

ALTO SHAAM®

OPERATION and CARE MANUAL



*Cart pictured with optional
motorized drive assembly*

HOT FOOD DELIVERY CART

MODEL: 1360-DCH

HALO
HEAT



COOK/HOLD/SERVE SYSTEMS

W164 N9221 Water Street • P.O. Box 450 • Menomonee Falls, Wisconsin 53052-0450 U.S.A.

PHONE: 262.251.3800

800.558.8744 U.S.A./CANADA

FAX: 262.251.7067 • 800.329.8744 U.S.A. ONLY

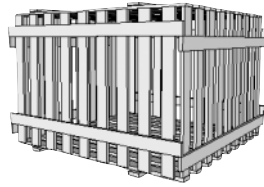
262.251.1907 INTERNATIONAL

WEBSITE:

www.alto-shaam.com

RECEIVING and UNPACKING

The Alto-Shaam Delivery Cart has been thoroughly tested, checked for calibration, and inspected to insure only the highest quality cart is provided. When you receive your cart, 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.

If the Delivery Cart was not received from the carrier in an upright position but appears to be undamaged, carefully restore the unit to the correct position as soon as possible.

Remove uncrated unit from the skid with a lift-truck or roll it off the skid by means of a temporary ramp provided in the crate.



CAUTION: If a lift-truck is used to remove the Delivery Cart from the skid, caution should be used to avoid damage to the drive motor assembly located beneath the unit.

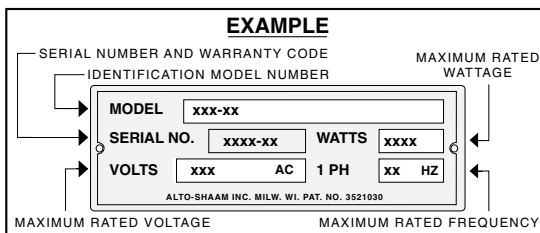
The cart is complete with accessories. Check to insure that all the accessories ordered have been received with the unit.

Save all the information and instructions packed inside the cart. Complete and return the warranty card to the factory as soon as possible to insure 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 cart.

ELECTRICAL INSTALLATION

1. Insure that the voltage stamped on the nameplate matches the available power source. An identification tag is permanently mounted on the cart.
2. This unit is provided with an electrical cord.



3. The electrical outlets used for the Delivery Cart must be properly grounded in accordance with the National Electrical Code and applicable local codes. For further details, please refer to the appropriate electrical wiring diagram.
4. Before plugging the unit in or disconnecting from the power source, make certain all thermostats are in "OFF" position. The unit power switches are located on the control panel.



ENSURE POWER SOURCE MATCHES VOLTAGE STAMPED ON UNIT NAMEPLATE

SYSTEM DESCRIPTION

Food quality and service are more important than ever in today's institutional food service market. Alto-Shaam recognizes this fact and developed the Delivery Cart using the highest quality stainless steel, insulating material, and the finest workmanship. This cart is a self-contained, complete hot meal delivery system. It is simple in concept and is designed to adapt to a completely new or to any existing institutional food service method of preparation.

The heat source for the hot compartments consist of a resistance wire element. This thermal cable element is wrapped in exact configurations against the walls of the heated compartments providing an evenly applied, highly controlled heat input. The design and operational characteristics of the cart provide even heat application and maintain the quality of hot foods for longer periods of time.

Through the best arrangement of the controls, operation of this appliance is simplified. The power switches will automatically energize all functions.

IMPORTANT SAFEGUARDS

- ✓ The Delivery Cart should be used for food preparation only.
- ✓ For the best service, the unit should be level.
- ✓ The Delivery Cart should not be operated in an enclosed area, exposed to excessive heat, steam, water, or any other adverse conditions.
- ✓ Use caution to protect against the risk of electric shock when operating in the presence of water or other liquids.
- ✓ Always move the unit to the workplace BEFORE connecting the power cord to the appropriate outlet.
- ✓ Always disconnect from power source before servicing or cleaning the unit.
- ✓ If a motor drive is on the unit, always refer to the motor drive instructions BEFORE moving the card.

EXTENDED STORAGE & BATTERY CHARGING

Carts with the optional motor drive assembly contain rechargeable batteries that were fully charged prior to shipment. Failure to properly store the unit and charge the batteries will cause battery failure, and the battery warranty will become null and void.

Be sure to store this cart in a cool and dry location. If the cart will not be activated for service within 30 days of receipt, the batteries must be charged by connecting the cord to electrical power for storage duration.

When removed from active service, the unit can remain continuously connected to power to maintain full battery charge. Be sure to turn the Drive System Power Switch OFF when not in use.

OPERATIONAL PROCEDURES

1. Clean cart thoroughly before using. Wipe exterior with a clean, damp cloth. Clean interior, side racks, and trays with a mild soap solution and sanitize. Clean the door gaskets prior to use.
2. To install the side racks in the compartments, position the keyhole openings in the tray side racks over the shoulder bolts located on the sides of the interior oven compartments. Push down to lock the tray side racks into position. Insert drip spill pan directly on the bottom surface of each oven compartment.

START-UP....

1. Connect the electric cord to an appropriate electrical outlet. If the optional retractable electric cord is on the unit, *pull and release the retractable cord horizontally, not vertically or slanted from its receptacle, gently guiding it back into its receptacle.*
2. Close the compartment vents located on the inside of each compartment door. If the unit has the four door option, ensure that the four (4) removable metal door strips are positioned properly on front and rear sides of the unit. Close the doors.
3. Press the power switches **ON** for the appropriate right or left compartments.
4. Preheat the empty compartments (without trays) at 200° F (93°C) for approximately one hour.
5. Load the cart with hot food only. The purpose of the delivery cart is to maintain hot food at proper serving temperature. *Only hot food should be placed into the delivery cart.* Before loading the cart with food, use a food thermometer to make certain all products have reached 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 it into the cart.
6. Load covered plates, bowls and service trays into appropriate compartments. Plates, bowls and covers should be heat resistant. Load assembled trays into preheated cart as quickly as possible to maintain maximum heat.

In the unit with four doors, the removable metal door strips will have to be repositioned to accommodate the trays in the center of the unit. Hang them vertically on their appropriate screw attachment to keep them from being misplaced. These metal door strips must be put back properly for the unit to operate efficiently.
7. Securely close the doors of the cart after loading trays. When loading or unloading individual heated compartments, the doors to the other compartments should remain closed.
8. After the cart has been completely filled with product, check to make certain the doors are securely closed, and reset the **thermostat** to the desired setting. The thermostats are located at the front center under a lift-up cover. *NOTE: The digital temperature display buttons cannot be used to adjust temperature. They are for factory use only.*

9. The proper temperature range for the products 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 with a food thermometer to assure maintenance of the proper temperature range of 140° to 160°F (60° to 71°C).

DELIVERY....

1. Transport the cart to the designated service area. Before moving the cart, turn the right and left power switches **OFF**. Disconnect the electric cord from the outlet making sure that the cord is returned properly back into its receptacle. *For minimal wear to the optional retractable cord, pull and release the cord horizontally, not vertically or slanted.* Upon reaching the service area, plug this cord into an appropriate outlet and turn the power switches **ON**. Foods will be automatically maintained at proper serving temperatures throughout the service period.
2. Unload covered plates or trays as needed for meal service. When unloading one compartment of the cart, the doors to the remaining compartments should remain closed in order to retain maximum heat.

For the four-door option unit, the metal door strips will have to be repositioned when removing the trays at the center of the cart. Always remember to put these metal strips back properly so that the unit will operate efficiently.

For best service all meals should be served in a timely manner. Following meal service, press the right and left power switches **OFF** and return the electric cord properly to its receptacle.

3. Transport cart to designated cleaning areas. Clean cart and trays after each meal service. Follow care and cleaning guidelines located in this manual.



For proper sanitation, do not put soiled trays back into the cart until all meals are served.

Use hand protection when handling hot compartment items



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.

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)

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.

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. 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, 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		
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.

CARE and CLEANING

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. A comprehensive program of sanitation will provide essential cleanliness. It will assure an attractive appearance of the equipment, along with maximum efficiency and utility. All these factors are important to build quality service as the foundation of patient satisfaction.



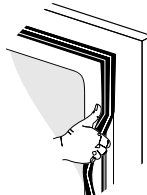
Disconnect the food delivery cart from the power source before cleaning.



1. Wipe and clean the power cord if necessary. Return properly to its receptacle. Let unit cool.
2. Remove detachable items such as trays, side racks, metal door strips, and lower drip trays. Wash these items in the dishwasher. Let dry.
3. Clean all interior compartments after each meal service. Any spilled food should be removed with a clean, 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 well to remove all residue and wipe dry.



4. All delivery cart door gaskets are removable. To maintain a good door seal and to extend the life of the gaskets, periodically wash the gaskets with warm sudsy water. Always rinse well to remove all soap or detergent residue.
5. 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 the cloth and wipe with the grain of the stainless steel.



