Cleveland Range

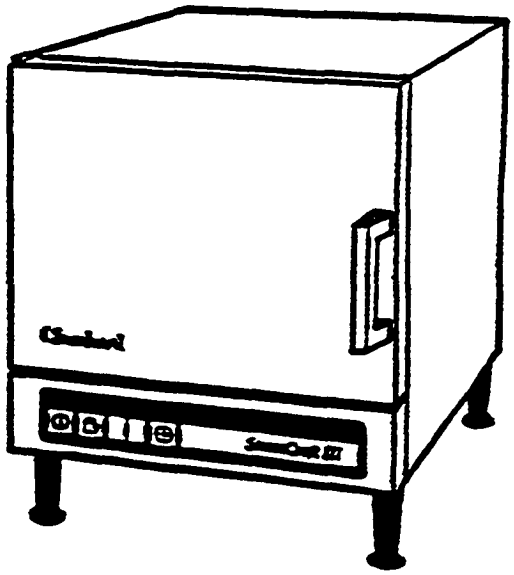
Steamcraft® III

COUNTER TYPE

CONVECTION STEAMER

SERVICE MANUAL

Model CET-8



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CTS-03

IMPORTANT

THE STEAM GENERATOR IN THIS UNIT REQUIRES PERIODIC MAINTENANCE. FAILURE TO PERFORM THE REQUIRED MAINTENANCE (BASED ON WATER QUALITY AT THE INSTALLATION AND VERIFIED BY MAINTENANCE RECORDS) WILL RESULT IN THE CANCELLATION OF WARRANTY COVERAGE ON THE STEAM GENERATOR.

WATER QUALITY REQUIREMENTS

THE RECOMMENDED MINIMUM WATER QUALITY STANDARDS WHETHER UNTREATED OR PRE-TREATED, BASED UPON 10 HOURS OF USE PER DAY, AND A DAILY BLOWDOWN, ARE AS FOLLOWS:

TOTAL DISSOLVED SOLID
less than **60** parts per million

TOTAL ALKALINITY
less than 20 parts per million

SILICA
less than 13 parts per million

pH FACTOR
greater than 7.5

CONSULT A LOCAL WATER TREATMENT SPECIALIST FOR AN ON SITE WATER ANALYSIS AND THIER RECOMMENDATIONS CONCERNING STEAM GENERATOR FEED WATER TREATMENT (IF REQUIRED), IN ORDER TO REMOVE OR REDUCE HARMFUL CONCENTRATIONS OF MINERALS. THE USE OF HIGHLY MINERALIZED WATER WILL MEAN THAT MORE FREQUENT SERVICING OF THE STEAM GENERATOR WILL BE NECESSARY. THE FACT THAT A WATER SUPPLY IS POTABLE IS NOT PROOF THAT IT WILL BE SUITABLE FOR THE GENERATOR.

TABLE OF CONTENTS

INSPECTION

Before unpacking, visually inspect the shipping carton for evidence of any damage during shipment If there are signs of possible damage, do not unpack the equipment. Notify the carrier that delivered the shipment so the canon and its contents can be examined for any damage claims. Fill out all appropriate forms and have the examining carrier sign and date each form. Do not install damaged equipment

UNPACKING

1. If the shipping carton has no signs of possible damage, unpack the equipment To remove the unit from the carton, it is easiest to slit the canon in 4 comers and "peel" it away from the steamer. After removing the canon, examine the steamer for signs of possible damage. If damage exists, detail your observations on a claims form and give to the shipper (keep a copy for your records).
2. If the equipment is undamaged, lift the unit to the counter top OF stand where it is to be installed. Do not install damaged equipment

INSTALLATION INSTRUCTIONS

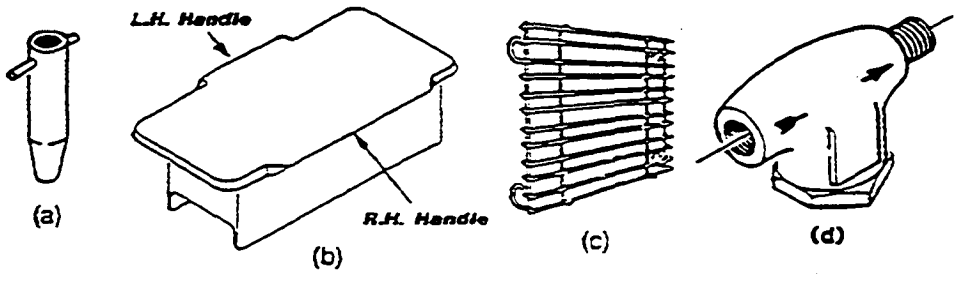
WARNING *Installation of this unit mast be done by qualified plumbing and electrical! installation personnel working to all applicable local and national* codes. *The equipment is to be installed to comply with the Basic Plumbing Code of the Building Officials and Code Administrators International, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA). Improper installation of this product could cause injury or damage and void customer warranty.*

INSTALLATION POLICIES:

- Cleveland Range equipment is designed and manufactured to comply with applicable standards tuners. Included among those certification agencies which have approved the safety of the equipment design and construction are: UL, NSF, CSA, and others.
- Cleveland Range equipment is designed and certified for safe operation only when permanently installed in accordance with local and/or national codes. Many local codes exist, and it is the responsibility of the owner and installer to comply with these codes.
- In no event shall Cleveland Range assume any liability damage or injury resulting from installation which are not in strict compliance with our Installation Instructions. Specifically. Cleveland Range will not assume any liability for damage or injury resulting from improper installation of equipment, including, but not limited to temporary or mobile installations.

BASIC ASSEMBLY:

1. The four legs have adjustable feet and should be used to level the unit in both directions: front to rear and side to side. It is important for good operation that the unit is level.
2. Open steamer door and remove package of operational pans. It will contain:
   (a) Drain Stopper (Units before S/N C3991-881-01)
   (b) 1 Steam Generator Cover
   (c) 2 Pan Slide Racks
   (d) Water inlet Strainer



BASIC ASSEMBLY: (Continued)

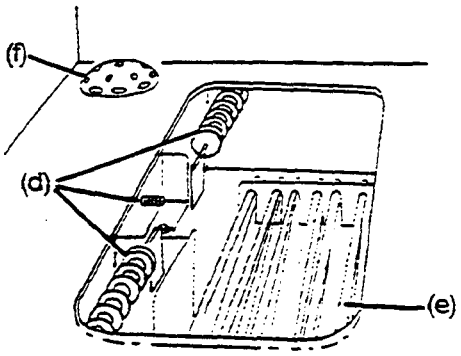
CAUTION
DO NOT REMOVE PRE-ASSEMBLED PARTS.
They may be damaged if not handled property.

3. Pre-Assembled Parts. When the operating pans package is removed, several pre-assembled parts can be seen inside the unit. Do not attempt to remove these parts.

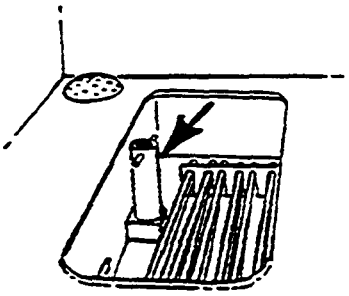
   (d) water level probes

   (e) heating elements

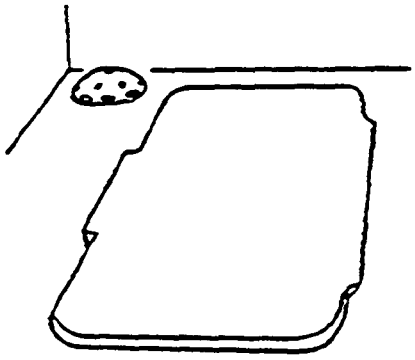
   (f) compartment drain screen



4. Install Drain Stopper (Before S/N C3991-88I-01). With steamer door open, notice the opening in the bottom of the compartment. This leads into the Steam Generator. Inside the Steam Generator about midway along the left-hand side, you will find a square shaped fixture with a drilled hole on top and another on the right side. This is the Steam Generator drain. Place the Drain Stopper vertically as shown. Make sure it seats firmly.

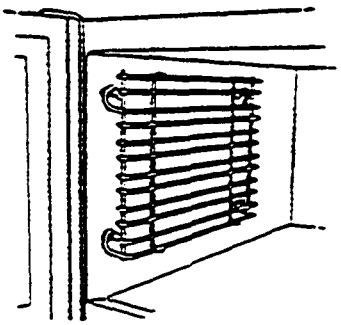


5. Install the Steam Generator Cover. This cover is designed to be installed in only one way. Refer to illustration (b) in Step 2 above. Using both hands, lift and locate the cover above the Steam Generator opening. Lower the cover until it fits firmly into place.



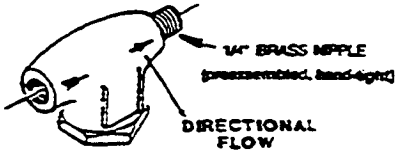
6. Install the Pan Slide Racks. Each slide rack has 4 'loops' which are designed to loop-over' the stainless steel hanger pins pre-mounted on each compartment wall Position the 2 upper loops on the 2 upper hanger pins. Let go. Now place your hand on bottom of slide rack and gently move the slide rack upward, allowing top of slide rack to lean against compartment wall Bottom loops will easily 'loop-over' bottom hanger pins, Slide rack is now in position. Pans will slide easily on property installed slide racks.

7. Check to insure that the Compartment Drain Screen is free of debris. It is in the left rear comer of the compartment floor.

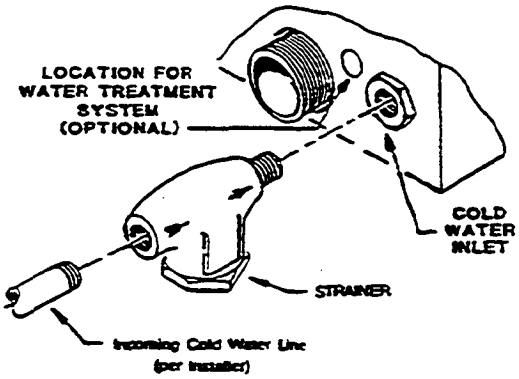


BASIC ASSEMBLY: (*Continued*)

8. Install Cold Water Inlet Strainer.



NOTE: The Strainer must be installed with the Directional Flow Arrow aiming in towards the rear of the steamer.

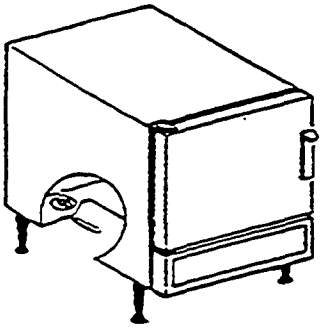


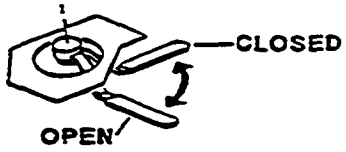
The 40 - MESH STRAINER and *1/4"* Brass NIPPLE (P/N 102383) are preassembled and ready for quick installation into the 1/4"" Bulkhead Coupling (see COLD WATER INLET) located on the lower, right rear of the steamer.

Apply Pipe Dope or Teflon Tape to the *1/4*" Brass Nipple. Turn the *1/4"* Brass Nipple (and Strainer) into the 1/4" Bulkhead Coupling. Using a Pipe Wrench, turn the Strainer, so that the *1/4"* Brass Nipple is snug in the *1/4"* Bulkhead Coupling (Cold Water Inlet) and the Strainer is in a vertical position as shown (with nut in downward position). Then flush the Cold Water Inlet line (to be provided by the installer) before connecting it to the Strainer. Be sure to check .for any leakage and adjust accordingly.

9. Drain Valve Location and Operation.

The Drain Valve is located in the rear left comer, underneath the steamer. When the red handle is turned toward the front of the unit the drain valve is open. (see illustration below) A 90° turn to the right will dose the valve.

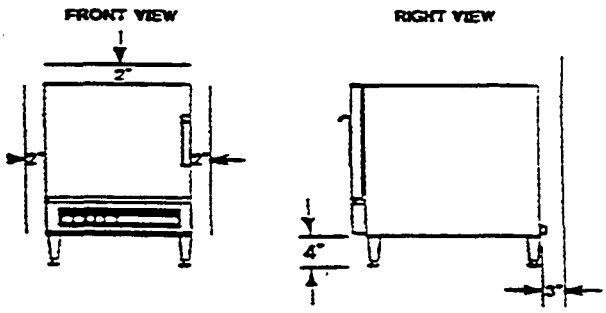




INSTALLATION CLEARANCES:

The steamer should be installed with the following clearances:

- Left = 2"
- Right = 2"
- Top = 2"
- Bottom =4" (4" legs already mounted to unit)



SERVICE CONNECTIONS:

(A) Hole for electrical conduit connection leads to terminal block and ground connection inside unit. On C.S.A. (Canadian Standards Association) units 6 feet of flexible electrical conduit is already attached to the unit for the electrical supply connection.

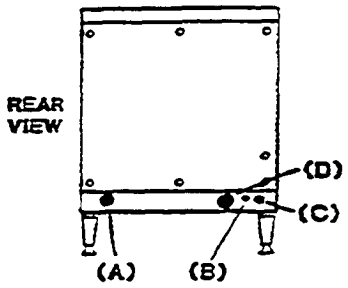
(B) 1/4" 0 COLD WATER INLET for Steam Generator feed water. (On units before S/N C 5519-88L-17)

(B) Location for SteamerGard Water Treatment System. Installation Optional. (On units after S/N C 5519-88L-16)

(C) 1/4" 0 COLD WATER INLET for Condenser feed water. (On units before S/N C 5519-88L-17)

(C) 1/4" diameter COLD WATER INLET for Steam Generator (Boiler) feed water and Cold Water Condenser. (On units after S/N C 5519-88L-16)

(D) Drain (On units after S/N C 2937-88F-13)



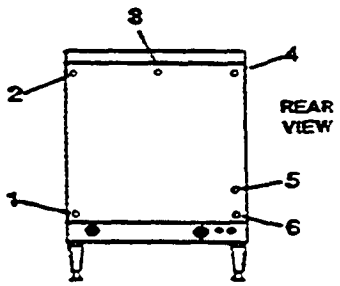
ELECTRICAL:

1. Install in accordance with local codes and/or the National Electric Code, ANSINFPA No. 70-1987 (USA) or the Canadian Electrical Code CSA Standard C22.1 (Canada). A separate fused disconnect switch must be installed for each unit. The steamer must be electrically grounded by the installer.
2. The electric supply must match the power requirements specified on the steamer's rating label. The copper wiring must be sized to carry the required current at the rated voltage. See table below.

VOLTS	KW	3PH AMPS	SIZE (AWG)	1PH AMPS	SIZE (AWG)
208	8.1	**23**	10	**39**	**8**
220	7.4	**20**	10	**34**	**8**
240	8.8	**22**	10	**37**	**8**
380	7.4	**12**	12	**20**	**10**
415	8.8	**13**	12	**22**	**10**
460	7.4	**10**	14	**18**	**12**
480	8.8	**11**	14	**18**	**12**

NOTE: Use copper wire suitable for not less than 75° C

3. Locate the six (6) screws that hold the rear panel to steamer and remove them. (Save to use again.) Remove rear panel, exposing the terminal block on bottom panel of unit. Connect with properly sized copper wire. On C.S.A. units 6 feet of flexible conduit is already attached to the terminal block for the electrical supply connection



4. The steamer is wired 3-phase delta operation at the factory. For single phase operation, the installer must change the two jumpers on the terminal block to that shown in the accompanying diagram (and on the steamer's wiring diagram label).

5. The steamer will be wired 3 phase WYE connection at the factory. For steamers ordered for 380/220 V or 415/240 V, 4 wire 3 phase.

WATER

A 1/4" I.P.S. (M1N. SIZE) COLD water line is required. DO NOT USE HOT WATER. Minimum water pressure (dynamic) is 35 psi (2.4 kg/cm), the maximum static water pressure is 60 psi (4.1 kg/cm).

Water Quality Requirements

If the purity of the incoming water is good, the generator, the heating element and the valves should give years of trouble-free, efficient service with a minimum of servicing.

The recommended minimum water quality standards, whether untreated or pretreated. for the Steam Generator are as follows:

- TOTAL DISSOLVED SOLIDS less than GO parts per million • SILICA less than 13 parts per million
- TOTAL ALKALINITY less than 20 pans per million • pH FACTOR greater than 7.5

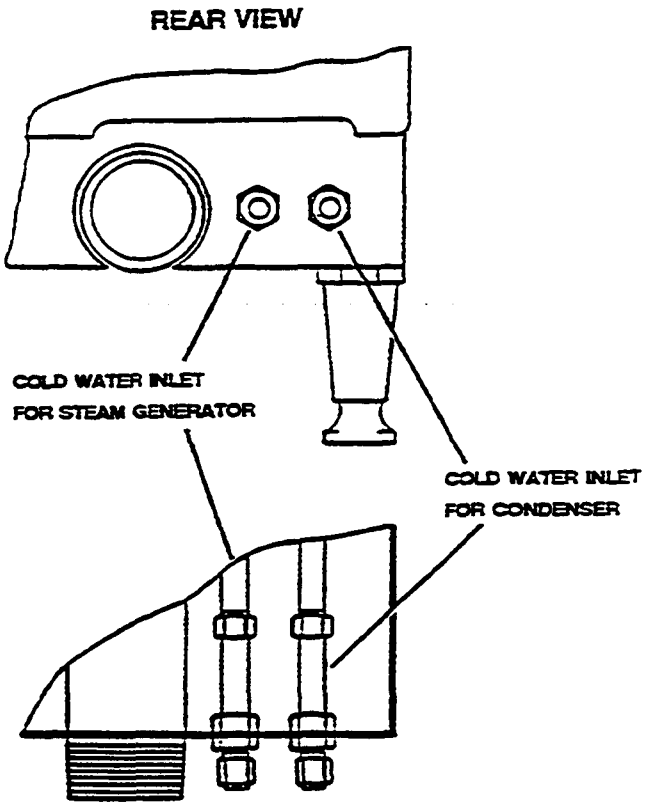
Consult a local water treatment specialist for an on-the-premises water analysis and for recommendations concerning steam generator feed water treatment (if required), in order to remove or reduce harmful concentrations of minerals. The use of a poor quality (highly mineralized) water will mean that more frequent servicing of water sensitive components will be necessary. The fact that a water supply is potable is not proof enough that it will not be detrimental to the water sensitive components.

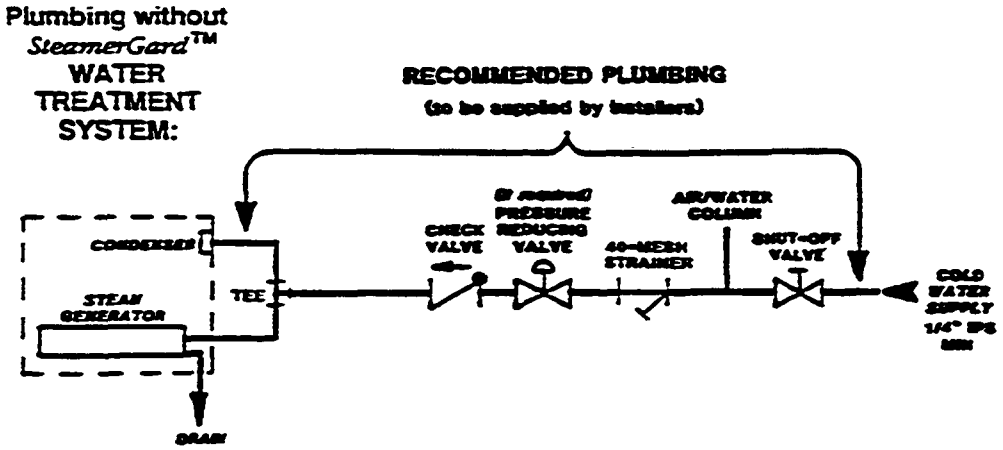
Recommended Plumbing

- On units (before S/N C 5519-88L-17) the steamer has two Cold Water Inlet Fittings at the lower right-hand side of the rear panel. The fitting on the left feeds the Cold Water Inlet to the Steam Generator (See figures 13 and 16) and the one on the right feeds the Cold Water Condenser System. (See figures 14 and 17) Decals mark the respective fittings. When using treated water, only the Cold Water Inlet to the Steam Generator need be connected to the treater; the Cold Water Condenser System can use untreated water.
- On units (after S/N C 5519-88L-16) the steamer has one Cold Water Inlet Fitting at the lower right-hand side of the rear panel (See illustration on page 5). When using a Water Treatment System, the connection for the Steam Generator (Boiler) is made through the optional hole provided. This process will also require additional parts. The Cold Water Condenser System can use untreated water. (See illustration on page 11). NOTE: See rear **view** drawing in "Service Connections, "B & C (page 6).

Recommended Plumbing (Continued)

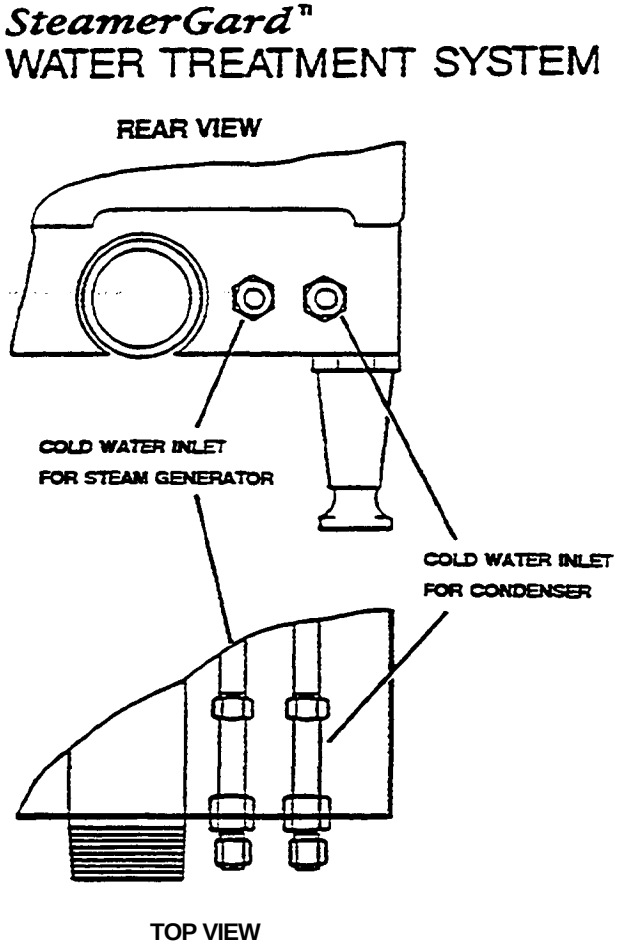
NOTE: This water supply arrangement is used on units before S/N CS519-88L-17.



