in lists are shown in blue color.

If screen inputs are inactive for 60 seconds (unless in Unit Status, Diagnostics or an active pop up), the screen function will timeout and return to the Start up screen (during startup) or Home screen (non-cook modes) or Cook / Hold screen (cook/hold modes).

All list buttons will have a gray gradient, lessening left to right. Entire list button area is touchable.

When entering data, data fields will always start with a default setting (ie. HH:MM:SS) showing on the screen. User can change existing values by starting to type a new value. Date fields will require selection of the month, day or year field before editing.

Door opening - Always shuts down convection fan and heating circuit. Water fill and drain allowed to proceed. Circulation fan delays for 15 seconds after door close.

Circulation Fan runs only during Cook modes and Hold mode when cycling at temperature.

Alarms can be silenced by pushing any available button.

## INITIAL STARTUP

When initially starting the app, users are shown a startup screen. Providing a progress indicator, the purpose of this initial startup screen is to provide brand recognition as well as alleviate any progress stress to user.

Application Loading



Startup Without Delime Image 1



Startup Image 2



Startup Image 3



## APPLICATION LOADING

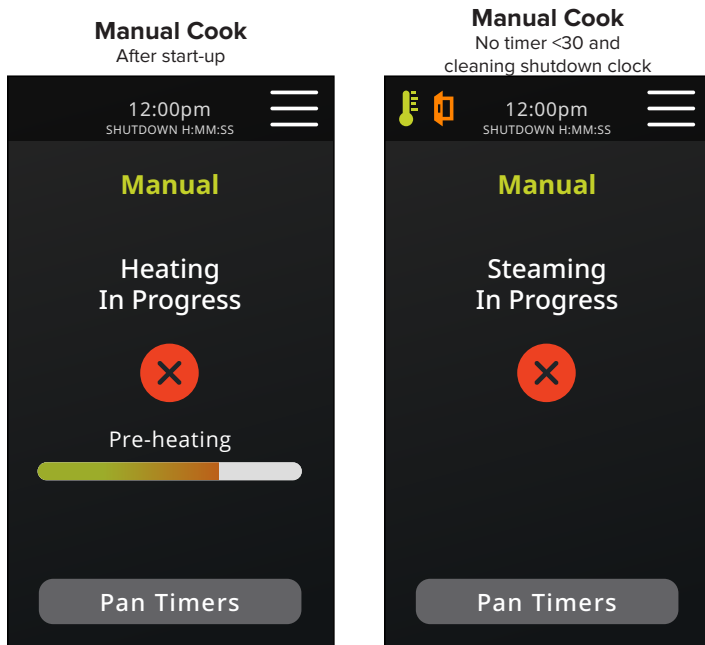
Application Loading screen appears when ever power is provided to the unit including after a power disruption. Progress bar will be Blue during loading and turn to green when fully loaded.

## STARTUP

When power unit is plugged in, display will show Application Loading screen and once loaded, go blank. Progress bar will be different as it comes with Shiptide. When power button is activated, Startup screens will appear and unit will proceed through Startup diagnostics scrolling through the 3 "picture" screens (Noodles, Broccoli, Shrimp) and displaying a linear progress bar animation. Images will appear and disappear in sequence while diagnostics are performed. Images will fade in and fade out every 4 seconds. Progress bar will fill with white color from left to right during startup. Progress bar will fill with white color from left to right during startup. Progress steps will be: Low probe transition - make, Low probe transition - break, Low probe transition - make and continue to fill to High probe transition - make, High probe transition - break. After High probe transition - break unit starts to heat and continues to drain to Low probe transition - break, Low probe transition - make. After Low probe transition - make, unit stops filling, self-diagnostic completes and the Manual Cook (pre-heat) screen displays. If Low or High probe is not functioning, unit will drain empty and popup

will display instructing user to clean critical areas before restarting. Door icon and Error popups can occur on startup screens. Menu is available during self-diagnostics. Note: Unit will always conduct a break/make/break check at Low probe before beginning Startup if water level at starting condition is at or above Low probe. During start up, all diagnostics and Delime button are delayed for 5 seconds. After 5 seconds, unit will check to ensure a model number exists in the control prior to beginning startup procedure. If model number has not been entered previously, an error popup will be displayed. Selecting Okay on the error popup will take user to the Model Selection screen. After a model is selected and Save is pressed, unit returns to start up screen and begins startup procedure. This allows for model setting on field replaced controls (only model number is necessary for proper operation). This can be bypassed in the factory by going to the Service mode during the first 5 seconds of startup so that all data can be entered. If Menu icon is selected within first 5 seconds and held for 5 seconds, unit will display Acknowledgment Screen briefly stating "Entering Service mode" and will then go directly to Menu (Service Mode). Unit will not begin start up procedure. All menu options are available including Diagnostics. Exiting the menu via "X" button will generate Popup stating unit will restart and if accepted, start up screens will be displayed. All diagnostics and preheating functions will occur on restart. If menu button is not pushed within 5 seconds and held for 5 seconds, start up will occur normally. Delime button is only available during start up and if the Delime Button in settings is "On". When setting is "On", all popups related to cleaning will reference delime and manual cleaning process. Note: the default position for the Delime Button is "Off". When Delime Button is "Off" in settings, Delime Reminder will be unavailable and all popups related to cleaning will reference manual cleaning process only. Pressing Delime button will enter control into Delime Mode and show first Delime screen. Regardless of when during startup the button is pushed, the unit will fill to High probe checking make/break/make transition. If High probe is functioning, a probe based delime cycle will be initiated. If High probe is not functioning, unit will drain empty and popup will display to clean all probes before restating delime process. If High probe continues not to function, the unit will continue to repeat popup for cleaning before restart until High probe issue is resolved. Delime button font will change to black and background will change to yellow when 75% of Delime Reminder date is reached, changed to orange when 90% is reached and changed to red at expiration. Delime button background will return to normal after Delime is completed or reminder is reset. Startup diagnostics will be begin after Delime is complete and unit is restarted.

## MANUAL COOK



### MANUAL COOK AFTER STARTUP

On power button push, diagnostics will complete and the unit will begin to heat. When Ready temperature is reached, unit will transition to the Manual Cook

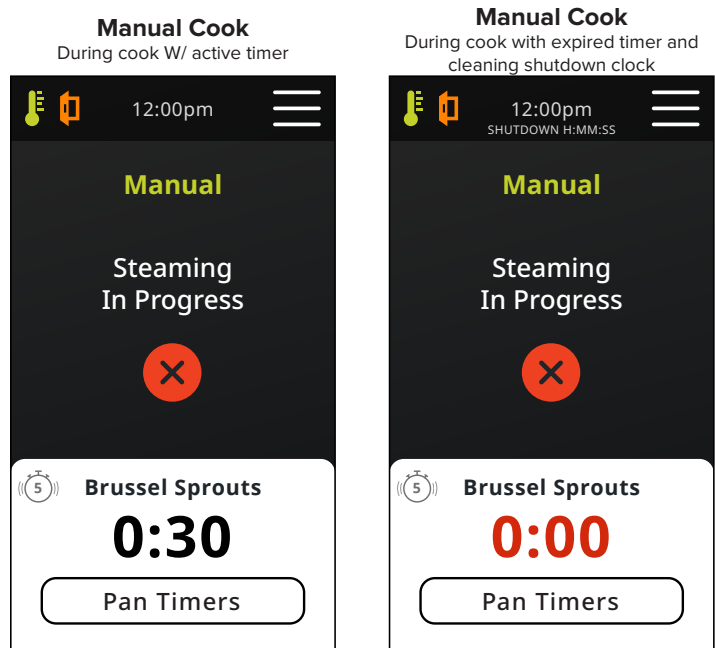
Steaming in Progress screen, ready light will illuminate and one 3 second beep will be audible. Condensate spray remains off until ready temperature is reached (Ready tstat opens).

If red "X" is pressed, screen will transition to Pre-heating screen.

### MANUAL COOK NO TIMER

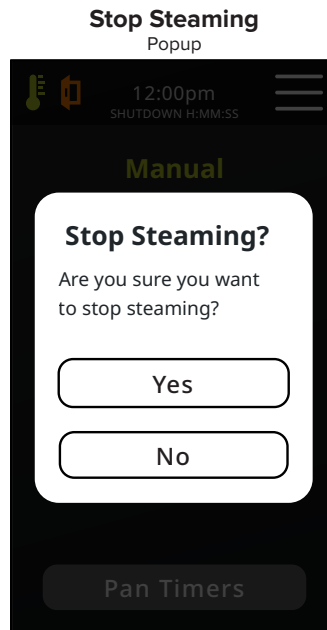
Pressing "X" will show acknowledgment pop up (Stop Steaming Popup).

Pan Timer function is same as Timed Cook screen.



### MANUAL COOK DURING COOK WITH ACTIVE TIMER

"X" returns to Home screen.

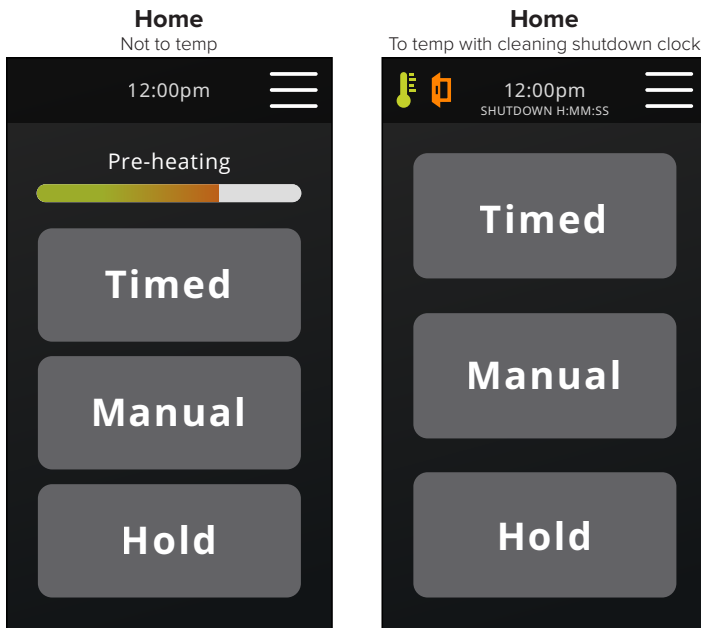


### STOP STEAMING

Yes - Returns to Home screen if above ready temp or Pre-heating screen if below ready temp.

No - Unit returns to manual screen and continues manual operation.

## HOME



### HOME NOT TO TEMP

If user has exited out of the manual mode pre-heating screen, they are transitioned to this Home pre-heating screen.

Progress bar will have three steps: first step (33% fill) will indicate heating has started, second step (66% fill) will indicate “hold” temperature has been reached. Third step (100% fill) will indicate ready temp has been reached. When Ready temperature is reached, unit will transition to the Home screen, ready light will illuminate and one 3 second beep will be audible. Condensate spray remains off until ready temperature is reached (Ready tstat opens).

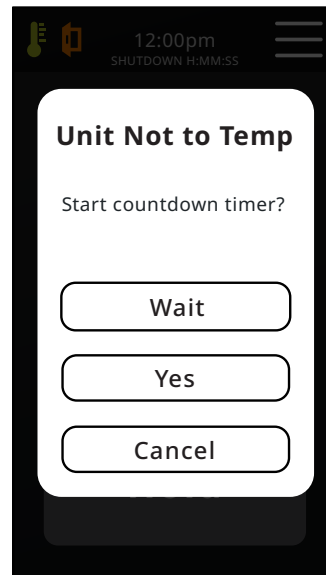
### HOME TO TEMP

Door symbol is active for every screen and will only be visible when the door is open.

