

PARTS & SERVICE for ST-1 Mini Conveyor Toaster

The ST-1 Mini-Conveyor Toaster is engineered for efficient, dependable service throughout the years. Like any piece of fine equipment with moving parts and broad temperature ranges, physical wear takes its toll. When this happens, the information found in this manual will prove very helpful. Although the instructions are easy to follow, all repair procedures should be carried out by a qualified Merco/Savory Service Representative.



Description	Part #	Description	Part #
On/Off toggle switch control, 20A	68117	Drive chain assy, 54 links, 208V/240V	12412
Energy saver switch control	14614	Rear shaft assembly	14603
Heater control 120V, upper or lower	21874	Front shaft assembly	14644
Heater control 208V, upper or lower	14702	Front shaft spacers	14606
Heater control 240V, upper or lower	12355	Rear shaft spacers	14762
Conveyor speed control, 120V	12464	Tension adjusting brackets	12508
Conveyor speed control, 208V / 240V	12425	Bearing retainer brackets	12381
Heater control knob	12919	Bearings	22754
Terminal block	21858	Conveyor belt assembly, SS 58 links	14647
Control panel, blank	14765	Gearmotor, 120V	69716
Control panel decal	14763	Gearmotor, 208V/240V	14674
1" adjustable legs	12668	Cooling fan motor, 120V	14618
5' cord set, 120V, NEMA 5-15P	26047	Cooling fan motor, 208V	14699
5' cord set, 208V/240V, NEMA 6-15P	26064	Cooling fan motor, 240V	14675
Strain relief bushing	000171	Fan blade, 5" cw	14619
Right side panel	14554	Toast receiving tray/chute	14590
Left side panel	14556	Fan motor mounting bracket	14658
Top cover	14542	Heating element, 120V, 825W	14648
Chimney	14539	Heating element, 208V, 1200W	14694
Bottom cover assembly	14732	Heating element, 240V, 1200W	14673
On/Off energy toggle switch	18209	Lower element assembly, 120V	14707
Reflector/crumb tray assembly	14568	Lower element assembly, 208V	14722
14T sprocket assy. Drive 208/240V	13733	Lower element assembly, 240V	14724
8T sprocket assembly, 120V	30494	Upper element assembly, 120V	14713
20T sprocket assy. drive shaft 120V	14750	Upper element assembly, 208V	14723
12T sprocket assembly, 208V/240V	69787	Upper element assembly, 240V	14725
Drive chain assembly, 57 links, 120V	13301	Lubricant	21720

ST-1 PARTS REPLACEMENT INSTRUCTIONS

WARNING

**DISCONNECT TOASTER FROM
POWER SOURCE
BEFORE ATTEMPTING ANY SER-
VICE PROCEDURES.**

General Information

The information on the following pages will describe how to replace the most common components of the ST-1 toaster. Though the instructions are easy to follow, the work should be done by a qualified service technician. All replacement procedures will first require the removal of one or both toaster side panels, and top or bottom covers. **IMPORTANT: When removing or replacing the bottom toaster cover, it is extremely important that it be positioned correctly. The open side air cooling vent should be facing towards the front of the unit. This will assure proper air circulation and toaster performance.**

A Panel Removal

1. The right and left side panels are each secured to the toaster by one sheet metal screw located at the back of the unit. Remove this screw and slide

out the panel. When replacing either panel, be sure that the panel is properly positioned in the securing track.

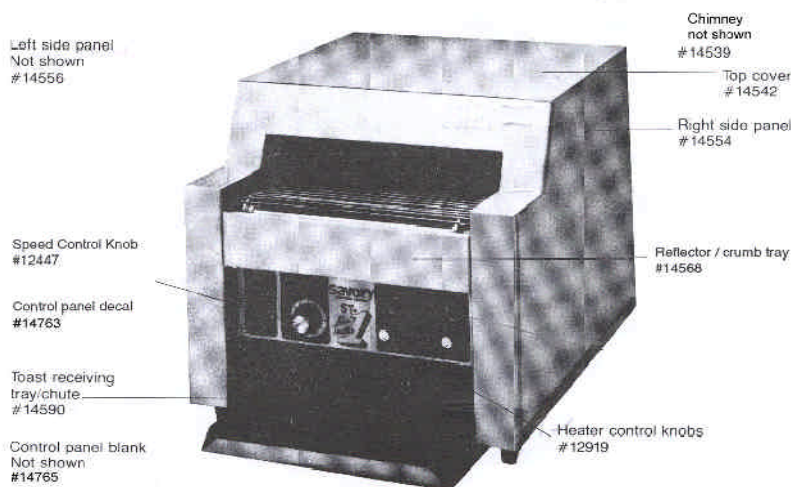
2. The top cover is also held in place with one sheet metal screw. Remove this screw and slide the top cover towards the back of the toaster. When replacing the top cover, be sure that it is properly positioned in the securing tracks.
3. The bottom cover is secured by two sheet metal screws. Remove these screws and pull towards the front of the toaster. **NOTE PROPER ORIENTATION OF THE OPEN SIDE OF THE AIR COOLING VENT.** This opening must always face towards the front of the unit to assure proper toaster performance.

