

## Statement of Responsibilities

This document is for use by experienced and trained Qualified Cleveland Range, LLC Authorized Service Representatives who are familiar with both the safety procedures, and equipment they service.

Cleveland Range, LLC assumes no liability for any death, injury, equipment damage, or property damage resulting from use of, improper use of, or failure to use the information contained in this document.

Cleveland Range, LLC has made every effort to provide accurate information in this document, but cannot guarantee that this document does not contain unintentional errors and omissions.

The information in this document may be subject to technical and technological changes, revisions, or updates.

Cleveland Range, LLC assumes no liability or responsibility regarding errata, changes, revisions, or updates.

Qualified Cleveland Range, LLC Authorized Service Representatives are obligated to follow industry standard safety procedures, including, but not limited to, OSHA regulations, and disconnect / lock out / tag out procedures for all utilities including steam, and disconnect / lock out / tag out procedures for gas, electric, and steam powered equipment and / or appliances

All utilities (gas, electric, water and steam) should be turned OFF to the equipment and locked out of operation according to OSHA approved practices during any servicing of Cleveland Range equipment

Qualified Cleveland Range, LLC Authorized Service Representatives are obligated to maintain up-to-date knowledge, skills, materials and equipment.



# Convection Steamers

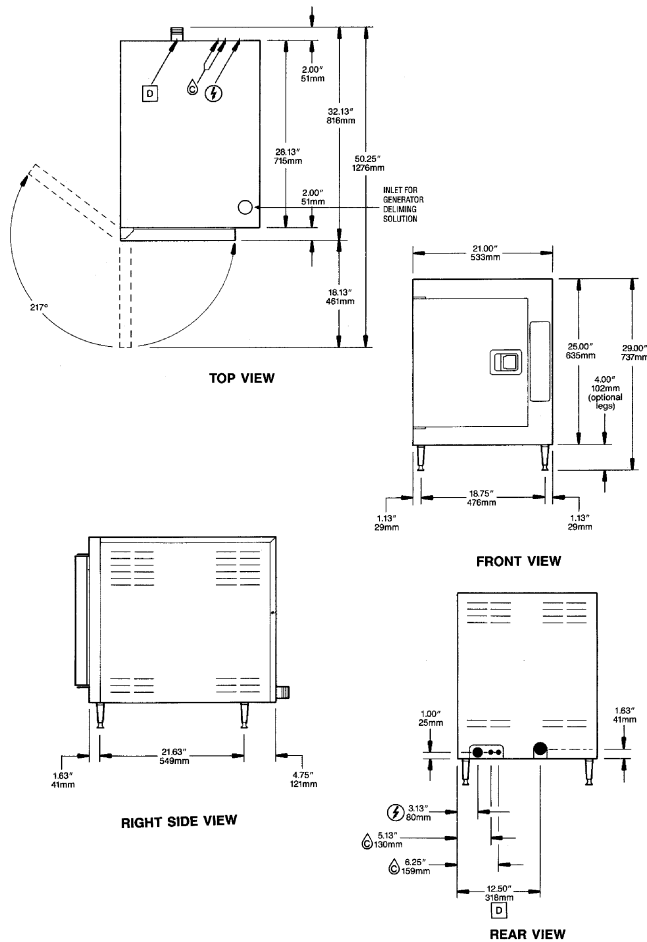
## SteamCraft® Ultra 5

COUNTER TYPE DESIGN  
PRESSURELESS CONVECTION STEAMER  
Electric Steam Generator, 16 KW

MODEL:  21-CET-16

ITEM NUMBER \_\_\_\_\_

JOB NAME / NUMBER \_\_\_\_\_



Shown with optional  
Electronic Timer

### SHORT FORM SPECIFICATION

Shall be CLEVELAND, SteamCraft® Ultra 5, one compartment, Counter-Type Steamer, Model 21-CET-16, \_\_\_ volts, 16.5 KW, \_\_\_ Hz, 3 phase, heavy duty all Stainless Steel construction; rear mounted, insulated Steam Generator with Remote Probe Type Water Level Controls and Automatic Steam Generator Blowdown with "Water Jet" Drain Cleaning feature.

### WATER QUALITY REQUIREMENT

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 SOLIDS	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
CHLORINE	less than 30 parts per million

Consult a local water treatment specialist for an on site water analysis for 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.

ELECTRIC ⚡			WATER
<b>VOLTS</b>	<b>KW</b>	<b>3PH AMPS</b>	Cold water: 35 psi minimum 60 psi maximum
208	16.5	46	Two ½" I.D. Tubing: • one for Condenser • one for Steam Generator
220	15	40	Unit comes with a 40 Mesh Water Strainer (installation required)
240	18	44	
440	15	20	
480	18	22	
DRAINAGE <input type="checkbox"/>			CLEARANCE
1½" N.P.T. tube Do not connect other units to this drain. Drain line must be vented. No PVC pipe for drain.			Right - 6.00" Left - 3.00" Rear - 3.00"

Cleveland Range reserves right of design improvement or modification, as warranted.

# Cleveland Range, LLC

Ph: 1-216-481-4900 Fx: 1-216-481-3782

1333 East 179th St., Cleveland, Ohio, U.S.A. 44110

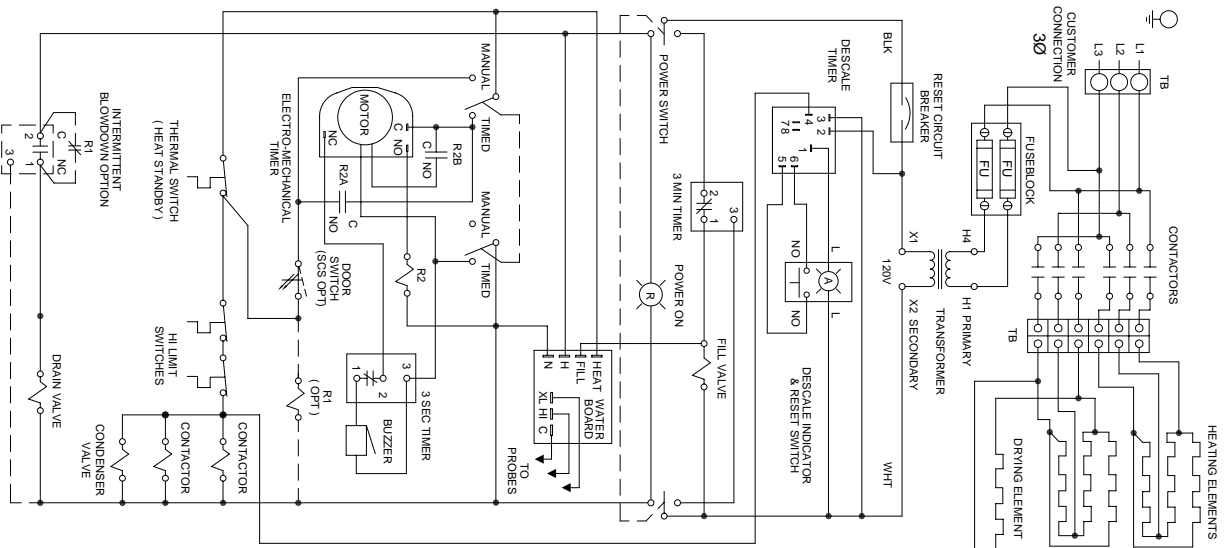
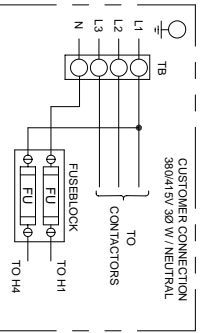
Visit our Web Site at [www.clevelandrange.com](http://www.clevelandrange.com)

