



IMPORTANT FOR FUTURE REFERENCE	
Please complete this information and retain this manual for the life of the equipment:	
Model #:	_____
Serial #:	_____
Date Purchased:	_____

Installation & Operation Manual

Eco-Tech® Plus Electric Convection Steamer ETP-10E-CS



ETP-10E-CS

WARNING

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

CROWN FOOD SERVICE EQUIPMENT

 **MIDDLEBY** A Middleby Company

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SAFETY PRECAUTIONS

Before installing and operating this equipment, be sure everyone involved in its operation is fully trained and aware of precautions. Accidents and problems can be caused by failure to follow fundamental rules and precautions.

The following symbols, found throughout this manual, alert you to potentially dangerous conditions to the operator, service personnel, or to the equipment.

**DANGER**

This symbol warns of immediate hazards that will result in severe injury or death.

**WARNING**

This symbol refers to a potential hazard or unsafe practice that could result in injury or death.

**CAUTION**

This symbol refers to a potential hazard or unsafe practice that could result in injury, product damage, or property damage.

NOTICE

This symbol refers to information that needs special attention or must be fully understood, even though not dangerous.

IMPORTANT NOTES FOR INSTALLATION AND OPERATION

**WARNING**

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

**WARNING**

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

NOTICE

This product is intended for commercial use only. NOT FOR HOUSEHOLD USE.

NOTICE

This manual should be retained for future reference.

IMPORTANT

Do not attempt to operate this unit in the event of power failure.

Adequate clearances must be maintained for safe and proper operation.

Contact the factory, the factory representative or a local service company to perform maintenance and repairs should the appliance malfunction. Refer to warranty terms.

ERRORS: Descriptive, typographic or pictorial errors are subject to correction.

Specifications are subject to change without notice.

RETAIN THIS MANUAL FOR FUTURE REFERENCE.

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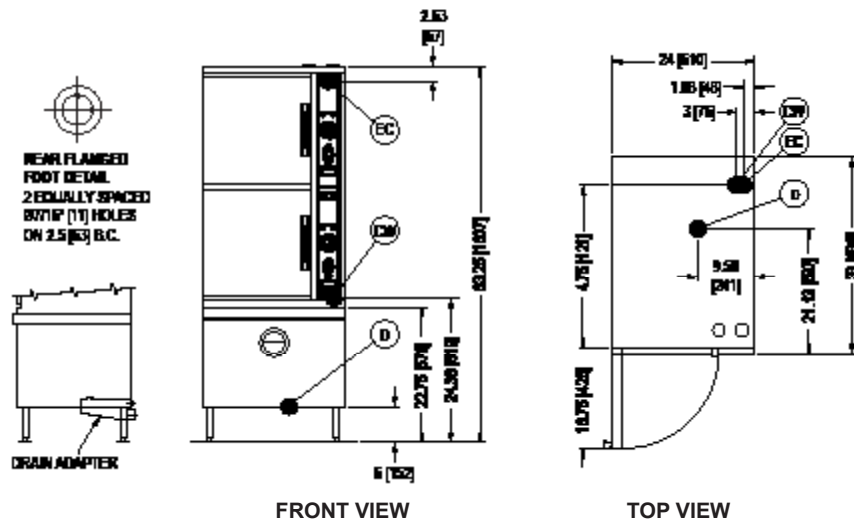
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SERVICE CONNECTIONS

DIMENSIONS ARE
IN INCHES [MM]



SERVICE CONNECTIONS

SYMBOL	DESCRIPTION
EC	Electrical Connection - 1 1/8" hole for electrical connection. Rating specified on data plate.
CW	Cold Water - 3/8" (10mm) NPT, Maximum 50 PSI, Minimum 25 PSI.
D	Drain - 1-1/2" NPT male from the drain adapter (see illustration)

ELECTRICAL CHARACTERISTICS

MODEL	kW	PHASE	AMPS PER LINE						
			208V	220V	240V	380V	416V	480V	600V
ETP-10E-CS	20	3	55.5	52.5	48.1	30.4	27.8	24.1	19.2

NOTES

Allow 6" 152 mm of space on the right side if height of adjoining wall or equipment exceeds 29" 737 mm.

All service connections are made at the rear of the unit.

PVC and CPVC pipe are not acceptable materials for drains.

The drain piping must consist of temperature resistant material, greater than 160°F, and be of adequate diameter not to cause flow restriction. Improper materials may deform and cause restrictions, thus affecting performance.

PAN CAPACITY, CLEARANCE AND WEIGHT

MODEL	COMPARTMENT PAN CAPACITY		INSTALLATION CLEARANCE			SHIPPING WEIGHT
	PANS	NUMBER OF PANS	LEFT SIDE	RIGHT SIDE	REAR	
ETP-10E-CS	12" x 20" x 1" deep pans	9	3	6	6	425 lbs (193 kg)
	12" x 20" x 2-1/2" deep pans	5				
	12" x 20" x 4" deep pans	3				

WATER SUPPLY AND DRAIN SPECIFICATIONS

Good quality water feed is the responsibility of the owner. Water quality must be within the following general guidelines.