B Main Power On/Off Switch

(Figures 1 & 2)

1. Remove the bottom cover.
2. Disconnect the 2 wires at the on/off switch terminal ends. Note the correct orientation of the wires.
3. Remove the rubber on/off switch boot (old style units) and the black plastic mounting bezel.
4. The on/off switch can now be removed from the back of the control panel.
5. Reverse this procedure to install a new switch. (Refer to the wiring diagram)

Figure 1



C Conveyor Speed Control/P.C. Board

(Figures 1 & 2)

1. Remove bottom cover.
2. Pull off speed control knob and remove the nut securing the control board panel. Pull out the control from the back of the control panel.
3. Cut the wire harness tie and disconnect the 2 wire leads at the wire connectors.
4. Reverse this procedure to install the new assembly.

D Heater Control Switches

(Figures 1 & 2)

1. Remove bottom cover.
2. Pull off heater control knob to gain access to the 2 slotted screws that secure the control to the control panel. Remove these 2 screws.
3. Disconnect the wires from the control terminal ends, noting the proper orientation of the wires.
4. Install the new control securing with the 2 slotted screws.
5. Re-attach wires to the terminal ends. (Refer to the wiring diagram)

E Energy Saver Switch

(Figures 1 & 2)

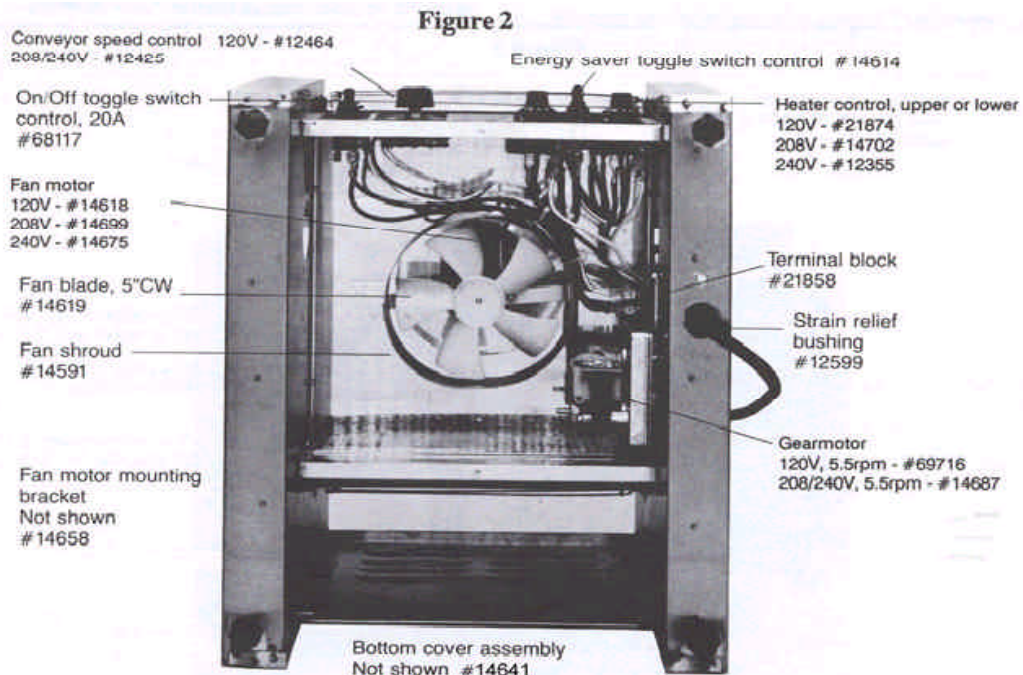
1. Remove bottom cover.
2. On the front of the control panel, unscrew the rubber switch boot and remove the black plastic mounting bezel securing the switch to the panel.
3. In order to gain easier access to the back of the switch, remove the upper heater control, but do not disconnect the wires.

4. Disconnect the wires from the energy save switch terminal ends, noting the proper wire orientation.
5. Install the new switch to the back of the control panel and secure with the black plastic mounting bezel and rubber boot.
6. Re-attach wires to the terminal ends. (Refer to wiring diagram)
7. Replace the upper heater control switch.

