

LOW TEMPERATURE COOKING AND HOLDING GUIDELINES

SIMPLE CONTROL OVENS



ALTO-SHAAM®



LOW TEMPERATURE COOKING AND HOLDING OVENS
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ALTO-SHAAM®

LOW TEMPERATURE COOKING INTRODUCTION



HALO HEAT®



Welcome to the cost saving convenience of Low Temperature Cooking.

In 1968, Alto-Shaam invented the first automatic, commercial cook and hold oven featuring the principle of Halo Heat. The heating method provided by Halo Heat low temperature cooking and holding ovens consists of an electric thermal cable that encircles the entire cooking and holding chamber. This creates a gentle blanket or HALO of radiant heat — surrounding food with a consistent and uniform temperature with no air movement inside the oven compartment. This gentle heating concept cooks at low temperatures and at a high level of humidity to preserve product moisture, flavor, and nutrition. Halo Heat ovens are designed to convert automatically from a cooking temperature to a holding temperature where the product can remain until it is ready to be served.

Halo Heat is an entirely different system of cooking. Utilizing this uniform heat source, Halo Heat dramatically reduces meat shrinkage; provides natural enzyme

(aging) action for more tender, flavorful meat; and preserves natural juices along with nutritional values in all foods. Halo Heat cooking reduces energy cost, cuts back on labor and handling, and solves kitchen space problems. There is no mechanical ventilation or oven hood necessary in most areas so the ovens can be moved wherever they are needed.

Read this booklet carefully. Halo Heat is a cooking system that requires minimal care once you have learned the basic principles. For best results with many products, we recommend you start your cooking cycle the evening before — for serving the next day. In many areas, off-peak power rates are also lower at night.

If anything you cook in a Halo Heat low temperature cooking and holding oven doesn't meet your highest standards of quality, please contact one of our food service professionals for help. Usually, only a minor change in procedure is required.

SECTION 1 - INTRODUCTION

LOW TEMPERATURE COOKING FACTS

MEAT AND NUTRITION

Meat plays a significant role in the diet; therefore, one of the primary goals in food preparation is proper nutrition. Meat is one of the best sources of protein; is a rich source of B vitamins such as thiamine, riboflavin, and niacin; and includes fats, carbohydrates, minerals, pigments, enzymes and water.

All of these elements are affected by cooking, but over-heating destroys many of them. Low temperature Halo Heat cooking helps preserve unstable, heat-sensitive vitamins and nutrients.

A report on the Nutrient Analysis of Roast Beef, conducted by the University of Wisconsin-Stout in July 1971, concluded, "...it is apparent that Alto-Shaam cooking method results in lower moisture losses. Even after a 24 hour holding period, the Alto-Shaam product is nutritionally equal to, and possibly better than beef roast cooked in a conventional oven and removed immediately after cooking."

Fat contributes greatly to the flavor of meat. During the cooking process, fat not only melts, but also changes chemically. With low temperature cooking there is less chemical change and less fat melt resulting in a more flavorful finished product.

The enzymes found in meat break down the tissues and act as natural tenderizing agents. A premium price is paid for aged meats where this enzyme action has already started, however; enzymes are destroyed by high temperatures.

Low temperature cooking does not destroy these enzymes and, particularly in the hold cycle, creates this natural chemical action to tenderize or age the meat right in the oven. For this reason, it is important to use fresh beef and it is essential to allow the product to remain in the hold cycle for at least the minimum amount of time suggested in the individual procedures. The longer meat is left in the hold cycle the more tender it becomes, making the purchase of more expensive, aged meat unnecessary.

Meat is seventy to seventy-five percent water. High temperatures cause this water to evaporate during cooking resulting in loss of product moisture. Cooking at low temperatures in a Halo Heat oven retains the maximum amount of water content resulting in a juicier finished product and an extended holding life.

Along with better nutrition, a more tender finished product, less shrinkage and higher moisture content, meat will not require the addition of as much salt as needed with conventional cooking methods. Natural flavors are preserved. This is a significant factor in today's health conscious diets.

LOW TEMPERATURE COOKING FACTS

SHRINKAGE CONTROL AND COOKING TIME

THERE ARE TWO MAJOR FACTORS CONTROLLING MEAT SHRINKAGE OR COOKING LOSSES.

1. Temperature at which meat is cooked:

The higher the temperature at which meat is cooked the more shrinkage will result. Over-cooked meat also results in higher losses. Higher temperatures and over-cooking draws moisture to the surface and this moisture evaporates or drips out of the meat.

2. Internal temperature of the meat:

Like over-cooking, as meat is brought to a higher internal temperature shrinkage is increased. For these two reasons, it is suggested most cuts of red meat be cooked at 250°F (121°C) and that all cooking be based on internal product temperature. The use of a thermometer is encouraged.

THERE ARE FOUR MAJOR FACTORS INVOLVED IN DETERMINING COOKING TIMES FOR MEAT:

1. The degree of aging on the meat:

Aged meat will cook faster, shrink more, and has a much shorter holding life than fresh meat.

2. Internal temperature before cooking:

Meat should be placed in a preheated oven directly from a refrigerated temperature of 38° to 40°F (3° to 4°C). Meat cooked from a frozen state will require approximately one and one-half to two times the normal cooking time. In addition, freezing ruptures tissue cells creating additional moisture loss during the cooking process and will result in more shrinkage.

3. Desired degree of doneness:

The higher the degree of internal temperature required, the longer the necessary cooking time. Cooking times in this guideline are based on the most popular internal product temperatures.

4. Quantity and quality of product.

TO CALCULATE MEAT SHRINKAGE

STARTING WEIGHT (Weight of Raw Product)
 -MINUS: ENDING WEIGHT (Weight of Cooked Product)
 EQUALS: AMOUNT OF SHRINKAGE

AMOUNT OF SHRINKAGE (Total Weight Lost in Cooking)
 ÷ DIVIDED BY: STARTING WEIGHT (Weight of Raw Product)
 EQUALS: PERCENT OF SHRINKAGE

EXAMPLE:	Raw Beef Roast:	100 lb	(45 kg)
	Cooked Beef Roast:	-95 lb	(-43 kg)
	= AMOUNT OF SHRINKAGE:	5.0 lb	(2 kg)

SHRINKAGE DIVIDED BY	0.05 = 5%	0.05 = 5%
STARTING WEIGHT: 100	5.0	45 2.0
EQUALS: PERCENT OF SHRINKAGE		

PREVENTING BACTERIA GROWTH

The surface of raw meat may become contaminated in processing, handling by the butcher or chef, or by other means. Food contamination can also be caused by unsanitary personal hygiene and work habits, unclean slicers, knives, and probes, or by faulty operational procedures. It is important, therefore, that

sanitary procedures be followed at all times during food preparation and handling. This is your main protection in guarding against food contamination. For additional information see the *Cleaning and Maintenance* section of this manual.

SECTION 1 - INTRODUCTION

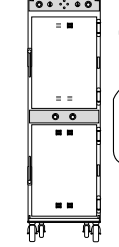
LOW TEMPERATURE COOKING FACTS

LABOR AND EQUIPMENT COST REDUCTION

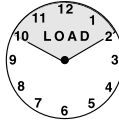
Halo Heat ovens are easy to operate and maintain. After the raw product is placed in the oven and the controls are set, there is no need to check, stir, or adjust the time or the temperature. Minimal time is spent attending the product during cooking. This advantage, combined with the automatic conversion to the hold cycle, frees key personnel to concentrate on other tasks including final product and presentation.

HALO HEAT REDUCES LABOR

LOAD OVEN
AT CLOSING



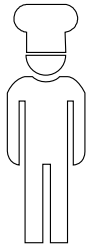
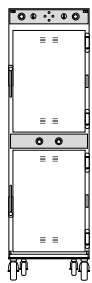
- PRODUCT CAN BE COOKED THE NIGHT BEFORE FOR SERVING THE NEXT DAY.
- COOKING TAKES PLACE OUTSIDE PEAK PREPARATION HOURS.
- PRODUCT DOES NOT NEED CHECKING.
- OFF-PEAK ELECTRICAL RATES ARE USED.
- KEY PERSONNEL CAN CONCENTRATE ON OTHER TASKS.



DISTRIBUTES WORK LOADS



REMOVE
ROASTS
NEXT
DAY



CARVE,
PLATE
AND
SERVE

When cooking in a Halo Heat oven at a temperature of 250°F (121°C), outside venting and expensive exhaust hoods are not necessary in most areas. Kitchens remain cooler, lowering energy costs by reducing the exchange of heated air. Because the ovens do not need outside venting, they can be put almost anywhere — in the corner of the kitchen, on a buffet line, or in a banquet room. The ovens can also be built into a counter or to save space, can be stacked in combination with another Halo Heat oven or holding cabinet of the same or similar dimensions.

Cooking at low temperatures also reduces cleaning time. Most food does not normally carbonize or burn on the interior of the oven.

HALO HEAT



500-TH SERIES
SINGLE COMPARTMENT
40 lb (18 kg) Capacity
Stackable Design



750-TH SERIES
SINGLE COMPARTMENT
100 lb (45 kg) Capacity
Stackable Design



1000-TH SERIES
SINGLE COMPARTMENT
120 lb (54 kg) Capacity
Stackable Design



1000-TH SERIES
DOUBLE COMPARTMENT
120 lb (54 kg) Capacity
per Compartment

SECTION 1 - INTRODUCTION

LOW TEMPERATURE COOKING FACTS

OPTIONS AND ACCESSORIES	500-TH-II	750-TH-II	1000-TH/II	1000-TH-I
Bumper, Full Perimeter (NOT AVAILABLE WITH 2-1/2 CASTERS)	5011161	5010371	5009767	5009767
Carving Holder PRIME RIB STEAMSHIP (CAFETERIA) ROUND	HL-2635 4459	HL-2635 4459	HL-2635 4459	HL-2635 4459
Casters - 2 RIGID, 2 SWIVEL W/BRAKE 5" (127mm) 3-1/2" (89mm) 2-1/2" (64mm)	5004862 STANDARD 5008022	5004862 STANDARD 5008022	5004862 STANDARD 5008022	5004862 STANDARD —
Door Lock with Key	LK-22567	LK-22567	LK-22567	LK-22567
Drip Pan STANDARD WITH DRAIN 1-7/16" (37mm) STANDARD WITH DRAIN 1-11/16" (43mm) STANDARD WITH DRAIN 1-7/8" (48mm) WITHOUT DRAIN, 1-7/16" (37mm) WITHOUT DRAIN, 1-7/8" (48mm) EXTRA DEEP, 4" (102mm)	14813 — — 11898 — —	— 14831 — — — —	— — 5005616 — 11906 15929	— — 5005616 — 11906 15929
Legs, 6" (152mm), Stemmed (SET OF FOUR)	5011149	5011149	5011149	5011149
Pan Grid, Wire - 18" x 26" PAN INSERT	—	PN-2115	PN-2115	PN-2115
Security Panel with key lock	5006787	5004750	5005776	5011592
Shelf, Stainless Steel FLAT WIRE, REACH-IN FLAT WIRE, PASS-THROUGH RIB RACK	SH-2326 SH-2326 —	SH-2324 SH-2327 SH-2743	SH-2325 SH-2346 SH-2773	SH-2325 SH-2346 SH-2773
Stacking Hardware	5004864	5004864	5004864	—

SMOKER OPTIONS AND ACCESSORIES	767-SK	1767-SK	1000-SK/II	1000-SK-I
Bumper, Full Perimeter (NOT AVAILABLE WITH 2-1/2 CASTERS)	5010371	5010371	5009767	5009767
Carving Holder PRIME RIB STEAMSHIP (CAFETERIA) ROUND	HL-2635 4459	HL-2635 4459	HL-2635 4459	HL-2635 4459
Casters - 2 RIGID, 2 SWIVEL W/BRAKE 5" (127mm) 3-1/2" (89mm) 2-1/2" (64mm)	5004862 STANDARD 5008022	STANDARD 5008017 —	5004862 STANDARD 5008022	STANDARD 5008017 —
Door Lock with Key	LK-22567	LK-22567	LK-22567	LK-22567
Drip Pan, WITH DRAIN, 1-11/16" (43mm) WITHOUT DRAIN, 1-7/8" (48mm) EXTRA DEEP, 4" (102mm)	— 14831 —	— 14831 —	5005616 11906 15929	5005616 11906 15929
Legs, 6" (152mm), Stemmed (SET OF FOUR)	5011149	5011149	5011149	5011149
Pan Grid, Wire - 18" x 26" PAN INSERT	PN-2115	PN-2115	PN-2115	PN-2115
Security Panel with key lock	5004750	5004750	5005776	5005776
Shelf, Stainless Steel FLAT WIRE, REACH-IN RIB RACK	SH-2324 SH-2743	SH-2324 SH-2743	SH-2325 SH-29474	SH-2325 SH-29474
Stacking Hardware	5004864	—	5004864	—
Wood Chips, bulk pack Apple 20 lb (9 kg) Cherry 20 lb (9 kg) Hickory 20 lb (9 kg) Maple 20 lb (9 kg)	WC-22543 WC-22541 WC-2829 WC-22545	WC-22543 WC-22541 WC-2829 WC-22545	WC-22543 WC-22541 WC-2829 WC-22545	WC-22543 WC-22541 WC-2829 WC-22545

SECTION 2 - OPERATION



GENERAL OPERATION - SIMPLE CONTROL OVENS

OVEN CHARACTERISTICS

The oven is equipped with a special, low-heat-density, heating cable. Through the **Halo Heat®** concept, the heating cable is mounted against the walls of the cooking and holding compartment to provide an evenly applied heat source, controlled by an oven sensor. The design and operational characteristics of the unit eliminates the need for a moisture pan or a heat circulating fan. Through even heat application, the food product is cooked evenly and provides the ability to hold foods for longer periods of time.

START-UP

1. *Before operating the oven*, clean both the interior and exterior of the unit with a damp cloth and any good commercial detergent at the recommended strength. Rinse surfaces by wiping with a sponge and clean warm water to remove all detergent residue. Wipe dry with a clean cloth or air dry.
2. *Wipe door gaskets* and control panel dry with a soft cloth.
3. *Clean and install* the oven side racks, oven shelves, and external drip tray. Shelves are installed with curved edge toward the back of the oven. Insert the drip pan on the interior bottom surface of the oven.
4. *Before operating* the unit with product, become familiar with the operation of the controls. Read the following "Control Description" and "Operation" section of this cooking guide and begin by operating the various control functions.

