



BKT-2V TECH MANUAL (9210130)

BURGER KING

180 Kehoe Blvd. Carol Stream, Illinois 60188 USA



Table of Contents

- **Warranty.....4**
- **Specifications.....5**
- **Safety Information.....6**
- **Theory Of Operation.....7**
- **Installation.....8**
- **Operation.....9**
- **Manager Mode.....10**
- **Troubleshooting.....11-14**
- **Parts Testing & Replacement.....14-42**
- **Type “K” millivolt Chart.....19**
- **Wiring Diagram.....42**





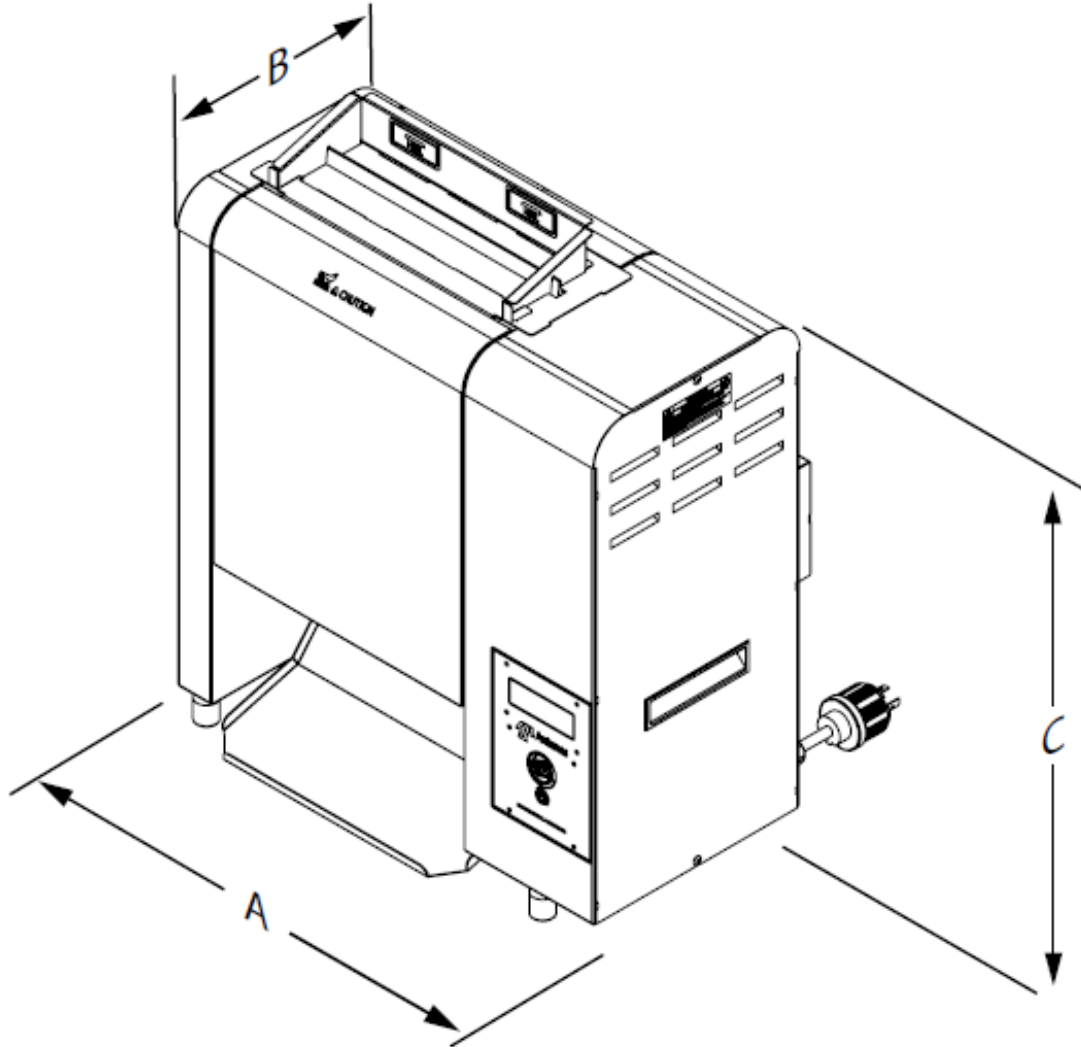
Equipment manufactured by Antunes has been constructed of the finest materials available and manufactured to high quality standards. These units are warranted to be free from electrical and mechanical defects for a period of one (1) year from date of purchase under normal use and service, and when installed in accordance with manufacturer's recommendations. To insure continued operation of the units, follow the maintenance procedures outlined in the Owner's Manual. During the first 12 months, electromechanical parts, non-overtime labor, and travel expenses up to 2 hours (100 miles/160 km), round trip from the nearest Authorized Service Center are covered.

This warranty does not cover cost of installation, defects caused by improper storage or handling prior to placing of the Equipment. This warranty does not cover overtime charges or work done by unauthorized service agencies or personnel. This warranty does not cover normal maintenance, calibration, or regular adjustments as specified in operating and maintenance instructions of this manual, and/or labor involved in moving adjacent objects to gain access to the equipment. This warranty does not cover consumable/wear items. This warranty does not cover damage to the Load Cell or Load Cell Assembly due to abuse, misuse, dropping of unit/shock loads or exceeding maximum weight capacity (4 lbs). This warranty does not cover water contamination problems such as foreign material in water lines or inside solenoid valves. It does not cover water pressure problems or failures resulting from improper/incorrect voltage supply. This warranty does not cover Travel Time & Mileage in excess of 2 hours (100 miles/160 km) round trip from the nearest authorized service agency.

Antunes reserves the right to make changes in design or add any improvements on any product. The right is always reserved to modify equipment because of factors beyond our control and government regulations. Changes to update equipment do not constitute a warranty charge. If shipment is damaged in transit, the purchaser should make a claim directly upon the carrier. Careful inspection should be made of the shipment as soon as it arrives and visible damage should be noted upon the carrier's receipt. Damage should be reported to the carrier. This damage is not covered under this warranty. Warranty charges do not include freight or foreign, excise, municipal or other sales or use taxes. All such freight and taxes are the responsibility of the purchaser. This warranty is exclusive and is in lieu of all other warranties, expressed or implied, including any implied warranty or merchantability or fitness for a particular purpose, each of which is hereby expressly disclaimed. The remedies described above are exclusive and in no event shall Antunes be liable for special consequential or incidental damages for the breach or delay in performance of this warranty.

The Warranty DOES NOT extend to:

- Damages caused in shipment or damage as result of improper use.
- Installation of electrical service.
- Installation, calibration, or adjustment.
- Normal maintenance outlined in this manual.
- Malfunction resulting from improper service or maintenance.
- Damage caused by improper installation, abuse, or careless handling.
- Damage from moisture getting into electrical components.
- Damage from tampering with, removal of, or changing any preset control or safety device.
- Damage caused by parts or components not provided by Antunes



Model & Mfg. No.	Volts	Phase	Hertz	Power	Current
9210130	200-240	1 Phase	50/60	1900W	10

Model #	(A) Width	(B) Depth	(C) Height
9210130	23" (584.2mm)	10 3/4" (273.05mm)	24 3/4" (628.65mm)

Model & Mfg. No.	Volts	Phase	Hertz	Power	Current
9210131	200-240	1 Phase	50/60	1900W	10

Model #	(A) Width	(B) Depth	(C) Height
9210131	23" (584.2mm)	10 3/4" (273.05mm)	24 3/4" (628.65mm)



In addition to the warnings and cautions in this manual, use the following guidelines for safe operation of the unit.

- Read all instructions before using equipment.
- Install or locate the equipment only for its intended use as described in this manual.
- Do NOT use corrosive chemicals in this equipment.
- Do NOT operate this equipment if it has a damaged cord or plug; if it is not working properly; or if it has been damaged or dropped. If the power cord is damaged, it must be replaced by a qualified service technician.
- This equipment should be serviced by qualified personnel only. Contact Antunes Technical Service at 1-877-392-7854 toll free in the U.S.) or at 630-784-1000.
- Do NOT block or cover any openings on the unit.
- Do NOT immerse cord or plug in water. there is a possibility of slippery floor adjacent to this equipment.
- Keep cord away from heated surfaces.
- Do NOT allow cord to hang over edge of table or counter.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children should not play with this appliance. Cleaning and user maintenance shall not be made by children without supervision.


The following warnings and cautions appear throughout this manual and should be carefully observed.

- Turn the power off, unplug the power cord, and allow the unit to cool down before performing any service or maintenance.
- The equipment should be grounded according to local electrical codes to prevent the possibility of electrical shock. This requires a grounded receptacle with separate electrical lines to be protected by fuse(s) or circuit breaker(s) of the proper rating.
- All electrical service connections must be in accordance with local and/or other applicable electrical codes.
- Do NOT clean this appliance with a water jet.
- Do NOT use a sanitizing solution or abrasive materials.

The use of these may cause damage to the stainless steel finish.

 CAUTION 
Use of any replacement part other than those supplied by Antunes or their authorized distributors can cause injury to the operator and damage to the equipment and will void all warranties.

 WARNING 
Before replacing any parts, or opening any side or rear panel from the toaster, disconnect the toaster from the electrical power supply.

 WARNING
ELECTRICAL SHOCK HAZARD. Failure to follow the instructions in this manual could result in serious injury or death.
Do not modify the power supply cord plug. If it does not fit the outlet, have a proper outlet installed by a qualified electrician.
Electrical ground is required on this appliance.
Check with a qualified electrician if you are unsure if the appliance is properly grounded.
Do NOT use an extension cord with this product.
The unit should be grounded according to local electrical codes to prevent the possibility of electrical shock. It requires a grounded receptacle with separate electrical lines, protected by fuses or circuit breaker of the proper rating.
NEVER unplug the power cord while the unit is running. Use the proper shutdown procedure before unplugging the power cord.

BKT-2V Theory of Operation

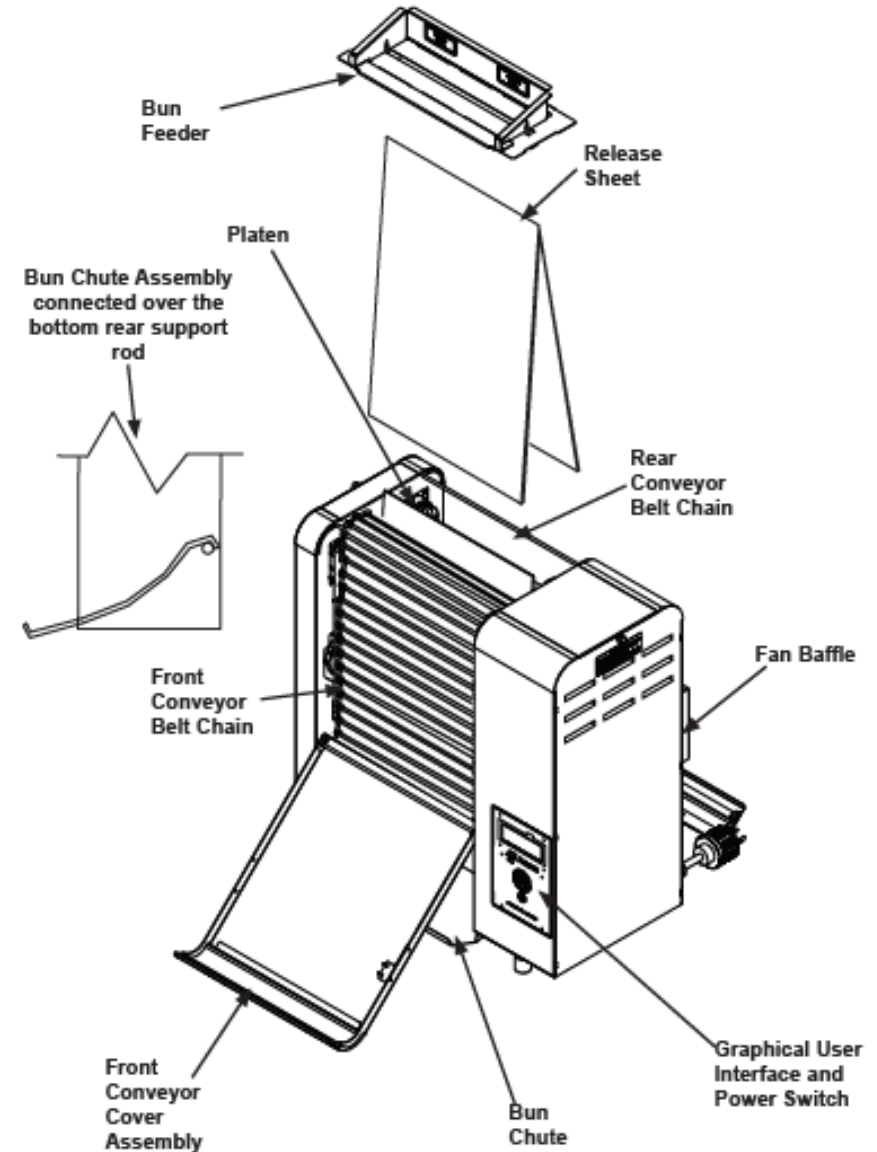
The BKT 2V is a fully digitally touch screen controlled Toaster. When unit is plugged into a 208/230 VAC outlet the line voltage is sent to the power supply board and 12VDC is supplied from the Power Supply Board to power Main Board and Display Board. When the power button is pushed 0.3-0.5 DC will be sent to the Relay then 9-10 amps to the platen to start heating. There is one type-K thermocouples that send a mVDC signal back to the Control Board which monitors and maintains the temperature of the platens. The Drive Motor will receive 60–120V between the BLK/BRN/GRY wires it has a built in Tachometer that reads back to the Control Boards so the Control Board knows how fast the Drive Motor is running and the hard the Drive Motor is working. The Run capacitor determines the course of travel. The fan will receive 208V once the unit gets above 250F (121 C).





Unpacking

1. Remove toaster and all packing materials from the shipping pallet.
2. Remove all shipping tape and protective coverings from the toaster and parts.
3. Open the Accessories Box. It should contain the following:
 - Bun Chute
 - Bun Feeder
 - Two Release Sheets
 - Owner's Manual
4. Wipe the entire exterior of the toaster and the accessories mentioned above with a hot damp cloth. Allow to air dry completely.
5. Install the Bun Chute, Release Sheet, and Bun Feeder as shown in Figure 1.



- NOTICE:** If any parts are missing or damaged, contact Antunes IMMEDIATELY at 1-800-253-2991 (toll free in the U.S. and Canada) or at 630-784-1000.4. Wipe the entire exterior of the toaster and the accessories mentioned above with a hot damp cloth. Allow to air dry completely
- NOTICE:** Do NOT use a dripping wet cloth. Wring out before use
- NOTICE:** Ensure both Conveyor Covers are closed before turning on the toaster. Failure to do so will trigger an OPEN COVER Warning. Close the covers to cancel the warning.



Operating Instructions Startup

Press and hold the Power button for two (2) seconds. The splash screen will appear, followed by the software version screen. The toaster will begin its warm-up. Warm up time is less than 30 minutes.

During the warm-up, the current platen temperature is displayed. When initial Warm-up completes, the toaster displays the Main Menu.

The warm-up screen can be bypassed by touching **FOOD**.

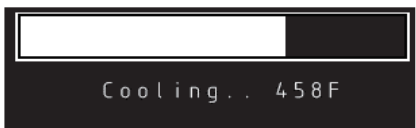


Toasters are HOT and can cause severe burns. Keep hands and objects out of the toaster. Failure to do so may result in serious injury. Turn the toaster off, unplug it, and check that the toaster is completely cool before touching or servicing.

NOTICE: After 20 seconds of inactivity the toaster will time out. If the toaster is not up to the operating temperature, the display will default to the Warm-Up screen until operating temperature is reached. While at operating temperature, the toaster will default to the Toasting Screen.

System Cooldown

Pressing and holding the power button for two (2) seconds will power off the toaster. It will then go into Cooldown Mode. The unit is off but will continue to show the temperature of the platen during this time. Wait till the toaster is completely cooled and unplug before servicing or moving it.



Toasting

To begin start on the main screen:



Use the arrow key to cycle through the menu items and select an option to open the Toasting Screen.

To choose a different menu item, tap the highlighted menu item button to be returned to the previous screen.



NOTICE: If the initial Warm-Up Screen is bypassed the toaster may not be at operating temperature. In this case, the Toasting Screen may say **WAIT**. If this happens, wait until the Toasting Screen reads **READY** before inserting product.



You may change the toasting speed at any time by touching the toast time button to cycle through the three (3) preset values: Light, Medium, & Dark.

When the screen reads **READY** you may begin toasting product.

Insert product into the toaster with the CUT SIDE facing the PLATEN.

NOTICE: If SOUR is selected, the display will automatically default to WHPR after 20 seconds.

Adjusting Toasting Settings

From the Toasting Screen:



Press and hold for one (1) second then release the toast time button.

This opens the timer settings screen for that darkness preset. The current setting is shown in the top right corner in # of seconds.