F Fan / Fan Housing / Fan Motor

(Figure 2)

1. Remove the bottom cover.
2. Rotate Fan Blades which will expose 2 nuts securing the fan housing to the motor. Remove these two nuts to remove the housing.
3. To remove the fan motor, but do NOT remove the 2 motor mounting bracket nuts. Slide the motor until clearance is achieved.
4. Cut the wire harness ties to gain access to the wire connector. Disconnect the 2 wire leads from the motor, one at the wire connector and one at the terminal block.
5. Insert the new motor into the motor mounting bracket and tighten the 2 motor mounting bracket nuts.
6. Re-attach the two wire leads, one at the wire connector and one at the terminal block. (Refer to wiring diagram)
7. Install fan housing and secure with the 2 nuts.
8. **IMPORTANT: BE SURE TO RE-TIE THE WIRE HARNESS SO THAT THE WIRES DO NOT BLOCK THE FAN FROM SPINNING FREELY.**



G Terminal Block

(Figure 2)

1. Remove right side panel and bottom cover.
2. Remove the wires at the terminal ends, noting proper wire orientation.
3. Remove the 2 nuts securing the terminal block to the wall of the toaster.
4. Reverse this procedure to install new terminal block.
(Refer to wiring diagram)

H Gearmotor and Motor Sprocket

(Figures 2 & 3)

1. Remove right side panel and bottom cover. (Section A)
2. Loosen the 4 motor mounting screws and slide motor to achieve slack in the drive chain.
3. Loosen set screw on motor sprocket and remove sprocket.
4. Remove the 4 mounting screws and lift out motor.
5. Disconnect 2 wire leads from motor, one at the wire connector and the other at the terminal block.
6. Reverse this procedure to install the new motor.
(Refer to wiring diagram)

I Drive Chain

(Figures 3, 5 & 6)

1. Remove right side panel. (Section A)
2. Loosen, but do NOT remove the 4 mounting screws. Slide motor to achieve slack in drive chain and remove chain.
3. When installing new chain, check for proper chain orientation and tension.

J Conveyor Shaft Sprocket

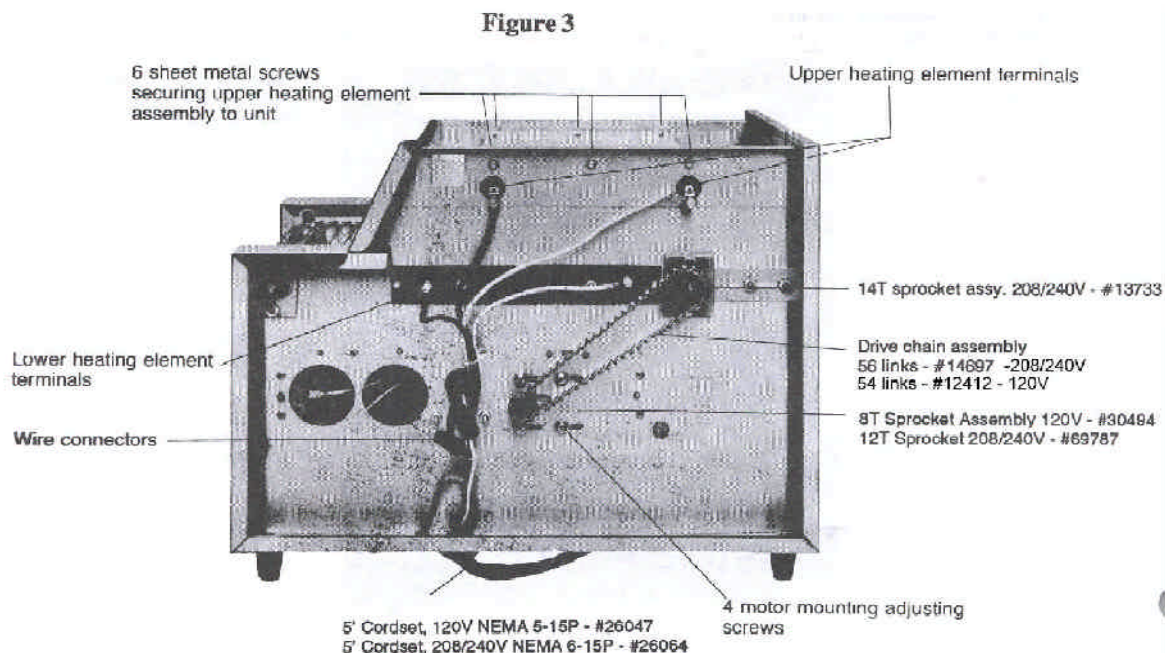
(Figures 3, 5 & 6)

1. Remove right side panel. (Section A)
2. Remove drive chain. (Section I)
3. Loosen set screw on hub of sprocket and slide sprocket off shaft.
4. When installing new sprocket, make sure set screw rests in hole of shaft.
5. Replace drive chain. (Section I)

K Conveyor Belt

(Figures 3, 4 & 7)

1. Remove right & left side panels. (Section A)
2. Loosen, but do NOT remove the bearing retainer brackets on both sides of the toaster.
3. Loosen, but do NOT remove the tension adjusting brackets on both sides of the toaster.
4. Push front conveyor shaft towards the back of the toaster to loosen belt tension.
5. Separate the conveyor belt at any link and slide out of toaster.
6. When installing new conveyor belt, check for proper link orientation. (Figure 6)
7. Starting at front of toaster, slide belt under front shaft and push towards rear of unit. Bring belt up and over the rear shaft and pull towards front of toaster. Make sure belt is resting on both belt support guides. Reconnect links.
CAUTION: Make sure belt is not installed at an angle.
8. Pull forward on front conveyor shaft until excess slack is removed.
9. Tighten tension adjusting brackets and bearing retainer brackets on both sides of toaster.



