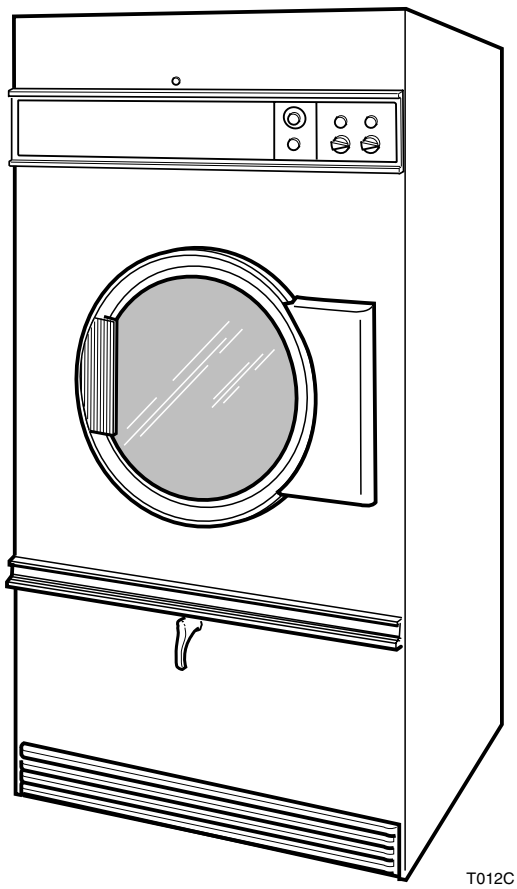
# Drying Tumblers

## 75 Pound Capacity
## 634 Liter Capacity

Refer to Page 5 for Model Numbers

Service



T012C

Alliance Laundry Systems

www.comlaundry.com

Part No. M411433R1
October 2001

# Table of Contents

## Section 6 – Adjustments

# Section 1
# Safety Information

Throughout this manual and on machine decals, you will find precautionary statements ("CAUTION", "WARNING", and "DANGER") followed by specific instructions. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.

**⚠ DANGER**

Danger indicates the presence of a hazard that **will** cause **severe** personal injury, death, or substantial property damage if the danger is ignored.

**⚠ WARNING**

Warning indicates the presence of a hazard that **can** cause **severe** personal injury, death, or substantial property damage if the warning is ignored.

**⚠ CAUTION**

Caution indicates the presence of a hazard that **will** or **can** cause **minor** personal injury or property damage if the caution is ignored.

Additional precautionary statements ("IMPORTANT" and "NOTE") are followed by specific instructions.

**IMPORTANT**

The word "IMPORTANT" is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

**NOTE**

The word "NOTE" is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

In the interest of safety, some general precautions relating to the operation of this machine follow.

**WARNING**

- **Failure to install, maintain and/or operate this product according to the manufacturer's instructions may result in conditions which can produce serious injury, death and/or property damage.**
- **Do not repair or replace any part of the product or attempt any servicing unless specifically recommended or published in this Service Manual and that you understand and have the skills to carry out.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the product is properly grounded and to reduce the risk of fire, electric shock, serious injury or death.**

W006R1

**IMPORTANT INFORMATION: During the lifetime of your tumbler, it may require service. The information contained in this manual was written and is intended for use by qualified service technicians who are familiar with the safety procedures required in the repair of your tumbler, and who are equipped with the proper tools and testing equipment.**

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W240

## WARNING

**Repairs that are made to your products by unqualified persons can result in hazards due to improper assembly or adjustments subjecting you, or the inexperienced person making such repairs, to the risk of serious injury, electrical shock or death.**

W007

## CAUTION

**If you or an unqualified person perform service on your product, you must assume the responsibility for any personal injury or property damage which may result. The manufacturer will not be responsible for any injury or property damage arising from improper service and/or service procedures.**

W008

**NOTE: The WARNING and IMPORTANT instructions appearing in this manual are not meant to cover all possible conditions and situations that may occur. It must be understood that common sense, caution and carefulness are factors which CANNOT be built into this tumbler. These factors MUST BE supplied by the person(s) installing, maintaining or operating the tumbler.**

Always contact your dealer, distributor, service agent or the manufacturer on any problems or conditions you do not understand.

## Locating An Authorized Service Person:

**Alliance Laundry Systems is not responsible for personal injury or property damage resulting from improper service. Review all service information before beginning repairs.**

**Warranty service must be performed by an authorized technician, using authorized factory parts. If service is required after the warranty expires, Alliance Laundry Systems also recommends contacting an authorized technician and using authorized factory parts.**

# Section 2
# Introduction

## Model Identification

Information in this manual is applicable to these models:

| Gas | Steam | Electric |
|---|---|---|
| ATB75CG | ATB75CSH | DCB75CE |
| DCB75CG | DCB75CSH | DTB75CE |
| DCB75FG | DCB75CSL | JCB75CE |
| DTB634 | DTB75CSH | JT75CE |
| DTB75CG | DTB75CSL | JTB75CE |
| DTB75EG | JCB75CSH | SCB75CE |
| DTB75FG | JCB75CSL | ST75CE |
| JCB75CG | JT75CSH | STB75CE |
| JT75CG | JT75CSL | |
| JT75EG | JTB75CSH | |
| JTB75CG | JTB75CSL | |
| JTB75EG | SCB75CSH | |
| SCB75CG | SCB75CSL | |
| ST75CG | ST75CSH | |
| STB75CG | ST75CSL | |
| STB75EG | STB75CSH | |
| STB634 | STB75CSL | |

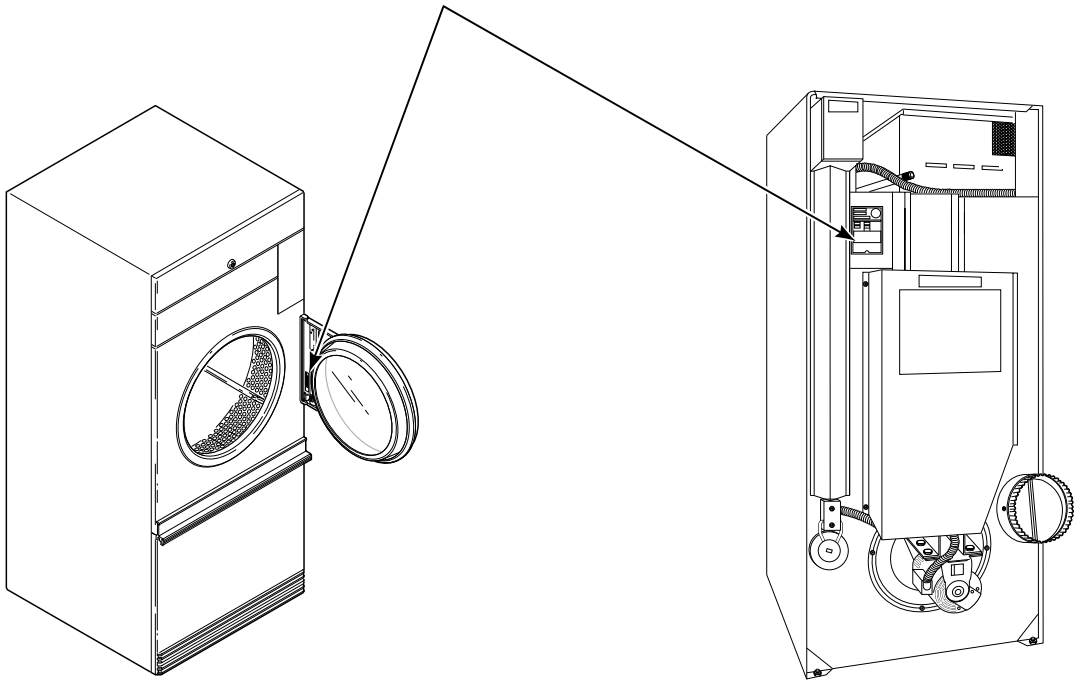
# Customer Service

If literature or replacement parts are required, contact the source from whom the machine was purchased or contact Alliance Laundry Systems at (920) 748-3950 for the name and address of the nearest authorized parts distributor.

For technical assistance, call (920) 748-3121.

# Serial Plate Location

When calling or writing about your product, be sure to mention model and serial numbers. Model and serial numbers are located on serial plate(s) as shown.



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# Safety Warnings and Decals

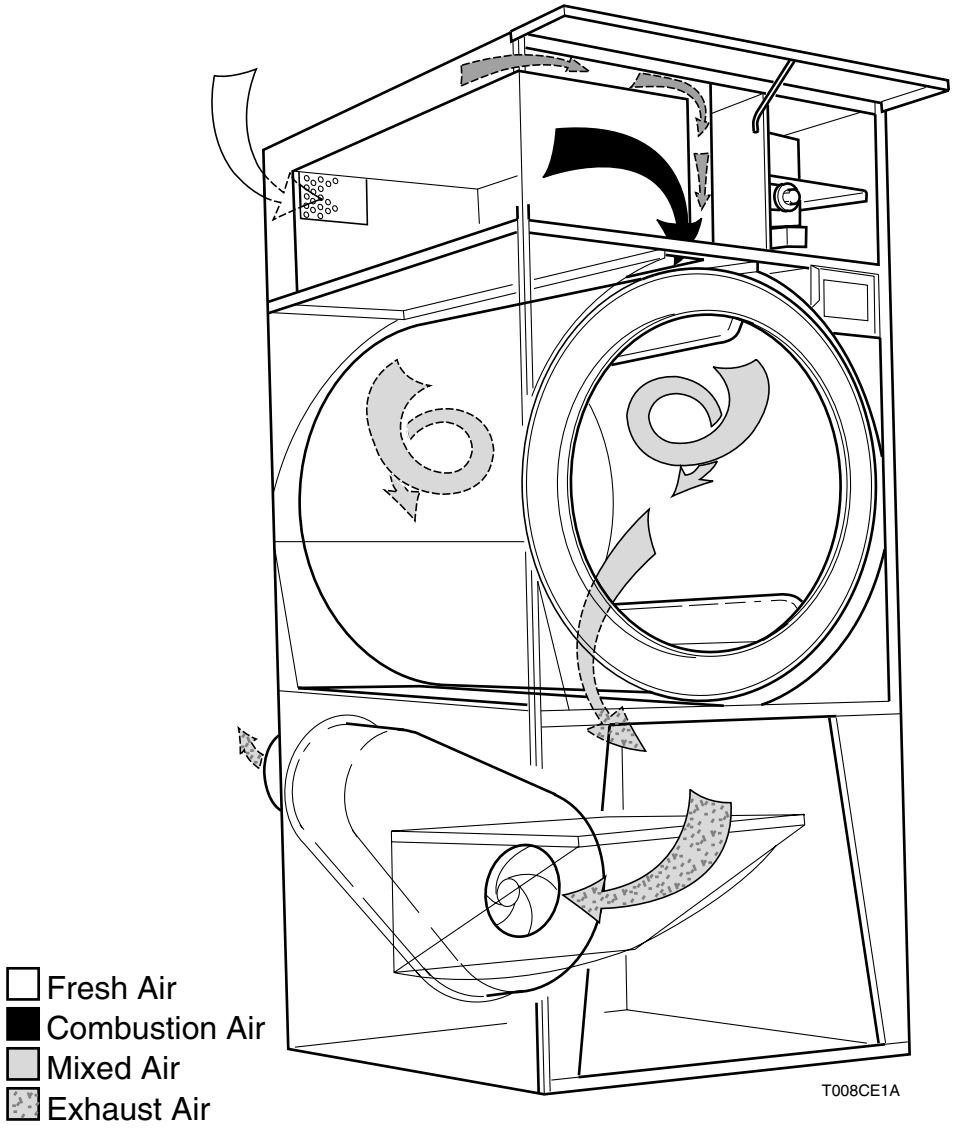
SAFETY WARNINGS and decals have been provided in key locations to remind you of important precautions for the safe operation and maintenance of your tumbler. Please take the time to review these warnings before proceeding with service work.

All decals have been designed and applied to withstand washing and cleaning. Decals should be checked periodically to be sure they have not been damaged, removed, or painted. Refer to ***Parts Manual*** for ordering replacement decals.

# Safety Precautions for Servicing Tumblers

- **Disconnect electrical service.**
- **Shut off supply gas valve before servicing gas components.**
- **Control panel and access panel MUST be reinstalled after inspection or servicing of tumbler is completed.**
- **Use a non-corrosive leak detection solution to check all pipe connections for gas leaks. DO NOT USE AN OPEN FLAME TO CHECK FOR GAS LEAKS!**
- **Chain/Drive guard MUST be reinstalled after inspection or servicing of tumbler is completed.**
- **Belt guard MUST be reinstalled after inspection or servicing of tumbler is completed.**
- **Contactor box cover MUST be reinstalled after inspection or servicing of electric and/or reversing tumbler is completed.**
- **Loading door switch MUST be operational before putting tumbler into service.**
- **Junction box cover MUST be reinstalled after inspection or servicing of tumbler is completed.**

# How A Tumbler Works




**Standard Models**

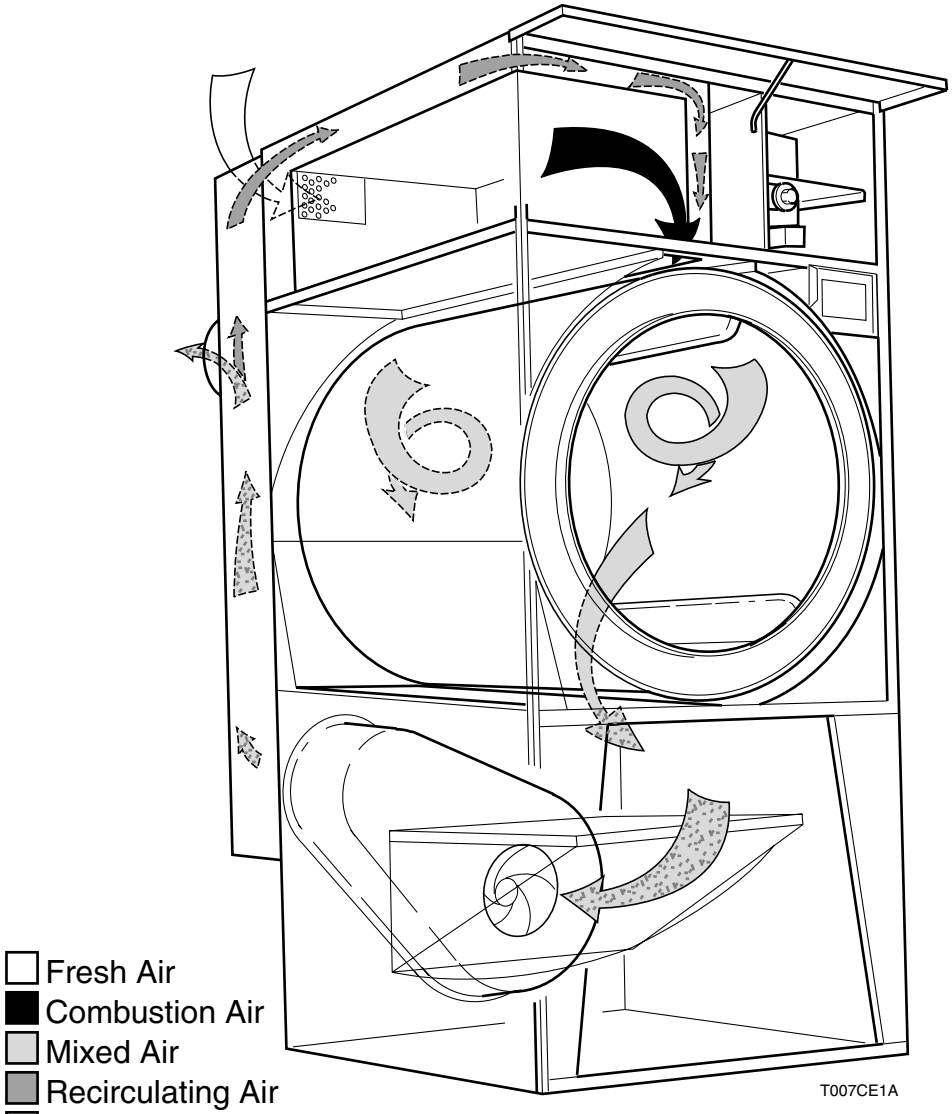
The tumbler uses heat, air and movement to dry loads of laundry.

When the motor is started, the exhaust fan pulls air in through the air intake and over the heat source (burner flame for gas, heating element for electric, and coil for steam).

The heated air moves into the cylinder, where it is circulated through the laundry by the tumbling action of the cylinder.

The air then passes through the lint filter, exhaust fan, and is vented to the outdoors.

**NOTE: In Energy Saver Models, some of the exhaust air is recirculated. Refer to illustration on page 9.**




**Energy Saver Models**

# Section 3
# Troubleshooting

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**IMPORTANT: Refer to appropriate wiring diagram for aid in testing tumbler components.**

**1. MOTOR DOES NOT START**

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Electrical power off or fuses blown. | • Check power and fuses, replace fuses if necessary |
| Loading door not closed or inoperative door switch. | • Close door, or test switch and replace if inoperative. |
| Door switch improperly adjusted. | • Refer to ***Adjustment*** Section for door switch adjustment. |
| Trunnion shaft assembly binding in trunnion housing bearings. | • Replace trunnion housing bearings. |
| Start circuit not completed. | • Press start switch, or test switch and replace if inoperative. |
| Idler shaft binding in idler housing bearings. | • Replace bearings. |
| Inoperative motor. | • Have motor tested and replace if inoperative. |
| Non-Metered Models: Timer improperly set. | • Turn drying timer clockwise to desired setting. |
| Non-Metered Models: Inoperative timer. | • Test timer and replace if inoperative. |
| Metered Models: Improper coins inserted in accumulator. | • Check that proper coins are inserted. |
| Metered Models: Accumulator knob improperly set after coins were inserted. | • Turn knob clockwise to its full limit of travel. |
| Metered Models: Inoperative run switch (accumulator). | • Test run switch and replace if inoperative. |
| Broken, loose, or incorrect wiring. | • Refer to wiring diagram located on back of tumbler or in literature packet. |

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### 2. MOTOR OVERLOAD PROTECTOR CYCLES REPEATEDLY

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Incorrect voltage. | • Refer to the ***Installation Manual*** (supplied with tumbler) for electrical requirements. |
| Clothes load too large. | • Remove part of load. |
| Cylinder is binding. | • Check cylinder for binding. Refer to ***Adjustment*** Section for cylinder adjustment. |
| Inadequate wiring. | • Check with electrician to ensure that wiring is adequate. |
| Inadequate make-up air. | • Refer to ***Installation Manual*** (supplied with tumbler) for make-up air requirements. |
| Poor housekeeping. | • Clean lint accumulation on and around the motor. |
| Broken, loose, or incorrect wiring. | • Refer to wiring diagram located on back of tumbler or in literature packet. |

### 3. MOTOR RUNS BUT CYLINDER DOES NOT TURN

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Motor drive pulley loose. | • Tighten setscrews. |
| Sheave loose. | • Tighten setscrews. |
| Broken or loose belt. | • Replace or adjust belt. Refer to ***Adjustment*** Section for proper belt adjustment. |
| Broken or loose drive chain. | • Replace or adjust chain. Refer to ***Adjustment*** Section for proper chain adjustment. |
| Cylinder is binding. | • Check cylinder for binding. Refer to ***Adjustment*** Section for proper cylinder adjustment. |

### 4. MOTOR DOES NOT STOP

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Inoperative door switch or switch is out-of-adjustment. | • Test switch and replace if inoperative. Refer to ***Adjustment*** Section for proper switch adjustment. |
| Non-Metered Models: Inoperative timer. | • Test timer and replace if inoperative. |
| Metered Models: Inoperative accumulator. | • Test accumulator and replace if inoperative. |
| Incorrect wiring. | • Refer to wiring diagram located on the back of tumbler or in literature packet. |

## WARNING

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W002

### 5. HEATING ELEMENT DOES NOT HEAT OR BURNER DOES NOT IGNITE

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Improper or inadequate exhaust system. | • Refer to the ***Installation Manual*** (supplied with tumbler) for exhaust system requirements. |
| Blown fuses or tripped circuit breakers. | • Check fuses or circuit breakers. |
| Drying timer not selected or inoperative. | • Set drying timer or replace if inoperative. |
| Inoperative thermostat. | • Test thermostat and replace if inoperative. |
| Electric Models:<br>Inoperative heating elements. | • Check heat contactors and elements. Replace if necessary. |
| Gas Models:<br>Insufficient gas supply. | • Open partially closed gas shut-off valve, or correct low gas pressure. Check inlet pressure and compare to pressure specified on serial plate. If pressure cannot be obtained, contact gas supplier. |
| Gas Models:<br>Incorrect orifices. | • Tumbler is equipped for type of gas specified on serial plate. If orifices are different from that specified on serial plate, obtain and install proper orifices. |
| Gas Models: (IEI Ignition)<br>Inoperative igniter. | • Test igniter and replace if inoperative. |
| Gas Models: (IEI Ignition)<br>Inoperative igniter control. | • Test igniter control and replace if inoperative. |
| Gas Models:<br>Inoperative Main Coil | • Test main coil and replace if inoperative. |
| Gas Models:<br>Inoperative Redundant Coil | • Test redundant coil and replace complete gas valve if inoperative. |
| Gas Models: (Glow Bar Ignition)<br>Inoperative igniter. | • Test igniter and replace if inoperative. |
| Gas Models: (Glow Bar Ignition)<br>Inoperative sensor. | • Test sensor and replace if inoperative. |
| Gas and Electric Models:<br>Inoperative high limit thermostat. | • Test thermostat and replace if inoperative. |

(continued on next page)

  

## WARNING

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- **Close steam valve to steam tumbler before servicing.**
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W002

**5. HEATING ELEMENT DOES NOT HEAT OR BURNER DOES NOT IGNITE (cont.)**

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Gas and Electric Models:<br>Inoperative airflow switch | • Clean lint compartment after every eight hour shift.<br>• Check back draft damper for foreign objects, lint accumulation, or other causes that may prevent damper from opening.<br>• Check ductwork for lint build-up. Refer to ***Installation Manual*** (supplied with tumbler) to ensure that ductwork and make-up air openings are sized properly.<br>• Check exhaust outlet. If a screen has been improperly installed on the outlet, it may be clogged with lint or frozen over in winter. |
| Gas and Electric Models:<br>Airflow switch out of adjustment. | • Refer to ***Adjustment*** Section for airflow switch adjustment. |
| Lint door panel not closed properly. | • Open lint door panel, place lint door panel back on tumbler (ensuring a tight fit) then latch. |
| Broken, loose, or incorrect wiring. | • Refer to wiring diagram located on back of tumbler or in literature packet. |

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
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### 6. IGNITER GLOWS, FLAME SENSOR OPENS BUT NO IGNITION - GAS MODELS (White Rodgers Glow-bar Ignition)

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Insufficient gas supply. | • Is manual shut-off valve in full open position? Check gas pressure. |
| Gas flow, but no ignition. | • Gap between igniter and burner must be 1/8 – 1/4 inch. |
| No gas flow through gas valve. | • Check for 80 – 120 Volts between red and white wires on gas valve.<br>• If correct voltage is present and redundant coil does not click open, replace complete gas valve.<br>• If correct voltage is not present, replace diode logic board.<br>• If correct voltage is present and redundant coil clicks open, check for 40 – 60 Volts across the purple wires on the main coil after the igniter cycles off.<br>• If voltage is present and main coil does not click open, replace main coil.<br>• If no voltage is present, replace diode logic board. |

### 7. BURNER IGNITES AND GOES OUT REPEATEDLY - GAS MODELS (Glow-Bar Ignition)

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Burner heat not holding sensor contacts open. | • Replace sensor. |
| Insufficient gas pressure. | • Check gas supply and pressure. A low flame will not maintain radiation to sensor. |
| Burner ports plugged or dirty. | • Check burner tubes for build-up. |
| Improper or inadequate exhaust system or make-up air. | • Refer to ***Installation Manual*** (supplied with tumbler) for exhaust and make-up air requirements. |
| Inoperative high limit thermostat. | • Test thermostat and replace in inoperative. |
| Improper orifices. | • Tumbler is equipped for type of gas specified on serial plate. If orifices are different from that specified on serial plate, obtain and install proper orifices. |

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
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- **Close steam valve to steam tumbler before servicing.**
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### 8. HEATING ELEMENT OR BURNER SHUTS-OFF PREMATURELY

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Improper or inadequate exhaust and/or make-up air system. | • Refer to ***Installation Manual*** (supplied with tumbler) for exhaust and make-up air requirements. |
| Gas Models: Insufficient gas supply | • Open partially closed gas shut-off valve, or correct low pressure. |
| Gas Models: Tumbler not properly equipped for type of gas used. | • Tumbler is equipped for type of gas specified on serial plate. If orifices are different from that specified on serial plate, obtain and install proper orifices. |
| Gas Models: Improperly adjusted burner flame. | • Refer to ***Adjustment*** Section for burner flame adjustment. |
| Gas Models: (Glow-Bar Ignition) Sensor contact closing. | • Replace sensor. |
| Cycling off on limit thermostat. | • Refer to *Paragraph 9*. |
| Broken, loose or incorrect wiring. | • Refer to wiring diagram located on back of tumbler or in literature packet. |

### 9. HEATING ELEMENT OR BURNER REPEATEDLY CYCLES OFF ON HIGH LIMIT THERMOSTAT

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| External exhaust system is longer than recommended or inadequate make-up air. | • Refer to ***Installation Manual*** (supplied with tumbler) for exhaust and make-up air requirements. |
| Clogged lint screen. | • Remove screen and clean. Lint screen and compartment should be cleaned after every eight hour shift. |
| Lint in tumbler ducts. | • Clean tumbler ducts |
| Lint in external exhaust system. | • Disassemble exhaust system and clean. |
| High limit thermostat cycling at too low a temperature. | • Replace thermostat. |
| Lint door panel not closed properly. | • Remove lint door panel, place lint door panel back on tumbler (ensuring a tight fit) then latch. |

## WARNING

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- **Close steam valve to steam tumbler before servicing.**
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W002

### 10. HEATING ELEMENT OR BURNER DOES NOT SHUT-OFF

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Gas Models:<br>Impurities on gas valve seat, preventing valve from closing. | • Replace gas valve. |
| Inoperative drying timer, relay or contactor. | • Replace timer, relay or contactor. |
| Incorrect wiring. | • Refer to wiring diagram located on back of tumbler or in literature packet. |

### 11. CLOTHES DO NOT DRY

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Heat source inoperative. | • Refer to *Paragraph 5*. |
| Too much water in articles being dried. | • Remove excess water. |
| Clothes load too large. | • Remove part of load. |
| Improper or inadequate exhaust system. | • Refer to ***Installation Manual*** (supplied with tumbler) for exhaust requirements. |
| Heat source shuts-off prematurely. | • Refer to *Paragraph 8*. |
| Drying timer improperly set. | • Set selector for higher setting. |
| Incorrect voltage. | • Refer to ***Installation Manual*** (supplied with tumbler) for electrical requirements. |
| Inadequate make-up air. | • Refer to ***Installation Manual*** (supplied with tumbler) for make-up air requirements. |

### 12. TUMBLER OVERHEATING

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Gas Models: Incorrect main burner orifices. | • Replace orifices. |
| Gas Models: Gas pressure too high. | • Gas pressure must be as specified on serial plate. |
| Inadequate make-up air. | • Refer to ***Installation Manual*** (supplied with tumbler) for make-up air requirements. |
| Lint accumulation. | • Remove lint. |
| Restricted or inadequate exhaust system. | • Remove obstruction or lint build-up from exhaust ductwork. Refer to the ***Installation Manual*** (supplied with tumbler) for exhaust system requirements. |
| Inoperative thermostat. | • Replace thermostat. |

