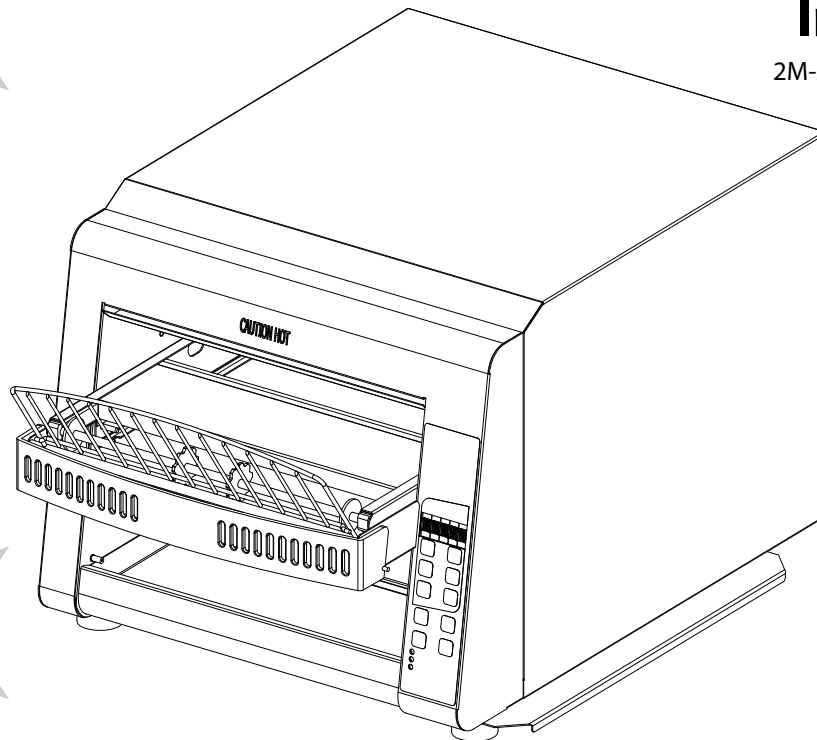


# **Holman**<sup>®</sup> **IMPINGEMENT TOASTER**

MODEL  
IR3-16BCT

## **Installation and Operation Instructions**

2M-Z20638 Rev. - 7/15/2015



IR3-16BCT



## SAFETY SYMBOL



These symbols are intended to alert the user to the presence of important operating and maintenance instructions in the manual accompanying the appliance.

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## RETAIN THIS MANUAL FOR FUTURE REFERENCE NOTICE

Using any part other than genuine Star factory supplied parts relieves the manufacturer of all liability.

Star reserves the right to change specifications and product design without notice. Such revisions do not entitle the buyer to corresponding changes, improvements, additions or replacements for previously purchased equipment.

Due to periodic changes in designs, methods, procedures, policies and regulations, the specifications contained in this sheet are subject to change without notice. While Star International Holdings Inc., Company exercises good faith efforts to provide information that is accurate, we are not responsible for errors or omissions in information provided or conclusions reached as a result of using the specifications. By using the information provided, the user assumes all risks in connection with such use.

## MAINTENANCE AND REPAIRS

Contact your local authorized service agent for service or required maintenance.

Please record the model number, serial number, voltage and purchase date in the area below and have it ready when you call to ensure a faster service.

Model No. \_\_\_\_\_  
Serial No. \_\_\_\_\_  
Voltage \_\_\_\_\_  
Purchase Date \_\_\_\_\_

### Authorized Service Agent Listing

Reference the listing provided with the unit

or

for an updated listing go to:

**Website:** [www.star-mfg.com](http://www.star-mfg.com)  
**E-mail** [customerservice@star-mfg.com](mailto:customerservice@star-mfg.com)

