

ALTO SHAAM®

OPERATION and CARE MANUAL



TYSYS-90

HEATED DISPLAY CASE, WEDGE

TY-90
TY-90/P
TYSYS-90
TYSYS-90/P



COOK/HOLD/SERVE SYSTEMS

W164 N9221 Water Street • P.O. Box 450 • Menomonee Falls, Wisconsin 53052-0450 U.S.A.
PHONE: 262.251.3800 FAX: 262.251.7067 • 800.329.8744 U.S.A./CANADA WEBSITE:
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ALTO-SHAAM® HEATED DISPLAY CASES

UNPACKING and SET-UP

The Alto-Shaam Display Case has been thoroughly tested, checked for calibration, and inspected to insure only the highest quality cabinet is provided. When you receive your cabinet, check for any possible shipping damage and report it at once to the delivering carrier. See *Transportation Damage and Claims section located in this manual.*



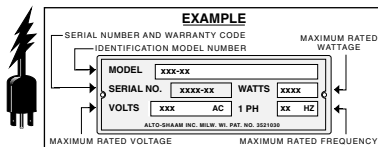
In order to maintain established National Sanitation Foundation standards, all stationary floor models must be sealed to the floor with a R.T.V. or silastic meeting N.S.F. requirements or have 6" (153mm) unobstructed clearance beneath the unit. Counter and table units must be mounted on legs of a sufficient 4" (102mm) height to provide minimum unobstructed space beneath the unit. Legs are supplied with the unit. Warranty will become null and void if these directions are not followed.

Save all the information and instructions packed inside the cabinet. Complete and return the warranty card to the factory as soon as possible to assure prompt service in the event of a warranty parts and labor claim.

NOTE: Any and all claims for warranty must include the full model number and serial number of the cabinet.

ELECTRICAL INSTALLATION

The unit must be installed or permanent wiring for this unit must be done by a licensed electrician in accordance with local electrical codes.



Ensure power source matches voltage stamped on nameplate of unit.

1. An identification tag is permanently mounted on the cabinet.
2. Plug the case into a properly grounded receptacle ONLY, positioning the unit so that the plug is easily accessible in case of an emergency. Arcing will occur when connecting or disconnecting the display case unless all controls are in the OFF position.
3. REGARDING INTERNATIONAL STANDARD UNITS: If the unit is not equipped with flexible cord with plug, an all-pole country approved disconnection device which has a contact separation of at least 3mm in all poles must be incorporated in the fixed wiring for disconnection. When using a cord without a plug, the green/yellow conductor shall be connected to the terminal which is marked with the ground symbol. If a plug is used, the socket outlet must be easily accessible. If the power cord needs replacement, use a similar one obtained from the distributor.

OPERATIONAL PROCEDURES

1. DO NOT ADD WATER TO THE CASE
It is not necessary to add water to the case. As a matter of fact, adding water is not recommended since water will accelerate the deterioration of the product, and may damage the case.
2. PLACE DIVIDERS and SERVING PANS IN CASE
A complete pan configuration layout is located in this manual. It is VERY important to note, no matter what type of pan configuration you choose, pan separator bars or divider bars must be used to close all gaps between pans, and all gaps between the pans and the edges of the display case. As a consequence, if this is not done, heat distribution can be uneven and uniform temperature will be difficult to hold. If needed, additional pan divider bars are available.
3. TURN POWER AND/OR BREAKER SWITCH ON
They are located on the control side of the unit.
4. TURN DISPLAY LIGHTS "ON" AND SET THE THERMOSTATS AT NUMBER "10" TO PREHEAT
A indicator light will illuminate when the thermostats are turned "ON." The light indicators will remain lit as long as the unit is preheating or calling for heat. The unit should be preheated, at the number 10 setting, for a minimum of 45-60 minutes before loading the case with food. When preheating is completed, or whenever the unit reaches any temperature set by the operator between 1 and 10, the indicator lights will go "OUT".
5. LOAD HOT FOODS INTO THE CASE
Be certain only hot food is transferred into the case. Before loading food into the unit, use a pocket-type meat thermometer to make certain all products have reached an internal temperature of 140° to 160° F (60° to 71°C). If any food product is not at proper serving temperature, use a Halo Heat cooking and holding oven, set at 250° to 275°F (121° to 135°C), or a Combitherm oven, to bring the product within the correct temperature range. Be certain only hot PRE-PACKAGED foods with heat tested containers are used in the self-service section of the case.
6. RESET THERMOSTATS AS NEEDED
After all food is loaded into the display case and the doors are closed, reset the thermostats to the number "8" setting. THIS WILL NOT NECESSARILY BE THE FINAL SETTING. Since proper temperature range depends on the type of products and the quantities being held, it is necessary to periodically use a pocket thermometer to check each item to make certain the correct temperatures are being maintained. Proper temperature range is between 140° and 160°F (60° and 71°C). Normally, this will require a thermostat setting of "8," but self-service sections will always require a higher thermostat setting.
7. SERVE FRESH HOT FOOD
Keep hot foods looking fresh. Occasionally stir or rotate foods as needed. Serve products in the proper package or container. Keep doors closed after serving. Wipe spills immediately to assure maximum eye appeal and to ease end-of-the-day cleanup.

CARE and CLEANING

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



THOROUGHLY CLEAN THE DISPLAY CASE DAILY

1. Turn lights and adjustable thermostats to the "OFF" position.
2. Disconnect unit from power source.
3. Remove and store unused products under refrigeration.
4. Clean the interior metal surfaces of the cabinet with a damp cloth and any good alkaline or alkaline chlorinated based commercial detergent or grease solvent at the recommended strength. Use a plastic scouring pad or oven cleaner for difficult areas. Avoid the use of abrasive cleaning compounds, chloride based cleaners, or cleaners containing quaternary salts. Rinse carefully to remove all residue and wipe dry.



NO SCRAPERS



NO STEEL PADS

NOTE: Never use hydrochloric acid (muriatic acid) on stainless steel.

5. Clean glass with window cleaner.
6. To help maintain the protective film coating on polished stainless steel, clean the exterior of the unit 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.

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

Remember to turn power and/or breaker switch "ON" before operating the unit.

At no time should the case be flooded with water or liquid solution. NEVER STEAM CLEAN. Do not use water jet to clean. Severe damage or electrical hazard could result, voiding the warranty.



Disconnect the unit from the power source before cleaning or servicing.



CAUTION Hood glass extended to the full upright position is stabilized through the use of gas struts designed for the full load bearing weight. These struts could weaken or fail due to wear, environmental conditions or aging. Operators should be aware of any decrease in effort to lift the hood and initiate an immediate gas strut safety check. **DO NOT LIFT THE HOOD IN THIS CONDITION.**

SAFETY ALERT



CAUTION

This unit's performance has been optimized using the factory provided bulbs. These bulbs should be replaced with an exact replacement or with a factory recommended replacement. These bulbs have been treated to resist breakage and must be replaced with similarly treated bulbs in order to maintain compliance with NSF standards. To avoid filament damage, do not overtighten the bulbs in their receptacles.