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### 13. BURNERS NOT BURNING PROPERLY - GAS MODELS

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Burner air shutters incorrectly adjusted. | • Refer to ***Adjustment*** Section for proper flame adjustment. |
| Dirt in burners. | • Disassemble burners and blow out the dirt. |
| Gas pressure too high. | • Check serial plate on back of the tumbler for correct gas pressure. |
| Incorrect orifices. | • Tumbler is equipped for type of gas specified on serial plate. If orifices are different from that specified on serial plate, obtain and install proper orifices. |
| Restricted or blocked exhaust duct. | • Disassemble and clean exhaust system. |
| Airflow switch not functioning properly. | • Check adjustment and replace airflow switch if necessary. |

### 14. CYLINDER DOOR OPENS DURING OPERATION

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Door strike improperly adjusted. | • Refer to ***Adjustment*** Section for door strike adjustment. |
| Tumbler improperly leveled. | • Refer to ***Adjustment*** Section for leveling leg adjustment. |

### 15. TUMBLER RUNS BUT NO STEAM TO COILS - STEAM MODELS

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Valves closed. | • Check all valves in supply and return lines, make sure they are open. |
| Blocked steam trap. | • Remove trap and clean. Replace if inoperative. |
| Inoperative solenoid valve. | • Check operation of solenoid valve. |
| Incorrect installation of check valve. | • Check for inlet and outlet markings on check valve, and invert is necessary. |
| Clogged strainer. | • Remove strainer and clean. |
| Inoperative timer or thermostat. | • Test timer or thermostat, replace if inoperative. |

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### 16. WATER IN STEAM LINE - STEAM MODELS

| POSSIBLE CAUSE | TO CORRECT |
|---|---|
| Incorrect installation of steam piping. | • Refer to ***Installation Manual*** (supplied with tumbler) for steam requirements. |
| Trap functioning improperly. | • Check trap for size and capacity. If trap is dirty or sluggish, clean thoroughly or replace. Check return line for high back pressure. |

### 17. TROUBLESHOOTING ELECTRONIC CONTROL MODELS

| PROBLEM | POSSIBLE CAUSE | TO CORRECT |
|---|---|---|
| Display shows “PF” (MM models) | Tumbler has not been run in last six days. | Power tumbler for at least two continuous days to recharge battery. |
| | A custom cycle has not been programmed into memory. | Enter a custom cycle into memory. |
| | Discharged battery. | If tumbler has been powered for at least two continuous days, replace battery. |
| Door Open light and display flash with door closed | Door switch needs adjustment. | Adjust and test door switch. |
| | Door switch faulty. | Replace door switch. |
| | Electrical service connected incorrectly. | Check service connections to terminal block in junction box. For 120 or 240 Volt tumblers, neutral wire must be connected to terminal marked “NEUT”. On single phase tumblers, hot wire must be connected to terminal marked “L1”. A ground wire must be secured to the ground screw in the junction box. |
| Display shows “SH” and signals sounds | Temperature at sensor is over 191°F (88.3°C). | Allow tumbler to cool and press ON/SELECT pad. If display still shows “SH”, replace sensor. |
| | Temperature sensor shorted. | Replace temperature sensor. |
| Display shows “OP” and signal sounds three minutes after tumbler is started | Temperature at sensor is under 24°F (-4.4°C). | If the temperature of the tumbler is above 24°F (-4.4°C), replace temperature sensor. |
| | Temperature sensor open. | Replace temperature sensor. |

## WARNING

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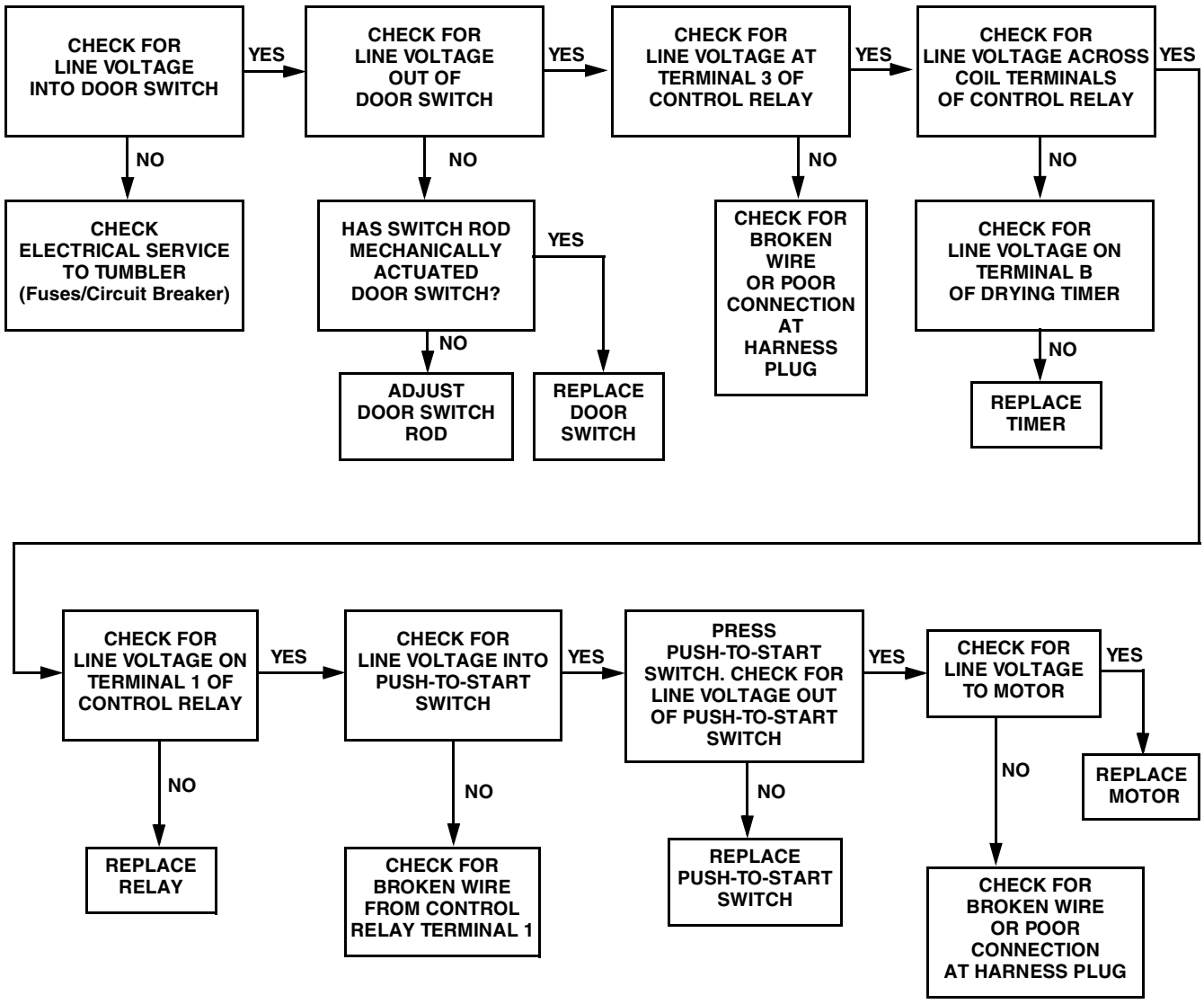
W002

### 18. TUMBLER WILL NOT START, TIME ON DRYING TIMER, DOOR CLOSED (MANUAL TIMER MODELS)



## WARNING

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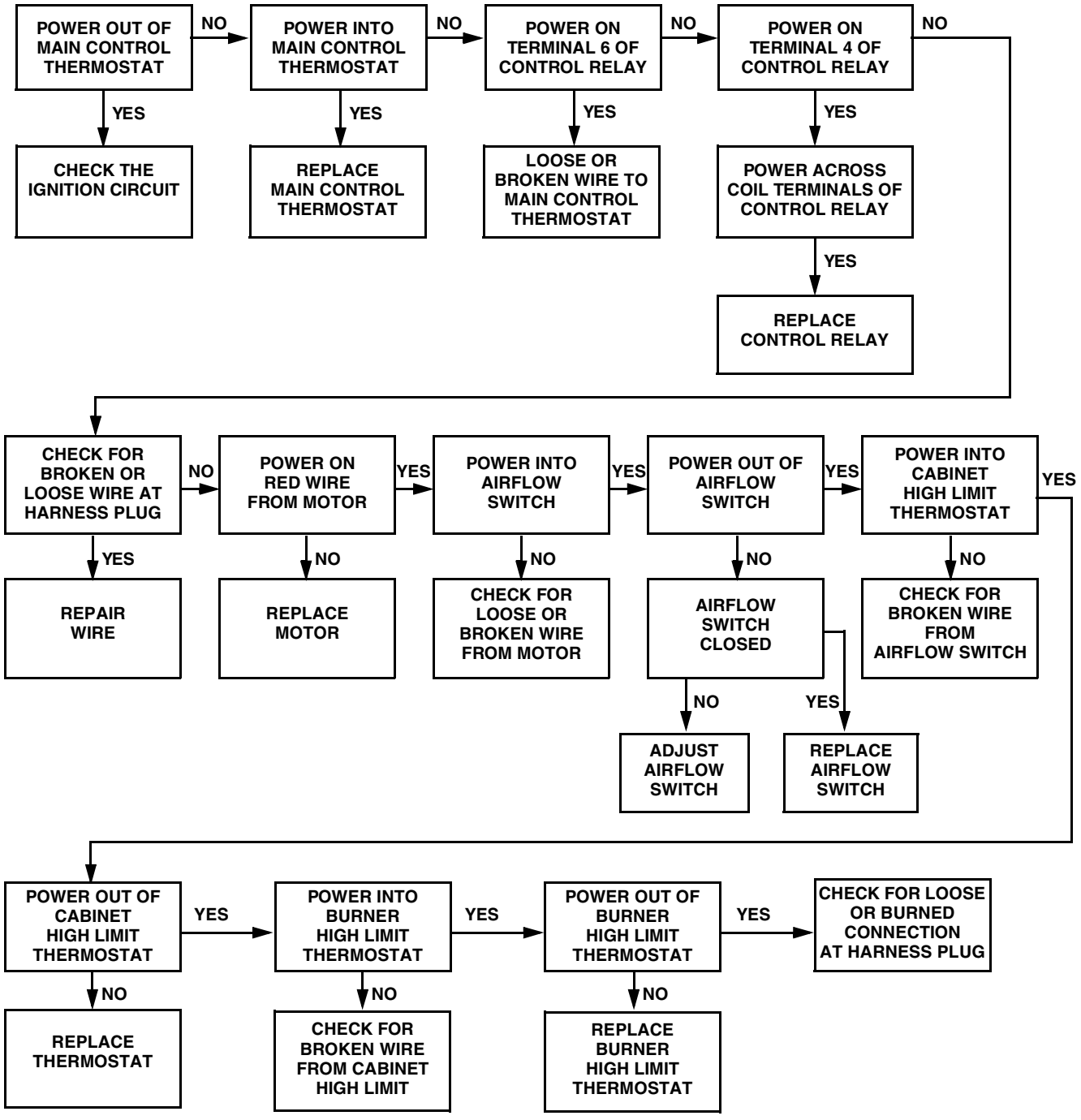
W002

### 19. MOTOR RUNS, TIME ON DRYING TIMER BUT NO HEAT

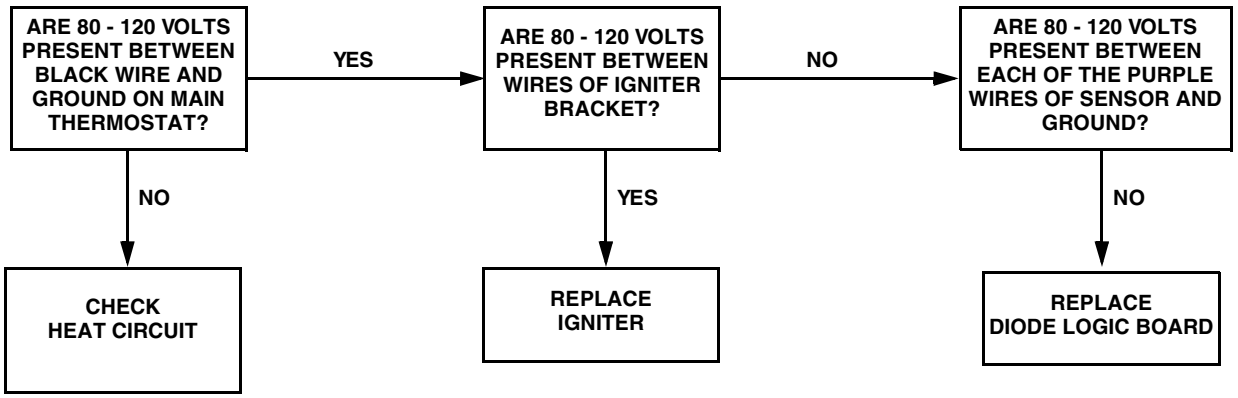


## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

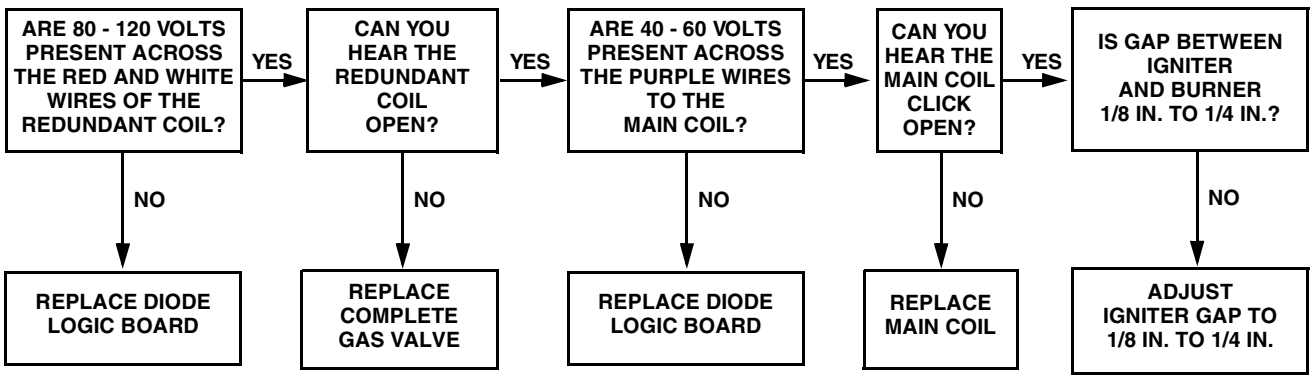
W002

### 20. IGNITER DOES NOT GLOW
**(White Rodgers Glow-Bar System)**




### 21. IGNITER GLOWS CONSTANTLY


### 22. IGNITER GLOWS, CYCLES OFF BUT BURNER DOES NOT IGNITE

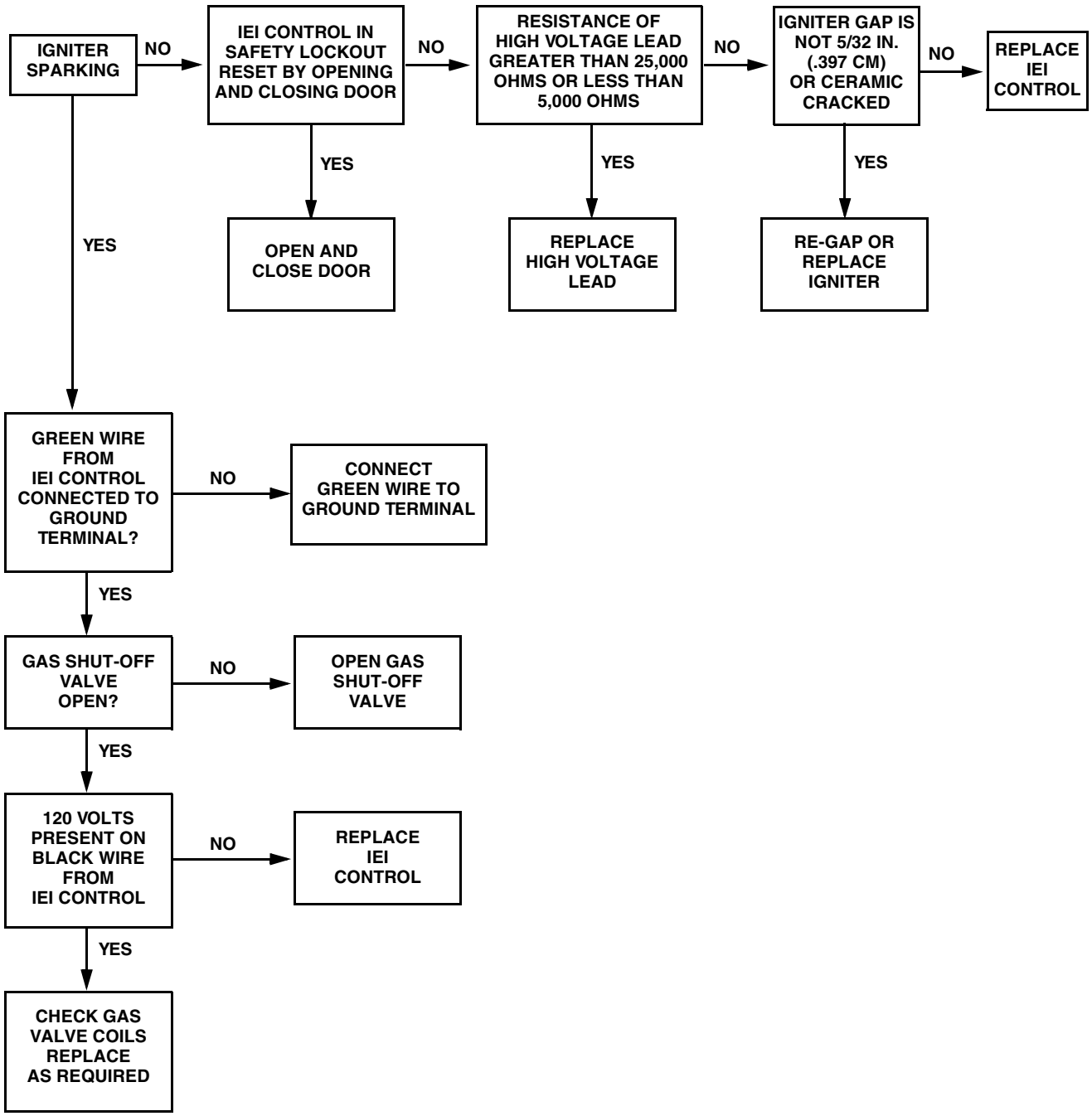


## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 23. IGNITER DOES NOT SPARK
**(White Rodgers Instant Electronic Ignition)**



# Section 4
# Grounding

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

## WARNING

**To reduce the risk of fire and electric shock, check with a qualified serviceperson for proper grounding procedures. Improper connection of the equipment grounding conductor may result in a risk of electric shock.**

W068R1

## WARNING

**To reduce the risk of fire and electric shock, if electrical supply is coming from a three phase service, DO NOT connect a "High Leg" or "Stinger Leg" to a single phase machine. On a three phase machine, if there is a "High Leg" or "Stinger Leg" it should be connected to L3.**

W069

## Grounding Instructions

Tumbler must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electric shock by providing the path of least resistance for electric current. Tumbler must be connected to a grounded metal, permanent wiring system; or an equipment grounding conductor must be run with the circuit conductors and connected to the appropriate ground location.

**NOTE: To ensure protection against shock, tumbler MUST be electrically grounded in accordance with local codes, or in the absence of local codes, with the latest edition of the National Electrical Code ANSI/NFPA No. 70. In Canada, the electrical connections are to be made in accordance with CSA C22.1 or the latest edition of the Canadian Electrical Code, Part I and/or local codes. Electrical work should be done by a qualified electrician.**

## WARNING

**All electrical connections should be made by a qualified electrician.**

**To reduce the risk of electrical shock, de-energize the electrical circuit being connected to the tumbler before making any electrical connections. Never attempt to connect a live circuit.**

W070

# Section 5
# Service Procedures

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**IMPORTANT: References made to the left or right hand direction are taken from the operator's position facing the front of the tumbler.**

**24. CONTROL PANEL**

Refer to *Figure 1*.

a. Unlock and open access panel. To hold panel open, swing support rod under panel.

b. **Manual Timer and Coin Meter Models**

(1) Remove two screws holding control panel to cabinet.

(2) Lift control panel off top edge of front panel and pull panel forward just far enough to disconnect wire harness at the plug.

**25. PUSH-TO-START SWITCH**

a. Remove control panel.

b. Remove two screws holding switch, and mounting bracket (if applicable), to control panel. Refer to *Figure 1*.

c. Disconnect wires from switch terminals and remove switch.

**NOTE: Refer to wiring diagram when rewiring switch.**

**26. COOLING, DRYING, OR RUN LIGHT**

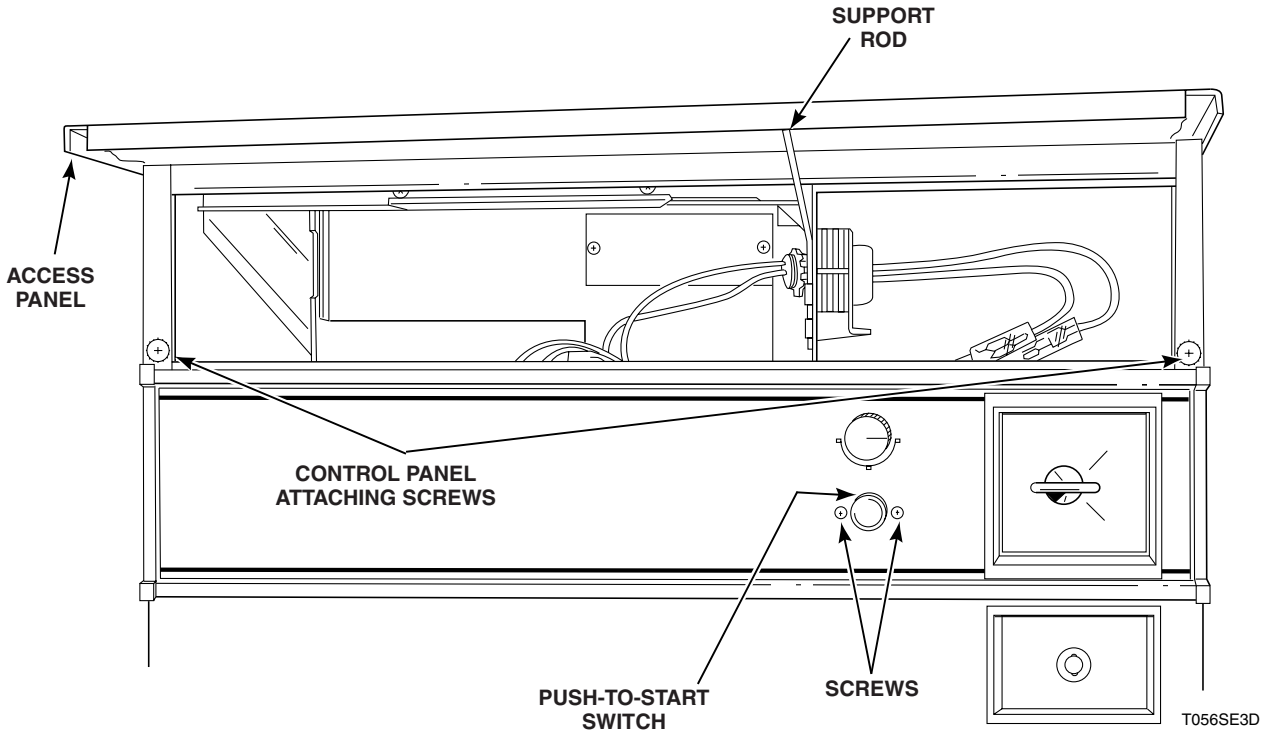
a. Remove control panel.

b. Disconnect light wire leads.

**NOTE: On Coin Meter Models, the run light white lead must be joined to the wire harness white lead using a double spade connector. Remove the single spade lug from the replacement run light white wire.**

c. Compress locking tabs on sides of light and push light out through front of control panel Refer to *Figure 2* for Coin Drop Models or *Figure 3* for Manual Timer Models.

**NOTE: Refer to wiring diagram when rewiring light.**



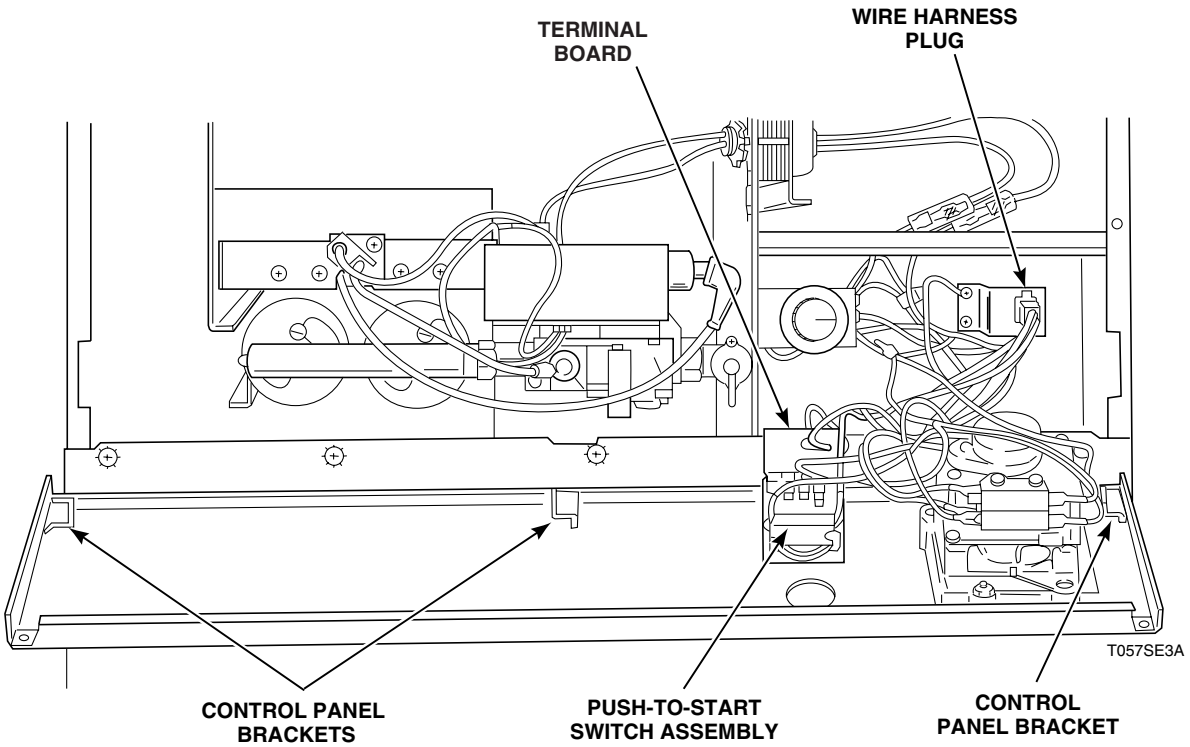




Figure 1

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

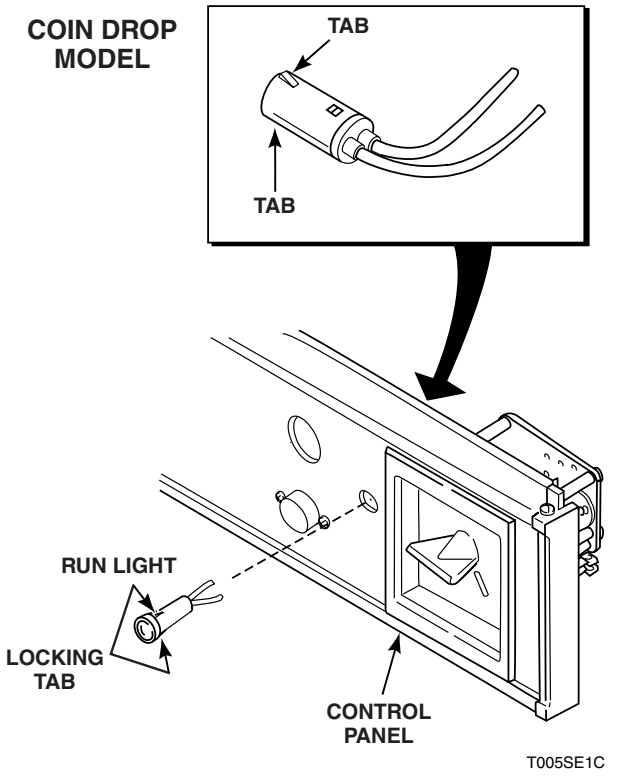



Figure 2

**27. RELAY (MANUAL TIMERS MODELS)**
a. Remove control panel.
b. Remove two screws holding relay to mounting bracket. Refer to *Figure 3.*
c. Disconnect wires from relay.

