

Cleveland

Installation, Operation & Maintenance Manual

PRESSURE STEAMERS



SERIES: PGM, PEM, PSM, PDM, PDL-2/3

260APC-A

Table of Contents

INSTALLATION	3
Correct Installation	3
Water Quality	3
Drain Line Connection	4
Installation Safety	4
Installation Instructions	5
Installation checks	5
Gauge Pressure Reading with No Steam Flow* (Static Pressure)	7
 OPERATION	 7
Controls and Controls Panels	7
Steam Generator Controls	7
Start-up and Preheat	8
Cooking Operations	8
Startup and Preheat	9
Cooking Operation	9
Boiler Shutdown	9
Care and Cleaning	9
 MAINTENANCE	 10
Preventative Maintenance-Descaling Instructions	11
 TROUBLESHOOTING	 15
Operators Troubleshooting Guide	16
Troubleshooting Notes	16
 PRESSURE STEAMER COOKING INFORMATION	 17

Installation

CORRECT INSTALLATION

You have purchased the finest Steam Cooking Equipment made. The following information we know will increase the productivity and life span of the equipment.

Every product needs proper installation and with a steamer it is critical. The following is some important information you should check on before and during installation of the equipment.

Water

The quality of water you put into the steam generator is important. Poor quality water will create generator problems.

Water is no longer just plain and simple. Water has many natural ingredients in it. These are called Total Dissolved Solids, or TDS. This includes calcium, iron, and other minerals in the water that collect in the steam generator. Because of the droughts in many areas, water and TDS's are being pumped up from the bottom of the water systems. If these TDS are not pre-filtered out or cleaned out with a regular preventive maintenance program, your steam generator could deteriorate and develop holes.

CHLORIDE is another chemical in our water creating many problems with all steam generators. When the generator creates steam from the water it also carries the chloride gas with it. These chlorides begin to eat away the inside of the generator and follow the steam into the compartments causing a rusting action (oxidation) as it goes along.

A CARBON OR CHARCOAL FILTER must be installed on the incoming water line to the steamer if the chlorine is over 30 parts per million. These filters will remove the chloride.

The WATER QUALITY REQUIREMENTS for your STEAMER 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
Chlorides	less than 30 parts per million
pH Factor	greater than 7.5

Drain Line Connection

A proper drain line connection is important. If the drain line is clogged it can create a back up of pressure causing extreme and costly repairs.

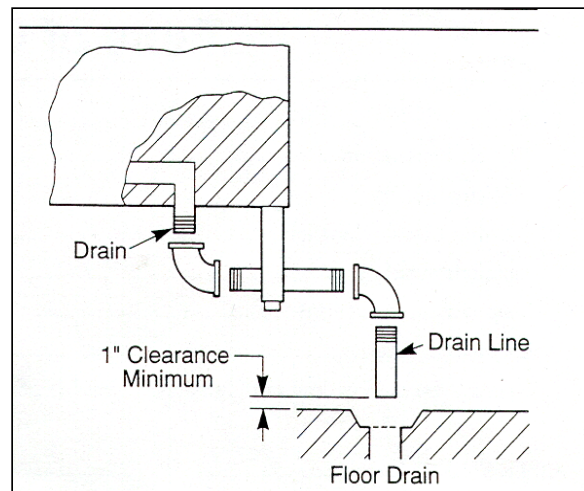


Figure 1. Drain Connections

If the drain line is not large enough, not open at the end, or does not have a gravity flow; pressure and hot water will back up into the compartments. If any of these conditions exist and hot water does back up into the compartment someone could be seriously burned and injured. This can happen even with a correct installation if a drain cleaner is not used on a regular basis.

An open and free flowing drain line IS REQUIRED for the proper cooking performance of a CONVECTION STEAMER. It helps create a swirling action around the products being cooked. This movement of hot steam around the product is your CONVECTION STEAM COOKING.

DO NOT INSTALL UNIT OVER A FLOOR DRAIN. If it becomes an absolute must, using an 18" stainless steel or aluminum pan turn it over and cut a notch in the side wall to fit over the drain line. Place the pan directly over the drain opening- DO NOT SEAL TO THE FLOOR. The steam from the drain line will collect on the under side and condense into the drain opening.

DO NOT INSTALL GAS UNITS ON FLAMMABLE FLOORS OR NEAR WALLS. A flammable floor or wall is any material such as wood, linoleum, or vinyl that is easily ignitable and burns rapidly.

The intent of these instructions is to provide meaningful information, which will help you obtain many years of production. Before installing the steamer, please read those instructions carefully to maintain your safety and warranty.

INSTALLATION SAFETY

WARNING

Qualified installation personnel, working to all applicable local and national codes must accomplish installation of this equipment. Improper installation of this product could cause or damage.

Do not store or use gasoline or other flammable Vapors and liquids in the vicinity of this or any other appliance.

The flooring that will be directly under the boiler must **also** be made of a noncombustible material.

Cleveland Range equipment is designed and built to comply with applicable standards for manufacturers. Included among those certification agencies which have approved the safety of the equipment design and construction: UL, A.G.A., NSF ASME, CSA, CGA, and others.