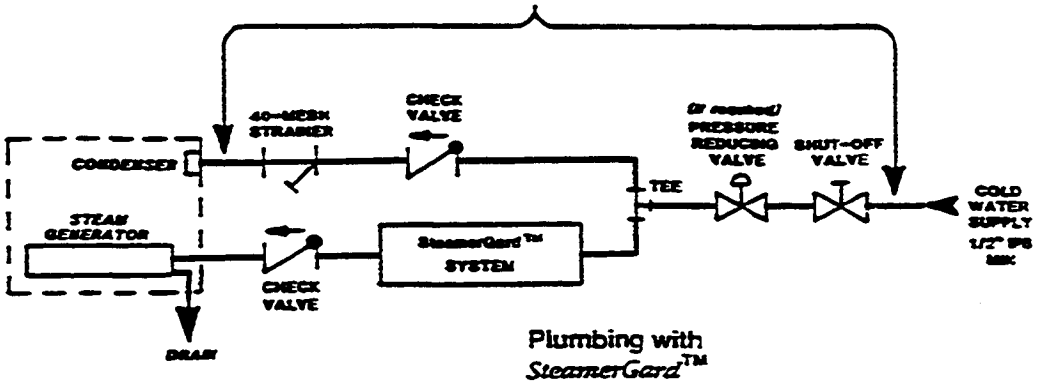


Recommended Plumbing (Continued)

NOTE: This water supply arrangement is used on units before S/N C5519-88L-17.



RECOMMENDED PLUMBING

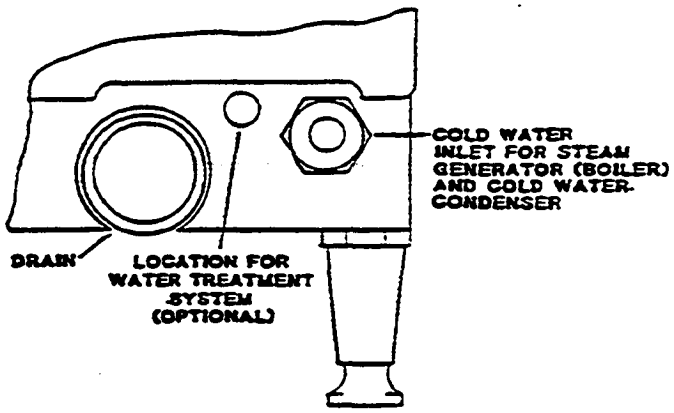


Plumbing with *SteamerGard*™ WATER TREATMENT SYSTEM:

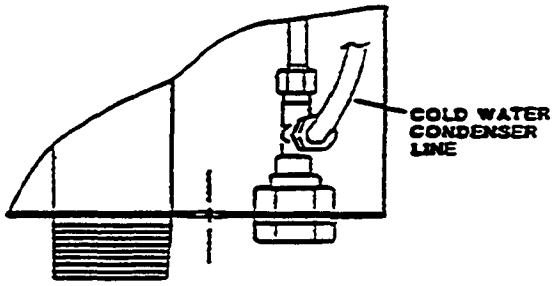
Recommended Plumbing (Continued)

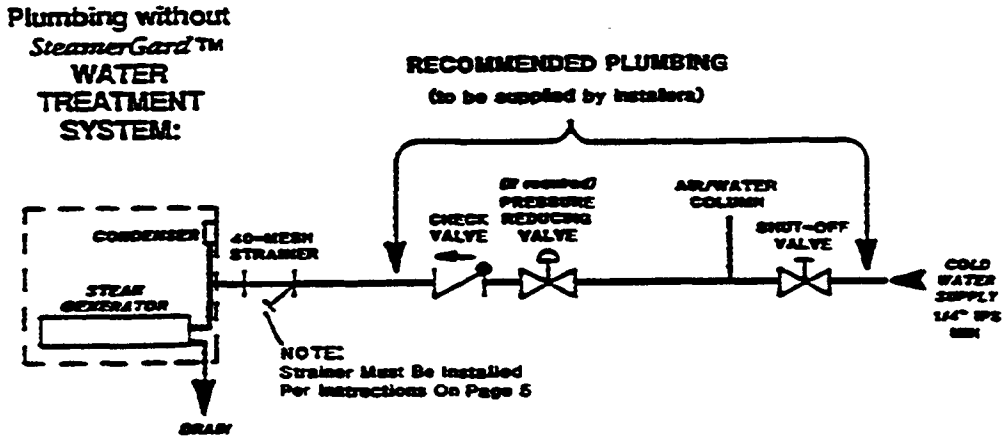
NOTE: This water supply arrangement is used on units before S/N C5519-88L-16.

REAR VIEW



TOP VIEW





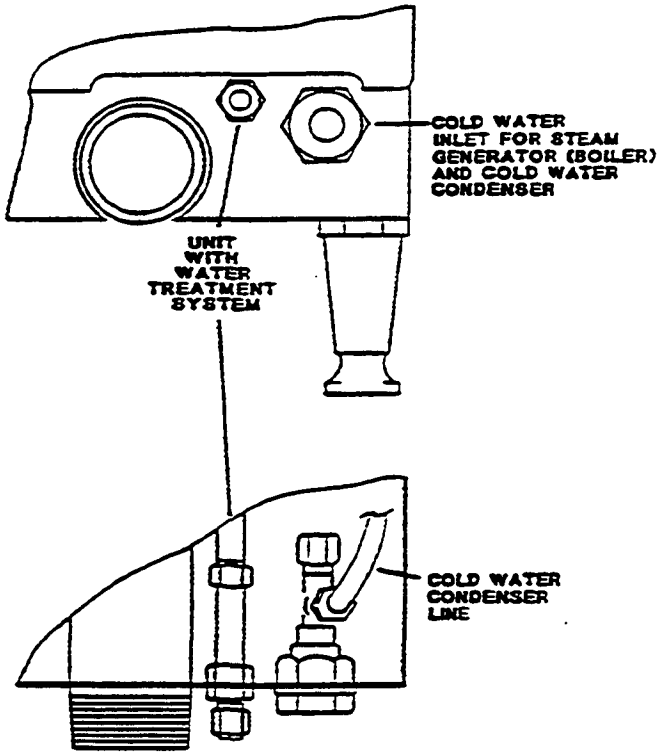
Recommended Plumbing (Continued)

NOTES:

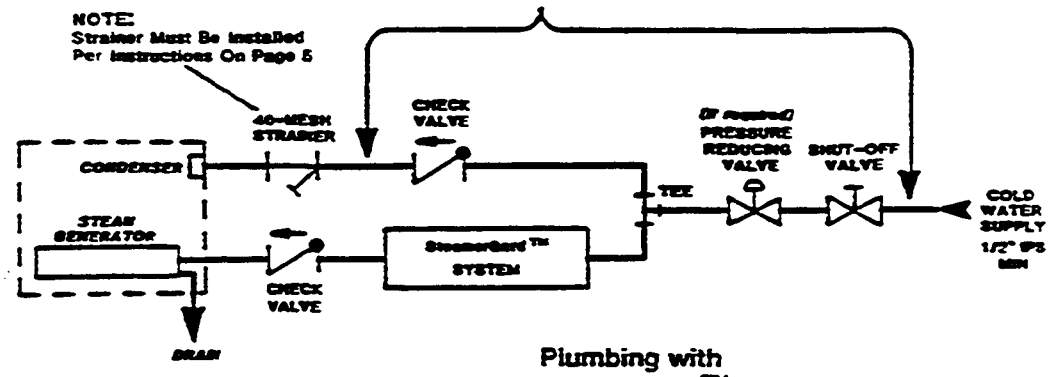
1. This water supply arrangement is used on units after S/N C5519-88L-16.

2. The *conversion* kit for converting one incoming water line into two for a treatment system is P/N 102431.

SteamerGard
WATER TREATMENT SYSTEM



RECOMMEMDED PLUMBING
(to be supplied by installers)



Plumbing with *SteamerGard*™

WATER TREATMENT SYSTEM:

Drain

This drain line outlet discharges exhaust steam and hot condensate. Connect 1-1/4" I.P.S. piping (or larger) to extend the drain line to a nearby open floor drain. Up to two elbows and six feet of 1-1/4" I.P.S. (or larger) extension pipe should be connected to the drain termination. Drain piping extended six to twelve feet. or using three elbows, should be increased to 2" I.P.S. - **DO NOT, UNDER AN CIRCUMSTANCE, CONNECT ANY OTHER EQUIPMENT DRAIN TO THIS DRAIN LINE.** The extension piping must have a gravity flow and vent freely into the air. This drain outlet must be free vented to avoid the creation of back pressure in the steamer cooking compartments.

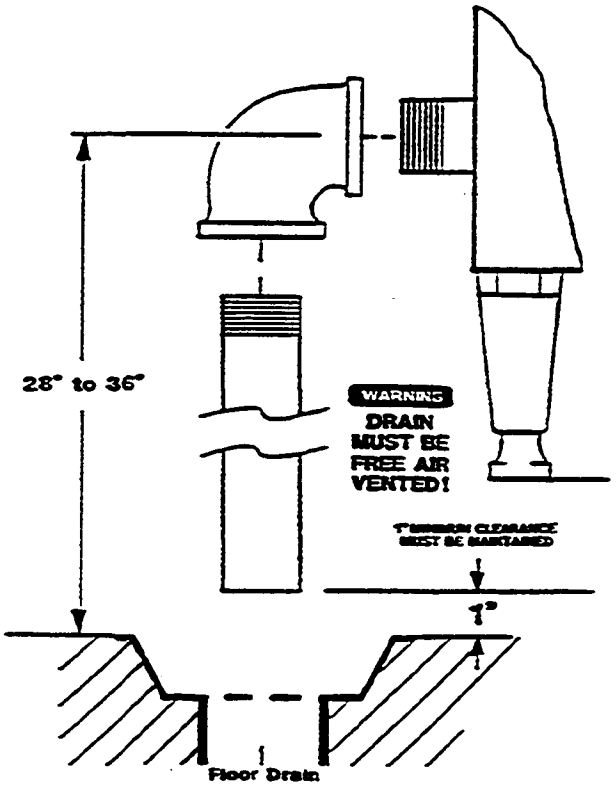
To ensure a vented drain line, **DO NOT, UNDER ANY CIRCUMSTANCE, CONNECT THE DRAIN OUTLET DIRECTLY TO THE FLOOR DRAIN OR SEWER LINE.**

Do not run the drain fine discharge into PVC drain piping or any other drain material not capable of sustaining 180°F operation. The equipment is to be installed to comply with the Basic Plumbing Code of the Building Officials and Code Administrators International, Inc: (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).

In making a connection to the dram termination use a hardening type of pipe sealant. **FINGER TIGHTEN ONLY - DO NOT USE A WRENCH.**

FAILURE TO OBSERVE THESE REQUIREMENTS CAN RESULT IN DAMAGE TO EQUIPMENT AND/OR THE POSSIBILTY OF INJURY.

WARNING ***If these instructions are not complied with, there will be steam and water leakage past the compartment door. Furthermore, the possibility of serious personal injury may result.***



Start-Up and Check-Out

1. Be sure to put the Steam Generator Cover in its' proper location.
2. Close Drain Valve.
3. Turn on water at supply valve.
4. Turn on electricity at Fused Disconnect Switch.
5. Close steamer door.
6. Press "POWER" touch pad.
7. Set Timer display at "01"minutes.
8. Press "TIMED" touch pad. The unit will HI with water and begin to make steam. After the compartment reaches operating temperature the timer will count down to "00" and an alarm will beep. This test will take 5 to 10 minutes.
9. Press "MANUAL* touch pad. The Heater Elements and the Cold Water Condenser will turn on. Open and dose the door several times to ensure that the steam shuts off with the door open.

INTRODUCTION TO *SteamCraft® III*

To get the full advantage of steam cooking, the Cleveland *SteamCraft III* must be properly installed. A steamer which is improperly installed, improperly used, improperly maintained, or improperly repaired will create a dangerous condition and may cause injury to personnel.

OPERATIONAL SAFETY

Your Cleveland *SteamCraft III* will require minimum servicing provided it is operated according to instructions and given the care recommended.

Make sure that responsible personnel understand how your steam cooking equipment should be operated and cared for. Proper use and maintenance pay handsome dividends in longer equipment He and satisfactory performance minimal down-time.

Safe steam cooking equipment operation dictates that every owner should follow these rules for operational safety.

1. Begin a comprehersive, continuous program of steam cooking equipment inspection.
2. Never allow untrained personnel to operate your steam cooking equipment. Establish an in-house training policy and adhere to ft.
3. At the end of each day's operation:

   -Shut unit down at the end of each day's operation according to instruction on pages 21 -*22*.

   -Remove any spilled food, then wash the racks and compartment interiors thoroughly with mid detergent in warm water. Rinse thoroughly with dean warm water. (Racks can be removed and washed in a dishwasher if desired. To reinstall see Basic Assembly instructions, *page 4*.)

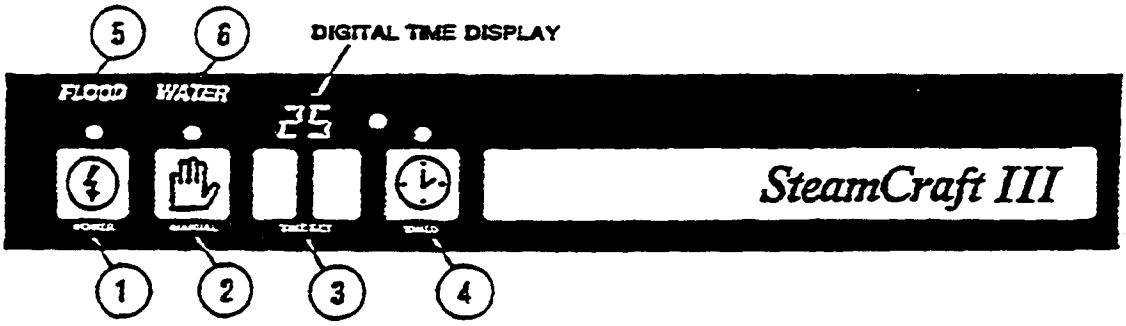
   Let rinse water drain through compartment drain opening. If water does not drain freely, drain lines must be cleaned out before cooking again. Clogged or slow drains are dangerous because hot water may spill out when compartment doors are opened during or after a cooking cycle.

   -Before cleaning the steamer's exterior, BE SURE THAT ELECTRICITY TO THE UNIT AT FUSED DISCONNECT SWITCH IS OFF. Use a damp cloth for cleaning. Never hose down the equipment.
4. Read and follow Cleveland Range instructions on steamer and steam generator maintenance.
5. Use only replacement parts which are factory authorized to preserve the certification of Underwriters Laboratories, Canadian Standards Association, and all approvals and to protect your warranty coverage.
6. Never allow unqualified personnel to service your steamer.

OPERATIONAL FUNCTIONS

Operation of the Cleveland *SteamCraft III* is very easy. Each operator should become familiar with the following operational functions and procedures to effectively start, operate, and shut down the steamer.

CONTROL PANEL OVERVIEW:



1. "POWER" -ON and OFF touch pad controls the power to unit. The red indicator light above the touch •pad is illuminated when the power is ON.
2. "MANUAL" -ON and OFF touch pad controls the manual operation. The green indicator light above the touch pad is illuminated when operating in the manual mode.
3. "TIME SET" -Directional touch pads are used to adjust the time on the Digital Time Display located above the two touch pads. A maximum of 99 minutes can be programmed. The green indicator fight to the right of the Digital Time Display flashes when the steaming compartment is at steaming temperature and the time is counting (up or down).
4. "TIMED" -ON and OFF touch pad controls the timed operation. The green indicator light above the touch pad is illuminated when operating in the TIMED mode.
5. "FLOOD" -FLOOD is a safety signal. POWER to the unit will automatically turn off when the signal comes on. Refer to the troubleshooting section when displayed.
6. "WATER" -WATER illuminates as the steam generator fills turns off when the water level reaches the safe operating level.

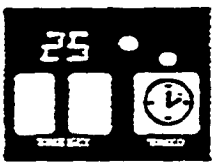
CAUTION

The touch pad controls are designed to be pressed with finger tips only. Be careful not to use fingernails, kitchen utensils or anything that could cause damage.

SETTING DIGITAL TIME DISPLAY:

To set Digital Time Display for TIMED mode, press and hold the "LEFT" touch pad and the display will begin counting upward from 01 to 10 slowly, then more quickly. Run the time up until display is dose to (or over) value wanted, then use the "LEFT" and "RIGHT" touch pads to set actual time desired. Digital time Display must be reset before each new cooking process can begin. (Refer to the Steamer Timer Setting Guide on page 21 for suggested settings.)

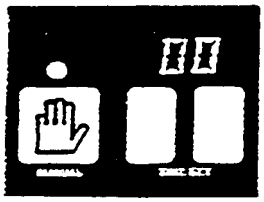
TIMED MODE:



If TIMED operation is desired, cooking time must be set on Digital time Display. Begin timed cooking by pressing "TIMED" touch pad. The green indicator light above the "TIMED" touch pad will become illuminated. When the unit reaches cooking temperature, the timing sequence will begin and win be confirmed by a flashing green indicator light to the right of the DIGITAL TIME DISPLAY. At the conclusion of the timed period, the DIGITAL TIME DISPLAY will flash 00. the green indicator light will go out and a 4 second beeping signal win begin.

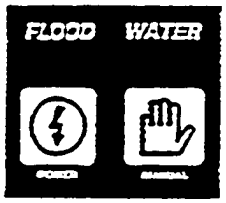
OPERATIONAL FUNCTIONS *(Continued)*

MANUAL MODE:



If TIMED operation is NOT desired, unit may be operated in the MANUAL mode by pressing the "MANUAL" touch pad which turns the steam flow ON and OFF. The green indicator light above the "MANUAL" touch pad will be illuminated when unit is ON in the MANUAL mode. (When operating in the MANUAL mode, the Digital Time Display will start at 00 and count upward, after the steaming compartment reaches cooking temperature, keeping actual time lapsed.)

SPECIAL NOTES ABOUT CONTROL PANEL:

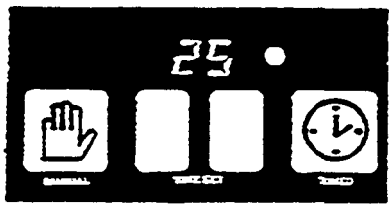


- Above the "POWER" touch pad is an alert signal which will begin flashing FLOOD - if the water level controls or drain are not functioning properly and water threatens to overflow the steam generator. This signal means the unit has shut off the water and all other functions.
- Above the "MANUAL" touch pad is a signal which will light up - WATER. It indicates insufficient water level in the steam generator and will automatically go off when a safe water level is attained. Steamer will not produce steam when this light is on.

NOTE: the event that either of these two-word displays do NOT turn off at the proper time and no quick remedy can be found (turning of a water valve, etc.) the unit will require the attention of an Authorized Service Representative.

WARNING *If FLOOD light is flashing, DO* **NOT** *OPEN COMPARTMENT DOOR! Shut off wetter supply to unit. Flood may be caused by damaged water feed valve. Allow unit to cool before opening compartment door.*

THERMOSTATIC TIMER COMPENSATION:



Whenever this automatic adjustment is taking place, the DIGITAL TIME DISPLAY will stop counting down (or up if in "MANUAL" mode) and the green indicator light will stop flashing. Both will remain illuminated. When the steaming compartment reaches a preset temperature, the steaming operation will automatically begin.

This feature doesn't require any control settings by the owner. It is an automatic function designed to ensure consistent cooking results whether your food product is frozen (needing thawed) or if the compartment door is opened too often.

UNIT FUNCTIONAL TEST

Before S/N: C 1613-88A-24 (with Thermistors)

NOTE: *This test is intended to be carried out after the unit* is *installed. If the water, drain and electrical hook up has been completed property then proceed with test.*

1) Open customer's water supply valve.

2) Check for water leakage at all visible pipe joints, tube connections or unions. Wait a few minutes then look for water leaking from body of unit. If any leakage is found, repair leaks before continuing.

3) Turn on electricity at Fused Disconnect Switch.

4) Check to see that front control panel is off and is not illuminated.

5) Short the flood probe (upper most) to generator or ground. "FLOOD" light should begin to flash within three to four seconds. Push "POWER" touchpad. Unit should not turn on. "FLOOD" light will continue to flash.

6) Turn off electricity to the unit at Fused Disconnect Switch and wait ten seconds. Restore electricity to the unit at the Fused Disconnect Switch.

7) Close Steam Generator drain by removing Steam Generator Cover and placing drain stopper into opening located along left hand side.

8) Push "POWER" touchpad on front control panel.

9) Red indicator light above the "POWER" touchpad, digit displays and "WATER" indicator will light.

10) After approximately five seconds, the water fill solenoid will energize and water will begin to fill the Steam Generator.

11) Check for water leakage around the base of the unit.

12) When water level reaches the low water cutoff probe (lowest) the "WATER" indicator will turn off and heater contactor will be energized. One heating element will begin to heat the water in the Steam Generator.

13) With compartment door open, push "MANUAL" touchpad. Green indicator above touchpad

14) Contactor and heater will turn off.

15) Push "MANUAL" touchpad again.

16) Heater turns on and green indicator turns off.

17) As the Steam Generator temperature reaches "standby temperature" the contactor will be de-energized and heater will turn off.

18) Check that Steam Generator did not come to boil and that water level is correct Water temperature should be between 180° and 190° degrees F.

19) Push "MANUAL" touchpad. Green indicator above touchpad will light. Close compartment door.

20) When compartment door is dosed the condenser solenoid valve and heater contactors will be energized.

21) Check for water flow from drain. Look for water leakage around base of unit

22) Open compartment door. Condenser water and heaters will turn off.

23) Position a test magnet on top of the control panel enclosure over door sensor. Condenser and heaters will turn on.

24) Watch heaters in Steam Generator to determine that all three are working.

NOTE: *This test is best done with cold water in the Steam Generator so that any differences in heater output may be more easily detected. It may be necessary to drain and refill Steam Generator before continuing.*

25) Push "MANUAL" touchpad and remove test magnet.

26) Install Steam Generator Cover and close compartment door.

27) Push and hold "LEFT" Time Set touchpad.

28) Digit displays should count up at two per second for first 5 seconds (display of "00" through "10"). After five seconds displays will count at 20 per second until switch is released.

29) Release and push the "LEFT" Time Set touchpad again.

30) Digits will return to slow counting.

31) Release "LEFT" Time Set touchpad. Repeal steps 27 thru 30 this time pushing "RIGHT" Time Set touchpad.

32) Set time display to "01" and push TIMED" touchpad.

33) As cooking cycle is started the condenser and all heaters will turn on. The green indicator to the right of the time display will not be flashing.

34) When the compartment reaches operating temperature the green Indicator to the right of the digit displays win begin to flash. At this time one heater contactor should be cycling on and off approximately once every 5

35) Turner will count down to "00" one minute after the flashing indicator is first lit, this will end the timed cooking style cycle.

36) At the end of the cycle the heaters and condenser will turn off. the digit displays will flash ("00") and the alarm will beep four times.

37) Push "TIMED" touchpad to stop flashing of the displays.

38) Set timer to any setting over "00".

39) Push "MANUAL" touchpad.

40) Digit display will reset to "00", heaters and condenser will turn on and green indicator by digit displays will flash.

41) Allow the unit to run for at least one minute to see that timer counts up in manual operation.