CLEVELAND RANGE 21CET16  
SEQUENCE OF OPERATIONS  
Mechanical Timer

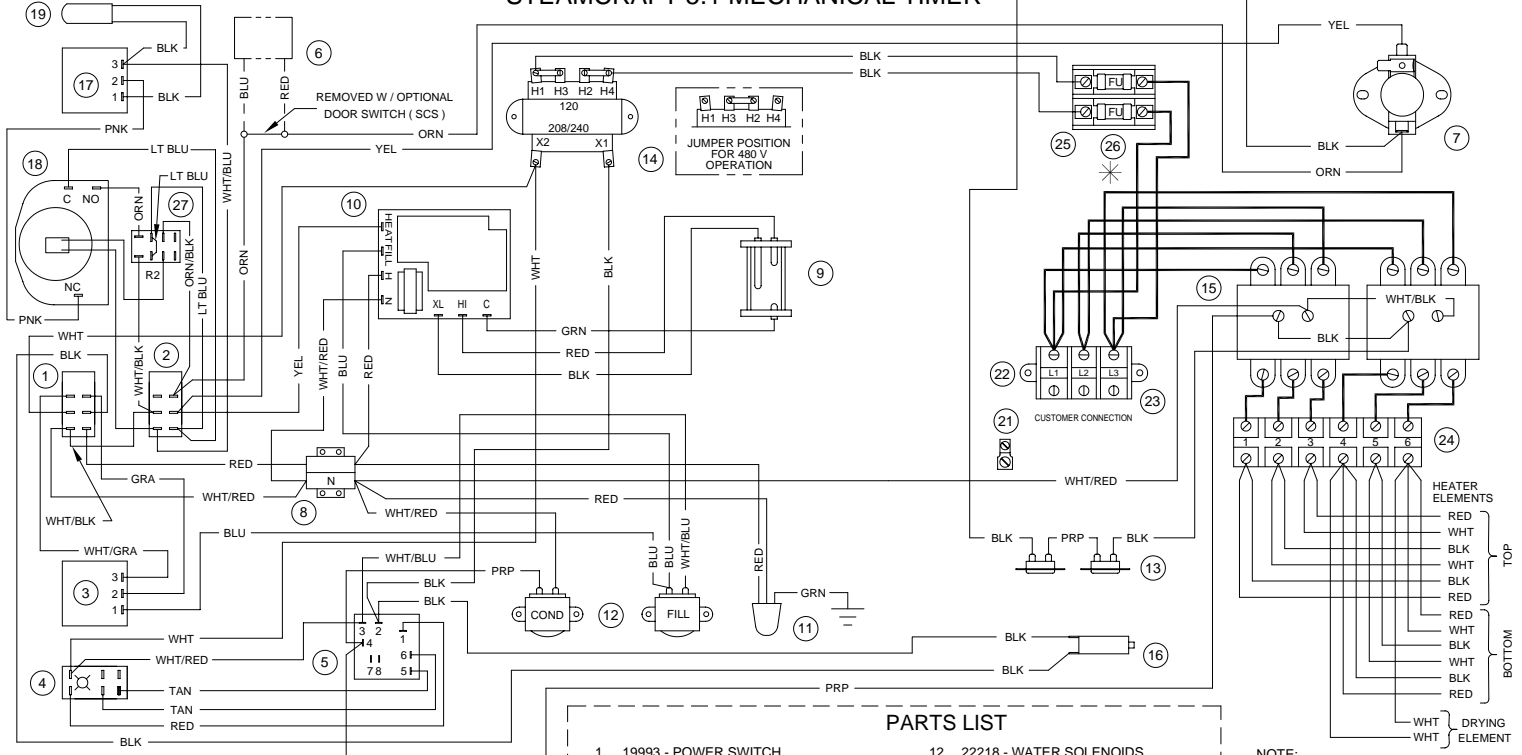
1. Supply power is sent to the primary of the main transformer.
    - 115 VAC is sent from the secondary of the main transformer to the on/off rocker,
  
  1. To turn the unit on, depress the red on/off rocker switch.
    - 115 VAC is sent to the red indicator light.
    - 115 VAC is sent to the normally open drain valve closing it.
    - 115 VAC is sent to H and N of the water level board
  
  2. With the water level board energized and no water in the generator
    - After a 5 second delay, 115 VAC is sent from the FILL terminal to the fill solenoid.
    - The fill solenoid opens and the generator fills through the drain valve.
    - The water fills to the low probe shorting it to ground
    - 115 VAC is sent from the HEAT terminal to the timed manual switch.
    - 115 VAC is sent to the preheat thermostat.
      - 115 VAC is then sent through the high limits to the coil of condensate solenoid.
        - The condensate solenoid opens sending cold water down the compartment drain.
      - 115 VAC is also sent through the high limits to the coil of the contactor.
        - When the contactor is energized supply voltage is sent to both of the elements.
      - The heat circuit will stay energized until the preheat thermostat opens at 185 degrees.
  
  3. When the timed/manual switch is in the timed position and time is on the timer
    - 115 VAC is sent from the timer to the coil of the R2 relay
      - The R2 relay energizes
      - R2B contacts close and 115 VAC is sent to the motor of the timer
      - R2A contacts close and 115 VAC is through the optional door switch to the normally closed contacts of the high limits
    - 115 VAC is then sent through the high limit to the coil of condensate solenoid and the coil of the mercury contactor.
    - 115 VAC is sent to the clean light timer.
      - When the clean light timer times down 115 VAC is sent to the clean light switch.
      - When the clean light switch is depressed the clean light timer is reset.
  
  4. When the contactor is energized supply voltage is sent to both of the elements.
  
  5. When the timer times out 115 VAC is sent to the 3 second timer and then to the buzzer for 3 seconds.
  
  6. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.
-

7. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
8. The red on/off rocker switch is depressed and the unit is turned off.
  - 115 VAC is removed from the timer and heat circuits.
  - 115 VAC is removed from the normally open drain valve allowing the steamer to drain.
  - 115 VAC is sent to the 3-minute timer and the fill solenoid is energized for 3 minutes flushing the drain.

