

G-SB Series

GAS BOILER BASE STEAMER

INSTALLATION - OPERATION - MAINTENANCE



BLODGETT OVEN COMPANY

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PART NUMBER 170220 REV A (04/11)

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. WE SUGGEST 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.

IMPORTANT - READ FIRST - IMPORTANT

- WARNING:** THE UNIT MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY AND PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO THE EQUIPMENT. INSTALLATION MUST COMPLY WITH APPLICABLE CODES.
- NOTICE:** DO NOT INSTALL THE UNIT IN ANY WAY WHICH WILL BLOCK THE RIGHT SIDE VENTS , OR WITHIN 12 INCHES OF A HEAT SOURCE SUCH AS A BRAISING PAN , DEEP FRYER , CHAR BROILER OR CONVECTION OVEN .
- NOTICE:** LEVEL THE UNIT FRONT TO BACK , OR PITCH IT SLIGHTLY TO THE REAR , TO AVOID DRAINAGE PROBLEMS .
- WARNING:** TO AVOID DAMAGE OR INJURY, FOLLOW THE WIRING DIAGRAM EXACTLY WHEN CONNECTING A UNIT. AN ELECTRICAL GROUND IS REQUIRED.
- CAUTION:** DRAIN MUST BE RATED FOR BOILING WATER. DO NOT USE PLASTIC PIPE.
- WARNING:** DO NOT CONNECT THE DRAIN DIRECTLY TO A BUILDING DRAIN. DAMAGE TO THE EQUIPMENT MAY RESULT.
- WARNING:** BLOCKING THE DRAIN MAY BE HAZARDOUS.
- IMPORTANT:** IMPROPER DRAIN CONNECTION WILL VOID WARRANTY .
- WARNING:** WHEN YOU OPEN A COMPARTMENT DOOR, STAY AWAY FROM STEAM COMING OUT OF THE UNIT. CONTACT WITH STEAM CAN CAUSE BURNS.
- WARNING:** BEFORE CLEANING THE OUTSIDE OF THE STEAMER, DISCONNECT ELECTRIC POWER . KEEP WATER AND CLEANING SOLUTIONS OUT OF CONTROLS AND ELECTRICAL COMPONENTS. NEVER HOSE OR STEAM CLEAN ANY PART OF THE UNIT. SERIOUS INJURY COULD RESULT.
- WARNING:** LET COOKING CHAMBERS COOL BEFORE CLEANING. HOT SURFACES CAN CAUSE BURNS.
- WARNING:** CAREFULLY READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF EACH CLEANING AGENT USED. DIRECT CONTACT WITH SOME AGENTS CAN CAUSE INJURY.
- WARNING:** DO NOT MIX DE-LIMING AGENTS (ACID) AND DE-GREASERS (ALKALI) IN THE STEAM GENERATOR OR ON THE COOKING CHAMBER WALLS. HARMFUL GASSES MAY RESULT.
- WARNING:** DO NOT PUT HANDS OR TOOLS INTO THE COOKING CHAMBER, UNTIL THE FAN HAS STOPPED TURNING. THE ROTATING FAN CAN CAUSE INJURIES.
- WARNING:** DO NOT OPERATE THE UNIT UNLESS THE REMOVABLE RIGHT SIDE PANELS HAVE BEEN RETURNED TO THEIR PROPER LOCATIONS. DAMAGE TO THE UNIT COULD OCCUR.
- CAUTION:** DO NOT LOCATE THE BOILER CABINET DIRECTLY OVER A FLOOR DRAIN OR FLOOR SINK. HUMIDITY OR WATER FROM A DRAIN WILL DAMAGE ELECTRICAL PARTS OF A UNIT.
- NOTICE:** DO NOT USE CLEANING OR DE -LIMING AGENTS THAT CONTAIN SULFAMIC ACID OR ANY CHLORIDE, INCLUDING HYDROCHLORIC ACID . IF THE CHLORIDE CONTENT OF ANY PRODUCT IS UNCLEAR, CONSULT THE MANUFACTURER . DO NOT USE CLEANING OR DE -LIMING AGENTS THAT CONTAIN MORE THAN 30% PHOSPHORIC ACID.
- WARNING:** HIGH VOLTAGE EXISTS INSIDE CONTROL COMPARTMENTS. DISCONNECT POWER SOURCE BEFORE SERVICING. FAILURE TO DO SO CAN RESULT IN SERIOUS INJURY OR DEATH.

IMPORTANT - READ FIRST - IMPORTANT

- WARNING:** DO NOT EXPOSE SKIN TO ESCAPING STEAM. SEVERE BURNS CAN RESULT.
- CAUTION:** MAKING ANY ELECTRICAL OR MECHANICAL CHANGE IN THE UNIT WITHOUT PRIOR WRITTEN APPROVAL FROM ENGINEERING WILL VOID ALL WARRANTIES.
- WARNING:** ALL POTENTIAL USERS OF THE EQUIPMENT SHOULD BE TRAINED IN SAFE AND CORRECT OPERATING PROCEDURES.
- WARNING:** DO NOT OPERATE THE UNIT UNLESS ALL REMOVABLE PANELS (RIGHT, LEFT, FRONT AND REAR) HAVE BEEN PROPERLY INSTALLED.
- NOTICE:** USE NO DE -GREASER THAT CONTAINS POTASSIUM HYDROXIDE OR SODIUM HYDROXIDE OR IS ALKALINE .
- WARNING:** USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY THE MANUFACTURER OR THEIR AUTHORIZED SERVICE AGENTS VOIDS ALL WARRANTIES AND CAN CAUSE BODILY INJURY TO THE OPERATOR AND DAMAGE THE EQUIPMENT. SERVICE PERFORMED BY OTHER THAN FACTORY AUTHORIZED PERSONNEL WILL VOID ALL WARRANTIES.
- DANGER:** HIGH VOLTAGE EXISTS IN CONTROL COMPARTMENTS. DISCONNECT FROM BRANCH CIRCUIT BEFORE SERVICING. FAILURE TO DO SO CAN RESULT IN SERIOUS INJURY OR DEATH.

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References

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333 Pfingsten Road
Northbrook, Illinois 60062

KLENZADE SALES CENTER
ECOLAB, Inc.
370 Wabasha
St. Paul, Minnesota 55102
800 328-3663 or 612 293-2233

NATIONAL FIRE PROTECTION ASSOCIATION
60 Battery March Park
Quincy, Massachusetts 02269

NFPA/70 The National Electrical Code
NFPA/54 Installation of Gas Appliances & Piping
NFPA/96 Ventilating Hoods

NSF INTERNATIONAL
789 North Dixboro Road
P.O. Box 130140
Ann Arbor, Michigan 48113-0140

AMERICAN NATIONAL STANDARDS INSTITUTE
1403 Broadway, New York, New York 10018

Z21.30 Installation of Gas Appliances & Piping
Z223.1 (latest edition) National Fuel Gas Code

Equipment Description

WARNING

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

The G-SB Steamer is designed to bring you years of service. It has two stainless steel cavities (cooking chambers) and a control compartment, which houses the electrical components and steam valves. In each cavity, a powerful blower circulates the steam for increased heating efficiency. Each cavity, depending on model, will hold either three or five steam table pans (12" x 20" x 2-1/2").

A 16 gauge stainless steel case encloses the cavities and the control compartment that house electrical components. The door hinges are reversible (the doors may be hung to open from the left or right).

Operator Controls are located on the front panel.

The steamer cavities are mounted on a cabinet base containing a gas-fired steam boiler that generates low pressure steam. This model uses a spark ignition system. The boiler is small enough to fit in a 24-1/8" wide by 34-3/16" deep by 29-3/16" tall (maximum) cabinet. The boiler is constructed of 1/4" thick steel, which is certified by the American Society of Mechanical Engineers (ASME) for pressure vessels. All welds are hydrostatically tested. The boiler is also equipped with required instruments, fittings, and controls per CSD-1 (Controls and Safety Devices for automatically fired boilers). Heat transfer fins inside the combustion chamber add to the unit's high efficiency. The unit is rated as 60% efficient or better, with a firing rate of 200,000 BTU per hour using natural or propane gas. Energy output is 120,000 BTU per hour, with an effective boiler horsepower of 3.7.

The drain system includes a spray condenser, which suppresses any steam escaping from the chamber and cools condensate water going into the drain.



G-SB steamers have two steam compartments with individual controls mounted on a gas-fired boiler base..

Water Quality & Treatment

REDUCE SCALE PROBLEMS BY USING AND MAINTAINING A WATER SOFTENER FOR YOUR STEAMER!

It is essential that the boiler be supplied with water that will not form scale at an unacceptable rate. The boiler was engineered to minimize scale, but its formation depends on water hardness and how much the unit is used.

In some areas of the United States the water is low enough in mineral content to avoid scale build-up. However, most water supplies carry heavy loads of minerals. This will form scale on the boiler, reduce its steam output, and possibly cause premature component failure.

Your water utility or local water quality dealer can tell you about the minerals in your water. The water going to the steam generator should have:

1. Between 1 and 30 ppm total dissolved solids (TDS)
2. A pH (acidity rating) of 7.0 - 8.0
3. Total alkalinity less than 120 ppm
4. Silica less than 13 ppm
5. Chlorides less than 30 ppm
6. Sulfates less than 40 ppm
7. Chlorine less than 10 ppm.