When a pan timer expires when control is at the home screen, a pop up will show which timer is alarming and press the time on the pop up to silence the alarm.

If low probe has failed and the high probe is detected while heating, a shutdown clock appears with countdown. Once triggered, Shutdown clock will be displayed on all screens until time expires then unit will automatically shutdown or unit is turned off by pressing the power button. When shutdown clock counts down to 1 hour, the error code 01 pop up will reoccur and sound alarm until cleared by pressing the Okay button, at the same time the shutdown clock at the top of the screen will start flashing until it reaches 0:00.

## Not To Temp - Timed



### NOT TO TEMP TIMED

Pop up occurs after entering cook time after Timed Cook selection prior to preheating is complete or when timed cook mode is selected and time is entered after the unit has been in Hold mode and cooled down below Ready temperature.

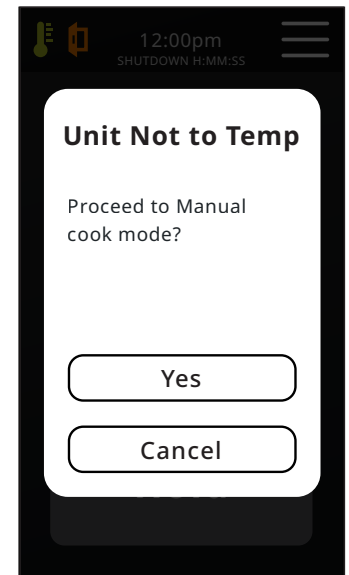
Cancel - Returns to Pre-heating screen. Yes - Goes to Timed cook screen. Starts Cook Mode even though unit has not finished preheating. Timer will begin counting down. Wait - Goes to Timed cook screen and timer does not start counting until ready temperature is reached. If button is not pressed in 10 seconds, returns to preheating screen and ignores previous selection - pop up disappears when preheat temp is reached if occurring within 10 seconds and screen changes to Timed cook screen.

### NOT TO TEMP MANUAL

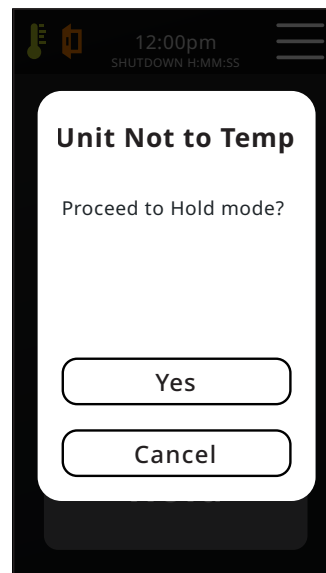
Pop up occurs after Manual Cook selection and prior to preheating is complete or when Manual cook mode is selected and the unit is in Hold mode and cooled down below Ready temperature.

Cancel - Returns to Pre-heating screen. Yes - Goes to Manual cook screen. Starts Cook Mode even though unit has not finished preheating. Ready light will not be illuminated.

## Not To Temp - Manual



## Not To Temp - Hold

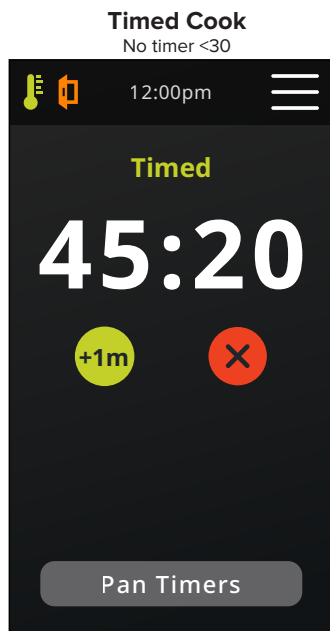
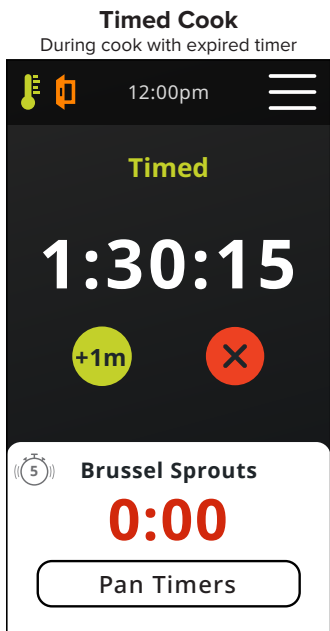
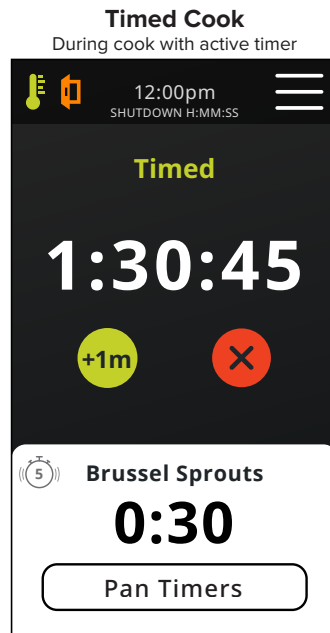
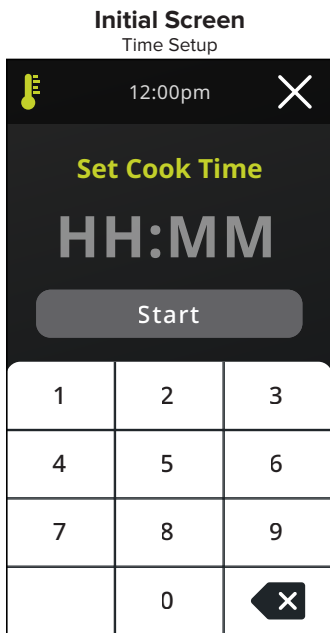


## NOT TO TEMP HOLD

Pop up occurs after Hold selection and prior to preheating is complete.

Cancel - Returns to Pre-heating screen. Yes - Goes to Hold screen and starts Hold Mode even though unit has not finished preheating. Ready light will not be illuminated.

## TIMED COOK

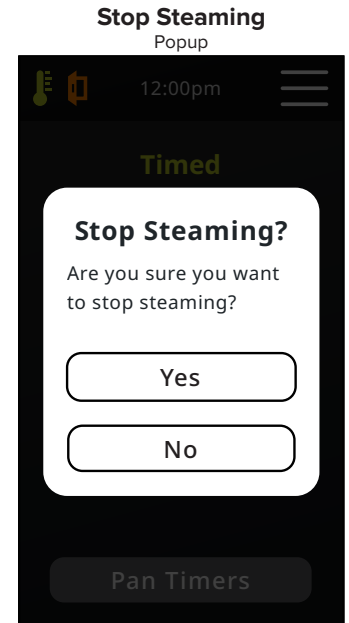
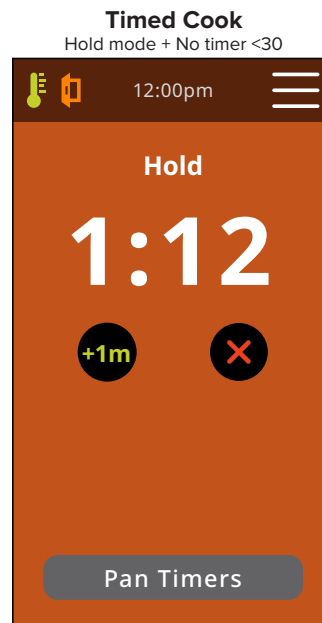


### INITIAL SCREEN

Before entering the timed cook screen, the user has to set the time for steaming. Back button removes on character from the right. Time entry defaults to HH:MM - This changes to zeros as soon as first number is pressed. Limit hours to 12, Greater than 12 hours will show error.

## TIMED COOK

Count down timer displays H:MM:SS. When time is less than 1 hour, display will show MM:SS. Text will be sized to fit screen and enlarge when time is less than 60 minutes. When door is open, seconds will stop counting down - Timer is paused during door opening (Function depends on Compensating Timer setting in Settings). If timed cook expires when in a menu or other screen, control will give 3 beeps (1/2 sec on, 1/2 sec off) but will allow user to continue activity. Control will return to Cook / Hold screen after 60 seconds of inactivity. Pan timer section will only display one timer at a time. Timer will not display until it is within 30 seconds of expiration. Once displayed, timer can be cleared by pressing on the countdown time prior to expiration. This will stop the timer and no alarm or further notifications will be given. Upon expiration, the format will change color to red and begin blinking and an alarm (Two beeps, 1/2 sec on, 1/2 sec off, repeated every 5 sec) will sound. The alarm sound will be differentiated from the main Timed Cook alarm. The audible alarm will continue until silenced by tapping the flashing "0.00". Once acknowledged, the timer notification will disappear. If a second timer reaches 30 sec prior to acknowledgment of the previous notification, the second timer notification will be showed on top of the previous notification and alarm sound will continue. Once the latest timer has been acknowledged, any previous unacknowledged timers will be displayed in order of last to expire, will show as flashing red zeros, will alarm and will need to be acknowledged. This will be repeated for every expired timer that was not acknowledged. All timers and cook time are paused during door openings (Function depends on Compensating Timer setting in Settings). +1m adds 1 minute to cook time for each press. 10 presses adds 10 min. "X" takes you to the "Stop Steaming?" pop up. "X" will not cancel any pan timers.



### TIMED COOK HOLD MODE

When Cook Time reaches zero, screen background changes to orange, 3 beeps will sound, unit will enter Hold mode and Time will begin to count up. Count up timer displays H:MM:SS. When time is less than 1 hour, display will show MM:SS. Text will be sized to fit screen and reduce when time is greater than 60 minutes. Count up time is limited to 10 hours. After ten hours, count up timer will reset and begin counting up from zero. Count up timer does not pause with door openings. +1m will remain active in Hold mode for 10 min. and then it will disappear and the "X" button will center on the screen. In Hold mode, Ready light is illuminated as long as temperature is above "ready" temperature. "X" - Returns to home screen if above ready temperature. Returns to Preheating home screen if below ready temperature. When unit is in Hold Mode, fan will be off unless the unit is cycling on the heating algorithm.