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

6. In the event the delivery cart is out of operation for an extended period of time, thoroughly clean and sanitize the cart and clean the door gaskets prior to use.

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

DOOR ADJUSTMENT

The doors on all compartments of the delivery cart have been adjusted at the factory to provide a proper seal. Routine maintenance of the delivery cart should include a periodic examination of the door gasket to make certain a good seal is maintained. Proper adjustment can be tested by pulling a dollar bill through the gasket seal and feeling a slight resistance.

Minor adjustment to the doors is made at the hinges in one direction -- IN and OUT. There is no need to adjust the doors up-and-down, or side-to-side.

For in-and-out adjustment, loosen the three (3) screws holding the plate to the door hinge. Move the door OUTWARD to LOOSEN the gasket seal or INWARD to TIGHTEN the gasket seal. The adjustment faces are grooved so that movement is fixed when the screws are retightened. Adjust the hinges so that the door face and the unit face are parallel, and the portion of the gasket at the hinge-side does not bind when the door closes. Following adjustment, retest for proper seal as indicated above.

TIRE MAINTENANCE

Tire pressure requires periodic checking. Add air as required to maintain a pressure level not to exceed 60 pounds per square inch (4 bars).

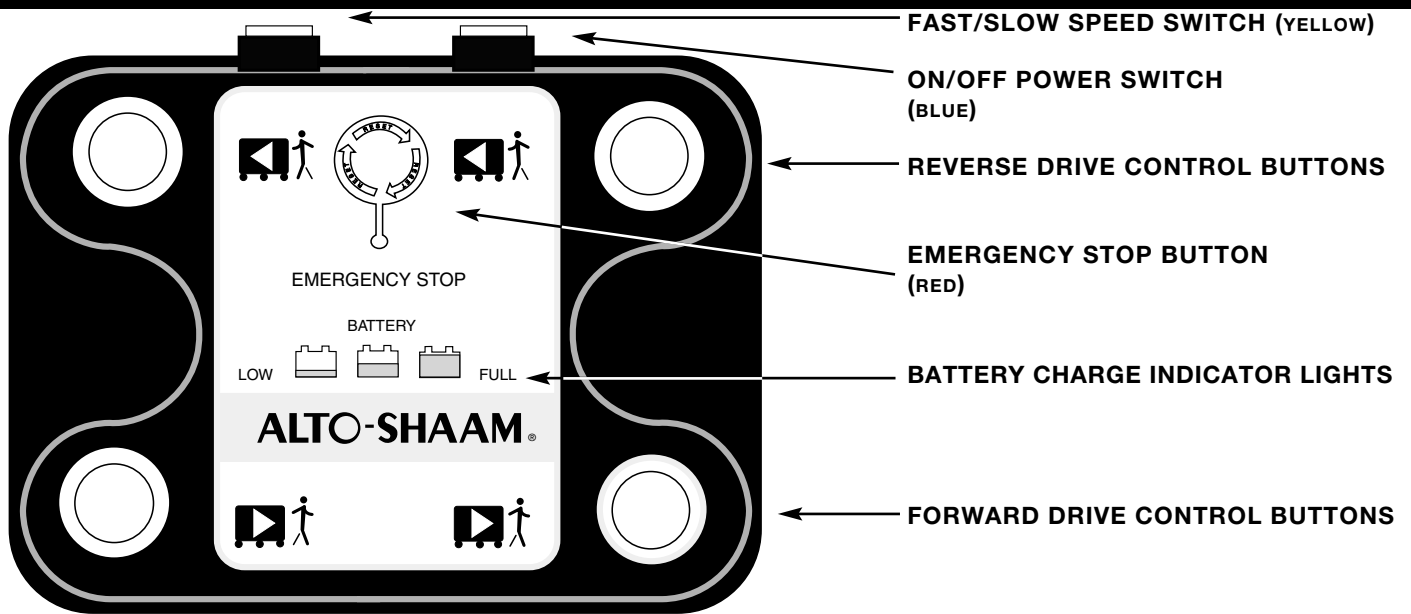
At no time should the interior or exterior of the cabinet be steam cleaned, washed down or flooded with water or liquid solution. Use caution to prevent flooding the electrical control panel and motor areas. Severe damage or electrical hazard could result, voiding the warranty.



1360-DCH • Rear View
Standard Model



MOTOR DRIVE CONTROL OPERATION



MOTOR DRIVE CONTROL

A two-speed Motor Drive Control is located at both ends of the cart to propel the unit in both forward and reverse. Slow speed is 0.9 mph (1.4 km/hr) and fast speed is 1.9 mph (3.1 km/hr).

ON/OFF POWER SWITCH

The ON/OFF power switch (BLUE) controls the Motor Drive Control and is located at the top of the drive control housing at one end of the cart only. To engage the drive control press the ON/OFF power switch to the "ON" position. Allow 2 to 3 seconds for control to initialize before using Forward/Reverse Control buttons.

FAST/SLOW SPEED SWITCH

The yellow FAST/SLOW speed switch is located left of the ON/OFF Power Switch. To engage Fast Speed, depress the yellow switch – the switch will illuminate. For best results, start in Slow Speed. The cart will accelerate to speed within 3 to 4 seconds. Once cart is moving – engage Fast Speed. This will minimize cart "surge".

REVERSE DRIVE CONTROL BUTTONS

The reverse drive control buttons are located toward the top of the drive control housing. Pressing either of these buttons will move the cart in reverse or away from the operator.

EMERGENCY STOP BUTTON

When pushed, the red emergency stop button completely disengages the motor drive control and will immediately halt all cart movement. To restore motor drive function, turn and release the emergency stop button in a clockwise direction.

BATTERY INDICATOR LIGHTS

When the motor drive control switch is in the "ON" position, a battery light will illuminate indicating the condition of the battery charge: RED, low; YELLOW, medium; or GREEN, full. To recharge the battery when indicating a medium or low charge, connect the cart to the power source until the charge is restored (one hour minimum). If battery charge is insufficient to maintain the cart through the service period or while en route, the motor drive assembly brake must be released and the cart manually moved to a power source. (SEE SECTION TITLED

MOTOR DRIVE FOR DETAILED INSTRUCTIONS.)

FORWARD DRIVE CONTROL BUTTONS

The forward drive control buttons are located toward the bottom of the drive control housing. Pressing either of these buttons will move the cart forward or toward the operator.

MOTION BEEPER

There is an audible signal whenever the drive control is engaged in either a forward or reverse motion.

IMPORTANT

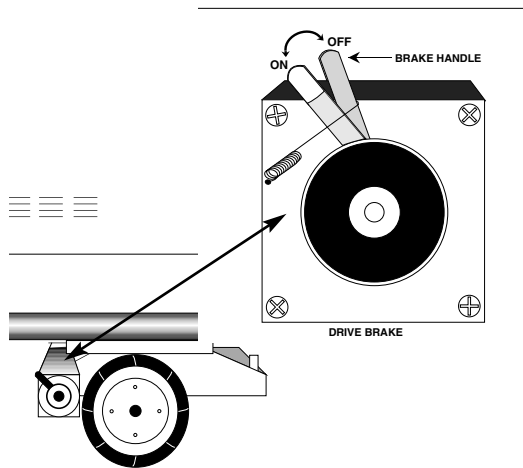
FOR THE SAFEST METHOD OF OPERATION, A CART OPERATOR SHOULD ALWAYS BE POSITIONED AT THE FRONT OF THE CART IN WHICHEVER DIRECTION THE CART IS MOVING.



AS A SAFETY PRECAUTION DO NOT GUIDE CART FROM THE BACK. GUIDE THE UNIT TO DESTINATION BY PULLING FROM EITHER END OF THE CART.

To keep drive batteries fully charged, the cart must remain connected to the power source when not in service. Turn drive system power switch OFF when not in use.

MOTOR DRIVE BRAKE



IF DRIVE BATTERY LOSES CHARGE IN TRANSIT, DISENGAGE BRAKE

1. Move handle of brake clockwise to the **OFF** position. Turn Drive System Power Switch **OFF**.
2. Manually push the cart to an appropriate outlet and connect power cord for a minimum of 30 minutes. *FOR A FULL CHARGE, CART MUST BE CONNECTED TO THE POWER SOURCE FOR A MINIMUM OF 1 HOUR.*
3. Following recharge period, move brake handle counter-clockwise to the **ON** position.

To keep batteries fully charged, the cart must remain connected to the power source when not in service. Turn Drive System Power Switch **OFF** when not in use.

BATTERY CHARGER

The battery charger is located on the Motor Drive Assembly. The charger includes one bi-color indicator light to show the charging state of the battery.

- A. The yellow light indicates the charger is in operation but the motor drive battery has not yet reached full charge.
- B. A green light indicates the battery has reached full charge. Charger can operate indefinitely without harming the battery.

CART FREEWHEELING and DRIVE SAFETY FEATURES

To freewheel the cart manually, the Drive Power Switch must be **OFF** – then the Drive Brake must be placed in the **OFF** position. See Drive Brake Caution below. Restore the Drive Brake to the **ON** position upon freewheeling completion.

