

# Cleveland

## Installation, Operation and Service Manual

### CONVECTIONPRO STEAMERS



SERIES: 36CGM16, 36CEM16, 36CSM16, 36CDM16

# Installation, Use and Care Instructions Convection Pro XVI

## INSTALLATION

### INSTALLATION SAFETY

#### WARNING

Installation of this equipment must be accomplished by qualified installation personnel, working to all applicable local and national codes. Improper installation of this product could cause injury 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 are: 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/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 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.

### 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 THE 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 the Canadian Electrical Code CSA Standard C22.1. Equipment that is con-

nected to electricity must be grounded by the installer. A wiring diagram is provided inside the base cabinet.

#### WARNING

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

4. 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 IPS (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-inch IPS. No more than two pieces of Cleveland Range equipment should be connected to one common drain line. The maximum length of extension from the drain termination should not exceed six feet and use no more than two elbows. 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 back pressure 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.

**NOTE:** Direct-steam connected pressure steamers do not require a cold water connection, and therefore steps 5 and 6 do not apply. Refer directly to step 7. A kettle fill faucet, if so equipped, requires a hot and/or cold water connection. The data contained in step 5 for cold water also applies to hot water.

5. Connect COLD water supply plumbing to the line strainer. (Never connect hot water to the boiler 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. 1/4-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 3/8-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 (10mm) 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.

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7. 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 consulting the local gas supplier. Install a sediment trap (drip leg) in the gas supply line, then connect gas supply piping to the boiler gas valve piping. **GAS-FIRED EQUIPMENT IS DESIGNED FOR INSTALLATION ONLY IN NON-COMBUSTIBLE LOCATIONS. THIS INCLUDES THE FLOORING 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 IPS gas supply piping, and boilers rated at 225,000 BTU or more require 1-inch IPS gas supply piping. Natural gas pressure must be between 4" - 14" water column, and L.P. 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 supply 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" on the knob will be opposite the index on the valve's body). Test all pipe joints for leaks with soap and water solution. 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 shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 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 unit must be electrically grounded by the installer.

**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 must be adequate to carry the required current at the rated voltage. A separate fused disconnect switch must be supplied and installed. The unit must be electrically grounded by the installer.

**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 IPS 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 unit must be electrically grounded by the installer.

**For Direct-Steam Connected Steamers/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 IPS minimum. (Direct-steam-connected kettles require 1/2-inch IPS pipe if the kettle total capacity is 20 gallons or less, and 3/4-inch IPS 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 unit must be electrically grounded by the installer.

### Installation Checks

Proper operation of the Cleveland Convection Pro XVI 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 Pro XVI 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 meet the requirements of installation paragraph 5.
6. On electric 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.
7. On gas, steam coil, and direct-steam-connected units, verify that there is a 115 Volt connection at the handi-box located on the left side of the base at the bottom front.

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8. On steam coil units, the incoming steam pressure must be 35 to 50 psi. Less than 35 psi will not effectively operate the unit. Pressure in excess of 50 psi must be reduced (with a pressure reducing valve) to 35 to 50 psi.

**WARNING**  
INJURY TO PERSONNEL AND EQUIPMENT DAMAGE  
may result from an improper drain connection.

9. Check that the drain lines meet the installation requirements specified in installation paragraph 4.
10. After completing checks 1 through 9, and correcting any deficiencies, refer to the Start-up and Preheat instructions in the Operation section. Verify that the unit operates properly, and make checks 11 and 12.
11. Check to ensure that the water in the boiler sight gage glass automatically stays about 1/3 full when the boiler is started up and operated.
12. Check to ensure that the steam pressure gage registers 10 psi.

The steam pressure is factory-adjusted to provide the proper pressure. In some cases, however, the factory setting may shift due to shaking in transit, and resetting will be required after installation. Proper adjustments and maintenance procedures are detailed on 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.

### Gage 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	15 psi
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 Pro XVI 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 can cause serious injuries, and 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.

### Controls and Control Panels

There are two steam generator control arrangements and two steamer compartment control panels available for Cleveland Range Convection Pro XVI steamers. The steam generator controls are illustrated in Figure 1. The steamer compartment control panels are illustrated in Figures 2 and 3. Compare these figures with the equipment supplied, and identify which control and panel combinations apply.

#### Steam Generator Controls

The steam generator controls are located on the front face of the steamer base unit. The switches are to the left of the pressure gage, as illustrated in Figure 1. Most Cleveland Range Convection Pro XVI steamers have a steam generator built into the base unit which supplies steam to the cooking compartments. However, an external steam supply may also be used. Units with a built-in boiler have both the POWER rocker switch and the STEAM momentary switch next to the pressure gage. Units with an external steam supply have the POWER rocker switch only. They do not have the STEAM momentary switch.

#### Steamer Compartment Control Panels

Figure 2 illustrates the standard electronic controls: the Key Pad Control Panel. This panel has a rocker switch, a key pad, and a digital timer. Figure 3 illustrates the optional electro-mechanical controls: the Dial Timer Control Panel. This panel has a rocker switch and dial timer. Steamer functions are the same for both the standard and optional panel configurations. Operating details are slightly different especially when setting the automatic operating time. For clarity, two sets of instructions are provided for cooking operations.

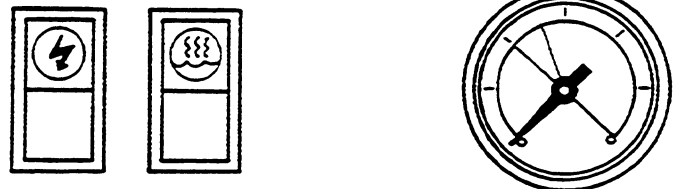


Figure 1. Steam Generator Controls

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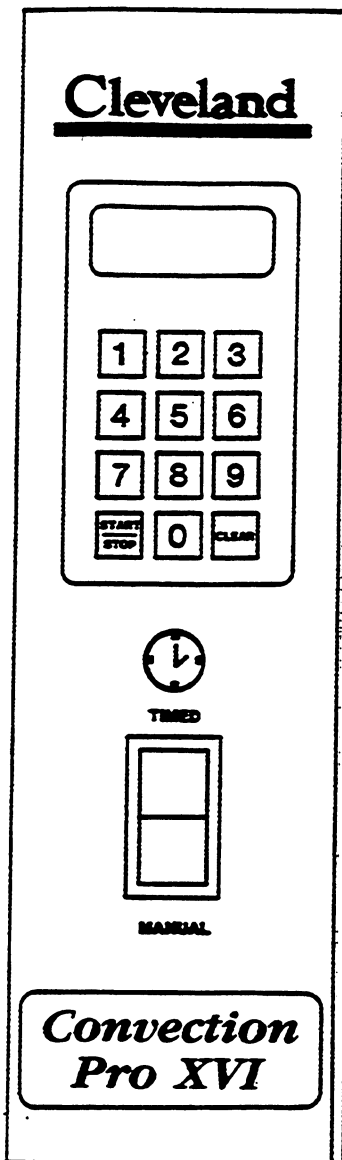


Figure 2. Key Pad Control Panel

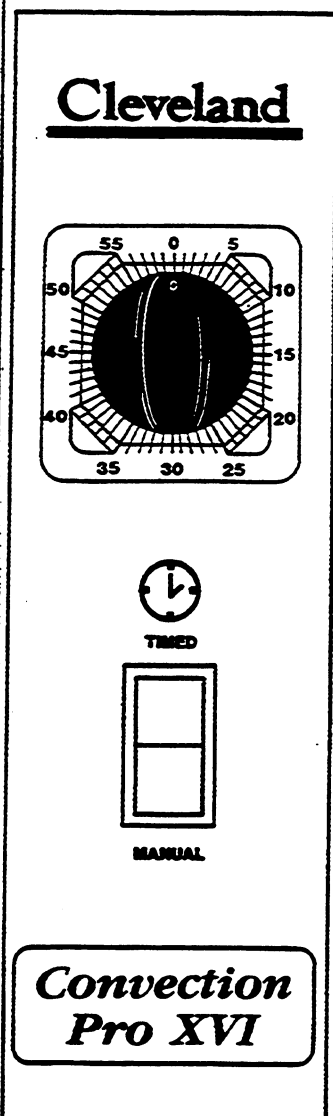


Figure 3. Dial Timer Control Panel

## Start-up and Preheat

### WARNING

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

1. Inspect the steamer. Check the cooking compartments to ensure that the steam tubes and drain screens are in place and secure. Check inside the steamer base cabinet to ensure that the manual drain valve is closed and the manual water supply valve is open.