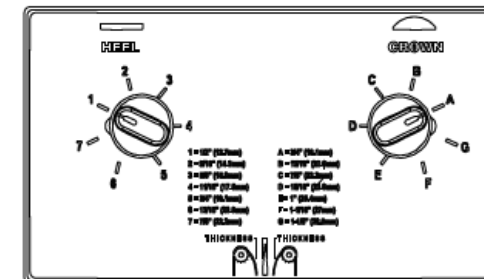
Using the left and right arrow keys, adjust the time to the setting desired.

Touch **OK** to save the adjusted setting and return to the Toasting Screen.

Adjusting Bun Compression

This toaster features compression knobs that are adjustable for different bun thickness. Increase the compression setting for buns that are taller in height and decrease for buns that are shorter.

NOTICE: For darker toast decrease the compression setting. For lighter toast increase the compression setting.



Crown - Rotate knob Counterclockwise to increase and clockwise to decrease the compression setting
Heel - Rotate the knob clockwise to increase the and counterclockwise to decrease the compression setting.



Manager Menu

Touching MENU from the main menu will open up the Manager Menu. You can access the options for Status, Errors, Programming, and Resetting.



Touch MENU to return to the main screen to exit.



Use the arrow keys to show the different Manager menu options.

Service Menu

Pressing and holding Power Button for 15 seconds will open up the Service Menu. You can access the options for Motor Speed, Board Temp, SSR.



Status Menu:

Touch **STAT** from the Manager Menu to open the Status Menu.

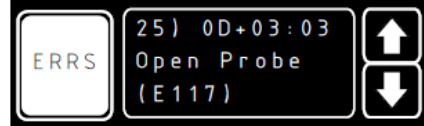


Use the up and down arrow buttons to view the statuses for:
 Platen Temperature
 Power
 Board Temperature
 Motor Speed
 Total Run Time (Total time the toaster has been ON)

Touch **STAT** again to be returned to the Manager Menu.

Error Log:

Touch **ERRS** from the Manager Menu to open the Error Log.



Errors are listed in reverse order with the most recent error listed first. Up to 30 errors can be stored in the system. Use the up and down arrow buttons to view the logged errors.

Error time is displayed as time elapsed since the error occurred. If the error occurred less than 100 days before, then it will be displayed in the following format: Days, Hours: Minutes.

The above example shows that the error occurred 0 Days, 3 hours and 3 minutes ago.

After 100 days, the error will be displayed in number of days only.

Touch **ERRS** again to be returned to the Manager Menu.

Program Menu:

Touch **PRGM** from the Manager Menu to open the Program Menu.



There are several options to adjust in the Program Menu: Set Platen Point, Units, Beeper Volume.

Selecting **SETP** will open the **Platen Set Point Temperature Menu:**



The default set-point temperature is 565F.

Adjust the Set Point Temperature using the arrow keys. Touch **OK** to save your changes or **SETP** to return to the Program Menu without saving.

The temperature is shown in Fahrenheit by default. To change units, select **UNIT** to change the display unit (Fahrenheit or Celsius)

Select **VOL** to change the beeper volume (Off, Low or High)

Reset Menu:

Touch **RSET** from the Manager Menu to open the Reset Menu.



There are several options for resetting: All, Options (All Options in the Program Menu), Food (All darkness for food items), and Errors (to clear the Error Log). Use the arrow keys to navigate. Touch the desired menu item to reset it.

Touch **RSET** again to be returned to the Manager Menu.



Daily Maintenance

The toaster requires a minimal amount of maintenance. Daily maintenance helps keep the toaster running smoothly and free of any excess buildup that comes from daily use and wear. These steps should be completed at the end of every day to ensure that the toaster maintains optimum efficiency.

The toaster will remain hot to the touch while it is cooling down. Personal injury and burns may result from touching the toaster before it is finished cooling down. Wear Heat Resistant Gloves during all cleaning processes.

Cleaning the Accessories and the Toaster

Push the Power Button to turn the toaster off.

The toaster will enter the cool down mode. The fan will continue to run. This cool down mode will shut the toaster down automatically when complete.

Wearing Heat Resistant Gloves, remove the following items from the toaster (refer to Figure 1):

- Bun Feeder
- Bun Chute
- Release Sheet

Wash the Bun Feeder and Bun Chute in a three compartment sink. Let air dry.

NOTICE: Do NOT wash any of the accessories in a Power Soak Machine or any other mechanical washer. Damage to the accessories may result. Wash all accessories by hand in the sink

Wipe down the outside of the toaster with a clean, sanitized towel dampened with non-corrosive cleaning solution.

Cleaning the Release Sheet

Remove the Bun Feeder and Release Sheet and inspect both sides of the Release sheet.

NOTICE: Replace the Release Sheet if it is overly worn, creased, or torn.

Lay the release sheet on a clean, flat, dry surface. Spray a multipurpose cleaner on a clean, dry towel.

Wipe the Release Sheet firmly from top to bottom over its entire surface.

Immediately repeat this procedure with a clean, dry towel dampened with water.

Wipe the entire Release Sheet with a clean towel dampened with sanitizer solution and allow to air dry.

Turn the Release Sheet over and repeat Steps 2 through 5 on the reverse side.

Allow Release Sheet to completely dry before installing.

Reinstall the Release Sheet, checking to make sure it is draped properly over the Platen.

NOTICE: Rotate the reversible Release Sheet from side to side daily to extend the life of the Release Sheet.

Cleaning the Conveyor Belts

Wear heat resistant gloves during the belt cleaning process to avoid risk of burns or cuts while cleaning.

NOTICE: Grill Cleaner is most effective when used while the toaster is still warm. Do NOT wait for the toaster to cool down completely before cleaning.

Face the front of the toaster. From the bottom of the Conveyor Cover Weldment, lift up and tilt the cover away from the toaster to expose the Conveyor Belt.

NOTICE: The conveyor belts will stop rotating “Cooling Mode” when the covers are open.

Spread a light coating of high temperature grill cleaner or degreaser on a non-scratch pad or clean towel.

Applying moderate pressure, scrub the metal slats side to side until clean.

NOTICE: There is a metal backing plate behind the conveyor to provide support for cleaning the slats. Only clean the conveyor while it is against the backing plate in the center to prevent damage to the unit.

Wipe the conveyor belt with another clean, towel sprayed with sanitizer solution. Let the belt air dry.

Close the front Conveyor Cover, making sure it locks into place.

Repeat steps 1-5 to clean the rear conveyor belt.



Clean Cooling Fan

To ensure proper airflow and help prevent the occurrence of fan fault or error messages the cooling fan intake vent and/or fan should be periodically cleaned.

1. Turn the toaster off and allow the toaster to complete its cool down.
2. Unplug the power cord.
3. Locate the Fan Baffle on the rear of the toaster. Pull the pin out and tilt the baffle up and away from the toaster to remove. (See Figure 3)

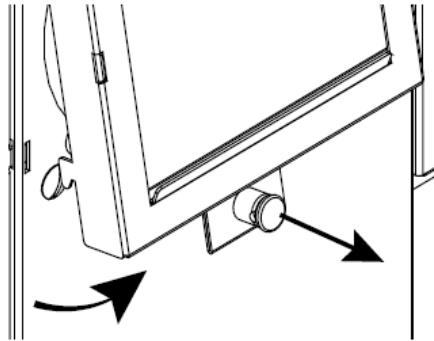


Figure 3. Fan Baffle Removal

Fan Baffle Removal

Wipe away any debris and lint from the fan baffle and air intake vent with a clean towel.

Reinstall Fan Baffle to toaster and plug in power cord. Return toaster to use.

NOTICE: It is very important to keep the cooling fan and electrical compartment clean and in top operational mode. Do not ignore these cleaning steps

Checking Conveyor Chains

This unit features an take-up system that automatically applies tension to the conveyor chain as it wears/ stretches. Over a period of time however, the take-up system can reach it's maximum level resulting in the conveyor chain eventually skipping on the sprockets. This is easily remedied by removing one or more conveyor links from each side of the belt.

1. Turn the toaster off and let it enter cooldown mode.
2. Open both conveyor covers. The belts will stop rotating .
3. Locate the bottom Idler shaft on the front and rear conveyors. If the belt lower than bottom sprocket a link(s) will need to be removed.
4. Close the conveyor covers and let the unit cool before proceeding. Unplug the power cord.
5. Remove the Bun Feeder
6. Remove the release sheet to avoid damaging it during the belt link replacement process.
7. Open both Conveyor Covers.
8. Disconnect the Conveyor Belt Chain by squeezing any two links together and unhooking both ends of one link (Figure 4). Needle-nose pliers may be used

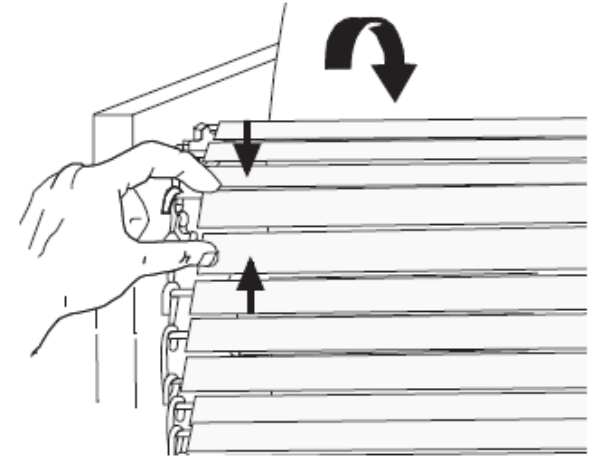


Figure 4. Remove Belt Link

9. To shorten a stretched Conveyor Belt Chain, remove one complete link from the chain.

NOTICE: The ends of the hooks must point down (Figure 4).

10. Wrap the Conveyor Belt Chain around the top and lower sprockets and connect by hooking both ends together.

NOTICE: Some pressure may need to be applied to the top idler shaft by pressing it down to provide more slack to the belt when reinstalling the conveyor belt chain.

BKT-2V Troubleshooting



ERROR CODE	ERROR	DESCRIPTION	CORRECTIVE ACTION
E101	HI-LIMIT	High-Limit is triggered.	Allow sufficient time (10-15 minutes) for the unit to cool down. Remove the Hi-Limit control cap at the rear of the unit. Press the Hi-Limit Reset button. Turn the unit on and test the unit by toasting some product. Check relay possible stuck closed
E117	OPEN PROBE	Thermocouple connection is open.	Check across thermocouple 2-10 Ohms , If thermocouple is ok, Replace board
E135	WARMUP TIME	The unit is taking too long to warm-up.	Check Relay intermediately opening and closing Check for .5-.7 DCV to relay 9-10 amps
E10	MOTOR COMM	Unit cannot communicate with motor.	Check wire harness connection
E2	ZERO CROSS	Internal control board error.	Cycle power if still continues replace board
E6	MEMORY	Memory chip error.	Cycle power if still continues replace board
E105	OVERTEMP	Temperature is 25°F over Set Point Temperature.	Check relay possible stuck closed
E111	UNDERTEMP	Unit drops 100°F below Set Point Temperature when in READY state.	Check Relay intermediately opening and closing Check for .5-.7 DCV to relay
E305	MOTOR SLOW	Motor speed drops below 75%	Check the conveyor belts & surrounding areas for any obstructions/jams. Possible motor issue
E300	MOTOR STOP	Motor Failure.	
E123	BOARD TEMP	Control Board is too hot.	Inspect the cooling fan on the back for operation and ensure it is clean. If needed, clean the cooling fan or replace.



ERROR	DESCRIPTION	CORRECTIVE ACTION
OPEN COVER	Conveyor cover isn't locked in place. Check conveyor covers	Inspect both conveyor covers and ensure that they are properly engaged. Magnet or Sensor Board or wiring could be issue
MOTOR LOAD	Motor speed drops below 90% for 5 seconds.	Check the conveyor belts & surrounding areas for any obstructions/jams.



Power Supply Board (7001959):

Controls the relay ,heater and fan also receives/sends input to/from Main Board.

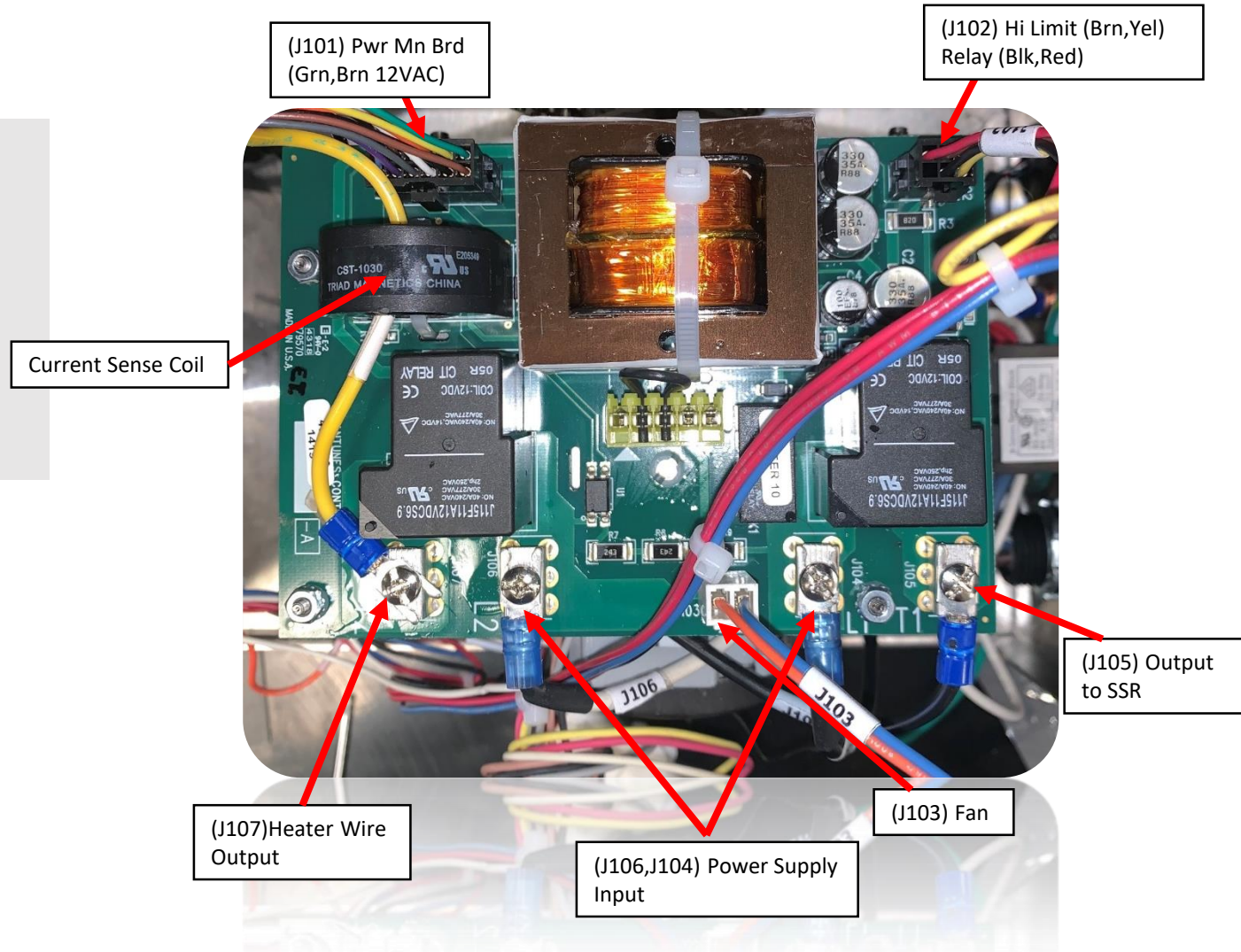
Testing Procedure:

If there is no display or function to unit :

1. Check for 208 VAC at the J106,J104 terminal from Black wire J104 to White wire # J106.
2. If 208 VAC not present check incoming power.
3. If 208 VAC present Verify if 12 VAC from Green and Brown wires on J101
Replace if test fails

Replacement Procedures:

1. Unplug unit from power supply.
2. Take picture of board before removal if possible.
3. Disconnect control board wiring,(Mark for reinstallation).
4. Pull/remove yellow wire from current sense coil.
5. Remove the mounting nuts & control board.
6. Install new control board & secure with the nuts.
7. Re-insert Yellow wire through current sense(flowing same direction).
8. Reinstall all wire connections according to Wiring diagram or photo
9. Test unit for proper operation.





Main Board (7001957):

Operates and controls the motor and platen heating circuits.

Testing Procedure:

1. Verify 12.0 -14.0 VAC Input is present at J6 Terminal across brown and green wire (see fig 1)

If NOT present must inspect the power supply board

If present must verify 15.0 – 20.0 VDC across red and brown near the left side of terminal.

* Note : Do not remove connector attached to the board when testing
Replace if fails

Replacement Procedures:

1. Disconnect control board wiring & remove thermocouples.
2. Remove the mounting nuts & control board.
3. Install new control board & secure with the nuts.
4. Reinstall the wiring & plug thermocouple onto control board.
5. Test unit for proper operation.