DANGER	
	AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.
	SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT. WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED

GENERAL OPERATION - SIMPLE CONTROL OVENS

1. Push power switch to ON (I) position.

Control will display 0°F or 0°C.

2. Set the holding temperature.

- Rotate the hold knob to the desired holding temperature. The set temperature will appear in the Digital Display **140F** and the Temperature Display Key will illuminate.
- The Holding Indicator Light will illuminate while in hold mode.
- Holding temperature range:
60° to 205°F (16 to 96°C)

3. Set the cooking temperature.

- Rotate the Cook Knob to the desired temperature. The set temperature will appear in the Digital Display **250F** and the Temperature Display Key will illuminate.
- The Cooking Indicator Light will illuminate while in cook mode.
- Cooking temperature range:
200° to 325°F (94 to 160°C)
- **Note:** Cooking mode not active unless timer is running.

4. Set timer for pre-heat.

- Press Up or Down Arrow Keys to adjust the pre-heat time.
- **Note:** Hold Time Cancel Key for 3 seconds when in cook mode to cancel time (display shows **----**).

5. PREHEAT oven for 30 minutes before loading food.

The Heat Indicator Light will illuminate and will remain lit as long as the oven is calling for heat.

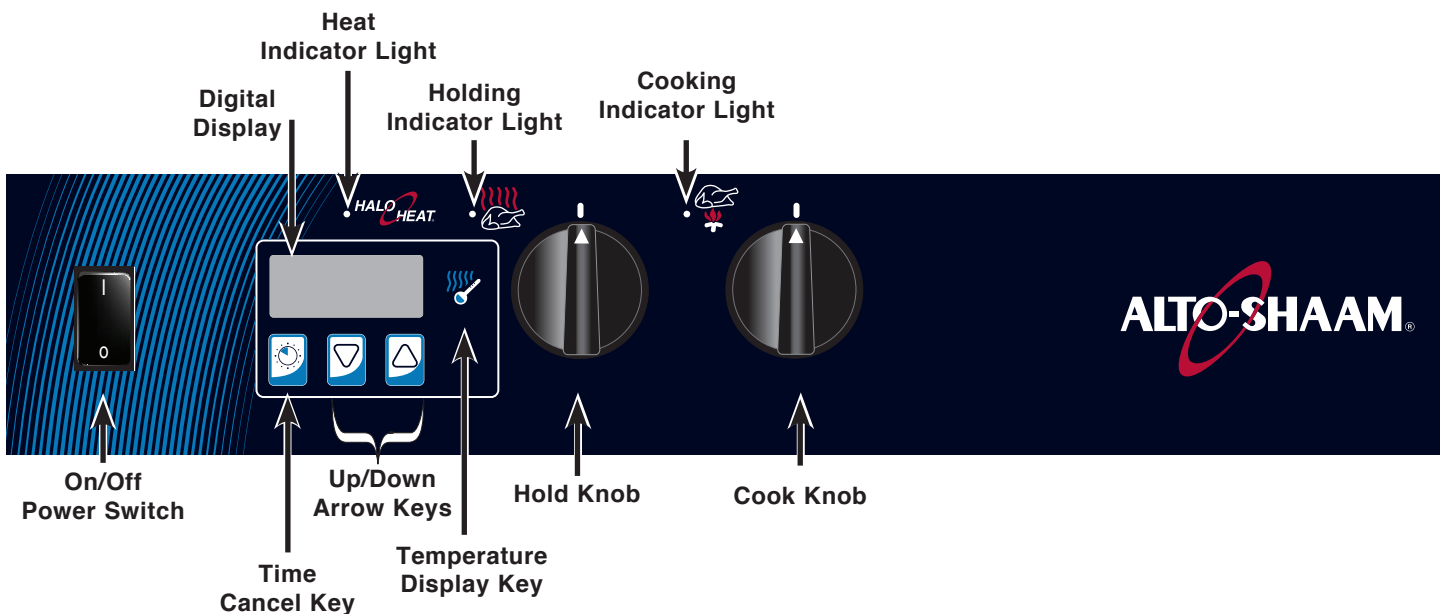
6. Load the oven with food.

7. Set time for cook.

Press Up or Down Arrow Keys to adjust the cook time.

Notes:

- When the oven temperature reaches the set temperature, the Heat Indicator Light will turn off.
- Press and hold the Temperature Display Key for 3 seconds at any time to display the actual oven temperature **190F**.



SECTION 2 - OPERATION

GENERAL OPERATION - SIMPLE CONTROL OVENS



CHEF OPERATING TIPS

1. For cooking specific products, refer to individual cook and hold instructions.
2. When cooking at 250°F (121°C), it takes approximately one hour for the cooking temperature to decrease to the selected holding temperature. During this one hour time period, the product will continue to cook.
3. The cooking times in this guide are based on meat taken directly from a refrigerated temperature of 38° to 40°F (3.3° to 4.4°C), and placed in a preheated oven. Adjustments must be made for cooking products at other than refrigerated temperatures.
4. Place the curved edge of the shelf toward the back of the oven.
5. Adjust the inside door vents as indicated in the individual cooking procedure selected.
6. It is recommended the oven door remain closed during the cooking cycle. Opening the door will only increase the length of time necessary to cook the product.
7. Puncturing an item with any sharp instrument may introduce bacteria inside the product. Avoid using a fork to handle products, and always use standard sanitary methods when handling any food item.
8. Use a thermometer to check the internal temperature of a product. Be certain to sanitize the thermometer before each use.
9. Aged meat will cook faster, shrink more, and cannot be held as long as fresh meat. Because of the tenderizing capabilities of the oven, aged meat or tenderizing agents such as M.S.G. are not necessary, and are not recommended.
10. When cooking full loads, never cook below the second shelf spacing from the bottom of the oven compartment.
11. Fully clean the oven interior, drip pan, shelves, and side racks on a daily basis.
12. Since there is no air movement inside the Halo Heat® low temperature cooking and holding oven, condensation will form on the inside of the door during operation and may leak out of the oven door vents. This is a normal operating condition, however; any condensation spilling on the floor should be periodically wiped as a safety precaution. There is an External Drip Tray included as standard with most ovens.
13. Insert drip pan directly on the bottom surface of the oven compartment.
14. Drip pan overflow is a condition caused by cooking some cuts of beef to an internal temperature in excess of 130°F (54°C). The External Drip Tray will help alleviate some of this overflow problem. There is also an extra large drip pan available as an option for the 1000-TH series ovens.
15. Overflow may also be caused by overloading the oven compartment. **DO NOT OVERLOAD THE OVEN.** Follow the recommended load capacities listed in each individual procedure.
16. For maximum product tenderizing and to reduce labor during peak preparation hours, overnight cook and hold is highly recommended for many products. Refer to individual cooking instructions.



NEED SOME HELP?

The Alto-Shaam staff includes corporate executive chefs who welcome questions. You are invited to contact anyone on our staff by phone (800.558.8744) or e-mail through the Contact Us section of our web site (www.alto-shaam.com) for help with any cook and hold procedure.

GENERAL OPERATION - SIMPLE CONTROL OVENS

DETERMINING IF PRODUCT IS SUFFICIENTLY COOKED

1. Insert a thermometer into the center of the product to determine if the correct internal temperature has been reached.

RED MEAT:

RARE: 130° to 135°F (54° to 57°C)

MEDIUM: 140° to 145°F (60° to 63°C)

WELL: 155° to 160°F (66° to 71°C)

2. When following the procedures in the individual product cooking instructions, additional cooking time should not be necessary. If, however, the required internal product temperature has not been reached after the product has remained in the HOLD cycle for the one hour minimum time period, additional cooking time may be added. Use the same COOK temperature set for the original cooking cycle until the correct internal temperature has been reached.

Always follow federal and local health (hygiene) codes for the time and internal temperature required for reheating products.

CARE AND CLEANING

1. Clean interior oven cavity, wire shelves, and drip pan daily, at the end of each cook and hold cycle.
2. Refer to Care and Cleaning instructions in Section 3.

In the United States, FDA food code requires products such as red meat to remain in "HOLD" for a specified time period. This holding time requirement is based on the internal product temperature desired for the finished product and includes the one hour time period while the oven decreases from the cooking temperature to the holding temperature and the product continues to cook.

REHEATING

1. Any over production must be removed from the oven, wrapped, rapidly chilled, and refrigerated.
2. Product can be removed from refrigerator, returned to the oven, and reheated the next day.
3. Products must be reheated at a temperature range of 250° to 275°F (121° to 135°C). Refer to individual cooking instructions for the correct thermostat setting for the product being reheated.
4. Length of time necessary to reheat a product depends on the type of product and the quantity to be reheated. Time should be based on internal product temperature. Use a pocket thermometer to determine the internal product temperature of the reheated product.

United States food code requirements indicate cooked foods that have been cooled, followed by reheating for hot food holding, must be reheated to 165°F (74°C). The temperature of 165°F (74°C) must be maintained for a period 15 seconds.

INTERNAL PRODUCT TEMPERATURE	TIME* IN HOLD CYCLE REQUIRED BY FOOD CODE
130°F (54°C)	1 HOUR, 52 MINUTES
131°F (55°C)	1 HOUR, 29 MINUTES
133°F (56°C)	56 MINUTES
135°F (57°C)	36 MINUTES
136°F (58°C)	28 MINUTES
138°F (59°C)	18 MINUTES
140°F (60°C)	12 MINUTES
142°F (61°C)	8 MINUTES
144°F (62°C)	5 MINUTES
145°F (63°C)	4 MINUTES
147°F (64°C)	2 MINUTES, 14 SECONDS
149°F (65°C)	1 MINUTES, 25 SECONDS
151°F (66°C)	54 SECONDS
153°F (67°C)	34 SECONDS
155°F (68°C)	22 SECONDS
157°F (69°C)	14 SECONDS
158°F (70°C)	0 SECONDS
*HOLDING TIME MAY INCLUDE POST-OVEN HEAT RISE	

SECTION 3 - CLEANING AND MAINTENANCE

CLEANING AND MAINTENANCE

PROTECTING STAINLESS STEEL SURFACES



It is important to guard against corrosion in the care of stainless steel surfaces. Harsh, corrosive, or inappropriate chemicals can completely destroy the protective surface layer of stainless steel. Abrasive pads, steel wool, or metal implements will abrade surfaces causing damage to this protective coating and will eventually result in areas of corrosion. Even water, particularly hard water that contains high to moderate concentrations of chloride, will cause oxidation and pitting that result in rust and corrosion. In addition, many acidic foods spilled and left to remain on metal surfaces are contributing factors that will corrode surfaces.



Proper cleaning agents, materials, and methods are vital to maintaining the appearance and life of this appliance. Spilled foods should be removed and the area wiped as soon as possible but at the very least, a minimum of once a day. Always thoroughly rinse surfaces after using a cleaning agent and wipe standing water as quickly as possible after rinsing.

CLEANING AGENTS

Use non-abrasive cleaning products designed for use on stainless steel surfaces. Cleaning agents must be chloride-free compounds and must not contain quaternary salts. Never use hydrochloric acid (muriatic acid) on stainless steel surfaces. Always use the proper cleaning agent at the manufacturer's recommended strength. Contact your local cleaning supplier for product recommendations.

CLEANING MATERIALS

The cleaning function can usually be accomplished with the proper cleaning agent and a soft, clean cloth. When more aggressive methods must be employed, use a non-abrasive scouring pad on difficult areas and make certain to scrub with the visible grain of surface metal to avoid surface scratches. Never use wire brushes, metal scouring pads, or scrapers to remove food residue.

 CAUTION	
	TO PROTECT STAINLESS STEEL SURFACES, COMPLETELY AVOID THE USE OF ABRASIVE CLEANING COMPOUNDS, CHLORIDE BASED CLEANERS, OR CLEANERS CONTAINING QUATERNARY SALTS. NEVER USE HYDROCHLORIC ACID (MURIATIC ACID) ON STAINLESS STEEL. NEVER USE WIRE BRUSHES, METAL SCOURING PADS OR SCRAPERS.
	
	

SECTION 3 - CLEANING AND MAINTENANCE

CLEANING AND MAINTENANCE

EQUIPMENT CARE

Under normal circumstances, this oven should provide you with long and trouble free service. There is no preventative maintenance required, however, the following Equipment Care Guide will maximize the potential life and trouble free operation of this oven.



The cleanliness and appearance of this equipment will contribute considerably to operating efficiency and savory, appetizing food. Good equipment that is kept clean works better and lasts longer.

CLEAN DAILY

1. Disconnect unit from power source, and let cool.
2. Remove all detachable items such as wire shelves, side racks, and drip pans. Clean these items separately.
3. Wipe the interior metal surfaces of the oven with a paper towel to remove loose food debris.
4. Clean the interior metal surfaces of the cabinet with a damp clean cloth or sponge and any good commercial detergent.



NOTE: Avoid the use of abrasive cleaning compounds, chloride based cleaners, or cleaners containing quaternary salts. Never use hydrochloric acid (muriatic acid) on stainless steel.

5. Spray heavily soiled areas with a water soluble degreaser and let stand for 10 minutes, then remove soil with a plastic scouring pad.
6. Wipe control panel, door vents, door handles, and door gaskets thoroughly since these areas harbor food debris.
7. Rinse surfaces by wiping with sponge and clean warm water.

8. Remove excess water with sponge and wipe dry with a clean cloth or air dry. Leave doors open until interior is completely dry. Replace side racks and shelves.
9. Wipe door gaskets and control panel dry with a clean, soft cloth.
10. Interior can be wiped with a sanitizing solution after cleaning and rinsing. This solution must be approved for use on stainless steel food contact surfaces.
11. To help maintain the protective film coating on polished stainless steel, clean the exterior of the cabinet with a cleaner recommended for stainless steel surfaces. Spray the cleaning agent on a clean cloth and wipe with the grain of the stainless steel.
12. Clean any glass with a window cleaner.

Always follow appropriate state or local health (hygiene) regulations regarding all applicable cleaning and sanitation requirements for equipment.

CLEAN THE DOOR VENTS



Door vents need to be inspected and cleaned as required.



CHECK OVERALL CONDITION OF OVEN ONCE A MONTH

Check the oven once a month for physical damage and loose screws. Correct any problems before they begin to interfere with the operation of the oven.

