



**ISO 9001 : 2000 REGISTERED**

10 SUNNEN DRIVE, ST. Louis MO/U.S.A. 63143  
Phone (314) 781-2777 FAX (314) 781-2714

**OPERATOR'S MANUAL  
HOLMAN CONVEYOR OVENS  
MODEL 314HXM**

**FOR SERVICE INFORMATION  
U.S. AND CANADA CALL: 1-800-807-9054  
24 HOURS/DAY 7 DAYS/WEEK**

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Revised 12/23/2003

**2M-HG0346**

**Electric Cooking Equipment for the Food Service Industry**

**Conveyor Toasters & Ovens Cheese Melters Broilers Pretzel Bakers**

**OPERATOR'S MANUAL  
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**UNCRATING AND INSPECTION**

Unpack unit and components from container. Remove all visible packing material, inspect unit for damage. If damage is discovered, file a claim immediately with the carrier that handled the shipment.

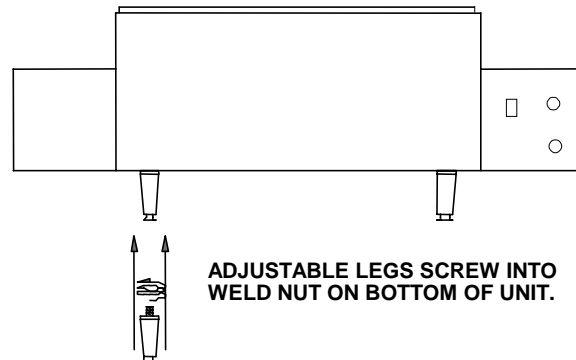
The following should be included in the container:

- A. 1ea. Conveyor oven with heaters and conveyor belt in place. **Remove heating element shipping supports.**
- B. 1ea. Stainless Steel Unload Tray and 1ea. Stainless Steel Load Up Tray.

**ASSEMBLY AND INSTALLATION**

- A. Attach legs by screwing into weld nuts, as shown.

**NOTE: LEGS MUST BE INSTALLED BEFORE OPERATING THIS UNIT!**



- B. Anti Skid pads are available at no charge and may be adhered to the foot section of each leg to prevent sliding. Contact the Holman Cooking Equipment Factory Service Team at **1-800-807-9054** for details.

**CAUTION:** Use of these pads is not approved by the National Sanitation Foundation.

- C. Install unit in its operating position. The load & unload ends must be at least 6" from any vertical combustible surfaces. Allow sufficient space for operating personnel.

- 1) Have an electrician connect input power to the unit in accordance with local electrical codes.

ASSEMBLY AND INSTALLATION CONT. ON PAGE 2

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**ASSEMBLY AND INSTALLATION (CONT)**

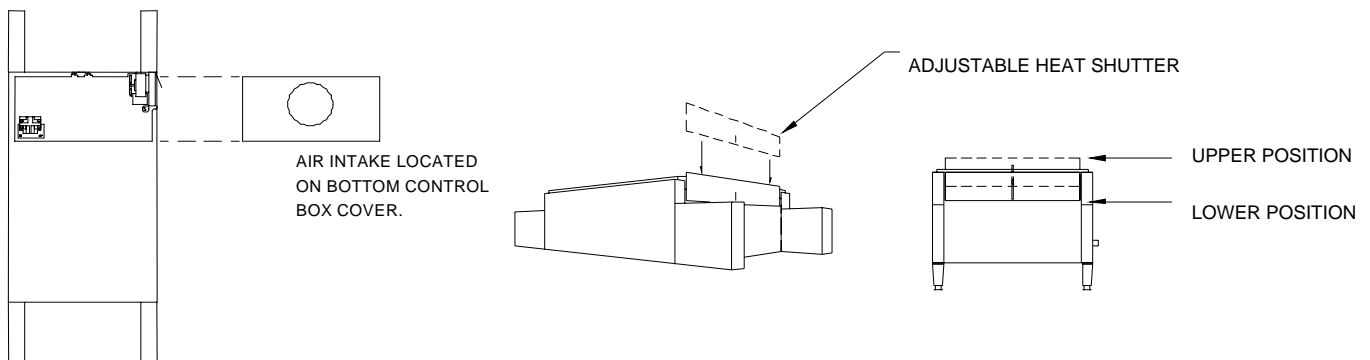
**WARNING:** MAKE SURE ALL INPUT POWER IS OFF BEFORE INSTALLING/REMOVING ANY PARTS.

**WARNING:** BEFORE INSTALLING UNIT (S), CHECK WITH LOCAL POWER COMPANY TO DETERMINE ACTUAL VOLTAGE AT JOB SITE. NEVER PLUG A 208 VOLT UNIT INTO 240 VOLTS OR A 240 VOLT UNIT INTO 208 VOLTS.

**WARNING:** BE ABSOLUTELY SURE THE GROUND CONNECTION FOR THE RECEPTACLE IS PROPERLY WIRED. NEVER CONNECT UNIT TO POWER WITHOUT PROPER GROUND CONNECTIONS. IMPROPER GROUND MAY RESULT IN SEVERE INJURY OR FATALITY.

D. Before applying input power to the unit(s) check heating elements for breakage, do not apply power to the unit(s) if a broken tube is found. If no broken tubes are found apply input power by switching the master On/Off toggle to the ON position. Turn conveyor belt speed control to the maximum setting and check all heater tubes and conveyor for proper operation.

E. Allow approximately 5 to 8 minutes for the fan cooling system to come on, check the air intake area as noted below and be sure that there is a sufficient flow of air into the control box. **(To ensure proper airflow into the air intake area, the legs must be on the unit.)**



F. If all heaters and conveyor system are operating properly, switch the master on/off switch to the OFF position and allow unit to cool. The fan will continue to circulate cool air through out the unit until the internal temperatures have been decreased.