### Service Help Desk

**Business Hours:** 8:00 am to 4:30 p.m. Central Standard Time

**Telephone:** (314) 678-6303

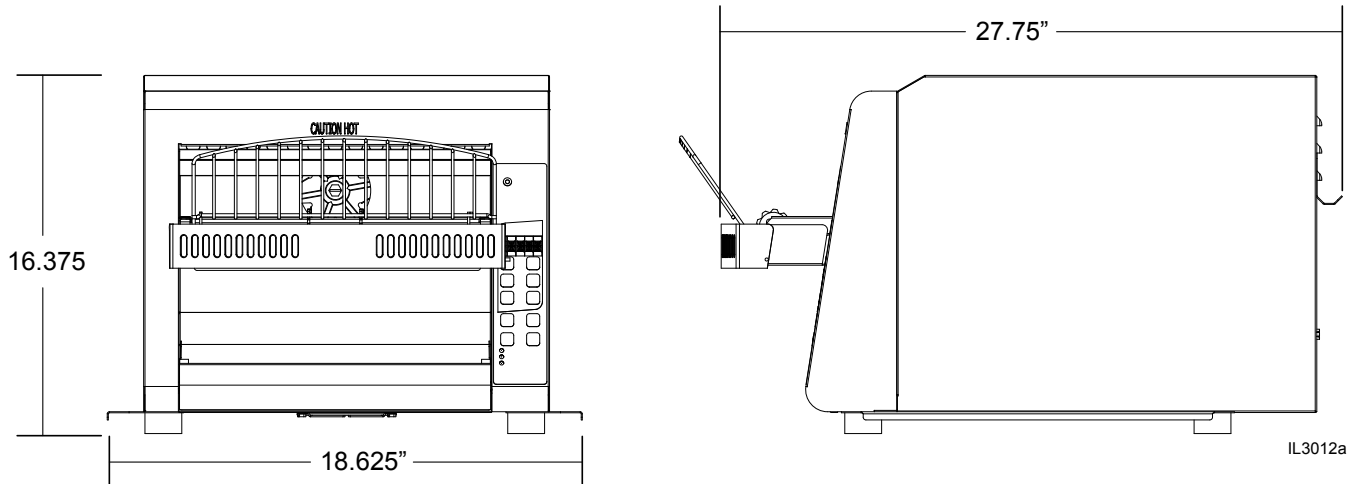
**Fax:** (314) 781-2714

**E-mail** [customerservice@star-mfg.com](mailto:customerservice@star-mfg.com)

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

**Mailing Address:** Star International Holdings Inc., Company  
10 Sunnen Drive  
St. Louis, MO 63143  
U.S.A

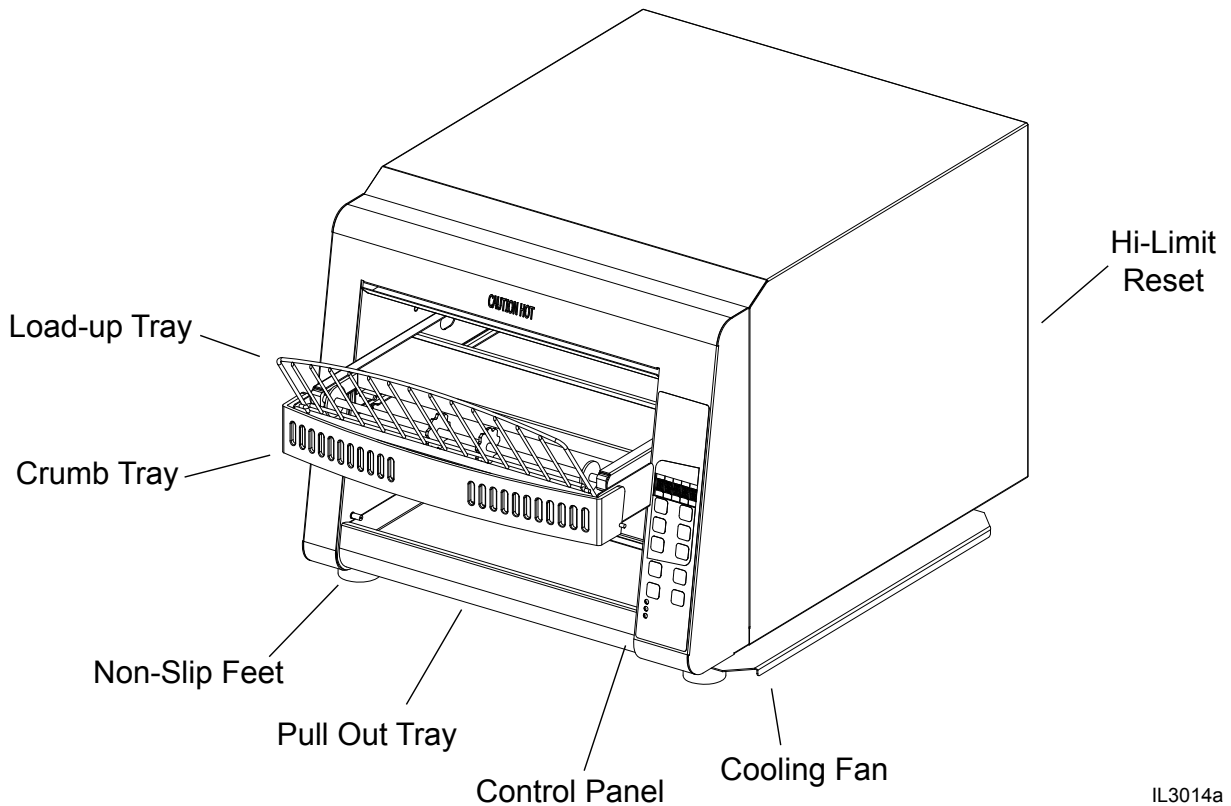
## EQUIPMENT SPECIFICATIONS



### Electrical Specifications

Model	Voltage	Hz	Phase	Amps	Watts	Cord
IRC-16BCT	208V	60	1	22.1	4,596	6-30P

## EQUIPMENT FEATURES



2M-z20638; Impingement Toaster IR3-16BCT

## GENERAL INSTALLATION DATA



### CAUTION

This equipment is designed and sold for commercial use only by personnel trained and experienced in its operation and is not sold for consumer use in and around the home nor for use directly by the general public in food service locations.