TDS: 40-125 ppm Hardness: 35-100 ppm pH: 7.0 - 8.5 Silica: <13 ppm Chlorides: <25 ppm Chlorine: <0.2 ppm Chloramine: <0.2 ppm

The best defense against poor water quality is a water treatment system designed to meet your water quality conditions.

Pressure: 25(min)-50(max) PSI Connections: Trough drain: 1/2 MNTP Drain out: 1" FNPT Water: 3/4" male garden hose

The best defense against poor water quality is a water treatment system designed to meet your water quality conditions.

Appliance to be installed with backflow protection according to federal, state or local codes.

DISCLAIMER

Terry System Cartridge Changes / Installation – "2-3 gallons of water MUST be purged at each cartridge change or new installation prior to water supply being fed to the steamer. Failure to do so can result in component damage within the steamer which is not covered under warranty. For additional guidance on proper installation, refer to install documentation provided with each Terry System and Replacement Cartridge Set."

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

INTRODUCTION

DESCRIPTION

The ETP-10E-CS is an electric pressureless steam cooker. The cooking compartments are equipped with a three-piece door with inner gasket plate isolated from the exterior surface. Door latch operates by slam action for positive sealing of the door. Operating controls are displayed on a front-mounted panel and include indicator lights for ready and cooking modes, a timer to set cook times and a selectable hold cycle to keep food warm once cooked, a temperature display to monitor cavity temperature, and an illuminated ON/OFF/DELIME switch.

BASIC FUNCTIONING

The steamer is ready for operation when the READY light comes on.

At the end of the set interval, timer contacts switch to shut off the cooking operation and sound a signal buzzer. The buzzer is silenced by returning the timer dial to the OFF position. In the 'HOLD' mode, the steamer will maintain a safe food holding temperature at or above 150 °F.

Steam emitted from the compartment along with liquid cooking drainage is directed through a removable drain screen inside the compartment. Drainage from the compartment as well as from the steam generators, after the appliance is shut-off, is directed to the drain box in the cabinet base. The drain box condenses the steam prior to discharge into the drain.

INSTALLATION

LOCATION

Allow space for plumbing and electrical connections. Allow adequate access for operating and servicing the steamer, 36" (915 mm) at the front of the steamer and 15" (381 mm) above the steamer.

MECHANICAL CONNECTIONS

All electrical and plumbing connections are located on the rear panel of the unit. (See 'SERVICE CONNECTIONS' in this manual for location of mechanical connections.)

INSTALLATION CODES AND STANDARDS

Electrical grounding must be provided in accordance with local codes, or in the absence of local codes, with the National Electrical Code ANSI/NFPA 70, or the Canadian Electrical Code, CSA C22.2 as applicable.

Ventilation must be provided in accordance with local codes, or in the absence of local codes, with *ANSI/NFPA 96 Standard for Ventilation and Fire Protection of Commercial Cooking Operations*.

WIRING DIAGRAM FOR APPLIANCE IS LOCATED ON RIGHT HAND SIDE PANEL OF THE COOKER CABINET.

INSTALLATION

1. Uncrate carefully. Report any freight damage to the freight company immediately.
2. Set the unit in place.
3. Using a spirit level or pan of water in the bottom of the steamer, adjust the levelling feet to level the steamer front-to-back and side to side.
4. Mark hole locations on the floor through the anchoring holes provided in the flanged adjustable feet. Remove the steamer and drill holes at marked locations on the floor. Insert proper anchoring devices.
5. Set steamer back in proper position.
6. Install bolts through anchoring holes and into anchors to secure the steamer to the floor. Seal bolts and flanged feet with Silastic™ or equivalent.
7. After the drain is connected, check for level by pouring water onto the floor of the compartment. All water should drain through the opening at the back of the compartment cavity.

WARNING

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

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

PLUMBING CONNECTIONS

NOTICE

Equipment not installed in accordance with these guidelines may void the warranty.

CAUTION

An obstructed drain can cause personal injury or property damage.

WARNING

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

Connect cold water supply line at the rear of the steamer.

The water supply line pressure should be 25 - 50 PSI (1.8 - 3.5 kg/cm²).

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

DRAIN CONNECTIONS

WARNING

Directly plumbing a drain line to the tempering tank may cause personal injury or damage to the appliance. Not using the supplied drain adapter will void your warranty.

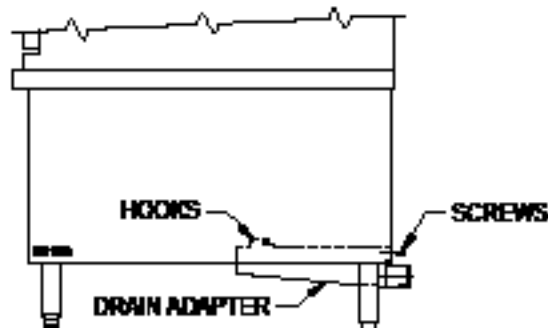
CAUTION

PVC OR CPVC are not acceptable materials for drains.