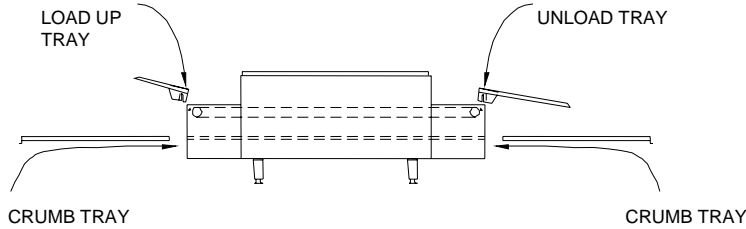
G. If a problem is discovered during start up procedures, immediately switch the Master On/Off switch to the OFF position and notify the **Holman Cooking Equipment Factory Service Team at 1-800-807-9054 (24 hours 7 days a week). Service will be arranged for you.**

ASSEMBLY AND INSTALLATION CONT. ON PAGE 3

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**ASSEMBLY AND INSTALLATION (CONT.)**

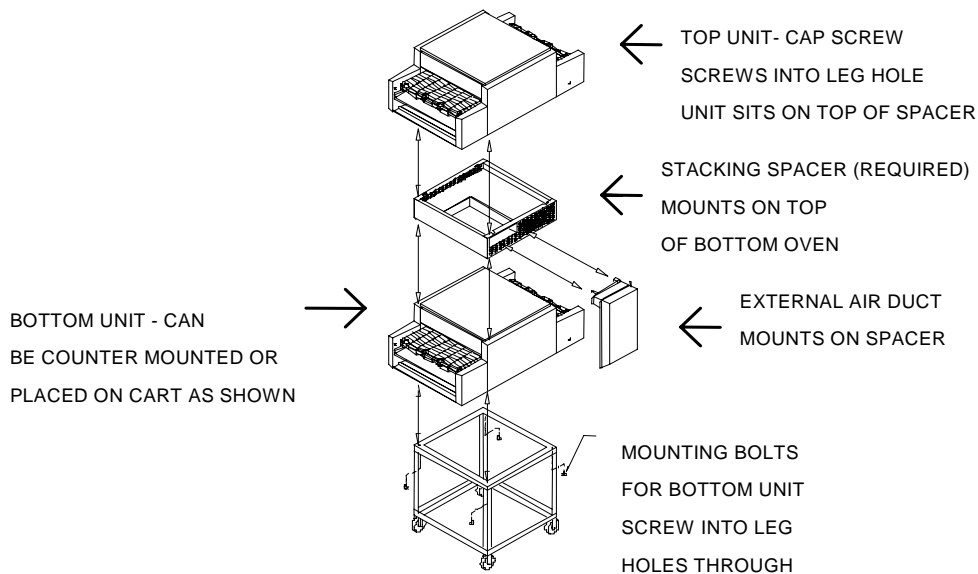
H. Install load and unload trays as shown.



I. Stacking Instructions

**When stacking two Holman Proveyor ovens a stacking spacer with external air duct must be used to prevent overheating of the control box in the top oven.**

- 1) If cart is to be used with units, place bottom unit on cart and align leg hole of unit to holes in top portion of cart. Insert 3/8" bolts through cart and into leg holes to secure bottom unit to cart as shown below.
- 2) Place stacking spacer on top of bottom oven with **internal** air duct facing up and toward the rear of the oven.
- 3) Mount **external** air duct on stacking spacer as shown below. External air duct must be installed for cooling system of top unit to function properly.
- 4) Install cap screws (4ea.) into leg holes on top oven.
- 5) Place top oven on stacking spacer. Cap screws will fit into cut outs in top of stacking spacer to lock unit into position. **(NOTE) Air intake of top unit must fit over the internal air duct of stacking spacer to allow airflow into the control box of the top oven.**



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**OPERATION**

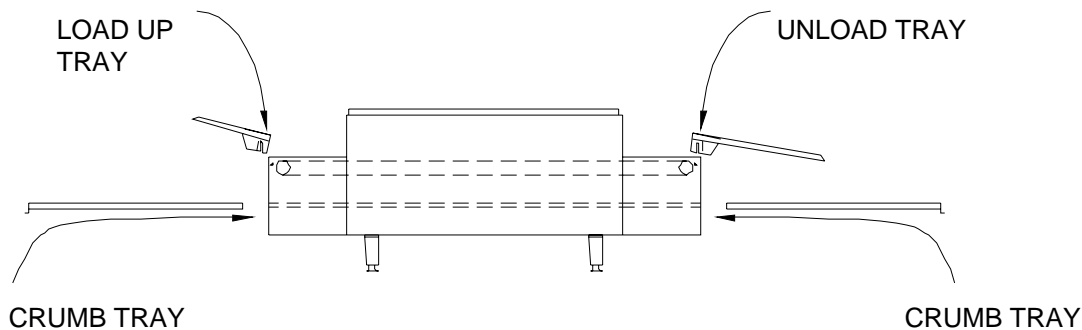
- A. Switch Master On/Off switch to the ON position and turn Variable Speed Control to fastest time setting.
- B. Allow 10 to 15 minutes for unit(s) to warm up.

**CLEANING PROCEDURES**

Preventive maintenance for your Holman oven consists of the following recommended cleaning procedures. To keep your oven in its top operating condition, these steps should be performed daily.

