

ALTO SHAAM[®] HALO HEAT[®]

500-1D



500-1DN



500-2D



500-2DN



500-3D



500-3DN



INSTALLATION OPERATION AND MAINTENANCE MANUAL

DRAWER WARMERS

*Manual or Electronic
Control*

MODELS:

500-1D, 1DN

500-2D, 2DN

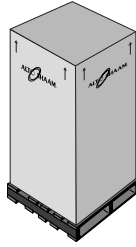
500-3D, 3DN

W164 N9221 Water Street • P.O. Box 450 • Menomonee Falls, Wisconsin 53052-0450 USA
PHONE: 262.251.3800 FAX: 262.251.7067 • 800.329.8744 U.S.A. ONLY WEBSITE:
800.558-8744 USA/CANADA 262.251.1907 INTERNATIONAL www.alto-shaam.com

ALTO-SHAAM® DRAWER WARMERS

UNPACKING and SET-UP

The Alto-Shaam Drawer Warmer has been thoroughly tested, checked for calibration, and inspected to insure only the highest quality cabinet is provided. When you receive your unit, 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.



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.

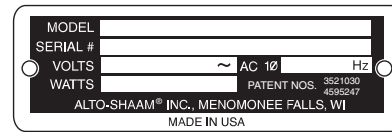
NOTE: Any claims for warranty must include the full model number and serial number of the cabinet.

HEATING CHARACTERISTICS

The drawer warmer is equipped with a special heating cable. Through this Halo Heat concept, the heating cable is mounted against the walls of the unit to provide an evenly applied heat source controlled by a thermostat. The design and operational characteristics of the unit eliminate the need for a moisture pan or a heat circulating fan. Through even heat application, the quality of food products is maintained up to several hours or more.

ELECTRICAL INSTALLATION

1. An identification tag is permanently mounted on the cabinet.



2. Plug cabinet into a properly grounded receptacle **ONLY**, positioning the unit so the power supply cord is easily accessible in case of an emergency.

**ENSURE POWER SOURCE MATCHES
VOLTAGE STAMPED
ON NAMEPLATE OF UNIT**



3. If necessary, a proper receptacle or outlet configuration as required for this unit, must be installed by a licensed electrician in accordance with applicable, local electrical codes.

Disconnect unit from power source before cleaning or servicing. At no time should a warming compartment, drawer assembly or the unit be steamed cleaned, washed down or flooded with water or liquid solution. Do not use water jet to clean. Severe damage or electrical hazard could result



Warranty becomes void if unit is flooded.

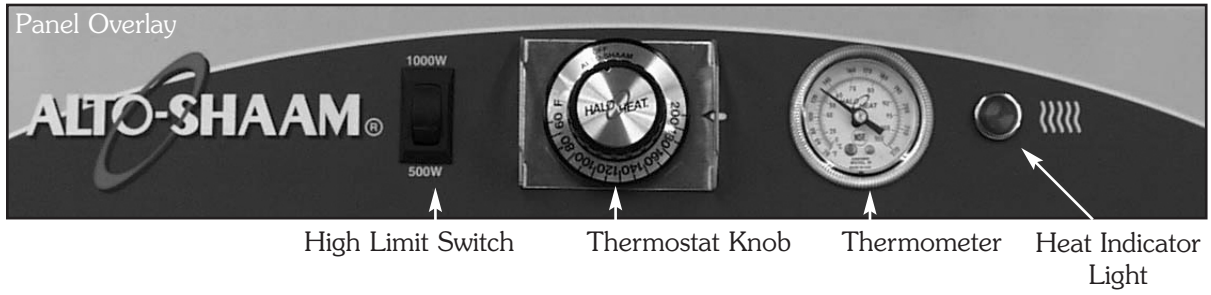
START-UP

1. Before operating the unit, clean both the interior and exterior of the unit with a damp cloth and mild soap solution. Rinse carefully.
2. Clean and install the drawer warmer pan(s).
3. Remove drawer pans and clean separately. The drawer assembly is completely removable. Remove from the cabinet and clean as a sanitation measure, and to prevent a build-up of food residue from interfering with the function of the drawer assembly.

Regular cleaning will help prolong the life of these parts. After cleaning, lubricate by spraying the bearings with vegetable release spray.

INSTALLATION

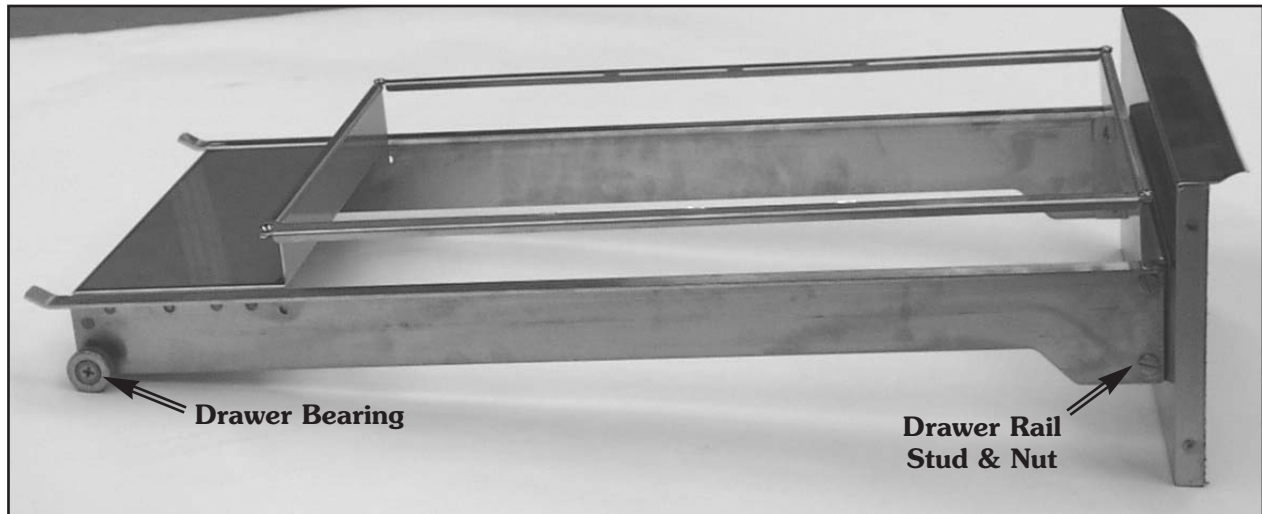
Manual Control, 120V Unit



Manual Control, 208-240V, 230V Units



Drawer Assembly



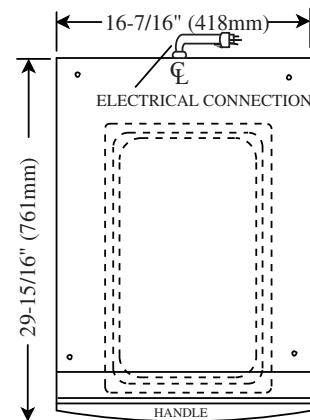
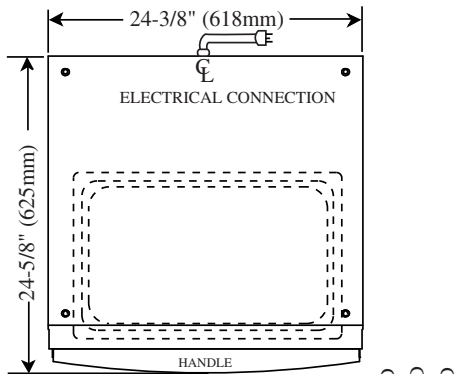
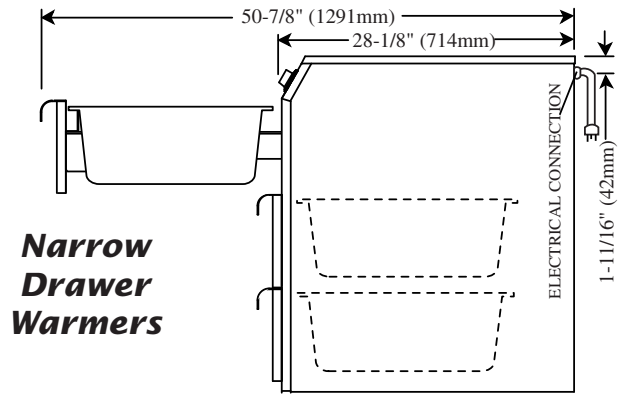
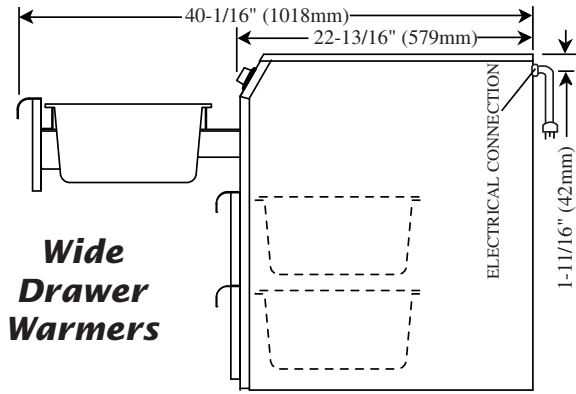
Electronic Control