42) Open compartment door carefully Avoid hot steam contact.

43) Steam and condenser should turn off. Within one minute after the door is opened the timer should stop counting (green indicator stops flashing)

44) Push "POWER" touchpad one time. Unit turns off

45) End of test.

UNIT FUNCTIONAL TEST

After S/N: C 1613-88A-23 (without Thermistors)

NOTE: *This test is intended to be carried out after the unit **is** installed. If the water, drain and electrical hook up has been completed property, men proceed with test.*

1) Open customer's water supply valve.

2) Check for water leakage at all visible pipe joints, tube connections or unions. Wait a few minutes then look for water leaking from body of unit. If any leakage is found, repair leaks before continuing.

3) Turn on electricity at Fused Disconnect Switch.

4) Check to see that front control panel power is off and it is not illuminated.

5) Short the flood probe (upper most) to generator or ground."FLOOD" light should begin to flash within four seconds. Push "POWER" switch. Unit will not turn on. "FLOOD" light will continue to flash.

6) Turn off electricity to the unit at Fused Disconnect Switch and wait ten seconds. Restore electricity to the unit Fused Disconnect Switch.

7) Close Steam Generator drain valve by reaching under the unit and pushing the handle to the right. (Units before serial number C2937-88F-14 have a drain stopper in the generator that must be in place.)

8) Push "POWER" touchpad on front control panel.

9) Red indicator light above the "POWER" touchpad, digit displays and "WATER" indicator will light.

10) After approximately five seconds, the water fill solenoid will energize and water will begin to fill the Steam Generator.

11) Check for water leakage around the base of the unit.

12) If you have removed the front control panel to check for water leakage, make sure ft is up in place and the compartment door is closed. When water level reaches the low water cutoff probe (lowest) the "WATER" indicator will turn off and the heater contactor will be energized. The heating elements will begin to heat the water in the Steam Generator.

13) Open the compartment door and the contactor and heaters will turn off.

14) Close compartment door. Push the "MANUAL" touchpad.

15) When compartment door is dosed the condenser solenoid valve and heater contactors will be energized.

16) Check for water flow from drain. Look for water leakage around base of unit.

17) Open compartment door. Condenser water and heaters will turn off.

18) Position a test magnet on top of the control panel enclosure over door sensor. Condenser and heaters will turn on.

19) Watch heaters in Steam Generator to determine that all three are working.

NOTE: *This test is best done with cold water in the Steam Generator so that any differences in heater output may be more easily detected. It may be necessary to drain and refill Steam Generator before continuing.*

20] Push "MANUAL" touchpad and remove test magnet.

21) Install Steam Generator Cover and dose compartment door.

22) Push and hold "LEFT" Time Set touchpad.

23) Digit displays should count up at two per second for first 5 seconds (display of "00" through "10"). After five seconds displays will count at 20 per second until switch is released.

24) Release and push the "LEFT" Time Set touchpad again.

25) Digits should return to slow counting.

26) Release "LEFT" Time Set touchpad. Repeat steps 22 thru 25 this time pushing "RIGHT" Time Set touchpad.

27) Set time display to Wand push "TIMED" touchpad.

28) As cooking cycle is started the condenser and all heaters will turn on. The green indicator to the right of the time display should not be flashing.

29) When the compartment reaches operating temperature the green Indicator to the right of the digit displays will begin to flash. At this time one heater contactor should be cycling on and off approximately once every 5 seconds.

30) Timer will count down to "00" one minute after the flashing indicator is first lit, this win end the timed cooking cycle.

31) At the end of the cycle the heaters and condenser will turn off, the digit displays will flash ("00") and the alarm will beep four times.

32) Push TIMED" touchpad to stop flashing of the displays.

33) Set timer to any setting over "00".

34) Push "MANUAL" touchpad.

35) Digit display will reset to "00" heaters and condenser will turn on and green indicator by digit displays will flash.

36) Allow the unit to run for at least one minute to see that timer counts up in manual operation.

37) Open compartment door carefully. Avoid hot steam contact.

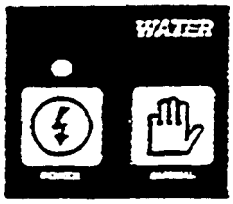
38) Steam and condenser should turn off. Within one minute after the door is opened the timer should stop counting (green indicator stops flashing).

39) Push "POWER" touchpad one time. Unit turns 08.

40) End of test

START-UP and PREHEAT

1. Be sure the Drain Valve is dosed. Reinstall Steam Generator Cover inside steaming compartment. Drain Screen must be free of debris.



2. Press the "POWER" touch pad. The red indicator light will become illuminated indicating that the unit power is ON. Also, the word "WATER" will light up. (Water will enter the unit, filling the steam generator to proper level, the water flow will cease. The word •WATER" win stop glowing.)

3. Preheat the Steaming Compartment for at least 5 minutes before beginning steaming operation. This is done by pressing the "MANUAL" touch pad to turn on the heaters.

STEAMING OPERATION

1. Preheat steamer compartment (as described in "Start-Up and Preheat").
2. Slide the pan(s) with food onto the compartment pan slide racks. Close door.

NOTE: To obtain best steaming results, use shallow, perforated pans, without covers. This assures the best transfer of heat to the food product. When steaming meats, fish or poultry use a catch pan under the perforated pan to collect the juices. **(FAILURE TO USE A CATCH PAN CAN CAUSE A CLOGGED DRAIN. SEE WARNING NOTE ON PAGE 13).**

3. Use either the TIMED" steaming mode or "MANUAL" steaming mode to complete steaming operation.

"TIMED" STEAMING MODE

1. Consult 'Steamer Tuner Setting Guide* for suggested settings (page 21).
2. Set time on timer by pressing the "TIME SET" touch pads.
3. Press the "TIMED" touch pad to start steam flow.
4. Food product is now in process of being cooked. (See note below.)
5. When the selected time has elapsed, the steam flow will automatically turn-off.
6. Remove the pans of food, but be aware that they will be hot. Handle with caution.

"MANUAL" STEAMING MODE

1. Consult 'Steamer timer Settings Guide' for suggested cooking times (page 21).
2. Press the "MANUAL" touch pad to start steam flow. The timer will dock up after the initial delay period.
3. Food product is now in process of being cooked. (See note below.)
4. To stop the steam flow open the steam door. (If the "MANUAL" touch pad is pressed the timer will dear to "00" and resume timing.)
5. Remove the pans of food, but be aware that they will be hot. Handle with caution.

***NOTE:** Although *the steamer door can be opened at any lime during the steaming cycle, the cooking process will be interrupted because the steam flow will automatically stop when the door is opened and not begin again until the door is closed. The total cooking time will be lengthened by the amount of time the door is open.*

HELPFUL HINT: After steaming operation is over for the day and daily clean-up/maintenance has been performed as per instruction, leave the steamer door open a little to prolong the life of the door gasket.

SUGGESTED TIMER SETTING GUIDE

Item	Maximum Amount Per Pan	Number of Perforated Pans 12 x 20 x 2 1/2"	Suggested Timer Setting Minutes
Asparagus Spears	5 Lbs. (2.3 Kg)	1-3	6-9
Broccoli Spears	4 Lbs. (1.8 Kg)	1-3	8-11
Carrots (Whole Baby)	4 Lbs. (1.8 Kg)	1-3	8-11
Corn, Cobbettes	20 Ears	1-3	12-15
Peas, Green	5 Lbs. (2.3 Kg)	1-3	4-7
Hot Dogs	10 Lbs. (10/1)	1*	10
Chicken	5 Lbs. (Cut 8)	1-3*	20
Turkey, Frozen	12 Lbs.	1*	2 1/2 Hrs.
Shellfish	3-4 DOZ.	1-3*	3-8

* (add catch pan)

A Five Minute Preheat Time is Recommended.

PREVENTATIVE MAINTENANCE

DAILY CLEAN-UP

interior:

1. At the end of each day's operation, electricity to the unit should be shut off at the Fused Disconnect Switch and the steamer compartment door opened allowing the steamer to cool down. Open the drain valve.
2. Remove any spilled food from the steamer, then wash the pan slide rack: drain screen, door gasket, and compartment interior with mild detergent and warm water. Rinse thoroughly with clear water.

WARNING **DO NOT *use any caustic cleaners awing cleaning procedure. Rinse water should drain freely through the compartment dram opening. If it does* NOT, *the drain* must be cleaned *before using the steamer.***

DAILY CLEAN-UP *(Continued)*

3. The pan slide racks are easily removed from the steaming compartment for thorough cleaning. They are stainless steel and can be washed safely in a dishwasher (See "Basic Assembly," page 4, to reinstall.)
4. The Steam Generator Cover should be removed only when cool enough to avoid injury. Check to insure that the water drains freely.
5. Depending on the water quality being used. mineral build-up will vary Refer to Chemical Descaling Procedure, pages 22-*23*).
6. Do **NOT** try to dean the heating elements or water level probes by scraping, brushing, etc. Extensive damage could result!

Exterior:

1. Always turn off electricity to the unit at Fused Disconnect Switch before using water on the equipment.
2. Do **NOT** allow water to run into electrical controls
3. Do **NOT** hose down he steamer.

NO HOSES!

4. Allow the steamer to cool before washing. Use the same cleansers and cleaning procedures as for other kitchen surfaces of stainless steel and aluminum. Mild, soapy water, with a clear water rinse, is recommended.

WEEKLY MAINTENANCE

WARNING ***The steamer is equipped with a drain screen in the back of the cooking compartment. The steamer should never be operated without the screen in place. This screen. prevents large food particles from entering and possibly restricting the drain line. Any restriction of the drain line may cause a slight build-up of back pressure in the compartment resulting in steam leaks around the door gasket. It also may adversely affect the convection action of the steam in the compartment which is necessary for optimion performance. Pouring USDA approved drain cleaner through the compartment drain once a week, will belp to ensure an open drain.***

CHEMICAL DESCALING INSTRUCTIONS

PRECAUTIONS:

- Liquid Phosphoric Acid. can be handled with comparitive safety if the basic rules of safety for handling any acid are followed.
- Breathing the fumes should be avoided. Any areas of the skin with which phosphoric acid comes in contact should be immediately flushed with large quantities of cold water. Affected clothing should be removed.
- In case of contact with the eyes, the eyes should be flushed with large amounts of cold water for a minimum of 15 minutes, after which, medical attention should be sought.
- Protective goggles are advised, and should be of the approved cup-type. Rubber gloves and a mask to prevent breathing of dust when handling either the dry product or its solution, are also recommended.
- If accidentally taken internally the person should drink large amounts of water immediately and seek m attention.

CLEANING PROCEDURE:

1. Make sure that the steamers' on/off "POWER" touchpad is in the OFF position. Allow ample time for the compartment and the water in the Steam Generator to cool down before proceeding to step #2.
2. Take the Steam Generator Cover out of the Steam Generator opening.
3. Drain out all of the water present in the Steam Generator by opening the Drain Valve.
4. Remove all loose scale that can be scraped out of the Steam Generator without difficulty and then rinse dean with tap water. Do not attempt to wash the pieces out through the drain. DO NOT SCRAPE THE HEATING ELEMENTS OR THE WATER LEVEL PROBES.
5. Close the Drain Valve but leave the Steam Generator Cover out for now.
6. Push the on/off "POWER" touchpad to the ON position. This will allow tap water into the Steam Generator. The water flow will automatically stop when the normal operating level is reached.
7. Close the cooking compartment door and press the "MANUAL" touch pad to heat the water to 140- 160° F.
8. If the scale on the sides of the Steam Generator extends higher than the water line, add cold tap water manually (using a container) until the scale is covered with water. The acid works best in water at a temperature of about 140-160F.
9. Mix two to three cups of phosphoric acid descaler with the hot water in the Steam Generator. A bubbling, hissing action will be created by the chemical attack of the add on the scale.
10. Replace the Steam Generator Cover on the Steam Generator so the scale on it's surfaces can be removed.
11. Leave the water/acid mixture in the Steam Generator until the metal surfaces have been descaled. The time required to descale the Steam Generator will vary from a minimum of 1 1/2 hours to several hours, depending on the quantity of descaling required. As the add is consumed in dissolving the scale, there may still be evidence of undisolved scale, an additional one or two cups can be added to the working solution.
12. A thorough visual examination of the Steam Generator should reveal that the scale has been removed. When your inspection is satisfactory, the Steam Generator will be ready to be drained. Simply open the Drain Valve and let the used cleaning solution drain out. After draining out the used cleaning agent, the Steam Generator will need to be neutralized to counteract any remaining add.
13. Close the Drain Valve and add three to four tablespoons of baking soda (neutralizing agent) to the Steam Generator. Set the "TIMED" mode to 10 minutes and push the touch pad to the ON position. A green indicator light above the touch pad is illuminated when operating in the "TIMED" mode. At the end of the cycle, turn off the unit at the "POWER" touch pad and open the Drain Valve. Inspect the Steam Generator. If scale exists, repeat the process; otherwise, descaling is complete.

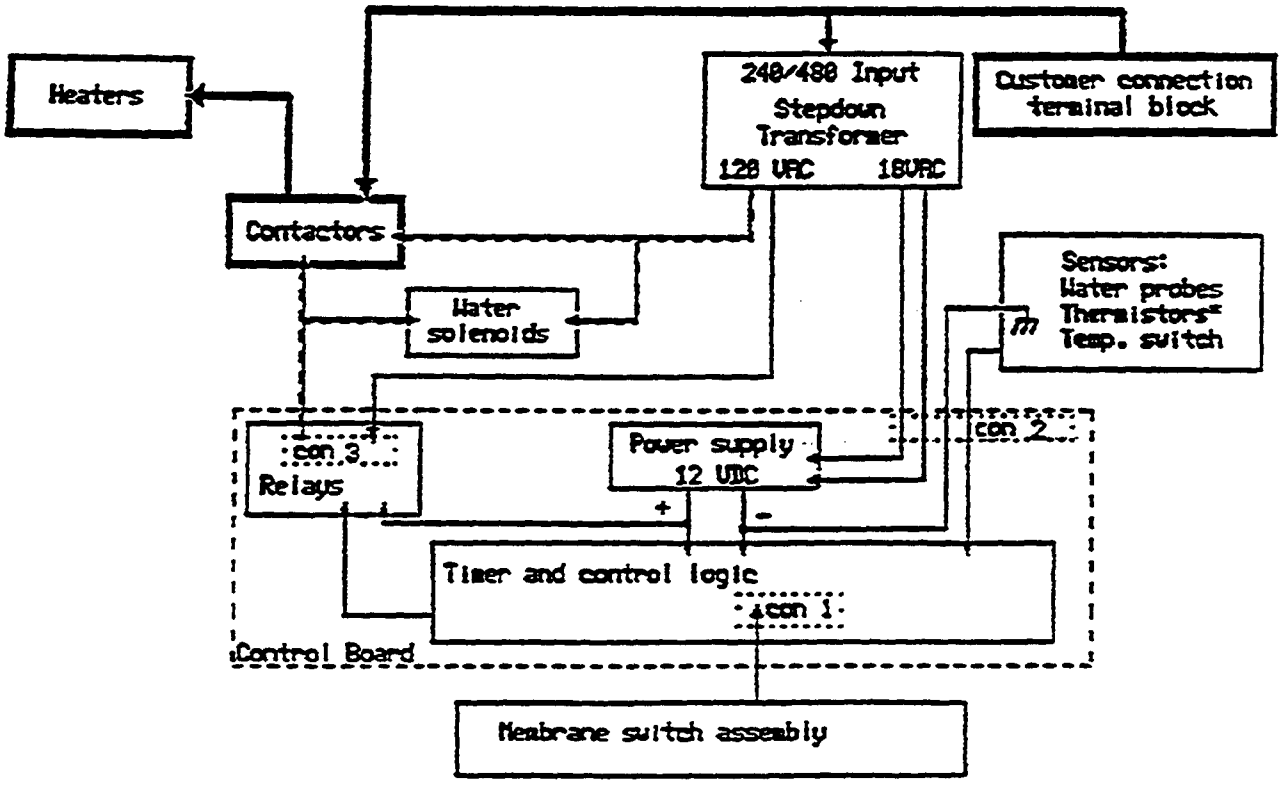
NOTE: Please contact your Maintenance and Repair Center to purchase Descaling Kits or for information concerning the descaling procedure.

ELECTRICAL CIRCUITRY OVERVIEW

A block diagram for the *SteamCraft III* is shown in Fig. 1.

SteamCraft III counter type steamers are composed of three separate power systems with interface between each being handled by relays and contactors. The primary voltage source provided by the customer is used to power all major power loads in the steamer. The remaining control and display functions are powered by 120 and 18V secondary windings of the transformer. The contactors used to switch high voltage loads and solenoid valves used to control water flow are powered by 120 VAC. The control of the 120 volt is carried out by the control board (part # 101606 or 101918). The user input, water level and temperature control, timer functions, time display and safety circuits are operated on 12 VDC. This regulated DC supply is part of the control board and is powered by 18 VAC.

NOTE: All high voltage *(208-480 VAC)* input, heater, transformer primary wiring, transformer secondary circuits *(18 and 120 VAC),* secondary loads and switching devices *(including relay circuits on control boards)* should be isolated from ground.



——288 to 488 volt circuits
------128 volt circuits
——Low voltage control circuits

• on units before S/N C 1613-88A-24

PRIMARY CIRCUITS

The electrical power input as provided by the customer is used to power heaters and stepdown transformer of the steamer. These components are affected by the choice of input power in the following ways:

1. Each heater wattage used is available in three design voltages (208,230 and 460 V) *Refer to heater data section below.*
2. Primary windings of the stepdown transformer may be series or parallel connected for operation at 208-240 or 440-480 volts respectively.

NOTE: *All of the components used in this cooker are designed for use at 50 or 60 Hz. Steamers that are to be run on 50 cycle power must have the control board modified for that purpose. To do this remove the wire jumper labeled "JP1".* (See figures 2 and 3)

TESTING OF HEATING ELEMENTS:

WARNING ***Disconnect power before checking beating elements***

Heating elements may be tested installed in the Steam Generator with or without wiring connected.

Measure resistance of heating dement and compare value to those listed in Table 1 below. It is possible to determine the actual heater ratings and/or pan number using this method. When trouble-shooting a unit. resistance between heater terminals and generator tank, *(ground)* should always be checked. A very high *(over 1 Meg ohm)* or infinite resistance should be found between either terminal and ground for dry undamaged heating elements.

CLEVELAND PART #	DESIGN WATTS VOLTS	OHMS (+/-5%)
101225	2660 208	16
101225-1	2660 230	19
101225-2	2660 460	76

Table 1

120 VAC CIRCUITS

The acceptable voltage range for the 120 V secondary circuits is 105 to 140 VAC measured no load at the transformer. For ease of identification all of these circuits are wired with 8 AWG white wire with color stripe or tracer. All of the wiring is contained in one harness assembly having one, six position plug for connection to the control board.

Refer to the detailed wiring diagram on page 29 (Fig. 3) and block diagram on page 24.

Control board mounted relays (normally open SPST contacts) are used to switch 120 VAC to water solenoid valves and heater contactors. Each relay has one side of its contacts connected to a common 120 VAC input. This input is supplied to the board directly from the stepdown transformer by a wire (white with black stripe) to pin 1 of CON 3. All 120 VAC outputs are also brought out through CON 3. Four outputs are available on control board pan # 101606 and three available on # 101918. All 120 V loads have one coil connection tied directly to the stepdown transformer via a single white wire that is 'daisy chained' from coil to coil.

NOTE: If a digital multimeter (DMM) is being used to check voltage output from CON 3 to solenoids or contactors the load must remain connected to the board to obtain an accurate result. This is due to the very high input impedance of this type of meter allows current feeding through the capacitors across output relay contacts to appear as 120 volts our.

A description of each outputs function is provided below. Refer to wiring diagrams for CON 3 and wiring harness

WATER PILL SOLENOID VALVE:

The water level control for the Steam Generator is active whenever the steamer is on. In normal operation the water fill solenoid is energized only after the resistance between the middle water probe and the Steam Generator has been continuously higher than the set point (12,000 Ohm) for more than 5 seconds. When resistance drops below set point (water touches probe) the solenoid valve is shut off immediately. See Water Level Control section pages 30-33.

CONDENSOR WATER SOLENOID VALVE:

The condensor water solenoid valve is energized during all cooking cycles as long as the compartment

FRONT CONTACTOR (3 POLE) (before S/N C1613-88A-24) or
FOUR POLE CONTACTOR IN (after S/N C 1613-88A-23):

This contactor is energized (heaters on) when the cooking cycle is in progress and the compartment door is closed *AND* water level is above the low water probe. ("WATER" light is not lit)

REAR CONTACTOR (3 POLE) (before S/N C 1613-88A-24):

This contactor functions during steaming cycles and in standby operation. When steamer power is on and water is above low water probe this contactor cycles on and off to maintain water pan temperature at about 190° F. During steaming cycles (door dosed and water level above tow probe) this contactor cycles on and off to maintain proper amount of steam in the compartment See Temperature Controls section page 34-35.

LOW VOLTAGE CIRCUITS and CONTROL BOARD

As seen in the block diagram of the steamer, all sensor and user touchpad inputs are connected directly to the control board at CON 2 and CON 1 respectively. The control board output connections are provided at CON 3 as discussed in previous section.

All low voltage DC signals to the control board and the low voltage AC power supply inputs are provided at CON 2 of the control board. This connector location is provided with an attached wiring harness. Refer to Figure(s) 2 and 3 (Pages 28-29). Color coded pairs of wires are used for thermistor (on units before S/N C 1613-88A-24) and compartment temperature switch inputs. One wire from each pair is connected to the power supply common. The water level control probe and power supply common is connected to ground via the green wire from CON 2. All wires in the harness except the 18 VAC input can be shorted to ground without risk of damage to the steamer. Open or shorted wiring will cause improper operation of the steamer. See information below for details.

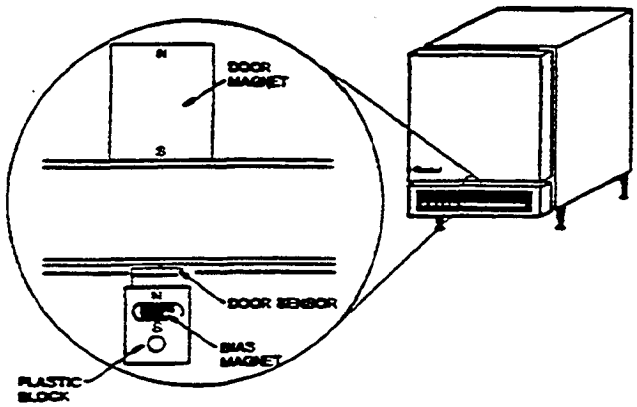
Printed circuit boards used in Cleveland Range equipment are manufactured with conformal type coatings applied over all components and circuit traces for moisture protection. This coating may be damaged or removed during handling or shipment. Erratic behavior of a control board often is the result of moisture contamination or snorting circuit traces. Typically this condition will cause no permanent damage to the control board. In cases where moisture is suspected cause of failure, the control board should be removed and thoroughly dried. Particular attention should be paid to connectors and wire leads. After the control board is returned to operating condition, steps to prevent further contamination should be taken. This may include additional coatings, repair of water leaks or correction of installation deficiencies.