ALARM CONDITION No. 1

With the Drive Power Switch **ON** – and then the Drive Brake turned **OFF** – the drive unit provides dynamic braking (movement is possible, but difficult). If either Forward/Reverse Drive Control Buttons are depressed, the motion beeper will sound an alarm and the Drive Motor will not operate. To clear the alarm and restore operation, turn the Drive Brake **ON**.

ALARM CONDITION No. 2

If the Drive Power Switch and Drive Brake are both **OFF** – then the Drive Power Switch is turned **ON**, the motion beeper will sound an alarm and the drive motor will not operate. To clear the alarm and restore operation, turn the Drive Brake **ON**, then turn the Drive Power Switch **OFF** and then **ON** again.

ALARM CONDITION No. 3

If either Forward or Reverse Drive Control Button is depressed and the Drive Power Switch is turned **ON**, the motion beeper will sound an alarm and the drive motor will not operate - **OR** - if either Forward or Reverse Drive Control Button is depressed immediately after the Drive Power Switch is turned on, the motion beeper will sound an alarm and the drive motor will not operate.

ALARM CONDITION No. 4

If the cart power cord is connected to power and then the Drive Power Switch is turned **ON**, the motion beeper will sound an alarm, the green “full” battery indicator light will flash, and the drive motor will not operate. To clear the alarm and restore operation, disconnect the cart power cord from the power supply; turn the Drive Power Switch **OFF** for 5 seconds and then turn it **ON** again.

ALARM CONDITION No. 5

If the Drive Power Switch is **ON**, and the cart power cord is connected to power, the green “full” battery indicator light will flash. If either Forward/Reverse Drive Control Button(s) are depressed, the motion beeper will sound an alarm and the drive motor will not operate. To clear the alarm and restore operation, disconnect the cart power from the power source; turn the Drive Power Switch **OFF** for 5 seconds and then turn it **ON** again.

Drive Brake • Caution

The motor drive brake must be engaged at all times unless it becomes necessary to move the cart manually. After moving the cart manually, the wheels of the cart and the motor drive assembly will respond to even a slight incline unless the brake is reset. Maintaining a “set” brake to keep the cart in a stationary position is an important safety factor.



SERVICE PARTS LIST

4/01 1360-DCH • Hot Food Delivery Cart

PART DESCRIPTION	UNIT QUANTITY	ALTO-SHAAM PART NUMBER
1. T-BLOCK, 4 SCREW	2	BK-3023
2. HANDLE, CABINET "U"	4	HD-22257
3. SOCKET HEAD CAP SCREWS, 1/4-20 X 3/4	8	SC-22339
4. BOX FAN, 230V	2	FA-3568
5. FAN MOTOR, CIRCULATING	4	FA-33221
6. FAN BLADE	4	FA-33217
7. HOLD DOWN CAP	4	BK-2609
8. HINGE, 1 3/8 OFFSET	8 PAIRS	HG-22338
9. HANDLE, LOCKING, STANDARD	8	HD-2565
HANDLE W/OFFSET, OPTIONAL	8	HD-24172
10. THERMOMETER	2	TH-33443
11. BLOCK, SENSOR MOUNTING	2	BK-24427
12. SENSOR, 1 3/4	2	SN-33541
13. C KNOB, 90 DEGREE	2	KN-3474
14. INDICATOR LIGHT, ROUND, WHITE, 250V	4	LI-3951
15. SPEED NUT	2	NU-3335
16. ROCKER SWITCH, ON/OFF	2	SW-33251
17. THERMOSTAT, 200 DEGREE	2	TT-3057
18. TRANSFORMER	2	TN-33135
19. SENSOR GUARD	2	1496
20. SWIVEL CASTER, WITHOUT BRAKE, 8" (203mm)		CS-22028
SWIVEL CASTER, WITH BRAKE, 8" (203mm)		CS-22029
RIGID CASTER, 8" (203mm)		CS-22030
21. BUMPER W/INSERT, 16' (4877mm)	1	BM-22417
22. SPADE CONNECTOR, DUAL 1/4	3	CR-3849
23. BUSHING, 3/8" (9.5mm)	2	BU-3419
24. BUSHING, 1/2" (13mm)	1	BU-3006
25. HOLE PLUG, 3/4" (19mm)	5	PG-3398
26. PANEL, WARMER OVERLAY	1	PE-24813
27. THERMOMETER OVERLAY	1	PE-24781
28. DOOR GASKET	4	GS-24740
29. CORD REEL, ELECTRIC, OPTION	1	CD-33620
CORD , ELECTRIC, STANDARD	1	CD-33533
30. SHELF LABEL SET, 1 TO 60	1	PE-24779
31. RESISTOR, 50W, 1 OHM	2	RS-33622
32. MOTOR DRIVE, TWO SPEED, TWO CONTROL	1	MO-33514
MOTOR DRIVE, TWO SPEED, ONE CONTROL	1	MO-33515
33. CYLINDER DOOR LOCK & KEY REPLACEMENT	8	LK-22567
34. METAL DOOR SEAM STRIPS	4	11755
35. CERAMIC T-BLOCK	2	BK-33546
36. DRIP TRAY	2	11977
37. MENU CARD HOLDER	2	12285

Two-Speed Drive Option Assembly Components

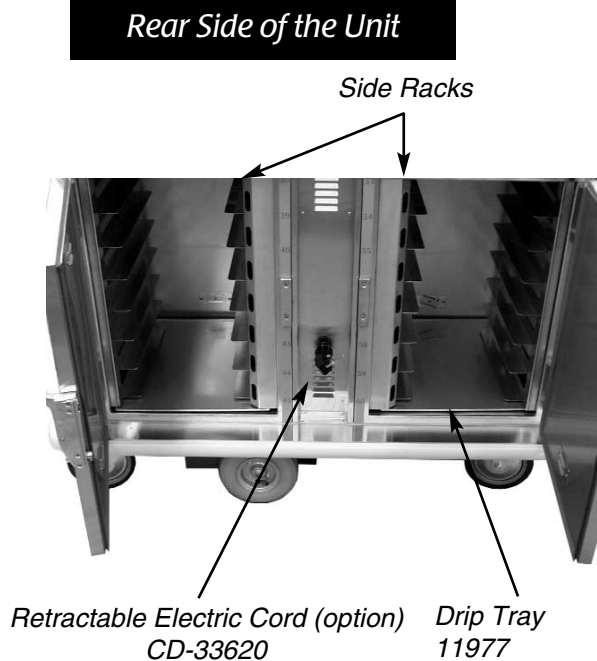
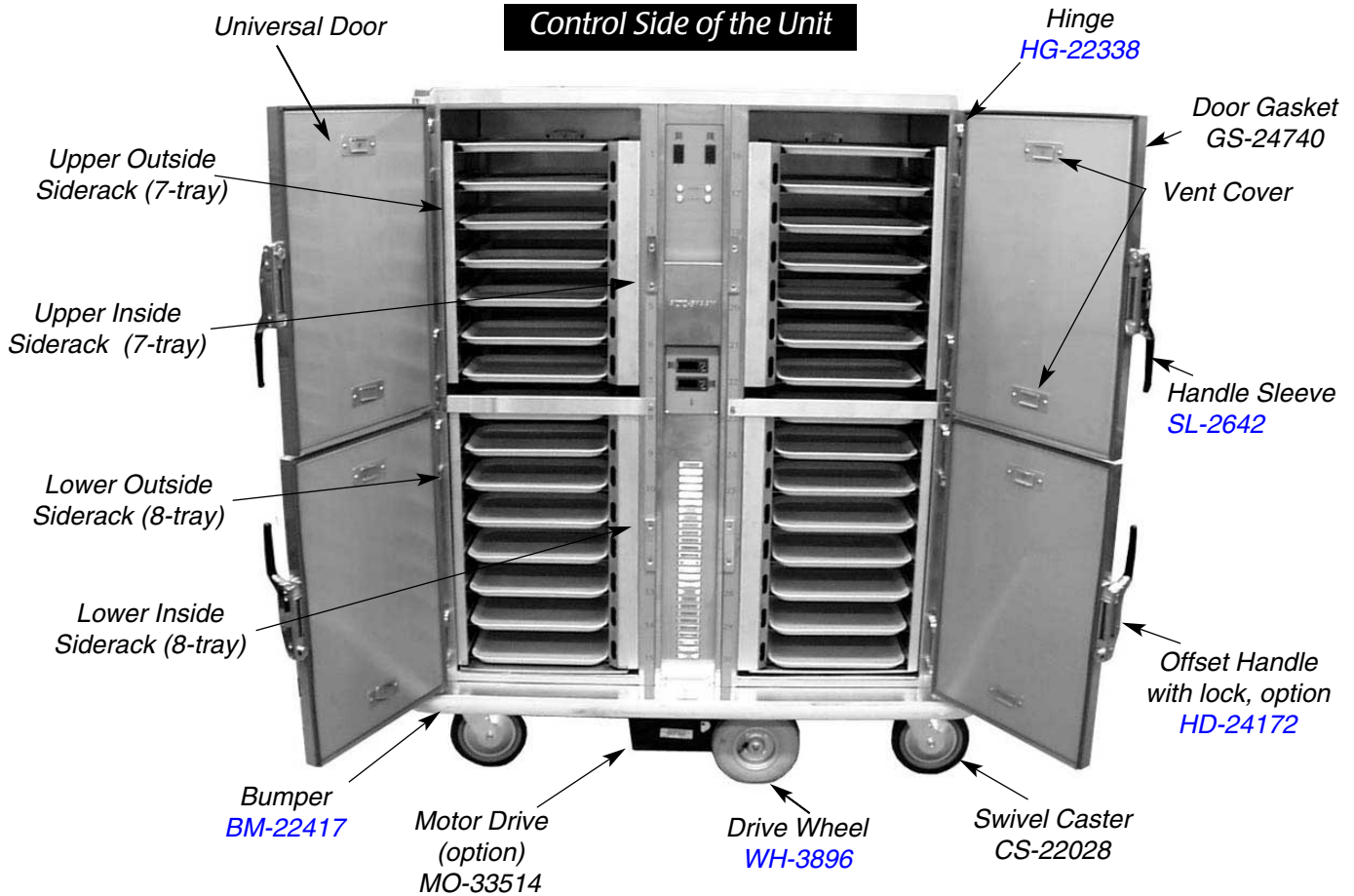
Description	Part No.
Charger	CH-33524
Handle Assembly "A" ON/OFF, SLOW/FAST	HD-33525
Illuminated Switch, YELLOW, SLOW/FAST	SW-33526
Emergency Stop Switch	SW-33032
Push button "Motion" Switch, WHITE, FORWARD/REVERSE	SW-33527
ON/OFF Switch - BLUE	SW-33029
Handle Assembly "B" (no On/OFF)	HD-33529
Control Board for Handle Assembly A & B	BA-33636
Hsndl Assembly "C" EMERGENCY STOP ONLY	HD-33530
Grip Handle	HD-22257
Circuit Breaker - 30 Amp	CI-33531
Fuse, 2A	FU-33627
Brake Assembly	BR-33628
Main Control Module	CC-33532
Battery (two required)	BE-3889
Drive Motor	MO-33576
Differential with motor/brake/wheels	DI-33629
Differential ONLY	DI-33630
Wheel and Tire Assembly	WH-3896
Key, Wheel/Shaft Lock	LK-33633
Tire, rubber	WH-33631
Inner Tube for Tire	WH-33632
Horn, Sound Generator	HN-3898