Cleveland Range *equipment* is designed *and certified* for safe operation only when permanently installed in accordance with local and I 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 for consequential damage or injury resulting from installations which is not in strict compliance with our installation instructions. Specifically, Cleveland Range will not assume any liability for damage resulting from improper installation of equipment including, but not limited to, temporary or mobile installations

INSTALLATION INSTRUCTIONS

1. These instructions must be retained by the owner/user for future reference. Gas-fired boilers are only to be installed in noncombustible areas that have provisions for adequate air supply. The term "boiler" will be used synonymously with "steam generator".
2. Position: For proper operation and drainage, the equipment must be level. It should be placed next to an open floor drain. **DO NOT POSITION THE UNIT DIRECTLY ABOVE WE FLOOR DRAIN.** Observe all clearance requirements to provide air supply for proper operation, as *well* as sufficient clearance for servicing. The surrounding area must be free and clear of combustibles. Dimensions and clearance specifications are shown on the specification sheet.
3. Install in accordance with local codes and/or the National Electric Code ANSI/NFPA No.70-1987. Installation in Canada must be in accordance with Canadian Electrical Code CSA Standard C22.1. The installer A wiring diagram is provided inside the base cabinet must ground equipment that is connected to electricity.

WARNING

INJURY TO PERSONNEL AND EQUIPMENT DAMAGE
May result from an improper drain connection. No connection lines are to be under the unit

4. Drain Line. The drain line outlet discharges exhaust steam and hot condensate. Connect 1-1/2-inch IPS piping (or larger) to extend the drain line to a nearby open floor drain. Up to two elbows and six feet of 1-1/2-inch IFS (or larger) extension pipe should be connected to the drain termination. No more than two pieces of Cleveland Range Equipment should be connected to one common drain line. The extension piping must have a gravity flow and vent freely to the air. This drain outlet must be free-vented to avoid the creation of backpressure in the steamer cooking compartments. To ensure a vented drain line, **DO NOT UNDER ANY CIRCUMSTANCES, CONNECT THE DRAIN OUTLET DIRECTLY TO THE FLOOR DRAIN OR SEWER LINE.** Do not run the drain line discharge into PVC drain piping or any other drain piping material not capable of sustaining 180° F operation.

5. Water Supply. Connect COLD water plumbing to the line strainer (Never conned hot water to the condensate water fill line strainer) Constant flow pressure must be maintained between 35 and 60 psi, and not experience a pressure drop below 35 psi when other appliances are used. If the water pressure exceeds 60 psi, a pressure-reducing valve must be installed in the water supply plumbing to reduce the water pressure to less than 60 psi. Locations and pressure data are shown on the specification sheet. 3/8-inch IPS plumbing is sufficient for water supply lines up to 20 feet in length, but *water supply* lines longer *than* 20 feet should be at least 1/2-inch IPS. Flush water supply lines thoroughly before connecting them to the unit. Use water, which is low in total dissolved solids content and low in gas content to prevent internal scaling, pitting and corrosion of the steam generator, and carry-over of minerals into the steam. Water, which is fit to drink, can still contain highly detrimental impurities.

NOTE: If equipped with a kettle and kettle water fill swing spout, 3/8-inch (10 mm) hot and/or cold-water connection(s) will be required at the swing spout valve.

6. *Turn on the cold water* supply to the unit Ensure *that* the manual water valve, inside the base cabinet is open.
7. Fuel Supply. Connect the primary fuel supply in accordance with the following instructions. Location and other data are shown on the specification sheet.

For Gas-Fired Steam Generators: Post in a prominent location, instructions to be followed in the event the user smells gas. This information shall be obtained by the consulting the local gas supplier.

Install a sediment trap (drip leg) in the gas supply line, and then connect gas supply piping to the boiler gas valve piping. GAS-FIRED EQUIPMENT IS DESIGNED FOR INSTALLATION ONLY IN NONCOMBUSTIBLE LOCATIONS. THIS INCLUDES THE FLOOR-INC THAT WILL BE DIRECTLY UNDER THE EQUIPMENT Location, plumbing size, and pressure data are shown on the specification sheet. Boilers rated at less than 225,000 Btu require 3/4-inch 'PS gas supply piping, and boilers rated at 225,000 Btu or more require 1-inch IIS gas supply piping. Natural gas pressure must be between 4" -14" water column and LP gas supply pressure must be between 12" - 14" water column. NEVER EXCEED 14" WATER COLUMN (1/2 psi) GAS PRESSURE. If the gas supply pressure exceeds 14" water column, a pressure-regulating valve must be installed in the gas plumbing to reduce the gas pressure to less than 14" water column. Installation must be in accordance with local codes, or in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1-1984. Installation in Canada must be in accordance with Installation codes for Gas Burning Appliances and Equipment B149.1 and B149.2. Use a gas pipe joint compound, which is resistant to LP gas. Turn the gas valve control knob to ON (the word "on" the knob will be opposite the index on the valve's body). Test all pipe joints for leaks with soap and water solutions. Never obstruct the flow of combustion and ventilation air. Observe all clearance requirements to provide adequate air openings into the combustion chamber. The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 14" water column (1/2 psi or 3.45 kPa). The appliance must be isolated from the gas supply piping system at test pressures equal to or less than 14" water column (1/2 psi or 3.45 kPa). A permanent 115-volt electrical connection is required at the junction box. The junction box location is shown on the specification sheet. The installer must electrically ground the unit.

For Electric-Powered Steam Generators: Connect electric power: location and data are shown on the specification sheet. Provide connection as required by the unit, either directly to the single contactor, or to the terminal block (when equipped with multiple contactors). Electric supply must match power requirements specified on the data plate inside the base cabinet. The copper wiring size must be adequate to carry the required current at the rated voltage. A separate fused disconnect switch must be supplied and installed. The installer must electrically ground the unit.