DOOR SENSOR:

Heater contactor(s) and condensor solenoid valve will not operate if door position sensor is not activated. This sensor is mounted on the Control Board Assembly (pan # 101606,101918 and 101607) and is magnetically activated by a magnet mounted inside the compartment door.

To test the operation of heater and condensor circuits with the control panel assembly removed or compartment door open, a magnet may be used to activate the door sensor. The magnet must be positioned over the sensor with the SOUTH MAGNETIC POLE FACING THE SENSOR.

When replacing a Control Board Assembly it may be necessary to reuse the plastic mounting block. 8-32 x 1/4" screw and bias magnet. To avoid changing magnet polarity, do not remove the bias magnet from plastic block:



DOOR SENSOR LOCATION

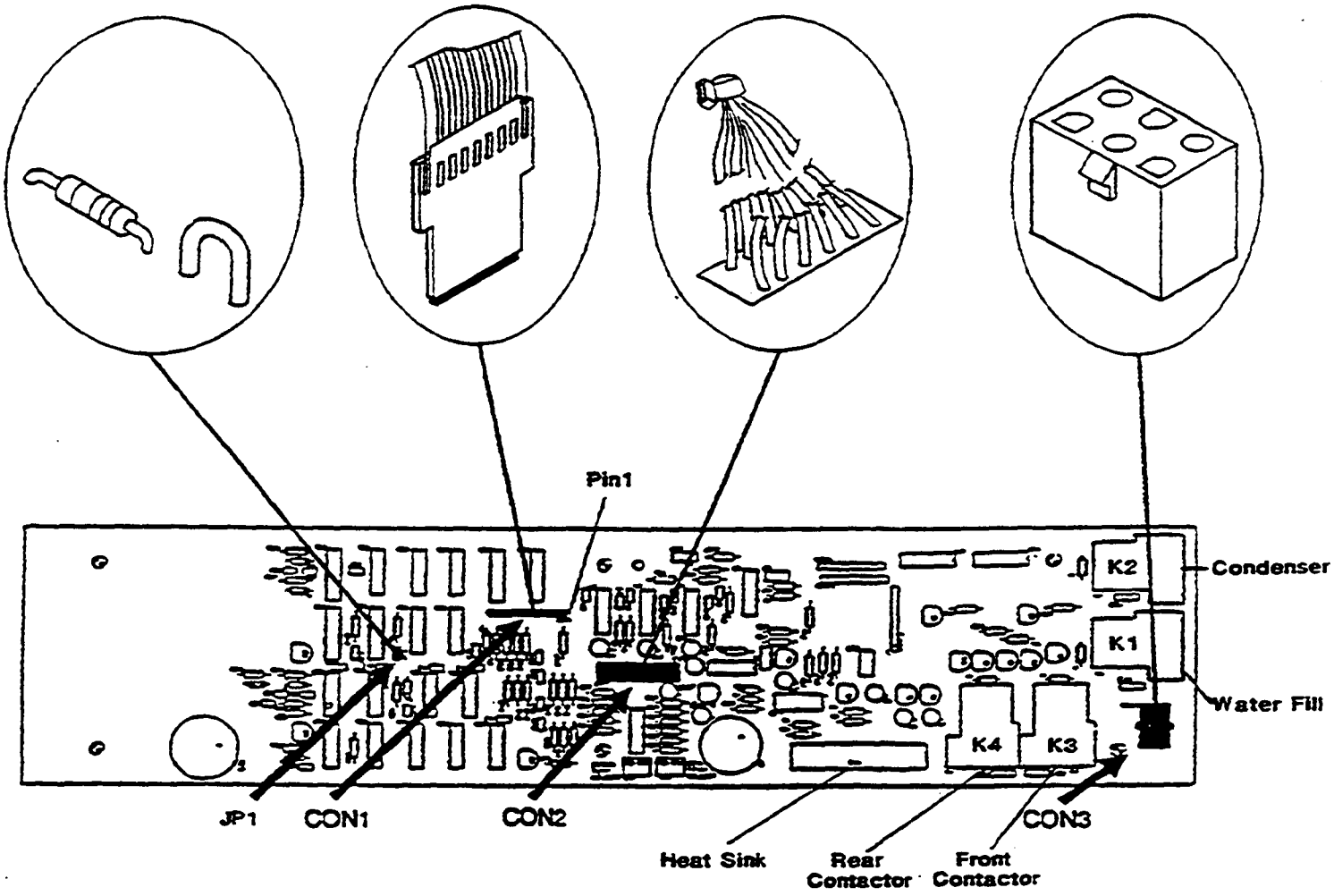


Fig- 2 CONTROL BOARD PCB (pan # 101606)

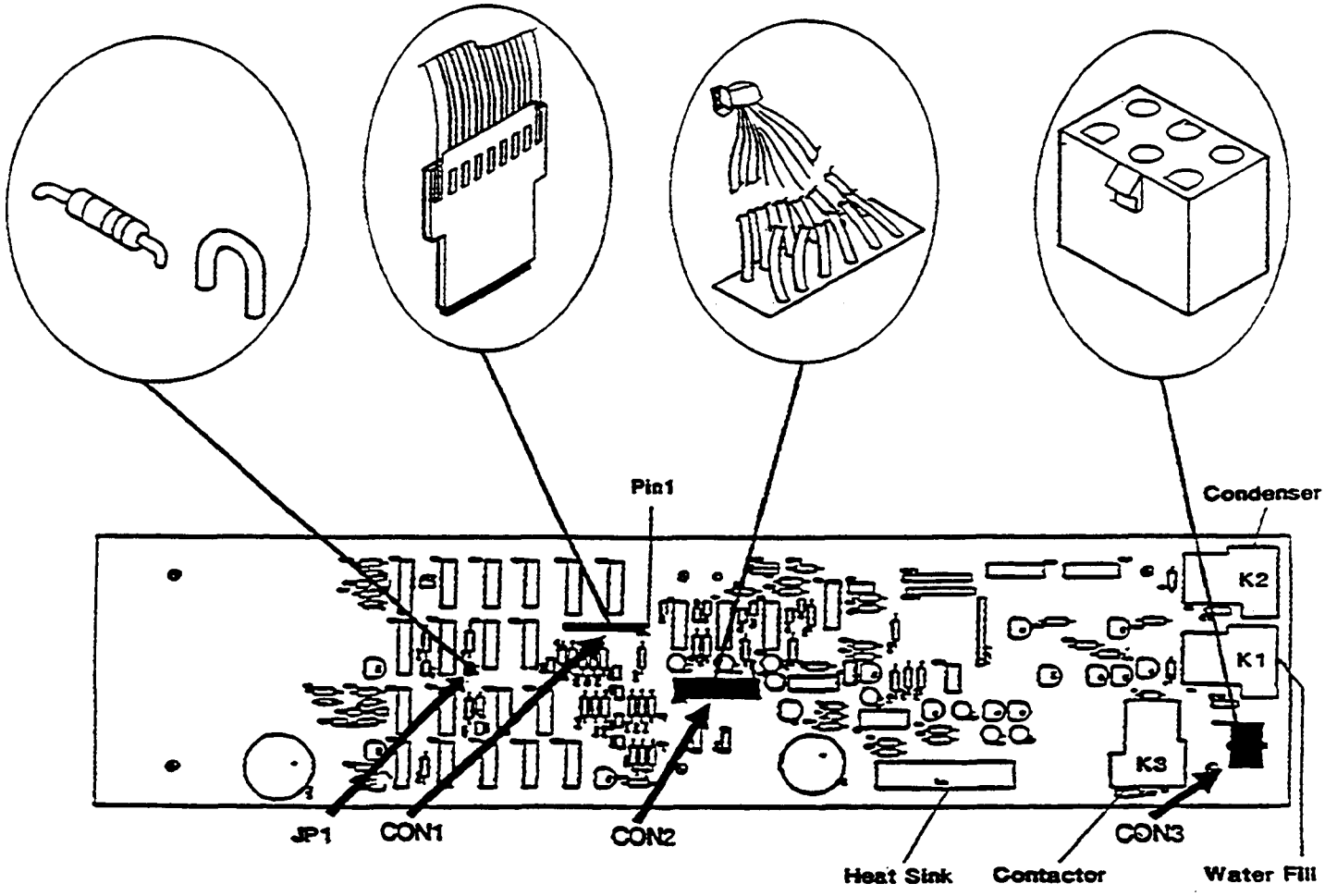


Fig. 3 CONTROL BOARD PCB (pan # 101918)

MEMBRANE SWITCH: (pan # 101119)

A properly installed membrane switch when tested with an ohm meter must have a resistance of less than 70 ohms when held closed. This value is as set by the switch vendor for quality control purposes, the design of the circuit is based on a 5000 ohm limit.

Before testing or replacing a membrane switch be sure that both the pins and sockets of the switch connector (CON 1) are clean and free of contaminants and moisture. Refer to page 28 and 29 for connector pin location.

COMPARTMENT TEMPERATURE SWITCH: (part # 101543)

A snap action thermostatic switch is attached to the bottom of the compartment near the front left corner of the Steam Generator. The timer will count (minutes) when this switch is dosed and suspend timing when the switch is open. The action of the compartment temperature switch provides compensation for product temperature (fresh or frozen), compartment loading or opening of the compartment door during a cooking cycle.

Problems related to timing of cooking cycles may result from a damaged or improperly installed thermostatic switch. By removing and jumping together the two purple wires from CON 2 of the control board an accurate check of the timer operation may be made. If timer still fails count minutes correctly, separate purple wires and check for 12 VDC between them. Inspect wire leads and terminals if no voltage is detected and repair as required. The thermostatic switch should be tested to see that ft doses when compartment temperature reaches 180° to 200° F and opens within two minutes after the compartment (hot) door is open.

WATER LEVEL PROBES

GENERAL DESCRIPTION:

All Cleveland Range steamers employ resistive sensing type water level control circuits. In this a low power AC current source develops a potential between the shell of the Steam Generator and the sensing probe. When water fills the tank to the point where the water contacts the probe, current begins to flow (through water) in the circuit. This current flow is used to trigger an appropriate switching action. For example turning off the water fill solenoid when current flows in the water level probe circuit.

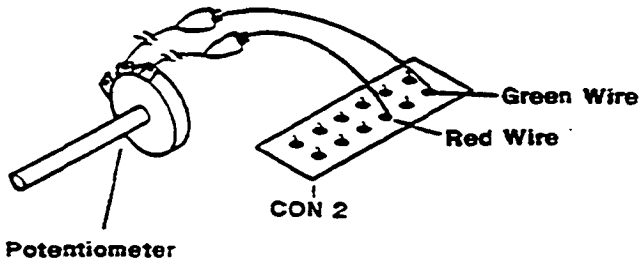
Current flow through any circuit is a function of both the voltage and the resistance of the circuit In the case of water level controls the resistance at which the current flow is great enough to cause the control to switch is called the set point resistance. This is expressed as a nominal DC resistance value and does not take into account the reactive (AC) characteristics of the water in the circuit. This explains why the measured resistance through water (probe to tank) may be somewhat higher than the set point resistance of the control without causing any problems.

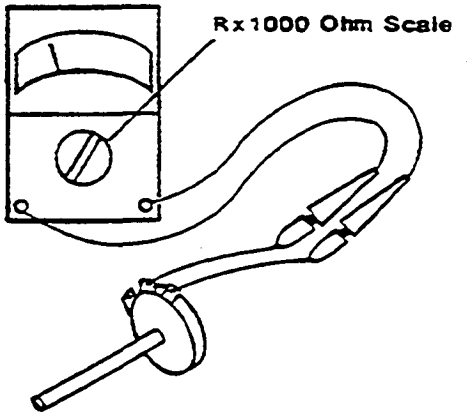
The *SteamCraft III* steamer uses a high frequency (15 to 20 kHz) AC current source with an open circuit voltage of 0.6V RMS (+ /-5%). The nominal set point resistance tor all water level probe functions in these steamers is *1*2,000 Ohms. This value may vary as much as 5,000 Ohms without significant effect on performance.

To test the operation of water level sensing functions ft. is helpful to have a multimeter or ohmmeter to check resistance and a 100,000 Ohm potentiometer. Connect the pot between the control board "COMMON" (green wire) and the appropriate probe wire. Refer to test procedure below for function to be tested.

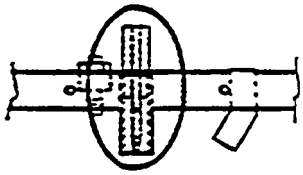
FLOOD PROBE:

1. Disconnect the red wire from the Rood probe
2. Using a meter, set the resistance of the potentiometer to 15,000 Ohms
3. Connect the pot to COMMON (green) and water level probe (red wire)
4. Turn on unit (push "POWER" touchpad) LED indicator will light.
5. Allow one minute of operation to determine if "FLOOD" shut down circuit will be triggered.
6. Remove pot and change resistance to 5,000 Ohms.
7. Reconnect the pot The "FLOOD" indicator light should begin to flash after 3 to 5 seconds. At this time the "POWER" on/off touchpad should not be functional. Removing the pot will not restore the unit to normal operation. This can only be accomplished by removing all power from the steamer at the customers Fused Disconnect Switch.





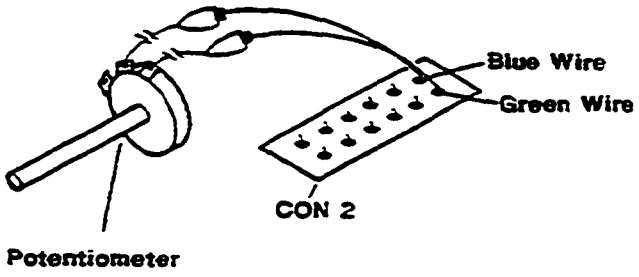
Reading should be between 5,000 to 18,000 Ohms

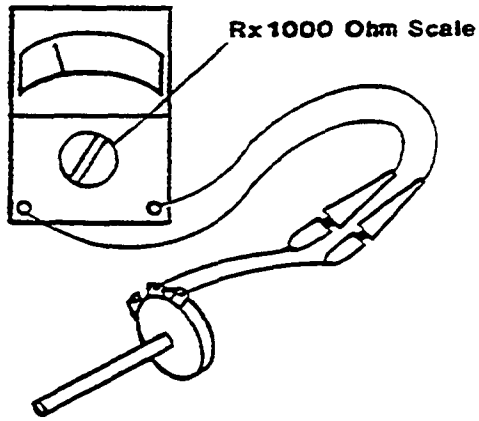


FLOOD PROBE

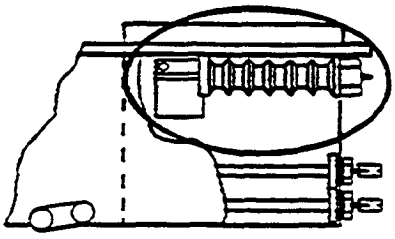
WATER LEVEL:

1) Turn off water or disconnect wires to the water fill solenoid and drain Steam Generator.
2) Disconnect the blue wire from the middle water level probe
3) Using a meter set the resistance of the potentiometer to 20,000 Ohms
4) Connect the pot to COMMON (green) and water level probe (blue wire)
5) Turn on unit (push "POWER" touchpad) and begin timing. Water level solenoid should energize in 5 to 8 seconds.
6) Slowly turn knob on potentiometer to reduce the resistance. Stop turning pot at the moment the water solenoid turns off.
7) Remove pot and measure resistance. The resistance should be between 10.000 and 15.000 Ohms.
8) Reconnect the pot. The water solenoid should turn off immediately.





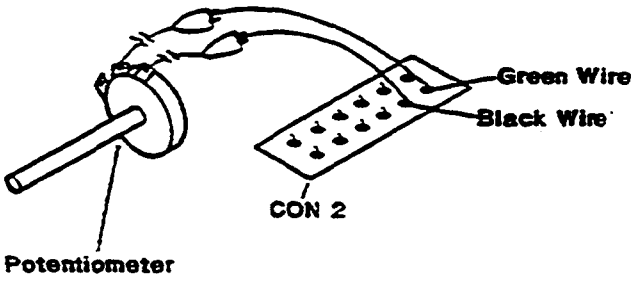
Reading should be between 5.000 to 18,000 Ohms

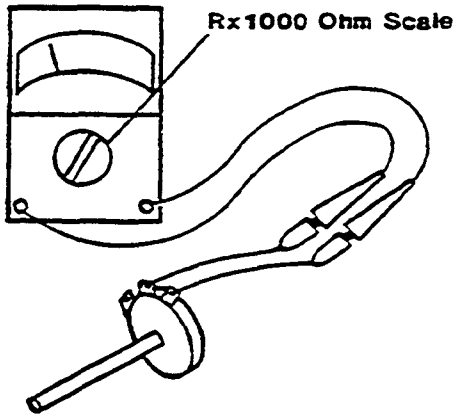


WATER LEVEL PROBE

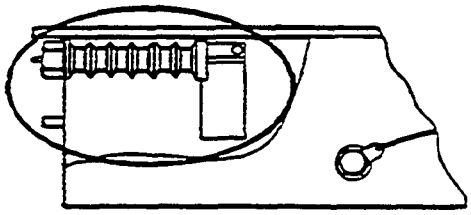
LOW WATER LEVEL:

1) Turn off water or disconnect wires to the water fill solenoid and drain Steam Generator.
2) Disconnect the black wire from the lower water level probe
3) Using a meter set the resistance of the potentiometer to 20,000 Ohms
4) Connect the pot to COMMON (green) and water level probe (black wire)
5) Turn on unit (push "POWER" touchpad) "WATER" warning light should light.
6) With test magnet installed over door sensor, push "MANUAL" touchpad (LED over touchpad will light up). condenser solenoid valve wit open. Heater contactor(s) will not energize.
7) Slowly turn knob on potentiometer to reduce the resistance. Stop turning pot at the moment the contactor(s} energize and "WATER" light turns off.
8) Remove pot (contactor turns off immediately) and measure resistance. The resistance should be between 10,000 and 18,000 Ohms.
9) Reconnect the pot. The contactor(s) should turn on immediately.





Reading should be between 5,000 to 18,000 Ohms



LOW WATER PROBE

TEMPERATURE CONTROL CIRCUITS

GENERAL DESCRIPTION:

Two separate temperature control circuits have been incorporated into the controls of *SteamCraft III* steamers. These controls offer the additional standby and power conservation features. Both circuits use a negative temperature coefficient thermistor (pan # *101508.* used on units before S/N C 1613-88A-24) as a temperature sensor and a board mounted potentiometer for set point adjustment. Each thermistor to control board combination requires separate calibration, therefore potentiometers must readjusted if a board or thermistor is replaced.

The operation of both the "STANDBY" and the "DRAIN TEMPERATURE ADJUST" circuits make use of the rear heater contactor to control heater loads. By doing so, the "STANDBY" circuit can turn on one heater (contactor closed) to preheat water and the "DRAIN TEMPERATURE ADJUST" circuit can turn off (contactor open) two heaters as a means of steam regulation during cooking cycles.

NOTE: *Water must be in contact with the low water probe before heater contactor(s) will operate. Compartment door must be closed or magnet installed over door sensor for contactors to* operate *during a cooking cycle.*

STANDBY:

For the "STANDBY" control, the thermistor is mounted to the front of the Steam Generator near the water level probes. The mounting of the thermistor is critical to proper operation of the control. The thermistor must be in good contact with the surface it is mounted to. This surface should be free of weld spatter or other defects and provided with a thermally conductive pad or compound. The water preheat temperature may be changed by adjustment of the control board pot labeled "GEN TEMP". Turn clockwise to increase temperature. Set control so that water temperature is held at approximately 190°.

DRAIN TEMPERATURE ADJUST:

"DRAIN TEMPERATURE ADJUST" control operation is also dependant on the adjustment of a board mounted potentiometer, labeled "DRAIN TEMP". Use the following procedure to adjust potentiometer.

1) Remove front control panel assembly and install magnet over door sensor location.
2) Turn "DRAIN TEMP" pot clockwise 10 turns.
3) Turn on steamer and start manual steaming cycle (push "MANUAL" touchpad).
4) Allow steamer to operate empty for 15 to 20 minutes. During this time be sure that the rear heater contactor does not cycle off. If contactor does turn off, turn pot clockwise additional turns to keep contactor on and begin 15 minute waiting period.
5) Turn pot counter clockwise until contactor just turns off. The contactor should begin to cycle on and off. Continue to adjust pot until the off time period in these cycles is 4 to 6 seconds. Since on/off cycle time will be affected by water fill solenoid operation it is best to check timing at a time mid-way between water fill cycles.

NOTE: When "DRAIN TEMP" adjustment is properly set, the drain water temperature will average 150° to 160° F.

THERMISTORS (on units before S/N C 1613-88A-24):

The resistance of a negative temperature coefficient thermistor will decrease as temperature increases. To determine proper operation, first measure the resistance of the thermistor at room temperature, it should be between 90,000 and 125,000 ohms. Then measure the resistence after the compartment has operated for at least 10 minutes. The resistence should be between 10,000 and 25,000 ohms. Leaving an ohmmeter connected to a thermister as it is heated and observing the changes in resistence is the preferred test.

