

OWNER'S MANUAL

ELECTRIC CONVECTION STEAMER

MODELS: PS-3E

PS-6E



MARKET FORGE
INDUSTRIES INC.

An Employee-Owned Company

35 Garvey Street • Everett, MA 02149-4422 USA

Tel: (617) 387-4100 • Fax: (617) 387-4456

Fax Outside MA: 1-800-227-2659

E-Mail: CUSTSERV@MFIL.COM

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

IMPORTANT NOTES FOR INSTALLATION AND OPERATION



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



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

This manual should be retained for future reference.

Intended for commercial use only. Not for household use.

Adequate clearances must be maintained for safe and proper operation.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

TABLE OF CONTENTS

DESCRIPTION	PAGE
Important Notes for Installation and Operation	2
1.0 Service Connections	4
2.0 Installation Instructions	5
3.0 Operation	13
4.0 Suggested Cooking Guidelines	17
5.0 Cleaning	21
6.0 Maintenance	23
7.0 Service	25
8.0 Parts	28
Wiring Diagrams	35

INSTALLATION AND OPERATION MANUAL AND PARTS, ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

1.0 SERVICE CONNECTIONS

⚡ – ELECTRICAL CONNECTION: ϕ 1 1/8" hole for electrical connection.
Rating to be as specified on data plate.

💧 – DRAIN: 1" IPS piped to open floor drain. No solid connection.
Use copper only. 24" length before open air gap opening.
(No bends or elbows)

⚙️ – GENERATOR WATER: 3/8" O.D. tubing at 25–50 PSI(170–345 kPa)

⚙️ – CONDENSING WATER: 3/8" O.D. tubing at 25–50 PSI(170–345 kPa)

PAN CAPACITIES

MODEL	Pan Depth			
	1" 25mm	2.5" 64mm	4" 102mm	6" 152mm
PS-3E	6	3	2	1
PS-6E	12	6	3	2

AMPS/PHASE

MODEL	kW		SINGLE PHASE			THREE PHASE					Shipping Wt.	Min. Clearance
			208	220	240	208	240	380	415	480		
PS-3E	10	STANDARD	48	46	42	28	24	16	14	12	141 lbs. [64 kg]	Sides 0
PS-6E	15	STANDARD	72	69	63	42	36	23	21	18	169 lbs. [77 kg]	Back 6

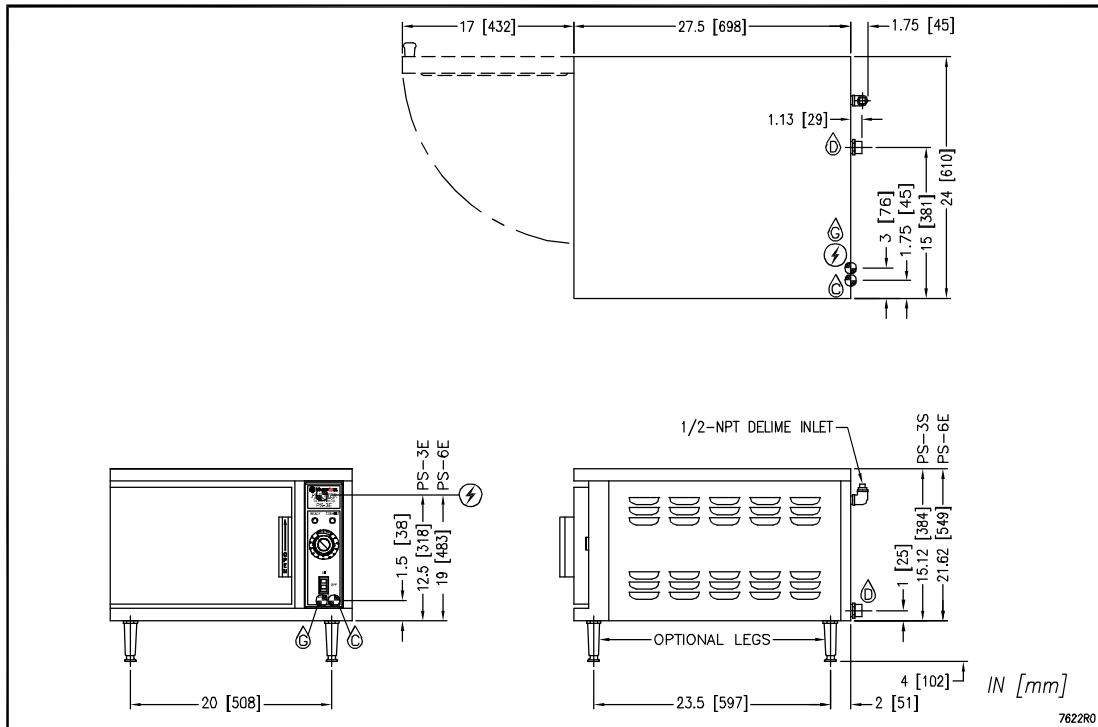
WATER QUALITY STATEMENT

Water quality is the major factor affecting the performance of your appliance. If you are unsure of water quality, consult a local water treatment specialist and have the water analyzed. Your water supply must be within these general guidelines:

Total dissolved solids	Less than 60 PPM
Total alkalinity	Less than 20 PPM
Silica	Less than 13 PPM
Chlorine	Less than 1.5 PPM
pH Factor	6.5–8.0

Water which fails to meet these standards should be treated by installation of water conditioner.

FAILURE OR MALFUNCTION OF THIS APPLIANCE DUE TO POOR WATER QUALITY IS NOT COVERED UNDER WARRANTY.



As continued product improvement is a policy of Crown, specifications are subject to change without notice.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

2.0 INSTALLATION INSTRUCTIONS

GENERAL

The PS-3E and PS-6E steamers are single compartment electric pressureless steam cookers with an internal electric steam generator that maintains standby water temperature at approximately 205°F. PS-3E is rated 10 kW. PS-6E is rated 15 kW.

At high altitude locations a lower temperature is required to achieve atmospheric steaming. Contact your authorized service office to have the thermostat adjusted if the steamer will be operated at high altitudes.

UNPACKING

This steamer was inspected before leaving the factory. The transportation company assumes full responsibility for safe delivery. Immediately after unpacking the steamer, check for possible damage. If the steamer is found to be damaged after unpacking, save the packaging material and contact the carrier within 15 days of delivery.

Prior to installation, verify that the electrical service agrees with the specifications on the machine data plate which is located on the left side panel.

LOCATION

Allow space for plumbing and electrical connections. Minimum clearances are 0" on the sides and 6" (152 mm) on the back for proper air circulation. Allow adequate access for operating and servicing the steamer, 36" (915 mm) at the front of the steamer and 15" (381 mm) above the steamer.

