This document contains the installation and operating instructions for:

VERTICAL TOASTER MODEL VT12

Supplier Name:	**MARSHALL AIR SYSTEMS, INC.**
Address:	419 Peachtree Drive South
Charlotte, NC 28217	
Serial #:	_____
	_____
	_____
Date Received:	_____
Date Installed:	_____
Telephone #:	704-525-6230
Toll Free #:	800-722-3474 Customer Service
Fax #:	704-525-6229
Local Service Name:	_____
Local Service #:	_____
Conveyor Speed Setting:	_____
Temperature Settings:	
Crown Side:	_____
Heel Side:	_____
Platen:	_____

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WIRING SCHEMATIC -#130197 (208V, 50/60HZ, 1 PH)

WIRING SCHEMATIC-#131117 (240V, 50/60HZ, 1PH)

WIRING SCHEMATIC - #132088 (220V, 50/60HZ, 1PH)

WIRING SCHEMATIC-#130168 (208V, 50/60HZ, 1PH) WITH NEUTRAL

I. GENERAL DESCRIPTION

The Marshall High Speed Vertical Toaster produces a grilled effect on the cut side of sandwich buns. The buns are inserted at the top of the unit and are pressed against a heated platen surface, which is covered by a replaceable toaster platen sheet. The buns are discharged onto a product slide at the bottom of the unit. The system is high speed and also variable in speed. Additionally, there are separate heat controls for the bun crown, heel, and cut surface temperatures. These are safely located inside the secure cabinet thus eliminating unauthorized tampering with settings. The flexibility of this toaster is unmatched allowing operators to produce the hottest buns in the shortest time.

GENERAL SPECIFICATIONS

Height:	21.125"
Width:	12.625"
Depth:	18.875"
Electrical:	208V Single Phase 21 Amps Special Note: If toaster is wired to a 240V single phase supply, special adjustments are required, see note 1A under "INSTALLATION AND OPERATION."
Power Cord:	6 ft. 4 wire including ground, with NEMA L14-30P Plug
Weight:	62 lbs.

**INTERNATIONAL:

Electrical:	220V and 240V Single Phase supply with infinite switch controls factory set at position 9. DO NOT CHANGE BOOST HEAT INFINITE SWITCH CONTROLS TO A POSITION HIGHER THAN 9.
Power Cord:	6FT 3 wire including ground, with NEMA L6-30 Plug, (Plug not supplied with 220V or 240V units)

II. INSTALLATION

PRE-INSTALLATION

1. This toaster is shipped completely wired and ready to plug into a grounded NEMA L14 30 receptacle. (208 Volt Single Phase, 3 wire with ground circuit). Check receptacle for proper voltage and phase.

2. Other voltages - some localities may only have 240 volts and a 208 volt machine has been used. To compensate remove the control cabinet side cover WITH THE UNIT UNPLUGGED and turn the two temperatures switches that are pointer type knobs from a setting of 12 down to a setting of 9. This same action even on a 208 volt unit will produce considerable Grill cover life extension at the penalty of buns taking 10-15 seconds longer to achieve maximum temperature. In other words, a toast time of 30 seconds instead of 18 seconds. DO NOT CONNECT HIGH LEG OF A 240 VOLT CIRCUIT TO TOASTER. THERMOSTAT IS FACTORY SET AT 10.

** International 240V Units are shipped with plug NEMA L6-30, and are 240Volt, Single Phase, 3 wire including ground. DO NOT CHANGE BOOST HEAT INFINITE SWITCH CONTROLS TO A POSITION HIGHER THAN 9.

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INSTALLATION

1. Place toaster on level metal surface.

2. Install product slide on the underside of the toaster. The product slide hangs on a rod located under the toaster and directs the buns out from under the toaster.

3. Check that the two lift off side covers are in place on the toaster. One is marked "Heel", which indicates the side of the toaster for inserting the bottom, or heel, of the bun.

4. Check that the toaster platen sheet is installed over the contact platen. The toaster platen sheet is installed from the top of the unit by lightly creasing it at the center, and directly hanging it on the contact platen. NOTE: THE NOSE GUARD SHOWN IN FIG 4, KEEPS THE TOASTER PLATEN SHEET IN PLACE.

5. Connect the toaster to the power supply.

6. Turn on the conveyor switch on the toaster and check for free movement of the two conveyor belts.

7. Turn on the heat switch . Allow 15 minutes for the toaster to warm up before toasting buns.

8. After warm up, drop buns into the toaster at the top of the unit. For proper operation, insert heels on the side of the toaster marked "Heel", and crown on the opposite side. The cut sides of the heel and crown must face each other.

9. The toasted heel and crown will drop down onto the product slide together. Check the appearance of the toasted buns.

10. Adjust the gap settings using the two levers on the side of the toaster. (See Figure 7). The levers are labeled, one lever for the "Heel" gap, and one lever for the "Crown" gap. To adjust the gap, pull out the lever to disengage the rod from the locator holes, and turn the lever to the desired position so the rod engages in one of the locator holes.

11. The speed control can be adjusted to control the conveyor belt speed to lighten or darken the toasted product. The toaster is shipped with the speed control set on 50. On early models where the speed control is located on the front panel loosen by hand the thumb screw to allow the speed control knob to turn. After adjusting the speed control, hand tighten the thumb screw to secure the knob. On current models, the speed control is located behind a cover on the front panel.

12. The temperature of the toaster can be field adjusted. Before making adjustments, disconnect the toaster from its' power source. Remove screws and control panel cover (Fig 3). To decrease the temperature of the platen, crown side, or heel side, select the respective control (Fig 3), and rotate to next decreasing number. Allow to stabilize for 20 min. and retest. Repeat until desired product is reached. Record new settings on the front of your owner's manual.

13. Test at least 3 buns before putting the toaster into service.

III. OPERATION

1. The toaster is operated by turning on the conveyor switch (Figure 4) and then the heat switch.

2. Allow the toaster to warm up for 15 minutes before toasting buns.

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3. For proper operation, insert heels on the side of the toaster marked "HEEL", and crowns on the opposite side.

4. Turn both switches off at the end of the day to turn the toaster off.

5. Toaster Platen Sheet General Information:
   A . The toaster is not designed for use with buttered buns.

   B. Life of Toaster Platen Sheet - 3 to 5 weeks depending on usage.

   C. Sheet turning white - this is black pigment fading out of the sheet and does not mandate sheet replacement.

   D. What triggers sheet replacement? When buns no longer feed through the machine but instead are damaged or torn by the machine, the toaster platen sheet should be replaced.

   E. How to get maximum life? Only the heel side of the sheet gets white and therefore has the shortest life. Rotate the sheet daily so the white side is opposite from the day before.

   F. A slightly lower heel side booster temperature setting will extend toaster platen cover life and still may meet bun temperature objective.

CAUTION: DO NOT REMOVE THE CONTROL PANEL COVER WITHOUT FIRST TURNING OFF THE TOASTER AND UNPLUGGING THE TOASTER.

IV. PREVENTIVE MAINTENANCE DAILY:

When the toaster is cool, remove the product slide (Fig 3) and clean with soap and water and allow to dry. Carefully, remove the toaster platen sheet (Fig 4), lay on a flat surface, and wipe with a soft cloth or towel and clean with soap and water. **DO NOT USE ABRASIVES ON THE TOASTER PLATEN SHEET.**

Re-install all parts after drying.

WEEKLY:

1. Turn toaster off and unplug power cord from wall receptacle.

2. Perform daily maintenance.

3. Remove heel side cover and crown side cover by lifting these covers off the toaster. Clean these covers with soap and water. Wipe the conveyor belt and exposed metal parts with a damp soft cloth or towel.