Before using your new equipment, read and understand all the instructions & labels associated with the unit prior to putting it into operation. Make sure all people associated with its use understand the units operation & safety before they use the unit.

All shipping containers should be checked for freight damage both visible and concealed. This unit has been tested and carefully packaged to insure delivery of your unit in perfect condition. If equipment is received in damaged condition, either apparent or concealed, a claim must be made with the delivering carrier.

Concealed damage or loss - if damage or loss is not apparent until after equipment is unpacked, a request for inspection of concealed damage must be made with carrier within 15 days. Be certain to retain all contents plus external and internal packaging materials for inspection. The carrier will make an inspection and will supply necessary claim forms.

### INSPECTION & ASSEMBLY

#### UNCRATING AND INSPECTING

Unpack the unit and components from the shipping container. Remove all visible packing material and those from inside the cooking chamber. If damage is discovered, file a claim immediately with the carrier that handled the shipment. Do not operate the unit if it was damaged during shipping.

#### ASSEMBLY AND INSTALLATION

The unit was shipped fully assembled and ready to plug into a standard outlet specified for its voltage and amp draw. If improper electrical supply is determined, contact a qualified electrician prior to using the unit. Removal and replacement of the power cord and plug will void the warranty. For assistance, contact your local authorized service agent for service or required maintenance.

Level unit using the adjustable feet under the unit (approximately 1/2" adjustment).

Before using the unit for the first time, wipe down the exterior with a damp cloth.



### CAUTION

**Allow enough space around the toaster for adequate ventilation. Do not operate the unit without the crumb tray properly positioned. Overheating and poor toasting may occur. Read all labels on the unit and follow their instructions.**

#### ELECTRICAL CONNECTION

Before making any electrical connection to this unit, check that the power supply is adequate for the voltage, amperage and requirements stated on the rating plate. A wiring diagram is included herewith.



### WARNING

Disconnect the unit from the power source before installing or removing any parts.

Be absolutely sure that the ground connection for the receptacle is properly wired.

Do not connect equipment to power without proper ground connections.

Improper grounding may result in personal injury or fatality.

**DO NOT CUT OR REMOVE THIS PLUG OR GROUNDING PRONG FROM THE PLUG.**

**CONNECT/PLUG UNIT INTO DEDICATED A.C. LINE ONLY SPECIFIED ON THE DATA PLATE OF THE UNIT.**

# OPERATION

The Holman IR3 Impingement toaster comes pre-programmed from the factory

## START UP

When the toaster has been plugged into a suitable outlet and power supply, the word OFF will be displayed on the L.E.D. read out.

- A. Press the ON/OFF button once to turn on the toaster. The toaster will now enter into pre-heat and **PREHT** will be displayed (the elements will begin to glow but the conveyor and fan motor will not turn on).
- B. After one minute, the fan motor will turn on and the conveyor will begin turning at the previously saved setting (for initial start up, the drive motor will operate at the factory default setting).
- C. After four minutes, the display will show the last used program selected.
- D. Select buttons 1 thru 6 to choose a different program.

## DAILY OPERATION

Check the power cord to insure that it is plugged into a proper outlet.

*Press the ON/OFF button once to turn the toaster on.*

*Press the button a second time to turn the toaster off.*

**NOTE:** When the toaster is turned off, the fan and conveyor motors will continue to run for five minutes.

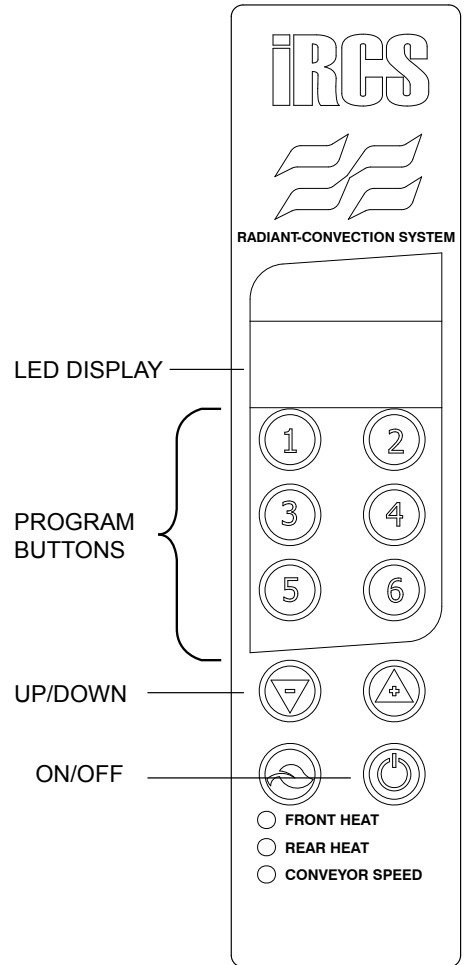
Do not leave the unit in operation without an attendant.

The words **COOL** and **DOWN** will be alternately displayed during that time. After five minutes, the word **OFF** will be displayed until the ON/OFF button is pressed again.