CAUTION

SANITATION GUIDELINES

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

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°F TO 40°F	(2°C 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)

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 are both cost effective and relatively simple. While HACCP guidelines go far beyond the scope of this manual, additional information is available by contacting the USDA/FDA Food-borne Illness Education Information Center at (301)504-6803.

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.

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.

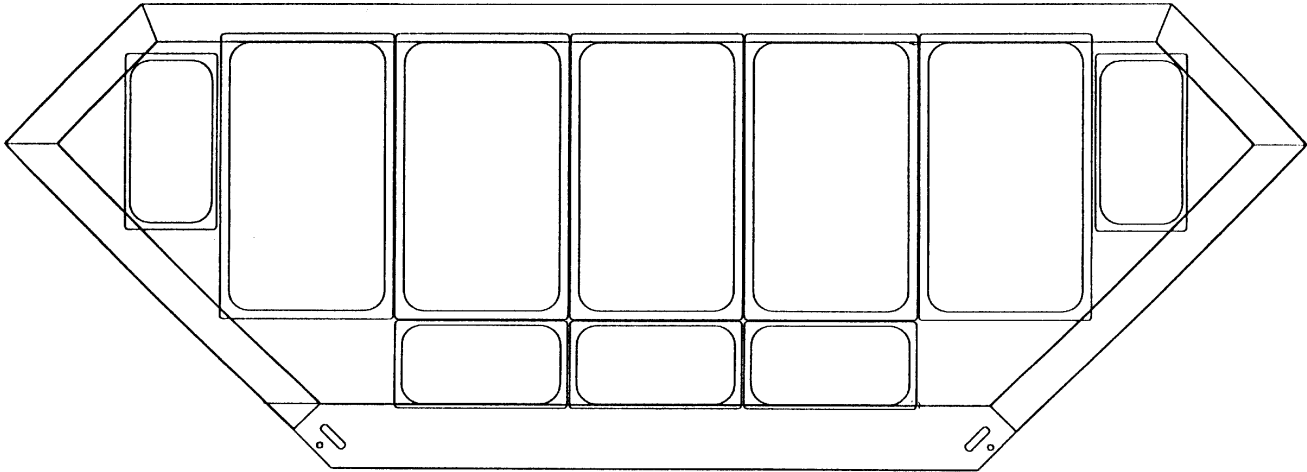
This Alto-Shaam holding unit is equipped with a thermostat indicating a range of between 1 and 10. Use a metal-stemmed indicating thermometer to measure the internal temperature of the product(s) being held. Adjust the thermostat setting to achieve the best overall setting based on internal product temperature.

HOLDING TEMPERATURE RANGE		
	FAHRENHEIT	CELSIUS
MEAT		
BEEF ROAST — Rare	140°F	60°C
BEEF ROAST — Med/Well Done	160°F	71°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	140°F	60°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	180°F	82°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.

TY-90 • TY-90/P • TYSYS-90 • TYSYS-90/P

SAMPLE PAN LAYOUT



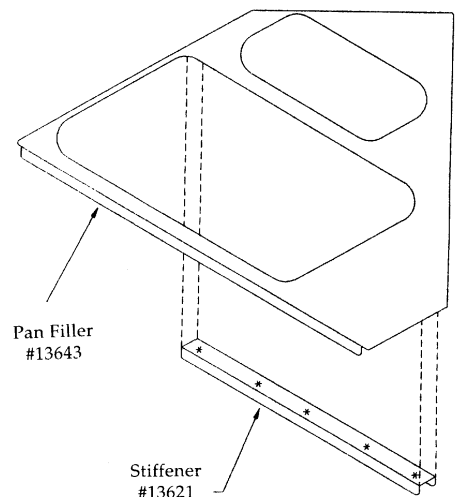
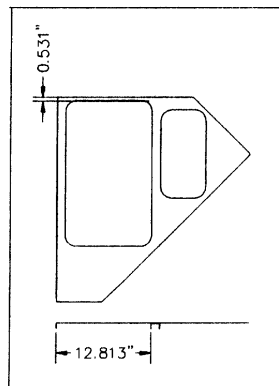
OPTIONS & ACCESSORIES

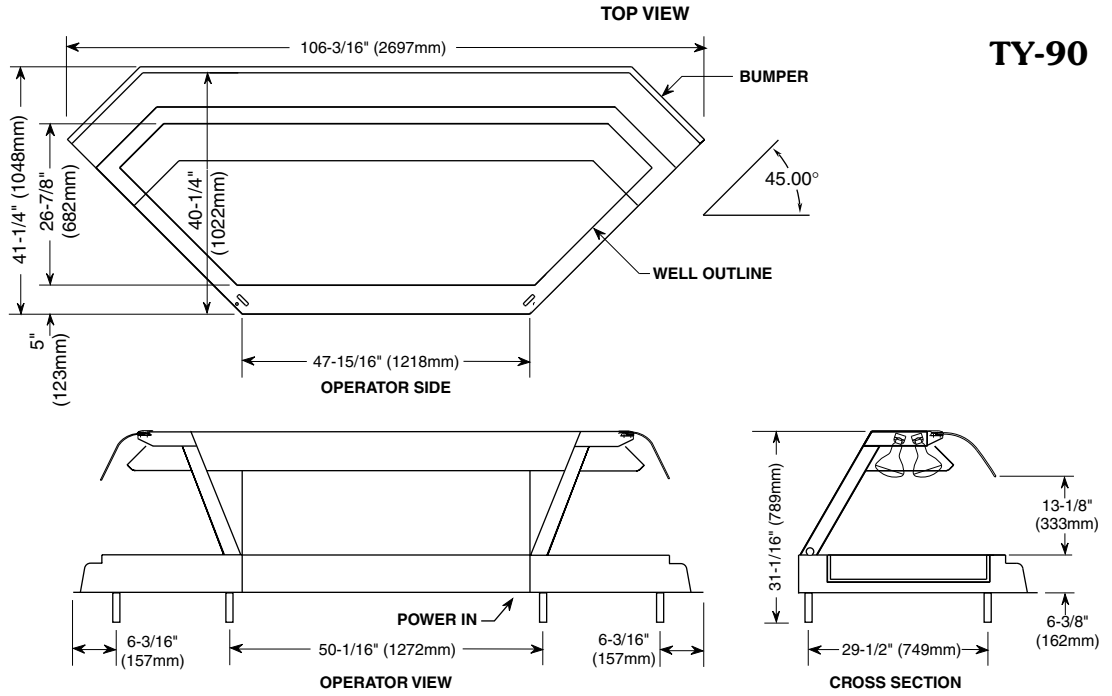
Custom Panel, End Panel & Bumper Colors	FACTORY QUOTE
Bulbs	
standard, Halogen, tuffskin	LP-33592
blue tint, teflon coated	LP-33253
standard, 230V unit, Halogen	LP-3384
Temperature Gauge	GU-33384