INSTALLING THE DRAIN ADAPTER

From the rear of the unit, position the drain adapter hooks through the slots in the floor of the cabinet to and align with the holes at the rear and fasten in place with provided screws.

When making the drain connection to the 1-1/2" NPT male thread of the drain adapter, use a pipe wrench to firmly support the drain adapter nipple to prevent damage to the assembly.



WATER CONDITIONING

Untreated water contains scale producing minerals which can precipitate onto the surfaces in the steam generator. Due to the temperatures in the steam generator, the minerals can bake onto the surfaces and components. This can result in early component failure and reduced product life. Water level probes become coated with scale. Scale may bridge across the probe insulator from the metal extension which senses the water level in the steam generator shell. Once this scale becomes wet, the water level control is unable to maintain the proper water level in the steam generator.

! IMPORTANT !

This equipment is furnished with a Middleby TruH2O water treatment system. An initial flushing procedure for the system must be performed before using this equipment. (See 'FLUSH THE CARTRIDGES BEFORE USE' in this manual).

CARTRIDGE SYSTEM INSTALLATION SET-UP

1. Unscrew two wing nuts that hold head assembly bracket until end of studs (See 'CARTRIDGE CHANGE PROCEDURE' in this manual).
2. Tilt the bracket with head assembly towards outside of cabinet (See 'CARTRIDGE CHANGE PROCEDURE' in this manual).
3. Push the M-C 10 (Stage 1) cartridge up into left side of head assembly until it stops and turn to right until it stops in the Lock position. (Figure 1)
4. Push the M-S (Stage 2) cartridge up into right side of head assembly until it stops and turn right until it stops in the Lock position. (Figure 2)
5. Tilt the bracket with assembly back in the cabinet. Hand tighten the wing nuts.

The cartridges should be replaced every six months or more often if the needle on the flow gauge enters the red area (below 10 PSI). (See 'CARTRIDGE CHANGE PROCEDURE' in this manual.)

Cartridge life depends greatly upon the quality of water.

For replacement cartridges call 480-591-4073.

Figure 1

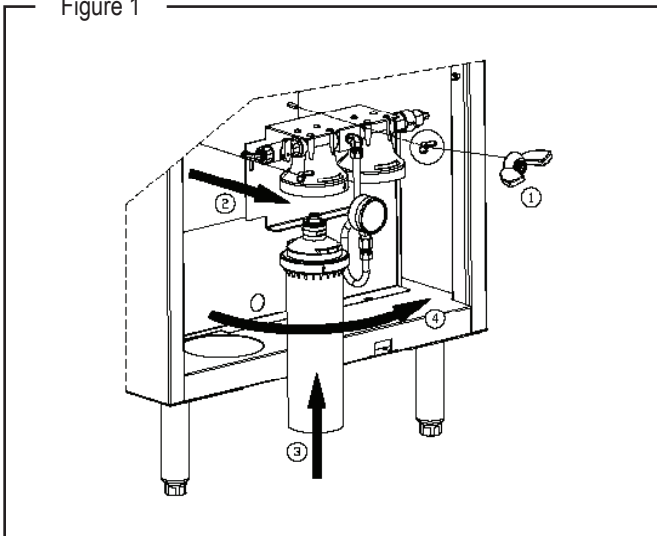
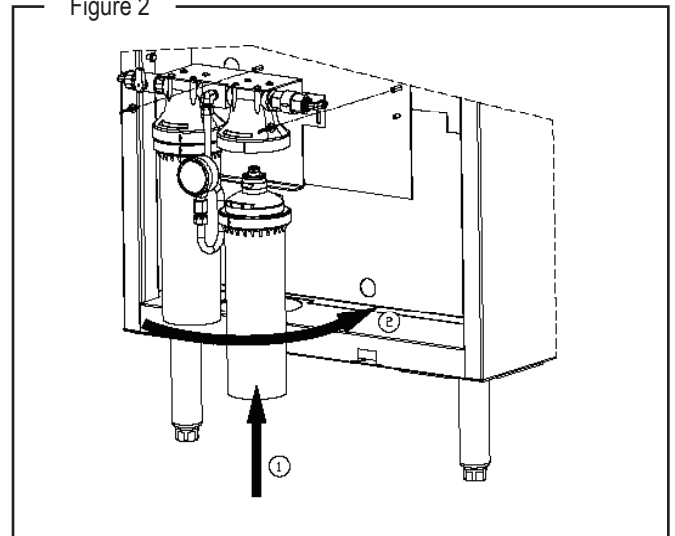


Figure 2



PERFORMANCE CHECK

WARNING

The steamer and its parts are hot. Use care when operating, cleaning or servicing the steamer. The cooking compartment contains live steam. Stay clear while opening door.