**CAUTION**

**CERTAIN SURFACES ARE EXTREMELY HOT DURING OPERATION AND CARE SHOULD BE TAKEN WHILE USING THIS UNIT.**



IL3015

IR3-16BCT Default Settings			
Menu Buttons	Front Heat	Rear Heat	Conveyor Speed
1	10	10	90
2			80
3			70
4			60
5			50
6			40

## PROGRAMING

### A. PROGRAMING VALUES FOR MENU ITEMS

To make a program change to the FRONT heat, REAR heat, or conveyor speed, you must first be in the menu item you want changed. Example: to change the programmed conveyor speed for **1**, the display must read **1**. To change the programmed conveyor speed for **2**, the display must read **2** and so on for each menu item.

- 1) Select the menu item you want to change i.e. **1 - 6**.
- 2) Press and hold both ( + ) AND ( - ) buttons for 3 seconds until the display goes blank, release the buttons and the display will show three characters for the menu item elected and the last two characters for the current value setting, i.e. **TST-1, TST-2**. The red L.E.D. light for top heat at the bottom of the label will flash.
- 3) Press the ( + ) or ( - ) buttons to increase or decrease the setting for the front heat.
- 4) Press the button for the menu button again and the red L.E.D. for the rear heat will flash.
- 5) Press the ( + ) or ( - ) buttons to increase or decrease the setting for the rear heat.
- 6) Press the button for the menu button again and the red L.E.D. for the conveyor speed will flash.
- 7) Press the ( + ) or ( - ) buttons to increase or decrease the setting for the conveyor speed.
- 8) To skip one feature setting with out making any changes, press the menu item button one time and the red L.E.D. light for the next item will now flash.
- 9) To change the POWER SAVER values press the SAVER button or to save your new setting(s), and exit the program mode press the menu button.
- 10) The last two characters in the display will show **MN** for minutes.
- 11) The first three characters will be numerical to represent the time setting.
- 12) Press the ( + ) or ( - ) buttons to increase or decrease the setting for the savor mode time. The minimum value is **15** minutes to maximum value of **480** minutes (*default=330*).
- 13) Press the SAVER button to change the power reduction using the ( + ) or ( - ) buttons to increase or decrease the setting.
- 14) Press the POWER SAVER button to save changes and to exit.

## CLEANING

Preventive maintenance for your Holman toaster consists of the following recommended cleaning procedures. To keep your toaster in its top operating condition, these steps should be performed on a daily or weekly as indicated.

- A. Clean air intake on bottom of unit.
- B. For lightly soiled conveyor belts, turn conveyor speed control to fastest setting and wipe with a damp cloth (daily) For heavily soiled conveyors, turn conveyor speed control to fastest setting and wipe with a light abrasive pad (as needed).
- C. Turn main power saver switch to the OFF position. Disconnect unit from power source.
- D. After the unit cools, remove interior crumb tray (as shown below) and clean.  
Slide crumb tray back into position.
- E. Wipe exterior surface of unit.



**WARNING**

**DO NOT IMMERSE OR LET THE UNIT STAND IN WATER.  
DO NOT HOSE DOWN THE UNIT OR THE TABLE/COUNTER IF THE  
UNIT IS ON  
THE TABLE/COUNTER.  
KEEP AWAY FROM RUNNING WATER.**

## MAINTENANCE PROCEDURES

### A. REPLACING HEATER TUBES

- 1) **DISCONNECT UNIT FROM POWER SOURCE.**
- 2) Remove the enclosure, by removing screws. Lift back end of enclosure up then back.
- 3) Remove heater tube wires from terminal block connection, keeping top and bottom wires separate.
- 4) Lift heater tube retainers by loosening retaining screws and sliding the retainer plate up. Hand tighten the plate to hold it up so the heater tubes will slide out freely.
- 5) Gently, pull defective heater tube out of unit.
- 6) Gently, put new heater tube into unit.
- 7) Loosen retainer screws and slide the retainer back into place. Tighten the screw to secure the retainer in place over the ends of the heater tubes.
- 8) Reinstall the wires being sure use the same location as was in the original heater tube. Tighten the screws securely.

### B. REPLACING FAN MOTOR

- 1) **DISCONNECT UNIT FROM POWER SOURCE.**
- 2) Remove the enclosure, by removing screws. Lift back end of enclosure up then back.
- 3) Unplug power supply cord from fan motor.
- 4) Remove (4) screws, which hold fan motor and grill to bottom of unit and remove fan.
- 5) Put replacement motor and grill in place and secure to the bottom of unit with screws.
- 6) Reconnect power supply cord to fan motor.
- 7) Replace back panel and enclosure. Fasten with screws removed in step 2.

### C. REPLACING CONVEYOR DRIVE MOTOR

- 1) **DISCONNECT UNIT FROM POWER SOURCE.**
- 2) Remove enclosure and back panel.
- 3) Remove sprocket from motor shaft, using an Allen wrench and loosening the set-screw.
- 4) Remove the wire from terminal block connecting the drive motor to internal wiring. On units rated 208 or 240 volts, note which color leads are being used for these connections and which lead is capped with white tape. The new motor should use the same arrangement.
- 5) Remove screws holding motor in place and remove motor from unit.
- 6) Put new motor in place and attach loosely with mounting screws.
- 7) Replace sprocket on motor shaft.