Please follow these simple precautions:

1. Do not rely on unproven water treatment equipment which is sold for scale prevention or scale removal. They frequently don't work. The best way to prevent scale is to supply the purest possible water.
2. If your water contains scale-forming minerals, as most water does, use a well-maintained water treatment system. Whether an exchangeable softener cartridge or a regenerating system is chosen, a regular exchange system is essential.
3. Installing a water meter on supply line to the steamer will provide an accurate gauge of water use, and will help determine when to exchange cartridges or regenerate the softener. Using treated water will provide longer generator life, higher steam capacity, and reduce maintenance requirements.
4. If you notice a slowdown in steam production, check the boiler for scale build-up. Heavy scale reduces the unit's ability to boil water, and can even cause heating elements in the steam generator to overheat and burn out.
5. Pressure boilers are available with two separate water intakes:

one for the boiler (treated water)
one for the spray condenser (untreated water).

The steam generator only uses 14 to 31% of a steamer's water. Since water treatment systems are typically sized by total GPH (gallons per hour), the second intake could reduce treatment requirements by up to 80%, resulting in significant savings.

Installation

WARNING
MAKING ANY ELECTRICAL OR MECHANICAL
CHANGE IN THE UNIT WITHOUT PRIOR
APPROVAL WILL VOID ALL WARRANTIES.

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. THE UNIT MUST BE
INSTALLED BY A LICENSED PLUMBER OR
GAS FITTER WHEN INSTALLED WITHIN THE
COMMONWEALTH OF MASSACHUSETTS.

WHEN THE UNIT IS RECEIVED, IMMEDIATELY INSPECT IT FOR EXTERNAL OR INTERNAL DAMAGE. REPORT ANY DAMAGE TO THE FREIGHT CARRIER. After inspection, keep the unit in its shipping container until it is installed. It can be installed on combustible and non-combustible floors. Minimum clearances are:

Right Side	2 inches
Left Side	4 inches
Rear	6 inches

In order to service the unit properly, access with at least 24 inches clearance is needed on the right side.

Install the unit in a well-vented room so that there is an adequate air supply. Since products of combustion come out of its flue, the appliance must be located under a ventilation hood. **Do not directly vent the flue.**

Level the unit front to rear and left to right by adjusting its legs. Levelness may be checked by using a spirit level on top of the cabinet.

A free flow of air around the boiler promotes efficient operation. Items which might restrict air flow must be removed. After installation, do not obstruct the flue, or any front, side, rear or top vents. Similarly, keep the area directly around the appliance clear of combustible material.

Installation must conform with local codes, or in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1 (latest edition, including the following paragraph:

“The unit and its individual shut-off valve must be **disconnected** from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 PSI (3.45 kPa). The unit must be **isolated** from the gas piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures **equal to or less than** 1/2 PSI (3.45 kPa).”

1. Gas Supply Connection

- a. Connection to the gas supply can be completed with 1/2" NPT pipe or approved equivalent. Although this is the diameter for immediate connection to the unit, **gas supply piping must be large enough to provide volumes and pressure sufficient for 200,000 BTU per hour.** Supply pressure must be at least 5.0" W.C. (14.0" W.C. maximum) for natural gas or 11.0 W.C. (14.0" W.C. maximum) for propane.
- b. In Canada, the installation must conform to the Canada Gas Code, CAN 1-B149 (Installation Codes for Gas Burning Appliances and Equipment), and/or local codes.
- c. After the unit has been connected to the gas supply, check piping joints for leaks. Do NOT use flame to check for leaks. A thick soap solution or other suitable leak detector should be used.

Installation

WARNING

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

CAUTION

SHIPPING STRAPS ARE UNDER TENSION. THEY CAN SNAP BACK VIOLENTLY AND CAUSE INJURY WHEN CUT.

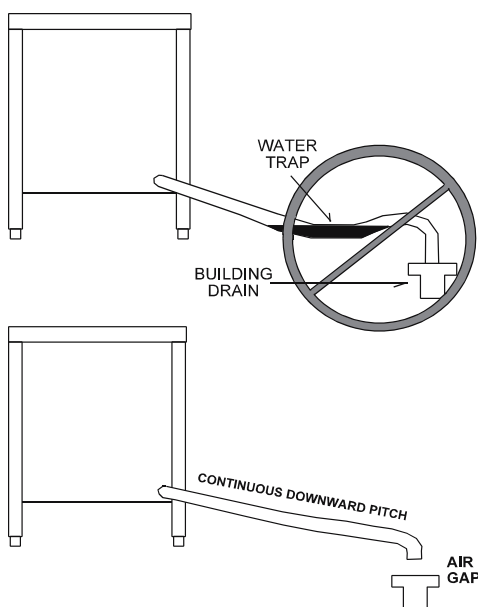
CAUTION

MAKING ELECTRICAL OR MECHANICAL CHANGES TO THE UNIT WITHOUT APPROVAL FROM THE FOOD SERVICE ENGINEERING DEPARTMENT WILL VOID WARRANTIES.

IMPORTANT
IMPROPER DRAIN CONNECTION
WILL VOID WARRANTY.

CAUTION

DO NOT LOCATE THE BOILER CABINET DIRECTLY OVER A FLOOR DRAIN OR FLOOR SINK. HUMIDITY OR WATER WILL DAMAGE ELECTRICAL.



Leave an air gap between the hose and the building drain, and don't allow water traps in the line.

2. Electrical Supply Connection

- Power is supplied to cavity controls and blower from the boiler base, and no other electrical connections are required.
- The maximum electrical load is 4 AMP. You must provide 115 Volt Alternating Current, 60 Hz, 1PH, 15 AMP service. Local codes and/or the National Electrical Code should be followed (ANSI/NFPA-70-1987 - or latest edition). AN ELECTRICAL GROUND IS REQUIRED.
- The electrical schematic is located in the electrical enclosure and in this manual. In Canada provide electrical service in accordance with the Canadian Electrical Code, CSA C22.1, Part 1 and/or local codes.

3. Water Supply Connection

- This Model features two separate water inlets – one for the steam boiler (treated water), the other for the spray condenser (untreated water). The second intake will reduce treatment requirements resulting in significant savings.
- Cold water should be supplied to a 3/8" NPT pipe connection for untreated water at the rear of the unit. A back siphonage device (check valve) must be installed, complying with local plumbing codes. The water pressure should be between 30 and 60 PSI (210 to 410 kPa). A pressure regulator is required above 60 PSI (410 kPa). A strainer screen at the connection is also recommended, to trap debris before it can enter the system.
- The condenser spray uses 0.70 to 0.95 gallons of water per minute (2.6 to 3.6 liters per minute) at 30 to 60 PSI (210 and 410 kPa). The spray will only operate when a steamer cavity (cooking chamber) is in operation.
- Water supply lines should be sized to provide for maximum water use (the total of the boiler and condenser spray) as shown in the following table:

Maximum Water Consumption-gal/hr (L/hr)

Gas boiler only 12.9 (48.8)

Steamer condenser spray only

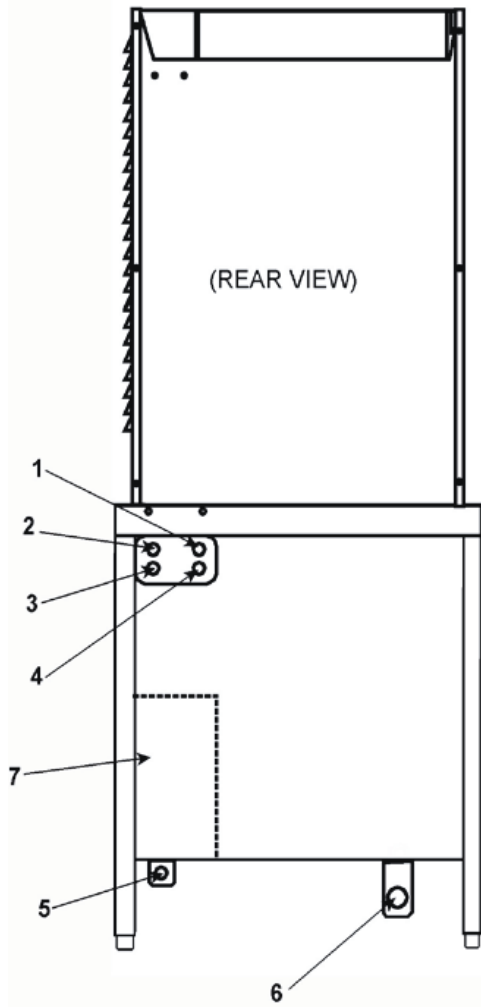
AT 40 PSI (280 kPa) 47.4 (180)

AT 60 PSI (410 kPa) 57.0 (215)

4. Drain Connection

- The drain connection is made at the rear of the unit, using a 1-1/4" NPT pipe. Do NOT use plastic pipe — the piping must be able to withstand steam and hot water. Extend the drain piping to a nearby floor drain. Piping of 1 - 1/4" NPT (or 1 - 1/2" NPT) is acceptable for distances of six feet or less. If the distance to the drain is further than six feet, use 2" NPT piping.
- Install the drain line with a constant downward pitch. Do not allow any water traps in the line. A trap can cause pressure to build up inside the cavity during steaming, which will make the door gasket leak. A vertical air gap must be maintained between the drain line and the building drain, unless otherwise specified by local plumbing codes.