PAN FILLER PACKAGE OPTION #15804

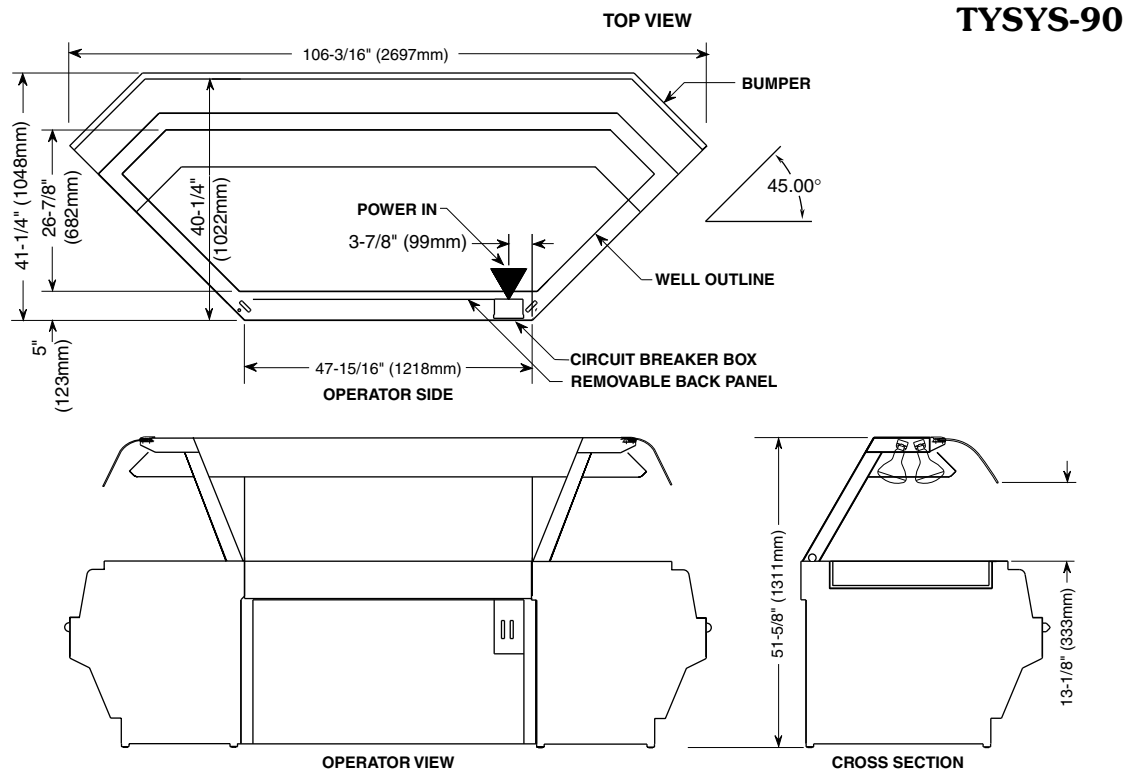
Includes:

- Left-hand pan spot #14567
- Right-hand pan spot #14568
- example pictured at the right*
- Long divider, long expanded #11046
- Pan divider, 1/3 #11047
- Pan divider, long #11317
- Pan divider, short #11318
- Divider, sheet pan, long #11319
- Divider, sheet pan, short #11320