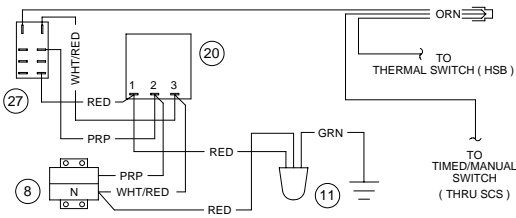
# STEAMCRAFT 5.1 MECHANICAL TIMER



# STEAMCRAFT 5.1 MECHANICAL TIMER



## INTERMITTENT BLOWDOWN OPTION



## PARTS LIST

- |    |                                    |    |                                |    |  |
|----|------------------------------------|----|--------------------------------|----|--|
| 1  | 19993 - POWER SWITCH               | 12 | 22218 - WATER SOLENOIDS        | 23 | 101541 - TERMINAL BLOCK SECTIONAL                |
| 2  | 104224 - TIMED/MANUAL SWITCH       | 13 | 103731 - HI LIMIT SWITCHES     | 24 | 109240 - 6 POLE TERMINAL BLOCK                   |
| 3  | 20478 - 3 MIN TIMER                | 14 | 20535 - TRANSFORMER            | 25 | 109374 - FUSEBLOCK                               |
| 4  | 19994 - DESCALE INDICATOR RESET SW | 15 | 103905 - CONTACTORS            | 26 | 109380 - FUSE, 3.5 A ( FOR 208 V & 240 V UNITS ) |
| 5  | 106911 - DESCALE TIMER             | 16 | 108331 - RESET CIRCUIT BREAKER | 27 | 109381 - FUSE, 1.5 A ( FOR 480 V UNITS )         |
| 6  | 108880 - DOOR SW (MAGNETIC)        | 17 | 20477 - 3 SEC TIMER            |    |  |
| 7  | 105789 - THERMAL SWITCH ( HSB )    | 18 | 110198 - MOTORIZED TIMER       |    |  |
| 8  | 44168 - TERMINAL BLOCK             | 19 | 41350 - BUZZER                 |    |  |
| 9  | 107239 - PROBE                     | 20 | 106541 - INTMT BLOWDOWN TIMER  |    |  |
| 10 | 107241 - WATER BOARD               | 21 | 20304 - GROUND LUG             |    |  |
| 11 | 22221 - DRAIN VALVE                | 22 | 101540 - END SEGMENT           |    |  |

NOTE:  
HEAVY WIRE LINES INDICATES  
12 AWG HI - TEMP WIRE

\* ( SEE RATING PLATE ) P106380 G

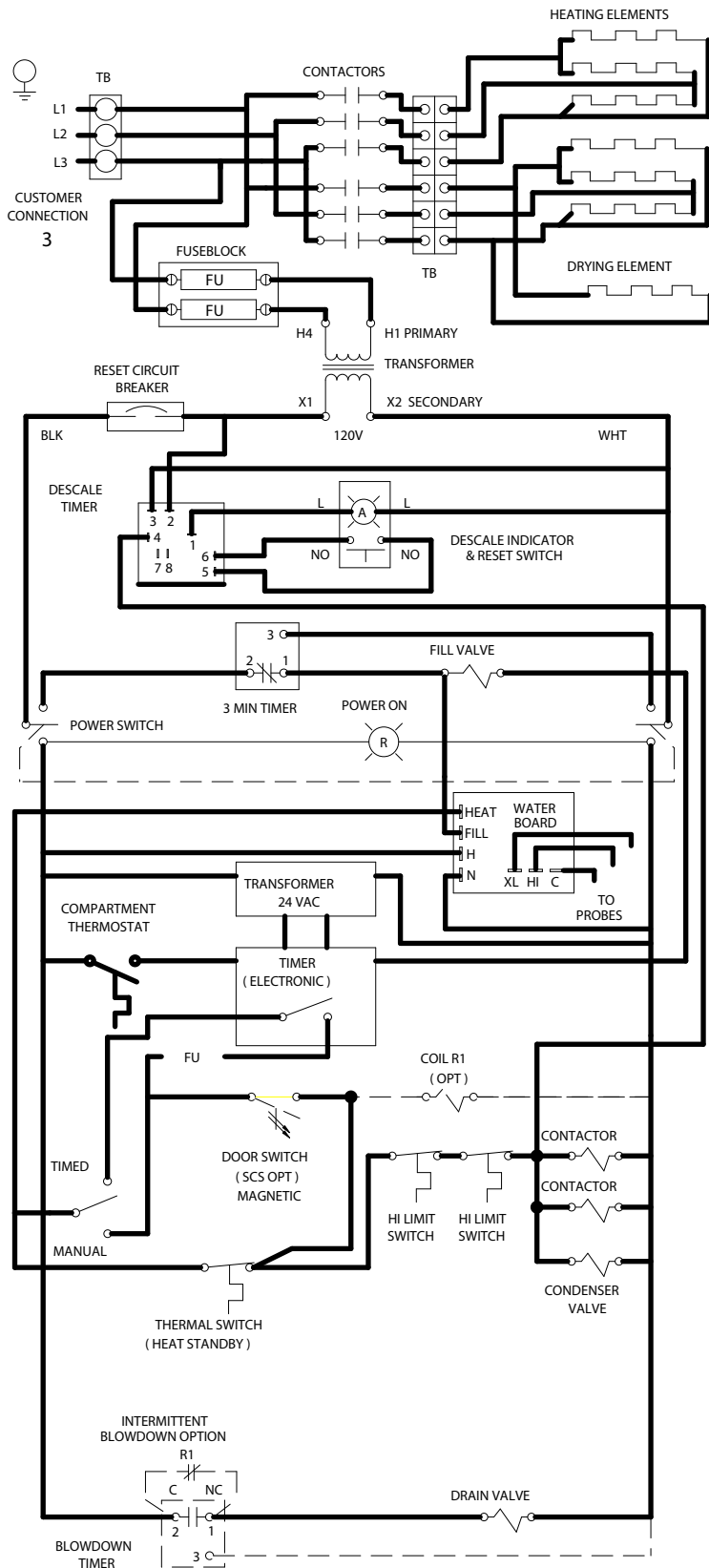
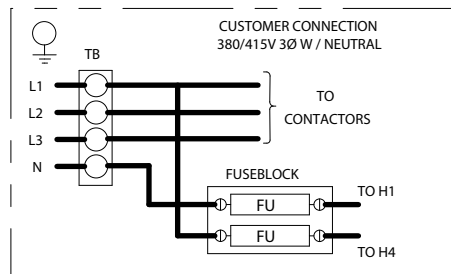
**CLEVELAND RANGE 21CET16**  
**SEQUENCE OF OPERATIONS**  
**Electronic Timer**  
With preheat thermostat