For Steam Coil Steam Generators: Connect steam supply piping to the input side of the steam coil. Location and pressure data are shown on the specification sheet. Incoming steam pressure must be regulated between 35 and 45 psi. A 3/4-inch strainer, equipped with a 20 mesh stainless steel screen, must be supplied and installed at the incoming steam connection point. Flush the steam

line thoroughly before connecting it to the boiler. To ensure an adequate volume of steam, the branch steam supply line must be 3/4-inch 'PS minimum. Connect the inverted bucket trap to the outlet end of the steam coil. Fill the trap with water before installing it. A permanent 115-volt electrical connection is required at the junction box. The junction box location is shown on the specification sheet. The installer must electrically ground the unit.

For Direct-Steam Connected Steamers and Kettles: Connect steam supply piping to the input side of the line strainer. Location and pressure data are shown on the specification sheet. Flush the steam line thoroughly before connecting it to the steamer. To ensure an adequate volume of steam, the branch steam supply line must be 3/4 inch 'PSI minimum. Direct-steam-connected kettles require 1/2-inch 'PS pipe if the kettle total capacity is 20 gallons or less, and 3/4-inch 'PS pipe if the total capacity exceeds 20 gallons.) A permanent 115-volt electrical connection is required at the junction box. The junction box location is shown on the specification sheet. The installer must electrically ground the unit.

INSTALLATION CHECKS

Proper operation of the Cleveland Convection Steamer is dependent upon proper installation. After the steamer has been installed, a few quick checks could save unnecessary service calls.

1. The unit must be level.
2. The Convection Steamer requires a cold water connection for proper efficient operation. DO NOT USE HOT WATER. The cold water must be connected to the line strainer, located at the front lower right of the steamer base.
3. Check that the manual water supply valve is open.
4. Check all water supply lines and valves for leaks.
5. Check that the water supply pressure and water quality meets the requirements of installation paragraphs.
6. On electrical units, verify that the supply voltage meets the voltage requirements on the rating plate inside the base cabinet and the voltage shown on the packing slip. Verify that the unit is protected with a separate fused disconnect and is properly grounded in accordance with the National Electric Code.
On gas, steam coil and direct-steam-connected units
7. On all gas, steam-coil, and direct steam connected units, verify that there is a 115-Volt connection at the handy-box located on the left side of the base.

8. On all steamcoil units, the incoming steam pressure must be 35-50 psi. Less than 35 will not effectively operate the unit. Pressure in excess of 50 psi must be reduced (with a pressure-reducing valve) to 35-50 psi.
9. Check that the drain lines meet installation requirements specified in installation paragraph 4

WARNING

INJURY TO PERSONNEL AND EQUIPMENT DAMAGE may result from an improper installation.

10. After completing checks 1 through 9, correct any deficiencies refer to the Start-Up and Pre heat instructions in the Operation section. Verify that the unit operates properly, make checks 11 and 12.
11. Check to ensure that the water in the boiler sight gauge glass automatically stays about 1/3 full when boiler is started up and operated.
12. Check to ensure that *the* steam pressure gauge registers 10 psi. The steam pressure is factory-adjusted to 10 psi

Factory setting may shift due to shaking in transit and resetting will be required after installation. Proper adjustments and maintenance procedures are detailed on a separate data sheet entitled "Steam Pressure Adjustments." Adjustments should be made only by qualified service personnel- the factory pressure settings shown in the accompanying chart should never be exceeded.

GAUGE PRESSURE READING WITH NO STEAM FLOW* (STATIC PRESSURE)

Self-Contained Steam Generator: Gas or Electric

Operating Pressure Switch	10 psi
High Limit Safety Pressure Switch	15 psi

Self-Contained Steam Coil Generator

Operating Pressure Switch	10 psi
High Limit Safety Pressure Switch	15psi
Steam Supply Pressure Range	35-45 psi

Direct-Connect (to House Steam Supply)

Steamer Pressure Reducing Valve	10 psi
Steam Supply Pressure Range	15-45 psi

** With or without kettle

OPERATION

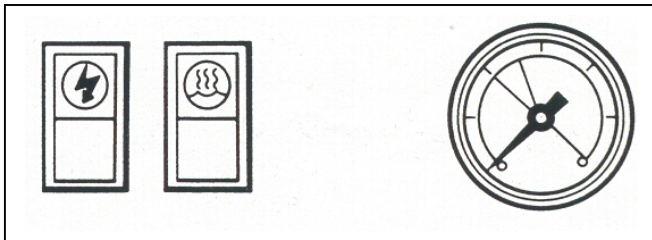
Operation of the Cleveland Range Convection Steamer is very easy. Each operator should read and understand the following procedures to effectively start, operate, and shut down the steamer each day. The owner(s) and operator(s) of this equipment should be aware that live steam could cause serious injuries, pay particular attention to the WARNINGS in this text. These instructions are to be retained by the owner(s) and operator(s) for future reference.

Note: These instructions pertain to pressure steamers equipped with a steam generator (boiler). For pressure steamers direct-connected to a remote (in-house) steam source. Disregard those instructions, which pertain solely to a self-contained boiler.

START-UP AND PREHEAT

WARNING

Do not attempt to start or operate the Pressure Steamers during a power failure. Critical safety circuits are not energized, and serious injury to personnel or damage to equipment may result.



Boiler Controls

1. Start the steam supply. The steam is either an integral steam generator (boiler) built into the base unit, or an external steam supply.

- For units without a built-in boiler, refer to the start-up procedures for the external steam supply and be sure it is running properly. As soon as the pressure gauge

On the Pressure Steamer front console is a pressure gauge, when it registers 10 psi, steamer preheating may begin. Skip the remainder of step 1, and begin step 2.

- For units with a built-in boiler, fill the boiler with water and start the steam generator as described in step a. through d. below.

a. Press the ON end of the POWER on-off rocker switch located next to the steam pressure gauge (Figure 2).