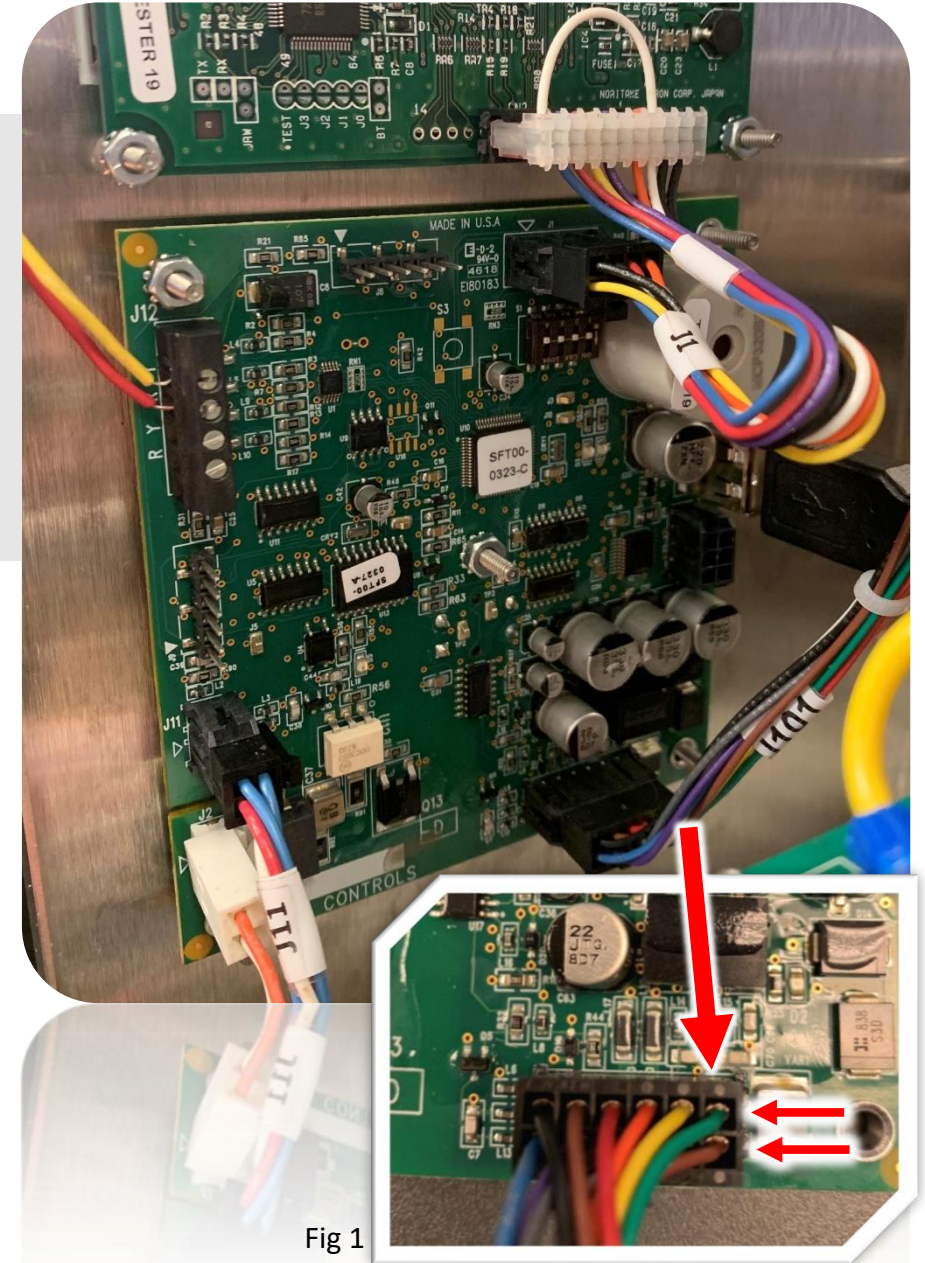
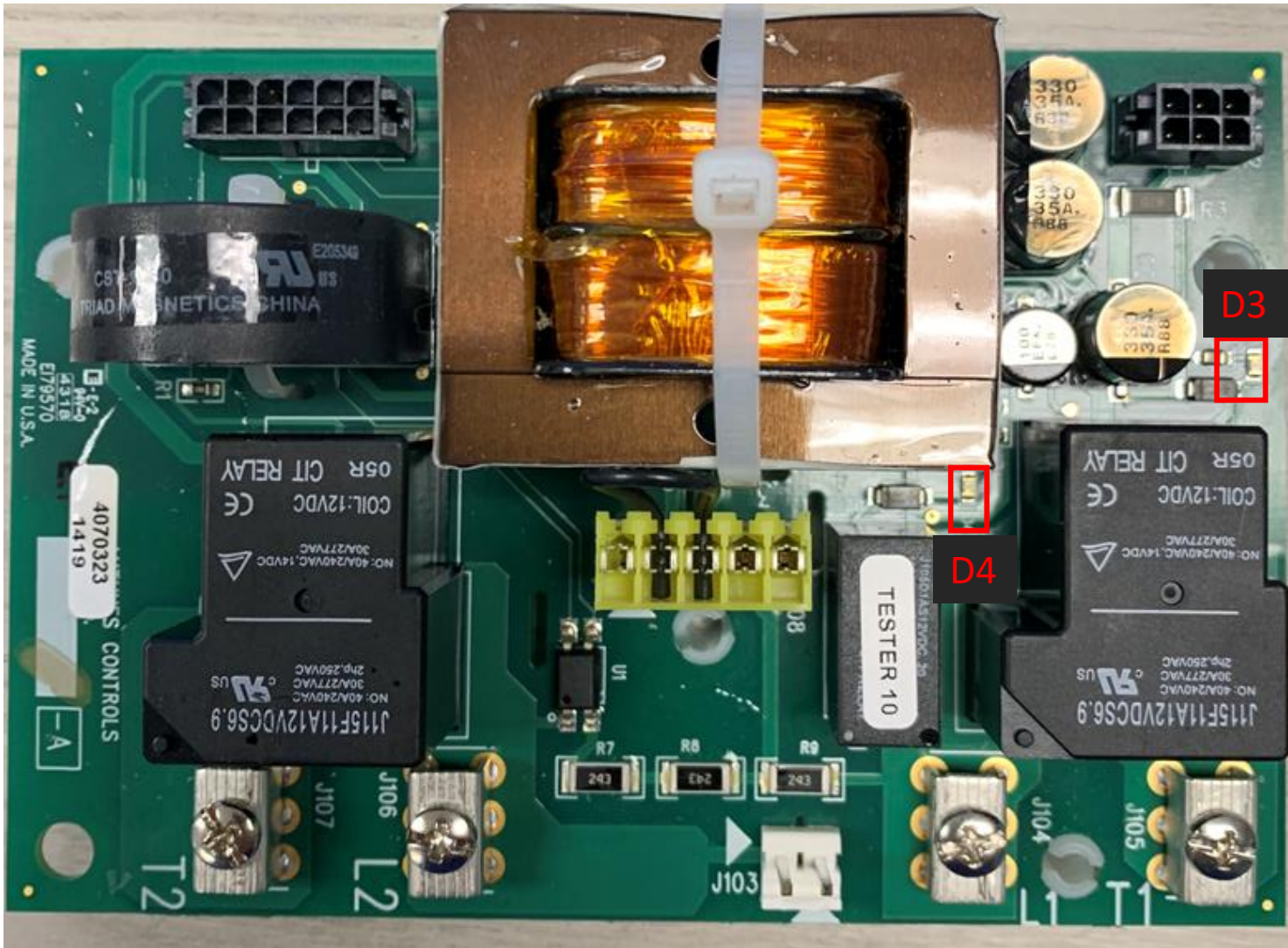
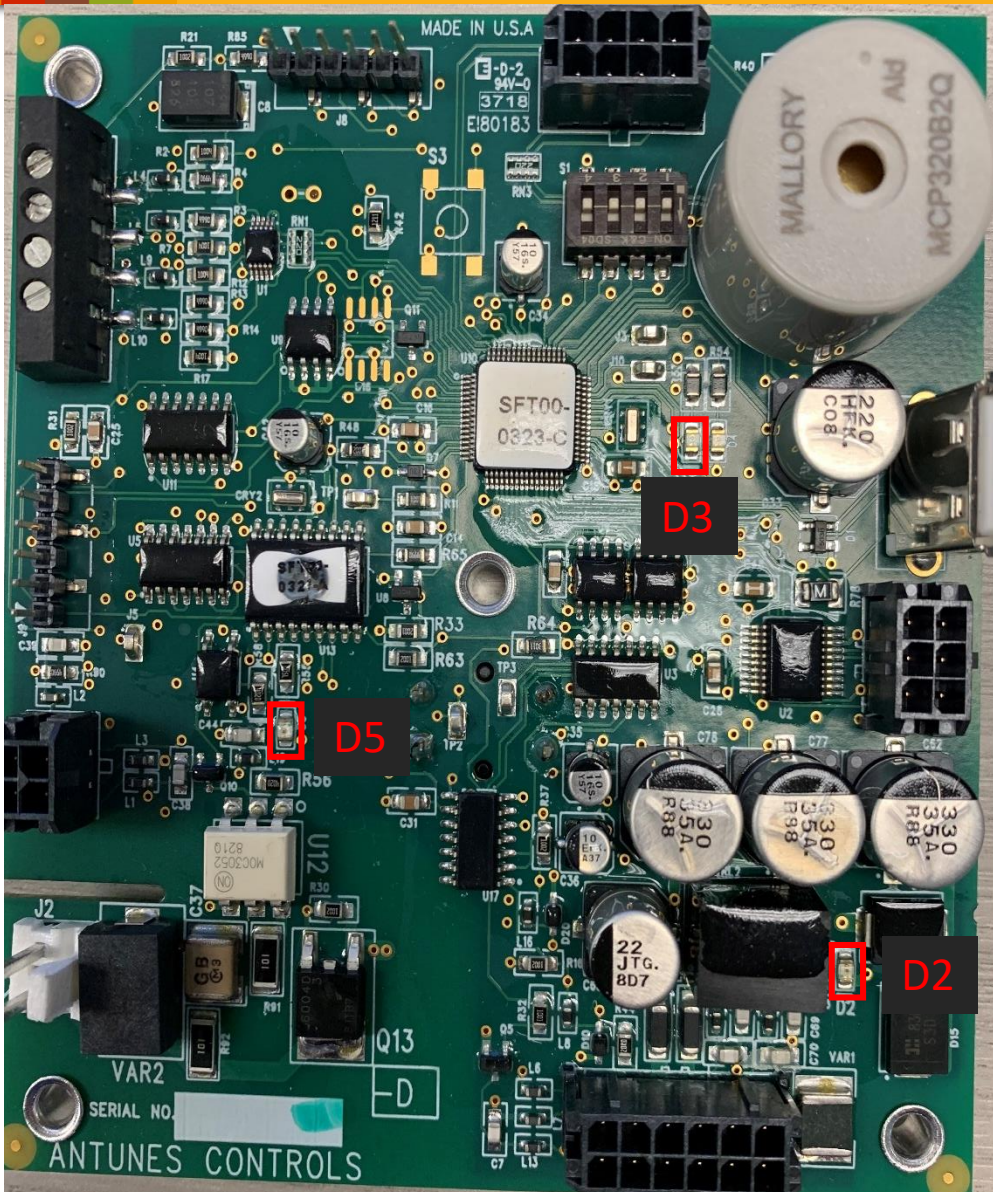


Fig 1



POWER SUPPLY BOARD

- Led D3:** When steadily lit, it means that the Hi-Limit and its wiring loop is closed, therefore it has continuity and that also both onboard mechanical relays (**K2** & **K3**) have been commanded to activate therefore, close their internal contacts to then transfer line voltage out of **J105 (T1)** & **J107 (T2)**.
- Led D4:** When steadily lit, it means that the platen temperature has reached 250 F (121 C) therefore, the onboard mechanical relay (**K1**) has been commanded to activate therefore, close its internal contacts so that it can complete the circuit by supplying **L1** voltage out of **J103** to the cooling fan and then the cooling fan should operate at this time. **NOTE: L2 voltage at J103 is a constant common line that goes directly to the fan as long as the power cord is plugged into an outlet.**



MAIN BOARD

- **Led D2:** When steadily lit (Normal), it means that the main board **J6** is receiving 12.0-14.0 VAC input from the Power Board **J101**. between Green & Brown wires located at the corner of wiring harness connector. It also means that the main board has internally rectified the voltage into **VDC** to operate other internal main board functions.
- **Led D3:** When blinking (Normal), it means that the primary micro-processor within the main board is functioning & executing its various internal functions.
- **Led D5:** When steadily lit (Normal), it means that the secondary micro-processor within the main board is functioning & executing its drive motor circuit functions & that it is communicating with the primary micro-processor



Type 'K' Thermocouple – (7001293):

Type 'K' Thermocouples consist of 2 wires, Red (-) and Yellow (+). The thermocouples plug into the **J12** Terminal block on the Main Board and are held in place with terminal block screws. The Thermocouple individually monitor the main Platen internal temperature, as temperatures rise the thermocouple creates a millivolt DC signal that is sent to the control board.

NOTE: At the Main Board, the thermocouple wires connect into a 4 port terminal block.

Testing Procedure:

Test the Thermocouple for ohms value:

1. Remove both thermocouple wires for the affected thermocouple from the terminal block on the Main Board to isolate it.
2. At room temperature (25°C), verify 2 – 3 ohms across the red to yellow wires.
3. Replace if fails.

To determine if platen is “overheating” or “under-heating” due to a faulty platen thermocouple:

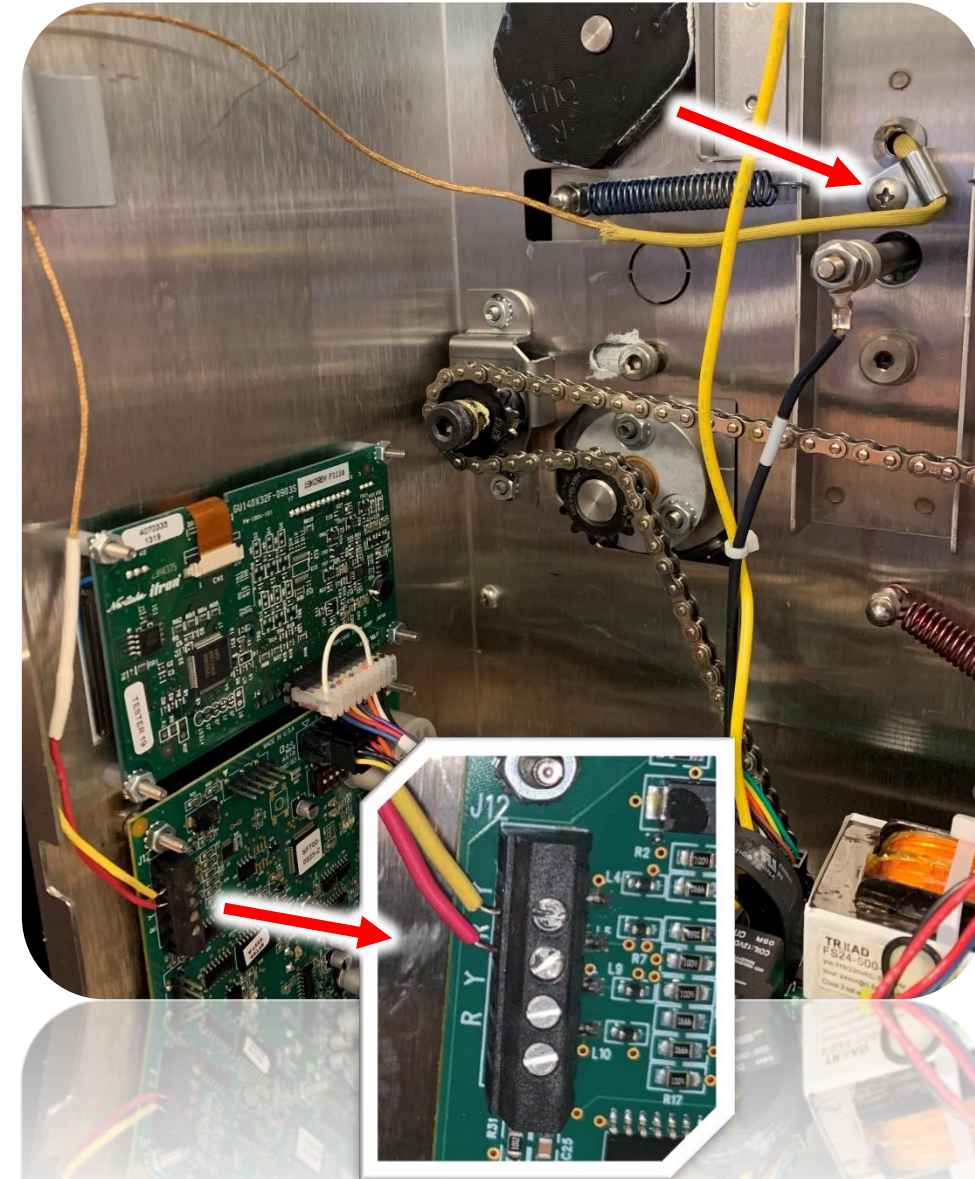
1. Preheat unit for 30 minutes then monitor the platen’s surface, or internal temperature.
2. Remove both thermocouple wires from the Main Board. Set your DMM to the VDC scale, 50-200 mV (millivolt) range.
3. Using the provided millivolt chart (page 26), determine if the thermocouple is generating the proper DC millivolts (=/- 1.0 millivolts) at the indicated temperature.