4. Assemble the covers and re-connect the power cord.

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TROUBLE SHOOTING GUIDE

NOTE: **INSTALLATION MUST BE PERFORMED BY A QUALIFIED SERVICE COMPANY. THE TERM "QUALIFIED SERVICE COMPANY" MEANS ANY INDIVIDUAL, FIRM, CORPORATION OR COMPANY WHICH IS EITHER ENGAGED IN AND IS RESPONSIBLE FOR THE INSTALLATION OR REPLACEMENT OF ELECTRICAL COMPONENTS, OR THE CONNECTION, INSTALLATION OR REPAIR OF ELECTRICAL APPLIANCES, WHO IS EXPERIENCED IN SUCH WORK, FAMILIAR WITH ALL PRECAUTIONS REQUIRED, AND HAS COMPLIED WITH ALL THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.**

WARNING: **INSPECTION, TESTING, AND REPAIR OF ELECTRICAL EQUIPMENT SHOULD BE PERFORMED BY QUALIFIED SERVICE PERSONNEL. THE UNIT SHOULD BE UNPLUGGED WHEN SERVICING, EXCEPT WHEN ELECTRICAL TESTS ARE REQUIRED.**

DANGER: **USE EXTREME CARE DURING ELECTRICAL CIRCUIT TESTS. LIVE CIRCUITS WILL BE EXPOSED. WHERE TESTING INDICATES "WITH POWER OFF", BE SURE THAT THE CONVEYOR AND HEAT SWITCHES ARE OFF AND TOASTER IS UNPLUGGED.**

PROBLEM:

1. No heat and conveyor belts do not move. SOLUTION:

A. Check that toaster is plugged in.
B. Check that conveyor and heat switches are on.
C. Check that power is available at the 208 Volt receptacle or 220 or 240 Volts for International units.
D. With unit unplugged, check connections inside of plug.
E. With unit unplugged, remove control panel cover screws and remove control panel cover. Check electrical connections for burns, discoloration or arcing. Replace all connections or components that are damaged. Replace all damaged wiring with new wire that is the same or a higher rated, wire.

PROBLEM:

2. Conveyor Belt moves but no heat.

SOLUTION:

A. Check that the heat switch is on.

B. Turn off switches and unplug toaster. Remove control panel cover and check position of infinite switches and thermostat.

C. Check for loose connections at infinite switches, thermostat, and heating elements.

D. Replace all connections or components that are damaged. Replace all damaged wiring with new wire that is the same or a higher rated wire.

E. Check resistance of heating platen and elements:

	Toaster Platen	Crown Element	Heel Element
Schematic - (208V Platen)	24 OHMS	45.8 OHMS	29 OHMS

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PROBLEM:

3. Grill is hot, but conveyor belts do not move.

SOLUTION:

A. Check that conveyor switch is on.
B. Check conveyor speed control setting.
C. Turn off switches, unplug toaster, and remove control panel cover. Check fuse. Replace fuse if necessary with same type AGC 1.5 Amp.
D. Check for loose connections or wiring.
E. Check for power to speed control circuit board.
F. Check that circuit board 115/230 switch is at the 120V position. International Units with 220V or 240V supply should have the circuit board 115/230 switch set at the 230 position (Schematic #131117 or 132088).
G. Check for 0-90 VDC power at the motor.
H. Check for loose chain, or sprockets, tighten set screw on flat of shaft if needed. Replace as needed.

PROBLEM:

4. Product is over or under toasted.

SOLUTION:

A. Check position of conveyor speed control setting.
B. Check conveyor chain for binding, check for loose sprockets, check for loose conveyor guides.
C. Unplug unit, remove control panel cover, check position of infinite switches and thermostat.

PROBLEM:

5. Buns do not feed properly into toaster.

SOLUTION:

Check condition of Toaster Platen Sheet to be sure buns are not sticking to cover, replace Toaster Platen Sheet if necessary.

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BROILER & TOASTER LIMITED WARRANTY

MARSHALL AIR SYSTEMS, INC., ("Marshall") warrants to the first purchaser ("Purchaser") all new equipment of its manufacture to be free of defects in material and factory workmanship for a period of one year* from date of shipment provided that (i) the equipment is installed in the Continental United States, Canada or Hawaii and operated according to the Owner's Manual while located at the original address of installation, (ii) the warranty registration card has been completed and returned to the factory within fifteen (15) days after installation, and (iii) a post-installation start-up has been performed by an authorized service representative (portable equipment not applicable). Marshall's obligation under this warranty is limited to the repair or replacement at its option of any defective part. Under certain circumstances, Marshall will reimburse Purchaser for limited labor costs in replacing parts during a period of not more than ninety (90) days after date of shipment, provided that Labor Reimbursement instructions are followed and items i, ii, and iii above are completed. See special provision for portable equipment. It is understood that Marshall's obligation with respect to equipment located outside the Continental United States, Canada or Hawaii is limited to replacement parts only.

*The following broiler parts are consumable items and not covered under warranty:

- Burner Shields and Screens
- Burner Grids
- Burner Gaskets
- Electric Broiler Elements
- Flame Runners

Because Marshall does not and cannot control Purchaser's installation, use, and maintenance of equipment manufactured by Marshall, this warranty **DOES NOT COVER:**

1. Any equipment calibration;
2. Any component disassembled in the field;
3. Damage due to improper cleaning and/or abuse, i.e. burner rotation, grease accumulation in electrical components or plugs (hosing or "watering down" equipment will cause electrical failures not covered by warranty);
4. Blown fuses or bulbs, motor brushes and Teflon components; toaster belts;
5. Any replacement parts used on the equipment which are not purchased from Marshall;
6. Accessory components not installed or manufactured by Marshall.
7.

SHIPPING DAMAGE must be reported to the carrier and is not covered under this warranty. Marshall will not be liable for damage as a result of improper installation, misuse, abuse, alteration of original design, incorrect voltage, unauthorized service, breakage of fragile items, or any other damage caused by an act out of Marshall's control.

The effect of corrosion, fire, and normal wear on the equipment or component parts is not covered by this warranty. This warranty does not cover cooking performance, smoke capture or holding temperatures which is a function of food types, textures, temperatures, equipment line ups and other variables chosen by the Purchaser and over which Marshall has no control. This warranty does not apply to damage caused by accident or to damage caused by the negligence of Purchaser or the employees of Purchaser or to damage caused by lightning generated electrical current or any other Act of God whatsoever. This warranty does not apply to any equipment bearing a serial number which has been tampered with or altered. Marshall reserves the right to accept or reject any such claim in whole or in part. Marshall will not accept the return of any product without prior written approval from Marshall, and all such approved returns shall be made at Purchaser's sole expense.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR PATENT OR OTHER INTELLECTUAL PROPERTY RIGHT INFRINGEMENT, AND EXCEPT FOR THE EXPRESS WARRANTY CONTAINED HEREIN, THE EQUIPMENT IS SOLD "AS IS." REMEDIES UNDER THIS WARRANTY AND UNDER ANY WARRANTY THAT MAY SURVIVE THE DISCLAIMER OF WARRANTIES ARE LIMITED EXCLUSIVELY TO THOSE REMEDIES DESCRIBED ABOVE. NO OTHER REMEDY IS AVAILABLE UNDER THIS WARRANTY OR ANY OTHER WARRANTY. NEITHER THIS WARRANTY NOR ANY OTHER WARRANTY COVERS, AND MARSHALL WILL NOT BE RESPONSIBLE FOR, ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO THE COST OF DISASSEMBLY AND SHIPMENT OF THE EQUIPMENT, PRODUCTION OR PRODUCT LOSSES, INJURY TO OTHER PROPERTY, OR LOST PROFITS RESULTING FROM THE USE OF OR INABILITY TO USE THE PRODUCTS OR FROM THE PRODUCTS BEING INCORPORATED IN OR BECOMING A COMPONENT OF ANY OTHER PRODUCT OR GOODS, OR OTHER LOSSES. WHERE, DUE TO OPERATION OF LAW, CONSEQUENTIAL AND INCIDENTAL DAMAGES CANNOT BE EXCLUDED, THEY ARE EXPRESSLY LIMITED IN AMOUNT TO THE PURCHASE PRICE OF THE EQUIPMENT.

FOR INTERNATIONAL INSTALLATIONS -- PLEASE CONTACT YOUR LOCAL MARSHALL AIR SYSTEMS RECOGNIZED DISTRIBUTOR.