PART NUMBERS FOR *SteamCraft ® III* CONTROLS

PART	PART#	PART #
Control Board	101606	101918
120vac Harness	101693	101919
Contactor To heater Harness		101907
Term. Block to Contactor Harness		101908
Contactor	101351 2 Req.	101899 1 Req.
Wring Label	101616, 101616A	101616B

TABLE 2

***NOTE:** This system was used on units before S/N C 2937-88F-14

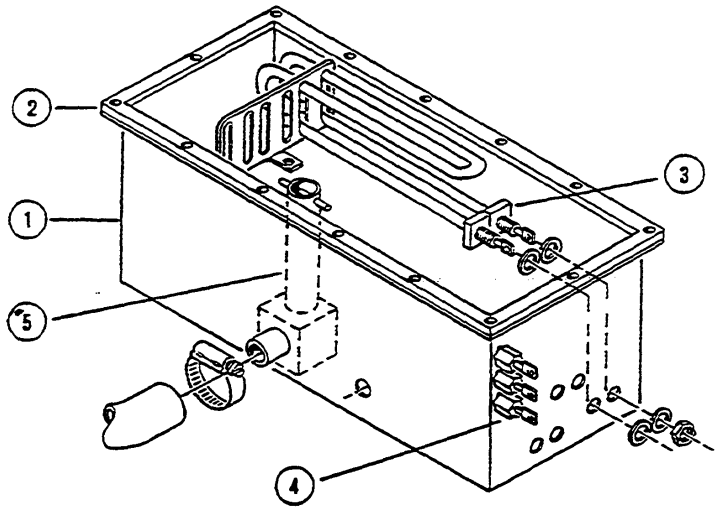
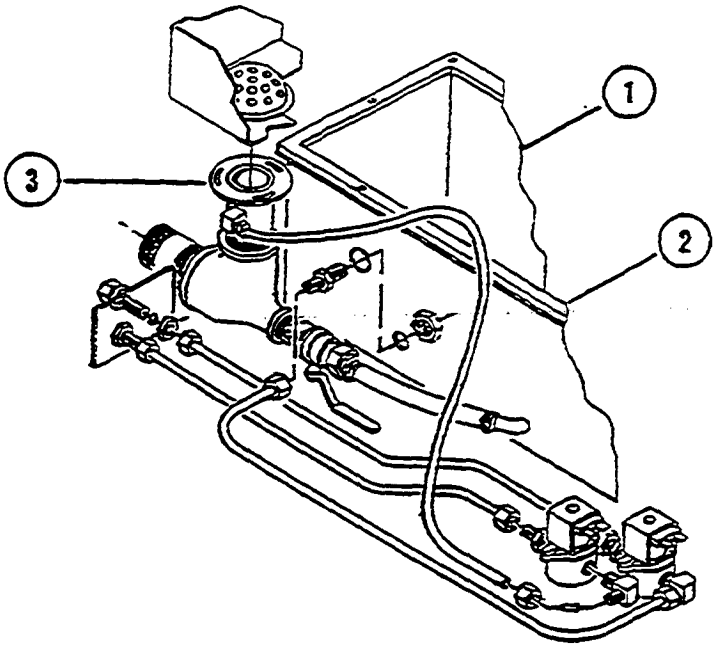


Fig. 4 STEAM GENERATOR ASSEMBLY

Item	Part No.	Description	Qty.
		STEAM GENERATOR ASSEMBLY	
1	101281	Steam Generator Body	1
2	101309	Steam Generator Gasket	1
3		Heating Element(s) Assembly (see Fig. 7, pages 42-43)	
4		Probe Assembly (see Pig- 8, pages 44-47)	
*5	101431	Drain Stopper*	1



NOTE: This system was used on units after S/N C 2937-88F-13

Fig.5 STEAM GENERATOR ASSEMBLY

Item	Part No.	Description	Qty.
		STEAM GENERATOR ASSEMBLY	
1	101281	Steam Generator Body	1
2	101309	Steam Generator Gasket	1
		Heating Element(s) Assembly (see Fig. 7, page 42)	
		Probe Assembly (see Fig. 9, page 44)	
3		Drain Valve Assembly (see Fig. 18, page 53)	

NOTE: This system was used on units after S/N C 5080-88J-00.

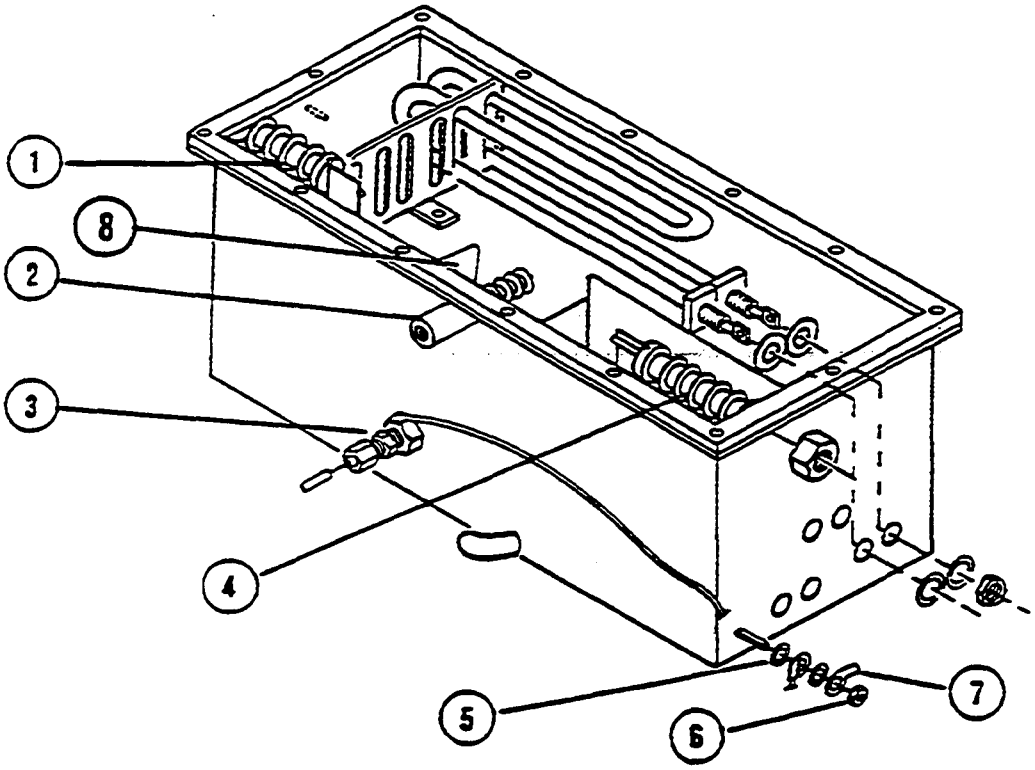


Fig. 6 STEAM GENERATOR ASSEMBLY

Item	Part No.	Description	Qty.
1	102519	Low Water Probe Assembly	1
2	102515	Rood Probe Assembly	1
3	102520	Bulkhead Ground, Wire Assembly	1
4	102518	Water Level Probe Assembly	1
5	23114	Washer, #10 S/S	2
6	14672	Nut, Hex, Lock, Elastic 10-32 Plated	1
7	20323	Terminal, #10 Ring	2
8	102649	Baffle, Rood Probe	1

NOTE: This system was used on units after S/N C 5080-88J-00-

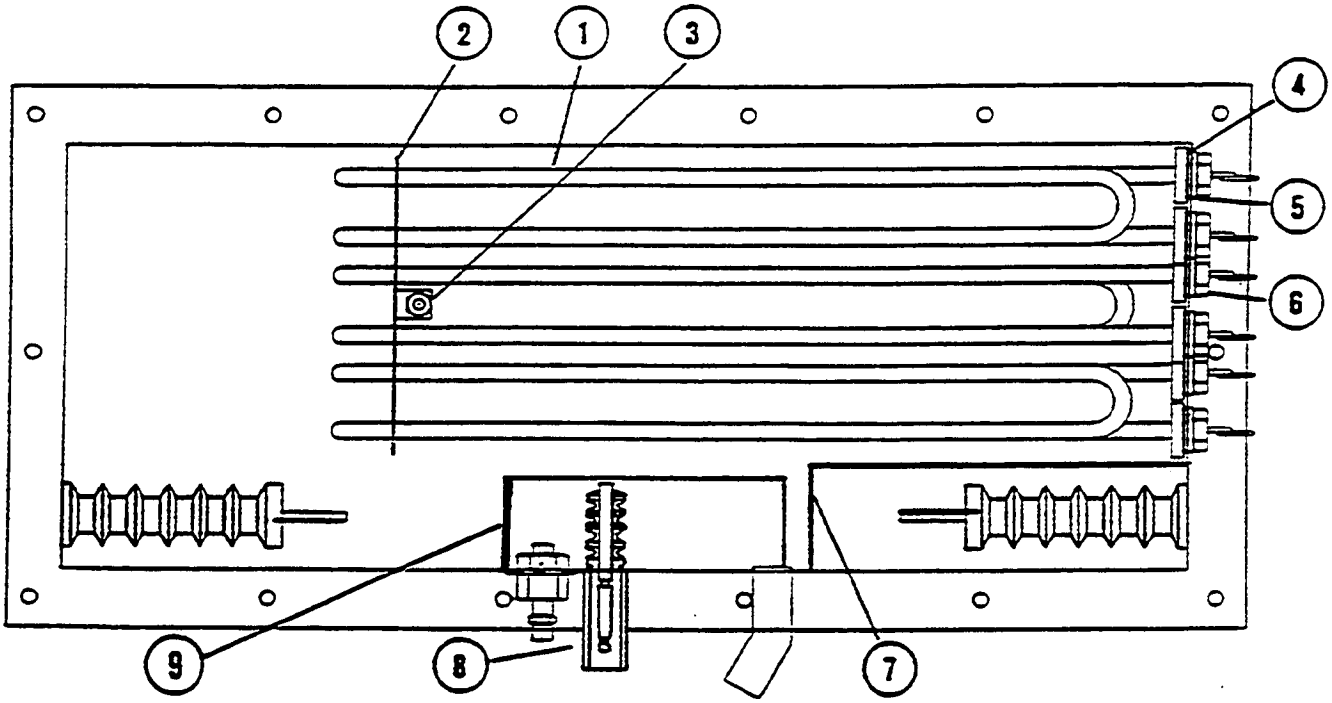


Fig. 6a TOP VIEW - Steam Generator Assembly*

Item	Part No.	Description	Qty.
1		Heating Element Assembly (see voltage required)	
	101225	2.6 KW, 208 V	3
	1012251	2.6 KW, 220 V	3
	1012252	2.6 KW, 460 V	3
2	101312	Heating Element Spacer	1
3	14677	Acorn Nut, 1/4-20, S/S	1
4	101306	Sealing Washer, S/S	6
5	101768	Heater Washer, .515 I.D., Zinc PL	6
6	101308	Hex Nut (brass), 1/4-20	6
7	1012781	Probe Baffle	1
8	102515	Rood Probe Assembly (see page 41)	
9	102649	Baffle, Rood Probe	1

*** Refer to** Fig. 6b **and** 6c **for further information.**

NOTE: This system was used on units after S/N C 5080-88J-00

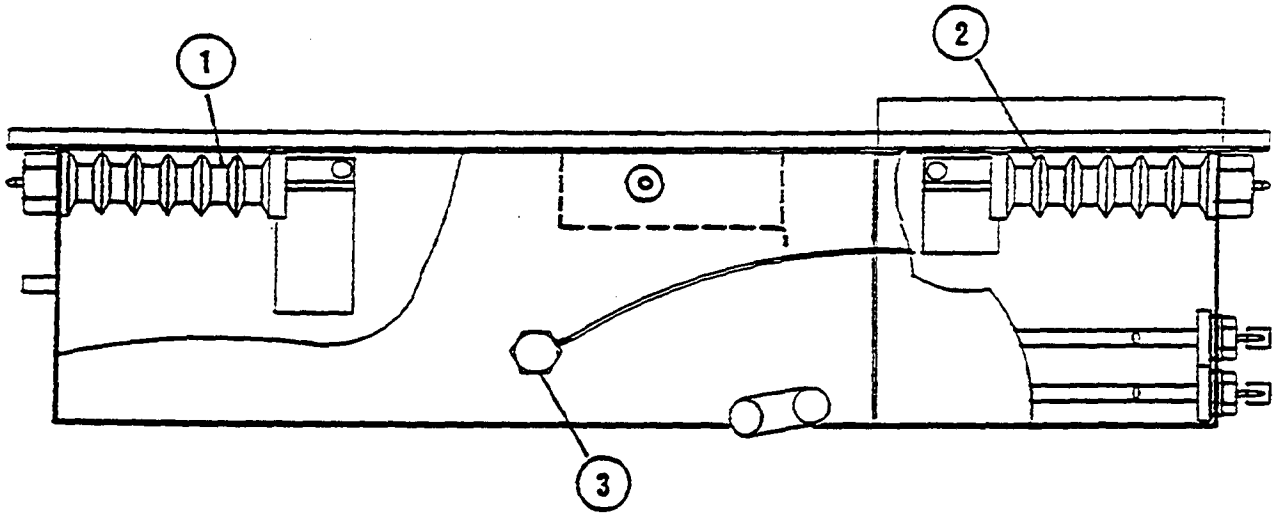


Fig. 6b LEFT SIDE VIEW - Steam Generator Assembly*

Item	Part No.	Description	Qty.
1	102519	Low Water Probe Assembly	1
2	102518	Water Level Probe Assembly	1
3	102510	Wire, Bulkhead Ground Assembly	1

NOTE: This system was used on units after S/N C 5080-88J-00

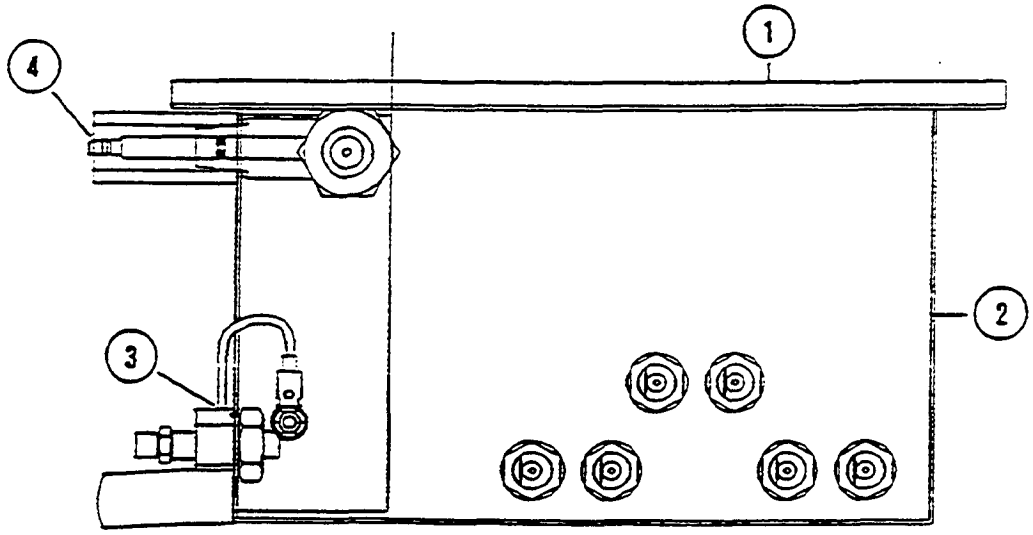


Fig. 6c FRONT VIEW Steam Generator Assembly

Item	Part No.	Description	Qty.
1	101402	Steam Generator Gasket	1
2	102257	Steam Generator Weldment Assembly	1
3	102520	Wire, Bulkhead Ground Assembly	1
4	102515	Rood Probe Assembly	1

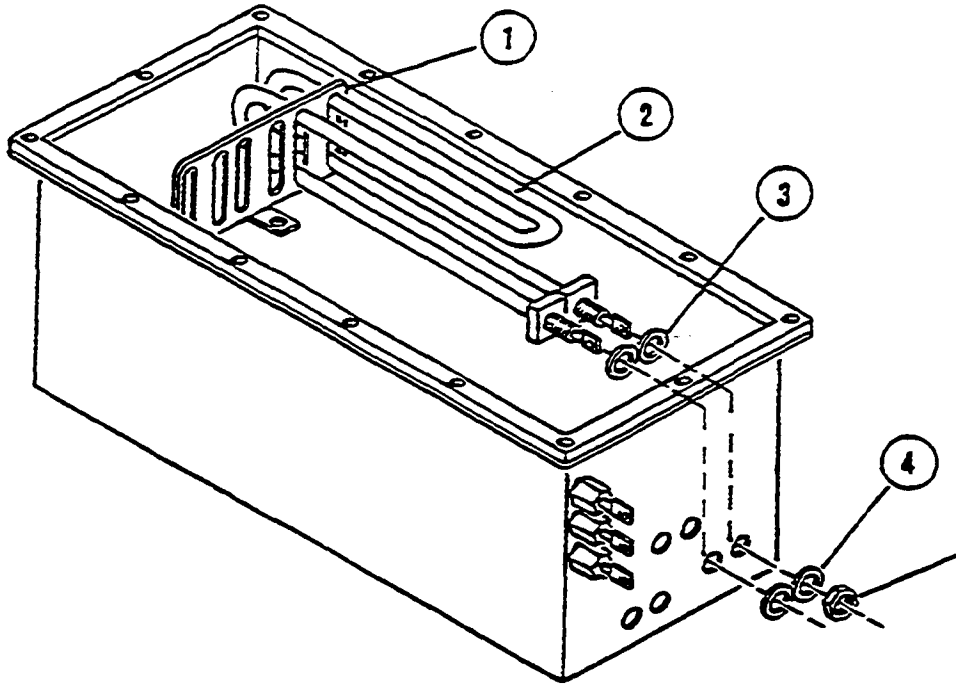


Fig. 7 HEATING ELEMENT(S) ASSEMBLY

Item	Part No.	Description	Qty.
		HEATING ELEMENT ASSEMBLY	
1	101312	Bracket Heater Retainer	1
2		Heating Element Assembly (see Voltage req'd)	3
	101225	2666 Watt, 208 V	
	1012251	2666 Watt, 220-240 V	
	1012252	2666 Watt, 440-480 V	
3	101306	Gasket Washer	6
4	101768	Heating Element Washer	6
5	101308	Heating Element Nut, *1/2"*-20	6

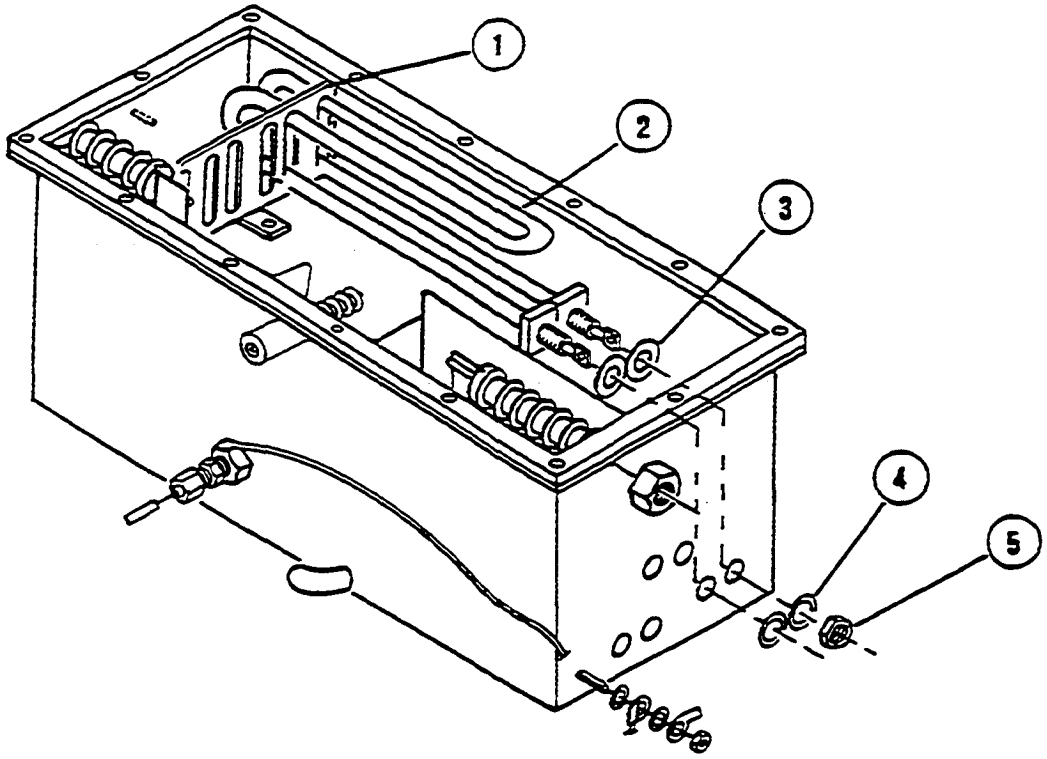


Fig. 8 HEATING ELEMENT(S) ASSEMBLY

Item	Part No.	Description	Qty.
		HEATING ELEMENT ASSEMBLY	
1	101312	Bracket Heater Retainer	1
2		Heating Element Assembly (see Voltage req'd)	3
	101225	2666 Watt, 208 V	
	1012251	2666 Watt, 220-240 V	
	1012252	2666 Watt, 440-480 V	
3	101306	Gasket Washer	6
4	101768	Heating Element Washer	6
5	101308	Heating Element Nut, *1/2"-20*	6

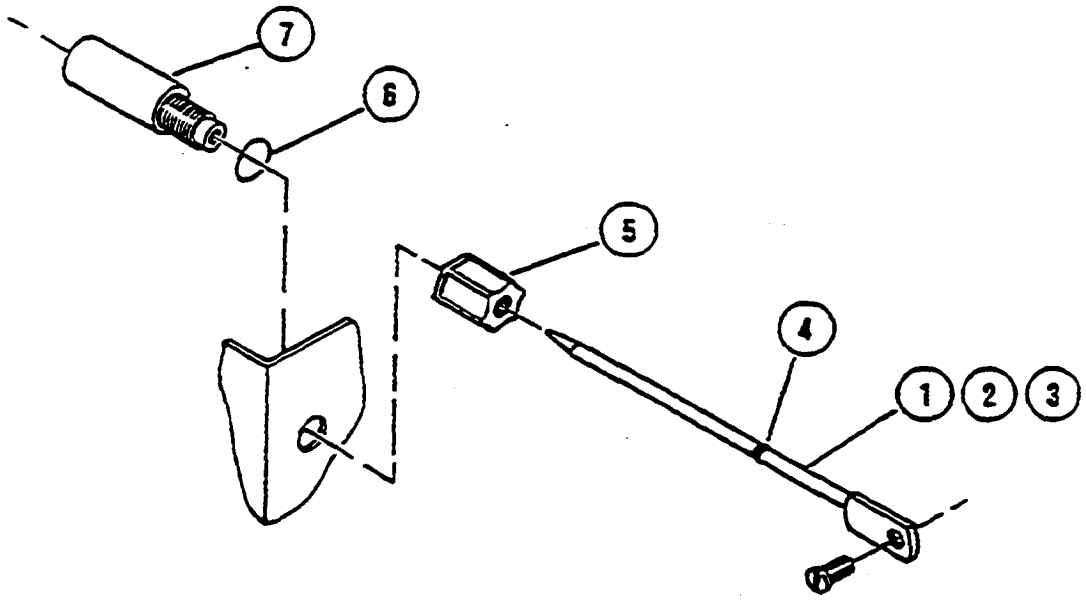


Fig. 9 PROBE ASSEMBLY

Item	Part No.	Description	Qty.
		PROBES ASSEMBLY	
		Probes	3
1	1012961	"Flood" Probe (Upper, shortest Probe)	1
2	101296	"Water" Probe (Middle Probe)	1
3	101296	"Low Water Cut-off" Probe (Lower Probe)	1
4	101302	Probe O-Ring, 5/64" I.D. x 13/64" O.D. x 1/16"	3
5	101316	Probe Nut Ferrule, 1/4"	3
6	101303	Seal, O-Ring, 3/8" I.D. x 1/2" O.D. x 1/16"	3
7	101298	Probe Bushing	3

NOTE: This system was used on units after S/N C 5080-88J-00.