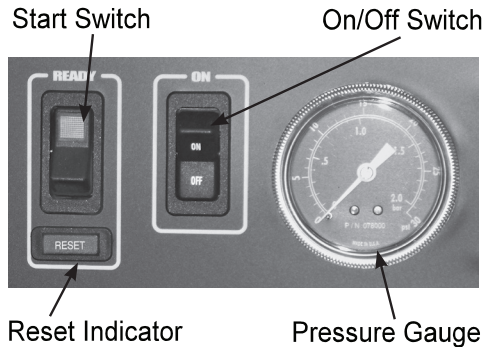
Installation



5. Utility Connections

- a. Hot water (for faucet on 36" and wider units with kettles).
- b. Steam outlet (for power take-off).
- c. Cold water (treated).
- d. Cold water (untreated).
- e. Gas, natural or propane.
- f. Drain (for boiler, steamers and condenser spray). Also for kettle condensate and sink where used.
- g. Electrical (conduit through underside, terminals at the right on the inside).

Initial Start-Up



Operating Controls are located on the front of the cabinet base unit.

After the unit has been installed, test it to ensure that it is operating properly.

1. Remove literature and packing material from the interior and exterior of the unit.
2. Make certain the water supply is turned on.
3. Turn on electrical power to the unit.
4. Make sure the gas supply line is open, and turn on the gas valve.

Turn the knob on the gas valve to the "ON" position.

NOTE: The "trial for ignition" period is approximately 90 seconds after the on/off switch is turned to the "ON" position. (Refer to the Control Panel illustration in the Operation Section).

During initial start-up several trials may be necessary to remove air from the gas piping. Subsequent start-ups should only need about five seconds for the pilot to light. If the pilot burner does not light within the trial period, the ignition system will automatically stop gas flow to the pilot burner, and terminate the ignition trial. If this happens, turn the switch to "OFF" and then "ON" again, to repeat the trial for ignition.

5. Turn the on/off switch on the cabinet front panel to the "ON" position:
 - The amber light in the switch will come on
 - The boiler drain valve will close
 - The unit will fill with water

When the water level reaches the "mid" probe, the red RESET light will come on. Push the start switch.

- The green light in the switch will come on
- The RESET light will go out
- The main burner will light

When the water level reaches the "hi" probe, the water supply to the boiler will shut off.

6. After about 15 minutes, the pressure on the gauge will rise. When the pressure reaches 9- 1/2 PSI, the main burner will turn off. Thereafter, as pressure decreases, the burner will automatically re-light to maintain the 9-1/2 PSI level. The pilot burner should stay lit, even though the main burner cycles on and off.
7. To shut the unit down, turn the on/off switch to OFF. When it has cooled to approximately 170°F, the boiler will automatically drain.

The pilot is off when the on/off switch is OFF.

If the boiler functions as described above, it is ready for use. If it does not, contact your authorized Service Agent.

Initial Start-Up

WARNING
STAY AWAY FROM STEAM COMING OUT
FROM THE UNIT. STEAM CAN CAUSE
SEVERE BURNS.



8. When steam is available for the cavity, choose one of the following:

- a. Set the timer to the desired time for timed steaming.
- b. Turn the timer to the manual ON position for continuous steam.

NOTE: The door must be shut before steam will enter the cavity. If the door is opened when the timer is on, the flow of steam will stop.

- c. Let the steamer sit idle until needed.

9. If the unit will not be used for an extended period, turn off power to the individual steamer compartments. Turn off power to the gas or electric pressure boiler. Refer to the steam boiler operator manual, if necessary.

If the unit functions as described above, it is ready for use. If it does not, contact your Authorized Service Agent.

Operation

WARNING
ALL POTENTIAL USERS OF THE EQUIPMENT
SHOULD BE TRAINED IN SAFE AND CORRECT
OPERATING PROCEDURES.

A. Controls

Operating controls are located on the front panel of the unit.

1. The on/off switch starts the unit or shuts it off.
2. The RESET indicator lights to show that the boiler has filled with water and that the main burners can ignite.
3. The start switch (momentary) lights the main burners. It also restarts the unit if electrical power is interrupted, or if a low water condition in the boiler disables the unit.
4. In addition to operating these controls, there are gas supply controls located on the gas valve.

When the control knob is “ON,” gas flows to the pilot, as well as to the main burners.

Timers are located on the front right side of the unit. There are two timers — one each for the upper and lower cavities.

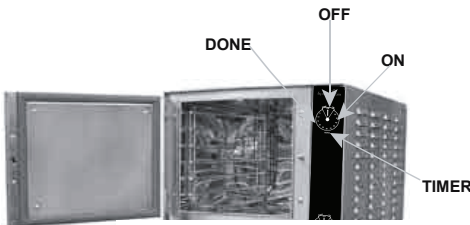
The timer is used in two ways:

5. Turning the timer to any setting delivers steam to the cavity until the timer runs down to OFF. At that time a red LED switches on and a beeper sounds and the steam flow to the compartment stops.
6. When turned all the way to the ON position, the timer allows continuous steaming. A green LED is turned on, and the timer does not time down. Steam continues until the timer knob is turned to the OFF position.

Operation

WARNING
ANY POTENTIAL USER OF THE EQUIPMENT
SHOULD 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.



Timer Controls for each of the two
cavities are identical.

B. Operating Procedure

1. Turn on the unit's water supply.
2. Turn on electrical power to the unit.
3. Turn on the gas supply to the unit, and turn on the gas valve. Turn the control knob on the gas valve to the "ON" position.

NOTE: The "ignition trial" period runs for approximately 90 seconds after the on/off switch is turned ON. This means that if the pilot light does not light within the "trial" period, the ignition system will automatically stop the gas flow and terminate the ignition trial. If ignition is terminated, turn the switch off and then "ON" again to repeat the trial. Normally, the pilot should light within five seconds of turning on the unit.

- a. Turn the on/off switch on the front of the cabinet to "ON."
 - 1) The amber light will come on.
 - 2) The boiler drain valve will close and the unit will fill with water.
 - 3) When the water reaches the "mid" probe, the red RESET light will come on.
 - 4) Press the start switch.
 - 5) The green light in the switch will come on, the RESET light will go off, and the main burner will light.
 - 6) When the water level reaches the "hi" probe, the water supply to the boiler will shut off.
 - b. After about 15 minutes, the pressure gauge will indicate that the pressure is rising. When it reaches 9-1/2 PSI, the main burner will shut off. Thereafter, the burner will periodically relight to maintain the pressure at 9-1/2 PSI. The pilot light should stay lit when the burner is off.
 - c. To shut down the unit, turn the on/off switch to OFF. The unit will drain automatically after it has cooled to about 170°F. The unit turns off the pilot light when the on/off switch is turned to OFF.
4. Load food into pans so that it is in uniform layers. For best results, pans should be filled to about the same levels, and should be even on top.
 5. Open the door and slide the pans onto the supports. If you will only be steaming one pan, put it in the middle rack position.
 6. Close the door.

NOTE: The door must be closed before steam will enter the cavity. If the door is opened when the timer is on, the steam will stop.

Operation

7. Turn the timer to one of the following settings:
 - a. If you want to steam for a definite period of time, set the timer to that time. Steam will be delivered to the cavity for that time, and then stop. A buzzer and red LED will indicate that the timed cycle is complete. Steam flow stops.
 - b. If you want to steam continuously, turn the timer to the ON position. A green light will come on. Steam will be delivered to the cavity until the timer is returned to OFF.
8. Open the door.
9. Using a pad or oven mitt to protect your hands, remove the pans from the steamer.
10. To shut down the steamer, turn the Timer to the OFF position.

Sequence of Operation

CAUTION

WAIT AT LEAST 60 SECONDS BEFORE ATTEMPTING TO RE-LIGHT THE MAIN BURNER AFTER IT SHUTS OFF.

CAUTION

ESCAPING STEAM MAY CAUSE SEVER BURNS. STAY AWAY FROM THERMOSTATIC AIR VENT AND PRESSURE RELIEF VALVES.

When electrical power is turned on to the unit, the following happens:

- The drain valve closes
- The water valve opens
- The unit fills with water

As the boiler fills, the water is detected by two probes. The first of these is the “mid” probe, which activates the RESET light. The second (“hi” probe) is reached when the boiler is full, and shuts off the water supply. As the water supply drops below this probe, the water supply opens until it is again reached.

The gas valve has a step-opening feature. When the control calls for the main burner to light, the outlet pressure of the valve is maintained at a preset (non-adjustable) rate for several seconds, before full rated pressure is allowed to develop.

Once the main burner shuts down, step-opening gas valves need at least 60 seconds to reset. If an attempt to re-light the burner is made before these valves reset, it may bypass or shorten the length of the low pressure step, and could re-light the main burner under full flow rate.

A thermostatically-controlled air vent remains open while the boiler fills. As steam begins to develop, this vent will close. Some steam may escape from this vent before it is fully closed (at approximately 200°F).

Once the pressure has reached 9-1/2 PSI, the main burner will be shut off by an operating pressure switch. Residual heat stored in the boiler’s heat exchanger can, however, cause the pressure to continue to build, even after the burner has shut down. This is especially true when the unit is heated for the first time.

If/when the pressure reaches 12 PSI, a relief valve will open to prevent pressure from increasing past 12 PSI. As pressure decreases, the main burner will automatically re-light to maintain 9-1/2 PSI.

Even if something causes the pressure to pass 12PSI, a high-limit safety switch will shut down the boiler electrically when it reaches 14-1/2 PSI. If this happens, the unit should not be re-started until the problem which caused the shut-down has been corrected.

As an additional safety measure, the unit is equipped with an A.S.M.E.-certified safety valve which will open to relieve excess pressure at 15 PSI. The ability of this valve to discharge steam pressure is greater than the boiler’s ability to generate steam.

When electrical power is turned off, the gas valve automatically shuts off flow to the main gas burner.