**NOTE: The two sprockets must line up parallel with each other, so the chain does not twist any during operation. Also the hub gets installed closets to the motor.**

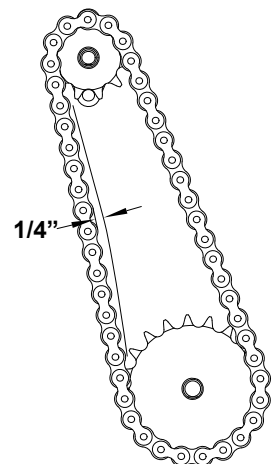
- 8) Slide motor until the drive chain has about 1/4" slack when lightly pushed at the center of its top open run.  
*See chain tensioning illustration.*
- 9) Tighten screws to secure motor.
- 10) Rewire leads same as removed in step 4.
- 11) Replace side panel and control box cover.

### D. CLEANING AIR INTAKE ONCE A WEEK

- 1) **DISCONNECT UNIT FROM POWER SOURCE.**
- 2) Place unit on its backside.
- 3) Use a vacuum cleaner and or a damp cloth to clean the air intake. This procedure should be done at least

### E. LUBRICATE THE CHAIN & SPROCKETS EVERY 6 MONTHS

- 1) **DISCONNECT UNIT FROM POWER SOURCE.**
- 2) Remove enclosure exposing chain drive.
- 3) Using an extreme pressure, synthetic chain lubricant with a temperature range up to 400°F. Apply liberally onto chain and sprockets. This grease is available as part no. 1P-Z12397.
- 4) Replace enclosure, Reconnect power source and test unit.



Chain Tension

## TROUBLESHOOTING GUIDE

### A. UNIT WILL NOT HEAT, CONVEYOR BELT WILL NOT MOVE.

- 1) Be sure the main circuit breaker is switched to the ON position.
- 2) Check to see if the toaster is plugged in and all controls are turned to the ON position.

### B. UNIT HAS HEAT ONLY ON ONE SIDE, CONVEYOR BELT TURNS FREELY.

- 1) Call the Star Parts Help Desk at 314-678-6303, as heating element may need replacing.

### C. CONVEYOR WILL NOT TURN, UNIT HEATS PROPERLY.

To check for mechanical binding:

- 1) **DISCONNECT UNIT FROM POWER SOURCE.**
- 2) Remove 2 screws holding enclosure to the bottom of the unit.
- 3) Set unit on the legs and remove 4 screws on the back of the toaster.
- 4) Slide the enclosure off the unit and remove the back panel.
- 5) Loosen the four screws that hold the drive motor in place.
- 6) Slide the motor up allowing the drive chain to be removed from the sprockets.
- 7) Move the conveyor belt by hand to check for mechanical binding. If conveyor moves freely, call the Star Parts Help Desk at 314-678-6303, as the drive motor and/or speed control may need replacing.
- 8) Replace the enclosure by sliding it forward towards the front of the unit.  
The front edge of the enclosure will slide beneath the toaster front.

### D. HEAT LIMIT SWITCH (RESET)

Your Holman conveyor toaster is equipped with an automatically activated heat limit switch that interrupts the heater tube connections if the ambient temperature in the control box exceeds 190°F (88°C). This switch can be reset manually by pushing the red button under the toaster as shown in the Toaster Components Illustration on Page 3.

- 1) **DISCONNECT UNIT FROM POWER SOURCE.**
- 2) Check to see if air intake area in the bottom center of the control box cover is free of dust, grease or other obstructions.
- 3) Check if crumb tray is in place. **NEVER OPERATE UNIT WITHOUT CRUMB TRAY IN PLACE AS THIS CAUSES OVERHEATING IN THE CONTROL BOX.**
- 4) If no obstructions to the airflow can be found and if the crumb tray is in place, call the Star Service Help Desk at 314-678-6303 for assistance.