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

1. Check that proper water, drain and electrical connections have been made.
2. Turn main power switch ON. After approximately 10 minutes, the "READY" light should come on, indicating that the water temperature is approximately 200° F (93 °C).
3. When the "READY" light comes on, set timer to the "5 minute" position. With door open, observe that no steam is entering the compartment and that the "COOKING" light is OFF.
4. Close compartment door. The COOKING light should now be illuminated and steam should be heard entering the compartment after about 45 seconds.
5. The tempering tank does not discharge to drain until the water in the top of the tank reaches 130F or the unit is shut off and the generators are allowed to drain.
6. Open compartment door and observe that steam supply to chamber is cut off. "READY" light should again come on as "COOKING" light goes "OFF".
7. Close compartment door and let cooking cycle finish. When the timer returns to "0" position, a buzzer will sound signaling the end of the cooking cycle. Buzzer must be manually turned off by setting the timer to its "OFF" position.
8. Complete the above steps for each cooking compartment.
9. To shut the steamer down, turn the main power switches OFF and leave the compartment doors slightly open to allow the inside to dry out.

BEFORE FIRST USE

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

OPERATION

OPERATING INSTRUCTIONS

CAUTION

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

CAUTION

An obstructed drain can cause personal injury or property damage.

COOKING

CAUTION

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

Before loading the steamer, be sure the ready light is on.

1. Slide pans of food into cooking compartment pan supports.
2. Close cooking compartment door.
3. Set timer cooking time:
 - a. 60-MINUTE TIMER - for timed cooking. Set timer to the required cooking time. (See 'Cooking Guidelines' in this manual).
 - b. HOLD - for holding cooked foods in a warm state. Will maintain the cooking cavity at or above 150 °F (65 °C).
4. The cooking cycle may be interrupted at any time by opening the compartment door. To resume operation, close the door.
5. Turn off buzzer, which sounds to indicate cooking is complete, by setting timer dial to the OFF position.
6. Open door slightly at first letting most of the steam out of the compartment and then fully open the door.
7. **Unload by sliding pans of food from pan supports.**

CAUTION

An obstructed drain can cause personal injury or property damage.

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

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

SHUTDOWN PROCEDURE

STAND BY

1. Set timer to "OFF" position and leave door slightly open.

END OF THE DAY

1. Set timer to "OFF"
2. Set power switches to "OFF". Generator(s) will drain automatically.
3. Leave door(s) ajar.

COMPLETE SHUTDOWN

1. Set timers to "OFF" and turn power switches "OFF". Steam generator(s) will drain automatically.
2. Turn water supply "OFF".
3. Disconnect power supply.
4. Leave door(s) ajar

WARNING

When this appliance is installed with casters and is connected to the supply piping by means of a connector for moveable appliances, a restraint to prevent damage to the connector or quick disconnect device should have been installed. If disconnection of the restraint is necessary, reconnect this restraint after the appliance has been returned to its originally installed position.

CAUTION

When the unit is not in use, leave the cooking compartment doors ajar to prolong the life of the door gasket.

CLEANING

After each period of daily operation (*more frequently as required to maintain cleanliness*), the steamer should be thoroughly cleaned by completing the following steps:

1. Remove left and right side pan supports by lifting up and off mounting studs. Remove the drain screen in the rear of the compartment. Wash with a mild detergent. Rinse and set aside for reassembly.
2. Wash cooking compartment interior using a mild detergent and water. Rinse and dry thoroughly.
3. Replace pan supports and drain screen in compartment and leave door open.

DRAINAGE

Cooking Compartment Drainage

The bottom of the cooking compartment is angled slightly toward the rear of the unit. This assures that any build-up condensate or spills will be directed toward the drain, which is located at the rear bottom center of the cooking compartment. Any liquid exiting the cooking compartment runs down the cooking compartment drain tube and into the condensate tempering tank.

Drip/Spill Trough Drainage

The Pressureless Steam Cooker has a drip/spill trough below the cooking compartment door. It will catch any condensate gathering on the front of the unit when the door is opened.

ADJUSTMENT FOR HIGH ALTITUDE LOCATIONS

The steamer has been factory set so that when it is ON, and during the READY phase, it will maintain water temperature in the steam generator tank at approximately 200 °F (93 °C) (*just below water boiling point*). However, for high altitude locations, an authorized service agency must adjust the steamer to achieve this temperature.

⚠ WARNING

The steamer and its parts are hot. Use care when operating, cleaning or servicing the steamer. The cooking compartment contains live steam. Stay clear when opening door.

⚠ CAUTION

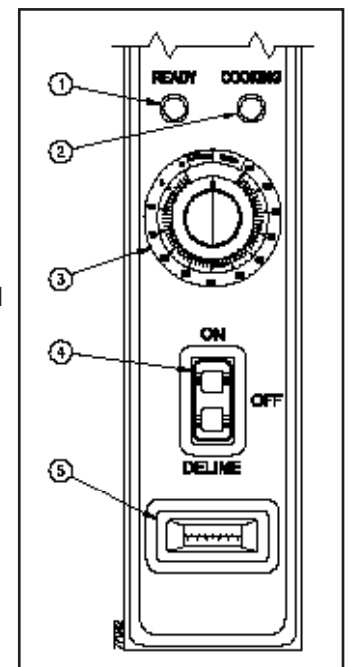
An obstructed drain can cause personal injury or property damage.