**WARNING:** HIGH VOLTAGES ARE PRESENT IN THESE UNITS. BE SURE ALL INPUT POWER IS OFF BEFORE SERVICING OR CLEANING UNIT.

- A. Remove Load and Unload Trays (daily) as shown and wash with hot soapy water.



- B. Remove the Crumb Trays from both load and unload ends of the oven (daily) as shown above, **(WASH WITH HOT SOAPY WATER ONLY).**
- C. For lightly soiled conveyor surfaces a damp cloth or scotch pad can be used without removing the conveyor belt. (daily)

**NOTE: For heavily soiled conveyor surfaces a STIFF WIRE brush may be used to clean the conveyor belt.**

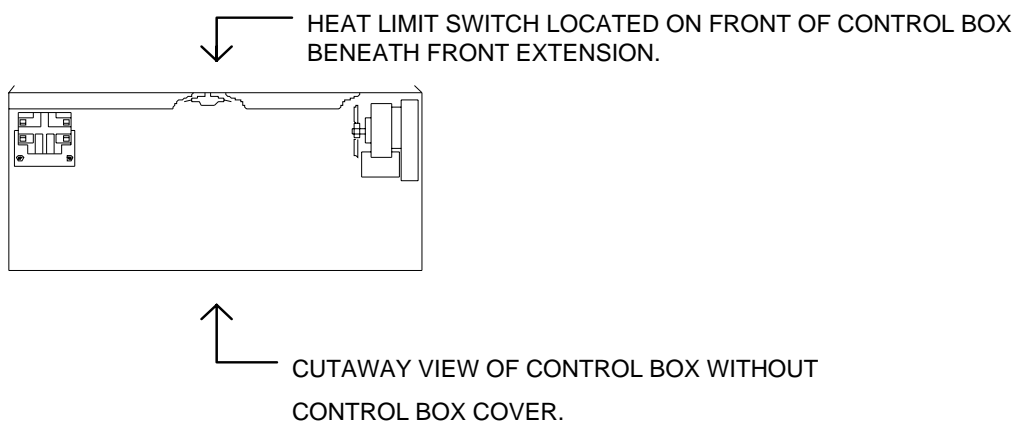
**NOTE: LUBRICATION OF DRIVE CHAIN WITH A GRAPHITE BASED LUBRICANT IS REQUIRED AS PERIODIC MAINTENANCE. CALL THE HOLMAN COOKING EQUIPMENT FACTORY SERVICE TEAM AT 1-800-807-9054 FOR DETAILS.**

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**TROUBLESHOOTING GUIDE**

A. UNIT WILL NOT HEAT, CONVEYOR BELT WILL NOT TURN.

- 1) Be sure main Circuit Breaker is switched to the ON position and there is power at the outlet.
- 2) Check to see that the unit is connected to power and Master On/Off is switched to the ON position.
- 3) Be sure HEAT LIMIT SWITCH is pushed in (see below).



B. UNIT WILL NOT HEAT, CONVEYOR TURNS FREELY.

- 1) **MAKE SURE AIR INTAKE ON BOTTOM OF UNIT IS FREE OF OBSTRUCTIONS.**
- 2) Press Heat Limit Switch, located on the front section of the control box as shown above. If this reactivates the Heater Tubes, see section C.
- 3) For further assistance call the **Holman Cooking Equipment Factory Service Team at: 1-800-807-9054 (24 hours/day 7days a week).**

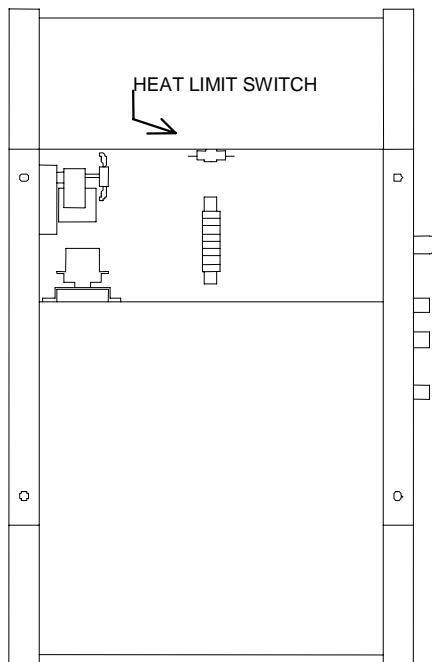
TROUBLESHOOTING GUIDE CONT. ON PAGE 6

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**TROUBLESHOOTING GUIDE CONT.**

Your Holman Conveyor Oven is equipped with an automatically activated HEAT LIMIT SWITCH that interrupts the heater tube connections if the air temperature in the control box exceeds 190F (88C). This Limit Switch can be reset manually by pushing the button in the center of the switch, which is located as shown below.

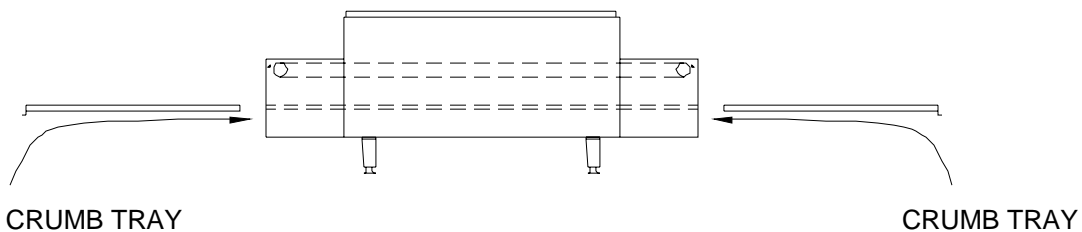
**C. HEAT LIMIT SWITCH**



THE HEAT LIMIT SWITCH CAN BE ACTIVATED IF THERE IS NOT A PROPER AMOUNT OF AIR FLOW BEING GENERATED BY THE COOLING FAN. IF THIS OCCURS:

**1) DISCONNECT UNIT FROM POWER SOURCE.**

- 2) Check to see if air intake area (openings in bottom center of Control Box) is free of dust, grease or other obstructions.
- 3) Check to see if Crumb Trays (heat reflectors) are in place.