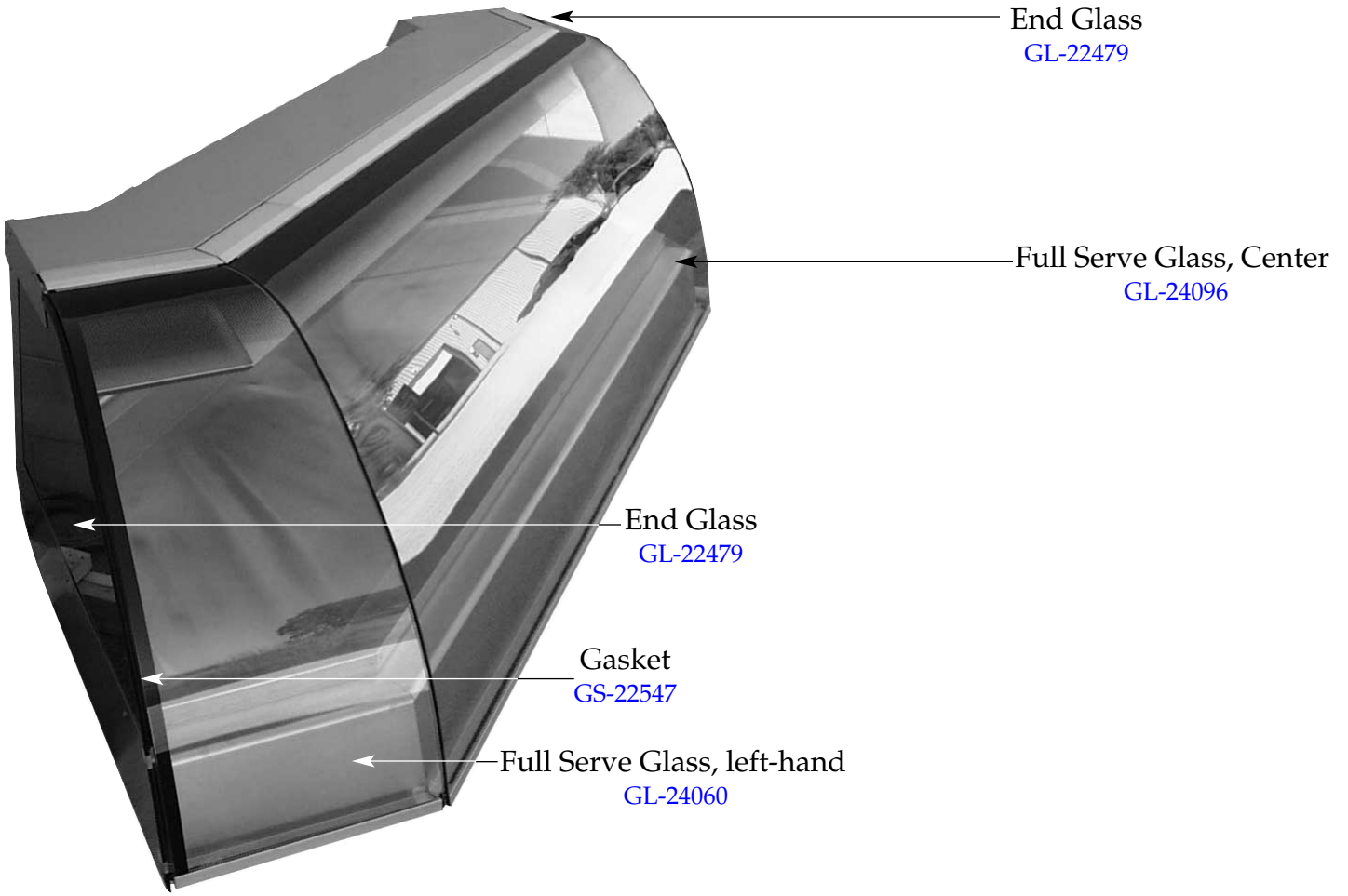
Outside Dimensions



Service Parts List

TY-90 • TY-90/P • TYSYS-90 • TYSYS-90/P

12-22-00 Part Description	Alto-Shaam Part No.	TY-90 Qty.	TY-90/P Qty.	TYSYS-90 Qty.	TYSYS-90/P Qty.
Bumper Rail, 10' (3048mm)	BM-22721	-	-	1	1
Circuit Breaker	CI-3879	-	-	1	1
Cord, 120V, 208-240V	CD-3291	1	1	-	-
Cord, 230V	CD-33490	1	1	-	-
Door Assembly (top track included)	DR-22480	1	1	1	1
Door, right-hand	DR-22480B				
Door, left-hand	DR-22480A				
Door Bumper Assembly	DR-22480G				
Door Guides #44049	DR-22480F				
Door Track, bottom, 4' (1219mm)	TK-24265	1	1	1	1
Gasket, End Glass, 2' (610mm)	GS-22547	1	1	1	1
Gasket, Frame, 6' (1829mm)	FR-22496	1	1	1	1
Glass, Center, Self Service	GL-24071	-	1	-	1
Glass, Full, Center	GL-24096	1		1	
Glass, Full Serve, right-hand	GL-24059	1	-	1	-
Glass, Full Serve, left-hand	GL-24060	1		1	
Glass, Self Serve, right-hand	GL-24061	-	1	-	1
Glass, Self Serve, left-hand	GL-24062	-	1	-	1
Glass, End	GL-22479	2	2	2	2
Glass Clamp Assembly, right-hand	CM-24051	1	1	1	1
Glass Clamp Assembly, left-hand	CM-24052	1	1	1	1
Glass Clamp Assembly, center	CM-24274	1	1	1	1
Heat Element	13669	4	4	4	4
Heat Indicator Light, 120V, 208-240V	LI-3025	2	2	2	2
Heat Indicator Light, 230V	LI-3951	2	2	2	2
Hinge, Pivot	HG-24063				
Mounting Screws, Pivot Hinge	SC-23628	8	8	8	8
Insulation 1.5"x 25.5"x 120" (38mm x 648mm x 3048)	IN-22364	3	3	3	3
Bulb, 230V	LP-3384	10	10	10	10
Receptacle, 230V	RP-3955	10	10	10	10
Bulb, 120V, 208-240V	LP-33592	10	10	10	10
Receptacle, 120V, 208-240V	RP-3952	10	10	10	10
Legs, 6" (152mm)	LG-22686	6	6	-	-
Struts	SU-22702	2	2	2	2
Thermostat	TT-3498	2	2	2	2
Toggle Switch	SW-3616	2	2	2	2
Terminal Block, 230V	BK-3019	1	1	-	-
Terminal Block, 120V, 208-240V	BK-3023	1	1	-	-
OPTION Pan Filler Package Assembly	15804	1	1	1	1