Panel Overlay

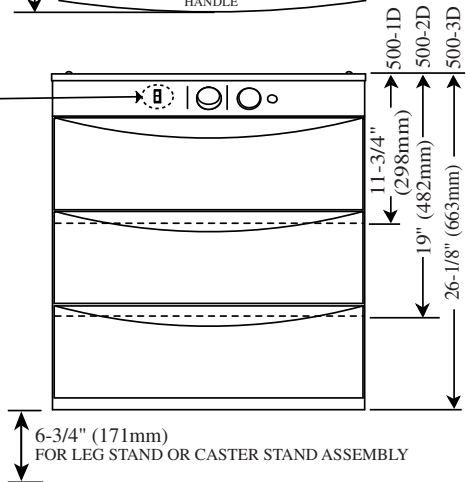


INSTALLATION

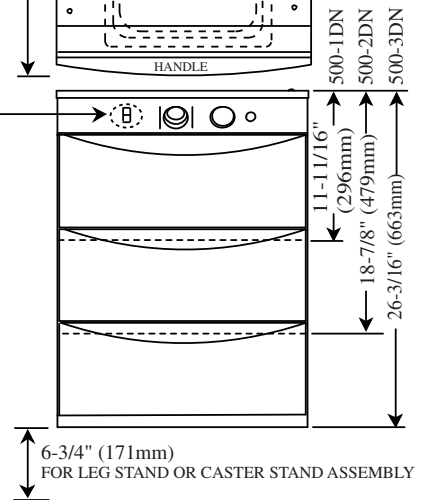
■ Outside Dimensions ■



HI-LO Switch available only on 500-1D and 500-2D.



HI-LO Switch available only on 500-1DN and 500-2DN.



Options & Accessories

Built-In Trim Kit		Drawer Assembly with vents	
➤ 500-1D	44224	➤ wide drawer warmers	55536
➤ 500-1DN	44225	➤ narrow drawer warmers	55537
Leg Stand Assembly		Leg Stand Assembly	
➤ 500-2D	44226	➤ wide drawer warmers	15380
➤ 500-2DN	44227	➤ narrow drawer warmers	55535
➤ 500-2D for BU-48, BU-72	55532	Pan, Oversize, 15"x20"x5" PN-2123	
➤ 500-2D for BU-96	44231	➤ Perforated Pan Grid,	1231
➤ 500-3D	44228	➤ Perforated Pan Grid, 12"x20"	16642
➤ 500-3DN	44229	➤ fits standard drawer pan (PN-25088)	
Caster Stand Assembly			
➤ wide drawer warmers	15379		
➤ narrow drawer warmers	55534		

OPERATION - MANUAL CONTROL

1. **Dual wattage control.**

The one and two drawer, 120V warmers are provided with a HIGH/LOW power switch. Use the HIGH position at 1000 watts for meats, potatoes, and vegetables — use the LOW position at 500 watts for breads and rolls.

2. **Preheat at 200°F (93°C) for 30 minutes.**

When the thermostat is turned clockwise to an “ON” position, the indicator light will illuminate and will remain lit as long as the unit is calling for heat. Allow a minimum of 30 minutes of preheating before loading the warmer with food. The indicator light will go “OUT” after approximately 30 minutes, or when the air temperature inside the unit reaches the temperature set by the operator.

3. **Load the drawer warmer with pans of hot food only.**

The purpose of the unit is to maintain hot food at proper serving temperatures. Only hot food should be placed into the warmer. Before loading the unit with food, use a food

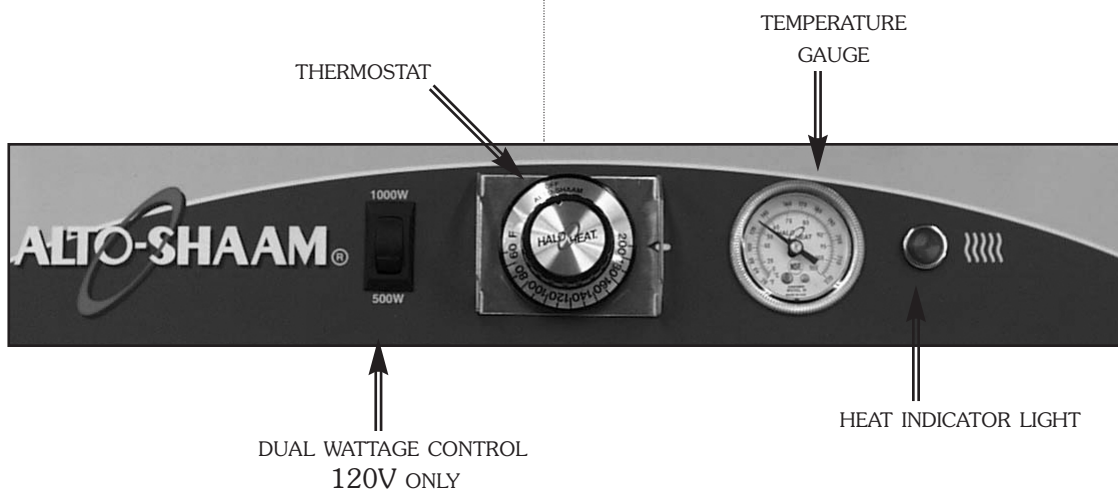
thermometer to make certain all food products are at an internal temperature range of 140° to 160°F (60° to 71°C). All food not within the proper temperature range should be heated before putting into the drawer warmer.

4. **Reset the thermostat to 160°F (71°C).**

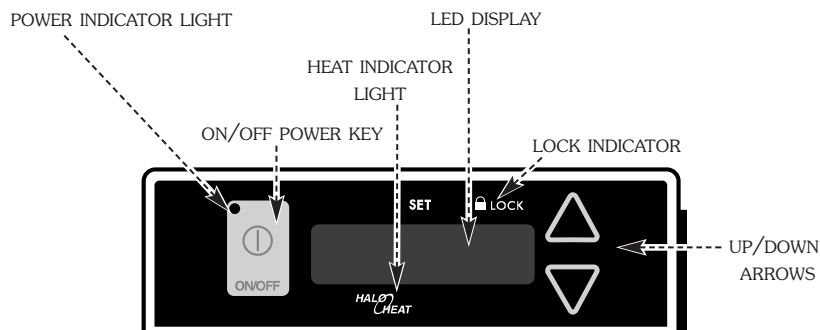
Check to make certain the drawer is securely closed, and reset the thermostat to 160°F (71°C).

THIS WILL NOT NECESSARILY BE THE FINAL SETTING.

The proper temperature range for the food being held will depend on the type and quantity of product. When holding food for prolonged periods, it is advisable to periodically check the internal temperature of each item to assure maintenance of the proper temperature range.



OPERATION - ELECTRONIC CONTROL



ON/OFF KEY

Press the on/off key once and the power indicator light will illuminate. Press and hold the on/off key until the LED display turns off (at least three seconds) and on/off indicator goes out.

UP/DOWN ARROW KEY

The up and down arrow keys are used for a variety of settings when selecting the holding temperature. If an arrow key is pressed and released the display will show the current set temperature for two seconds. If an arrow key is held (at least eight seconds), the value will change at a rapid rate. If the arrow key is pressed and released in rapid succession, the set temperature will change by increments of one degree.

ENABLE/DISABLE BEEPER

A beeper sounds when an error code is displayed. To choose between beeper on and beeper off mode, the control must be OFF, then press and hold the down arrow key until either "ON" or "OFF" is shown in the LED display. Release arrow key when desired mode is displayed.

FAHRENHEIT / CELSIUS

With the control OFF, to choose between Fahrenheit and Celsius, press and hold the up arrow key until either °F or °C is shown in the LED display. Release key when desired setting is displayed.

The control has a four-digit LED display. When the display is ON, it will show current holding temperature, as well as diagnostic information.

CONTROL LOCK

The warmer controls can be locked so that no changes can be made to the set temperature.

To **lock the display**, press and hold the ON/OFF key and the Up Arrow key at the same time. The lock indicator will illuminate. When the lock indicator is illuminated, additional programming will not be functional other than the key sequence required to unlock the panel.

To **unlock the display**, press and hold the ON/OFF key and the Down Arrow key at the same time. The lock indicator will extinguish. The panel keys will resume normal function.

1. Preheat at 200°F (93°C) for 30 minutes.

Press the ON key, and set the temperature to 200°F (93°C) by using the UP/DOWN arrow keys. Allow a minimum of 30 minutes preheating time before loading the drawer warmer with food. The LED heat indicator light will go "OUT" after approximately 30 minutes preheat time, or when the air temperature inside the unit reaches the temperature set by the operator.

2. Load with pans of hot food only.

The purpose of the warmer is to maintain hot food at proper serving temperature. Only hot food should be placed into the unit. Before loading with food, use a food thermometer to make certain all products are at an internal temperature range of 140° to 160°F (60° to 71°C). Any food product not within the proper temperature range should be heated before loading into the unit.

3. Reset the control to 160°F (71°C).

Check to make certain the drawer is securely closed, and reset to 160°F (71°C) by using the UP/DOWN keys.