**NOTE: Refer to wiring diagram when rewiring relay.**

**28. RESISTOR 208 or 240 Volt/60 Hertz (Models with Control Circuit)**
a. Remove control panel.
b. Disconnect resistor leads. Refer to *Figure 3.*

**NOTE: Refer to wiring diagram when rewiring resistor.**

**29. COOLING OR DRYING TIMER (New Style)**
a. Remove control panel.
b. Pull timer knob off timer shaft. Refer to *Figure 3.*
c. Remove three screws holding timer to control panel or mounting bracket.
d. Remove wires from timer terminal board, and timer motor lead from terminal block.

**IMPORTANT: Be sure barrier is installed in proper position when reinstalling drying timer. Refer to *Figure 3*.**

**NOTE: Refer to wiring diagram when rewiring timer.**

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

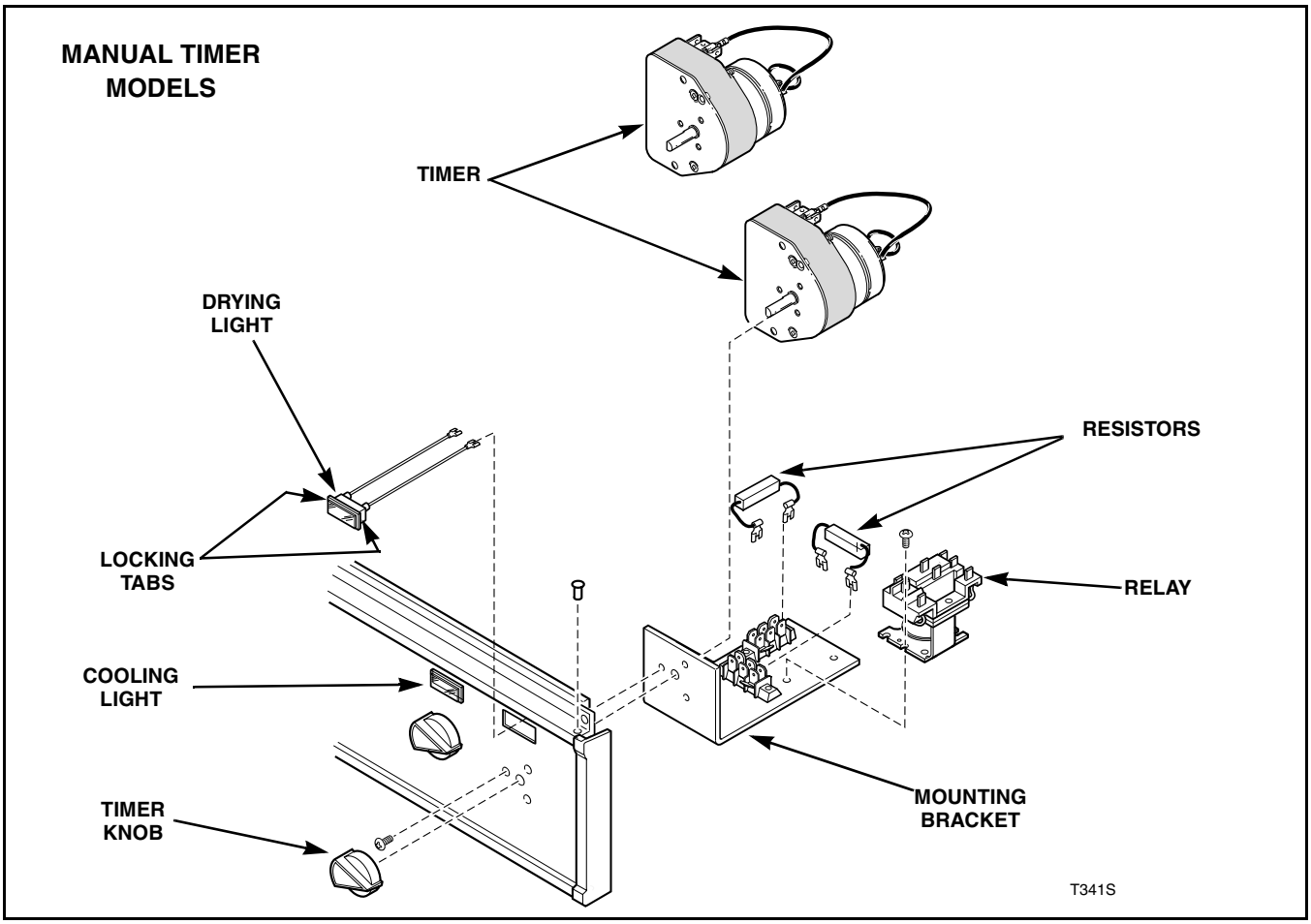



Figure 3

### 30. COOLING OR DRYING TIMER MOTOR (Old Style Timers)

**NOTE: Cooling and drying timers used prior to January 1985 were supplied by Greenwald and have serviceable timer motors. After January 1985, Robert Shaw or Mallory timers are used, which do not have serviceable timer motors. These later timers must be replaced as complete assemblies if the timer motor fails.**

a. Remove control panel.
b. Disconnect motor leads.
c. Remove screws holding timer motor to mounting bracket, *Figure 4*.

**NOTE: Refer to wiring diagram when rewiring timer motor.**

d. Replacing Greenwald timer assembly with Mallory timer assembly:
   (1) Remove Greenwald timer assembly.
   (2) Connect timer terminal wire 3 to terminal board terminal B.
   (3) Connect timer terminal 5 wire to terminal board terminal C.

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

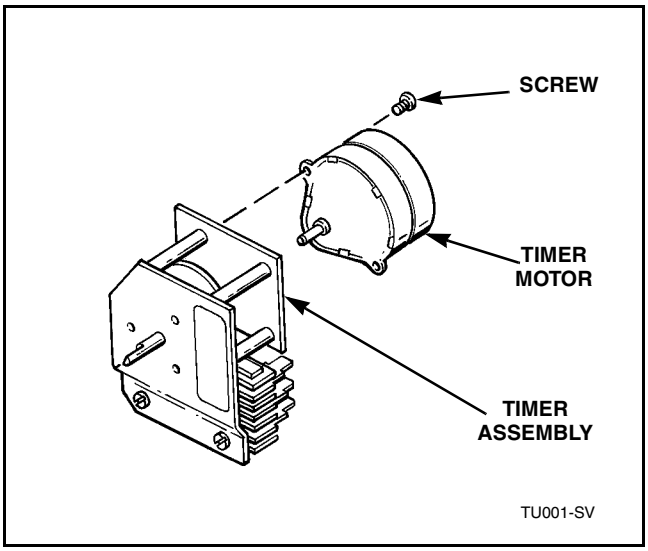



Figure 4

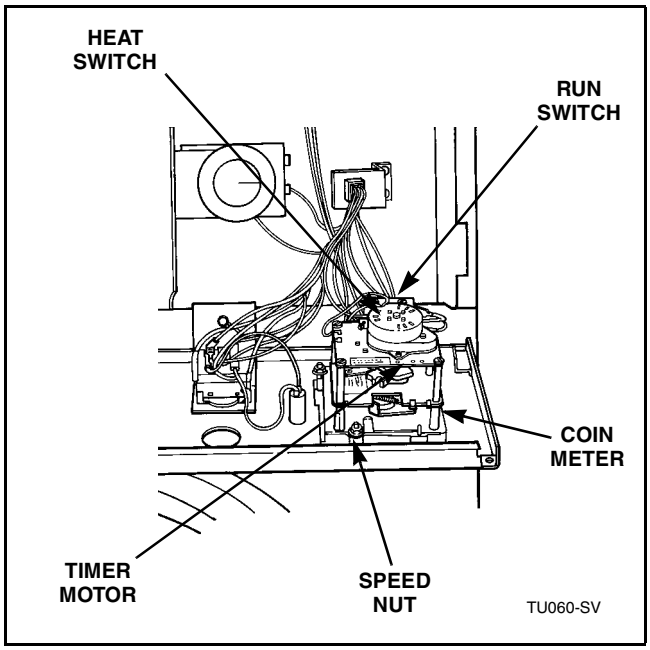



Figure 5

**31. COIN METER**

Refer to *Figure 5*.

a. Remove control panel.
b. Disconnect wires from heat and run switches.
c. Cut remaining motor wire and joining white wire at wire nut.
d. Remove four speed nuts holding coin meter to coin meter frame.

**NOTE: Refer to wiring diagram when rewiring coin meter. Connect wires cut in step "c" above with new wire nut.**

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**32. COIN METER TIMER MOTOR**

a. Remove control panel.
b. Remove two screws holding motor to mounting bracket. Refer to *Figure 6.*
c. Hold cam and drive fork against inside face of motor mounting bracket and pull timer motor free of cam and drive fork.
d. Disconnect motor leads.
e. Slide cam and drive fork out from under motor mounting bracket.

**NOTE: Refer to wiring diagram when rewiring timer motor.**

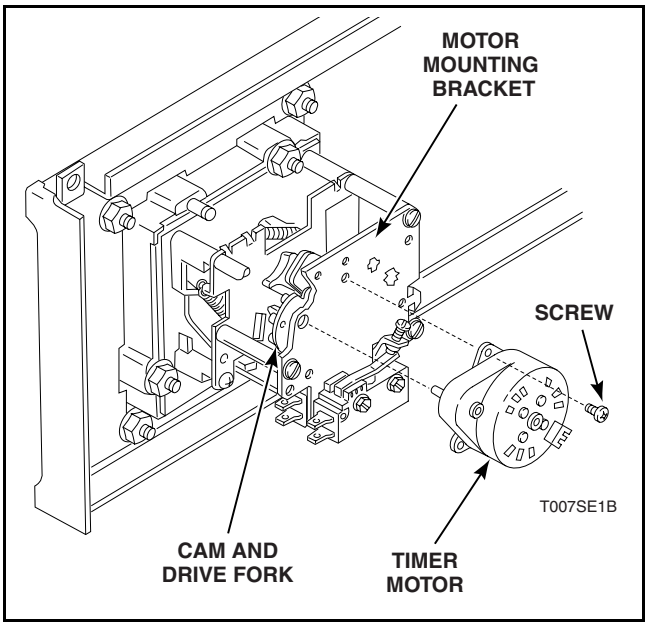



Figure 6

**33. COIN METER RUN OR HEAT SWITCH**

Refer to *Figure 7*.

a. Remove control panel.
b. Disconnect wires from switches on timer.
c. Hold switches and actuating bracket under switches tightly together with one hand while removing two screws holding switches to timing motor mounting bracket. Carefully remove the switches and actuating bracket parts.
d. Assemble the two switches and the two parts making up the switch actuating bracket.
e. Actuate the switches a number of times by manually pressing the actuating plate against the switch lever and plunger to ensure that the actuating parts do not bind. If binding occurs, reposition the actuating plate slightly until the binding stops.

**NOTE: Refer to wiring diagram when rewiring switches.**

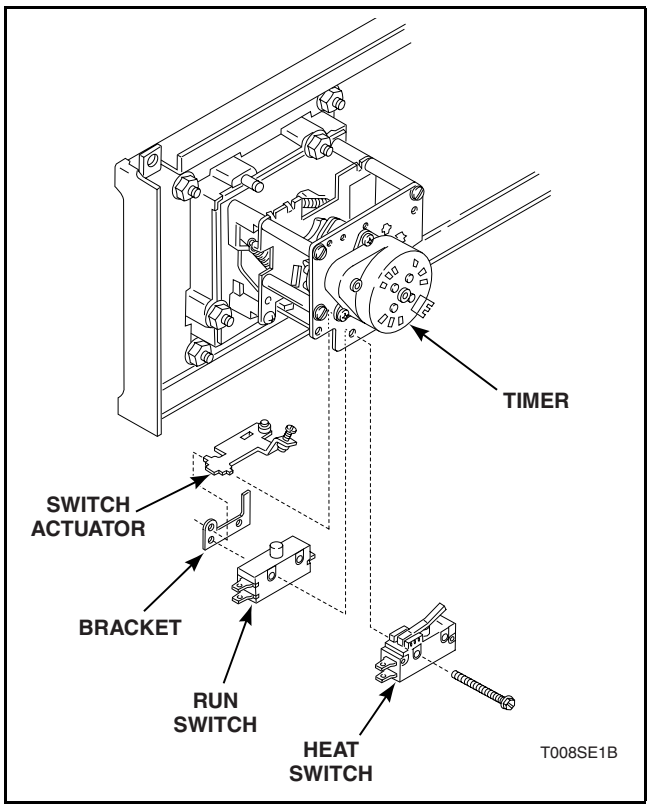



Figure 7

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**34. ELECTRONIC CONTROL (MM Models)**

a. Unlock and open access panel.
b. Remove retaining screw and swing electronic control out from control area. Refer to *Figure 8*.
c. Disconnect battery plug from control plug.
d. Carefully remove the wire harness wires from the back of the electronic control.
e. Remove the four mounting screws holding the electronic control to the bracket. Refer to *Figure 3*.

**NOTE: Refer to the wiring diagram when reconnecting the wire harness to the electronic control.**

**IMPORTANT: Due to the sensitivity of the electronic control, careful handling is required. As a precautionary measure, we recommend using a ground wrist strap when handling the electronic control. Wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and to direct charge to an available ground. By using this static protection device, potential electrostatic discharge problems associated with handling of electronic control will be minimized. Always handle electronic control by its metal edges. If a wrist strap is not available, touch tumbler while it is plugged in before handling control to dissipate any charge.**

**35. REVERSING/NONREVERSING SWITCH**

Refer to *Figure 8*.

a. Unlock and open access panel.
b. Remove retaining screw and swing electronic control out from control area.
c. Disconnect the wires from the back of the switch.
d. Remove nut holding switch to electronic control bracket. For OM Models, depress locking tabs on rectangular switch.

**36. BATTERY (MM Model) (Electronic Control Models)**

Refer to *Figure 8*.

a. Unlock and open access panel.
b. Remove retaining screw and swing electronic control out from control area.
c. Disconnect battery plug from control plug.
d. Unsnap plastic clamp holding battery to control bracket.

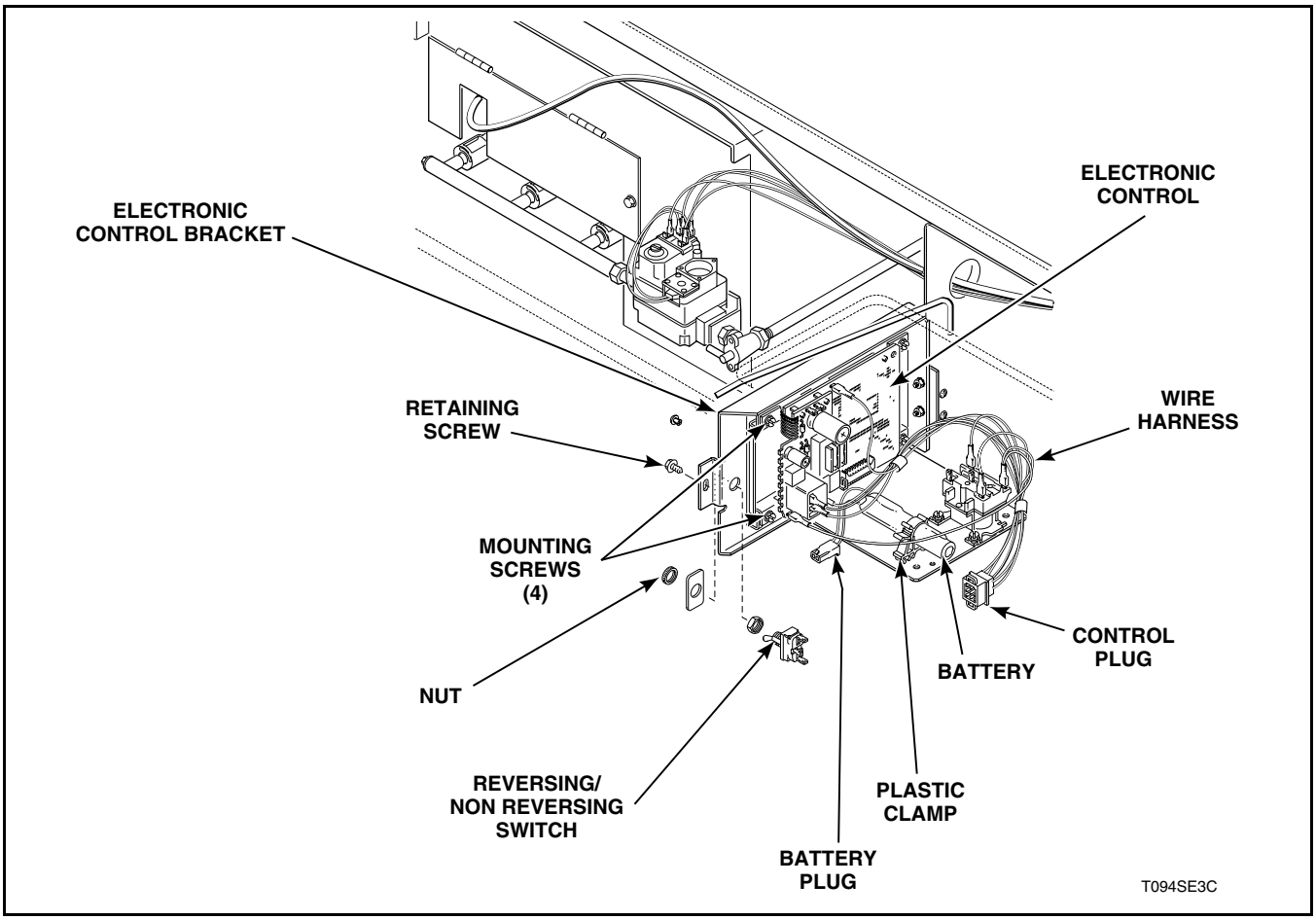



Figure 8

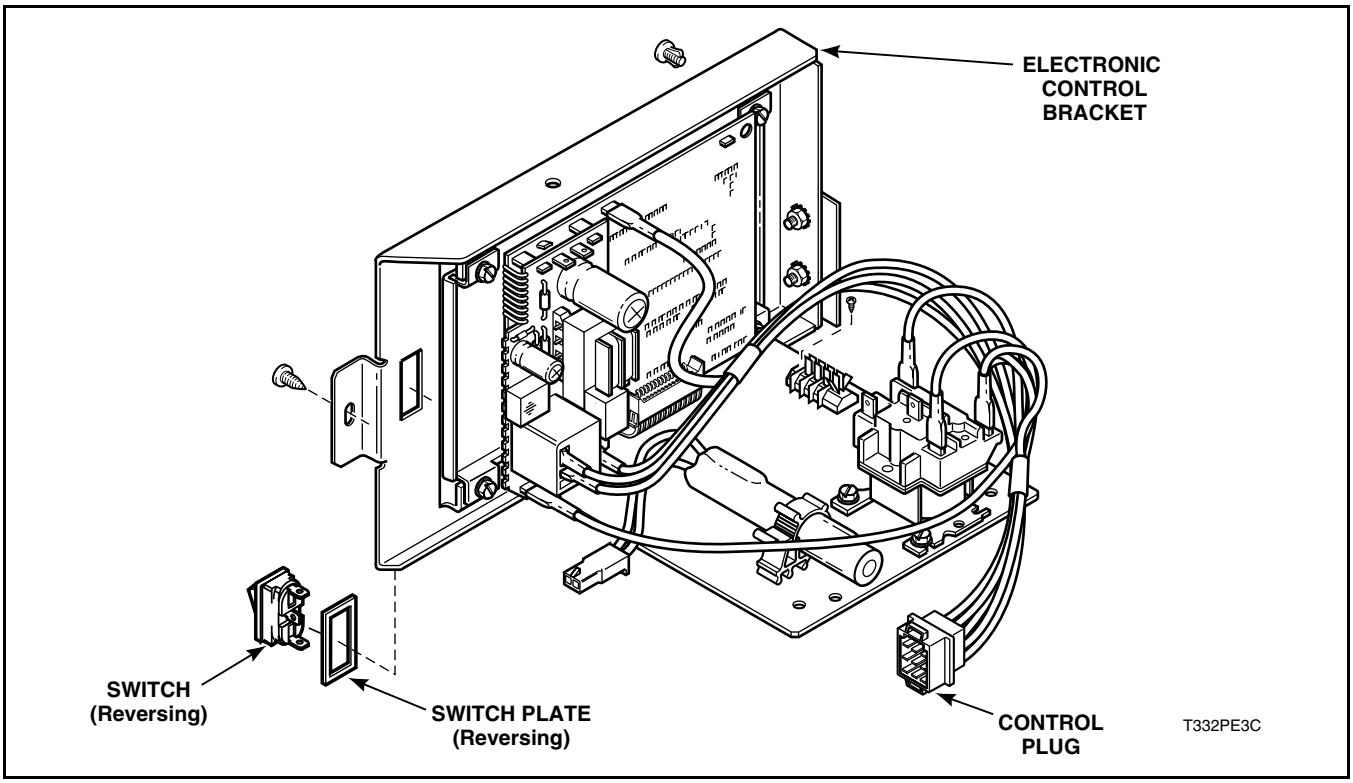



Figure 9

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**37. CONTROL THERMOSTAT**

a. Remove control panel.
b. Pull off thermostat knob. Refer to *Figure 10*.
c. Disconnect wires from thermostat.
d. Remove two screws holding thermostat to bracket.

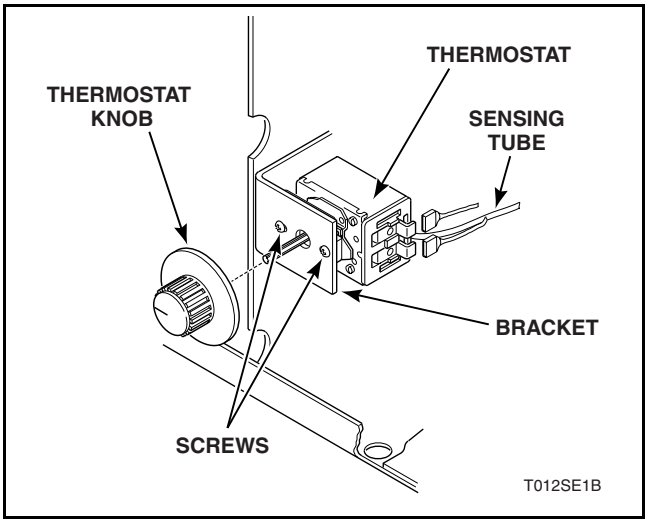



Figure 10

e. Remove wire-way attaching screws. Refer to *Figure 11*.
f. Remove screws, wire clips and/or retaining straps securing thermostat sensing tube in wire-way.
g. Remove junction box cover attaching screws. Refer to *Figure 11*.

**IMPORTANT: When reinstalling thermostat, be sure to install all screws and wire clips and replace all retaining straps removed in step "f" and "g".**

h. Unlock and remove lint panel.
i. Spread locking tabs on sensing probe bracket and disengage probe from bracket. Refer to *Figure 12*.

**IMPORTANT: When reinstalling thermostat, be sure to secure sensing probe with locking tabs on bracket.**

j. Carefully remove thermostat, tube and probe.

**IMPORTANT: Do not kink sensing tube when installing thermostat.**

**NOTE: Refer to wiring diagram when rewiring thermostat.**

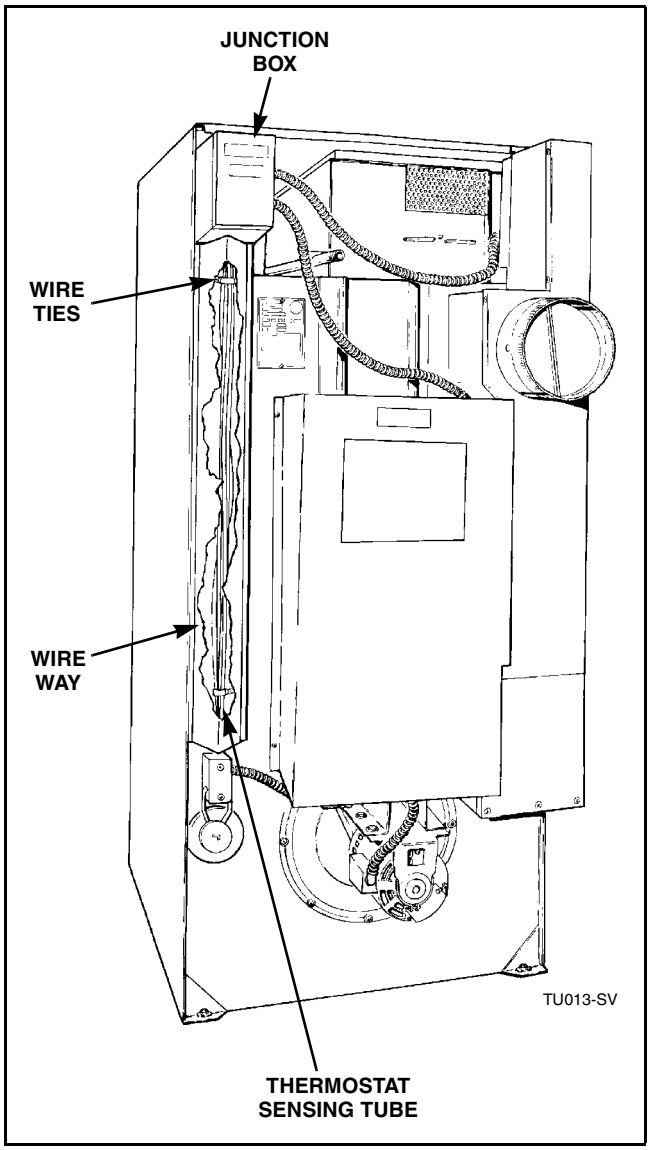



Figure 11

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**

- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

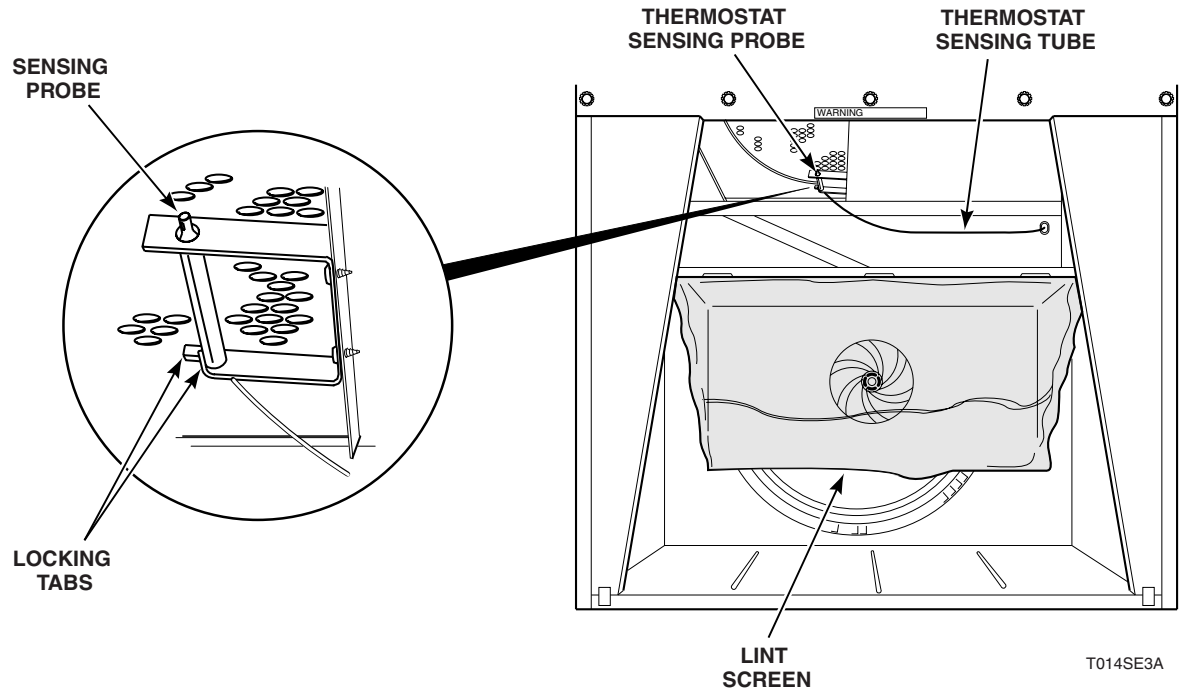



Figure 12

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**38. THERMISTOR**
**(Electronic Control Models Only)**
Refer to *Figure 13*.

a. Unlock and remove the lint panel.
b. Remove the two screws holding the perforated cover to the thermistor bracket.
c. Disconnect the wires from the back of the thermistor.
d. Remove the two screws holding the thermistor to the bracket.
**OM Models**: Unthread thermistor from bracket.