**Always disconnect the
food delivery cart from
the power source before
cleaning or servicing.**

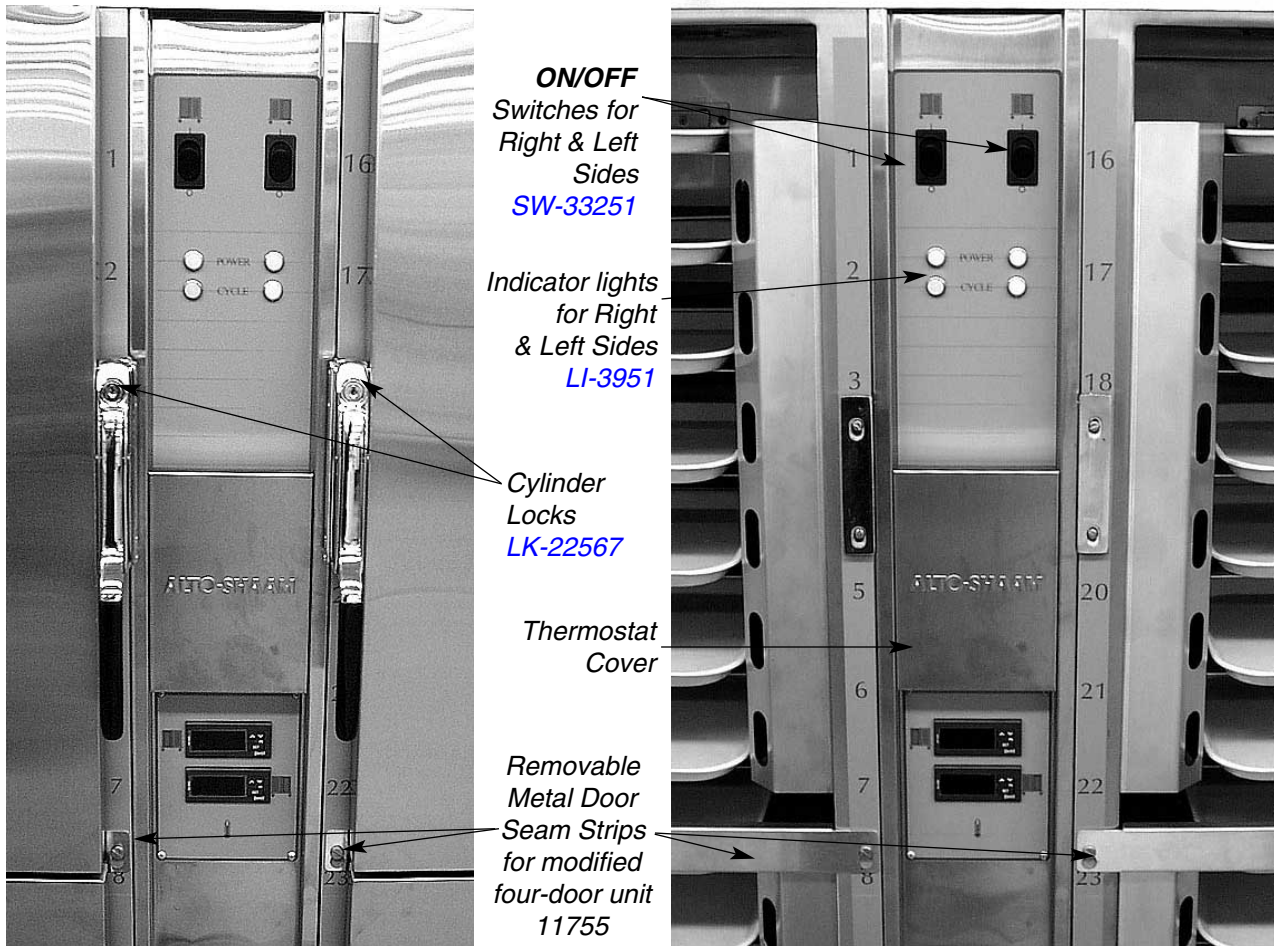
Cable Heating Service Kit (one for each cavity)	No. 4881
includes:	
CB-3045	Cable Heating Element 210 feet
CR-3226	Ring Connector 12
IN-3488	Insulation Corner 1 foot
BU-3105	Shoulder Bushing 12
BU-3106	Cup Bushing 12
SL-3063	Insulating Sleeve 12
TA-3540	High Temperature Tape 1 roll
ST-2439	Stud, 10-32 12
NU-2215	Hex Nut 24

Unit pictured is a modified unit with four doors on front and rear sides



NOTE: For minimal wear to the cord, pull and release the retractable cord horizontally, not vertically or slanted

Unit pictured is a modified unit with four doors on front and rear sides



ON/OFF
Switches for
Right & Left
Sides
SW-33251

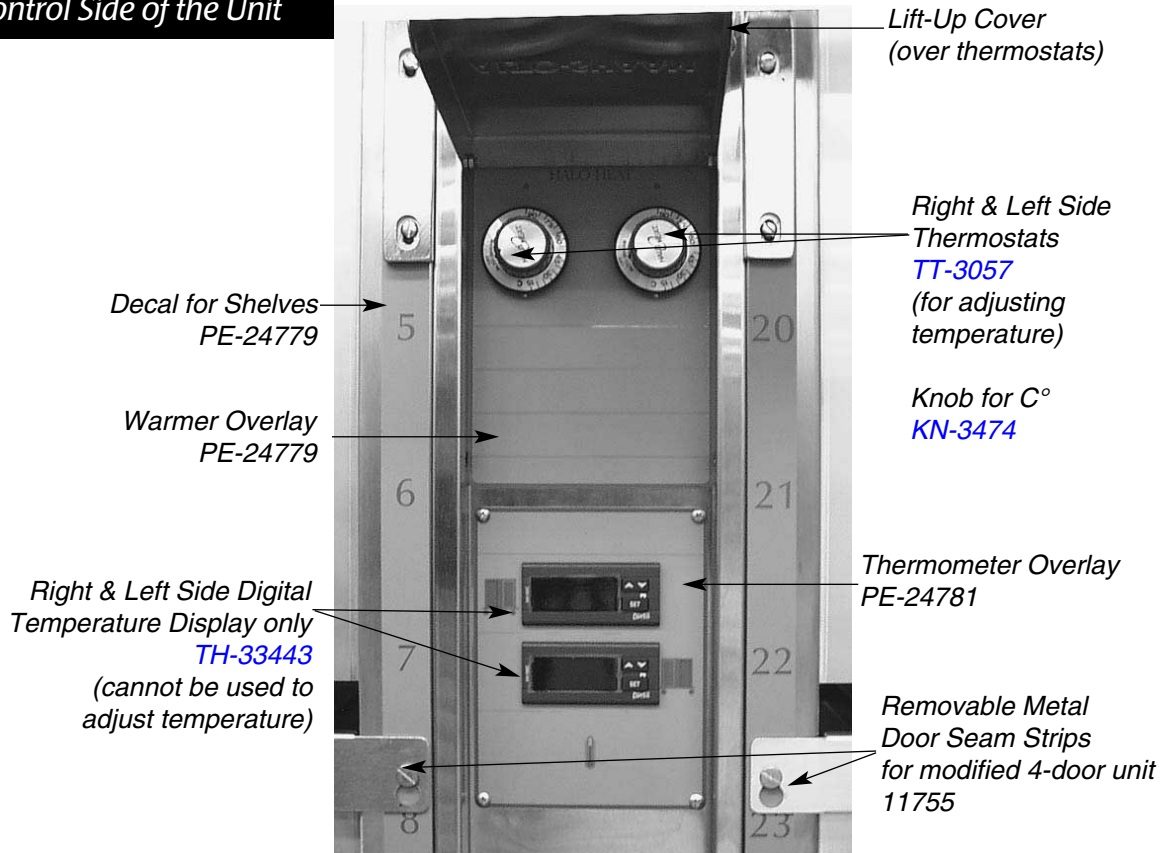
Indicator lights
for Right
& Left Sides
LI-3951