THIS WILL NOT NECESSARILY BE THE FINAL SETTING.

The proper temperature range will depend on the type and quantity of product. When holding food for prolonged periods, it is advisable to periodically check the internal temperature of each item with a food thermometer to assure maintenance of the proper temperature range of 140° to 160°F (60° to 71°C).

HACCP & KITCHEN MANAGEMENT SOFTWARE - ELECTRONIC CONTROL

These holding units can be ordered equipped with the optional serial communication interface for connection to a PC. The units also have the capability of being connected to the internet via a Gateway device. This can provide temperature recording data as well as setup and diagnostic information which can be used for HACCP documentation.



FOOD PRODUCT TIPS

Bread and Rolls

Breads and rolls are traditionally difficult to hold for prolonged periods due to the very low moisture content of these products. For best results and longest possible holding life, it is recommended these products be placed in a plastic bag while in the warming drawer. Breads and rolls should be held at a temperature no higher than 120° to 140°F (49° to 60°C).

Potatoes — for the best results in holding potatoes:

1. Do not overcook.

Regardless of the temperature at which potatoes are cooked or what type of oven is used, it is important that this product does not achieve a final internal product temperature in excess of 195°F (91°C). Overcooking will further reduce the moisture content and consequently, reduce the holding life. Potatoes should be removed from the oven when they reach an internal temperature of approximately 190°F (88°C). After they are removed from the oven, the internal temperature will continue to increase.

2. Allow potatoes to stabilize before placing in drawer warmer.

When potatoes are removed from a conventional high-temperature oven, they have an extremely high surface temperature. If they are placed in the drawer warmer while they are this hot on the outside, moisture will be pulled from the inside of the potato and condensation will form on the outside. Holding results under these conditions will not be totally satisfactory. Remove potatoes from the oven and allow the surface temperature to stabilize before placing them in the controlled holding atmosphere of the drawer warmer.

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.

HOLDING TEMPERATURE RANGE		
MEAT	FAHRENHEIT	CELSIUS
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.		

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.

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.

If the 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.

CARE and CLEANING



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

THOROUGHLY CLEAN THE UNIT DAILY

1. Disconnect unit from power source, and let cool.
2. Remove, cover or wrap, and refrigerate food.
3. Remove drawer pans and clean separately. The drawer assembly is completely removable. Remove from the cabinet and clean as a sanitation measure, and to prevent a build-up of food residue from interfering with the function of the drawer assembly. Regular cleaning will help prolong the life of these parts. After cleaning, lubricate by spraying the bearings with vegetable release spray.
4. Clean interior metal surfaces of the unit with a damp, clean cloth and any good commercial detergent or grease solvent at the recommended strength. Use a plastic scouring pad or oven cleaner for difficult areas. Rinse carefully to remove all residue and wipe dry.



NO SCRAPERS



NO STEEL PADS

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. 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 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 foodservice equipment.



CAUTION

***At no time should the inside or outside of the unit be washed down, flooded with water or liquid solution.
NEVER STEAM CLEAN.
Do not use water jet to clean.***



CAUTION

***Severe damage or electrical hazard could result.
Warranty becomes void if unit is flooded.***

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 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.

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)

SERVICE SECTION

MANUAL CONTROL

THERMOSTAT and HEAT LIGHT SEQUENCE

Whenever the thermostat is turned "ON," the heat indicator light will indicate the power ON/OFF condition of the heating cable, and consequently, the cycling of the cabinet as it maintains the dialed cavity temperature. If the light does not illuminate after normal start-up, the main power source, thermostat, and/or light must be checked. If the warming cabinet does not hold the temperature as dialed, the calibration of the thermostat must be checked. If the warmer fails to heat or heats continuously with the thermostat "OFF," the thermostat must be initially checked for proper operation. If these items are checked and found to be in order, a continuity and resistance check of the heating cable should be made. *SEE CIRCUIT DIAGRAM.*

THERMOSTAT CALIBRATION

The thermostat is precision calibrated at the factory. Normally, no adjustment or recalibration is necessary unless the thermostat has been mishandled in transit, changed or abused while in service. A thermostat with a sensing bulb operates on hydraulic pressure, consequently, any bending of the bulb results in a change in its volume, and alters the accuracy of the thermostat calibration.

A thermostat should be checked or recalibrated by placing a quality, thermal indicator at the center of an empty holding cavity. *DO NOT CALIBRATE WITH ANY FOOD PRODUCT IN THE CABINET.* The thermostat should be set at 140°F (60°C), and should be allowed to stabilize at that setting for a minimum of one hour. Following temperature stabilization, the center of the thermal swing of the air temperature within the cabinet should approximately coincide with the thermostat dial setting.

If calibration is necessary, the calibration screw should be adjusted with great care. The calibration screw of the thermostat is located in the thermostat dial shaft. With the shaft held stationary, a minute, clockwise motion of the calibration screw appreciably lowers the thermostat setting. A reverse, or counter-clockwise motion appreciably raises the thermostat setting. After achieving the desired cycling of the thermostat, the calibration screw must be sealed. Place a few drops of enamel sealant directly on the calibration screw. *(RED NAIL POLISH OR EQUIVALENT IS ACCEPTABLE.)*

TROUBLE SHOOTING CHECKLIST • ELECTRONIC CONTROL

Repairs should be made by authorized service agents only.

TROUBLE	POSSIBLE CAUSE	REMEDY
Unit does not operate.	Insufficient power supply.	Check power source.
	Defective power cord or plug.	Check and replace if necessary.
No display in electronic control.	Faulty power supply board.	Check line voltage for 24V across pins 7 and 8 on the power supply board and across terminals J9 and J10 on the electronic control.
	Faulty electronic control.	Replace control.
Cannot control temperature but sensor and electronic control checks O.K.	Faulty relay	Replace relay.
	Heating element grounded.	Replace element.
Temperature readout incorrect.	Dirty or faulty sensor.	Check sensor at 32°F (0°C). If Ohm reading is 100, replace display.
	Faulty control.	If Ohm reading is not 100, replace sensor.

Wide Drawer Warmers – Service Parts

Illustrations on following pages.

<u>Part Description</u>	<u>Qty</u>	<u>500-1D</u>	<u>Qty</u>	<u>500-2D</u>	<u>Qty</u>	<u>500-3D</u>
<u>Manual or Electronic Control • Wide Drawer Warmers</u>						
Air Tunnel	1	1002672	1	1002672	1	1002672
Cable Replacement Kit (CB-3044)	1	4874	1	4874	1	4874
Casing Bottom	1	1002400	1	1002400	1	1002400
Casing Top	1	1002403	1	1002403	1	1002403
Casing	1	1002558	1	1002396	1	pending
Cordset (120V)	1	CD-3232	1	CD-3232	1	CD-3232
Cordset (208/240)	1	CD-33840	1	CD-33840	1	CD-33840
Cordset (230V)	1	CD-3922	1	CD-3922	1	CD-3922
Drawer Assembly	1	55502	2	55502	3	55502
Drawer front Mounting Stud	4	ST-25019	8	ST-25019	12	ST-25019
Drawer front Mounting Nut	4	NU-2187	8	NU-2187	12	NU-2187
Drawer Bearing	6	BG-24890	12	BG-24890	18	BG-24890
Drawer Pan (NOT SHOWN)	1	PN-25088	2	PN-25088	3	PN-25088
Drawer with vents	1	55536	2	55536	3	55536
Fan, Box (120V)	1	FA-3973	1	FA-3973	1	FA-3973
Fan, Box (208/240V, 230V)	1	FA-3974	1	FA-3974	1	FA-3974
Insulation, Board	3	IN-2003	3	IN-2003	3	IN-2003
Switch (230V), circuit breaker	1	SW-33487	1	SW-33487	1	SW-33487
Switch (120V), wattage	1	SW-3409	1	SW-3409		N/A
Terminal Block	1	BK-3019	1	BK-3019	1	BK-3019
<u>Manual Control Wide • Drawer Warmers</u>						
Heat Indicator Light (120V)	1	LI-3027	1	LI-3027	1	LI-3027
Heat Indicator Light (208/240V)	1	LI-3025	1	LI-3025	1	LI-3025
Heat Indicator Light (230V)	1	LI-3951	1	LI-3951	1	LI-3951
Knob, Thermostat (120V, 208/240V)	1	KN-3469	1	KN-3469	1	KN-3469
Knob, Thermostat (230V ONLY)	1	KN-3474	1	KN-3474	1	KN-3474
Panel Overlay (120V)	1	PE-25068	1	PE-25068	1	PE-25067
Panel Overlay (208/240V, 230V)	1	PE-25067	1	PE-25067	1	PE-25067
Thermostat	1	TT-33626	1	TT-33626	1	TT-33626
Thermometer	1	TH-33713	1	TH-33713	1	TH-33713
Thermometer Lens Cover replacement	1	TH-33956	1	TH-33956	1	TH-33956
<u>Electronic Control • Wide Drawer Warmers</u>						
Beeper	1	BP-3567	1	BP-3567	1	BP-3567
Block, Sensor	1	BK-33546	1	BK-33546	1	BK-33546
Board, Power Supply	1	BA-33554	1	BA-33554	1	BA-33554
Control, Electronic	1	5000876	1	5000876	1	5000876
Panel Overlay	1	PE-25327	1	PE-25327	1	PE-25327
Relay	1	RL-33558	1	RL-33558	1	RL-33558
Sensor	1	SN-33541	1	SN-33541	1	SN-33541
Thermostat, Electronic, 230V ONLY	1	TT-33789	1	TT-33789	1	TT-33789

DISCONNECT UNIT FROM POWER SOURCE BEFORE CLEANING OR SERVICING



Narrow Drawer Warmers – Service Parts

Illustrations on following pages.