LEVELLING FEET (Standard) OR 4" ADJUSTABLE LEGS (Optional)

Thread the four 2" levelling feet shipped in a bag inside the steamer cabinet into the threaded holes on the bottom corners of the steamer. Or, thread the four optional 4" adjustable legs into the threaded holes on the bottom corners of the steamer.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

2.0 INSTALLATION INSTRUCTIONS (Continued)

LEVELLING

Using a spirit level or pan of water in the bottom of the steamer, adjust the levelling feet or the feet on the adjustable legs to level the steamer front-to-back and side-to-side. After the drain is connected, check for level by pouring water onto the floor of the compartment. All water should drain through the opening at the back of the compartment cavity.

ANCHORING STEAMER (Without Legs)

1. Place steamer in the desired location on the levelled counter top and mark four corners. Remove the steamer and drill ½" holes as indicated in Figure 1.
2. Apply a bead of RTV or other equivalent sealant around bottom perimeter edge of the steamer. If anchoring the steamer, this bottom seal is necessary to meet NSF requirements.
3. Set steamer on counter and bolt down securely with 3/8 - 16 bolts (not supplied).

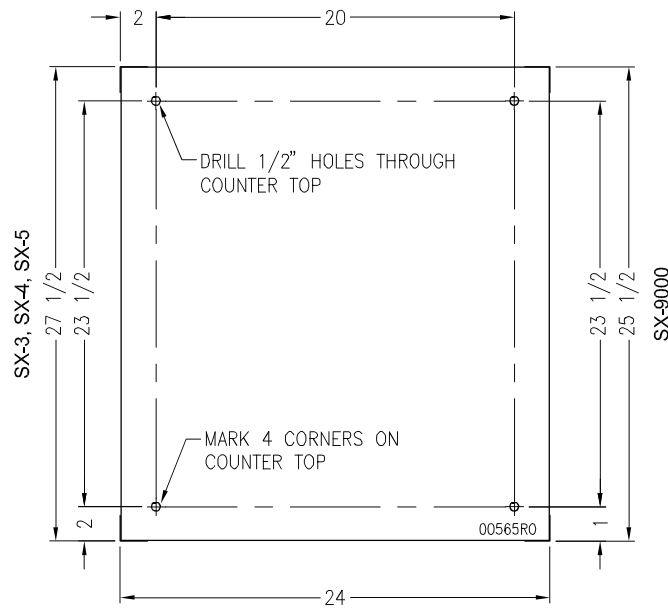
STACKING KIT

Follow instructions in the stacking kit when installing stacked convection steamers.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

2.0 INSTALLATION INSTRUCTIONS (Continued)

FIGURE 1



WARNING: Disconnect the power supply to the appliance before cleaning or servicing.

Make electrical connection through the 1-1/8" (29 mm) diameter hole provided using 3/4" (19 mm) trade size conduit. Refer to the wiring diagram located inside the right side panel. Use 90°C minimum insulated wire.

PLUMBING CONNECTIONS



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

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

2.0 INSTALLATION INSTRUCTIONS (Continued)

The water supply inlets are provided with 3/8" (10 mm) compression fittings for 3/8" O.D. copper tubing. The water supply line pressure should be 25 - 50 psi (170 - 345 kPa) for each line. The water supply to the generator tank is separate from the water supply to the cooling system where steam is condensed before entering the drain line.

Install line strainers (not provided). A manual shutoff valve for each supply line must be provided convenient to the steamer.

We recommend treated water feeding the boiler inlet supply, and untreated water feeding the cooling system inlet. Hook-ups are labelled on the back of the steamer.

ADJUSTMENT FOR HIGH ALTITUDE LOCATIONS

The steamer has been factory set so that when it is ON, and during the READY phase, it will maintain water temperature in the steam generator tank at approximately 205°F (96°C) (just below water boiling point). However, for high altitude locations, an authorized service agency must adjust the steamer to achieve this temperature.

ADJUSTMENT FOR DRAIN WATER TEMPERATURE

Cooling solenoid valves have been adjusted to yield drain temperatures of 140°F. This will vary depending on install location water supply temperature and pressure. A qualified service person should adjust the cooling solenoid valves should the drain temperature be other than desired. Refer to section 7.0 Service on page 26 for adjustment instructions.

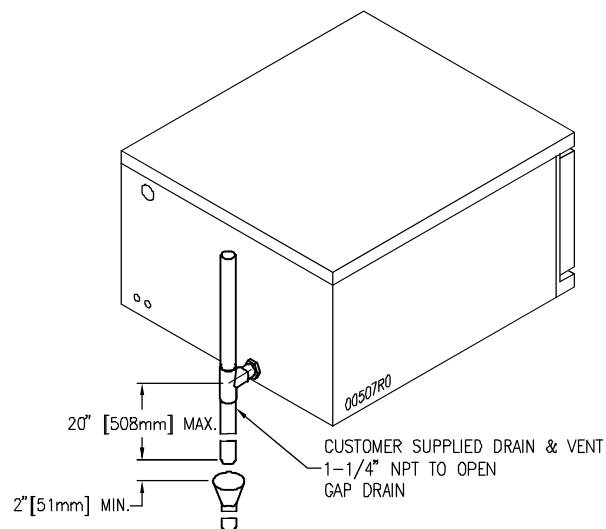
DRAIN CONNECTIONS (FIGURE 2)

The drain connection (Fig. 2) must be 1" IPS down, preferably with one elbow only, maximum length of 6 feet and piped to an open air gap type drain. Use copper only.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

2.0 INSTALLATION INSTRUCTIONS (Continued)

FIGURE 2



CAUTION: In order to avoid any back pressure in the steamer, do not connect solidly to any drain connection.

INSTALLATION AND OPERATION MANUAL AND PARTS, ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

WATER QUALITY

The water supply connected to this steamer should contain no more than 2.0 grains of hardness per gallon with pH from 6.5 to 8.0. This degree of hardness and pH can easily be obtained with the use of a properly maintained water softener.

Water supplies vary from one location to another. A local water treatment specialist should be consulted before installing any steam generating equipment.

Untreated water contains scale producing minerals which can precipitate onto the surfaces in the boiler. Due to the temperatures in the boiler, the minerals can bake onto the surfaces and components. This can result in early component failure and reduced product life.

Mineral scale on components causes several problems:

1. The surfaces of the heating devices become coated with scale, reducing the heat transfer efficiency. This can produce hot spots on the heating elements and result in premature failure.
2. The water level probes become coated with scale. Scale will bridge across the probe insulator from the metal extension which senses the water level in the boiler. Once this scale becomes wet, the water level control is unable to maintain the proper water level in the boiler. This situation may cause an electric heating element to fail if the element is not adequately covered by water.

Strainers and filters will NOT remove minerals from the water.

Refer to REMOVAL OF LIME SCALE DEPOSITS, page 23.