**NOTE: Refer to the wiring diagram when reconnecting the wires to the thermistor.**

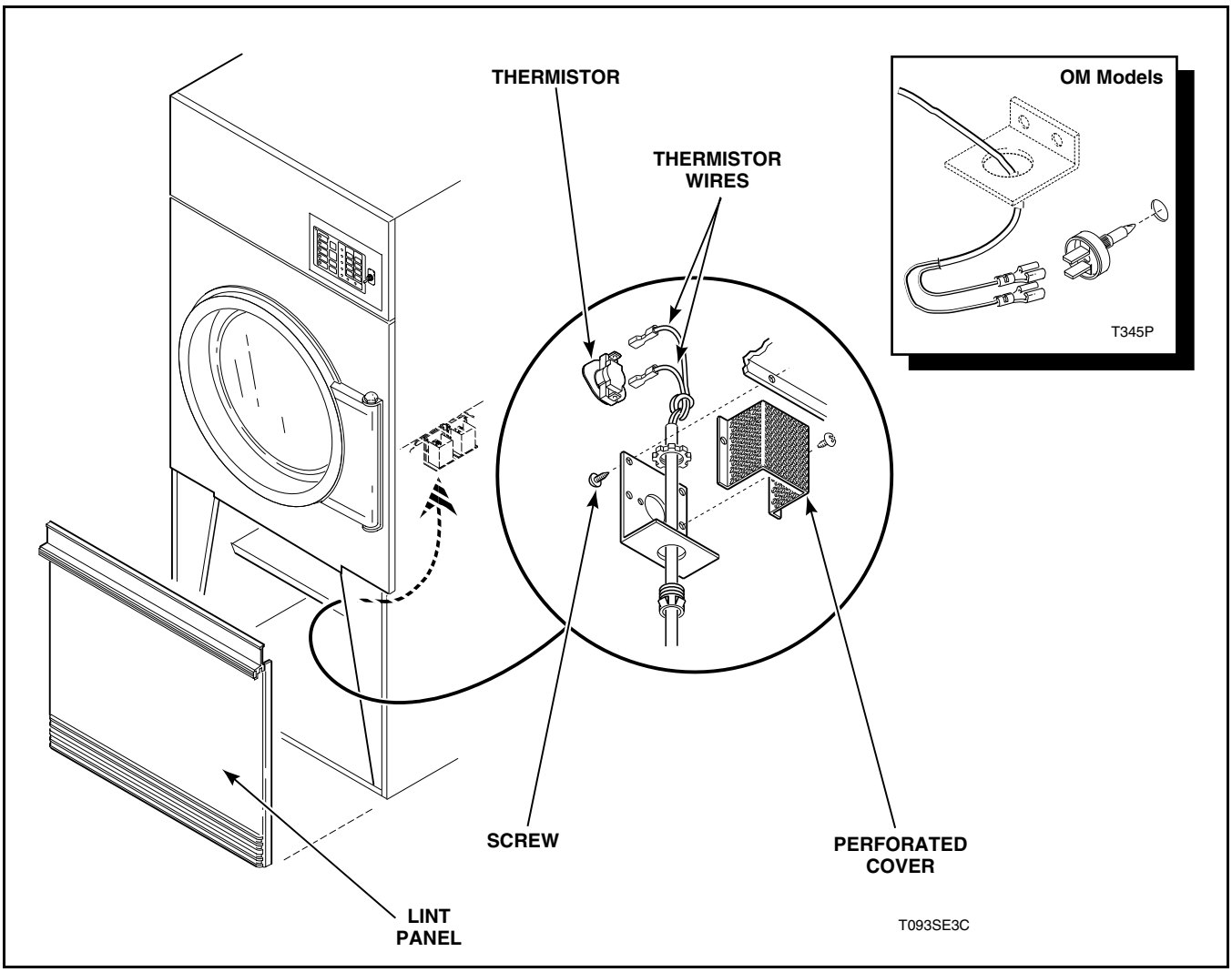



Figure 13

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**39. GAS VALVE**
**(White Rodgers Glow-Bar Models)**
Refer to *Figure 15*.

a. Remove control panel.
b. Close gas shut-off valve. Refer to *Figure 14*.
c. Disconnect all wires from gas valve terminals and disconnect gas valve pipe unions.
d. Remove screws holding gas valve and bracket to stove assembly.
e. Remove gas valve from mounting bracket.
f. Remove spudholder and nipple from left side of valve. Use 1/2 inch Allen wrench to remove plug from right side of valve.

**IMPORTANT: Purge air from the gas service line by operating tumbler in drying mode. Use pipe compound resistant to action of L.P. gas on all pipe threads.**

## WARNING

**To reduce risk of fire or explosion, check pipe connections for gas leaks with a non-corrosive leak detection fluid. Do not use an open flame to check for gas leaks!**

W310

**NOTE: Refer to wiring diagram when rewiring gas valve.**

**40. DIODE LOGIC BOARD**
**(White Rodgers Glow-Bar Models)**

a. Remove control panel.
b. Disconnect wires from diode logic board terminals. Refer to *Figure 14*.

**NOTE: Refer to wiring diagram when rewiring diode logic board.**

c. Compress tabs on back ends of diode logic board standoffs and push standoffs through holes in cabinet wall to free the diode logic board.

**41. MAIN COIL**
**(White Rodgers Glow-Bar Models)**
Refer to *Figure 15*.

**NOTE: The redundant coil cannot be purchased separately. Replace the complete gas valve.**

a. Remove control panel.
b. Close gas shut-off valve. Refer to *Figure 14*.
c. Disconnect wires from main coil terminals.
d. Remove screws holding main coil to gas valve.

**NOTE: Refer to wiring diagram when rewiring gas valve main coils.**

**42. IGNITER BRACKET**
**(White Rodgers Glow-bar Models)**
Refer to *Figure 14*.

a. Remove control panel.
b. Insert tips of 90 degree Tru-Arc pliers into holes in each igniter mounting clip and spread clips just far enough for igniter removal.

**IMPORTANT: Use extreme care when handling the igniter as it is very fragile. Handle igniter by grasping the white wings only. Do not handle the silicon carbide portion of the igniter with hands or allow any oil, grease, or other foreign material to contaminate it. Hairline cracks, oil, grease, or other impurities will cause igniter to burn out.**

c. Remove screw holding igniter bracket to stove assembly.
d. Disconnect igniter wires from diode logic board.

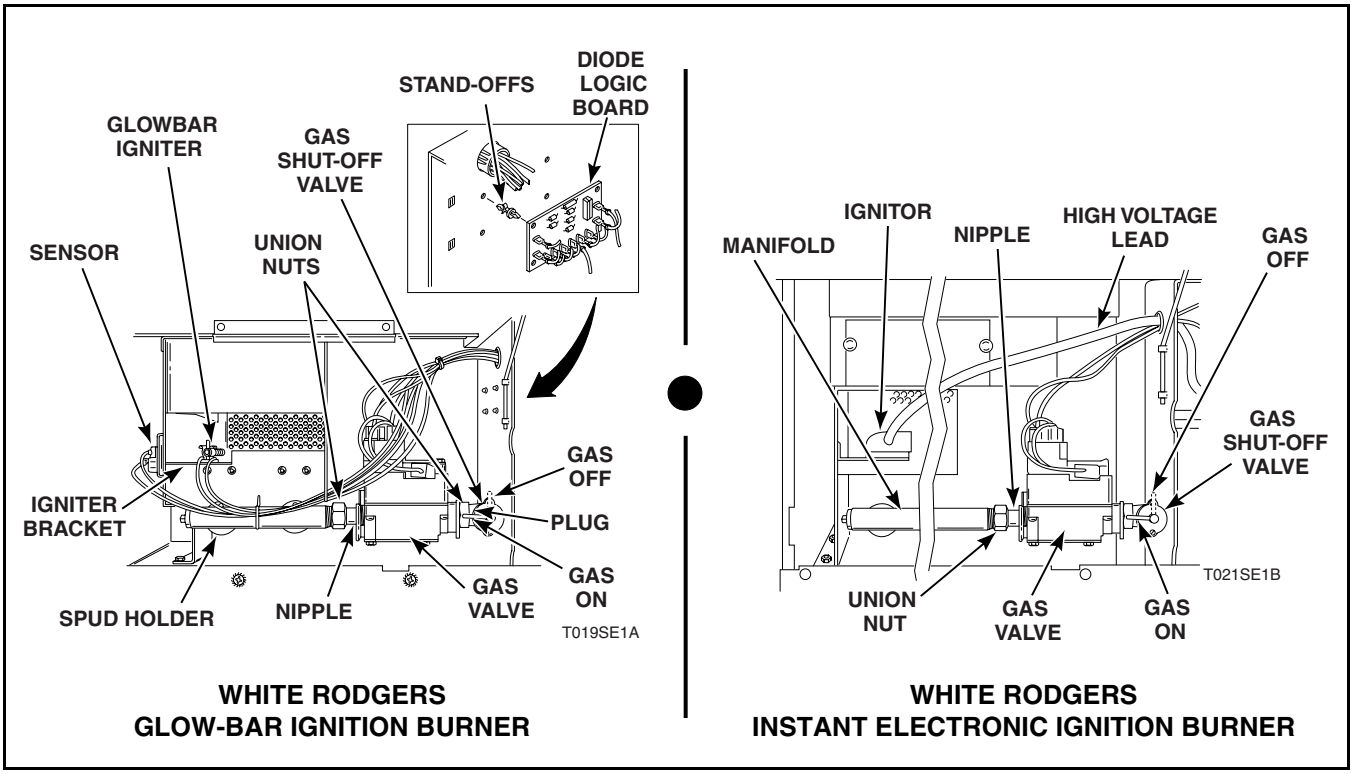



Figure 14

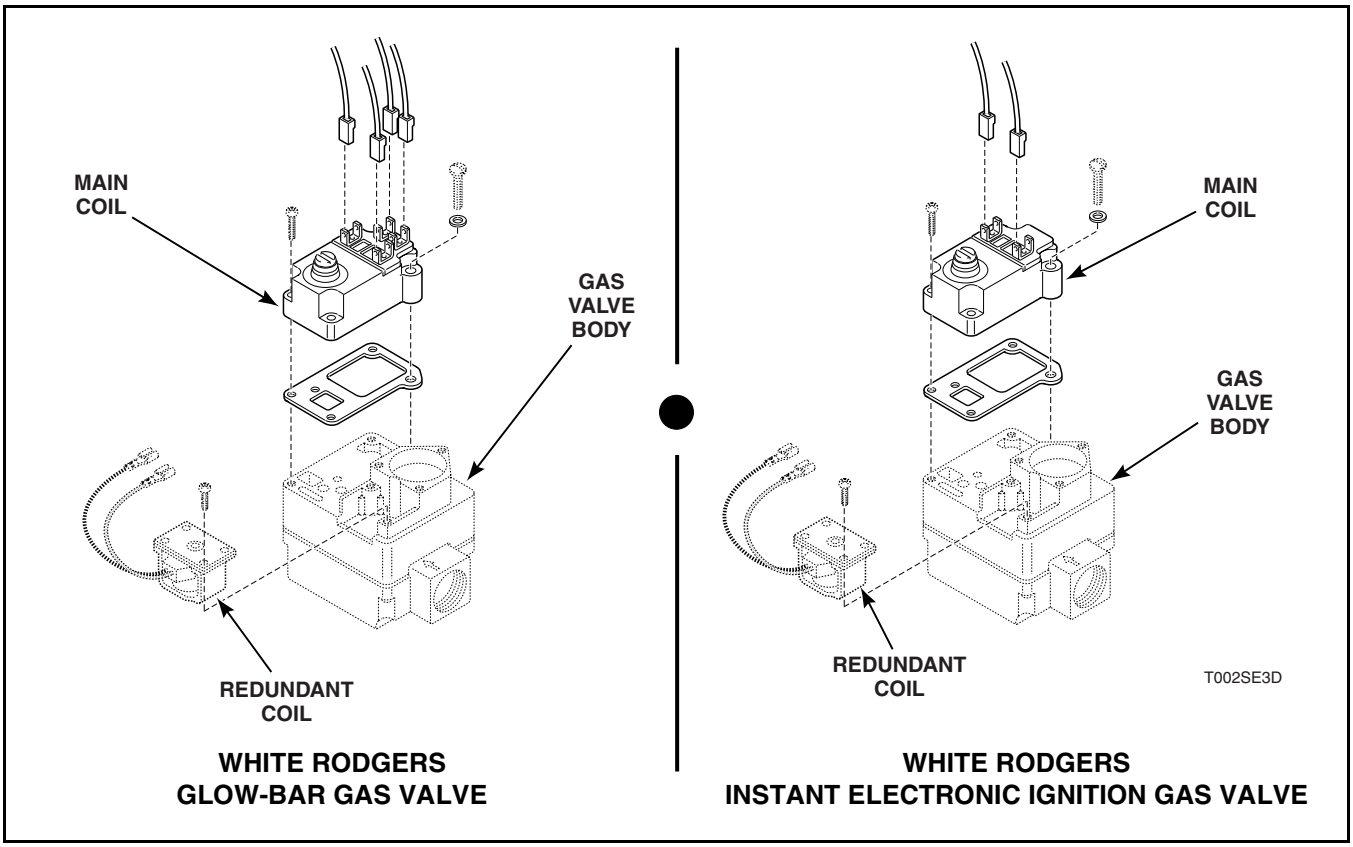



Figure 15

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**43. SENSOR**
**(White Rodgers Glow-Bar Models)**
Refer to *Figure 14*.

a. Remove control panel.
b. Disconnect wires from sensor, (on left side of burner housing).
c. Remove screw holding sensor to side of stove assembly.

**NOTE: Refer to wiring diagram when rewiring flame sensor.**

**44. IGNITER**
**(Instant Electronic Ignition Models)**
Refer to *Figure 14*.

a. Remove control panel.
b. Disconnect high voltage lead from igniter.
c. Remove two screws attaching igniter bracket to stove assembly.

**45. IGNITION CONTROL**
**(Instant Electronic Ignition Models)**
Refer to *Figure 14*.

a. Remove control panel.
b. Disconnect wire harness.
c. Remove high voltage lead.

**IMPORTANT: Remove circuit board and plastic back as a unit. Handle ignition control unit by sides of board only. Do not contact circuit boards with hands or metal objects. Place unit in clean, dry area away from work area to avoid damage. Do not attempt field repair of the ignition control unit. Attempted repair or tampering with the ignition control unit will void its warranty.**

d. Remove two screws attaching ignition control unit to cabinet frame.
e. Remove ignition control unit.

**46. GAS VALVE**
**(Instant Electronic Ignition Models)**
Refer to *Figure 15*.

a. Remove control panel.
b. Close gas shut-off valve. Refer to *Figure 14*.
c. Disconnect all wires from gas valve terminals and disconnect gas valve pipe unions.
d. Remove screw holding gas valve bracket to stove.
e. Remove spudholder and manifold from left side of valve and plug from right side of valve.
f. Remove gas valve from mounting bracket.

**IMPORTANT: Purge air from the gas service line by operating tumbler in drying mode. Use pipe compound resistant to action of L.P. Gas on all pipe threads.**

## WARNING

**To reduce risk of fire or explosion, check pipe connections for gas leaks with a non-corrosive leak detection fluid. Do not use an open flame to check for gas leaks!**

W310

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**47. MAIN COIL**
**(Instant Electronic Ignition Models)**
Refer to *Figure 15*.

**NOTE: The redundant coil cannot be purchased separately. Replace complete gas valve.**

a. Remove control panel.
b. Close gas shut-off valve. Refer to *Figure 14*.
c. Disconnect wires from main coil terminals.
d. Remove screws holding main coil to gas valve.

**48. BURNER TUBE**
a. Remove control panel.
b. Close gas shut-off valve. Refer to *Figure 14*.
c. Disconnect union nuts attaching nipple to spudholder and remove spudholder.
d. Remove screws holding gas and valve bracket to stove assembly.
e. Remove screws holding burner tubes to stove frame and remove burner tubes.

## WARNING

**To reduce risk of fire or explosion, check pipe connections for gas leaks with a non-corrosive leak detection fluid. Do not use an open flame to check for gas leaks!**

W310

**IMPORTANT: Make sure that spudholder and orifices are positioned such that gas will be injected directly down the center of the burner.**

**49. CONTACTORS AND TERMINAL BLOCK**
**(Electric Models)**
Refer to *Figure 16*.

**NOTE: Contactors and terminal blocks are located in contactor box at the rear of the tumbler.**

a. Remove screw holding cover to contactor box and remove cover.
b. Remove wires from contactor terminals and terminal blocks.

**NOTE: Refer to wiring diagram when rewiring contactors or terminal blocks.**

c. Remove screws attaching contactor to box.
d. Remove two screws holding terminal block to box.

**NOTE: Terminal block consists of two terminal section (one phase) or three terminal sections (three phase) and an end piece snapped together. Later models use a one-piece three position terminal block mounted on a din rail.**

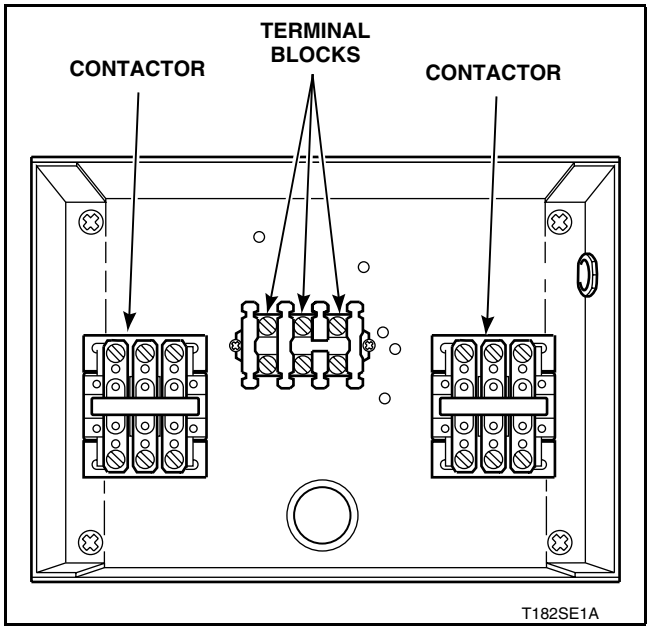



Figure 16

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**50. HEATER ELEMENT**
**(Electric Tumbler)**
Refer to *Figure 17*.

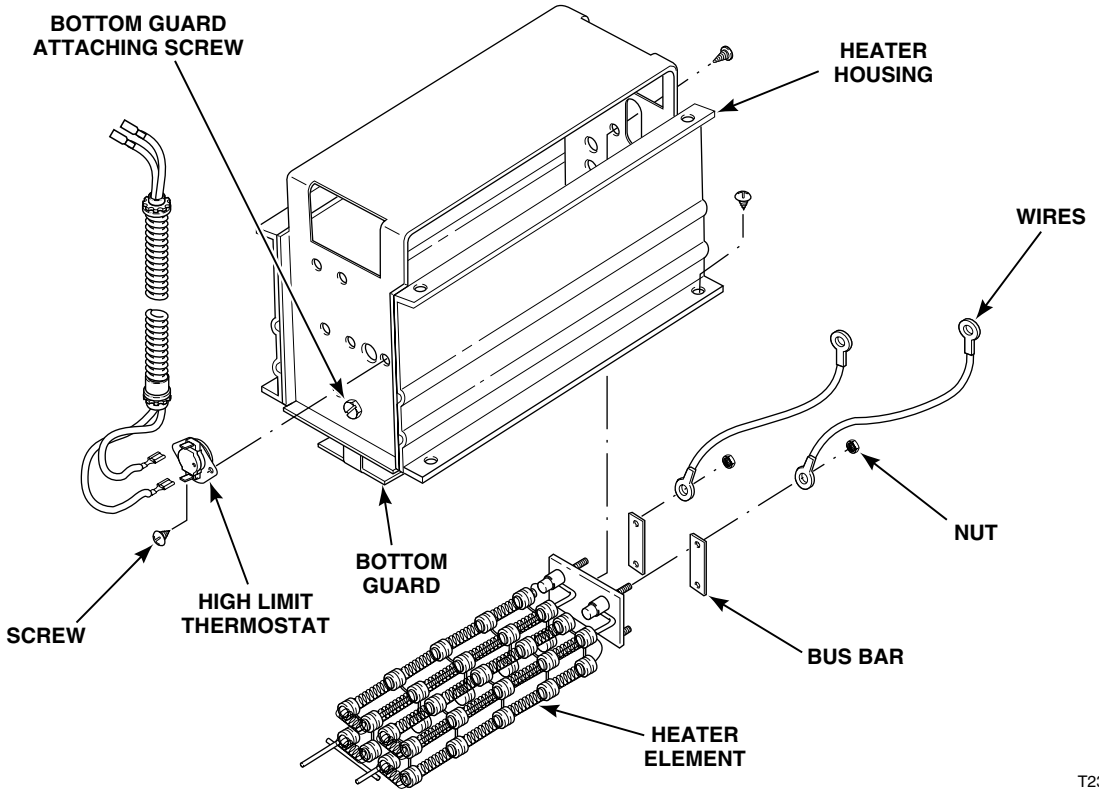
a. Remove two screws holding wire hood to top of cabinet and remove.
b. Remove nuts, wires and bus bars from element terminals.
c. Remove four screws holding heater housing to top of cabinet and remove heater from tumbler.
d. Turn heater housing upside down and remove bottom guard retaining screws.
e. Remove two retaining screws from each of the elements to be replaced.

**NOTE: To remove top element, all elements must be removed. To remove center element, both center and bottom element must be removed.**

f. Slide element forward until terminals clear rear of heater housing.
g. Tilt element up and gently slide it out of housing.

**IMPORTANT: Bottom guard must be put back on bottom of housing before reinstalling heater on tumbler.**

## Older Models:




## Newer Models:

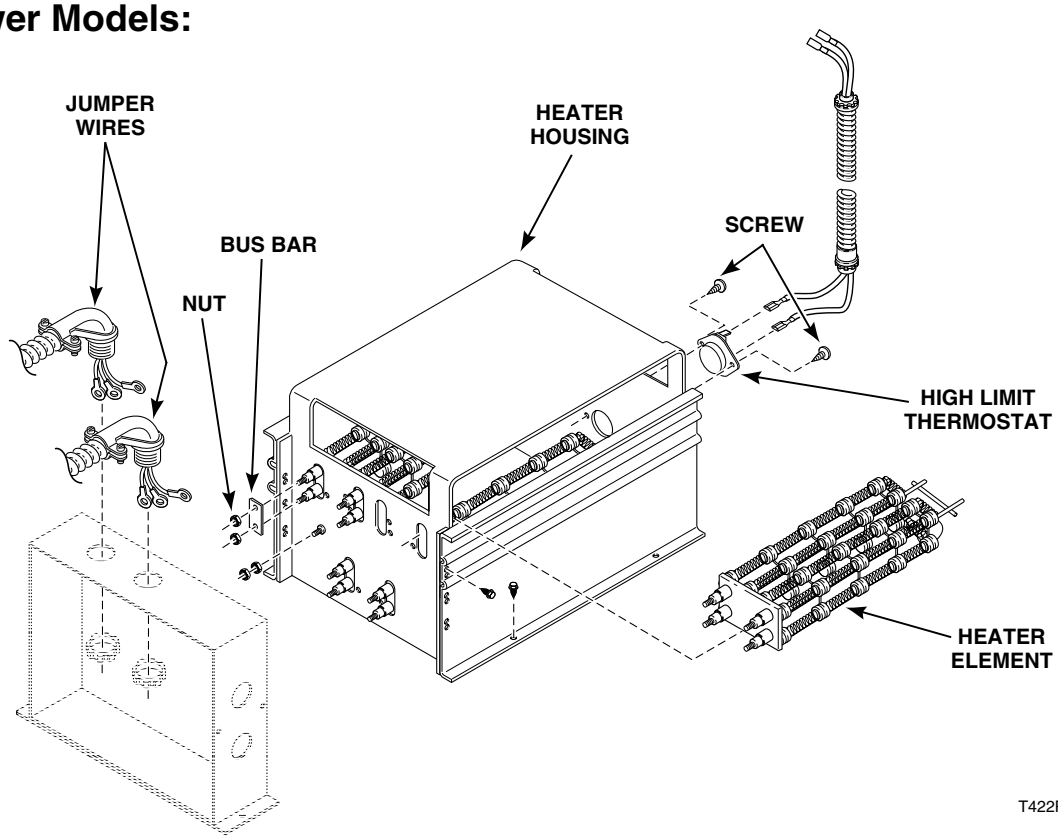



Figure 17

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 51. STOVE HIGH LIMIT THERMOSTAT (Gas Models)

**NOTE: Steps "a" through "d", and "f" apply only to energy saver models. The stove high limit thermostat is more readily accessible on non-energy saver models.**

a. Remove control panel.
b. Remove screw holding cover to junction box or airflow switch. Remove cover. Refer to *Figure 18*.
c. Disconnect stove high limit thermostat wires in junction box.
d. Remove conduit nut from BX on inside of junction box. Refer to *Figure 18*.
e. Remove two screws holding thermostat and bracket to rear side of burner. Refer to *Figure 18*.