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BROILER & TOASTER WARRANTY PROCEDURES

RETURN GOODS AUTHORIZATION FOR PARTS - FACTORY DIRECT

For prompt warranty parts replacement and RGA processing, please call Marshall's Customer Service Department at 800-722-3474 or 704-525-6230 for assistance. In all cases, a Return Goods Authorization (RGA) number must be issued by Marshall Air Systems, Inc. Unauthorized returns will not be processed.

Option #1: Purchaser to return part prepaid to Factory, Marshall to repair or replace at own expense if defective, and ship part back to Purchaser prepaid.

Option #2: Marshall to furnish replacement part freight prepaid with or without requesting return of the defective part.

WARRANTY LABOR REIMBURSEMENT AND/OR PARTS REPLACEMENT THROUGH RECOGNIZED MAINTENANCE & REPAIR CENTERS

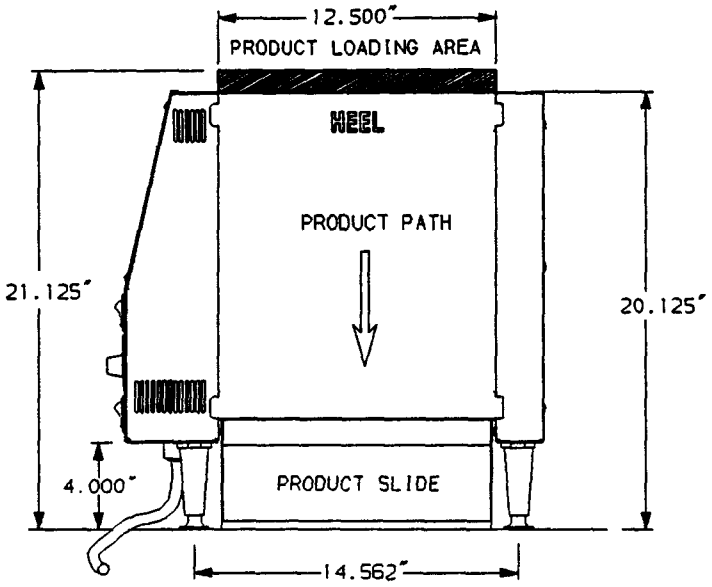
Normally, labor will be covered under the start up fee. In the unlikely event this does not apply, consult Marshall Air Systems, Inc. To be reimbursed for warranty labor costs, authorization must be given by Marshall Air Systems, Inc. Unauthorized work will not be reimbursed. Work must be performed by a Marshall Air Systems Recognized Service Agency within the service time allowance guidelines and must be submitted along with failed parts (if applicable) to Marshall Air Systems (freight prepaid) within 30 days of the work being performed. Travel is covered, but must not exceed 50 miles or 1 hour, whichever is greater. Call Marshall's Service Department at 800-722-3474 or 704-525-6230 with any questions. Service is to be performed by recognized service agencies during normal working hours. Owner to pay for all other charges including excessive travel or overtime charges. **DIAGNOSTIC LABOR CHARGES ARE INCLUDED IN SERVICE TIME ALLOWANCE GUIDELINES.** All portable equipment (under 90 pounds) shall be delivered by Purchaser, at his/her expense, to the nearest authorized service agency for in-shop repair or at purchaser's discretion he/she will pay all travel time and mileage expenses for portable equipment.

NON-WARRANTY RETURNS:

All items returned for customer convenience are subject to a 20% restocking fee. In the event of an error by Marshall Air Systems, Inc., a Returned Goods Authorization will be issued for full credit.

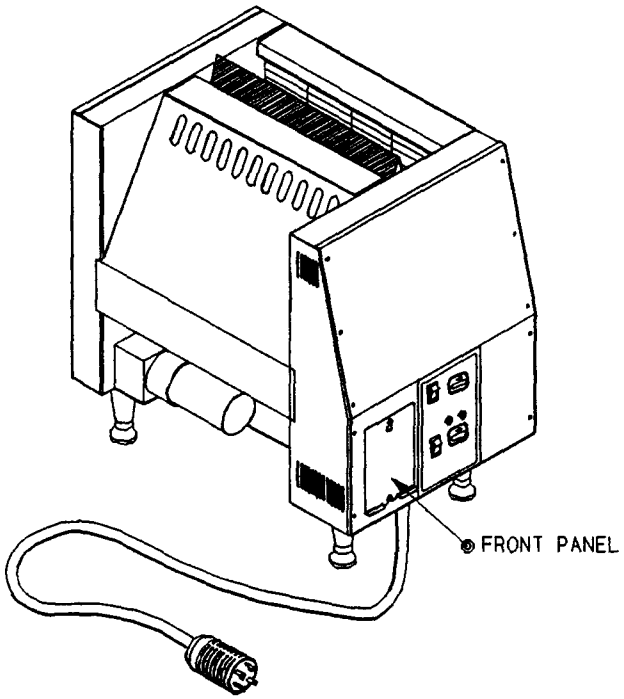
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OVERALL DIMENSIONS