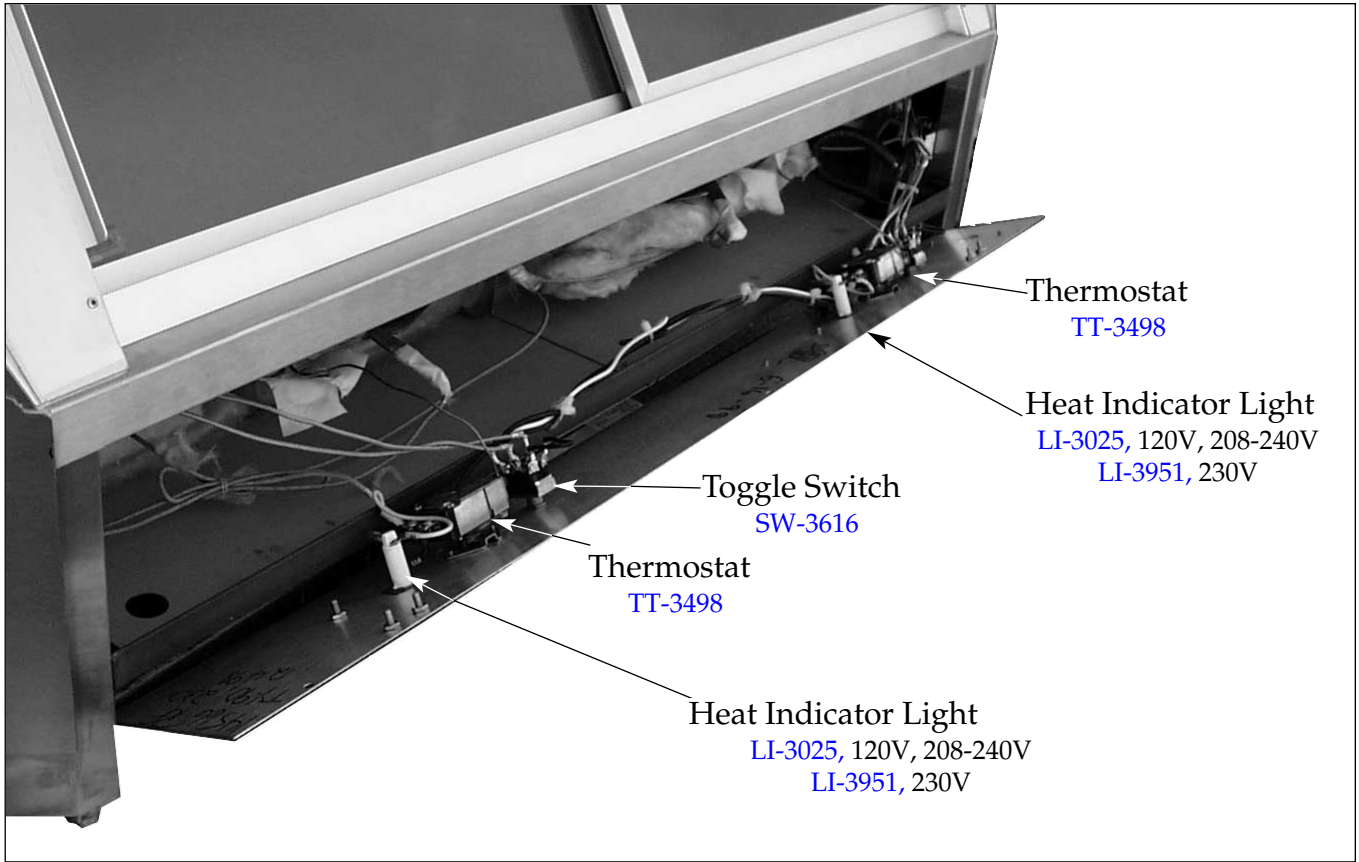
TY-90

Sliding Glass Door
Assembly
DR-22480

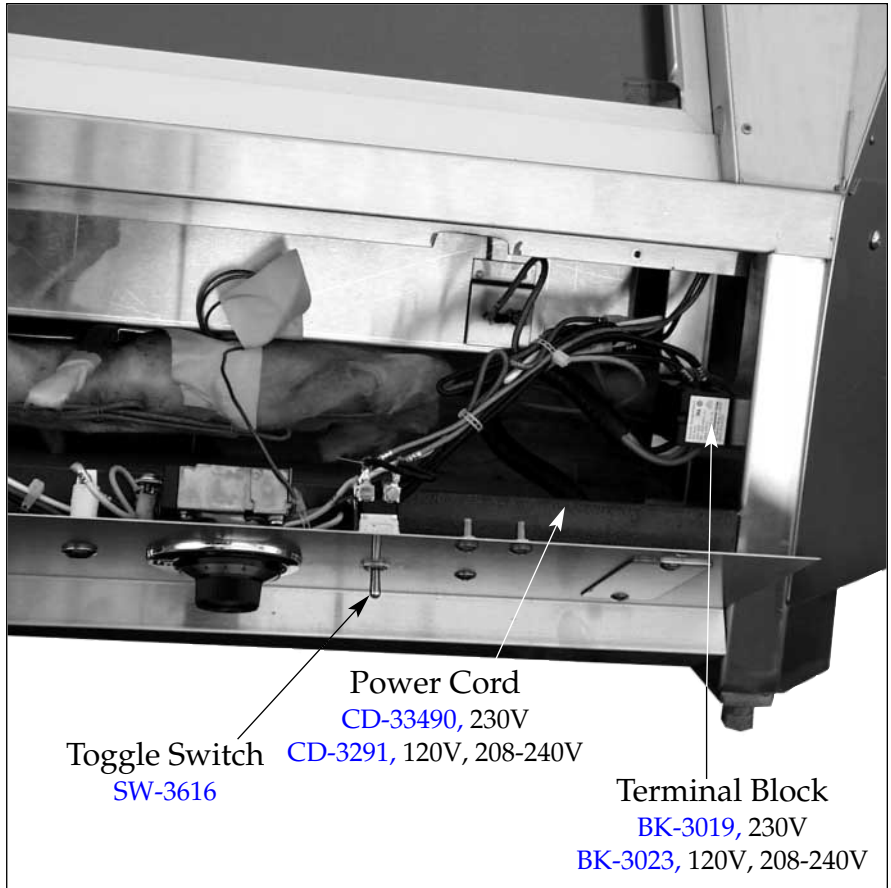
*Top door track is part of
door assembly*