2. Start the steam supply. The steam supply 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 gage on the Convection Pro XVI Steamer registers 10 psi, steamer preheating may begin. Skip the remainder of step 2, and begin step 3, preheat instructions.
- For units with a built-in boiler, fill the boiler with water and start the steam generator as described in steps a. through d. below.
  - a. Press the ON end of the POWER on-off rocker switch located next to the steam pressure gage (Figure 1). The red indicator light in the POWER rocker switch turns on and the steam generator begins to fill with water. This takes about 5 minutes.
  - b. 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.
  - c. Press the STEAM 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 re-start 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 de-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, then press the STEAM momentary switch to start the burner ignition cycle once again.

- d. About 20 minutes after starting the boiler in step c, the steam pressure gage on the unit base should register 10 psi.
3. Preheat the Convection Pro XVI steamer cooking compartments. For accurate, efficient cooking times, the cooking compartments should be preheated during startup.
    - a. Close the compartment door by gently swinging it shut.
    - b. Refer to timer setting instructions under Automatic Operation for the appropriate control panel. Set the timer for each compartment to one minute, and start the cooking cycles. Steaming begins in each compartment.

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**NOTE:** On Convection Pro XVI steamers equipped with the electronic key pad control panels, the timer does not begin counting down until the cooking compartment reaches operating temperature. This may take 2 or 3 minutes if the steamer has not been operating.

- c. Steaming continues for the set one minute. When the preheating is completed, the steam automatically shuts off and a 3-second alarm sounds. The Convection Pro XVI steamer is ready for cooking operations.

### COOKING OPERATIONS

The control panels mounted on the cooking compartments regulate cooking operations. Although cooking operations are similar for all Convection Pro Steamers, regardless of control panel configuration, separate instructions are provided for each control panel type.

#### Cooking Operations for The Key Pad Control Panel

The electronic key pad control panel is illustrated in Figure 2.

The Cleveland Range Convection Pro XVI steamer has two cooking modes: Manual and Automatic. The Manual Mode provides continuous steaming and is turned on and off by the MANUAL/TIMED rocker switch. The Automatic Mode monitors cooking time and compartment temperature to provide accurate, efficient, uniform steam cooking.

**NOTE:** Whether using timed or manual cooking modes, optimum steam heat transfer, and therefore a higher quality food product, is achieved when shallow, perforated, uncovered pans are used.

#### **WARNING**

**LIVE STEAM** may cause severe burns. Use extreme caution when opening the steamer door. Turn face away from the steamer when first opening the door. Do not look into the cooking compartment until steam has cleared. **KEEP HANDS OUT OF THE COOKING COMPARTMENT TO PREVENT BURNS.**

#### Manual Cooking Operation - Key Pad Controls

Use manual mode for a continuous supply of steam for long periods, or if the required cooking time is unknown and frequent inspection is required.

1. Place the pan(s) of food into the cooking compartment.
2. To **START** the flow of steam, press the **MANUAL** end of the **MANUAL/TIMED** rocker switch, located below the timer. Steam immediately starts flowing into the cooking compartment.
3. If food inspection is required during steaming, refer to the **LIVE STEAM WARNING** above. Use extreme caution when opening the steamer door during steaming operations.

4. Although the timer can not turn the steam off in manual mode, it can be used as a conventional cooking timer. Refer to the timer setting instructions under Automatic Operation and set the timer. The timer will count down the set period and sound the buzzer, but **IT WILL NOT TURN OFF THE STEAM AFTER THE ALARM SOUNDS.**
5. To **STOP** the flow of steam, press the **TIMED** end of the **MANUAL/TIMED** rocker switch. Steam stops flowing into the cooking compartment.

#### Automatic Cooking Operation - Key Pad Controls

Each Convection Pro XVI steamer cooking compartment is equipped with an independent electronic digital timer, which has a maximum setting of 99 minutes and 99 seconds. Each timer is connected to a temperature sensing device in the cooking compartment. **THE SENSOR CIRCUIT ALLOWS THE TIMER TO COUNT DOWN ONLY WHEN THE COOKING COMPARTMENT IS AT THE PROPER COOKING TEMPERATURE.** This assures uniformity in the cooking times as the timer automatically compensates for food product defrosting and/or heat-up time.

1. Place the pan(s) of food into the cooking compartment.
2. Clear and reset the timer. The timer can be set only when the **COOKING TIME** display is clear. Press the **CLEAR** key on the number pad to zero the timer.
3. Set the desired cooking time. The cooking time display contains four digits. The left two digits are minutes, and the right two digits are seconds. The display 12:34 is set for 12 minutes and 34 seconds.
  - a. To set the cooking time, change the required cooking time to minutes and seconds, press the number keys for the minutes, and then press the number keys for the seconds. If the cooking time is 99 seconds or less, only press the number keys for seconds.
  - b. **Example 1.** To set the timer for 1 hour and 15 minutes: Change 1 hour (60 min) and 15 minutes to 75 minutes. Press the following number keys in sequence: 7 5 0 0. The display will read 75:00 when properly set for 1 hour and 15 minutes.
  - c. **Example 2.** To clear the time numbers set in example 1, press the **CLEAR** key on the number pad. The display returns to 00:00.
  - d. **Example 3.** To set the timer for 1.5 minutes: Change the time to 1 minute and 30 second. Press the following number keys in sequence: 1 3 0. The display will read 01:30, when set for 1.5 minutes.  
All seconds method: Change the 1.5 minutes to 90 seconds and press 9 0. The display will read 00:90, when set for 1.5 minutes.
4. Press the **START/STOP** key to start the timer. When the **START/STOP** key is pressed, steam enters the cooking compartment.

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- a. **THE TIMER WILL BEGIN TO COUNT DOWN ONLY AFTER THE COOKING COMPARTMENT REACHES PROPER COOKING TEMPERATURE.** The timer automatically delays to compensate for defrosting and/or food product heat-up time.
- b. For example, a timer setting of 10 minutes may in fact take 11 or 12 minutes for the timer to count down and the alarm to sound. This is normal. Heating the compartment and food to cooking temperature uses the additional time.
- c. To stop or reset the timer, press and hold the START/STOP key. The cooking time display returns to the last time setting.
  - To restart the same time, press the START/STOP key.
  - To set a new time press the CLEAR key, and set the new time.
5. When the timer counts down to zero, an alarm sounds continuously. Press the START/STOP key to silence the alarm. The cooking time display returns to the last time setting. Either run this same setting again or clear and reset the timer.
6. **Example 4.** To cook two 14 minutes cycles: Press the CLEAR key to clear the timer. Press the following number keys in sequence: 1 4 0 0. The display shows 14:00. Press the START/STOP key to start the timer. When the display counts down to zero, the alarm sounds. Press the START/STOP key, and the display returns to 14:00. Press the START/STOP key to start the second 14 minute cycle.

### Cooking Operations for The Dial Timer Control Panel

The dial timer control panel is illustrated in Figure 3.

The Cleveland Convection Pro XVI steamer has two cooking modes: Manual and Automatic. The Manual Mode provides continuous steaming and is turned on and off by the MANUAL/TIMED rocker switch. The Automatic Mode monitors cooking time to provide accurate, efficient, steam cooking.

**NOTE:** Whether using timed or manual cooking modes, optimum steam heat transfer, and therefore a higher quality food product, is achieved when shallow, perforated, uncovered pans are used.

#### **WARNING**

LIVE STEAM may cause severe burns. Use extreme caution when opening the steamer door. Turn face away from the steamer when first opening the door. Do not look into the cooking compartment until steam has cleared. **KEEP HANDS OUT OF THE COOKING COMPARTMENT TO PREVENT BURNS.**

### Manual Cooking Operation - Dial Timer Controls

Use manual mode for a continuous supply of steam for long periods, or if the required cooking time is unknown and frequent inspection is required.

1. Place the pan(s) of food into the cooking compartment.
2. To START the flow of steam, press the MANUAL end of the MANUAL/TIMED rocker switch, located below the timer. Steam immediately starts flowing into the cooking compartment.
3. If food inspection is required during steaming, refer to the LIVE STEAM WARNING above. Use extreme caution when opening the steamer door during steaming operations.
4. Although the timer cannot turn the steam off in manual mode, it can be used as a conventional cooking timer. Refer to the timer setting instructions under Automatic Operation and set the timer. The timer will count down the set period and sound the buzzer, but IT WILL NOT TURN OFF THE STEAM AFTER THE ALARM SOUNDS.
5. To STOP the flow of steam, press the TIMED end of the MANUAL/TIMED rocker switch. Steam stops flowing into the cooking compartment.