FIGURE 1

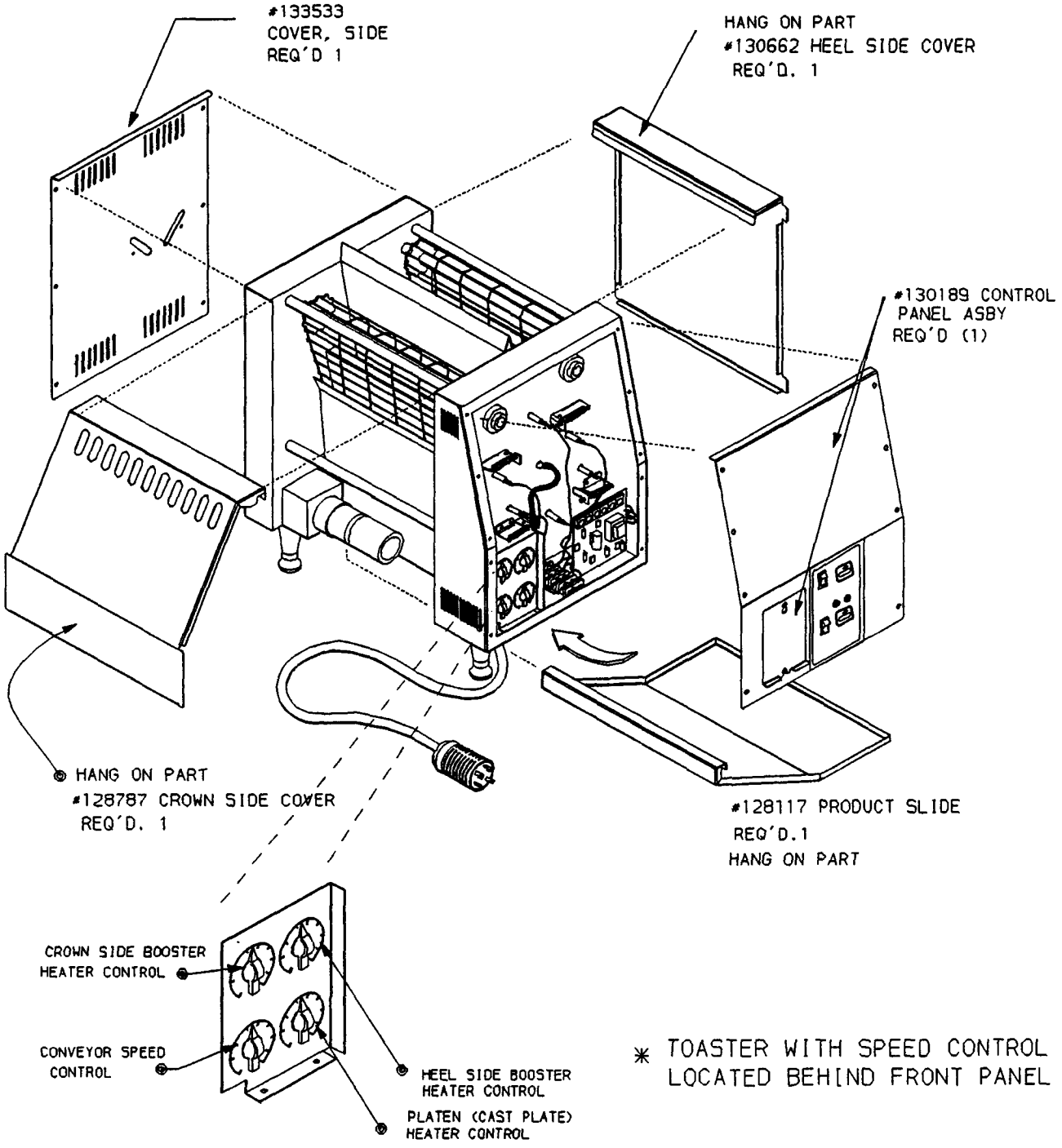


TOASTER WITH SPEED CONTROL
LOCATED BEHIND FRONT PANEL

OVERALL VIEW

FIGURE 2

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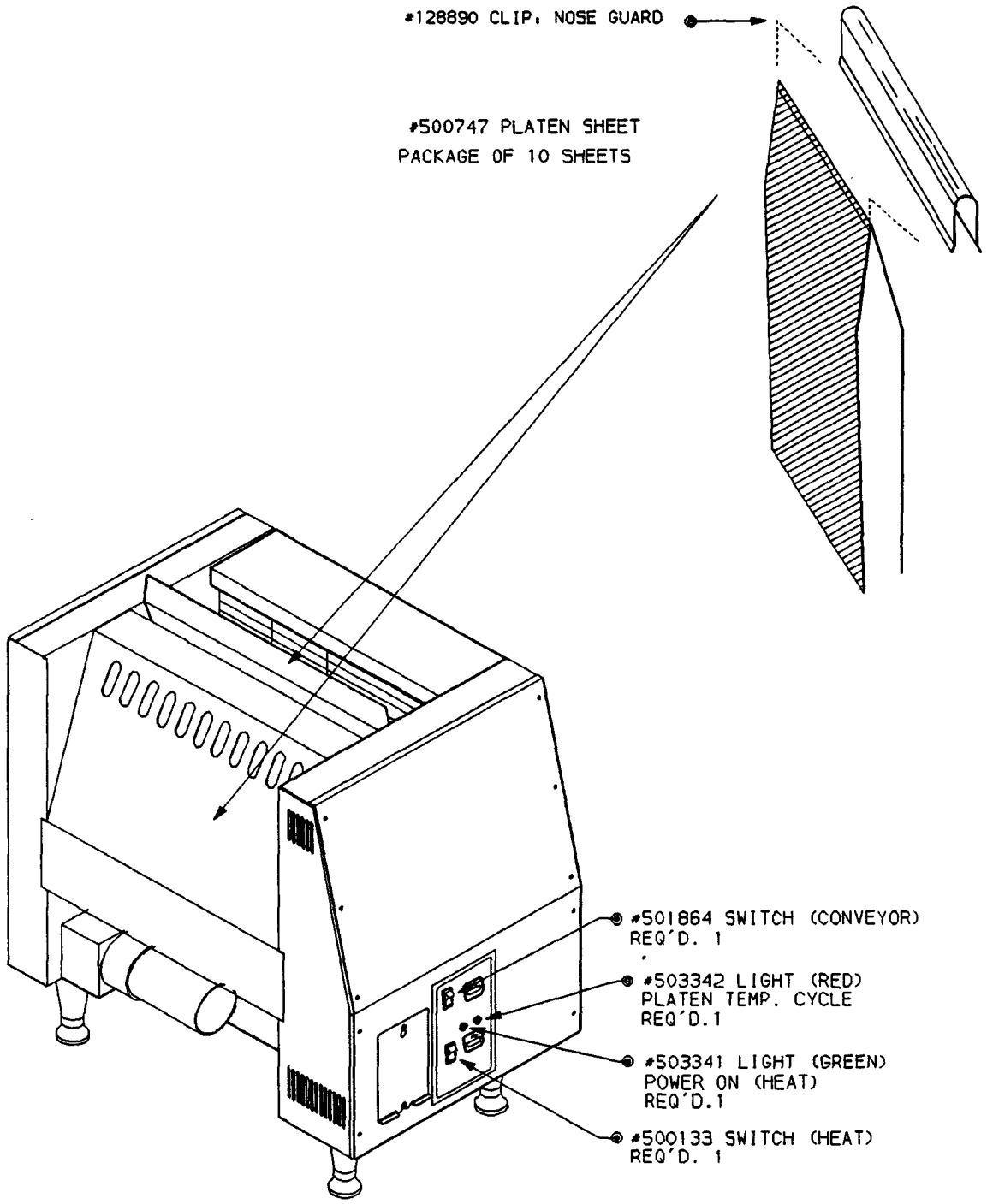


HANG-ON PARTS AND CONTROL PANEL

FIGURE 3

132503F103 RY082099

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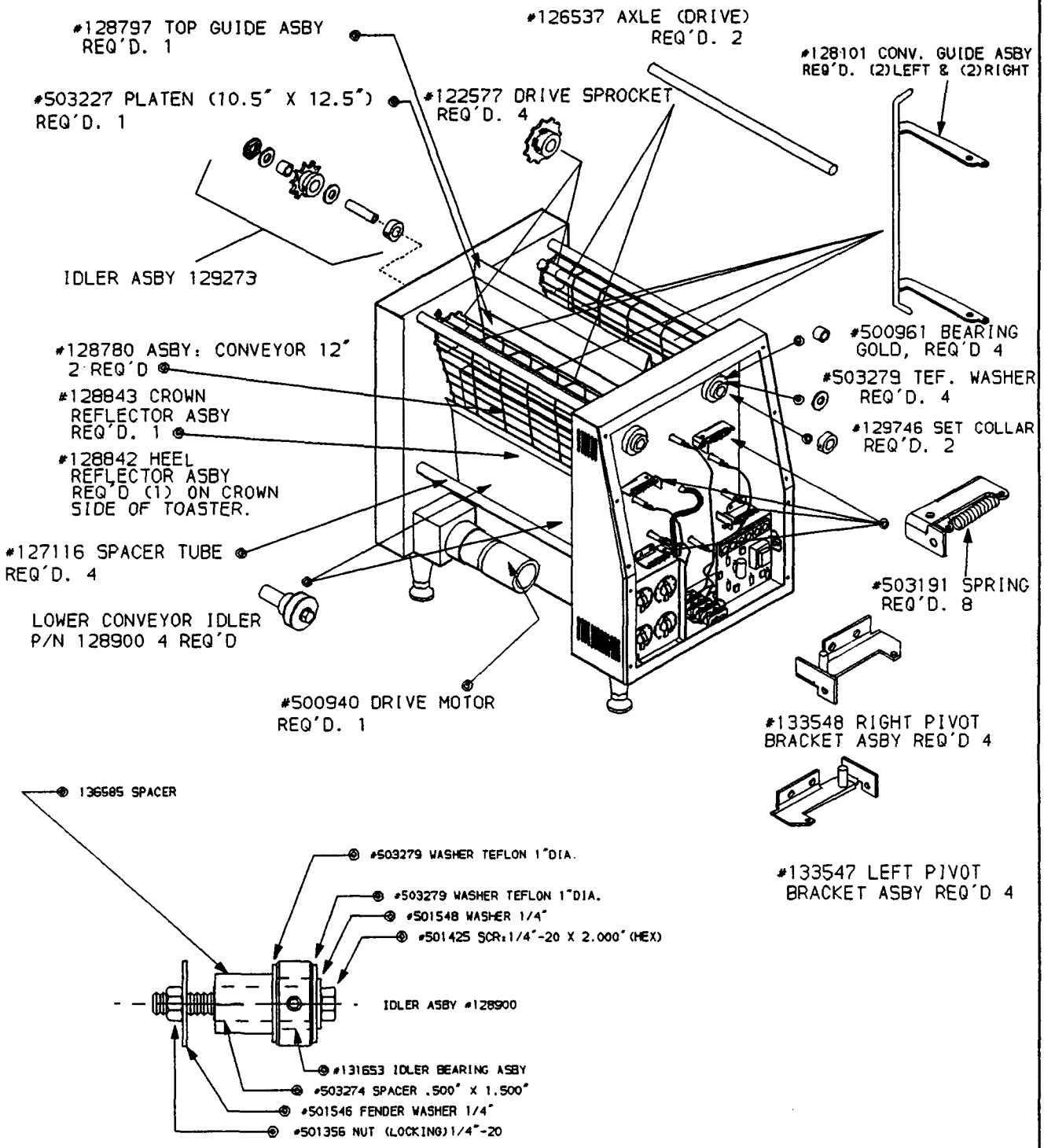
TOASTER WITH SPEED CONTROL
LOCATED BEHIND FRONT PANEL