L Front and Rear Shafts and Bearings

(Figures 3,4,5, & 6)

1. Remove right and left side panels. (Section A)
2. **To remove front shaft and front shaft bearings:**
Remove bearing retainers on both sides of toaster. Loosen conveyor belt tension adjusting brackets on both sides of toaster. Bearings (with shaft) will now slide out. Note proper orientation of spacers.
3. **To remove rear shaft and rear shaft bearings:**
Remove drive chain (Section 1), and conveyor shaft sprocket (Section J) Remove rear bearing retainer brackets from both sides of toaster. Bearings (with Shaft) will now slide out. Note proper orientation of spacers.
4. Replace bearings, spacers, and shaft. Replace conveyor belt tension adjusting brackets on front and rear shafts.
5. Replace conveyor shaft sprocket and drive chain on rear shaft.
6. Adjust tension of conveyor belt on front shaft to remove excess slack.

M Upper Heater Element Assembly

(Figures 3, 4, 8, 9, & 10)

1. Remove right and left side panels. Remove top cover and Chimney. (Section A)
2. Remove the 6 sheet metal screws. (3 on each side) securing the assembly to toaster sides.
3. Disconnect the 2 wires at heating element terminal ends.
4. Carefully lift out assembly.
5. Reverse this procedure to install new assembly. (Refer to wiring diagram)

N Lower Heating Element Assembly

(Figures 3, 4, 8, 9 & 10)

1. Remove right and left side panels. (Section A)

2. Disconnect wires from both upper and lower heating element terminal ends.
3. At left side of toaster, bend the 2 protruding tabs to achieve clearance through slots.
4. Slide out assembly from right side of toaster.
5. Reverse this procedure to install new assembly. (Refer to wiring diagram)

O Individual Heating Element

(Figures 3, 4, 8, 9, & 10)

1. Remove heating element assembly. (Sections M or N)
2. Remove the two hex head screws securing element to end plate. Note proper orientation of spacers, nuts and retainer bars.
3. Bend the holding tabs to achieve clearance of element.

CAUTION: Check for proper voltage & wattage stamped on each element before installation.

4. Reverse this procedure to install new element.

P Power Cord

(Figures 2 & 3)

1. Remove right side panel. (Section A)
2. Disconnect green ground wire and the 2 wires at the large wire connectors.
3. Tilt toaster on back panel. Squeeze strain relief bushing and pull out from toaster.
4. Reverse this procedure to install new power cord. (Refer to wiring diagram)