Door Track,
bottom
TK-24265





TY-90





TY-90

Bulb Receptacle
RP-3955, 230V
RP-3952, 120V, 208-240V

Bulb
LP-3384, 230V
LP-33592, 120V, 208-240V

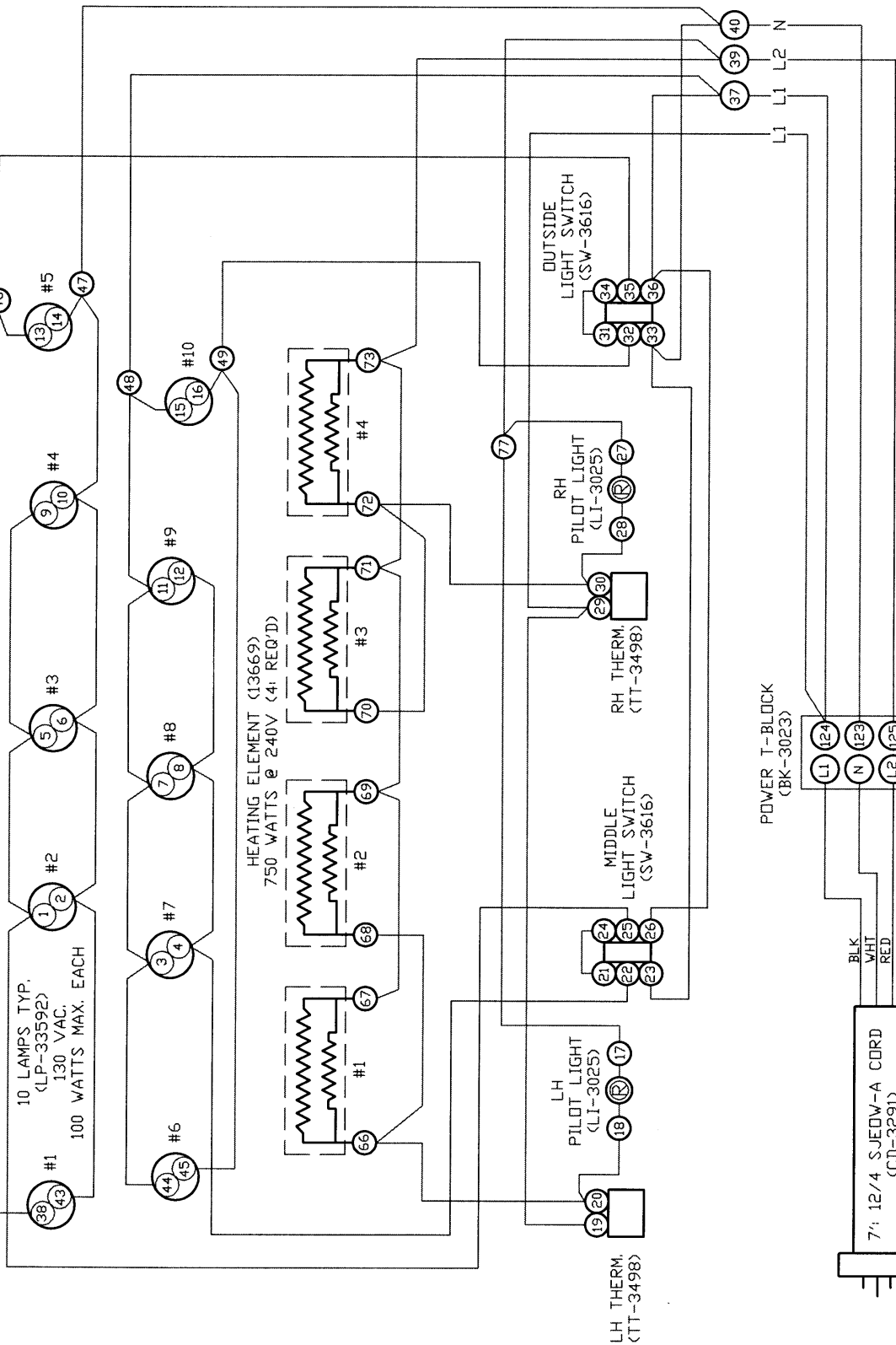


Heating Element
13669

120/208-240V

60HZ
4500W
25.0A

10 LAMPS TYP.
(LP-33592)
130 VAC.
100 WATTS MAX. EACH



REVISIONS		TY-90, 90/P	120/208-240V
NO.	DATE	BY	
1	01/15/01	NWM	
2			
3			
4			
5			

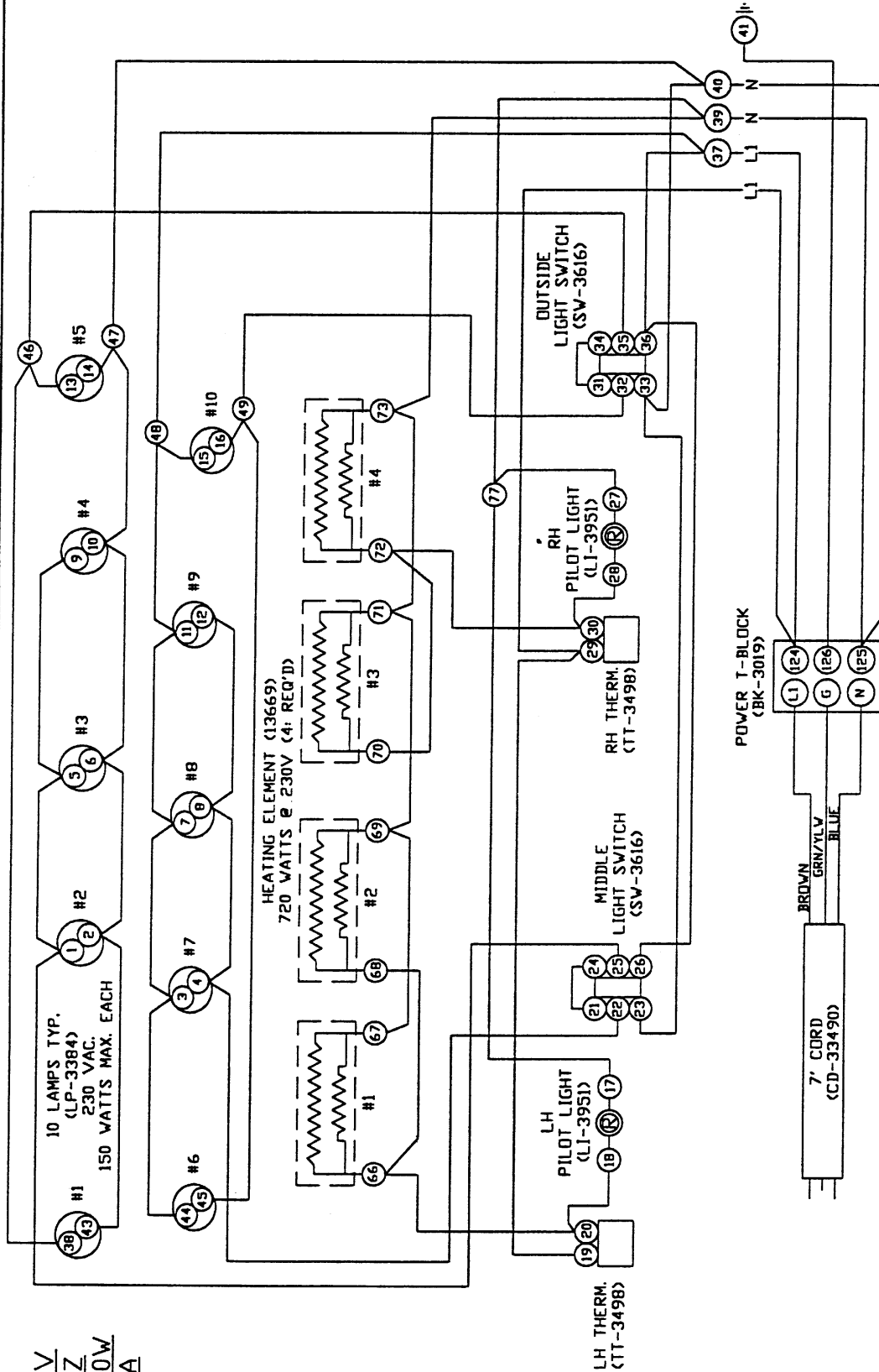
WIRING DIAGRAM

ALTO-SHAAM INC.
MEMONEE FALLS, WISCONSIN

DRAWN BY	RS	SCALE	NONE	DWG. NO.	A-7485
APP'D	DAR	DATE	6/10/98		

NOTE #1: ALL NUMBERS IN () = ALTO-SHAAM PART NUMBERS.
NOTE #2: SEE DRAWING #C-8852 FOR WIRE ASSEMBLIES.