EXTERNAL CONTROLS AND PLATEN SHEET INSTALLATION

FIGURE 4

132503F104 RV082099

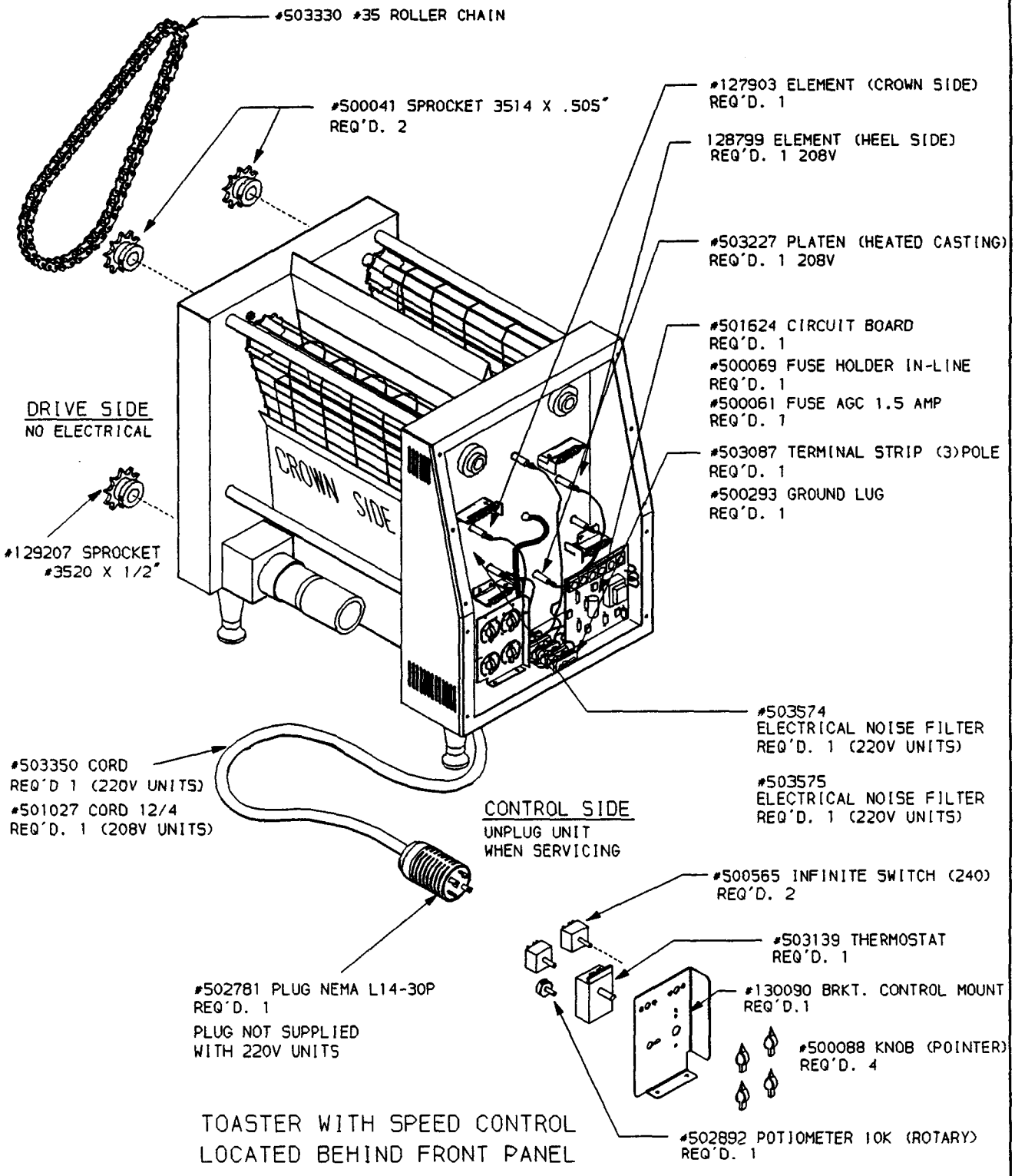
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INTERNAL PARTS AND DRIVE COMPONENTS

FIGURE 5

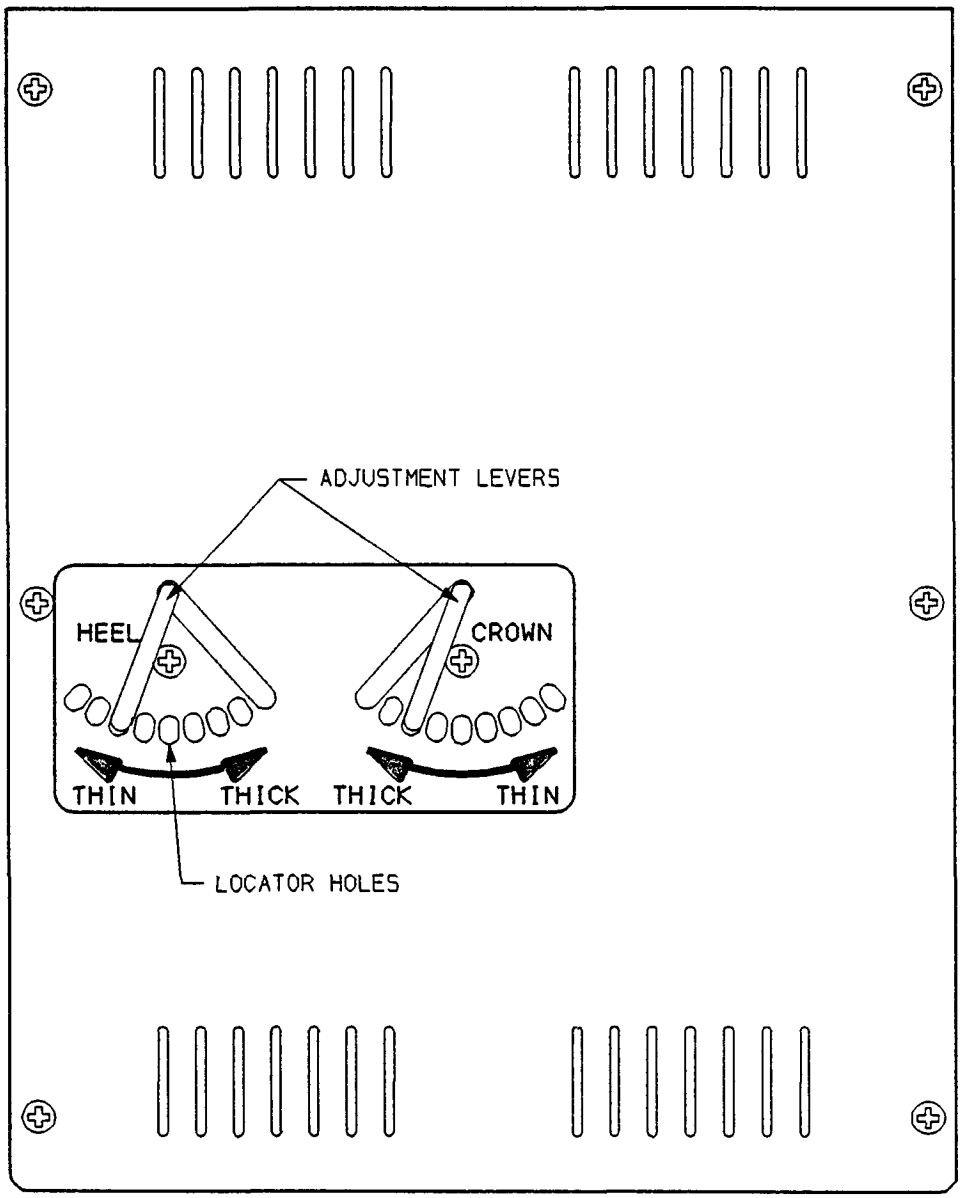
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INTERNAL PARTS AND DRIVE COMPONENTS