Part Description	Qty	500-1DN	Qty	500-2DN	Qty	500-3DN
Manual or Electronic Control • Narrow Drawer Warmers						
Air Tunnel	1	1002672	1	1002672	1	1002672
Cable Replacement Kit (CB-3044)	1	4874	1	4874	1	4874
Casing Bottom	1	1002794	1	1002794	1	1002794
Casing Top	1	1002798	1	1002798	1	1002798
Casing	1	1002884	1	1002837	1	1002799
Cordset (120V)	1	CD-3232	1	CD-3232	1	CD-3232
Cordset (208/240)	1	CD-33840	1	CD-33840	1	CD-33840
Cordset (230V)	1	CD-3922	1	CD-3922	1	CD-3922
Drawer Assembly	1	55509	2	55509	3	55509
Drawer front Mounting Stud	4	ST-25019	8	ST-25019	12	ST-25019
Drawer front Mounting Nut	4	NU-2187	8	NU-2187	12	NU-2187
Drawer Bearing	6	BG-24890	12	BG-24890	18	BG-24890
Drawer Pan (NOT SHOWN)	1	PN-25088	2	PN-25088	3	PN-25088
Drawer with vents	1	55536	2	55536	3	55536
Fan, Box (120V)	1	FA-3973	1	FA-3973	1	FA-3973
Fan, Box (208/240V, 230V)	1	FA-3974	1	FA-3974	1	FA-3974
Insulation, Board	3	IN-2003	3	IN-2003	3	IN-2003
Switch (230V), circuit breaker	1	SW-33487	1	SW-33487	1	SW-33487
Switch (120V) wattage	1	SW-3409	1	SW-3409		N/A
Terminal Block	1	BK-3019	1	BK-3019	1	BK-3019
Manual Control • Narrow Drawer Warmers						
Heat Indicator Light (120V)	1	LI-3027	1	LI-3027	1	LI-3027
Heat Indicator Light (208/240V)	1	LI-3025	1	LI-3025	1	LI-3025
Heat Indicator Light (230V)	1	LI-3951	1	LI-3951	1	LI-3951
Knob, Thermostat (120V, 208/240V)	1	KN-3469	1	KN-3469	1	KN-3469
Knob, Thermostat (230V ONLY)	1	KN-3474	1	KN-3474	1	KN-3474
Panel Overlay (120V)	1	PE-25014	1	PE-25014	1	PE-25013
Panel Overlay (208/240V, 230V)	1	PE-25013	1	PE-25013	1	PE-25013
Thermostat	1	TT-33626	1	TT-33626	1	TT-33626
Thermometer	1	TH-33713	1	TH-33713	1	TH-33713
Thermometer Lens Cover replacement	1	TH-33956	1	TH-33956	1	TH-33956
Electronic Control • Narrow Drawer Warmers						
Beeper	1	BP-3567	1	BP-3567	1	BP-3567
Block, Sensor	1	BK-24427	1	BK-24427	1	BK-24427
Board, Power Supply	1	BA-33554	1	BA-33554	1	BA-33554
Control, Electronic	1	5000876	1	5000876	1	5000876
Panel Overlay	1	PE-25326	1	PE-25326	1	PE-25326
Relay	1	RL-33558	1	RL-33558	1	RL-33558
Sensor	1	SN-33541	1	SN-33541	1	SN-33541
Thermostat, Electronic, 230V only	1	TT-33789	1	TT-33789	1	TT-33789