Cylinder
Locks
LK-22567

Thermostat
Cover

Removable
Metal Door
Seam Strips
for modified
four-door unit
11755

Control Side of the Unit



Lift-Up Cover
(over thermostats)

Right & Left Side
Thermostats
TT-3057
(for adjusting
temperature)

Knob for C°
KN-3474

Thermometer Overlay
PE-24781

Removable Metal
Door Seam Strips
for modified 4-door unit
11755

Decal for Shelves
PE-24779

Warmer Overlay
PE-24779

Right & Left Side Digital
Temperature Display only
TH-33443
(cannot be used to
adjust temperature)

Circulating Fan Motor
(4) FA-33221

Cooling Fan
(2) FA-3568

T-Block
(2) BK-3023

Retractable
Electric Cord (option)
CD-33620



Power Rocker Switches
(2) SW-33251

Indicator Lights
(4) LI-3951

Thermostats
(2) TT-3057

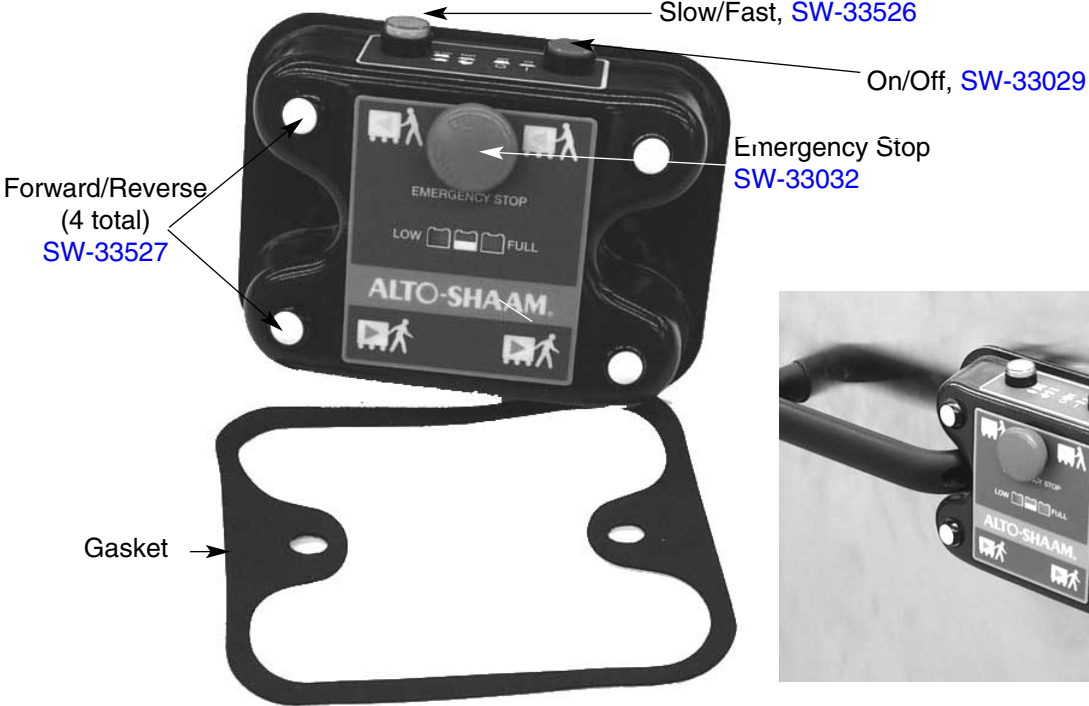
Temperature Displays
(2) TH-33443

Stepdown
Transformers
(2) TN-33135
220V-12V

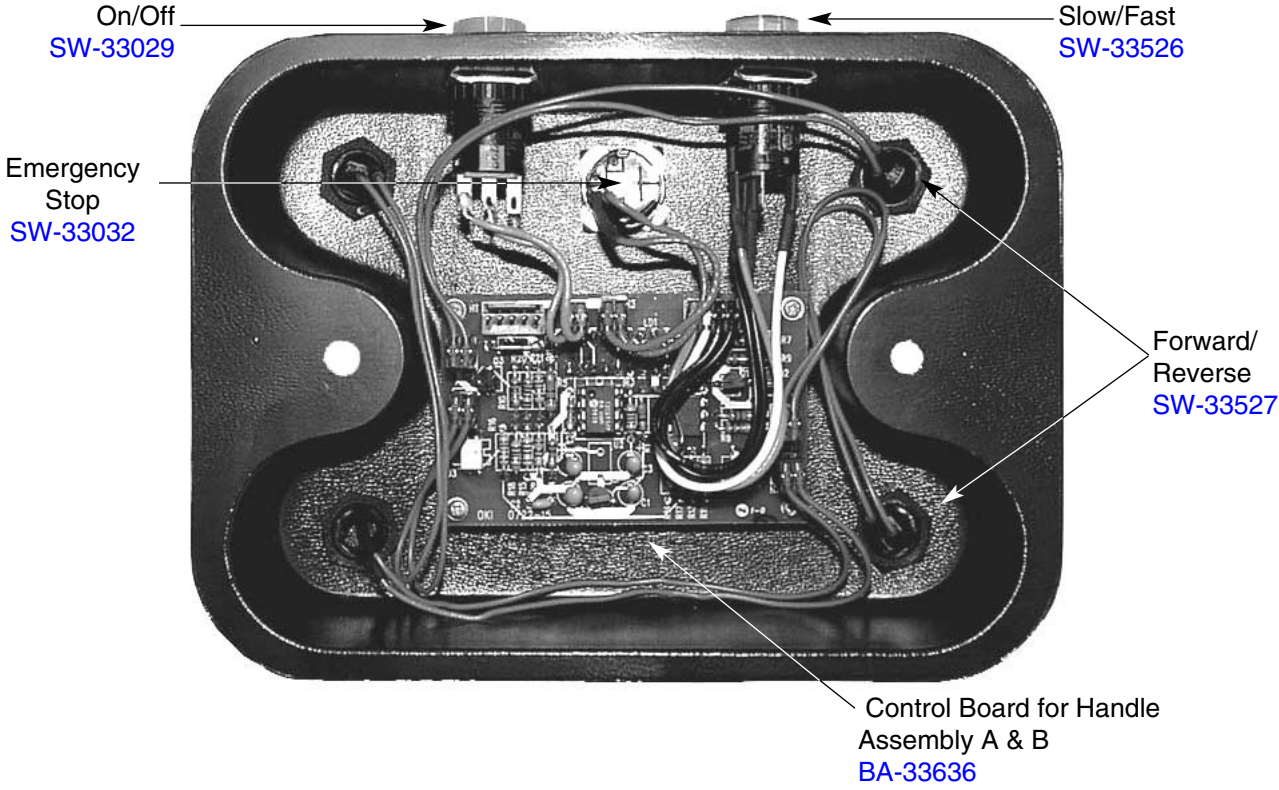
Resistor
RS-33622
50W, 10HM



MOTOR DRIVE SYSTEM (option)