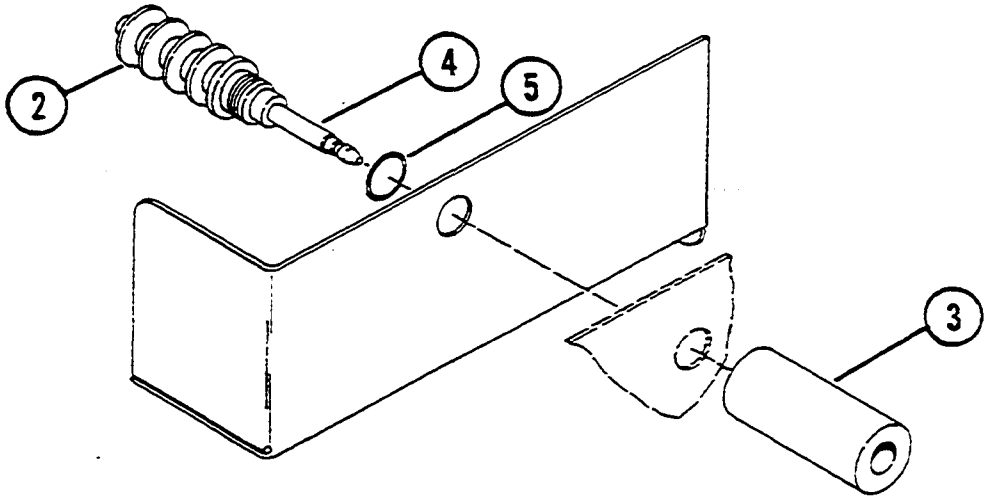


Fig. 10 FLOOD PROBE ASSEMBLY

Item	Part No.	Description	Qty.
1	102515	FLOOD PROBE ASSEMBLY	1
2	101298	Ribbed Insulator	1
3	1013161	Nut, Probe	1
4	1012954	Probe, S/S	1
5	101303	Seal, O-ring 3/8" I.D. x 1/2" O.D.	1
6	102649	Baffle	1

NOTE: This system was used on units after S/N C 5080-88J-00.

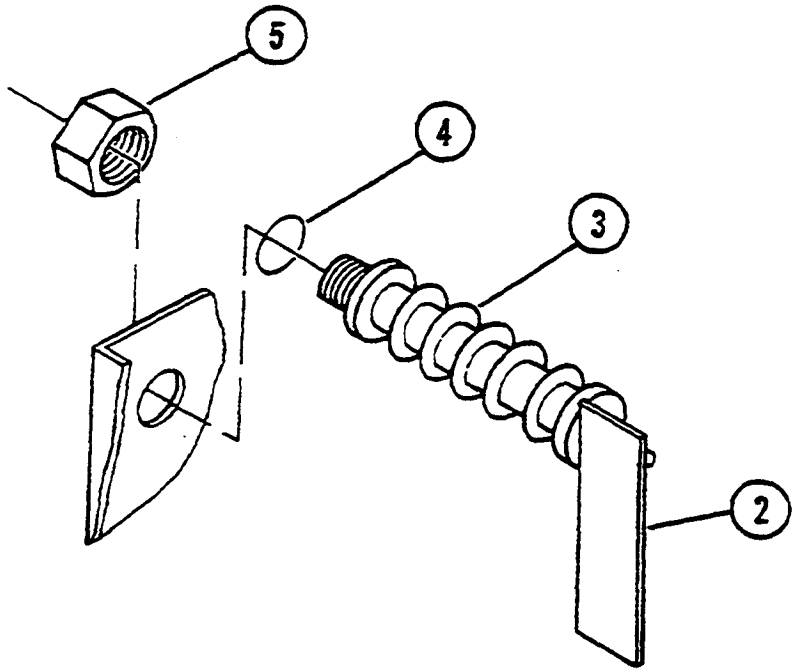


Fig. 11 LOW WATER PROBE ASSEMBLY

Item	Part No.	Description	Qty.
1	102519	LOW WATER PROBE ASSEMBLY	1
2	1022532	Probe Weldment Assembly	1
3	102236	Bushing, Insulator	1
4	1013023	Seal, O-ring 5/8" I.D. x 3/4" *O.D.*	1
5	102254	Nut, Hex 5/8"-11 Nylon	1

NOTE: This system was used on units after S/N C 5080-88J-00.

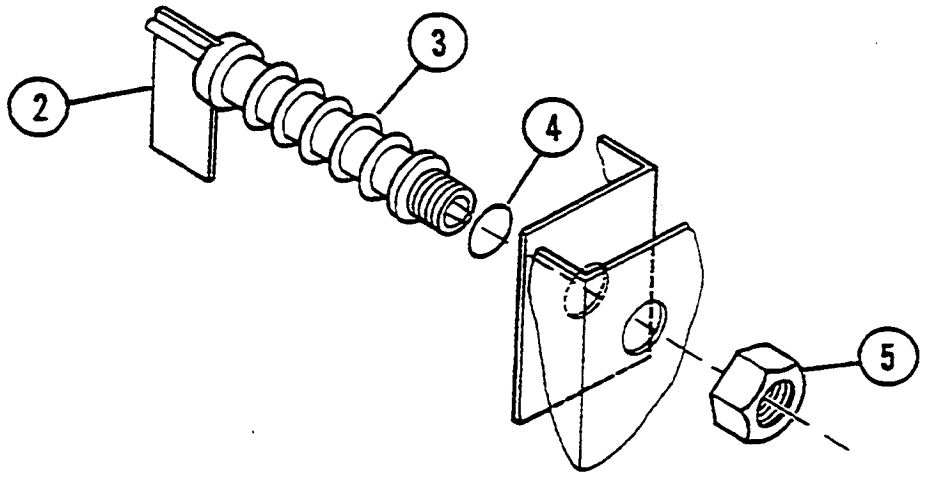


Fig. 12 WATER LEVEL PROBE ASSEMBLY

Item	Part No.	Description	Qty.
1	102518	WATER LEVEL PROBE ASSEMBLY	1
2	1022532	Probe Weldment Assembly	1
3	102236	Bushing, Insulator	1
4	1013023	Seal, O-ring *5/8"* I.D. x 3/4" *O.D.*	1
5	102254	Nut, Hex 5/8"-11 Nylon	1

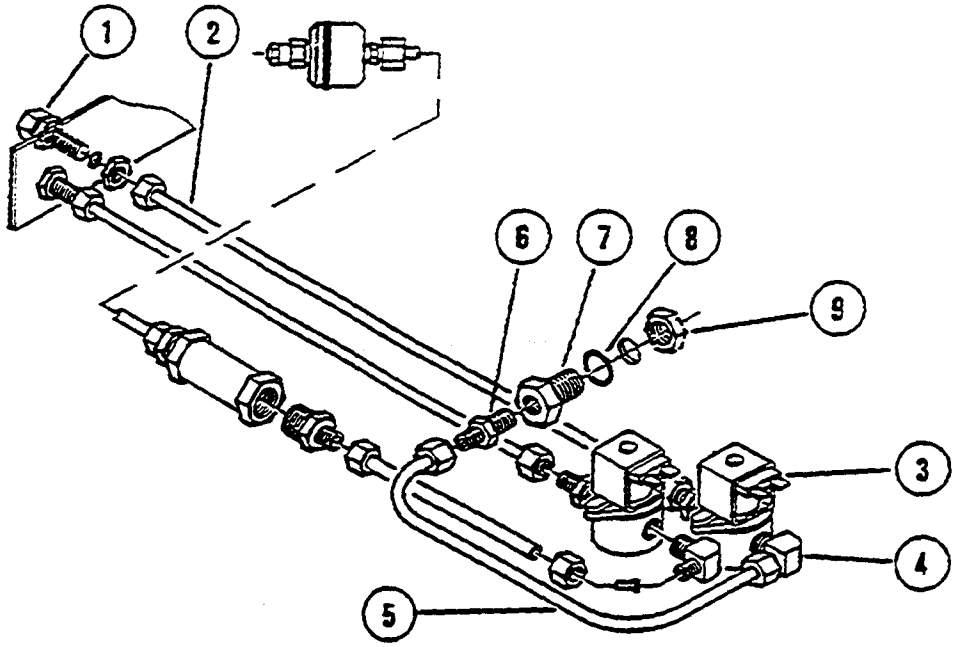
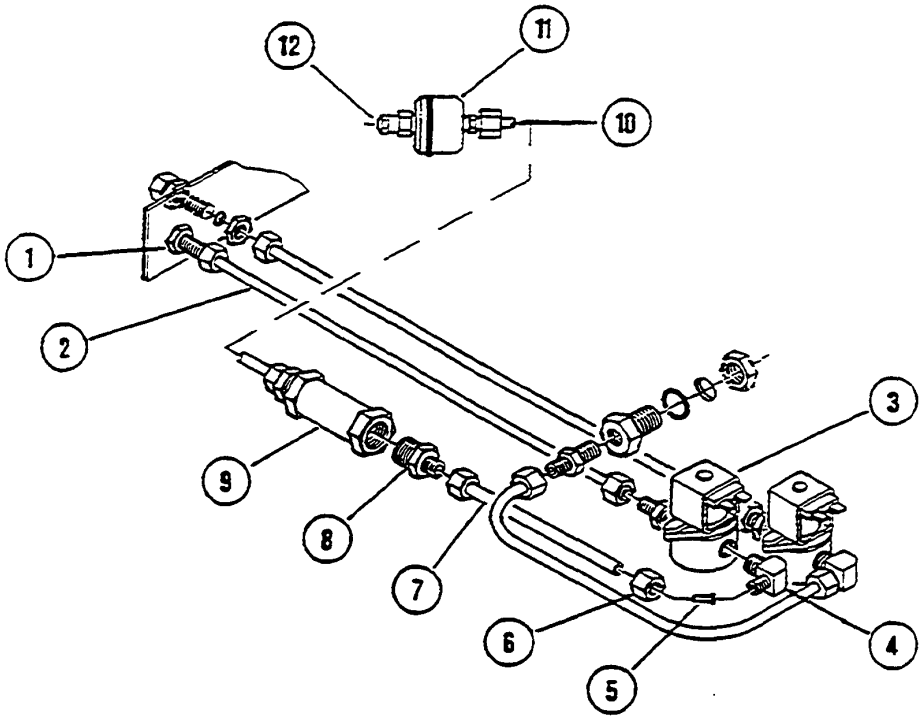


Fig. 13 WATER INLET TO STEAM GENERATOR

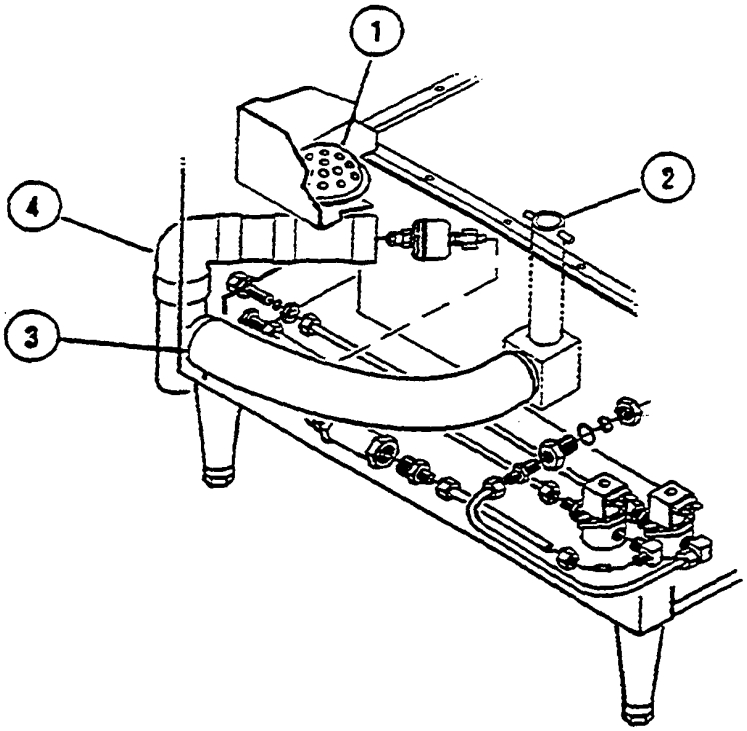
Item	Part No.	Description	Qty.
		WATER INLET TO STEAM GENERATOR	
1	101775	Incoming Water Connection, Fitting 1/4", Bulkhead	1
2	102486	Tubing 1/4", Polyethylene	(per ft.)
3	22218	Water Solenoid Valve	1
4	06214	Fitting 90°, 1/4" T x 1/8" P	1
5	102486	Tubing 1/4", Polyethylene	(per ft.)
6	06190	Compression Fitting, *1/4"* T x 1/8" P	1
7	101674	Pitting, Steam Generator Inlet	1
8	1013022	O-Ring	1
9	101307	Nut, Steam Generator Intet Fitting 7/16" x 20	1



NOTE: This system was used on units before S/N C 2937-88F-14

Fig. 14 WATER INLET TO CONDENSER SYSTEM

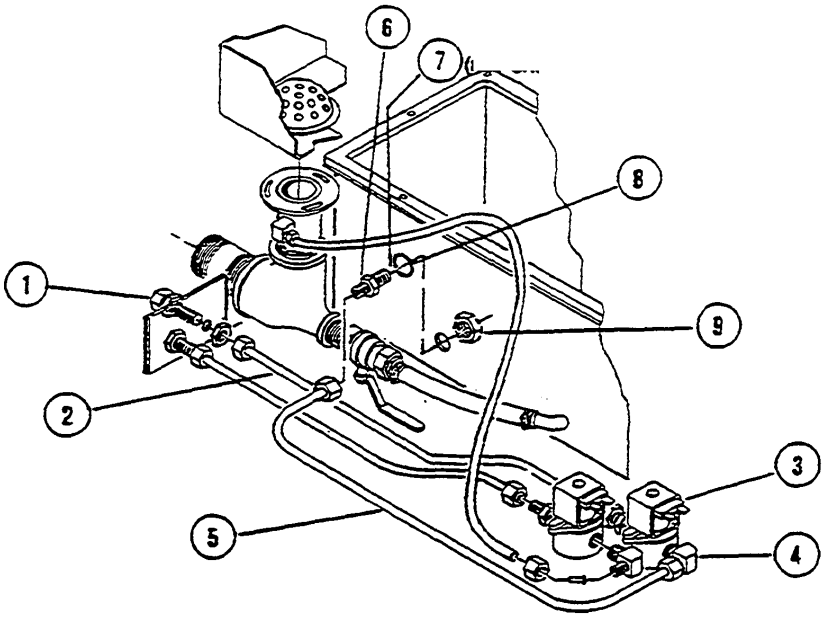
Item	Part No.	Description	Qty.
		WATER INLET TO CONDENSER SYSTEM	
1	101775	Incoming Water Connection, Fitting 1/4", Bulkhead	1
2	102486	Tubing 1/4", Polyethylene	(per ft.)
3	22218	Water Solenoid Valve	1
4	05214	Fitting 90°. 1/4" T x 3/8" P	1
5	101774	1/4" Tubing Insert	
6	14661	1/4" Tube rating Nut	
7	102486	Tubing 1/4", Polyethylene	(per ft.)
8	06193	Tube Fitting, 1/4" T x 3/8" P	2
9	15463	Row Regulator, 1/4 GPM	1
10	06190	1/8 -1/4 Compression Fitting	
11	101258	Condenser Fitting	1
12	14556	Condenser Spray Nozzle	



NOTE: This system was used on units before S/N C 2937-88F-14

Fig. 15 DRAINAGE SYSTEM

Item	Part No.	Description	Qty.
		DRAINAGE SYSTEM	
1	101735	Inner Drain Screen (should be welded in place)	1
2	101431	Drain Stopper (see note above)	1
3	085051250	Drain Hose (see note above)	1
4	1017461	Drain Assembly (see note above)	1

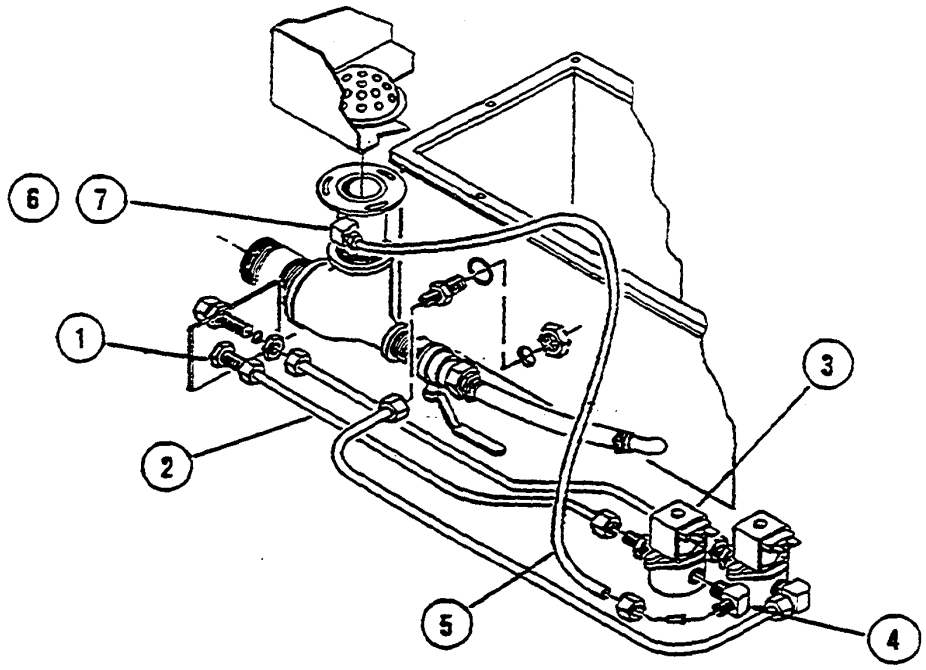


-- (Not shown, see fig. 13)

NOTE: This system was used on units after S/N C 2937-88F-13

Fig. 16 COLD WATER INLET TO STEAM GENERATOR

Item	Part No.	Description	Qty.
		WATER INLET TO CONDENSER SYSTEM	
1	101775	Incoming Water Connection, Fitting 1/4", Bulkhead	1
2	1024862	Tubing 1/4", Polyethylene	24"
3	22218	Water Solenoid Valve	1
4	06214	Fitting 90°, 1/4" T x l/8" P	1
5	1024861	Tubing 1/4", Polyethylene	18"
6	06190	Compression Fitting, 1/4"T x l/8" P	1
7	101674	Fitting, Steam Generator Inlet	1
8	1013022	O-Ring	1
9	101307	Nut, Steam Generator Inlet Fitting 7/16" x 20	1



NOTE: This system was used on units after S/N C 2937-88F-13

Fig. 17 COLD WATER INLET TO STEAM GENERATOR

Item	Part No.	Description	Qty.
		WATER INLET TO CONDENSER SYSTEM	
1	101775	Incoming Water Connection	1
2	1024862	Condenser Tubing	24-
3	22218	Condenser Solenoid Valve 1/4", 120V	1
4	06214	1/4" Tube 90° Compression Fitting. 1/4" MPT	1
5	1024862	Condenser Tubing	24"
6	06231	Fitting, 1/4" tube x 1/8" FPT, 90° Brass	1
7	14497	Nozzle, Condenser. Brass	1

NOTE: This system was used on units after S/N C 2937-88F-13.

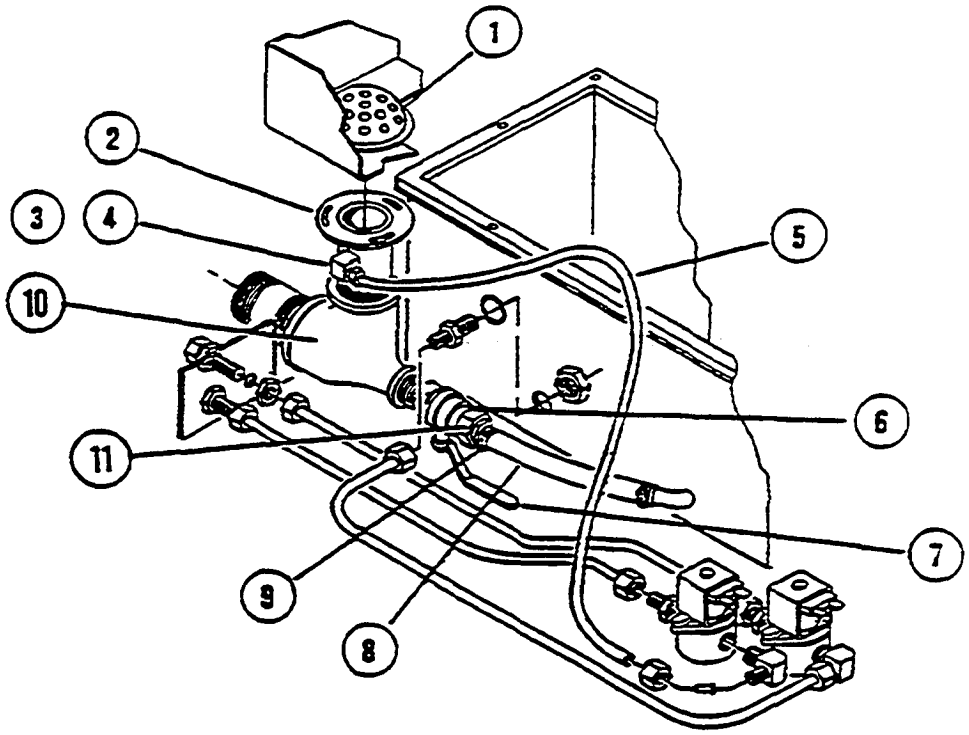
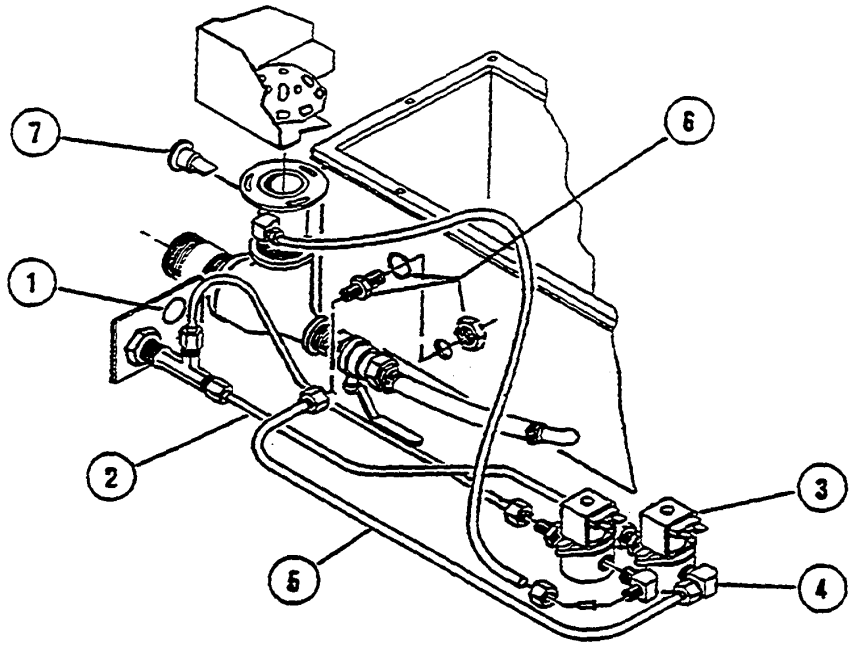