1. Supply power is sent to the primary of the main transformer.
  - 115 VAC is sent from the secondary of the main transformer to the on/off rocker,
2. To turn the unit on, depress the red on/off rocker switch.
  - 115 VAC is sent to the red indicator light.
  - 115 VAC is sent to the normally open drain valve closing it.
  - 115 VAC is sent to H and N of the water level board
  - 115 VAC is sent to the 24 VAC transformer for the electronic timer.
  - 115 VAC is sent to the normally open compartment thermostat switch.
3. With the water level board energized and no water in the generator
  - After a 5 second delay 115 VAC is sent from the FILL terminal to the fill solenoid.
  - The fill solenoid opens and the generator fills through the drain valve.
  - The water fills to the low probe shorting it to ground
  - 115 VAC is sent from the HEAT terminal to the timed manual switch.
  - 115 VAC is sent to the preheat thermal switch.
    - 115 VAC is then sent through the high limit to the coil of condensate solenoid.
      - The condensate solenoid opens and cold water is sent down the compartment drain.
    - 115 VAC is also sent through the high limit to the coil of the contactor.
      - When the contactor is energized supply voltage is sent to both of the elements.
    - The heat circuit will stay energized until the preheat thermostat reaches 185 degrees.
4. When the timed/manual switch is in the timed position and time is on the timer
  - 115 VAC is sent from the timer through the door switch to the normally closed contacts of the high limit
  - 115 VAC is then sent through the high limit to the coil of condensate solenoid and the coil of the contactor.
  - 115 VAC is sent to the clean light timer.
  - When the clean light timer times down 115 VAC is sent to the clean light switch.
  - When the clean light switch is depressed the clean light timer is reset.
5. When the contactor is energized supply voltage is sent to both of the elements.
  - Steam is energized and sent to the cooking compartment.
  - When the cooking compartment reaches 193 degrees the compartment thermostat closes sending 115 VAC to the timer.
  - The timer will then begin counting down.

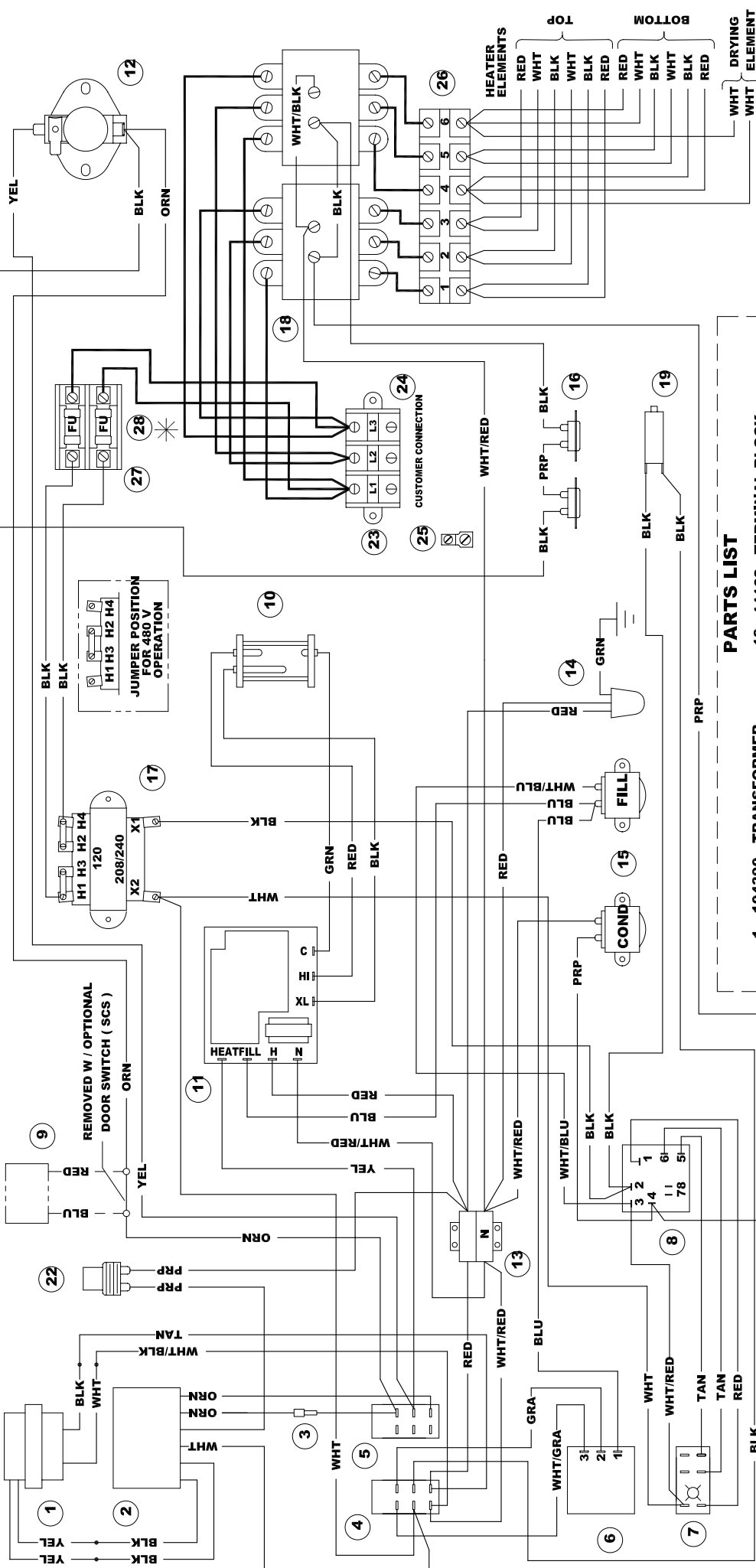
- When the timer times down a buzzer will sound and the timer will open removing 115 VAC from the heat circuit.
6. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.
  7. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
  8. The red on/off rocker switch is depressed and the unit is turned off.
    - 115 VAC is removed from the timer and heat circuit.
    - 115 VAC is removed from the normally open drain valve allowing the steamer to drain.
    - 115 VAC is sent to the 3-minute timer and the fill solenoid is energized for 3 minutes flushing the drain.
-