The red indicator light in the POWER rocker switch turns on and the steam generator begins to fill with water units takes about 5 minutes.

- When the water level in the steam generator reaches a safe operating level, the amber light in the STEAM momentary switch turns on. Whenever the amber light is on, the heaters, steam supply, or burners are *off*, and no steam is being generated. The energy source (electric, gas, etc.) cannot be activated until the boiler contains sufficient water, indicated by the amber light.
- Press the STEAM (amber colored) momentary switch to produce steam in the boiler this activates the energy source (electric heaters, gas burners, or steam solenoid valve) and the amber light turns off. The STEAM switch must be pressed to restart the steamer after it is shut off for any reason (including a brief power interruption). No attempt should be made to operate the equipment during a power failure.

NOTE: For steamers with built-in gas-fired boilers: If the burners fail to ignite in four seconds, a safety circuit energizes the system. In this event toggle the POWER rocker switch to the OFF position and back to the ON position. The amber light in the STEAM momentary switch lights. Wait five minutes, and then press the STEAM momentary switch to start the burner ignition cycle once again.

d. About 15 minutes after starting the boiler in step C; the steam pressure gauge on the unit base should register 10 psi.

2. To preheat, close and latch the door securely Turn the bar handle clockwise until the gasket just touches the compartment face.

3. Start the steam supply by pulling the steam valve handle out. The handle is located to the immediate left of the door latch. set the time for 5 minutes. The standard mechanical timer must be turned past 10 minutes to wind the spring. then set the timer for 5 minutes. This is not necessary with the optional automatic timer. At the start the compartment thermostatic traps will release air and wet steam for about two minutes, then shut of. Throughout the preheating or cooking cycles, the traps will open and close periodically. venting cooler steam and condensate

4. Seal the compartment door by turning the bar handle clockwise just until steam leakage stops. DO NOT OVERTIGHTEN.

5. At the completion of the 5-minute preheating cycle, the timer's bell will ring. If fitted with an optional automatic timer; turning the knob to "Or. will stop the bell. Push

the steam valve handle in slowly. all the way. This shuts off the steam supply and also depressurizes and drains the compartment, which takes about 2 minutes.

Note: The automatic timer shuts an The steam automatically; the mechanical timer does not Neither timer depressurizes and drains the compartment

WARNING

WAIT AT LEAST TWO MINUTES FOR THE COMPARTMENT (S) TO DEPRESSURIZE AND DRAIN BEFORE OPENING THE COMPARTMENT DOOR.

6. To open the compartment door. turn the bar handle counter-clockwise. Do not attempt to disengage the door arm latch. When the compartment has depressurized and drained completely; the door will open slightly and come to rest against the door arm latch. WARNING: If at this point the door does not open partially by itself, it is a sign that the drain line is blocked. Do not attempt to open the door. Retighten the bar handle and then call a serviceman to open the door and unblock the drain line (See page 3. item #2, regarding drain)

COOKING OPERATION

Check the cooking compartment to ensure it is warm. If it is cool. Perform the steps for preheating

Place the pan(s) of food into the cooking compartment by sliding the pan(s) into the slide rack for optimum steam heat transfer. and therefore, a higher quality food product is achieved when shallow. perforated, uncovered pans are used. if pans must be covered. use only stainless steel pan lids designed for use with the pan racks. Do not cover pans with aluminum foil or plastic wrap, as they may fall out of the pan and clog the drain. A clogged drain may cause an' accumulation of hot water in the cooking compartment which could cause injury when the door is opened.

Boiler Shutdown

The red-lighted power switch must be shut off for 3 minutes a minimum of once every 8 hours to automatically drain highly mineralized water from the boiler, which reduces the formation of scale. See step J in CARE AND CLEANING instructions, which follow.

CARE AND CLEANING

The Cleveland Convection Steamer must be cleaned regularly to maintain its fast, efficient cooking performance, and to ensure its continued safe, reliable operation.

1. The boiler must be drained (Blowdown) after a maximum of 8 hours of use. If the boiler feedwater contains more than 60 parts per million of total dissolved solids, the boiler must have a Blowdown more often, the frequency depending upon the mineral content of the feedwater Blowdown means the boiler must be drained under pressure.

THE BOILER BLOWDOWN IS PERFORMED BY SIMPLY SHUTTING OFF THE STEAMER'S RED-LIGHTED POWER SWITCH WHILE THE BOILER IS AT NORMAL 10 PSI OPERATING PRESSURE. WHEN THE BOTTOM OF THE POWER ROCKER SWITCH IS PRESSED, ITS RED LIGHT GOES OUT, AND THE DRAIN VALVE AUTOMATICALLY OPENS, DRAINING THE BOILER. AUTOMATICALLY TIMED DRAIN WATER CONDENSER WILL PLUSH THE DRAIN FOR 3 MINUTES THEN SHUT OFF. AFTER 3 MINUTES THE STEAMER IS READY TO BE RESTARTED.

When steam is produced, the water in the boiler is being distilled. During this process, the minerals that come into the boiler *with the water; remain in the boiler* as the *water* boils away as steam. When allowed to accumulate, the water becomes highly mineralized, which results in erratic operation, lime build-up, corrosion, and premature electric heater failures. In some cases, complete boiler replacement becomes necessary, which is extremely expensive. By draining the boiler under pressure, most sediment present will be flushed down the drain.

2. The steamer is equipped with a drain in the back of the cooking compartment. No compartment should be operated without the drain screen in place. This screen prevents large food particles from entering and possibly plugging the drain line. Any restriction of the drain line *may cause* a slight build-up of backpressure 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 critical to optimum performance. Pouring USDA approved drain cleaner through the compartment drains once a week will help to ensure an open drain. An auger or "snake" may be safely used to clear obstructions in the compartment drains. Do not use a power auger, as damage to the plastic drain system will result.