DISCONNECT UNIT FROM POWER SOURCE BEFORE CLEANING OR SERVICING



SERVICE SECTION

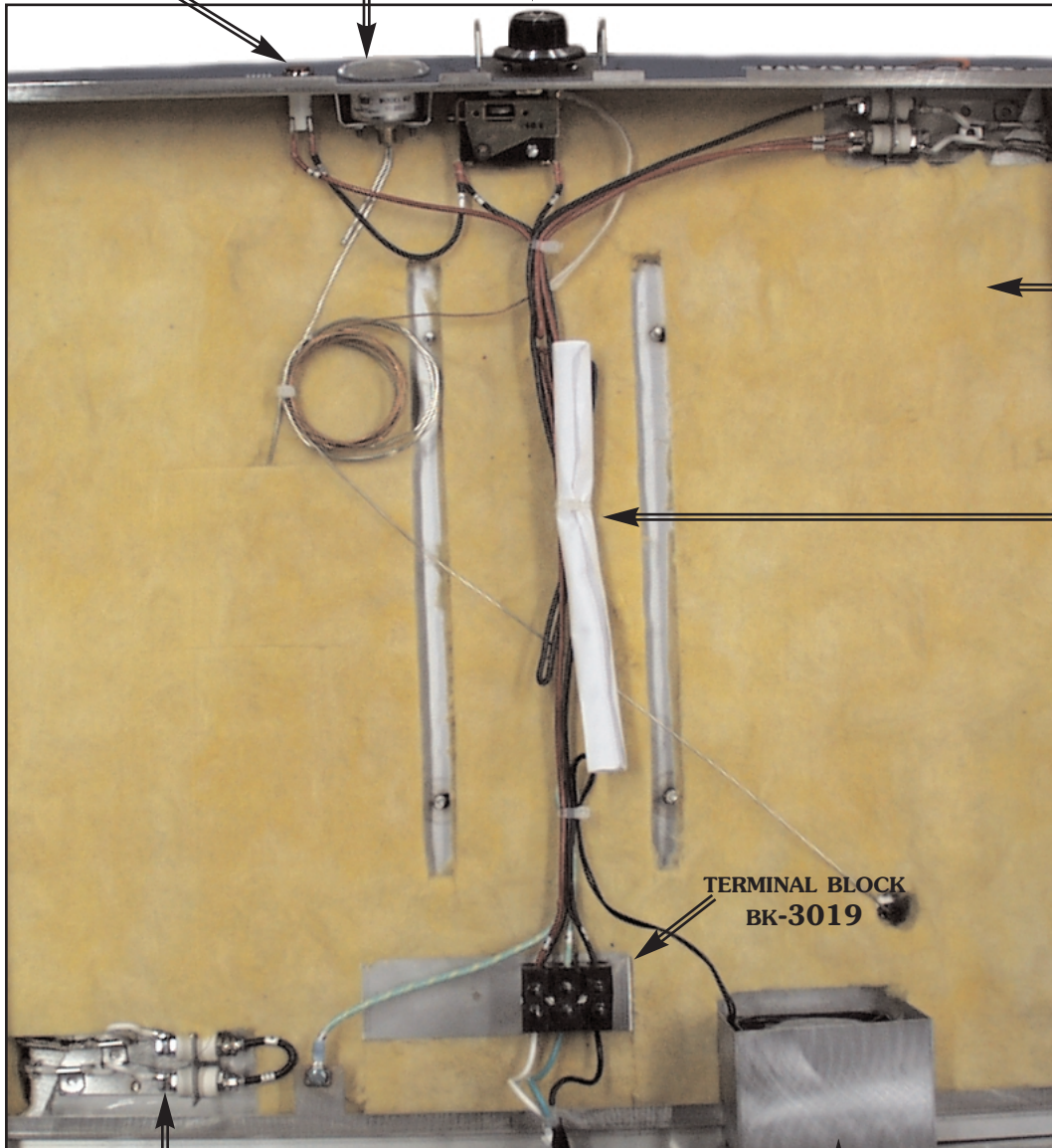
500-3D • Manual control • top removed



INDICATOR LIGHT
LI-3027
LI-3025
LI-3951

THERMOMETER
TH-33713

THERMOSTAT
TT-33626



INSULATION
IN-2003

WIRING
DIAGRAM

TERMINAL BLOCK
BK-3019

HEATING ELEMENT
CONNECTIONS

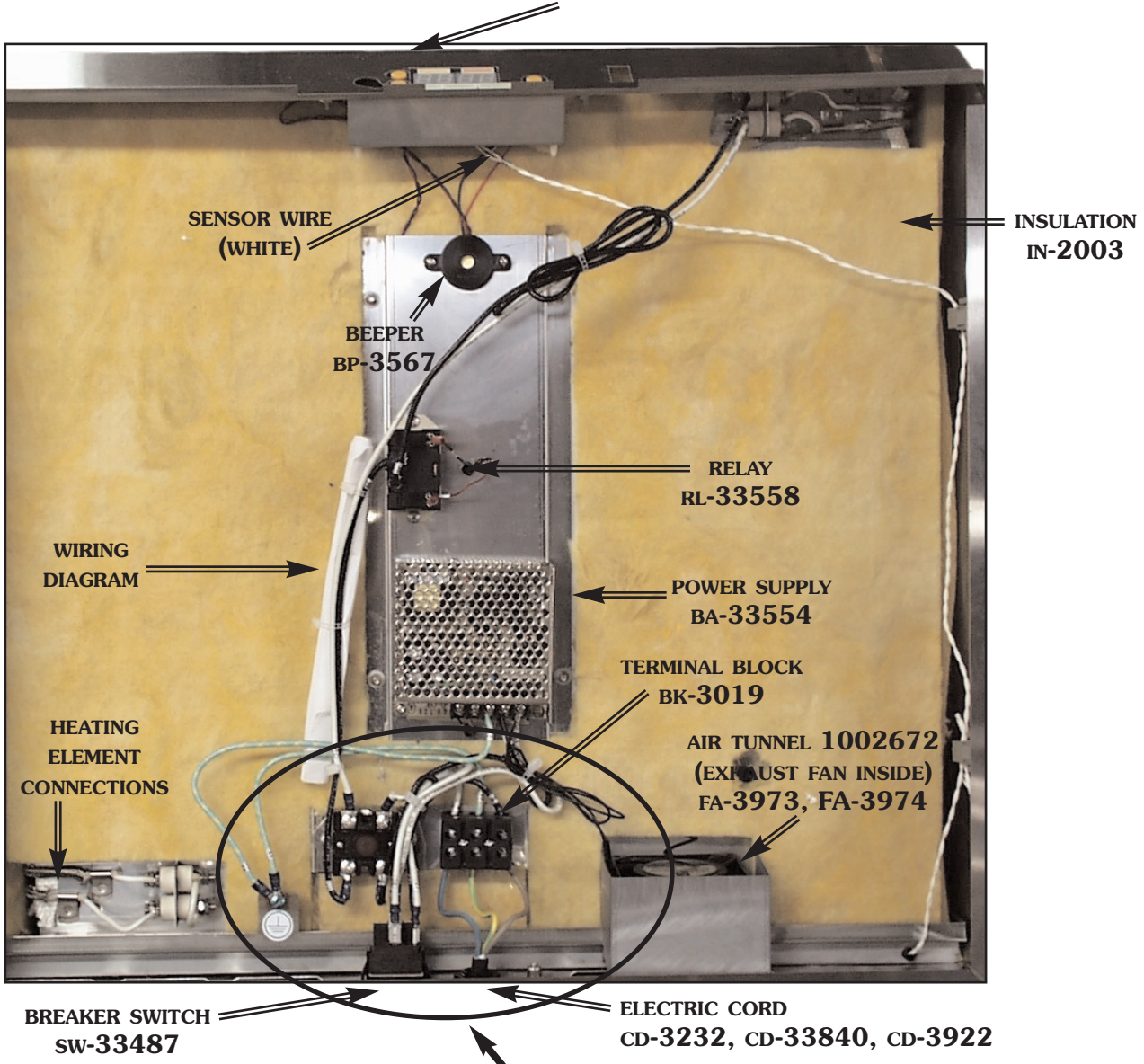
ELECTRIC CORD
CD-3232
CD-33840
CD-3922

AIR TUNNEL 1002672
(EXHAUST FAN INSIDE)
FA-3973
FA-3974

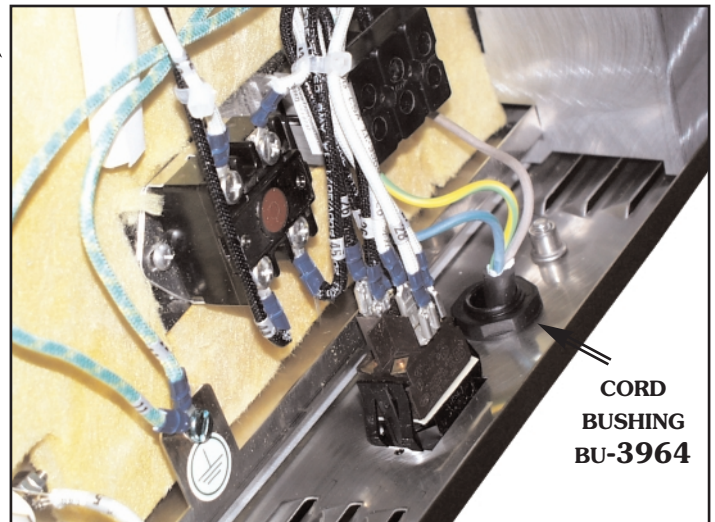
SERVICE SECTION

500-3D • Electronic control • top removed • 230V

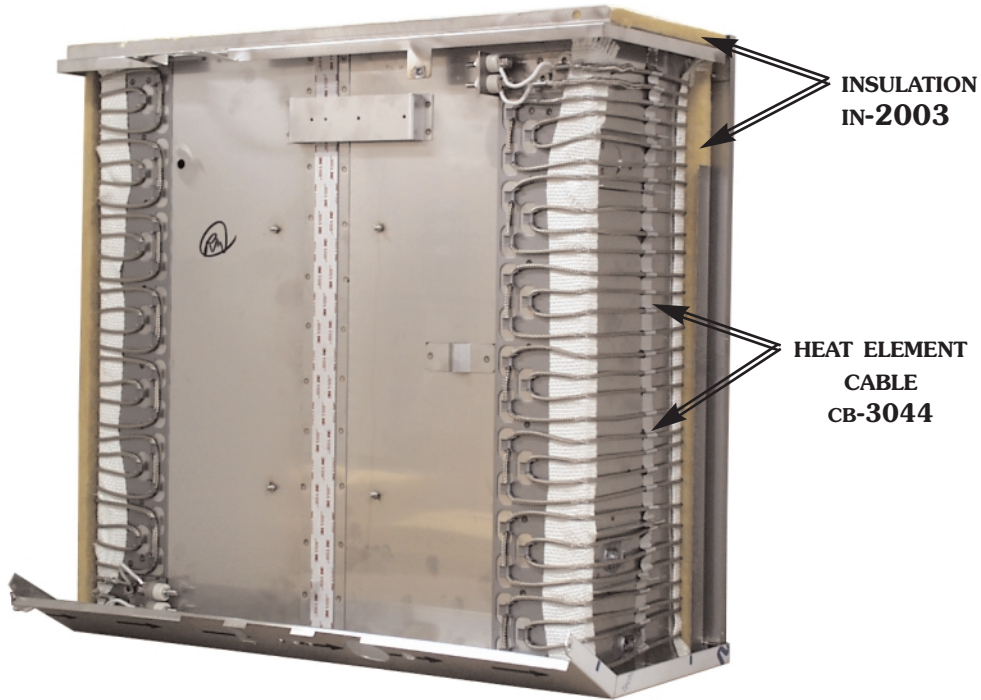
CONTROL #5000876 WITHOUT SCI • CONTROL #5000877 WITH SCI



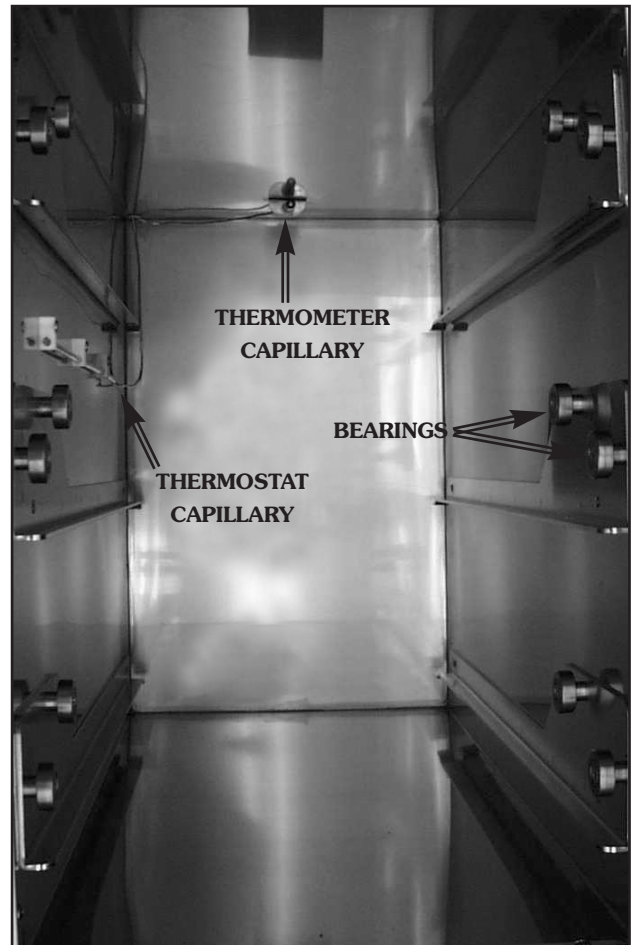
THIS PHOTOGRAPH IS AN ENLARGEMENT OF THE CIRCLED AREA ABOVE.