DO NOT USE OVEN IF CONTROLS ARE NOT PROPERLY FUNCTIONING

Refer to the Trouble Shooting Guide located in this manual or call an authorized service technician.

 DANGER	
	DISCONNECT UNIT FROM POWER SOURCE BEFORE CLEANING OR SERVICING.

DANGER	
	AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.
	SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT. WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED

SECTION 4 - COOKING GUIDELINES

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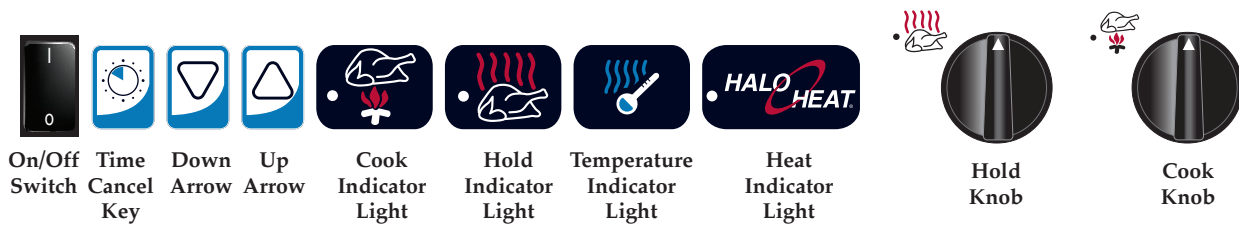
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SECTION 4 - BEEF, LAMB, VEAL

PRODUCT SPECIFICATIONS AND PREPARATION



1. Push ON/OFF power switch to ON.
2. Rotate HOLD KNOB to desired temperature.
3. Rotate COOK KNOB to desired temperature.
4. Press UP/DOWN ARROW keys to set time.
5. Preheat oven for 30 minutes.
6. Load oven with food.

PRODUCT >	BEEF BRISKET	BEEF SHORT RIBS	BEEF STRIPLOIN
SIZE OF MEAT	Beef Brisket, Fresh, 9-13 lbs (4 to 6 kg)	Short Ribs, 10 to 12 oz. pieces	Short-Cut, Boneless: 8-12 lb (4 to 5 kg)
INSTRUCTIONS	Season brisket and wrap individually in clear plastic wrap for cooking. Place wrapped brisket directly on wire shelves.	Season as desired. Place ribs side-by-side in pans. For an overnight cook and hold, cover pans loosely with clear plastic wrap to retain additional product moisture.	Season as desired. Place roasts directly on the wire shelves with fat side down. Place larger roasts toward the top of the oven compartment.
SUGGESTED PAN	None	Sheet Pan	None
NO. OF SHELVES			
500	3	3	2
750	2	3	2
1000	3	None	3
ITEMS PER SHELF			
500	1 roast	1 half-size sheet pan	2 roasts
750	3-4 roasts	1 full-size sheet pan	4 roasts
1000	2-3 roasts	1 full-size sheet pan	3 roasts
MAX. CAPACITY			
500	3 roasts up to 40 lbs (18 kg)	3 half-size sheet pans	4 roasts up to 40 lb (18 kg)
750	6-8 roasts up to 100 lbs (45 kg)	3 full-size sheet pans	8 roasts up to 100 lb (45 kg)
1000	6-9 roasts up to 100 lbs (45 kg)	4 full-size sheet pans	9 roasts up to 100 lb (45 kg)
VENT POSITION	One-half open	One-half open	One-half open
COOK TEMP.	250°F (121°C)	250°F (121°C)	250°F (121°C)
HOLD TEMP.	160°F (71°C)	160°F (71°C)	140°F (60°C)
COOK TIME	20 min/lb for first roast (44min/kg) plus 30 minutes each additional roast.	3 hours for the first pan plus 30 minutes for each additional pan.	8 to 10 lb roasts (4 to 4,5 kg): 8 minutes per pound for the first roast (18 minutes per kilogram) plus add 8 minutes for each additional roast. 12 lb roasts (5 kg): 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 8 minutes for each additional roast.
MIN. HOLD TIME	6 hours	6 hours	4 hours
MAX. HOLD TIME	24 hours	18 hours	12 hours
OVERNIGHT COOK/HOLD	Highly recommended	Required	Optional
FINAL INTERNAL TEMPERATURE	165°F (73°C)	170° to 190°F (77° to 88°C)	130°F (54°C) Rare
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - BEEF, LAMB, VEAL

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	CORNED BEEF	PRIME RIB	PRIME RIB SPECIAL
SIZE OF MEAT	9 to 12 lb (4 to 5 kg)	Beef Rib, Roast Ready, with Fat Cap, #109: 20 lb (9 kg) Average Weight	Beef Rib, Roast Ready Special, Tied: 14 to 18 lb (6 to 8 kg) Average Weight
INSTRUCTIONS	Leave the corned beef in the original plastic bag and place the corned beef bag directly on the wire shelf.	Season as desired. Place roasts directly on wire shelves with the larger roasts toward the top of the oven compartment.	Season as desired. Place roasts directly on wire shelves with the larger roasts toward the top of the oven compartment.
SUGGESTED PAN	None	None	None
NO. OF SHELVES 500 750 1000	2 2 3	2 2 3	2 2 3
ITEMS PER SHELF 500 750 1000	2 roasts 3 to 4 roasts 2 to 3 roasts	1 roast 3 roasts 2 roasts	1 roast 3 roasts 2 roasts
MAX. CAPACITY 500 750 1000	4 roasts up to 40 lb (18 kg) 6 to 8 roasts up to 100 lb (45 kg) 6 to 9 roasts up to 100 lb (45 kg)	2 roasts - 40 lb (18 kg) 6 roasts - 120 lb (54 kg) 6 roasts - 120 lb (54 kg)	2 roasts 36 lb (16 kg) 6 roasts 100 lb (45 kg) 6 roasts 100 lb (45 kg)
VENT POSITION	One-half open	One-half open	One-half open
COOK TEMP	250°F (121°C)	250°F (121°C)	250°F (121°C)
HOLD TEMP	160°F (71°C)	140°F (60°C)	140°F (60°C)
COOK TIME	20 minutes per pound for the first corned beef (44 minutes per kilogram) plus add 30 minutes for each additional corned beef.	10 minutes per pound for the first roast (22 minutes per kilogram) plus add 30 minutes for each additional roast.	10 minutes per pound for the first roast (22 minutes per kilogram) plus add 15 minutes for each additional roast.
MIN. HOLD TIME	6 or more hours	4 to 6 hours	4 or more hours
MAX. HOLD TIME	24 hours	24 hours	24 hours
OVERNIGHT COOK/HOLD	Required	Highly Recommended	An overnight cook and hold can be done with this cut.
FINAL INTERNAL TEMPERATURE	175°F (79°C)	130°F (54°C) Rare	130°F (54°C) RARE
ADDITIONAL INFORMATION	If desired corn beef can be removed from the bag and wrapped in clear plastic wrap for cooking.	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - BEEF, LAMB, VEAL

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	RIBEYE	BEEF ROUND	BEEF ROUND (CAFETERIA OR STEAMSHIP)
SIZE OF MEAT	Beef Ribeye Roll, Lip On, #112A: 8 to 12 lb (3 to 5 kg)	Beef Round, Top (Inside), Untrimmed: 14 to 23 lb (6 to 10 kg) Beef Round, Bottom (Gooseneck), Untrimmed: 14 to 23 lb (6 to 10 kg)	Any one of a variety of beef rounds used for carving on a buffet line. May be bone-in or boneless and may have a handle on or off as required. WEIGHT RANGE: 40 to 50 lb (18 to 23 kg) 50 to 80 lb (23 to 36 kg)
INSTRUCTIONS	Season as desired. Place roasts directly on the wire shelves, fat side down. Place larger roasts toward the top of the oven compartment.	Season as desired. Place roasts directly on wire shelves with fat side down. Place larger roasts toward the top of the oven compartment.	Meat should be at a refrigerated internal temperature of 38° to 40°F (3 to 4°C) when placed in a preheated oven.
SUGGESTED PAN	None	None	none
NO. OF SHELVES 500 750 1000	2 2 3	1 or 2 2 3	1 1 1
ITEMS PER SHELF 500 750 1000	2 roasts 3 roasts 3 roasts	1: 23 lb (6 kg) or 2: 14 lb (10 kg) roasts 3: 23 lb (6 kg) or 4: 14 lb (10 kg) roasts 2: 23 lb (6 kg) or 3: 14 lb (10 kg) roasts	1 roast 1-2 roasts 1-2 roasts
MAX. CAPACITY 500 750 1000	4 roasts up to 40 lb (18 kg) 6 roasts up to 100 lb (45 kg) 9 roasts up to 100 lb (45 kg)	2 lg. or 4 sm. roasts up to 40 lb (18 kg) 6 roasts up to 100 lb (45 kg) 6 lg. or 9 sm. roasts up to 100 lb (45 kg)	40 lb (18 kg) up to 80 lb (36 kg) up to 80 lb (36 kg)
VENT POSITION	One-half open	One-half open	One-half open
COOK TEMP	250°F (121°C)	250°F (121°C)	250°F (121°C)
HOLD TEMP	140°F (60°C)	140°F (60°C)	150°F (66°C)
COOK TIME	8 to 11 lb (4 to 5 kg) ROASTS: 8 minutes per pound for the first roast (18 minutes per kilogram) plus add 10 minutes for each additional roast. 12 lb (5 kg) ROASTS: 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 10 minutes for each additional roast.	14 lb (6 kg) roasts: 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 15 minutes for each additional roast. 15 to 23 lb (7 to 10kg) roasts: 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 30 minutes for each additional roast.	40 to 49 lb (18 to 22 kg) ROASTS: 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 15 minutes for a second roast. 50 to 80 lb (23 to 36 kg) ROASTS: ONE ROAST ONLY — 7 minutes per pound (15 minutes per kilogram)
MIN. HOLD TIME	4 hours	14 lb (6 kg) roasts: 4 to 6 hours 15 to 23 lb (7 to 10 kg) roasts: 8-10 hrs.	40 to 49 lb (18 to 22 kg) ROASTS: 6 to 8 hours 50 to 80 lb (23 to 36 kg) ROASTS: 8 to 12 hours
MAX. HOLD TIME	12 hours	14 lb (6 kg) roasts: 12 hours 15 to 23 lb (7 to 10 kg) roasts: 24 hours	24 hours
OVERNIGHT COOK/HOLD	Optional	Optional for smaller roasts. Highly recommended for larger cuts.	Required
FINAL INTERNAL TEMPERATURE	130°F (54°C) RARE	130°F (54°C) Rare	138°F (59°C) RARE
ADDITIONAL INFORMATION	—	Do not overload the oven.	When cooking these large roasts, reinforce the shelf support by using two wire shelves in one shelf bracket.

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - BEEF, LAMB, VEAL

PRODUCT SPECIFICATIONS AND PREPARATION

ITEM >	TENDERLOIN	VEAL LOIN	RECIPE
SIZE OF MEAT	Beef Loin, Full Tenderloin, Side Muscle Off, Skinned: 4 to 6 lb (2 to 3 kg)	Veal Loin, Trimmed: 8 to 10 lb (4 to 5 kg)	
INSTRUCTIONS	Season as desired. Place tenderloins directly on wire shelves.	Season as desired and place directly on wire shelves.	
SUGGESTED PAN	none	none	
NO. OF SHELVES 500 750 1000	2 3 3	2 2 3	
ITEMS PER SHELF 500 750 1000	3 tenderloins 5 tenderloins 5 tenderloins	2 roasts 4 roasts 3 roasts	
MAX. CAPACITY 500 750 1000	6 tenderloins 15 tenderloins 15 tenderloins	4 roasts 8 roasts 9 roasts	
VENT POSITION	One-half open	One-half open	
COOK TEMP.	250° to 275°F (121° to 135°C)	250°F (121°C)	
HOLD TEMP.	140°F (60°C)	140°F (60°C)	
COOK TIME	FULL LOAD TO RARE: 1 hour	12 minutes per pound for the first roast (26 minutes per kilogram) plus add 20 minutes for each additional roast.	
MIN. HOLD TIME	1 hour	1 hour	
MAX. HOLD TIME	6 hours	10 hours	
OVERNIGHT COOK/HOLD	Not Recommended	Not Recommended	
FINAL INTERNAL TEMPERATURE	130°F (54°C) RARE	140°F (60°C) MEDIUM RARE	
ADDITIONAL INFORMATION	—	—	

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - BEEF, LAMB, VEAL

PRODUCT SPECIFICATIONS AND PREPARATION

ITEM >	LAMB, LEG	LAMB RACKS (FRENCHED)	RECIPE
SIZE OF MEAT	Lamb Leg, Boneless, Tied: 8 to 11 lb (4 to 5 kg)	Lamb Rack, Roast Ready, Single, Frenched: 7-bone	
INSTRUCTIONS	Season as desired and place directly on wire shelves.	Season as desired. Place racks on sheet pans with icing racks inserted in pans.	
SUGGESTED PAN	None	Sheet pan	
NO. OF SHELVES 500 750 1000	2 2 3	4 4 none	
ITEMS PER SHELF 500 750 1000	2 roasts 6 roasts 4 roasts	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	
MAX. CAPACITY 500 750 1000	4 roasts up to 40 lb (18 kg) 12 roasts up to 100 lb (45 kg) 12 roasts up to 100 lb (45 kg)	4 half-size sheet pans 4 full-size sheet pans 4 full-size sheet pans	
VENT POSITION	One-half open	One-half open	
COOK TEMP	250°F (121°C)	250°F (121°C)	
HOLD TEMP	RARE: 140°F (60°C) MEDIUM RARE: 140°F (60°C) MEDIUM: 150°F (66°C) MEDIUM WELL: 160°F (71°C) WELL: 160°F (71°C)	160°F (71°C)	
COOK TIME	10 minutes per pound for the first roast (22 minutes per kilogram) plus add 15 minutes for each additional roast.	1-1/2 hours Full Load	
MIN. HOLD TIME	2 hours	1 Hour	
MAX. HOLD TIME	10 hours	4 Hours	
OVERNIGHT COOK/HOLD	Optional	Not Recommended	
FINAL INTERNAL TEMPERATURE	RARE: 130°F (54°C) MEDIUM RARE: 135°F (57°C) MEDIUM: 145°F (63°C) MEDIUM WELL: 150°F (66°C) WELL: 160°F (71°C)	135° to 140°F (57° to 60°C)	
ADDITIONAL INFORMATION	—	—	