### Automatic Cooking Operation Dial Timer Controls

Each Convection Pro XVI steamer cooking compartment is equipped with an independent dial timer. This timer controls the cooking compartment steaming cycle. Use automatic mode when an exact cooking time is required. Steam cooking begins when the timer is set, and automatically stops when the timer counts down to zero.

1. Check that the MANUAL/TIMED rocker switch is in the TIMED position. If it is not, press the TIMED end of the MANUAL/TIMED rocker switch.
2. Place the pan(s) of food into the cooking compartment.
3. Set the desired cooking time. Turn the dial until it points to the desired cooking time. When the dial timer is set, steam enters the cooking compartment.
4. When the timer counts down to zero, an alarm sounds for three seconds, and steam flow into the cooking compartment stops.

### 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 1 in CARE AND CLEANING instructions, which follow.

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## CARE AND CLEANING

The Cleveland Convection Pro XVI 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. AN AUTOMATICALLY-TIMED DRAIN WATER CONDENSER WILL FLUSH 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 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 critical to optimum performance. Pouring USDA approved drain cleaner through the compartment drains once a week will help to ensure an open drain. A manual (hand crank) drain 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 allow 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, steam tubes, 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. Once a week, remove the steam tubes and clean the orifices. First, remove the pan slides by lifting upward and toward the center of the compartment. Pressing backward on the steam tube will allow its front eyelet to clear the compartment stud. The tube is then angled toward the center of the compartment just enough to clear the stud and be pulled forward, out of its socket. The orifices can be cleaned easily with a paper clip. Then, thoroughly wash and rinse all steam tubes. This can be done in a dishwasher. Lubricate each tube's tapered end with cooking oil before replacing in the steamers compartments. Be sure all four steam tubes are securely in place before activating the compartment. The tubes are interchangeable and may be placed in any spot in either compartment.
5. To prolong door gasket life, always leave compartment door ajar when not in use.
6. 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 or use 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 chemical descaling should be done by a boiler treatment specialist. This should be done once a year in average water conditions, but in poor water areas it may be needed two or three times a year.
2. Periodic boiler inspection should be made by a qualified serviceman.
3. Once every three months, the cold water line strainer should be cleaned.

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 replacement parts will void the warranty.



# CONVECTION STEAM COOKING INFORMATION

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Our Forced Convection Non-Pressure Steam Cooker is produced with two cooking compartments. Each compartment has the capacity to hold three, 12" x 20" x 2½" or up to six, 12" x 20" x 1" Cafeteria Pans.

The steamer is available with an Electric or Gas-fired, self-contained steam generator or can use existing building steam by Direct Connect or with Steam Coil (for impure building steam).

<u>ELECTRIC</u>	<u>GAS</u>
24 KW	200,000 BTU
36 KW	250,000 BTU
48 KW	300,000 BTU

208V, 220V, 240V, 440V, 480V/3 Phase

<u>DIRECT CONNECTED*</u>	<u>STEAM COIL</u>
*Minimum psi 15 lbs. (uncontaminated steam) Maximum psi 50 lbs. (uncontaminated steam)	*Minimum psi 35 lbs. [within 6 ft. of Maximum psi 50 lbs. [equipment inlet ]

\*This value represents steam requirement at unit.

The Convection Steamer, installed in restaurants, hotels, schools, hospitals, nursing homes, industrial cafeterias and penal institutes, serves 100 to 300 meals per hour. For school lunches, 150 to 500 meals per hour.

## SEAFOODS

Steaming is an excellent method of cooking a variety of seafoods. From the freezer directly into the steamer gives you, the operator, portion control on expensive seafood products. Steamed fish is tender, succulent, flaky and table ready in a matter of minutes.

## VEGETABLES

Steam cooking of vegetables, either fresh or frozen, enhances color, improves flavor, and helps retain vitamins when recommended Timer Settings are followed. Steaming fresh vegetables on perforated pans gives best results. Two to three institutional packages of frozen vegetables will fit into one, 12" x 20" x 2½" Cafeteria Pan.

## ADDITIONAL IDEAS

There are many applications for steam cooking besides vegetables and seafood:

- Eggs can be soft cooked, coddled, hard cooked, poached, scrambled, made into a custard or pudding. 25 dozen eggs can be hard cooked in 12 minutes using three, 12" x 20" x 2½" perforated pans in one compartment of the steamer.
- Momentary steam blanching of fruits, including citrus and pineapple, simplifies skin removal.
- Dumplings, steamed breads, muffins, hot cereal, pasta, noodles, and rice can be prepared or reheated in the steamer.
- Beef and other meat, cooked by steaming, is moist, tender, and flavorful. The meat drippings from the catch pan can be used to make gravy, soups, or clear stock, or as a salt free broth for special diets.
- Turkey, chicken, and other poultry are tender, juicy when steamed then combined into a casserole, added to BBQ sauce, or browned under the broiler. Chicken pieces can be breaded, steamed, then finished in the deep fat fryer. It is crisp, delicious, and juicy.
- Hot dogs, sausage and other variety meats remain plump and juicy when steamed.
- Entrées such as lasagna, macaroni and cheese, or beef stew can be prepared from scratch. Frozen institutional packs can be reheated in the steamer. It is not necessary to cover.

Steam cooking is efficient, economical, and convenient. From steamer to steam table, it saves money in labor/time, and, of course, the quality consistently remains the same.

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## Cleveland Range, Inc.

1333 East 179th St., Cleveland, Ohio 44110  
Telex: 98-0546 • Facsimile: 216-481-3782  
Phone: (216) 481-4900 • Toll Free: 1-800-338-2204



# CONVECTION STEAMER TIMER SETTINGS

Timer settings are approximate due to the differences in food quality, age, shape and the degree of doneness desired. It is not necessary to add water. Perforated pans are recommended. Starred items (\*) must be cooked in solid pans or containers. Items marked with two stars (\*\*) require handling in two steps. First, steam for approximately 1/2 the time shown, remove from steamer, separate thawed portion, or stir, and return to the steamer for the time remaining. The compensating feature of the timer allows the cooking compartment to reach cooking temperature before the preset time starts to count up.

VEGETABLES:	(In Minutes)		SEAFOODS: Steam all seafoods on a perforated pan with catch pan.	(In Minutes)	
	Fresh	Frozen		Fresh	Frozen
Artichoke	12		Clams in shell	3-5	
Asparagus, spears	4	6	Cod filets, 5 oz. portions	3	4
Beans, green 2" cut	6	5	Crab legs, king		4-6
French cut	4	5**	Snow crab		2-4
whole	6	4	Crab, live, 4 oz.	4	
Broccoli, spears	3	2-3	3/4 - 1 lb.	12	
flowerettes	2-3	1-2	Halibut, 6-8 oz. portions	4-6	6-8
chopped		6-8	Lobster, whole, 1 lb.	7-9	
Brussels sprouts	4-5	4	Lobster tails, 8 oz.		8-10
Cabbage,			defrosted, butterflied		4-6
12-16 wedges/head	4		Mussels in shell	2	
Cabbage,			Oysters in shell	2-4	
whole - to remove leaves	2		Red snapper, 8 oz.	4-5	4-5
for cabbage rolls			Salmon steak, 8 oz.	6	7
Carrots, baby whole	10	6	Shrimp, 10 ct. per lb. IQF	3	4-6
sliced, crinkle cut	7-8	3	5 lb. block, peeled &		6-8**
diced		2	deveined 30 ct.		10**
Cauliflower, flowerettes	4-5	3-4	5 lb. block, green, 26-30 ct. (nested pan)		
whole	10				
Celery, diagonal cut 1 1/2"	3				
diced	2	1			
minced	1				
Corn, yellow whole kernel		2			
on cob, cobbettes	6	12**	<b>EGGS (Medium Sized):</b>		
Eggplant, sliced, diced	1		Hard cooked for egg salad,		
Mixed vegetables		3-4	potato salad	10-12	
Mushrooms, whole (1 1/2" dia.)	3		Soft cooked	3	
sliced	1		Coddled	6	
Onions, diced, sliced	2-3	1	Poached in a cup	2-3	
whole	4	2	Scrambled*	6-7**	
Peas, green		2			
Potatoes, whole 8 oz.	30-35		<b>FRUITS:</b>		
peeled, quartered, fresh	12-19		Blanch for peeling		
peeled, diced	8-10		Fresh: Avocado	1	
Potatoes, sweet, whole	30-35		Apple, cored	1	
Spinach leaf	2	21**	Grapefruit	1	
chopped		21**	Orange	1	
Squash, acorn halves	15		Apricot	1	
butternut, quartered	7		Pineapple, whole	2	
whipped*		20**	Dried*: add water to re-hydrate		
spaghetti squash, halves	15-18		Apple	10	
Tomatoes, whole, sliced*	1		Apricot	10	
Turnips, whole	20-25		Peach	10	
Zucchini, sliced	2-4	2-4	Pear	10	
			Prune	10	

## Cleveland Range, Inc.

**UNITED STATES**

1333 East 179th St., Cleveland, Ohio 44110  
 Phone: (216) 481-4900 • Telex: 98-0546 • FAX: (216) 481-3782  
 Toll Free: 1-800-338-2204 (in U.S.A. only)

**CANADA**

8251 Keele St. • Concord, Ontario, Canada L4K 1Z1  
 Phone: (416) 660-4747 • FAX: (416) 660-4492  
 Toll Free: 1-800-387-3562 (in Canada only)

# CONVECTION STEAMER TIMER SETTINGS

(continued)

## MEATS & POULTRY:

Steam meats and poultry in nested pans, as juices can be used for gravy, sauces, beef stock and soups. The size of portion, thickness of cut, grade, should be considered when selecting a timer setting for doneness.