With the steamer off, open the cooking compartment doors and allows the steamer to cool before cleaning the cooking compartments and their components.

3. At the end of each day's operation, wash the pan slides door gaskets, and compartment interiors with mild detergent and warm water, either by hand or in a dishwasher Rinse thoroughly with clear water.

Rinse water should drain freely through the compartment drain openings. If it does **not**, the drain must be cleaned before using the steamer.

4. To prolong door gasket life, always leave compartment door ajar when not in use.
5. Exterior Care: Allow steamer to cool before washing. Use the same cleaners and cleaning procedures as for other kitchen surfaces of stainless steel and aluminum. Mild soapy water, with a clear water rinse, is recommended. **DO NOT ALLOW WATER TO RUN INTO ELECTRICAL Controls.** Always turn off equipment power before using water to wash equipment. Do not hose down the steamer!

WARNING

Do not store gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

MAINTENANCE

Periodically, a *qualified* serviceman should be summoned for routine preventive maintenance.

1. The Blowdown procedure will not completely remove the mineral deposits that adhere to the top of the boiler. A boiler treatment specialist should do a chemical descaling. This should be done 4 times a year in average water conditions, but in poor water areas it may be needed more often.

2. A qualified Field serviceman should make periodic boiler inspections.

3. The cold water line strainer should be cleaned weekly.

Cleveland Range supports a comprehensive *network of* Maintenance and Repair Centers (regional parts and service distributors) throughout the United States and Canada. Please contact your nearest distributor for the name of an authorized service agency in your area, or for replacement parts and information regarding the proper maintenance and repair of Cleveland Range equipment. In order to maintain the various agency safety certifications, only factory-supplied replacement parts should be used. The use of other than factory supplied parts will void the warranty.

Preventive Maintenance and Record Keeping

PREVENTIVE MAINTENANCE is the key to keeping your equipment in top condition. There are certain cleaning procedures that should be performed on a regular schedule.

A. DAILY

1. Using a **NON-CHLORINE DETERGENT**

- a. Wipe out the interior of the compartments
- b. Wipe the face of the compartments
- c. Rinse the pan slides
- d. When the steamer is not cooking, leave the door open resting against the door latch.
- e. Wipe down the gaskets to prevent sticking

5. WEEKLY

1. Check the door gasket for wear and reverse or replace the gasket when needed.
2. Pour a liquid chemical descaler down the back of each compartment drain.

C. MONTHLY

1. Every 3 to 4 months the generator should be *opened* and checked for mineral build up or Chloride corrosion.

Look to see *if* the generator has a buildup of scale greater than the thickness of a business card or if the top is beginning to peel off in layers. If either one of these conditions is present, the generator needs to be chemically descaled by your **CLEVELAND AUTHORIZED SERVICE AGENCY.**

- a. Inspect more frequently in areas where the water conditions do not meet the Water Quality Requirements.

1. Change the boiler gasket every time you open the boiler for liability reasons.

2. Check to see that all door fasteners *are* tight.

3. Check to see that all steam, water, and electrical connections are secure. If any are loose contact your **authorized service** agency to make the REPAIRS. It is in your best interest to maintain as many preventive maintenance records as possible. When contacted by a customer or service agency the manufacturer appreciates having this information available.

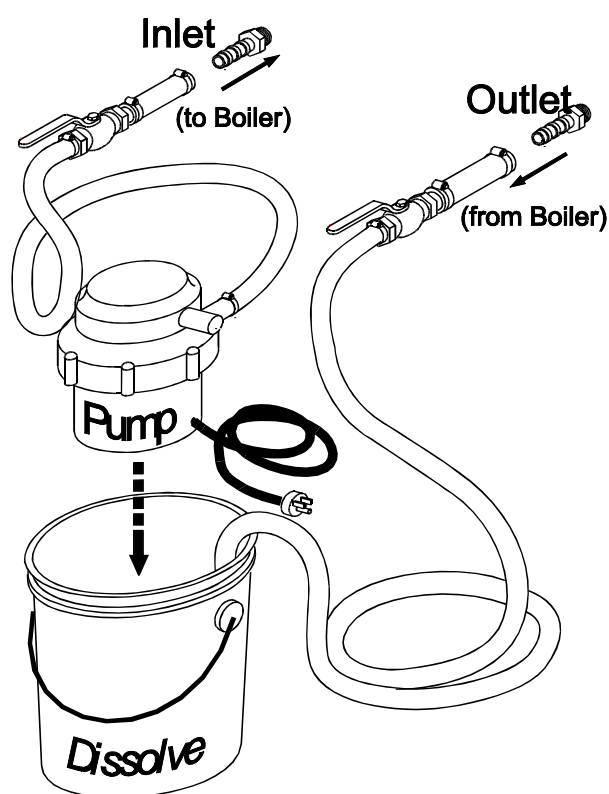
The record keeping chart that is provided with the steam generator would assist you and your service agency. It will help you record your maintenance and service history of the equipment.

If you have any questions concerning the proper installation and maintenance of your CLEVELAND STEAM COOKER call the Cleveland Service Department at (216) 4814900.

Descaling is the most important maintenance you can perform on a steam cooker, and is required by the Cleveland Range warranty.

The Descaling Pump System circulates DISSOLVE descaling liquid through the boiler of the steamer. Recirculating the descaling liquid provides a faster and more thorough cleaning process than the conventional soaking process.