⚠ CAUTION

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

CONTROLS

1. **Ready Pilot Light** When lit, indicates steam generator has reached 200° Fahrenheit (93° Celsius) and is ready for the cooking cycle.
2. **Cooking Pilot Light** When lit, indicates that a cooking cycle is in progress.
3. **Timed Cooking/Hold Mode** Set the cooking time (0 to 60 minutes) - steam cooking will begin after the door is closed. The cooking cycle will be interrupted if the door is opened during the cooking cycle; resume cooking by closing the door. Hold - For keeping cooked foods warm after cooking, at or above 150 °F (65 °C).
4. **Main Power Switch: ON** The steam generator will automatically fill and begin heating to the pre-set temperature for standby. Red light will ignite on the main power switch.
4. **Main Power Switch: OFF** The steam generator will drain. No lights.
4. **Main Power Switch: DELIME** Closes the drain valve while TOTAL CONCEPT liquid is being poured into the steam generator during the Delime procedure. Amber light will ignite on the main power switch.
5. **Temperature Display** Shows temperature within the cooking cavity.
6. **Buzzer** Signals end of cooking period (not shown).



TEST KITCHEN BULLETIN

Pressureless Cooker - Facts On Parade

1. Frozen vegetables should always be cooked in perforated 12" x 20" x 2-1/2" pans, 7-1/2 lbs. (3.4 kg) maximum per pan.
2. Frozen entrees should be underlined with a perforated pan for best results. If they are defrosted first, the heating time will be decreased.
3. Fresh foods may also be cooked in this unit. Vegetables and other foods where the stock is not to be retained should be cooked in perforated 12" x 20" x 2-1/2" pans for the most nutritious results.
4. There is a safety microswitch on the door which shuts off the steam each time the door is opened if the unit is in the cooking cycle.
5. Total cooking time will vary depending on the load, even though the timer setting is the same.
6. All foods, except cakes and pastry, can be cooked in a steam cooking unit.
7. Steam cooked meals have greater nutritional value since they retain most of their vitamins and minerals.
8. Because foods are cooked faster by the higher temperatures of steam cooking, they can be prepared closer to serving time, insuring maximum freshness.
9. Steam cooked foods have a higher percent yield more portions per dollar spent.
10. Food may be served from the same pan in which it is steam cooked, thus reducing food breakage since there is no extra handling or transferring of food from cooking pans to serving pans. It also reduces pot washing tasks.
11. Some important advantages of steam cooking are labour saving, reduced operating costs, space saving, and the lifting of heavy stock pots is eliminated.
12. Rice and spaghetti products, if thoroughly wet at the start of the cooking process, are very easily prepared.
13. Food such as potatoes, poultry, seafood, and some meats may be blanched in the steam cooker, thus reducing the total cooking time and grease absorption.
14. The steam cooker will loosen foods burned on pans making washing easier.
15. Solid pans are recommended when liquid is to be retained and perforated pans when the liquid is not to be retained.
16. Eggs may be cooked out of the shell if they are to be chopped which eliminates peeling after steaming.
17. The steam cooker can be opened during the cooking period to add or remove items.
18. Steam cooking information, including recommended pan size and type, weight per pan, cooking times and pan yields are given on the following pages of this bulletin.

COOKING GUIDELINES

The cooking times indicated in this list are based on a preheated cooking compartment. Preheat time for the Eco-Tech Plus Steamer is approximately 15 minutes.