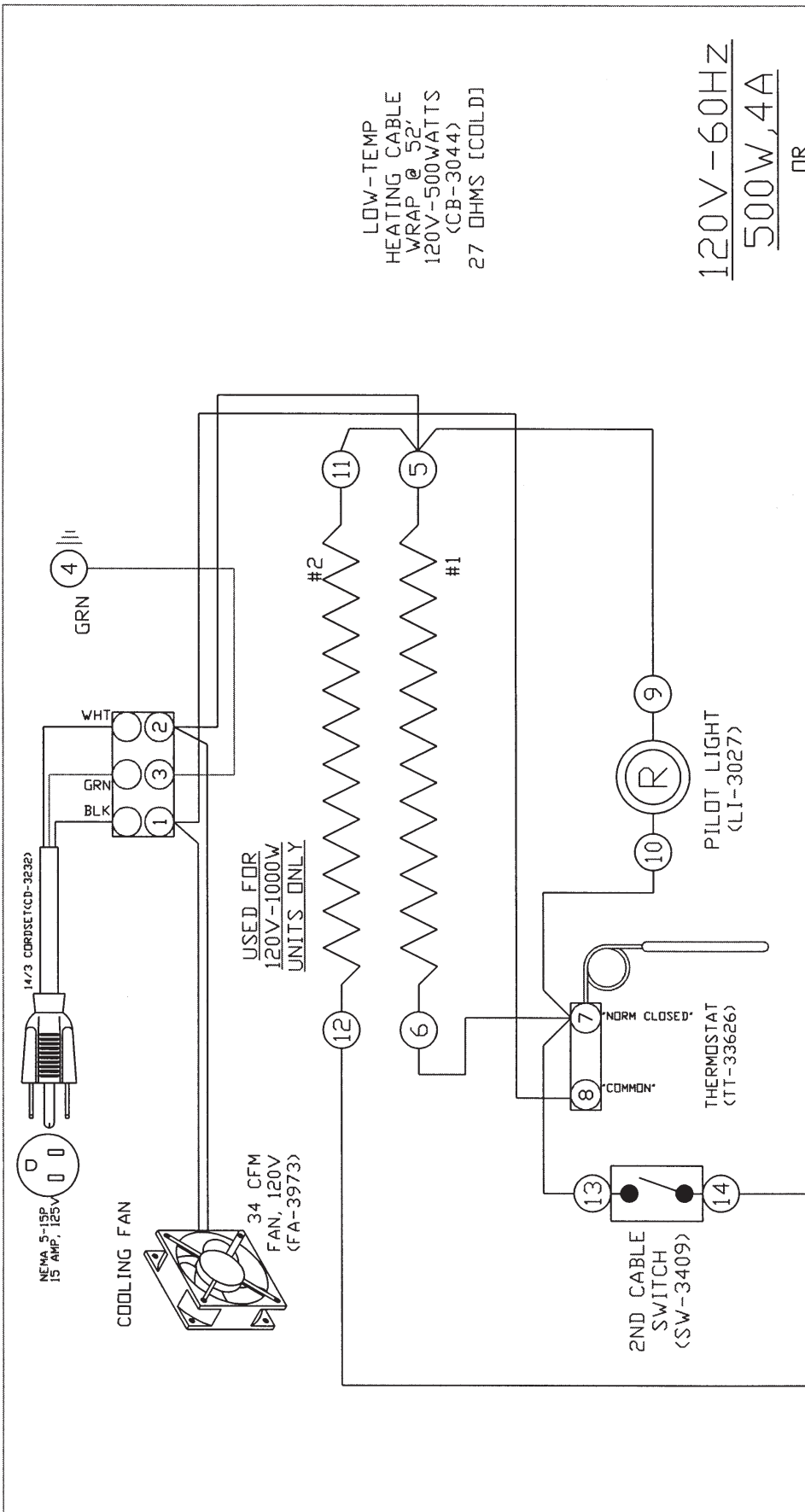


SERVICE SECTION



500-3D
Interior





LOW-TEMP
HEATING CABLE
WRAP @ 52'
120V-500WATTS
(CB-3044)
27 OHMS [COLLD]

120V-60HZ
500W, 4A
OR
1000W, 8.5A

WIRE DIAGRAM

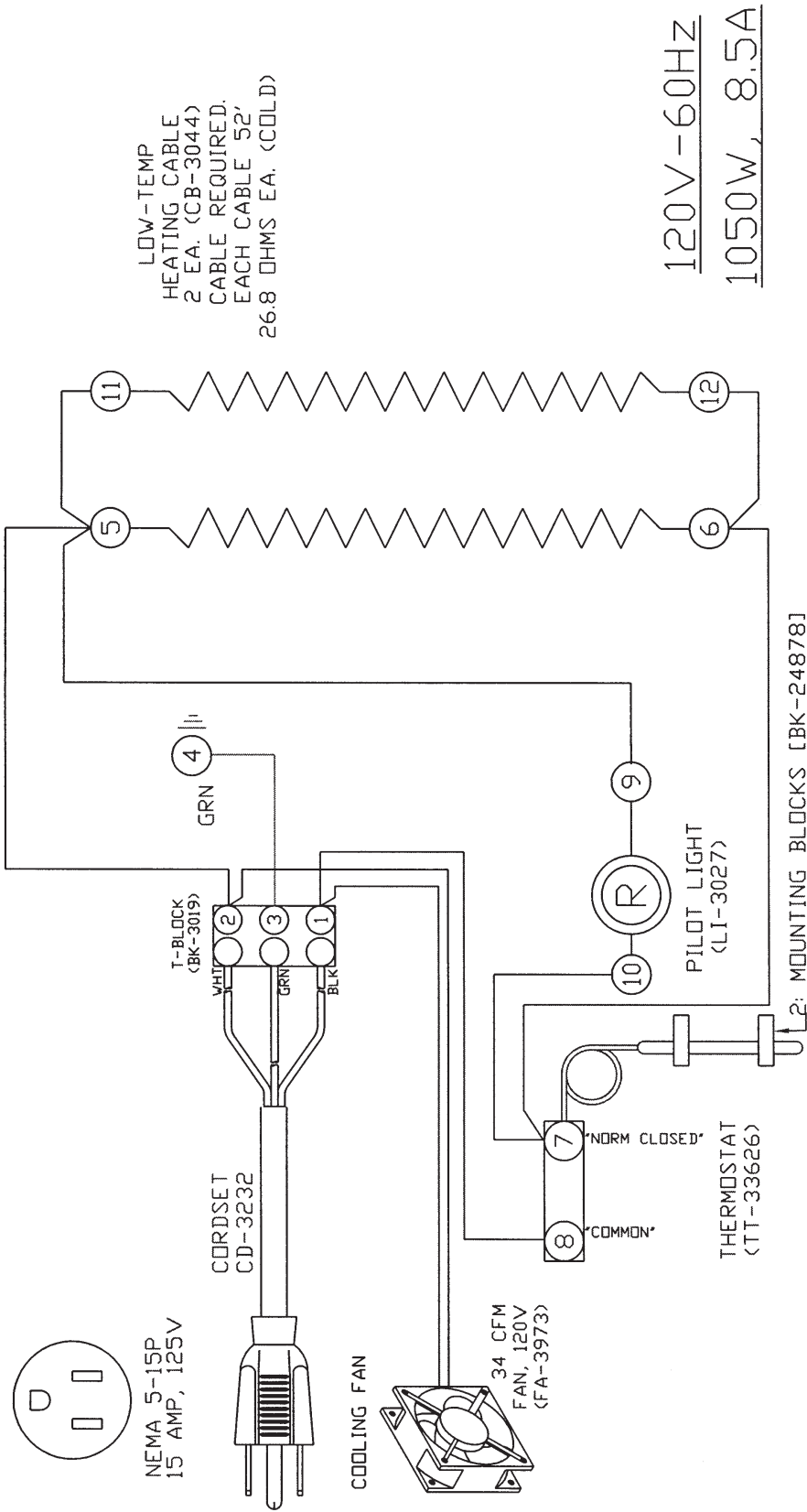
MODELS: 500-1D, 2D, 1DN, 2DN 0.5/1KW ('04) 120V

NO.	REVISION	BY
1	03/19/04	MS
2	03/26/04	DDF
3	04/02/04	DDF

BY: M S SCALE: NONE DWG: 7620-730766.DWG
APP'D: DDF DATE: 03/09/04 A-7620-730766.DWG

ALTO-SHAAM
MENOMONEE FALLS, WISC. 53052-450

NOTE #1: ALL NUMBERS IN () =
ALTO-SHAAM PART NUMBERS
NOTE #2: SEE DRW. #8089 FOR
WIRE ASSEMBLIES



NOTE #1: SEE DRW # 8090 FOR WIRE ASSEMBLY.