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - PORK, PROCESSED MEATS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PORK LEG, FRESH	HAM - CURED AND SMOKED	PORK CHOPS
SIZE OF MEAT	Pork Leg, Fresh: 14 to 17 lb (6 to 8 kg)	Ham, Boneless, Skinless, Cured and Smoked: 10 to 14 lb (4,5 to 6 kg)	Pork Loin Chops: 3 to 8 oz (85 to 227 grams) approximate weight range. Pork Loin Rib Chops with Pocket (STUFFED): 5 to 8 oz (142 to 227 grams) approximate weight range. Thickness: 1" to 1-1/2" (25 to 38 mm)
INSTRUCTIONS	Season as desired and place directly on wire shelves.	Place ham directly on wire shelves for cooking.	Season as desired. Place chops side-by-side on sheet pans.
SUGGESTED PAN	None	None	Sheet Pan
NO. OF SHELVES 500 750 1000	2 2 3	2 2 3	4 4 None
ITEMS PER SHELF 500 750 1000	2 pork legs 2-4 pork legs 2-3 pork legs	2 hams 4 hams 3 hams	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan
MAX. CAPACITY 500 750 1000	4 pork legs up to 40 lb (18 kg) 4 to 8 pork legs up to 100 lb (45 kg) 6 to 9 pork legs up to 100 lb (45 kg)	4 hams up to 40 lb (18 kg) 8 hams up to 100 lb (45 kg) 9 hams up to 100 lb (45 kg)	4 half-size sheet pans 4 full-size sheet pans 5 full-size sheet pans
VENT POSITION	One-half open	One-half open	One-half open
COOK TEMP	250° to 275°F (121° to 135°C)	250° to 275°F (121° to 135°C)	250°F (121°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)	160°F (71°C)
COOK TIME	12 minutes per pound for the first pork leg (26 minutes per kilogram) plus add 30 minutes for each additional pork leg	12 minutes per pound for the first ham (26 minutes per kilogram) plus add 30 minutes for each additional ham.	3-1/2 hours Full Load
MIN. HOLD TIME	2 hours	1 to 2 hours	1-1/2 hours
MAX. HOLD TIME	10 hours	10 hours	6 to 8 hours
OVERNIGHT COOK/HOLD	Optional	Optional	Not Recommended
FINAL INTERNAL TEMPERATURE	160°F (71°C)	160°F (71°C)	160° to 170°F (71° to 77°C)
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - PORK, PROCESSED MEATS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PORK LOIN	PORK SHOULDER	PORK RIBS
SIZE OF MEAT	Pork Loin, Boneless, Tied: 8 to 10 lb (4 to 5 kg)	Pork Shoulder, Boston Butt, Boneless: 8 to 10 lb (4 to 5 kg)	Spareribs: 1-1/2 down (38 kg or less) Pork Loin, Back Ribs (BABY BACK RIBS): 1-1/2 down (38 kg or less)
INSTRUCTIONS	Season as desired and place roasts directly on wire shelves for cooking.	Season as desired and place in pans.	Ribs can be cooked from frozen or thawed. Season as desired. Place ribs on sheet pans, slightly overlapping and cover with clear plastic wrap only if cooking overnight. If desired, barbecue sauce can be included with initial seasoning to allow it to cook into the ribs.
SUGGESTED PAN	None	Hotel Pan	Sheet Pan
NO. OF SHELVES 500 750 1000	2 3 3	2 None 3	3 4 None
ITEMS PER SHELF 500 750 1000	2 roasts 3 roasts 3 roasts	2 roasts per pan / 2 pans 2 roasts per pan / 2 pans 2 roasts per pan / 2 pans	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan
MAX. CAPACITY 500 750 1000	4 roasts up to 40 lb (18 kg) 9 roasts up to 100 lb (45 kg) 9 roasts up to 100 lb (45 kg)	4 roasts up to 40 lb (18 kg) 10 roasts up to 100 lb (45 kg) 12 roasts up to 100 lb (45 kg)	3 half-size sheet pans approx. 20 lb (9 kg) 4 full-size sheet pans 5 full-size sheet pans
VENT POSITION	One-half open	One-half open	One-half open
COOK TEMP	250° to 275°F (121° to 135°C)	250°F (121°C)	250°F (121°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)	160°F (71°C)
COOK TIME	15 minutes per pound for the first roast (33 minutes per kilogram) plus add 30 minutes for each additional roast.	20 minutes per pound for the first roast (33 minutes per kilogram) plus add 30 minutes for each additional roast.	THAWED RIBS: 2-1/2 to 3-1/2 hours FROZEN RIBS: 3-1/2 to 4-1/2 hours Full Load
MIN. HOLD TIME	2 hours	2 hours	1-1/2 hours
MAX. HOLD TIME	12 hours	12 hours	12 hours
OVERNIGHT COOK/HOLD	Highly Recommended	Highly Recommended	Optional
FINAL INTERNAL TEMPERATURE	155° to 165°F (68° to 74°C)	165° to 170°F (74° to 77°C)	160° to 170°F (71° to 77°C) Well Done
ADDITIONAL INFORMATION	—	—	Additional barbecue sauce can be added after completing the hold cycle. Heat sauce to 150°F (66°C) and coat ribs just before serving.

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - PORK, PROCESSED MEATS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PIG, WHOLE	PROCESSED MEATS	RECIPE
SIZE OF MEAT	33 lb. whole pig	Sausage, Fresh: Any of a variety of processed meat product including brat-wurst, Polish sausage, breakfast links, smoked sausage, hot dogs, etc.	
INSTRUCTIONS	Bend hind legs under the pig so that it sits on the shelf. Brush with caramel color and season.	Place sausage side-by-side on sheet pans. Add a sufficient amount of hot water so that it just covers the bottom of each pan. Cover each pan with clear plastic wrap.	
SUGGESTED PAN	None	Sheet Pan	
NO. OF SHELVES 500 750 1000	— 1 2	4 5 None	
ITEMS PER SHELF 500 750 1000	— 1 1	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	
MAX. CAPACITY 500 750 1000	— 1 1	4 half-size sheet pans 5 full-size sheet pans 8 full-size sheet pans	
VENT POSITION	Open Full	Open Full	
COOK TEMP	250°F (121°C)	250°F (121°C)	
HOLD TEMP	160°F (71°C)	160°F (71°C)	
COOK TIME	5 hours	1-1/2 to 2 hours Full Load	
MIN. HOLD TIME	none	none	
MAX. HOLD TIME	12 hours	6 hours	
OVERNIGHT COOK/HOLD	Required	Not Recommended	
FINAL INTERNAL TEMPERATURE	167°F (75°C)	170°F (77°C)	
ADDITIONAL INFORMATION	Reheating time: 250°F (121°C) 5 hours	For precooked sausage, follow the same time and temperature settings as fresh sausage. Cooking time for a precooked sausage will vary, particularly for less than full loads. When heating a full load of precooked sausage, check the internal product temperature after approximately one (1) hour of cooking time.	

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - POULTRY AND FISH

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	CHICKEN, PIECES AND HALVES	CHICKEN, WHOLE	RECIPE
SIZE OF MEAT	2-1/2 to 2-3/4 lb (1,1 to 1,2 kg) avg. wt.	2-1/4 to 2-3/4 lb (1 to 1,2 kg)	
INSTRUCTIONS	Clean chicken and remove excess fat. Brush chicken with oil, butter or margarine (OPTIONAL). Season as desired and sprinkle with paprika.	Clean chicken and remove excess fat. Brush chicken with oil, butter or margarine (OPTIONAL). Season as desired and sprinkle with paprika. For better whole bird appearance, fold chicken wings and tuck under the back of the bird. Make a slit in the skin of the chicken (lower end of the bird), cross chicken legs and insert both legs through the slit.	
SUGGESTED PAN	Sheet Pan	Sheet Pan	
NO. OF SHELVES 500 750 1000	3 3 None	2 2 None	
ITEMS PER SHELF 500 750 1000	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	4 chickens 9 chickens 9 chickens	
MAX. CAPACITY 500 750 1000	18 halves or 60 pieces, 3 half-size sheet pans 36 halves or 120 pieces, 3 full-size sheet pans 48 halves or 160 pieces 4 full-size sheet pans	8 chickens - 2 half-size sheet pans 18 chickens - 2 full-size sheet pans 27 chickens - 3 full-size sheet pans	
VENT POSITION	Open Full	Open Full	
COOK TEMP	275° to 300°F (135° to 149°C)	275° to 300°F (135° to 149°C)	
HOLD TEMP	160°F (71°C)	160°F (71°C)	
COOK TIME	2-1/2 to 3 hours Full Load	3 to 3-1/2 hours Full Load	
MIN. HOLD TIME	30 minutes	1 hour	
MAX. HOLD TIME	8 hours*	8 to 10 hours	
OVERNIGHT COOK/HOLD	Not Recommended	Optional*	
FINAL INTERNAL TEMPERATURE	185°F (85°C)	185°F (85°C)	
ADDITIONAL INFORMATION	*When holding longer than 30 minutes, cover chickens with clear plastic wrap.	* When cooking and holding overnight, cover the pans of raw chicken with clear plastic wrap for cooking. Set cooking thermostat to 250°F (121°C) for 4 hours. If barbecue sauce is desired, heat sauce to 150°F (66°C) and coat chicken approximately 1 hour before serving.	

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - POULTRY AND FISH

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	CHICKEN, FRIED (TWO-STEP METHOD*)	CORNISH HENS	DUCK, WHOLE
SIZE OF MEAT	2-1/2 to 2-3/4 lb (1,1 to 1,2 kg) fryer, 8 piece cut	12 oz (340 grams) each	4 to 5 lb (2 kg)
INSTRUCTIONS	Clean chicken and remove all excess fat. Soak chicken in cold, salted water for 15 minutes, drain, and dredge in dry breading. Coat pans with vegetable release spray. Place chicken side-by-side on pans — separating breasts and wings from legs and thighs. Cover chicken loosely with clear plastic wrap.	Clean hens and remove excess fat. Fold wings and tuck under the back of the bird. Make a slit in the skin of the hen (lower end of bird), cross hen legs and insert both legs through the slit. Brush hens with oil, butter, or margarine (OPTIONAL). Season as desired and sprinkle with paprika. Space evenly on sheet pans.	Season as desired. Rub with oil and paprika and place directly on wire shelves.
SUGGESTED PAN	Sheet Pan	Sheet Pan	None
NO. OF SHELVES			
500	3	2	2
750	3	3	2
1000	None	None	3
ITEMS PER SHELF			
500	1 half-size sheet pan	1 half-size sheet pan, 9 hens per pan	3 ducks
750	1 full-size sheet pan	1 full-size sheet pan, 18 hens per pan	6 ducks
1000	1 full-size sheet pan	1 full-size sheet pan, 18 hens per pan	4 ducks
MAX. CAPACITY			
500	18 halves or 60 pieces, 3 half-size pans	2 half-size sheet pans, 18 cornish hens	6 ducks
750	36 halves or 120 pieces, 3 full-size pans	3 full-size sheet pans, 54 cornish hens	12 ducks
1000	48 halves or 160 pieces, 4 full-size pans	4 full-size sheet pans, 72 cornish hens	12 ducks
VENT POSITION	One-Half Open	Open Full	Open Full
COOK TEMP	275°F (135°C)	275°F (135°C)	300°F (149°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)	160°F (71°C)
COOK TIME	2-1/2 to 3 hours - Full Load	3 to 3-1/2 hours - Full Load	2-1/2 to 3 hours - Full Load
MIN. HOLD TIME	none	1 hour	1 hour
MAX. HOLD TIME	4 hours	4 to 6 hours	8 hours
OVERNIGHT COOK/HOLD	Not Recommended	Not Recommended	Not Recommended
FINAL INTERNAL TEMPERATURE	180°F (79°C)	175°F (79°C)	185° to 190°F (85° to 88°C)
ADDITIONAL INFORMATION	See below	—	—
<p>The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.</p>			

*TWO-STEP FRIED CHICKEN

The two-step method consists of precooking the chicken in a low temperature oven to retain the product moisture, then adding the crisp, fried appearance by inserting the product in a fryer for a very short period of time. This method can be used with product directly from the oven or the product can be precooked and fried directly from refrigerated storage. With the two-step method the chicken will be moist, flavorful, plump and golden brown. Shrinkage will be low and shortening in the fryer will last much longer.

FRYING DIRECTLY FROM THE OVEN

1. Preheat fryer to 335°F (168°C).
2. If heavier or crisper breading is desired, remove required portion of chicken from the oven and dredge in fresh breading.
3. Drop chicken in fryer for three minutes or until chicken is golden brown.
4. Chicken can be fried per customer order or in larger quantities. When frying larger quantities, place fried pieces on a sheet pan with wire grid insert and place pans in a preheated Alto-Shaam display case or in a preheated holding cabinet with door vents fully open.

FRYING FROM REFRIGERATED STORAGE

1. Remove chicken from the Alto-Shaam Halo Heat oven, wrap, chill rapidly and store under refrigeration at 38° to 40°F (3° to 4°C).
2. Preheat fryer to 335°F (168°C).
3. Remove required portion of precooked chicken from refrigerated storage.
4. Drop chicken in fryer for 6 to 7 minutes or until chicken is golden brown.