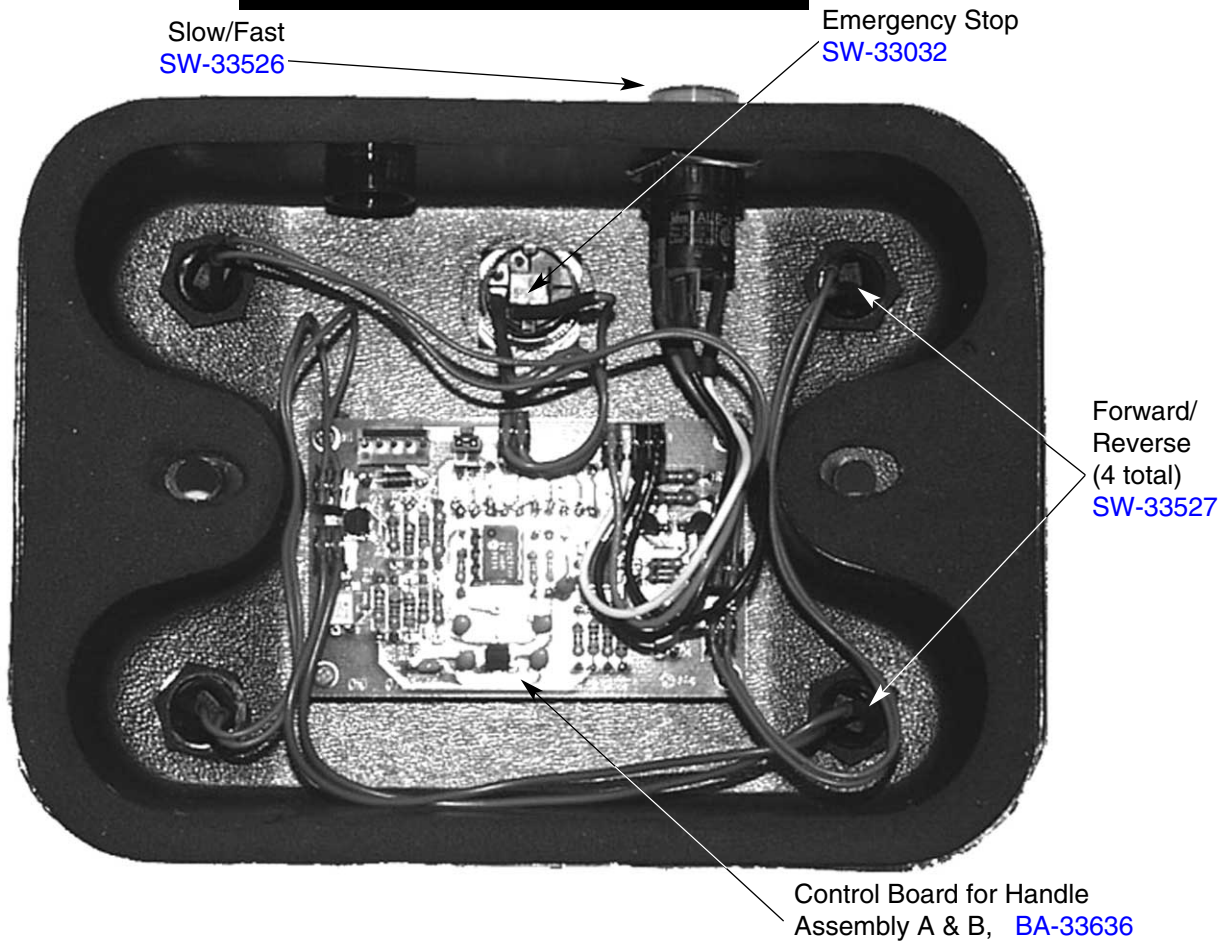
HANDLE 'A' ASSEMBLY HD-33525 Front & Rear View



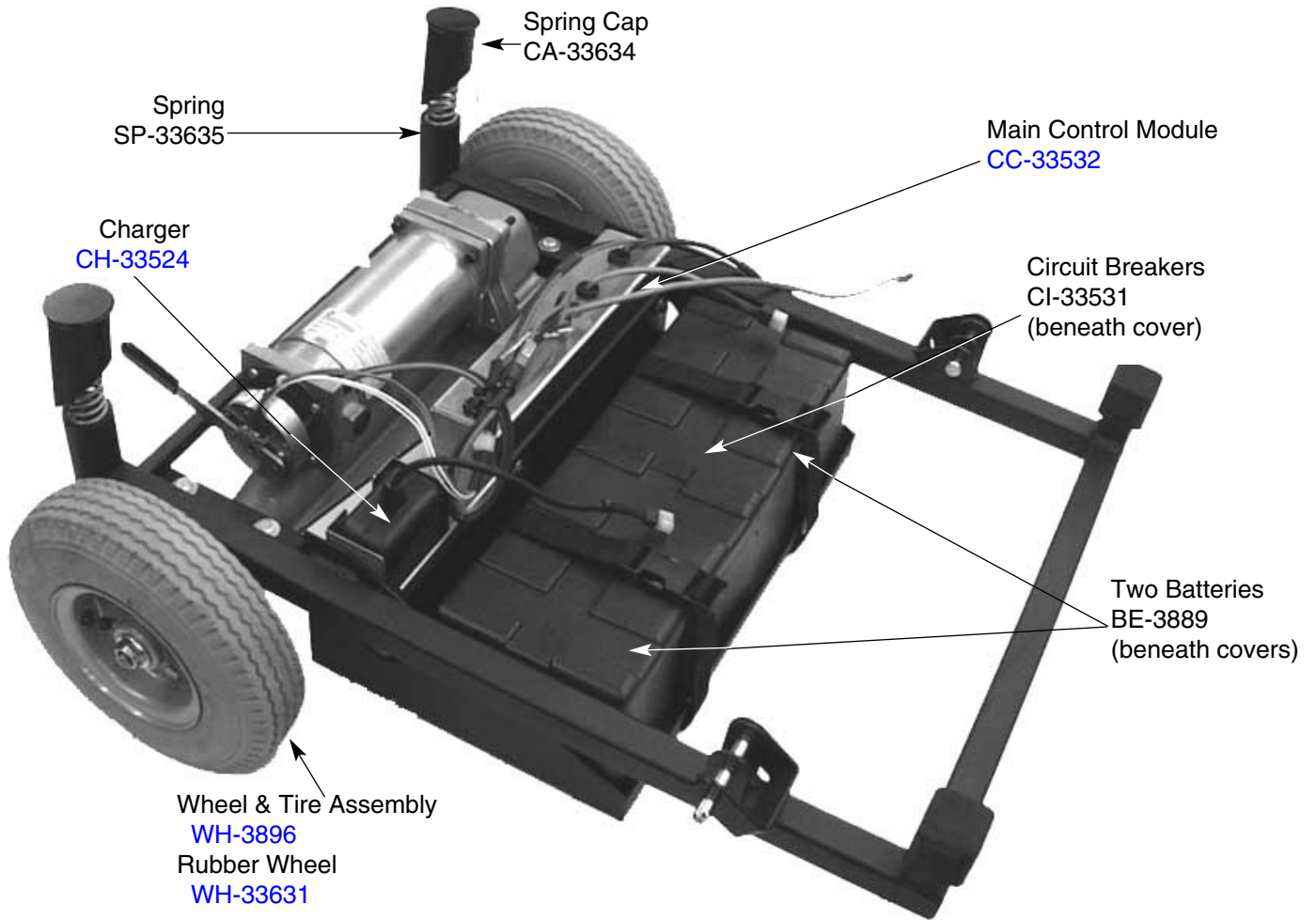
MOTOR DRIVE SYSTEM (option)



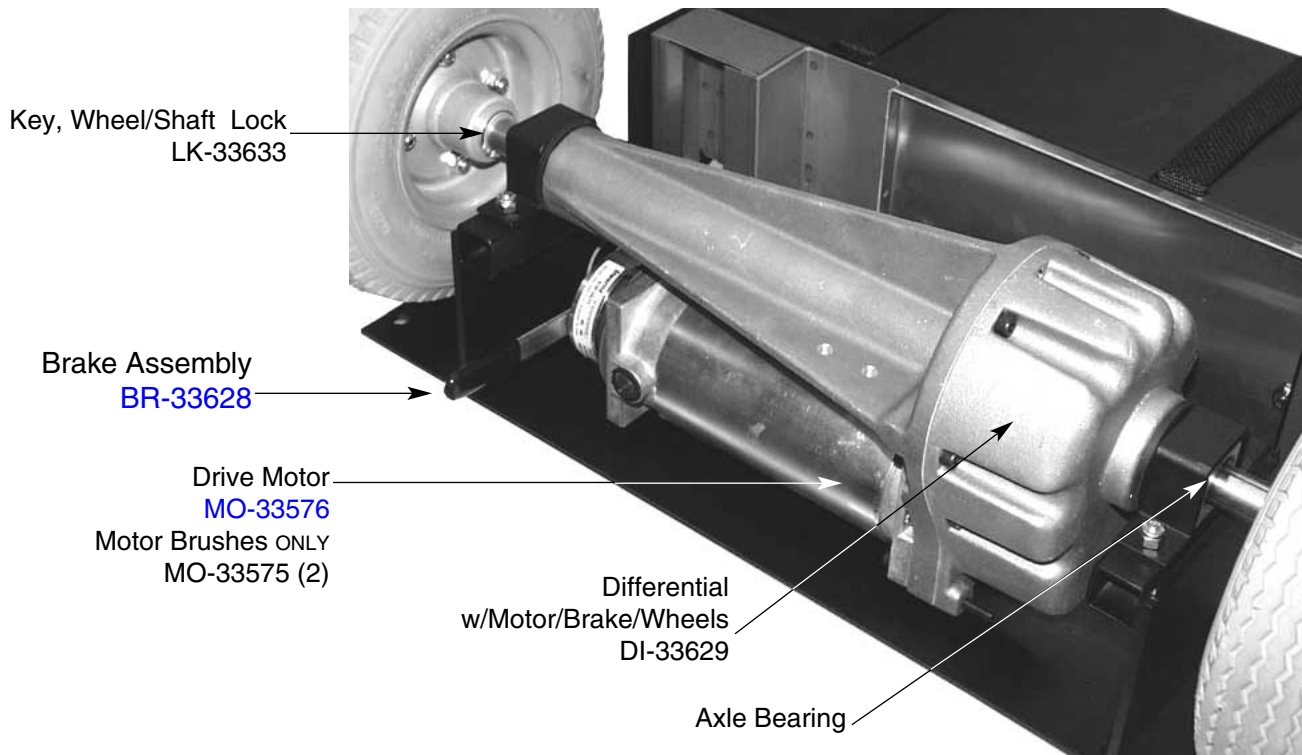
HANDLE ASSEMBLY "B" HD-33529 Front & Rear View