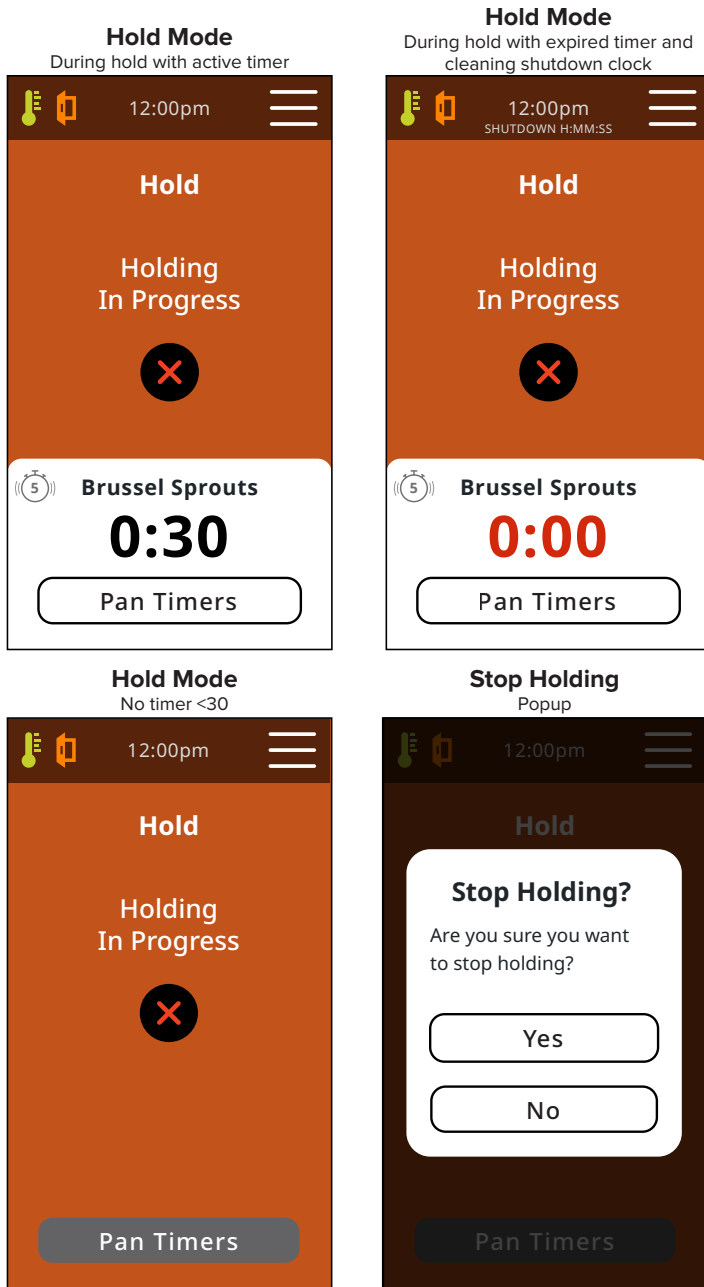
### STOP STEAMING

Yes- Returns to Home screen and unit goes into ready mode.

No - Unit returns to cook screen and continues cook operation.

## HOLD MODE

This mode is entered from the Home page only. This is similar to Hold after Timed Cook but has some different functionality.



## HOLD MODE

Hold mode attempts to maintain a cavity temperature of 140-165°F. When “HOLD” is initiated and if HOLD & READY thermostats are closed then heat will turn on. Heat will remain on until HOLD & READY thermostat opens. When READY thermostat opens, heat turns off. Heat will remain off until READY thermostat closes then heat ON/OFF cycle rate will initiate as determined by model. If the HOLD thermostat closes due to drop in temperature, and the READY thermostat is still closed, then the heat turns on and repeats the sequence. If HOLD thermostat is open & READY thermostat is closed then heat will turn on when “HOLD” is initiated. Heat will remain on until READY thermostat opens. When READY thermostat opens, heat turns off. Heat will remain off until READY thermostat closes then heat ON/OFF cycle rate will initiate. If the HOLD thermostat closes due to drop in temperature, and the READY thermostat is still closed, then the heat turns on and repeats the sequence. When “HOLD”

is initiated and HOLD & READY thermostats are open; then heat will turn off. Heat will remain off until READY thermostat closes. Heat will remain off until READY thermostat closes then heat ON/OFF cycle rate will initiate. If the HOLD thermostat closes due to drop in temperature, and the READY thermostat is still closed, then the heat turns on and repeats the sequence. When unit is in Hold Mode, fan will be off unless the unit is cycling on the heating algorithm. “X” displays Stop Holding popup.

Pressing “X” will show acknowledgment pop up.

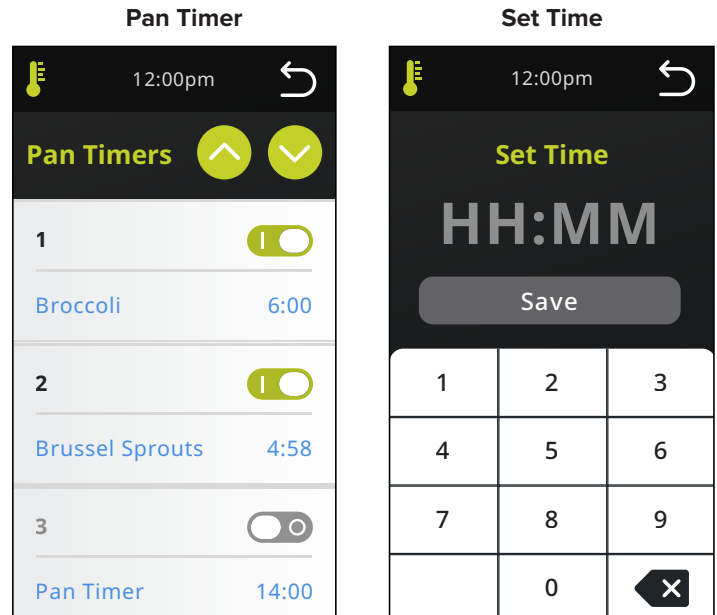
Pan Timer function is same as Timed Cook screen.

## STOP HOLDING

Yes - Returns to Home screen and unit goes into ready mode.

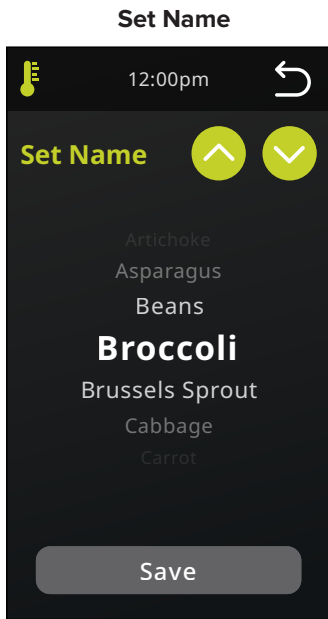
No - Unit returns to hold screen and continues holding operation.

## PAN TIMERS



## PAN TIMER

Timer names will default to Pan Timer and initial time display will default to HH:MM. Once timer has started, time display will change to H:MM:SS. When timer is stopped or completed, the previous time set will be displayed in HH:MM. Pressing the Time or Name will bring up an input screen. When pressing Time or Name, the touch area will be colored grey to indicate a “press”. Pressing the toggle will change the toggle to green background, move the toggle to uncover “I”, ungrey the timer # and begin timer countdown. Timers count down on screen if active. Expired timers will have the timer # and toggle switch greyed out and toggle will move to uncover the “0”. The name and time will immediately show previously set values when a timer expires or is turned off. There is no pause function. Preset timer data is remembered unless main power is disconnected. Timers will stop during door openings based on selection in settings. Timers are limited to 12 hours.

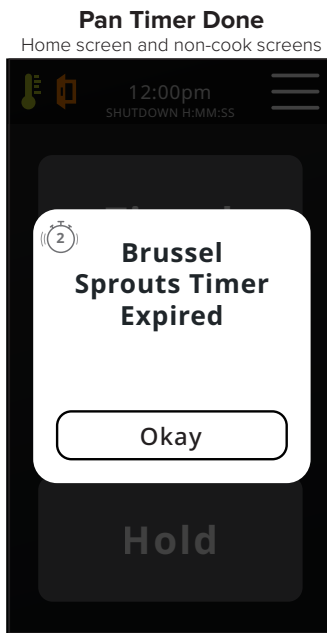


### SET NAME

List will always default to “Pan Timer” when setting the timer name: Pan Timer, Alfredo, Asparagus, Beans, Broccoli, Brussel Sprouts, Buns, Cabbage, Cake, Carrots, Casserole, Cauliflower, Chicken, Dumplings, Eggs, Fish, Ham, Hamburger, Hotdogs, Mac & Cheese, Meat, Nacho Cheese, Pasta, Peas, Potatoes, Puddings, Rice, Shellfish, Spaghetti, Spinach, Squash, Tamales, Tomato, Vegetables

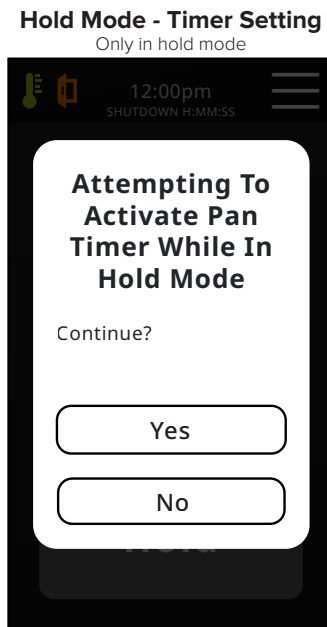
### PAN TIMER DONE

If a timer goes off while on the home screen or a non-cook screen, a popup will appear as an acknowledged alert. Pushing “Okay” will silence the alarm, and close the pop up. If multiple timers are expiring, each subsequent timer will silence the previous one and only the last timer will be shown. Popup will show the number of the expiring timer plus the saved timer name including the text “... Timer Expired” i.e. Brussels Sprout Timer Expired.



### LONGER THAN COOK

If a Pan timer is set for longer than an active “cook” time, a pop up warning will appear when the timer is started. Okay - Returns to Timed Cook screen.



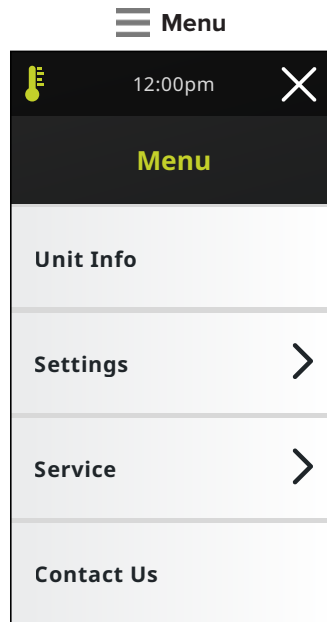
### HOLD MODE TIMER SETTING

Pop up occurs when a timer is activated / started in Hold mode.

Yes - Starts timer and returns to timer screen.

No - Returns to timer screen.

### MENU



### MENU

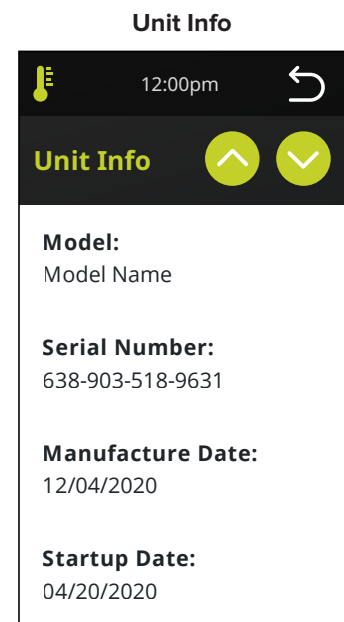
The menu screen will be accessible on the majority of screens and provide quick access to more finite functions.