Fig. 18 DRAINAGE SYSTEM

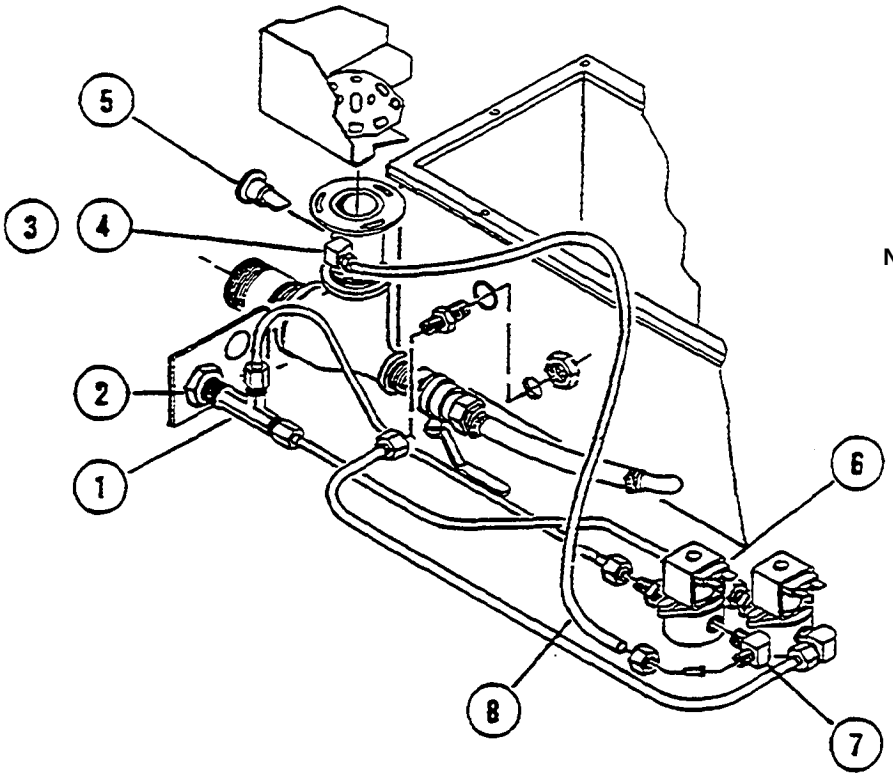
Item	Part No.	Description	Qty.
	102030	DRAINAGE SYSTEM	
1	101735	Inner Drain Screen (should be welded in place)	1
2	101970	COMPARTMENT DRAIN ASSEMBLY	
3	06231	Fitting. 1/4" tube x 1/8" FPT, 90° Brass	1
4	14497	Nozzle, Condenser, Brass	1
5	1024862	24" long tube 1/4"	24"
6	22243	Valve, Ban, 1/2" (Drain Valve)	1
7	222431	Drain Valve Handle	1
8	*085250500*	Hose, *5/8" O.D.* x 1/16" w., Translucent Silicone Rubber	
9	03206	Clamp, Hose, Worm Drive, 1/2" x 29/32" dia.	2
10	20230	Tee - Black,1-l/4" x 1/2" x 1-1/4"	1
11	06249	Fitting, 1/2" MPT x *5/8"* I.D., Hose	1



NOTE: This system was used on units after S/N C 5519-88L-16

Fig. 19 COLD WATER INLET TO STEAM GENERATOR

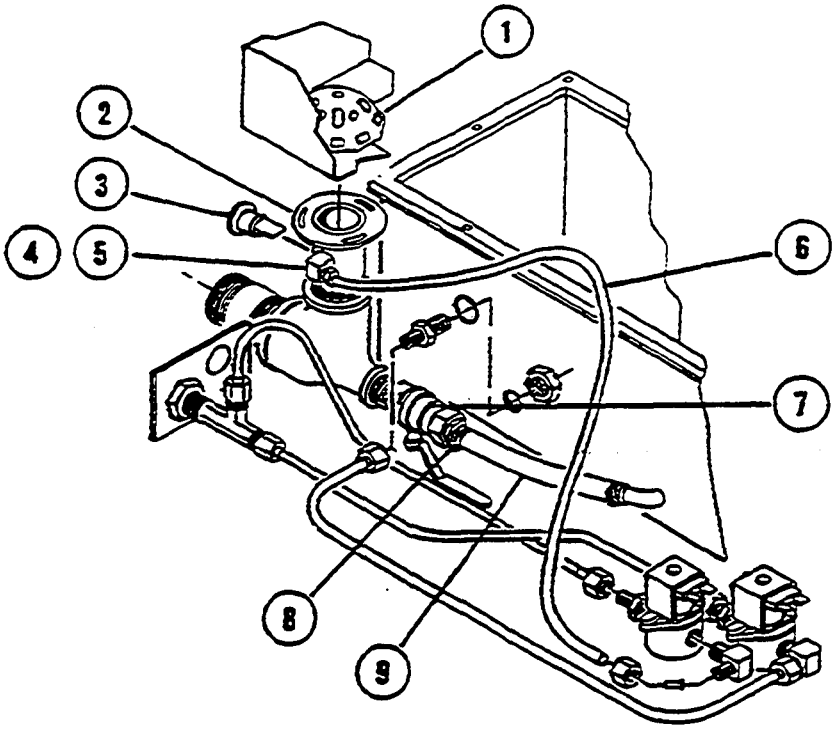
Item	Part No.	Description	Qty.
		COLD WATER INLET TO STEAM GENERATOR	
1		Hole, location for Water Treatment System (optional)	
2	1024862	Tubing 1/4", Polyethylene	24"
3	22218	Water Solenoid Valve	1
4	06214	Pitting 90°, 1/4" T x l/8" P	1
5	1024861	Tubing 1/4", Polyethylene	18"
6	102520	Bulkhead Ground, Wire Assembly	1
7	102424	Duckbill	1



NOTE: This system was used on units after S/N C 5519-88L-16

Fig. 20 COLD WATER INLET TO STEAM GENERATOR

Item	Part No.	Description	Qty.
		COLD WATER INLET TO STEAM GENERATOR	
1	06188	Tee, 1/4" Male Run, Brass	1
2	03641	Coupling, Bulkhead 1/4" Female	1
3	06231	Fitting, 1/4" tube x 1/8" FPT, 90° Brass	1
4	14497	Nozzle. Condenser, Brass	1
5	102424	Duckbill	1
6	22218	Condenser Solenoid Valve 1/4" 120V	2
7	06214	Fitting, 90°. 1/4" T x 1/8" P	1
8	1024862	Condenser Tubing	24"



NOTE: This system was used on units after S/N C 2937-88F-13

Fig.21 DRAINAGE SYSTEM

Item	Part No.	Description	Qty.
		DRAINAGE SYSTEM	
1	1017352	Inner Drain Screen (should be welded in place)	1
2	102030	DRAIN VALVE ASSEMBLY	
3	102424	Duckbill	1
4	06231	Fitting. 1/4" tube x 1/8" FPT, 90° Brass	1
5	14497	Nozzle. Condenser, Brass	1
6	1024862	24" long tube 1/4"	24"
7	22243	Valve, Ball, 1/2" (Drain Valve)	1
8	03206	Clamp, Hose, - lined worm drive, 1/2" x 29/32" dia.	2
9	085300500	Tubing, Braided - 5.00" length	5"

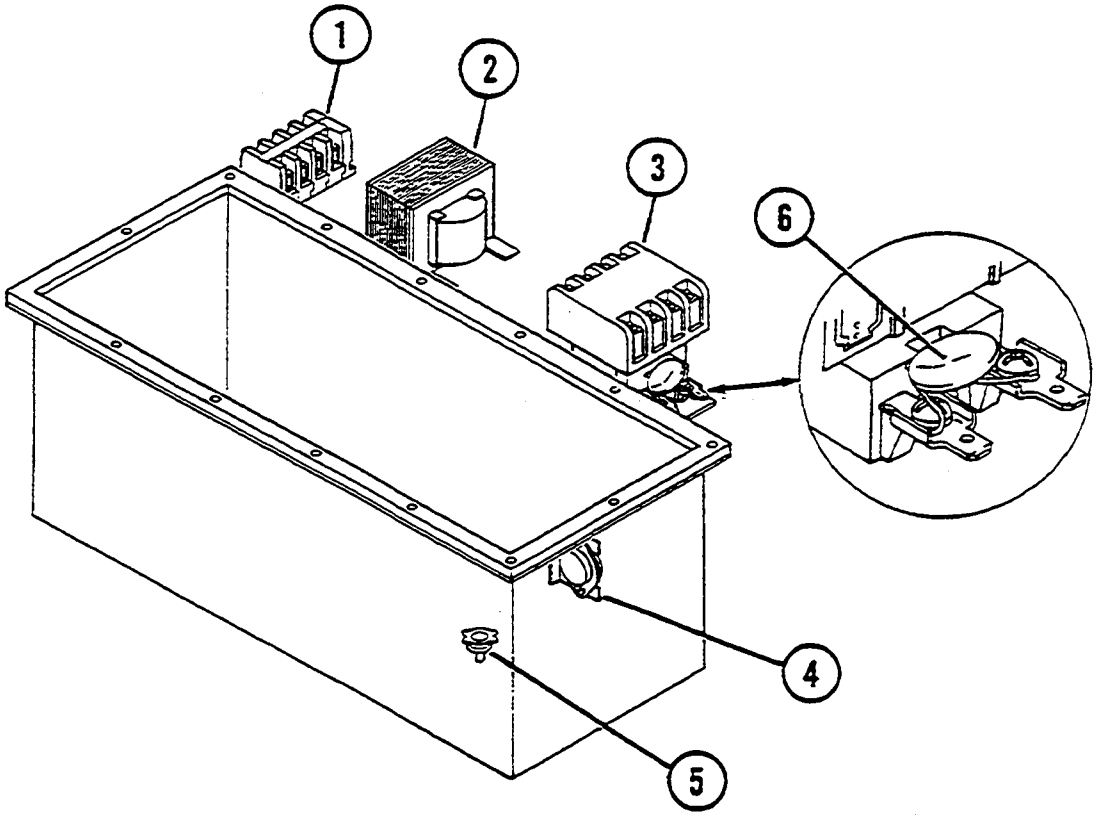


Fig. 22 ELECTRICAL COMPONENTS ASSEMBLY

Item	Part No.	Description	Qty.
1	101352	Terminal Block 4 pole*	1
2	101640	150 V.A. Step Down Transformer *	1
3	101899	Contactor, 120 V, 50/60 cycle *	1
4	19980	Thermoswitch (Canadian Units Only) **	1
5	101543	Snap Disc Thermoswitch ***	1
6	102286	Contactor, Varistor 276-568 ****	1

* Mounted to Base Plate.

**Mounted to Steam Generator (Prior to CSA Approval).

***Mounted to cooking compartment bottom.

**** Mounted terminal to terminal on contactor coil.

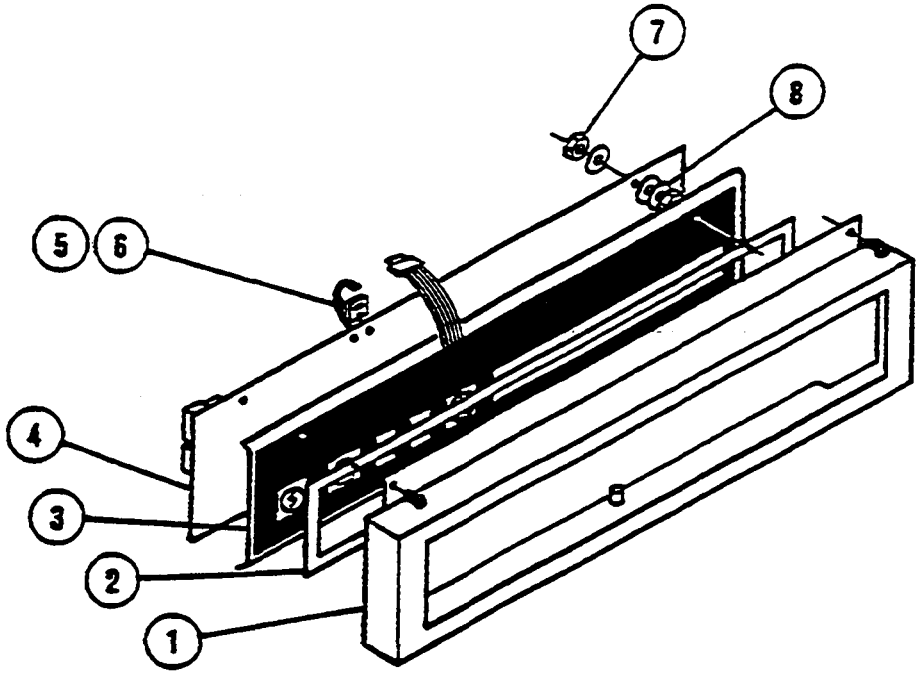


Fig. 23 FRONT CONTROL PANEL ASSEMBLY

Item	Part No.	Description	Qty.
	1018743	FRONT CONTROL PANEL ASSMBLY - After S/N 6790-89E-05	
	101874	FRONT CONTROL PANEL ASSMBLY - Before S/N 6790-89E-04	
1	1012921	Front Panel Weldment	1
2	101944	Front Panel Gasket	1
3	1019301	Membrane Switch Assembly	1
4	101606	Control Panel PCB	1
5	101684	Compartment Door Sensor bias Magnet, 1/4"	1
6	101710	Compartment Door Sensor bias Magnet Bracket	1
7	14598	8 x 32 hex nut	12
8	23148	# 8 nylon washer	18

NOTE: Nuts and/or washers are used to maintain adequate space between support panel and control board.

NOTE: This system was used on units before S/N C 6100-89B-27.

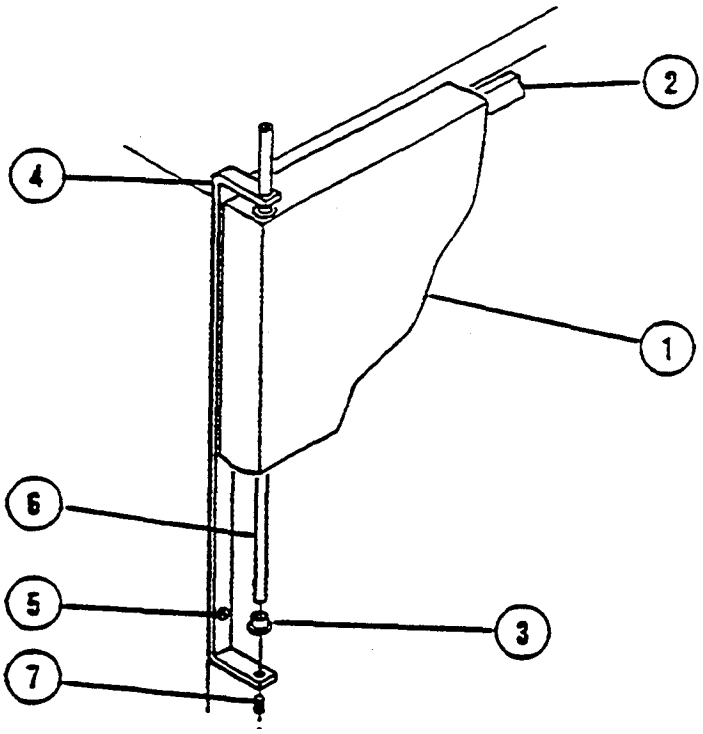
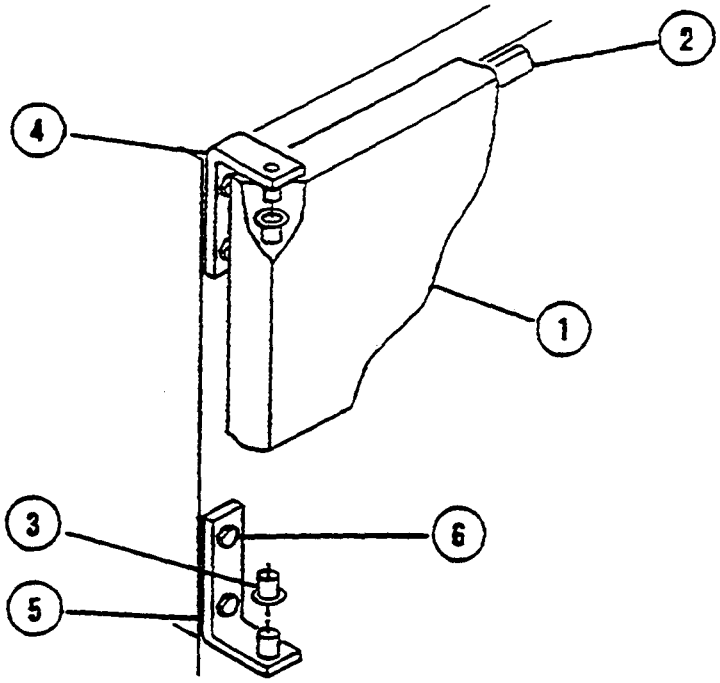


Fig. 24 COMPARTMANT DOOR AND HINGE ASSEMBLIES

Item	Part No.	Description	Qty.
		DOOR ASSEMBLY, COMPARTMENT	
1	101772	Compartment Door Assembly, hinged left (standard)	1
2	101237	Door Gasket	1
3	101299	Nylon, Ranged Bushing	2
	1017721	Compartment Door Assembly, hinged right (optional)	1
		COMPARTMENT DOOR HINGE ASSEMBLY	
4	101269	Compartment Door Hinge Bracket	1
5	101334	10 x 32 Pan Head Screw	2
6	101259	Compartment Door Hinge Rod	1
7	101270	10 x 32 x 1/2" Hex Head Screw	1



NOTE: This system was used on units after S/N C 6100-89B-27

Fig. 25 COMPARTMENT DOOR and HINGE ASSEMBLIES

Item	Part No.	Description	Qty.
		COMPARTMENT DOOR ASSEMBLY	
1	101772	Compartment Door Assembly, hinged left (standard)	1
2	101237	Door Gasket	1
3	101299	Nylon, Flanged Bushing	2
	1017721	Compartment Door Assembly, hinged right (optional)	1
		COMPARTMENT DOOR HINGE ASSEMBLY	
	102000	Hinge Assembly, Top Left	
4	101998	Hinge, Door, Top Left	1
	102001	Hinge Assembly, Bottom Left	
5	101999	Hinge, Door, Bottom Left	1
6	102129	Screw. 1/4"-28 x 1/2" Hex HD S/S	4

NOTE: This system was used on units before S/N 6790-89E-04.

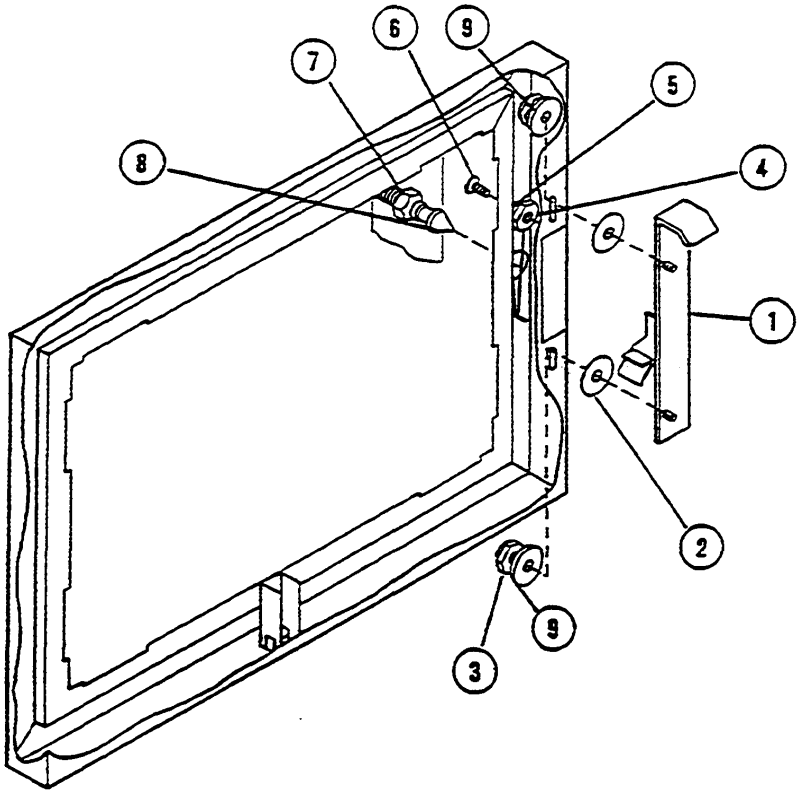


Fig. 26 DOOR HANDLE AND LATCH ASSEMBLIES

Item	Part No.	Description	Qty.
		DOOR HANDLE and LATCH ASSEMBLIES	
1	101277	Handle, Door Assembly	1
2	101284	Washer, Teflon, Door Handle	4
3	101873	Nut, 1/4"-20 Hex elastic lock	2
4	101255	Nut, Spring	1
5	101260	Spring, Door Latch	1
6	101334	Screw # l0-32 x 1/2" Slotted Pan Head S/S	1
7	101253	Nut, Jam, Door Strike Pin 3/8-24	1
8	101256	Strike Pin, Door	1
9	23116	Washer	2

NOTES:

1. This system was used on units after S/N 6790-89E-05.
2. All units with this style door use control panel P/N 1018743.

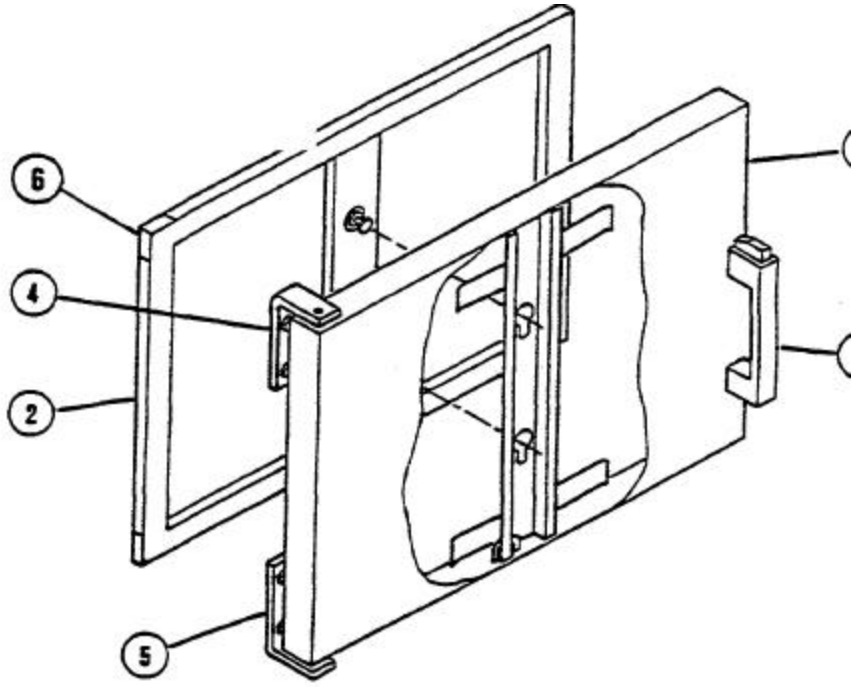
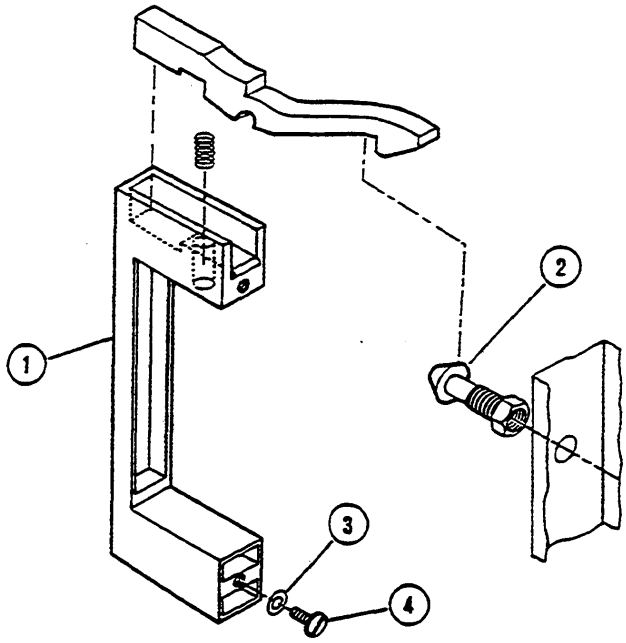


Fig. 27 DOOR ASSEMBLY

Item	Part No.	Description	Qty.
		DOOR ASSEMBLY	
1	102240	Hinged Left	1
	1022401	Hinged Right	
		OUTER DOOR	
1	102237	Hinged Left	1
	1022371	Hinged Right	
		INNER DOOR	
2	102239	Hinged Left and Hinged Right	1
3	102231	Handle	1
	102000	HINGE ASSEMBLY, TOP LEFT	
4	101998	Hinge, Door, Top Left	1
	102001	HINGE ASSEMBLY, BOTTOM LEFT	
5	101999	Hinge, Door, Bottom Left	1
6	101237	Door Gasket	1



NOTE: This system was used on units after S/N 6790-89E-05.