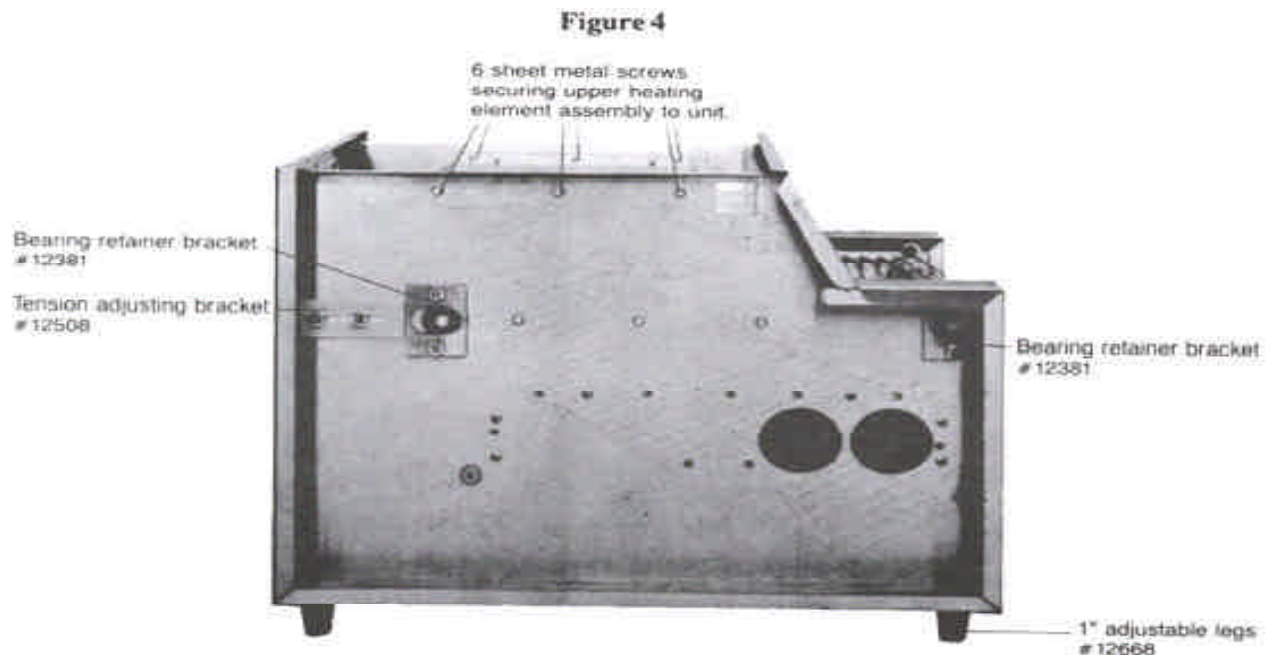
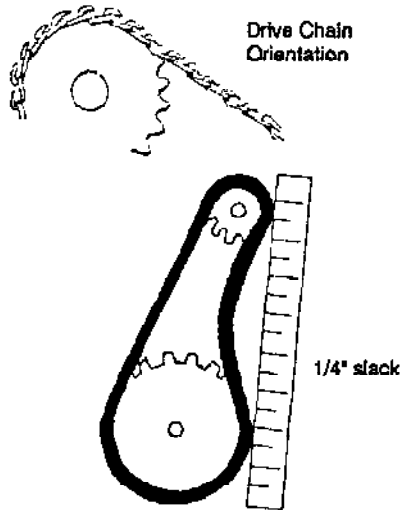
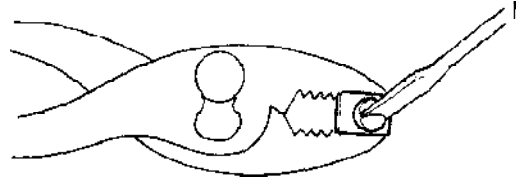


Figure 5



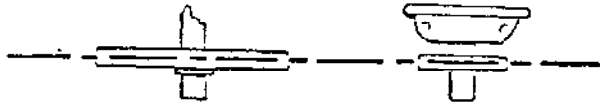
Checking drive chain tension

Figure 8



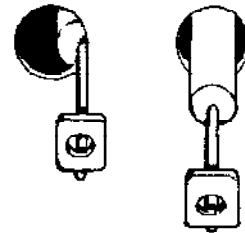
Disconnecting wires at heating elements using pliers to prevent twisting of terminals