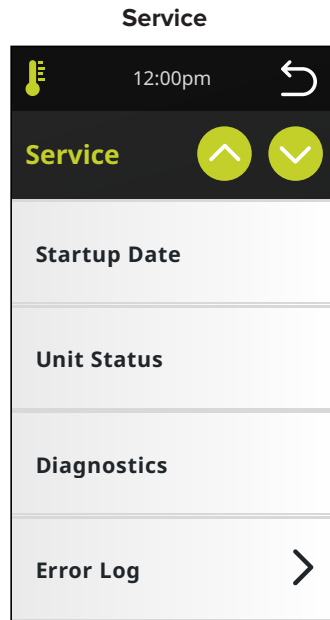
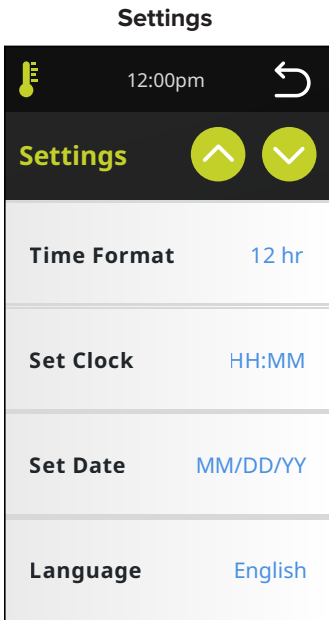
“X” returns you to the Home screen if you are not in cook mode. If cooking, “X” returns to active cook screen. If in fatal error mode, “X” returns screen to Error pop up. If in Initial Service mode, “X” shows Restart? pop up.

Service menu is password protected - Screen will pop up to enter password. Preset 4 digit numeric password is common to all units and is not changeable. (Note: Password is not to be shared with the operator.)

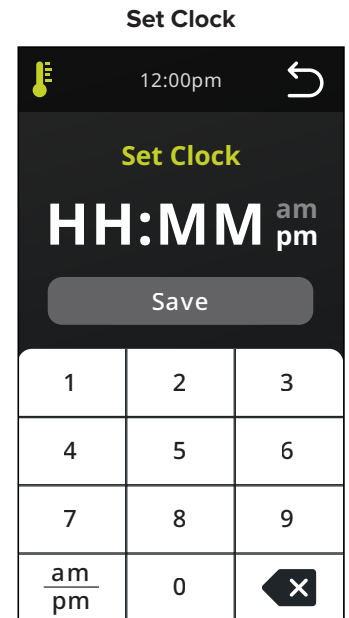
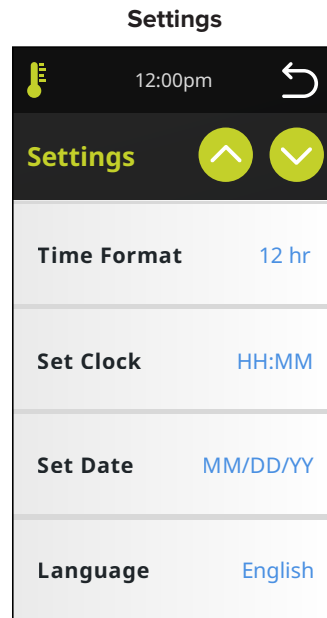
### UNIT INFO

“Back” arrow takes you back one screen. Unit Info screen to include: Model, Serial Number, Manufacture Date, Startup Date, Firmware Version, Total Runtime, Last Delime date and Last Delime at:. Model, Serial Number and Manufacture Date are entered from Parameters menu. Startup date is entered from Service menu. Total run time is recorded from the moment the power switch is toggled on and the circuit latches.





## SETTINGS



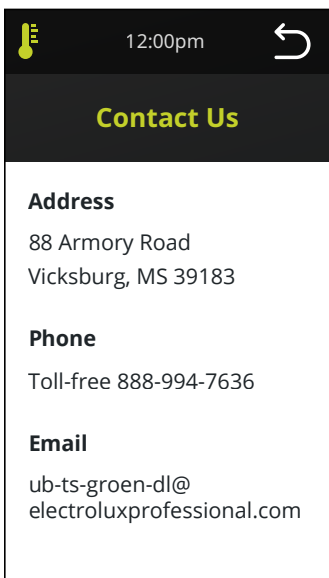
### SETTINGS

User will click on button to change data. Data will either toggle between choices or pop up an input window. Default values will be set in firmware and shown in **Bold** below. Settings screen to include: Time Format (12 hr, 24 hr), Set Clock (**Default=Parameter setting**), Set Date (**Default=Parameter setting**), Language (**Eng**), Temp Indication (F, C), Door Alarm (Off, 2 min, 5 min, 10 min), Keyboard Beep (On, Off), Brightness (1-20%, 2 - 40%, 3 - 60%, **4 - 80%**, 5 - 100%), Number of Timers (1-10, **Default = # of pans from Parameters**), Compensating Timers (On, **Off**), Timer Screen Lock (On, **Off**), Alarm Volume (Low, **Mid**, High - Volume setting will apply to all sounds except keyboard beeps which will only be ON/OFF.), Delime Button (On, **Off** [Delime Reminder will be grayed out]) and Delime reminder (Off), Settings will be retained at power off and power disconnect.

### SERVICE

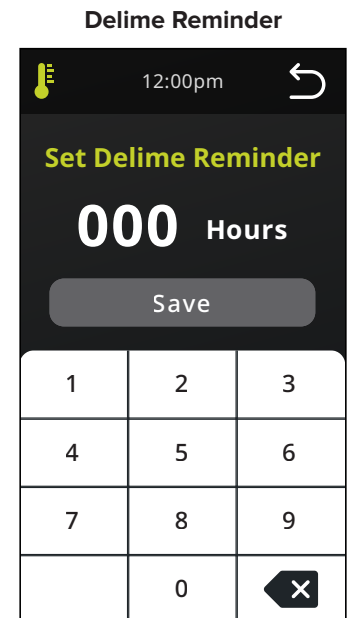
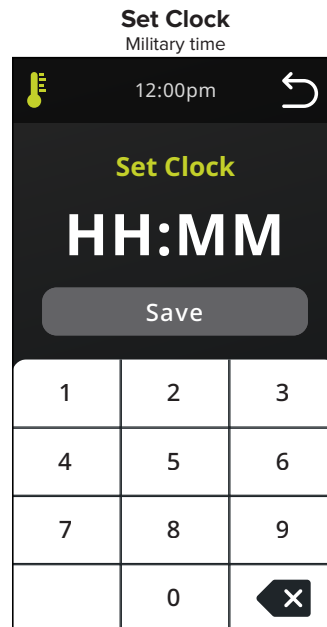
Service screen to include Startup Date (grayed out after setting), Unit Status, Diagnostics, Error Log, Documents (Operation, Error Descriptions, Parts List), Data Retrieval, Firmware Update, RTD Calibration (only if RTD is used) and Parameters. Startup date will be entered and then asked to confirm. Once confirmed, date button text will be grayed out and date will be locked but can be changed in Parameters.

### Contact Us



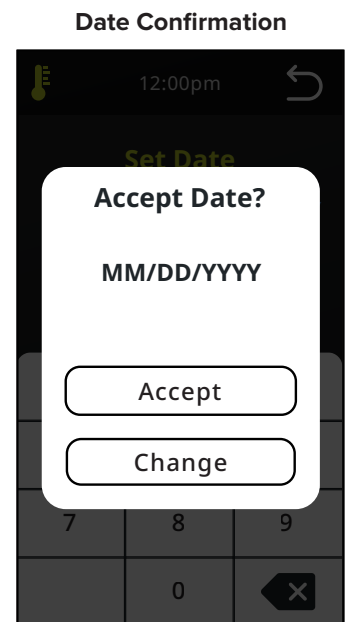
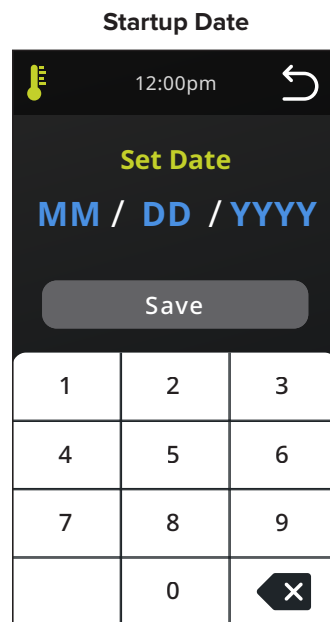
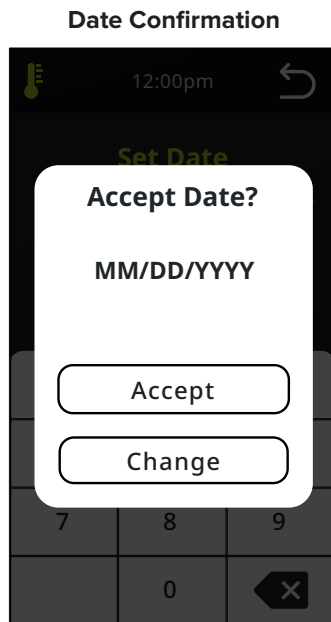
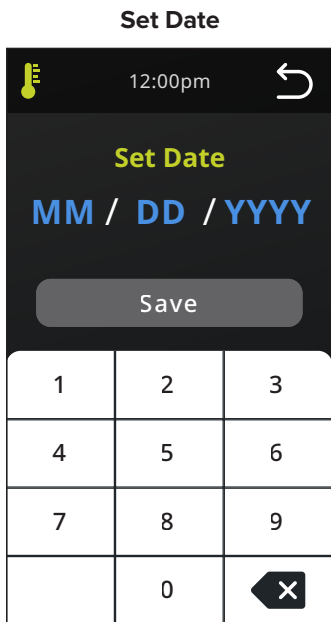
### SET CLOCK

If data is changed and not saved, no changes are made and unit returns to Home or Cook screen after 20 seconds.



### DELIME REMINDER

Limit number of hours to 999. Zero hours will indicate the reminder is "off" and Off will be shown in Settings. Default is 0 hours.



**DATE CONFIRMATION**

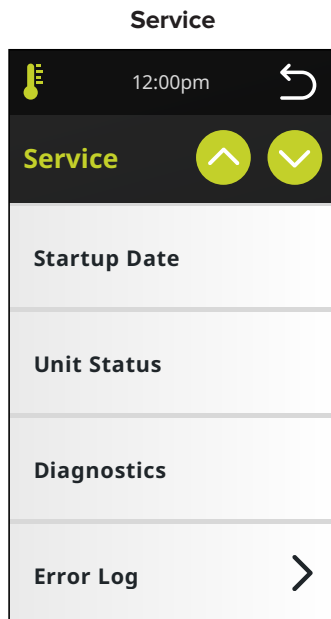
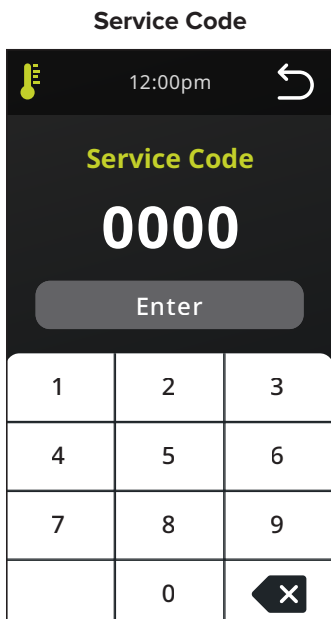
Accept - Accepts the date, locks the data and greys out the Startup date button in the Service menu.

Change - returns to Install Date screen and the fields retain the user data entry.

**STARTUP DATE**

Date will be entered by selecting each individual data box. Default value in the box should be MM, DD, YYYY. Text in the boxes should be blue to indicate to the user that it can be changed.

**SERVICE**



**SERVICE CODE**

Code: 9999. Each digit will be briefly displayed and then replaced with an "\*" to hide the code. (Note: Password is not to be shared with the operator.)