VENT HOOD

Some local codes may require the steamer to be located under an exhaust hood. Information on the construction and installation of ventilating hoods may be obtained from Vapor Removal from Cooking Equipment, NFPA standard No. 96 (latest edition).

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

ELECTRICAL CONNECTIONS



WARNING: Disconnect electrical power supply and place a tag at the disconnect switch to indicate that you are working on the circuit.

Electrical grounding must be provided in accordance with local codes or in the absence of local codes, with the National Electrical Code, ANS/NFPA70, or the Canadian Electrical Code, CSA C22-2, as applicable.

Use copper wire suitable for at least 200 degrees Fahrenheit (90 degrees Celsius). The steamer must be grounded. The wiring diagram is located on the right side panel as you face the steamer.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

TESTING PROCEDURES



CAUTION: Live steam and accumulated hot water in the compartment may be released when the door is opened.

Once the steamer is installed and all mechanical connections have been made, thoroughly test the steamer before operation.

1. Check that proper water, drain and electrical connections have been made.
2. Turn main power switch ON. After approximately 15 minutes, the READY light should come on, indicating that the water temperature is 205 degrees Fahrenheit.
3. When the READY light comes on, set timer to the "5 minute" position. With door open, observe that no steam is entering the compartment and that the COOKING light is OFF.
4. Close compartment door. The COOKING light should now be illuminated and steam should be heard entering the compartment after about 45 seconds.
5. Check drain line to ensure that water from cold water condenser is flowing through the drain line.
6. Open compartment door and observe that steam supply to chamber is cut off. (READY light should again come on as COOKING light goes off.)
7. Close compartment door and let cooking cycle finish. When the timer returns to "0" position, a buzzer will sound signalling the end of the cooking cycle. Buzzer must be manually turned off by setting the timer to its OFF position.
8. To shut down steamer, turn main power switch OFF and leave compartment door slightly open.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

3.0 OPERATION



CAUTION: Live steam and accumulated hot water in the compartment may be released when the door is opened.



CAUTION: An obstructed drain can cause personal injury or property damage.

CONTROLS

Main Power Switch

- | | | |
|--------|---|---|
| ON | - | The boiler will automatically fill and begin heating to the preset standby temperature. |
| OFF | - | The boiler will drain. |
| DELIME | - | Closes the drain valve while CLR liquid is being poured into the generator during the delime procedure. |

- | | | |
|--------------------|---|---|
| Ready Light | - | Indicates the temperature has reached 205°F and that the steamer is ready to begin cooking. |
|--------------------|---|---|

- | | | |
|----------------------|---|--|
| Cooking Light | - | Indicates that a cooking cycle is in progress. |
|----------------------|---|--|

- | | | |
|--------------|---|---|
| Timer | - | Set the cooking time (0 to 60 minutes) or constant steam. Steam cooking will begin when the door is closed. The cooking cycle will be interrupted if the door is opened during the cooking cycle; resume cooking by closing the door. |
|--------------|---|---|

When done, a buzzer sounds and steam supply to the cooking chamber will cease. Turn the timer OFF to stop the buzzer.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

3.0 OPERATION (Continued)

BEFORE FIRST USE

Clean the protective oils from all surfaces of the steamer. Use a non-corrosive, grease dissolving commercial cleaner, following manufacturer's directions. Rinse thoroughly and wipe dry with a soft clean cloth.

PREHEAT

Turn the main power switch ON. When the READY light comes on, set the timer to 1 minute to preheat the compartment. This should be done when the steamer is first used for the day or whenever the chamber is cold. The door should be closed during the preheat cycle. The COOKING light will be lit. When the buzzer sounds, set the timer to the OFF position. The steamer is now ready to cook.

COOK

With compartment preheated and READY light ON, place pans of food into the compartment and close the door.

Set timer to desired cooking time. (The cooking cycle may be interrupted at any time by opening the door. To resume operation, close the door.) Steam will flow into the compartment and the COOKING light will be lit.

At the end of the cooking cycle, the buzzer will sound, the COOKING light will go off and steam supply to the compartment will cease. Turn the timer to the OFF position to silence the buzzer.

SHUTDOWN

Turn main power switch OFF. The boiler will automatically blow down. Leave the compartment door open to allow the inside to dry out. For an extended shutdown, turn the main power switch OFF; turn power and water supply OFF.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

3.0 OPERATION (Continued)

CONSTANT STEAM COOKING - This mode will give continuous steam to the cooking chamber until the operator either turns the timer to the "OFF" position, or turns power OFF to the steamer.

When cooking is complete, or not in use, the constant steam cooking feature should be shut off. This prevents the boiler from running unnecessarily. This will help conserve water, and will reduce boiler maintenance.

SHUT DOWN

Turn the timer to OFF. Turn main power switch to the "OFF" position.

DRAINING THE BOILER

Drain the boiler after each day's use to flush out minerals and minimize scale build-up. The boiler drains automatically for approximately 4 - 6 minutes after the main power switch is turned off.

Each compartment is equipped with a removable drain screen. Frequently check the drain screen for accumulation of food particles. Should food particles accumulate against, or clog the drain screen, remove it, clean it thoroughly and then replace it in its original position.

Frequently check that the compartment drain and plumbing is free of all obstructions. Never place food containers, food or food portion bags in the cooking compartment in such a way that the compartment drain becomes obstructed.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

3.0 OPERATION (Continued)

STEAM COOKING

Your steamer efficiently cooks vegetables or other foods for immediate serving. Steam cooking should be carefully time controlled. Keep hot-food-holding-time to a minimum to produce the most appetizing results. Prepare small batches, cook only enough to start serving, then cook additional amounts to meet demand. Separate frozen foods into smaller pieces to allow more efficient cooking.

Use a pan cover for precooked frozen dishes that cannot be cooked in the covered containers in which they are packed if they require more than 15 minutes of cooking time. When a cover is used, approximately one-third additional cooking time is necessary.

Cooking time for frozen foods depends on amount of defrosting required. If time permits, allow frozen foods to partially thaw overnight in a refrigerator. This will reduce their cooking time.

PREPARATION

Prepare vegetables, fruits, meats, seafood and poultry normally by cleaning, separating, cutting, removing stems, etc. Cook root vegetables in a perforated pan unless juices are being saved. Liquids may be collected in a solid 12 inch by 20 inch pan placed under a perforated pan. Perforated pans are used for frankfurters, wieners and similar items when juices do not need to be preserved. Solid pans are good for cooking puddings, rice and hot breakfast cereals. Vegetables and fruits are cooked in solid pans to preserve their own juices. Meats and poultry are cooked in solid pans to preserve their own juices or to retain broth. Canned foods may be heated in their opened cans (cans placed in 12 inch by 20 inch solid pans) or the contents may be poured into solid pans.