**NOTE: This will allow the conduit to follow through between burner and cabinet when thermostat and bracket assembly are slid toward front of tumbler (energy saver models only).**

f. Carefully slide assembly, with conduit, toward front of tumbler far enough to permit removal of complete assembly from burner.
g. Remove two screws holding cover to mounting bracket. Refer to *Figure 19*.
h. Disconnect wires from thermostat.
i. Remove two screws holding thermostat to mounting bracket. Refer to *Figure 19*.

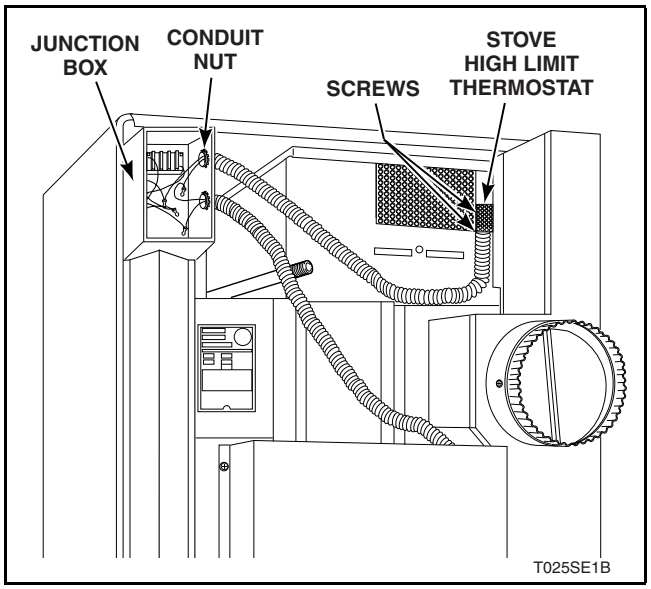



Figure 18

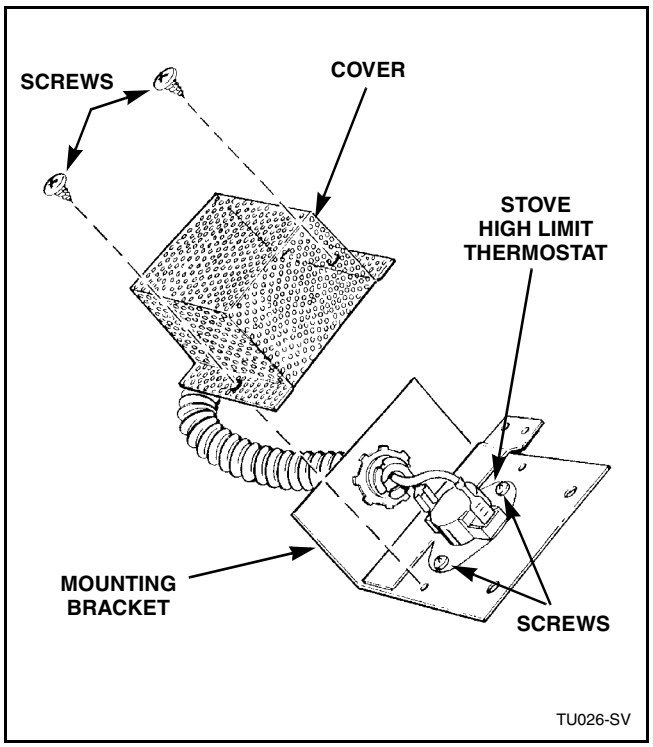



Figure 19

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**52. CABINET HIGH LIMIT THERMOSTAT**

**Energy Saver Gas Models**
(Located on side of Vertical Exhaust Duct)
Refer to *Figure 20*.

a. Support drive guard and remove screws holding guard to rear of tumbler, *Figure 28*.
b. Disconnect wires from thermostat.
c. Remove two screws holding thermostat to vertical duct.

**Non-Energy Saver Gas Models**
(Located under Cylinder)
Refer to *Figure 20*.

a. Remove lint compartment door.
b. Remove two screws holding thermostat mounting bracket to cylinder shroud.
c. Remove two screws holding cover to mounting bracket.
d. Disconnect two wires from thermostat.
e. Remove two screws attaching thermostat to mounting bracket.

**NOTE: Refer to wiring diagram when reconnecting thermostat wires.**

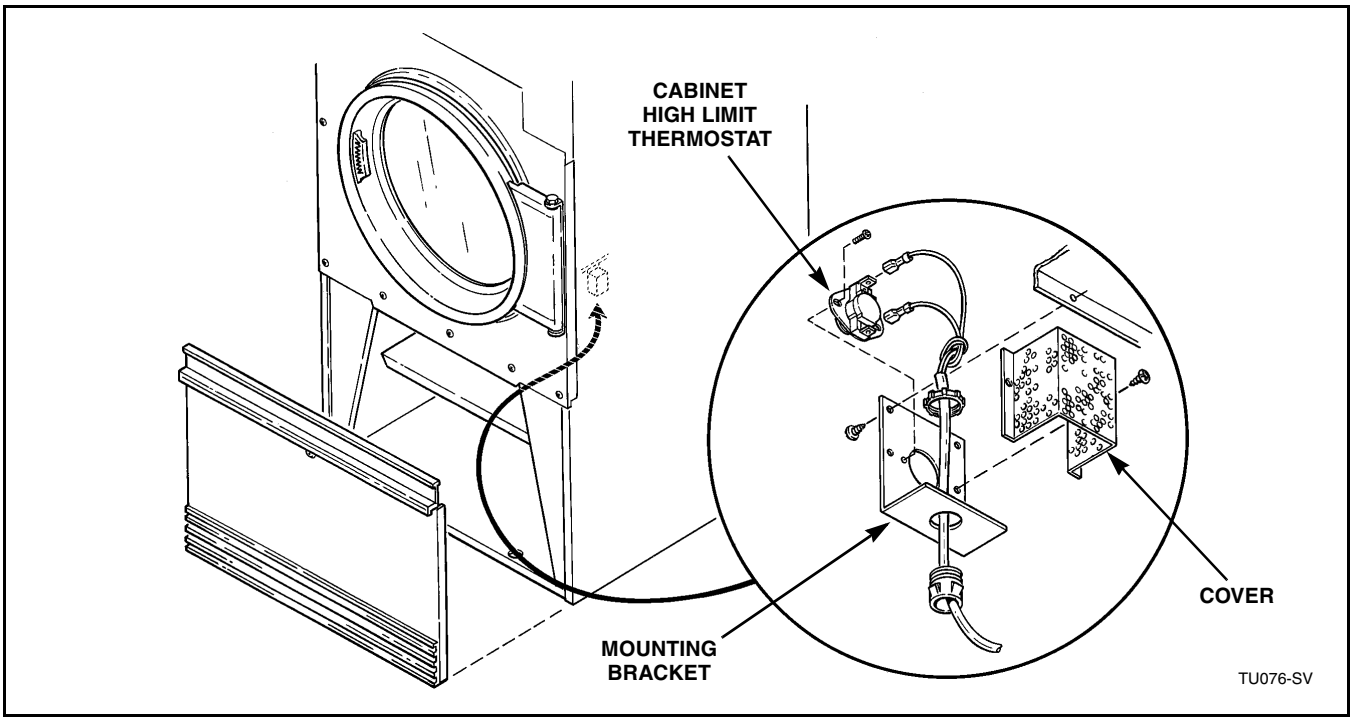



Figure 20

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 53. HIGH LIMIT THERMOSTAT (Electric Models)

a. Unlock and open access door.
b. Disconnect wires from thermostat.
c. Remove two screws holding thermostat to front of heater housing and remove thermostat. Refer to *Figure 17*.

**NOTE: Refer to wiring diagram when rewiring thermostat.**

### 54. STEAM COILS

## WARNING

**Allow steam coils and valve to cool down before attempting any service procedures.**

W249

a. Shut off inlet and outlet valves and disconnect flex hoses from steam coils
b. Remove screws holding cover to top of steam heating unit and remove cover.
c. Remove screws holding steam coils to coil frame.
d. Remove steam coils by lifting straight up and out of tumbler.

**IMPORTANT: When removing or replacing steam coils, be careful not to damage fins on steam coils.**

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 55. LOADING DOOR ASSEMBLY

Refer to *Figure 21*.

a. Open loading door.
b. While supporting door, remove upper hinge bolt holding door to hinge bracket.
c. Remove door from hinge bracket.

**NOTE: Nylon washer must be in place on lower pin when reinstalling loading door.**

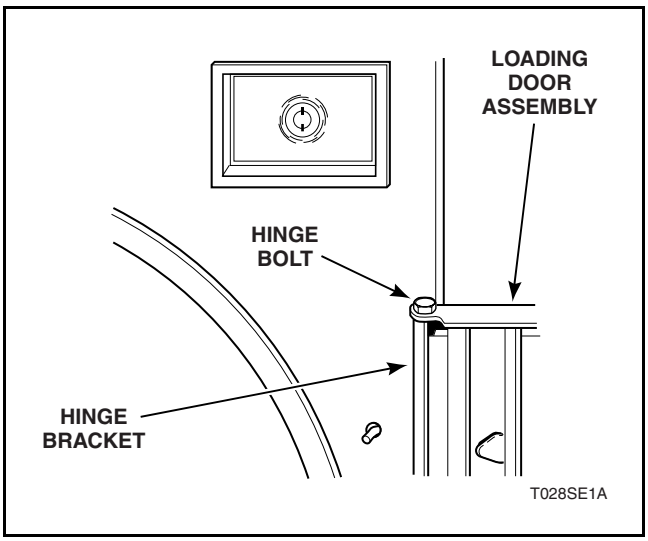



Figure 21

### 56. LOADING DOOR HINGE

a. Open loading door.
b. While supporting door, remove upper hinge bolt holding door to hinge bracket. Refer to *Figure 21*.
c. Remove door from hinge bracket.
d. Remove nuts and screws holding hinge to door frame. Refer to *Figure 22*.

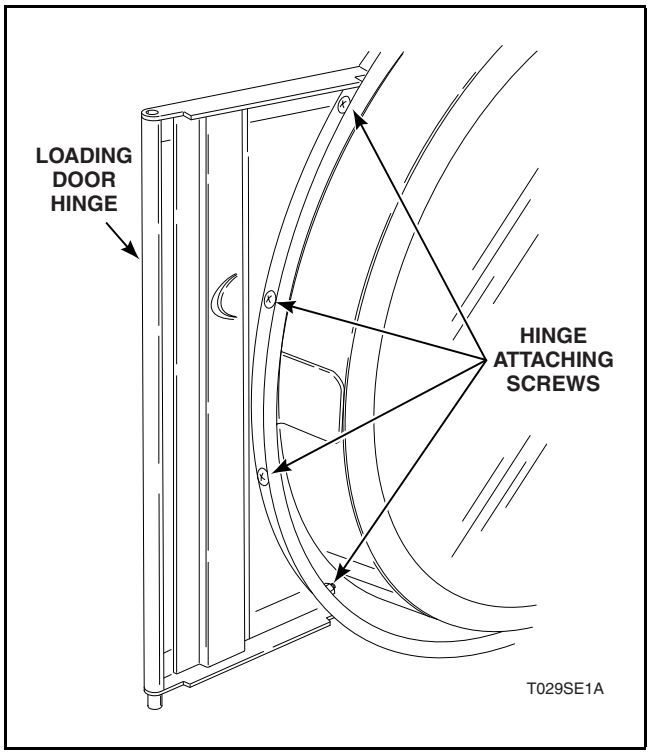



Figure 22

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 57. LOADING DOOR HANDLE

Refer to *Figure 23*.

a. Open loading door.

b. Remove screws holding door handle to door frame.

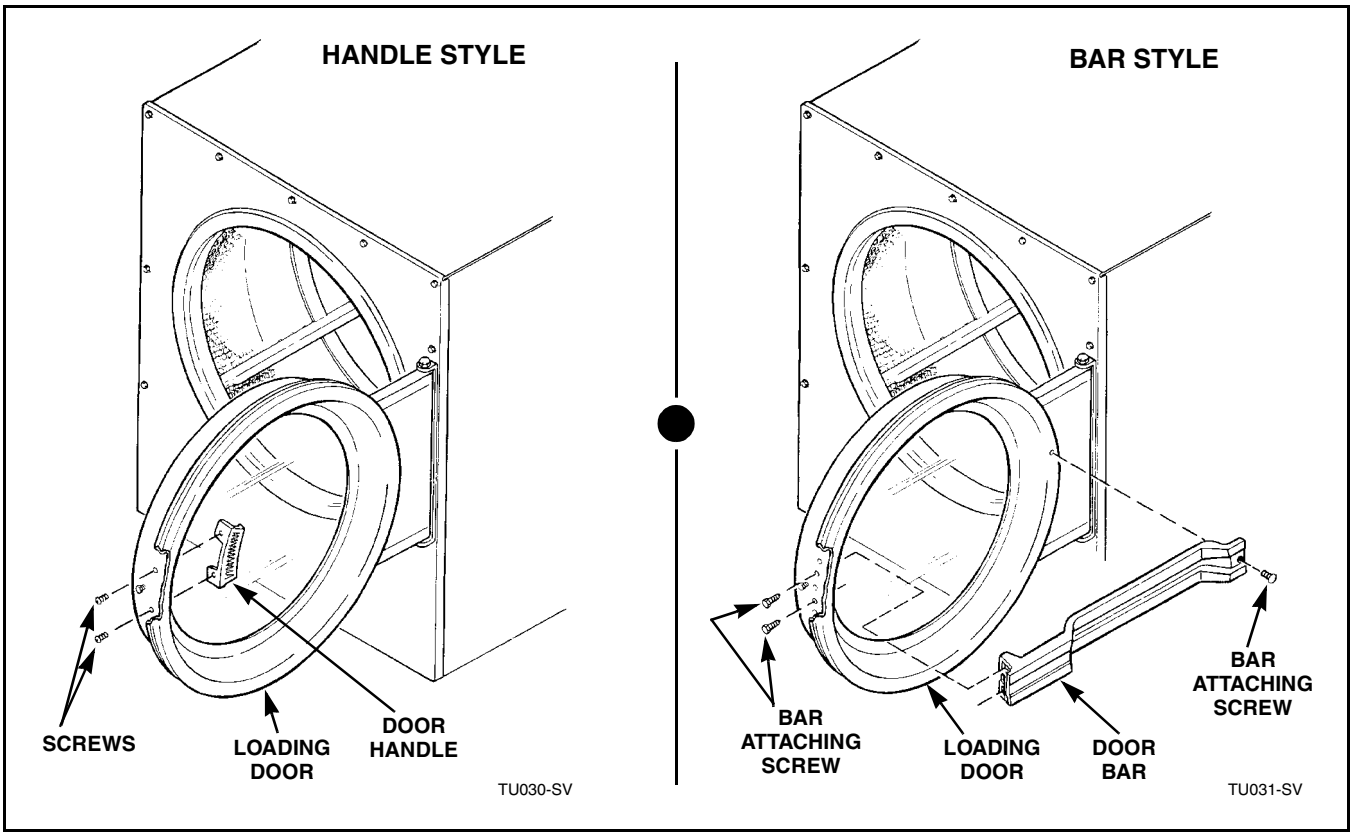



Figure 23

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**58. FRONT PANEL**

a. Remove control panel.
b. Unlock, open and remove lint panel. Set aside to prevent damage.
c. Open loading door, support door and remove upper hinge bolt holding door to hinge bracket. Refer to *Figure 21*.

**NOTE: Nylon washer must be in place on lower hinge pin when reinstalling door.**

d. Remove door from bracket.
e. Support front panel and remove screws (and three speed nuts) holding front panel to tumbler cabinet. Refer to *Figure 24*.

**NOTE: When removing front panel, lower panel slightly to make sure door switch rod clears hole in cabinet.**

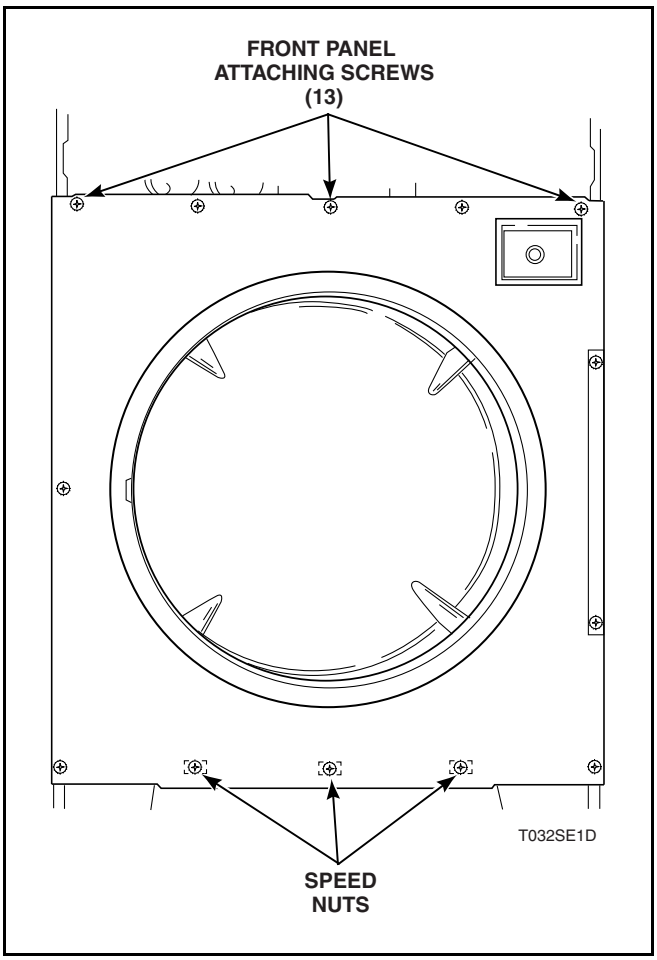



Figure 24

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 59. LOADING DOOR SWITCH

a. Remove control panel.
b. Disconnect wires from door switch.
c. Remove two switch attaching screws and remove switch. Refer to *Figure 25*.

**NOTE: Refer to wiring diagram when rewiring door switch.**

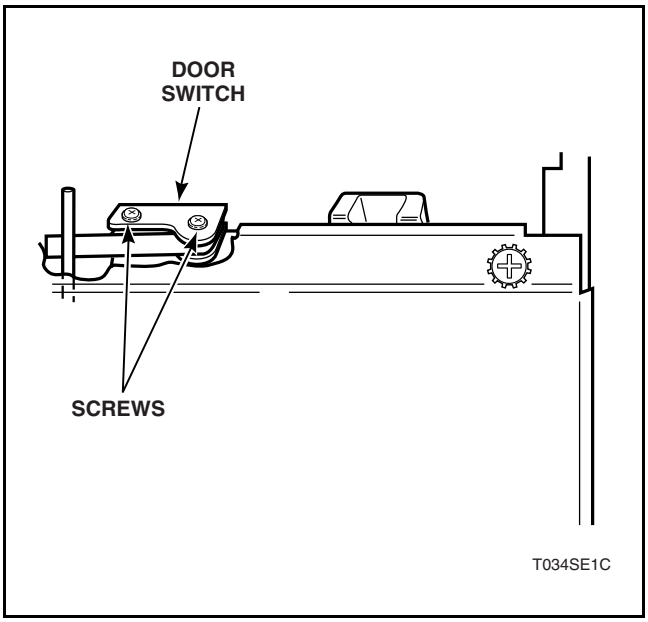



Figure 25

### 60. LOADING DOOR SWITCH ROD

a. Remove control panel.
b. Unlock, open and remove lint panel. Set aside to prevent damage.
c. Open loading door, support door and remove upper hinge bolt holding door to hinge bracket, *Figure 21*.

**NOTE: Nylon washer must be in place on lower hinge pin when reinstalling door.**

d. Remove door from bracket.
e. Support front panel and remove screws (and three speed nuts) holding front panel to tumbler cabinet. Refer to *Figure 24*.
f. Remove nut, washers and spring clip holding switch rod to backside of front panel.
g. Apply upward pressure on the welded clip to allow switch rod snap free. Refer to *Figure 26*.

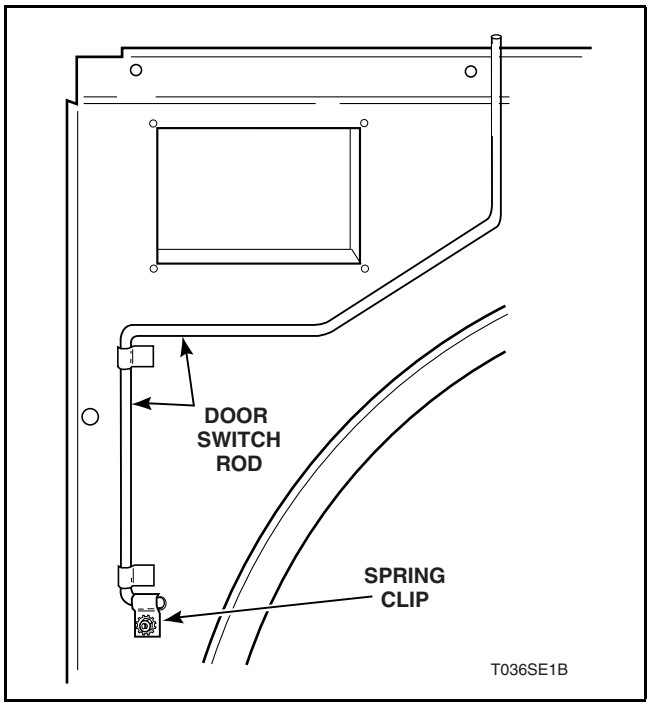



Figure 26

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 61. AIRFLOW SWITCH ASSEMBLY

Refer to *Figure 27*.

**NOTE: Depending on the model, the airflow switch will be found either on the rear of the stove assembly or, directly below the wire-way on the rear of the tumbler.**

a. Remove airflow switch box cover. Refer to *Figure 28*.
b. Disconnect wires from airflow switch.

**NOTE: Refer to wiring diagram when rewiring airflow switch.**

c. Remove screw(s) holding airflow switch and mounting bracket to switch box.
d. Remove two screws holding airflow switch to mounting bracket.

**NOTE: After reinstalling airflow switch and mounting bracket into switch box, adjust airflow switch. Refer to *Paragraph 80*.**

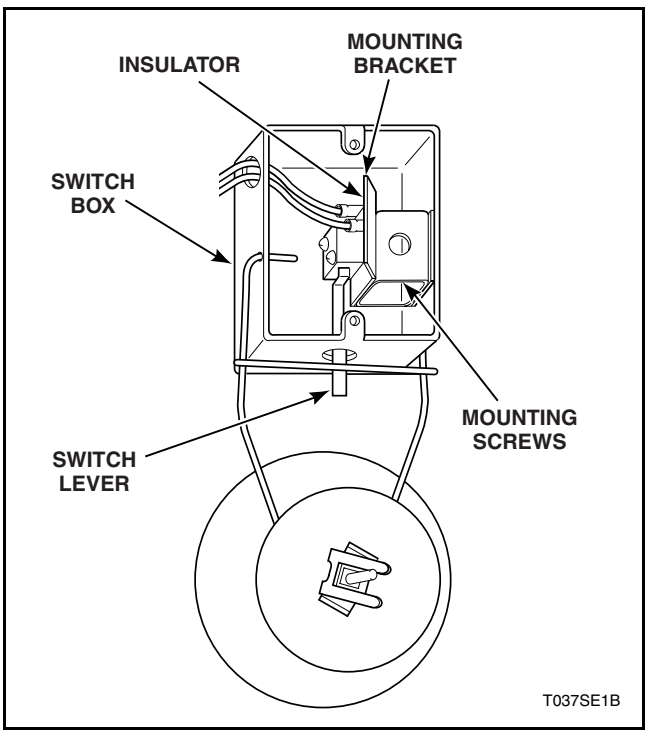



Figure 27

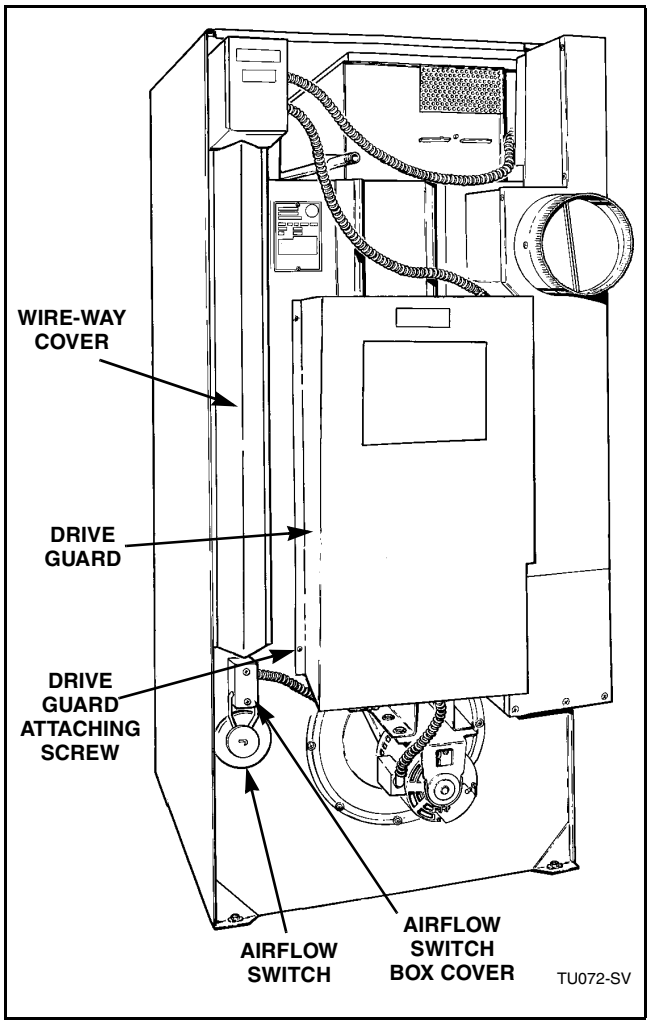



Figure 28

### 62. WIRE-WAY COVER

Refer to *Figure 28*.

a. Remove six screws holding wire-way cover to rear of tumbler.
b. Remove wire-way cover.

**IMPORTANT: When reinstalling cover, make sure the wires and thermostat sensing tube (if equipped) are not pinched between rear of cabinet and wire cover or between cover plate and channel.**

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**63. DRIVE GUARD**

Refer to *Figure 28*.

a. Support drive guard and remove screws holding guard to rear of tumbler.
b. Reinstall drive guard.

**64. DRIVE BELT**

**Nonreversing Tumblers**

Refer to *Figure 30*.

a. Support drive guard and remove screws holding guard to rear of tumbler. Refer to *Figure 28*.
b. Remove two screws holding belt guard assembly to motor bracket. Remove belt guard. Refer to *Figure 29*.
c. Remove chain. Refer to *Paragraph 65*.
d. Loosen nut on idler housing attaching bolt. Drop idler housing to bottom of slots.
e. Remove lower bolt and nut from guide rail. Hinge guide rail out and slip belt out from under guide rails.
f. Slip new belt under guide rail and onto sheave, and motor pulley.