**SERVICE**

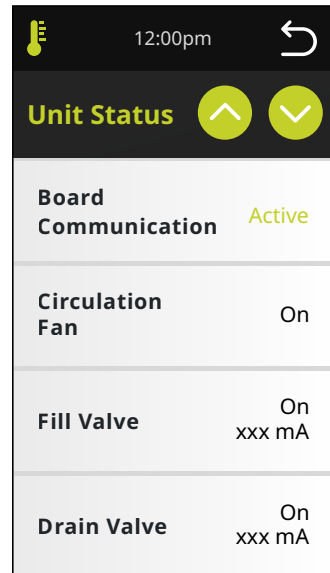
Data to be stored includes 8 hours of operational data and maximum of 50 errors (including operational data at time of error). Each error to be cleared from memory after 120 calendar hours. All data from internal memory will be downloaded. No ability to select time or dates will be provided. Data is to be output in simple text file. No data will be recorded during data retrieval.

**DATE CONFIRMATION**

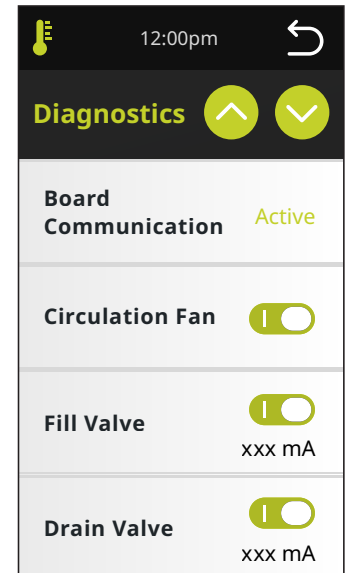
Accept - Accepts the date, locks the data and greys out the Startup date button in the Service menu.

Change - returns to Install Date screen and retains original data entry.

**Unit Status**



**Diagnostics**

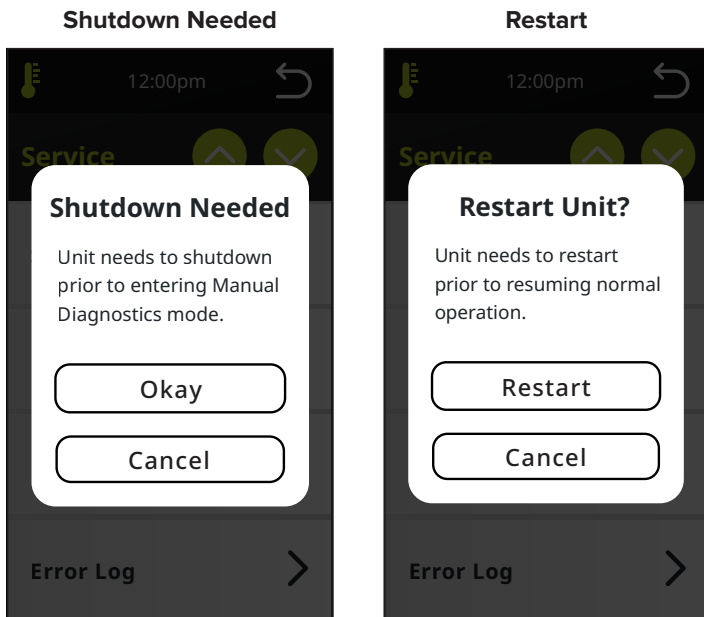


**UNIT STATUS**

Unit Status list to include: Board Communication (Active (green font) / Lost (red font)), Circulation Fan (ON/OFF), Fill Valve (ON/OFF xxx mA), Drain Valve (On/ Off Xxx mA), Condensate Valve (ON/OFF Xxx mA), Cooling Fan (ON/OFF Xxx mA), Water Level Low (Open/Closed), Water Level High (Open/Closed), Water Level Overflow (Open/Closed) (only with 3rd sensor), Door Switch (Open/Closed), High Limit Thermostat (state only, (Open/Closed), Ready tstat (state only, (Open/Closed), Hold tstat (state only, (Open/Closed), Condensate tstat (state only, (Open/Closed), Board Temp (XXX°C or XXX°F), Control Voltage (XXXV) and Contactor (xxx mA). Unit Status can be used during any functions other than data download and firmware update. Screen update is real time. Screen dimming is disabled. Readings below 32mA will be shown as 0.

## DIAGNOSTICS

Diagnostics includes: Board Communication (Active (green font) / Lost (red font)), Circulation Fan (ON/OFF), Fill Valve (ON/OFF Xxx mA), Drain Valve (On/ Off Xxx mA), Condensate Valve (ON/OFF Xxx mA), Cooling Fan (ON/OFF Xxx mA), Water Level Low (Open/Closed), Water Level High (Open/Closed), Water Level Overflow (Open/Closed) (only with 3rd sensor), Door Switch (Open/ Closed), High Limit Thermostat (state only, (Open/Closed), Ready tstat (state only, (Open/Closed), Hold tstat (state only, (Open/Closed), Condensate tstat (state only, (Open/Closed), Board Temp (XXX°C or XXX°F), Control Voltage (XXXV), Contactor (ON/OFF Xxx mA). Items which are status only and cannot be activated should show the text in black instead of blue including the mA values for items that can be toggled. Screen update is real time. mA will be rounded to nearest 10 mA and below 32mA will show 0. Diagnostics cannot be activated in Delime, Data retrieval or software update modes. In Service Mode (from Startup screen), selecting Diagnostics will allow for manual operation of components. After exiting menu, unit displays popup with Restart acknowledgment. If accepted, unit will restart properly regardless of what was changed in Diagnostics mode. If not in Service Mode, selecting Diagnostics will trigger a pop up stating that the unit will go through a shutdown cycle first and ask for confirmation. If user cancels, screen goes back to Service Menu. If users accepts, unit shows shutdown screen and proceeds through Fill/ drain shutdown sequence. After shutdown, Diagnostics screen is displayed. Upon exiting Service Menu via back button, unit displays popup with Restart acknowledgment. Manual mode requires all safeties to be active to prevent overheating, overfilling, etc. Consider only activating for short period. Circulation Fan (ON/OFF), Fill Valve (On=30 secs, Off=Default), Drain Valve (Open=Default, Closed=30 secs.), Condensate Valve (On=30 secs, Off=Default), Cooling Fan (ON/OFF), Water Level Low (Open/Closed), Water Level High (Open/ Closed), Water Level Overflow (Open/Closed) (only with 3rd sensor), Door Switch (Open/Closed). Screen dimming is disabled.

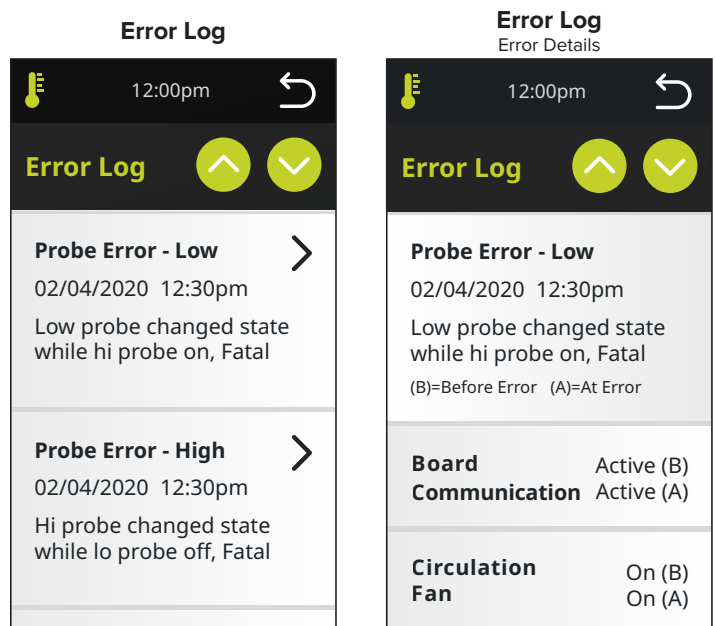


## SHUTDOWN NEEDED

Pop up occurs after selecting Diagnostics but prior to entering Diagnostic Mode.

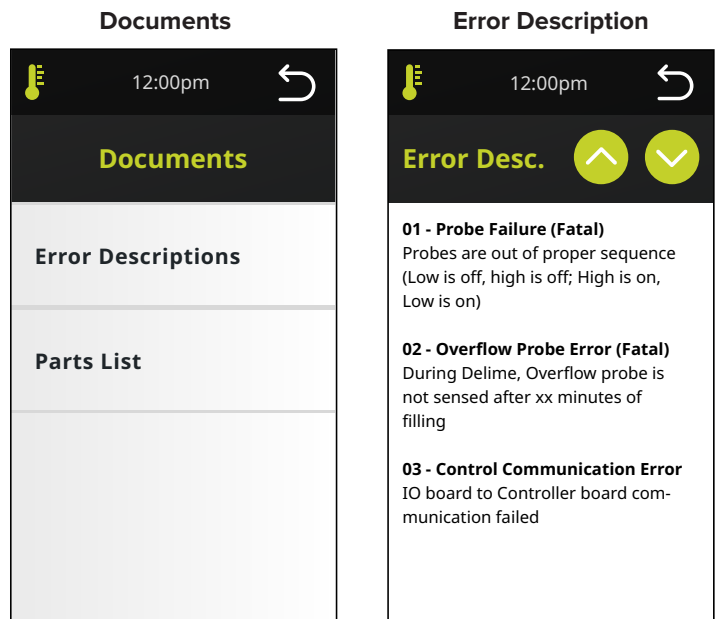
Okay - Unit shuts down and displays Diagnostics menu.

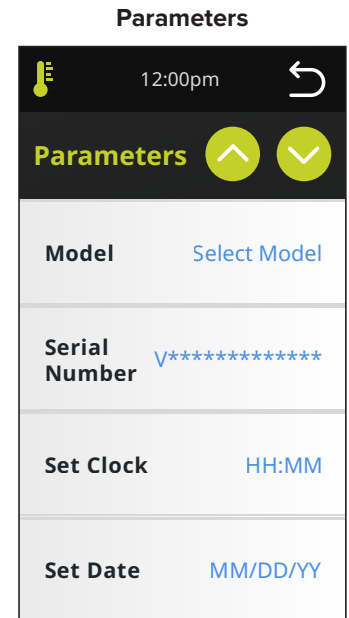
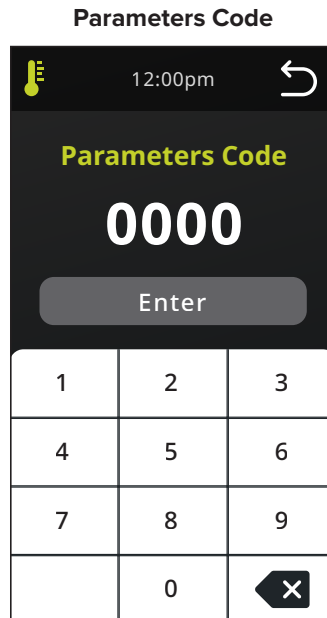
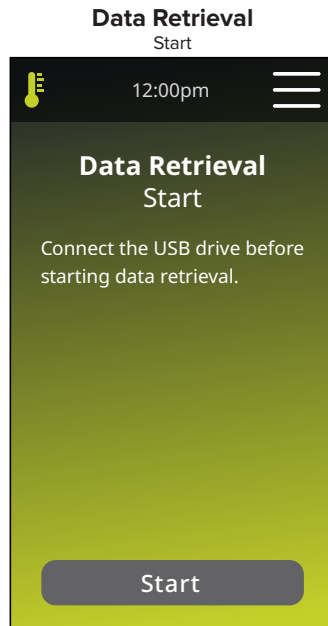
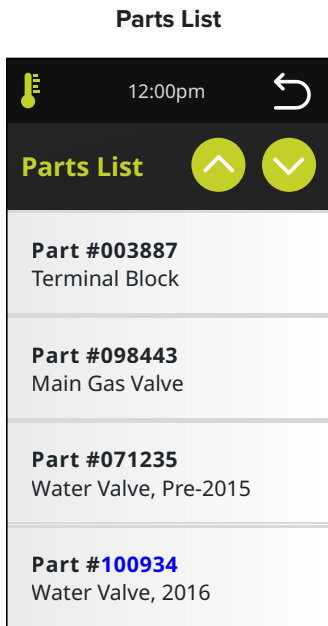
Cancel - Unit returns to Service Menu.