NEVER OPERATE UNIT WITHOUT CRUMB TRAYS IN POSITION AS THIS CAUSES OVERHEATING IN THE CONTROL BOX.

TROUBLESHOOTING GUIDE CONT. ON PAGE 7

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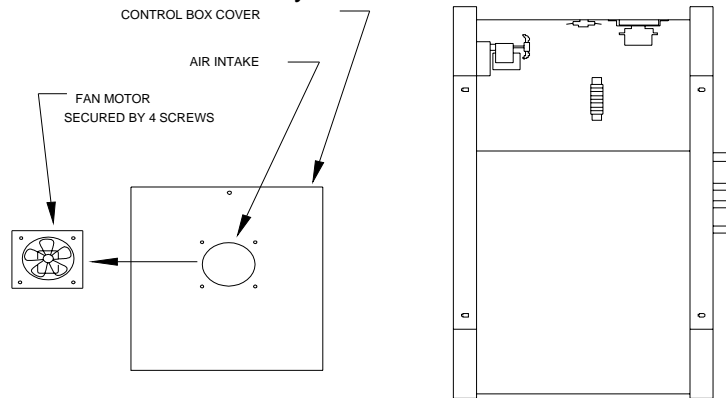
**TROUBLESHOOTING GUIDE CONT.**

D. CONVEYOR WILL NOT TURN, UNIT HEATS PROPERLY.

**1) DISCONNECT UNIT FROM POWER SOURCE.**

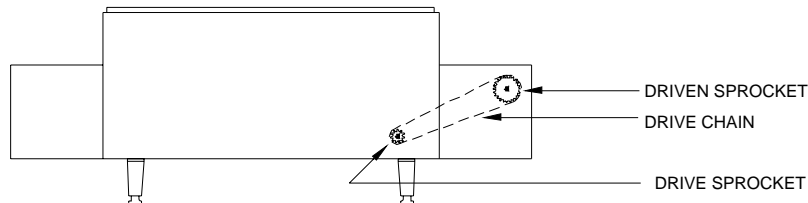
2) Check to see if there are obstructions in the conveyor system that may cause a jam.

3) Remove Air Intake Cover as shown on page 9 and spin the Drive Motor Shaft as shown on page 10. Recheck to see if the Conveyor now works.



IF CONVEYOR STILL DOES NOT TURN:

4) Remove power cord side panel and Drive Motor Sprocket (see below). Manually move Conveyor Belt to check for mechanical binding. If Conveyor moves freely, contact the **Holman Cooking Equipment Factory Service Team at 1-800-807-9054** as Drive Motor and/or Variable Speed Control may have to be replaced (refer to page 10 for instructions on replacing drive motor).



E. CONVEYOR TURNS AT ONE SPEED REGARDLESS OF SPEED CONTROL SETTING.

1) Call the **Holman Cooking Equipment Factory Service Team at 1-800-807-9054** as Variable Speed Control may have to be replaced.

F. COOLING FAN DOES NOT START.

**1) DISCONNECT UNIT FROM POWER SOURCE.**

2) Remove Control Box Cover and check Fan Blade for obstructions.

3) Check Fan Motor Cord for secure connection.

4) Call the **Holman Cooking Equipment Factory Service Team at 1-800-807-9054** as the Fan Switch and/or Fan Motor may have to be replaced.



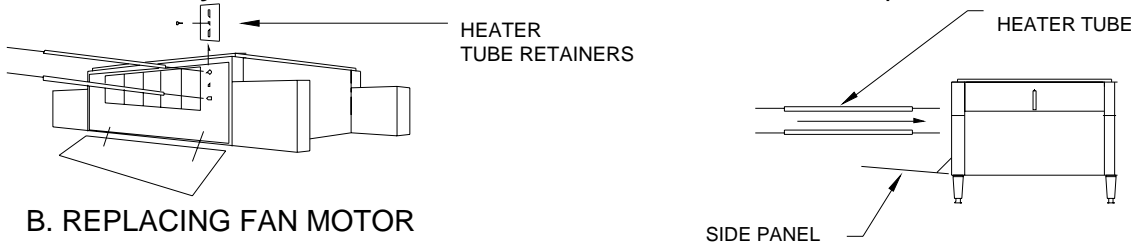
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**MAINTENANCE PROCEDURES**