ACCEPTABLE PAN SIZES

The steamer accommodates combinations of 12" x 20" pans, solid or perforated.

Model	Number of Pans Accommodated			
	Depth of Pan			
	1"	2.5"	4"	6"
PS-3E	6	3	2	1
PS-6E	12	6	3	2

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

4.0 SUGGESTED COOKING GUIDELINES

COOKING HINTS

Your steamer efficiently cooks vegetables or other foods for immediate serving. Steam cooking should be carefully time controlled. Keep hot food holding-time to a minimum to produce the most appetizing results. Prepare small batches, cook only enough to start serving, then cook additional amounts to meet demand.

Preparation

Prepare vegetables, fruits, meats, seafood, and poultry normally by cleaning, separating, cutting, removing stems, etc. Cook root vegetables in a perforated pan. Other vegetables may be cooked in a perforated pan unless juices are being saved. Liquids can be collected in a solid pan placed under a perforated pan.

Perforated pans are used for frankfurters, wieners, and similar items when juices do not need to be preserved. Solid pans are good for cooking puddings, rice and hot breakfast cereals. Vegetables and fruits are cooked in solid pans in their own juice. Meats and poultry are cooked in solid pans to preserve their juice or return broth.

Canned foods can be heated in their opened cans (cans placed in solid pans), or the contents may be poured into solid pans. DO NOT place unopened cans in the steamer.

Frozen Food Items

Separate frozen foods into smaller pieces to allow more efficient cooking.

Use a pan cover for precooked frozen dishes that cannot be cooked in the covered containers in which they are packed if they require more than 15 minutes of cooking time. When a cover is used, approximately one-third additional cooking time is necessary. Cooking time for frozen foods depends on the amount of defrosting required. If time permits, allow frozen foods to partially thaw overnight in a refrigerator. This will reduce their cooking time.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

4.0 SUGGESTED COOKING GUIDELINES

<u>PRODUCT</u>	<u>TIMER SETTING (Minutes)</u>	<u>WEIGHT PER PAN</u>
Eggs	10 - 12	8 dozen
Scrambled	15	4 dozen
Hard Cooked	25	2 lb
Rice, long grain (cover with 4 cups water/lb.)	25	2 lb
Pasta (Place perforated pan inside solid pan, cover with cold water)		
Spaghetti, regular/vermicelli	12 - 15	
Macaroni, shells/elbows	15 - 18	
Lasagna noodles	15 - 18	
Frozen Casseroles, Lasagna	35	Full Pan
Meat Loaf, 3 - 5 lb each	40	15 lb
Beef		
Ground Chuck	20 - 25	10 lb
Beans		
Baked/Refried	9	10 lb can
Chicken - Breasts, Legs, Thighs	20	15 lb
Turkey, Frozen		
Breasts (2)	90	6 - 7 lb each
Hot Dogs	3	80 - 100
SEAFOOD		
Clams		
Frozen	10 - 12	3 dozen
Fresh, Cherrystone	5 - 6	3 dozen
King Crab, frozen		

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

<u>PRODUCT</u>	<u>TIMER SETTING</u> <u>(Minutes)</u>	<u>WEIGHT PER PAN</u>
Claws	4	2 ½ lb
Legs	4 - 6	4 ½ lb
Shrimp, frozen, 10 per lb.	5	4 lb
Lobster Tail, frozen	6	10 lb
Lobster, Live, 10" - 12"	5	4 per pan
Scallops, fresh	4	3 lb
Scrod Fillets, fresh	3 - 5	4 lb
VEGETABLES		
Asparagus Spears		
Frozen	10 - 12	3 dozen
Fresh	5	5 lb
Beans		
Green, 2" cut, frozen/fresh	6	5 lb
Lima, frozen	8	5 lb
Broccoli		
Spears, frozen	8	4 lb
Spears, fresh	6	5 lb
Florets, frozen	6	5 lb
Carrots		
Baby whole, frozen	8	7 lb
Crinkle cut, frozen	7 - 8	4 lb
Sliced, fresh	11	9 lb
Cauliflower, Florets		
Frozen	6	4 lb
Fresh	7 - 8	5 lb

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

<u>PRODUCT</u>	<u>TIMER SETTING</u> <u>(Minutes)</u>	<u>WEIGHT PER PAN</u>
Corn		
Yellow whole kernel, frozen	5	5 lb
Cobbettes, frozen	8	27 ears
Corn-on-Cob, fresh	10 - 12	18 ears
Peas, Green	6	5 lb
Potatoes, whole russet	55	40 lb
Zucchini, slices	8	10 lb
Canned Vegetables	6	10 lb can
Frozen Mixed Vegetables	6 - 7	5 lb

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

5.0 CLEANING



WARNING: Disconnect the power supply to the appliance before cleaning or servicing.



CAUTION: Do not use cleaning agents that are corrosive.



CAUTION: The appliance and its parts are hot. Use care when operating, cleaning and servicing the appliance.



CAUTION: Live steam and accumulated hot water in the compartment may be released when the door is opened.

At the end of each day, or between cooking cycles if necessary:

1. Turn main power switch OFF.
2. Remove pans and racks from compartment and wash in sink.
3. Wash compartment interior with clean water.
4. Use warm soapy water with a cloth or sponge to clean exposed bead of door gasket, rinse with warm clear water and wipe with a dry cloth.
5. Wipe surfaces which touch door gasket with a cloth or sponge and warm soapy water, rinse with warm clear water and wipe with a dry cloth. **Do not apply food oils or petroleum solvents or lubricants directly to door gasket or surfaces which touch door gasket.**
6. Wipe all solids away from drain opening in compartments to prevent clogging.
7. Keep cooking compartment drain working freely. After cooking grease producing foods, operate steam with compartment empty for 30 minutes at end of the day, or pour ½ gallon of warm soapy water down the drain, followed by ½ gallon of warm clear water.
8. Leave door slightly open when steamer is not in use.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

5.0 CLEANING (Continued)

Weekly, or more often if necessary:

Clean exterior with a damp cloth and polish with a soft dry cloth. Use a non-abrasive cleaner to remove discolorations.



CAUTION: An obstructed drain can cause personal injury or property damage.

GUIDELINES FOR MAINTAINING STAINLESS STEEL SURFACES

There are three things that can break down stainless steel and allow corrosion to develop:

- 1) Abrasion;
- 2) Deposits and water;
- 3) Chlorides.

Avoid rubbing with steel pads, wire brushes, or scrapers that can leave iron deposits on stainless steel; instead, use plastic scouring pads or soft cloths. For stubborn stains, use products such as Cameo, Talc, or Zud First Impression. Always rub parallel to polish lines or with the grain.