## ERROR LOG

Errors are shown in order of newest received. Codes are shown along with date, time, and description text. Selecting arrow will move to Error Details screen. Error details will show values 5 seconds before the error (B) and immediately after the error (A). Time format should match the user setting.



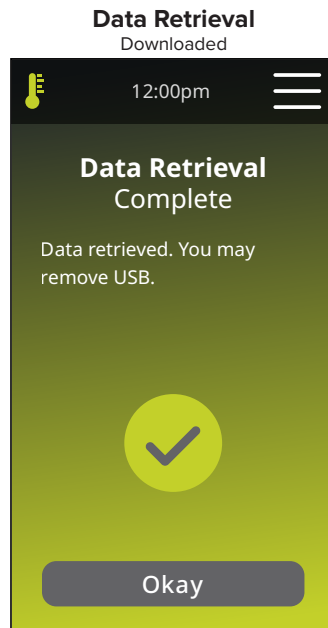
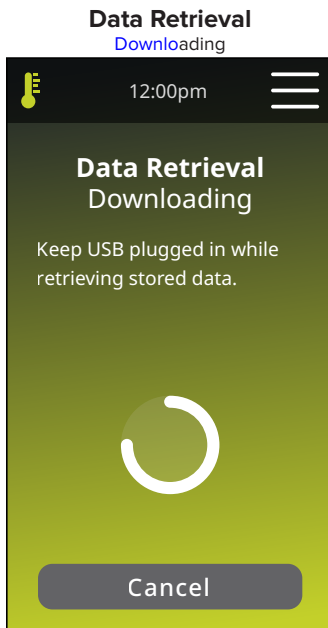


**PARTS LIST**

Should not be model specific. Include all parts and denote by model as necessary.

**DATA RETRIEVAL**

User shall [connect](#) a USB drive before pressing the Start button. Start will initiate the Data retrieval process.



**DATA RETRIEVAL DOWNLOADING**

Cancel stops data download and returns to Service Menu screen. Spinning animation indicates download in progress. Will not show how far process has progressed.

**DATA RETRIEVAL DOWNLOADED**

Okay returns back to Service screen.

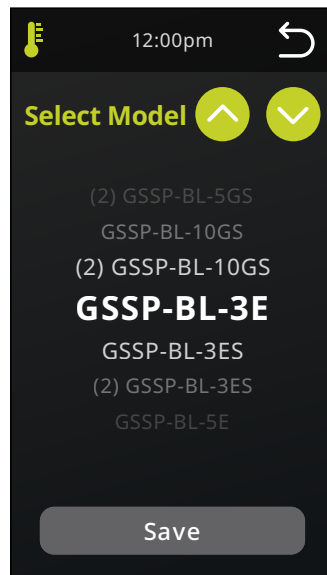
**PARAMETERS CODE**

Parameters screen is protected by common, unchangeable 4 digit password (7256). Each digit will be briefly displayed and then replaced with an "\*" to hide the code. (Note: Password is not to be shared with the operator.)

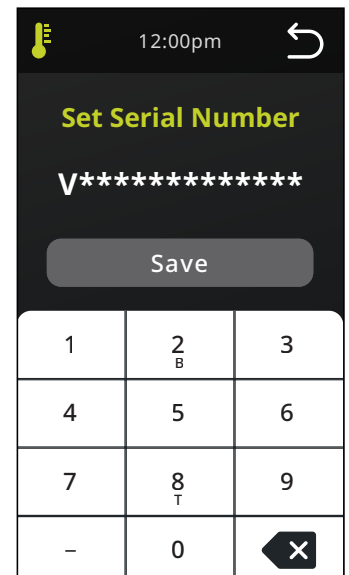
**PARAMETERS**

Parameters screen to include: Model (**Select Model**), Serial Number (**V\*\*\*\*\***), Set Clock (**HH:MM**), Set Date (**MM/DD/YY**), Number of Pans (**Derived from Model**), Manufactured Date (**Defaults to Unit Date**) but is changeable and Startup Date which allows for change if incorrect date is entered in Service screen). Parameters auto-populate the Unit Info and Settings screens.

**Model Selection**



**Serial Number Entry**



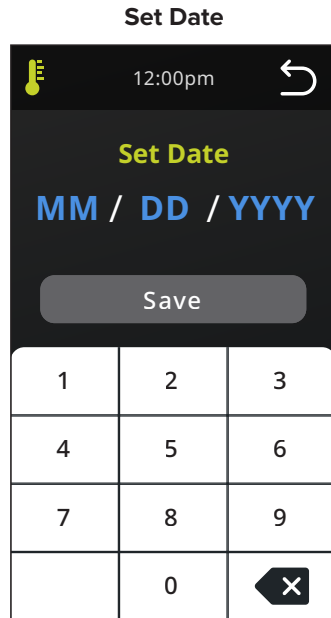
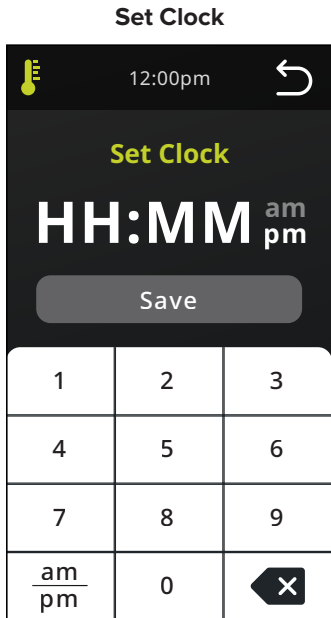
**MODEL SELECTION**

Screen functionality should be the same as the Timer list. Selecting a Model Name and the Save button will store the information and display it in the Unit Info screen. Selecting Save returns back to the Parameters screen. The Model Name selection will automatically set the Number of Pans and gas/electric. Model names match what is on the data tag. New models will need to be added via firmware changes and can be done when the UL construction file is updated. Model name selections will include: GSSP-BL-3E, GSSP-BL-3ES, (2) GSSP-BL-3ES, GSSP-BL-5E, GSSP-BL-5ES, (2) GSSP-BL-5ES, GSSP-BL-10ES, (2) GSSP-BL-10ES, GSSP-BL-3G, GSSP-BL-3GS, (2) GSSP-BL-3GS, GSSP-BL-5G, GSSP-

BL-5GS, (2) GSSP-BL-5GS, GSSP-BL-10GS, (2) GSSP-BL-10GS. If entering model number from start up error pop up, Save takes back to start up screen.

**SERIAL NUMBER ENTRY**

Serial number will always begin with a V and will have 13 additional characters which may include “-”s and the letter T or B at the end. Letters T and B are selected by holding down the 2 or 8 key for 1 second. Selecting Save stores the data, populates the Unit Info screen and returns back to the Parameters screen.

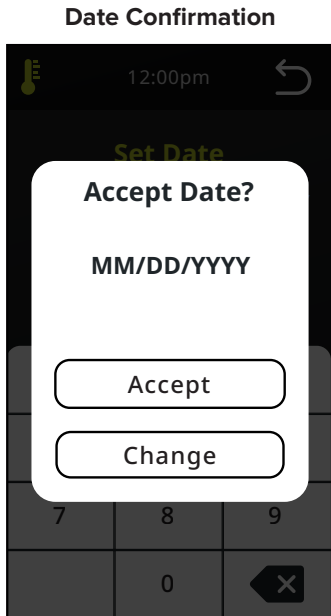


**SET CLOCK**

Selecting Save stores the data, populates the Settings screen and returns back to the Parameters screen.

**SET DATE**

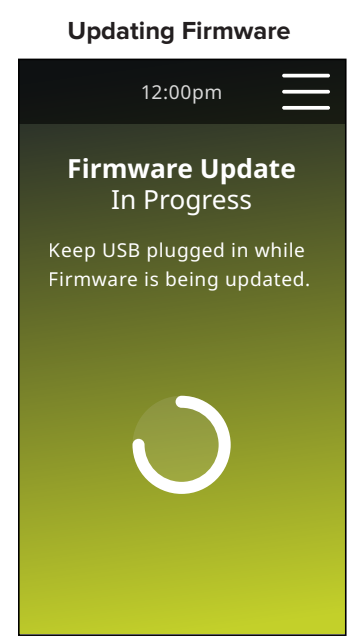
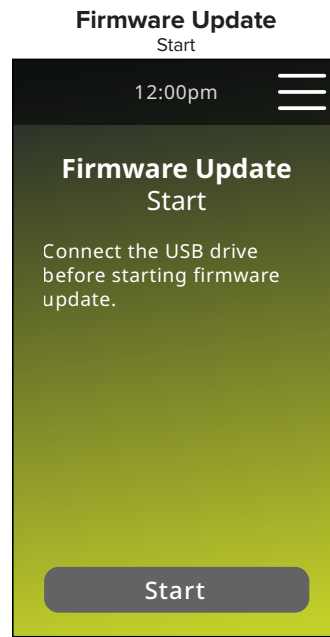
Selecting Save stores the data, populates the Manufactured Date in Parameters, populates the Settings screen and returns back to the Parameters screen.



**DATE CONFIRMATION**

Accept - Accepts the date, locks the data and greys out the Startup date button in the Service menu.

Change - returns to Install Date screen and the fields retain the user data entry.



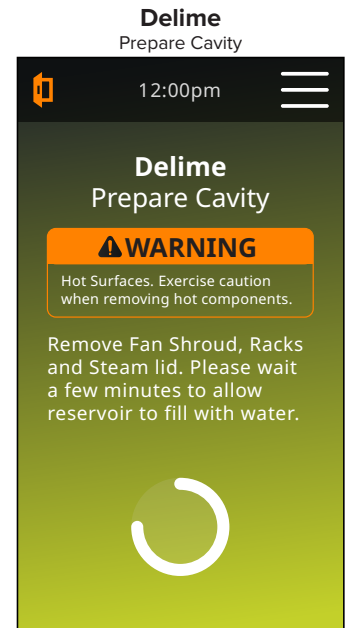
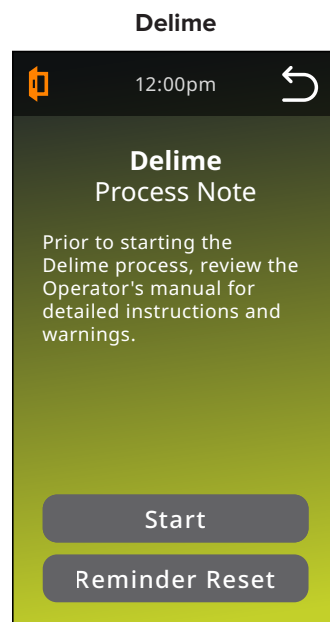
**FIRMWARE UPDATE**

User shall connect a USB drive which shall have the executable files needed for firmware update. Start will initiate the Firmware update process.