SECTION 4 - POULTRY AND FISH

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	TURKEY	TURKEY BREAST	TURKEY ROLL
SIZE OF MEAT	Turkey, Whole: 25 lb (11 kg)	10 to 15 lb (5 to 7 kg)	Precooked, Frozen: 8 to 12 lb (4 to 5 kg)
INSTRUCTIONS	Turkey must be fully thawed. Season as desired. Rub with oil, butter or margarine (OPTIONAL), and sprinkle with paprika. Place directly on wire shelves.	Turkey breast should be at a refrigerated temperature of 38° to 40°F (3° to 4°C) when placed in a preheated oven. Season as desired. Brush with oil, butter or margarine (OPTIONAL), and sprinkle with paprika. Place breasts directly on wire shelves.	Place fully frozen turkey rolls directly on wire shelves to reheat.
SUGGESTED PAN	None	None	None
NO. OF SHELVES			
500	1	2	2
750	1	2	2
1000	2	3	3
ITEMS PER SHELF			
500	1 turkey	2 turkey breasts	2 turkey rolls
750	2 turkeys	4 turkey breasts	4 turkey rolls
1000	2 turkeys	3 turkey breasts	3 turkey rolls
MAX. CAPACITY			
500	1 turkey	4 turkey breasts	4 turkey rolls
750	2 turkeys	8 turkey breasts	8 turkey rolls
1000	4 turkeys	9 turkey breasts	9 turkey rolls
VENT POSITION	Open Full	Open Full	Open Full
COOK TEMP	250°F (121°C)	250° to 275°F (121° to 135°C)	250°F (121°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)	160°F (71°C)
COOK TIME	10 minutes per pound for the first turkey (22 minutes per kilogram) plus add 30 minutes for each additional turkey.	3-1/2 to 4-1/2 hours Full Load	3 to 4 hours Full Load
MIN. HOLD TIME	1 to 2 hours	1 hour	1 hour
MAX. HOLD TIME	10 hours	10 hours	6 to 8 hours
OVERNIGHT COOK/HOLD	Highly Recommended	Optional*	Not Recommended
FINAL INTERNAL TEMPERATURE	185°F (85°C)	180°F (82°C)	165°F (74°C)
ADDITIONAL INFORMATION	—	*When cooking and holding overnight, set the cook thermostat at 250°F (121°C)	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - POULTRY AND FISH

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	FISH, BAKED	SALMON STEAKS	TROUT
SIZE OF MEAT	Fish Fillets, Fresh or Frozen: 6 to 8 oz (170 to 227 grams)	6 to 8 oz (170 to 227 grams), 1" (25mm) thick	Whole: 1 lb (454 gm) dressed
INSTRUCTIONS	Do not thaw frozen fillets. Spray or coat sheet pans with oil. Place fillets side-by-side on sheet pans. Brush fish with oil, butter or margarine. Season as desired and sprinkle lightly with paprika. Loosely cover pans with clear plastic wrap.	Spray or coat sheet pans with oil, butter or margarine. Place steaks side-by-side on sheet pans. Season as desired.	Spray or coat sheet pans with oil. Wipe trout with a damp towel and place side-by-side on sheet pans. Season as desired.
SUGGESTED PAN	Sheet Pan	Sheet Pan	Sheet Pan
NO. OF SHELVES			
500	4	4	6
750	6	4	6
1000	None	None	None
ITEMS PER SHELF			
500	1 half-size sheet pan	7-8 steaks per pan, 1 half-size sheet pan	6 trout, 1 half-size sheet pan
750	1 full-size sheet pan	15 steaks per pan, 1 full-size sheet pan	12 trout, 1 full-size sheet pan
1000	1 full-size sheet pan	15 steaks, 1 full-size sheet pan	12 trout, 1 full-size sheet pan
MAX. CAPACITY			
500	4 half-size sheet pans	28-32 steaks, 4 half-size sheet pans	36 trout, 6 half-size sheet pans
750	6 full-size sheet pans	60 steaks, 4 full-size sheet pans	72 trout, 6 full-size sheet pans
1000	8 full-size sheet pans	75 steaks, 5 full-size sheet pans	96 trout, 8 full-size sheet pans
VENT POSITION	One-half open	One-half open	One-half open
COOK TEMP	275°F (135°C)	275°F (135°C)	275°F (135°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)	160°F (71°C)
COOK TIME	1-1/2 to 2-1/2 hours Full Load	1-1/2 hours Full Load	1 to 1-1/2 hours Full Load
MIN. HOLD TIME	none	1 hour	none
MAX. HOLD TIME	3 to 4 hours Holding time will vary greatly depending on the type of fish and the initial product moisture content.	3 to 4 hours	4 to 6 hours
OVERNIGHT COOK/HOLD	Not Recommended	Not Recommended	Not Recommended
FINAL INTERNAL TEMPERATURE	150°F (71°C)	150°F (66°C)	150°F (66°C)
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - MISCELLANEOUS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	QUICHE	RICE	BAKED EGG CUSTARD
ITEM/AMOUNT	As needed	As needed	As needed
INSTRUCTIONS	Prebake the shells in pie plates at 275°F (135°C) for approximately 40 minutes. Pour the quiche mixture into the prebaked shells and bake in a preheated oven. Quiche is done when product sets-up.	Use 1 x 1 or 1 x 1-1/2 ratio of rice to water. Rice that is high in starch needs to be rinsed. Fill pans to half the pan depth and cover pans with foil.	Use a favorite custard recipe. Pour custard mixture into cups to a depth of 2/3 the container height and place cups on a sheet pan. NO WATER BATH IS REQUIRED. Bake in a preheated oven. Custard is done when knife inserted in center of cup is clean when removed.
SUGGESTED PAN	Pie Plate	Hotel Pan	Sheet Pan
NO. OF SHELVES 500 750 1000	2 4 8	none none 3	4 4 None
ITEMS PER SHELF 500 750 1000	2 quiches 5 quiches 3 quiches	1 full-size pan 2 full-size pans 1 full-size pan	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan
MAX. CAPACITY 500 750 1000	4 quiches 20 quiches 24 quiches	2 full-size pans 4 full-size pans 3 full-size pans	4 half-size sheet pans 4 full-size sheet pans 5 full-size sheet pans
VENT POSITION	Open Full	Closed	Closed
COOK TEMP	275°F (135°C)	275°F (135°C)	250°F (121°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)	—
COOK TIME	Bake approximately 2 hours or until product sets-up. Full Load	60 minutes - 3 hours depending on load and pan size	60-90 minutes, 4 oz. ramekins Up to 3 hours for 4" hotel pans
MIN. HOLD TIME	none	none	none
MAX. HOLD TIME	5 hours	8 hours	none
OVERNIGHT COOK/HOLD	No	Optional	No
FINAL INTERNAL TEMPERATURE	N/A	160° to 170°F (71° to 77°C)	N/A
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - MISCELLANEOUS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	SHEET CAKE	CHEESE CAKE	RECIPE
ITEM/AMOUNT	As needed	As needed	
INSTRUCTIONS	Use a favorite cake recipe or mix. Pour batter in pans to one-half the pan depth. Keep oven door closed during the cooking cycle. The cake is done when a toothpick inserted in the center of the cake is clean when removed.	Use a favorite cheese cake recipe or mix. Pour batter into spring-form pans and bake in a preheated oven. The cheese cake is done when a toothpick inserted in the center is clean when removed. To prevent cracking, allow the cheese cake to remain in the oven until it reaches room temperature.	
SUGGESTED PAN	Sheet Pan	Spring-Form Pan	
NO. OF SHELVES 500 750 1000	4 4 None	2 4 4	
ITEMS PER SHELF 500 750 1000	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	2 cakes 5 cakes 3 cakes	
MAX. CAPACITY 500 750 1000	4 half-size sheet pans 4 full-size sheet pans 4 full-size sheet pans	4 cakes 20 cakes 12 cakes	
VENT POSITION	Open Full	Open Full	
COOK TEMP	325°F (163°C)	250°F (121°C)	
HOLD TEMP	—	—	
COOK TIME	1-1/2 hours Full Load	90 minutes to 2-3 hours depending on pan depth	
MIN. HOLD TIME	none	none	
MAX. HOLD TIME	none	none	
OVERNIGHT COOK/HOLD	No	No	
FINAL INTERNAL TEMPERATURE	N/A	N/A	
ADDITIONAL INFORMATION	—	—	

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - MISCELLANEOUS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	FROZEN CONVENIENCE ENTRÉES	FROZEN PORTIONED CONVENIENCE ENTRÉES
ITEM/AMOUNT	As needed	As needed
INSTRUCTIONS	PRODUCT MUST BE FULLY FROZEN WHEN PLACED IN A PREHEATED OVEN. Leave product in original container with foil cover in place.* Pour 1/2 gallon (1 liter) of hot water into the drip pan located on the bottom surface of the oven compartment. Place containers directly on wire shelves.	
SUGGESTED PAN	Half-Size Pan	None
NO. OF SHELVES		
500	3	3
750	3	3
1000	5	3
ITEMS PER SHELF		
500	2 foil half-size pans	6
750	4 foil half-size pans	9
1000	2 foil half-size pans	9
MAX. CAPACITY		
500	6 foil half-size pans	18
750	12 foil half-size pans	27
1000	10 foil half-size pans	27
VENT POSITION	Closed	Closed
COOK TEMP	275°F (135°C)	275°F (135°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)
COOK TIME	SEE PAN PLACEMENT DIAGRAMS AND TIME SETTINGS ON THE FOLLOWING PAGE.	APPROXIMATELY 2 HOURS. SEE PAN PLACEMENT DIAGRAMS ON FOLLOWING PAGE. DO NOT OVER-COOK — CHECK INTERNAL PRODUCT TEMPERATURE.
MIN. HOLD TIME	none	none
MAX. HOLD TIME	16 to 18 hours	4 hours
OVERNIGHT COOK/HOLD	Optional	Not Recommended
FINAL INTERNAL TEMPERATURE	140°F (60°C)*	140°F (60°C)*
ADDITIONAL INFORMATION	* Frozen convenience entrées removed from the original food processor's intact packaging must be treated as a product for reheating. Products for reheating must reach an internal product temperature of 165°F (74°C) for the amount of time specified by local health (hygiene) regulations.	

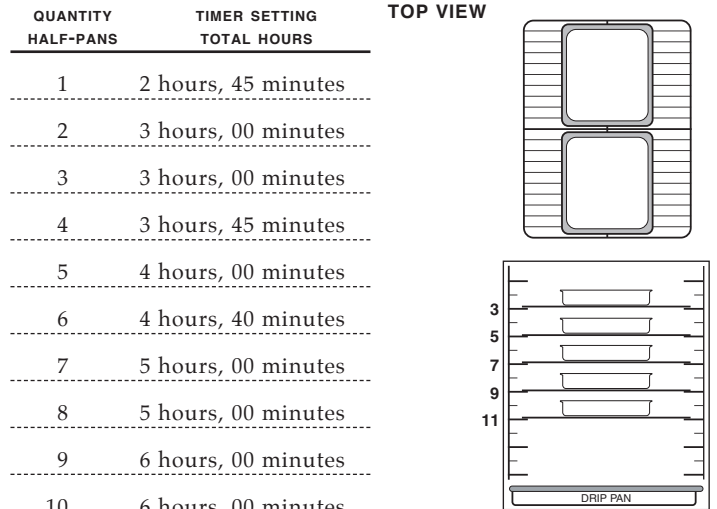
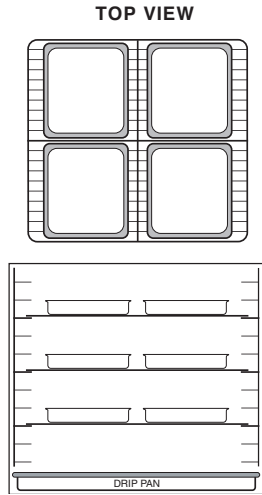
The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 4 - MISCELLANEOUS

PRODUCT SPECIFICATIONS AND PREPARATION

FROZEN CONVENIENCE ENTRÉES

500 & 750 SERIES		1000 SERIES	
QUANTITY HALF-PANS	TIMER SETTING TOTAL HOURS	QUANTITY HALF-PANS	TIMER SETTING TOTAL HOURS
1	2 hours, 30 minutes	1	2 hours, 45 minutes
2	2 hours, 45 minutes	2	3 hours, 00 minutes
3	3 hours, 30 minutes	3	3 hours, 00 minutes
4	3 hours, 30 minutes	4	3 hours, 45 minutes
5	4 hours, 00 minutes	5	4 hours, 00 minutes
6	4 hours, 30 minutes	6	4 hours, 40 minutes
7	5 hours, 00 minutes	7	5 hours, 00 minutes
8	5 hours, 00 minutes	8	5 hours, 00 minutes
9	6 hours, 40 minutes	9	6 hours, 00 minutes
10	7 hours, 25 minutes	10	6 hours, 00 minutes
11	7 hours, 25 minutes		
12	7 hours, 25 minutes		



FROZEN PORTIONED CONVENIENCE ENTRÉES

500 SERIES		750 SERIES	

1000 SERIES	

SECTION 4 - MISCELLANEOUS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PRECOOKED FROZEN FINGER FOOD	BREAKFAST SANDWICHES	COOKIES
ITEM/AMOUNT	CHICKEN NUGGETS: Approximately 40 per full-size sheet pan. CORN DOGS: Approximately 30 per full-size sheet pan. EGG ROLLS: Approximately 40 per full-size sheet pan. MINI PIZZA: Approximately 12 to 15 per full-size sheet pan.	Approximately 36 wrapped sandwiches per full-size sheet pan.	Premixed frozen commercial cookie dough at room temperature. Premixed frozen commercial cookie dough pieces.
INSTRUCTIONS	Line sheet pans with baking pan liners (optional) and insert wire pan grid. Place items side-by-side on the wire pan grids.	Place sandwiches on pans	Preheat oven at 325°F (163°C) for a minimum of one hour. Line full-size sheet pans with baking pan liners. Use a number 30 scoop to produce a 1 oz (28 gm) cookie. Evenly space portioned cookie dough on sheet pans and load all pans in the oven at one time. Oven doors must remain closed during baking. DO NOT OVER-BAKE. Approximate pan capacity: 24 cookies per full-size sheet pan
SUGGESTED PAN	Sheet Pan	Sheet Pan	Sheet Pan
NO. OF SHELVES 500 750 1000	3 5 None	3 3 none	6 6 None
ITEMS PER SHELF 500 750 1000	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan
MAX. CAPACITY 500 750 1000	3 half-size sheet pans 5 full-size sheet pans 5 full-size sheet pans	3 half-size sheet pans 3 full-size sheet pans 5 full-size sheet pans	6 half-size sheet pans 6 full-size sheet pans 8 full-size sheet pans
VENT POSITION	Open Full	Open Full	Open Full
COOK TEMP	275°F (135°C)	275°F (135°C)	325°F (163°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)	N/A
COOK TIME	CORN DOGS: 30 to 45 minutes EGG ROLL/CHICKEN NUGGETS: 45 to 60 minutes* MINI PIZZA: 60 minutes*	90 minutes	FRESH: 1 full-size sheet pan: 20 minutes 2 to 3 full-size sheet pans: 45 minutes FROZEN: 1 full-size sheet pan: 30 minutes • 2 to 3 full-size sheet pans: 45 to 60 minutes
MIN. HOLD TIME	none	none	none
MAX. HOLD TIME	Maximum holding time varies from product to product. Generally expect a 1 to 3 hour maximum holding time for product acceptability.	2 to 3 hours	none
OVERNIGHT COOK/HOLD	Not Recommended	Not Recommended	No
FINAL INTERNAL TEMPERATURE	150°F (66°C)	160°F (66°C)	N/A
ADDITIONAL INFORMATION	Make certain product reaches the fully heated temperature. Check internal product temperature before removing product from oven and adjust heating time as required.	Make certain product reaches the fully heated temperature. Check internal product temperature before removing product from oven and adjust heating time as required.	Cookies will continue to bake for approximately 3 minutes after being removed from the oven. Take this factor into consideration to prevent over-baking. Place cookies on bakery rack for cooling.
The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.			