Fig. 28 HANDLE AND LATCH ASSEMBLY

Item	Part No.	Description	Qty.
1	102231	DOOR HANDLE ASSEMBLY	1
2	102241	Door Striker	1
3	23114	Washer #10-Int Tooth Lock S/S	2
4	101334	Screw *10-32 x 1/2 S/S Pan Head	2

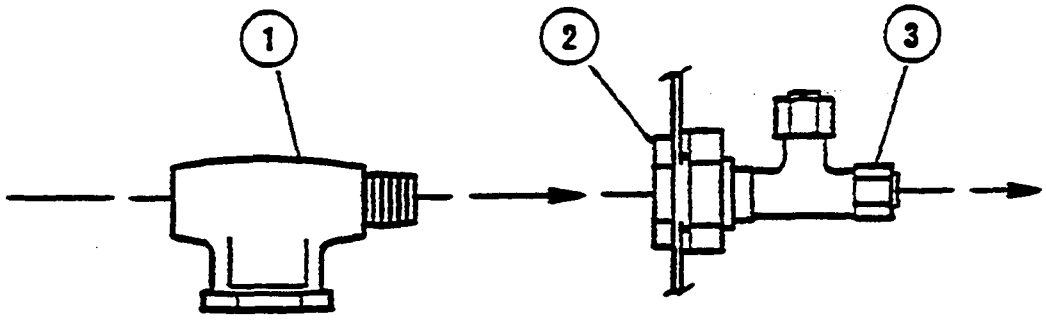


Fig. 29 COLD WATER INLET STRAINER ASSEMBLY

Item	Part No.	Description	Qty.
	102383	COLD WATER INLET STRAINER ASSEMBLY	1
1	19870	Strainer, 1/4"	1
2	03641	Coupling, Bulkhead 1/4" Female	1
3	06188	Tee, Tubing Male Fitting	1

Miscellaneous Parts List

Description	Number
Steam Generator Cover Assembly	101288
Pan Racks	414231
Wire Harness:	
Terminal Block to Contactor	101908
Contactor to Heater	101907
Control Circuit	101919
Leg, 4"	101450

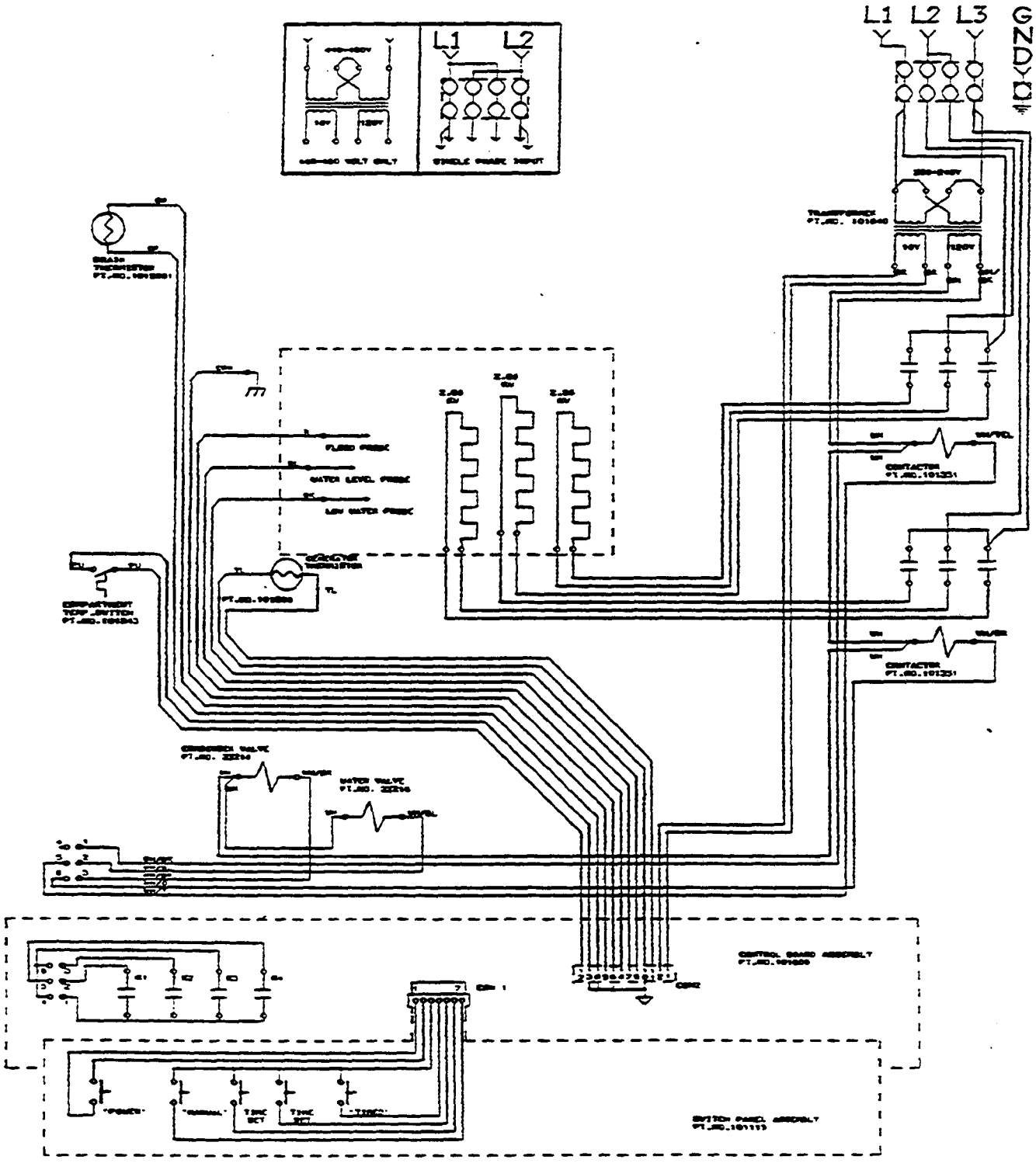


Fig-30 With 2 Thermistors and 2 Contactors

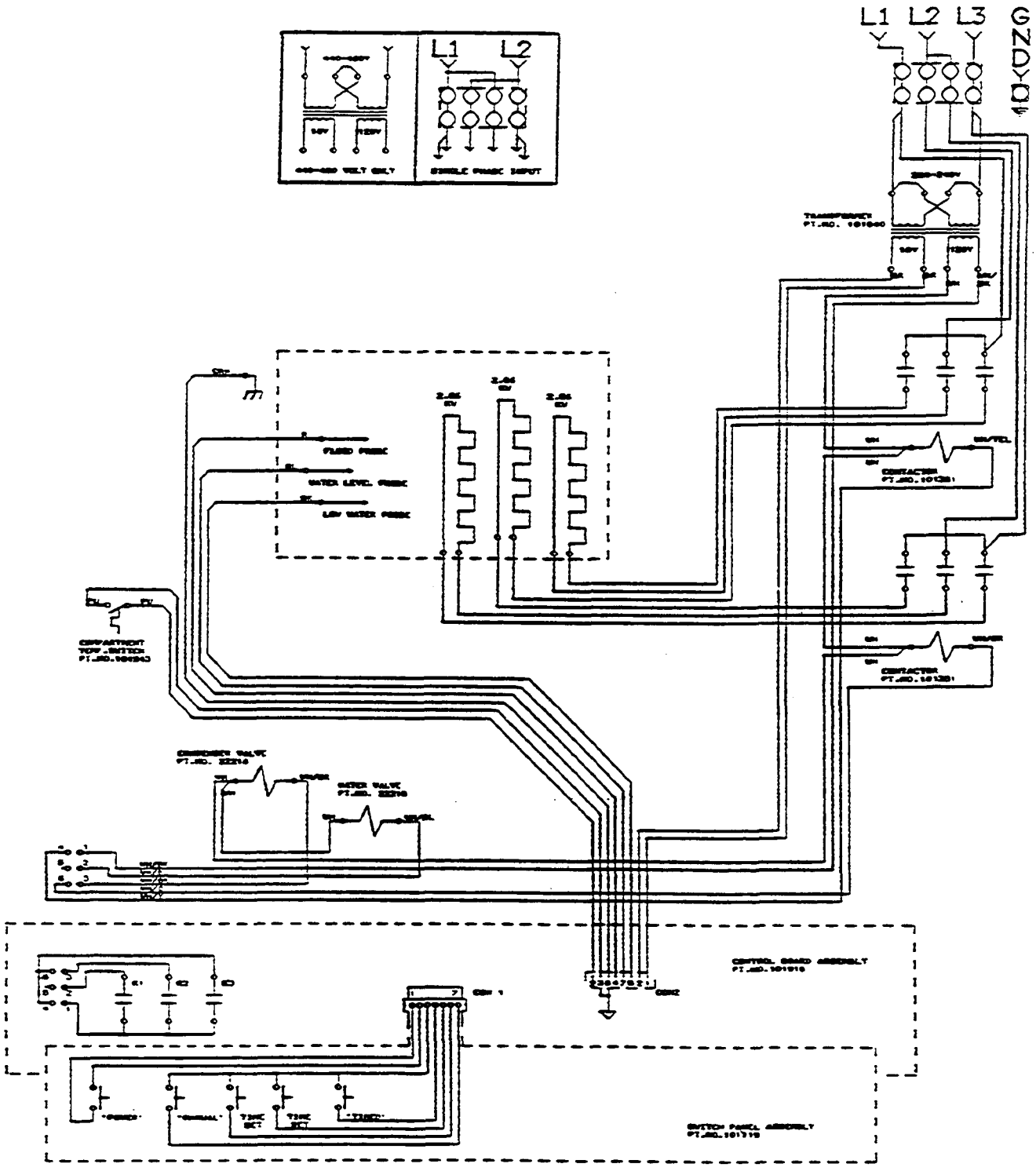


Fig. 31 With No Thermistors and 2 Contactors

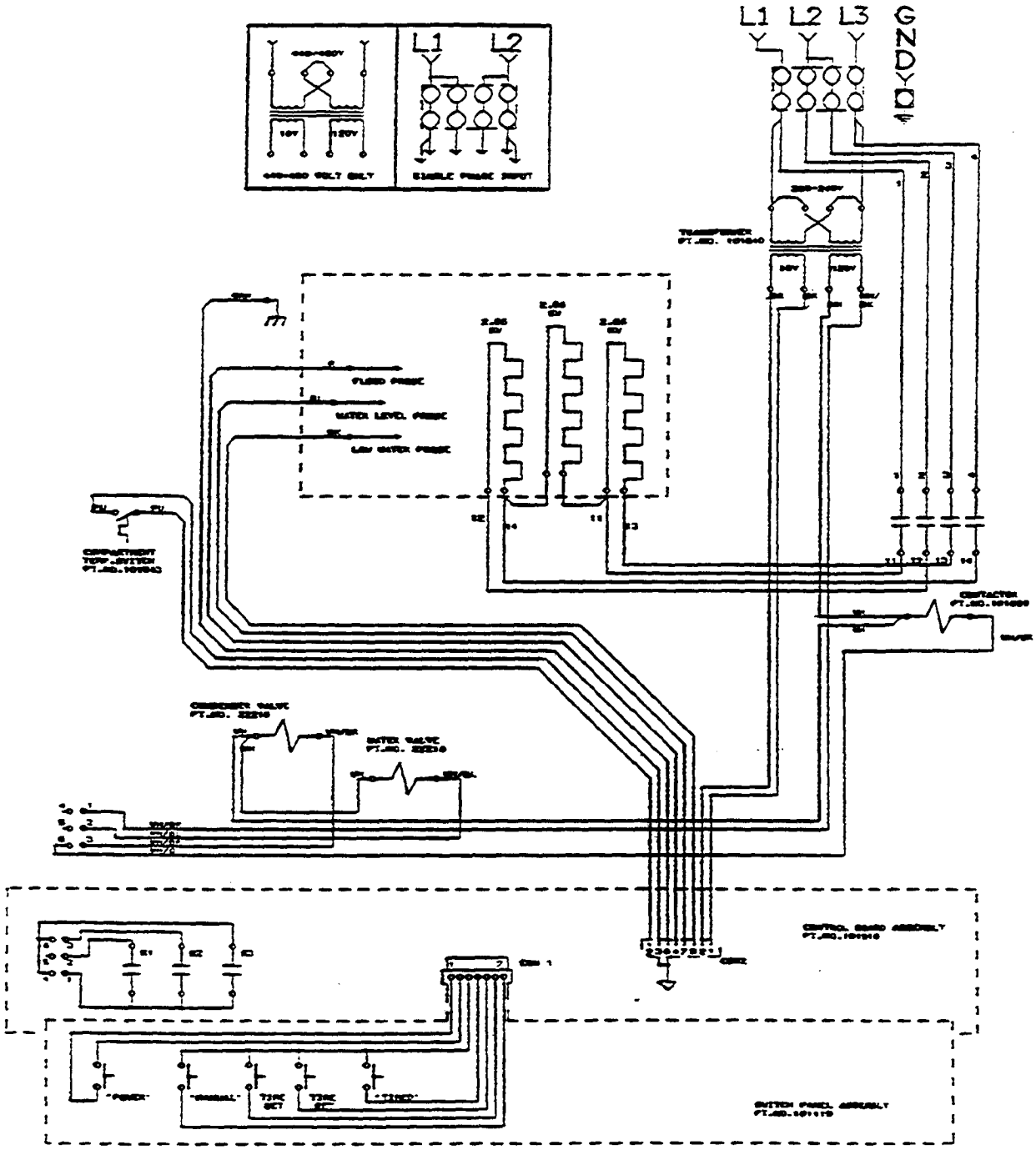


Fig. 32 With No Thermistors and 1 Contactor
•(For Current Domestic Production)

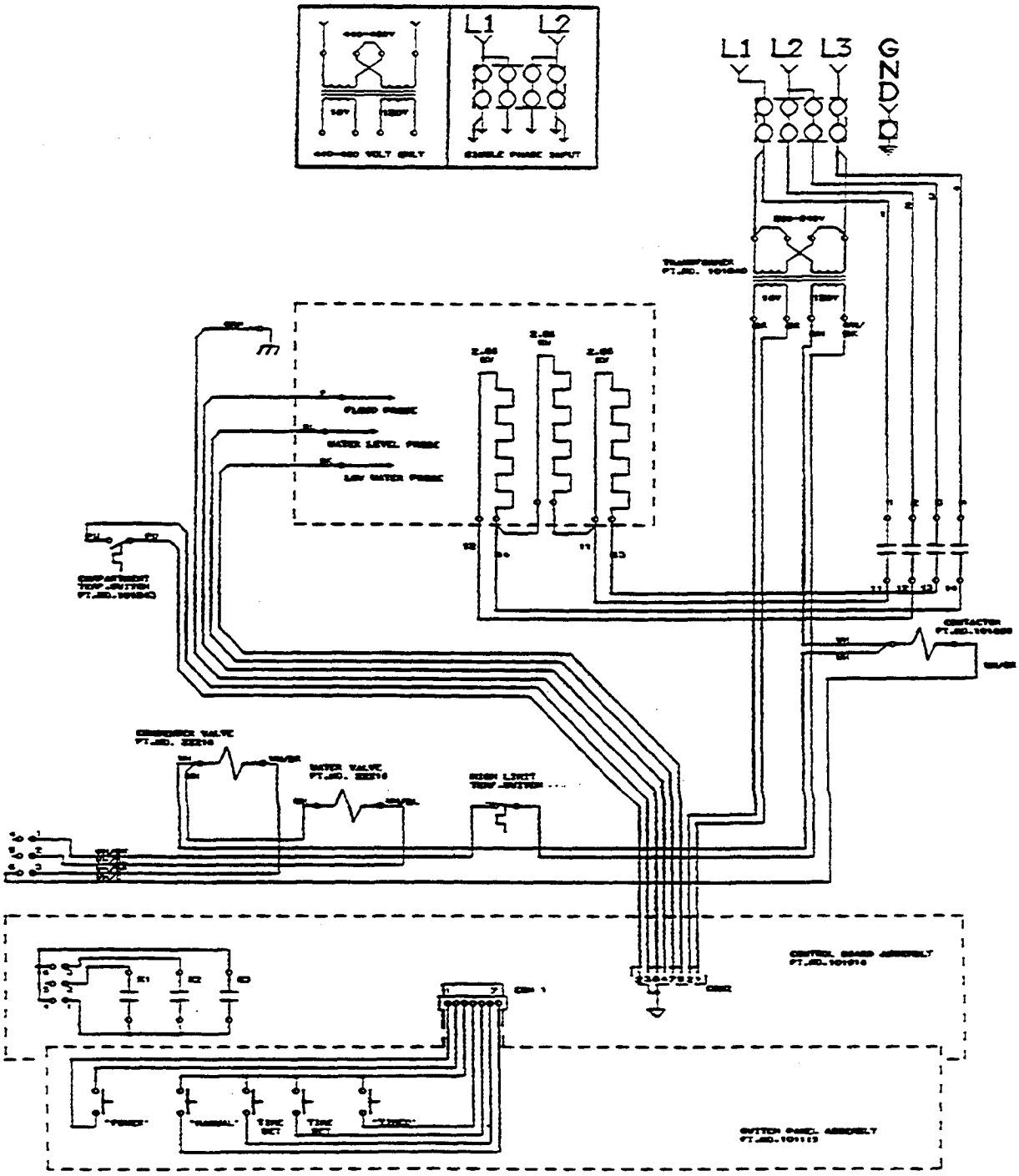


Fig. 33 With No Thermistors, 1 Contactor, 1 High Limit Thermostatic Switch (Canadian Units Only)

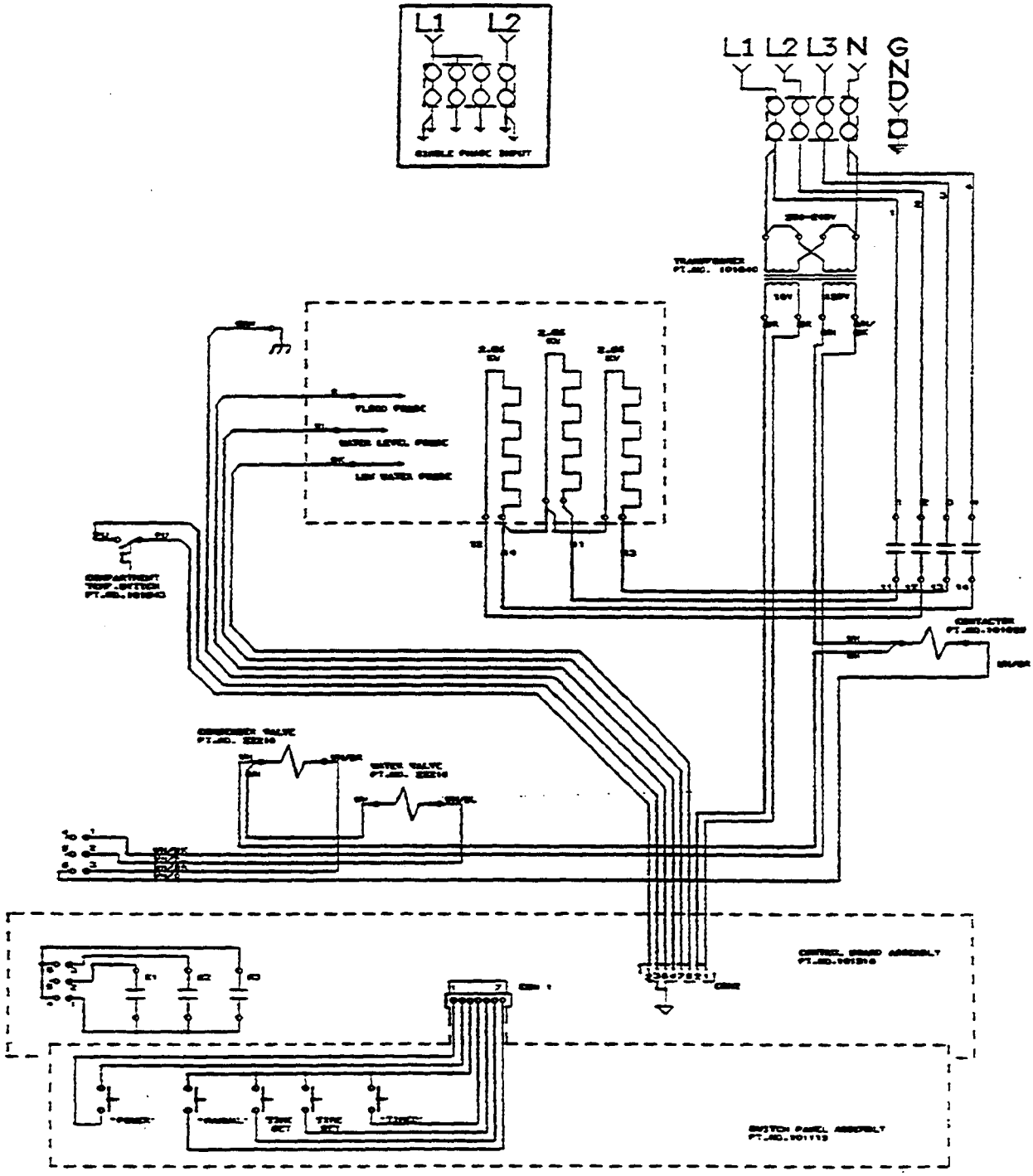


Fig.34 Current Export Wiring Diagram