Hard water can leave deposits that promote rust on stainless steel. Treated water from softeners or certain filters can eliminate these mineral deposits. Other deposits from food or lubrication must be properly removed by cleaning. Use mild detergent and non-chloride cleaners. Rinse thoroughly. Wipe dry. If using chloride containing cleaners or sanitizers, ***rinse repeatedly*** to avoid stainless steel corrosion. Where appropriate, apply a polish recommended for stainless steel (such as Benefit or Super Sheen) for extra protection and lustre.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

6.0 MAINTENANCE



WARNING: Disconnect the power supply to the appliance before cleaning or servicing.



CAUTION: Live steam and accumulated hot water in the compartment may be released when the door is opened.



CAUTION: The appliance and its parts are hot. Use care when operating, cleaning and servicing the appliance.

COLD WATER CONDENSER

The steamer is equipped with a cold water condenser in the rear of the cooking chamber which helps to condense the steam prior to discharge into the drain. The steamer freely vents itself by the negative pressure created by the condensate water drainage. This negative pressure prevents steam leakage around the door gasket and helps draw the steam through the cooking compartment. Steam leakage at the door may indicate a plugged or improperly installed drain.

REMOVAL OF SCALE DEPOSITS

It is recommended that your steamer be delimed once a month, or more often if necessary.

Should your steamer develop a heavy buildup of lime scale deposits, use CLR.

Before beginning deliming procedures, ensure that water is not overflowing into the cooking compartment.

The generator tank has a removable sealed tank cover. The main purpose of the removable cover is for inspection of the interior of the tank for lime build up and easy removal of large pieces of lime that will not flush out drain. Should the tank cover have to be removed, check condition of sealing gasket before replacing cover. The hold down bolts are to be tightened to 160 inch pound torque each.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

REMOVAL OF SCALE DEPOSITS (Continued)



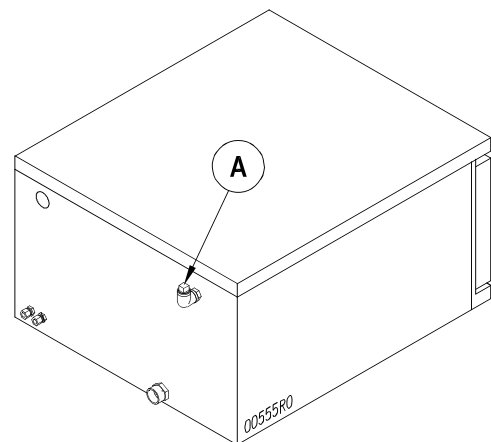
NOTICE: Contact the factory, the factory representative or local service company to perform maintenance and repairs.



WARNING: Read and follow instructions on the CLR bottle. Use plastic or rubber gloves to avoid skin contact. If CLR comes in contact with skin, rinse with clean water.

1. Drain steam generator by setting the main power switch to OFF. Set cooking timer to "OFF".
2. Set the main power switch to DELIME.
3. Delime port (A) is located on left side at rear of unit. Unscrew hex plug from elbow to allow CLR solution to be poured in using a tube and funnel. Pour in 28 ounces of solution into the generator (pour slowly to avoid spillage). Remove tube and funnel.
4. Screw the hex plug back into the elbow so that it is sealed.
5. Turn main power switch to ON.
6. Allow steamer to remain in READY cycle for 1-1/2 hours, then turn main power switch OFF and allow generator to drain.
7. FLUSH CYCLE: Turn main power switch to ON. When READY light comes on, turn main power switch to OFF to flush generator. Repeat this step three times to completely flush generator.
8. Clean exterior and interior. Use a mild solution of soap and water. Rinse with clean cloth. Dry with soft cloth. Leave compartment door open when not in use.

The steamer is now ready for use. Turn off for overnight shutdown.



INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

7.0 SERVICE

NOTICE: Contact the factory, the factory representative or local service company to perform any maintenance and repairs.

ADJUSTMENT FOR HIGH ALTITUDE LOCATIONS

The steamer has been factory set so that when it is ON and during the READY phase, it will maintain water temperature in the steam generator tank at approximately 205 degrees Fahrenheit (just below water boiling point). However, for high altitude locations, an authorized servicer must adjust the steamer to achieve this temperature. To adjust:

1. Remove side panel and turn control panel power switch to ON.
2. Open compartment door, and after about 15 minutes, steam will be seen, entering the cooking compartment.
3. Turn thermostat dial counterclockwise to lower temperature until steam just ceases to enter cooking compartment and READY light goes on.
4. Replace side panel.
5. Follow TESTING PROCEDURES in this manual.

WATER FLOWS INTO DRAIN DURING SHUTDOWN

When steamer is shut down and cold water is running continuously into the open drain, either or both solenoid valves did not close when steamer was turned off.

1. Disassemble solenoid valve(s) and examine for scale or foreign particles lodged in diaphragm or core tube.
2. Clean valve(s) thoroughly and reassemble, or replace valve(s).

DRAIN WATER TEMPERATURE TOO LOW OR TOO HIGH

Cooling solenoid valves are adjustable with fine adjustment screw on the bottom of the valve.

1. Run cooking compartment empty until drain temperature stabilizes.
2. Turn fine adjustment screw on cooling solenoid valve out to decrease drain temperature and in to increase drain temperature.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

7.0 SERVICE (Continued)

WATER OVERFLOWS INTO COOKING COMPARTMENT

When steamer is first turned on for the day, and the following conditions occur:

- READY light does not come on after about 15 minutes,
- Water begins to overflow into cooking compartment,
- Water fill solenoid valve is open,

then any or all of these symptoms may indicate a problem with the operating probe due to either:

1. A short between the operating probe terminal and body of the steamer. Call your authorized servicer.
2. Excessive scale build-up on the operating probe. This acts as an “insulation” and prevents the probe from sensing the water level. It is therefore unable to close the water fill (solenoid) valve to shut off the water.

As a temporary solution, with power OFF, unscrew probes, check visually, and clean or chip off scalant. Replace probe.

This problem is an indication of severe harmful water conditions which should be corrected immediately to avoid damage to the components and ultimate malfunction of the steamer. (See WATER CONDITIONING in this manual).

HEATER ELEMENTS DO NOT COME ON

When the steamer is turned ON and heater elements do not activate, and therefore, the READY light does not come on, then the contactors may be burned out. If a considerable amount of “chattering” of contactors has been previously experienced, then the thermostat bulb may be coated with scalant and unable to sense water temperature in the boiler accurately, and therefore unable to control the contactors.