SECTION 4 - MISCELLANEOUS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PROOFING DOUGH	RECIPE	RECIPE
ITEM/AMOUNT	As needed		
INSTRUCTIONS	Remove dough from retarder or refrigerator, and allow covered product to set up at room temperature. Preheat oven for 45-60 Minutes. Pour approximately 2 quarts (c. 2 liters) of hot water, 140-180°F (60-82°C) into a pan on the bottom surface of the oven compartment.		
SUGGESTED PAN	Muffin Pans		
NO. OF SHELVES			
500	4		
750	4		
1000	8		
ITEMS PER SHELF			
500	1 muffin pan (12 cup capacity)		
750	2 muffin pans (12 cup capacity)		
1000	2 muffin pans (12 cup capacity)		
MAX. CAPACITY			
500	4 muffin pans		
750	8 muffin pans		
1000	16 muffin pans		
VENT POSITION	One-Half Open		
COOK TEMP	N/A		
HOLD TEMP	90 to 110°F (32 to 43°C)		
COOK TIME	N/A		
MIN. HOLD TIME	20 Minutes		
MAX. HOLD TIME	45 Minutes		
OVERNIGHT COOK/HOLD	No		
FINAL INTERNAL TEMPERATURE	N/A		
ADDITIONAL INFORMATION	The above proofing procedure is suggested as a general guideline only. Due to variations in product, product quality, and weight, adherence to the product manufacturer's instructions are recommended.		
<p>The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.</p>			

SECTION 5 - SMOKER OPERATION

COOKING/SMOKING/HOLDING PROCEDURES - SIMPLE CONTROL

1. Push power switch to ON (I) position.

Control will display 0°F or 0°C.

2. Set the holding temperature.

- Rotate the Hold Knob to the desired holding temperature. The set temperature will appear in the Digital Display **140°F** and the temperature display button will illuminate.
- The Holding Indicator Light will illuminate while in hold mode.
- Holding temperature range:
60° to 205°F (16 to 96°C)

3. Set the cooking temperature.

- Rotate the Cook Knob to the desired temperature. The set temperature will appear in the Digital Display **250°F** and the Temperature Display Key will illuminate.
- The cooking indicator light will illuminate while in cook mode.
- Cooking temperature range:
200° to 325°F (94 to 160°C)
- **Note:** Cooking mode not active unless timer is running.

4. Set time for preheat.

- Press Up or Down arrows to adjust the preheat time.
- **Note:** Hold Time Cancel Key for 3 seconds when in cook mode to cancel time (display shows **----**).

5. PREHEAT oven for 30 minutes before loading food.

The Heat Indicator Light will illuminate and will remain lit as long as the oven is calling for heat.

6. Load the oven with food.

7. Set time for cook.

Press Up or Down Arrow Keys to adjust the cook time.

8. Load wood chip container.

Take one container load of dry wood chips and soak the chips in water for 5-15 minutes. Shake excess water off wood chips. Remove wood chip container from the interior back panel of the smoker. Place the moistened chips in the wood chip container and replace the container in the oven.

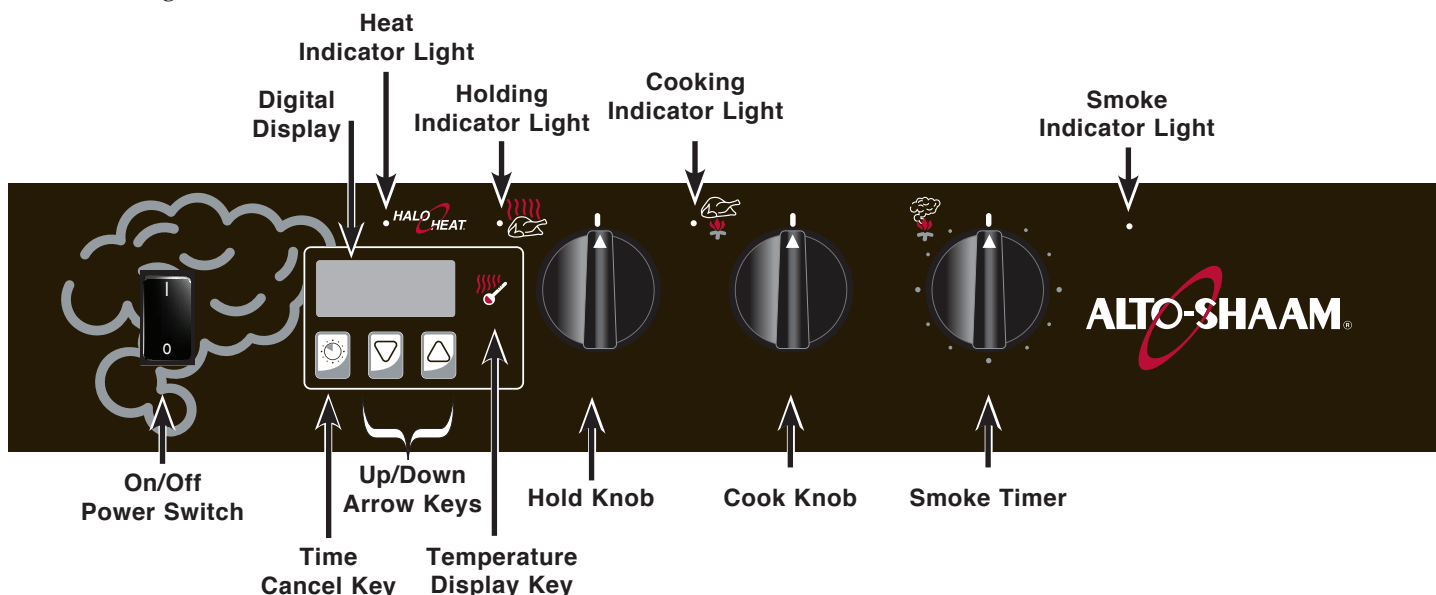
9. Set the Smoke Timer (1 hour).

The Smoke Timer activates the heating element located within the wood chip container. When the wood chip container is full and the Smoke Timer is turned clockwise as far as it will turn, the wood chips will smoke for approximately forty-five minutes to one hour.

- To set the Smoke Timer, turn the smoke timer knob past the required length of time, then immediately bring it back to the correct setting.
- Smoke Indicator Light will illuminate.
- Keep the oven door completely closed during the smoking cycle.

Notes:

- When the oven temperature reaches the set temperature, the heat indicator light will turn off.
- Press and hold the Temperature Display Button for 3 seconds at any time to display the actual oven temperature **190°F**.



GENERAL OPERATION - SMOKERS



CHEF OPERATING TIPS

1. For cooking specific products, refer to individual cook and hold instructions.
2. When cooking at 250°F (121°C), it takes approximately one hour for the cooking temperature to decrease to the selected holding temperature. During this one hour time period, the product will continue to cook.
3. The cooking times in this guide are based on meat taken directly from a refrigerated temperature of 38° to 40°F (3.3° to 4.4°C), and placed in a preheated oven. Adjustments must be made for cooking products at other than refrigerated temperatures.
4. Place the curved edge of the shelf toward the back of the oven.
5. Adjust the inside door vents as indicated in the individual cooking procedure selected.
6. It is recommended the oven door remain closed during the cooking cycle. Opening the door will only increase the length of time necessary to cook the product.
7. Puncturing an item with any sharp instrument may introduce bacteria inside the product. Avoid using a fork to handle products, and always use standard sanitary methods when handling any food item.
8. Use a thermometer to check the internal temperature of a product. Be certain to sanitize the thermometer before each use.
9. Aged meat will cook faster, shrink more, and cannot be held as long as fresh meat. Because of the tenderizing capabilities of the oven, aged meat or tenderizing agents such as M.S.G. are not necessary, and are not recommended.
10. When cooking full loads, never cook below the second shelf spacing from the bottom of the oven compartment.
11. Fully clean the oven interior, drip pan, shelves, and side racks on a daily basis.
12. Since there is no air movement inside the Halo Heat® low temperature cooking and holding oven, condensation will form on the inside of the door during operation and may leak out of the oven door vents. This is a normal operating condition, however; any condensation spilling on the floor should be periodically wiped as a safety precaution. There is an External Drip Tray included as standard with most ovens.
13. Insert drip pan directly on the bottom surface of the oven compartment.
14. Drip pan overflow is a condition caused by cooking some cuts of beef to an internal temperature in excess of 130°F (54°C). The External Drip Tray will help alleviate some of this overflow problem. There is also an extra large drip pan available as an option for the 1000-TH series ovens.
15. Overflow may also be caused by overloading the oven compartment. **DO NOT OVERLOAD THE OVEN.** Follow the recommended load capacities listed in each individual procedure.
16. For maximum product tenderizing and to reduce labor during peak preparation hours, overnight cook and hold is highly recommended for many products. Refer to individual cooking instructions.

**NEED SOME HELP?**

The Alto-Shaam staff includes corporate executive chefs who welcome questions. You are invited to contact anyone on our staff by phone (800.558.8744) or e-mail through the Contact Us section of our web site (www.alto-shaam.com) for help with any cook and hold procedure.

SECTION 5 - OPERATION

GENERAL OPERATION - SMOKERS

SMOKING PROCEDURE OPTIONS

Many of the procedures listed in the front section of this guide can be adapted to the Alto-Shaam Smoker.

1. Follow the load capacities for the 750 and 1000 series ovens.
2. Follow the cooking and holding temperatures and times listed.
3. Set the Smoking Timer for the amount of smoke flavor desired.

A. ONE-STEP COOKING:

After the COOK time is complete and the minimum number of hours in the HOLD cycle have elapsed, the product may remain ON HOLD until serving time.

B. TWO-STEP COOKING:

Remove product from the oven after the minimum number of hours in the HOLD cycle. Chill product quickly and prepare for refrigerated storage. Refrigerated product can be sauced and finished on a char-broiler, in a convection oven, a combination oven/steamer or in a salamander for a la carte service. This process takes between 8 and 15 minutes and insures a tender, juicy and fresh tasting product. When using cook/chill processing techniques, products have an extended storage life of 5 days which includes the day of preparation and the day of service.

SMOKING TIMES

It is recommended the operator be familiar with the taste preferences of the area. Initially experimenting with a minimal amount of smoking time is suggested.

LIGHT SMOKE FLAVOR	10 MINUTES
MEDIUM SMOKE FLAVOR	30 MINUTES
HEAVY SMOKE FLAVOR	40 MINUTES
VERY HEAVY SMOKE FLAVOR	60 MINUTES*
EXTRA HEAVY SMOKE FLAVOR	120 MINUTES*

*FOR 60 MINUTES OR MORE: LOAD WOOD CHIP CONTAINER TWICE AND ACTIVATE SMOKING TIMER TWICE.

DETERMINING IF PRODUCT IS SUFFICIENTLY COOKED

1. Insert a thermometer into the center of the product to determine if the correct internal temperature has been reached.

RED MEAT:

RARE:	130° to 135°F (54° to 57°C)
MEDIUM:	140° to 145°F (60° to 63°C)
WELL:	155° to 160°F (66° to 71°C)

2. When following the procedures in the individual product cooking instructions, additional cooking time should not be necessary. If, however, the required internal product temperature has not been reached after the product has remained in the HOLD cycle for the one hour minimum time period, additional cooking time may be added. Use the same COOK temperature set for the original cooking cycle until the correct internal temperature has been reached.

INTERNAL PRODUCT TEMPERATURE	TIME* IN HOLD CYCLE REQUIRED BY FOOD CODE
130°F (54°C)	1 HOUR, 52 MINUTES
131°F (55°C)	1 HOUR, 29 MINUTES
133°F (56°C)	56 MINUTES
135°F (57°C)	36 MINUTES
136°F (58°C)	28 MINUTES
138°F (59°C)	18 MINUTES
140°F (60°C)	12 MINUTES
142°F (61°C)	8 MINUTES
144°F (62°C)	5 MINUTES
145°F (63°C)	4 MINUTES
147°F (64°C)	2 MINUTES, 14 SECONDS
149°F (65°C)	1 MINUTES, 25 SECONDS
151°F (66°C)	54 SECONDS
153°F (67°C)	34 SECONDS
155°F (68°C)	22 SECONDS
157°F (69°C)	14 SECONDS
158°F (70°C)	0 SECONDS

*HOLDING TIME MAY INCLUDE POST-OVEN HEAT RISE

GENERAL OPERATION - SMOKERS

REHEATING

1. Any over production must be removed from the oven, wrapped, rapidly chilled, and refrigerated.
2. Product can be removed from refrigerator, returned to the oven, and reheated the next day.
3. Products must be reheated at a temperature range of 250° to 275°F (121° to 135°C). Refer to individual cooking instructions for the correct thermostat setting for the product being reheated.
4. Length of time necessary to reheat a product depends on the type of product and the quantity to be reheated. Time should be based on internal product temperature. Use a pocket thermometer to determine the internal product temperature of the reheated product.

United States food code requirements indicate cooked foods that have been cooled, followed by reheating for hot food holding, must be reheated to 165°F (74°C). The temperature of 165°F (74°C) must be maintained for a period 15 seconds.

Always follow federal and local health (hygiene) codes for the time and internal temperature required for reheating products.

CARE AND CLEANING

1. Clean interior oven cavity, wire shelves, and drip pan daily, at the end of each cook and hold cycle.
2. Refer to Care and Cleaning instructions in Section 3.

In the United States, FDA food code requires products such as red meat to remain in "HOLD" for a specified time period. This holding time requirement is based on the internal product temperature desired for the finished product and includes the one hour time period while the oven decreases from the cooking temperature to the holding temperature and the product continues to cook.