**NOTE: After reinstalling belt and chain, adjust belt, then adjust chain. Refer to *Adjustments* Section.**

**Reversing Tumblers**

Refer to *Figure 31*.

a. Support chain guard and remove screws holding guard to rear of tumbler. Refer to *Figure 28*.
b. Disconnect electrical service to the tumbler.
c. Support chain guard and remove the screws holding it to the back panel of the tumbler. Leave the belt guard attached to the top of the drive guard.
d. Loosen four capscrews holding motor mounting bracket to side brackets. Lower motor and mounting bracket until holding capscrews bottom in the mounting slots.
e. Slip drive belt off motor pulley.
f. Slip drive belt off sheave, and remove drive belt by working it over the top of the guide rails.
g. Slip new belt onto sheave and motor pulley. Adjust belt tension. Refer to ***Adjustments*** Section.

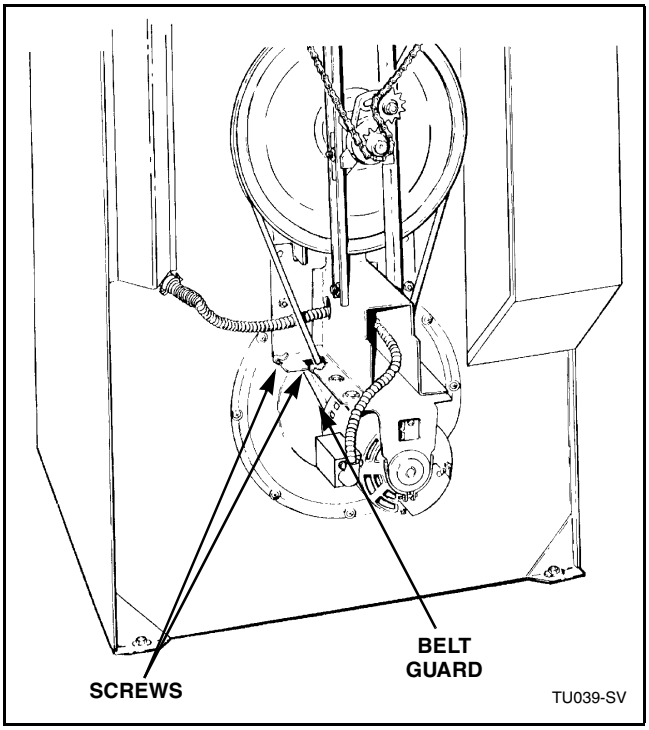



Figure 29

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 65. DRIVE CHAIN

**Nonreversing Tumblers**

a. Support drive guard and remove screws holding guard to rear of tumbler. Refer to *Figure 28*.
b. Loosen jam nut on idler sprocket locking bolt and move sprocket to the right to relieve chain tension. Refer to *Figure 30*.
c. Run chain off drive sprocket and lift chain off cylinder sprocket.
d. Reinstall chain and drive guard.

**Reversing Tumblers**

a. Support drive guard and remove screws holding guard to rear of tumbler. Refer to *Figure 28*.
b. Loosen nut on idler housing attaching bolt and slide idler housing to top of slotted mounting holes in guide rails. Refer to *Figure 31*. This will provide slack in drive chain for removal from sprockets.
c. Adjust chain following installation.

### 66. IDLER HOUSING ASSEMBLY

**Nonreversing Tumblers**

Refer to *Figure 30*.

a. Remove drive guard.
b. Remove drive belt.
c. Loosen jam nut on chain idler sprocket and move sprocket to right. (Non-reversing tumbler only.)
d. Run chain off the drive sprocket.
e. While supporting the idler housing assembly, remove the upper and lower bolts, lock washers and nuts holding the guide rail to the trunnion housing and motor bracket.
f. Pull complete idler housing assembly with guide rails away from the back of the tumbler.
g. After repairing or replacing idler housing assembly, reinstall chain, belt and drive guard.

**Reversing Tumblers**

a. Support drive guard and remove screws holding guard to rear of tumbler. Refer to *Figure 28*.
b. Remove two screws holding belt guard assembly to motor bracket. Refer to *Figure 29*. Remove belt guard.
c. Remove chain. Refer to *Paragraph 65*.
d. Loosen nut on idler housing attaching bolt. Refer to *Figure 31*. Drop idler housing assembly to bottom of slots.
e. Remove upper and lower bolts and nuts from guide rail. Refer to *Figure 31*. Guide rail out and slip belt out from under guide rails.
f. Slip new belt under guide rail and onto sheave, and motor pulley. Refer to *Figure 31*.

**NOTE: After reinstalling belt and chain, adjust belt, then adjust chain. Refer to *Adjustments* Section.**

g. Support drive guard and remove screws holding guard to rear of tumbler. Refer to *Figure 28*.
h. Leave the belt guard attached to the top of the drive guard.
i. Loosen nut on idler housing attaching bolt and slide idler housing to top of slotted mounting holes in guide rails. Refer to *Figure 31*. This will provide slack in drive chain for removal.
j. While supporting the idler housing assembly, remove the upper and lower bolts, lockwashers and nuts holding the guide rail to the trunnion housing and motor bracket, *Figure 31*.
k. Pull complete idler housing assembly with guide rails away from the back of the tumbler.
l. After repairing or replacing idler housing assembly, reinstall chain, belt, drive guard and belt guard.

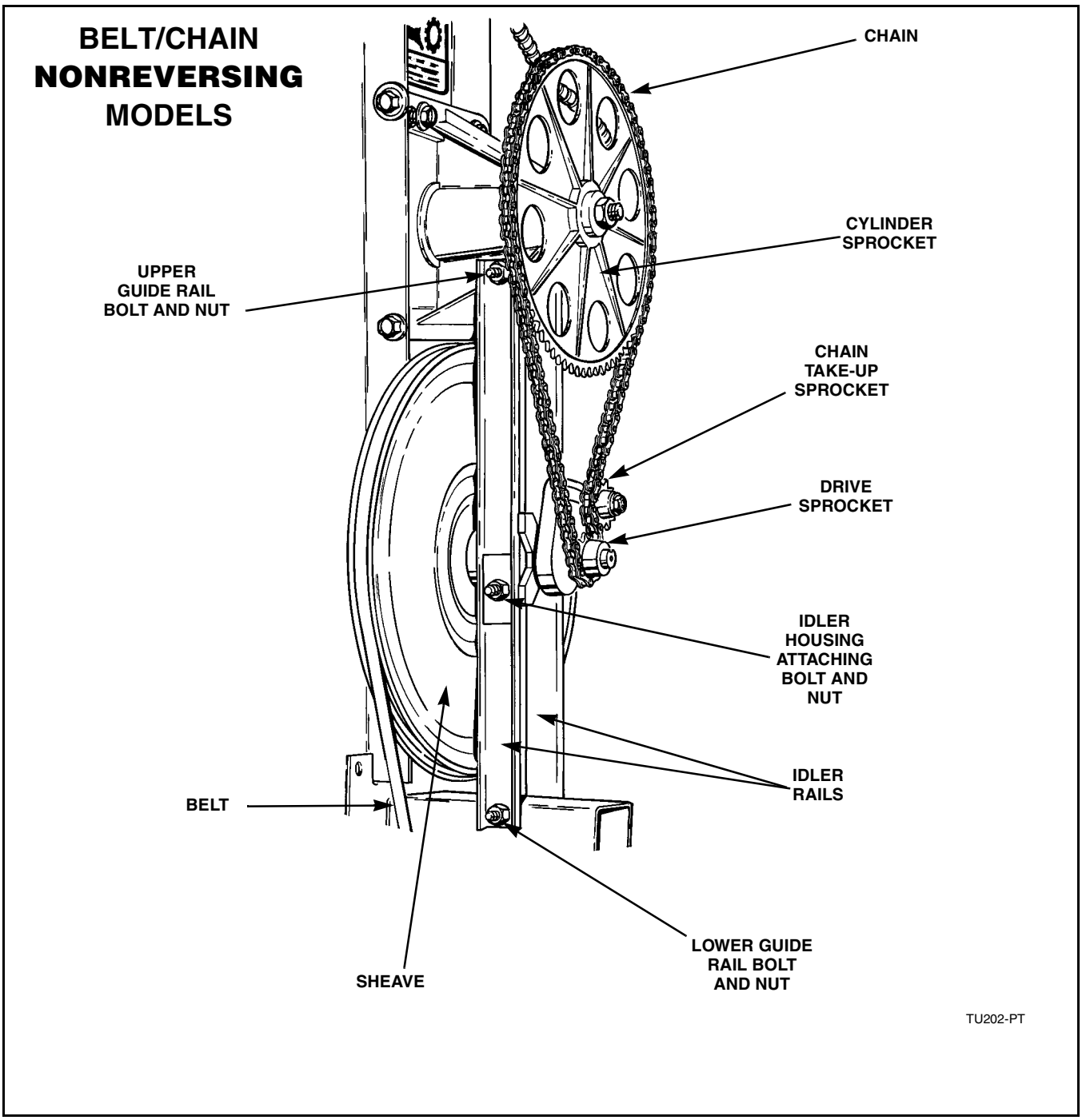



Figure 30

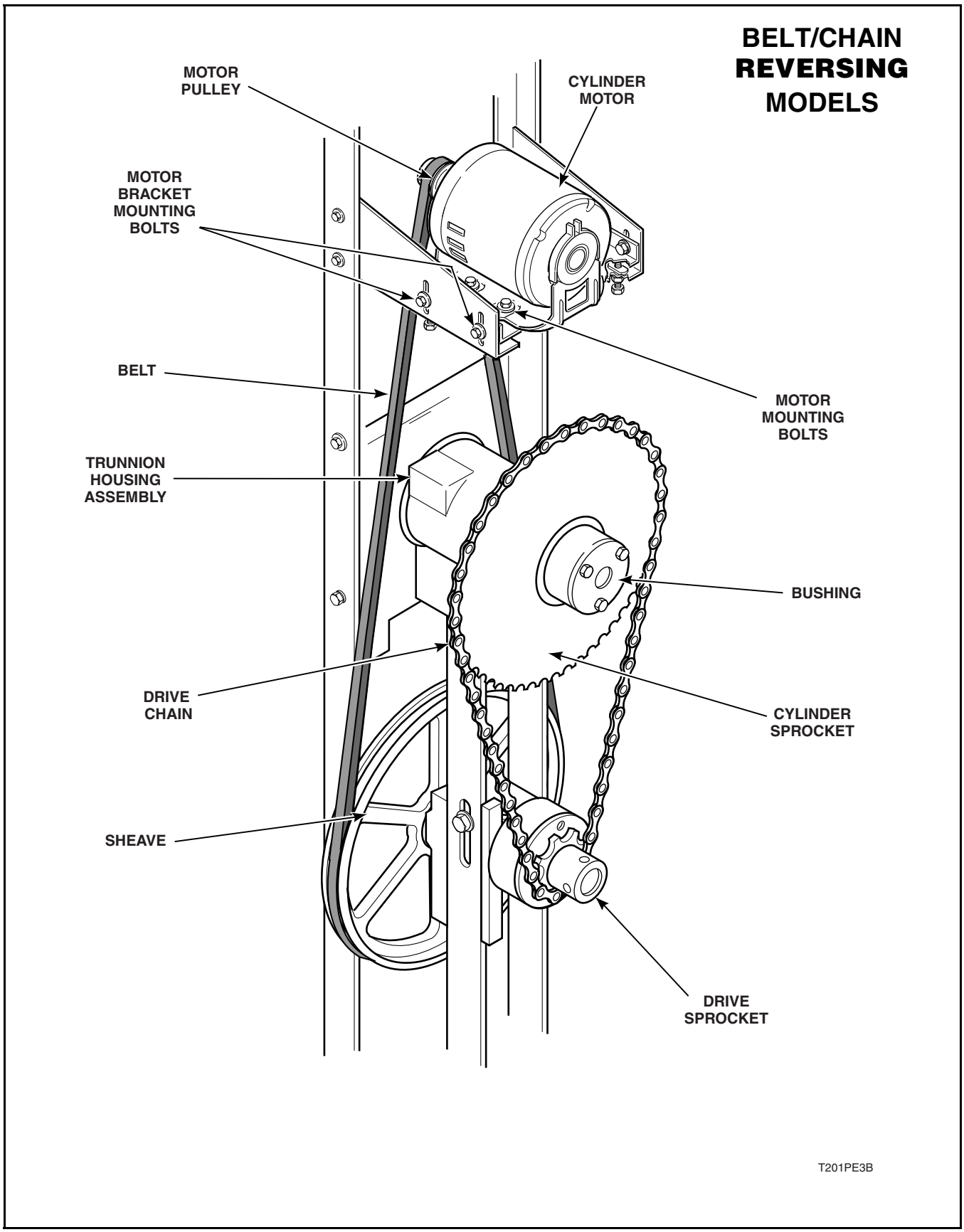



Figure 31

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**67. IDLER SPROCKET**

**Nonreversing Tumblers**

Refer to *Figure 32*.

a. Support drive guard and remove screws holding guard to rear of tumbler. Refer to *Figure 28*.
b. Remove chain from idler sprocket.
c. Remove jam nut and sprocket from bolt. Refer to *Figure 30*.
d. Reinstall chain and drive guard.

**NOTE: After installing chain and sprocket, adjust chain. Refer to *Adjustments* Section.**

**68. SHEAVE**

Refer to *Figure 30* and/or *Figure 31*.

a. Remove drive belt.
b. Loosen jam nut on chain idler sprocket and move idler sprocket to the right. (Nonreversing tumblers only).
c. Run chain off drive sprocket or belt off upper sheave.
d. While supporting idler housing, remove the upper and lower bolts, nuts, and lockwashers holding guide rails to trunnion housing and motor bracket.
e. Remove the sheave, guide rails and idler housing as an assembly from the rear of the tumbler.
f. Remove snap ring from idler shaft. (Nonreversing models only).
g. Loosen two setscrews holding sheave to idler shaft and pull sheave off idler shaft.
h. Remove key from shaft keyway.

**IMPORTANT: Reassemble sheave to idler shaft. On nonreversing tumblers, run sheave out until it butts against snap ring. Make sure that shaft key is correctly positioned under setscrew. Tighten setscrew above key first, then tighten other setscrew.**

**IMPORTANT: Nonreversing Tumblers — Realign motor pulley directly under sheave by loosening drive motor mounting screws and repositioning motor on mounting bracket.**

**IMPORTANT: Reversing Tumblers — Realign motor pulley directly over sheave by loosening drive motor mounting screws and repositioning motor on mounting bracket.**

**69. DRIVE SPROCKET/PULLEY**

Refer to *Figure 32*.

a. Remove chain.
b. Loosen setscrews holding drive sprocket/pulley to idler shaft and pull sprocket/pulley free.
c. Remove key from shaft keyway.
d. Reinstall chain and belt and drive guard.

**IMPORTANT: Reassemble sprocket or pulley to idler shaft. Align with cylinder sprocket or sheave. Make sure shaft key is positioned under one of the setscrews. Tighten setscrew over key first, then tighten the other setscrew.**

**70. IDLER SHAFT**

Refer to *Figure 32*.

a. Remove idler housing assembly.
b. Remove sheave and drive sprocket or pulley.
c. Remove bolt holding idler housing to guide rails.
d. Support idler housing assembly and carefully drive idler shaft from housing with a hammer and a hardwood dowel.
e. Support idler housing assembly and remove bearings from housing with a hammer and a hardwood dowel.
f. Reinstall shaft and bearings.

**IMPORTANT: When installing new bearings, apply a film of bearing retaining compound to the bearing cavity surfaces of the housing and the outside diameter of the bearings.**

**IMPORTANT: If a press is not available to install bearings, carefully tap bearings into housing.**

g. Reinstall drive guard.

**NOTE: After installing sheave, adjust belt, then adjust chain. Refer to *Adjustments* Section.**

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 71. CYLINDER SPROCKET/UPPER SHEAVE

**Nonreversing Tumblers**

Refer to *Figure 30*.

a. Support drive guard and remove screws holding guard to rear of tumbler. Refer to *Figure 28*.
b. Loosen jam nut on idler sprocket and move sprocket to the right to relieve chain tension.
c. Run chain off idler sprocket and drive sprocket or run belt off upper sheave.
d. Lift chain off cylinder sprocket.

**NOTE: After installing chain on drive and idler sprockets, adjust chain. Refer to *Adjustments* Section.**

e. Remove pal nut and jam nut, and pry sprocket from cylinder shaft.

**Reversing Tumblers**

Refer to *Figure 31*.

a. Remove drive chain from cylinder sprocket or two belts from drive.
b. Remove three attaching bolts from sprocket or sheave hub.
c. Turn these three bolts into the threaded holes in the hub, and "jack" the hub and sprocket apart.
d. Remove hub, sprocket or belt, key and spacer.

**NOTE: After installing chain on drive and idler, adjust chain or belts. Refer to *Adjustments* Section.**

### 72. CYLINDER ASSEMBLY

a. Remove control panel.
b. Open loading door.
c. While supporting door, remove upper hinge bolt holding door to hinge bracket. Refer to *Figure 21*.
d. Remove door from hinge bracket.

**NOTE: Nylon washer must be in place on lower pin when reinstalling loading door.**

e. Remove control panel.
f. Unlock, open and remove lint panel. Set aside to prevent damage.
g. Support front panel and remove screws (and three speed nuts) holding front panel to tumbler cabinet. Refer to *Figure 24*.

**NOTE: When removing front panel, lower panel slightly to make sure door switch rod clears hole in cabinet.**

h. Remove drive chain or belt.
i. Remove key and cylinder sprocket or sheave.
j. Pull cylinder out through front of cabinet.

**NOTE: When removing cylinder out through front of cabinet, spread cabinet slightly so cylinder will clear cabinet sides.**

**NOTE: After reinstalling chain on cylinder, drive and idler sprockets, adjust chain. Refer to *Adjustments* Section.**

**NOTE: After installing cylinder and shaft, adjust cylinder clearance. Refer to *Adjustments* Section.**

k. Reinstall drive guard on tumbler.

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

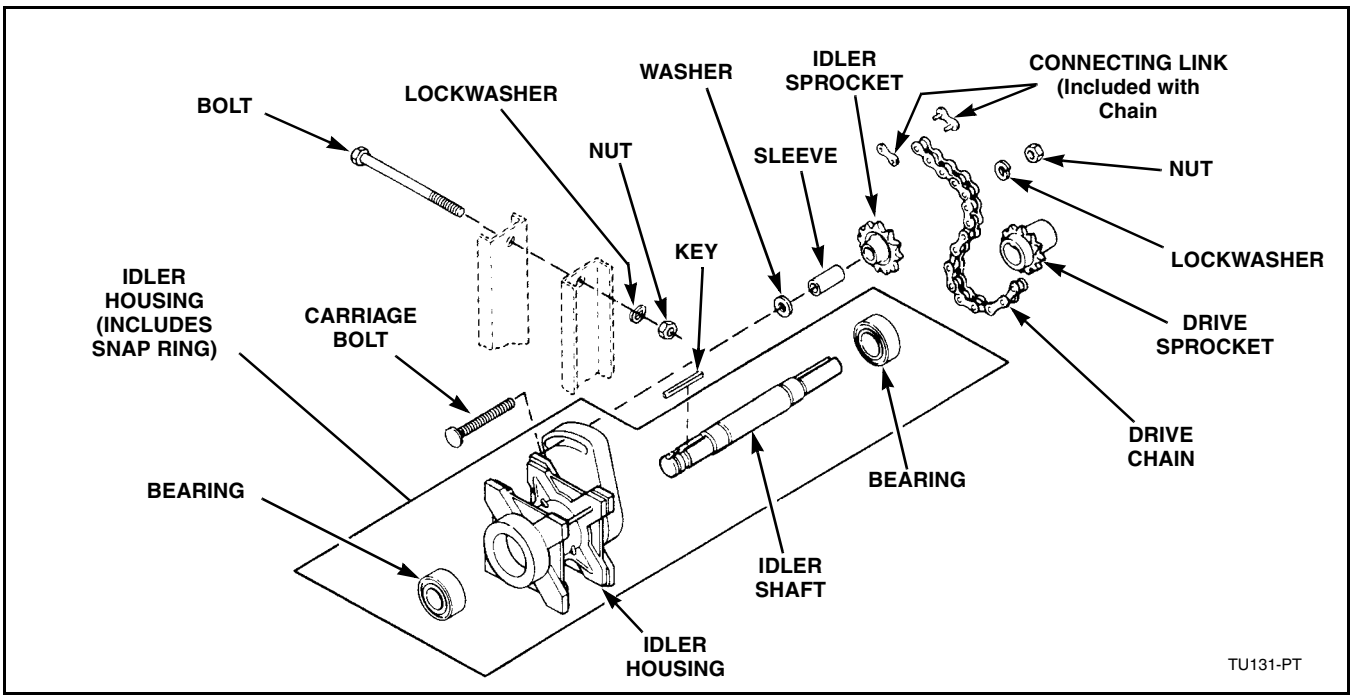



Figure 32

### 73. TRUNNION HOUSING ASSEMBLY

a. Remove cylinder assembly.
b. Remove upper guide rail bolt and nut.
c. Remove four cap screws holding trunnion housing assembly to rear of cabinet. Refer to *Figure 30* or *Figure 31*.
d. Remove housing from tumbler.
e. Remove four bearing retainer screws holding the small bearing in housing. Refer to *Figure 33*.
f. Use a hammer and wood dowel to remove bearings.

**IMPORTANT: When installing new bearings, apply a film of bearing retaining compound to the bearing cavity surfaces in the housing.**

**NOTE: If a press is not available to install bearings, carefully tap bearings into housing.**

g. Reinstall drive guard on tumbler. Refer to *Figure 28*.

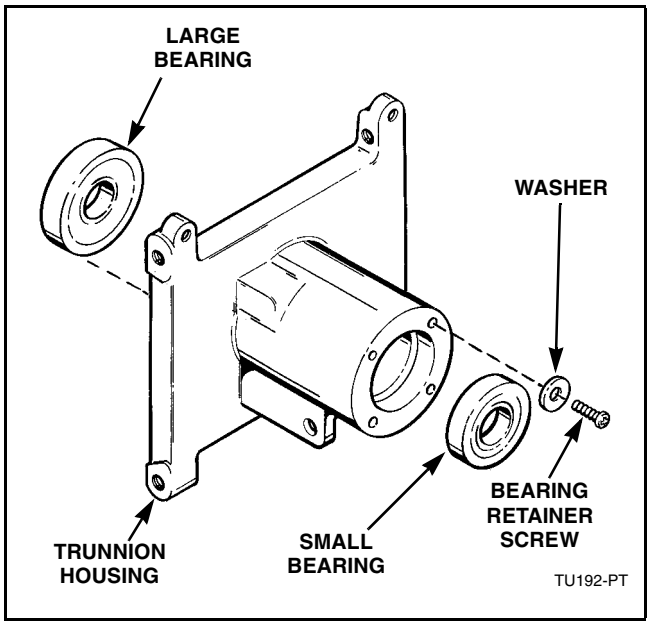



Figure 33

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**74. TRUNNION SHAFT ASSEMBLY**
Refer to *Figure 34*.

a. Remove cylinder assembly.
b. Remove the four washers and nuts holding trunnion shaft assembly to rear of cylinder.

**IMPORTANT: When installing trunnion assembly on cylinder, the cylinder and shaft must be leveled. Refer to *Figure 34* for an example of how to check for proper alignment of the shaft and cylinder. Measure the distance between the center of the trunnion shaft and the outer rim of the cylinder at the four points shown. If any measurement is lower than the highest point, place shim or shims (M401402) between trunnion channel and cylinder back until the measurement is equal to the highest point.**

**NOTE: After installing cylinder and shaft, adjust cylinder clearance. Refer to *Adjustments* Section.**

c. Reinstall drive guard on tumbler, *Figure 28*.

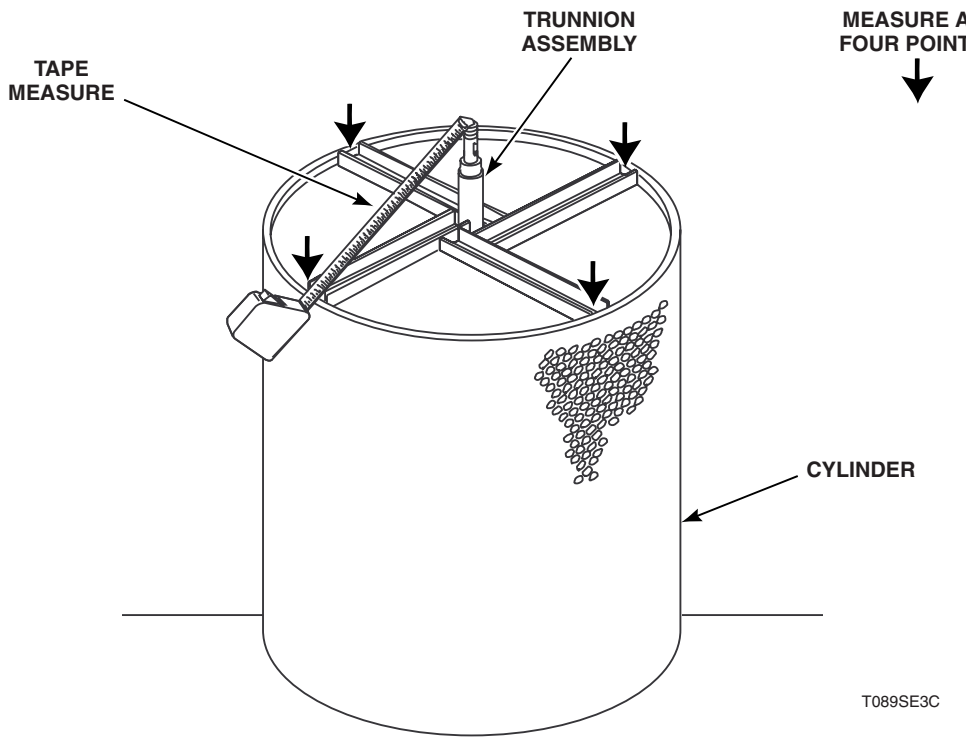



Figure 34

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 75. MOTOR AND FAN ASSEMBLY

**NOTE: To remove the motor and fan assembly from a nonreversing tumbler, the complete procedure (steps "a" through "o") must be performed. On a reversing tumbler, where the motor drives only the fan, motor and fan removal can be accomplished using steps "a", "b", "g" and "i" through "o".**

a. Disconnect wires from motor as follows:

**Older models - without quick-disconnect wire harness.**

(1) Remove cover plate from motor junction box and disconnect wires from motor wires. Refer to *Figure 35*.
(2) Remove conduit nut from inside of motor junction box. Pull wires from junction box.

**Newer models - with quick-disconnect wire harness.**

(1) Remove cover plate from rear of motor.
(2) Mark four wires and disconnect them from motor terminals.
(3) Loosen clamp screws in box connector.
(4) While holding box, turn box connector out of motor.

**NOTE: Refer to wiring diagram when rewiring motor.**

b. Remove chain or upper belt.
c. Loosen nut on upper guide rail bolt. Refer to *Figure 30* or *Figure 31*.
d. Loosen nut on idler housing attaching bolt and lower idler housing to bottom of slots. This is to put slack in drive belt, so it can be slipped off the motor pulley without risk of damage.
e. Remove screws holding belt guard to motor bracket and remove belt guard. Refer to *Figure 29*.
f. Loosen nut and washer from lower guide rail bolt. Refer to *Figure 30* or *Figure 31*.

**NOTE: After removing belt, replace the lower guide rail bolt, Refer to *Figure 30* or *Figure 31*.**

g. Slip drive belt off motor pulley.
h. Remove the seven fan housing attaching screws. Refer to *Figure 35*.
i. Remove the two capscrews and two sets of nuts and washers holding motor bracket to rear of tumbler cabinet. Refer to *Figure 35*.