1. Replace contactors.
2. Unscrew operating thermostat bulb, clean off scalants and screw thermostat bulb back in.

This problem is an indication of inadequate water quality and is not covered under warranty. Have water quality analysed and corrected immediately to avoid complete malfunction of the steamer.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

7.0 SERVICE (Continued)

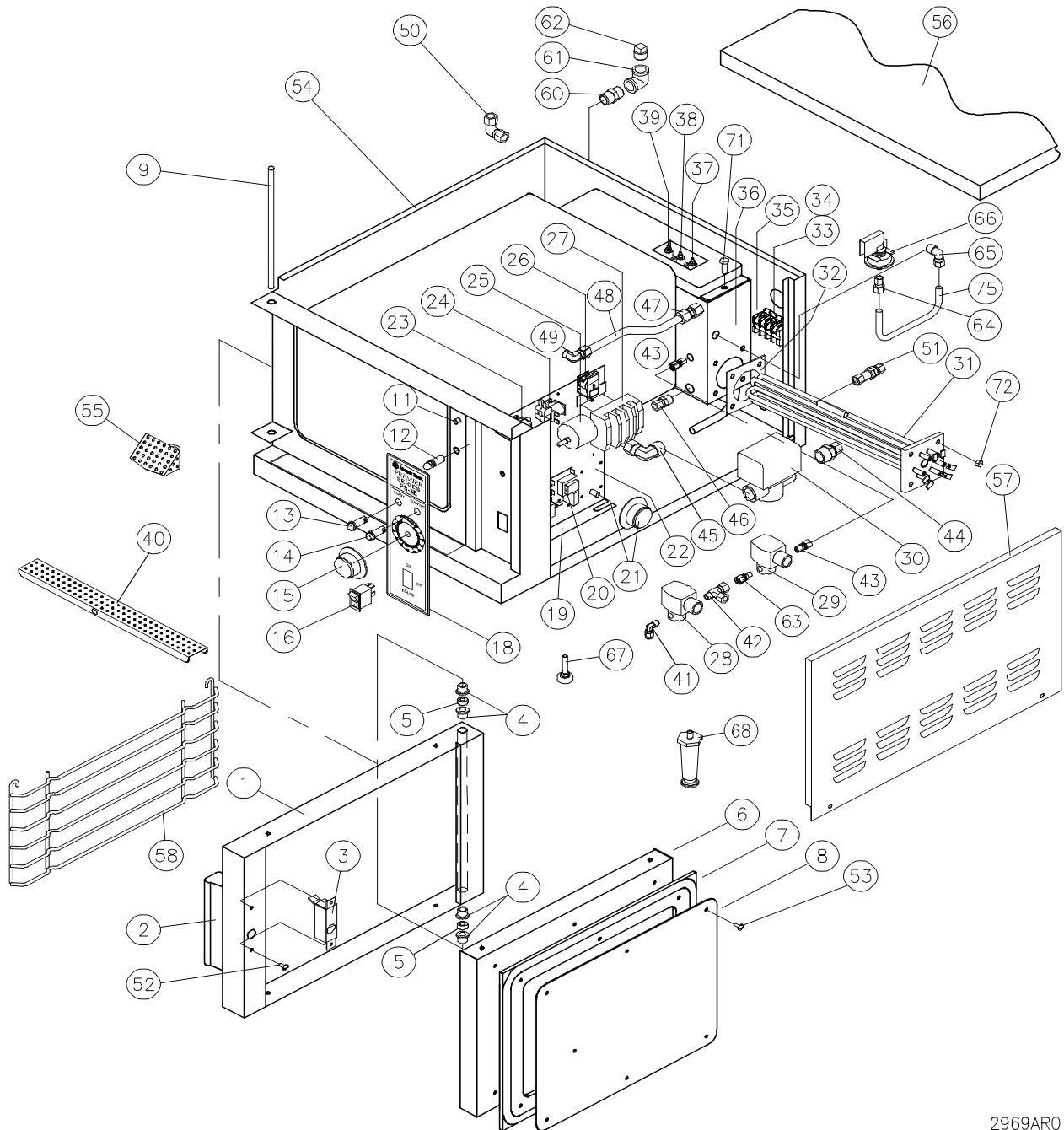
UNIT SHUTS DOWN WHILE IN OPERATION

Pressure switch has been activated due to 5 psi (34 kPa) pressure in the generator tank. Pressure in the generator tank is caused due to plugged steam jet tubes or steam diverters due to scale or poor water conditions. Steam jet tubes/steam diverter will have to be cleaned or replaced.

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

FIGURE 3

8.0 PARTS



2969AR0

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

GENERAL ASSEMBLY

FIGURE 3

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	
			<u>3</u>	<u>6</u>
1A.	8-5076-9	Door Assembly	1	
	8-5076-8	Door Assembly		1
1	8-5060-9	Door Frame	1	
	8-5060-8	Door Frame		1
2	8-5066-9	Door Handle Assembly	1	1
*	9-3320	Decal	1	1
*	4090-1	Door Handle	1	1
*	4089-1	Door Handle Plate	1	1
*	1-57S7	Socket Set Screw, 1/4 - 20 x 1-3/4	2	2
*	1-56S6	Socket Set Screw, 1/4 - 20 x 3/4	1	1
*	4088-1	Spacer	2	2
*	2-W0S2	Lock Washer, 1/4	2	2
*	1-59S0	Hex Nut, 1/4 - 20	2	2
3	8-5068-9	Latch Assembly	1	1
4	8-5078	Door Bushing	4	4
5	9-3366	Spacer	2	2
6	8-5065-9	Door Panel	1	
	8-5065-8	Door Panel		1
7	8-5063-9	Door Gasket	1	
	8-5063-8	Door Gasket		1
8	8-5064-9	Gasket Plate	1	

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>		
			<u>3</u>	<u>6</u>	
8	8-5064-9	Gasket Plate		1	
9	8-5077-9	Hinge Rod	1		
	8-5077-8	Hinge Rod		1	
*	10	3502-1	Steam Diverter	2	2
	11	9-3336	Actuator Complete With Retaining Rings	1	1
*		9-3213	Door Switch	1	1
	12	8-5021	Striker	1	1
*		8-5022	Stainless Steel Washer	1	1
*		1-90S0	Lock Washer	1	1
*		1-99S0	Nut	1	1
	13	4-PL04-1	Pilot Light, green	1	1
	14	4-PL07-1	Pilot Light, red	1	1
**	15	9148-1	Timer Dial	1	1
	16	9124-1	Power Switch	1	1
*	17	4195-3	Label, De-Lime (Rear of Unit)	1	1
**	18	7623-1	Control Decal	1	
		7624-1	Control Decal		1
	19	2958-1	Component Mounting Board	1	1
**	20	4038-3	Level Control Board, 10K OHM	1	1
		5230-2	Level Control Board, 1M OHM	2	2
	21	9126-1	Thermostat - Operating	1	1
		4352-1	Dial	1	1
	22	9128-1	High Limit Thermostat	1	1
	23	9-3175	Relay - Single Pole, 240V	1	1