NOTE: If the unit is under-heating, the DC millivolts being generated will be much higher than what they should be. If the unit is overheating, the DC millivolts being generated will be much lower than what they should be.

4. Replace if fails.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Access the right side control compartment.
3. Remove the affected Thermocouple from the Main Board’s terminal block by loosening screws.
4. Remove the sensor bracket Phillip’s screws
5. Remove Thermocouple from platen hole.
6. Install new Thermocouple into platen hole.
7. Reinstall Red and yellow wires on J12 connector on Main board.





THERMOELECTRIC VOLTAGE IN MILLIVOLTS DC

TYPE “K” THERMOCOUPLE READINGS + OR – 1 MILLIVOLT DC

° F	° C	MV
300	148.8	6.1
310	154.4	6.3
320	160.0	6.5
330	165.5	6.7
340	171.1	6.9
350	176.6	7.2
360	182.2	7.4
370	187.7	7.6
380	193.3	7.8
390	198.8	8.0

° F	° C	MV
400	204.4	8.3
410	210.0	8.5
420	215.5	8.7
430	221.1	8.9
440	226.6	9.2
450	232.2	9.4
460	237.7	9.6
470	243.3	9.8
480	248.8	10.1
490	254.4	10.3

° F	° C	MV
500	260.0	10.5
510	265.5	10.7
520	271.1	11.0
530	276.6	11.2
540	282.2	11.4
550	287.7	11.7
560	293.3	11.9
570	298.8	12.1
580	304.4	12.3
590	310.0	12.6
600	315.5	12.8



Solid State Relay (7001143):

Single-Pole, Single-Throw Random Phase relay that is located in the electrical compartment. When input coils, (input '4/A2-' and '+3/A1') are supplied 0.3 - 0.5 VDC from the Control Board, it allows the line voltage contacts (output '1/L1' and '2/T1') to close.

Testing Procedure:

To determine if relay contacts are stuck closed (Platen heater is overheating):

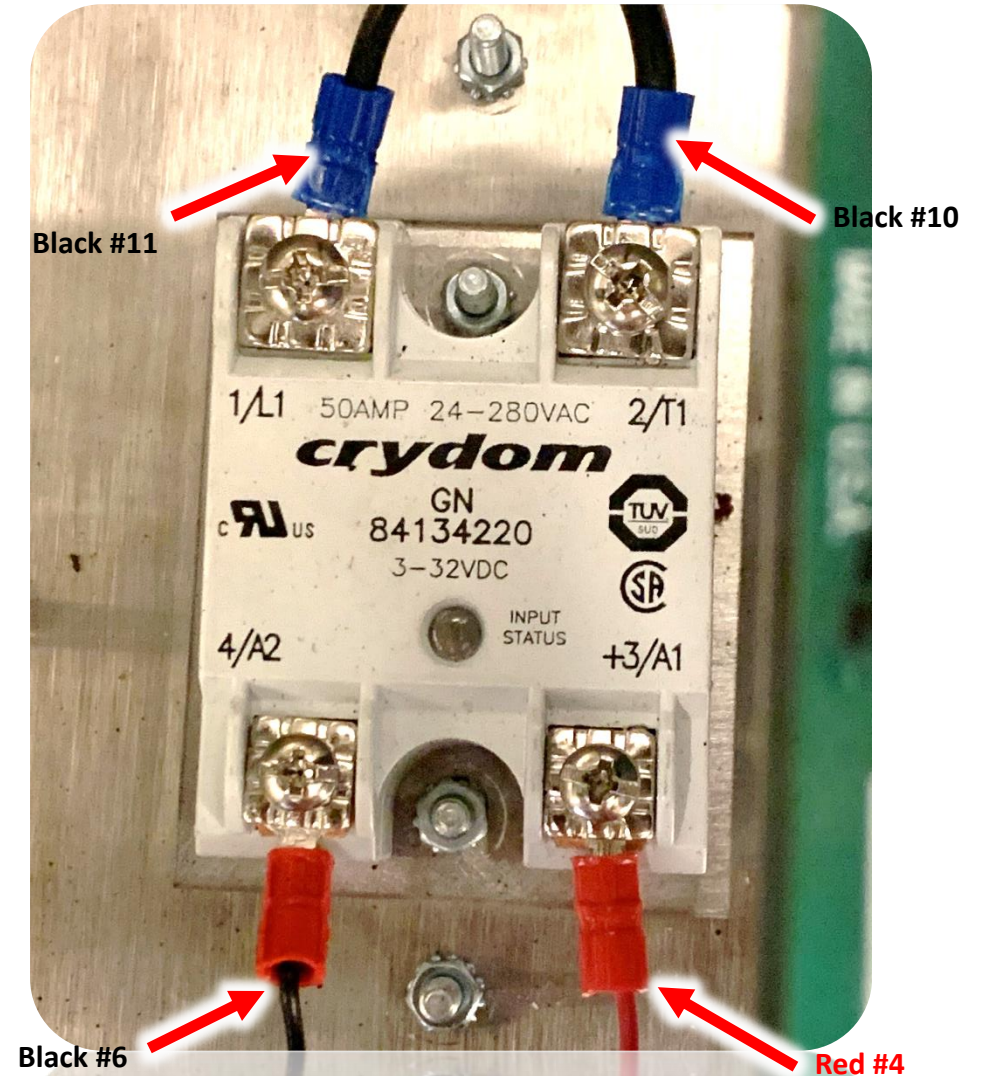
1. Disconnect the positive side of the VDC input (Red # 4, Black # 6) connector from the Input coil side of the relay. Clamp an amp meter onto black wire # 11 or onto yellow wire # 12. Is there any amp draw?
2. If Yes, replace the relay due to the contacts being stuck close.

To determine if relay contact are stuck open (Platen heater is not heating):

1. Ensure the relays are wired per the wiring diagram.
2. Is 0.3 -0.5 VDC present at the VDC input of the relay input (Black wire # 6 to red wire # 4)?
3. If yes, is line voltage (208 –240 VAC) present across relay terminals on either output 'A' and/or output 'B'?
4. If yes, Replace the relay due to the contact being stuck open.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Access the Right side control compartment.
3. Disconnect the relay wiring (mark for reinstallation).
4. Remove the mounting screws and relay.
5. Install new relay and secure with screws.
6. Reinstall wiring onto the relay.
7. Test unit for proper operation.





Main Platen (7001984 Platen Replacement Kit):

An aluminum grill surface casting that consists of one permanently integrated 1900 watt heating element. The default temperature for the platen is 565(F)/296(C)

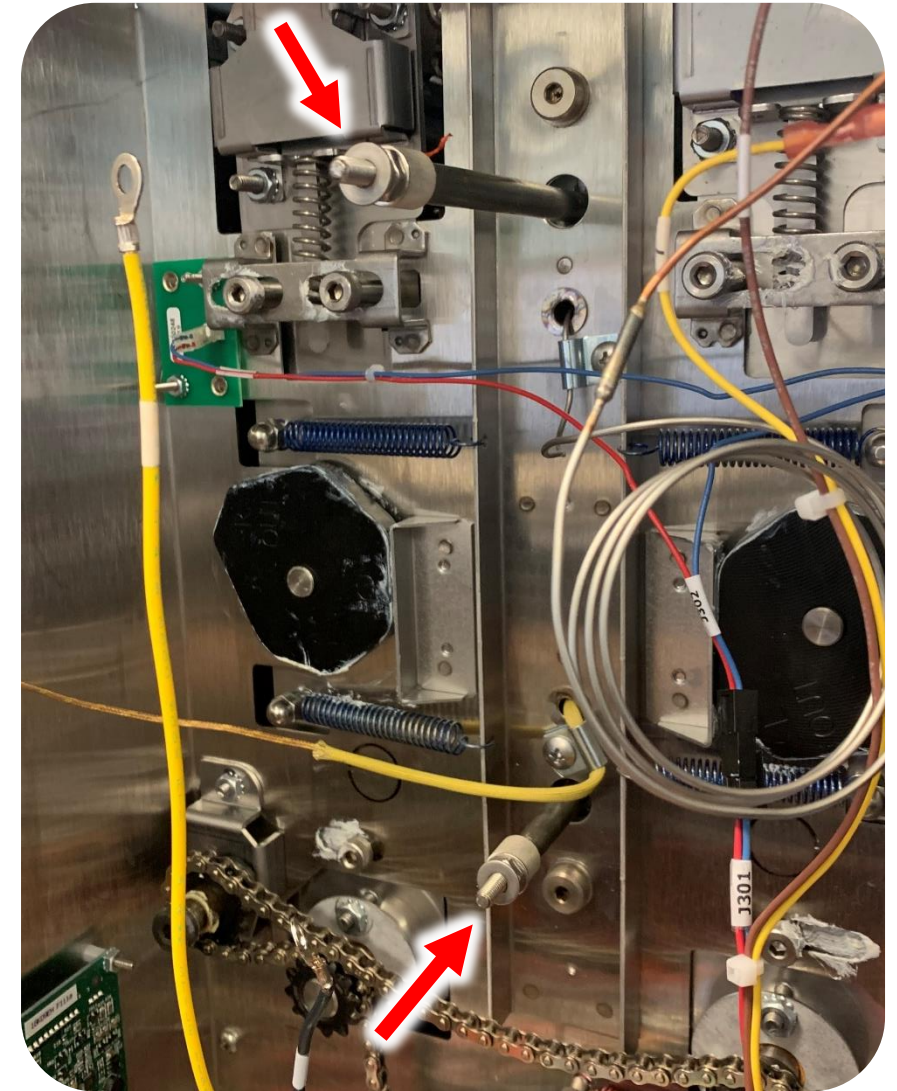
Testing Procedure:

Test Platen for continuity:

1. Disconnect wires from platen terminals to isolate the platen's internal element.
2. Check for resistance across the terminals, readings should be within 20Ω-23Ω.
3. Check resistance from each terminal to chassis ground using an ohm meter set to at least a 20MΩ scale. Reading should be at least 2-4MΩ or open.
4. Replace if either test fails the above.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Remove the right and left side panels.
3. Access the control side compartment.





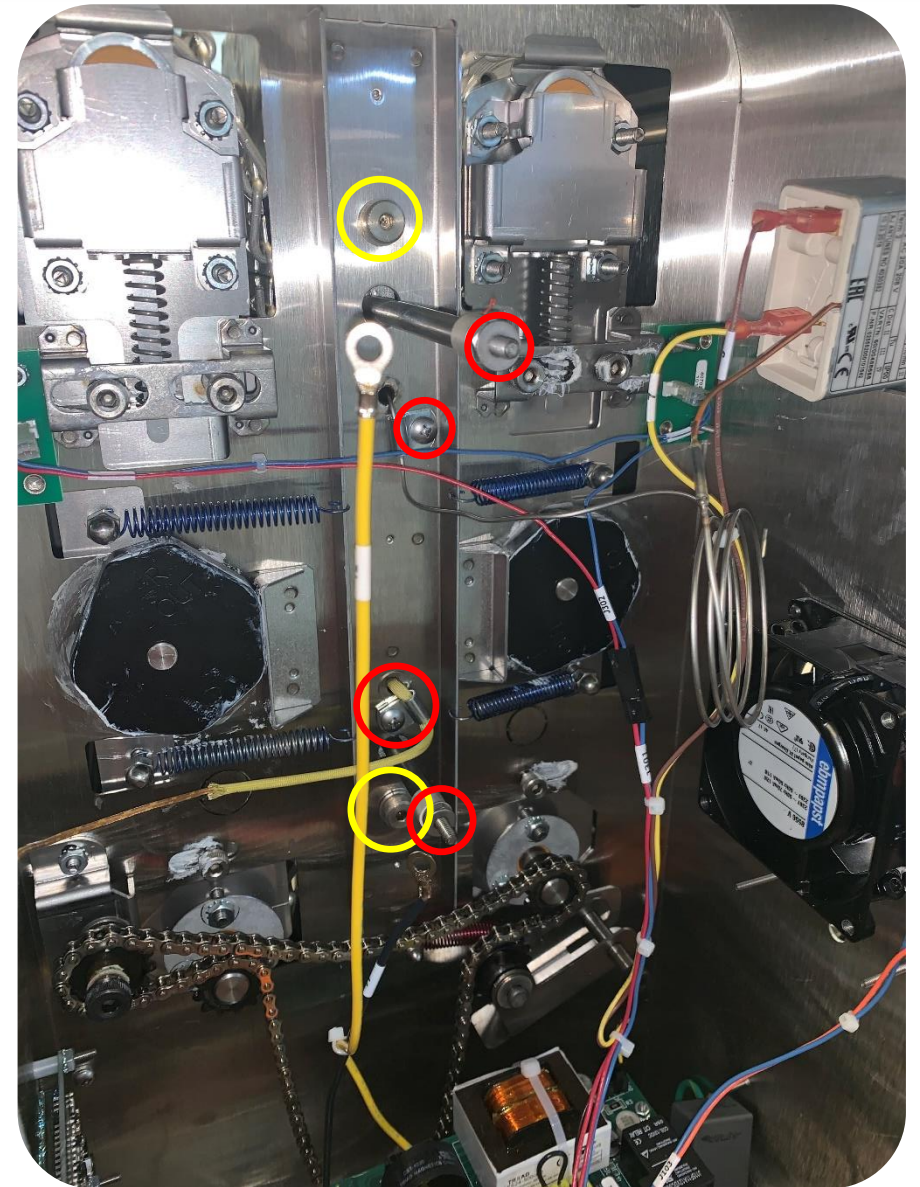
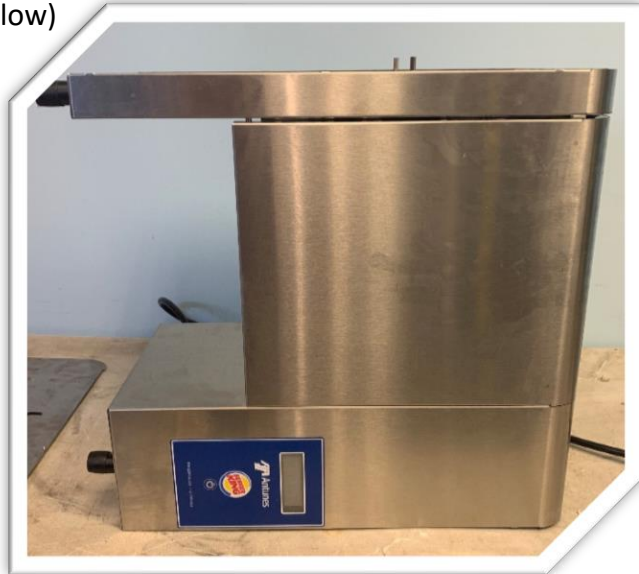
Main Platen (7001984 Platen Replacement Kit):

An aluminum grill surface casting that consists of one permanently integrated 1900 watt heating element. The default temperature for the platen is 565(F)/296(C)

Replacement Procedures:

4. Turn power OFF and unplug the power cord.
5. Remove left side panel.
6. Access the right side control compartment.
7. Remove the 2 -14 gauge wires from the 2 platen terminals of the platen being replaced.
8. Remove the thermocouple from the Platen being replaced.
9. Remove Hi-Limit capillary tubing from the Platen being replaced.
10. Remove the 2 (5/32) Shoulder Bolts (Location Highlighted in **YELLOW**)

11. Place unit on its side (as pictured below)



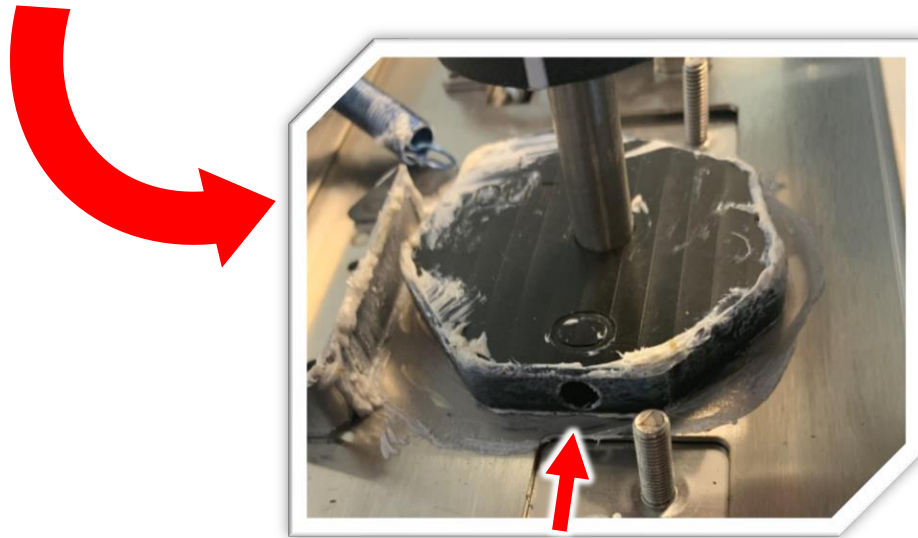


Main Platen (7001984 Platen Replacement Kit):

An aluminum grill surface casting that consists of one permanently integrated 1900 watt heating element. The default temperature for the platen is 565(F)/296(C)

Replacement Procedures:

12. Remove 4 Support Rod Screws. (Highlighted in **RED**)
13. Remove 6 (5/32) tensioner Shoulder Bolts (Highlighted in **GREEN**)
14. Remove 2 (5/32) Platen Shoulder Bolts (Highlighted in **YELLOW**)
15. Unhook the 4 Springs by unscrewing acorn nuts (3/8) and sliding spring off. (Highlighted in **BLUE**)
16. Using compression knob rotate Cams until screw set hole is visible loose set screw using (3/32) T-Handle Hex Key. (Repeat this step on other Compression Cam)





Main Platen (7001984 Platen Replacement Kit):

An aluminum grill surface casting that consists of one permanently integrated 1900 watt heating element. The default temperature for the platen is 565(F)/296(C)

Replacement Procedures:

17. Remove side housing weldment.
18. Lift the Platen out of toaster housing.
19. Follow the above procedures in reverse order for reinstallation.
20. Test unit for proper operation.