A thermostatic switch (mounted on the boiler shell) keeps the drain valve closed until the temperature drops to approximately 170°F.

At that point, the thermostatic switch opens and water drains from the boiler. A vacuum breaker allows air to enter the boiler for this purpose.

Steamer Compartment 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.

DON'T MIX DE-LIMING AGENTS (ACID) WITH DE-GREASERS (ALKALI) ANYWHERE IN THE UNIT.

AVOID CONTACT WITH ANY CLEANERS, DE-LIMING AGENT OR DE-GREASER 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 REMOVABLE INTERIOR PARTITIONS HAVE BEEN PUT BACK IN THEIR PROPER LOCATIONS.

DON'T USE ANY CLEANING OR DE-LIMING 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. DON'T USE ANY CLEANING OR DE-LIMING AGENT THAT CONTAINS MORE THAN 30% PHOSPHORIC ACID.

IMPORTANT

DO NOT USE ANY METAL MATERIAL (SUCH AS METAL SPONGES) OR METAL IMPLEMENT (SUCH AS A SPOON, SCRAPER OR WIRE BRUSH) THAT MIGHT SCRATCH STAINLESS STEEL SURFACES. 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.

To keep your Steamer in proper working condition, clean the unit each day. This regular cleaning will reduce the effort required to clean the cavities.

A. Suggested Tools

1. Mild detergent
2. Stainless steel exterior cleaner such as Spray Degreaser, Zepper®
3. De-greaser, such as EncompasS®, Malone 34®, Puritan Puribruite®, or Con-Lie®
4. Cloth or sponge
5. Plastic wool or a brush with soft bristles
6. Spray bottle
7. Measuring cup
8. Nylon pad
9. Towels
10. Plastic disposable gloves

B. Procedure

1. Outside

- a. Prepare a warm solution of 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. Do not allow freely running liquid to touch the controls, the control panel, any electrical part, or any panel louver.
- b. To remove material which may be stuck to the unit, use plastic wool, a fiber brush, or a plastic or rubber scraper with a detergent solution.
- c. Stainless steel surfaces may be polished with a recognized stainless steel cleaner such as Zepper®.

2. Inside

Remove the fan/baffle partition from inside the unit and place it into a utility sink. Wash the cooking chamber(s) and fan/baffle partition with a warm solution of mild detergent and water. If needed, use a de-greaser with a plastic scouring pad. Rinse parts thoroughly with clean water and replace fan/baffle partition. Make sure the drain holes at the back of each cavity are free of food particles or other debris.

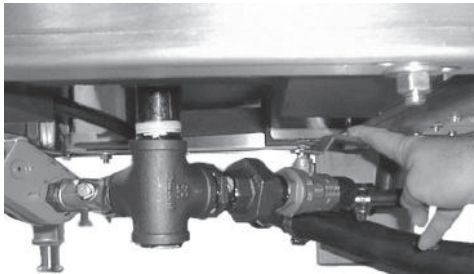


Boiler Cleaning

WARNING
WATER AND VALVES MAY BE VERY HOT,
AND MAY CAUSE BURNS. PROTECT HANDS
FROM HOT SURFACES AND WATER.

WARNING
USE SAFETY GLASSES AND RUBBER
GLOVES AS RECOMMENDED BY DE-LIMING
AGENT MANUFACTURER.

CAUTION
DO NOT USE A CLEANING OR DE-LIMING
AGENT THAT CONTAINS SULFAMIC ACID
OR ANY CHLORIDES, INCLUDING
HYDROCHLORIC ACID (HCL). IF THE
CHLORIDE CONTENT OF ANY PRODUCT IS
UNCLEAR, CONSULT THE MANUFACTURER.



The manual drain valve is located under the boiler.

Whenever the boiler is turned off and allowed to cool to about 170°F, it drains automatically. This should be done every day to minimize scale buildup inside the boiler.

In addition to this draining, however, the following cleaning procedure should be followed using a regular schedule. This will prevent the accumulation of lime on the water level probes and interior surfaces of the boiler. The actual time between these scheduled cleanings depends on the water quality and hours of operation. Minimally, We recommend cleaning the boiler at least once each month.

A. Suggested Tools

1. 1/2" hardened square wrench extension
2. Pipe Joint compound (approved for 300°F steam)
3. Delimer Descaler
4. Spray Degreaser
5. Nylon pad(s)

B. Procedure

1. Turn the boiler on/off switch to the OFF position.
2. Slowly open the manual drain valve to empty the boiler. The valve is located under the boiler.
3. Close the manual drain valve.
4. Turn off water supply to the boiler.
5. Allow the boiler to cool. This takes several hours, so it is recommended that you cool the boiler overnight.
6. Turn on/off switch to "ON" to close the automatic drain valve.
7. Using a 1/2" hardened square wrench extension, remove one of the 1" NPT pipe plugs from the front of the boiler.
8. Pour 32 ounces of de-limer into the boiler.
9. Replace the pipe plug. Use pipe joint compound, and tighten the plug securely.
10. Turn on water supply to allow water to fill the boiler.
11. When the reset light appears, press the START switch.
12. Allow boiler pressure to develop. Let it stand for approximately 15 minutes after pressure has built up. A badly limed unit may require more than 15 minutes.

Cleaning

WARNING
SOLUTION AND VALVES WILL BE VERY HOT,
AND MAY CAUSE BURNS. PROTECT HANDS
FROM HOT SURFACES AND CONTINUE TO
USE PROTECTIVE GLOVES.



13. Set steamer timers for 10 minutes.
14. When steamer timers sound, turn them to OFF and open the doors.
15. When the fans have stopped, remove fan baffle partitions using protective gloves, and rinse with clean water.
16. Completely wipe out steamer chambers using a degreaser and nylon pad, if necessary. Rinse thoroughly with clean water.
17. Replace fan baffle partitions.
18. Wait 10 minutes for the compartments to air dry, then close the steamer doors.
19. Turn the on/off switch OFF, and slowly open the manual drain valve.
20. When the boiler has drained completely, close the manual drain valve and turn the on/off switch to "ON" to fill the boiler with water.
21. After the RESET light comes on, press the start switch.
22. Allow boiler pressure to develop. If steamers are not present, proceed to step 25.
23. Set steamer timers for 10 minutes.
24. When steamer signal sounds, turn timers off.
25. If the boiler is not to be used, it may be turned off. It is ready for normal operation.

Steamer Maintenance

WARNING
BEFORE REPLACING ANY PART TURN OFF
THE ELECTRICAL POWER TO THE UNIT.
DEATH OR INJURY COULD RESULT FROM
CONTACT WITH HIGH VOLTAGE.



The Steamer is designed for minimum maintenance, and no user adjustments should be necessary. Certain parts may need replacement after prolonged use. If there is a need for service, only Authorized Service Representatives should do the work.

Periodic Inspection: The manufacturer recommends that service personnel check the unit thoroughly at least once a year. The inspection should include electrical wires and connections. The inside of the control compartment should also be thoroughly cleaned.

Door Latch Adjustment: If steam or condensate is observed leaking from around the door, take the following steps:

1. Check the condition of the door gasket. Replace it if it is cracked or split.
2. Inspect the cooking chamber drain for blockage.
3. Adjust the latch pin to allow for changes that might occur as the gasket ages.
 - a. Loosen the lock nut at the base of the latch pin, then turn the latch pin $\frac{1}{4}$ turn clockwise, and tighten the lock nut.
 - b. After adjustment, run the unit to test for further steam leakage.
 - c. If there is still leakage, repeat.
 - d. Continue adjusting the pin clockwise until the door fits tightly enough to prevent leakage.
 - e. If leakage is still present, repeat steps a. through c. until leakage stops.

A Maintenance and Service Log is provided at the back of this manual. Each time maintenance is performed on the unit, enter the date the work was done, what was done, and who did it.

Maintenance

WARNING
USE ONLY MANUFACTURER-SUPPLIED PARTS.
USING SUBSTITUTE, UNAUTHORIZED OR
“GENERIC” PARTS CAN CAUSE BODILY
INJURY TO THE OPERATOR AND DAMAGE
THE EQUIPMENT.

WARNING
DO NOT EXPOSE SKIN TO ESCAPING STEAM.
SEVERE BURNS MAY RESULT.



One of the pressure relief safety valves is located on the top left rear of the boiler.

Your boiler is designed to minimize maintenance, but certain parts may need to be replaced after prolonged use. For the most part, no user adjustments should be necessary. If a need for service arises, only Authorized Representatives should perform the work.

Among the most common problems is the rapid build-up of scale in the boiler. To avoid this, always supply water that has a low mineral content, which meets the standards described in the Water Quality section of this manual.

A. Periodic Inspection

The unit should be inspected by a qualified service technician at least once each year. The inspection should include electrical wires and connections, cleaning the inside of the control enclosure and pilot burner adjustment, if required.

At the back of this manual (with the information about our warranty) is a Maintenance and Service Log. Each time maintenance is performed on the unit, enter the date on which it was done, what was done, and who did it. Keep this log with the warranty.

In addition to yearly inspections by a qualified service technician, a weekly check of the following will help prevent down time and ensure continued efficient operation.

1. Pressure gauge operation
2. Proper water level (gauge)
3. Strainer in water feed line (clear?)
4. Air inlets for gas burner jets (clean?)
5. Pilot burner flame (blue? Envelops sensor?)
6. Drain piping (free running? No blockage?)

At least twice each month, check the safety valve to be sure it is working properly. When pressure reaches five PSI on the gauge, lift the lever to vent steam, then release it, allowing it to snap back into place.