ITEM	APPROX. WEIGHT PER PAN	SIZE OF PAN (PERFORATED)	NUMBER OF PANS	TIMER SETTING (MINUTES)	APPROXIMATE NO. COOKED SERVINGS PER PAN - 3 OZ.
FROZEN VEGETABLES					
Green Beans, Regular Cut	6 lb	12" x 20" x 2.5"	1 - 5 Pans	15 - 20	24
Green Beans, French Cut	4 lb	12" x 20" x 2.5"	1 - 5 Pans	13 - 18	16
Lima Beans, Baby	5 lb	12" x 20" x 2.5"	1 - 5 Pans	23 - 28	20
Broccoli Spears	6 lb	12" x 20" x 2.5"	1 - 5 Pans	11 - 16	24
Brussel Sprouts	5 lb	12" x 20" x 2.5"	1 - 5 Pans	14 - 19	20
Carrots, Diced	4 lb	12" x 20" x 2.5"	1 - 5 Pans	15 - 21	16
Cauliflower	6 lb	12" x 20" x 2.5"	1 - 5 Pans	13 - 17	24
Corn on the Cob, 3" Ears	27 Ears	12" x 20" x 2.5"	1 - 5 Pans	17 - 21	27
Corn, Nibbles	5 lb	12" x 20" x 2.5"	1 - 5 Pans	13 - 17	20
Mixed Vegetables	5 lb	12" x 20" x 2.5"	1 - 5 Pans	15 - 21	20
Green Peas	6 lb	12" x 20" x 2.5"	1 - 5 Pans	13 - 19	24
Spinach	6 lb	12" x 20" x 2.5"	1 - 5 Pans	Must Be Defrosted	-
Squash, Winter	8 lb	12" x 20" x 2.5" (Solid)	1 - 5 Pans	Must Be Defrosted	1
FRESH VEGETABLES FRESH VEGETABLES					
Asparagus Spears	4 lb	12" x 20" x 2.5"	1 - 5	15 -21	16
Beans Green or Waxed	4 lb	12" x 20" x 2.5"	1 - 5	18 -27	16
Broccoli Spears	6 lb	12" x 20" x 2.5"	1 - 5	17 - 23	24
Carrots, Sliced	6 lb	12" x 20" x 2.5"	1 - 5	25 - 29	24
Cauliflower	4 lb	12" x 20" x 2.5"	1 - 5	17 -23	16
Corn on the Cob (Husked)	1 dozen	12" x 20" x 2.5"	1 - 5	17 - 23	1 dozen
Green Peas	5 lb	12" x 20" x 2.5"	1 - 5	13 - 17	24
Potatoes, Whole	10 lb	12" x 20" x 2.5"	1 - 5	40 - 45	40
Potatoes, French Fry Cut	10 lb	12" x 20" x 2.5"	1 - 5	17 - 23	40
Spinach	3 lb	12" x 20" x 4"	1 - 5	9 - 11	12
Squash, Summer or Zucchini, 1" slices	5 lb	12" x 20" x 2.5"	1 - 5	10 - 15	24
FISH AND SHELLFISH					
Clams	5 lb	12" x 20" x 2.5"	1 - 5	11 - 13	-
Crabs	6 each	12" x 20" x 2.5"	1 - 5	21 - 27	-
Fish Filets	3 lb	12" x 20" x 2.5"	1 - 5	11 - 13	-
Fish Filets, Covered	3 lb	12" x 20" x 2.5"	1 - 5	14 - 17	-
Fish Filets, Covered in Casserole 6 - 8 oz.	3 per pan	12" x 20" x 2.5"	1 - 5	19 -21	-
Fish Steak	3 lb	12" x 20" x 2.5"	1 - 5	13 - 17	-
King Crab Legs, Frozen	5 lb	12" x 20" x 2.5"	1 - 5	11 - 13	-
Lobsters, 1-1/4 lb	4 - 5 each	12" x 20" x 2.5"	1 - 5	17 - 23	-
Shrimp, Peeled, Frozen	3 lb	12" x 20" x 2.5"	1 - 5	11 - 13	-

Continued On Next Page

ITEM	APPROX. WEIGHT PER PAN	SIZE OF PAN (PERFORATED)	NUMBER OF PANS	TIMER SETTING (MINUTES)	APPROXIMATE NO. COOKED SERVINGS PER PAN - 3 OZ.
MEAT AND POULTRY					
Chicken, Cut-Up	5 lb	12" x 20" x 2.5"	1 - 5	27 - 37	15 - 20
Chicken, Whole, (1.8 kg)	4 lb	12" x 20" x 2.5"	1 - 5	45 - 55	25 - 30
Frankfurters	5 lb	12" x 20" x 2.5"	1 - 5	10 - 14	20 - 25
Hamburgers, (3 oz.)	5 lb	12" x 20" x 2.5"	1 - 5	23 - 27	20 - 25
Meatballs, 1 oz. Size	6 lb	12" x 20" x 2.5"	1 - 5	27 - 32	35 - 40
Sausages, 10 per lb	6 lb	12" x 20" x 2.5"	1 - 5	23 - 26	18 - 20
MISCELLANEOUS					
Eggs in Shell (Hard Cooked)	3 dozen	12" x 20" x 2.5"	1 - 5	19 - 21	-
Eggs in Shell (Soft Cooked)	3 dozen	12" x 20" x 2.5"	1 - 5	10 - 12	-
Eggs, Out of Shell	4 dozen	12" x 20" x 2.5" (Solid)	1 - 5	15 - 19	-
Eggs, Poached	1 dozen	12" x 20" x 2.5"	1 - 5	8 - 10	-
Rice	4 lb	12" x 20" x 2.5"	1 - 5	28 - 30	-
Spaghetti, Raw	2 lb	12" x 20" x 2.5"	1 - 5	19 - 21	-
Spaghetti, Cooked, Refrigerated	3 lb	12" x 20" x 2.5"	1 - 5	8 - 10	-
Spaghetti, Cooked, Frozen	3 lb	12" x 20" x 2.5"	1 - 5	10 - 13	-

STEAM COOKING

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

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

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

PREPARATION

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

PAN

The steamer compartment is designed to accept combinations of the pan of 12" x 20" (either solid or perforated) as shown on the following table.