Bearings (7001033 Bearing 4 Pack):

There are eight high-temp Teflon bearings in the toaster. They are located at both ends of the two top idler shafts and both ends of the bottom drive shafts. They support the shafts & allow for smooth rotation.

Testing Procedure:

The High Temperature Teflon Bearings are usually trouble free; however if any of them appear to be physically damaged or worn they must be replaced.

Replacement Procedures:

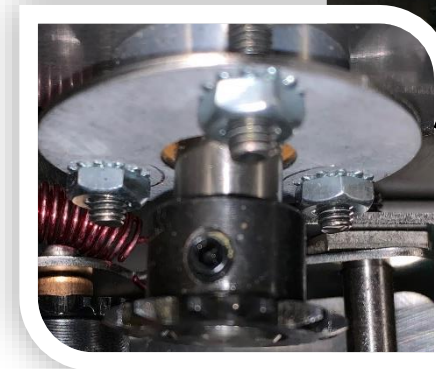
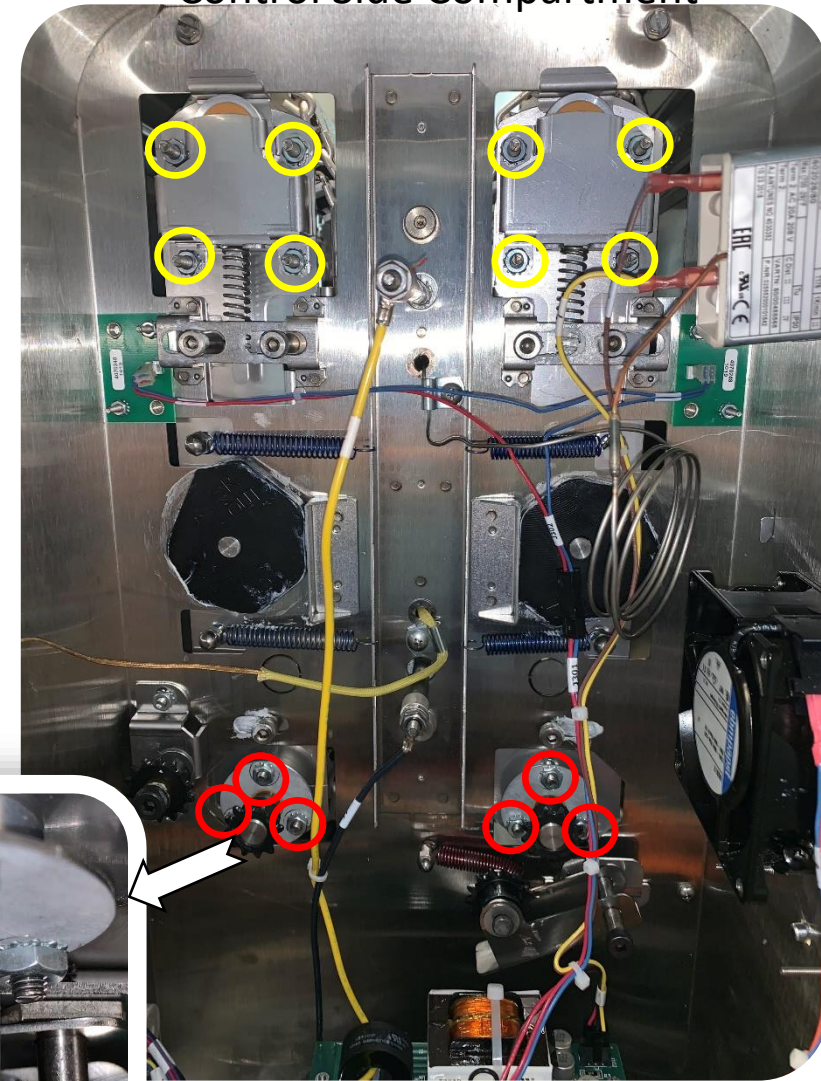
To Remove Drive Shaft Bearings from the Control side(Highlighted in **RED**)

1. Turn power OFF and unplug the power cord.
2. Access the side control compartment.
3. Push the Drive Chain Tensioner Sprocket Assembly down and remove the Drive Chain
4. Loosen both the Right and Left Drive Sprocket's (3/32) Allen set screw.
5. Remove Both Right and Left Drive Sprocket(s).
6. Remove the 6 (3/8) nuts from the bracket.
7. Remove the Bearing(s) from the drive shaft(s).
8. Follow the above procedures in reverse order for reinstallation.

To Remove Idler Shaft Bearings from the Control Side: (Highlighted in **Yellow**)

1. Turn power OFF and unplug the power cord.
2. Access the control side compartment.
3. Remove the 8 (3/8) nuts from the Bearing Tensioner Retainer and remove the Bearing retainer.
4. Remove the Bearing.
5. Follow the above procedures in reverse order for reinstallation.
8. Test unit for proper operation.

Control Side Compartment



* Drive chain removed for clarity



Bearings (7001033 Bearing 4 Pack):

There are eight high-temp Teflon bearings in the toaster. They are located at both ends of the two top idler shafts and both ends of the bottom drive shafts. They support the shafts & allow for smooth rotation.

To Remove Drive Shaft Bearings from the non-Control Side:(Highlighted in **RED**)

- 1.Turn power OFF and unplug the power cord.
- 2.Access the side non-control compartment.
- 3.Remove the 6 (3/8) nuts from the Bearing Retainer and remove the Bearing retainer.
- 4.Remove the Bearing.
- 5.Follow the above procedures in reverse order for reinstallation.
- 8.Test unit for proper operation.

To Remove Idler Shaft Bearings from the Non-Control Side: (Highlighted in **Yellow**)

- 1.Turn power OFF and unplug the power cord.
- 2.Access the control side compartment.
- 3.Remove the 8 (3/8) nuts from the Bearing Tensioner Retainer and remove the Bearing retainer.
- 4.Remove the Bearing.
- 5.Follow the above procedures in reverse order for reinstallation.
- 8.Test unit for proper operation.

Non-Control Side Compartment





Idler Shaft Tensioner Assembly:

Located in both the control and non-control compartment, the tensioners are spring loaded and will tighten the belts as they stretch to ensure proper tension. The tensioner assemblies also secure the ball bearings to the Idler Shafts. There are two Idler Shaft Tensioner Assemblies per Idler Shaft with four total.

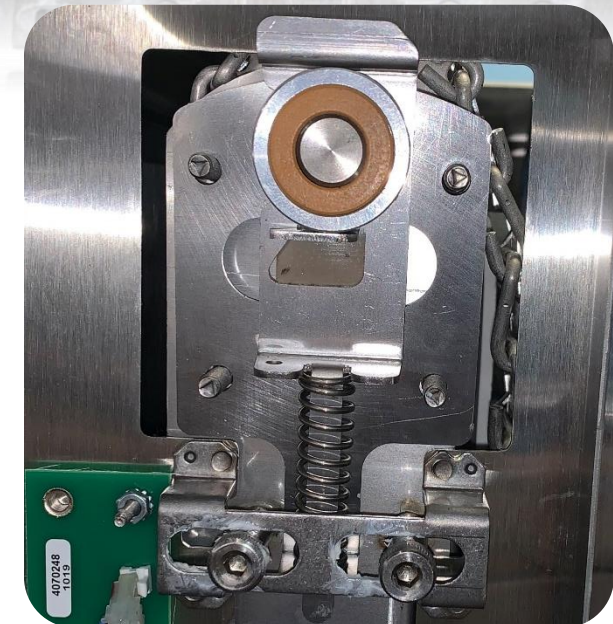
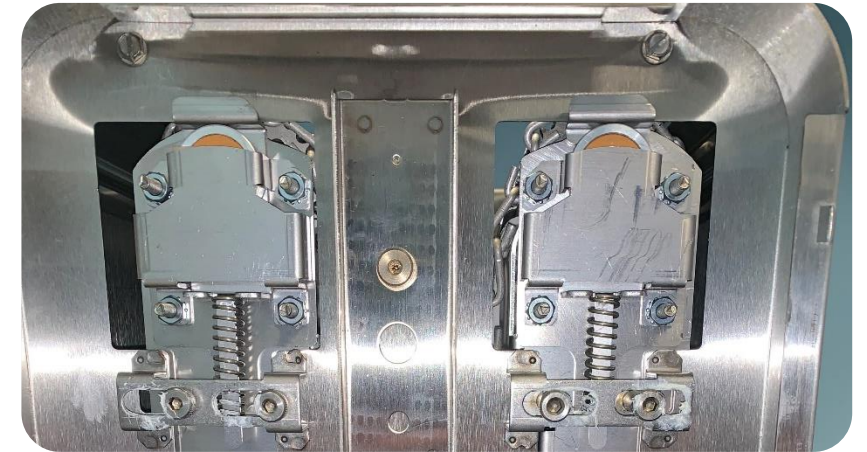


Testing Procedure:

1. The Idler Shaft Tensioner Assemblies are normally trouble free; however if they appear to be physically damaged or worn, they must be replaced

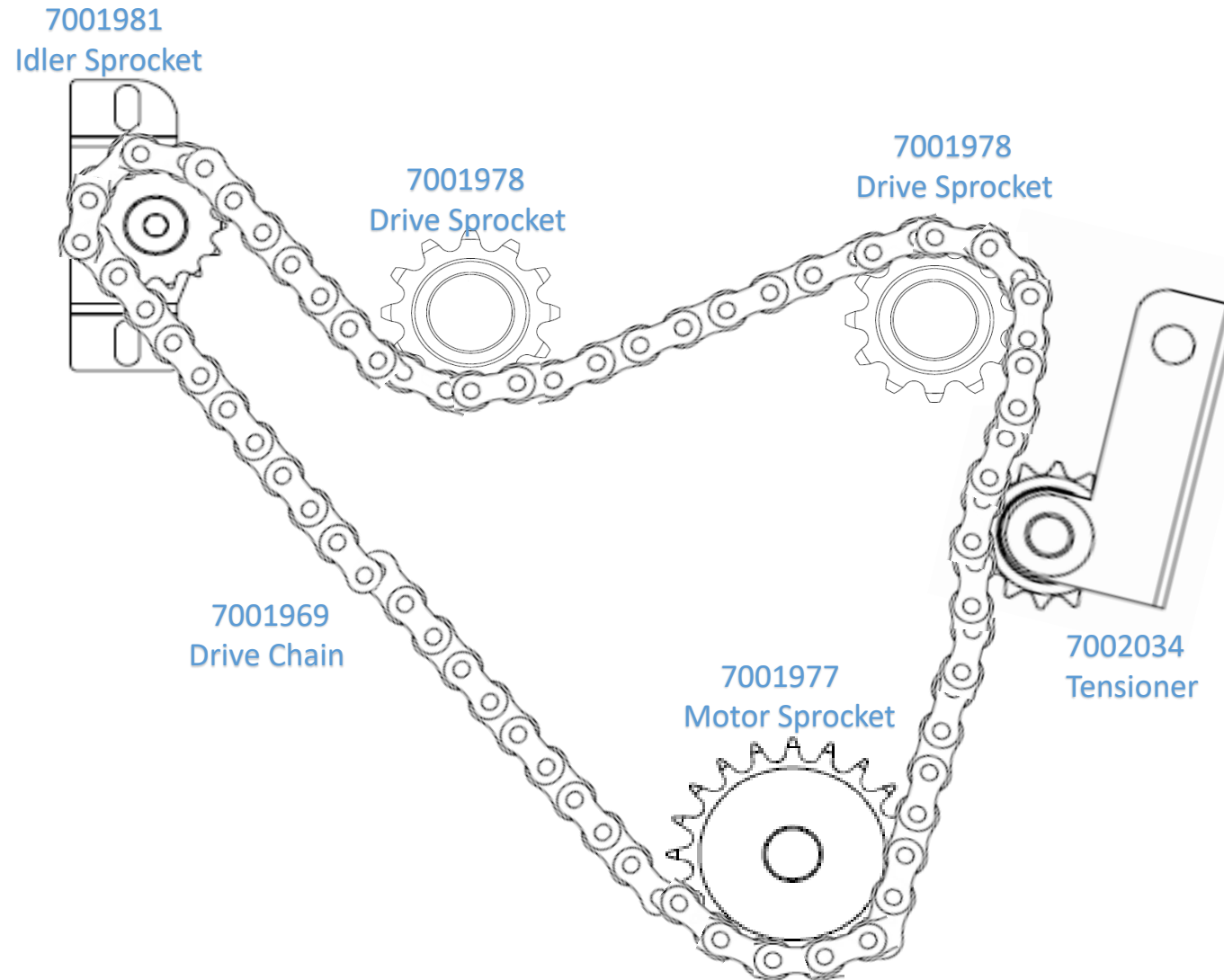
Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Access the control or non-control, correspondingly, side of the toaster.
3. Remove the 3/8" nuts holding the Bearing Retainer in place and remove the Bearing Retainer.
4. Remove the Bearing Bracket and Bearing Retainer Backing Plate.
5. Follow the above procedures in reverse order for reinstallation.
6. Test unit for proper operation.



*Shown without Bearing Retainer

BKT-2V Drive Chain Routing





Drive Chain (7001969):

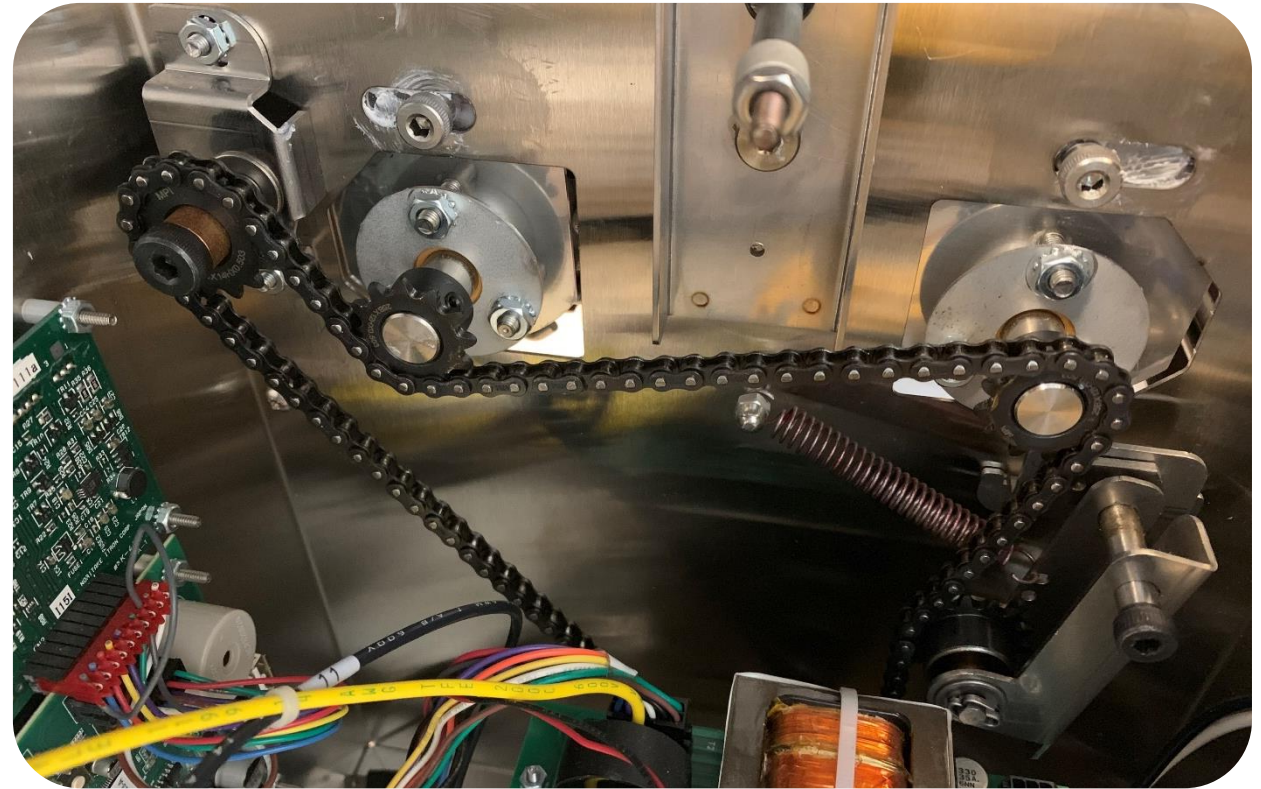
Located in the electrical compartment, consists of 106 Links. The Drive Chain is attached to the drive, idler, tensioner and motor sprockets and help drive the conveyors.