POULTRY:	Fresh	Frozen
Turkey, whole	6-8 min./lb.	6-8 min./lb.
Chicken, 5-8 oz. breaded pieces	18-20 min.	
halves, 1¼ - 1½ lb. per half	20-24 min.	20-24 min.

## PORK, SAUSAGE, HOT DOGS:

Pork, Chop, 4 count/lb.	10 min.
Italian sausage, 4 oz. portion	10 min.
Ribs, 3 lb. and down	20-26 min.
Hot dogs, 8 count/lb.	2 min.

## BEEF:

	Fresh	Frozen
Cubes, 1½"	6-7 min./lb.	6 min./lb.
Ground chuck for chili	4 min./lb.	4-6 min./lb.
Pot roast, choice	8-12 min./lb.	
Rump roast, choice boned, rolled, tied	12 min./lb.	
Meat loaf, 4 lb. loaf	5 min./lb.	
Liver, baby beef, 8 oz. slice	2-4 min.	2-4 min.
Corned beef, 6-8 lb. cut, add ½" water to pan	20-23 min./lb.	

## STEAKS:

Using a ¾" to 1" steak, the steaming time listed below produces a "rare" steak. A "well done" steak is first steamed to the "rare" stage, then broiled or grilled for 1½ minutes on each side. This "well done" steak shrinks less, is more tender and juicy; and, when served, is the same size as the "rare" steak.

Sirloin patties, chopped, 8 oz.	4 min.
Ribeye, 8 oz.	4 min.
Top butt steak, 6 oz.	4 min.
8 oz.	6 min.
Filet Mignon, butterflied —	
4 oz.	3 min.
6 oz.	3-4 min.
8 oz.	4 min.
10 oz.	5 min.
16 oz. whole (Chateaubriand)	8 min.

## STEAKS:

Strip steak — 10 oz.	5 min.
12 oz.	7 min.
T-bone — 12 oz.	5 min.
16 oz.	8 min.
18 oz.	8 min.
22 oz.	10 min.

## PREPARED ENTREES:

	Fresh	Frozen
Full size pans		
Cabbage rolls, stuffed* cover with tomato sauce & serve	25 min.	20 min.
Casserole dishes**		
beef stew,	20-25 min.	25-30 min.
stroganoff	20-25 min.	25-30 min.
Lasagna*, freshly prepared	20-25 min.	25-30 min.
reheat each serving 4"	6-8 min.	12 min.

## DEHYDRATED FOODS:

Potatoes\*: 2½# random sliced plus 5 cups cold water/lb. 12 min.

## RICE & BEANS:

Rice*, long grain	
4 cups cold water/lb.	17 min.
Beans*, pre-soaked overnight,	
1 lb. beans + 1¼ qts. water	45 min.
Beans*, unsoaked,	
1 lb. beans + 1½ qts. water	2½ hrs.
Refried beans*, 2 #10 cans	15-17 min.

## PASTA:

Steam in nested pans. Place pasta on 2½" perforated pan used as a liner in a solid 2½" pan. Cover pasta with cold water.

Egg noodles, 1½" wide	4-6 min.**
Lasagna noodles	10-12 min.**
Macaroni, shells, elbow	10-12 min.**
Rigatoni	10 min.**
Spaghetti, vermicelli	8 min.**
Spaghetti, regular	10 min.**

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WEBBILT Company

### ConvectionPro XVI®

TWO LARGE COMPARTMENTS-PRESSURELESS  
48 KW ELECTRIC STEAM GENERATOR  
36" WIDE CABINET BASE DESIGN

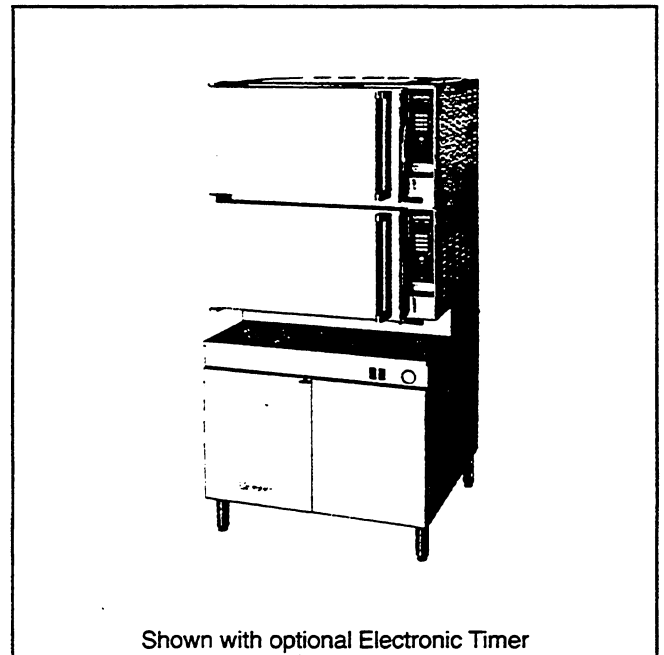
MODEL:  36-CEM-16-48

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

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

#### General Specifications:

- Cooking Capacity for up to eight 12" x 20" x 2½" deep Cafeteria Pans per compartment, or four 12" x 18" Buns Pans.
- Pressureless cooking with forced convection steam, permitting doors to be opened while cooking continues.
- Solid State Controls operate water level and safety functions.
- Each compartment is equipped with a 60 minute mechanical timer, separate bypass switch for constant steaming and a cold water condenser for superior cooking results.
- **Instant Steam Standby Mode:** Holds generator at steaming temperature. Allows unit to start cooking instantly.
- **Durable 10 Gauge Stainless Steel Construction:** For Compartment Door and Steam Cooking Cavity.
- **Separate Main Power Switch for "On/Off"**
- **Unique Patented Steam Cooking Distribution System:** The patented Convection Jets produce a high velocity convection steam without fans. Coved Corner design in cooking compartment distributes heat evenly and is easy to keep clean. Creased bottom enhances drainage. Cold Water Condenser for each compartment maintains a dry steam. Fully insulated cooking compartment for thermal efficiency. Removable Stainless Steel Slide Racks for easy cleaning.
- **Heavy duty, one piece, solid compartment door design with replaceable door gasket.**
- **Left Hand Door Hinging:** Compartment Doors hinged left, controls on the right.
- Modular Cabinet Base with Hinged Door.
- **Heavy duty Stainless Steel Base Frame.**
- **Electric Steam Generator:** Automatic Water Fill on start up.
- **Automatic Generator Drain at shutdown:** Large ¾" drain valve contains a "Water Jet" Spray Rinse Cleaning Cycle to keep drain clear.
- **Automatic Water Level Control System** with Low Water Power Cut-off Circuit.
- Steam generator equipped with High Limit Pressure Safety Switch, 15 psi Safety Valve, and Steam Generator Pressure Gauge.
- **NSF Approved 6" Stainless Steel Adjustable Legs:** Provides one inch level adjustment.
- Standard voltage 208 or 240 volts, 60 Hz, 3 phase.
- All Controls are serviceable from the front.
- Compartment Door Steam Shut Off Switch.



Shown with optional Electronic Timer

#### MODEL AVAILABLE

Model No.	Description
36-CEM-16-48	<i>ConvectionPro XVI:</i> Two Large Compartments, cabinet mounted; Convection; 48 KW Electric Steam Generator, 36" Wide Cabinet Base.