STEAMCRAFT 5.1 ELECTRONIC TIMER



# STEAMCRAFT 5.1 ELECTRONIC TIMER

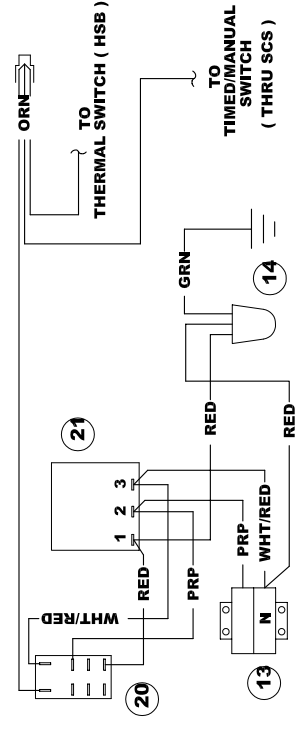


NOTE:  
HEAVY WIRE LINES INDICATE  
12 AWG HI - TEMP WIRE

## PARTS LIST

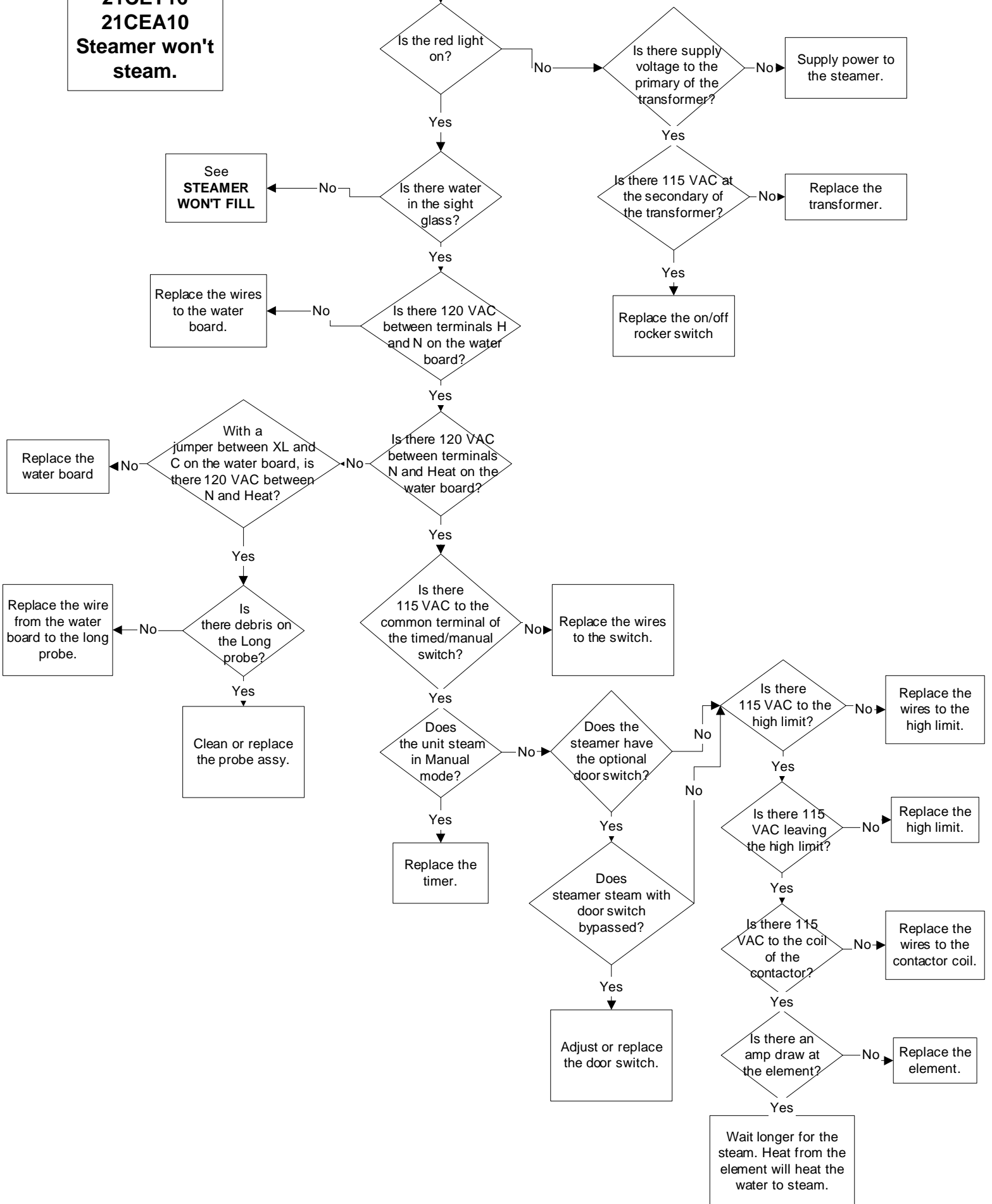
- |    |  |    |  |
|----|--|----|--|
| 1  | 104390 - TRANSFORMER                     | 13 | 44168 - TERMINAL BLOCK                           |
| 2  | 104389 - ELECTRONIC TIMER                | 14 | 22221 - DRAIN VALVE                              |
| 3  | 106909 - 2 AMP, 250V FUSE                | 15 | 22218 - WATER SOLENOIDS                          |
| 4  | 19993 - POWER SWITCH                     | 16 | 103731 - HI LIMIT SWITCH                         |
| 5  | 104224 - TIMED / MANUAL SWITCH           | 17 | 20535 - TRANSFORMER                              |
| 6  | 20478 - 3 MIN TIMER                      | 18 | 103905 - CONTACTORS                              |
| 7  | 19994 - DESCALC INDICATOR & RESET SWITCH | 19 | 108331 - RESET CIRCUIT BREAKER                   |
| 8  | 106911 - DESCALC TIMER                   | 20 | 105966 - RELAY                                   |
| 9  | 108880 - DOOR SW ( SCS ) MAG             | 21 | 106541 - INTERMITTENT BLOWDOWN TIMER 240 V UNITS |
| 10 | 107239 - PROBE                           | 22 | 19972 - COMPARTMENT THERMAL SWITCH UNITS )       |
| 11 | 107241 - WATER BOARD                     | 23 | 101540 - END SEGMENT                             |
| 12 | 105789 - THERMAL SWITCH ( HSB )          | 24 | 101541 - TERMINAL BLOCK SECTIONAL                |
|    |  | 25 | 20304 - GROUND LUG                               |
|    |  | 26 | 109240 - 6 POLE TERMINAL BLOCK                   |
|    |  | 27 | 109374 - FUSEBLOCK                               |
|    |  | 28 | 109380 - FUSE, 3.5 A ( FOR 208 V & 240 V UNITS ) |
|    |  |    | 109381 - FUSE, 1.5 A ( FOR 480 V UNITS )         |