WIRE DIAGRAM

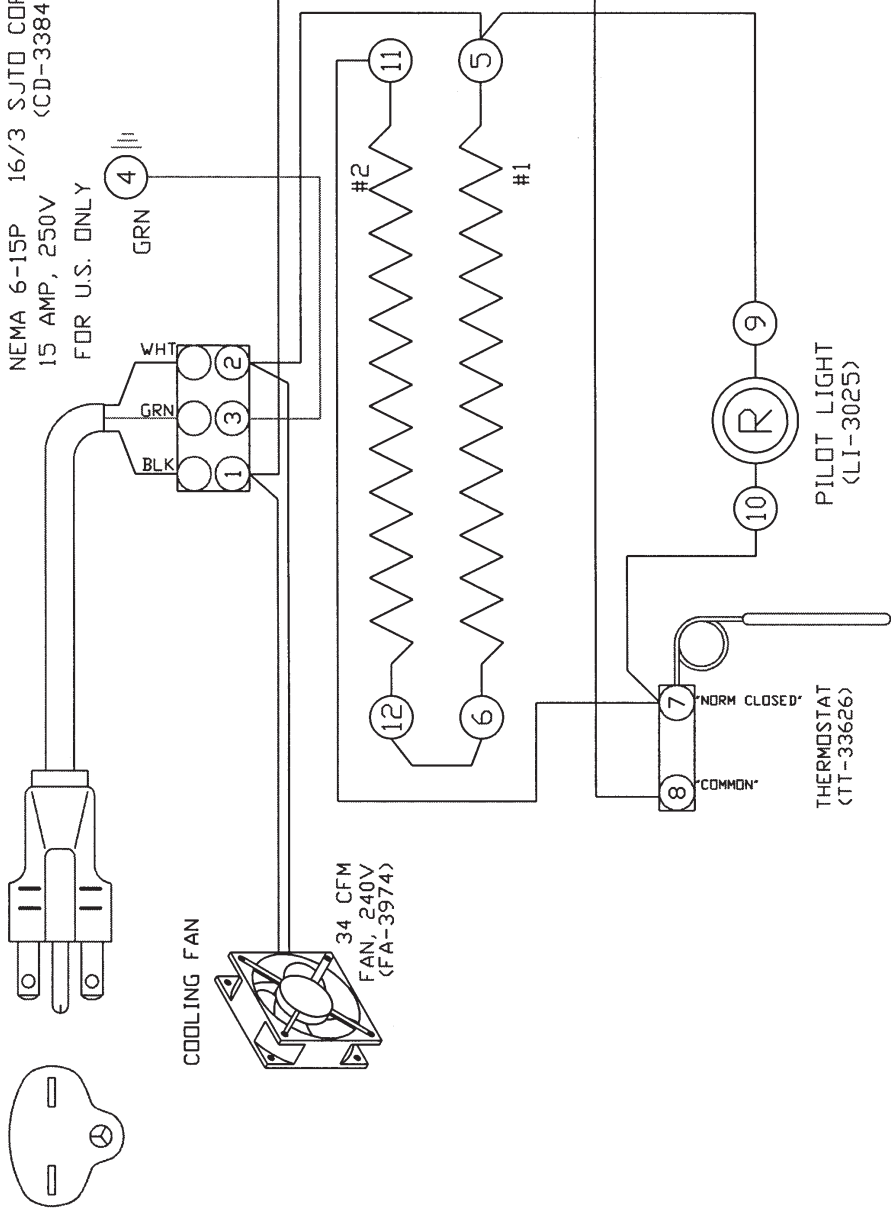
MODELS: 500-3D, 3DN 120V ('04)

NO.	REVISION	BY
1	04/02/04	DDF

ALTO-SHAAM
MENOMONEE FALLS, WISC. 53052-450

BY: DDF SCALE: NONE DWG: 7621-730776.DWG
 APP'D: DATE: 03/26/04

NEMA 6-15P 16/3 S.JTD CORD SET
15 AMP, 250V
FOR U.S. ONLY



LOW-TEMP
HEATING CABLE
WRAP @ 52'
27 OHMS [COLD]

TOTAL POWER
208V, 3.75A, 800W
50/60HZ
240V, 4.5A, 1050W
50/60HZ

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

WIRE DIAGRAM

MODELS: 500-1D, 2D, 3D, 1DN, 2DN, 3DN (04) 240V

ALTO-SHAAM®
MENOMONEE FALLS, WISC. 53052-450

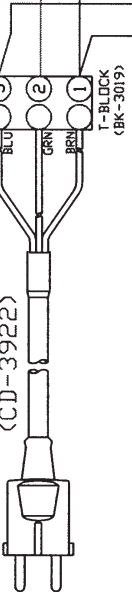
BY: DDF	SCALE: NONE	DWG: 208-240V/3076DDF
APP'D: DDF	DATE: 05/11/04	A-208-240V/3076DDF.DWG

220V, 4.0A, 900W
 230V, 4.5A, 975W
 50/60HZ



CEE 7/7
 220,230V

16/3 CORD SET (TYPE H07 RN-F)
 (CD-3922)



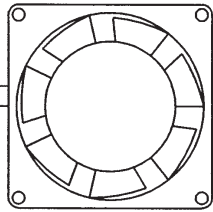
ON/OFF LABEL
 (E2100LA)



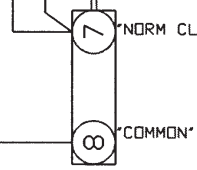
ROCKER SWITCH
 15A 277V
 (SW-33487)



LOW-TEMP
 HEATING CABLE
 2 EA. [CB-3044]
 WRAP @ 52'
 27 OHMS [COLD]



230V 3" BOX INTAKE FAN
 [FA-3974]



THERMOSTAT
 (TT-33626)

2: MOUNTING BLOCKS [BK-24878]



PILOT LIGHT
 (LI-3951)

WIRING DIAGRAM

MODELS: 500-1D,2D,3D,1DN,2DN,3DN 230V [*04]

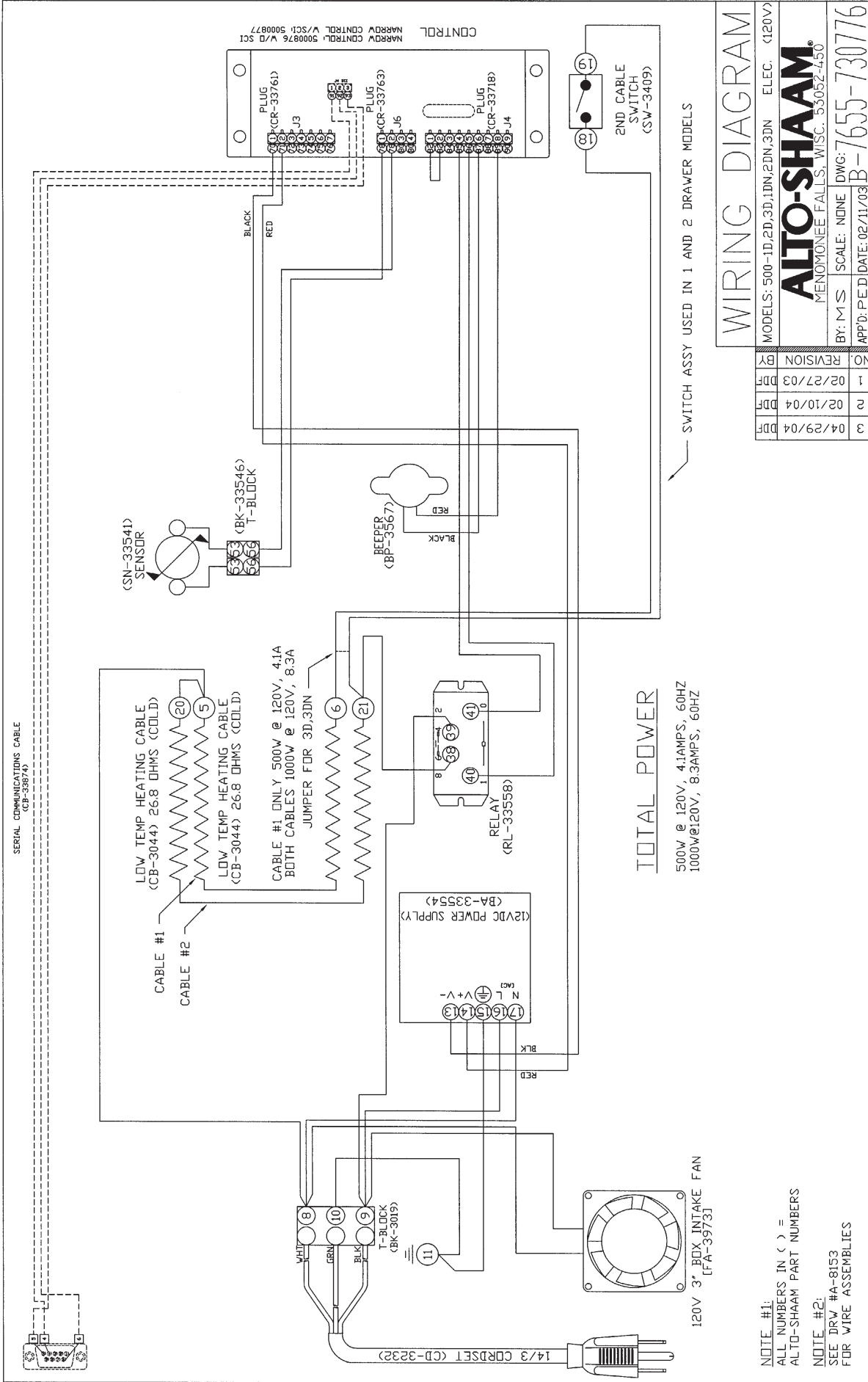
ALTO-SHAAM
 MENOMONEE FALLS, WISC. 53052-450