Figure 6



Correct alignment of motor and shaft sprockets

Figure 9

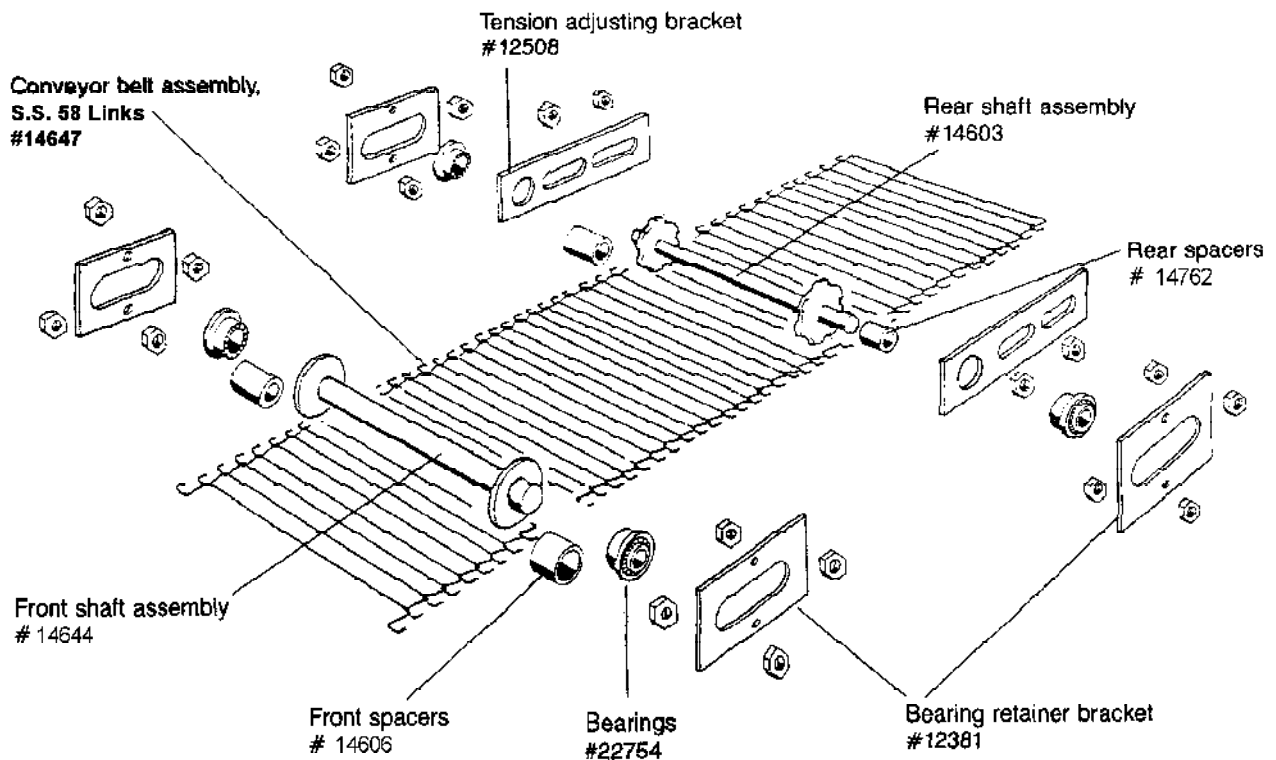


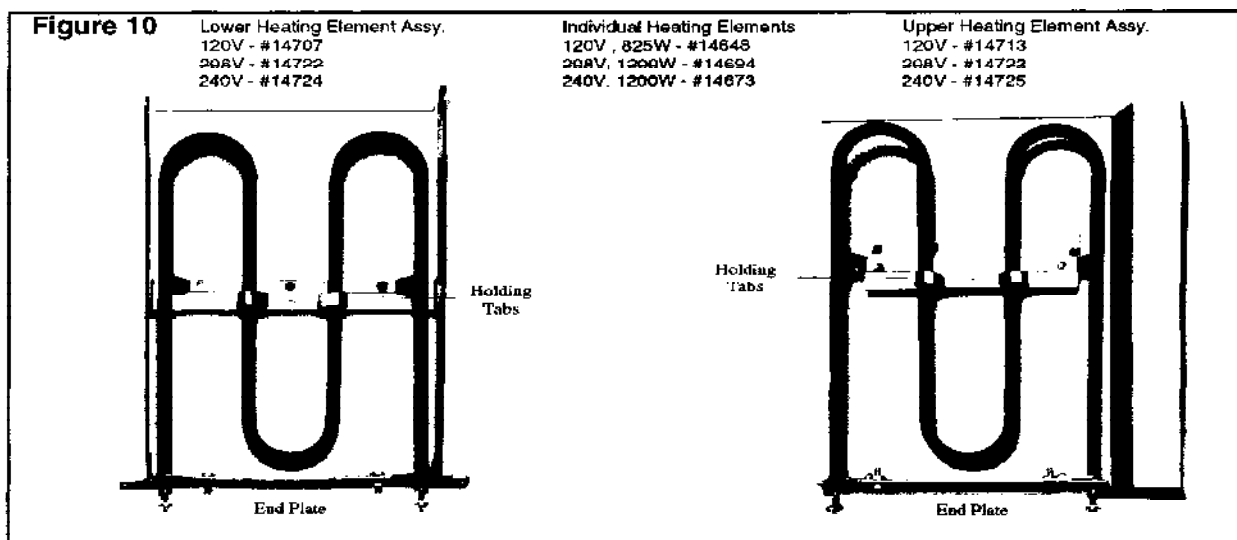
INCORRECT