230V
50HZ
4380W
19.0A



REVISIONS		TY-90, 90/P	230V, 50HZ
NO.	DATE	BY	
1	03/02/99	JMM	
2			
3			
4			
5			

WIRING DIAGRAM

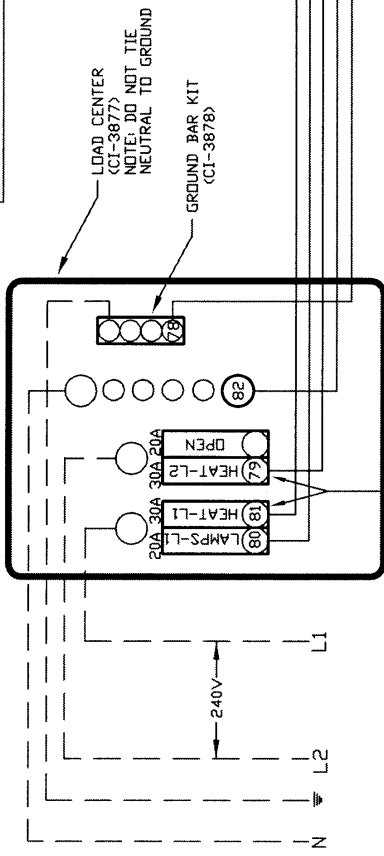
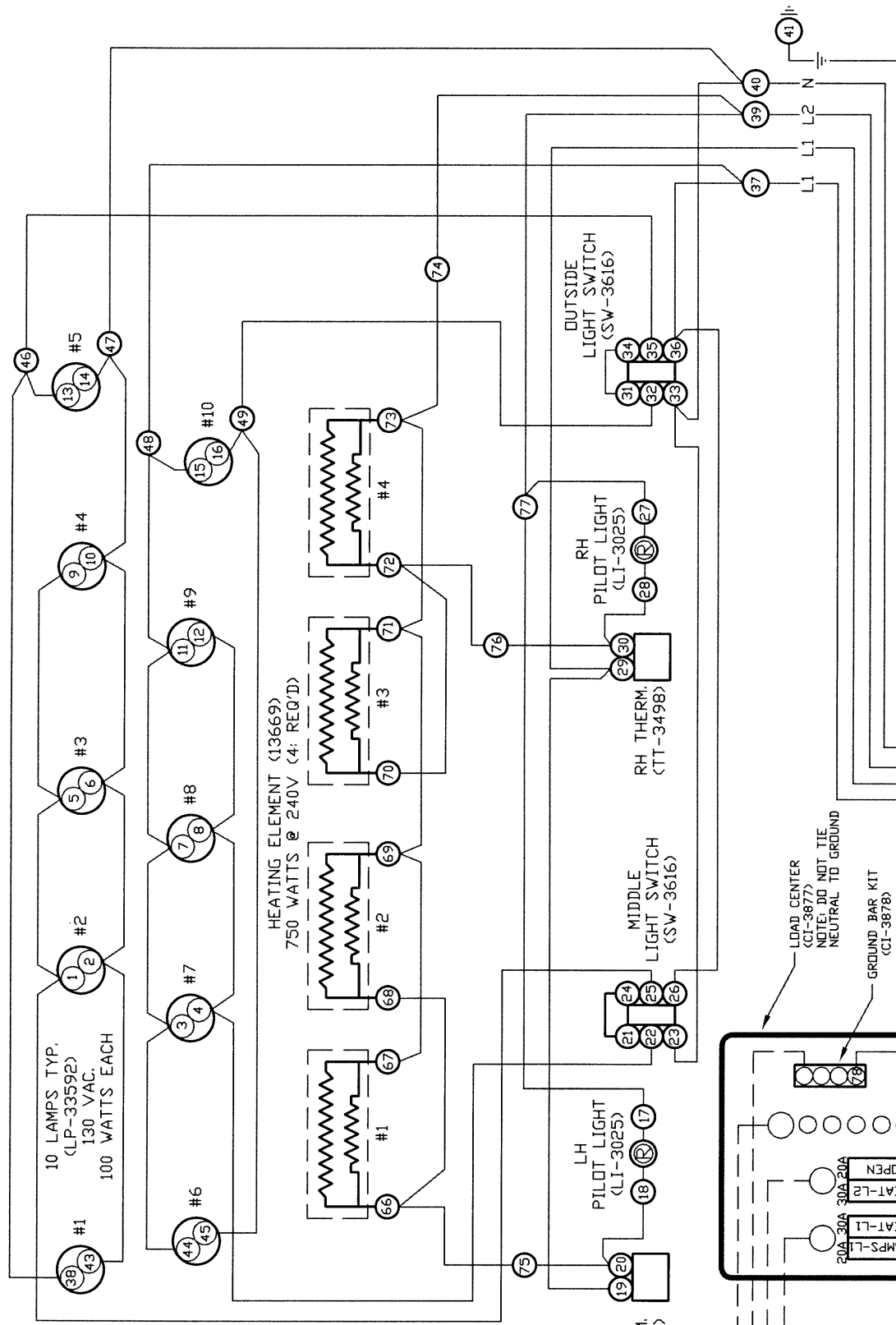
ALTO-SHAAM INC.
MEMONONEE FALLS, WISCONSIN

DRAWN BY	RS	SCALE	NONE	DWG. NO.	
APP'D	<i>[Signature]</i>	DATE	6/10/98		A-7486

NOTE #1: ALL NUMBERS IN () = ALTO-SHAAM PART NUMBERS.
NOTE #2: = SEE DRAWING #C-8853 FOR WIRE ASSEMBLIES.

120/208-240V

60HZ
4500W
25.0A



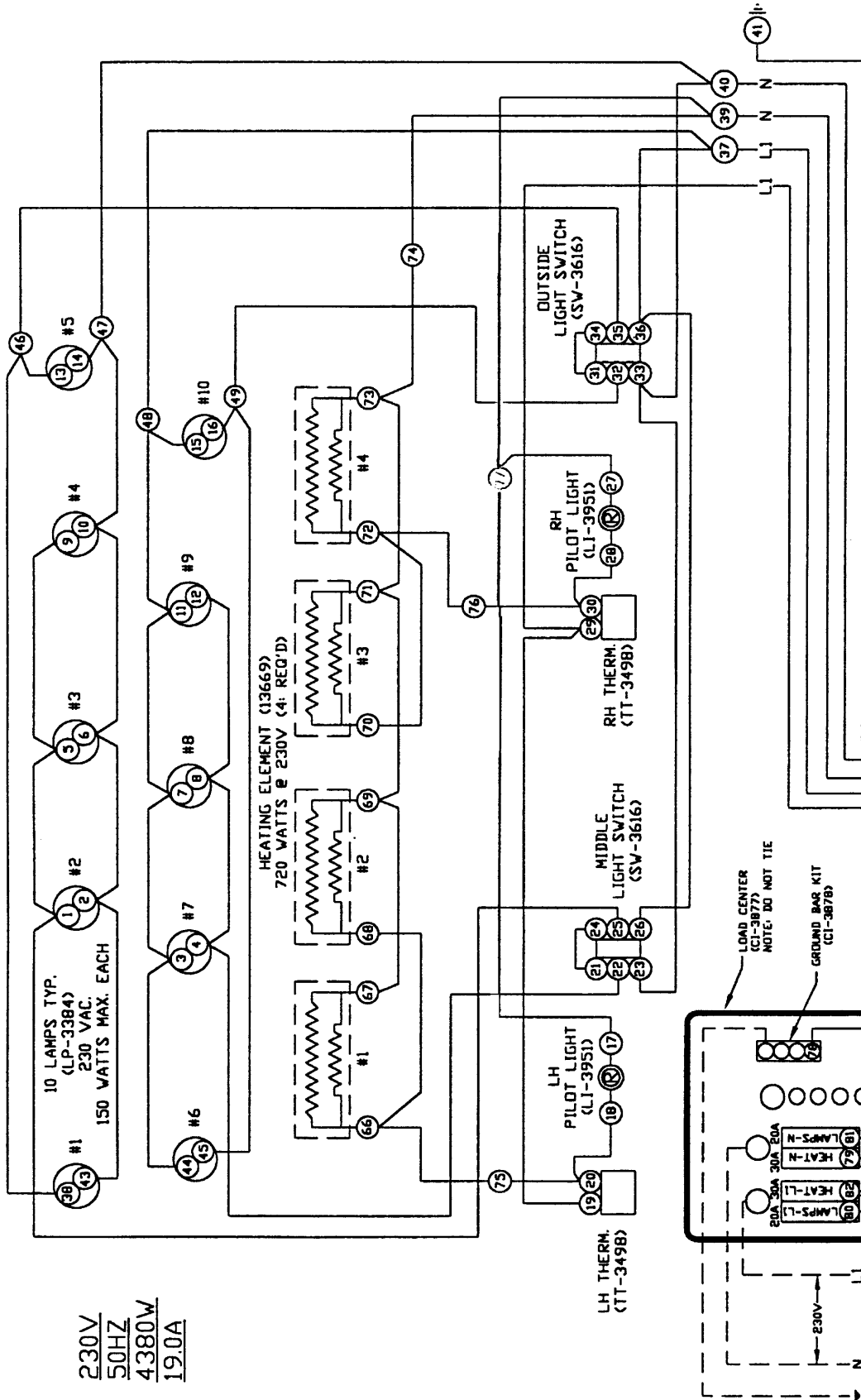
1- 20/30, 30/20 AMP TANDEM CIRCUIT BREAKER (CI-3879)