#### Options and Accessories:

- Electronic Timer with Compensating Load Feature. (ETC)
- ON/OFF Steam Switch only for compartment controls (MC)
- Cafeteria pans in depths of 1", 2½", 4" and 6"
- 12" x 18" Bun Pans
- Voltages other than standard
- Automatic Generator Mineral Purging Cycle (MPC) automatically cleans generator, reducing scale build up
- Correctional Packages
- 8", 10", Stainless Steel Adjustable Legs (LF-)
- Adjustable Flanged Feet (FF-A)
- Secondary Low Water Cut-Off, factory installed (CAL-E) (Required for AZ, CA, CO, CT, FL, GA, IL, IA, MA, MN, NE, NV, RI, SD, TN, WA, Houston, TX.)

**SHORT FORM SPECIFICATION**

Shall be Two Compartments, CLEVELAND Convection Steamer, Electric Steam Generator, Model 36-CEM-16-48, 48 KW Electric; \_\_\_\_\_volts, \_\_\_\_\_Hz, \_\_\_\_\_phase, 3 wire. Solid State Controls operate timing, water level and safety functions. Type 304 Stainless Steel exterior paneling and cooking compartments. Insulated compartments. One, Solid State 99 minute digital Timer with Touch Control, per compartment. Audible and Visual Signals for cycle completion and steam shut-off.

• Each compartment has capacity for:

Eight, 12" x 20" x 2½" Cafeteria Pans. Can accommodate 18" x 26" Bun Pans.

• Many local codes exist and it is the responsibility of the Owner and Installer to comply with those codes.

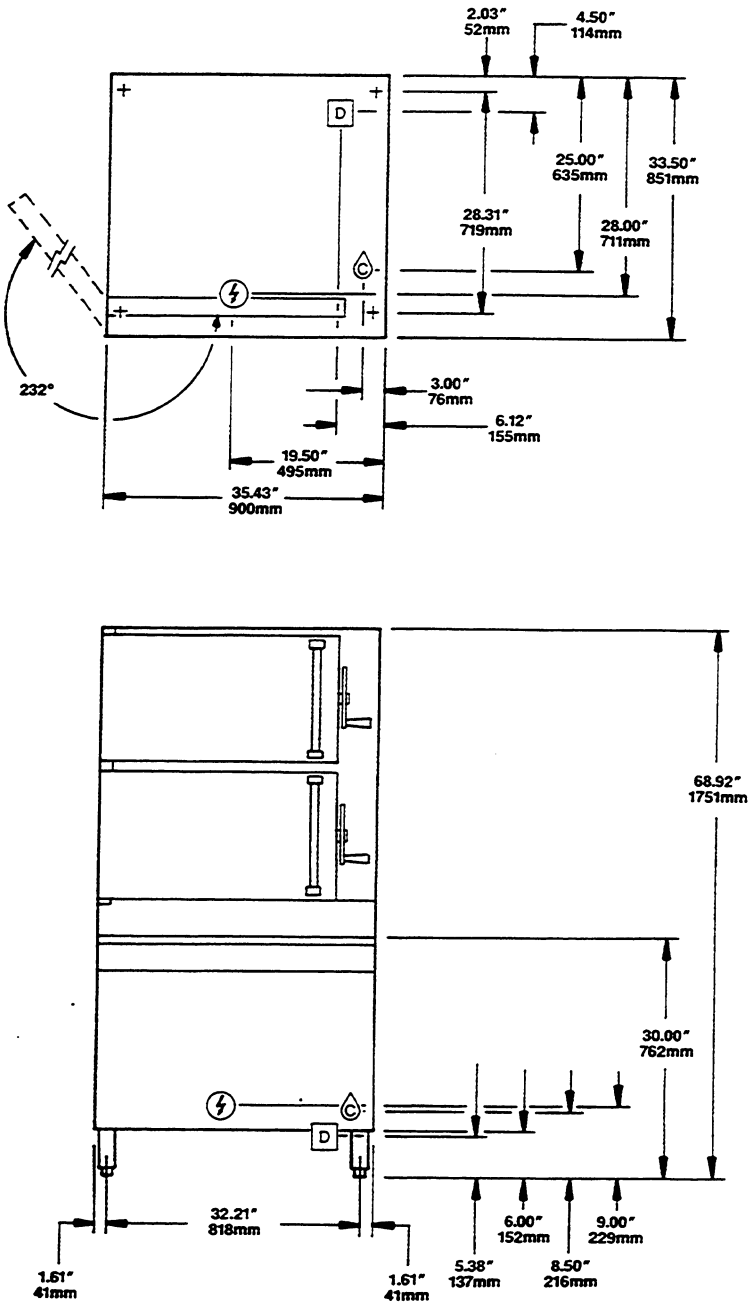
• Cleveland Range equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are: UL, A.G.A., NSF, ASME/N.Bd., CSA, CGA, ETL, and others.

**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

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 💧	DRAINAGE D	CLEARANCE												
<b>3 PHASE - 48 KW</b> <table border="1"> <tr> <td>208V</td> <td>AMPS</td> <td>119</td> </tr> <tr> <td>220V</td> <td>PER</td> <td>127</td> </tr> <tr> <td>240V</td> <td>LINE</td> <td>116</td> </tr> <tr> <td>480V</td> <td></td> <td>58</td> </tr> </table> <p>For power supply, use copper wire only.</p>	208V	AMPS	119	220V	PER	127	240V	LINE	116	480V		58	35 psi minimum 60 psi maximum ¾" IPS cold water	1½" IPS common drain. Do not connect any other units to this drain. Floor Drain must be located outside the confines of the equipment base. Drain line must be vented.	RIGHT = 12.00" If adjoining wall or equipment is over 30.00" high. LEFT = 0" REAR = 0"
208V	AMPS	119													
220V	PER	127													
240V	LINE	116													
480V		58													

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

### ConvectionPro XVI®

TWO LARGE COMPARTMENTS-PRESSURELESS  
300M BTU GAS FIRED STEAM GENERATOR  
36" WIDE CABINET BASE DESIGN

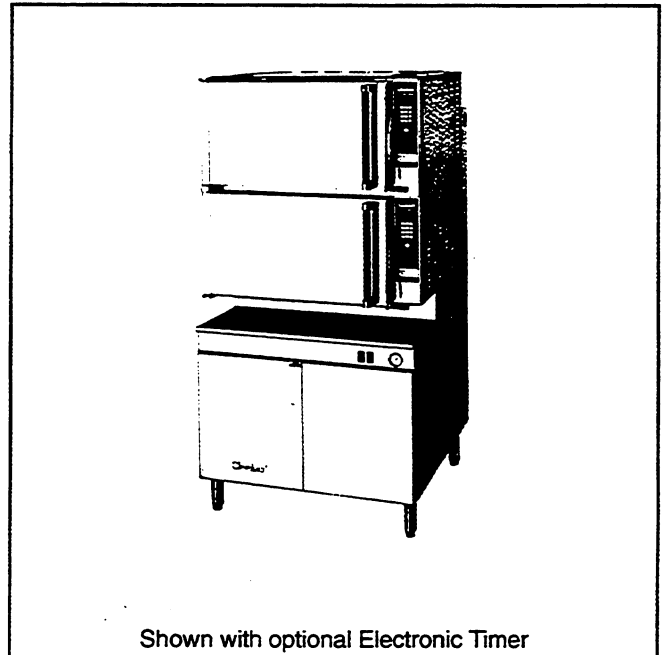
MODEL:  36-CGM-16-300

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

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

#### General Specifications:

- Cooking Capacity for up to eight 12" x 20" x 2½" deep Cafeteria Pans per compartment, or four 18" x 26" Buns Pans.
- Pressureless cooking with forced convection steam, permitting doors to be opened while cooking continues.
- Solid State Controls operate water level and safety functions.
- Each compartment is equipped with a 60 minute mechanical timer, separate bypass switch for constant steaming.
- **Instant Steam Standby Mode:** Holds generator at steaming temperature. Allows unit to start cooking instantly.
- **Durable 10 Gauge Stainless Steel Construction:** For Compartment Door and Steam Cooking Cavity.
- **Separate Main Power Switch for "On/Off"**
- **Unique Patented Steam Cooking Distribution System:** The patented Convection Jets produce a high velocity convection steam without fans. Coved Corner design in cooking compartment distributes heat evenly and is easy to keep clean. Creased bottom enhances drainage. Cold Water Condenser for each compartment maintains a dry steam. Fully insulated cooking compartment for thermal efficiency. Removable Stainless Steel Slide Racks for easy cleaning.
- **Heavy duty, one piece, solid compartment door design with replaceable door gasket**
- **Left Hand Door Hinging:** Compartment Doors hinged left, controls on the right.
- Modular Cabinet Base with Hinged Door.
- **Heavy duty Stainless Steel Base Frame.**
- **High Efficiency Gas Steam Generator with Electronic Spark Ignition and Automatic Water Fill on start up.**
- **Automatic Generator Drain at shutdown:** Large ¾" drain valve contains a "Water Jet" Spray Rinse Cleaning Cycle to keep drain clear.
- **Automatic Water Level Control System with Low Water Power Cut-off Circuit.**
- Steam generator equipped with High Limit Pressure Safety Switch, 15 psi Safety Valve, and Steam Generator Pressure Gauge.
- **NSF Approved 6" Stainless Steel Adjustable Legs:** Provides one inch level adjustment.
- Gas Pressure Regulator and Control Valve.
- Standard Voltage for Control: 115 volts, 60 Hz, single phase.
- All Controls are serviceable from the front.
- Compartment Door Steam Shut Off Switch.