FIGURE 6

192503FIG6 RV082099
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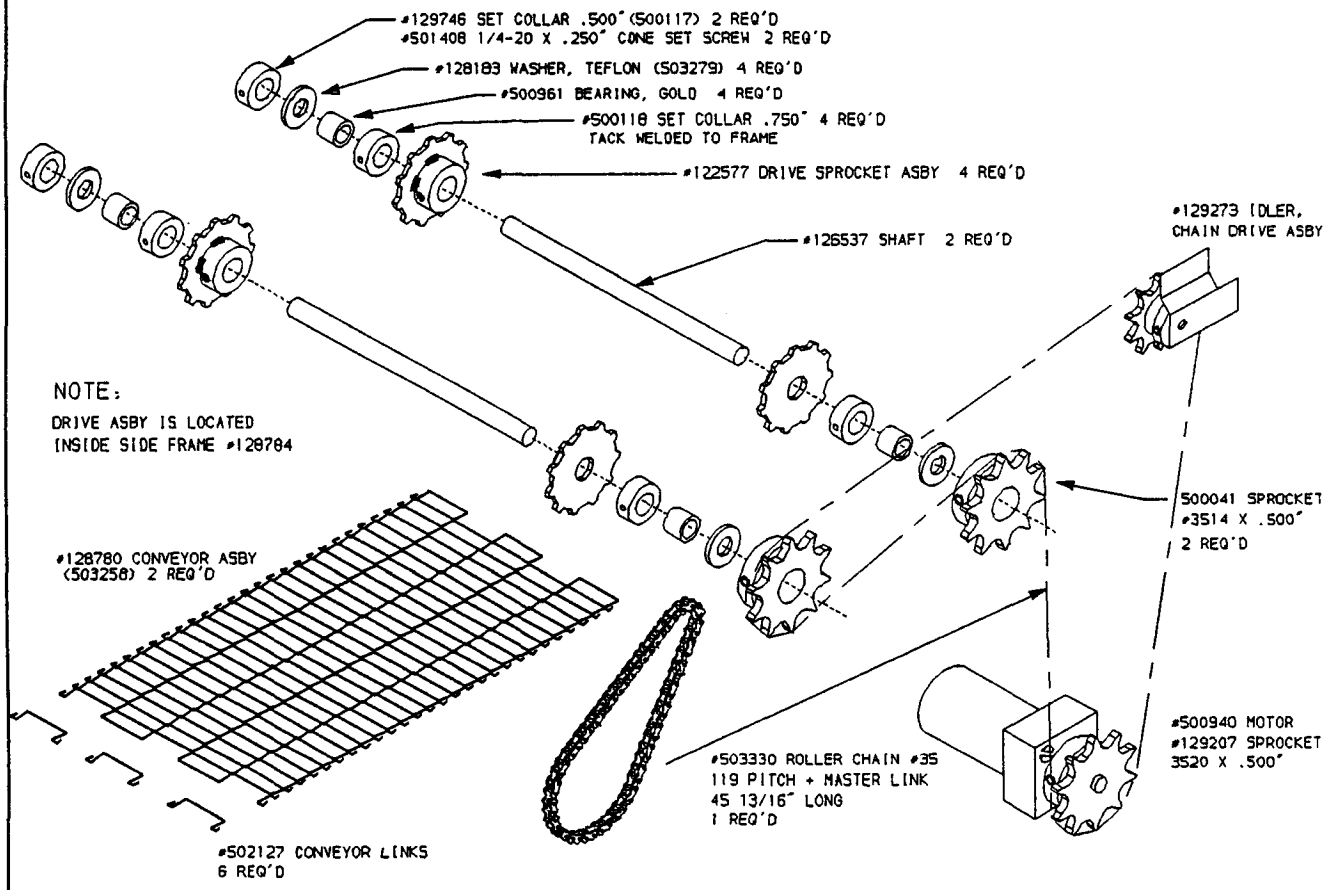
TOASTER SIDE VIEW

ADJUSTMENT LEVER OPERATION

FIGURE 7

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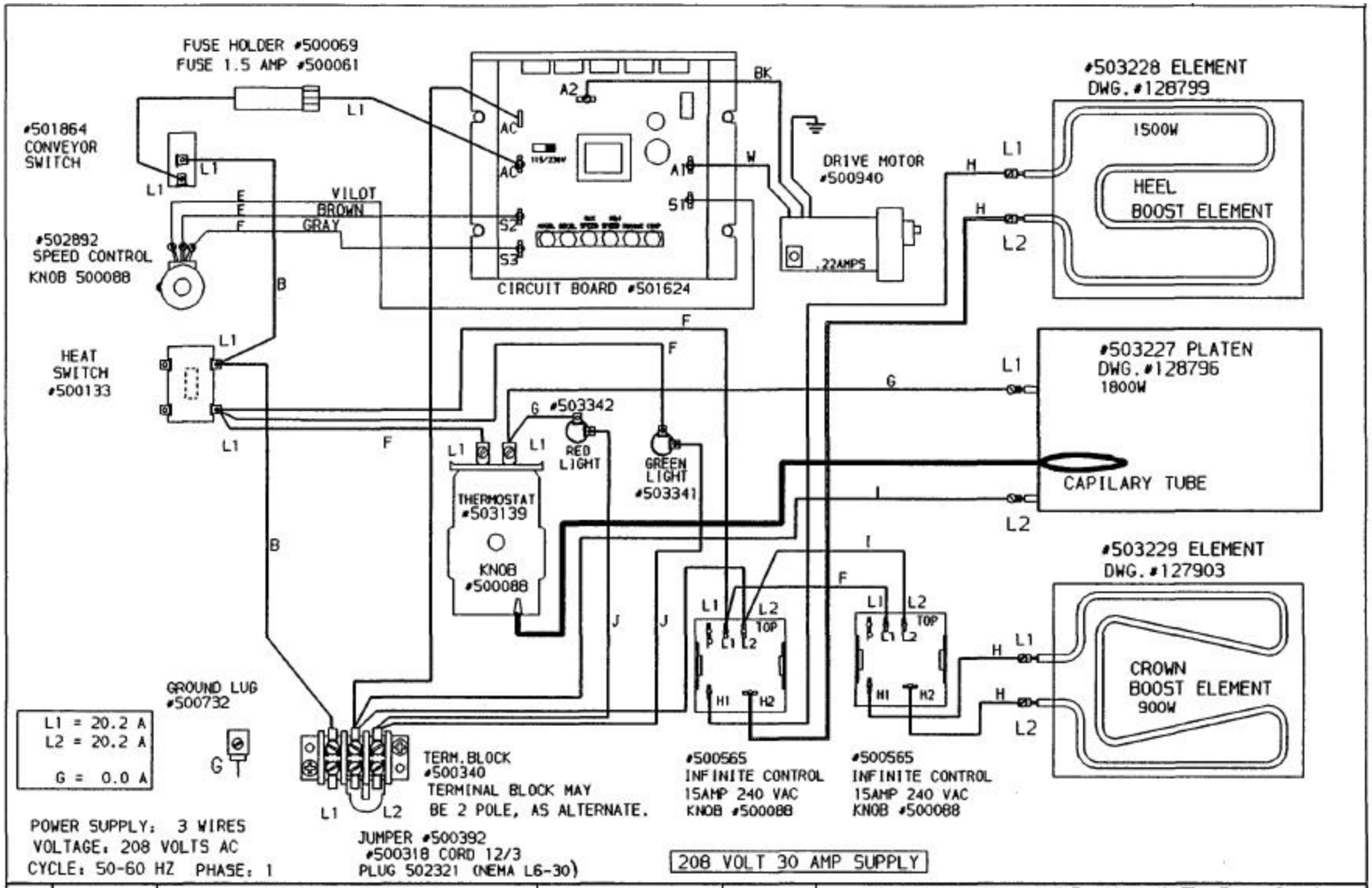
CONVEYOR DRIVE ASBY SHOWN IS P/N 128849