DEPTH OF PAN	NUMBER OF PANS PER COMPARTMENT
1"	10
2-1/2"	5
4"	3
6"	2

PREVENTIVE MAINTENANCE

INTRODUCTION

A good preventive maintenance program begins with the daily cleaning procedure. Additional preventive maintenance operations are presented in this section. In establishments that employ full-time maintenance personnel, the tasks described can be assigned to them. For other installations, tasks requiring mechanical or electrical experience should be performed by an authorized service agency.

The following paragraphs are set out for minimum preventive maintenance procedures that must be completed periodically to assure continued trouble-free operation of the steamer.

CAUTION

Under no circumstances should hardware (or parts) be replaced with a different length, size, or type other than as specified in the parts list. The hardware used in the cooker has been selected or designed specifically for its application, and the use of other hardware may damage the equipment and will void any warranty.

WARNING

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

WARNING

The steamer and its parts are hot. Use care when operating, cleaning or servicing the steamer. The cooking compartment contains live steam. Stay clear when opening door.

WARNING

When this appliance is installed with casters and is connected to the supply piping by means of a connector for moveable appliances, a restraint to prevent damage to the connector or quick disconnect device should have been installed. If disconnection of the restraint is necessary, reconnect this restraint after the appliance has been returned to its originally installed position.

CLEANING

CAUTION

Do not use cleaning agents that are corrosive.

NOTICE

Contact the factory, the factory representative or a local service company to perform maintenance and repairs should the appliance malfunction. Refer to warranty terms.

CLEANING DAILY

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

1. Turn main power switch OFF.
2. Remove pans and racks from compartment and wash in sink.
3. Wash compartment interior with clean water.
4. Use warm soapy water with a cloth or sponge to clean exposed bead of door gasket, rinse with warm clear water and wipe with a dry cloth.

Wipe surfaces which touch door gasket with a cloth or sponge and warm soapy water, rinse with warm clear water and wipe with a dry cloth. Do not apply food oils or petroleum solvents or lubricants directly to door gasket or surfaces which touch door gasket.

5. Remove drain screen from inside compartment drain. Using a plastic bottle brush and mild detergent, clean inside the drain opening ensuring there is no food residue or blockage. Clean the drain screen and replace in its original position.
6. Leave door slightly open when steamer is not in use.

NOTICE

It is always advisable to leave the steamer door open when the unit is shut down for the evening. This will extend the life of your gasket.

CLEANING WEEKLY

Weekly, or more often if necessary

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

Following daily and periodic maintenance procedures will enhance long-life for your equipment. Climatic conditions - salt air - may require more thorough and frequent cleaning otherwise the life of the equipment could be adversely affected.

It is **NOT RECOMMENDED** to use cleaning agents that are corrosive.

Use of cleaning agents that contain chloride, acids or salts which are corrosive may cause pitting and corrosion when used over a period of time; this will reduce the life of the appliance.

Should pitting or corrosion occur, this is not covered by warranty.

Follow the recommended cleaning instructions. Use a mild detergent, warm water and rinse thoroughly.

WARNING

NEVER SPRAY WATER INTO ELECTRIC CONTROLS OR LOUVERS.

REMOVAL OF SCALE DEPOSITS

This equipment is furnished with the Middleby TruH2O water treatment system which, when properly maintained can provide a scale-free environment for your steamer.

However, because water quality can vary it is recommended that the steamer be delimed every 60 days or more often if necessary.

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

DELIMING PROCEDURE

Both generators must be delimed individually.

CAUTION

Do not open deliming caps when unit is in operation. Do not open or close compartment doors when deliming caps are not in place.

GENERATOR DELIMING INSTRUCTIONS

CAUTION

Do not open or close compartment doors or operate unit when deliming caps are not in place.

1. Turn the power switch "OFF" for three minutes, allowing the generators to completely empty.
2. Turn the power switch to the "DELIME" position.
3. Remove caps located on top right of steamer (left cap for top generator, right cap for bottom generator.) Using a funnel and pouring slowly to avoid spilling, pour one quart (0.95 litres) of CLR deliming solution into each generator.
4. Replace the deliming caps and tighten. Turn power switch to "ON" for five minutes allowing the generator to completely fill.
5. Turn the power switch to the "DELIME" position. Unscrew the deliming caps and add 1/2 quart (0.48 litres) of clean water to each generator.
6. Replace the deliming caps and tighten. Turn the power switch "ON" for 30 minutes. (Timer in OFF position.)
7. Flush the generators three times. Turn power switch to "OFF" for three minutes and the "ON" for five minutes.

WARNING

At least twice a year, have an authorized service person clean and adjust the unit for maximum performance.

CARTRIDGE CHANGE PROCEDURE

NOTICE

This system is equipped with an internal shut-off valve.

1. Turn power switches to “OFF” for 3 minutes, allowing generators to completely empty.
2. Shut off inlet water.
3. Turn power switches to “ON” for 5 seconds to relieve pressure, then turn power switches back to “OFF”.
4. Unscrew two wing nuts that hold bracket until end of studs. (Figure 3).
5. Tilt the bracket with head assembly towards outside of cabinet. (Figure 4)
6. Turn each cartridge to the left to “OPEN” position, and pull it down to remove it.
7. Insert new cartridges to the head assembly and turn to right to “Locked” position.
8. Turn “ON” inlet water and check for leaks.
9. If leaks occur repeat Step 6 and 7.
10. Reinstall the bracket with head assembly back into the cabinet. Hand tighten the wing nuts.