B. Component Replacement

Boilers are easy to service. The design is simple, and controls are readily accessible.

Before replacing any part, **COMPLETELY SHUT OFF THE GAS AND ELECTRICAL POWER TO THE UNIT.** When breaking (opening) a gas pipe connection, allow five minutes for gas to dissipate before proceeding.

When the pipes have been reconnected, check for leaks with a thick soap solution or other suitable leak detector. **Do not use flame to check for gas leaks.**

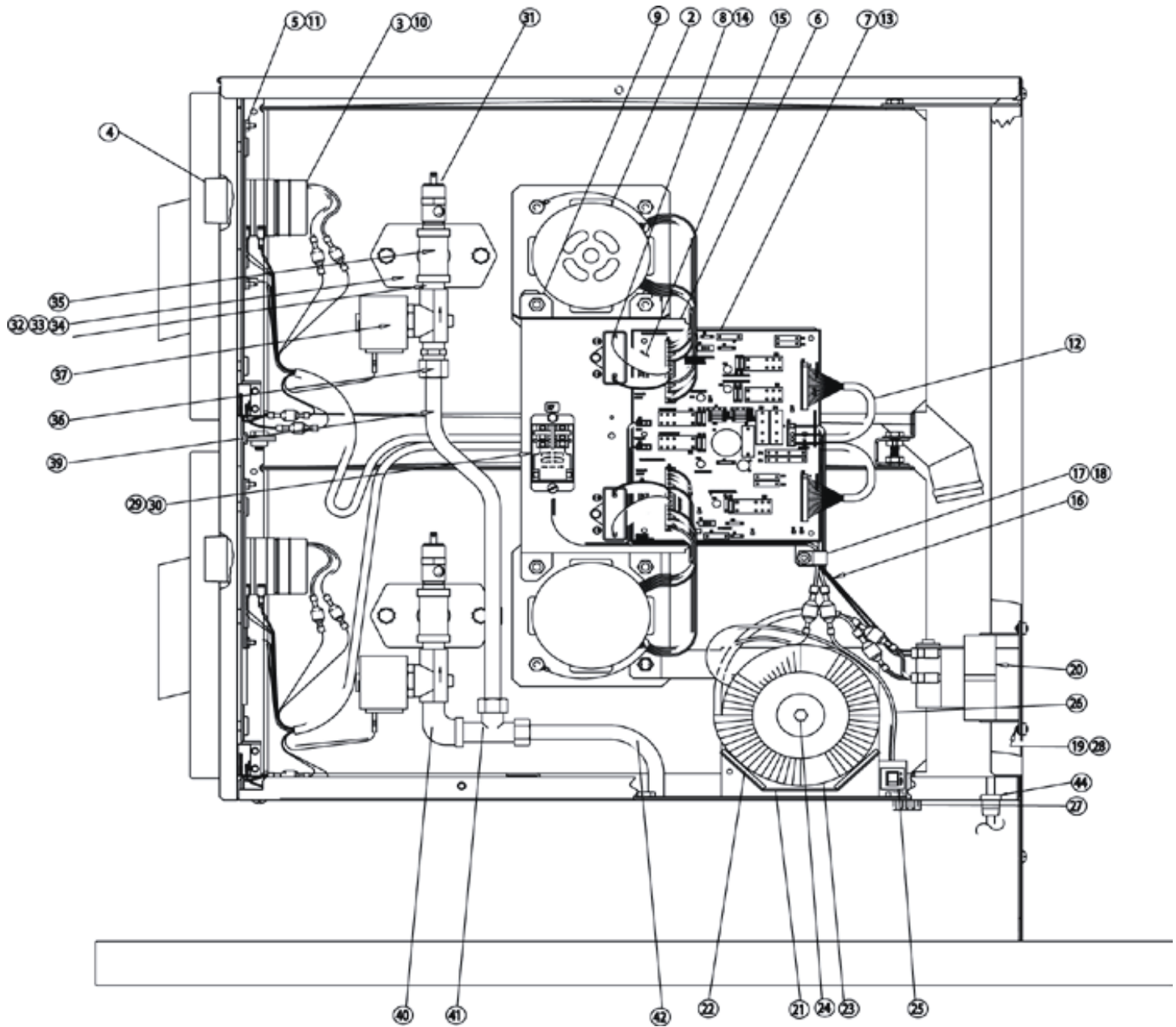
Troubleshooting

Do not operate the unit if it malfunctions or has damaged or broken parts. Steam boilers are designed to operate smoothly and efficiently when maintained properly. However, the following is a list of checks to make if there is a problem. Electrical schematics are provided in this manual, and inside the unit electrical enclosure. IF THE ITEM ON THE LIST IS MARKED WITH (X), THE WORK SHOULD ONLY BE DONE BY A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE.

SYMPTOM	WHO	WHAT TO CHECK
Boiler does not fill with water.	User	a. Is water supply connected and is water present? b. Is water pressure low (less than 30 PSI)? c. Is strainer screen (if used) clogged? d. Is on/off switch in base cabinet turned on? Is the amber light in the on/off switch ON ? e. Is the manual drain valve open?
	Authorized Service Rep Only	f. Is the Water Level Control Board defective? Check for loose electrical connections on water fill solenoid. (X) g. Is the water fill solenoid valve defective? (X) h. Is the solenoid drain valve open or leaking? Check for loose electrical connections on solenoid drain valve. (X)
Boiler overfills with water.	User	a. Is the boiler level? Check levelness of unit with a spirit level. b. Is the water pressure too high? (Greater than 60 PSI?)
	Authorized Service Rep Only	c. Is the Water Level Control Board defective? Check for loose electrical connections on “hi” water fill solenoid. (X) d. Is the water fill solenoid valve defective? (X) Check for debris on valve seat. e. Is the hi water probe sensing level? Clean water level probe and probe well (located in boiler). (X)
Boiler under fills with water.	User	a. Is the boiler level? Check levelness of unit with a spirit level.
Water enters boiler slowly.	User	a. Is strainer screen (if used) clogged? b. Is the water pressure too low? (Less than 30 PSI)? c. Is the water supply line too small?
	Authorized Service Rep Only	d. Is the water fill solenoid defective? (X)
RESET light does not come on.	Authorized Service Rep Only	a. Is the Is the Water Level Control Board defective? Check for loose electrical connections on “mid” water fill solenoid. (X) b. Is the mid water probe sensing level? Clean water level probe and probe well (located in boiler). (X) c. Is the indicator light defective? (X)
Pilot burner will not light (spark ignition).	User	a. Is supply gas valve open? b. Is gas valve knob in the ON position? c. Is the boiler filled with water? Is the green light in the start switch ON ?
	Authorized Service Rep Only	d. Does the pilot flame require adjustment? Screw attachment on gas valve. (X) e. Is the gas valve defective? (X)
Pilot burner will not stay lit.	Authorized Service Rep Only	a. Does the pilot flame require adjustment? Screw attachment on gas valve. (X)

Troubleshooting

SYMPTOM	WHAT TO CHECK
Timer control will not operate	<ul style="list-style-type: none">a. Is the electrical supply turned on?b. Is the ON/OFF switch in the base cabinet turned on?c. Is boiler started? Is the green light in the ON/OFF switch lit?d. Are any fuses blown?
No steam to cavities	<ul style="list-style-type: none">a. Has steam pressure developed?b. Is steam supply turned on?c. Is the door closed? (Doors must be closed before steam will enter the cavity).
Door leaking steam or water	<ul style="list-style-type: none">a. Are the drain holes at the rear of the cavity blocked?b. Does the door gasket need replacement?c. Is the door latch in need of adjustment? (See the Maintenance section).d. Is the unit level?
Excessive steam coming from the vent pipe	<ul style="list-style-type: none">a. Is the water supply turned on?b. Is the condenser hose kinked or obstructed?c. Is the condenser spray solenoid working?