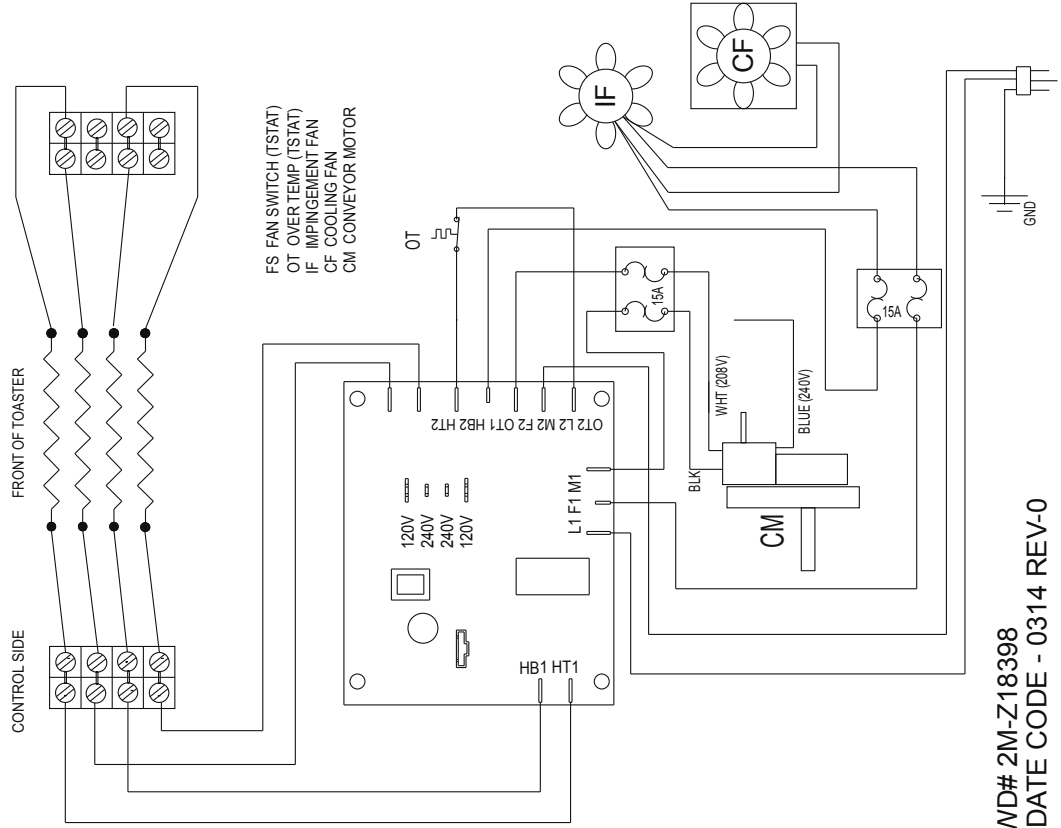
### E. CONVEYOR TURNS AT ONE SPEED REGARDLESS OF SPEED CONTROL SETTING.

- 1) Call the Star Parts Help Desk at 1-314-678-6303.



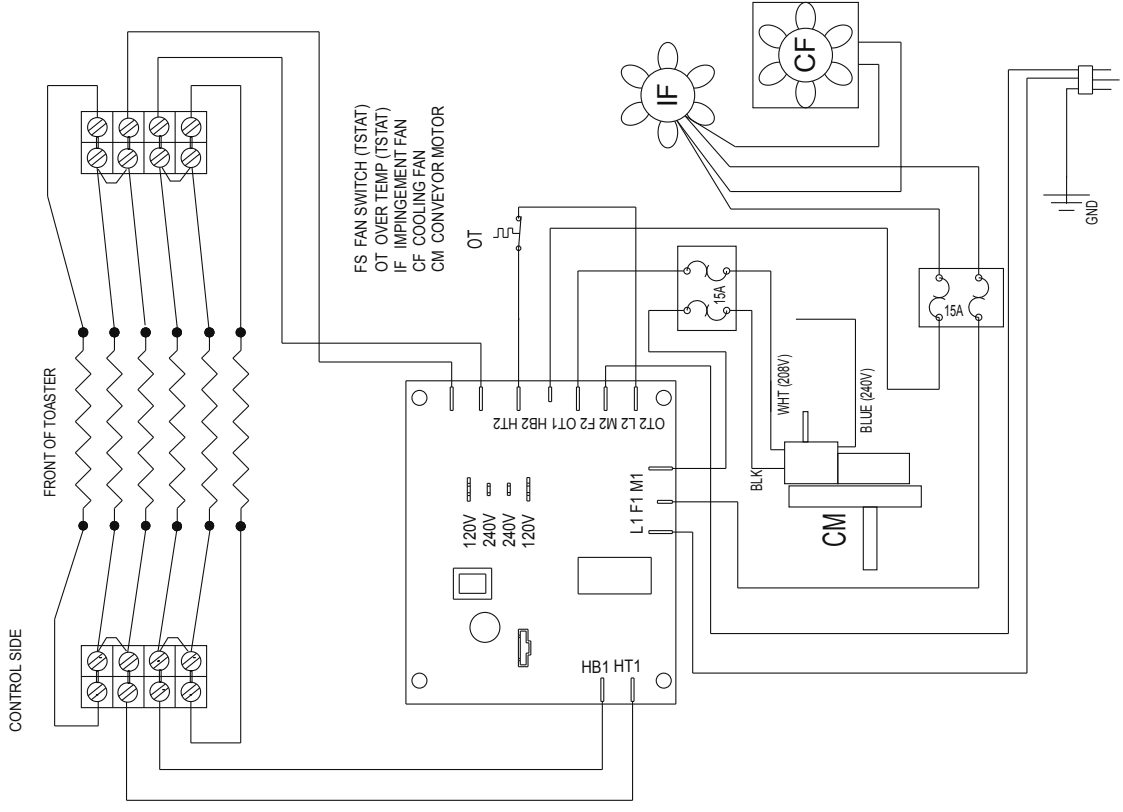
2M-z20638; Impingement Toaster IR3-16BCT