## INTERMITTENT BLOWDOWN OPTION

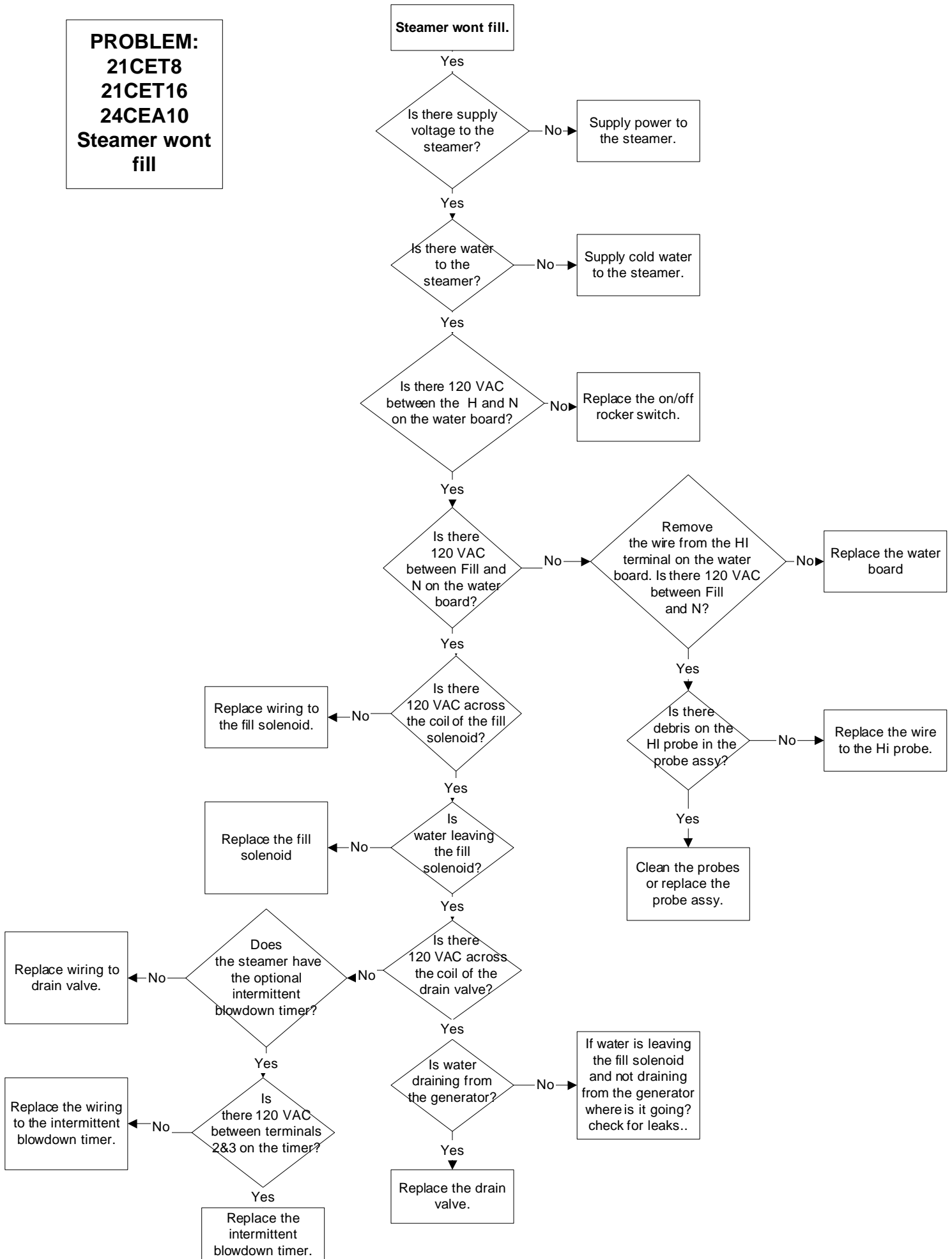


**PROBLEM:**  
**21CET8**  
**21CET16**  
**21CEA10**  
**Steamer won't steam.**

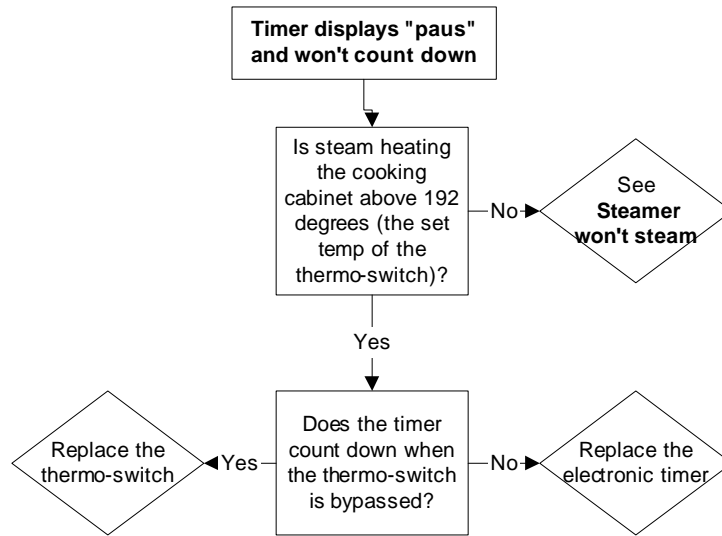
**Steamer won't steam**



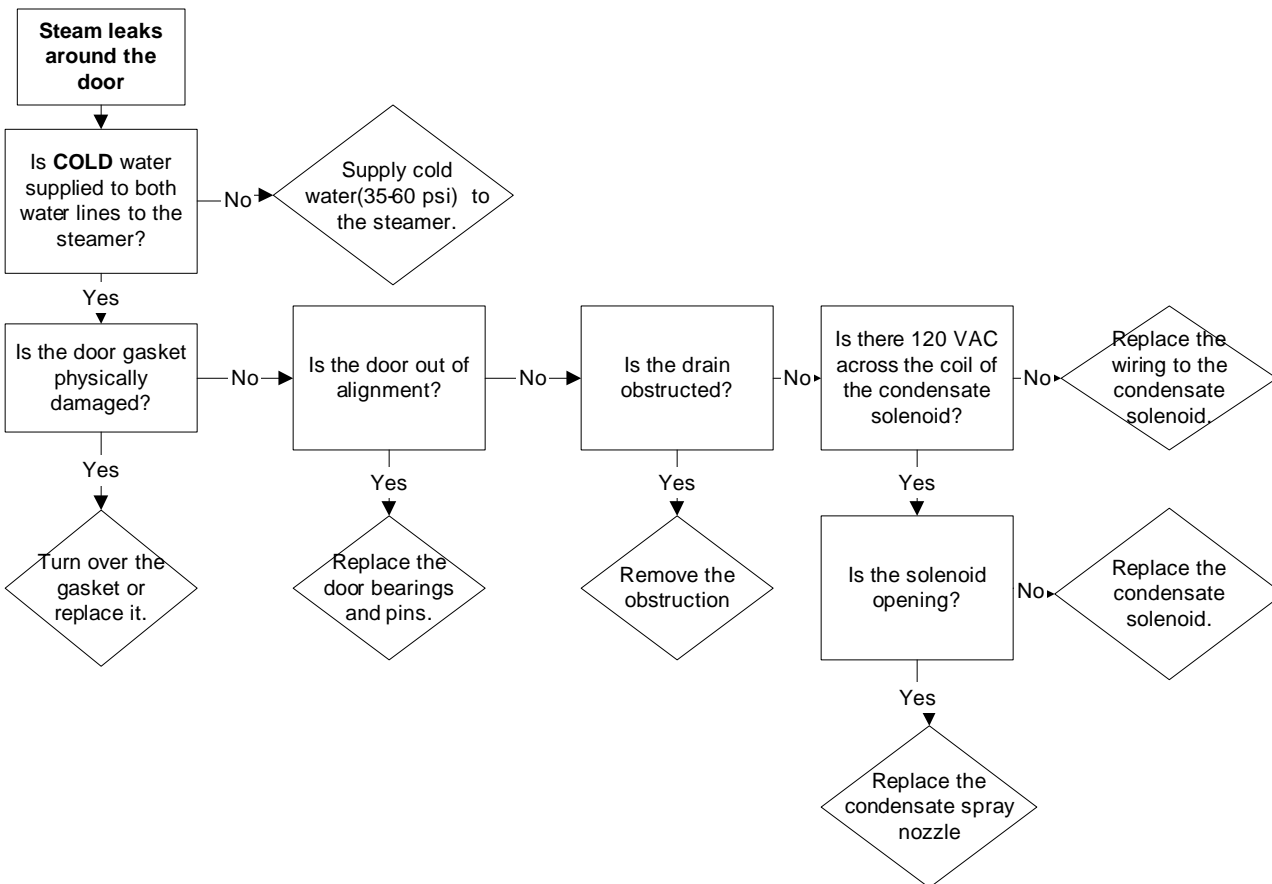
**PROBLEM:**  
**21CET8**  
**21CET16**  
**24CEA10**  
**Steamer wont fill**