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	
			<u>3</u>	<u>6</u>
	24	9-3174 Relay - Double Pole, 240V	1	1
**	25	08-6464 Timer, 115 VAC	1	1
*		9109-1 Rotary Shaft Seal	1	1
*		9198-1 Transformer for Timer, 230 - 120V, 6VA	1	1
	26	4742-1 Buzzer, 240V	1	1
**	27	4916-1 Contactor - 4 Pole (208, 220, 240V)	1	1
		4-NG41 Contactor - 380, 415, 480, 600 Volt	1	1
	28	3-S162-1 Cooling Solenoid, 240V, Metering	1	1
	29	5162-2 Fill Solenoid, 240V	1	1
	30	3-S543-1 Blowdown Solenoid, 240V	1	1
**	31	8-5050 Element Assembly, 10 kW, 208V	1	
		8-5056 Element Assembly, 10 kW, 220/380V	1	
		8-5051 Element Assembly, 10 kW, 240/415V	1	
		8-5052 Element Assembly, 10 kW, 480V (287)	1	
		8-5347-1 Element Assembly, 10 kW, 600V (347)	1	
		8-5053 Element Assembly, 15 kW, 208V		1
		8-5054 Element Assembly, 15 kW, 220/380V		1
		8-5055 Element Assembly, 15 kW, 240/415V		1
		8-5057 Element Assembly, 15 kW, 480V (287)		1
		8-5347-2 Element Assembly, 15 kW, 600V (347)		1
	32	8-5092 Element Gasket	1	1
	33	4-22TB Terminal Block	4	4
	34	4-22ES End Section	1	1
	35	4-70EU Ground Lug	1	1

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>		
			<u>3</u>	<u>6</u>	
*	35	9-3104	Earth I.D. Tag	1	1
	36	6947-1	Steam Generator Tank	1	1
*		2906-1	Tank Cover	1	1
*		9-3214	Tank Gasket	1	1
	37	3738-3	Probe - 5" Low Level Cut Off	1	1
	38	3738-2	Probe - 4.25" Low Level	1	1
	39	4-LLP2	Probe - 3.688" High Level	1	1
	40	8-5023	Perforated Trough	1	1
	41	3-694A	Elbow, 1/4 c x 1/8 MPT	1	1
	42	3-716A	Tee, 3/8 c x 1/8 MPT	1	1
	43	3-684A	Connector, 1/4 c x 1/8 MPT	1	1
	44	3-688E	Connector, 1/2 c x 3/4 MPT	1	1
	45	3-698E	Elbow, 1/2 c x 3/4 MPT	1	1
	46	2-686C	Thermostat Fitting, 3/8 c x 3/8 MPT	1	1
	47	3-628	Union Coupling, 1/2 c	1	1
	48	5189-1	Right Hand Steam Jet Tube	1	1
*		5190-1	Left Hand Steam Jet Tube	1	1
	49	3-698B	Elbow, 1/2 c x 1/4 MPT	2	2
	50	3-658	Elbow, 1/2 c	1	1
	51	3-776	Water Connection, 3/8 c	1	1
	52	1-34S4	Screw, 10-32 x 1/2 SS	6	6
	53	9-1011-1	Screw, (Special), 10-32 x 1/2	6	8
	54	7340-1	Left Hand Side and Back	1	

INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	
			<u>3</u>	<u>6</u>
	54	7342-1 Left Hand Side and Back		1
	55	5224-2 Compartment Strainer	1	1
	56	B-2279 Top	1	1
**	57	9-3372 Side Panel	1	
		9-3372-2 Side Panel		1
**	58	2681-1 Rack Slides	2	
		7625-1 Rack Slides		2
*	59	4721-1 Rack Pin Assembly	4	4
	60	3-122D Brass Nipple, ½ -14	1	1
	61	3-100D Brass Elbow, ½-14	1	1
	62	3-109D Square Head Brass Plug, ½ - 14	1	1
	63	3-686A Connector, 3/8 c x 1/8 MPT	1	1
	64	3-666A Connector, 3/8 c x 1/8 FPT	1	1
	65	3-696C Elbow 90°, 3/8 c x 3/8 MPT	1	1
	66	5445-1 Pressure Switch	1	1
	67	4148-1 Leveler	4	4
	68	5-FS66 Adjustable Leg, Optional	4	4
* **	69	9092-2 Fuse, 2 Amp., 250V (208, 240V)	2	2
		9092-2 Fuse, 2 Amp., 250V (220, 220/380, 240/415)	1	1
		9068-1 Fuse Holder (208, 240V)	2	2
		9068-1 Fuse Holder (220, 220/380, 240/415V)	1	1
		9001-2 Fuse, ½ Amp, 600V (380, 415, 480, 600V)	2	2
		9002-1 Fuse Holder (380, 415, 480, 600V)	2	2
* **	70	4-T251 Transformer, 380/220V, 50/60Hz, 100VA	1	1

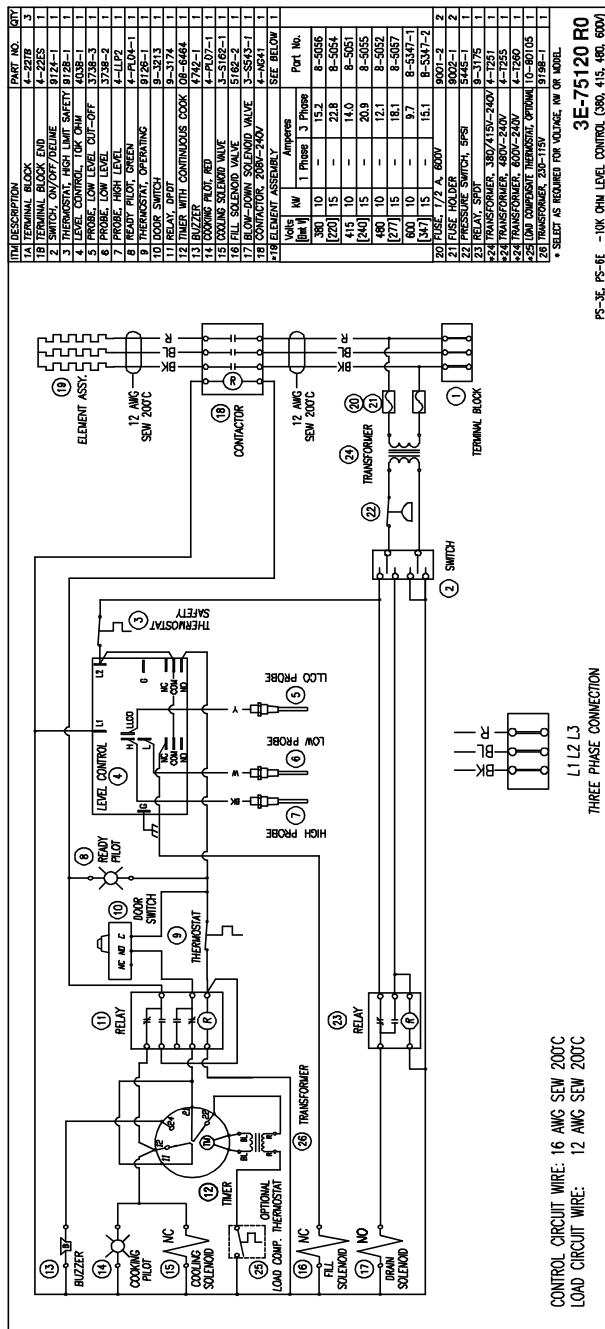
INSTALLATION AND OPERATION MANUAL AND PARTS,
ELECTRIC CONVECTION STEAMERS, MODELS: PS-3E, PS-6E