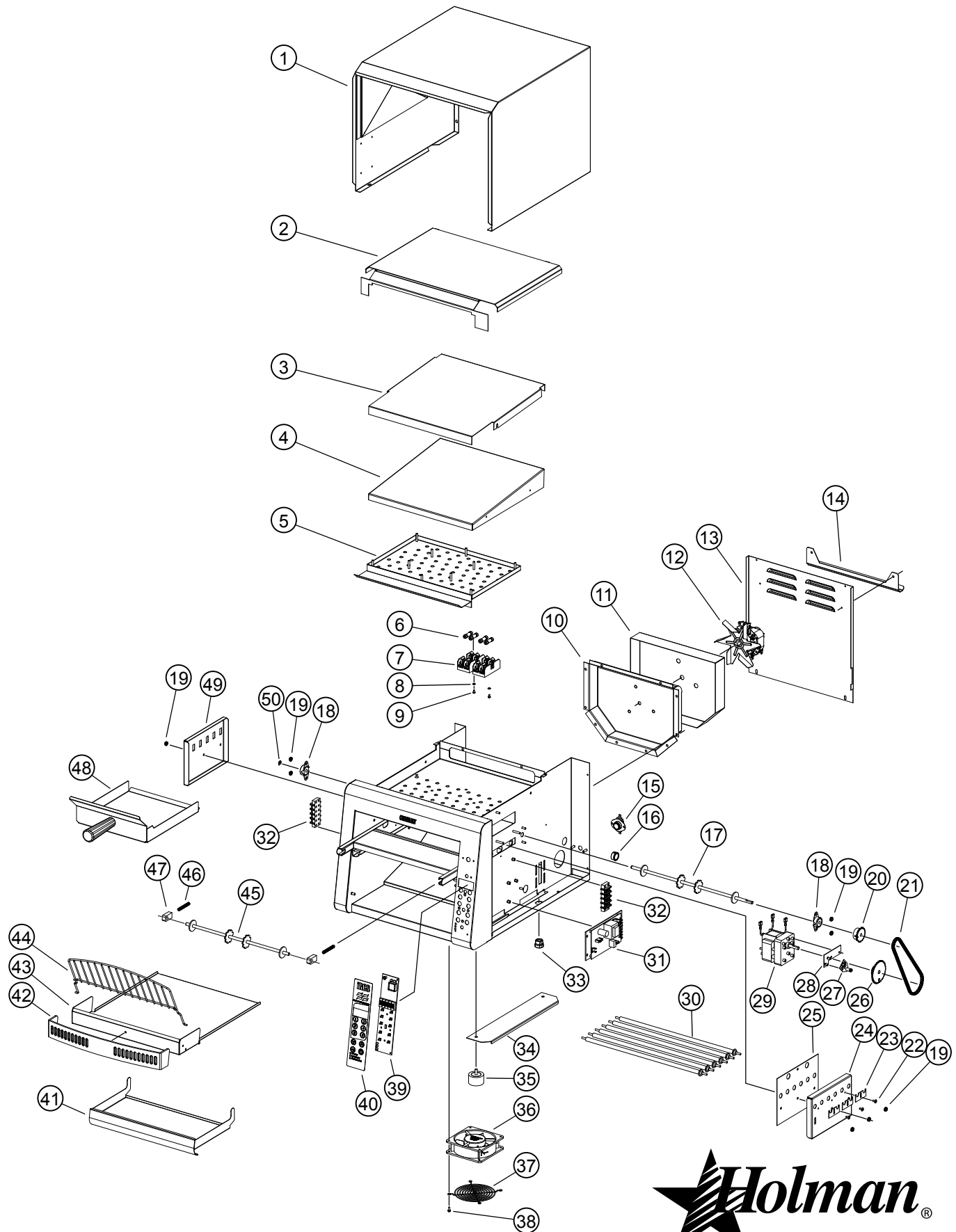
IQCS-3 WIRING DIAGRAM



WD# 2M-Z18398  
DATE CODE - 0314 REV-0

IRCS-3 WIRING DIAGRAM





MODEL: IR3-16BCT



SK2915, Rev. A 8/06/15

2M-Z20638; Impingement Toaster IR3-16BCT

# PARTS LIST

July 14,2015, Rev. -

2M-z20638; Impingement Toaster IR3-16BCT

Model: IR3-16BCT208 Impingement Toaster			
Fig No.	Part Number	Qty	Description
1	HC-120348	1	ENCLOSURE ASSY IQ3/IR3
2	HC-120332	1	TOP BAFFLE ASSY
3	HC-Z17418	1	PLENUM COVER
4	HC-Z17424	1	PLENUM
5	HC-Z20636	1	NOZZLE PLATE ASSEMBLY
6	2E-Z5680	4	FUSE, 5A - CLASS G
7	2E-Z5681	2	FUSEHOLDER, CLASS G
8	2C-H8669	4	WASHER #6 INT STL NP
9	2C-1487	4	SCREW 6-32X1/4 RHP STL NP
10	HC-Z17417	1	DUCT REAR
11	HC-Z17429	1	DUCT - INSULATION COVER
12	2U-Z17519	1	BLOWER-IMPINGEMENT
13	HC-Z20450	1	BACK PANEL 16BCT
14	HC-Z20635	1	REAR BAFFLE
15	2E-200566	1	SWITCH, RESET, 0796
16	2K-200464	2	BUSHING, WIRE RING 7/8"
17	2A-202902	1	SHAFT, T714 DRIVE
18	HA-112261	2	BEARING ASSY, 5/16 PTFE
19	2C-Z6929	30	10-24 KEPS NUT S.S.
20	2P-200645	1	SPROCKET, 25B17 X 5/16
21	2P-Z18401	1	CHAIN, DRIVE #25 21.5"
22	2C-6349	2	SCREW #8X3/8 B THP STL NP
23	HC-Z18350	3	BRACKET-ELEMENT
24	HC-Z18349	1	ELEMENT RETAINER RIGHT
25	HC-Z18354	2	ELEMENT GUARD PLATE
26	2P-200648	1	SPROCKET, 25B32 X 5/16
27	2E-Z17514	1	SPEED SENSOR
28	HC-Z17468-1	1	BRACKET-SPEED SENSOR LT
29	2U-Z9657	1	MOTOR AC 11 RPM CW
30	2N-Z19584	6	ELEMENT 750W 208V
31	2U-200592	1	QCSE POWER BOARD
32	2E-Z10406	2	TERMINAL BLOCK 4 POS
33	2K-Y6764	1	BUSHING - STRAIN RELIEF
34	HC-Z20716	2	DEFLECTOR FLANGE
35	2R-Z18201	4	FOOT 1.69X1 SIL 1/4 20
36	2U-Z17520	1	MUFFIN FAN 130CFM
37	2R-200562	1	FAN GUARD
38	2C-Z5883	4	10-24 X 1/2 FZA SCREW
39	HC-Z20639	1	SOFTWARE IR3-16BCT
40	2M-Z20690	1	LABEL, IR3-16BCT
41	HH-100561	1	TRAY, PULL OUT, QCS, 14

Model: IR3-16BCT208 Impingement Toaster			
Fig No.	Part Number	Qty	Description
42	2R-200788	1	QCS-3 CRUMB TRAY GUARD
43	HC-120369	1	CRUMB TRAY ASSY 16BCT
44	2B-200764	1	LOAD-UP, 14 EURO, WIRE
45	2A-202905	1	SHAFT, 214HX IDLER
46	2P-200736	2	2 INCH BEARING SPRING
47	2P-200700	2	BEARING-PTFE SPRING LOAD
48	HC-120347	1	PADDLE ASSY
49	HC-Z17422	1	ELEMENT RETAINER LEFT
50	2A-200284	1	E-CLIP 5/16
NI	SP-160028	1	BELT,CONVEYOR 14 X 35 1/2"
NI	2B-200603	3	BELT LINK 14IN SPACECLIP
NI	HI-140074	1	QCSE 6-30P MOLDED CORD
NI	2M-Z18398	1	LABEL - WIRING IQ3, IR3