Shown with optional Electronic Timer

#### MODEL AVAILABLE

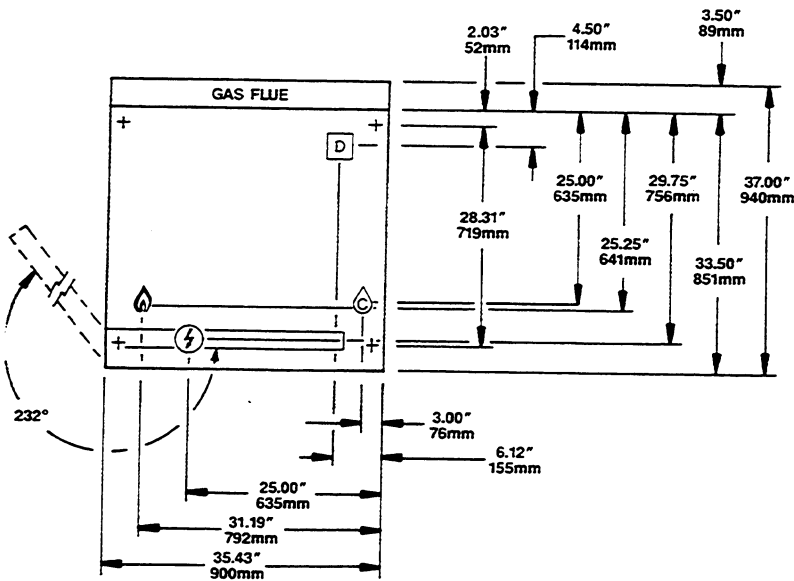
Model No.	Description
36-CGM-16-300	<i>ConvectionPro XVI:</i> Two Large Compartments, cabinet mounted; convection steam; 300M BTU Gas-fired Steam Generator, 36" wide cabinet.

#### Options and Accessories:

- Electronic Timer with Compensating Load Feature. (ETC)
- ON/OFF Steam Switch only for compartment controls (MC)
- Cafeteria pans in depths of 1", 2½", 4" and 6"
- 18" x 26" Bun Pans
- Automatic Generator Mineral Purging Cycle (MPC) automatically cleans generator, reducing scale build up
- 8", 10", Stainless Steel Adjustable Legs (LF)
- Adjustable Flanged Feet (FF-A)
- Stainless Steel Insulated Flue Cover (SSF)
- Quick Disconnect for gas line (QDC)
- Correctional Packages
- Secondary Low Water Cut-Off, factory installed (CALG) (Required for AZ, CA, CO, CT, FL, GA, IL, IA, MA, MN, NE, NV, RI, SD, TN, UT, WA, Houston, TX.)

### SHORT FORM SPECIFICATION

Shall be Two Large Compartments, CLEVELAND Convection Steamer, Gas-fired Steam Generator, Model 36-CGM-16-300, 300M BTU, \_\_\_\_\_ gas, \_\_\_\_\_ volts, \_\_\_\_\_ Hz, single phase. Solid State Controls operate timing, water level and safety functions. Type 304 Stainless Steel exterior paneling and cooking compartments. Insulated compartments. One, Solid State 99 minute digital Timer with Touch Control, per compartment. Audible and Visual Signals for cycle completion and steam shut-off.

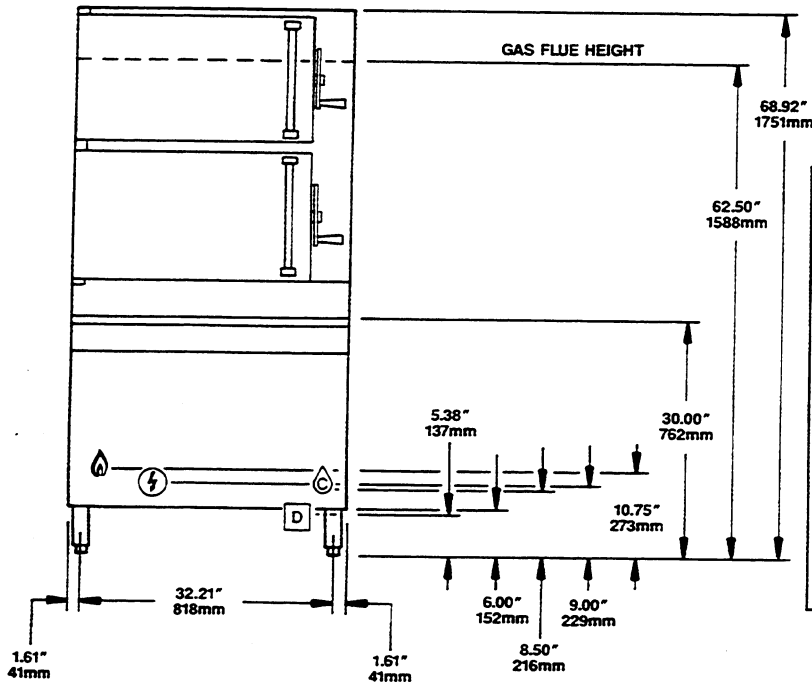


• Each compartment has capacity for:

Eight, 12" x 20" x 2½" Cafeteria Pans. Can accommodate 18" x 26" Bun Pans.

• Many local codes exist and it is the responsibility of the Owner and Installer to comply with those codes.

• Cleveland Range equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are: UL, A.G.A., NSF, ASME/N.Bd., CSA, CGA, ETL, and others.



### 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 75

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.

GAS		ELECTRIC	WATER	DRAINAGE	CLEARANCE
NATURAL	PROPANE	115V-1 PH 25 watts per compartment. 50 watt Steam Generator Control.	35 psi minimum 60 psi maximum ¾" IPS cold water	1½" IPS common drain. Do not connect any other units to this drain. Floor Drain must be located outside the confines of the equipment base. Drain line must be vented.	RIGHT = 12.00" If adjoining wall or equipment is over 30.00" high. LEFT = 0" REAR = 0" For use only in non-combustible locations.
Piping-1" IPS Supply pressure: 4.00" W.C. minimum 14.00" W.C. maximum	Piping-1" IPS Supply pressure: 12.00" W.C. minimum 14.00" W.C. maximum				
Manufacturer must be notified if unit is to be used above 2,000 ft. altitude.					