**A. REPLACING HEATER TUBES (see below)**

**1) DISCONNECT UNIT FROM POWER SOURCE.**

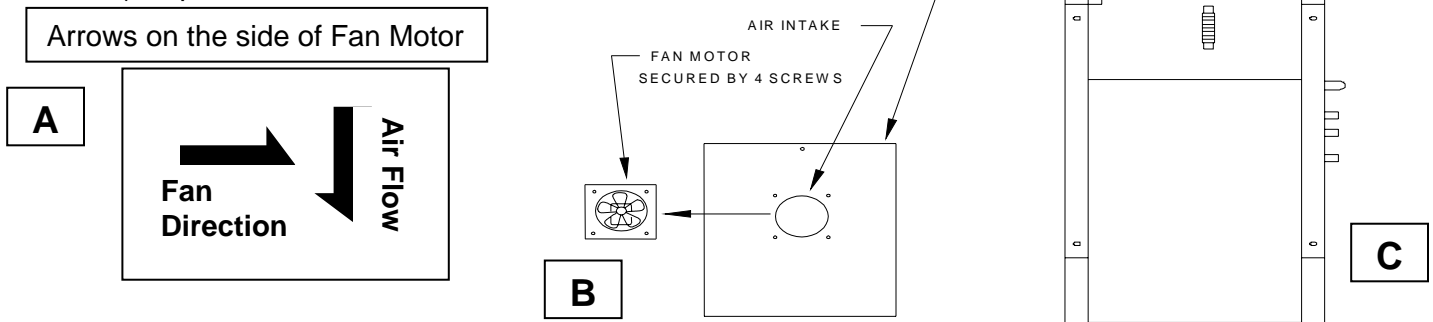
- 2) Remove left and right side panels by removing the truss head screws in each panel. Pull the top of each panel out slightly and lift up.
- 3) Disconnect heater tube wires, which require replacement from terminal block connections.
- 4) Remove Heater Tube Retainer by removing retainer screw with washer (retainers are located on power supply side of unit).
- 5) GENTLY, pull defective Heater Tube out of unit.
- 6) GENTLY, place new Heater Tube into unit.
- 7) Replace heater tube retainers.
- 8) Reconnect heater wires to terminal block connections.
- 9) Replace side panels and test unit for proper operation. Call the **Holman Cooking Equipment Factory Service Team at 1-800-807-9054** assistance is required.



**B. REPLACING FAN MOTOR**

**1) DISCONNECT UNIT FROM POWER SOURCE.**

- 2) Remove control box cover with Fan Motor.
- 3) Unplug power supply cord from Fan Motor.
- 4) Remove (4) screws that hold Fan Motor and grill to cover.
- 5) On the side of the fan motor there are two arrows. One facing down (air flow) and the other facing the side (fan direction) (see below Fig. A) Attach the replacement motor to the control box cover with the up and down arrow pointed towards the internal controls. The label on the motor should also face towards the internal controls and the side arrow should be pointed left. Secure the motor and grill to the control box cover with the screws.
- 6) Reconnect power supply cord to Fan Motor.
- 7) Replace control box cover.



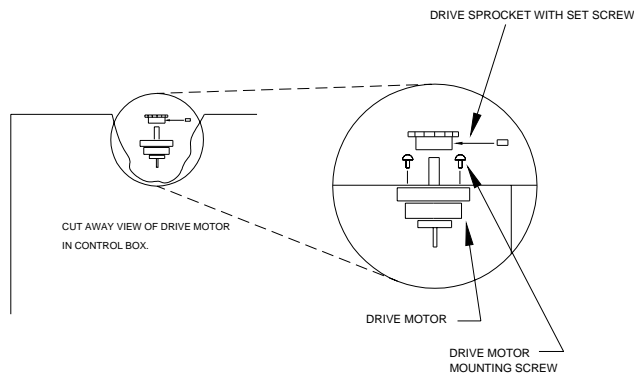
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**MAINTENANCE PROCEDURES CONT.**

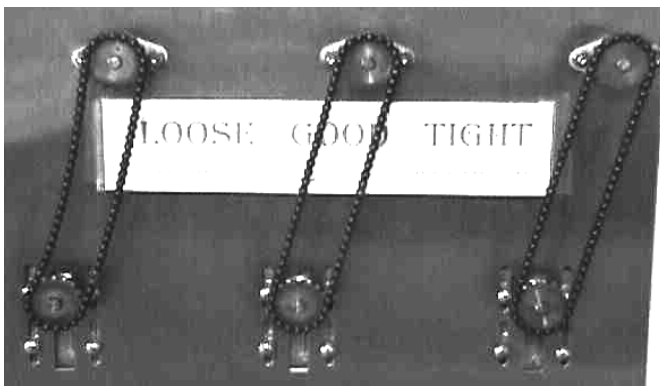
**C. REPLACING BELT DRIVE MOTOR**

**1) DISCONNECT UNIT FROM POWER SOURCE.**

- 2) Remove power cord side panel and control box cover.
- 3) Remove sprocket from motor shaft by loosening the allen screw on the sprocket.
- 4) Disconnect the leads from the Drive Motor to the internal wiring. Motors are rated 208 Volts or 240 Volts. **NOTE WHICH COLOR LEADS ARE BEING USED FOR THESE CONNECTIONS AND WHICH LEAD IS CAPPED WITH WHITE TAPE. THE NEW DRIVE MOTOR SHOULD USE THE SAME ARRANGEMENT.**
- 5) Remove the four screws that hold the Drive Motor in place.
- 6) Put the new motor in place and loosely attach with the four screws removed from step 5.
- 7) Replace the Sprocket onto the motor shaft, then replace the Drive Chain onto the sprockets.



- 8) Slide the Drive Motor until the Drive Chain has about 1/8" slack when lightly pushed at the center of its top open run. Align drive and driven sprockets evenly before tightening to prevent binding. Tighten the Drive Motor screws.



- 9) Rewire the Drive Motor as described in step 4 above. Replace the panels and test for proper operation.