### 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.
- > On all shipments outside the United States and Canada, see International Warranty.
- \* The warranty period for the Ultra-Max, Hot Plates, Griddles, Charbroilers is (3) years parts & labor.
- \* The warranty period for the Star-Max, Charbroilers, Griddles, Hot Plates, Fryers & Finishing Oven is (2) years parts & labor.
- \* The warranty period for the JetStar six (6) ounce & Super JetStar eight (8) ounce series 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 Dura-Tec coatings is one year under normal use and reasonable care. This warranty does not apply if damage occurs to Dura-Tec coatings from improper cleaning, maintenance, use of metallic utensils, or abrasive cleaners, abrasive pads, product identifiers and point-of-sale attachments, or any other non-food object that comes in continuous contact with the roller coating. 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 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, the labor to replace the part is **NOT** warranted.

### SERVICES NOT COVERED BY WARRANTY

1. Travel time and mileage rendered beyond the 50 mile radius limit
2. Mileage and travel time on portable equipment (*see below*)
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.
4. Installation of equipment
5. Damages due to improper installation
6. Damages from abuse or misuse
7. Operated contrary to the Operating and Installation Instructions
8. Cleaning of equipment
9. Seasoning of griddle plates
10. Voltage conversions
11. Gas conversions
12. Pilot light adjustment
13. Miscellaneous adjustments
14. Thermostat calibration and by-pass adjustment
15. Resetting of circuit breakers or safety controls or reset buttons
16. Replacement of bulbs
17. Replacement of fuses
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, 510FF Fryer.
- \* The Model 526TOA Toaster Oven.
- \* The Model J4R, 4 oz. Popcorn Machine.
- \* 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 HPD & SPD 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 Fast Steamer Models **except Direct Connect Series.**

### ALL:

- \* Pop-Up Toasters
- \* Butter Dispensers
- \* Pretzel Merchandisers  
(Model 16PD-A Only)
- \* Pastry Display Cabinets
- \* Nacho Chip Merchandisers
- \* Accessories of any kind
- \* Sneeze Guards
- \* Pizza Ovens  
(Model PO12 Only)
- \* Heat Lamps
- \* Pumps-Manual

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.