Figure 3



Figure 4



FLUSH THE CARTRIDGES BEFORE USE

1. Turn the power switches to “ON” for about three minutes. Let the generators fill with water.
2. Turn the power switches to “OFF” for about three minutes, to completely empty the generators. System is now ready to use.

For replacement cartridges call 480-591-4073.

STAINLESS STEEL

To remove normal dirt, grease or product residue from stainless steel, use ordinary soap and water (*with or without detergent*) applied with a sponge or cloth. Dry thoroughly with a clean cloth. Never use vinegar or any corrosive cleaner.

To remove grease and food splatters or condensed vapours that have baked on the equipment, apply cleanser to a damp cloth or sponge and rub cleanser on the metal in the direction of the polishing lines on the metal. Rubbing cleanser as gently as possible in the direction of the polished lines will not mar the finish of the stainless steel. **NEVER RUB WITH A CIRCULAR MOTION.**

Soil and burnt deposits which do not respond to the above procedure can usually be removed by rubbing the surface with SCOTCH-BRITE scouring pads or **STAINLESS** scouring pads. **DO NOT USE ORDINARY STEEL WOOL** as any particles left on the surface will rust and further spoil the appearance of the finish. **NEVER USE A WIRE BRUSH, STEEL SCOURING PADS (EXCEPT STAINLESS), SCRAPER, FILE OR OTHER STEEL TOOLS.** Surfaces which are marred collect dirt more rapidly and become more difficult to clean. Marring also increases the possibility of corrosive attack. Refinishing may then be required.

REMOVE HEAT TINT

Darkened areas sometimes appear on the stainless steel surface where the area has been subjected to excessive heat. These darkened areas are caused by thickening of the protective surface of the stainless steel and are not harmful. Heat tint can normally be removed by the foregoing, but tint which does not respond to this procedure calls for a vigorous scouring in the direction of the polish lines using **SCOTCH-BRITE™** scouring pads or a **STAINLESS** scouring pad in combination with a powdered cleanser. Heat tint action may be lessened by not applying or by reducing heat to equipment during slack periods.

REMOVAL OF SCALE DEPOSITS

See Deliming Procedure in this manual.

TROUBLESHOOTING

**CAUTION**

Shut off main electrical power to unit.

EXTERIOR PANEL REMOVAL

Access to all internal plumbing and electrical assemblies is from the right side. The right-side panel is removed by removing the bottom screws from panel.

WATER FLOWS INTO COOKING COMPARTMENT

1. Probes not sensing water, thereby not operating fill solenoid.
2. Scale build-up on operating probe inside generator.
3. Water fill solenoid valve is not closed. Check for scale or foreign particles lodged in diaphragm or core tube of valve.

These problems are an indication of severe harmful water conditions which should be corrected immediately to avoid damage to the components and performance of the steamer.

DOOR LEAKS

1. Check for damage to door gasket.
2. Clogged compartment drain or plumbing.

WATER ACCUMULATES IN THE COMPARTMENT

1. Compartment drain clogged.

WATER FLOWS INTO DRAIN DURING SHUT DOWN

When steamer is shut down and cold water is running continuously into the open drain, solenoid valve(s) did not close when steamer was turned off.

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

WATER NOT BEING SUPPLIED TO GENERATOR

1. Water supply is "OFF".
2. Supply water pressure too low.
3. Defective water fill solenoid valve.
4. Defective level control board.
5. Shortage of circuit at operating probe and body.
6. Check that drain solenoid is closed.

HEATER ELEMENTS DO NOT COME ON

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

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

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

UNIT SHUTS DOWN WHILE IN OPERATION

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

DOOR GASKET REPLACEMENT

The cooking compartment door gaskets are made of a silicone-type rubber material that is very durable but subject to wear during normal operation. Should the gasket leak replace it.

1. Open the cooking compartment door.
2. Remove the four screws on the outside of the door frame, and remove the door panel assembly.
3. Remove the six screws from the gasket plate in the door panel assembly.
4. Remove the gasket plate and the door gasket from door panel.
5. Install the new door gasket to the door panel. Replace the gasket plate and six screws.
6. Reassemble the door panel assembly in the door frame using the four screws.
7. Gasket replacement is now complete.

Door may be difficult to close until gasket has compressed to conform to opening. Leaving door closed overnight will compress gasket.

NOTES

ETP-10E-CS Eco-Tech® Plus Electric Convection Steamer



A product with the Crown Steam name incorporates the best in durability and low maintenance. We all recognize, however, that replacement parts and occasional professional service may be necessary to extend the useful life of this appliance. When service is needed, contact a Crown Steam Authorized Service Agency, or your dealer. To avoid confusion, always refer to the model number, serial number, and type of your appliance.



CROWN FOOD SERVICE EQUIPMENT



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