**UPDATING FIRMWARE**

Firmware update screens to be based on standard shiptide screen. IIC to develop and maintain existing themes as close as possible. The UI will undergo a automatic reset during the firmware update process.

**DELIME**

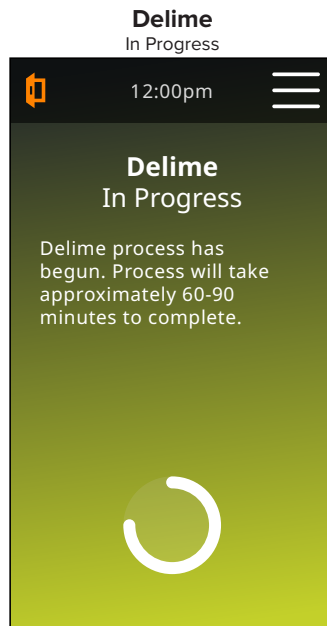


**DELIME**

Screen is displayed when the Delime button is pushed on the Startup screen. “Start” - Begins the delime process by filling reservoir. Door opening will not stop fill process. Reminder Reset - Resets the color of the Delime button on the Startup screen, restarts the reminder counter (does not reset Last Delime counter) and returns to Startup screen to resume startup procedure. Ready light is not available during delime. Circulation Fan is off during Delime cycle. Fill valve operates during Delime and maintains level at High probe. All Error codes are recorded during delime and probe errors are reported on screen as popups.

## DELIME PREPARE CAVITY

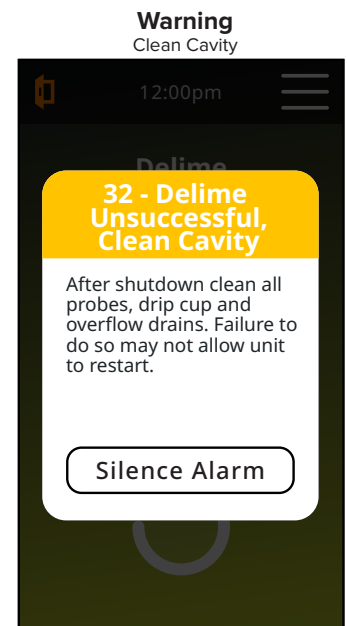
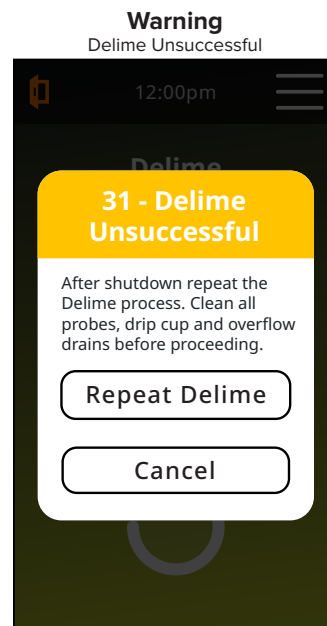
This screen is displayed after the Start button is pressed. Prior to and after pressing Start, the reservoir continues to fill and probe tests are preformed. If High probe is functioning, a probe based delime cycle will be initiated. If High probe is not functioning, unit will drain empty and popup will display to clean all probes before restating delime process. If High probe continues not to function, the unit will continue to repeat popup for cleaning before restart until High probe issue is resolved. After filling is complete, delimer is to be added by the operator. Pressing the Continue button and shutting the door starts the Delime cycle. Door alarm will sound after default time setting if door is left open.



## DELIME

Delime In Progress Screen appears after Continue is pressed on previous screen. Heater comes on after make / break validation of High probe but not prior to Continue button on previous screen being pressed. Unit refills to High probe after heat comes on/High probe break. Unit heats to ready temperature (approx 15 min) and heats for an additional 20 minutes. Heating and 20 minute counter is stopped during door opening and the spinning circle will also stop. Water fill or drain will continue during door openings and progress bar and spinning circle will continue. Door alarm functions only during heating cycle in Delime and will sound after default time setting if door is left open. Fill valve operates during heating cycle to maintain water at High probe. Probe based Delime: After heating

is complete, unit drains to Low probe. If no Low probe transition is seen within (2, 4) minutes of High probe transition, Cleaning popup is shown. Reservoir refills to High probe. If no High probe transition is seen within (2,4) minutes, Cleaning popup is shown and unit drains to Low probe. Reservoir refills to High probe. Drain to Low Probe and drain to empty. If there are no probe failures during third fill/drain cycle, Delime complete screen is displayed. Progress bar: 25% at High probe (M/B/M), 50% after heating and end of second fill at High probe (M/B/M), 75% after drain and refill at High probe (M/B/M), 95% on low probe break on last drain and 100% at empty (time based). When complete, an alarm will sound (4 beeps) and the notification screen will display and remain visible until acknowledged (Restart - goes back to Start Up screen) or unit is powered off via the power switch. Once Delime is complete, the Delime Date is recorded / updated, the Delime counter is reset to zero and the Delime button is reset to "no color". If control does not recognize transition on Low or High probes during third fill, Cleaning pop up occurs and drains to empty. Unit waits until user selects Repeat Delime or shuts power off. If Repeat Delime button is pressed, the unit returns to the Prepare Cavity screen and waits until the "Start" button is pressed. After filling is complete, user shall add additional delimer and press Continue. Once Continue button is pressed, heater will energize (door must be closed). If control does not recognize transition on High probes or Low probe during third drain, Cleaning pop up occurs and unit continues to drain until user selects Repeat Delime or shuts power off. Note: Low probe circuit relay is defeated in delime to allow the heating to function even if low probe is fouled.



## WARNING DELIME UNSUCCESSFUL

If probe transitions are not seen after first delime, an alarm tone will sound (continuous beep for 10 seconds, repeating every 60 seconds) and pop up recommends additional deliming.

Repeat Delime - Silences alarm and Starts process back at Delime - Prepare Cavity.

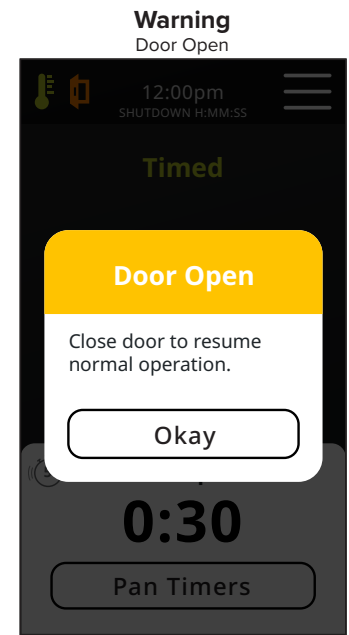
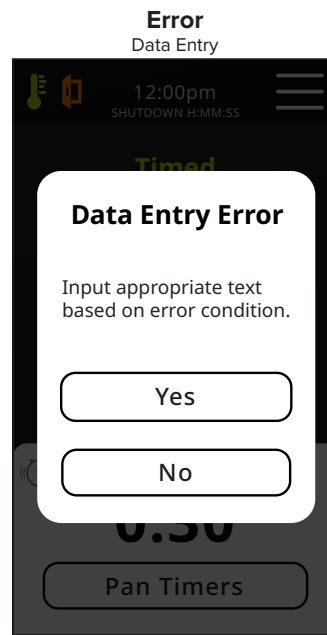
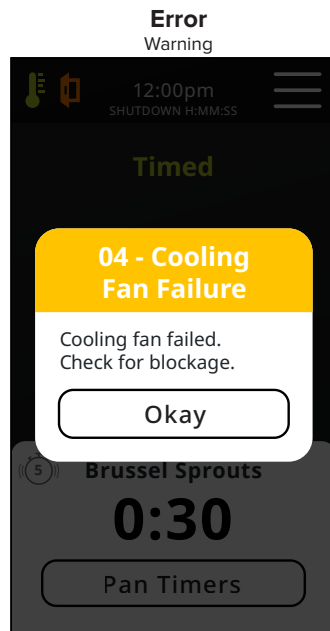
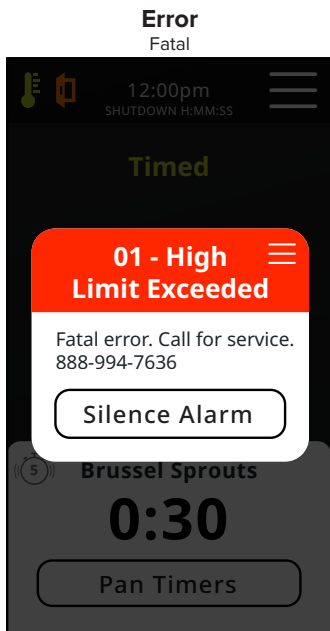
Cancel - Silences alarm and Cleaning pop up (yellow) displays and restarts alarm.

## WARNING CLEAN CAVITY

If probe transitions are not seen after second delime, an alarm tone will sound (continuous beep for 10 seconds, repeating every 60 seconds).

Silence Alarm - Silences alarm and Warning stays on screen until unit is turned off. If unit is restarted and probes act properly, unit will run. If probes do not transition, an error will occur.

## ERRORS



### ERROR FATAL

When a fatal error occurs, a pop up will be displayed and an alarm tone will sound (continuous beep for 10 seconds, repeating every 60 seconds). If multiple errors occur, only the last error will be displayed. All errors will be recorded in the error log along with the status of each component. Upon fatal error, the unit will immediately go into a shutdown process (to be defined for each type of fatal error), but the error will remain on the screen until the power button is switched off. If errors still exist at start up, unit will re-alarm. "Silence Alarm" button will stop the audible alarm but leave the pop up on the screen. The Pop up will contain the menu icon in the upper right corner of the pop up to allow access to the Menu. If the screen sits inactive for 20 seconds or if the "X" button is pressed from the Menu, the error pop up will return. If Service Mode is entered at start up after a fatal error, unit will go to the Service Code screen and allow Service functions to be performed. Certain fatal errors may allow for a user to perform a limited action like Delime unit. If the power button is turned off prior to shutdown process completing, the error popup will disappear and the shutdown screen will be shown until shutdown is complete, and then the screen will go blank.

### ERROR WARNING

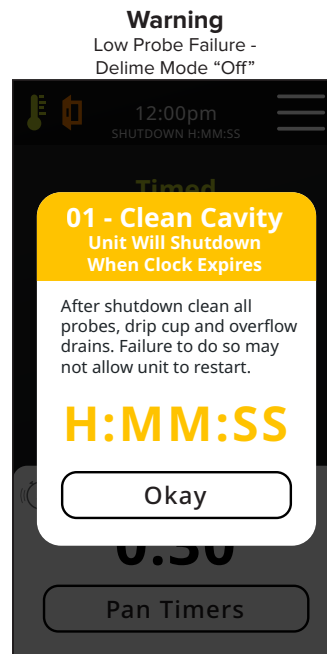
When a non-fatal error occurs, a pop up will be displayed and an alarm tone will sound (continuous beep for 10 seconds, repeating every 60 seconds). If multiple errors occur, the last error will be displayed. Once it is cleared by pressing Okay button, previous errors will be displayed sequentially. All errors will be recorded in the error log along with the status of each component.

Okay Button - Silences and removes alarm pop up until power is cycled. If error reoccurs after power cycle, pop up will reoccur.