**PROBLEM:**  
**21CET8, 21CET16, 24CEA10**  
**Electronic timer displays "PAUS" and won't count down**

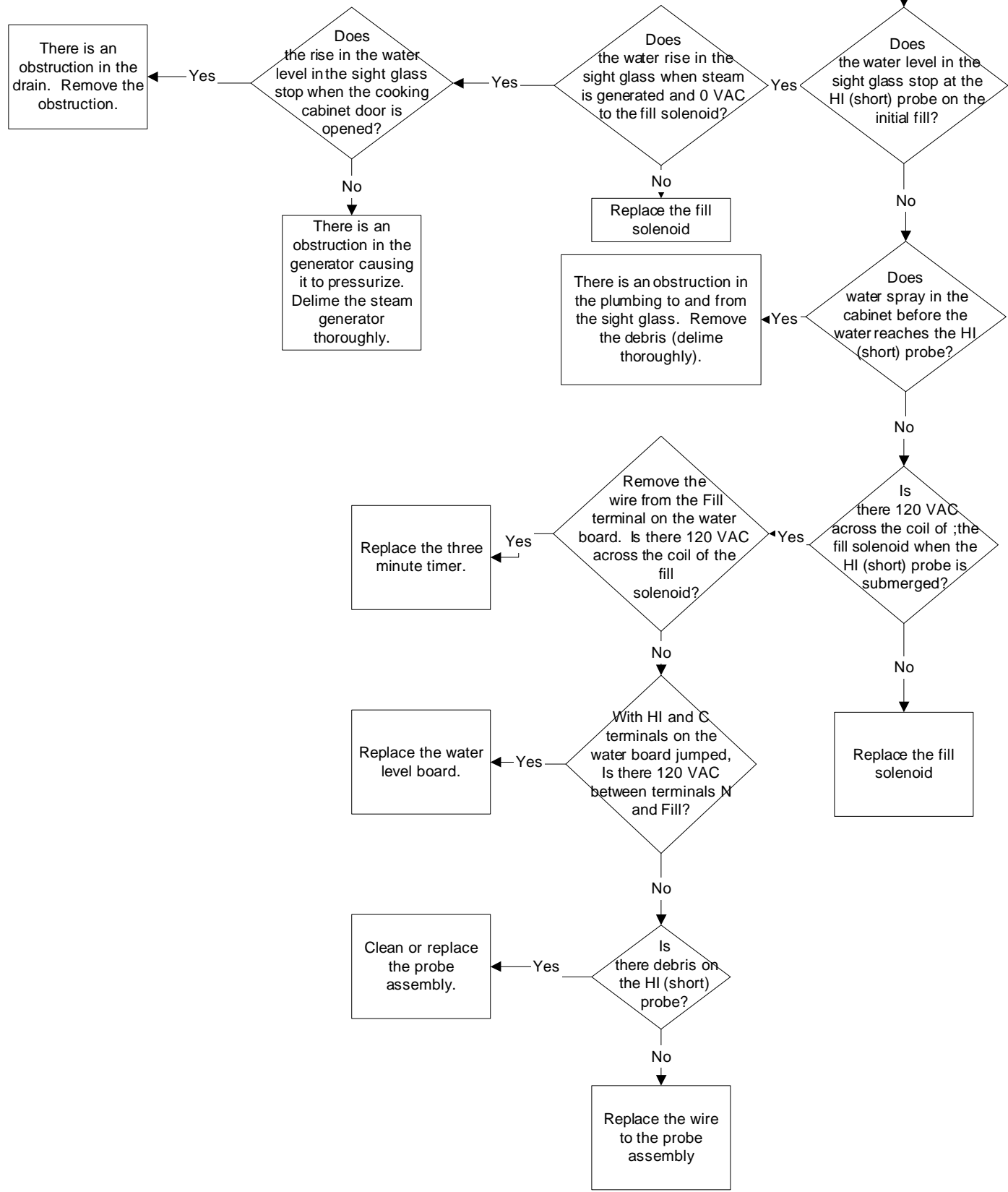


**PROBLEM:**  
**21CET8, 21CET16, 24CEA10**  
**Steam leaks around the door.**

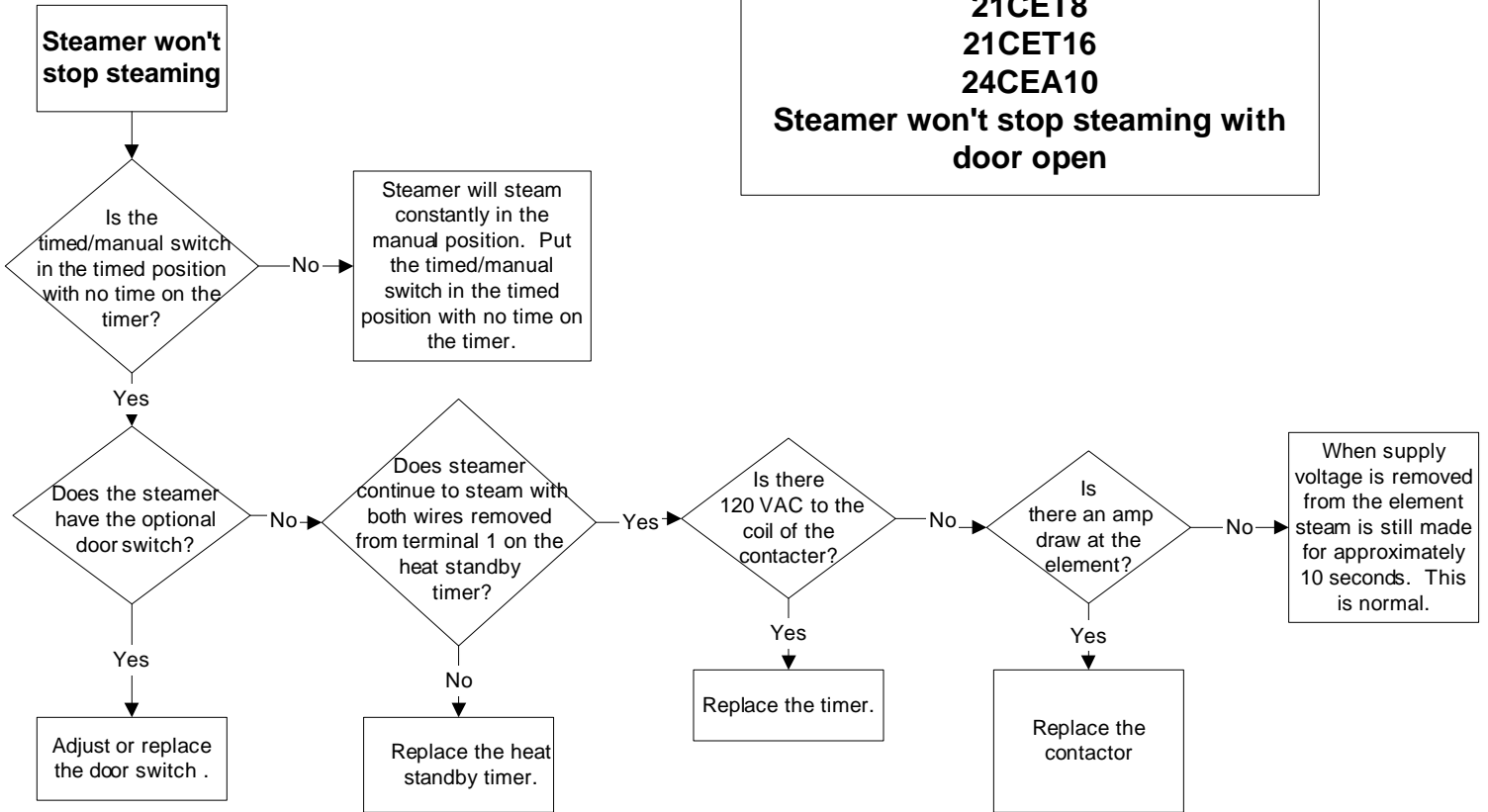


**PROBLEM:  
21CET8  
21CET16  
24CEA10  
Steamer overfills.  
(Water sprays into cooking cabinet)**

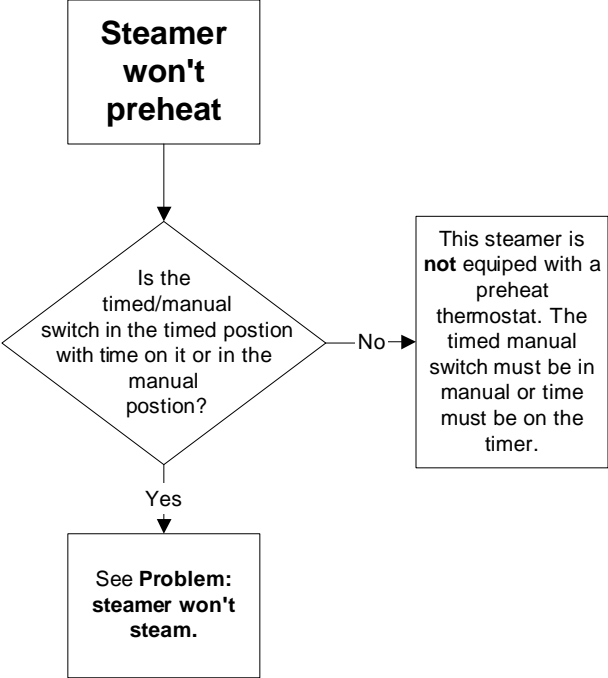
**Steamer overfills  
(Water sprays into the cooking cabinet)**



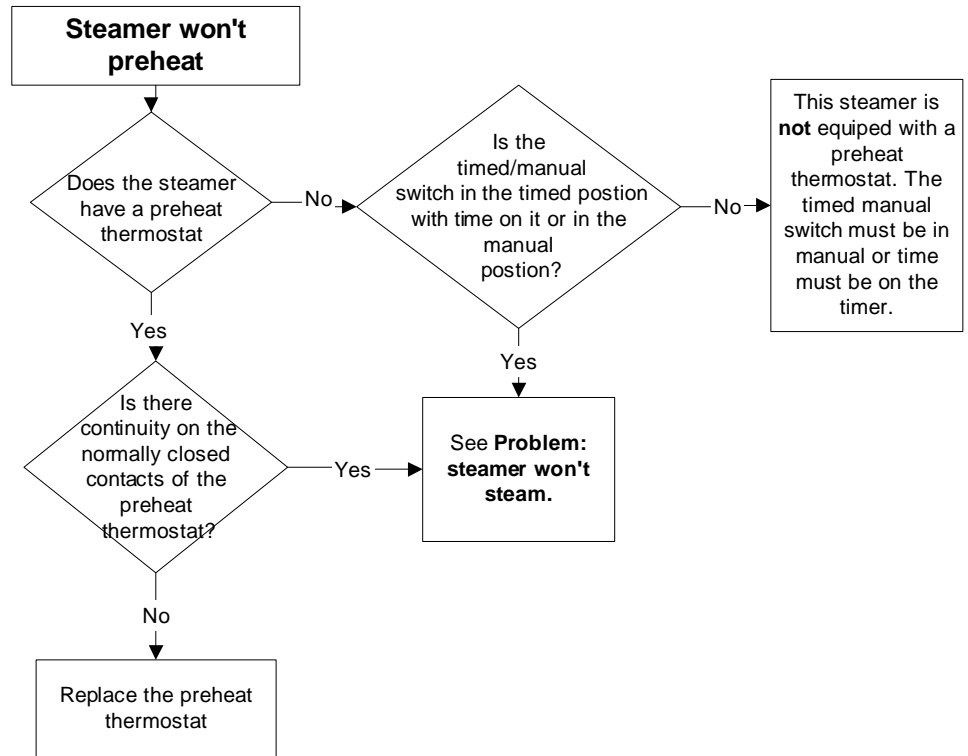
**PROBLEM:  
21CET8  
21CET16  
24CEA10  
Steamer won't stop steaming with  
door open**



**Problem:  
21CET8, 24CEA10  
Steamer won't preheat**



**Problem:  
21CET16  
Steamer won't preheat**







# Cleveland

## Descaling Procedure-SteamCraft Ultra and Gemini Series

### How Much DISSOLVE to Use

Model	Dissolve
Ultra 3	1/2 Gallon
Ultra 5	1 Gallon
Ultra 10 (Elec.)	1 Gallon (ea.)
Ultra 10 (Gas)	1½ Gallon
Gemini 6 & 10	1 Gallon (ea.)

### 1. Turn the unit OFF and open the doors:

This will drain and rinse the generator for about 3 minutes.

### 2. Turn the unit power back On:

The generator will begin to refill with water.

### 3. Select Timed with the Timed/Manual switch:

DO NOT start the timer, since you do not want to heat the water during descaling. Leave the doors open.

### 4. Remove descaling port cap and add with the specified amount of DISSOLVE: (See chart above)

Do this while the unit is refilling. The generators can take-up to 8 minutes to refill.