Testing Procedure:

1. The Drive Chain is normally trouble-free; however if it appears physically damaged or worn, it must be replaced.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Access the control side compartment.
3. Push/Pull the Drive Chain Tensioner Sprocket Assembly towards the rear of the toaster and remove the Drive Chain.
4. Follow the above procedures in reverse order for reinstallation.
5. Test unit for proper operation.





Idler Sprocket Assembly (7001981):

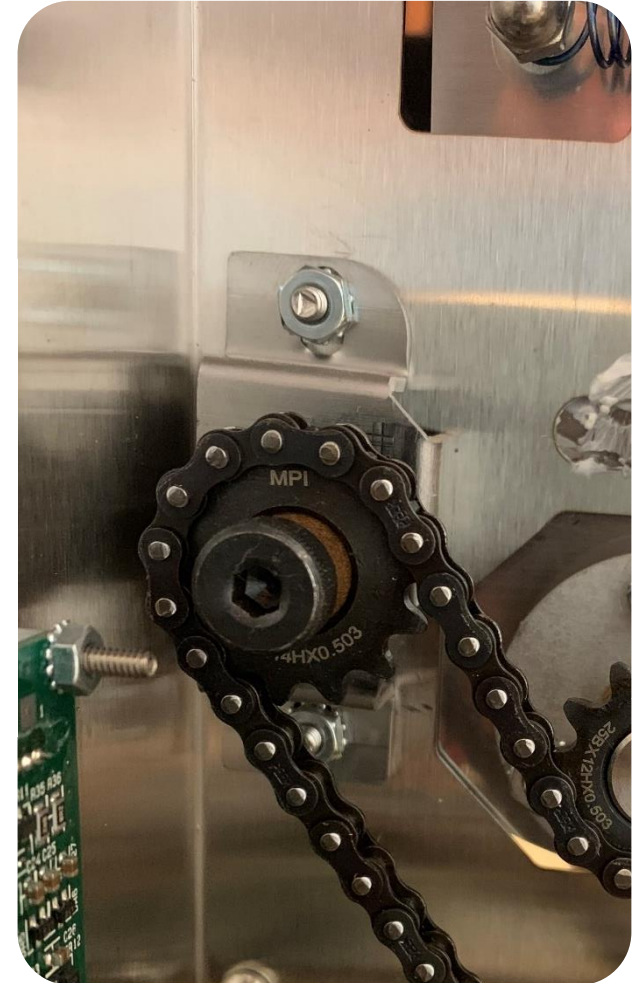
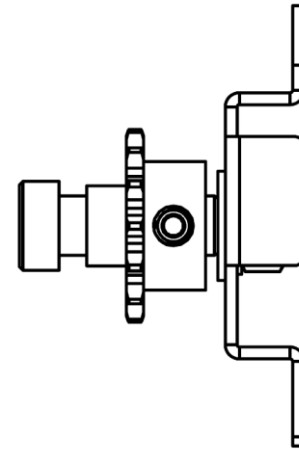
Located in the electrical compartment, The idler sprocket is attached to a bronze sleeve bushing and assists in guiding the drive chain.

Testing Procedure:

1. The Idler Sprocket Assembly is normally trouble-free; however if it appears physically damaged or worn, it must be replaced.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Access the side control compartment.
3. Push/Pull the Drive Chain Tensioner Sprocket Assembly towards the rear of the toaster and remove the Drive Chain.
4. Remove the 2 3/8" nuts from the bracket.
5. Slide the Idler Sprocket Assembly out of the control compartment
6. Follow the above procedures in reverse order for reinstallation.
7. Test unit for proper operation.





Front and Rear Drive Sprockets (7001978):

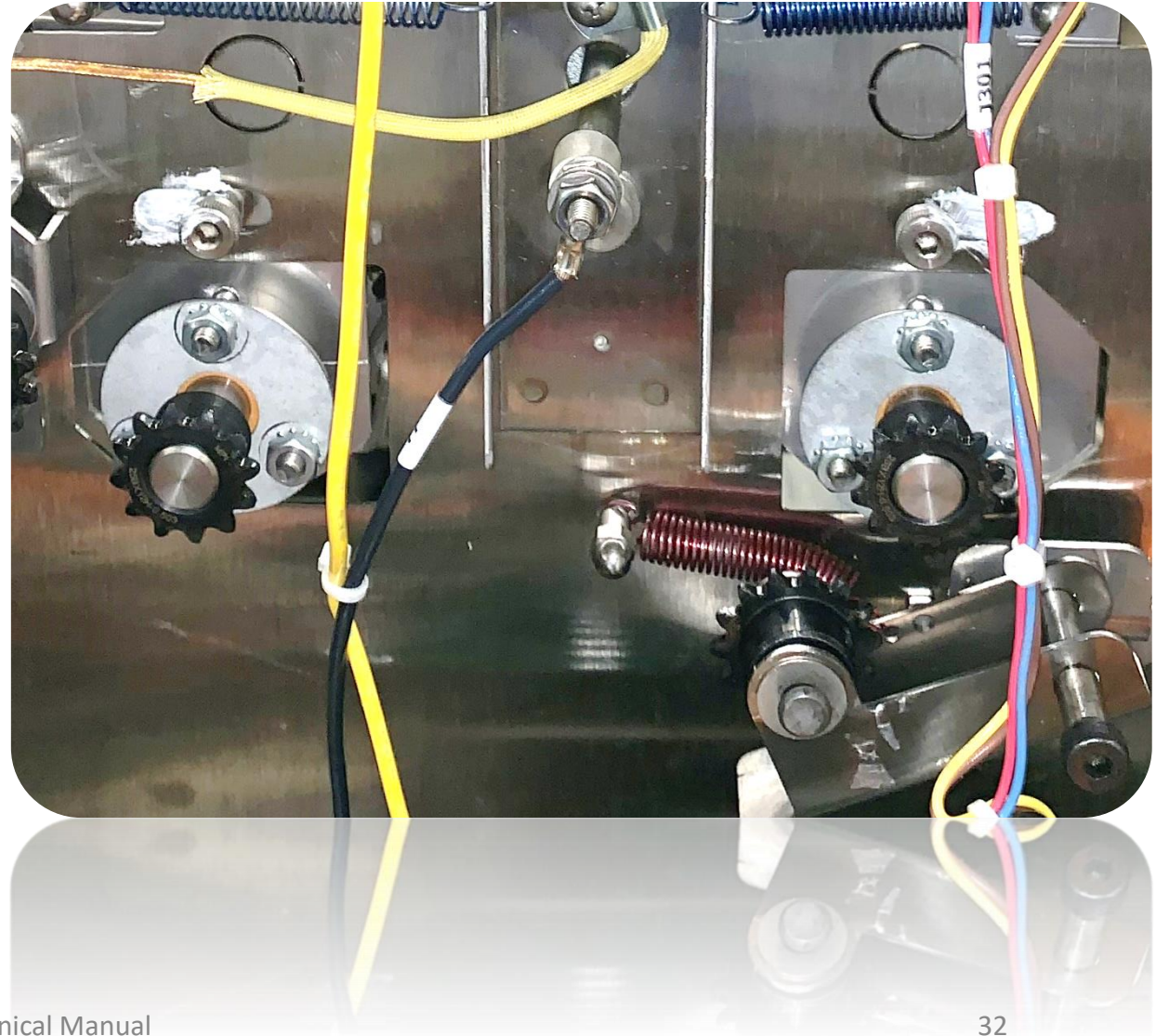
Located in the electrical compartment consists of 12 teeth and a 1/2" bore. The sprocket are secured to the end of the front and rear drive shafts. Both drive sprockets are driven by the drive chain and the drive motor.

Testing Procedure:

1. The Drive Sprockets are normally trouble-free; however if it appears physically damaged or worn, it must be replaced.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Access the side control compartment.
3. Push/Pull the Drive Chain Tensioner Sprocket Assembly towards the rear of the toaster and remove the Drive Chain
4. Loosen the Drive Sprocket 3/32" Allen set screw.
5. Remove the Drive Sprocket(s).
6. Follow the above procedures in reverse order for reinstallation.
8. Test unit for proper operation.





Drive Chain Tensioner (7002034):

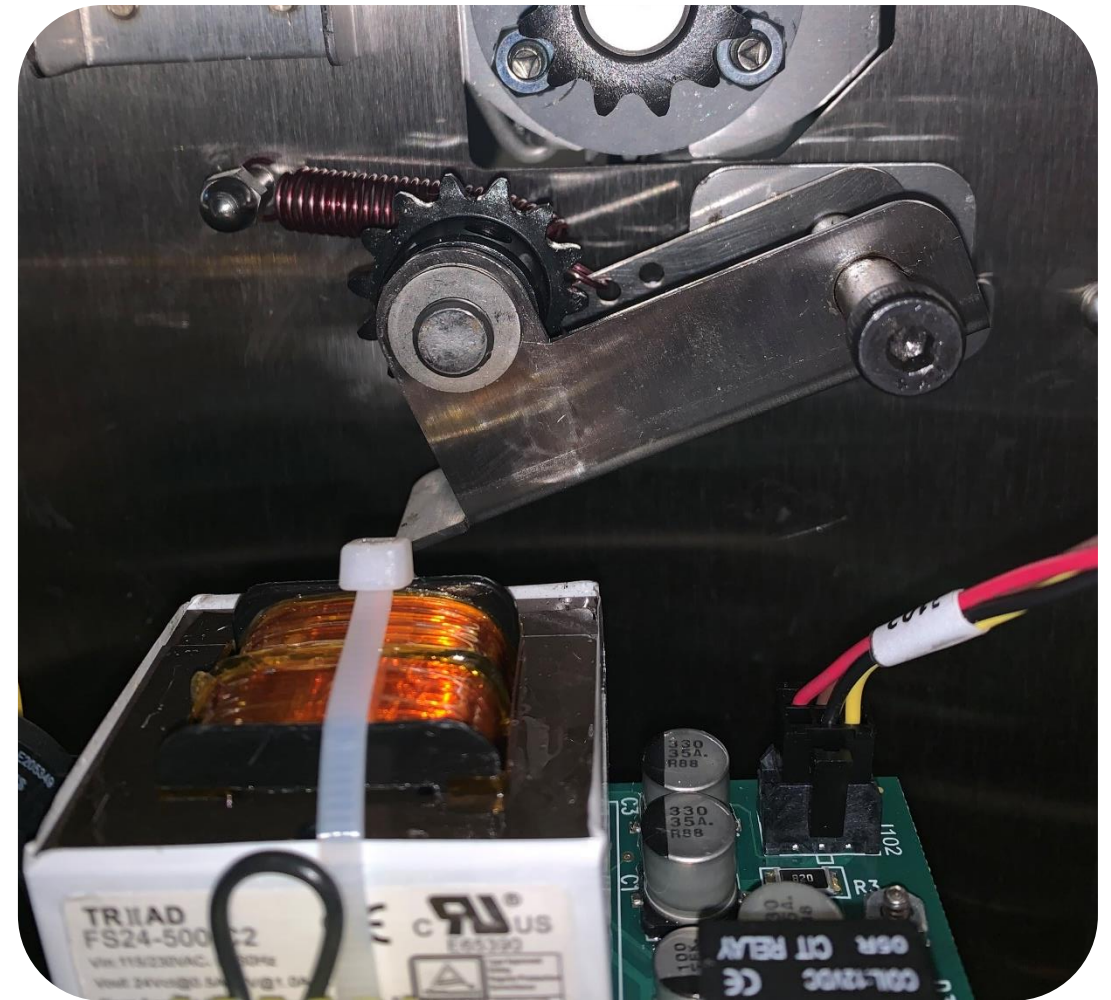
The idler sprocket is attached to a plate that uses a spring to add tension to drive chain.

Testing Procedure:

1. The Drive Chain Tensioner Sprocket Assembly is normally trouble-free; however if it appears physically damaged or worn it must be replaced.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Access the side control compartment.
3. Push/Pull the Drive Chain Tensioner Sprocket Assembly towards the rear of the toaster and remove the Drive Chain
4. Remove the 5/32" Allen Shoulder bolt holding the Drive Chain Tensioner Sprocket Assembly in place.
5. Remove the Drive Chain Tensioner Sprocket Assembly Spring secured behind the 5/16" Acorn Nut.
6. Slide the Drive Chain Tensioner Assembly out.
7. Follow the above procedures in reverse order for reinstallation.
8. Test unit for proper operation.





Idler Shaft Assembly (7001971):

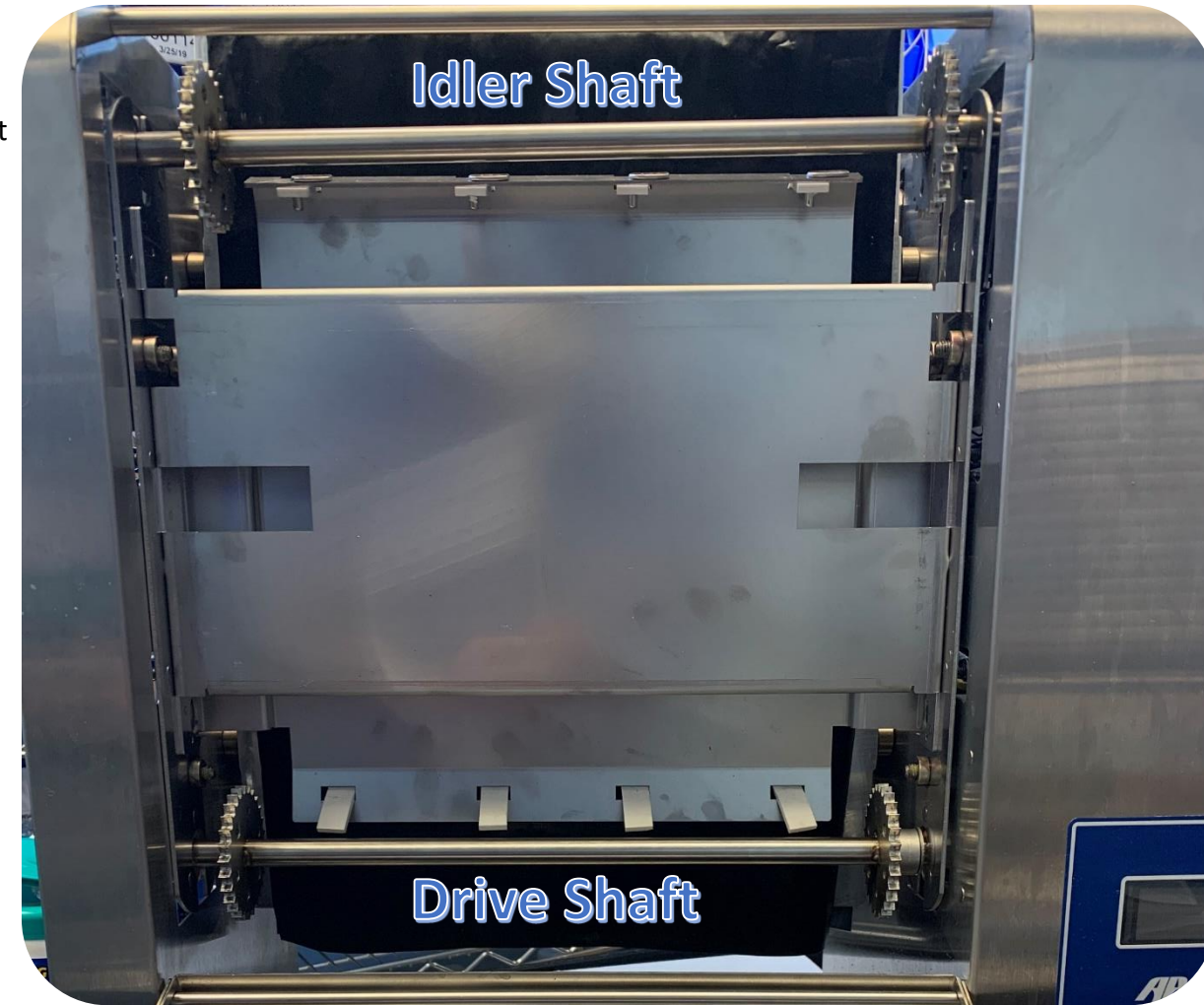
Two Idler Shafts Assemblies located at the Top Front and Top Rear of the units conveyors and assist with guiding the metal conveyor belts that are driving by the Drive shaft Assemblies. The Idler shaft Assemblies are spring loaded and be compressed when removing and installing links..