CORRECT

Heating Element Terminals

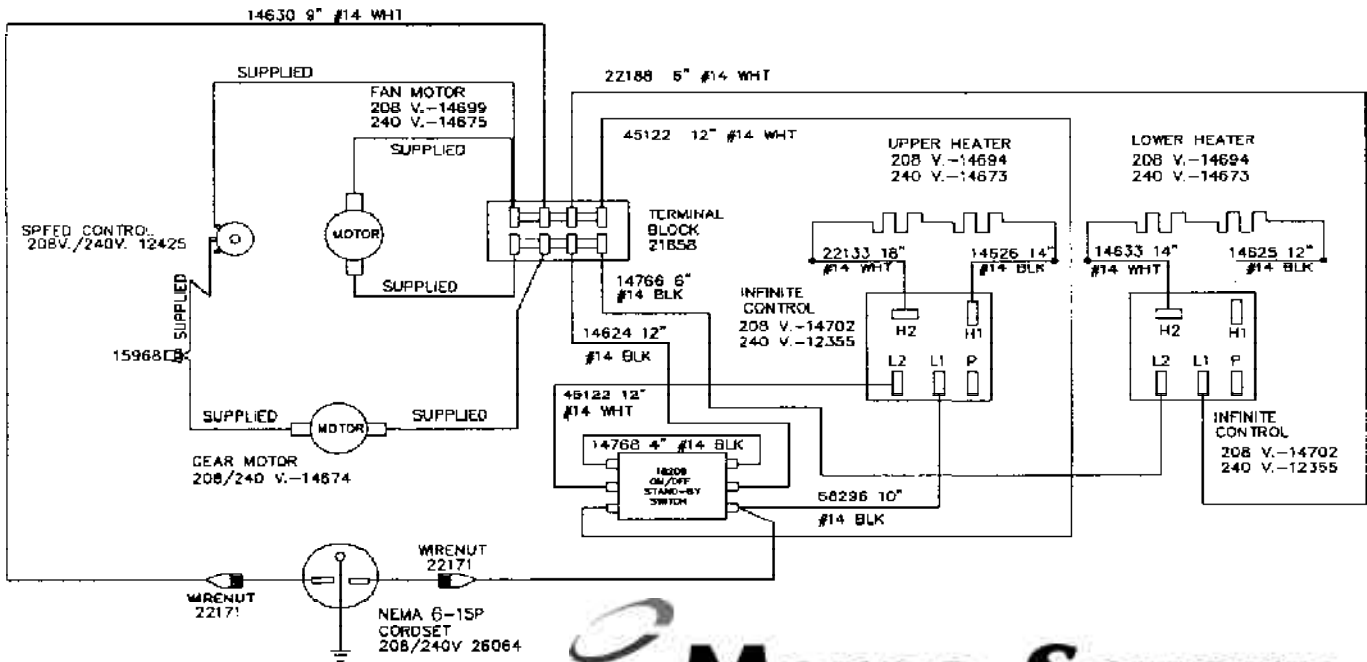
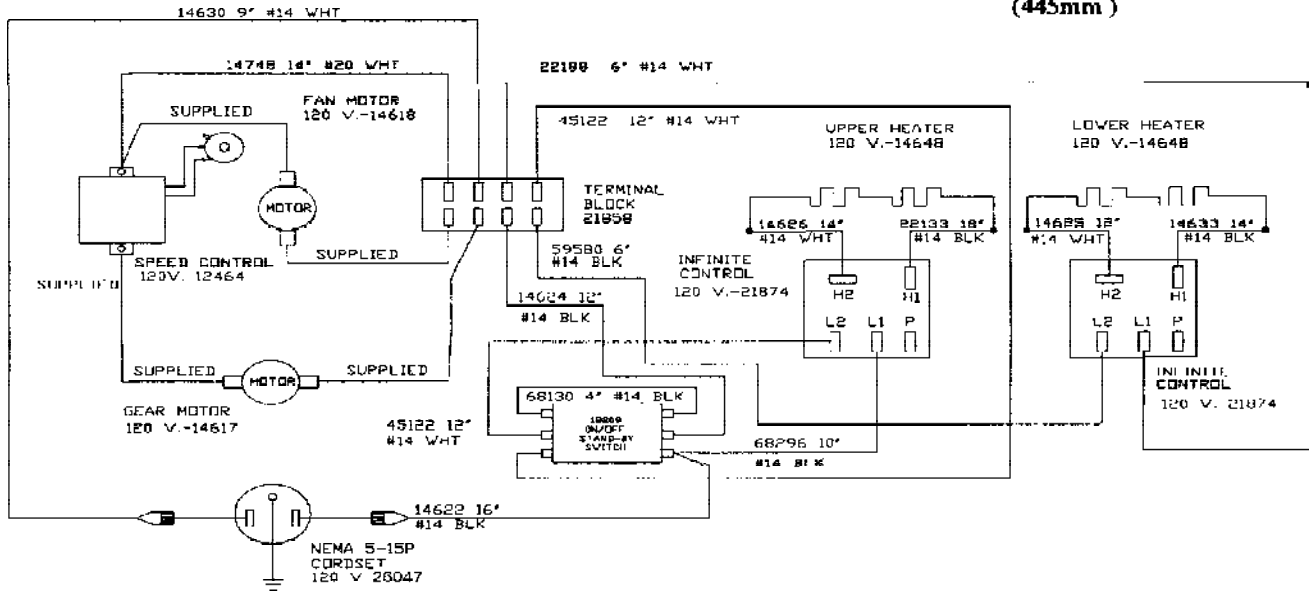
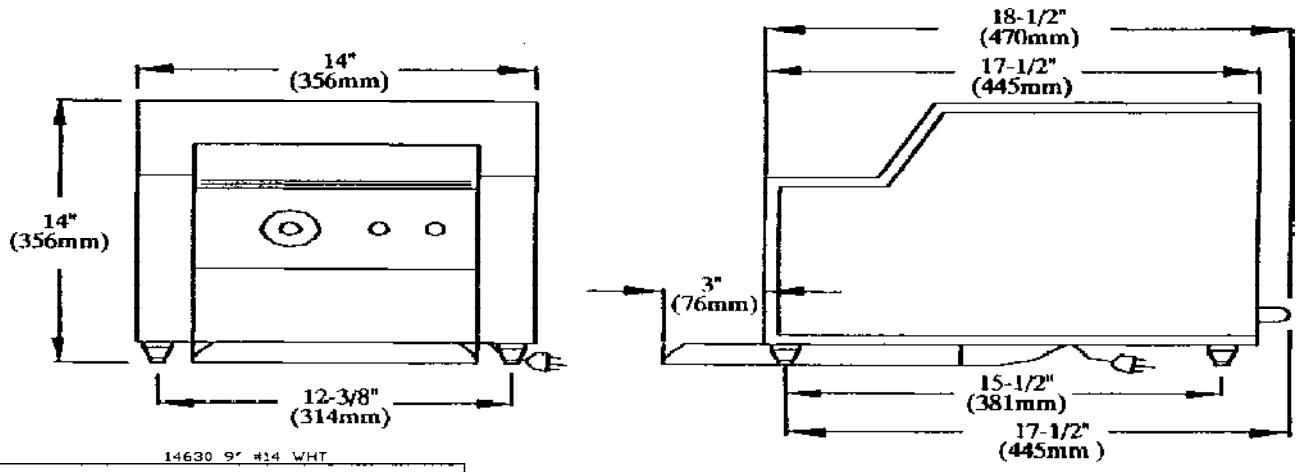
Figure 7