CONVEYOR DRIVE ASBY

FIGURE 8

132503FIG8 RY082399

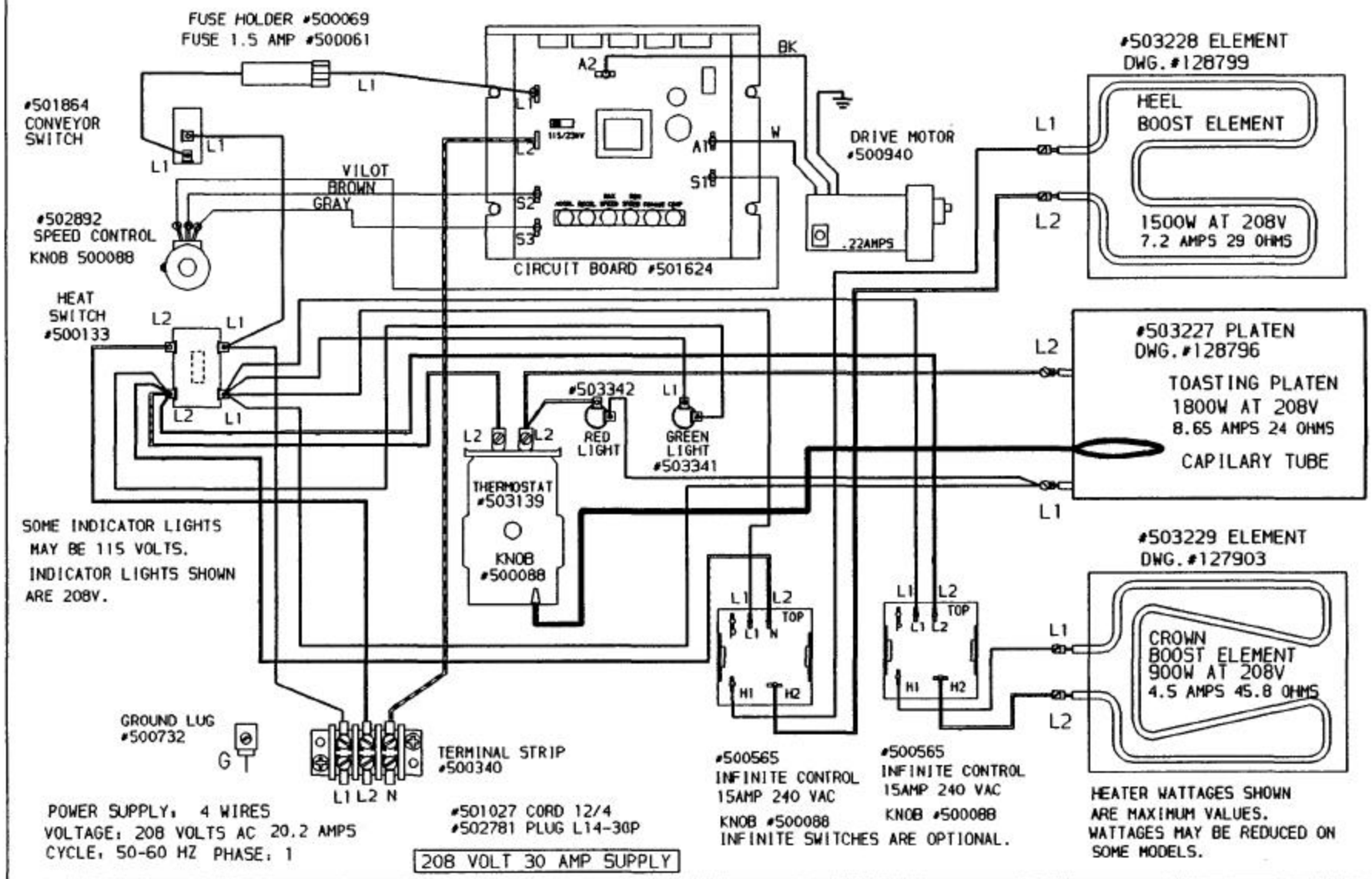
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REV	DATE	DESCRIPTION	JR	08-NOV-96	MARSHALL AIR SYSTEMS, INC.
1	08-OCT-97	CORRECTED L1 L2 MARKINGS ON MOTOR BOARD [CP]			SCHEMATIC, VT12 WITH 208V PLATEN WITH RECESSED SPEED CONTROL
2	22-OCT-97	DEL WORDING: "INFINITE SWITCHES ARE OPT." DEL WORDING: "WITH OPTIONAL 3 WIRE CORD" [TS]			
3	10-DEC-97	UPDATED WIRING TO MATCH 131117 [CP]	REFERENCE		SIZE A / PROJ. / DWG NO. 130197 / REV 4
4	22-JUN-98	ADDED PLUG P/N [CP]			SCALE 1:1 IMAGE MAY BE REDUCED NTS / CODE: BQ2B

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REV	DATE	DESCRIPTION
5	14-JAN-97	UPDATED INDICATOR LIGHT NOTE [CP] UPDATED WIRING TO LIGHTS.
6	21-FEB-97	UPDATED AMP WORDING [CP]
7	09-SEP-97	S03229 WAS S02533 [CP]
8	08-OCT-97	CORRECTED L1 L2 MARKINGS ON MOTOR BOARD [CP]
9	21-OCT-98	ADDED CORD AND PLUG P/N [CP]
10	23-JUN-1999	CHG L1 WIRING TO INF. CONTROL, L2 WIRING FOR IND. LIGHT [PW]

JR 08-NOV-96

REFERENCE

__.___"X"___.___

MARSHALL AIR SYSTEMS, INC.