Testing Procedure:

1. The Idler Shaft Assemblies are normally trouble-free; however if either of the Idler Shaft Assemblies appear to be physically damaged or worn, the must be replaced.
*Note the Conveyor Sprockets are welded to shaft.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Unhook conveyor belt as described in maintenance “**Checking Conveyor Chains**”.
3. Access the control and non control side compartments.



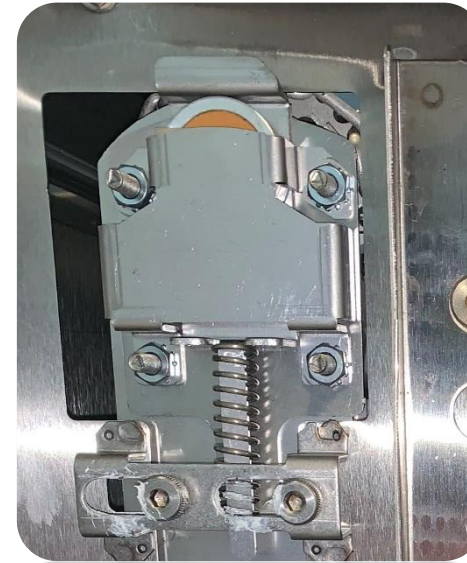
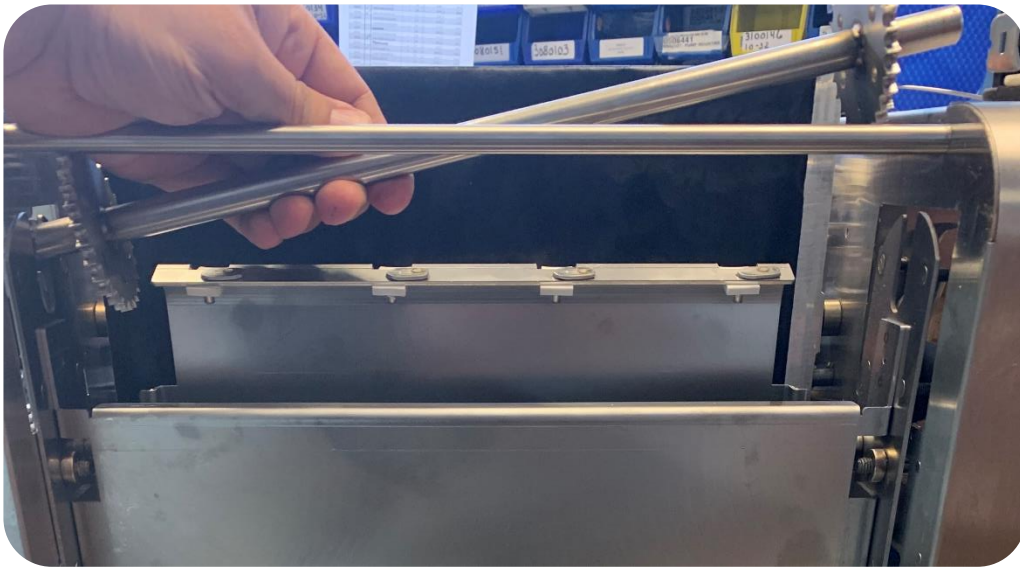


Idler Shaft Assembly (7001971):

Two Idler Shafts Assemblies located at the Top Front and Top Rear of the units conveyors and assist with guiding the metal conveyor belts that are driving by the Drive shaft Assemblies. The Idler shaft Assemblies are spring loaded and be compressed when removing and installing links..

Replacement Procedures:

6. Remove the 3/8 nuts holding the bearing retainer in place and remove the Bearing Retainer.
7. Remove the Bearing, Spring Guide, and Plate tensioner
8. Then Remove the Idler shaft out from the top of the unit.
9. Follow the above procedures in reverse order for reinstallation.
10. Test unit for proper operation.





Drive Shaft Assembly (7001970):

Two Drive Shafts Assemblies located at the Bottom Front and Bottom Rear of the units conveyors.

*Note Washer and Spacer come with Drive Shaft

Testing Procedure:

1. The Drive Shaft Assemblies are normally trouble-free; however if either of the Drive Shaft Assemblies appear to be physically damaged or worn, they must be replaced.
*Note the Conveyor Sprockets are welded to shaft.

Replacement Procedures:

1. Turn power OFF and unplug the power cord.
2. Unhook conveyor belt as described in maintenance “**Checking Conveyor Chains**”.
3. Access the control side compartment.
4. Remove the Drive Chain by pushing the Drive Chain Tension toward the rear of the toaster to remove tension.
5. Remove drive sprocket by loosening the 1/8” set screw.
6. Then remove the 3 3/8” nuts holding the Bearing Retainer.
7. Access the non control side compartment.
8. Remove the 3 3/8” nuts holding the Bearing Retainer in place and remove the Bearing Retainer and Remove the Bearing.



CONTROL SIDE



NON CONTROL SIDE





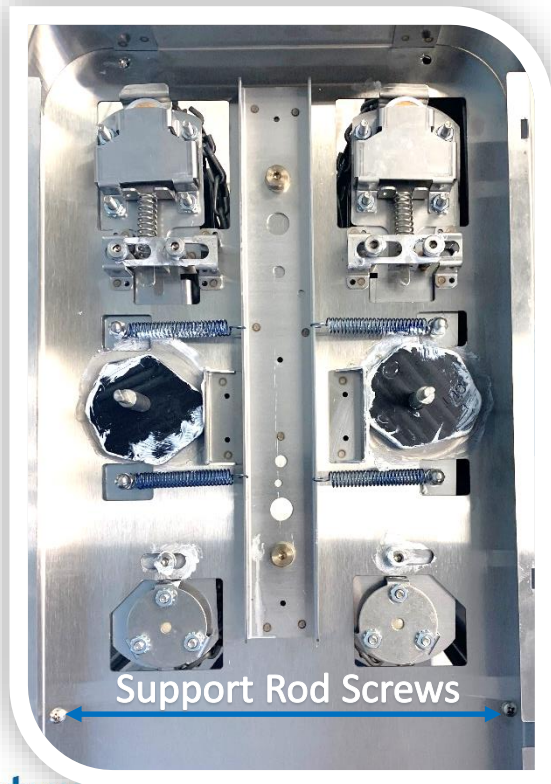
Drive Shaft Assembly (7001970):

Two Drive Shafts Assemblies located at the Bottom Front and Bottom Rear of the units conveyors.

*Note Washer and Spacer come with Drive Shaft

Replacement Procedures:

9. Remove support rod screw to provide extra clearance.
10. Remove Drive shaft from bottom of unit.
11. Follow the above procedures in reverse order for reinstallation





Motor (7001041):

Testing Procedure:

Testing Motor Tachometer: (Use an ohmmeter set to at least a 20M scale)

1. Disconnect the white Molex connector to isolate the motor.
2. Check resistance between the red, white, & yellow wires
Readings should be High Mega Ω or open/infinity if not replace motor.

Testing Motor Windings:

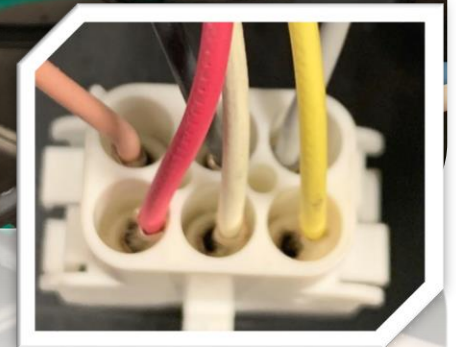
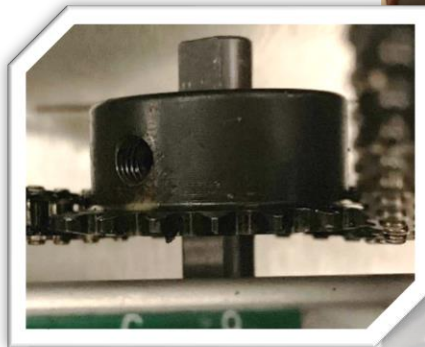
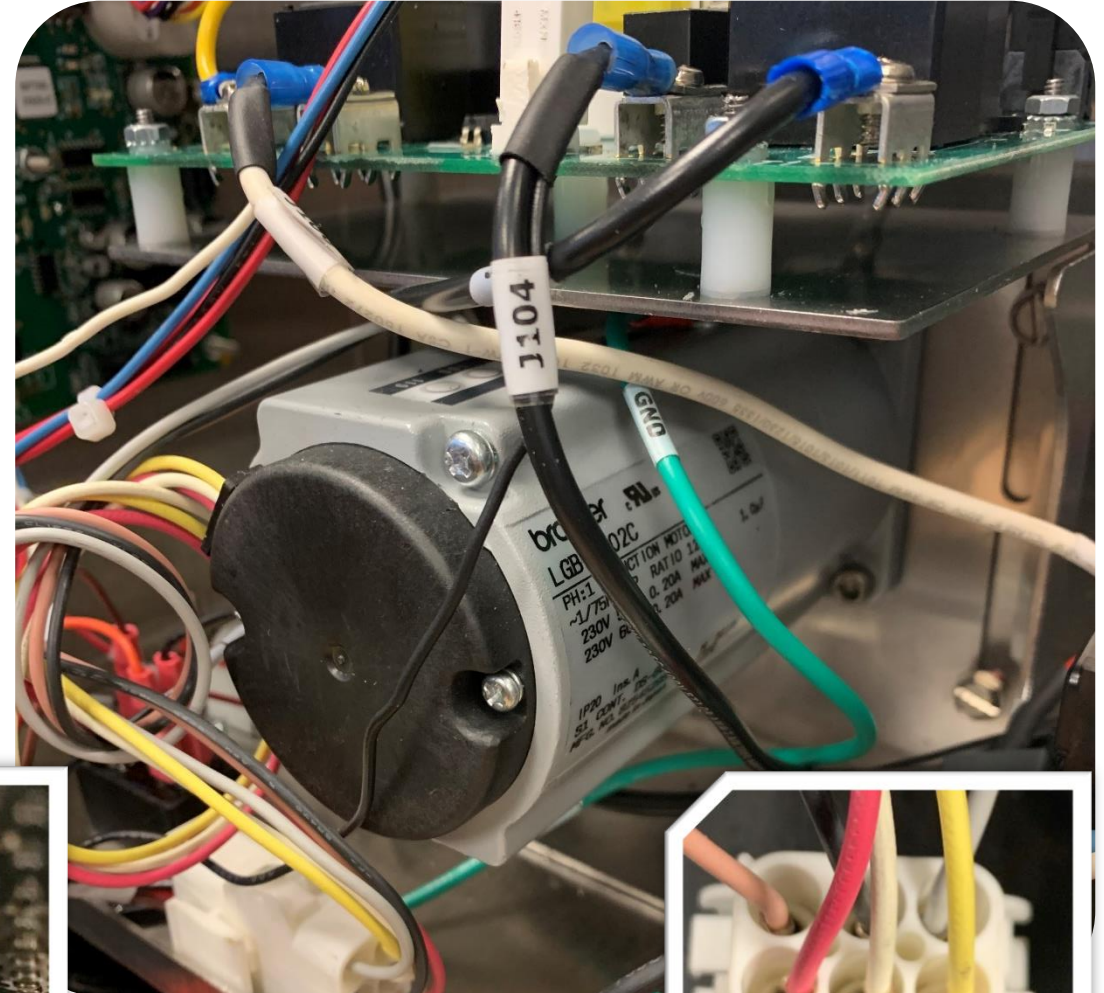
1. Disconnect the white Molex connector to isolate the motor
2. Verify resistance: between gray wire to black, gray wire to brown should be 320-360 Ω . Black to brown should be 680-720 Ω .

Testing Motor with power applied:

1. Does the motor receive approximately 70-130V between the brown & black wire?
2. If yes and motor does not turn, replace motor.

Replacement Procedures :

1. Turn power OFF & unplug the power cord.
2. Access the side control compartment.
3. Disconnect the white Molex connector.
4. Remove the 4 nuts on bracket below motor.
5. Loosen the 1/8 Allen on motor sprocket.
6. Remove the 4 Allen screws securing the motor to its mounting plate.
7. Remove the motor.
8. Follow the above procedures in reverse order for reinstallation.
9. Test unit for proper operation.





Axial Cooling Fan (7001440):

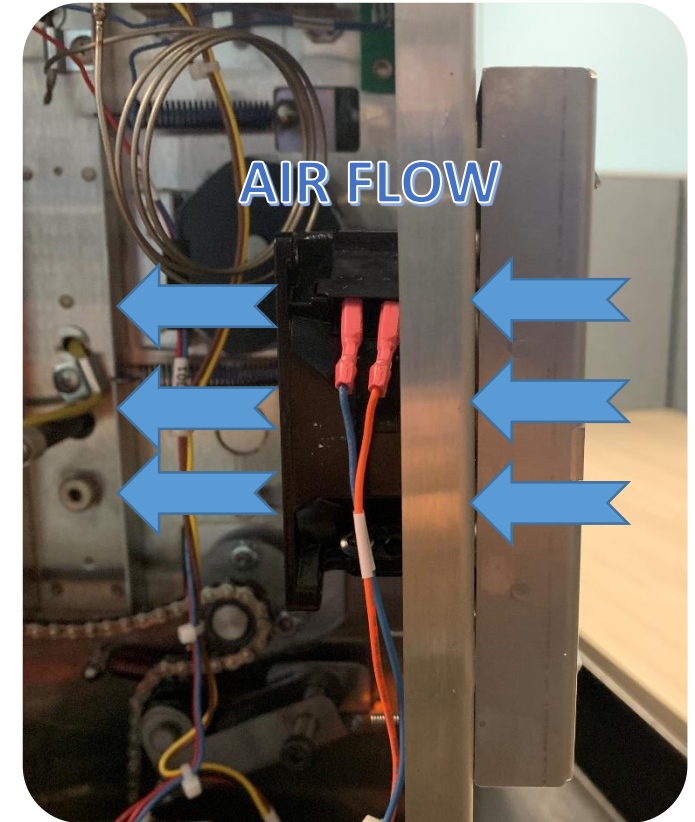
There is one 230VAC 50/60Hz intake fan, it is located at the back of the unit and blows air in. It's main purpose is to provide continuous airflow maintaining a cool electrical compartment.

Testing Procedure:

1. Disconnect wires to isolate fan coil and verify 0.8k Ω to 1.2k Ω across its terminals.
2. Replace if fails test.

Replacement Procedures:

1. Turn off power and unplug the power cord.
2. Access the control compartment.
3. Disconnect fan wires
4. Remove Fan Baffle (7001968).
5. Remove fan guard.
6. Remove the four fan mounting screws and the fan.
7. Follow the above procedures in reverse order for installation.
8. Test unit for proper operation.