ST-1 TROUBLESHOOTING GUIDE

Problem	Possible Causes	Suggested Remedy
INSUFFICIENT OR NO HEAT FROM UPPER OR LOWER ELEMENTS	<ol style="list-style-type: none"> 1. Defective heating element(s) 2. Defective heat control 3. Defective, loose, or improper wiring 4. Defective terminal block. 	<ol style="list-style-type: none"> 1. Set heater control to #9. Replace any element that does not glow after 10 minute warm-up. 2. Check amp draw on affected element. 3. Check all wiring. 4. Replace terminal block.
CANNOT REGULATE CONVEYOR BELT SPEED	<ol style="list-style-type: none"> 1. Speed control not trimmed to proper voltage. 2. Defective speed control 3. Defective speed control. 	<ol style="list-style-type: none"> 1. Adjust trim pot on speed control to desired low setting 2. Check that control varies the voltage. 3. Replace speed control.
TOASTER FAILS TO HEAT	<ol style="list-style-type: none"> 1. Defective or improper electrical outlet. 2. Defective plug or power cord 3. Loose or improper wiring. 4. Defect in one or ore of the following: a) On/Off switch. b) Terminal block. c) Energy saver switch. d) Heater control switch (es) 	<ol style="list-style-type: none"> 1. Check voltage at receptacle. Be sure it conforms to specifications on toaster data plate. 2. Replace plug and/or power cord. 3. Check all wiring. 4. Check all components in order. Replace as needed.
HEAT STAYS HIGH, CANNOT BE REGULATED	<ol style="list-style-type: none"> 1. Defective heater control switch(es) 2. Defective energy saver switch. 	<ol style="list-style-type: none"> 1. Replace switch(es) 2. Replace switch
TOASTER BECOMES EXCESSIVELY HOT AND SHUTS DOWN	<ol style="list-style-type: none"> 1. Defective fan motor or misaligned or bent fan blade. 	<ol style="list-style-type: none"> 1. Check that fan blade spins freely. Replace blade or motor as needed.
CONVEYOR BELT FAILS TO RUN	<ol style="list-style-type: none"> 1. Defective or improper electrical outlet. 2. Defective plug or power cord. 3. Loose or improper wiring. 4. Improperly installed drive chain. 5. Defect in one or more of the following: a) On/Off switch. b) Terminal block. c) Gearmotor. d) Speed control. e) Bearings 	<ol style="list-style-type: none"> 1. Check voltage at receptacle. Be sure it conforms to specifications on toaster data plate. 2. Replace plug or power cord. 3. Check all wiring. 4. Check that all components of drive chain assembly are properly installed. 5. Check all components in order. Replace as needed.
CONVEYOR BELT DOES NOT RUN SMOOTHLY AND/OR IS EXCESSIVELY NOISY	<ol style="list-style-type: none"> 1. Worn shaft bearing(s) 2. Incorrect conveyor belt tension. 3. Incorrect alignment of drive chain, motor or sprockets. 4. Worn sprockets and/or drive chain. 5. Front and rear shafts are not aligned. 	<ol style="list-style-type: none"> 1. Replace bearing(s). 2. Adjust conveyor belt tension. 3. Adjust alignment. 4. Replace worn sprockets or drive chain. 5. Adjust shaft alignment.
GEARMOTOR RUNS BUT CONVEYOR BELT SLIPS OR DOES NOT RUN	<ol style="list-style-type: none"> 1. Loose sprocket(s). 2. Broken drive chain. 3. Disengaged drive chain. 4. Defective rear shaft. 	<ol style="list-style-type: none"> 1. Tighten sprockets. 2. Replace drive chain. 3. Adjust drive chain. 4. Check drive sprockets are secure.



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