BY: MS SCALE: NONE DWG: 7622-730776
 APP'D: DATE: 02/28/02

NO.	REVISION	BY
1	08/08/02	CJB
2	01/07/04	DDF
3	02/26/04	MS
4	04/02/04	DDF

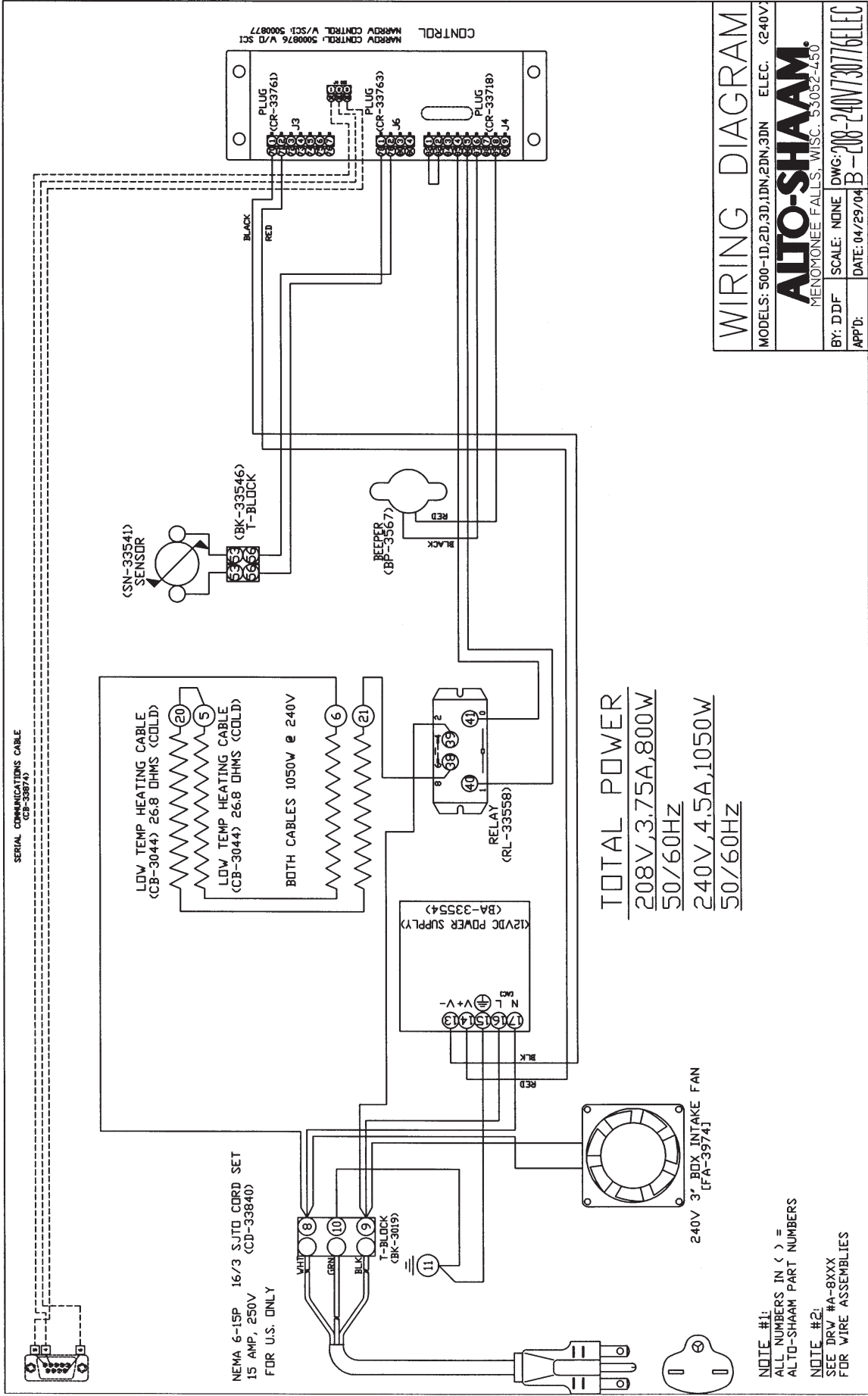
NOTE #1: ALL NUMBERS IN () =
 ALTO-SHAAM PART NUMBERS

NOTE #2: SEE DRW. #B-8091 FOR
 WIRE ASSEMBLIES

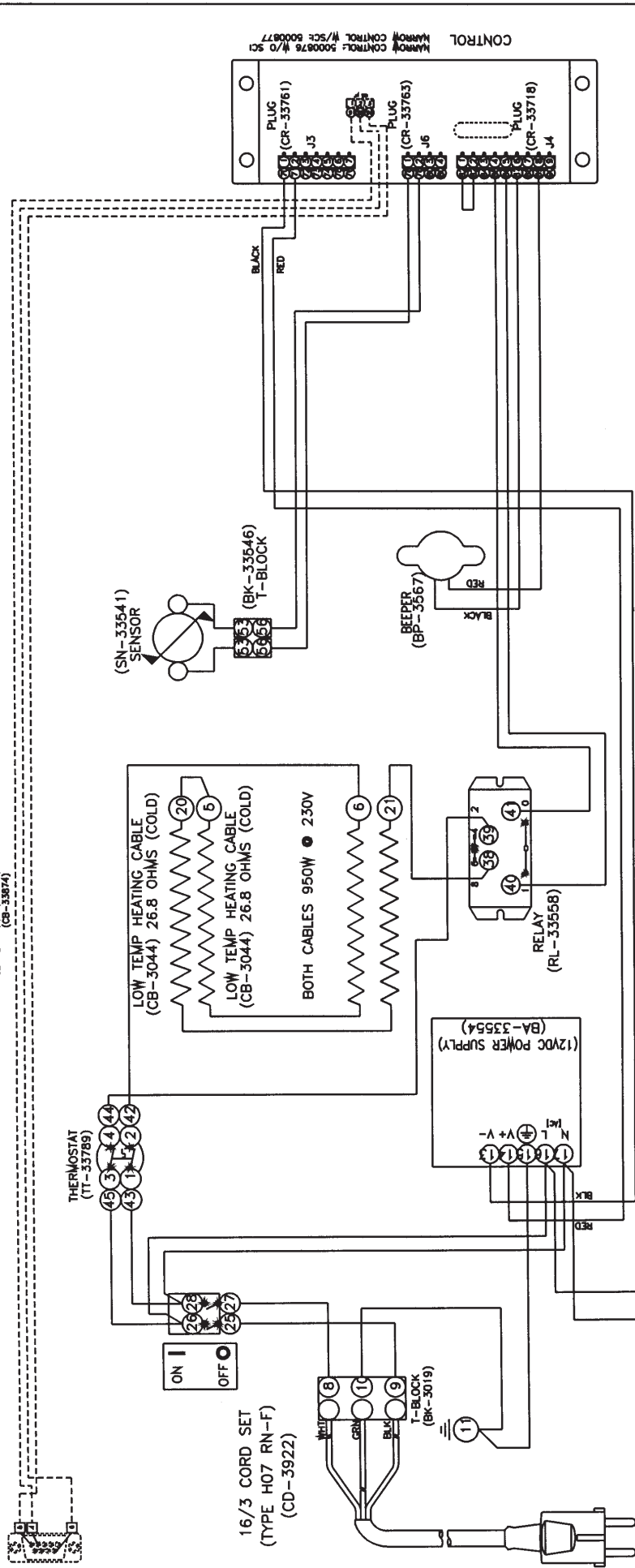


NOTE #1:
 ALL NUMBERS IN () =
 ALTO-SHAAM PART NUMBERS

NOTE #2:
 SEE DRW #A-8153
 FOR WIRE ASSEMBLIES



SERIAL COMMUNICATIONS CABLE
(CB-33874)



TOTAL POWER
220V, 3.9A, 875W
 50/60HZ
230V, 4.1A, 950W
 50/60HZ

230V 3" BOX INTAKE FAN
[FA-3974]

SEE 230V

NOTE #1:
 ALL NUMBERS IN () =
 ALTO-SHAAM PART NUMBERS
 NOTE #2:
 SEE DRW #A-8093R
 FOR WIRE ASSEMBLIES

WIRING DIAGRAM

MODELS: 600-1D, 2D, 3D, 1DN, 2DN, 3DN ELEC. (230V)

ALTO-SHAAM
 MEMPHIS, TENN. U.S.A. 38002-460

BY: DDF SCALE: NONE DWG: 7628-730776
 APP'D: DATE: 06/03/04 B

TRANSPORTATION DAMAGE and CLAIMS



LIMITED WARRANTY



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, 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 ANY CONTACT WITH ALTO-SHAAM REGARDING THE UNIT.

Model: _____
Voltage: _____
Serial Number: _____

Date Installed: _____
Purchased From: _____

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:

800.558.8744 USA/CANADA

262.251.1907 INTERNATIONAL

www.alto-shaam.com