Varistor Board (7001528):

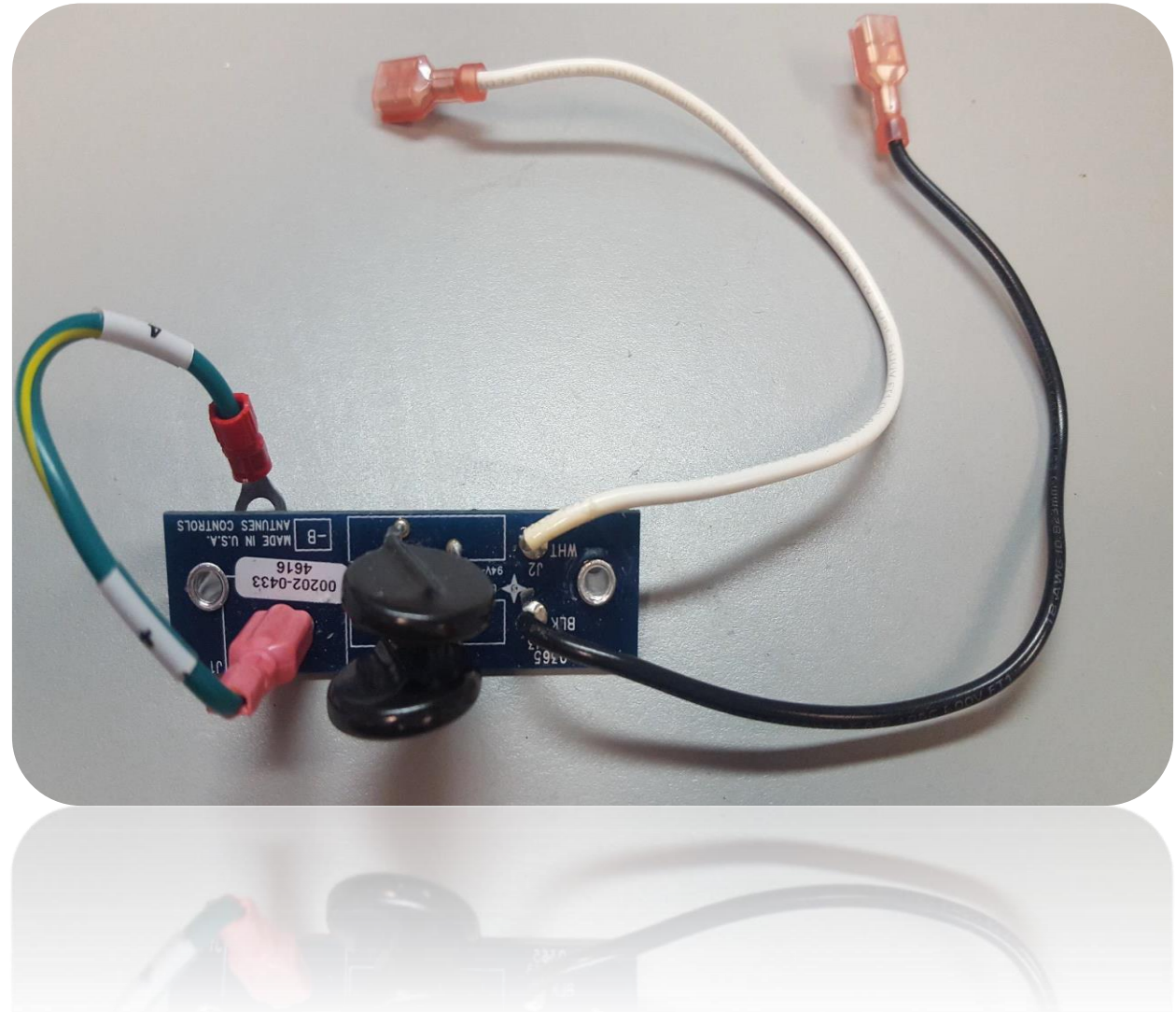
A circuit board consisting of multiple varistors used to filter electrical noise.

Testing Procedure:

1. The MOV Board is usually trouble free; however if it appears discolored or damaged, it must be replaced.

Replacement Procedures:

1. Turn power OFF & unplug power cord.
2. Access the Main Electrical Control Compartment.
3. Remove the black wire from Line 1 side of the terminal block and the white wire from Neutral of terminal block from the Varistor Board.
4. Remove the two ¼" nuts that secure the Varistor Board.
5. Remove the Varistor Board from the unit.
6. Follow the above procedures in reverse order for reinstallation.
7. Test unit for proper operation.





Front and Rear Conveyor Covers (Front 7001986, Rear 7001985):

There are two cover assemblies used per toaster. The purpose is to shield the rotating metal slate conveyors. one Actuator switch on each door that will line up with Sensor board to indicate if the covers are closed fully.

Testing Procedure:

1. The conveyor cover assemblies are generally trouble free however, if they are physically damaged, distorted, they must be replaced.
- * Note if Actuator switch is damaged or missing entire cover will need to be replaced as they are welded in place

Replacement Procedures:

1. Turn power OFF & unplug power cord.
2. Access the Control and non Control Side compartments .
3. Find Support Rod Screws and remove .
4. Remove Conveyor cover from unit .
5. Follow the above procedures in reverse order for reinstallation.
6. Test unit for proper operation.





Door Sensor Board (7001964):

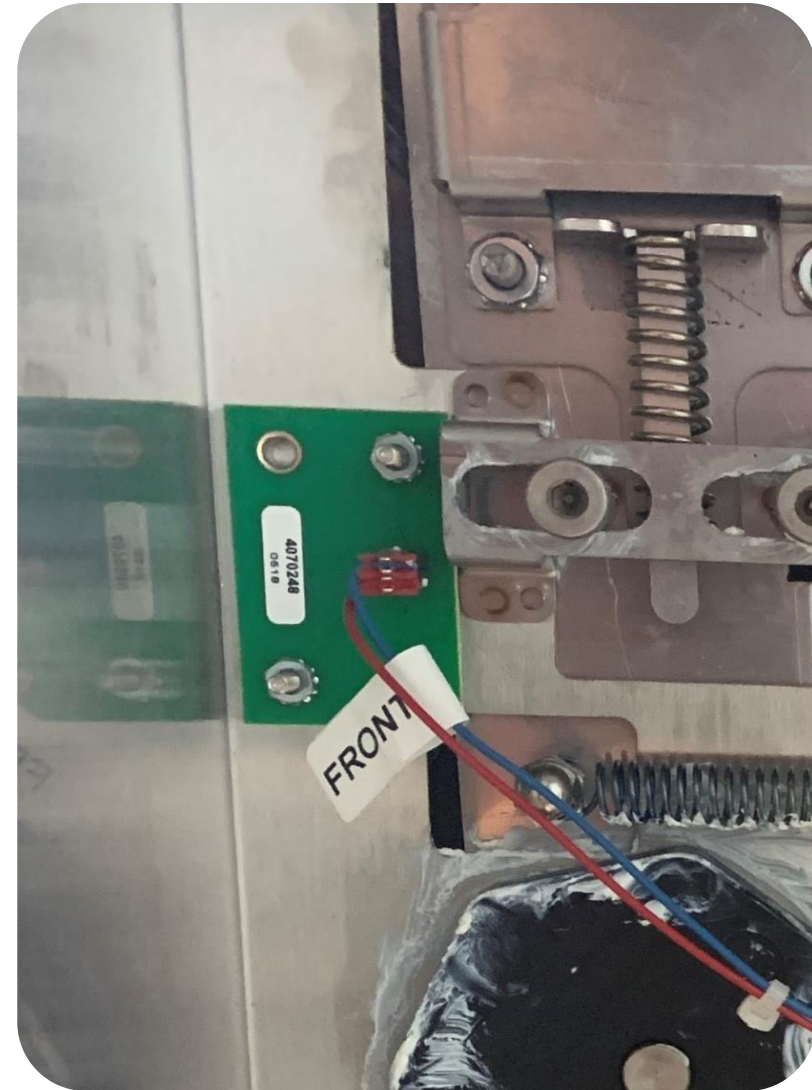
There are two Door Sensors used per toaster. The purpose is to read the Actuator switch on the door and if the door is open the conveyors will stop rotating for cleaning or removing a link.

Testing Procedure:

1. Disconnect the wires on Sensor board
2. Make sure door is closed completely and the Actuator switch on the door is in line with Sensor Board.
3. Verify continuity across the terminals.

Replacement Procedures:

1. Turn power OFF & unplug power cord.
2. Access the Main Electrical Control Compartment.
3. Disconnect wire harness on board.
4. Remove the two ¼" nuts that secure the Sensor board.
5. Remove the Sensor Board from the unit.
6. Follow the above procedures in reverse order for reinstallation.
7. Test unit for proper operation.





Twist Lock L6-30P Power Cord (0700479)

(MFG #9210130 Only):

30A, 250V

IEC-309 Power Cord (0700437)

(MFG #9210131 Only):

16A, 220-250V

Testing Procedure:

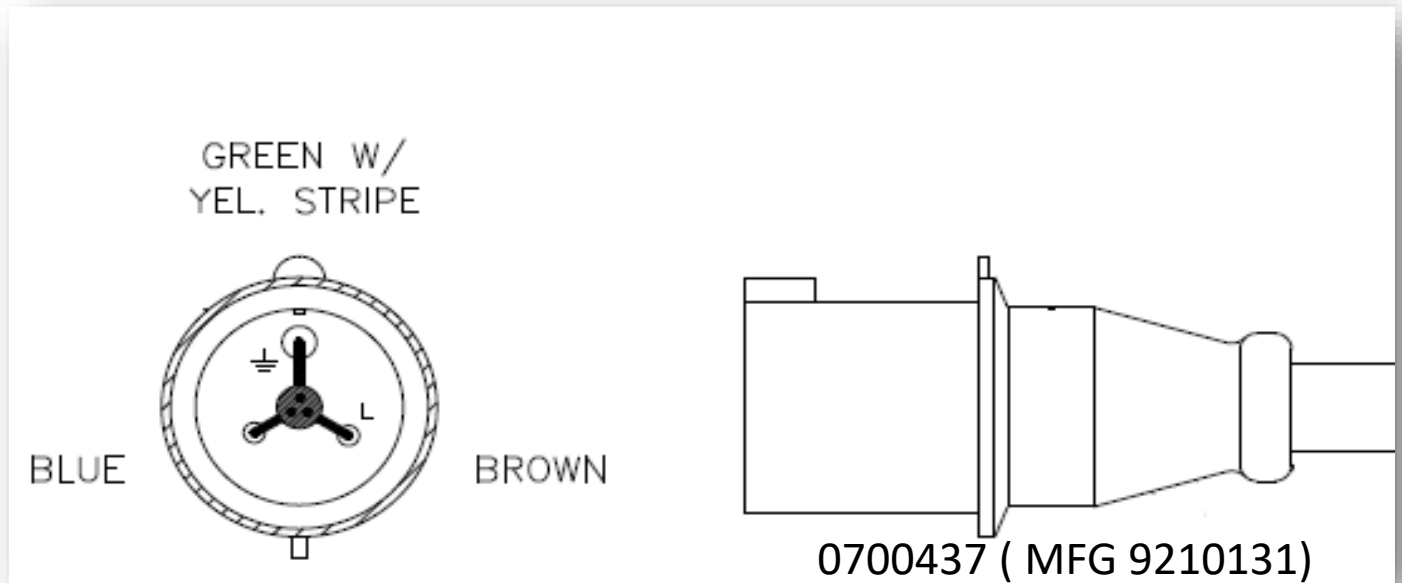
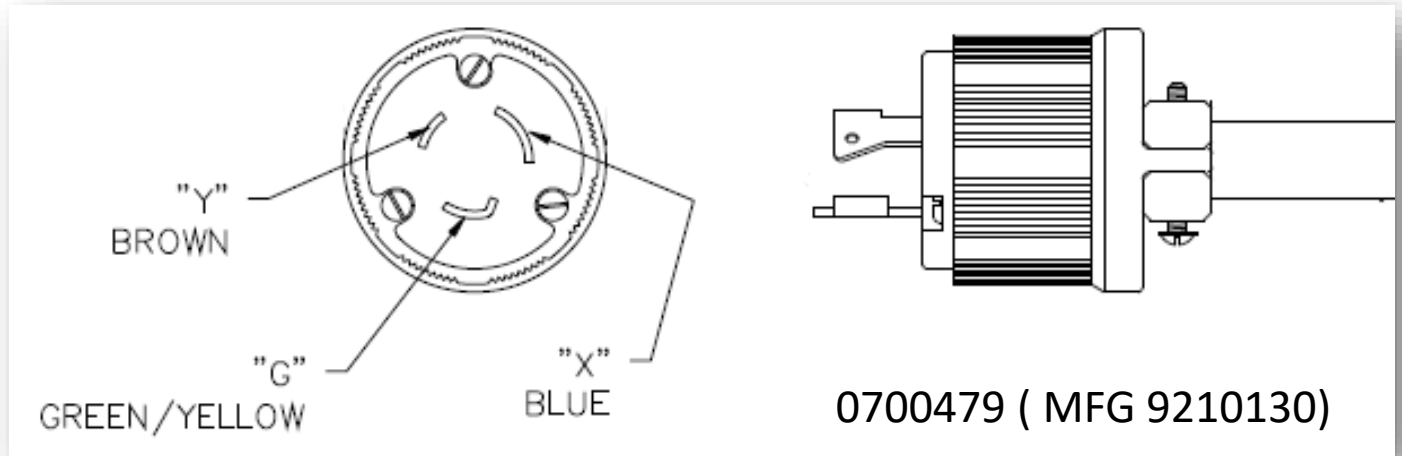
1. Turn power "OFF" & unplug power cord.
2. Verify continuity from each of the three plug prongs to the corresponding wire at the end of the power cord where it attaches to the terminal block.

NOTE: If the prong(s) are heavily discolored/burnt, replace the plug and inspect female receptacle.

3. Replace if it fails any part of the test.

Replacement Procedures:

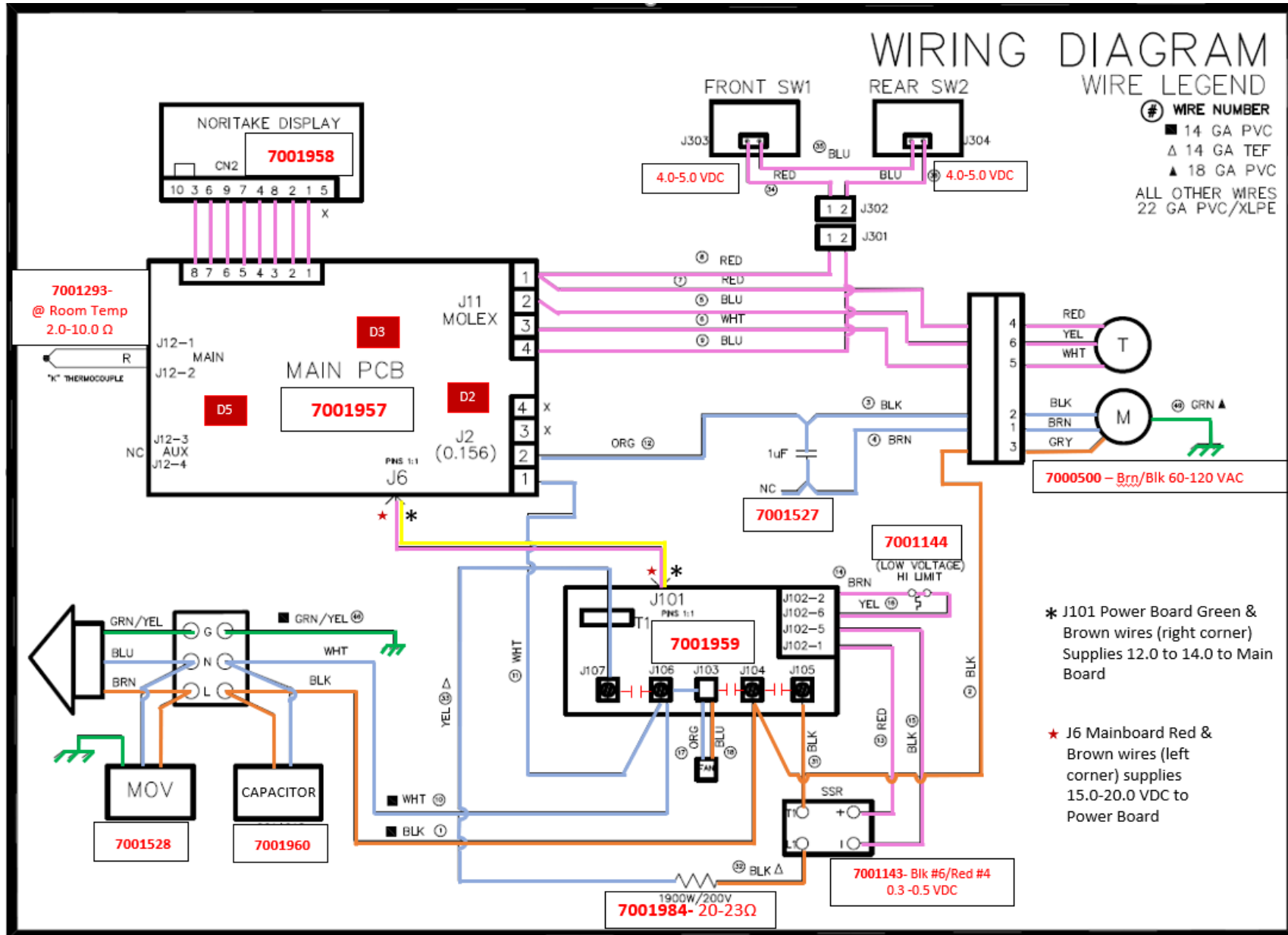
1. Turn power OFF & unplug power cord.
2. Access the side control compartment.
3. Disconnect power cord wires at terminal block .
4. Loosen the black strain relief nut then pull the power cord out.
5. Follow the above procedures in reverse order for reinstallation.
6. Test unit for proper operation.



BKT-2V Domestic Wiring Diagram



- L1
 - L2/N
 - Low VDC
 - 12VAC
 - Ground
 - LEDs
- } 208/240 VAC



BKT-2V International Wiring Diagram