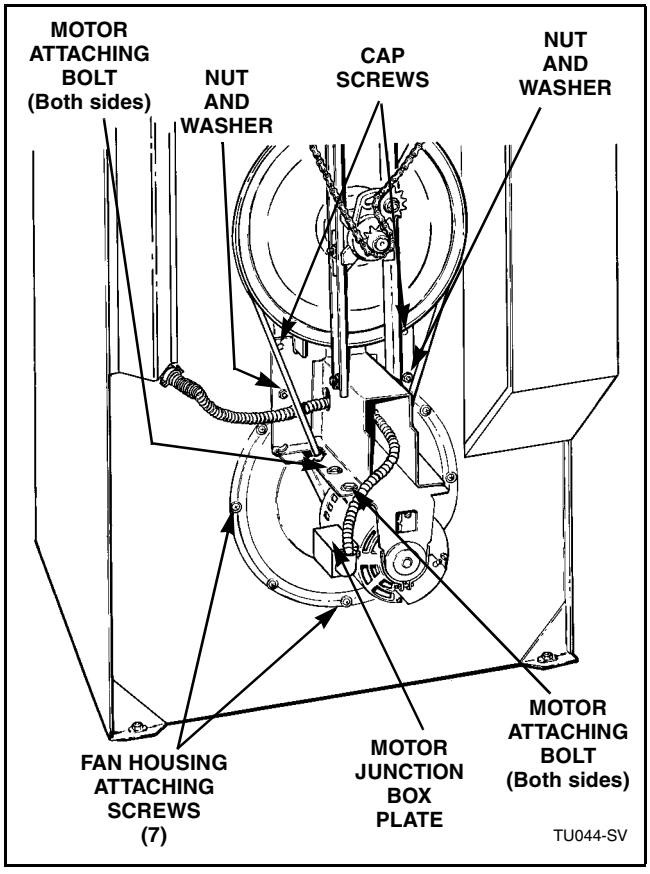



Figure 35

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

j. Using the guide rails as supports, swing motor and fan assembly out and away from rear of tumbler.
k. While supporting motor and fan assembly, remove the lower guide rail bolt.
l. Remove four sets of nuts, washers and bolts holding mounting bracket to motor. Refer to *Figure 35*.
m. Remove locknut and jam nut holding fan on motor shaft. Refer to *Figure 36*. Pull fan off motor shaft.

**NOTE: Fan is keyed to motor shaft and may have to be removed using a puller. Look for a spacer washer at the bottom of the fan keyway. Take care to avoid losing or damaging the washer.**

n. Remove spacer washer from motor shaft. Refer to *Figure 36*.
o. Loosen two setscrews holding motor pulley to motor shaft. Refer to *Figure 36*. Remove motor pulley.

**NOTE: A puller may be required to remove pulley from motor shaft.**

**NOTE: After installing motor and fan assembly, adjust belt, then adjust chain (nonreversing models only.) Refer to *Adjustments* Section.**

**NOTE: Belt/belt drive models have automatic upper belt tensioning.**

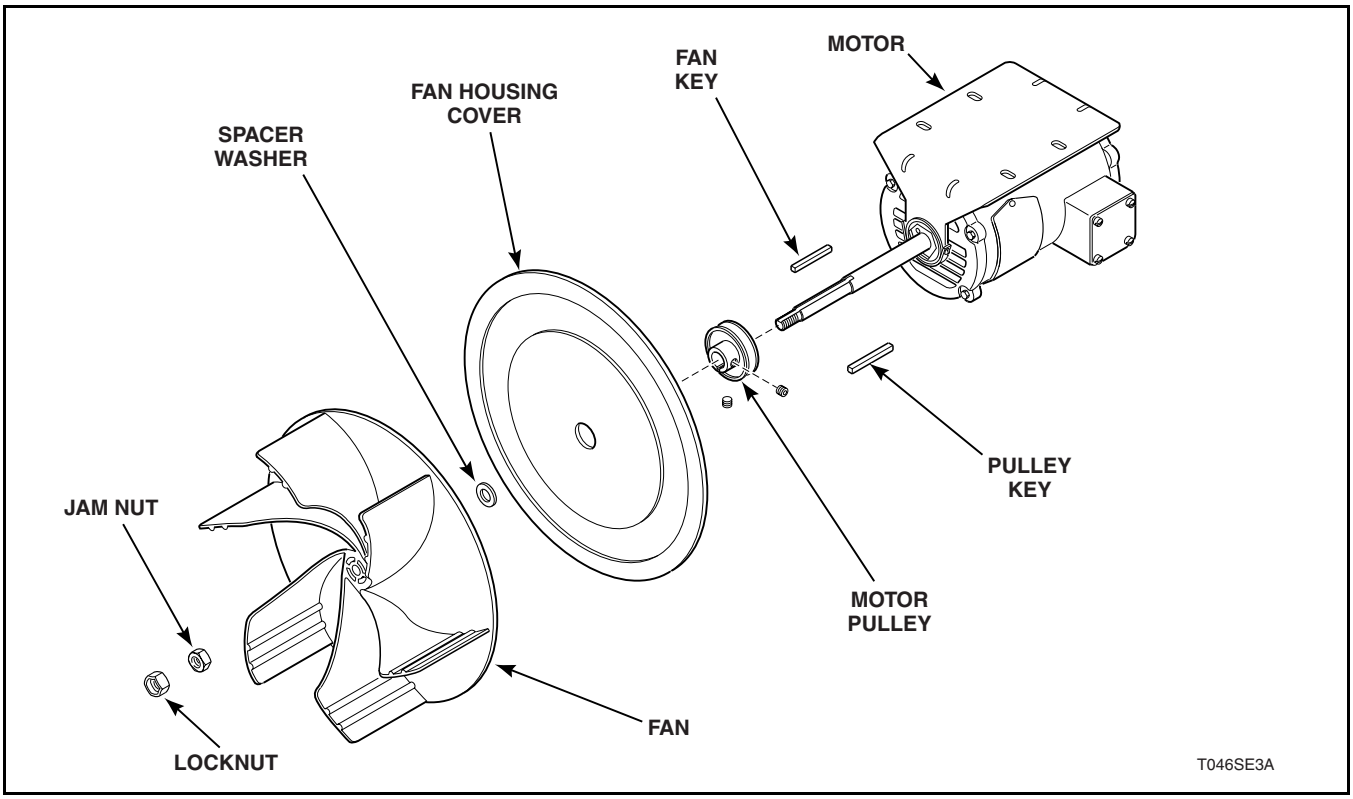



Figure 36

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 76. CYLINDER DRIVE MOTOR (Reversing Tumblers)

a. Support drive guard and remove the screws holding it to the back panel of the tumbler. Leave the belt guard attached to the top of the drive guard.

b. Loosen four capscrews holding motor mounting bracket to side brackets. Lower motor and mounting bracket until holding capscrews bottom in the mounting slots.

**On later models**, lower adjusting bolt to lessen belt tension.

c. Slip drive belt off of the motor pulley.

d. Disconnect the wire harness from motor.

e. Remove the four capscrews, nuts, lockwashers and flat washers holding the motor to the mounting bracket.

f. Loosen the setscrews in the motor pulley and remove pulley by using a suitable puller.

**NOTE: Refer to wiring diagram when rewiring the motor.**

g. After installing motor, adjust drive belt tension, and adjust motor position on mounting bracket.

**After 1996:**

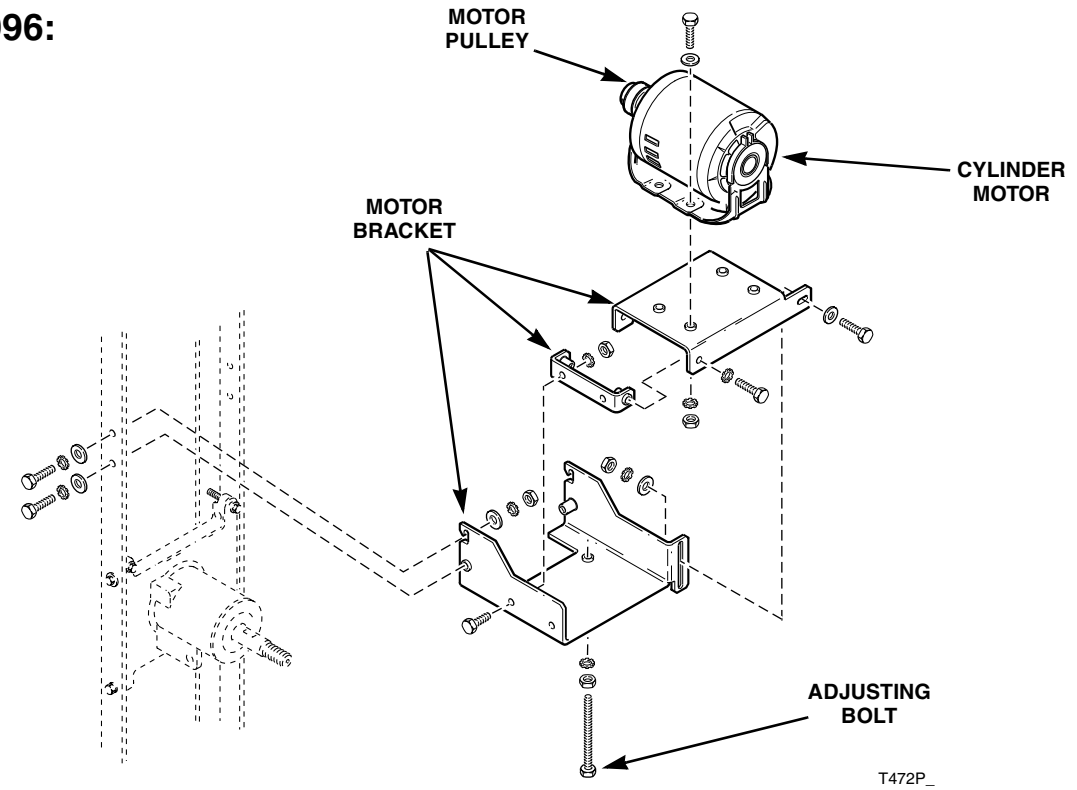



Figure 37

**Prior to 1996:**

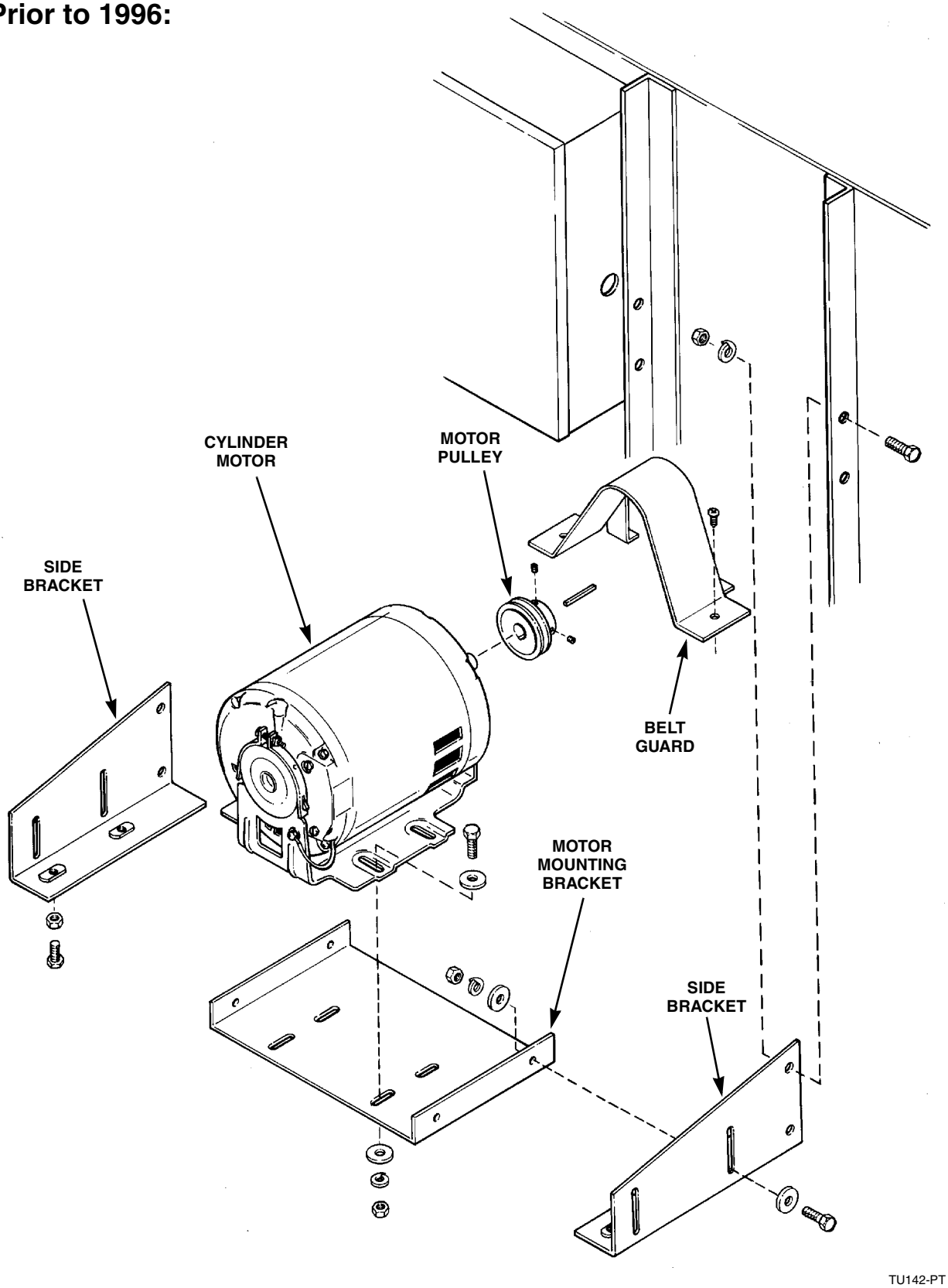



Figure 38

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 77. REVERSING CONTROL ELECTRICAL COMPONENTS

Refer to *Figure 39*.

**NOTE: All electrical components except the reversing/nonreversing switch are located in the reversing control box on the rear of the tumbler. The reversing/nonreversing switch is mounted on the upper right hand corner of the control panel on part of OM microprocessor.**

a. **Reversing/nonreversing switch:**
   (1) Remove control panel.
   (2) Disconnect wires from switch terminals.

**NOTE: Refer to wiring diagram when rewiring switch.**

   (3) Remove nut holding switch to front of control panel or release rectangular switch retainers.
   (4) Remove and save hex nut from switch shaft. Nut is furnished with the switch.

b. **Reversing timer assembly:**
   (1) Remove two attaching screws and cover from control box.
   (2) Disconnect wires from timer motor and switches.

**NOTE: Refer to wiring diagram when rewiring timer motor and switches.**

   (3) Remove two screws holding timer to back wall of control box.
   (4) Remove timer motor and/or switches as necessary for replacement. If timer itself is faulty, replace the complete assembly, including timer motor and switches. Electronic reverser has no motor or switches.

**NOTE: OM microprocessor doesn't have a mechanical or electronic reversing timer.**

c. **Reversing contactor:**
   (1) Remove two attaching screws and cover from control box.
   (2) Disconnect wires from contactor coil terminals.

**NOTE: Refer to wiring diagram when rewiring reversing contactor.**

   (3) Remove screws holding contactor to back wall of control box.
   (4) To remove coils for replacement, remove single screw holding each coil to contactor frame.
   (5) If contactor problem is something other than a defective coil, replace complete contactor assembly.

d. **Fan motor contactor:**
   (1) Remove junction box cover. Refer to *Figure 18*.
   (2) Disconnect wires from contactor terminals.

**NOTE: Refer to wiring diagram when rewiring fan motor contactor.**

   (3) Remove two screws holding fan motor contactor to back wall of junction box.

e. **Transformers (480 Volt electrical system only):**
   (1) Remove two attaching screws and cover from reversing control box.
   (2) Disconnect leads from transformer terminals.

**NOTE: Refer to wiring diagram when rewiring transformer.**

   (3) Remove four screws holding transformer to back wall of reversing control box. Refer to *Figure 39*.

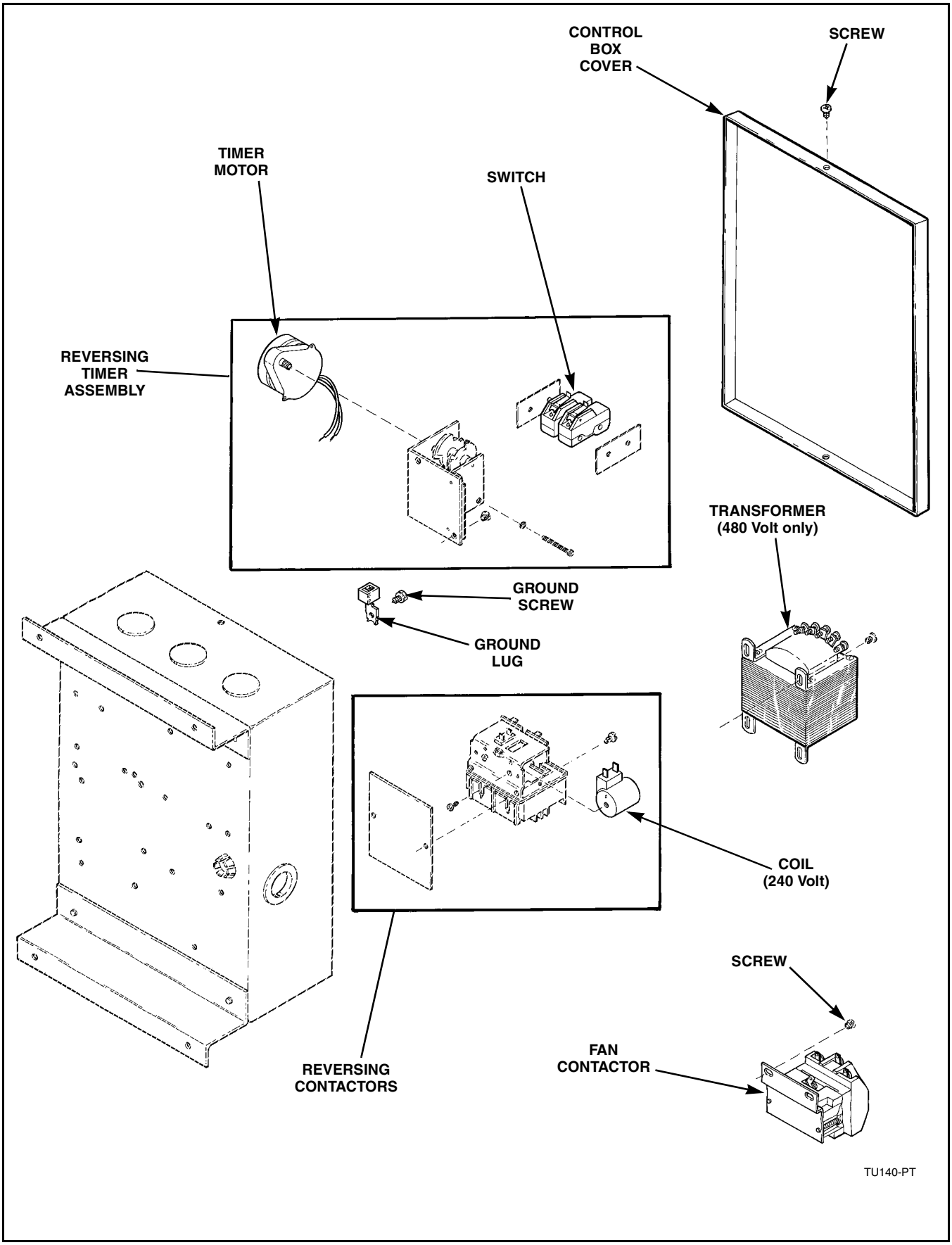



Figure 39

# Section 6
# Adjustments

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 78. LEVELING LEGS

**NOTE: It is recommended that the front of the tumbler be kept slightly higher than the rear (approximately 1/8 inch, 3.0 mm). This will prevent the clothes, while tumbling, from wearing on the door glass gasket.**

a. Check the front to rear level by rotating the clothes cylinder until one of the cylinder ribs is at the bottom. Place a level on the rib.
b. Check the side to side level by placing a level on the front and rear of top panel.
c. Front leg adjustment fittings are accessed by removing lint panel door. Rear adjustment fittings are located on rear corner braces. Adjust legs as needed.

**NOTE: Keep the tumbler as close to the floor as possible. All four legs must rest firmly on the floor so weight of tumbler is evenly distributed. Tumbler must not rock.**

d. Replace lint panel.

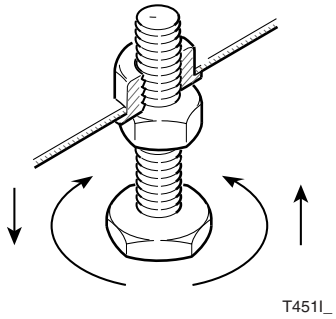



Figure 40

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 79. MAIN GAS BURNER AIR INLET SHUTTERS (All Gas Models)

Refer to *Figure 41*.

## CAUTION

**The air inlet shutters on the burner must be adjusted so sufficient primary air is metered into the system for proper combustion and maximum efficiency. Before adjusting the inlet shutter be sure that all lint is removed from lint compartment and lint screen.**

W281

Air inlet shutter adjustments will vary from location to location and will depend on the vent system, number of units installed, make-up air and line gas pressure. Opening the shutter increases the amount of primary air supplied to the burner while closing the shutter decreases the air supply. Adjust air shutter as follows:

a. Unlock and open the access door.
b. Start the tumbler and check the flame pattern. Correct air and gas mixture is indicated if the flame pattern is primarily blue, with small yellow tips. Too little air is indicated if the flame is yellow, lazy and smokey.
c. To adjust the air inlet shutter, loosen locking screw. Control panel may have to be removed temporarily to loosen locking screw.
d. Adjust shutter as necessary to obtain desired flame intensity.
e. After shutter is adjusted, tighten locking screw securely.
f. If the shutter is correctly adjusted, but the flame pattern is straight up, insufficient air is flowing through the tumbler and airflow switch is improperly set. A flame pattern that flares to the right and left, indicates that no air is flowing through the tumbler.

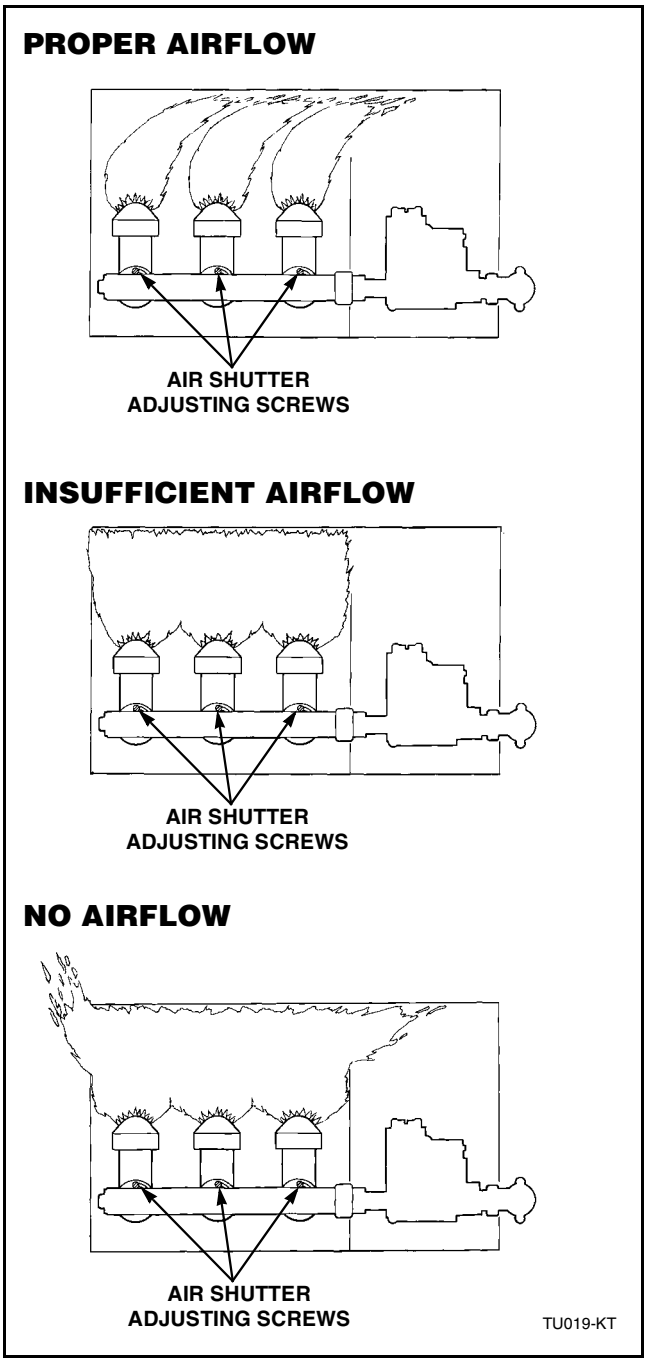



Figure 41

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

**80. AIRFLOW SWITCH**
Refer to *Figure 42*.

## WARNING

**Control panel, access panel, and lint panel must be in place before attempting to adjust airflow switch.**

W276

**IMPORTANT: Airflow switch disc must remain closed during operation. If it opens during the drying cycle, insufficient airflow through the tumbler is indicated. If switch remains open, or pops open and closed during the cycle, the heating system will shut off. The cylinder and fan will continue to operate even though the airflow switch is malfunctioning.**

## WARNING

**Airflow switch operation may be affected by a clogged lint screen, lack of make-up air, or by obstructions in the vertical recirculation stack, or in the customer installed main or collector ducts. These conditions MUST be checked and necessary corrections made before adjusting airflow switch. Always check airflow at installation. Under no circumstances is the airflow switch to be blocked closed or bypassed.**

W277

The airflow switch is set at the factory for proper operation. However, at installation, and following repairs, airflow must be checked. The airflow switch operation is controlled by the counterweight position on the shaft. Moving the counterweight changes airflow switch sensitivity. The counterweight should be adjusted so the disc moves away from the cabinet when the lint panel is opened 1-1/2 inches (38.1 mm). Adjust the airflow switch as follows:

a. Load the tumbler with a 75 pound dry cotton load.

**NOTE: Airflow adjustment is much faster with one person opening lint panel in front and another adjusting the counterweight in the rear of tumbler.**

b. Start the tumbler. Open the lint panel 1-1/2 inches (38.1 mm). The airflow disc should move away from the cabinet, opening the switch contacts and shutting off the heat system. This indicates proper operation and proper adjustment.
c. If switch is not opening as described in step “b”, it should be adjusted so it is MORE sensitive. Depress the spring clip and move counterweight a small amount toward disc. Retest by opening lint panel and continue moving counterweight toward disc until switch operates as described in step “b”.
d. If switch opens BEFORE lint panel is opened the proper distance, in step “b”, it should be adjusted so it is LESS sensitive. Depress the spring clip and move counterweight a small amount away from the disc. Retest by opening lint panel and continue moving counterweight away from disc until switch operates as described in step “b”.