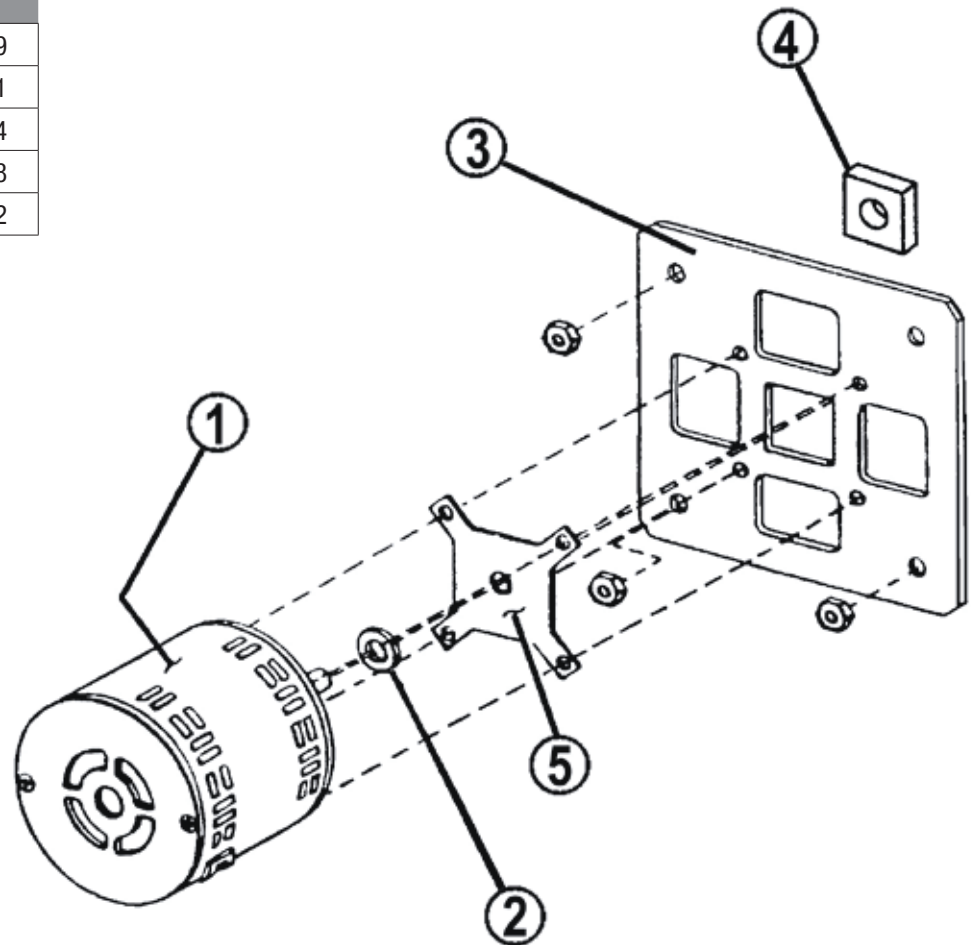


Steamer Cavity

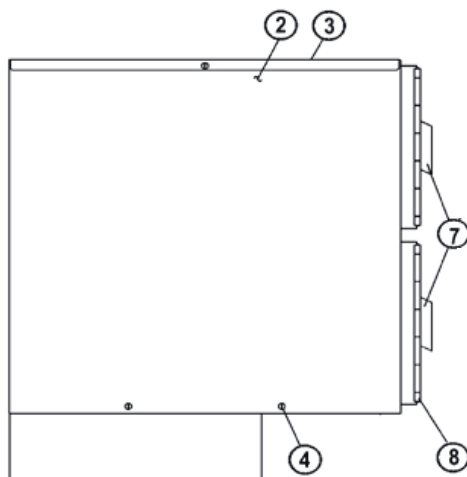
Parts List

Key	Description	Part #	Key	Description	Part #
1	UPPER CAVITY DRAIN HOSE	088847	20	TRANSFORMER, 75VA 110V - SG	121715
2	MOTOR ASSEMBLY	096740	21	BRACKET, TRANSFORMER MTG - SE - 480V	102287
3	TIMER	096826	22	RUBBER PAD - SE - 480V	102292
4	KNOB, TIMER	123100	23	TRANSFORMER, 230V - SE - 480V	101111
5	PC BOARD, HY-PLUS LIGHT AND TIMER	130457	24	SCREW, 1/4-20 X 2-1/4 - SE - 480V	119836
6	BRACKET, BOARD MTG	096888	25	CIRCUIT BREAKER, 2 AMP - SE - 480V	119836
7	STEAMER CONTROL BOARD	102222	26	WIRE, 4" - SE - 480V	130467
8	CAPACITOR, 6 MFD - SM & SG	096812	27	BUSHING - SG & SE	012864
8	CAPACITOR, 3 MFD - SE	096813	28	LOCK WASHER #8 - SG & SE	12971
9	SHIELD, MOTOR DRIP	119844	29	RELAY, DPDT 24VAC - SG & SE	121733
10	NUT, ROTARY SHAFT SEAL	101145	30	SCREW, 8-32 X 3/8 - SG & SE	069789
11	NUT, KEPS 6-32	071289	31	VALVE, SAFETY	143470
12	HARNESS, UPPER CONTROL	130450	32	MANIFOLD FITTING	099249
13	POST, PC BOARD MTG	099901	33	GASKET	099250
14	SCREW, 6-32	069777	34	NUT, 1/4-20	012940
15	JUMPER, VOLTAGE SELECT - SM & SG	100959	35	TEE	013201
15	JUMPER, VOLTAGE SELECT - SE	100960	36	SOLENOID VALVE	113014
16	HARNESS, SPRAY VALVE - SM	137834	37	NIPPLE, 3/8	013202
16	HARNESS, SPRAY VALVE - SE & SG	130449	38	CONNECTOR	054493
17	CABLE CLAMP	087958	39	TUBE, UPPER	100551
18	NUT, 10-32	071256	40	ELBOW	042364
19	NUT, 8-32	002632	41	TEE	100553
20	TRANSFORMER, 75VA 480V - SE - 480V	121717	42	TUBE, SUPPLY	100552
20	TRANSFORMER, 75VA 208/240V - SE	121716	43	LOWER CAVITY DRAIN HOSE	088848

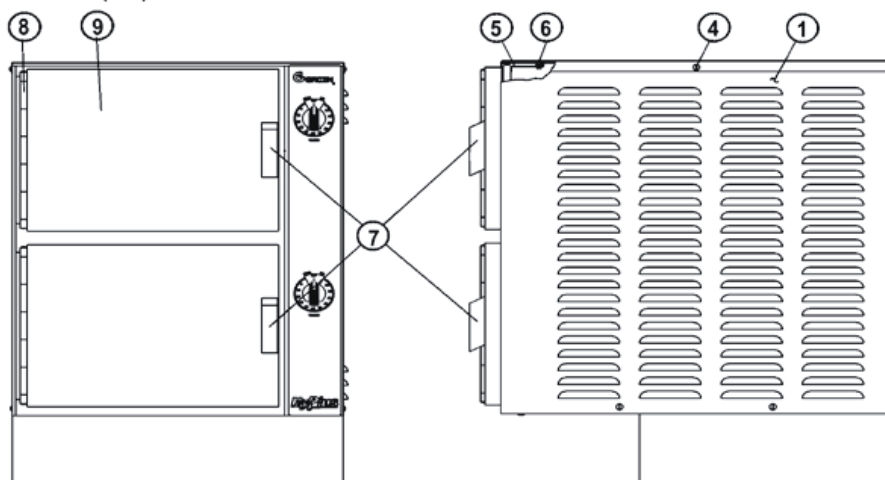
Key	Description	Part #
1	MOTOR	096739
2	SLINGER WASHER	096831
3	MOTOR MOUNTING PLATE	094134
4	SHAFT SEAL	096868
5	PLATE SEAL HOLDER	096752



Key	Description	Part #
1	COVER, RIGHT SIDE (6-PAN)	143778
1	COVER, RIGHT SIDE (10-PAN)	-
2	COVER, LEFT SIDE (6-PAN)	123184
2	COVER, LEFT SIDE (10-PAN)	-
3	COVER ASSEMBLY, TOP	123182
4	SCREW, 10-32 X 3/8 TRUSS HEAD	004173
5	RETAINER, TOP	123156
6	SCREW, 8-32 X 3/8 SLOTTED HEX HEAD	004173
7	DOOR HANDLE	070123
8	DOOR HINGE (6-PAN)	094143
8	DOOR HINGE (10-PAN)	-
9	OUTER DOOR (6-PAN)	094140
9	OUTER DOOR (10-PAN)	-



LEFT SIDE (TOP)



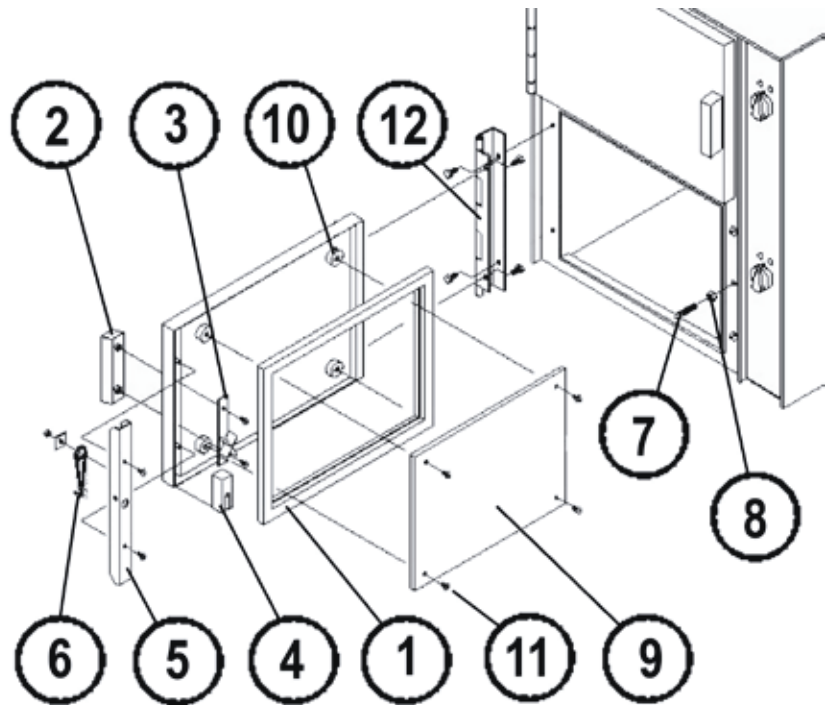
FRONT VIEW (TOP)