Descaling Procedure Convection Steamers Pressure Steamers SteamPro/Convection Pro Modular Boiler Bases (Using the Descaling Pump System)



The Descaling Pump System consists of a submersible pump, a 5-gallon reservoir pail, Hand-Hole plate with ports, the feed and drain hoses, and the temporary hose couplings necessary to connect the system to the Classic Series Cleveland Steamers.

Cleveland Range has developed the Descaling Pump System for owners of the Classic Series Convection Steamers, Pressure Steamers and SteamPro/Convection Pro series steam cookers.

The Pump System provides a fast, highly efficient way to descale Cleveland Steam Cookers. The descaling Pump Kit includes a temporary hand-hole plate that is equipped with two descaling ports, one for the inlet and one for the outlet. This is to be used only for the Pump Kit and replaced at the end of the procedure.

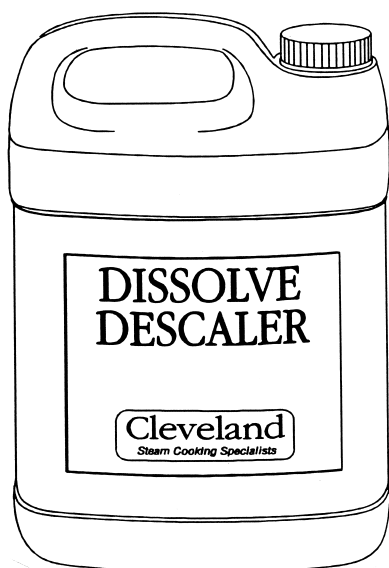


NOTE:

Only service technicians authorized by Cleveland Range should perform the descaling procedure. Read and be familiar with the procedure before starting. Follow the procedure exactly as given.

DISSOLVE Descaling Liquid

Use only Cleveland Range DISSOLVE descaling product. Five gallons of descaling liquid will be needed during this procedure. Avoid unnecessary contact with the descaling product; read and follow safety precautions on the container label.



DISSOLVE Order Quantities		
Container Size	Qty	Part No.
1-gallon bottles	6	106174
5-gallon pail	1	1061741
5-gallon pails	12	10617411
5-gallon pails	24	10617412

Overview of Pump Descaling Procedures

Below is a summary of the descaling procedure using the Pump System. The detailed procedure is given on page 3 and 4.

Descaling should be done as required by your maintenance schedule. The process takes about an hour and a half to complete.

Part A – Equipment Setup

- Turn off the steamer to drain the boiler
- Remove the handhold plate of the boiler and attach the hand-hole plate with the descaling ports
- Connect feed and drain hoses
- Fill reservoir pail with DISSOLVE descaling liquid and insert pump.

Part B – Descaling

- Turn on power to steamer; boiler will begin to fill
- Turn on pump
- Monitor liquid levels in boiler and pail- regulate level using hand valves
- Let liquid circulate for one hour
- Turn OFF steamer, pump; boiler will drain

Part C – Clean Water Flush

- Turn On steamer; boiler will fill
- Empty the pail of spent solution, refill with fresh water
- Route Drain hose to floor drain
- Turn pump ON and circulate for 5 minutes, monitoring water levels
- Turn OFF pump; close all valves; turn OFF steamer; boiler will drain
- Replace hand-hole plate, check gasket

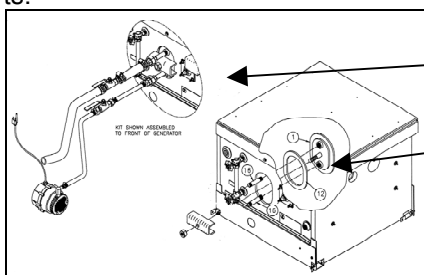
Part D –Take Down and Return to Service

- Turn ON Steamer; boiler will fill
- Remove hoses and couplings;
- Activate steam switch; unit ready to operate

Detail Procedure- Using the Descaling Pump System

A. Equipment Setup

1. Turn the Steamer OFF; the boiler will drain automatically
2. Open the door at the base of the unit
3. Remove the hand-hole plate and gasket. Discard old gasket.
4. Inspect the boiler for scale build up.
5. Remove any loose scale within reach that is around the hand-hole plate.
6. Install Hand-Hole plate with the descaler ports. And a new gasket.
7. Attach the 3" Feed and Drain nipples with the attached unions to the INLET and OUTLET ports.



Hand-Hole Plate with Descaler Ports for Feed and Drain Hoses. Sight Glass located on Left.

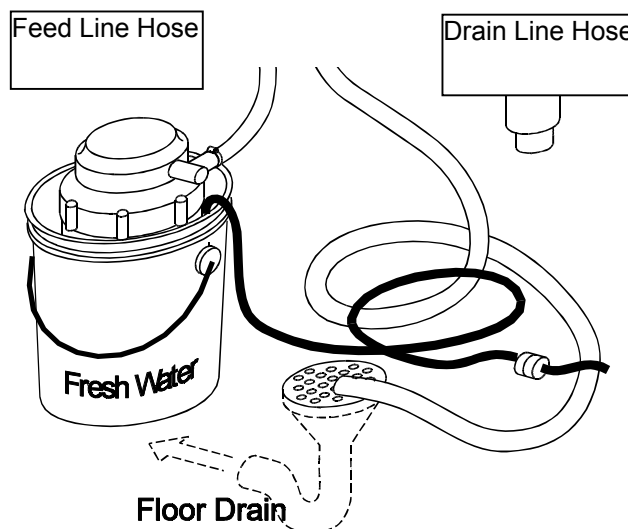
B. Descaling

1. Turn the Steamer power ON.
2. Turn the Pump ON and open the Feed Hose Valve to the boiler. Let the boiler fill with descaler to just above the top of the Sight Glass before opening the Drain Hose Valve. Make sure the Drain Line Hose is in the pail with the pump.
 - Do not allow the liquid to fall below the pump intake. Water may be added to reservoir pail to keep pump intake submerged.
 - Watch for liquid at the sight glass
3. Open the Drain Hose Valve when the descaler reaches the level just above the top of the Sight Glass.
4. While the descaler solution is circulating, keep an eye on the liquid level in the pail. Do not allow the level to fall below the pump intake or to overflow in the pail. The required level can be maintained by controlling the flow with the Feed Hose Valve
5. Let the pump circulate descaler for 1 hour.
6. After 1 hour, turn the Steamer power OFF; the boiler will automatically drain.
7. Turn OFF the pump; close both the Drain and Feed Hose Valves. Proceed to Part C, Flushing.