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



### ConvectionPro XVI®

TWO LARGE COMPARTMENTS-PRESSURELESS  
STEAM COIL GENERATOR  
36" WIDE CABINET BASE DESIGN

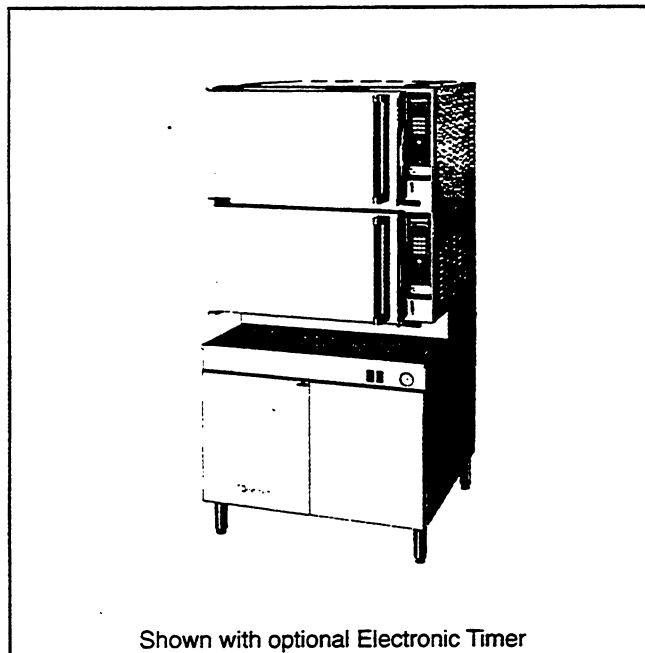
MODELS:  36-CSM-16

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

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

#### General Specifications:

- Cooking Capacity for up to eight 12" x 20" x 2½" deep Cafeteria Pans per compartment, or four 18" x 26" Bun Pans.
- Pressureless cooking with forced convection steam, permitting doors to be opened while cooking continues.
- Solid State Controls operate water level and safety functions.
- Each compartment is equipped with a 60 minute mechanical timer, separate bypass switch for constant steaming.
- **Instant Steam Standby Mode:** Holds generator at steaming temperature. Allows unit to start cooking instantly.
- **Durable 10 Gauge Stainless Steel Construction:** For Compartment Door and Steam Cooking Cavity.
- **Separate Main Power Switch for "On/Off"**
- **Unique Patented Steam Cooking Distribution System:** The patented Convection Jets produce a high velocity convection steam without fans. Coved Corner design in cooking compartment distributes heat evenly and is easy to keep clean. Creased bottom enhances drainage. Cold Water Condenser for each compartment maintains a dry steam. Fully insulated cooking compartment for thermal efficiency. Removable Stainless Steel Slide Racks for easy cleaning.
- **Heavy duty, one piece compartment door design with replaceable door gasket.**
- **Left Hand Door Hinging:** Compartment Doors hinged left, controls on the right.
- Modular Cabinet Base with Hinged Door.
- **Heavy duty Stainless Steel Base Frame**
- **Steam Coil Generator:** Automatic Water Fill on start up. Minimum 40 psi incoming steam pressure required with a ¾" steam line.
- **Automatic Generator Drain at shutdown:** Large ¾" drain valve contains a "Water Jet" Spray Rinse Cleaning Cycle to keep drain clear.
- **Automatic Water Level Control System** with Low Water Power Cut-off Circuit.
- Steam generator equipped with High Limit Pressure Safety Switch, 15 psi Safety Valve, and Steam Generator Pressure Gauge.
- **NSF Approved 6" Stainless Steel Adjustable Legs:** Provides one inch level adjustment.
- Standard voltage for Controls; 115 volts, 60 Hz, single phase.
- All Controls are serviceable from the front.
- Compartment Door Steam Shut Off Switch.



Shown with optional Electronic Timer

#### MODEL AVAILABLE

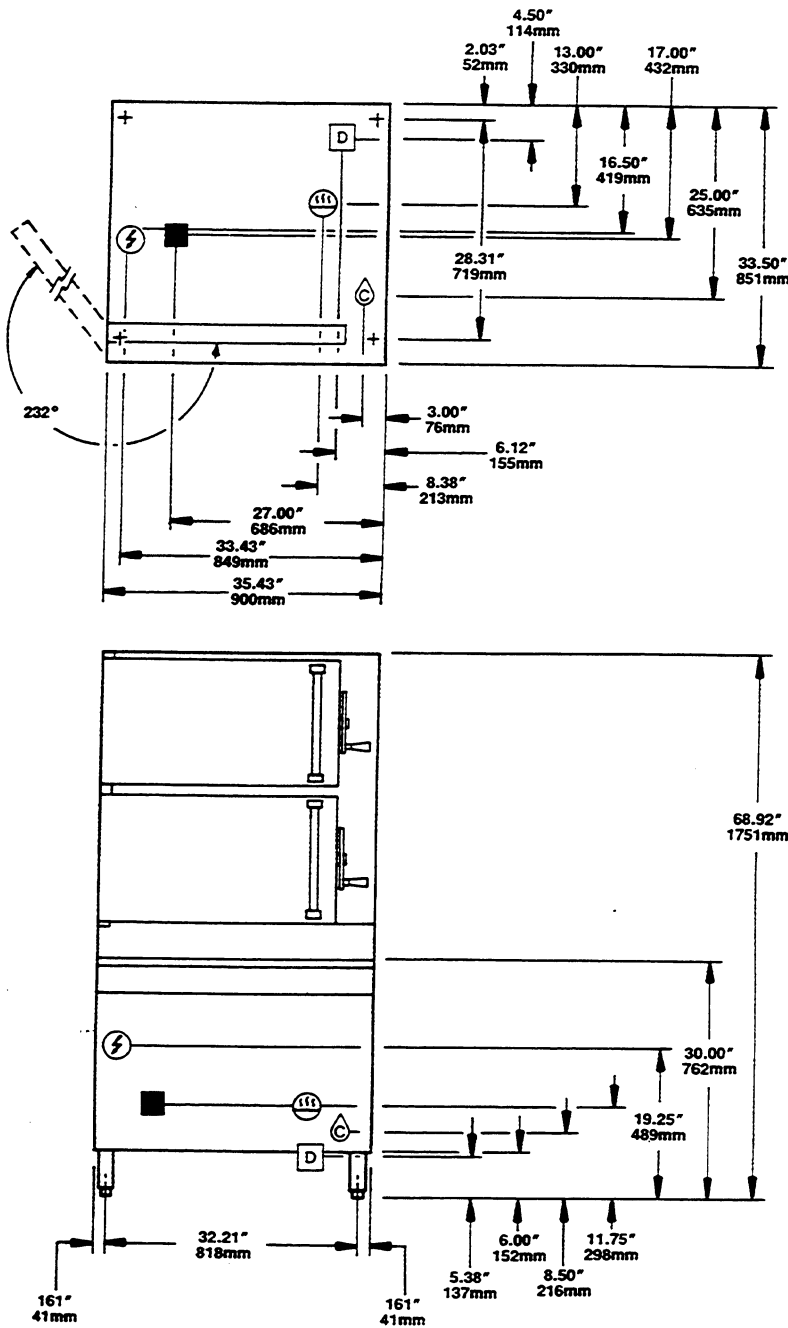
Model No.	Description
36-CSM-16	<b>ConvectionPro XVI:</b> Two Large Compartments, cabinet mounted; Convection steam, Steam Coil Generator, 36" Wide Cabinet Base.

#### Options and Accessories:

- ┘ Electronic Timer with Compensating Load Feature. (ETC)
- ┘ ON/OFF Steam Switch for compartment controls (MC)
- ┘ Cafeteria pans in depths of 1", 2½", 4" and 6"
- ┘ 18" x 26" Bun Pans
- ┘ Automatic Generator Mineral Purging Cycle (MPC) automatically cleans generator, reducing scale build up
- ┘ Additional Pressure Reducing Valve (PRV)
- ┘ Moisture Separator Trap (MS)
- ┘ 8", 10", Stainless Steel Adjustable Legs (LF-)
- ┘ Adjustable Flanged Feet (FF-A)
- ┘ Correctional Packages
- ┘ Secondary Low Water Cut-Off, factory installed (CAL-S) (Required for AZ, CA, CO, CT, FL, GA, IL, IA, MA, MN, NE, NV, RI, TN, WA, Houston, TX.)

### SHORT FORM SPECIFICATION

Shall be Two Large Compartments, CLEVELAND Convection Steamer, Steam Coil Steam Generator, Model 36-CSM-16, 115 volts, 60 Hz, single phase. Solid State Controls operate timing, water level and safety functions. Type 304 Stainless Steel exterior paneling and cooking compartments. Insulated compartments. One, Solid State 99 minute digital Timer with Touch Control, per compartment. Audible and Visual Signals for cycle completion and steam shut-off.



- Each compartment has capacity for:  
Eight, 12" x 20" x 2½" Cafeteria Pans. Can accommodate 18" x 26" Bun Pans.
- Many local codes exist and it is the responsibility of the Owner and Installer to comply with those codes.
- Cleveland Range equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are: UL, A.G.A., NSF, ASME/N.Bd., CSA, CGA, ETL, and others.







### 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

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.

NOTE: The Floor Drain must be located outside the confines of the equipment base.