PRODUCT CAPACITY - PER COMPARTMENT

767-SK, 1767-SK
100 lb (45 kg) MAXIMUM
VOLUME MAXIMUM: 53 QUARTS (67 LITERS)

1000-SK-I, 1000-SK/II
120 lb (54 kg) MAXIMUM
VOLUME MAXIMUM: 60 QUARTS (76 LITERS)

PAN DIMENSIONS	
Full-size hotel pans (GN 1/1)	20" x 12" x 2-1/2" (530mm x 325mm x 65mm)
Half-size hotel pans (GN 1/2)	12" x 10" x 2-1/2" (325mm x 265mm x 65mm)
Third-size hotel pans (GN 1/3)	12" x 6" x 2-1/2" (325mm x 176mm x 65mm)
Full-size sheet pans	18" x 26" x 1"
Half-size sheet pans	18" x 13" x 1"

DANGER



AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.



SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.

WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED



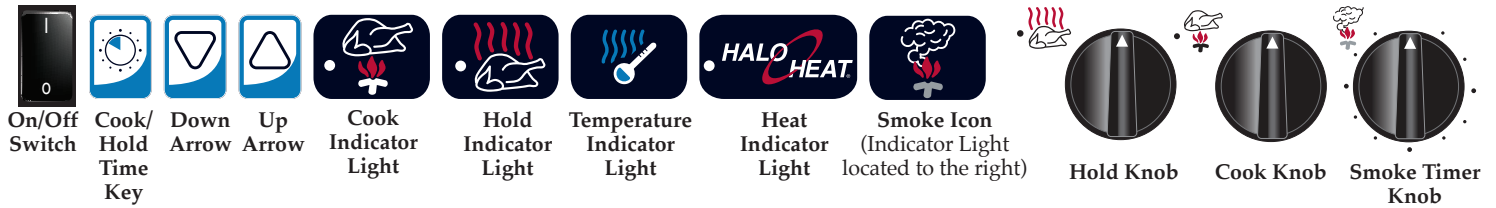
DANGER



DISCONNECT UNIT FROM POWER SOURCE BEFORE CLEANING OR SERVICING.

SECTION 6 - SMOKED BEEF

PRODUCT SPECIFICATIONS AND PREPARATION



1. Push ON/OFF power switch to ON.
2. Rotate **HOLD KNOB** to desired temperature.
3. Rotate **COOK KNOB** to desired temperature.
4. Press **UP/DOWN ARROW** keys to set timer.
5. Preheat oven for 30 minutes.
6. Load oven with food.
7. Load wood chip container.
8. Rotate **SMOKE TIMER KNOB** past the required length of time, then back to the correct setting.

PRODUCT >	BEEF BRISKET, SMOKED	BEEF TONGUE, SMOKED
ITEM/AMOUNT	Beef Brisket, Fresh: 9 to 13 lb (4 to 6 kg)	Beef Tongue: 3-1/4 lb (1,5 kg) average
INSTRUCTIONS	Season brisket as desired. Place brisket directly on wire shelves fat side down. Briskets can also be wrapped in clear plastic wrap for the cooking, smoking, and holding function (OPTIONAL).	Leave skin on tongue for cooking. Season as desired and place side-by-side in pans. Following the cooking cycle, tongues must remain in the HOLD cycle for four (4) hours. Remove product from pans, skin tongues and return them to the smoker, directly on the wire shelves.
SUGGESTED PAN	None	Full-size Hotel Pan with 18" x 26" wire rack
NO. OF SHELVES 767, 1767 1000	3 per compartment 3 per compartment	Cooking: None - Smoking: 2 per compartment Cooking: None - Smoking: 2 per compartment
ITEMS PER SHELF 767, 1767 1000	3 to 4 roasts 2 to 3 roasts	5 tongues per pan 10 tongues per pan
MAX. CAPACITY 767, 1767 1000	12 roasts - up to 100 lb (45 kg) per compartment 6-9 roasts - up to 100 lb (45 kg) per compartment	20 beef tongues - 65 lb (30 kg) per compartment 30 beef tongues - 98 lb (44 kg) per compartment
WOOD CHIP CONTAINER	Full	Full
VENT POSITION	Closed	Closed
COOK TEMP	250°F (121°C)	250°F (121°C)
HOLD TEMP	160°F (71°C)	150°F (66°C)
COOK TIME	20 minutes per pound for the first roast (44 minutes per kilogram) plus add 30 minutes for each additional roast	4-1/2 hours for the first pan plus add 30 minutes for each additional pan.
SMOKE TIME	Due to the density of the meat, set smoke timer for one hour to achieve a medium smoke flavor.	After cooking and minimum holding time, leave oven set at a holding temperature of 150°F (66°C). SET SMOKING TIMER: 30 minutes for one pan, 60 minutes for four pans
MIN. HOLD TIME	6 hours	4 hours
MAX. HOLD TIME	24 hours	8 hours
OVERNIGHT COOK/HOLD	Highly Recommended	Optional
FINAL INTERNAL TEMPERATURE	165°F (73°C)	Before activating the Smoking Timer: 188°F (87°C)
ADDITIONAL INFORMATION	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 6 - SMOKED PORK

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	HAM	RIBS
ITEM/AMOUNT	Pork Fresh Ham: 14 to 17 lb (6 to 8 kg)	Spareribs or Pork Loin, Back Ribs (BABY BACK RIBS): 1-1/2 down (38 mm or less)
INSTRUCTIONS	Season as desired and place directly on wire shelves.	Ribs can be cooked frozen or thawed. Season as desired. Place ribs on sheet pans, slightly overlapping or use rib rack shelves for more even smoke penetration. If desired, barbecue sauce can be included with initial seasoning to allow it to cook into the ribs.
SUGGESTED PAN	None	Sheet pan
NO. OF SHELVES 767, 1767 1000	2 per compartment 3 per compartment	2 rib racks or 3 flat wire shelves, 13 slabs per rib rack shelf 3 rib racks or 5 flat wire shelves, 13 slabs per rib rack shelf (per compartment)
ITEMS PER SHELF 767, 1767 1000	3 to 4 hams 3 hams	14 to 18 slabs per flat wire shelf 14 to 18 slabs per flat wire shelf
MAX. CAPACITY 767, 1767 1000	6 to 8 hams - up to 100 lb (45 kg) per compartment 9 hams - up to 100 lbs (45) kg per compartment	60 lb (27 kg) per compartment 60 lb (27 kg) per compartment
WOOD CHIP CONTAINER	Full	Full
VENT POSITION	Closed	Closed
COOK TEMP	250° to 275°F (121° to 135°C)	250°F (121°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)
COOK TIME	12 minutes per pound for the first ham (26 minutes per kilogram) plus add 30 minutes for each additional ham.	THAWED RIBS: 2-1/2 to 3-1/2 hours FROZEN RIBS: 3-1/2 to 4-1/2 hours
SMOKE TIME	3 TO 4 SMOKING CYCLES* 1 hour for each smoking cycle *FILL WOOD CHIP CONTAINER FOR EACH CYCLE	1 hour for medium smoked flavor
MIN. HOLD TIME	2 hours	1-1/2 hours
MAX. HOLD TIME	10 hours	12 HOURS: At the end of the hold cycle, heated barbecue sauce can be added to the ribs immediately before serving.
OVERNIGHT COOK/HOLD	Optional	Optional
FINAL INTERNAL TEMPERATURE	100°F (71°)	160° to 170°F (71° to 77°C) Well Done
ADDITIONAL INFORMATION	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 6 - SMOKED POULTRY

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	DUCK, SMOKED	TURKEY, SMOKED	RECIPE
ITEM/AMOUNT	Duck, Whole: 4 to 5 lb (2 kg)	Turkey, Whole: 25 lb (11 kg)	
INSTRUCTIONS	Season as desired. Rub with oil and paprika. Place ducks directly on wire shelves.	Turkey must be fully thawed. Season as desired. Rub with oil, butter, or margarine (optional). Place turkeys directly on wire shelves.	
SUGGESTED PAN	None	None	
NO. OF SHELVES 767, 1767 1000	2 per compartment 3 per compartment	1 per compartment 2 per compartment	
ITEMS PER SHELF 767, 1767 1000	6 ducks per shelf 4 ducks per shelf	2 turkeys 2 turkeys	
MAX. CAPACITY 767, 1767 1000	12 ducks - 60 lb (27 kg) per compartment 12 ducks - 60 lb (27 kg) per compartment	2 turkeys per compartment 4 turkeys per compartment	
WOOD CHIP CONTAINER	Full	Full	
VENT POSITION	Closed	Closed	
COOK TEMP	300°F (149°C)	275°F (135°F)	
HOLD TEMP	160°F (71°C)	160°F (71°C)	
COOK TIME	3-1/2 to 4 hours	10 minutes per pound for the first turkey (22 minutes per kilogram) plus add 30 minutes for the second turkey.	
SMOKE TIME	1 hour	1 hour	
MIN. HOLD TIME	1 hour	1 to 2 hours	
MAX. HOLD TIME	8 hours	10 hours	
OVERNIGHT COOK/HOLD	Not Recommended	Highly Recommended. When cooking and holding overnight, set the cook thermostat to 250°F (121°C).	
FINAL INTERNAL TEMPERATURE	185° to 190°F (85°to 88°C)	185°F (85°C)	
ADDITIONAL INFORMATION	—	—	

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 6 - SMOKED FISH

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	FISH FILLETS, SMOKED	WHOLE SMOKED SALMON	SHRIMP, SMOKED
ITEM/AMOUNT	Fish fillets: As needed Haddock may be substituted.	Salmon, Whole: 8 to 10 lb (4 to 5 kg)	Shrimp: 16 to 20 count
INSTRUCTIONS	Portion cut fish. Place fillets side-by-side.	Scale and wash fish thoroughly. If desired, fish can be placed in a salt brine and refrigerated for 2 to 3 hours. Place fish upright on sheet pans. DO NOT LAY FISH ON ITS SIDE.	Shrimp may remain in the shell or may be peeled and deveined. Season as desired. Place side-by-side on pans.
SUGGESTED PAN	Full-size Hotel Pan PAN PLACEMENT: Position 1, 4, & 7 FROM THE TOP OF THE OVEN	Sheet Pan	Sheet Pan
NO. OF SHELVES 767, 1767 1000	None None	2 per compartment 4 per compartment	1 full-size sheet pan 5 full-size sheet pan
ITEMS PER SHELF 767, 1767 1000	2 pans per shelf position 1 sheet pan per shelf position	1 full-size sheet pan 4 full-size sheet pans	1 full-size sheet pan 1 full-size sheet pan
MAX. CAPACITY 767, 1767 1000	6 pans per compartment 7 sheet pans per compartment	3 full-size sheet pans - 6 whole salmon 4 full-size sheet pans - 8 whole salmon (per compartment)	4 full-size sheet pans 5 full-size sheet pans (per compartment)
WOOD CHIP CONTAINER	Full	Full	Full
VENT POSITION	Closed	Closed	Closed
COOK TEMP	250°F (121°C)	275°F (135°C)	250°F (121°C)
HOLD TEMP	160°F (71°C)	160°F (71°C)	160°F (71°C)
COOK TIME	1-1/2 to 2 hours	2 to 2-1/2 hours	45 minutes to 1 hour
SMOKE TIME	1 hour	1 TO 2 SMOKING CYCLES 1 hour for each smoking cycle FILL WOOD CHIP CONTAINER FOR EACH CYCLE	45 minutes
MIN. HOLD TIME	None	1 to 2 hours	none
MAX. HOLD TIME	3 to 4 hours	10 hours	1 hour
OVERNIGHT COOK/HOLD	Not Recommended	Not Recommended	Not Recommended
FINAL INTERNAL TEMPERATURE	150°F (66°C)	150°F (66°C)	150° to 160°F (66° to 71°C)
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

SECTION 6 - SMOKED FISH

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	COLD SMOKED SALMON
ITEM/AMOUNT	SAUMON FUME: Fresh Salmon Fillets 2-1/2 to 4 lb (1 to 2 kg) each
INSTRUCTIONS	<p><u>INGREDIENTS REQUIRED</u></p> <p>Fresh Salmon Fillets or Sides Sea Salt: Large Crystals Granulated or Raw Sugar</p> <p><u>SUPPLIES REQUIRED</u></p> <p>Clear Plastic Wrap Paper Toweling Wire Mesh Grids Digital Thermocouple Thermometer (TO MONITOR INTERNAL PRODUCT TEMPERATURE) Tweezers Ice: 3 to 4 lb (1 to 2 kg)</p> <p><u>PREPARATION</u></p> <p>Remove bones from fillets with a tweezers to avoid rupturing tissue.</p> <p><u>SALTING</u></p> <p>50% Sea Salt or Kosher Salt 50% Granulated or Brown Sugar (FOR RICHER COLOR)</p> <p>To remove moisture from the raw salmon, blend salt and sugar mixture thoroughly and pack firmly around each fillet. Cover salt-filled pans with clear plastic wrap and refrigerate for 24 hours. Following the 24 hour refrigeration period, remove fillets from salt/sugar mixture and rinse thoroughly under cold, running water. Pat dry with paper toweling. Place fillets side-by-side on a sheet pan and return, uncovered, to the refrigerator for a period of 1-6 hours for the final drying period.</p>
SUGGESTED PAN	Wire grid
NO. OF SHELVES 767, 1767 1000	3 per compartment 4 per compartment
ITEMS PER SHELF 767, 1767 1000	3 fillets/sides per shelf 3 fillets/sides per shelf
MAX. CAPACITY 767, 1767 1000	9 fillets per compartment 12 fillets per compartment
WOOD CHIP CONTAINER	Full
VENT POSITION	Closed
SMOKE TIME	10 to 20 minutes
OVEN TIME REQUIRED	1-2 hours
FINAL INTERNAL TEMPERATURE	NOT TO EXCEED 77°F (25°C)
<p>The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.</p>	

SMOKING PROCEDURE

OVEN MUST BE AT ROOM TEMPERATURE BEFORE BEGINNING THE COLD SMOKE PROCEDURE.

Soak wood chips in water according to directions (5-15 minutes), fill wood chip container full and insert in chip holder located at the back of the oven.

Fill pan with ice and locate pan in shelf position number 7 (just above wood chip container).

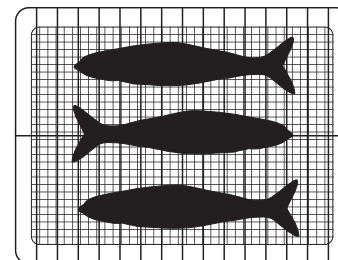
Place prepared salmon fillets on a wire grid as indicated on the diagram and insert wire grid on oven shelf beginning with the top shelf position.