SCHEMATIC, VT12 WITH 208V PLATEN
WITH RECESSED SPEED CONTROL

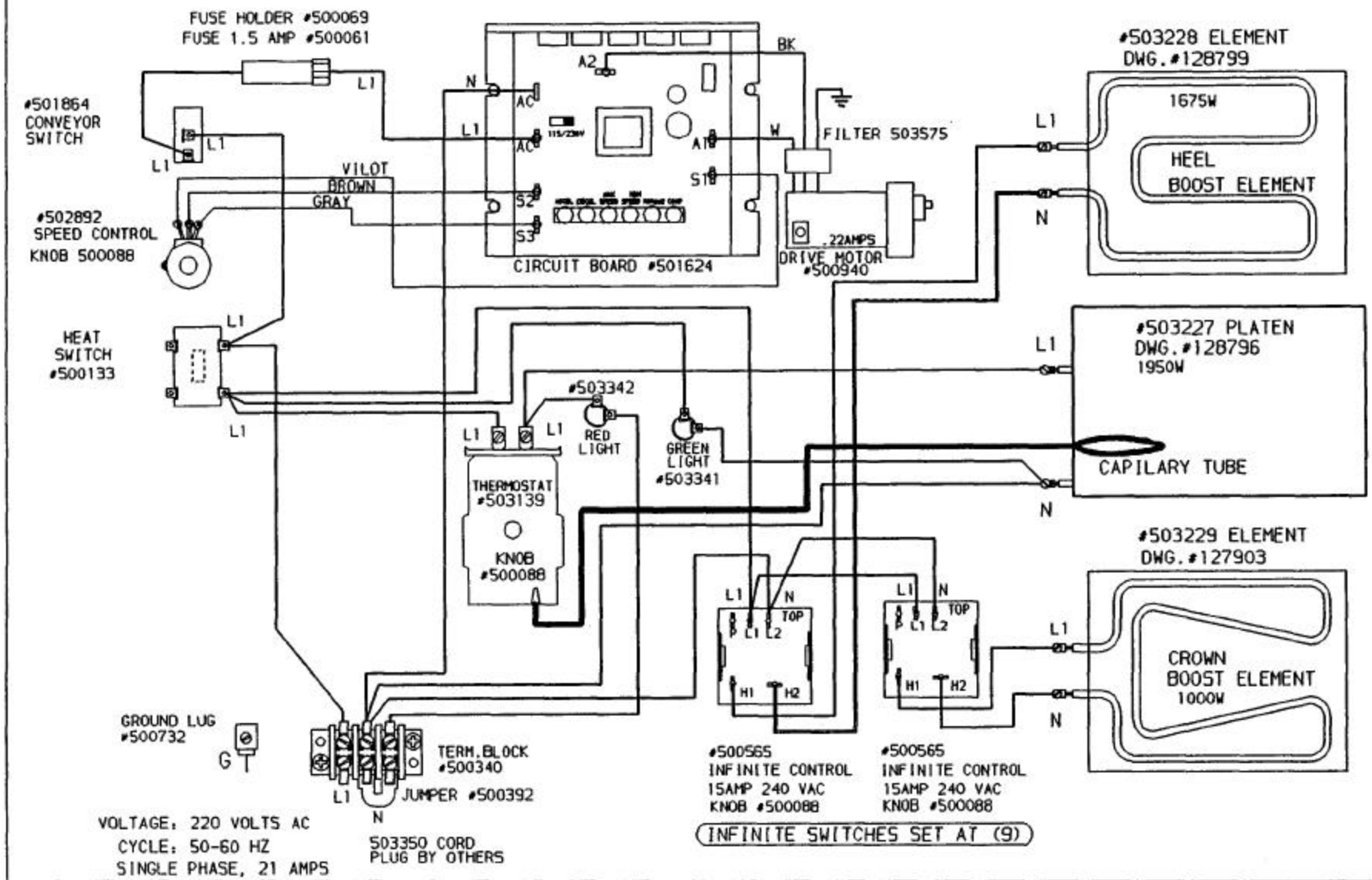
SIZE A | PROJ. | DWG NO. 130168 | REV 10

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CODE: BQ2B BQ2J BQ2E BQ2F BQ2G

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REV	DATE	DESCRIPTION
1	09-JUN-97	ADDED CORD P/N, PLUG BY OTHERS [CP]
2	15-DEC-97	ADDED NOISE FILTERS [CP]
3	30-JUN-1999	DELETED NOISE FILTER 503574 [CP]
4	01-JUL-1999	REPLACED N JUMPER BETWEEN PILOT LIGHTS WITH N FROM TERM BLOCK. SEE 132088-3 [JMR]

J.M.R. 06-JUN-97

REFERENCE

__.___"X___.___"

MARSHALL AIR SYSTEMS, INC.

SCHEMATIC, VT12, 220V, 50/60Hz, 1PH
WITH RECESSED SPEED CONTROL

SIZE	PROJ.	DWG NO.	REV
A	/	132088	4

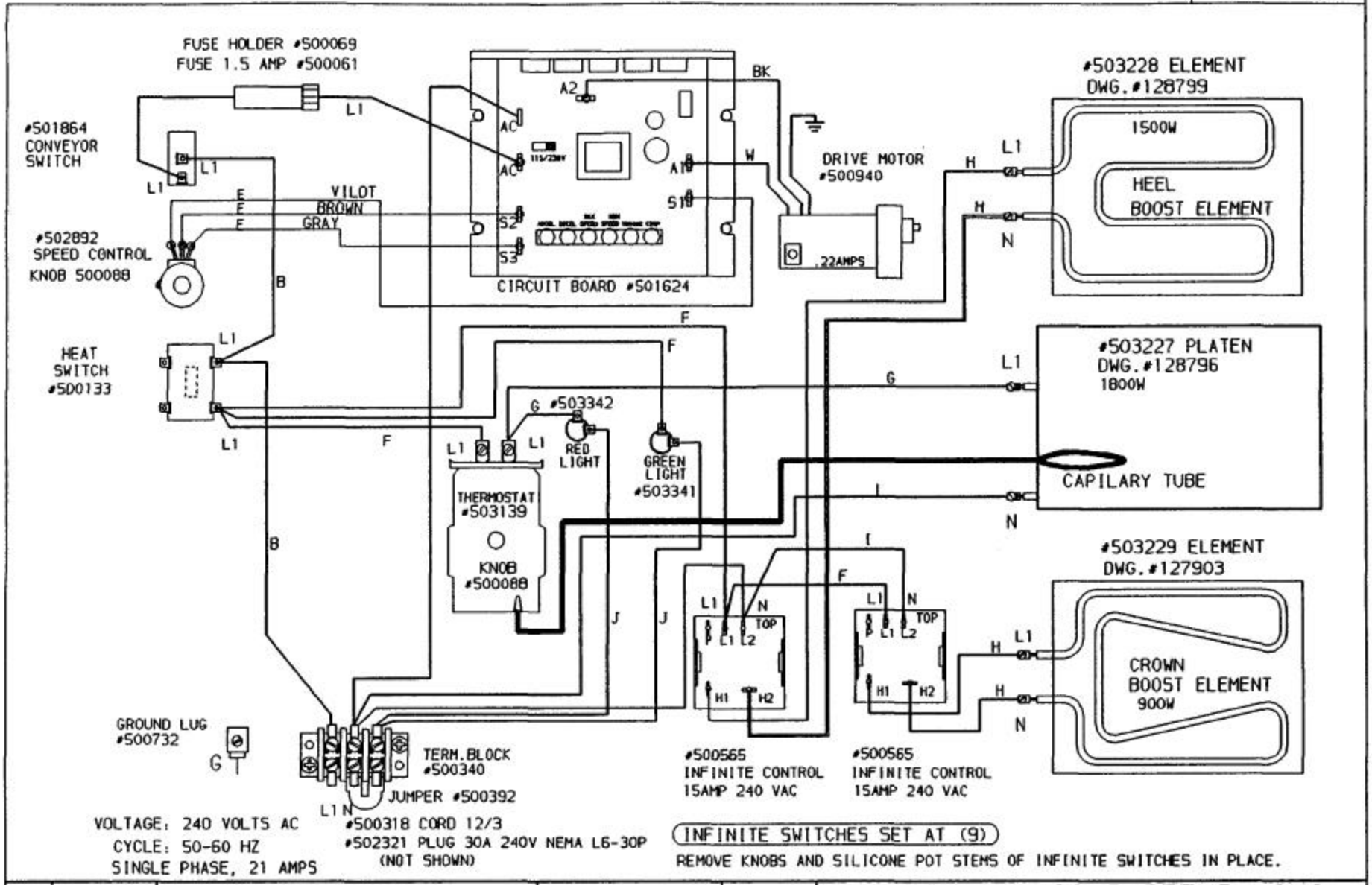
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CODE: BQ2JINTLCE

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131117



REV	DATE	DESCRIPTION
1	10-FEB-97	CORRECTED TITLE FROM 3PH TO 1PH [CP]
2	17-FEB-97	UPDATED NEUTRAL WIRING [CP]
3	18-FEB-97	CORRECTED ELEMENT P/N 503229 WAS 502533 [CP]
4	21-FEB-97	UPDATED AMP WORDING [CP]
5	19-AUG-97	REVISED WIRING [BL]
6	22-SEP-98	ADDED NOTE: REMOVE KNOBS AND SILICONE... [CP]
		DELETED KNOB 500088

JR | 03-FEB-97

REFERENCE

__.___"X___.___"

MARSHALL AIR SYSTEMS, INC.

SCHEMATIC, VT12, 240V, 50/60HZ, 1PH
WITH RECESSED SPEED CONTROL

SIZE A | PROJ. | DWG NO. 131117 | REV 6

SCALE 1:1 IMAGE MAY BE REDUCED NTS

CODE: BQ2BINTL BQ2JINTL

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