Door & Cavity Hardware

Parts List

Key	Description	Part #
1	DOOR GASKET (6-PAN)	094147
1	DOOR GASKET (10-PAN)	-
2	DOOR HANDLE	070123
3	DOOR CAM	074252
4	MAGNET ASSEMBLY	069762
5	U-CHANNEL ASSY. (6-PAN) (INCL. DOOR SPRING 078911)	094144
5	U-CHANNEL ASSY. (10-PAN) (INCL. DOOR SPRING 078911)	-
6	LATCH SPRING	078911
7	LATCH PIN	078914
X	LEFT PAN RACK (6-PAN)	094148
X	LEFT PAN RACK (10-PAN)	-
8	LOCK NUT	003823
9	INNER PANEL (6-PAN)	094141
9	INNER PANEL (10-PAN)	-
10	DOOR SPACER	071206
11	DOOR SCREWS	005764
12	DOOR HINGE (6-PAN)	094143
12	DOOR HINGE (10-PAN)	-
13	OUTER DOOR (6-PAN)	094140
13	OUTER DOOR (10-PAN)	-
X	INSULATE BOARD (6-PAN)	094142
X	INSULATE BOARD (10-PAN)	-
X	BLOWER COVER/RIGHT PAN RACK (6-PAN)	096788
X	BLOWER COVER/RIGHT PAN RACK (10-PAN)	-

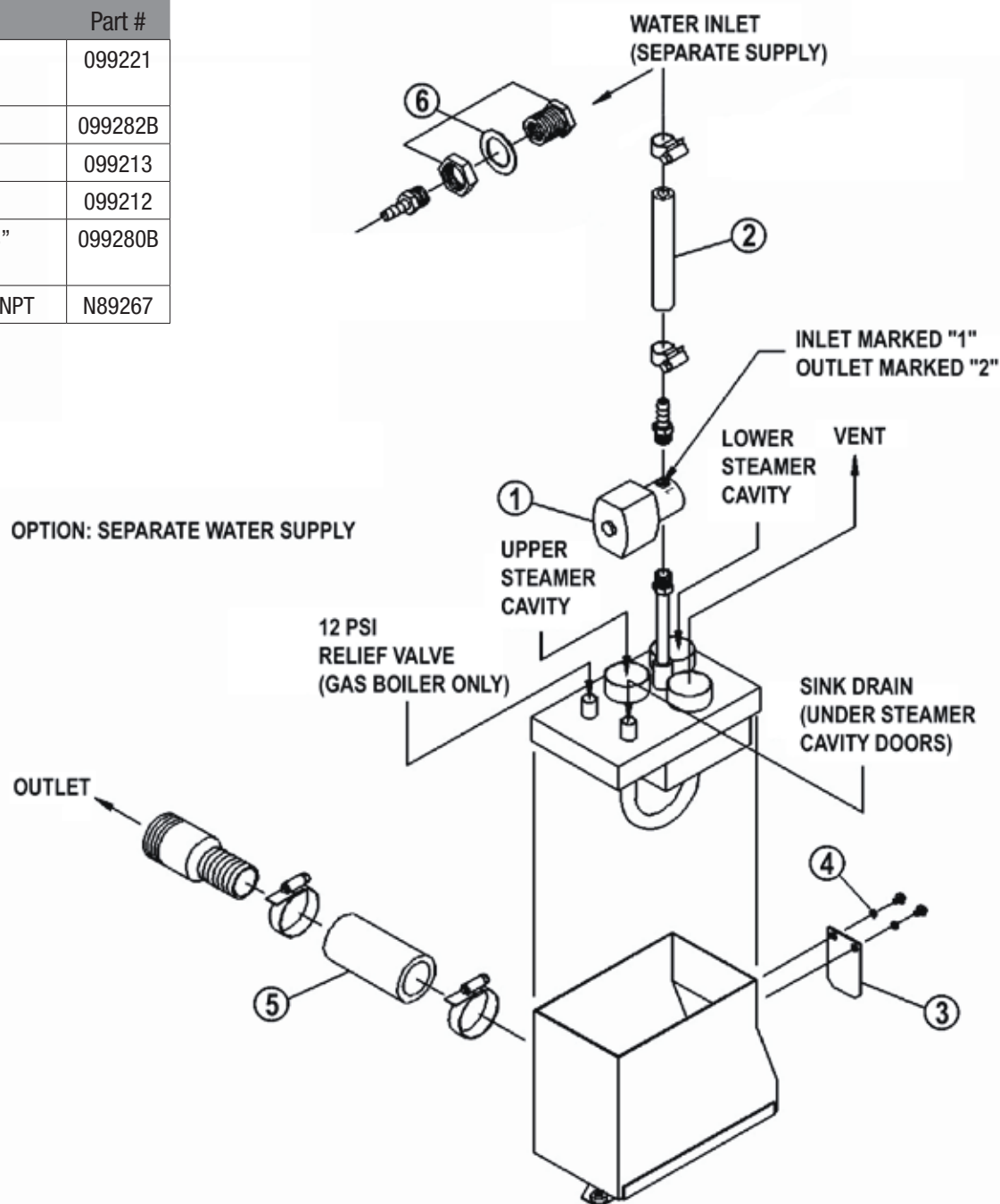
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Drain Box with Spray Condenser

Parts List

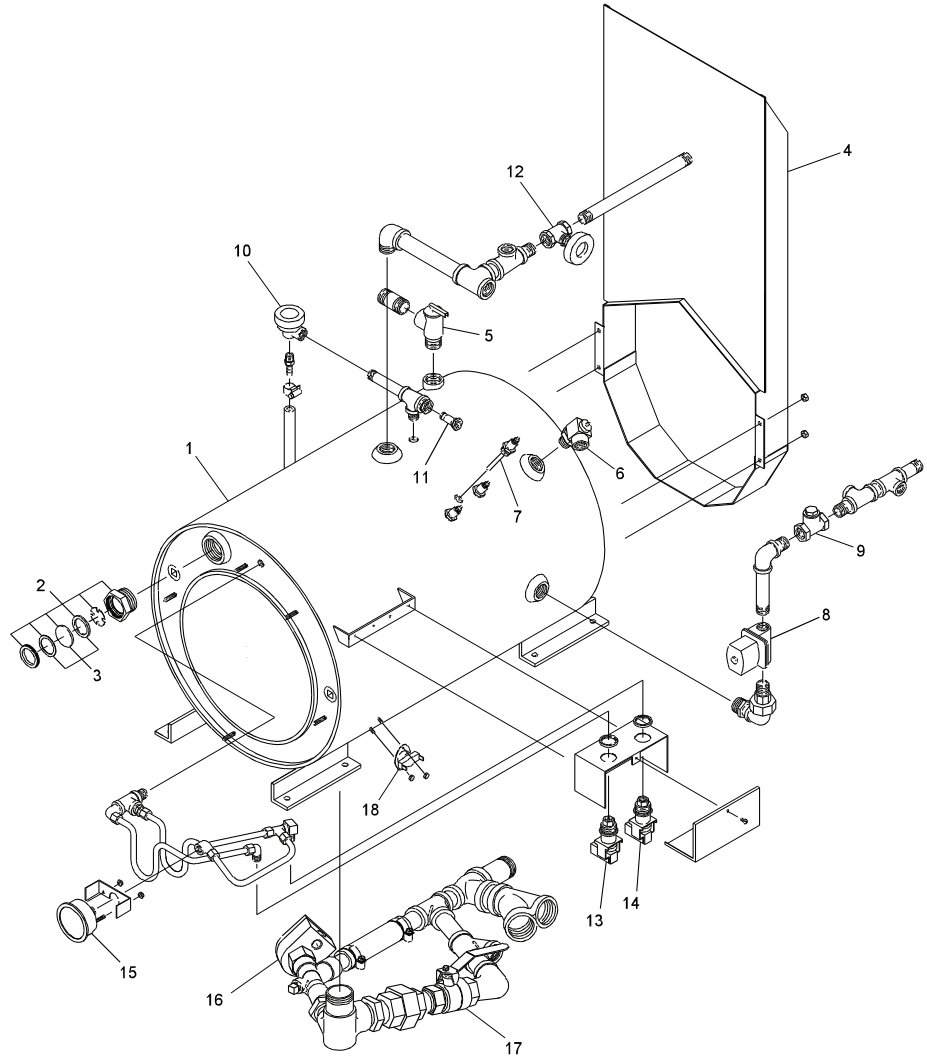
Key	Description	Part #
1	SOLENOID VALVE (SPRAY CONDENSER)	099221
2	HOSE D " ID X 8" LONG	099282B
3	RUBBER FLAP	099213
4	SPACER	099212
5	HOSE, OUTLET 1 "ID X 3" LONG	099280B
6	ANCHOR COUPLING, D" NPT	N89267