### 5. After refill has stopped, add extra tap water into the descaling port until liquid is seen entering the cooking cabinet. Note: Ultra 10 gas will have liquid coming out of the drain,

Adding extra water when descaling will raise the descaling solution higher than the normal fill level, allowing the DISSOLVE to work on sensors and surfaces above the water line

Note: Some SteamCraft Ultra models (the electric powered Ultra 10 and Gemini 6 and 10, for example) have two generators and two descaling ports. Both units should be descaled at the same time, using this procedure

### 6. Let the descaler soak in generator for approximately one hour:

### 7. After one hour, turn the unit power Off: This will drain and rinse the generator for about 3 minutes.



### 8. After the 3-minute drain cycle completes, turn the unit back ON. After the filling has stopped, add water until liquid enters the cooking compartment (or drain for the ultra 10 gas), and then turn the unit OFF. This will drain and flush any residue from the water level control assembly. Replace descaling cap.

### 9. After the 3 minute drain cycle completes, Turn the unit ON and set the Timer for 20 minutes: Make sure the Time/Manual switch is in the timed setting and the doors are closed.

### 10. When the timer times out (after 20 minutes) turn the power Off:

This will drain and rinse the generator for about 3 minutes.

This ends the descaling procedure. You can now turn the unit back on and resume normal startup and cooking operations.