A. Flushing

1. After the boiler has drained completely, it must be flushed with water.
2. Turn the Steamer back ON; it will begin to filling.
3. Remove the Pump from the pail. Remove the Drain Hose from the pail.
4. Empty the spent descaling solution, refill it with fresh water and put the pump back in.
5. Do Not put the Drain Hose back in the pail; instead, route it to a floor drain.
6. While the boiler is refilling, observe the water level in the sight glass.
7. When the level reaches the middle of the sight glass, turn ON the pump and open the Feed Valve of the steamer.
8. When the level reaches the top of the sight glass, open the Drain Valve of the steamer.
9. Let the pump run 5 minutes; keep an eye on the water level in the pail; additional water may be added to keep the pump submerged.
10. After 5 minutes, turn OFF the pump, close the Feed and Drain line Valves, turn the OFF the steamer power; the boiler will automatically drain. *Proceed to Part D. Takedown and Return to Service*

**D. Takedown and Return to Service**

1. The Steamer descaling procedure is complete; loosen the hose clamps, remove the hoses.
2. Replace the Hand-hole plate with the original.
3. Turn the Steamer back ON; the boiler will refill.
4. When the amber Steam Light comes on, activate the STEAM switch to bring the unit back to operating temperature
5. Record the current date in your descaling maintenance records

Troubleshooting

OPERATORS TROUBLESHOOTING GUIDE

This troubleshooting guide includes a list of symptoms that may be encountered during the operation and maintenance. The first column on the left (problem) describes these symptoms. The second column lists possible causes for the problem listed in column one. The third column lists remedies for the problems and causes columns one and two. The causes and remedies are listed in the am

Or they should be checked, with the least costly and easiest to repair listed first. The third column also refers to notes that are grouped at the end of the troubleshooting guide. Refer to these notes when instructed to do so. Do not try to correct a problem that requires an authorized service representative as this may adversely affect warranty coverage.

PROBLEM	POSSIBLE CAUSE	REMEDY/REFERENCE
Switch light does not turn on: When POWER switch is pressed switch. On.	Power turned off at main disconnects, SWITCH	Turn on power at main disconnect switch.
POWER switch light on and Steam generator does not fill.	Water supply to steamer shut off.	Open water supply valves.
	Water line strainer is clogged.	Clean water supply strainer
	Water sensors shorted by scale, Deposits.	Descale steam generator with USDA Approved descaler.
	Inoperative controls or solenoid	See note #1.
Steam Generator does not make any steam.	No water in steam generator.	See steam generator does not fill (above).
	Gas models only Gas supply valve closed. Electric models only Heating elements covered with Scale.	Turn off steam generator and open gas supply valve. Refer to Service Manual. Descale steam generator with USDA approved descaler
	Electric models only Heating elements damaged.	See note #1.
	Water sensors covered by scale Deposits.	Descale steam generator with USDA Approved descaler.
	Inoperative controls.	See note #1.
Abnormal amount of steam Coming from drain.	hot water instead of cold water Connected to condenser fitting	Make proper connections. Refer to Service Manual.
	Water supply to condenser turned off.	Open water supply valve.
	Condenser waterline strainer is clogged.	Clean out condenser water supply line. See note #1.
	Water supply line to the con- Condenser blocked, broken, or leaking.	Repair or replace solenoid. See note #1.
	Inoperative condenser solenoid.	Replace solenoid. See note #1.
	Inoperative five controls.	Turn off electricity at main disconnect Switch. See note #1.
Steam and / or water draining around compartment door	Drain clogged or covered.	Clean drain with USDA approved drain cleaner.
	Door gasket or door parts worn.	See note #1

PROBLEM	POSSIBLE CAUSE	REMEDY/REFERENCE
Reduced steam flow into cooking Compartment.	Steamer not level	See note #2.
	Hot Water to con denser	See note #2.
	Steam generator scale buildup.	Descal steam generator with approved Descaler
	Steam nozzle scale buildup.	See note #1.
	Steam solenoids scale buildup	See note #1.
	Electric models only Voltage too low for unit.	See note #4.
Steam flow does not stop when timer stops.	Electric models only Faulty heating element or controls.	See note #1.
	Operating in manual mode.	Switch to timed mode for timer to be Effective.
	Stuck open steam valve	See note #1.
Water leaking from bottom of Cabinet.	Inoperative five controls inside Cabinet.	Turn off electricity at main disconnect switch. See note #1.
	broken or loose plumbing inside steamer cabinet.	Turn off electricity at main disconnects switch and close water supply valve(s). See note #1.
Water leaking from water pipes or drain lines.	Plumbing needs repair	See note #3.
Food takes too long to cook. (Cook in perforated pans when possible.)	Not enough steam movement in compartment. Hot water con- Connected to condenser line.	Make proper connections. Refer to Service Manual.
	Pans too close to the bottom of cabinet.	Put pans in racks near top of cabinet.
	Steam generator scale buildup. approved descaler	Descal steam generator with USDA
	Compartment overloaded with too much food.	Put less food in pan. Use fewer pans.
	Voltage too low for unit.	See note #4.
	Suggested cooking times are usually listed for cooking at sea Level	Extend cooking times for altitudes above 2500 FEET.
Compartment bottom dirty with food drippings.	Juices and /or food leaking from pans.	Put a solid pan under perforated pans to catch drippings, or put less food in pan.