MOTOR DRIVE SYSTEM (option)



DRIVE ASSEMBLY Top & Bottom

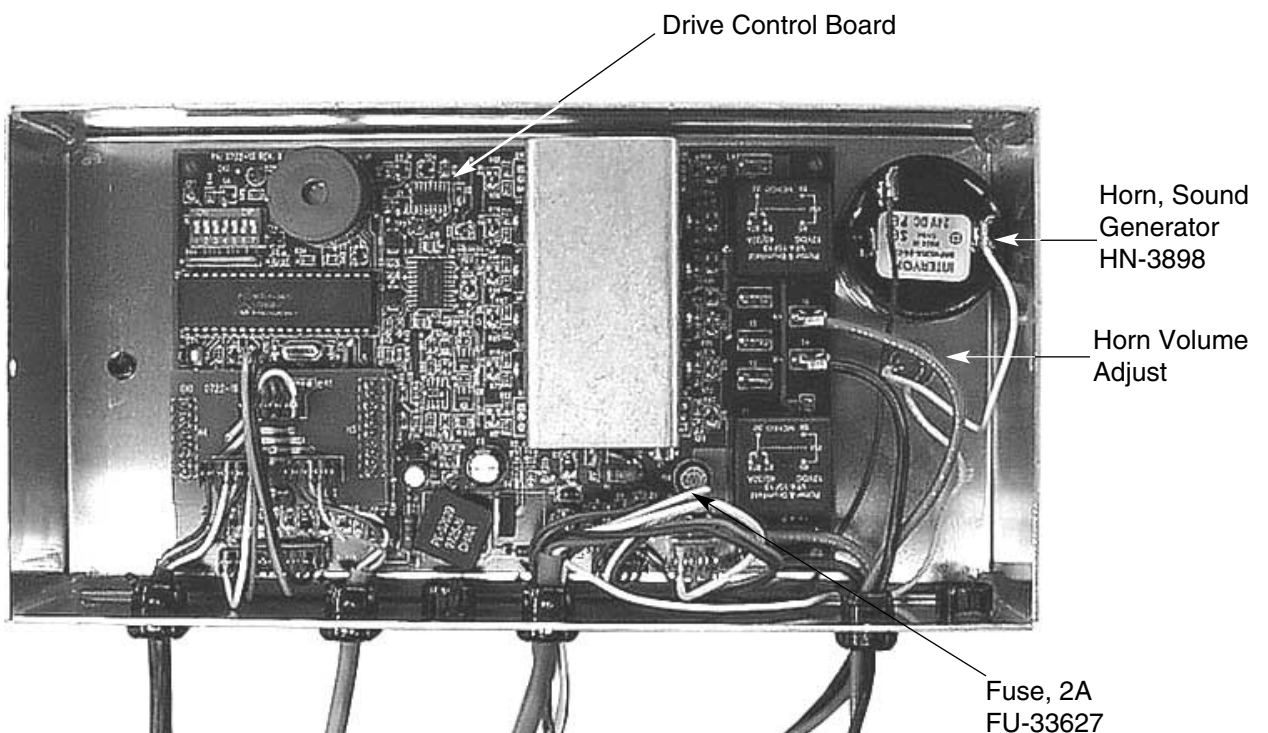


MOTOR DRIVE SYSTEM (option)

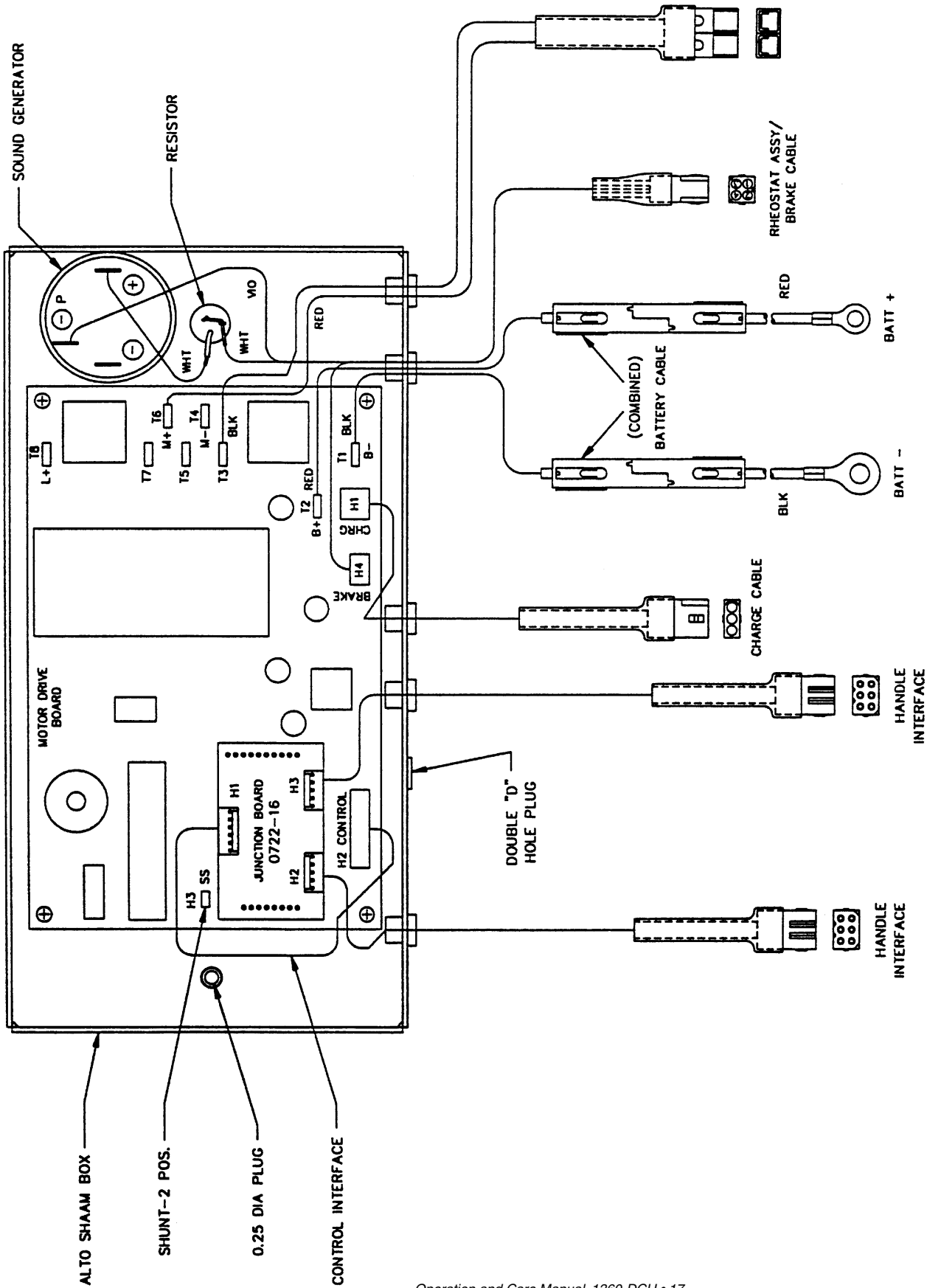
HANDLE ASSEMBLY 'C' • HD-33530
for unit that has drive control on one side only