STEAM COIL 	WATER 	DRAINAGE  & 	ELECTRIC 	CLEARANCE
Steam Supply Piping: • ¼" IPS minimum for 40 to 50 psi. • For pressure above 50 psi, a Pressure Reducing Valve must be specified.	35 psi minimum 60 psi maximum ¾" IPS cold water.	1½" IPS common drain. Do not connect other units to this drain. Drain line must be vented. Steam Coil Drain  ¾" IPS. Do not connect to common drain.	115V-1 PH 25 watts per compartment.	RIGHT = 12.00" If adjoining wall or equipment is over 30.00" high. LEFT = 0" REAR = 0"

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

### ConvectionPro XVI®

TWO LARGE COMPARTMENTS  
PRESSURELESS, DIRECT STEAM  
36" WIDE CABINET BASE DESIGN

#### General Specifications:

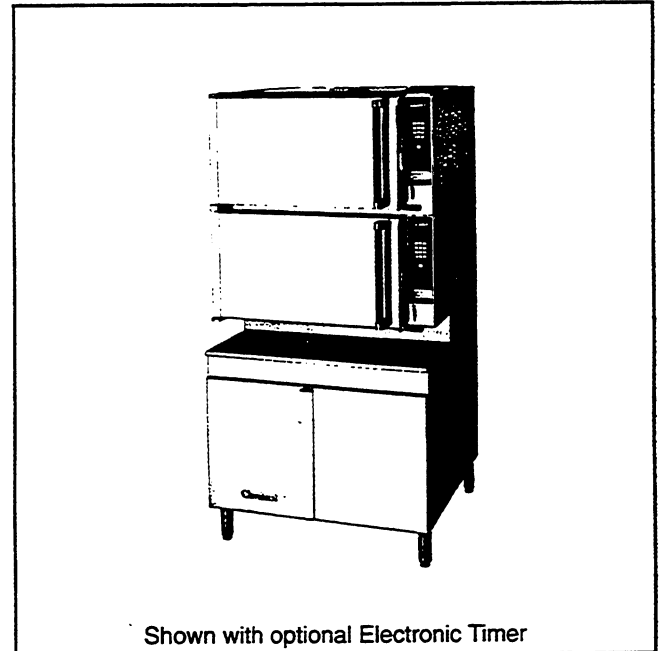
- Cooking Capacity for up to eight 12" x 20" x 2½" deep Cafeteria Pans per compartment or four 18" x 26" Bun Pans.
- Pressureless cooking with forced convection steam, permitting doors to be opened while cooking continues.
- Each compartment is equipped with a 60 minute mechanical timer, separate bypass switch for constant steaming and a cold water condenser for superior cooking results.
- **Durable 10 Gauge Stainless Steel Construction:** For Compartment Door and Steam Cooking Cavity
- **Separate Main Power Switch for "On/Off"**
- **Unique Patented Steam Cooking Distribution System:** The patented Convection Jets produce a high velocity convection steam without fans. Coved Corner design in cooking compartment distributes heat evenly and is easy to keep clean. Creased bottom enhances drainage. Cold Water Condenser for each compartment maintains a dry steam. Fully insulated cooking compartment for thermal efficiency. Removable Stainless Steel Slide Racks for easy cleaning.
- **Heavy duty, one piece, solid compartment door design with replaceable door gasket.**
- **Left Hand Door Hinging:** Compartment Doors hinged left, control on the right.
- Modular Cabinet Base with Hinged Door.
- **Heavy duty Stainless Steel Base Frame**
- **Moisture Separator Trap for incoming steam**
- **Pressure Reducing Valve:** For 35-50 psi incoming steam pressure based on a ¾" steam line. (minimum size)
- **Single Cold Water Connection**
- **NSF Approved 6" Stainless Steel Adjustable Legs:** Provides one inch level adjustment.
- Standard voltage for controls 115 volts, 60 Hz, single phase.
- All Controls are serviceable from the front.
- Compartment Door Steam Shut Off Switch.

Clean non-toxic, uncontaminated steam is required for all "Direct Steam" steamers

MODEL:  36-CDM-16

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

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



Shown with optional Electronic Timer

#### MODEL AVAILABLE

Model No.	Description
36-CDM-16	<i>ConvectionPro XVI:</i> Two Large Compartments, cabinet mounted; convection; Direct Steam, 36" Wide Cabinet Base.

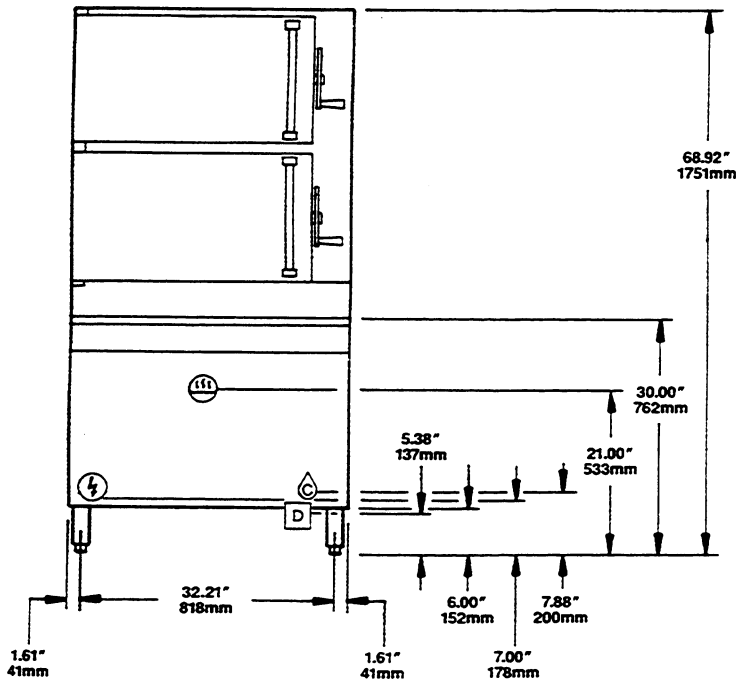
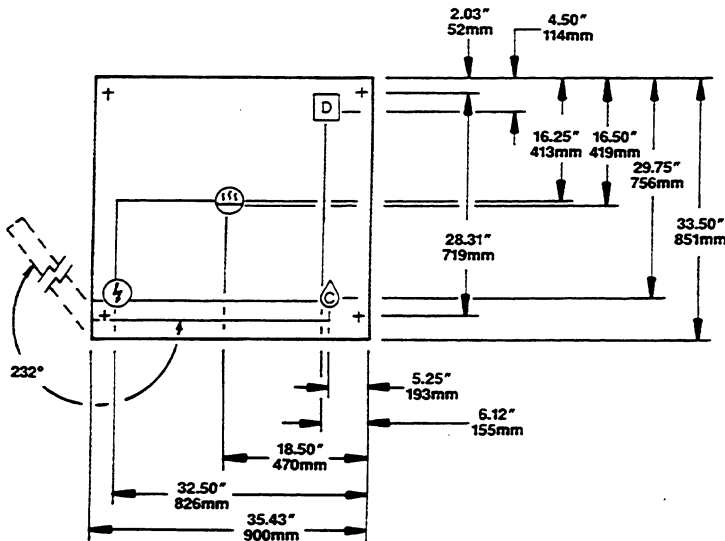
#### Options and Accessories:

- Electronic Timer with Compensating Load Feature. (ETC)
- ON/OFF Steam Switch for compartment controls (MC)
- Cafeteria pans in depths of 1", 2½", 4" and 6"
- 18" x 26" Bun Pans
- Voltages other than standard
- 8", 10", Stainless Steel Adjustable Legs (LF-)
- Adjustable Flanged Feet (FF-A)
- Correctional Packages
- Second Pressure Reducing Valve for 50-120 psi steam pressure (PRV)

### SHORT FORM SPECIFICATION

Shall be Two Large Compartments, CLEVELAND, Convection Steamer, Direct Steam, Model 36-CDM-16. Solid State Controls operate timing, water level and safety functions. Type 304 Stainless Steel exterior paneling and cooking compartments. Insulated compartments. One, Solid State 99 minute digital Timer with Touch Control, per compartment. Audible and Visual Signals for cycle completion and steam shut-off.

- Each compartment has capacity for:  
Eight, 12" x 20" x 2½" Cafeteria Pans. Can accommodate 18" x 26" Bun Pans.
- Many local codes exist and it is the responsibility of the Owner and Installer to comply with those codes.
- Cleveland Range equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are: UL, A.G.A., NSF, ASME/N.Bd., CSA, CGA, ETL, and others.



DIRECT STEAM (⊕)	WATER (⊖)	DRAINAGE (D)	ELECTRIC (⚡)	CLEARANCE
Steam Supply: Furnish ¾" IPS minimum line. 35 psi minimum pressure required. For pressures above 50 psi, an additional Pressure Reducing Valve must be specified.	35 psi minimum 60 psi maximum ¾" IPS cold water	1½" IPS common drain. Do not connect other units to this drain. Floor Drain must be located outside the confines of the equipment base. Drain line must be vented.	115V-1PH 25 watts per compartment.	RIGHT = 12.00" If adjoining wall or equipment is over 30.00" high. LEFT = 0" REAR = 0"

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