TROUBLESHOOTING NOTES

1. If problem is inside the steamer, call an authorized Service representative Cleveland Range will not pay for Non- warranty repair centers. For more information on products and services, contact
2. Proper installation of the Convection Steamer Responsibility of the owner or installer Refer to Cleveland
3. A Licensed Electrician should do repair to external wiring. For More information on products and services, contact your nearest Authorized Service Representative.

PRESSURE STEAMER Cooking Guidelines

INTRODUCTION

Steam cooking is an excellent way to prepare countless foods. With large or small quantities you will find steam cooking to be efficient, economical, fast and convenient. foods can never burn - pans will never boil over - there is no heavy lifting of water pots - no scouring of containers - no waiting for boiling to start.

MEAT

Steam provides an even, intense and penetrating heat, which, because of its nature, cooks meat with minimal shrinkage. The meat is tender, moist and flavorful. Stews, pot roasts, hams and corned beef are excellent when steam cooked.

Chickens, turkeys and other poultry items are steamed with out any shrinkage. The meat is tender and juicy. The birds may be steamed whole, cut in half, or in pieces. Chicken pieces may be partially steam cooked and then finished in the skillet or fryer The result is flavor and succulence.

Steam tenderizes stewing fowl. It produces excellent meat for sandwiches and salads, both moist and savory, and is easily sliced.

VEGETABLE STEAMING

Vegetables should be crisp and fresh before cooking. They should be cooked al dente. This prevents over cooking, the most prevalent mistake in pressure steam cooking. The natural characteristic flavors are present when vegetables are cooked in this manner.

Cut vegetables to the seine size pieces to assure uniform results. Vegetables should be washed before cooking. Removing tough stems and skins will shorten cooking times and improve results. Vegetables may be lightly seasoned before or after steaming. In general, use perforated pans for fastest results.

Frozen vegetables, in general, should be defrosted before pressure-cooking. Three vegetables can be pressure steamed from the frozen stage: carrots, peas and whole kernel corn.

Volume cooking of produce and other tuberous vegetables is an excellent application. 100 pounds of potatoes per compartment can be cooked in 40 minutes. other tuberous vegetables include: sweet potatoes, carrots, beets, onions, kohlrabi, turnips and parsnips. winter squash and cabbage can also be cooked in volume.

DESSERTS

Many kinds of cornstarch pudding and custard desserts are prepared by steaming. Any dish cooked in the double boiler may be success-fully steamed. The steamer is ideal for heating or scalding milk since the danger of scorching or burning is absent.

Fruit desserts such as steamed "baked" apples are another suggestion. Core the apple and arrange on a shallow pan. Fill the cored space with cinnamon and sugar, then steam. If desired, the apples may be finished by browning under the broiler Applesauce is another steam application, as are stewed pears or peaches. Dried fruits, properly marinated, turn out beautifully.

Under this heading comes a host of dishes not otherwise classified.

Cereals, eggs, noodles, spaghetti, rice, macaroni, and dumplings, with variations of each, are just a few.

Cooked, frozen convenience foods such as beef stroganoff, pot roast and noodles, chicken fricassee and rice, stuffed cabbage rolls, need only be brought up to serving temperature and then transferred from the pack directly onto the serving plate. The time required to heat these convenience foods is 5-10 minutes for the individual portion pack and 20-35 minutes for the 5-pound multi-serving pack. The cover of the packs should be perforated with a sharp fork to let the steam escape.

The disposable aluminum foil pans should be placed on a perforated stainless steel pan for support when steaming or carrying the hot product. Cover the pan with a stainless lid if a cover is not provided. Do not use plastic wrap or aluminum foil as a cover in the pressure steamer.

Vegetable Pressure Steam Cooking Chart

The cooking time for vegetables have wide limits due to several factors. Young or new vegetables cook in less time than the older ones. Freshly picked vegetables cook faster than those long stored. Different species of the same foods cook in varying time limits. The size of the vegetable or pieces affects the speed of cooking. The type of container also influences the length of the cooking period. Shallow pans are faster than deep ones, the perforated types are faster than the solid.

SUGGESTED TIME IN MINUTES			
FRESH VEGETABLES		FROZEN VEGETABLES	
Asparagus	7-8	Beans, Green, regular	4-5
Beans, Green	8-10		
Bean, Lima	15-17	Beans, Lima	4-5
Beets	20-40	Broccoli Spears.	5-6
Broccoli Spears	8-10	*Brussels Sprouts	2-3
Brussels Sprouts	10-15	Carrots, diced	5-6
Cabbage, wedges	8-10	Cauliflower	3-4
Carrots	8-10	Corn, cut (Kernel)	3-4
Cauliflower	8-10	Peas	4-5
Corn	5-8	*Mixed Vegetables	5-6
Onions	10-12		
Parsnips	12-15	* Defrosted Only	
Peas	5-8		
Peppers, stuffed	20-30		
Potatoes, white	20-40		
Potatoes, sweet	25-40		
Rutabaga, cubed	8-10		
Spinach	3-6		
Squash, summer, cut	5-7		
Squash, winter, half	10-15		
Turnips, cubed	12-15		