CONTROL MODULE ASSEMBLY • CC-33532

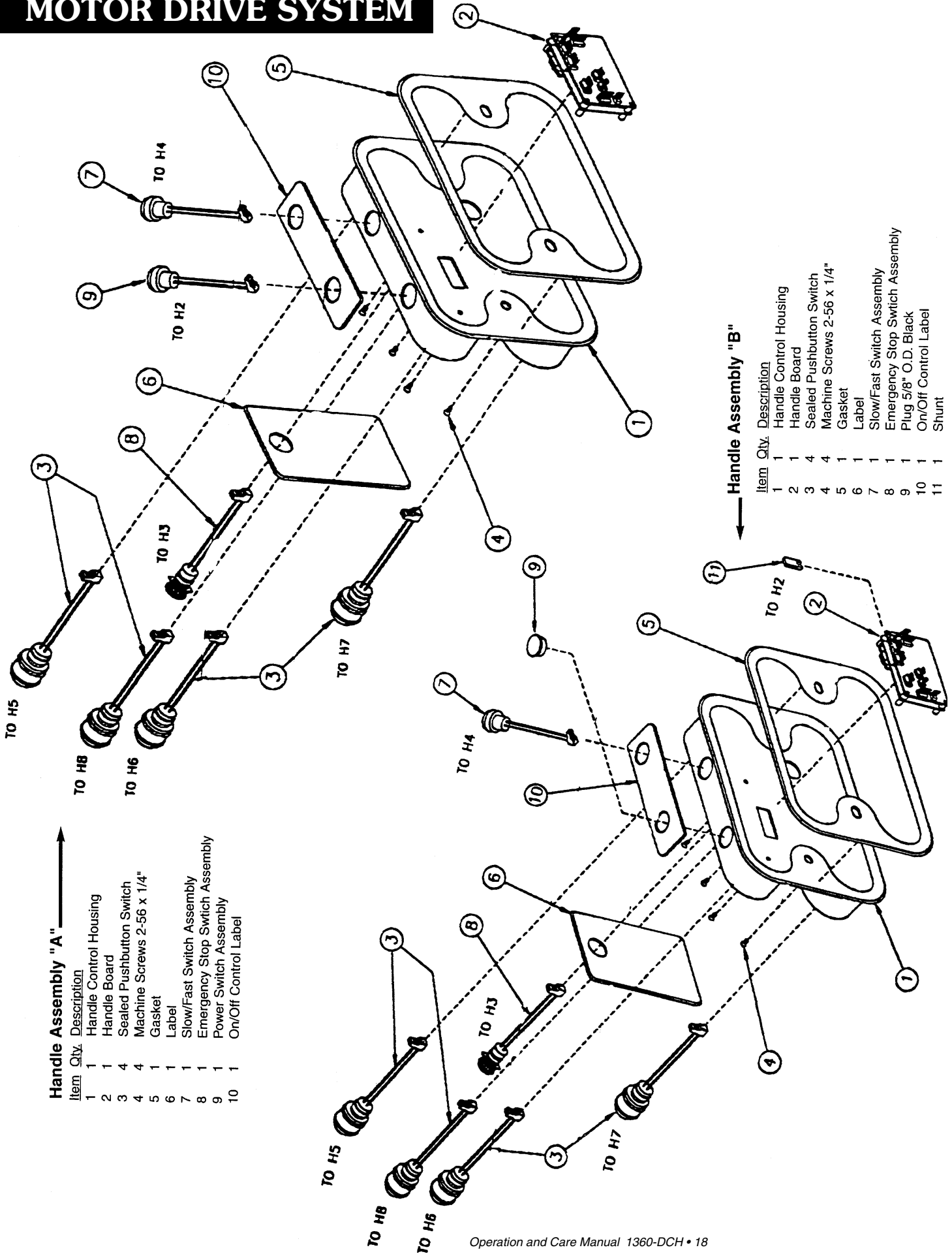


MOTOR DRIVE SYSTEM (option)



CONN. DIAGRAM, REAR CONTROL-ALTO

MOTOR DRIVE SYSTEM

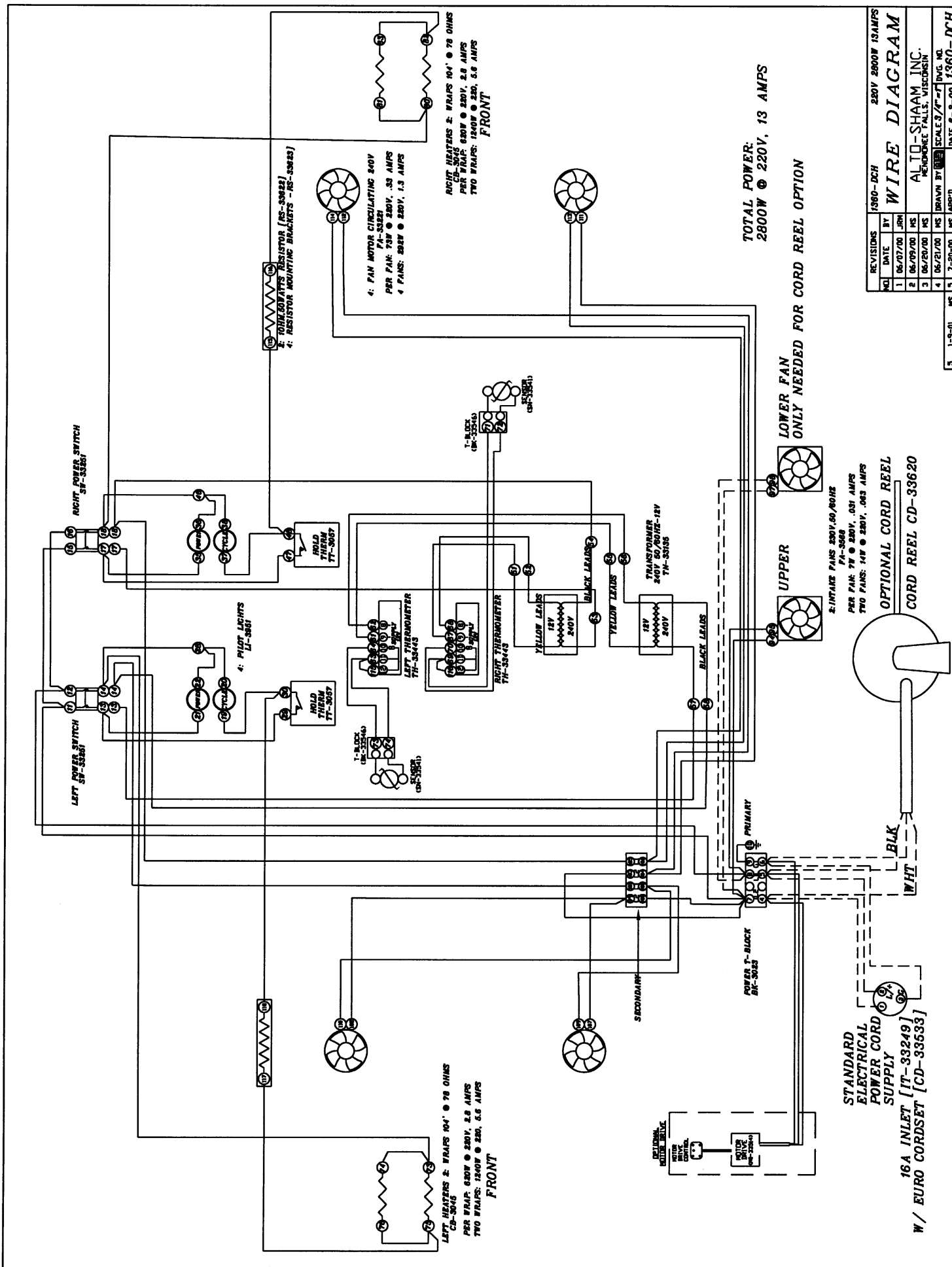


Handle Assembly "A" →

Item	Qty.	Description
1	1	Handle Control Housing
2	1	Handle Board
3	4	Sealed Pushbutton Switch
4	4	Machine Screws 2-56 x 1/4"
5	1	Gasket
6	1	Label
7	1	Slow/Fast Switch Assembly
8	1	Emergency Stop Switch Assembly
9	1	Power Switch Assembly
10	1	On/Off Control Label

← **Handle Assembly "B"**

Item	Qty.	Description
1	1	Handle Control Housing
2	1	Handle Board
3	4	Sealed Pushbutton Switch
4	4	Machine Screws 2-56 x 1/4"
5	1	Gasket
6	1	Label
7	1	Slow/Fast Switch Assembly
8	1	Emergency Stop Switch Assembly
9	1	Plug 5/8" O.D. Black
10	1	On/Off Control Label
11	1	Shunt



NO.	DATE	BY	REVISIONS
1	06/07/00	JRH	1360-DCH
2	06/09/00	MS	280V 2800W 13AMPS
3	06/09/00	MS	WIRE DIAGRAM
4	06/21/00	MS	ALTO-SHAAM INC KENOSHA FALLS, WISCONSIN

SCALE 3/4"=1" DATE 6-8-00 1360-DCH

TRANSPORTATION DAMAGE and CLAIMS

ALTO-SHAAM[®] 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 your correspondence regarding the unit.

Model: _____

Serial Number: _____

Purchased From: _____

Date Installed: _____ Voltage: _____

HALO HEAT COOK/HOLD/SERVE SYSTEMS BY ALTO-SHAAM[®]

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 U.S.A./CANADA

262.251.1907 INTERNATIONAL

www.alto-shaam.com

PRINTED IN U.S.A.