Insert probe of thermocouple thermometer into the center of the middle salmon fillet located in the top shelf position or central shelf position when smoking a full load. To maintain proper color, the internal temperature of the salmon must not exceed 77°F (25°C). For this reason, it is important to begin the smoking process with the oven at room temperature.

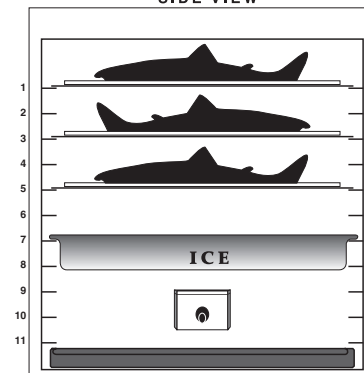
Make certain oven vents are closed. Close oven door and set smoke time from 10 to 20 minutes depending on taste preference. When the smoke timer cycles to the OFF position, the fillets must remain in the oven for a period of 1-2 hours. Do not open the oven door during this period.

Following the required oven time, remove the fillets, cover with clear plastic wrap and refrigerate until fully chilled.

TOP VIEW



SIDE VIEW



SECTION 7 - FOOD HOLDING AND SANITATION

FOOD HOLDING AND SANITATION

FOOD HOLDING - FUNCTION & VALUE

In the previous sections, cooking procedures in the Halo Heat Low Temperature Cooking and Holding Oven have been emphasized. If practical to the individual food service operation, these ovens can also be used without the cooking function to hold foods at proper serving temperatures. Individual holding cabinets can also be used to accomplish this function.

Food production in most food service facilities is accomplished in a variety of different cooking equipment. Food quality can be easily lost between the time a product is removed from an oven and the time of direct service. Regardless of the method of preparation, proper handling of food within this time period is of critical importance to the food service operator. Halo Heat hot food holding equipment is able to support any type of food preparation by extending the longest possible holding life for the widest variety of products.

For maximum efficiency, hot food holding equipment should be selected on the basis of the full range of functions this equipment can provide to the individual operation. For example, dough proofing, bulk food holding for buffet service or other situations and the transportation of hot foods are some of the major functions of these cabinets for multipurpose utility. When properly planned, Halo Heat holding equipment can be a time management aid, support the food service operation by extending preparation times outside of peak preparation hours, and provide a quality product in prolonged holding situations.

Consult an Alto-Shaam representative for information on compatible holding equipment or for recommendation on full systems tailored to meet specific requirements.

CAUTION

TO MAINTAIN SAFE TEMPERATURE LEVELS, COLD FOOD FOR RETHERMALIZATION OR REHEATING MUST NEVER BE ADDED TO THE OVEN WHILE HOT FOODS ARE BEING HELD.

GENERAL HOLDING GUIDELINES

Chefs, cooks and other specialized food service personnel employ varied methods of cooking. Proper holding temperatures for a specific food product must be based on the moisture content of the product, product density, volume, and proper serving temperatures. Safe holding temperatures must also be correlated with palatability in determining the length of holding time for a specific product.

Halo Heat maintains the maximum amount of product moisture content without the addition of water, water vapor, or steam. Maintaining maximum natural product moisture preserves the natural flavor of the product and provides a more genuine taste. In addition to product moisture retention, the gentle properties of Halo Heat maintain a consistent temperature throughout the cabinet without the necessity of a heat distribution fan, thereby preventing further moisture loss due to evaporation or dehydration.

In an enclosed holding environment, too much moisture content is a condition which can be relieved. A product achieving extremely high temperatures in preparation must be allowed to decrease in temperature before being placed in a controlled holding atmosphere. If the product is not allowed to decrease in temperature, excessive condensation will form increasing the moisture content on the outside of the product. To preserve the safety and quality of freshly cooked foods however, a maximum of 1 to 2 minutes must be the only time period allowed for the initial heat to be released from the product.

Most Halo Heat holding equipment is provided with a thermostat control between 60° and 200°F (16° to 93°C). If the unit is equipped with vents, close the vents for moist holding and open the vents for crisp holding.

SECTION 7 - FOOD HOLDING AND SANITATION

FOOD HOLDING AND SANITATION

GENERAL HOLDING CABINET OPERATION

Chefs, cooks and other specialized food service personnel employ varied methods of cooking. Proper holding temperatures for a specific food product must be based on the moisture content of the product, product density, volume, and proper serving temperatures. Safe holding temperatures must also be correlated with palatability in determining the length of holding time for a specific product.

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HOLDING TEMPERATURE RANGE		
MEAT	FAHRENHEIT	CELSIUS
BEEF ROAST — Rare	130°F	54°C
BEEF ROAST — Med/Well Done	155°F	68°C
BEEF BRISKET	160° — 175°F	71° — 79°C
CORN BEEF	160° — 175°F	71° — 79°C
PASTRAMI	160° — 175°F	71° — 79°C
PRIME RIB — Rare	130°F	54°C
STEAKS — Broiled/Fried	140° — 160°F	60° — 71°C
RIBS — Beef or Pork	160°F	71°C
VEAL	160° — 175°F	71° — 79°C
HAM	160° — 175°F	71° — 79°C
PORK	160° — 175°F	71° — 79°C
LAMB	160° — 175°F	71° — 79°C
POULTRY		
CHICKEN — Fried/Baked	160° — 175°F	71° — 79°C
DUCK	160° — 175°F	71° — 79°C
TURKEY	160° — 175°F	71° — 79°C
GENERAL	160° — 175°F	71° — 79°C
FISH/SEAFOOD		
FISH — Baked/Fried	160° — 175°F	71° — 79°C
LOBSTER	160° — 175°F	71° — 79°C
SHRIMP — Fried	160° — 175°F	71° — 79°C
BAKED GOODS		
BREADS/ROLLS	120° — 140°F	49° — 60°C
MISCELLANEOUS		
CASSEROLES	160° — 175°F	71° — 79°C
DOUGH — Proofing	80° — 100°F	27° — 38°C
EGGS — Fried	150° — 160°F	66° — 71°C
FROZEN ENTREES	160° — 175°F	71° — 79°C
HORS D'OEUVRES	160° — 180°F	71° — 82°C
PASTA	160° — 180°F	71° — 82°C
PIZZA	160° — 180°F	71° — 82°C
POTATOES	180°F	82°C
PLATED MEALS	140° — 165°F	60° — 74°C
SAUCES	140° — 200°F	60° — 93°C
SOUP	140° — 200°F	60° — 93°C
VEGETABLES	160° — 175°F	71° — 79°C
THE HOLDING TEMPERATURES LISTED ARE SUGGESTED GUIDELINES ONLY. ALL FOOD HOLDING SHOULD BE BASED ON INTERNAL PRODUCT TEMPERATURES. ALWAYS FOLLOW LOCAL HEALTH (HYGIENE) REGULATIONS FOR ALL INTERNAL TEMPERATURE REQUIREMENTS.		

SECTION 7 - FOOD HOLDING AND SANITATION

FOOD HOLDING AND SANITATION

Food flavor and aroma are usually so closely related that it is difficult, if not impossible, to separate them. There is also an important, inseparable relationship between cleanliness and food flavor. Cleanliness, top operating efficiency, and appearance of equipment contribute considerably to savory, appetizing foods. Good equipment that is kept clean, works better and lasts longer.

Most food imparts its own particular aroma and many foods also absorb existing odors. Unfortunately, during this absorption there is no distinction between GOOD and BAD odors. The majority of objectionable flavors and odors troubling food service operations are caused by bacteria growth. Sourness, rancidity, mustiness, stale or other OFF flavors are usually the result of germ activity.

The easiest way to insure full, natural food flavor is through comprehensive cleanliness. This means good control of both visible soil (dirt) and invisible soil (germs). A thorough approach to sanitation will provide essential cleanliness. It will assure an attractive appearance of equipment, along with maximum efficiency and utility. More importantly, a good sanitation program provides one of the key elements in the prevention of food-borne illnesses.

A controlled holding environment for prepared foods is just one of the important factors involved in the prevention of food-borne illnesses. Temperature monitoring and control during receiving, storage, preparation, and the service of foods are of equal importance.

The most accurate method of measuring safe temperatures of both hot and cold foods is by internal product temperature. A quality thermometer is an effective tool for this purpose, and should be routinely used on all products that require holding at a specific temperature.

A comprehensive sanitation program should focus on the training of staff in basic sanitation procedures. This includes personal hygiene, proper handling of raw foods, cooking to a safe internal product temperature, and the routine monitoring of internal temperatures from receiving through service.

Most food-borne illnesses can be prevented through proper temperature control and a comprehensive program of sanitation. Both these factors are important to build quality service as the foundation of customer satisfaction. Safe food handling practices to prevent food-borne illness is of critical importance to the health and safety of your customers.

HACCP, an acronym for Hazard Analysis (at) Critical Control Points, is a quality control program of operating procedures to assure food integrity, quality, and safety. Taking steps necessary to augment food safety practices is both cost effective and relatively simple. While HACCP guidelines go far beyond the scope of this manual, additional information is available by contacting:

**CENTER FOR FOOD SAFETY AND APPLIED
NUTRITION FOOD AND DRUG ADMINISTRATION
1-888-SAFEFOOD**

INTERNAL FOOD PRODUCT TEMPERATURES		
HOT FOODS		
DANGER ZONE	40° TO 140°F	(4° TO 60°C)
CRITICAL ZONE	70° TO 120°F	(21° TO 49°C)
SAFE ZONE	140° TO 165°F	(60° TO 74°C)
COLD FOODS		
DANGER ZONE	ABOVE 40°F	(ABOVE 4°C)
SAFE ZONE	36° TO 40°F	(2° TO 4°C)
FROZEN FOODS		
DANGER ZONE	ABOVE 32°F	(ABOVE 0°C)
CRITICAL ZONE	0° TO 32°F	(-18° TO 0°C)
SAFE ZONE	0°F or below	(-18°C or below)

SECTION 7 - FOOD HOLDING AND SANITATION

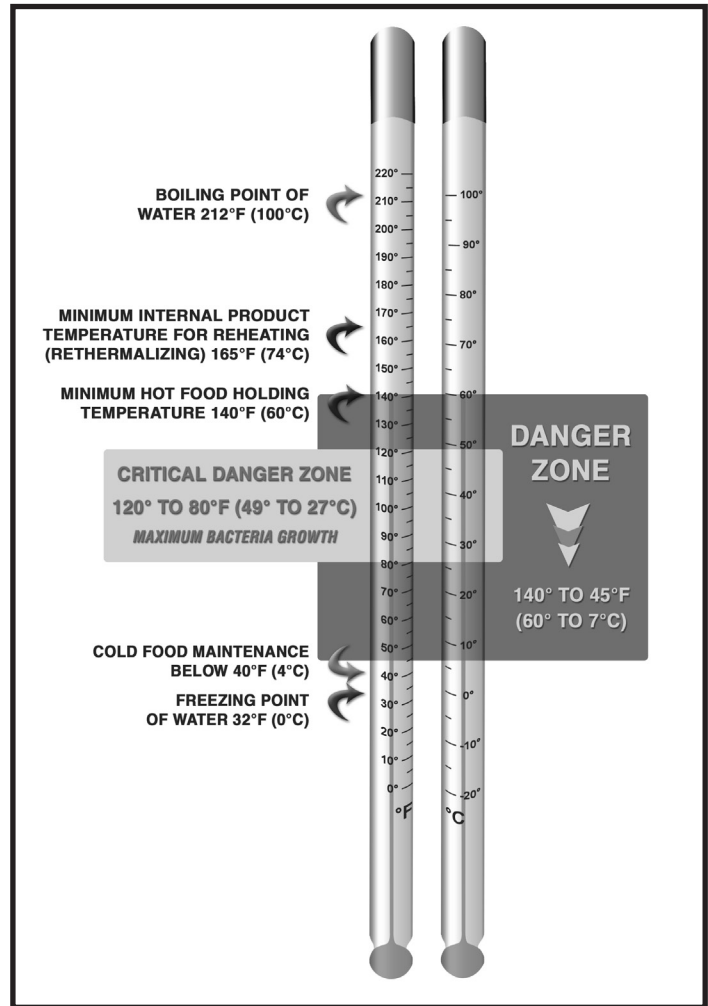
FOOD HOLDING AND SANITATION

FOOD SAFETY GUIDELINES

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All heated food must be maintained at 140°F to 150°F (60°C to 65°C) after being heated. Foods that have been heated followed by refrigerated storage must be reheated to a minimum of 165°F (74°C) to prevent bacteria growth.

- All stored food items must be covered and placed in a cooler or freezer at a minimum height of 6-inches (152mm) above the floor.
- Employees serving food, preparing food, or washing utensils must wear an effective hair covering.
- Employees must wash their hands before serving or preparing food.
- Soap and towels must be provided at the hand-sink which must only be used for washing hands.
- No smoking or use of tobacco products is allowed in the food preparation or service area.
- All serving containers must be stored with food contact surfaces covered or in the down position.
- All utensils must be washed in a three-compartment sink and dipped in a final sanitation rinse. A pH test kit must be used to check the rinse water.
- Food preparation surfaces must not be used for the storage of non-food items.
- All cold food must be stored at or below 40°F (4°C).
- Frozen foods must not be thawed at room temperature nor in water. Use the cooler for thawing and thaw foods slowly.



SUMMARY

In the United States, the Food and Drug Administration has a published Food Code as a reference guide for the prevention of food-borne illness in retail outlets such as restaurants, institutions and grocery stores. Provisions of this Food Code are compatible with the concept and terminology of Hazard Analysis (at) Critical Control Points (HACCP) and contains expanded provisions for food safety. The FDA publication, along with local codes, should be the final word with regard to all issues regarding food safety and sanitation in the U.S. For more information contact:

*Center for Food Safety and Applied Nutrition
Food and Drug Administration
PHONE: 1-888-SAFEFOOD
www.foodsafety.gov*

Alto-Shaam has established a twenty-four hour emergency service call center to offer immediate customer access to a local authorized service agency outside of standard business hours. The emergency service access is provided exclusively for Alto-Shaam equipment and is available throughout the United States through the use of Alto-Shaam's toll-free number. Emergency service access is available seven days a week including holidays.





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Economically Smart.**

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