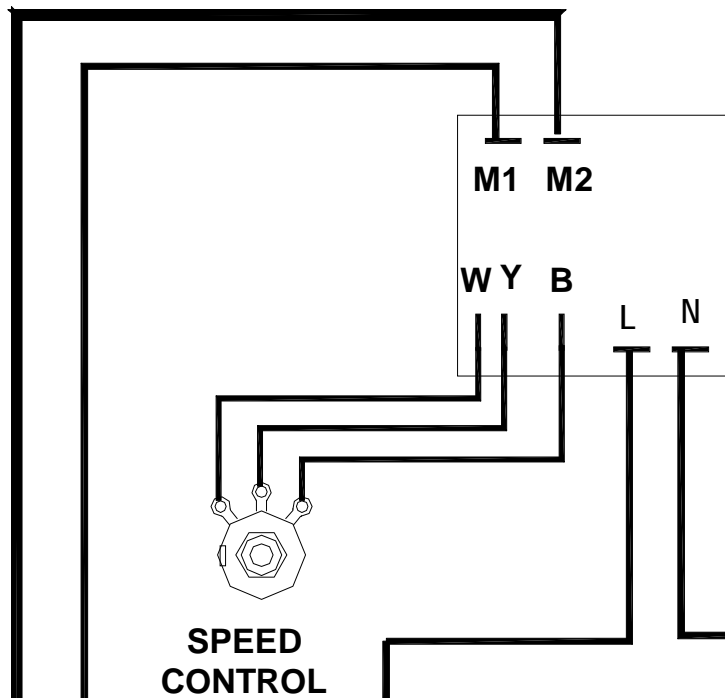
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**MAINTENANCE PROCEDURES CONT.**

D. REPLACING THE VARIABLE SPEED CONTROL (see below)

**1) DISCONNECT UNIT FROM POWER SOURCE.**

- 2) Turn unit over and lay on top cover with the legs pointing at the ceiling.
- 3) Remove Phillips head screws holding control box cover in place. Lift and slide forward to remove cover.
- 4) Locate the motor controller mounted in the top center of the control box.
- 5) Wires from Variable Speed Control go in to terminals located on the controller. **Note the location of the colored leads** and remove wires for Variable Speed Control.
- 6) Disconnect the wires from terminals marked L, N, M1 and M2 (**note which wires go to each terminal**).



- 7) Remove Phillips head screws (4ea.) holding controller in place.
- 8) Mount replacement control in the same manner as the old control.
- 9) Reconnect wires removed from old control (refer to diagram on page 13 for wire locations).
- 10) Replace control box cover, place unit on legs and connect to power supply. Test for proper operation.
- 11) Call the Holman Factory Service Team at **800-807-9054** if assistance is required.

### THOROUGHLY INSPECT YOUR UNIT ON ARRIVAL

This unit has been tested for proper operation before leaving our plant to insure delivery of your unit in perfect condition. However, there are instances in which the unit may be damaged in transit. In the event you discover any type of damage to your product upon receipt, you must immediately contact the transportation company who delivered the item to you and initiate your claim with same. If this procedure is not followed, it may affect the warranty status of the unit.

### LIMITED EQUIPMENT WARRANTY

All workmanship and material in Star products have a one (1) year limited warranty on parts & labor in the United States and Canada. Such warranty is limited to the original purchaser only and shall be effective from the date the equipment is placed in service. Star's obligation under this warranty is limited to the repair of defects without charge, by the factory authorized service agency or one of its sub-agencies. Models that are considered portable (*see below*) should be taken to the closest Star service agency, transportation prepaid.

- > Star will not assume any responsibility for loss of revenue.
- > Holman Brand equipment warranty repair must be pre-authorized before any work is performed.
- > On all shipments outside the United States and Canada, see International Warranty.
- \* The warranty period for the JetStar series six (6) ounce popcorn machines is two (2) years.
- \* The warranty period for the Chrome-Max Griddles is five (5) years on the griddle surface. See detailed warranty provided with unit.
- \* The warranty period for Teflon/Dura-Tec coatings is one year under normal use and reasonable care. This warranty does not apply if damage occurs to Teflon/Dura-Tec coatings from improper cleaning, maintenance, use of metallic utensils, or abrasive cleaners. This warranty does not apply to the "non-stick" properties of such materials.
- > This warranty does not apply to "Special Products" but to regular catalog items only. Star's warranty on "Special Products" is six (6) months on parts and ninety (90) days on labor.
- > This warranty does not apply to any item that is disassembled or tampered with for any purpose other than repair by a Star Authorized Service Center or the Service Center's sub-agency.
- > This warranty does not apply if damage occurs from improper installation, misuse, wrong voltage, wrong gas or operated contrary to the Installation and Operating instructions.
- > This warranty is not valid on UltraMax Conveyor Ovens *unless* a "start-up/check-out" has been performed by a Factory Authorized Technician.

### PARTS WARRANTY

Parts that are sold to repair out of warranty equipment are warranted for ninety (90) days. The part only is warranted. Labor to replace the part is chargeable to the customer.

### SERVICES NOT COVERED BY WARRANTY

- |  |   |
|--|---|
| 1. Travel time and mileage rendered beyond the 50 mile radius limit  | 10. Voltage conversions   |
| 2. Mileage and travel time on portable equipment ( <i>see below</i> )  | 11. Gas conversions   |
| 3. Labor to replace such items that can be replaced easily during a daily cleaning routine, ie; removable kettles on fryers, knobs, grease drawers on griddles, etc. | 12. Pilot light adjustment  |
| 4. Installation of equipment   | 13. Miscellaneous adjustments   |
| 5. Damages due to improper installation  | 14. Thermostat calibration and by-pass adjustment   |
| 6. Damages from abuse or misuse  | 15. Resetting of circuit breakers or safety controls or reset buttons                           |
| 7. Operated contrary to the Operating and Installation Instructions  | 16. Replacement of bulbs  |
| 8. Cleaning of equipment   | 17. Replacement of fuses  |
| 9. Seasoning of griddle plates   | 18. Repair of damage created during transit, delivery, & installation OR created by acts of God |