Buttons and actions will vary with error type.

### WARNING DOOR OPEN

During cook, hold and delime modes, leaving door open for longer than 2 minutes (default) will show pop up message and sound a continuous tone alarm. Pop up will go away and alarm will silence by pressing the OK button or by shutting the door. Counter will start again after pressing the OK button or reopening the door. Open time will be settable in settings, Off, 2 min, 5 min, 10 min. Door open icon will always show on screen regardless of alarm status.

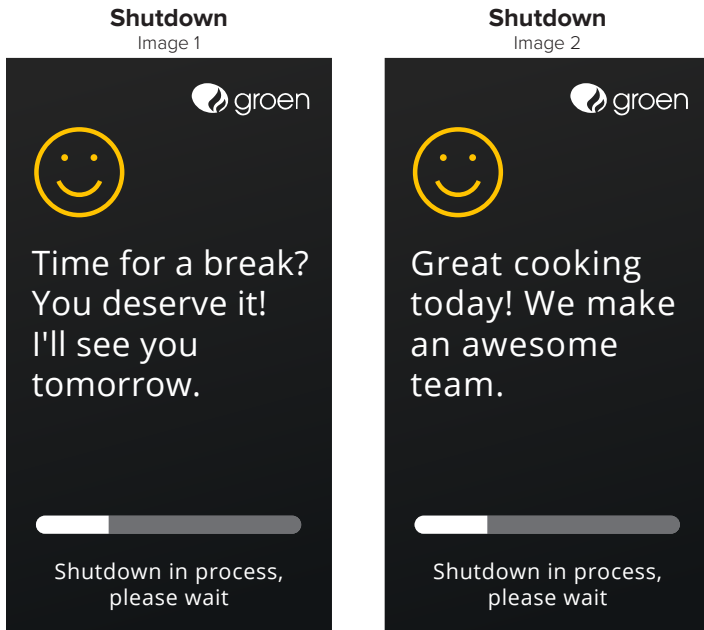


### WARNING LOW PROBE FAILURE

When the low probe stops functioning during a Timed, Manual and Hold mode, this non-fatal error pop up will be displayed and an alarm tone will sound (continuous beep for 10 seconds, repeating every 60 seconds) along with a shutdown clock that counts down to 0 from 8 hours. Time is displayed in yellow text in H:MM:SS format. Pop up reoccurs when 1 hour is left on the shutdown clock with time displayed flashing in 3 sec. intervals. When 1 minute is left on shutdown clock, time displayed will flash in 1 sec. intervals until expired. (The text flashing will be same for the shutdown clock on all other screens).

Okay Button - Silences alarm and transitions to the previous screen before the pop up occurred with the shutdown clock displayed. Shutdown clock will be displayed on all screens after occurrence until time expires or power button is pressed to turn the unit off. If probe error reoccurs after power cycle, a pop up will display.

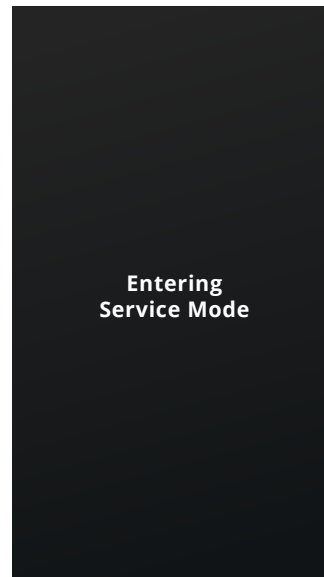
## SHUTDOWN



### SHUTDOWN

Shutdown screen will appear when power switch is turned off and power switch will darken. Progress bar will fill with white color from left to right during shutdown. Progress steps will be: Low probe transition - break, Low probe transition - make, High probe transition - make, High probe transition - break, Low probe - make, Low probe transition - break, High probe transition - make, High probe transition - break, Low probe - make After the Low probe - make, screen goes blank. During shutdown, text will appear and disappear in sequence. Text images will fade out and new image will appear (no fade in) every 4 seconds. Menu is not available during shutdown. Muffin fans stays on until screen is blank. Convection fan and heating contactor goes off as soon as Shutdown begins. Condensate spray stays on until Ready tstat is closed. Power cycling during Shutdown will cause unit to drain to Low probe and begin Startup procedure. If front ON/OFF button is pressed or an error caused shut down occurs and both probes are functioning, then unit will fill to the High probe; drain to Low probe past for XX minutes and refill to the High probe then drain cavity to empty. If front ON/OFF button is pressed or shutdown counter expires and High probe is functioning and Low probe is not functioning, then unit will drain for XX minutes; then fill to High probe and drain for XX minutes then fill to High probe and drain cavity to empty. If front ON/OFF button is pressed or shutdown counter expires and Low probe is functioning and High probe is not functioning, then unit will drain off Low Probe X seconds or minutes; then fill past Low probe for XX minutes and drain cavity to empty. If an error shutdown occurs and the Low and High Probe is not functioning; then unit will attempt to fill for XX minutes then drain cavity to empty. All active audible alarms are disabled when ON/OFF button is pressed to turn off unit. Once power button is pressed or shutdown process is initiated to turn unit off, the power button will be disabled to turn the unit back on until the shutdown process is complete.

## Service Mode



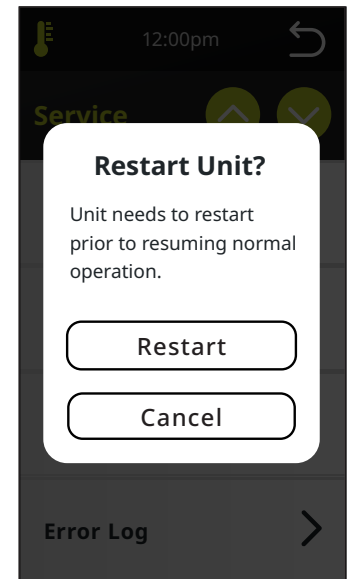
### RESTART

Pop up occurs after exiting the Service screen after engaging Diagnostics.

Restart - Unit shuts down and restarts.

Cancel - Unit returns to Diagnostics.

## Restart



# ALL MENUS

Settings	
Time Format	12 hr
Set Clock	HH:MM
Set Date	MM/DD/YY
Language	English
Temp Indication	°F
Door Alarm	2 min
Keyboard Beep	On
Brightness	4
Number of Timers	3
Compensating Timers	On
Timer Screen Lock	On
Alarm Volume	Mid
Delime Button	On
Delime Reminder	Off

Parameters	
Model	Select Model
Serial Number	V*****
Set Clock	HH:MM
Set Date	MM/DD/YY
Number of Pans	3
Manufactured Date	MM/DD/YY
Startup Date	MM/DD/YY

Diagnostics	
Board Communication	Active
Circulation Fan	<input checked="" type="checkbox"/>
Fill Valve	<input checked="" type="checkbox"/> xxx mA
Drain Valve	<input checked="" type="checkbox"/> xxx mA
Condensate Valve	<input checked="" type="checkbox"/> xxx mA
Cooling Fan	<input checked="" type="checkbox"/> xxx mA
Water Level Low	Open
Water Level High	Open
Water Level Overflow	Open
Door Switch	Closed
High Limit Thermostat	Open
Ready Tstat	Open
Hold Tstat	Open
Condensate Tstat	Open
Board Temp	xxx°F
Control Voltage	xxx V
Contactor	xxx mA

Unit Status	
Board Communication	Active
Circulation Fan	On
Fill Valve	On xxx mA
Drain Valve	On xxx mA
Condensate Valve	On xxx mA
Cooling Fan	On xxx mA
Water Level Low	Open
Water Level High	Open
Water Level Overflow	Open
Door Switch	Closed
High Limit Thermostat	Open
Ready Tstat	Open
Hold Tstat	Open
Condensate Tstat	Open
Board Temp	xxx°F
Control Voltage	xxx V
Contactor	xxx mA

Error Log	
Probe Error - Low	>
02/04/2020 12:30pm Low probe changed state while hi probe on, Fatal	
Probe Error - High	>
02/04/2020 12:30pm Hi probe changed state while lo probe off, Fatal	
Probe Error - High	>
02/04/2020 12:30pm Cold Fill to hi probe time exceeded, Fatal	
Probe Error - High	>
02/04/2020 12:30pm Hot refill to hi probe time exceeded, Fatal	
Control Temperature	>
02/04/2020 12:30pm Controller temperature exceeded, Fatal	

Error Log	
<b>Probe Error - Low</b>	
02/04/2020 12:30pm	
Low probe changed state while hi probe on, Fatal (B)=Before Error (A)=At Error	
<b>Board Communication</b>	Active (B) Active (A)
<b>Circulation Fan</b>	On (B) On (A)
<b>Fill Valve</b>	xxx mA (B) xxx mA (A)
<b>Drain Valve</b>	xxx mA (B) xxx mA (A)
<b>Condensate Valve</b>	xxx mA (B) xxx mA (A)
<b>Cooling Fan</b>	xxx mA (B) xxx mA (A)
<b>Water Level Low</b>	Open (B) Open (A)
<b>Water Level High</b>	Open (B) Open (A)
<b>Water Level Overflow</b>	Open (B) Open (A)
<b>Door Switch</b>	Closed (B) Closed (A)
<b>High Limit Thermostat</b>	Open (B) Open (A)
<b>Ready Tstat</b>	Open (B) Open (A)
<b>Hold Tstat</b>	Open (B) Open (A)
<b>Condensate Tstat</b>	Open (B) Open (A)
<b>Board Temp</b>	xxx°F (B) xxx°F (A)
<b>Control Voltage</b>	xxx V (B) xxx V (A)
<b>Contactors</b>	xxx mA (B) xxx mA (A)

Service	
<b>Startup Date</b>	
<b>Unit Status</b>	
<b>Diagnostics</b>	
<b>Error Log</b>	>
<b>Documents</b>	>
<b>Data Retrieval</b>	
<b>RTD Calibration</b>	
<b>Firmware Update</b>	V 1.1
<b>Parameters</b>	

Documents	
<b>Error Descriptions</b>	
<b>Parts List</b>	

Error Desc.	
<b>01 - Probe Failure (Fatal)</b>	Probes are out of proper sequence (Low is off, high is off; High is on, Low is on)
<b>02 - Overflow Probe Error (Fatal)</b>	During Delime, Overflow probe is not sensed after xx minutes of filling
<b>03 - Control Communication Error</b>	IO board to Controller board communication failed

Parts List	
<b>Part #003887</b>	Terminal Block
<b>Part #098443</b>	Main Gas Valve
<b>Part #071235</b>	Water Valve, Pre-2015
<b>Part #100934</b>	Water Valve, 2016
<b>Part #178955</b>	Muffin Fan
<b>Part #150659</b>	Drain Box (3G/5G)
<b>Part #150661</b>	Drain Box (10G)
<b>Part #144484</b>	Hi-Limit
<b>Part #178090</b>	Thermostat (Drain Box)
<b>Part #071234</b>	Drain Valve

Unit Info	
<b>Model:</b>	Model Name
<b>Serial Number:</b>	638-903-518-9631
<b>Manufacture Date:</b>	12/04/2020
<b>Startup Date:</b>	04/20/2020
<b>Firmware Version:</b>	1.0.0
<b>Total Runtime:</b>	xxx hrs
<b>Last Delime Date:</b>	MM/DD/YYYY
<b>Last Delime At:</b>	xxx hrs