Gas Boiler

Parts List

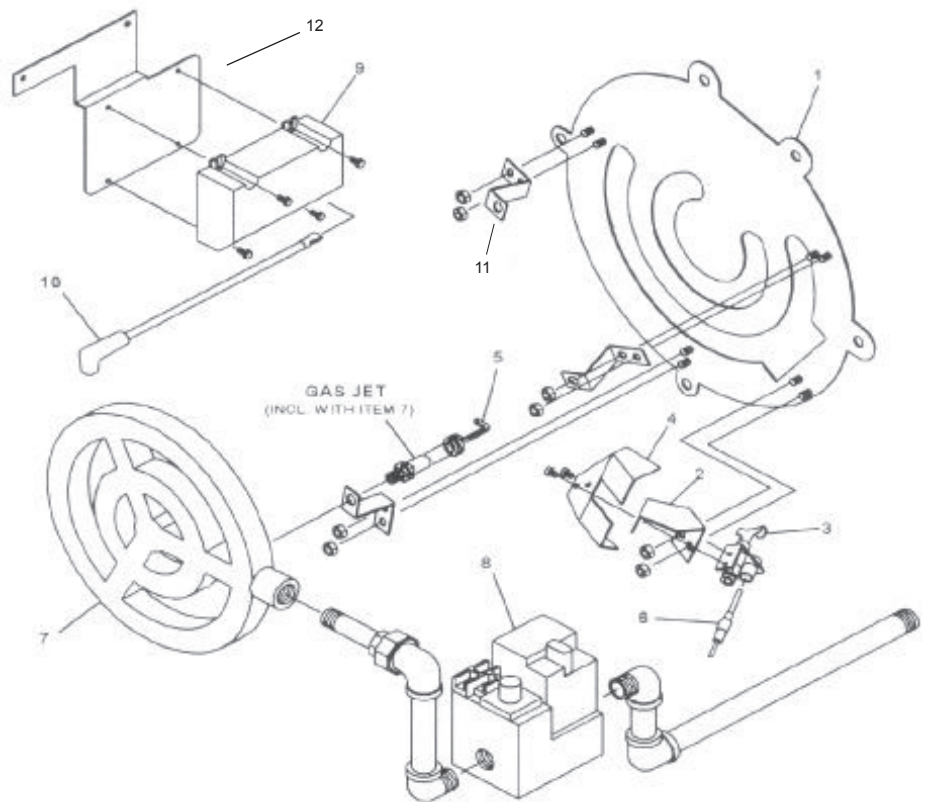
Key	Description	Part #
1	BOILER WELDMENT	MS98221
2	SIGHT GLASS ASSEMBLY	121754
3	KIT, REPAIR - SIGHT GLASS	097099
4	FLUE ASSEMBLY	099217
5	SAFETY VALVE (15PSI)	102297
6	PRESSURE RELIEF VALVE (12PSI)	099228
7	WATER LEVEL PROBES (LO, MED, HI)	076526
8	SOLENOID VALVE (WATER-IN)	099220
9	CHECK VALVE	004187
10	AIR VENT	145167
11	VACUUM BREAKER	090787
12	GLOBE VALVE 1/2"NPT	099255
13	OPERATING PRESSURE SWITCH-9½ PSI	099222
14	HI-LIMIT PRESSURE SWITCH-14½ PSI	118255
15	PRESSURE GAUGE	078000
16	SOLENOID VALVE (DRAIN)	074594
17	BALL VALVE (3/4" NPT)	003436
18	THERMOSTATIC SWITCH	077985



Burner & Gas Valve

Parts List

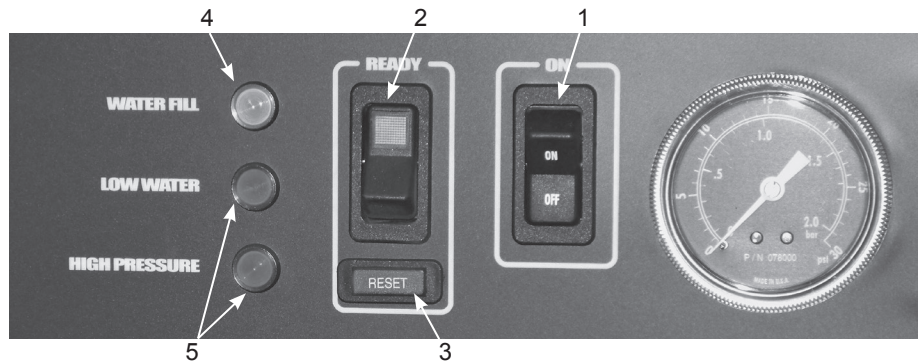
Key	Description	Part #
1	BAFFLE PLATE	083076
2	PILOT BURNER MOUNTING BRACKET	102257
3	PILOT BURNER W/ SPARK IGNITER-SENSOR	102258
4	SHIELD FOR PILOT BURNER	102260
5	FLAME DEFLECTOR (SINGLE LOOP) HOLDER FOR #640	056965
7A	MAIN BURNER ASSY 0-2000 FT. ELEV.(INCL. (29) GAS JETS W/ #54 DRILL DIA HOLE) FOR NATURAL GAS	047267
7A	MAIN BURNER ASSY 0-2000 FT. ELEV.(INCL. (29) GAS JETS W/ #68 DRILL DIA HOLE) FOR PROPANE GAS	050491
8	GAS VALVE (SPARK IGNITION) FOR NATURAL GAS	101497
8	GAS VALVE (SPARK IGNITION) FOR PROPANE GAS	104391
9	SPARK IGNITION MODULE	085153
10	IGNITION CABLE	106495
11	BURNER MOUNTING BRACKET	050490
12	KIT, SPARK IGNITION MODULE (INCLUDED BRACKET, MODULE AND CABLE)	137312



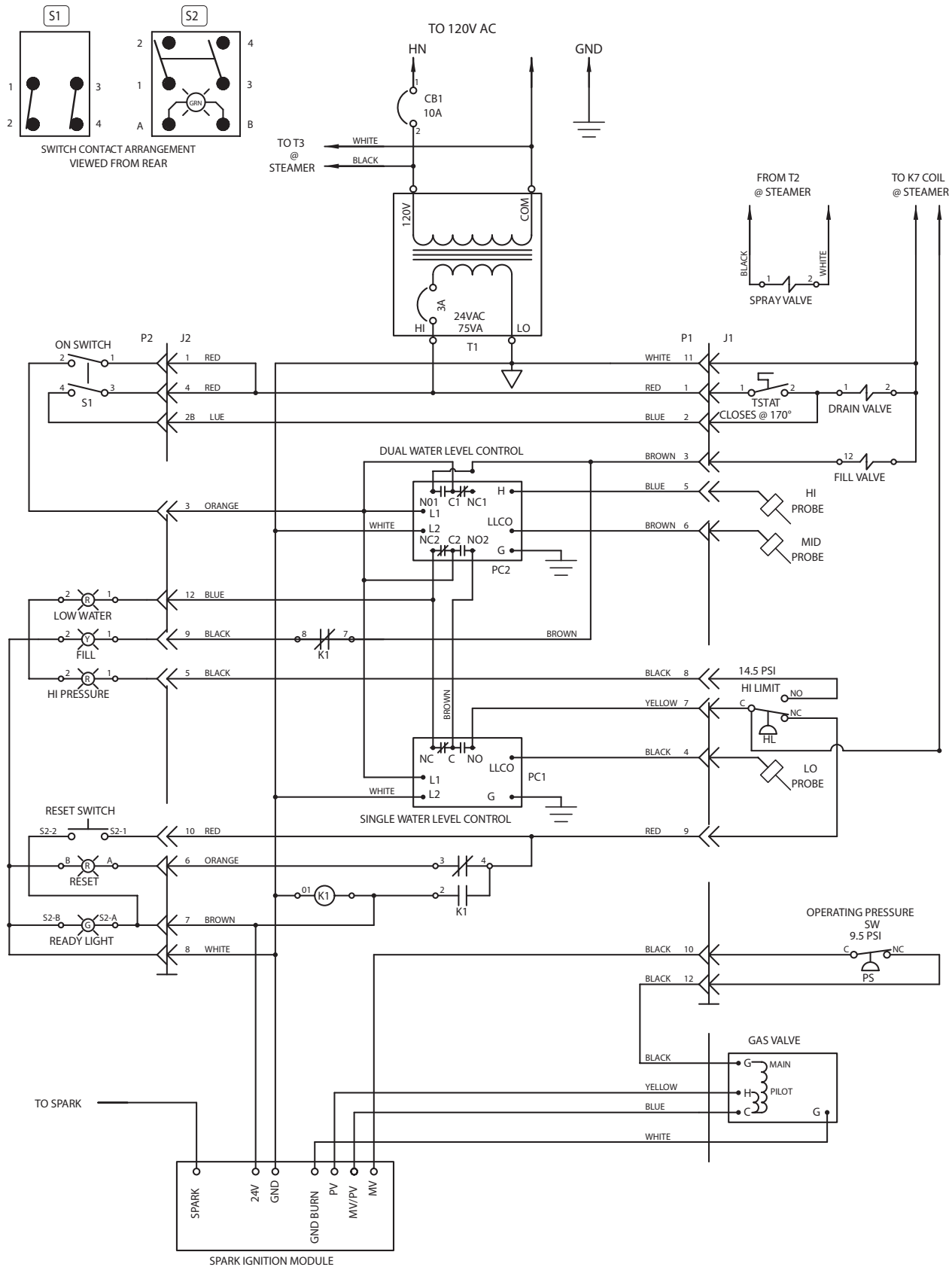
Boiler Electrical Controls

Parts List

Key	Description	Part #
1	SWITCH "ON/OFF"	088876
2	SWITCH "START" (MOMENTARY)	099290
3	INDICATOR LIGHT "RESET"	099289
4	LIGHT, INDICATOR AMBER	116384
5	LIGHT, INDICATOR RED (2)	116383
6	TERMINAL BLOCK, 2-POLE	003887
-	BUSHING SNAP 11/16" ID	012864
7	CIRCUIT BOARD SUPPORT	099292
8	WATER LEVEL CONTROL BOARD ASSEMBLY	116016
9	LUG, GROUND 14-6 AWG	119829
10	CIRCUIT BREAKER	119860
11	TRANSFORMER, 75VAC	121715
12	RELAY, DPDT 24VAC 30A	121733
13	WATER LEVEL CONTROL BOARD ASSEMBLY	122192
-	HARNESS, ELECTRICAL BOX	130446
14	BRACKET, CIRCUIT BREAKER	137254
15	ELECTRONIC CABINET, WELDMENT	137257







Service Log

Model No:	Purchased From:
Serial No:	Location:
Date Purchased:	Date Installed:
Purchase Order No:	For Service Call:

Date	Maintenance Performed	Performed By



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