### PORTABLE EQUIPMENT

Star will not honor service bills that include travel time and mileage charges for servicing any products considered "Portable" including items listed below. These products should be taken to the Service Agency for repair:

- \* The Model 510FD Fryer.
- \* The Model 526TOA Toaster Oven.
- \* The Model J4R, 4 oz. Popcorn Machine.
- \* The Model 526WOA Warming Oven.
- \* The Model 518CMA & 526CMA Cheese Melter.
- \* The Model 12MC & 15MC & 18MCP Hot Food Merchandisers.
- \* The Model 12NCPW & 15NCPW Nacho Chip/Popcorn Warmer.
- \* All Hot Dog Equipment **except Roller Grills & Drawer Bun Warmers.**
- \* All Nacho Cheese Warmers **except Model 11WLA Series Nacho Cheese Warmer.**
- \* All Condiment Dispensers **except the Model HPDE, & SPDE Series Dispenser.**
- \* All Specialty Food Warmers **except Model 130R, 11RW Series, and 11WSA Series.**
- \* All QCS/RCS Series Toasters **except Model QCS3 & RCS3 Series.**

#### ALL:

- \* Pop-Up Toasters
- \* Butter Dispensers
- \* Pretzel Merchandisers
- \* Pastry Display Cabinets
- \* Nacho Chip Merchandisers
- \* Accessories of any kind
- \* Sneeze Guards
- \* Pizza Ovens
- \* Heat Lamps
- \* Pumps

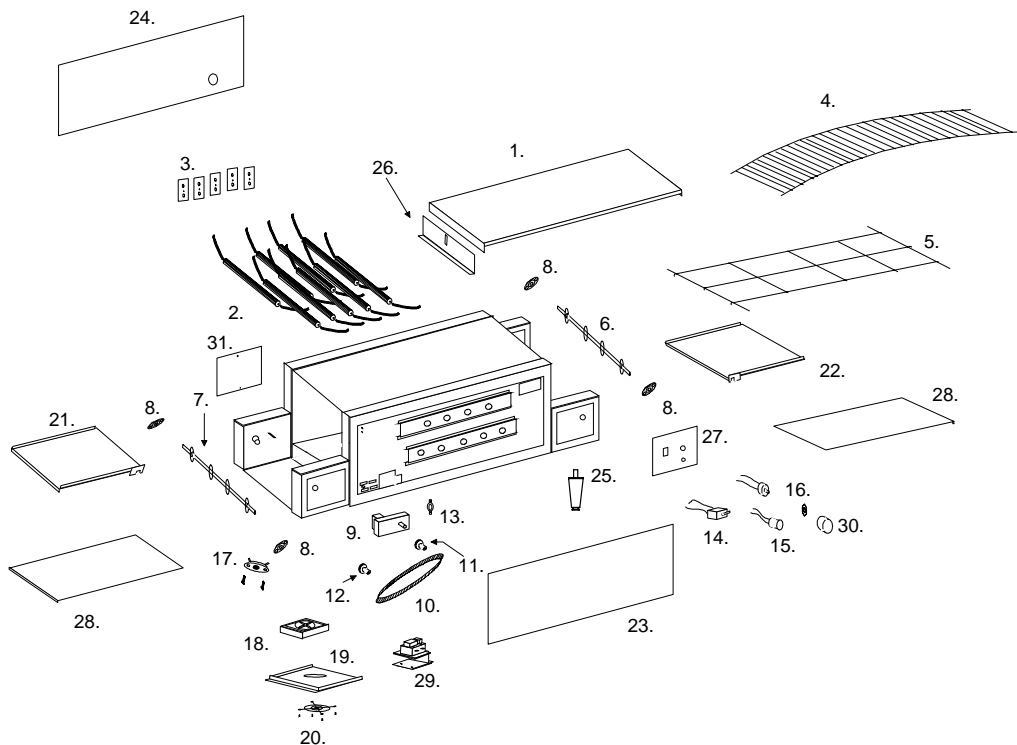
The foregoing warranty is in lieu of any and all other warranties expressed or implied and constitutes the entire warranty.

### FOR ASSISTANCE

Should you need any assistance regarding the Operation or Maintenance of any Star equipment; write, phone, fax or email our Service Department. In all correspondence mention the Model number and the Serial number of your unit, and the voltage or type of gas you are using.