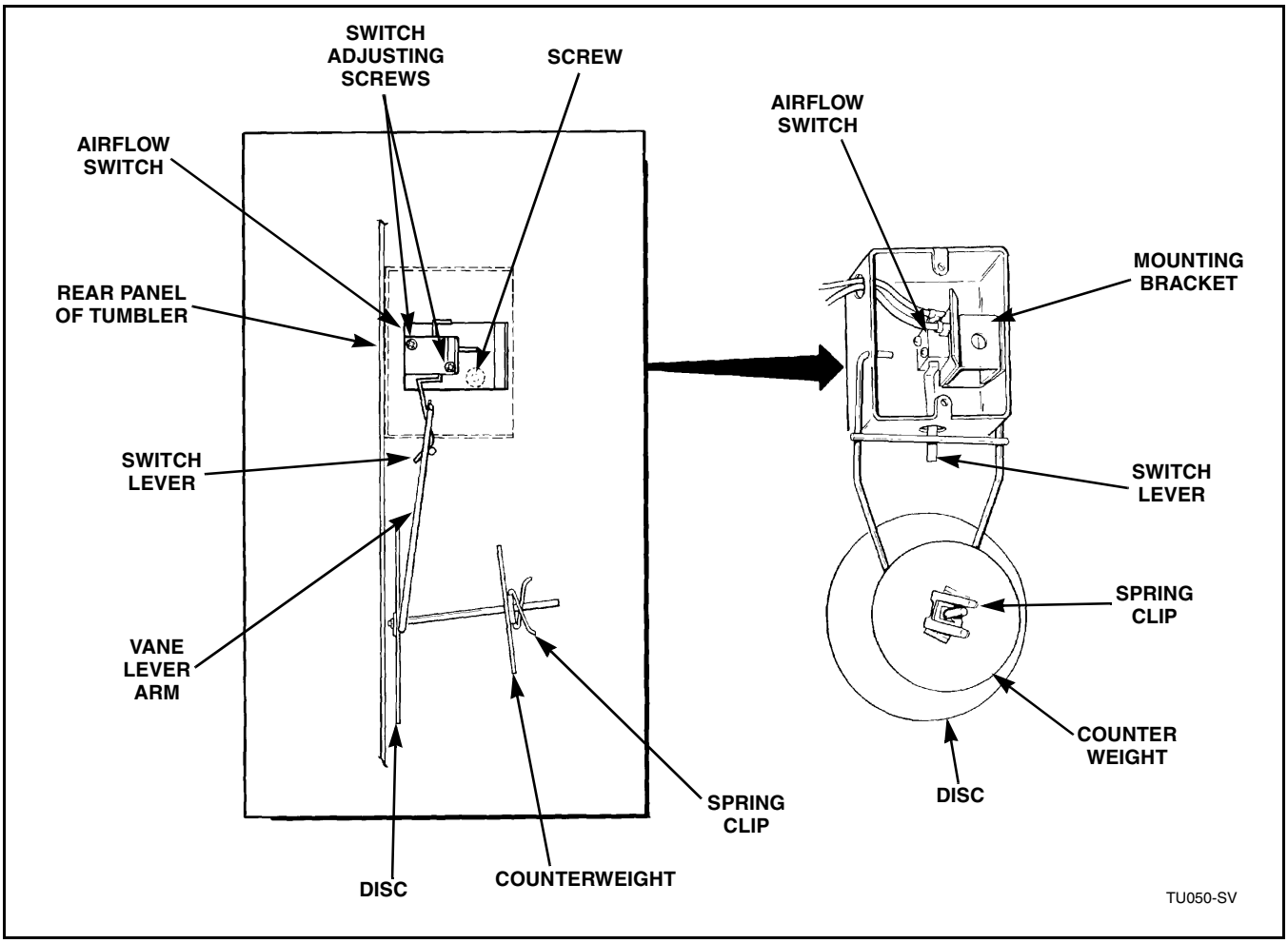



Figure 42

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 81. LOADING DOOR SWITCH

Refer to *Figure 43*.

The door switch should be adjusted so the cylinder stops when door is opened two inches (51 mm), plus or minus 1/4 inch (6 mm). This switch is a normally open switch and is closed when the door is closed.

a. Close door and start tumbler, then slowly open loading door. Cylinder and heat system should shut off when door is open two inches (51 mm) plus or minus 1/4 inch (6 mm).
b. Slowly close loading door. When door is two inches (51 mm) from being fully closed, the tab on the door should contact the switch rod and depress it enough to close the switch with an audible “click”.
c. If tab does not depress the switch rod enough to operate the switch, adjust switch position. If switch position doesn’t achieve proper operation, bend tab outward and repeat steps “a” and “b”.

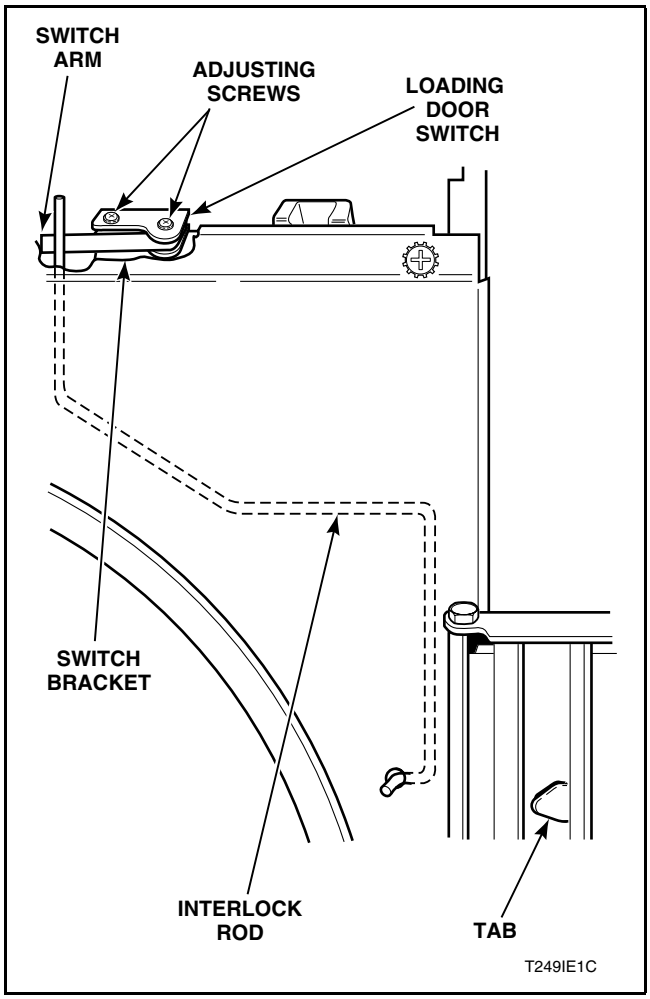



Figure 43

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 82. LOADING DOOR STRIKE

Refer to *Figure 44*.

The loading door strike must be adjusted so it has sufficient tension to hold loading door closed against the force of a tumbling load. The door strike is properly adjusted when 8-15 lbs. (17.6-33 kg) of pull is required to open door.

To adjust, open door, loosen acorn nut and turn door strike screw in or out as required. Retighten acorn nut.

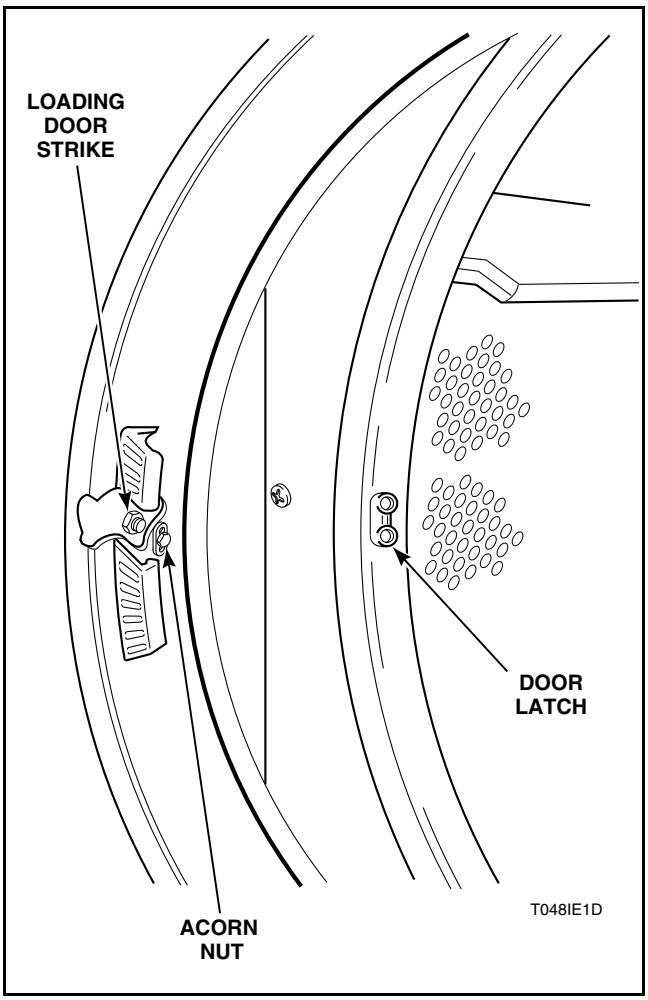



Figure 44

### 83. DRIVE BELT TENSION

## WARNING

**To avoid bodily injury, disconnect power to tumbler before performing this operation.**

W278

To find the proper tension, apply light thumb pressure midway between the sheave and motor pulley, and adjust until the belt can be depressed approximately 1/2 inch (13 mm).

## CAUTION

**Adjusting the drive belt tension WILL AFFECT drive chain tension. You MUST check and readjust the chain tension after adjusting belt tension.**

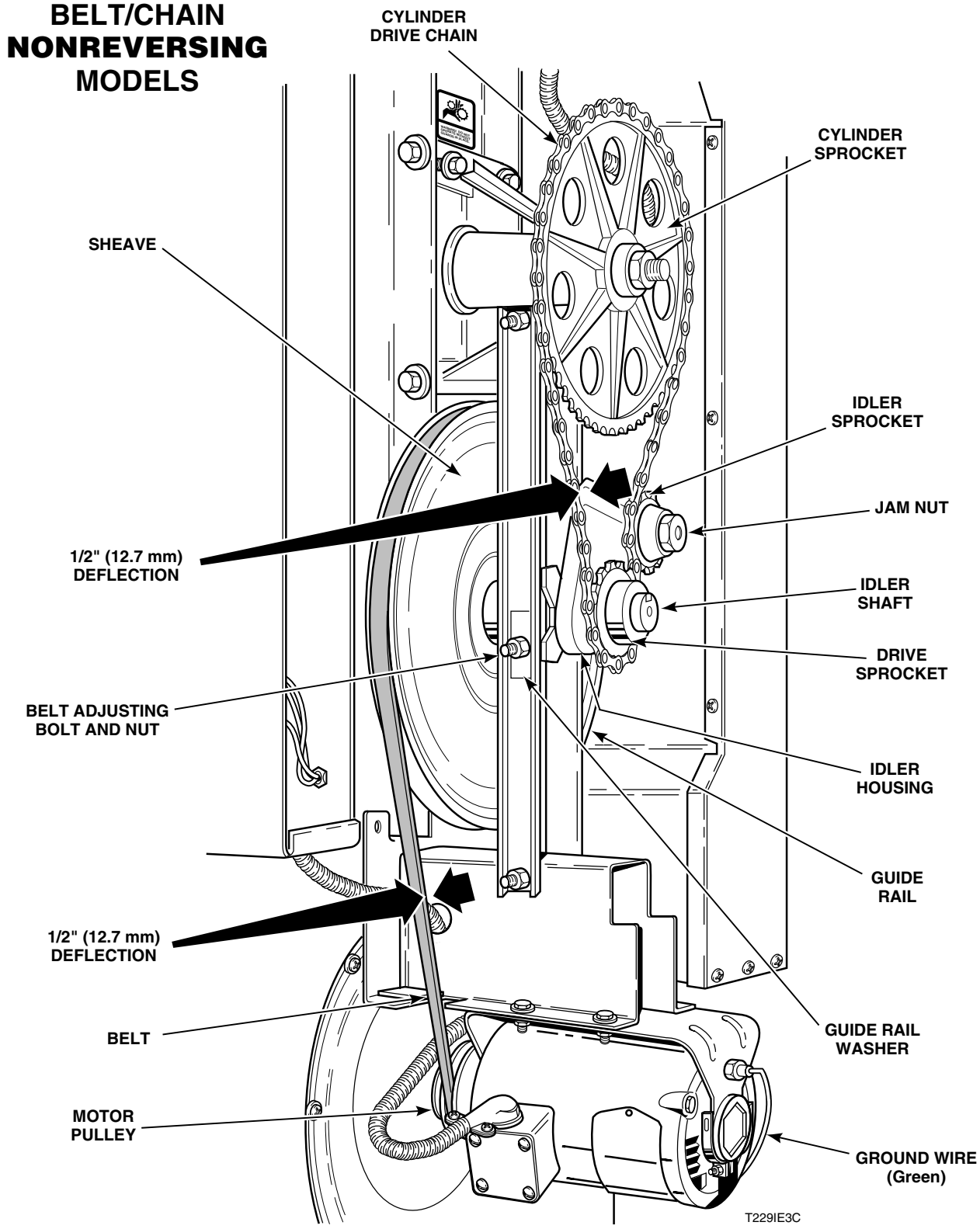
W282

**Nonreversing Tumblers:**
Refer to *Figure 45*.

a. Remove drive guard from rear of tumbler.
b. Loosen adjusting bolt holding idler housing assembly to the guide rails.
c. Lift idler housing assembly upward until proper belt tension is reached, then raise and retighten adjusting bolt.

**Reversing Tumblers:**
Refer to *Figure 46*.

a. Remove drive guard from rear of tumbler.
b. Loosen motor mounting bracket/side bracket mounting screws and loosen four adjusting screw locknuts, and move motor mounting bracket up or down in slots, equally, using the four adjusting screws. Refer to *Figure 38*.
c. Tighten adjusting screw locknuts and side bracket mounting screws securely, taking care to keep mounting bracket level so as not to disturb alignment of motor pulley.




**NOTE: Tumbler is shown with guards removed for ilustration purposes only. Never operate the tumbler with the guards removed.**

Figure 45

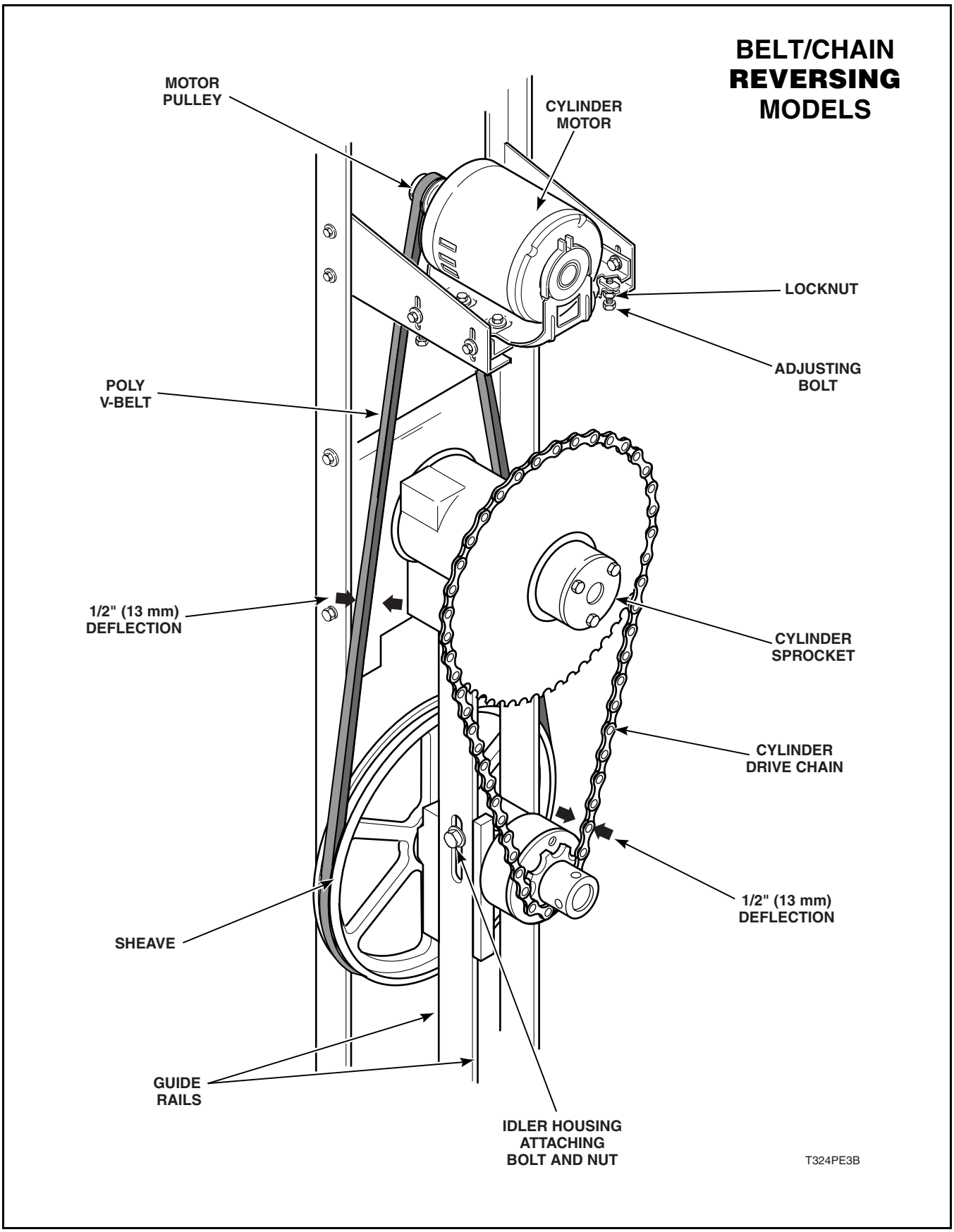



Figure 46

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 84. DRIVE TENSION

## WARNING

**To avoid bodily injury, disconnect power to tumbler before performing this operation. To find the proper tension, apply light thumb pressure midway between the cylinder sprocket and the idler sprocket, and adjust until the chain can be depressed approximately 1/2 inch (13 mm).**

W279

**IMPORTANT: After a tumbler has been in operation over an extended period of time, a "HIGH POINT" will develop on the cylinder drive sprocket from use and wear. Turn the sprocket manually with drive chain in place until this "high point" is at the top center. The "high point" can be found by noticing increased chain tension while slowly rotating the cylinder sprocket manually. The chain must be at the "high point" when making the adjustment.**

**Nonreversing Tumblers**
Refer to *Figure 45*.

a. Remove drive guard.
b. To adjust chain tension, loosen jam nut holding idler sprocket to housing.
c. Move idler sprocket left or right until proper chain tension is reached, then re-tighten the jam nut.
d. Check chain tension.

**Reversing Tumblers**
Refer to *Figure 46*.

a. Remove drive guard.
b. To adjust chain or belt tension, loosen jam nut on idler housing attaching bolt, *Figure 31*, and move entire idler housing assembly up or down in the guide rails to change tension.
c. When chain tension is correct, tighten idler housing attaching bolts. Hold idler housing firmly in position while tightening jam nut on attaching bolt.
d. Check chain or belt tension after tightening jam nut on idler housing attaching bolt.

## WARNING

**To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the tumbler before servicing.**
- **Close gas shut-off valve to gas tumbler before servicing.**
- **Close steam valve to steam tumbler before servicing.**
- **Never start the tumbler with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.**

W002

### 85. CYLINDER CLEARANCE

The clearance between the cylinder rim and front panel must be adjusted so the cylinder is centered within the front panel opening when the cylinder is fully loaded and is turning. However, the adjustment should be made when the cylinder is empty.

**NOTE: If the cylinder is not properly adjusted, the cylinder rim will rub against the front panel.**

a. Open loading door and check the gap between the center of the front panel top flange and the cylinder rim. Proper adjustment is when the gap is 7/16 inch (11 mm). Refer to *Figure 47*.
b. Remove drive guard.
c. Loosen the four trunnion housing bolts. Refer to *Figure 48*.
d. Loosen the locknuts on the trunnion housing adjusting bolts. Refer to *Figure 48*.
e. Turn the adjusting bolts in or out as necessary to obtain proper clearance between cylinder rim and front panel.

**NOTE: Turning the adjusting bolts clockwise will raise the cylinder and turning them counterclockwise will lower the cylinder. Turn both bolts evenly to adjust top and bottom clearance. Turn one or the other adjusting bolt in or out to adjust side clearance.**

f. After the cylinder is properly adjusted, tighten the adjusting bolt locknuts and the four trunnion housing bolts.
g. Install the drive guard removed in step “b”.

**NOTE: If adjusting the trunnion housing fails to correct the clearance, the problem is probably due to a worn trunnion shaft or bearings.**

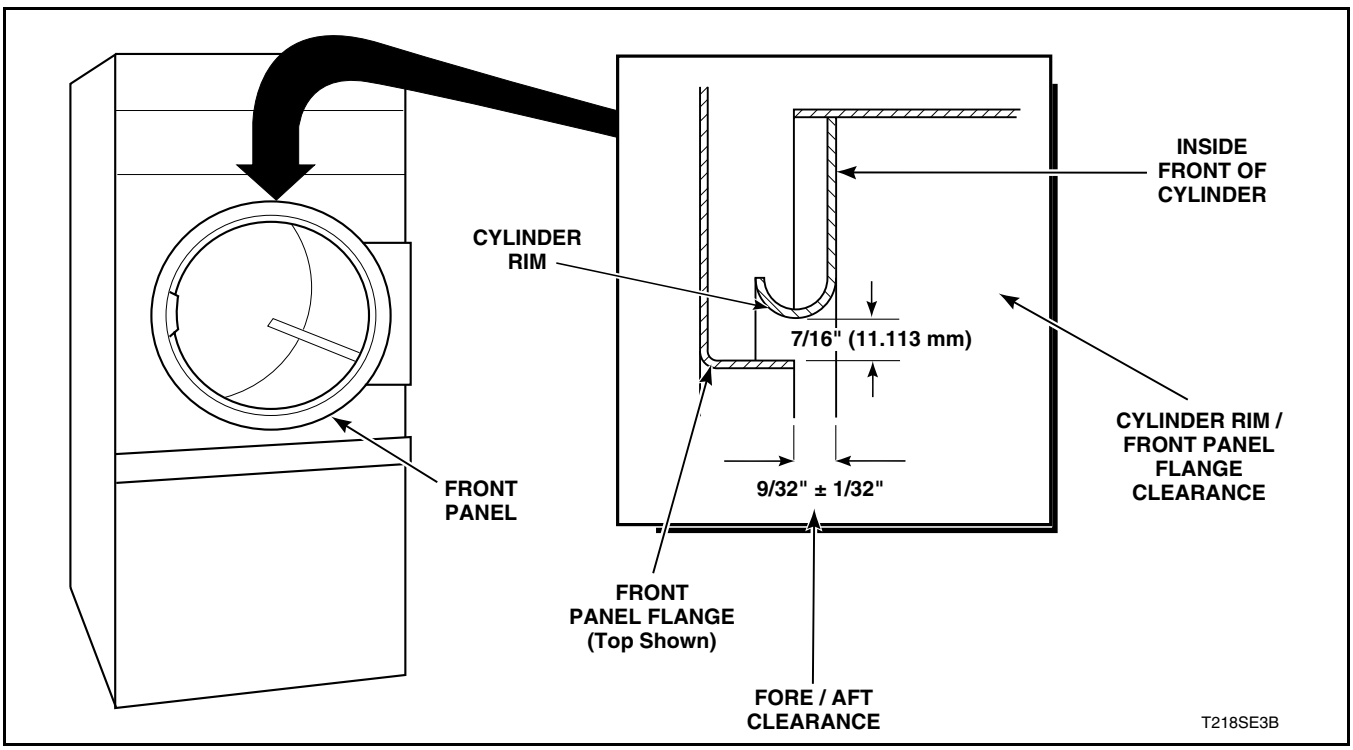



Figure 47

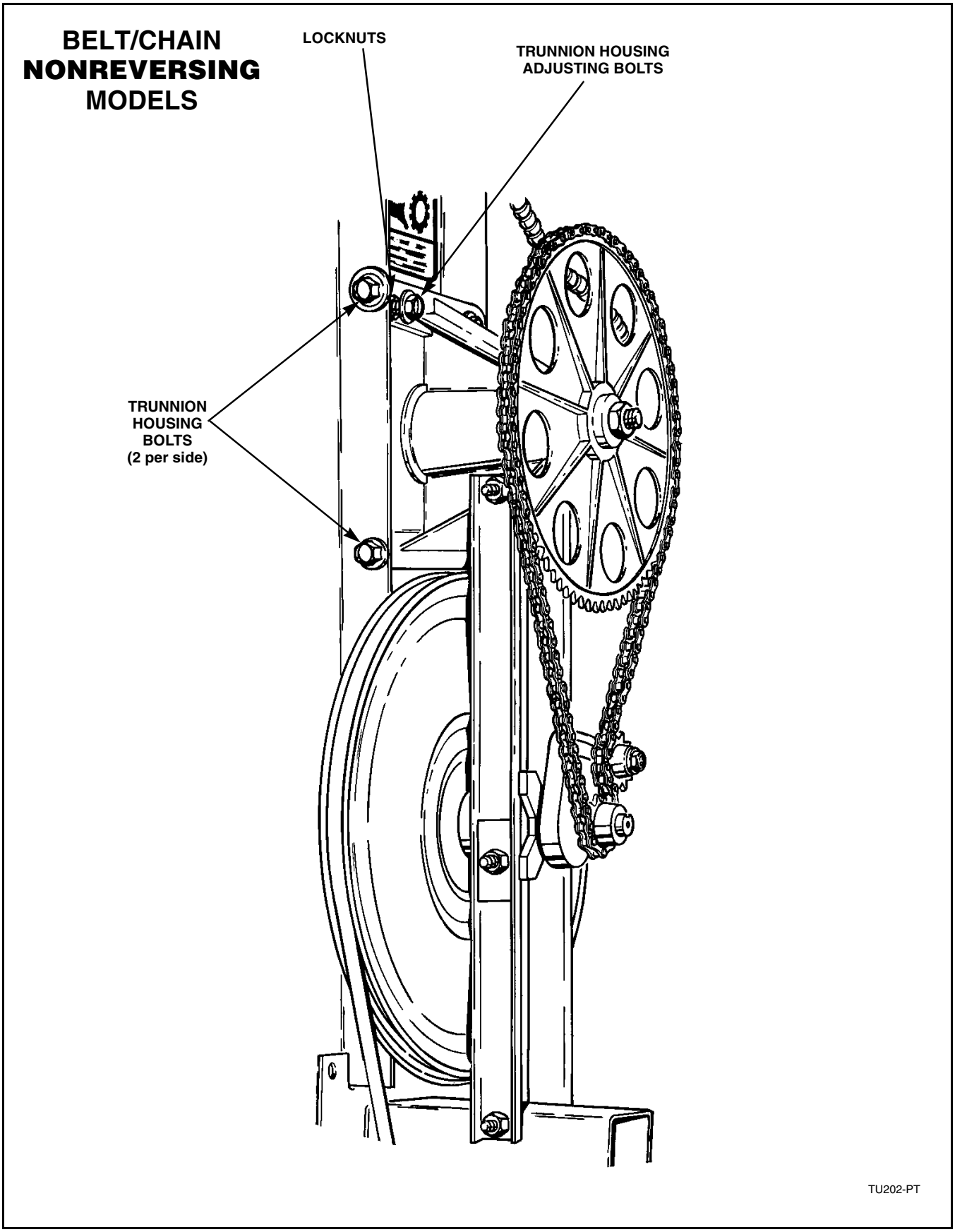



Figure 48