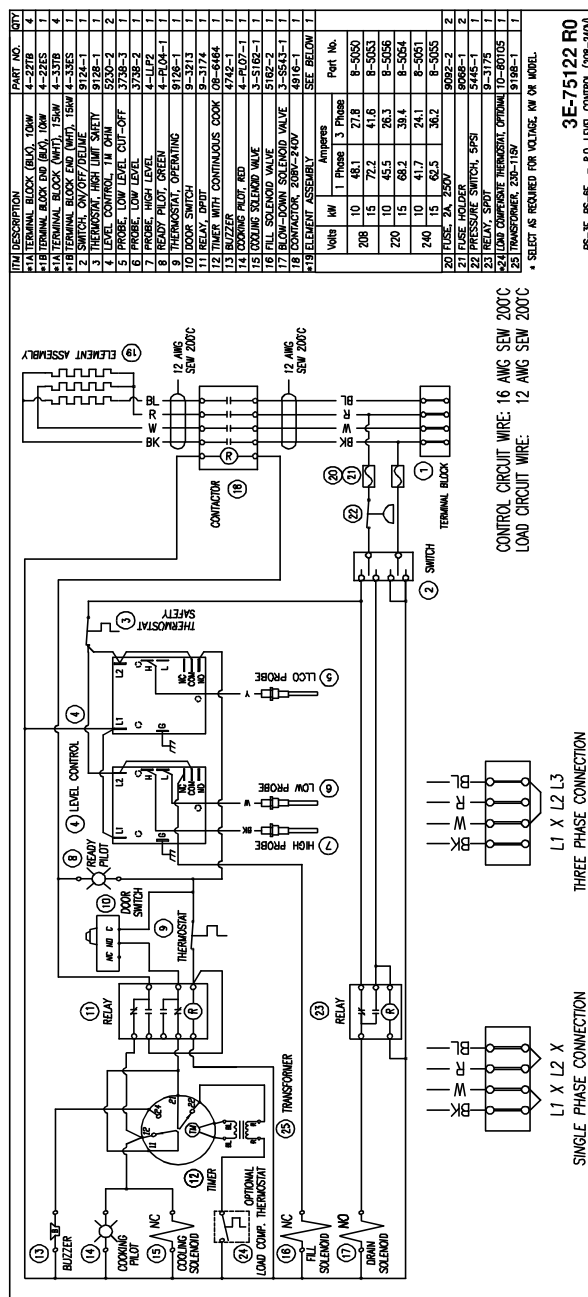
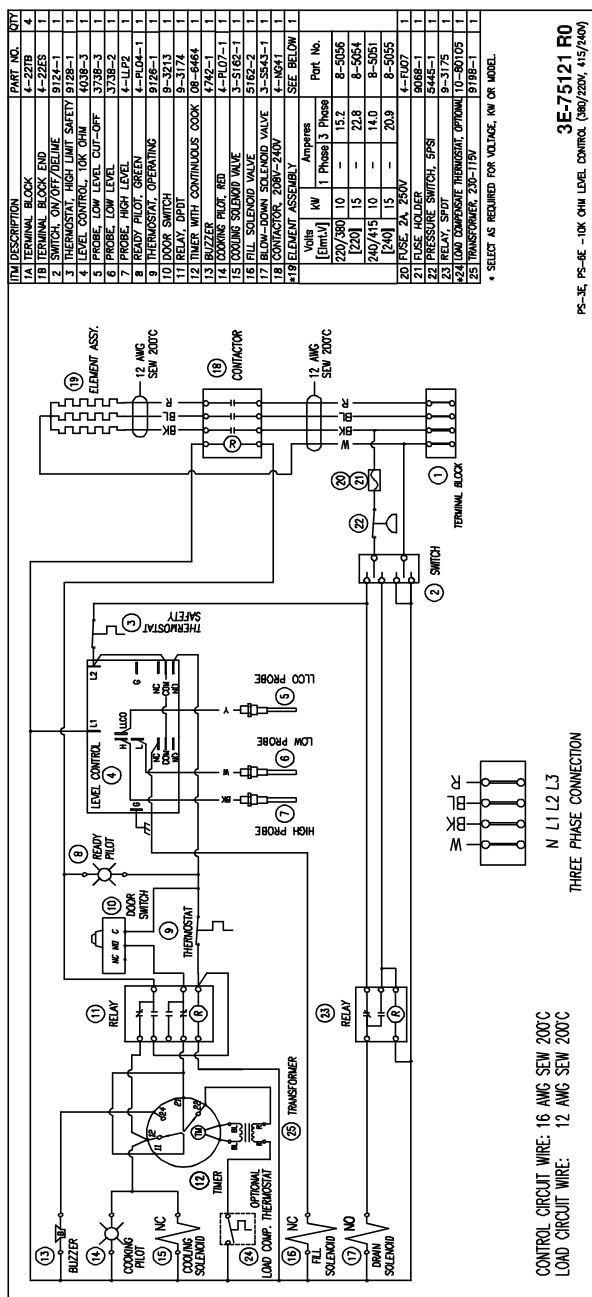
<u>ITEM</u>		<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	
				<u>3</u>	<u>6</u>
* **	70	4-T251	Transformer, 415/240V, 50/60Hz, 100VA	1	1
		4-T255	Transformer, 480/240V, 60Hz, 100VA	1	1
		4-T260	Transformer, 600/240V, 60Hz, 100VA	1	1
	71	1-65S8	Hex Blot, 5/16-18 x 1 SS	2	2
	72	1-59S0	Hex Nut, 1/4 - 20 SS	4	4
*	73	8-6009	"Y" Strainer, Optional	1	1
*	74	4204-24	Wire Harness	1	1
	75	5494-1	Copper Tube, 3/8	1	1

* NOT SHOWN

** SELECT AS REQUIRED

2006-05-09





2006-05-09