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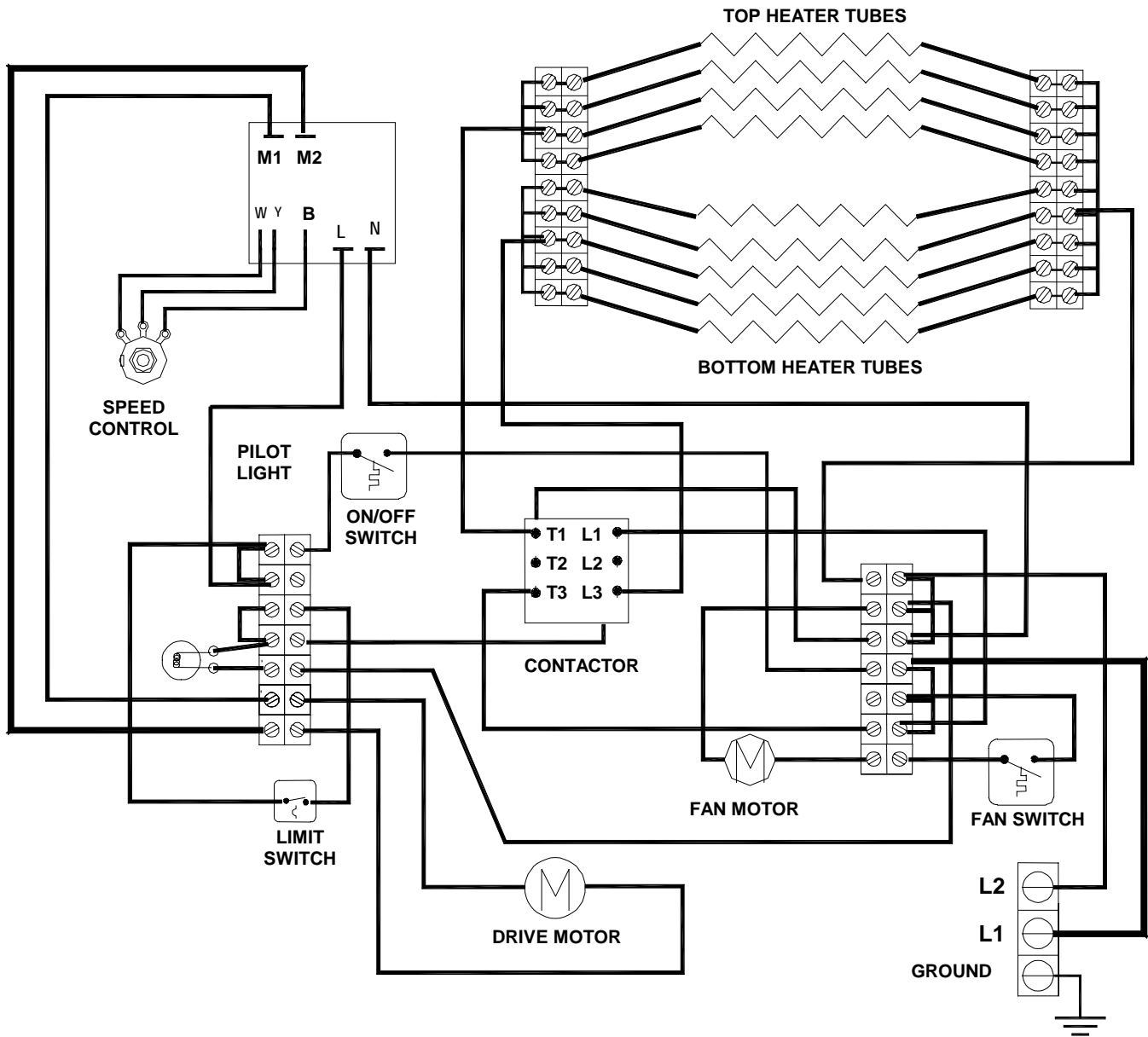
**PARTS LIST**



| No. | PART No.  | DESCRIPTION                 | Qty. | No. | PART No.  | DESCRIPTION                  | Qty. |
|-----|-----------|-----------------------------|------|-----|-----------|------------------------------|------|
| 1.  | GD-401168 | Cover, Top                  | 1    | 15. | 2J-200427 | Pilot Light                  | 1    |
| 2.  | GD-197991 | Heater Tube, Top, 208V      | 4    | 16. | GB-118062 | Speed control                | 1    |
| 2.  | GE-197988 | Heater tube, Bottom 208V    | 5    | 17. | 2E-200566 | Reset Switch                 | 1    |
| 2a. | GE-197992 | Heater Tube, Top, 240V      | 4    | 18. | 2U-200561 | Fan Motor                    | 1    |
| 2a. | GE-197990 | Heater Tube, Bottom 240V    | 5    | 19. | GD-401636 | Cover, Control Box           | 1    |
| 3.  | GD-401232 | Retainer, Heater Tube       | 5    | 20. | 2R-200562 | Grill, Fan Motor             | 1    |
| 4.  | GD-160008 | Conveyor Belt               | 1    | 21. | GD-100403 | Load Up Tray                 | 1    |
| 5.  | GD-100707 | Belt Support Rack           | 1    | 22. | GD-101403 | Unload Tray                  | 1    |
| 6.  | GD-101251 | Idler Shafts                | 1    | 23. | GD-416764 | Side Panel                   | 1    |
| 7.  | GD-101252 | Drive Shaft                 | 1    | 24. | GD-401376 | Side Panel, Cord             | 1    |
| 8.  | GB-112262 | Bearing                     | 4    | 25. | 2R-200716 | Leg, Metal, 2½"              | 4    |
| 9.  | 2U-200504 | Drive Motor                 | 1    | 26. | GD-401233 | Shutter, Heat                | 2    |
| 10. | GD-150023 | Drive Chain                 | 1    | 27. | GD-416162 | Panel, Controls              | 1    |
| 11. | 2P-200652 | Driven Sprocket 3/8"        | 1    | 28. | GD-401227 | Crumb Tray                   | 2    |
| 12. | 2P-200646 | Drive sprocket 5/16"        | 1    | 29. | 2E-200535 | Contactor/Relay              | 1    |
| 13. | 2E-200574 | Fan Switch                  | 1    | 30. | SP-115360 | Knob, Speed control          | 1    |
| 14. | 2E-200552 | On/Off Switch/Rocker Switch | 1    | 31. | GD-401206 | Cover, Extensions            | 3    |
|     |           |                             |      |     | 2U-200579 | Motor Controller (not shown) | 1    |

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WIRE DIAGRAM FOR MODEL 314HXM





**STAR MANUFACTURING**

10 Sunnen Drive, St. Louis, MO 63143 U.S.A.

(800) 807-9054 (314) 781-2777

Parts & Service (800) 807-9054

[www.star-mfg.com](http://www.star-mfg.com)