NOTE #1: ALL NUMBERS IN () = ALTO-SHAAM PART NUMBERS.
NOTE #2: SEE DRAWING # C-8854 FOR WIRE ASSEMBLIES.

REVISIONS	
NO.	DATE
1	09/01/99
2	01/15/01
3	
4	
5	

TYSYS-90, 90/P	120/208-240V
WIRING DIAGRAM	
ALTO-SHAAM INC. MEMONEE FALLS, WISCONSIN	
DRAWN BY RS	SCALE NONE
APP'D DAR	DATE 6/10/98
	DWG. NO. A-7487

230V
50HZ
4380W
19.0A



REVISIONS		TYSYS-90, 90/P		230V
NO.	DATE	BY		
1	03/02/99	JMM		
2	09/01/99	JMM		
3				
4				
5				

WIRING DIAGRAM

ALTO-SHAAM INC.
MENDONNEE FALLS, WISCONSIN

DRAWN BY	RS	SCALE	NDNE	DWG. NO.
APP'D	MSM	DATE	6/10/98	A-7488

1- 20/30 30/20 AMP TANDEM CIRCUIT BREAKER (CI-3875)

NOTE #1: ALL NUMBERS IN () = ALTO-SHAAM PART NUMBERS.
NOTE #2: SEE DRAWING #C-8855 FOR WIRE ASSEMBLIES.

TRANSPORTATION DAMAGE and CLAIMS



All Alto-Shaam equipment is sold F.O.B. shipping point, and when accepted by the carrier, such shipments become the property of the consignee.

Should damage occur in shipment, it is a matter between the carrier and the consignee. In such cases, the carrier is assumed to be responsible for the safe delivery of the merchandise, unless negligence can be established on the part of the shipper.

1. Make an immediate inspection while the equipment is still in the truck or immediately after it is moved to the receiving area. Do not wait until after the material is moved to a storage area.
2. Do not sign a delivery receipt or a freight bill until you have made a proper count and inspection of all merchandise received.
3. Note all damage to packages directly on the carrier's delivery receipt.
4. Make certain the driver signs this receipt. If he refuses to sign, make a notation of this refusal on the receipt.
5. If the driver refuses to allow inspection, write the following on the delivery receipt:
Driver refuses to allow inspection of containers for visible damage.
6. Telephone the carrier's office immediately upon finding damage, and request an inspection. Mail a written confirmation of the time, date, and the person called.
7. Save any packages and packing material for further inspection by the carrier.
8. Promptly file a written claim with the carrier and attach *copies* of all supporting paperwork.

We will continue our policy of assisting our customers in collecting claims which have been properly filed and actively pursued. We cannot, however, file any damage claims for you, assume the responsibility of any claims, or accept deductions in payment for such claims.

ALTO-SHAAM® LIMITED WARRANTY

Alto-Shaam, Inc. warrants to the original purchaser that any original part that is found to be defective in material or workmanship will, at our option, subject to provisions hereinafter stated, be replaced with a new or rebuilt part.

The labor warranty remains in effect one (1) year from installation or fifteen (15) months from the shipping date, whichever occurs first.

The parts warranty remains in effect one (1) year from installation or fifteen (15) months from the shipping date, whichever occurs first.

Exceptions to the one year part warranty period are as listed:

- A. Halo Heat cook/hold ovens include a five (5) year parts warranty on the heating element. Labor will be covered under the terms of the standard warranty period of one (1) year or fifteen (15) months.
- B. Alto-Shaam Quickchillers include a five (5) year parts warranty on the refrigeration compressor. Labor will be covered under the terms of the standard warranty period of one (1) year or fifteen (15) months.

This warranty does not apply to:

1. Calibration
2. Replacement of light bulbs and/or the replacement of display case glass due to damage of any kind.
3. Equipment damage caused by accident, shipping, improper installation or alteration.
4. Equipment used under conditions of abuse, misuse, carelessness or abnormal conditions.
5. Any losses or damage resulting from malfunction, including loss of product or consequential or incidental damages of any kind.
6. Equipment modified in any manner from original model, substitution of parts other than factory authorized parts, removal of any parts including legs, or addition of any parts.

This warranty is exclusive and is in lieu of all other warranties, expressed or implied, including the implied warranties of merchantability and fitness for purpose. In no event shall the Company be liable for loss of use, loss of revenue, or loss of product or profit, or for indirect or consequential damages. This warranty is in lieu of all other warranties expressed or implied and Alto-Shaam, Inc. neither assumes or authorizes any persons to assume for it any other obligation or liability in connection with Alto-Shaam equipment.

ALTO-SHAAM, INC.

Warranty effective January 1, 2000

Record the model and serial numbers of the unit for easy reference.

Always refer to both model and serial numbers in your correspondence regarding the unit.

Model: _____

Serial Number: _____

Purchased From: _____

Date Installed: _____ Voltage: _____

COOK/HOLD/SERVE SYSTEMS BY ALTO-SHAAM®

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262.251.1907 INTERNATIONAL

www.alto-shaam.com

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